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BELL & HOWELL COMPANY

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

November 1, 1966 Volume 832 Number 1

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of September 1966

Examiner affirmed	190
Examiner affirmed in part	37
Examiner reversed	55
Total	282

TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

Chapter I—Patent Office, Department of Commerce

PART 1—RULES OF PRACTICE IN PATENT CASES

Miscellaneous Amendments

The following amended sections are adopted to take effect January 1, 1967. All applications submitted after that date must comply with the sections as amended. With respect to amended § 1.72(b), every application which has not received a first office action of any kind from the Examiner prior to November 1, 1966, must be amended to contain an abstract in accordance with this section.

The general substance of these sections and other proposed sections was published in the Federal Register of March 15, 1966, 31 F.R. 4412–3, and the OFFICIAL GAZETTE of April 5, 1966, 825 O.G. 2. All persons who desired, were invited both to submit their written views, objections, recommendations, or suggestions and their oral comments at a hearing held on April 26, 1966. Both the oral and written comments were carefully considered. It was decided on the basis of the comments received and other considerations that the substance of certain of the proposed sections would be incorporated merely as suggestions in a guide to drafting a model patent application; and that the substance of certain other of the proposed sections would be adopted as herein indicated.

The principal purposes of the amendments are to facilitate examination of applications by the Patent Office and review of issued patents by the public. Suggested guidelines for complying with the amendment requiring an abstract of disclosure (Section 1.72(b)) and the amendment adding paragraph (e) to § 1.73 will be published separately by the Patent Office in a guide to drafting a model patent application.

Sections 1.72, 1.75, 1.77, 1.78, 1.83, and 1.84(g) have been amended to read as follows:

§ 1.72 *Title and abstract.*

(a) The title of the invention, which should be as short and specific as possible, should appear as a heading on the first page of the specification, if it does not otherwise appear at the beginning of the application.

(b) A brief abstract of the technical disclosure in the specification must be set forth immediately following the title and preceding the disclosure in a separate paragraph under the heading "Abstract of the Disclosure." The purpose of the abstract is to enable the Patent Office and the public generally to determine quickly from a cursory inspection the nature and gist of the technical disclosure, and the abstract shall not be used for interpreting the scope of the claims.

§ 1.75 *Claim(s).*

(a) The specification must conclude with a claim particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention or discovery.

(b) More than one claim may be presented provided they differ substantially from each other and are not unduly multiplied.

(c) When more than one claim is presented, they may be placed in dependent form in which a claim may refer back to and further restrict a single preceding claim. Claims in dependent form shall be construed to include all the limitations of the claim incorporated by reference into the dependent claim.

(d) (1) The claim or claims must conform to the invention as set forth in the remainder of the specification and the terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description.

(2) See §§ 1.141 to 1.147 as to claiming different inventions in one application.

(e) Where the nature of the case admits, as in the case of an improvement, any independent claim should contain in the following order, (1) a preamble comprising a general description of all the elements or steps of the claimed combination which are conventional or known, (2) a phrase such as "wherein the improvement comprises," and (3) those elements, steps and/or relationships which constitute that portion of the claimed combination which the applicant considers as the new or improved portion.

§ 1.77 *Arrangement of application.*

The following order of arrangement should be observed in framing the application:

(a) Title of the invention; or an introductory portion stating the name, citizenship, and residence of the applicant, and the title of the invention may be used.

(b) Abstract of the disclosure.

(c) Cross-references to related applications, if any.

(d) Brief summary of the invention.

(e) Brief description of the several views of the drawing, if there are drawings.

(f) Detailed description.

New Applications Received During September 1966

Patents	6,948
Designs	446
Plant Patents	19
Reissues	16
Total	7,429

Issue—November 1, 1966

Patents	1,473	No. 3,281,863 to No.	3,283,335, incl.
Designs	32	No. 206,113 to No.	206,144, incl.
Plant Patents	2	No. 2,682 to No.	2,683, incl.
Reissues	5	No. 26,104 to No.	26,108, incl.
Total	4,512		

(g) Claim or claims.
(h) Signature. (See § 1.76.)

§ 1.78 *Cross-references to other applications.*

(a) When an applicant files an application claiming an invention disclosed in a prior filed copending application of the same applicant, the second application must contain or be amended to contain in the first sentence of the specification following the title and abstract a reference to the prior application, identifying it by serial number and filing date and indicating the relationship of the applications, if the benefit of the filing date of the prior application is to be claimed. Cross-references to other related applications may be made when appropriate. (See § 1.14 (b).)

(b) Where two or more applications filed by the same applicant, or owned by the same party, contain conflicting claims, elimination of such claims from all but one application may be required in the absence of good and sufficient reason for their retention during pendency in more than one application.

§ 1.83 *Content of drawing.*

(a) The drawing must show every feature of the invention specified in the claims. However, conventional features disclosed in the description and claims, where their detailed illustration is not essential for a proper understanding of the invention, should be illustrated in the drawing in the form of a graphical drawing symbol or a labeled representation (e.g. a labeled rectangular box).

(b) When the invention consists of an improvement on an old machine the drawing must when possible exhibit, in one or more views, the improved portion itself, disconnected from the old structure, and also in another view, so much only of the old structure as will suffice to show the connection of the invention therewith.

§ 1.84 *Standards for drawings.*

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(g) *Symbols, legends.* Graphical drawing symbols and other labeled representations may be used for conventional elements when appropriate, subject to approval by the Office. The elements for which such symbols and labeled representations are used must be adequately identified in the specification. While descriptive matter on drawings is not permitted, suitable legends may be used, or may be required, in proper cases, as in diagrammatic views and flowsheets or to show materials or where labeled representations are employed to illustrate conventional elements. Arrows may be required, in proper cases, to show direction of movement. The lettering should be as large as, or larger than, the reference characters.

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(Sec. 1, 66 Stat. 793, 35 U.S.C. 6, 112, 113)

EDWARD J. BRENNER,
Commissioner of Patents.

Approved: September 29, 1966.

J. HERBERT HOLLOMAN,
Assistant Secretary for Science and Technology.

[F.R. Doc. 66-10803; Filed, Oct. 3, 1966; 8:47 a.m.]

Published in 31 F.R. 12922, Oct. 4, 1966

Examination Requirements and Procedure in Relation to Abstracts of the Disclosure

The newly adopted amendment to Rule 72 which requires the submission of an *Abstract of the Disclosure* is being applied to patent applications which receive a first Office action of any kind from the Examiner on or after November 1, 1966; however, on cases filed before January 1, 1967, abstracts will not be required where the application is passed to issue on the first action.

The Examiner in the first office action on and after November 1, 1966, should require the submission of a brief abstract of the technical disclosure in the specification, the abstract to appear immediately after the title of the invention and preceding the disclosure in a separate paragraph under the heading "Abstract of the Disclosure." The following form paragraph may be used to make the requirement:

"An abstract is required, see new Rule 72(b)."

Responses to such actions should be treated under Rule 111(b) practice like any other formal matter.

Upon passing the case to issue, the Examiner should see that the abstract is an adequate and clear statement of the contents of the disclosure and generally in line with the guidelines in the following paragraphs; the abstract shall be changed by Examiner's Amendment in those instances where deemed necessary.

1. The purpose of the abstract is to provide a non-legal technical statement of the contents of the disclosure. The abstract should be an objective condensation (rather than a description) of the disclosure, in clear and concise language. Statements as to the relative merits or value, or speculative applications of the invention should be omitted.

2. The abstract should be especially designed to serve as a searching-scanning tool for the scientist, engineer or researcher in the particular art, and therefore should serve to indicate whether there is a need for consulting the full specification for details.

3. The abstract should be as brief as the subject permits. A single paragraph of 50–100 words should be sufficient.

4. Especially in the chemical field, the abstract should include a statement of the utility of the subject matter of the disclosure, particularly that which is related to the invention.

5. The abstract should be separate and independent of the "Summary of the Invention." One of the purposes of the abstract is to determine quickly the nature and gist of the technical disclosure.

RICHARD A. WAHL,
Oct. 7, 1966. *Assistant Commissioner.*

Dedication

3,230,599.—*Marshall McKew*, Schodack Center, and *Francis L. McKone*, Albany, N.Y. METHOD OF PRODUCING NEEDLED FELTS. Patent dated Jan. 25, 1966. Dedication filed Aug. 23, 1966, by the assignees, *Huyck Corporation* and *Appleton Mills*.

Hereby dedicate to the Public the remaining term of said patent.

Registers of Attorneys and Agents

SUPPLEMENTAL TO THE LIST PUBLISHED IN THE OFFICIAL GAZETTE OF FEBRUARY 8, 1966, VOL. 823, NO. 2

In the June 29, 1965, Volume 815, Number 5, and the March 8, 1966, Volume 824, Number 2, issues of the OFFICIAL GAZETTE, there were published lists of names and addresses of persons whose names were being removed from the Registers of Patent Attorneys and Patent Agents pursuant to the provisions of Rule 347 of the Rules of Practice of the United States Patent Office in Patent Cases.

The following persons, whose names appeared therein, have been retained on the active Register of Attorneys or Register of Agents in view of information which they have furnished to the Committee on Enrollment.

EDWIN L. REYNOLDS,
Oct. 6, 1966. *Chairman, Committee on Enrollment.*

Names of Registered Attorneys and Agents To Be Retained on the Active Register

Bower, James H., Ex-Cell-O Corp., P.O. Box 386, Detroit, Mich., 48232
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McIntire, Ralph W., Westinghouse Air Brake Co., P.O. Box 67, Wilmerding, Pa., 15148
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Witker, Lawrence C., 4210 W. Central Ave., Toledo, Ohio, 43606
Wood, Donald L., 943 Worthington, Birmingham, Mich., 48009
Young, Henry C., Goodyear Tire and Rubber Co., 1144 E. Market St., Akron, Ohio, 44316

Adjudicated Patents

(C.A. Mo.) Jurett Patent No. 2,877,520 (287—20.92), for CONNECTOR. Claims 1, 3 and 4 *Held* invalid. *Automated Bldg. Components, Inc.* v. *Hydro-Air Engineering, Inc.*, 326 F.2d 989; 150 USPQ 421.

(D.C. Ill.) Skeggs Patent No. 2,797,149 (23—230), for METHOD AND APPARATUS AND ANALYZING LIQUIDS CONTAINING CRYSTALLOID AND NON-CRYSTALLOID CONSTITUENTS. Claims 4, 14, 16, and 19 *Held* valid and infringed. *Technicon Instruments Corporation* v. *Coleman Instruments, Inc.*, 255 F. Supp. 630; 150 USPQ 227.

(D.C. Ill.) Ferrari and Isreeli Patent No. 2,865,303 (103—149), for PUMPS. Claim 8 *Held* valid and infringed. *Id.*

(D.C. Ill.) Skeggs Patent No. 2,897,141 (208—209), for AUTOMATIC ANALYZING APPARATUS. Claims 10 and 16 *Held* valid and infringed. *Id.*

(D.C. Ill.) Ferrari and Isreeli Patent No. 2,935,028 (103—149), for PUMP. Claim 14 *Held* valid and infringed. *Id.*

(D.C. Tex.) Levey and Harvey Patent No. 3,000,576 (222—146), for SPRAY GUN. Claims 1, 2 and 8 *Held* infringed. *Spee-Flo Mfg. Corp.* v. *Gray Co.*, 255 F. Supp. 618; — USPQ —.

(D.C. Miss.) Abbott Patent No. 3,031,208 (280—460), for UNIVERSAL TRACTOR HITCH. Claims 2 and 5 *Held* valid and infringed. *Abbott* v. *Barrentine Mfg. Co.*, 255 F. Supp. 890; 149 USPQ 287.

(C.A. Ill.) Seyfried Reissue Patent No. 24,607 (192—55), for FLEXIBLE COUPLING MEANS FOR SEPARABLE SHAFTS. Claims 9 to 14 *Held* invalid. *Scovill Mfg. Co.* v. *Goldblatt Bros., Inc.*, 362 F.2d 777; 150 USPQ 406.

Disclaimer

3,015,950.—*Bernard H. Doctor*, Cincinnati, and *James V. O'Bryan*, Springdale, Ohio. EROSION SENSOR. Patent dated Jan. 9, 1962. Disclaimer filed July 22, 1966, by the assignee, *Avco Corporation*.

Hereby enters this disclaimer to claims 1 and 4 of said patent.

GUIDELINES FOR DRAFTING A MODEL PATENT APPLICATION UNDER THE REVISED RULES

The following guidelines illustrate the preferred lay-out and content for patent applications. They have been prepared to supplement the amendments to the rules which are effective January 1, 1967. These guidelines are suggested for the applicant's use.

Arrangement and Contents of the Specification

The following order of arrangement is preferable in framing the specification and, except for the title of the invention, each of the lettered items should be preceded by the headings indicated.

(a) Title of the Invention.
(b) Abstract of the Disclosure.
(c) Cross-References to Related Applications (if any).
(d) Background of the Invention.
1. Field of the Invention.
2. Description of the Prior Art.
(e) Summary of the Invention.
(f) Brief Description of the Drawing.
(g) Description of the Preferred Embodiment(s).
(h) Claim(s).

(a) *Title of the Invention:* (See Rule 72(a).) The title of the invention should be placed at the top of the first page of the specification. It should be brief but technically accurate and descriptive.

(b) *Abstract of the Disclosure:* (See Rule 72(b), MPEP 608.01(a), and 831 O.G. 1328, October 25, 1966.)

(c) *Cross-References to Related Applications:* (See Rule 78 and MPEP 201.11.)

(d) *Background of the Invention:* The specification should set forth the Background of the Invention in two parts:

(1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions. The statement should be directed to the subject matter of the claimed invention.

(2) Description of the Prior Art: A paragraph(s) describing to the extent practical the state of the prior art known to the applicant, including references to specific prior art where appropriate. Where applicable, the problems involved in the prior art, which are solved by the applicant's invention, should be indicated.

(e) *Summary:* A brief summary or general statement of the invention as set forth in Rule 73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.

(f) *Brief Description of the Drawing:* A reference to and brief description of the drawing(s) as set forth in Rule 74.

(g) *Description of the Preferred Embodiment(s):* A description of the preferred embodiment(s) of the invention as required in Rule 71. The description should be as short and specific as is necessary to adequately and accurately describe the invention.

Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field to which the invention pertains, form a part of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.

(h) *Claim(s):* (See Rule 75.) A claim may be typed with the various elements subdivided in paragraph form. There may be plural indentations to further segregate subcombinations or related steps.

Reference characters corresponding to elements recited in the detailed description and the drawings may be used in conjunction with the recitation of the same element or group of elements in the claims. The reference characters, however, should be enclosed within parentheses so as to avoid confusion with other numbers or characters which may appear in the claims. The use of reference characters is to be considered as having no effect on the scope of the claims.

Claims should preferably be arranged in order of scope so that the first claim presented is the broadest. Where separate species are claimed, the claims of like species should be grouped together where possible and physically separated by drawing a line between claims or groups of claims. (Both of these provisions may not be practical or possible where several species claims depend from the same generic claim.) Similarly, product and process claims should be separately grouped. Such arrangements are for the purpose of facilitating classification and examination.

The form of claim required in Rule 75(e) is particularly adapted for the description of improvement type inventions. It is to be considered a combination claim and should be drafted with this thought in mind.

In drafting claims in accordance with Rule 75(e), the preamble is to be considered to positively and clearly include all the elements or steps recited therein as a part of the claimed combination.

Oath

(See Rule 65.) Where one or more previously filed foreign applications are cited or mentioned in the oath, complete identifying data, including the application or serial number as well as the country and date of filing, should be provided.

EDWARD J. BRENNER,
Commissioner of Patents.

Date: Oct. 12, 1966.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF SEPTEMBER 26, 1966

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager	7-3-63	10-2-61
Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.		
GENERAL ORGANIC CHEMISTRY, GROUP 120—G. D. MITCHELL, Manager	6-4-63	8-31-61
Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.		
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING, GROUP 140—M. STERMAN, Manager	8-1-63	8-21-61
Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.		
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager	2-5-63	1-31-62
Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.		
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager	7-1-63	10-23-61
Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.		
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—M. L. LEVY, Manager	7-15-63	12-15-61
Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.		
SECURITY, GROUP 220—S. BOYD, Manager	1-16-62	9-9-63
Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.		
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—E. J. SAX, Manager	1-7-63	6-6-61
Communications; Multiplexing Techniques; Facsimile; Date Processing, Computation and Conversion; Storage Devices and Related Arts.		
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—F. M. STRADER, Manager	4-12-63	7-31-61
Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.		
PHYSICS, GROUP 280—R. L. EVANS, Manager	1-13-64	10-25-62
Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.		
DESIGNS, GROUP 290—S. BOYD, Manager	6-15-65	1-5-65
Industrial Arts; Household, Personal and Fine Arts.		

Total number of pending applications (excluding Designs)	195, 258
Total number of Design applications pending	Not available
Total number of applications awaiting action (excluding Designs)	143, 338
Total number of Design applications awaiting action	Not available
Date of oldest new application awaiting action	Jan. 16, 1962
Date of oldest amended application awaiting action	June 6, 1961

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during November 1966, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1963*.

Patents	Numbers 2,486,373 to 2,490,010, inclusive
Plant Patents	Numbers 888 to 903, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid, Flexible and Special Receptacles and Packages.	6-26-64	5-16-63
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks; Fasteners.	5-19-64	3-19-62
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, Etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	2-13-64	3-19-62
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	12-4-64	10-15-63
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	7-8-64	8-20-62
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager. Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	10-17-63	7-25-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE GEORGE BOSY

No. 7646. Decided May 26, 1966

[53 CCPA —; 360 F.2d 972; 149 USPQ 789]

1. APPLICATION—DISCLOSURE—SUFFICIENCY OF DISCLOSURE—"ENABLING" AND "BEST MODE" PORTIONS OF 35 U.S.C. 112.

"The issue in this case is whether the specification satisfies 35 U.S.C. 112, first paragraph, wherein it requires first, a full and clear description of the invention, and of the manner and process of making and using it, and second, that the best mode contemplated by the inventor of carrying out the invention be set forth. These two requirements are referred to as the 'enabling' and 'best mode' portions of 35 U.S.C. 112, *In re Gay*, 50 CCPA 725, 309 F.2d 769, 135 USPQ 311."

2. SAME—SAME—SAME.

"The test that the specification be 'clearly sufficiently definite to guide those skilled in the art to its successful application' is applied in this court • • •."

3. SAME—SAME—SAME—OBVIOUS MINUTIAE OF PROCEDURE NOT REQUIRED.

"The description of an invention 'need not set forth minutiae of description or procedures perfectly obvious to one of ordinary skill in the art yet unfamiliar to laymen,' *In re Folkers*, 52 CCPA 1269, 344 F.2d 970, 145 USPQ 390, 394. 'That which is common and well known is as if it were written out in the patent.' *Loom Co.* v. *Higgins*, 105 U.S. 580, 586 (1881)."

4. SAME—SAME—SAME—"BEST MODE" REQUIREMENT OF 35 U.S.C. 112.

"Regarding the best mode requirement of 35 U.S.C. 112, this court has stated that 'an inventor is in compliance therewith if he does not conceal what he feels is a preferred embodiment of his invention,' and there is no statutory basis for reading into the best mode portion a requirement 'that the mode disclosed be in fact the *optimum* mode of carrying out the invention' *In re Gay*, • • • 50 CCPA at 731–32."

5. SAME—SAME—SAME—SAME.

"It is our view that the error of failing to 'analyze exactly what appellant's invention is in the instant case,' *In re Gay*, supra, 50 CCPA at 732, has resulted in the additional error of requiring a best mode be set forth of details not relating to the essence of the invention. What would be sufficient as a best mode here cannot be determined until first the invention is discerned. With a clear picture of the invention in mind it becomes evident that the specification as a whole discloses the best mode in emphasizing that the beating must be minimized to avoid hydration of the pulp and the bed kept at a minimum height for filtration. The former is merely a matter of observation and control of an operating parameter. With regard to the latter, appellant discloses: '• • • The bed of grape mash in the trommel was 7 inches in depth.'"

6. SAME—SAME—SAME—SAME.

"We do not agree • • • that 'there is proper basis for holding that the specification fails to satisfy the "best mode" requirement of section 112' follows from the fact that appellant does not 'even contend that any portion of the specification represents "the best mode *contemplated by the inventor* of carrying out the invention."' The Patent Office here does not advance any convincing reason for finding that *the invention* is so dependent on the amounts of pulp and pectinase that a best mode of the claimed process is not disclosed by the general teachings of the specification. It does not follow that there is a proper basis for a best mode rejection under 35 U.S.C. 112 merely because appellant does not pinpoint *within* the specification some portion that represents a best mode."

APPEAL from the Patent Office. Serial No. 31,439.

REVERSED.

William E. Anderson, *Robert B. Jones* for appellant.

Joseph Schimmel (*Raymond F. Martin* of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, JR., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

MARTIN, *J.*, delivered the opinion of the court.

This is an appeal from a decision of the Board of Appeals affirming the rejection of process claims 4, 5 and 6 of appellant's application Serial No. 31,439, filed May 24, 1960, for "Treatment of Grape Juice."

[1] The issue in this case is whether the specification satisfies 35 U.S.C. 112, first paragraph, wherein it requires first, a full and clear description of the invention, and of the manner and process of making and using it, and second, that the best mode contemplated by the inventor of carrying out the invention be set forth. These two requirements are referred to as the "enabling" and "best mode" portions of 35 U.S.C. 112, *In re Gay*, 50 CCPA 725, 309 F.2d 769, 135 USPQ 311.

The invention relates to the recovery of grape juice from grapes. The application discloses both an apparatus and method for obtaining the highest yield of grape juice with a low amount of sediment. As a result of a restriction requirement only method claims are present in this appeal.

The process invention involves the convention cleaning and crushing of grapes followed by the removal of stems. The resultant grape mash, which includes juice and pomace, is then transferred to a preheater. Cellulose pulp, functioning as a filter aid, and pectinase are added, the latter causing depectinization to effect improved recovery of juice. The pulp, mash and pectinase mixture is then transferred to a hold tank in which it is uniformly dispersed. Subsequently, the mixture is pumped into a trommel, which generally comprises a rotatable, substantially horizontal cylindrical screen separator. The trommel is of appellant's own novel construction and design and is the subject of the restricted claims not on appeal. The mixture is introduced into one end of the trommel and flows to the other; as it flows a portion of the contained juice passes downwardly through the screen, where it is collected. The rotation of the trommel provides an additional movement or "agitation" of the bed of pulp and pomace to assist in the filtration of the grape juice. The partially "dejuiced" mixture of grape solids and cellulose pulp is discharged from the end of the trommel over a plate or dam, the height of which determines the height of the mixture or bed in the bottom of the trommel. The pomace which is discharged from the trommel may be further depleted of juice in a screw press as in prior art processes.

Representative claim 5 reads:

> A method for recovering juice from grape mash, comprising the steps of adding cellulosic pulp to the grape mash, stirring the pulp into the grape mash without beating of the pulp, establishing a bed of the grape mash having a height of at least 5 inches, and substantially continuously agitating said bed of grape mash while recovering juice from the bottom of said bed.

Claim 4 differs only in reciting the treatment of the pulp as "minimizing beating of the pulp," and claim 6 in more detail recites the movement of the filter bed.

The Examiner rejected claims 4–6 as based upon an insufficient disclosure, finding the specification incomplete in not reciting "the conditions necessary to complete satisfactory utilization of the process," and in the failure to disclose the amounts of the ingredients such as paper pulp and pectinase used in the process.

The Board noted that appellant's specification indicates that it was known prior to his invention to add cellulose pulp and pectinase to crushed grapes, beat the mixture, and then separate the juice and pulp in a separation device. This was also evident from certain prior art patents, mentioned by the Patent Office and appellant as pertinent to the question of completeness of the disclosure of operating conditions:

Leo et al. (Leo), 2,235,028, March 18, 1941.
Ash, 2,530,322, November 14, 1950.
Little, 2,823,126, February 11, 1958.
Wolcott, 2,837,431, June 3, 1958.

Although noting appellant's argument that the amount of pulp and pectinase were not critical, the Board held that since there were large variations in the prior art directly related to particular methods of separation of juice and pulp, the prior art would not guide a skilled artisan, having knowledge of the instant disclosure, "in determining the amounts, or even the kind, of cellulose material which would be suitable in appellant's particular process." In developing this point, the Board stated:

> • • • It appears to us, therefore, that the amount of cellulose pulp as well as the type of pulp required to accomplish appellant's purpose are directly related to the essential features of the invention and should not be the objects of experimentation in attempting to practice appellant's process. • • •

The Board also agreed with the Examiner's view with regard to the lack of disclosure as to the amount of pectinase used, holding that, in this respect, there were no reliable guides in the prior art cited by appellant.[1]

Thus, the Patent Office position with respect to the "enabling" portion of 35 U.S.C. 112 is that the disclosure is defective in not specifying the type and amount of pulp, and the amount of pectinase used, and that the prior patents cited and relied upon by appellant do not obviate the need for experimentation in attempting to practice appellant's process. Appellant's position is that these were matters known to the art long before appellant's filing date, the patent to Wolcott being relied upon as evidence thereof, and that to enable one of ordinary skill to practice appellant's invention, one need only look to Wolcott.

The Patent Office also urges that appellant's specification does not satisfy the "best mode" portion of 35 U.S.C. 112.

The Supreme Court set out some guidelines with reference to the sufficiency of a specification to disclose an invention in such a manner as will enable one of ordinary skill in the art to make it in *Minerals Separation, Ltd.* v. *Hyde*, 242 U.S. 261 (1929), at 270–71:

> Equally untenable is the claim that the patent is invalid for the reason that the evidence shows that when different ores are treated preliminary tests must be made to determine the amount of oil and the extent of agitation necessary in order to obtain the best results. Such variation of treatment must be within the scope of the claims, and the certainty which the law requires in patents is

[1] Appellant filed a request for reconsideration of the Board's decision, accompanied by an affidavit, purporting to show that one of ordinary skill in the art considered appellant's disclosure sufficient. The Board denied the request, and refused to "rule on the merits of the affidavit since it is untimely and we do not have the benefit of the Examiner's views." In the denial, the Board noted that the intimation in the principal decision respecting lack of disclosure of the *type* of pulp used in the process "merely amplified the Examiner's comments and did not of itself constitute the sole ground of affirmance."

not greater than is reasonable, having regard to their subject-matter. The composition of ores varies infinitely, each one presenting its special problem, and it is obviously impossible to specify in a patent the precise treatment which would be most successful and economical in each case. The process is one for dealing with a large class of substances and the range of treatment within the terms of the claims, while leaving something to the skill of persons applying the invention, is clearly sufficiently definite to guide those skilled in the art to its successful application, as the evidence abundantly shows. This satisfies the law. *Mowry* v. *Whitney*, 14 Wall. 620; *Ives* v. *Hamilton*, 92 U.S. 426, and *Carnegie Steel Co.* v. *Cambria Iron Co.*, 185 U.S. 403, 436, 437.

[2] The test that the specification be "clearly sufficiently definite to guide those skilled in the art to its successful application" is applied in this court, *In re Gay*, supra.

As applied to the facts of this case, we think the test shows the Board erred in concluding appellant's disclosure insufficient with respect to the amount and type of pulp and amount of pectinase necessary to successfully carry out the claimed process.

Appellant has admitted, and the prior art shows that use of a filter aid and pectinase is old in this art. The application states that:

• • • the juice and pomace are mixed with paper or cellulose pulp which is *conventionally* added to the mash in grape juice recovery operations. • • • [Emphasis added.]

The Leo patent discloses the use of paper pulp, white tissue paper, bleached sulfite pulp and cotton rags as an aid in filtering fruit juices such as berries, pears, peaches and apricots. Little gives an example in which alpha cellulose is used as a filter aid for grape juice. Wolcott adds wood pulp and pectinase to grape mash as a filter aid. All three specify ranges of amounts of materials used. We find such disclosures to support appellant's conclusion that *amounts* of both were known to those skilled in the art, and it would be expected that variations of the type or amount of grape juice would require some adjustments or preliminary testing in order to determine the amount of a given kind of pulp and the pectinase in order to obtain the best results.

Two factors aid us in putting this case in its proper perspective. The first has in part been discussed above, that the art has used ranges of amounts of such materials before. In this regard we note further that the most pertinent reference, Wolcott states:

Referring to a description of the exemplary method and to the flow sheet, the washed, stemmed and crushed grapes are heated to a temperature of 100° F. to 130° F. for supporting the reaction of the pectin hydrolyzing enzyme. To the heated grape material contained in the tank 1, which is equipped with an agitator 2, is added from 0.1% to 0.2% enzyme, by weight. From 0.2% to 0.5% wood pulp, by weight, is also added, and the additives are well mixed with the grape mass so that the enzymes and fines intercepting medium are in mutual immediate proximity, and uniformly distributed throughout the grape material. • • •

The second factor is that the key to the invention is the discovery that over-agitation or beating of the pulp, regardless of the amount or type, must be avoided. The specification states:

The hold tank is provided with a mixer 25. This mixer is operated at the end of the holding period to uniformly disperse the paper and pomace throughout the mixture so as to provide a homogeneous mixture, while, at the same time, not providing undue beating of the mixture. This is an important feature of the invention to provide most efficient operation of the process and apparatus of the invention. It has been found that excessive beating of the mixture, including the pulp, results in lower recovery of juice and inefficiency in operation. • • • As previously indicated, this minimizing of beating of the pulp is a desired feature of this invention to provide most satisfactory recovery of grape juice. Substantial beating of the pulp causes hydration of the pulp which results in inefficient operation.

• • • • • • • • •

A particular feature of the means of the invention is the moving bed of grape mash and fibre which is not hydrated to a high degree. If the fibre is overbeaten, hydration occurs causing the cellulosic pulp or paper to become ineffective in the operation of the moving bed. • • • It is important to maintain a hydraulic head, in accordance with this invention, upon the bed in order to assure a most effective dejuicing of the grape mash.

It is that *discovery*, in combination with the other limitations of the process claim, primarily the establishment and agitation of a bed of the mash having a height of at least 5 inches, that constitutes the invention. With the perspective of the Wolcott teachings as to amounts, and appellant's focus on the beating and the bed height and agitation discoveries, it is evident that appellant's specification will enable one of ordinary skill in this art to practice *the invention* appellant has disclosed and claimed. [3] The description of an invention "need not set forth minutiae of description or procedures perfectly obvious to one of ordinary skill in the art yet unfamiliar to laymen," *In re Folkers*, 52 CCPA 1269, 344 F.2d 970, 145 USPQ 390, 394. "That which is common and well known is as if it were written out in the patent." *Loom Co.* v. *Higgins*, 105 U.S. 580, 586 (1881). We do not agree with the Solicitor that the disclosure would require an undue amount of experimentation in order to enable one of ordinary skill to practice *the invention*.

[4] Regarding the best mode requirement of 35 U.S.C. 112, this court has stated that "an inventor is in compliance therewith if he does not conceal what he feels is a preferred embodiment of his invention," and there is no statutory basis for reading into the best mode portion a requirement "that the mode disclosed be in fact the *optimum* mode of carrying out the invention" *In re Gay*, supra, 50 CCPA at 731–32.

[5] It is our view that the error of failing to "analyze exactly what appellant's invention is in the instant case," *In re Gay*, supra, 50 CCPA at 732, has resulted in the additional error of requiring a best mode be set forth of details not relating to the essence of the invention. What would be sufficient as a best mode here cannot be determined until first the invention is discerned. With a clear picture of the invention in mind it becomes evident that the specification as a whole discloses the best mode in emphasizing that the beating must be minimized to avoid hydration of the pulp and the bed kept at a minimum height for filtration. The former is merely a matter of observation and control of an operating parameter. With regard to the latter, appellant discloses:

• • • Grape mash is introduced into the trommel 31 at the rate of 15 tons per hour and juice is recovered at the rate of 7.5 tons per hour, pomace and unseparated juice being discharged from the trommel at the rate of 7.5 tons per hour. The juice has a sediment of about 3 percent when discharged from the trommel through the line 32. The bed of grape mash in the trommel was 7 inches in depth.

[6] We do not agree with the Solicitor that "there is proper basis for holding that the specification fails to satisfy the 'best mode' requirement of section 112" follows from the fact that appellant does not "even contend that any portion of the specification represents 'the best mode *contemplated by the inventor* of carrying out the in-

vention.'" The Patent Office here does not advance any convincing reason for finding that *the invention* is so dependent on the amounts of pulp and pectinase that a best mode of the claimed process is not disclosed by the general teachings of the specification. It does not follow that there is a proper basis for a best mode rejection under 35 U.S.C. 112 merely because appellant does not pinpoint *within* the specification some portion that represents a best mode.

For the foregoing reasons, we reverse the decision of the Board.

REVERSED.

U.S. Court of Customs and Patent Appeals

IN RE CARSTEN INGEMAN JOHNSEN

No. 7656. Decided May 12, 1966

[53 CCPA —; 359 F.2d 905; 149 USPQ 630]

1. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT—ABANDONMENT OF ISSUE.

"On appeal here, the appellant expresses no 'dissatisfaction with the Examiner's and the Board's rejection of claims 1, 5–7, and 12–15 under 35 U.S.C. 112,' nor does he point out where the Board erred in rejecting those claims. While no question has been raised by the Solicitor as to the sufficiency of the appellant's reasons of appeal to enable us to review that rejection, it seems to us that the reasonable inference to be drawn from the appellant's subsequent conduct is that he has abandoned pursuit of that issue. See *In re Le Baron*, 42 CCPA 956, 223 F.2d 471, 106 USPQ 176, and cases cited therein."

2. SAME—EFFECT OF DECISION.

"We do not 'direct' or 'order' the Commissioner of Patents to issue a patent even upon disagreeing with decisions of the Patent Office. The effect of our decision is to return the case involved to the Patent Office for further proceedings consistent with the court's opinion."

3. SAME—JURISDICTION—CLAIMS NOT CONSIDERED IN THE PATENT OFFICE—35 U.S.C. 141.

"It is the province of the Patent Office, not of this court, to determine *in the first instance* whether the statutory requirements have been satisfied. We cannot, therefore, consider the allowability of claims, such as claims 1–8 appearing in the appellant's paper number 14, which have neither been entered in the case nor considered by the Examiner or the Board. *In re Smitley*, 49 CCPA 803, 296 F.2d 767, 132 USPQ 3. The Patent Office has not decided whether those claims are patentable to the appellant, and this court lacks jurisdiction to review a decision which has not been made. 35 U.S.C. 141."

APPEAL from the Patent Office. Serial No. 123,408.

AFFIRMED.

Carsten Ingeman Johnsen, pro se.

Joseph Schimmel (*Jere W. Sears* of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

PER CURIAM:

This is an appeal from the decision of the Board of Appeals which affirmed the Examiner's rejection of claims 1, 5–7, and 12–15 in the appellant's application[1] entitled "Generation of Hydrogen and Electrical Energy."

This case provides yet another illustration of the difficulties which beset an inventor, unfamiliar with Patent Office procedure, who prosecutes his application pro se and of the continuing validity of the observation by the Supreme Court in *Topliff* v. *Topliff*, 145 U.S. 156, 171, that:

> • • • The specification and claims of a patent, particularly if the invention be at all complicated, constitute one of the most difficult legal instruments to draw with accuracy, and in view of the fact that valuable inventions are often placed in the hands of inexperienced persons to prepare such specifications and claims, it is no matter of surprise that the latter frequently fail to describe with requisite certainty the exact invention • • •.

The Examiner rejected the appellant's claims, directed to a method of producing hydrogen and electrical energy from carbon compounds, water and air, as failing to comply with the requirements of 35 U.S.C. 112.[2] The Examiner regarded the claims as indefinite, vague and unduly broad. The Board agreed, finding that

> • • • the claims do not set forth coherent related steps which cooperate with each other • • •.

The Board refused to consider new claims which the appellant presented in a reply brief to the Examiner's answer, on the ground that the reply brief was not timely and that it was not directed to any new points raised for the first time in the Examiner's answer as required by Patent Office Rule 193(b).

[1] On appeal here, the appellant expresses no dissatisfaction with the Examiner's and the Board's rejection of claims 1, 5–7, and 12–15 under 35 U.S.C. 112, nor does he point out where the Board erred in rejecting those claims. While no question has been raised by the Solicitor as to the sufficiency of the appellant's reasons of appeal to enable us to review that rejection, it seems to us that the reasonable inference to be drawn from the appellant's subsequent conduct is that he has abandoned pursuit of that issue. See *In re Le Baron*, 42 CCPA 956, 223 F.2d 471, 106 USPQ 176, and cases cited therein.

What the appellant does ask this court to do, both in his brief and in his petition of appeal, is to consider

> • • • ordering the Commissioner of Patents to issue Letters Patent to said applicant, on said subject, containing specifications, drawings and the claims Nos. 1, 2, 3, 4, 5, 6, 7 and 8 described in Paper No. 14, mailed Feb. 24, 1964 • • •.

The appellant's "Paper No. 14" is his reply brief to the Examiner's answer, and claims 1–8 (obviously misnumbered—see Patent Office Rule 126) set forth therein are those not considered by the Examiner or the Board. He asks that the court "permit consideration of my paper #14" and notes that, in his opinion,

> The revised claims in paper #14 • • •answer all the Examiner's criticisms regarding broadness, coherence, indefinitness. *Consideration of my paper #14 is essential* to the success of my appeal.

[2] We do not "direct" or "order" the Commissioner of Patents to issue a patent even upon disagreeing with decisions of the Patent Office. The effect of our decision is to return the case involved to the Patent Office for further proceedings consistent with the court's opinion. See *Glass* v. *De Roo*, 44 CCPA 723, 239 F.2d 402, 112 USPQ 62; *In re Citron*, 51 CCPA 869, 326 F.2d 418, 140 USPQ 220. [3] It is the province of the Patent Office, not of this court, to determine *in the first instance* whether the statutory requirements have been sat-

[1] Serial No. 123,408, filed July 10, 1961.

[2] The second paragraph of 35 U.S.C. 112 reads:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

isfied. We cannot, therefore, consider the allowability of claims, such as claims 1–8 appearing in the appellant's paper number 14, which have neither been entered in the case nor considered by the Examiner or the Board. *In re Smitley*, 49 CCPA 803, 296 F.2d 767, 132 USPQ 3. The Patent Office has not decided whether those claims are patentable to the appellant, and this court lacks jurisdiction to review a decision which has not been made. 35 U.S.C. 141.

Thus, while we affirm the rejection of claims 1, 5–7, and 12–15 for the reasons given by the Examiner and the Board, and also refuse to consider "claims 1–8" appearing in the appellant's reply brief to the Examiner's answer, we note that the appellant does not appear to be without remedy. As the Solicitor points out:

> Appellant might have secured consideration for the new claims proposed in his reply brief by submitting them in a continuation application. This could yet be done, albeit at greater expense due to a recent statutory increase in fees. * * *

The court also observes a recent change in Patent Office practice which greatly simplifies the procedure for filing a continuation application. See 824 O.G. 1.

The decision is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE KENNETH R. MORRIS

No. 7622. Decided May 19, 1966

[53 CCPA —; — F.2d —; — USPQ —]

1. PATENTABILITY—EVIDENCE—COMMERCIAL SUCCESS—SUCCESS MUST RELATE TO CLAIMED SUBJECT MATTER.

"We have also considered appellant's affidavit relating to the sale, in 1962, of over 38,000 units of devices shown in FIGURES 3, 4 and 5 of appellant's application. However significant that commercial success may be, it relates to embodiments not covered by the claims on appeal."

2. SAME—PARTICULAR SUBJECT MATTER—"PIPE SUPPORT."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Pipe Support" as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 192,934.

AFFIRMED.

Keith D. Beecher for appellant.

J. Schimmel (*L. F. Parker* of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, *Jr.*, *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

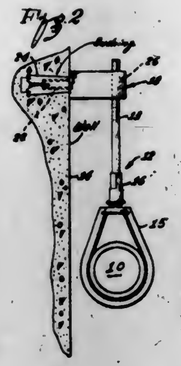
MARTIN, *J.*, delivered the opinion of the court.

This is an appeal from decisions of the Board of Appeals rejecting,[1] as obvious variations of certain prior art, claims 4, 5, 7, 9 and 10 in appellant's application Serial No. 192,934, filed May 7, 1962, for "Pipe Support." Three claims stand allowed by the Examiner. There is no appeal as to claims 1–3 reproduced in the record.

The invention is adequately depicted by FIG. 2 of the application

[1] The Board made the rejections discussed herein under the provisions of Rule 196(b), adhered to on reconsideration.

and representative claims 4 and 5 (with appropriate reference numerals added):



4. A pipe support comprising an elongated body portion in the form of a cylindrical-shaped concrete-anchor shell [24] symmetrical about a longitudinal axis, and a head portion [generally 18] formed integral with said body portion at one end thereof and having a threaded aperture formed therein extending transversely to the longitudinal axis of said body portion.

5. A pipe supporting assembly [12] including: a support member having an elongated body portion [24] adapted to be supported in a supporting structure [14] on a horizontal axis, and a head portion [generally 18] formed integral with said body portion at one end thereof and having a threaded aperture therein [26] extending transversely to the axis of said body portion to be vertically disposed; a threaded rod [13] extending into said aperture in said head portion in threaded engagement therewith to extend vertically down from said head portion; and a ring-shaped pipe [10] supporting bracket [15] pivotally mounted at the lower end of said threaded rod.

As can be seen from a comparison of FIG. 2 with the claims, claim 4 is directed to the sub-combination of a concrete anchor 24 having an apertured head 18, and claim 5 includes that in combination with a support rod 13 and pipe support bracket 15. Claim 7 further defines the pipe support bracket as being ring-shaped, claim 9 calls for a threaded stud-like body (e.g., a bolt) and nut as the anchor portion for use with stringers or steel I-beams that can be drilled to accept the anchoring bolt and nut, and claim 10 defines a hollow-type anchor portion.

The references relied on for rejections based on 35 U.S.C. 103 are:

Loepsinger, 1,077,727, November 4, 1913.
Phillips, 1,996,121, April 2, 1935.
Chuck, 2,947,022, August 2, 1960.
Knight's Mechanical Dictionary, vol. 1 (1874), pp. 322 and 323, J. B. Ford & Company, New York, N.Y.

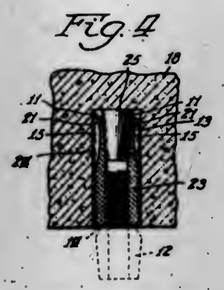
Claim 4 was held by the Board to be unpatentable over Knight's Mechanical Dictionary in view of Phillips. Item 6 of Knight's Fig. 768 on page 322, is stated therein to show "two views of an *eye*-bolt * * *." Item 7 "is a *Lewis*-bolt whose barbed shank *i* is surrounded by lead *k* poured into the under-cut mortise in the block *f*." Phillips discloses a cylindrical anchoring shell that is adapted to drill its own hole in masonry. In one embodiment it has a threaded projecting end of a bolt that "provides means for fastening a variety of devices to the wall such, for example, as the usual wall pictures, pipe hangers and the like." In another embodiment the interior tubular shell as

embedded in the wall is "threaded for a substantial portion of its length"; and thus "is adapted for fastening bolts thereon in a manner to suspend a variety of wall devices therefrom." The Knight and Phillips devices are depicted thus:

Knight's Fig. 768

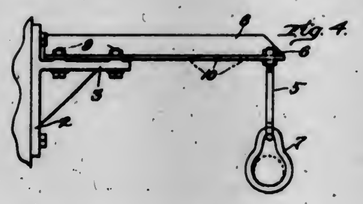


Phillips' Fig. 4



It will be noted that item 6 of Knight differs from the device of claim 4 in two respects, viz, the requirements (1) that the aperture in the head portion be threaded and (2) that the body portion be "in the form of a cylindrical-shaped concrete-anchor shell." As to the first, the Knight drawing is somewhat unclear whether the aperture is threaded, but we think it common practice and common sense to thread such an eye to permit a more secure fastening than a sleeve fit and also to permit adjustment. As to the second, the cylindrical shell anchor of Phillips is the full equivalent of the tapered lead filled wall mounting of Knight's item 7. In view of Phillips' teaching of the adaptability of his cylindrical anchors for pipe hangers, we think the claimed differences are not such that the sub-combination anchor-plus-head invention as a whole, as defined in claim 4, is a non-obvious variation of the devices of Knight and Phillips.

Claims 5, 7 and 9 were rejected by the Board over Knight as discussed above in a view of Loepsinger who shows a pipe-hanger for use on a vertical wall:



We agree with the Board that it would be obvious to secure a rod carrying a pipe support loop, as Loepsinger's elements 5 and 7 of FIG. 4, to the aperture of the eye-bolt in Knight.

Claim 10 was rejected by the Board as unpatentable over Knight in view of Loepsinger and the Chuck patent. As was noted above, that claim has, in addition to the features of the other claims already discussed, "a support member [anchor portion] having an internally fitted body portion * * *." Chuck is directed to decorative hardware for drawers, doors, and other furniture. Shown in detail is a decorative pulling handle 6 that is attached to a vertical member by an internally threaded tubular member 8 into which a securing screw or bolt 10 is threaded:



We think the Board was correct in viewing the claimed difference as not rendering the invention as a whole non-obvious over Knight and Loepsinger in view of the Chuck disclosure of conventional internally threaded anchor bodies.

We do not find convincing appellant's argument that the rejection was based on a hindsight building up of the invention from unrelated items of the prior art. Rather, we think the use of various types of anchors in a basically ordinary pipe hanger design to be an entirely conventional use of available mechanical elements. We note again that the Phillips anchor is specifically described as useful with pipe hangers. [1] We have also considered appellant's affidavit relating to the sale, in 1962, of over 38,000 units of devices shown in FIGURES 3, 4 and 5 of appellant's application. However significant that commercial success may be, it relates to embodiments not covered by the claims on appeal.

[2] For the foregoing reasons the decisions of the Board rejecting claims 4, 5, 7, 9 and 10 are affirmed.

AFFIRMED.

SMITH, *J.*, concurs in the result.

U.S. Court of Customs and Patent Appeals

IN RE NIKOLA J. TREBOJEVICH

No. 7460. Decided June 16, 1966

[53 CCPA —; 361 F.2d 1013; 150 USPQ 50]

1. PATENTABILITY—OBVIOUSNESS—35 U.S.C. 103.
"The issue of obviousness must be decided according to the controlling provisions of 35 U.S.C. 103. This requires, *inter alia*, that obviousness is to be determined as of the time the invention was made. On the record before us, that time must be taken as March 28, 1958, the filing date of appellant's application."

2. SAME—SAME—SAME.
"Section 103 is not specific as to the *weight* to be accorded to a particular reference, but requires rather that we consider the totality of the teachings of the prior art to determine what would have been obvious to one of ordinary skill in the art at the time of making the invention in issue."

3. SAME—REFERENCE—SPECULATIVE REFERENCE STATEMENTS SINCE PROVEN TRUE.
"In the instant case, and even assuming that certain statements in British were 'speculative' as urged by appellant and thus perhaps not completely credible when made, the unchallenged fact is that these statements have since been proven to be true. The statements in British were credible information and available to one of ordinary skill in the art at the time appellant's invention was made. We therefore perceive no reason why, in determining obviousness of the claimed invention, one of ordinary skill in this art should not be expected to recognize the statements in British as being valid teachings at the time the claimed invention was made. Thus, we consider as credible

the teachings in British which were relied upon by the Board for what they fairly taught one of ordinary skill in this art at the time appellant made his invention."

4. SAME—PARTICULAR SUBJECT MATTER—"NUCLEAR REACTOR."

The refusal of certain claims in an application entitled "Nuclear Reactor," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 724,713.

AFFIRMED.

L. Gaylor Hulbert for appellant.

Clarence W. Moore (*Raymond E. Martin* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*

SMITH, *J.*, writing for the majority in part and dissenting in part, delivered the opinion of the court.

The rejection of appealed claims 1, 2, 3 and 8[1] under 35 U.S.C. 103 is predicated on two references:

British patent (hereinafter "British"), 614,386, Dec. 15, 1948.
Wheeler, 2,812,304, Nov. 5, 1957.[2]

The invention defined by the appealed claims relates to an apparatus (claims 1, 2, 3) and a method (claim 8) for producing power from controlled nuclear fission. The claimed apparatus consists essentially of two members rotatable relative to each other, which are designated as the "rotor" and the "stator," on each of which is mounted a subcritical fissionable mass. The masses are so arranged that, during rotation, one of the fissionable masses is moved tangentially with respect to the other. The separate subcritical fissionable masses are so selected that when such movement occurs, they are brought into what is termed "juxtaposite position," the combined masses become hypercritical. This results in a chain reaction which produces what appellant refers to in the specification as "an intense nuclear spark." Further relative rotation of the one mass beyond this "juxtaposite position" carries it away from the other mass, eliminates the hypercriticality of the juxtaposed masses, extinguishes the nuclear spark and interrupts the chain reaction before a nuclear explosion occurs.

Appellant states that his nuclear reactor may be used in the propulsion of aircraft and rockets as well as in reactors for conducting a breeding reaction. Appellant points out in his specification that while a "complete nuclear turbojet" is shown in the drawings, "The novelty resides in the design of the reactor and the method of operation * * *." He further explains the novelty as residing "in the construction of a rotary and fast reactor in which the energy is produced in a series of discontinuous pulses, instead of continuously as in prior designs."

There are two grounds of rejection under section 103. The first ground of rejection is based on British alone. In this rejection, the Board relied on the teachings of British and the "well known" fact "that relative rotary motion between two parts is the simplest way to obtain periodic relative motion." The limitations in the appealed claims not disclosed in British were found to be "obvious" and the

[1] Application, Serial No. 724,713, filed Mar. 28, 1958, entitled "Nuclear Reactor." Claims 4, 9, 13 and 14 have been allowed.

[2] The record also includes two publications: Murray's "Nuclear Reactor Physics," 1957, p. 5, and "Aircraft Nuclear Propulsion Program," p. 361, a government publication of 1959. They were not considered by the Board and appellant's brief does not mention them. Thus they are not before the court and will not be considered in this opinion.

exercise of "mere engineering judgment."[3] The second ground of rejection is based upon the combined teachings of British and Wheeler.

Appellant argues that while the British patent issued on Dec. 15, 1948, its disclosures must be read as of its Convention filing date, May 2, 1939. Appellant argues that as of May 2, 1939, the disclosures in the British patent, relied on by the Board in its decision, were "mere speculations" and not "actual engineering knowledge." Appellant admits that the alleged "speculative" statements first disclosed in 1939 "have proved to be true." Thus, appellant does not here challenge the accuracy of the "speculations" made in British.

[1] The issue of obviousness must be decided according to the controlling provisions of 35 U.S.C. 103. This requires, *inter alia*, that obviousness is to be determined as of the time the invention was made. On the record before us, that time must be taken as March 28, 1958, the filing date of appellant's application.

When appellant's argument is considered in the light of the issue here, its thrust is directed to the *weight* which should be accorded the teachings of British. [2] Section 103 is not specific as to the *weight* to be accorded to a particular reference, but requires rather that we consider the totality of the teachings of the prior art to determine what would have been obvious to one of ordinary skill in the art at the time of making the invention in issue.

[3] In the instant case, and even assuming that certain statements in British were "speculative" as urged by appellant and thus perhaps not completely credible when made, the unchallenged fact is that these statements have since been proven to be true. The statements in British were credible information and available to one of ordinary skill in the art at the time appellant's invention was made. We therefore perceive no reason why, in determining obviousness of the claimed invention, one of ordinary skill in this art should not be expected to recognize the statements in British as being valid teachings at the time the claimed invention was made. Thus, we consider as credible the teachings in British which were relied upon by the Board for what they fairly taught one of ordinary skill in this art at the time appellant made his invention.

We therefore agree with the Board that British "has the concept of imparting periodic motion to two subcritical masses, so that during the portion of the periodic motion in which the two masses have approached each other, they shall become hypercritical." British discloses the periodic and controllable liberation of energy by controlled intermittent nuclear fission, characterized by the Examiner as a "pulsed neutron flux."

The teachings of British, especially in view of the terms "critical mass," "critical values," and "unlimited branching," indicates that each uranium body there disclosed constitutes a subcritical fissionable mass, but when they approach each other during their periodic movement, they reach a condition of hypercriticality characterized by the "unlimited branching of the chains." British does not contain any drawings or a description of any specific apparatus.

[3] The Board alternately held that a time limitation in claims 1 and 2, if not a matter of engineering judgment, was a "method limitation" which was "not pertinent to any possible patentability" of these claims. Claim 2 is dependent on claim 1. Claim 1 is as follows:

1. A reactor comprising two relatively rotatable members, each having a fissionable and subcritical mass associated therewith, means for rotating one member with respect to the other at a predetermined velocity, said fissionable masses and velocity being so selected that when the said masses are in proximity during said rotation, they become momentarily hyper-critical and generate a divergent fission, chain reaction lasting for a time on the order of 10^{-4} seconds.

An examination of claim 1 shows that the apparatus described therein is constructed according to four parameters, viz, mass, proximity, velocity and time.

Concerning British, appellant states:

> • • • The patent does not disclose any reactor comprising two relatively rotatable members each of which has any fissionable and subcritical mass associated therewith. Since the British patent does not disclose the relatively rotatable members, it of course cannot disclose the means for rotating one with respect to the other. The British patent fails to suggest that there is any predetermined velocity at which one member might be rotated with respect to the other so that two subcritical masses might become momentarily hypercritical to produce a chain reaction lasting for a time on the order of 10^{-4} seconds.

While the effective date of British pre-dates much of the subsequently acquired and subsequently disclosed knowledge concerning nuclear fission, appellant concedes that it "contains certain statements based on theoretical considerations which have proved to be true." Among such statements are those relating to time as a function in chain reactions and those in which it is recognized that time may be used as an element of control of the reaction. In addition to such theoretical considerations, British also refers to the use of distinct masses of "uranium" and describes how they may be periodically caused to approach and be separated from each other "to provide within limited and determined periods the conditions of the unlimited branching of the chains." As expressed in British:

> The mass containing uranium can for instance consist of a fixed part and of a movable part which is periodically separated from and moved towards the fixed part by means of any suitable mechanical means.

It is the position of the Solicitor that:

> The first embodiment of British • • • broadly suggests that two subcritical masses of uranium should be periodically brought together and separated. Relative motion of the two masses is clearly required. The mechanical details are so simple and obvious that there was no necessity for spelling them out. A large number of arrangements immediately suggest themselves, as any one consulting standard engineering textbooks and/or handbooks can determine. Among the simplest and therefore the most obvious are two bodies which have relative rotary movement • • • and two bodies having relative reciprocatory motion, like a piston in a cylinder • • •. Since each is a most obvious way of producing the periodic motion described in British, it should be unnecessary to decide whether the latter type of motion is more obvious than the former, or vice versa. It should be sufficient to a determination of the issue before the court, if it is satisfied that relative rotary movement is *an* obvious way of producing the periodic motion contemplated by British.

However, as appellant points out, Wheeler "relates to a reactor which depends upon the use of a moderator whereas appellant's rotary reactor does not require a moderator." It is pointed out in appellant's brief that:

> Wheeler discloses a reactor built on a rotary principle but for an entirely different purpose than appellant's rotary reactor. The plates of Wheeler are arranged to rotate through passages between the stationary moderator plates in the upper half of the device. After the plates emerge from the moderator passages they are rotated through a suitable coolant such as ordinary water disposed in the coolant tank. The rotating plates are composed of natural uranium having a hollow space between the sides for receiving the highly active uranium or plutonium isotopes. The generation of power in the Wheeler reactor occurs in precisely the same way as in ordinary stationary reactors by reason of the presence of abundant supplies of the highly active isotopes arranged in conjunction with the neighboring moderator plates of graphite or beryllium. There is no relative movement whatsoever between two subcritical masses of fissionable material into hyper-critical relationship. The only reason for the rotation of the plates containing the fissionable material is to permit them to be cooled by withdrawing them from the moderator spaces and moving them through the large mass of cooling water. The velocity of rotation is unspecified in Wheeler because speed is in no way critical. [Reference numerals omitted.]

Thus, while Wheeler discloses a reactor employing rotating parts, we agree with appellant that Wheeler does not contemplate controlling the power solely by the relative rotation of separate fissionable masses. It likewise is clear that in the Wheeler reactor, there is no generation of power because of movement between the two masses into hypercritical relationship; and there is no control of power generation by selection of a predetermined velocity of rotation of the separate subcritical fissionable masses to control the time during which the separate masses are so positioned as to become hypercritical.

From the foregoing, we think it apparent that one of ordinary skill in this art, at the time of appellant's invention, would have found it obvious from the teachings of the references to employ separate subcritical masses of fissionable materials and to so move them that their combined mass becomes critical and a divergent fission reaction is initiated, which is controlled by moving the separate masses out of juxtaposition to destroy the critical relationship and into positions where they are again subcritical.

Concerning claims 3 and 8, the court is in agreement that these claims define the invention in such generality as to embrace subject matter which we think would have been obvious to one of ordinary skill in this art at the time of appellant's invention. Accordingly, the rejection of claims 3 and 8 is affirmed.

Concerning claims 1 and 2, a majority of the members of this court affirm the rejection for the reasons stated in Judge Martin's opinion. I dissent from the affirmance of the rejection of claims 1 and 2 for the following reasons.

The express language of section 103 requires us to consider the differences between the invention claimed and the prior art before making a determination on the issue of obviousness. One such difference is found in appellant's claimed reactor which requires use of a gas turbine to effect rotation of the rotatable members at a predetermined velocity, as claimed in claim 2; and his recognition of the relationship between that velocity and the subcritical fissionable masses that, as claimed in both claims 1–2,

> when the said masses are in proximity during said rotation, they become momentarily hypercritical and generate a divergent fission chain reaction lasting for a time on the order of 10^{-4} seconds.

Viewing appellant's invention as a whole against the broad teachings of the prior art, I find that claims 1 and 2 define a nuclear reactor which I find to be non-obvious in view of the prior art. Accordingly, I would reverse the rejection of these claims.

[4] The judgment of the court is that the decision of the Board affirming the rejection of claims 1, 2, 3 and 8 is affirmed.

AFFIRMED.

MARTIN, *J.*, for the majority.

We agree with the fundamental approach of Judge Smith's opinion. However, a majority of the court holds that all the claims were properly rejected over the references, 35 U.S.C. 103.

Claim 1 recites a "means of rotation," and claim 2 recites "a gas turbine" as that means of rotation. Appellant's recognition of the relationship between rotational speed and the proximity of the subcritical fissionable masses is recited in both claims 1 and 2 as:

> • • • when the said masses are in proximity during said rotation, they become momentarily hypercritical and generate a divergent fission chain reaction lasting for a time on the order of 10^{-4} seconds.

Neither the means of rotation nor the velocity-time relationship are such differences from the prior art as to render the subject matter as a whole non-obvious.

That velocity (speed) is merely a way of describing and governing the time the two subcritical masses are in proximity is as fundamental as $v=d/t$. That it is necessary to keep the passing masses only *momentarily* hypercritical is equally fundamental. There appears to be nothing in the appellant's disclosure which indicates what range of time "on the order of 10^{-4} seconds" encompasses,[4] or that such time is critical.[5] Indeed, the specification does not attach any particular significance to that particular time value. At best, it merely suggests no more than the obvious—that one dare not keep the two masses together too long.

It is the *chain reaction* engendered upon the passing of the two masses in close proximity which lasts for "on the order of 10^{-4} seconds," not the passing itself. That recitation, being but descriptive of the result of the *method* of properly *operating* the apparatus, has not been shown on this record to confer patentability to the *apparatus* claims 1 and 2. In this regard the British reference states:

> In order to regulate the average liberation of energy, one could influence, automatically or not, the *time* during which the chains are developing and/or the interval between two developments of the chain reaction. [Emphasis added.]

From the above considerations we do not find the added velocity-time relationship, insofar as it is an apparatus limitation, to render the basic stator-rotor apparatus, as defined in claims 1 and 2, as a whole non-obivous over the prior art within the meaning of section 103. The Board's decision in respect to these claims is also affirmed.

WORLEY, *Chief Judge*, RICH, *J.*, and ALMOND, *J.*, join in the foregoing opinion.

[4] The entire disclosure regarding time, reads:

> It is to be noted that this process is somewhat similar to the well known process which is or was used for setting off atom bombs, except that the divergent chain process is now extinguished practically as soon as it is started, *i.e., usually within 10^{-4} sec.* [Emphasis added.]

The particular time value does not seem especially significant in view of that variance.

[5] Certainly there is a critical time beyond which the two masses may not be kept together without risking explosion. But short of that obvious time, there is no indication in the specification that there is a time limit critical to the operation of the *apparatus* to produce the desired net production of energy.

U.S. Court of Customs and Patent Appeals

EL-TRONICS, INC. *v.* ROBERT BOSCH ELEKTRONIK, GMBH

No. 7627. Decided June 9, 1966

[53 CCPA —; 361 F.2d 256; 149 USPQ 845]

1. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—JOINT MOTION TO AFFIRM—TRADEMARK.

"The joint motion to affirm the decision of the Trademark Trial and Appeal Board is granted and the decision of the Trademark Trial and Appeal Board that there is likelihood of confusion between the marks of the parties as respectively used (1) in connection with exposure meters, flash guns, flash lamps and (2) in connection with photoflash lamps or bulbs is affirmed; such judgment to be without prejudice to any right appellant-applicant may have to register its mark in connection with 'fluorescent lamps, incandescent lamps, other than lamps intended to be sold in connection with community antenna systems.'"

APPEAL from the Patent Office. Opposition No. 42,494.

AFFIRMED.

Thomas P. Schiller for appellant.

Michael S. Striker for appellee.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*

PER CURIAM:

[1] The joint motion to affirm the decision of the Trademark Trial and Appeal Board is granted and the decision of the Trademark Trial and Appeal Board that there is likelihood of confusion between the marks of the parties as respectively used (1) in connection with exposure meters, flash guns, flash lamps and (2) in connection with photoflash lamps or bulbs is affirmed; such judgment to be without prejudice to any right appellant-applicant may have to register its mark in connection with "fluorescent lamps, incandescent lamps, other than lamps intended to be sold in connection with community antenna systems."

WORLEY, *Chief Judge*, did not participate.

U.S. Court of Customs and Patent Appeals

OLD GRANTIAN COMPANY, LIMITED *v.* WILLIAM GRANT & SONS LIMITED

No. 7625. Decided June 16, 1966

[53 CCPA —; 361 F.2d 1018; 150 USPQ 78]

1. SUMMARY JUDGMENT.

"The function of summary judgment is to avoid a useless trial and it is to be cautiously granted."

2. TRADEMARK—OPPOSITION—FAILURE TO ANSWER NOTICE OF OPPOSITION—FEDERAL RULES OF CIVIL PROCEDURE—RULE 55(b)—RULE 2.106(a).

"Evaluating the default judgment in the instant case * * * we find that all the record shows of the previous opposition is that appellant's predecessor failed to answer appellee's notice of opposition. Under Rule 2.106(a), the Patent Office may sua sponte decide the opposition as a case in default and proceedings under Rule 55(b), Federal Rules of Civil Procedure, would be proper. Under these rules, the failure to answer is all that is necessary to support the judgment."

3. SAME—SAME—EFFECT OF DEFAULT JUDOMENT.

"If we would accept appellee's allegation that the previous notice of opposition was based on likelihood of confusion as proof of that material fact, the effect of the default judgment is that appellant's predecessor made an admission that there was a likelihood of confusion between GRANT'S and GRANTIAN as applied to Scotch whisky. That admission is all that is essential to support the judgment."

4. SAME—SAME—FAILURE TO ANSWER NOTICE OF OPPOSITION.

"Appellant argues that Rule 2.106(b), apparently meaning Rule 2.106(c), should be construed to allow an applicant to abandon an application without prejudice if the applicant does not file an answer to the notice of opposition. This unsupported argument is without merit."

5. SAME—SAME—ESTOPPEL BY JUDGMENT—SUMMARY JUDGMENT—GENUINE ISSUE AS TO MATERIAL FACT.

"It is at once apparent that appellee relies on and is limited to the doctrine of estoppel by judgment as part of its proof in support of its motion for summary judgment [based on prior decided opposition]. The most that doctrine can supply here is that there has been an admission of likelihood of confusion between GRANT'S and GRANTIAN. Appellee has the burden of proving that, *as a matter of law*, there is a likelihood of confusion between OLD GRANTIAN and GRANT'S *and there is no genuine issue as to any material fact*. We do not find the appellant has met this burden of proof."

6. SUMMARY JUDGMENT—GENUINE ISSUE AS TO MATERIAL FACT.

"We think there remained for trial genuine issues as to material facts and appellee was not entitled, as a matter of law, to judgment. Therefore appellee's motion for summary judgment should have been denied."

7. TRADEMARK—OPPOSITION—CONFUSING SIMILARITY—SUMMARY JUDGMENT—RES JUDICATA.

"Summary judgment may serve a useful function in trademark matters and this court has previously held that the doctrine of res judicata may be applicable. * * * Where the issue is likelihood of confusion, care must be exercised as the determination of that issue may involve many factors, not all of which remain the same over a period of time. Here appellant has alleged facts in its 'affirmative defenses' [to a motion for summary judgment based on a prior decision] which have occurred since the prior opposition. The Examiner has ruled these facts relevant to the ultimate issue of likelihood of confusion. Also, the mark for which registration is sought is different from the mark involved in the prior opposition. The scope of protection to which a mark is entitled is not fixed by time; rather, the owner's past conduct is always relevant as the mark may become strong or weak with the passage of time."

APPEAL from the Patent Office. Opposition No. 43,875.

REVERSED AND REMANDED.

H. John Campaign for appellant.

G. Cabell Busick (*Boynton P. Livingston* of counsel) for appellee.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, JR., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

SMITH, *J.*, delivered the opinion of the court.

We are here dealing with a decision of the Trademark Trial and Appeal Board granting opposer's motion for summary judgment. The substance of that motion as summarized by the Trademark Trial and Appeal Board is "that applicant having admitted that it was privy to the previous proceeding from which no appeal was taken is estopped from relitigating the issue of likelihood of confusion since the mark under attack herein is, in legal contemplation, substantially the same as that preivously opposed."

This appeal comes to us based on the following facts of record. Appellant sought registration of its mark "Old Grantian" for Scotch whisky on the Principal Register.[1] Upon publication it was opposed by appellee, owner and registrant of the trademark GRANT'S for blended Scotch whisky.[2] The opposition was predicated on two grounds. Appellee alleged that appellant's mark, when applied to Scotch whisky, so resembled appellee's previously registered and used trademark as to be likely to cause confusion or to cause mistake or to deceive. Section 2(d), Trademark Act of 1946 (15 U.S.C. 1052(d)).

Appellee also alleged as follows:

On March 9, 1953, applicant's predecessor, Ian Grant & Co. Limited, filed application Serial No. 643,316 in the United States Patent Office for registration of the trademark GRANTIAN for Scotch whisky. Said application was published in the OFFICIAL GAZETTE of August 24, 1954, and was opposed by the present opposer, William Grant & Sons Limited, said proceeding being identified as Opposition No. 34,018. No answer was filed by the applicant, Ian Grant & Co. Limited, and on March 4, 1955, the Examiner of Interferences entered judgment sustaining the Notice of Opposition and adjudging that the applicant, Ian Grant & Co. Limited, was not entitled to the registration for which it had made application. Said decision of the Examiner of Interferences was not appealed and the decision became final.

On this basis, appellee asserted further that:

Applicant, Old Grantian Company Limited, as a successor in interest to Ian Grant & Co. Limited, is precluded by the decision in Opposition No. 34,018, with

[1] Serial No. 172,841, filed July 11, 1963.
[2] No. 346,426, registered May 25, 1937, renewed May 25, 1957.

respect to the mark GRANTIAN, from registering substantially the same mark OLD GRANTIAN for the same goods.

Appellant, in its answer, admitted its predecessor Ian Grant & Co., Ltd., had applied for registration of the mark GRANTIAN and denied any knowledge or information to form a belief as to the outcome of Opposition No. 34,018. Appellant also alleged four "affirmative defenses."

Appellee then moved to strike affirmative defenses 1, 2 and 4. Appellant moved to amend defense number 4 and opposed the motion to strike the above defenses. Appellee submitted additional argument in support of its motion to strike defense 1 and amended defense 4. By letter of July 15, 1964, appellee's motion to strike was denied in all respects by a member of the Trademark Trial and Appeal Board.

Appellee then submitted a motion for summary judgment on the ground that "the decision in the prior opposition proceeding is clearly res judicata on the issues in the present opposition and opposer is entitled to summary judgment sustaining its Notice of Opposition," and requested that the trial dates be suspended pending the Board's decision on the motion.

Concerning prior Opposition No. 34,018, all we have of record here is a letter of an Examiner of Interferences in the prior opposition which states as follows:

The record shows that an answer has not been filed herein.

Accordingly, notice of default is hereby entered under Civil Procedure Rule 55(a).

Applicant is allowed twenty days from the date hereof to show cause why judgment should not be entered under Rule 55(b) F.R.C.P.

We do not have of record here appellee's notice of opposition stating the grounds in the prior opposition. Appellee alleges, in its motion for summary judgment, that the ground of opposition in the prior opposition was likelihood of confusion, section 2(d), and also,

* * * The records of the Patent Office disclose that the applicant, Ian Grant & Co. Limited failed to defend the opposition and on March 4, 1955, the Examiner of Interferences entered judgment sustaining the Notice of Opposition adjudging that the applicant was not entitled to the registration for the trademark GRANTIAN. This decision was not appealed and became final.

Appellee's motion for summary judgment was granted. A motion for summary judgent by appellant was denied. Appellant argues here that appellee's motion was improperly granted and its motion should have been granted.

We are governed here by Rule 56 of the Federal Rules of Civil Procedure (see Rule 2.117, Trademark Rules of Practice), which provides, in pertinent part, as follows:

Rule 56. Summary Judgment

* * * * * * * * * *

(c) Motion and Proceedings Thereon.

* * * [Summary judgment] shall be rendered forthwith if the pleadings, depositions, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law: * * *

[1] The function of summary judgment is to avoid a useless trial and it is to be cautiously granted. 6 Moore, Federal Practice 2101, 21 (2d ed. 1953). Also,

The courts are in entire agreement that the moving party for summary judgment has the burden of showing the absence of any genuine issue as to all the material facts, which, under applicable principles of substantive law, entitle him to judgment as a matter of law. *Id.* at 2123.

Appellee, in seeking to discharge the above burden, argues that, as a matter of law, there is a likelihood of confusion between OLD GRANTIAN and GRANT'S because adding the word "OLD," which is "descriptive or misdescriptive of the age of whisky and * * * commonplace among whisky trademarks," "does not create a different trademark but rather is an attempt by applicant to evade the consequences of the prior judgment."

Where a motion for summary judgment is based on an allegation of res judicata, we are guided as follows:

> Under general basic principles that control the grant or denial of summary judgment, a motion for summary judgment on the basis of a prior judgment should be denied if the prior judgment has no res judicata or collateral estoppel effect between the parties to the present action; or if there is a genuine issue of material fact as to the validity of the prior judgment, its scope and coverage, privity, or whether it was on the merits so that it is controlling in the case at bar.
>
> On the other hand where the prior judgment has legal effect, under established principles of res judicata or collateral estoppel, and its application to the parties in the case at bar does not involve any genuine issue of material fact, summary judgment may be rendered for the claimant, or the defendant, as the prior judgment may warrant. 6 Moore, Federal Practice 2257–58 (2d ed. 1953).

We thus must determine the "legal effect" of the prior judgment. The Supreme Court, in *Last Chance Mining Co.* v. *Tyler Mining Co.*, 157 U.S. 683, 691 (1895), commented on the effect of a judgment by default as follows:

> It is said that the defendants did not contest; that they withdrew their answer, and that there was only a judgment by default. But a judgment by default is just as conclusive an adjudication between the parties *of whatever is essential to support the judgment* as one rendered after answer and contest.
>
> The essence of *estoppel by judgment* is that there has been a judicial determination of a fact, and the question always is, has there been such determination, and not upon what evidence or by what means was it reached. A failure to answer is taken as an *admission* of the truth of the facts stated in the complaint, and the court may properly base its determination on such admission. [Emphasis added.]

[2] Evaluating the default judgment in the instant case according to the above principles, we find that all the record shows of the previous opposition is that appellant's predecessor failed to answer appellee's notice of opposition. Under Rule 2.106(a), the Patent Office may sua sponte decide the opposition as a case in default and proceedings under Rule 55(b), Federal Rules of Civil Procedure, would be proper. Under these rules, the failure to answer is all that is necessary to support the judgment.

[3] If we would accept appellee's allegation that the previous notice of opposition was based on likelihood of confusion as proof of that material fact, the effect of the default judgment is that appellant's predecessor made an admission that there was a likelihood of confusion between GRANT'S and GRANTIAN as applied to Scotch whisky. That admission is all that is essential to support the judgment.[3]

[5] It is at once apparent that appellee relies on and is limited to the doctrine of estoppel by judgment as part of its proof in support of its motion for summary judgment. The most that doctrine can supply here is that there has been an admission of likelihood of confusion between GRANT'S and GRANTIAN. Appellee has the burden of proving that, *as a matter of law*, there is a likelihood of confusion between OLD GRANTIAN and GRANT'S *and there is no genuine issue as to any material fact.* We do not find the appellant has met this burden of proof.

[4] [3] Appellant argues that Rule 2.106(b), apparently meaning Rule 2.106(c), should be construed to allow an applicant to abandon an application without prejudice if the applicant does not file an answer to the notice of opposition. This unsupported argument is without merit.

First, appellee, as proof of the fact that "OLD" is descriptive or misdescriptive of the age of whisky and commonplace among whisky trademarks, asks us to take judicial notice, or, in the alternative, adopt an observation to this effect in *Old Charter Distillery Co.* v. *Continental Distilling Corp.*, 174 F. Supp. 312, 121 USPQ 492 (D.C. Del. 1959) (decided on other grounds). We think that this is a material fact which must be proven through the submission of evidence.

Second, the appellant has plead four affirmative defenses which the Examiner sustained as against appellee's motion to strike. In "affirmative defense" number 1, appellant cited certain third party registrations. The Examiner construed this defense as pleading that appellee's mark was weak and he concluded that this was relevant to the issue of likelihood of confusion. The Examiner sustained defense number 2 as relevant to appellee's claim of damage. Defense number 4, alleging laches, estoppel and acquiescence, was sustained by the Examiner as matter properly raised in an opposition and involving a question of the sufficiency of proof. While the Board held in its decision granting appellee's motion for summary judgment that the subject matter pleaded as defenses 2 and 3 were insufficient *grounds* to grant *appellant's* motion for summary judgment, this holding is not dispositive of the issues raised by the Examiner's denial of appellee's motion to strike that subject matter as affirmative defenses. [6] We think there remained for trial genuine issues as to material facts and appellee was not entitled, as a matter of law, to judgment. Therefore appellee's motion for summary judgment should have been denied.

[7] Summary judgment may serve a useful function in trademark matters and this court has previously held that the doctrine of res judicata may be applicable. See *In re Retail Clerks Int'l Protective Ass'n*, 32 CCPA 1004, 149 F.2d 153, 65 USPQ 374. Where the issue is likelihood of confusion, care must be exercised as the determination of that issue may involve many factors, not all of which remain the same over a period of time. Here appellant has alleged facts in its "affirmative defenses" which have occurred since the prior opposition. The Examiner has ruled these facts relevant to the ultimate issue of likelihood of confusion. Also, the mark for which registration is sought is different from the mark involved in the prior opposition. The scope of protection to which a mark is entitled is not fixed by time; rather, the owner's past conduct is always relevant as the mark may become strong or weak with the passage of time.

The above reasoning applies equally well to appellant's motion for summary judgment. The substance of appellant's motion does not establish, as a matter of law, that there is no likelihood of confusion between OLD GRANTIAN and GRANT'S. There remains for determination the issue of likelihood of confusion considering all of the facts of record, the weight to be accorded the default judgment, and such other evidence as the parties care to submit.

For the above reasons, the decision of the Board is reversed and the cause is remanded to the Board for further proceedings not inconsistent herewith.

REVERSED AND REMANDED.

U.S. Court of Customs and Patent Appeals

IN RE JACK H. HOFSTETTER

No. 7529. Decided June 23, 1966

[53 CCPA —; 362 F.2d 293; 150 USPQ 105]

1. PATENTABILITY—COMBINING REFERENCES—HINDSIGHT.
"It seems that the relevancy of Sherman to the blow molding art, viewed in combination with Haines or Negoro is not appreciated until appellant's invention is examined. Thus, appellant's invention is realized only through hindsight. This we may not do."

2. SAME—EVIDENCE—RESOLUTION OF DOUBT IN THE COURTS.
"We are aware that the Court of Appeals, District of Columbia, in its per curiam opinion in *Reynolds* v. *Aghnides*, — F.2d —, 148 USPQ 245 (1966), stated the difference in the law applied in that court as contrasted with this court in determining patentability when the existence of any prerequisite thereto is in doubt."

3. SAME—SAME—RESOLUTION OF DOUBT IN THE U.S. COURT OF CUSTOMS AND PATENT APPEALS.
"There are very sound policy reasons underlying the rule applied in this court, and supposedly in the Patent Office, that doubts are to be resolved in favor of applicants. Several of the factors properly taken into account in determining patentability, especially unobviousness and utility, are often not known at the time when the application is being prosecuted in the Patent Office but are developed later, perhaps even after the patent is issued. It therefore is proper that doubt should be resolved in favor of applicants so that they shall not be denied patents which later events may show them entitled to. Among such events, which may even have to await patenting, are commercial success, unexpected utility, displacement of competing devices, etc."

4. SAME—SAME—RESOLUTION OF DOUBT IN THE COURT OF APPEALS FOR THE DISTRICT OF COLUMBIA.
"The so-called 'rule of doubt' is an ancient one, its common-sense basis having been recognized as early as 1827. It was applied by the Court of Appeals of the District of Columbia long before this court came into existence. * * * That court continued to apply the rule thereafter. * * * A dissent by Judge Edgerton may have started a trend by the Court of Appeals, D.C., in the direction of its present view. In *Magnaflux Corp.* v. *Coe*, 139 F.2d 531, 60 USPQ 3 (1943), Judge Edgerton in writing the opinion for the court gave effect to the presumption of administrative correctness. In *National Lead Co.* v. *Kingsland*, 74 F. Supp. 985, 76 USPQ 174 (D.D.C. 1948), Judge Holtzoff concluded that in the District of Columbia the rule of doubt was dead. These cases show that the court was trying, in that period, to follow the lead of the Supreme Court in 'raising the standard of invention.' This occurred prior to the 1952 Patent Act."

5. SAME—SAME—RESOLUTION OF DOUBT IN THE U.S. COURT OF CUSTOMS AND PATENT APPEALS.
"We continued to believe that the 'rule of doubt' is a sound rule making for a better and fairer operation of the patent system and that the reasons for its abandonment in the District of Columbia courts are not persuasive."

6. SAME—PARTICULAR SUBJECT MATTER—METHOD AND APPARATUS FOR PRODUCING BLOW MOLDED PLASTIC CONTAINERS.
The refusal of certain claims to a method and apparatus for producing blow molded plastic containers, as unpatentable over the prior art, is reversed.

APPEAL from the Patent Office. Serial No. 172,543.

REVERSED.

Paul N. Kokulis (*H. Calvin White*, *Lawrence A. Hymo* of counsel) for appellant.

Clarence W. Moore (*J. F. Nakamura* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

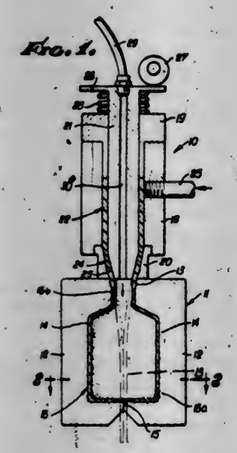
SMITH, *J.*, delivered the opinion of the court.

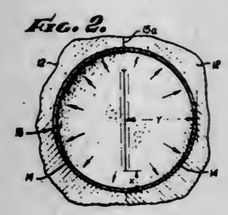
The issue presented is whether the subject matter of the appealed claims,[1] relating to a method and apparatus for producing blow molded plastic containers, is obvious within the meaning of 35 U.S.C. 103. The Board of Appeals affirmed the Examiner's rejection based on the combined teachings of the prior art.

The subject matter sought to be patented involves the blow molding of plastic containers by initially forming a tubular expansible parison[2] which is then received within a multisection mold and expanded by internal air pressure to the mold configuration. The method and apparatus claimed are particularly directed to making plastic containers having relatively wide variances between neck and bottom diameters, such as jugs or bottles in the half gallon to full gallon size range.

Appellant concedes that the appealed claims are directed to what he asserts to be an improvement over prior art methods and apparatus for blow molding such plastic containers. According to appellant, the asserted improvement permits the blow molding of a plastic container using a minimum amount of plastic materials yet providing a *uniform* wall of the desired thickness throughout the container.

The problem faced by appellant and his proposed solution for it are best understood by referring to FIGS. 1 and 2 of his patent application drawings.





In FIG. 1, the parison is shown at 13 and the container configuration desired is shown at 14. In FIG. 2, the parison is viewed from above the mold prior to blow molding with the container parting line shown at 15*a*. As appellant explains, the total displacement of the material near the parting line (shown as X) is much less than the displacement of the material normal to the parting line (shown as Y).

The improvement asserted by appellant is the extrusion of a parison

[1] Claims 1–3 and 5–13, inclusive, of application Ser. No. 172,543, filed Feb. 12, 1962.
[2] The term "parison" derives from the glass bottle blowing art but is here used to signify the plastic softened charge which, like a parison of glass, is placed in the mold prior to blowing the bottle, but which unlike the parison of glass is extruded into the mold with wall portions of predetermined contours.

having a nonuniform wall thickness such that after blowing, the wall thickness will *in fact* be uniform. The apparatus disclosed for this purpose includes an elliptical female die opening in cooperation with a cone shaped male die counterpart which produces an extruded parison having "crescent-shaped" wall sections. The question presented is whether this improvement is obvious in view of the prior art references of record.

The appealed claims fall into two groups: claims 1–3 and 5–7 are directed to a method; and claims 8–13 are directed to an apparatus for carrying out the claimed method.[3] The references relied on are:

Negoro, 3,019,481, February 6, 1962.
Sherman, 2,780,835, February 12, 1957.
Haines, 2,632,202, March 24, 1953.

The Board preferred to affirm the rejection of claims 1–3, and 5–7 as being unpatentable over either Haines or Negoro in view of Sherman.[4] The Board's statement of this rejection was as follows:

• • • Both Haines and Negoro clearly teach forming a tube of nonuniform wall thickness and placing this tube in a mold where it is blown into a container of uniform wall thickness. This is the concept that appellant is claiming and it is taught by Haines and Negoro. Sherman teaches extruding a tube of crescent-shaped thickened portions thereon and to modify the tubes of either Haines or Negoro to include this teaching of Sherman would be a mere matter of choice and design. • • •

As to apparatus claims 8–13, the Board stated as follows:

Claims 8 through 13 sthpd rejected as unpatentable over Sherman in view of either Haines or Negoro or as unpatentable over either Haines or Negoro in view of Sherman. The Examiner takes the position the claims are readable on the apparatus of Sherman when combined with the container molding halves and means for blowing air into the extruded tube taught by either Haines or Negoro. Further, as with the method claims above, the Examiner holds the references may be reversed and if this is done, it would be obvious to use the dual crescent-shaped orifice of Sherman in the apparatus disclosed by Haines or Negoro.

The subject matter is so claimed in the appealed claims that the references need not be discussed in detail. Both Negoro and Haines are concerned with blow molding of plastic articles. Appellant argues that while both refer to an article having uniform wall thickness, neither reference teaches a method or apparatus wherein this goal is achieved. Rather, the references disclose a finished article

[3] Claim 1, defining a method, is as follows:
1. In the formation of reduced diameter upper portion and enlarged bottom diameter containers by extruding a tubular parison and expanding the parison by internal air pressure within a mold comprising a pair of cavitated sections adapted to pinch together the walls of the parison along a bottom diameter in an axial plane of the formed container, the method that includes:
(1) extruding one extent of the parison having at opposite sides of said plane a relatively lesser wall thickness throughout a length of the parison which forms said reduced diameter portion of the container, and
(2) extruding another container bottom-forming extent of the parison of wall thicknesses at opposite sides of said plane which is greater than the first mentioned wall thickness and greater than the wall thickness of the last mentioned extent in said plane,
(3) internally blowing said bottom forming parison extent to conformance with the inside walls of said mold so as to cause the greater thickness of said parison wall at opposite sides of said plane to expand approaching the lesser thickness of said blown parison wall in said plane.

Claim 8, defining an apparatus, is as follows:
8. Apparatus for forming hollow plastic containers by extruding and blow molding a tubular parison, comprising an outer tubular structure and a mandrel movable axially within and annularly spaced from the wall of said structure to form an annular extrusion passage, means for forcing plastic material through said passage to form a tubular parison, said structure including a die extent surrounding a portion of the mandrel and having at one relative axial mandrel position lesser annular spacing about and at opposite sides of an axial plane of the mandrel, and having in another relative axial mandrel position greater spacing about the mandrel which increases at opposite sides of said plane, means for shifting the mandrel between said positions during extrusion of the parison to form the latter with different wall thicknesses corresponding to said spacings, and a pair of molding sections positioned to receive said parison upon extrusion, and means for blowing air to said parison for expanding same to conformance with the inside walls of said molding section.

[4] The Board also affirmed the rejection of these claims as unpatentable over Sherman in view of Haines or Negoro.

having substantially uniform wall thickness. The Negoro reference in pertinent part states:

It is therefore another object of the invention to provide a novel extruder for a machine which forms hollow articles by expanding a tube within a mold, the extruder having a variable orifice die which is of such a construction that the thickness of the tubing may be varied during the extrusion process so that portions of the tubing which are to be expanded the least will have a lesser wall thickness, with the result that the finished article will have a *substantially uniform wall thickness.* [Emphasis added.]

The Haines reference states:

• • • I propose to extrude tubes into appropriate position relative to open molds and then to close the molds over these tubes and blow the tubes into the shape of hollow containers in said molds in regular sequence. I propose that the tubes shall be formed as extruded so that approximately exactly the necessary material is supplied at each region at which greater or less materials are required so that the final plastic container shall have a *substantially uniform wall thickness throughout* without stress and strain and without weaknesses or waste of material which might otherwise be occasioned. [Emphasis added.]

Negoro, Haines and applicant disclose apparatus wherein, as relevant here, the space between the female portion of the extrusion die and the male portion thereof may be varied during extrusion of the parison to vary the wall thickness of the parison along its *length.* Neither Negoro or Haines, however, discloses appellant's means for *simultaneously* controlling the wall thickness of the parison across its *width.* Appellant's arguments are therefore well taken. Furthermore, it appears inconsistent to maintain that Negoro and Haines teach uniform wall thickness and also find it necessary to add the teachings of Sherman.

Sherman relates to forming plastic tubing and discloses an apparatus for extruding plastic tubes in which the wall thickness is controlled. FIGS. 4 and 5 of Sherman's drawing show a cross sectional view of the male and female die portions of his proposed apparatus and are here reproduced.

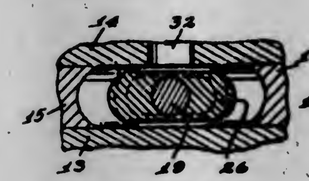


FIGURE 4



FIGURE 5

Referring to the above figures, it is seen that Sherman discloses a female die portion consisting of four parts (designated as 13 through 16 in the above figures). The Sherman specification states:

• • • The outside dimensions of the tubing are determined by the sections of the body as is the outside shape and thickness of the tubing. • • • Movement of the movable sections 15, 16 toward and away from the outer mandrel will change the outside dimensions, shape and thickness of the tubing. • • •

It may thus be seen that the apparatus provides for the change of the inner dimensions and shape, outer dimensions and shape, and thickness of the tubing during extrusion, without any interruption of the extrusion.

Thus, it appears that Sherman discloses an apparatus for varying the wall thickness of a tube extrusion uniformly along its length which also provides that the cross sectional shape of the tube may be changed without interruption of the extrusion through the cooperation of two stationary and two movable female die portions.

Appellant's argument relative to Sherman is:

> • • • In brief, Sherman is totally unrelated to any method or apparatus for forming and blowing a container to uniform wall thickness.

Sherman is admittedly concerned with extruding tubes and the structure shown by Sherman is dissimilar to that shown by appellant. Sherman does disclose the concept of changing the cross sectional shape of the extruded tube and varying the wall thicknesses. Also, the various portions of the die may be set in such a manner as to extrude a tube having varying wall thickness around the perimeter of a cross sectional view of the extruded tube.

It is apparent from the record that appellant has eliminated waste material in the operation of blow molding containers, particularly containers having relatively wide variances between the neck and bottom diameters, e.g., "in the half-gallon to full gallon size range." Appellant achieves this by simultaneously varying the wall thickness of the parison radially as well as longitudinally according to the final configuration desired in the blow molded article. Neither Haines or Negoro, concerned with the same problem as appellant in the blow molding of containers, discloses such a method or apparatus. Sherman, for different purposes, teaches the extrusion of tubes having varying radial thickness measured on a cross section.

[1] It seems that the relevancy of Sherman to the blow molding art, viewed in combination with Haines or Negoro is not appreciated until appellant's invention is examined. Thus, appellant's invention is realized only through hindsight. This we may not do.

We agree with the Solicitor's argument that:

> • • • It is well settled that, as stated in *In re Krogman*, 42 CCPA 1037, 223 F.2d 497:
>
> > Whether a reference is pertinent, or a combination of references is proper, depends solely upon what is reasonably and realistically taught thereby in relation to that which is claimed.

However, we are doubtful that appellant's invention would have been obvious to one of ordinary skill in the art from the teachings of record other than by employing hindsight reasoning.

[2] We are aware that the Court of Appeals, District of Columbia, in its per curiam opinion in *Reynolds* v. *Aghnides*, — F.2d —, 148 USPQ 245 (1966), stated the difference in the law applied in that court as contrasted with this court in determining patentability when the existence of any prerequisite thereto is in doubt. The court, consisting of Bazelon, Chief Judge, and Wright and Tamm, Circuit Judges, said:

> Appellee alleging unlawful denial of his patent application by the Patent Office, petitioned the District Court, under 35 U.S.C. § 145, to authorize issuance of the patent by the Commissioner. Although finding that "some doubt exists as to the utility" of appellee's claimed invention, the trial court, citing *Application of Nurkiewicz*, 52 CCPA 848, —, 338 F.2d 1020, 1022, 143 USPQ 421, 422 (1964), as its authority, resolved the doubt in favor of the applicant and ordered [5] the Commissioner to grant the patent. *Aghnides* v. *Reynolds*, D.D.C., 241 F. Supp. 280, 145 USPQ 411 (1965). In so doing the trial court erred. Whatever may be the rule in patent review proceedings before the United States Court of Customs and Patent Appeals, in trials de novo under 35 U.S.C. § 145 in the District Court "doubt [as to patentability] is to be resolved," not in favor of the applicant, but "in favor of the correctness of administrative • • • action." • *General Motors Corporation* v. *Coe*, 74 App. D.C. 189, 190, 120 F.2d 736, 737, 50 USPQ 10, 11, cert. denied, 314 U.S. 688, 51 USPQ 546 (1941). [Other cases cited.]

[5] The District Court cannot "*order*"—it "authorizes." 35 U.S.C. 145.
• The full quotation is as follows:
> • • • doubt is to be resolved, in suits to obtain a patent as in suits of other sorts, in favor of the correctness of administrative and judicial action.

[3]. There are very sound policy reasons underlying the rule applied in this court, and supposedly in the Patent Office, that doubts are to be resolved in favor of applicants. Several of the factors properly taken into account in determining patentability, especially unobviousness and utility, are often not known at the time when the application is being prosecuted in the Patent Office but are developed later, perhaps even after the patent is issued. It therefore is proper that doubt should be resolved in favor of applicants so that they shall not be denied patents which later events may show them entitled to. Among such events, which may even have to await patenting, are commercial success, unexpected utility, displacement of competing devices, etc.

[4] The so-called "rule of doubt" is an ancient one, its common-sense basis having been recognized as early as 1827. It was applied by the Court of Appeals of the District of Columbia long before this court came into existence. See McCrady, Patent Office Practice § 118 (4th ed. 1959) and cases there cited. That court continued to apply the rule thereafter. See *Battery Patents Corp* v. *Coe*, 68 App. D.C. 61, 35 USPQ 47 (1937). A dissent by Judge Edgerton may have started a trend by the Court of Appeals, D.C., in the direction of its present view. See *Carbide & Carbon Chemicals Corp* v. *Coe*, 69 App. D.C. 372, 40 USPQ 141 (1938). In *Magnaflux Corp.* v. *Coe*, 139 F.2d 531, 60 USPQ 3 (1943), Judge Edgerton in writing the opinion for the court gave effect to the presumption of administrative correctness. In *National Lead Co.* v. *Kingsland*, 74 F. Supp. 985, 76 USPQ 174 (D.D.C. 1948), Judge Holtzoff concluded that in the District of Columbia the rule of doubt was dead. These cases show that the court was trying, in that period, to follow the lead of the Supreme Court in "raising the standard of invention." This occurred prior to the 1952 Patent Act.

[5] We continued to believe that the "rule of doubt" is a sound rule making for a better and fairer operation of the patent system and that the reasons for its abandonment in the District of Columbia courts are not persuasive. In the present case we apply it for the same valid reasons stated at its inception:

> In every case of doubt, however, it would seem to be more congenial with the policy of the law to afford the citizen an opportunity of trying the validity of his right by issuing a patent. [2 Op. Atty. Gen. 52, 4 June 1827.]

We are, therefore, resolving our doubts on this issue in favor of appellant and solely on this basis reverse the rejection of these claims.

[6] In view of the foregoing, the decision of the Board is reversed.

REVERSED.

WORLEY, *Chief Judge*, concurs in the result.

MARTIN, *J.*, dissenting.

Although I agree with the majority opinion that the rule of law in this court is one of resolving doubt in favor of the applicant, I do not find appellant's case so strong here as to call that rule into play. For the reasons given by the Examiner and the Board, it is my view that the claimed method and apparatus for simultaneously controlling the parison wall thickness along its length and in its cross section are obvious in view of the references of record. I would affirm.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

Des. 187,799, E. Saarinen, TABLE OR THE LIKE, **filed** Aug. 5, 1966, D.C., E.D.N.Y., Doc. 66C–742, *Knoll Associates, Inc.* v. *Foamland U.S.A., Inc.*

Des. 190,760, W. H. Jones, PORTABLE LANTERN, **filed** Sept. 6, 1963, D.C., S.D.N.Y., Doc. 63/2644, *A. J. Ashe Company, Inc.* v. *Nicholl Brothers, Inc.* Order of dismissal Dec. 2, 1965.

Des. 190,789, I. I. Levis, HAND MIRROR, **filed** Aug. 30, 1963, D.C., S.D.N.Y., Doc. 63/2594, *Irene I. Levis et ano.* v. *Novel Felt Accessories, Inc.* Order of discontinuance July 10, 1965. **Same**, Doc. 63/2595, *Irene I. Levis et ano.* v. *Just-In-Case, Inc.* Order of discontinuance July 6, 1965.

Des. 190,964, C. O. Bliss, PITCHER OR SIMILAR ARTICLE, **filed** Jan. 23, 1964, D.C., S.D.N.Y., Doc. 64/246, *Blisscraft of Hollywood* v. *Rona Plastics, Inc.* Order discontinuing action with prejudice Aug. 2, 1966.

Des. 196,536, J. Shiffman, RING BOX, **filed** Aug. 18, 1966, D.C., S.D.N.Y., Doc. 66/2609, *Rocket Jewelry Box, Inc.* v. *Ideal New York, Inc. et ano.*

Des. 198,049, R. L. Whitman, METER HOUSING, **filed** Aug. 22, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c1536, *Handley Industries, Inc.* v. *Thomas Cleavenger Associates, Inc. et al.* Cause dismissed Aug. 23, 1966. **Same**, **filed** Aug. 25, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c1561, *Handley Industries, Inc.* v. *Thomas Cleavenger Associates, Inc. et al.*

Des. 199,291, F. L. Jahn, DISPLAY STAND FOR PHOTOGRAPHS AND THE LIKE, **filed** Apr. 1, 1965, D.C., S.D.N.Y., Doc. 65/974, *Eaton Paper Corp.* v. *Dan-Dee Imports, Inc. et ano.* Order of dismissal July 3, 1965.

Des. 204,100, A. Shindler, PAIR OF SUNGLASSES; **Des. 204,320**, W. C. Carmichael, same, **filed** Aug. 3, 1966, D.C., S.D.N.Y., Doc. 66/2398, *American Optical Company et ano.* v. *Rayex Corporation et ano.*

Des. 204,320. (See Des. 204,100.)

REISSUES

NOVEMBER 1, 1966

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

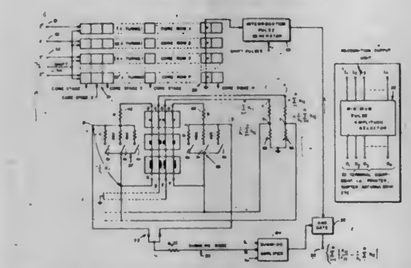
26,104

DATA PROCESSING APPARATUS FOR IDENTIFYING AN UNKNOWN SIGNAL BY COMPARISON

Marvin H. Glauberman, St. Davids, Pa., and Robert C. Kelner, Concord, Mass., assignors to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware

Original No. 2,947,971, dated Aug. 2, 1960, Ser. No. 553,770, Dec. 19, 1955. Application for reissue June 14, 1963, Ser. No. 288,061

15 Claims. (Cl. 340—146.2)



17. Apparatus for classifying an unknown signal waveform with respect to a plurality of known signal waveforms, the apparatus comprising:

means for sampling the unknown signal waveform at a plurality of discrete regions to derive a quantized signal for each region;

means for sampling each known signal waveform at a corresponding plurality of discrete regions to derive a quantized signal for each region;

means for combining the quantized signals from said known and unknown signal waveforms to derive for each known signal waveform a series of signals characteristic of the degree of difference between the known signal waveform and the unknown signal waveform at said plurality of discrete regions; means for combining the signals in each said series to derive for each known signal waveform a recognition signal characteristic of the degree of difference between the known signal waveform and the unknown signal waveform in their entireties;

and means for comparing the recognition signals to produce an output signal characteristic of the known signal waveform associated with the recognition signal indicating the least difference.

26,105

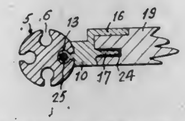
FURNITURE ASSEMBLING DEVICE

Jacques Silas Guillon, Westmount, Quebec, and Christen Wilhner Sorensen, Montreal, Quebec, Canada, assignors, by mesne assignments, to Massey-Ferguson Industries Limited, Toronto, Ontario, Canada, a corporation of Canada

Original No. 3,181,923, dated May 4, 1965, Ser. No. 174,154, Feb. 19, 1962. Application for reissue Mar. 14, 1966, Ser. No. 539,245

5 Claims. (Cl. 312—255)

1. In an article of furniture or the like, in combination, one or more cylindrical supporting leg or post members of extruded manufacture, each of the said post members having four longitudinal grooves of circular cross section located at 90 degree intervals to each other in the plane of the cross section of each leg or post member and extending the full length of the leg or post member, each of the said grooves having a restricted lip opening at the surface of the leg or post member, one or more assembly members each having a locking rib of circular cross section extending the full length of the assembly member at one edge thereof for sliding engagement in a longitudinal groove of said leg or post member, each of the said locking ribs having a longitudinal groove of generally circular cross section extending the full length thereof, the



said latter groove having a restricted lip opening and forming a pair of spring members engaging with adjacent surfaces in the longitudinal groove of the said leg or post members when the said assembly member is slidably engaged therewith, and a taper pin axially aligned in one end of the longitudinal groove of the said locking rib, the said taper pin expanding the end portions of the said spring members to frictionally lock the said assembly member in a set position lengthwise of the leg or post member.

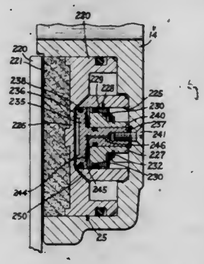
26,106

AUTOMATIC BRAKE ADJUSTING MECHANISMS

Gianni A. Dotto, Dayton, Ohio, assignor to The Dayton Steel Foundry Company, Dayton, Ohio, a corporation of Ohio

Original No. 3,064,768, dated Nov. 20, 1962, Ser. No. 859,172, Dec. 14, 1959. Application for reissue Aug. 12, 1963, Ser. No. 303,717

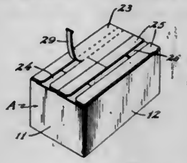
14 Claims. (Cl. 188—152)



8. An automatic adjusting device for a brake comprising a housing having a cylinder therein with one end of said cylinder being open, a fluid operated piston disposed in said cylinder for movement through the open end of said cylinder, said piston being closed across its diameter adjacent said open end, a cylindrical axially extending recess in said piston opening into said cylinder and disposed opposite the closed end of the piston, an axially extending pin fixed at one end to said housing and having its other end extending into said axial recess, friction means completely enclosed within said axial recess and encircling said pin and in frictional engagement with the

circumference of said axial recess, said friction means being movable axially relative to said pin and piston, and biasing means mounted on said pin and completely enclosed within said axial recess for normally urging said friction means in an axial direction away from the open end of said cylinder.

26,107
EASY OPENING CONTAINER
Walter H. Rasmussen, St. Paul, and Ronald V. Johnson, Minneapolis, Minn., assignors to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota
Original No. 3,141,598, dated July 21, 1964, Ser. No. 249,178, Jan. 3, 1963. Application for reissue Sept. 13, 1965, Ser. No. 493,606
7 Claims. (Cl. 229—51)



1. An easy opening container including,
a rectangular tubular container including parallel relatively longer side walls and parallel relatively shorter end walls,
closing flaps on said side and end walls, the closing flaps of the side walls extending substantially into end abutting relation when folded into a common plane,
a removable tear strip extending across each side wall closing flap parallel to the lines of fold connecting these side wall closing flaps to said side walls,
each said tear strip being formed by spaced side by side weakened lines of separation, and
weakened lines of separation extending inwardly from the free ends of the side wall closing flaps to the tear strip.

26,108
SOLID EXPLOSIVE COMPOSITION AND METHOD OF PREPARATION EMPLOYING VULCANIZED RUBBER AND A SOLID INORGANIC OXIDIZING SALT
David Pelton Moore, Marlow, N.H.
(9210 Flower Ave., Silver Spring, Md.)
No Drawing. Original No. 3,135,634, dated June 2, 1964, Ser. No. 165,456, Jan. 10, 1962. Application for reissue May 19, 1965, Ser. No. 459,525
26 Claims. (Cl. 149—19)

1. The method of making an explosive composition comprising mixing intimately together 65–80% by weight of oxygen and gas supplying alkali salts selected from the group consisting of ammonium nitrate, ammonium perchlorate, ammonium chlorate, potassium chlorate, potassium perchlorate, and sodium nitrate with a rubber binder consisting of a rubber latex containing 20–64% by weight of solid rubber, the remainder of said binder consisting of a coagulating agent selected from the group consisting of calcium hydroxide and sodium bisulphite and a retarder of coagulation selected from the group consisting of calcium sulphite, sodium perborate and sodium carbonate and mixtures thereof to form a putty-like mass, molding the mass into a desired shape, drying the shaped mass to produce a non-tacky, non-hygroscopic and waterproof explosive composition containing 4.05–25% by weight of solid rubber based on the total composition.

PLANT PATENTS

GRANTED NOVEMBER 1, 1966

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,682
ROSE PLANT
Ralph S. Moore, 2519 E. Mineral King, Visalia, Calif. 93277
Filed Sept. 24, 1965, Ser. No. 490,149
1 Claim. (Cl. Plt.—7)

A new and distinct variety of miniature rose plant of hardy, dwarf, rounded, much branched, bush type, as illustrated and described, characterized by buds and flowers resembling the Little Scotch (Pat. 1,952) miniature rose in general form but with shorter bud length, the color orange to coral rather than straw yellow and flowers more cupped and slightly smaller; the general color effect being orange or apricot; and further characterized by a plant which is of vigorous and compact growth, easy to propagate from cuttings, with medium small semi-glossy foliage and an abundance of bloom, with flowers borne singly or several to stem in loose clusters.

2,683
ROSE PLANT
Ralph S. Moore, 2519 E. Mineral King, Visalia, Calif. 93277
Filed Sept. 24, 1965, Ser. No. 490,150
1 Claim. (Cl. Plt.—8)

A new and distinct variety of miniature rose plant of hardy, dwarf, upright, much branched, bush type, as illustrated and described, characterized by buds and flowers resembling the Little Scotch (Plant Patent No. 1,952) miniature rose in general form but white rather than straw yellow, and mature flowers more flat and of much greater substance and lasting quality, both on the plant and as cut flowers; and further characterized by long lasting buds of hybrid tea quality, a plant which is of vigorous and compact growth, easy to propagate from cuttings, abundant, disease resistant foliage, a profusion of bloom, with flowers borne singly or several to stem in loose clusters.

PATENTS

GRANTED NOVEMBER 1, 1966

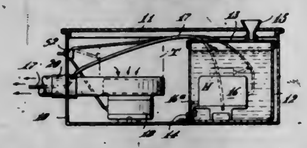
GENERAL AND MECHANICAL

3,281,863
GARMENT CONSTRUCTION
Ralph L. Beard and James Fred Hester, Winston-Salem, N.C., assignors to Hanes Corporation, Winston-Salem, N.C., a corporation of North Carolina
Filed July 23, 1964, Ser. No. 384,625
11 Claims. (Cl. 2—113)



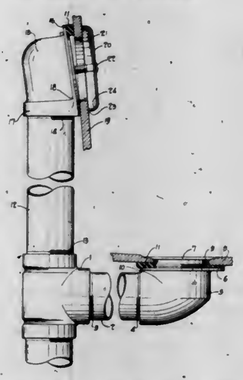
1. A collar edge construction for a knitted garment, comprising: a knitted fabric body portion having an edge defining an opening, a first strip of knitted fabric material having a longitudinally extending first fold therein to form inner and outer layers, said inner and outer layers being disposed on opposite faces of said body portion so as to have said first fold lie substantially parallel to the edge of said body portion, the lower edge portion of said outer layer being folded inwardly upon itself so as to form a second fold extending substantially parallel to said first fold, and a reinforcing strip of fabric having a third longitudinally extending fold therein to form inner and outer layers, said reinforcing strip being situated inwardly of said first strip so as to have said first and third folds adjacent and substantially parallel to each other, said inner layer of said reinforcing strip lying against the inner face of said body portion, the lower edge of the outer layer of said reinforcing strip being adjacent and substantially parallel to said second fold and lying between the folded portions of said outer layer of said first strip, said first strip and said reinforcing strip being fixed to said body portion by stitching.

3,281,864
PORTABLE BATHING APPLIANCE FOR THERAPEUTIC USE
Hildegarde B. Linnehan, 27 Larned St., Framingham, Mass.
Filed July 29, 1963, Ser. No. 298,361
5 Claims. (Cl. 4—161)



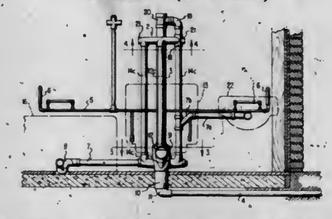
1. A bathing device for surgical and obstetrical use, said device comprising a portable case having therein a reservoir for liquid and a power-driven pump within said reservoir, a power-driven fan within the case, a flexible air tube extending outwardly from the fan through an opening in the wall of the case, a nozzle device secured to the free end of said air tube, the pump within the reservoir for liquid having a delivery tube which enters the air tube and extends within the latter to the nozzle device where it terminates in a tip having a plurality of delivery ports, and a valve within the nozzle device by means of which the delivery of liquid may be controlled.

3,281,865
BATH DRAIN WASHER CONSTRUCTION
Stephen A. Young, R.R. 5, Monticello, Ind.
Filed Sept. 13, 1963, Ser. No. 308,826
3 Claims. (Cl. 4—206)



1. A bath drain washer comprising a beveled resilient body with intersecting planar surfaces, and a pair of oppositely disposed gripping segments integral therewith, said segments being arranged to grip a flange of a bath drain head or the like at spaced positions, whereby the plane of the bevel may be caused to assume at least two different angles with respect to the axis of the body.

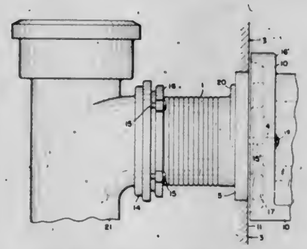
3,281,866
VENTED PLUMBING FITTING ASSEMBLY
Stanley R. Palowsky, 103 Somerset Drive, Monroe, La.
Filed June 23, 1964, Ser. No. 377,205
3 Claims. (Cl. 4—211)



1. A waste drain fitting of the character described comprising, an integral casting having a main body portion, said body portion being formed with a main passage, one end of the main passage being adapted to be connected to a soil-vent stack, the opposite end of said main passage being adapted to be connected to a sewer line, branch channels formed on said main body portion and extending at right angles out-

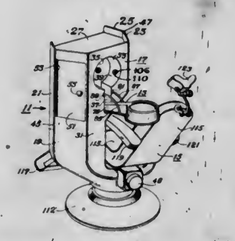
wardly from opposite sides of the main body portion, said branch channels being in communication with the main passage, each branch channel being adapted to be connected to a water closet, waste branches formed on the main body portion and extending outwardly therefrom, said waste branches being disposed at right angles to said water closet branch channels and being in communication with said main passage and a vent branch provided on each of the water closet branch channels and waste branches, each vent branch having a passage extending parallel to the main passage.

3,281,867
COMBINED FITTING AND TILING FRAME FOR FLOOR-MOUNTED WALL DISCHARGE WATER CLOSETS
Courtney C. Pope, P.O. Box 187, Haines City, Fla.
Filed June 22, 1964, Ser. No. 376,639
8 Claims. (Cl. 4—252)



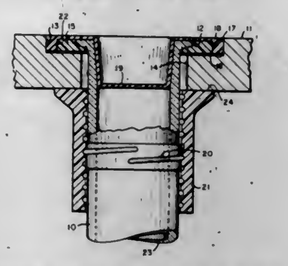
1. A mounting for water closets comprising, a sleeve having one end coupled to a stack, the opposite end of the sleeve being provided with laterally-projecting slotted wings, a tilting frame encircling the sleeve and having lugs disposed over the wings on the sleeve, bolts extending through the slots in the wings, said bolts being vertically adjustable in said slots, the bolts having heads located between the wings and lugs, means for preventing the heads from rotating or backing away and a closet attached to the wings by said bolts.

3,281,868
DENTAL APPARATUS
Glenn C. McGouirk, 3200 Chaparral Lane, Fort Worth, Tex.
Filed Apr. 23, 1963, Ser. No. 275,113
9 Claims. (Cl. 4—263)



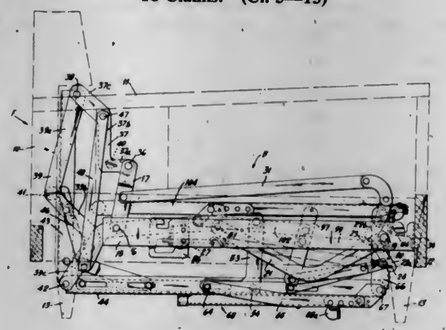
1. The combination with a movable dental chair of a dental unit fixed to said chair and movable therewith; and a dental cuspidor which is connected to and supported by said dental unit and movable in a vertical plane relative to said dental unit between an extended position and a position where said cuspidor is retracted into said dental unit.

3,281,869
SINK STRAINER ASSEMBLY
Bertrand Schweigaard-Olsen, Corning, and Harold R. Wacenske, Painted Post, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Feb. 12, 1964, Ser. No. 344,392
5 Claims. (Cl. 4—288)



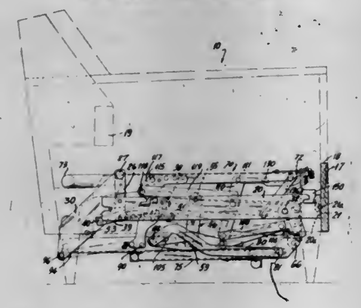
1. A strainer assembly comprising a section of pipe having an outwardly flared end portion, said end portion being fixed between two rings, the first said ring having an inner diameter less than the diameter of said flared end portion and bearing upon the surface of said end portion adjacent to the main body of said pipe section and the second said ring bearing upon the opposite side of said flared end portion and extending at least partially around a portion of said first ring in the direction of said main body of said pipe section in order to lock said flared end portion between said rings, and located within said pipe section a strainer depending from said second ring.

3,281,870
BEDS
Alex J. Katz, Orange, N.J., assignor to Super Sagless Spring Corp., Bayonne, N.J., a corporation of New Jersey
Filed Mar. 18, 1965, Ser. No. 440,844
18 Claims. (Cl. 5—13)



1. In a sofa-bed, the combination comprising a chassis, a main drive member pivoted to said chassis, a moving pivot link pivoted to said chassis, means interconnecting said main drive member and said moving pivot link, a throw-out link pivoted to said moving pivot link, spring means to rotate said main drive member relative to said said chassis, a rear bed section, a rear intermediate bed section pivoted to the front end of said rear bed section, a front intermediate bed section pivoted to the front end of said rear intermediate bed section, a front bed section pivoted to the front end of said front intermediate bed section, said bed sections being in alignment in the open position of said bed, a first control link interconnecting said throw-out link and the pivotal connection between said rear and said rear intermediate bed sections, a second control link, a third control link, said second control link interconnecting said throw-out link and said third control link, a bell crank lever pivotally mounted on said rear intermediate bed section and having a first arm pivoted to said third control link, and said main drive member being pivotally connected to said third control link.

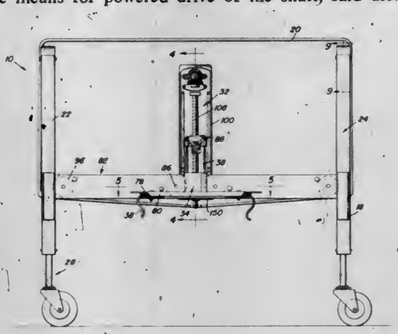
3,281,871
SOFA-BED
Alex J. Katz, West Orange, N.J. (% Super Sagless Spring Corp., Foot of E. 46th St., Bayonne, N.J.)
Filed Mar. 18, 1965, Ser. No. 440,845
14 Claims. (Cl. 5—13)



1. In an extensible collapsible bed, a chassis, a rear throw-out member pivoted to said chassis and inclined upwardly and forwardly in the extended condition of the bed, a main lever pivoted to said chassis and having an arm projecting downwardly and an arm projecting upwardly and rearwardly in the extended condition of the bed, a main tension spring connecting said downwardly projecting arm with said chassis, a first control link connecting said upwardly projecting arm with said throw-out member, a three section collapsible bed comprising a rear bed section, an intermediate bed section pivoted to the front end of said rear bed section, and a front bed section pivoted to the front end of said intermediate bed section, said three sections being in alignment, in the extended condition of the bed, a rear leg pivoted to the rear bed section, a front leg pivoted to said front bed section, a bell crank pivoted to said rear bed section and having a downwardly extending arm and a forwardly extending arm, and a second control link connecting said forwardly extending arm of said bell-crank with said throw-out member, said bed being fully collapsible to a position in which the rear bed section is down, the intermediate bed section extends up from the front end of said rear section, and said front section is located above the rear section and extends rearwardly from the upper end of said intermediate section, said rear throw-out link extending downwardly and rearwardly from its pivotal connection to said chassis, in the collapsed condition of said bed.

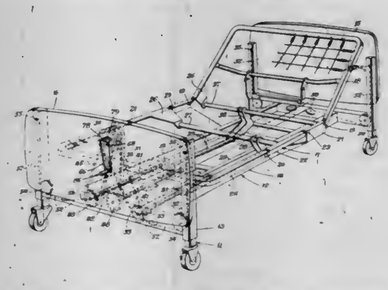
3,281,872
HOSPITAL BED
Ronald D. Dewey, Plover, Wis., assignor to Joerns Bros. Furniture Co., Stevens Point, Wis., a corporation of Wisconsin
Filed Nov. 7, 1962, Ser. No. 235,954
8 Claims. (Cl. 5—63)

5. In an adjustable bed having a frame assembly and cable means for elevating and lowering the bed, actuating mechanism for the cable means comprising, anti-friction drive means mounted on the frame assembly and connected to the cable means for elevating and lowering the bed, an elongated screw shaft, recirculating ball nut means threadedly engageable with said screw shaft, a cable carrier mounted on the ball nut means and guidingly engageable with the frame assembly for vertical displacement with the ball nut means, gear means drivingly connected to the screw shaft at an upper end thereof adapted to be driven by a manually operated crank and means mounted on a lower end of said screw shaft below the drive release brake means for powered drive of the shaft, said drive



release brake means comprising, a drive member connected to the screw shaft, a brake member rotatably mounted on the screw shaft in frictional engagement with the frame assembly, coil spring means releasably coupling the drive member and the brake member and responsive to rotation of the screw shaft in one direction to expand and release, thrust bearing means rotatably mounting the drive member on the brake member and operative to transmit axial thrust to the brake member in response to rotation of the screw shaft in the other direction to frictionally load the brake member.

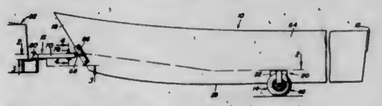
3,281,873
MANUALLY OPERABLE HOSPITAL BED WITH SELECTIVELY POSITIONABLE CONTROL
John F. Stanley, Whiting, and Ronald D. Dewey, Plover, Wis., assignors to Joerns Furniture Company, Stevens Point, Wis., a corporation of Wisconsin
Filed Aug. 31, 1965, Ser. No. 484,010
5 Claims. (Cl. 5—68)



1. A manually operable hospital bed, comprising supporting legs, a frame movable vertically relative to said legs and supported thereby, a first actuating means for vertically adjusting said frame relative to said legs, an articulated spring supported by said frame and having separate sections adjustably movable relative thereto, a plurality of additional actuating means each operable to adjustably move one of said sections, a single crank conveniently mounted on said frame for manual rotation, a

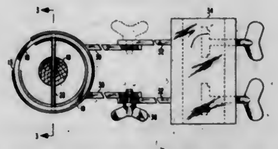
control member selectively movable to operatively interconnect said crank with any one of said actuating means, whereby rotation of said crank may effect selective adjustments of said frame and said spring sections, said crank including a hub portion, and said control member extending through said hub portion and terminating adjacent thereto in a manually engageable handle.

3,281,874
REMOVABLE WHEELS AND TRAILING TONGUE FOR BOATS
Cecil R. Sholl, P.O. Box 681, Kodiak, Alaska
Filed Oct. 8, 1964, Ser. No. 402,560
8 Claims. (Cl. 9—1)



1. An apparatus for transporting boats comprising, in combination, a pair of supporting wheel assemblies, means removably securing said assemblies to the sides of a boat, a towbar including means for detachably securing said towbar to a towing vehicle, and means detachably securing said towbar to the stem of the boat, each of said wheel assemblies including a plate mounted on a side of the boat, at least one essentially upstanding sleeve on the plate, a mount comprising a bar, an essentially upstanding pin on the bar engaged in said sleeve, a vertically oscillatable shaft on the bar, an axle affixed laterally to the shaft, and a wheel mounted for rotation on said axle.

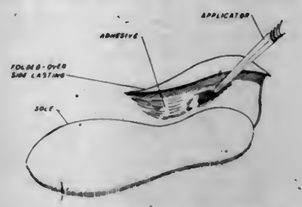
3,281,875
SCULLING OAR ASSEMBLY
Hubert G. Solomon, 9717 Halsey Road, Jacksonville, Fla.
Filed Aug. 24, 1964, Ser. No. 391,397
5 Claims. (Cl. 9—26)



1. In a sculling oar assembly an oar having a loom, means for supporting the oar on a boat for movement of the oar about a pair of mutually perpendicular axes comprising a pair of axially separable telescopically arranged members, said loom extending through and being carried by the inner one of said pair of members, the outer member of said pair being provided with a slot extending laterally thereof and longitudinally therethrough and having a width sufficient to permit passage of said loom therethrough, whereby the oar may be unshipped by moving the oar axially of said pair of members to separate the same and then laterally moving the loom through said slot without disassembling said loom from said inner one of said pair of members.

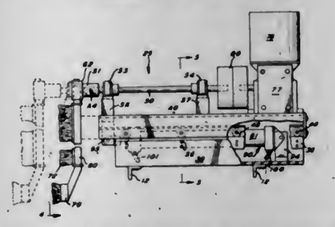
3,281,876
METHOD OF ASSEMBLING A SHOE UPPER
Jack William Lowe and Gilliam Senn Teague, Jr., Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed May 28, 1963, Ser. No. 283,731
2 Claims. (Cl. 12—146)

1. A shoemaking process comprising the steps of coating the topline portion of the inner surface of the rear portion of the upper with a hot melt adhesive composition comprising (1) a cellulosic material selected from the group consisting of cellulose acetate propionate, cellulose acetate butyrate and ethyl cellulose, (2) a polyvinyl thermoplastic resin and (3) an active plasticizer,



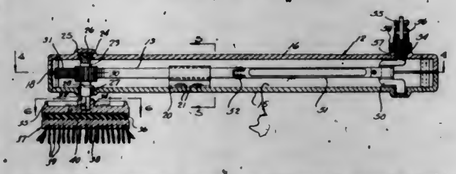
folding over said coated topline portion to form an overlapping topline seam; and maintaining a temperature of at least about 325° F. thereby temporarily bonding said overlapping topline seam and permitting stitching of the same into a permanent side last upper seam.

3,281,877
WASHER FOR AN AUTOMOBILE WHEEL
John F. Cirino, Churchville, Pa., and Charles Brenner, Overbrook Hills, Pa., assignors to Universal Robot Inc., Bala Cynwyd, Pa., a corporation of Pennsylvania
Filed Apr. 7, 1965, Ser. No. 446,191
15 Claims. (Cl. 15—21)



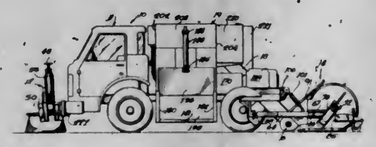
1. A washer for an automobile wheel, comprising: a base positionable opposite an automobile wheel; an extension member slidably mounted on said base for extension toward a wheel; an arm member having an end pivoted on said extension member; a brush carried by said arm member; means to rotate said arm member and brush; and means for extending said extension member to an operational position where said arm member may be rotated with said brush against a wheel for washing thereof.

3,281,878
MOBILE CLEANER BRUSH
Cutberto Meza Roiz, 1025 A 3rd St., Calexico, Calif.
Filed July 16, 1965, Ser. No. 472,513
5 Claims. (Cl. 15—22)



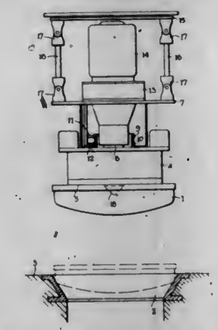
1. In a mechanical brush, an elongated housing having mating top and bottom segments provided with opposing longitudinally-extending walls, a rack bar slidably mounted in said housing, a shaft journaled in said opposing walls in one end of the housing transverse to said rack bar, a pinion gear secured on said shaft and meshing with said rack bar, said shaft having an externally projecting portion, extending through said bottom segment, a rotary applicator member detachably secured to said externally projecting portion, a generally U-shaped crank journaled in said opposing walls in the other end of said housing on an axis substantially parallel to said shaft and having a shaft portion extending through said top segment and having an intermediate bight portion, a link rod drivingly connecting said crank bight portion to said rack bar, whereby to reciprocate said rack bar responsive to rotation of said crank, an external drive motor, and transmission means connecting said crank shaft portion to said external motor.

3,281,879
STREET SWEEPER
Thomas F. Murphy, 1625 Terrace Road, Homewood, Ill.
Filed June 17, 1964, Ser. No. 375,808
14 Claims. (Cl. 15—84)



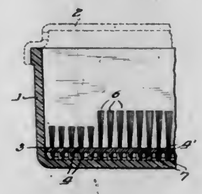
1. A street sweeper comprising, in combination: a motorized chassis for transporting said street sweeper, said chassis having a hopper mounted thereon for storing debris and the like, a conveyor mounted on said chassis for conveying debris and the like to said hopper, a pickup broom assembly for sweeping debris and the like into said conveyor, said pickup broom assembly comprising a broom having an axle, a substantially U-shaped trailer-like frame connected to said vehicle and having a pair of arms which extend rearwardly of said vehicle, axle support means on the end of said arms for receiving and retaining the axle of said broom, and means for operating said conveyor system and said pickup broom.

3,281,880
DEVICE FOR RAISING AND LOWERING HEAVY LIDS
Martin Bender, 29 Krippstr., Dusseldorf, Germany
Filed Feb. 5, 1964, Ser. No. 342,605
11 Claims. (Cl. 15—93)



1. Apparatus for manipulating a lid of an industrial oven comprising, in combination, upper support means; lower support means downwardly spaced from said upper support means; means swingably suspending said lower support means from said upper support means for maintaining the former in a substantially horizontal position; motor means on said lower support means and having a rotatable driveshaft having a lower end; and electromagnetic means secured to said lower end of said driveshaft and having a lower face adapted for releasably electromagnetically gripping said lid, said electromagnetic means being rotatable with said driveshaft about a substantially vertical axis whereby to facilitate the removal of deposits from a seating surface of said lid.

3,281,881
FINGER AND FINGER NAIL CLEANING DEVICE
Harry G. Yetter, Colchester, Ill.
Filed Oct. 19, 1965, Ser. No. 497,874
1 Claim. (Cl. 15—167)



A toiletry device comprising:
(a) a receptacle the inner side of the bottom of which is substantially flat;
(b) a sheet-like plastic brush bristle mounting body of shape and size substantially corresponding to that of the receptacle bottom received thereon within the receptacle;
(c) a plurality of relatively spaced substantially uniformly shaped and sized integral plastic protuberances on and over the normally lower side of the body bearing on the receptacle bottom and supporting it in spaced relation thereto, each of which is formed with an upwardly disposed pocket opening into said receptacle;
(d) bristles mounted in each of the pockets of said relatively spaced protuberances and extending upwardly into said receptacle; and
(e) webs on and integral with the inner side of said body arranged between and interconnecting said protuberances.

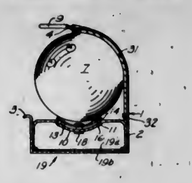
3,281,882
BRUSH TYPE ROTARY TOOLS AND THE LIKE
Vernon K. Charvat, Bay Village, Ohio, assignor to The Osborn Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 27, 1964, Ser. No. 347,754
6 Claims. (Cl. 15—179)



2. A new rotary brush-like product comprising a central support with bristles secured thereto and extending generally radially outwardly therefrom, said bristles being in rotary dynamically oriented relationship in substantially true radial positions with substantially uniform spacing

therebetween, and a body of plastic material between said bristles maintaining said bristles spaced apart in their dynamically oriented positions.

3,281,883
BOWLING BALL CARRYING BAG AND ROTATABLE SUPPORT
Milton Glantz, Lincolnwood, Ill., assignor of one-half to Samuel N. Glantz, Lincolnwood, Ill.
Filed Dec. 16, 1963, Ser. No. 330,906
4 Claims. (Cl. 15—210)



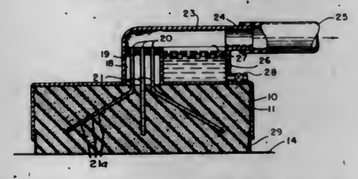
1. In combination, a carrying bag for a bowling ball and bowling accessories, divider means for separating said bag into a bowling ball compartment and a bowling accessory compartment, separate openings for each of said compartments, and rotatable means included in said divider means for supporting said ball coaxially therewith for rotation in said bag.

3,281,884
CLEANING IMPLEMENT
Anne C. Feil, 392 Deming Road, Rochester, N.Y.
Filed Oct. 20, 1965, Ser. No. 498,530
3 Claims. (Cl. 15—244)



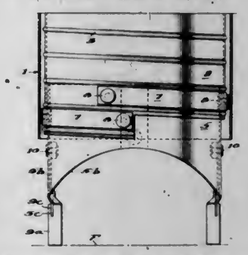
1. A brush comprising an elongated handle,
an elongated flexible cellular foam-like member helically wound about said handle from one end to a position short of the other end,
and means securing said member to said handle,
said member comprising a plurality of superimposed strips of flexible cellular foam plastic,
each of said strips defining spaced slits extending laterally thereof short of opposing side edge portions thereof and being folded over longitudinally to form plural layered projections in loop form with opposed side edge portions of said strips being superimposed on each other and helically tightly wound on said handle with adjacent turns thereof lying in overlapping relationship whereby said plural layers of said projections can separate from each other in use, said slits being of sufficient number to form projections substantially throughout the length of the strips.

3,281,885
VACUUM OPERATED SQUEEGEE
Seymour L. Hersh, Freehold, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Sept. 28, 1964, Ser. No. 399,949
2 Claims. (Cl. 15—393)



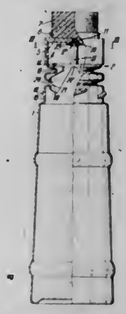
1. Apparatus for stripping liquid from a wetted surface comprising an absorbing member of soft sponge-like material having a capillary cell structure and presenting a working surface; a closely fitting gas tight casing enclosing all but a small portion of said absorbent member extending adjacent said working surface, a hollow liquid controlling enclosure secured to said casing having a relatively large diameter vertical conduit extending from inside said casing to a position within said enclosure located upon substantially a median plane between the top and bottom of said enclosure said conduit having a closure plate at the end within the enclosure, a plurality of capillary tubes in said conduit with their upper ends secured in said plate and terminating adjacent the upper end of said vertical conduit so as to communicate with the hollow enclosure and their lower ends extending a substantial distance into the body of said absorbing member, a liquid reservoir in said enclosure positioned below said median plane and arranged to receive free flow of liquid from said conduit, a vacuum conduit leading from said enclosure above said reservoir, a vacuum generator and a connection therefrom to said vacuum conduit whereby liquid flowing from said absorbing element will flow into said reservoir and avoid restriction to the vacuum line and backward flow of liquid.

3,281,886
FLOOR INLET NOZZLE CONSTRUCTION FOR SUCTION TRUNK ON TRAVELING CLEANER
James F. King, Jr., Winston-Salem, N.C., assignor to The Bahnson Company, Winston-Salem, N.C., a corporation of North Carolina
Filed Mar. 6, 1964, Ser. No. 349,941
3 Claims. (Cl. 15—420)



3. For use with a traveling cleaner of the type including a depending suction trunk arranged to travel along the side of one or more textile working machines such as spinning frames and the like disposed in a row, the combination with said trunk of a suction intake nozzle located at the lower end of said trunk adjacent the floor for floor sweeping, said nozzle being comprised of a generally cylindrical body of relatively flexible material and substantially the same diameter as said trunk, means securing said nozzle body to the lower end of said trunk, portions of the wall of said cylindrical nozzle body being omitted at opposite sides thereof to form lateral intake openings extending to the bottom of the nozzle, floor drags secured respectively to the remaining wall portions of said nozzle body and which face fore and aft respectively relative to the direction of movement of said trunk, each of said floor drags including a lower floor dragging part, an upper ear part secured to the wall portion of said nozzle body, and a horizontal slot receiving the lower edge of the wall portion of said nozzle body, and a protective sleeve covering said trunk and nozzle body in the vicinity where said nozzle body and trunk are secured together.

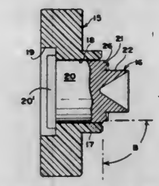
3,281,887
DISPENSING HEADS OR APPLICATORS FOR BOTTLES, TUBES AND LIKE CONTAINERS
Joseph Peter Raffe, London, England, assignor to Reckitt and Colman (Overseas) Limited, Hull, East Yorkshire, England, a British company
Filed July 20, 1964, Ser. No. 383,744
Claims priority, application Great Britain, Aug. 12, 1963, 31,753/63
8 Claims. (Cl. 15—569)



1. A dispensing device for a container, comprising: a tubular body portion; an apertured dispensing member at one end of said body portion and defining a valve seat; a valve member in said body portion and cooperable with said valve seat to control flow through said dispensing member; said tubular body portion having a permanent bellows fold therein between its ends providing for movement of said apertured dispensing member relative to said valve member; a cap threadedly mounted on said body portion at a part thereof separated from said dispensing member by said bellows fold and having interior shoulder means thereon abutting a shoulder on said dispensing member spaced from said valve seat; whereby said cap may be threadedly moved on said dispensing device relative to said valve member to compress said bellows fold and move said dispensing member toward said valve member to a closed position or in a direction to release said dispensing member for movement to an open position.

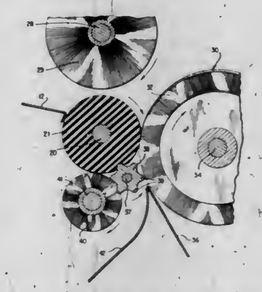
3,281,888
STUD SHAFT ROLLERS
Edward M. Stankewich, 49 Maxwell Road, Garden City, N.Y.
Filed Jan. 13, 1965, Ser. No. 425,294
2 Claims. (Cl. 16—97)

1. In combination, a stud shaft having a head at one end and a wheel structure having a central hole therethrough; said shaft being easily insertable into and positioned through said hole and said wheel structure being adjacent said head, the improvement being in that said stud shaft is one piece and comprises a shaft section having a head at one end thereof, and at its other end a reduced first section which is a ring, whereby an annular channel is formed at the junction of said sections; the largest diameter of said sections being smaller than the diameter of the hole in the wheel and a second reduced



section extending through said ring and outwardly therefrom in the direction away from said head; whereby on deforming said ring outwardly and towards said head to close said annular channel, a flange is formed of said ring for maintaining the assembly of said wheel structure and said stud shaft.

3,281,889
METHOD AND APPARATUS FOR DEHEADING SHRIMP
Richard G. Pollitzer, Beaufort, and Walter D. Toler, Mount Pleasant, S.C., assignors, by mesne assignments, to Sea Mach Co., Jacksonville, Fla., a corporation of Florida
Filed July 31, 1964, Ser. No. 388,975
19 Claims. (Cl. 17—2)

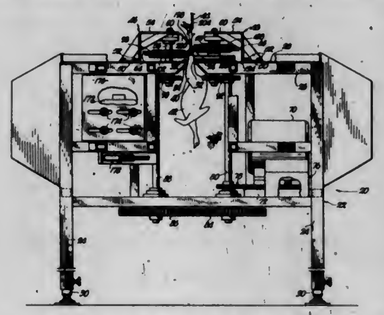


9. An apparatus for deheading shrimp which comprises a base, a movable member supported on said base and having a resilient surface, a pinching roller defining a plurality of circumferentially spaced ridges extending longitudinally on the periphery of said roller, said roller being rotatably supported on said base in coacting relation with said resilient surface to define a nip between said member and said roller for receiving shrimp head first thereby pinching the head from said shrimp, driving means supported on said base to operate said roller and said member, and means supported by said base to align said shrimp transverse to said nip.

3,281,890
SEPARATION OF POULTRY SHANKS FROM DRUMSTICKS
James A. Bonuchi, Merriam, Kans., and Jack L. Hathorn, Independence, and Ralph S. Zebarth, Kansas City, Mo., assignors to Gordon Johnson Company, Kansas City, Mo., a corporation of Missouri
Filed July 27, 1964, Ser. No. 385,339
14 Claims. (Cl. 17—45)

7. The method of separating the shank and the drumstick of a poultry carcass leg at the hock joint thereof comprising the steps of:
applying generally opposed combination cutting and

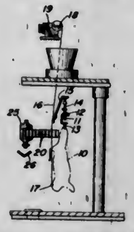
wedging forces to said leg laterally thereof at said joint with the forces offset in a direction longitudinally of the leg whereby one of the forces is applied at said joint to the convex rigid portion of the head of said drumstick, shifting the same inwardly and longitudinally of the leg in one direction, and the opposite of said forces is applied to the convex rigid



portion of the socket of said shank, shifting the same inwardly and longitudinally of the leg in the opposite direction to sever the skin covering of the joint therearound and to force the head of said drumstick out of the socket of said shank; and

thereupon cutting the tendons of said leg between said head and said socket.

3,281,891
HIDE-PULLING MEANS AND METHOD
Phillip A. Dethloff, Clarendon Hills, Ill., and Brice L. Thomas, Omaha, Nebr., assignors to Armour and Company, Chicago, Ill., a corporation of Delaware
Original application Jan. 29, 1964, Ser. No. 341,012, now Patent No. 3,231,931, dated Feb. 1, 1966. Divided and this application Oct. 4, 1965, Ser. No. 492,806
8 Claims. (Cl. 17—45)



3. In a process for removing the hide of an animal carcass in which the carcass is suspended by the hind legs and the hide near the bottom of the carcass is loosened, the steps of gripping the hide at the loosened portion, holding down the carcass by engaging the upper portion thereof, and exerting an upward pull to the hide from the gripped portion thereof.

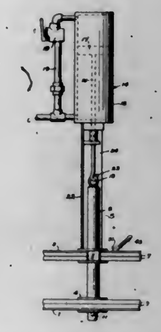
3,281,892
BEAD ALIGNER FOR TIRE MOLDING APPARATUS
Anthony T. Fassero, 194 98th Ave., Oakland, Calif., and James R. Maddox, Oakland, Calif.; said Maddox assignor to said Fassero
Filed Mar. 16, 1964, Ser. No. 352,268
8 Claims. (Cl. 18—2)

1. In a tire bead aligner

(a) a pair of spaced bead aligning elements fitting respectively on the opposite beads of a tire

(b) an aligner shaft extended through the centers of said bead aligning elements

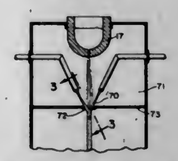
(c) means to anchor said aligner shaft in one of said bead aligning elements



(d) friction brake means in the other bead aligning element slidably engageable with the aligner shaft to hold the bead aligning elements on said aligner shaft in adjusted position

(e) and releasable means to apply said brake means at will.

3,281,893
CONTINUOUS PRODUCTION OF STRIP AND OTHER METAL PRODUCTS FROM MOLTEN METAL
Maurice D. Ayers, 121 Woodside Drive, Greenwich, Conn.
Filed Nov. 4, 1963, Ser. No. 321,246
1 Claim. (Cl. 18—2.5)



Apparatus for atomizing molten metal to produce powdered metal particles, which comprises

(a) means forming a chamber,

(b) a separator dividing said chamber into a substantially closed upper section and a lower section,

(c) said separator having an orifice-like opening connecting said chamber sections,

(d) means for discharging a stream of molten metal downward into said upper chamber section and toward and through said orifice, and

(e) nozzle means for directing wide, flat and substantially continuous sheetlike high velocity streams of quenching liquid into said upper chamber section and downward at an angle through said orifice,

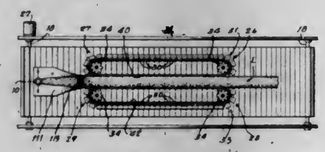
(f) said streams intercepting said molten metal and meeting substantially at said orifice,

(g) said orifice being of a size and shape to relatively closely receive the converging quenching liquid streams and to closely accommodate their downward passage through the orifice,

(h) the action of said high velocity stream of quenching liquid passing through said opening being effective to partially evacuate said upper chamber section, to effect partial vacuum degassing of the molten metal,

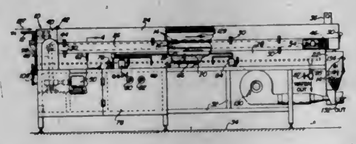
(i) said metal being disintegrated into finely divided and substantially irregular form.

3,281,894
MANUFACTURE OF EXPANDED CELLULAR PRODUCTS
Fred Buff, 59 Wyoming Road, Paramus, N.J.; Marcus French, 160 S. Church St., Hazleton, Pa.; and Warren Pollock, Orchard Lane, Conyngham, Pa.
Filed Oct. 2, 1964, Ser. No. 401,190
14 Claims. (Cl. 18—4)



1. Apparatus for the production of expanded cellular products from a liquid reaction mixture comprising means for generally uniformly distributing said liquid means at a deposit station, an endless traveling surface onto which said mixture is deposited at said deposit station for conveying said liquid mixture from said deposit station to a release station remote therefrom as said liquid mixture reacts to form said expanded cellular product, a pair of opposed traveling support elements between which said liquid mixture is contained during its travel from said deposit station to said release station, a plurality of support surfaces on each of said opposed traveling support elements, the opposed surfaces on said support elements cooperating to form a generally continuous shaped bottom support for said liquid mixture as it travels from said deposit station to said release station during the reaction thereof and the formation of said cellular product whereby said cellular product is formed with a shaped bottom portion.

3,281,895
APPARATUS FOR CUTTING AND EXPANDING PLASTIC MEMBERS
Robert E. Holden, Aloha, and James E. Morrow, Portland, Oreg., assignors to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon
Filed Nov. 9, 1964, Ser. No. 409,879
6 Claims. (Cl. 18—4)



1. Apparatus for cutting and expanding plastic elements, comprising:

a container for holding water;

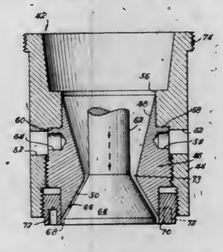
heater means for heating the water in said container to produce steam at atmospheric pressure;

a housing covering at least the top of said container to confine at least a portion of said steam within the housing at atmospheric pressure; and

conveyor means for continuously moving a plurality of separate plastic elements through said housing simultaneously to expose said elements to the steam within said housing for a predetermined time and cause the elements to expand substantially uniformly; and

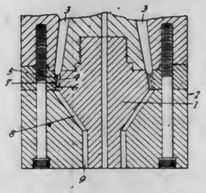
means for cutting said plastic elements from at least one strip of plastic material and for feeding said plastic elements onto said conveyor means.

3,281,896
PARISON EXTRUSION DIE
Louis William Meyer, Plaquemine, and Carroll John Macalusa, Baton Rouge, La., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Sept. 12, 1963, Ser. No. 308,445
2 Claims. (Cl. 18—14)



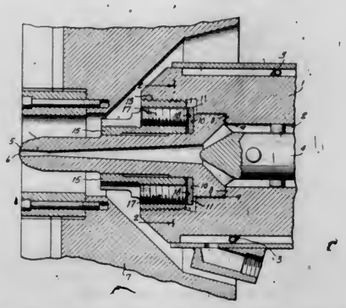
1. A parison extrusion die comprising, in combination: an extruder head piece; a mandrel positioned in said head piece, said mandrel having an end surface and an end portion which increases in diameter in the direction of said end surface; a throat piece supported in said head piece and terminated short of said mandrel end surface, said throat piece having a surface which conforms in shape with said mandrel end portion and is disposed adjacent thereto; means to adjust the relative longitudinal position between said throat piece and said mandrel; and a sleeve in sliding engagement with said throat piece and extendable therefrom for adjustment relative to the end surface of said mandrel, said mandrel and said sleeve forming an extrusion orifice which is adjustable, whereby curling and scalloping of the parison is substantially eliminated.

3,281,897
EXTRUDED PLASTIC TUBING
Frank Brian Mercer, Blackburn, England, assignor to Plastic Textile Accessories Limited, Blackburn, England, a British company
Filed Feb. 12, 1964, Ser. No. 344,400
Claims priority, application Great Britain, Feb. 15, 1963, 6,296/63
3 Claims. (Cl. 18—14)



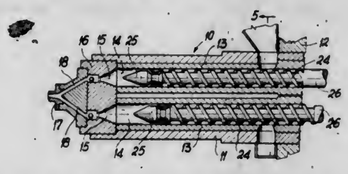
1. Apparatus for extruding plastic tubing comprising means for feeding plastic under pressure to a pair of circular die carrying members having contacting slideways and, on each side of the slideways, circumferentially spaced die orifice means, the die orifice means feeding a convergent annular-section passageway formed between inclined wall surfaces one of each die member and the convergent passageway feeding an annular tube extrusion slot of smaller diameter than that of the slideways and corresponding to the dimension of the tubular product required, and means for relatively displacing the die members about their common axis, so that the die orifices, the walls defining the convergent passageway and the walls defining the tube extrusion slot are relatively counter-rotated.

3,281,898
PRESET NOZZLE RETAINER FOR AN INJECTION MOLDING MACHINE
Francis E, Compton, Rochester, N.Y., assignor to Farrel Corporation, Rochester, N.Y., a corporation of Connecticut
Filed Oct. 28, 1963, Ser. No. 319,101
9 Claims. (Cl. 18—30)



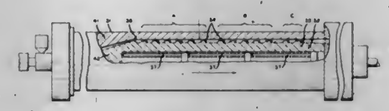
1. In an injection molding machine having an injection cylinder partially closed at one end by a removable injection nozzle, and means for retaining said nozzle comprising a threaded cylindrical chamber at the end of the injection cylinder positioned about the injection nozzle, a nozzle retaining assembly threaded into said chamber and about the nozzle behind a shoulder thereon, said retaining assembly having high pressure means for applying thrust against said nozzle shoulder.

3,281,899
INJECTION MOLDING APPARATUS WITH PLURAL RECIPROCATING SCREWS
Ernesto Dacco, 2 Via Villapizzone, Milan, Italy
Filed Jan. 27, 1964, Ser. No. 340,412
Claims priority, application Italy, Jan. 28, 1963, 1,684/63
6 Claims. (Cl. 18—30)



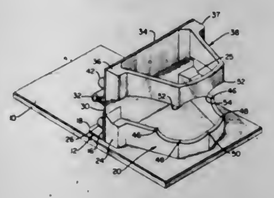
1. An injection molding machine, comprising, in combination, a plurality of injection cylinders, each having a front end and forming at said front end a pressure chamber; nozzle means connected to said front ends of said injection cylinders and communicating with said pressure chambers; a plurality of ram means respectively supported in said injection cylinders for rotational movement and for movement in axial direction between a forward injection stroke for ejecting material from the respective pressure chamber through said nozzle means and return stroke, each of said ram means including a plunger forming front end portion, a helically grooved plasticizing and feedscrew forming middle portion, and a rear portion; supply means individually communicating with each of said cylinders in the region of said middle portion of the ram means therein for supplying plastic material into said cylinders; drive means connected to said plurality of ram means for simultaneously rotating the same so that plastic material supplied by the supply means is progressively fed under pressure while being plasticized into said pressure chambers; and fluid actuated means constructed and connected to said rear portions of all of said ram means for simultaneously moving the same through equal distances along said forward injection stroke for ejecting material from said pressure chambers through said nozzle means and for individually controlling the return stroke of each ram means under the influence of the pressure built up in the respective pressure chamber during continuous rotation of the respective ram means.

3,281,900
EXTRUSION APPARATUS
William R. Whitney, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 13, 1964, Ser. No. 389,392
6 Claims. (Cl. 18—30)



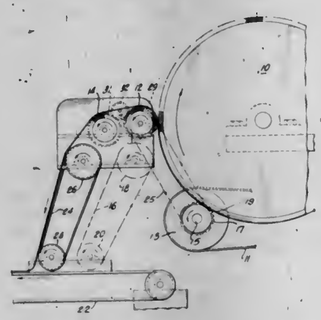
1. Flow control means for controlling a plastic mass in preparation for extrusion, comprising:
a body having a generally conical opening therein; and
a flow control mandrel in said conical section, said flow control mandrel comprising a generally conical member, said mandrel having a plurality of fluted channels thereon separated by a plurality of lands, said channels providing a passageway between said body and said mandrel, the number of said channels increasing in the direction of flow of said plastic mass whereby said passageway increases in cross sectional area in the direction of flow of said plastic mass therethrough, said lands conforming generally to the shape of said generally conical opening, thereby serving to resist distortion of said mandrel to contain said mandrel centrally positioned in said opening.

3,281,901
MODEL FORMER FOR DENTAL ARCHES
Harold G. Davis, Denver, and Thayer R. Brunson, Wheat Ridge, Colo., assignors to Rocky Mountain Dental Products Co., Denver, Colo., a corporation of Colorado
Filed Jan. 9, 1964, Ser. No. 336,807
6 Claims. (Cl. 18—34.1)



1. Apparatus for forming models of upper and lower dental arches in required occlusal alignment, comprising: a substantially flat base member; an angle-shaped mounting bracket means mounted transversely of said base member; a stationary form for molding a model of one of said dental arches attached to said angle-shaped mounting bracket; and a movable form for molding a model of the other of said dental arches hingedly connected to said stationary form to provide for movement from an open position to a closed position directly opposed to said stationary form.

3,281,902
METHODS FOR PRODUCING FIBROUS WEBS
Frank Kalwaites, Somerville, N.J., assignor, by direct assignments, to Johnson & Johnson, New Brunswick, N.J., a corporation of New Jersey
Filed June 29, 1962, Ser. No. 206,308
8 Claims. (Cl. 19—106)

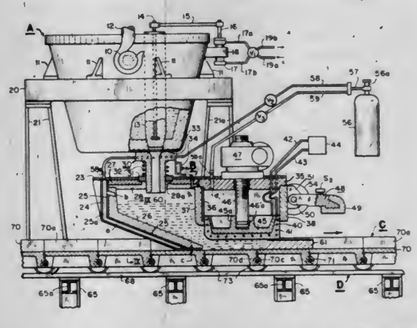


1. In a method of improving the cross strength and drafting characteristics of a fibrous web which comprises the steps of continuously carding fibers on a rotatable carding surface and transferring said carded fibers directly from said rotatable carding surface to projections lying in a rotatable surface having a much lower peripheral surface linear speed than that of said rotatable carding surface to form a carded fibrous web on said rotatable surface, said carded fibrous web having a predominant direction of fiber orientation along the longitudinal axis thereof, the improvement which comprises: transferring said carded fibrous web directly from said rotatable surface to projections lying in a second rotatable surface closely adjacent to but spaced from said first-mentioned rotatable surface by a clearance of from about 0.005 inch to about 0.175 inch, said second-rotatable surface moving in the same direction as said first-mentioned rotatable surface at the point of closest adjacency and having a peripheral surface linear velocity less than about 45% of the peripheral surface linear velocity of said first-mentioned rotatable surface to condense the fibrous web on the second rotatable surface so that it has at least about 2¼ times the weight it had on the first-mentioned rotatable surface but has increased cross strength, enhanced drafting characteristics, and substantially no predominant direction of fiber orientation.

3,281,903
METHOD AND APPARATUS FOR CONTINUOUS HORIZONTAL CASTING
Walter C. Ross, 1789 Hastings Mill Road, Bridgeville, Pa.
Filed Feb. 3, 1964, Ser. No. 341,957
13 Claims. (Cl. 22—57.3)

1. Apparatus for handling and casting molten metal into a lengthwise-extending integral piece which comprises, a frame, a housing carried by said frame and defining a molten metal receiving chamber therein and an adjacent control chamber therein, means for feeding molten metal into said receiving chamber, a series of pivotally-interconnected molds carried by said frame for forward movement horizontally beneath said housing, a movable wall operatively-carried within said control chamber and cooperating with said interconnected molds to define a horizontal mold chamber, a feed orifice open downwardly from said receiving chamber for feeding molten metal into a back end of said mold chamber, means for controlling the temperature of said movable wall to cast molten metal within said mold chamber, means for continuously forwardly-advancing said interconnected molds with respect to said housing as molten metal increments are progressively cast within said mold chamber and for advancing a forward portion of the cast metal piece out of a forward end of said mold chamber, and means for stripping the forward portion of the cast metal piece from the interconnected advancing molds forwardly of said mold chamber.

10. A method of continuously forming and advancing a longitudinally-extending metal slab which comprises, charging molten metal into a tundish chamber while protecting it from the ambient atmosphere, progressively endwise-forwardly advancing a continuously-pivotally-connected series of open-top and open-end molds horizontally in an aligned endwise-abutting relation along and beneath

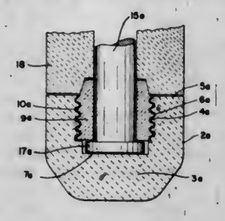


the tundish chamber while progressively feeding the molten metal from the tundish chamber forwardly-downwardly through a feed orifice into progressively advancing molds, casting the molten metal within a horizontal mold chamber defined between a top closure positioned forwardly of the feed orifice and cooperating under-positioned advancing molds to form a length of slab on a horizontal plane therein, maintaining a spaced relation between the advancing molds and the feed orifice at a back end of the mold chamber to facilitate the advancing movement of the molds, maintaining an inert gas curtain about the spacing between the feed orifice and the advancing molds at the back end of the mold chamber to seal-off the molten metal from the ambient atmosphere, advancing the slab forwardly out of a front end of the mold chamber on the horizontal plane as it is formed therewithin by carrying it within the advancing molds and while progressively forming and adding increments to its length within the mold chamber, sealing-off the forward end of the chamber from the ambient atmosphere, and stripping the slab from the advancing molds forwardly of the mold chamber.

3,281,904
STOPPER FOR A LADLE OR SIMILAR RECEPTACLE
Crawford B. Murton, Churchill, Pa., assignor to Vesuvius Crucible Company, Swissvale, Pa., a corporation of Pennsylvania
Filed Sept. 8, 1958, Ser. No. 759,670
2 Claims. (Cl. 22—85)

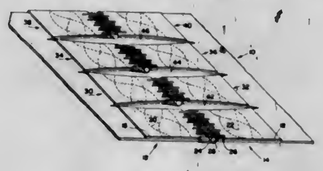
1. A stopper for a ladle or similar receptacle comprising a refractory head having a well extending downwardly thereinto, a rod having a lateral projection at its bottom

inserted downwardly into the well, the well being internally threaded, and externally threaded means threaded into the well into position to overlie at least a portion of



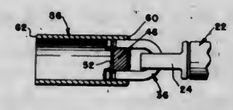
the lateral projection at the bottom of the rod and thereby block withdrawal of the rod from the well whereby to attach the rod to the head.

3,281,905
BELT CONSTRUCTION AND METHOD OF FORMING THE SAME
Joseph R. Wagner, Greeneville, Tenn., assignor to Huyck Corporation, Rensselaer, N.Y., a corporation of New York
Filed Oct. 14, 1964, Ser. No. 403,769
11 Claims. (Cl. 24—33)



6. In a papermakers' drier belt made from a flat material having a body portion and two ends which are joined together to render said belt endless, said ends being turned over to overlap said body portion and thereby form end portions which are substantially different in their response to environmental changes than said body portion, the improvement comprising a plurality of discrete seam segments disposed at spaced intervals along each of said end portions in the transverse direction of said belt, said seam segments being defined by apertures disposed between adjacent segments, each of said apertures extending longitudinally with respect to the belt substantially entirely across at least one of said turned over end portions, said apertures tending to compensate for differing responses of said end portions and said body portion to environmental changes.

3,281,906
COUPLING AND METHOD OF MAKING SAME
James A. Rakel, Cincinnati, Ohio, assignor to The National Marking Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed Nov. 18, 1964, Ser. No. 412,197
13 Claims. (Cl. 24—33)



1. A conveyor comprising a flexible member; means to support said flexible member for movement thereon; a coupling connecting the ends of said flexible member to form an endless movable member; said coupling comprising a swivel member having an opening extending therethrough at each end; a U-shaped member disposed in each of said openings with its spaced legs opening away from said swivel member; each of said legs having a peripheral groove therein adjacent the open end of each of said U-shaped members with the centerlines of said grooves being in a plane substantially perpendicular to the longitudinal axes of said legs; a collar closing the open end of each of said U-shaped members; each of said collars having oppositely disposed slots to accommodate said legs of said adjacent shaped member; each of said collars having one end in substantially the same plane as the centerlines of said grooves in said legs and the other end closer to the closed end of said adjacent U-shaped member; hollow tubular members fitting over said legs of each of said U-shaped members and said cooperating collars with one end of each of said hollow tubular members being in substantially the same plane as said other end of each of said collars; the other end of each of said hollow tubular members receiving an end of said flexible member; said hollow tubular member, said U-shaped member, and said collar being soldered together; means securing one of said hollow tubular members to one end of said flexible member; and means securing the other of said hollow tubular members to the other end of said flexible member.

3,281,907
RESILIENT LOCKING FASTENERS
Earl L. Featheringham, 1505 Byron Ave. SW., Massillon, Ohio
Filed Nov. 2, 1962, Ser. No. 234,998
3 Claims. (Cl. 24—73)



1. A resilient locking fastener comprising a unitary one-piece generally straight leaf spring having a central portion with a locking aperture for resilient, tiltable locking engagement of said fastener by said central portion upon an anchor pin, finger-grip and clamping portions projecting laterally from said central portion on opposite sides of said aperture, said fingergrip and clamping portions being angulated with respect to the plane of said central portion, said clamping portion being bifurcated and having parallel furcations with convex clamping surfaces, said furcations being sufficiently spaced and of sufficient length for embracing therebetween a shaft and with said clamping surfaces engaging and applying an axial thrust to a member slidably mounted upon said shaft.

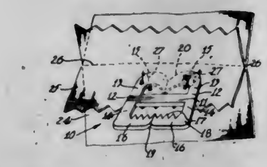
3,281,908
PIN CLIP
Viola I. Ross, R.D. 4, Box 572, Benton Harbor, Mich.
Filed Oct. 29, 1964, Ser. No. 407,355
5 Claims. (Cl. 24—86)

4. A pin clip for suspending a fabric article from a horizontal strand, comprising an elongated wire having a pointed end, a portion adjacent said pointed end being reverted to form a first resilient loop, and a grooved point retaining head at its other end, a portion adjacent the other end being reverted to form a second resilient loop, said loops lying in a common plane, said wire being oppositely bent between said first and second loops where-



by adjacent side portions of said loops abut resiliently to effect a clamping action on a horizontal strand inserted therebetween.

3,281,909
STRAP HOLDING DEVICE
June M. Schumacher, 15604 21st St. SW., Seattle, Wash.
Filed Nov. 6, 1964, Ser. No. 409,517
2 Claims. (Cl. 24—198)

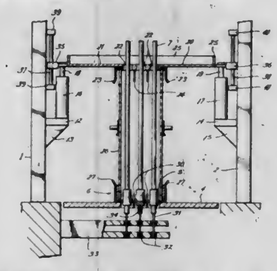


1. A device provided to be fastened within an outer garment for guiding a shoulder strap supporting an undergarment, said device comprising a central unifying stem, and cross members integral with opposite ends of said stem and extending in opposite directions therefrom in a common plane with said stem, said cross members on one side of said stem having end portions which comprise hooks which curve inwardly in said plane, said hooks being provided at their free ends with sharp points, which are adapted to pierce through the fabric of an outer garment, which points are positioned in close proximity with each other and with said stem, said cross members, on the other side of said stem, having end portions which extend towards each other in said plane in substantial alignment, and into close proximity at their ends with each other, to provide a split strap receiving eye.

3,281,910
CONCRETE MOLDING APPARATUS WITH ALIGNMENT MEANS
Harold G. Robinson, Austin, Tex., assignor to Austin Concrete Works, Inc., Austin, Tex., a corporation of Texas
Filed Aug. 23, 1963, Ser. No. 304,013
3 Claims. (Cl. 25—36)

1. An apparatus for forming molded concrete structures comprising,
a plurality of packer heads,
means for rotating said packer heads,
means moving said packer heads vertically,
a mold-receiving section positioned in a plane below said packer heads,
a hollow mold supported upon said mold-receiving section,
fixed dowel pins extending upwardly from said mold-receiving section and extending into the lower end of the mold when said mold is in position on said mold-receiving section,

guide means secured to the mold-receiving section, and surrounding the lower portion of the mold so as to extend upwardly along the exterior surface thereof to guide movement of the mold in a true axial direction when said mold is raised upwardly after the molding operation has been completed.



said guide means projecting upwardly to a plane above said dowel pins, whereby axial guiding of the movement of the mold is assured throughout the disengagement of said dowel pins from the material within the mold when said mold is raised, and
alignment means adapted for engagement with said packer heads in their lowermost position whereby said packer heads are maintained in alignment during initial packing.

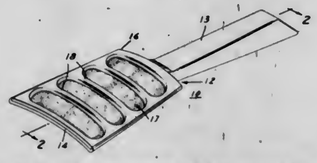
3,281,911
PALLET FOR MAKING PRESTRESSED CONCRETE
Robert S. Baker, Tampa, Fla., assignor, by mesne assignments, to American Concrete Crosstie Corporation, Tampa, Fla., a corporation of Florida
Original applications Oct. 5, 1959, Ser. No. 844,441, now Patent No. 3,128,521, dated Apr. 14, 1964, and Feb. 11, 1964, Ser. No. 344,095. Divided and this application Apr. 13, 1964, Ser. No. 359,053
3 Claims. (Cl. 25—118)



1. A portable pallet for molding prestressed concrete members comprising, a trough-shaped body, a header bridging one end of the body and fixed thereto, ledges extending from the opposite end of the body, a movable header separate from the body and seatable on the ledges in bridging relation to the end of the body, load-bearing struts along the side of the body extending the full length of the body having their ends abutting the headers, said headers each having a similar pattern of cable-receiving openings therein with a cable anchor at each recess, whereby stressing cables may be strung along the pallet with the cable ends anchored in the headers, and said movable header having spacing lugs thereon, the spacing lugs being located on the movable header a distance apart equal to the spacing of the load bearing struts so as to permit the header to seat against the ends of the body struts with the spacing lugs lying alongside the struts when the movable header is offset laterally relative to the pallet body to receive cables, and to permit the spacing lugs to seat against the ends of the body struts

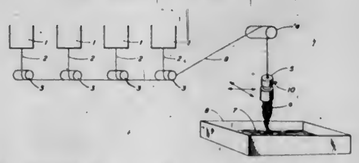
when the movable header is centered relative to the body to space the movable header an increased distance from the fixed header to tension, and hold tensioned, cables having their ends anchored in the pallet headers.

3,281,912
FABRIC GROOMING DEVICE
David A. Martin, 2375 Colgate Drive, Costa Mesa, Calif.
Filed Feb. 3, 1964, Ser. No. 342,060
5 Claims. (Cl. 26—28)



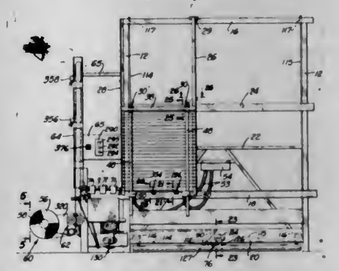
5. A device for grooming fabric comprising a base member having an outer curved surface, a sheet of abrasive material fitting against the curved surface of the base member, a web member having a curved surface matching the curved surface of the base member, means for holding the web member, the sheet of abrasive material and the base member together in that order in a sandwich configuration, said web member having a plurality of bars which define a plurality of openings through which the abrasive material may be exposed with varying degrees of effective contact with adjacent fabric in accordance with the orientation of the bars relative to the direction of motion of the device as it is rubbed against the fabric.

3,281,913
APPARATUS AND METHOD FOR HANDLING YARN BUNDLES
Edward A. Morehead and Merwyn L. Chase, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Aug. 10, 1964, Ser. No. 388,610
6 Claims. (Cl. 28—21)



1. An apparatus combination useful for forming and packaging a plurality of filaments into a container, said combination comprises a source of a plurality of filaments making up a strand, means for conducting said strand to and through a depositor device having high energy fluid supplied thereto, said device being in combination with a depositor traverse which incorporates means for intermittently varying the crosswise and lengthwise traverse velocities to prevent the occurrence of multiple or half multiple time ratios between the slow and fast traverse motions, the depositor device being characterized in that it comprises an entrance section adapted to impinge the high energy fluid onto the strand to be packaged in the container to generate a forwarding momentum therein and an exit section adapted to dissipate the forward momentum of the strand in a resilient storage chamber, the chamber being partially enclosed whereby the strand may exit in an axial direction and the high energy fluid as an exhaust may be exhausted in a radial direction and whereby the strand discharged into the container is not sensitive to the strand bed to depositor distance and the formation of mounds and voids in the strand bed as the strand is fed into the container is minimized.

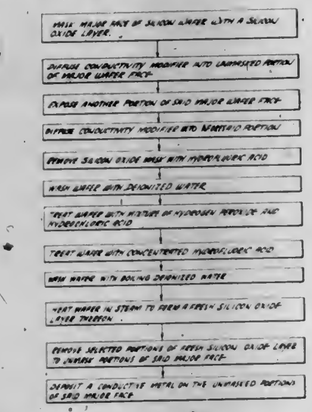
3,281,914
METHOD AND APPARATUS FOR ASSEMBLING VENETIAN BLINDS
Edwin J. Hunter and George H. Starrett, Riverside, Calif., assignors to Products Engineering Co., Riverdale, Calif., a co-partnership
Filed Aug. 21, 1964, Ser. No. 391,147
15 Claims. (Cl. 29—24.5)



1. A venetian blind assembly machine for cutting metal slats to length from a coil of slat stock, punching cord holes in said slats, and assembling said slats into ladder tapes depending from a preassembled headrail, said machine comprising:
a frame structure having laterally spaced, generally vertical guide means;
a headrail carrier mounted on said guide means for vertical sliding movement, said carrier having means for holding said headrail in a horizontal position;
means for raising said headrail carrier in increments equal to the vertical spacing between cross straps on said ladder tape;
means for supporting said coil of slat stock so that the slat stock can be fed into the machine along a path below said headrail and parallel thereto;
means for holding said ladder tapes with the sides thereof spread apart to the maximum width to receive said slats between them;
means on said machine for cutting said slat stock into individual slats of predetermined length, and for punching cord holes in said slats prior to inserting the slats into said ladder tapes;
a limit stop mounted on said frame in the path of said slat stock and engageable by the leading end thereof to stop said slat stock while the same is cut to length and cord holes are punched therein; and
driving means engageable with said slat stock for smoothly accelerating the same up to a relatively high linear velocity and then smoothly decelerating the slat stock down to a much slower linear velocity just prior to the impact of the leading end thereof against said limit stop, whereby the velocity of the slat stock at the instant of impact is below the velocity at which damage to the slat occurs.

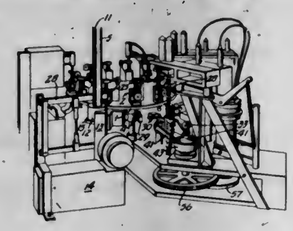
3,281,915
METHOD OF FABRICATING A SEMICONDUCTOR DEVICE
John A. Schramm, Chalfont, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed Apr. 2, 1963, Ser. No. 269,979
4 Claims. (Cl. 29—25.3)

2. The method of fabricating a semiconductor device, comprising the steps of:
masking a portion of one major face of a given conductivity type semiconductive wafer with silicon oxide;
diffusing an opposite conductivity type modifier into the unmasked portion of said one wafer face to form a region of opposite conductivity type adjacent said one face;
masking a portion of said one wafer face adjacent said opposite conductivity type region;



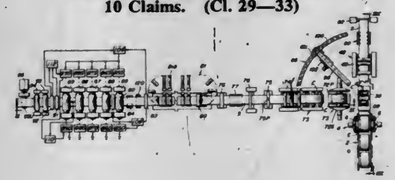
diffusing a given conductivity type modifier into the unmasked portion of said one wafer face to form a region of said given conductivity type within said opposite conductivity type region;
removing said silicon oxide mask;
cleaning said one wafer face with an etchant capable of oxidizing and removing contaminants therefrom; and,
forming a fresh silicon oxide layer upon said one wafer face.

3,281,916
APPARATUS FOR MAKING ELECTRICAL WINDING ASSEMBLIES
Bernard Morton Goldsmith, Westfield, N.J., assignor to Nytronics, Inc., Phillipsburg, N.J., a corporation of New Jersey
Continuation of application Ser. No. 727,612, Apr. 10, 1958. This application July 11, 1962, Ser. No. 211,929
18 Claims. (Cl. 29—33)



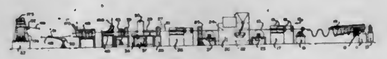
1. An automatic machine for making an encapsulated inductor, the capsule being initially an open ended, double walled insulated cylinder, the machine comprising means for forming a cylindrical coil having lead wires, the lead wires extending in the same direction and parallel to the axis of the coil, means for mounting the coil in the space between said walls with the lead wires extending through the open end of the cylinder, and means for applying insulated sealing means to the open end of the cylinder with the lead wires extending therethrough, thereby completely enclosing said coil between the double walls.

3,281,917
METHOD AND APPARATUS FOR COLD-ROLLING STRIP CONTINUOUSLY
Alfred Teplitz, Pittsburgh, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Jan. 8, 1964, Ser. No. 336,551
10 Claims. (Cl. 29—33)



1. A continuous cold reduction strip mill comprising means adapted to receive incoming coils of strip to be reduced, a first shear operatively associated with said means and adapted to crop the head end of a received coil of strip to prepare it for processing, means to support a prepared coil of strip to allow the strip to pay off therefrom, means to move a prepared coil to said last named means, a strip accumulator located on the exit side of said support means, a second shear located between said support means and said accumulator to crop the tail end of a coil being rolled, welding means adapted to weld the cropped head end of a prepared coil of strip to the tail end of the strip from a coil after it has been exhausted from the support means, a plurality of in line cold reduction stands adapted to receive strip from the accumulator and cold reduce it, means to coil the cold reduced strip, weld detector means between said accumulator and the first of said cold reduction stands, and control means adapted to reduce the rolling speed of said stands when a weld is detected by said weld detector.

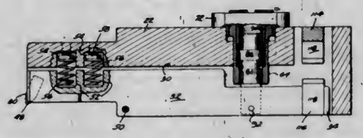
3,281,918
CONTINUOUS CLADDING SYSTEM FOR BIMETALLIC ROD
Francis E. Leib, Pittsburgh, Pa., and John G. Kura, Columbus, Ohio, assignors, by direct and mesne assignments, to Copperweld Steel Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 26, 1965, Ser. No. 428,051
24 Claims. (Cl. 29—33)



12. In a continuous system of cladding a core comprising a preformed metal rod moving along a passline with a cladding metal having a lower melting point and engaging said core initially in molten condition, apparatus comprising, in combination, a pay-out and welder assembly to provide a continuous length of core, a multiplane roller straightener for said core as it is paid out, a grit blaster having at least one cleaning pass for said core to thoroughly clean it, said blaster having dust removal means to inhibit adherence of dust to said clean core, a further multiplane roller straightener for said cleaned core, a roller guide, a tubular induction coil heater having an axial opening therethrough for said core, the entry end of said heater being positioned close to said roller guide, means for passing a protective gas through said axial opening entirely around said core in a direction counter to the direction of movement, a cladding fur-

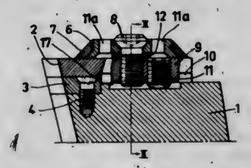
nace having a passway therethrough aligned with said passline, an entry guide to closely surround said core as it enters said cladding furnace adjacent the exit end of said axial opening, a sizing die on the exit side of said passway having the inner end of said sizing die projecting into the interior of said furnace a predetermined distance toward said entry guide, said furnace interior being adapted to receive molten cladding metal and maintain a pool thereof above said entry guide and sizing die at all times to provide a cladding layer for said core and produce a clad rod which exits hot from said sizing die, a roller guide for said clad rod as close as possible to but spaced from said exit side to avoid marking the cladding layer of said hot clad rod, a torque-controlled roller pulling device for said hot clad core, means for cooling said hot clad rod, means for forming a downward bow sag in said clad rod following said pulling device, means for maintaining said sag between lower and upper limits, and a coiling device for said cooled clad rod, said last-named means operating to speed up said coiling device when said sag reaches its lower limit and to slow down said coiling device when said sag reaches its upper limit.

3,281,919
DIAMOND BURNISHING APPARATUS
Arthur L. Estry, Jackson, and Samuel M. Worthington, Grass Lake, Mich., assignors to Crankshaft Machine Company, Jackson, Mich., a corporation of Michigan
Filed Jan. 21, 1965, Ser. No. 426,871
10 Claims. (Cl. 29—90)



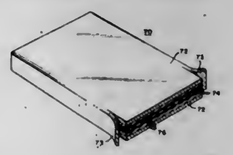
1. Burnishing apparatus comprising, in combination:
(a) a support body,
(b) a tool-supporting lever pivotally mounted upon said support body for selective pivotal movement about an axis in a tool retracting direction and a tool operative direction,
(c) a burnishing tool mounted upon said lever, and
(d) lever actuating means associated with said lever adapted to pivot said lever about said axis.

3,281,920
METAL CUTTING TOOL WITH AN ADJUSTABLE UNIT SERVING AS CHIP BREAKER AND CLAMP
Stig Lennart Eriksson, Fagersta, Sweden, assignor to Fagersta Bruks Aktiebolag, Fagersta, Sweden, a Swedish joint-stock company
Filed Mar. 6, 1964, Ser. No. 349,994
Claims priority, application Sweden, Mar. 8, 1963, 2,578
7 Claims. (Cl. 29—96)



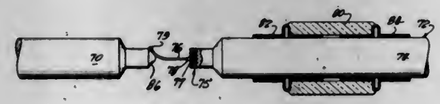
1. A cutting tool comprising: a tool holder; a prismatic cutting bit mounted detachably on said holder and having cutting edges provided at intersections between the top and bottom surfaces and the side surfaces of the bit; a unit acting as a chip breaker and clamping member for clamping the bit onto said holder and mounted above said bit; an intermediate member adjustably mounted on the holder and arranged between said unit and said holder in the direction of adjustment behind said bit; securing means connecting said unit with said intermediate member for releasably fastening said unit to said intermediate member; and lock means connecting said intermediate member with said holder for releasably clamping said intermediate member into locking abutment with said holder.

3,281,921
SWAGING PROCESS FOR FORMING A FLATTENED COMPOSITE THERMOELECTRIC MEMBER
Joseph C. Danko, Pitcairn, Pa., and Paul M. Bergstrom, Danville, Calif., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 26, 1961, Ser. No. 119,654
2 Claims. (Cl. 29—155.5)



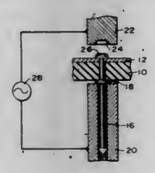
1. A process for forming a thermoelectric member comprising (1) providing a metal member having an internal elongated hollow space with at least two parallel side walls, (2) disposing at least one electrically conductive partition member parallel to the said parallel side walls in order to provide a plurality of compartments in the elongated hollow space, (3) introducing different thermoelectric materials into each of the said compartments, (4) sealing the ends of the hollow space in order to confine the thermoelectric materials, (5) swaging the sealed assembly in a direction parallel to the said parallel side walls whereby to provide an elongated flattened assembly wherein the thermoelectric material is compacted into a body in firm and intimate contact with the partition members and the metal member.

3,281,922
METHOD FOR ASSEMBLY OF SEMICONDUCTOR DEVICES
Ernie A. Ferris, Westminster, Calif., assignor to TRW Semiconductors, Inc., Lawndale, Calif., a corporation of Delaware
Filed Oct. 24, 1963, Ser. No. 318,597
6 Claims. (Cl. 29—155.5)



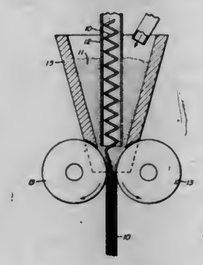
1. The method of assembling a semiconductor device comprising the steps of:
conductively securing a semiconductor body to the end face of a crystal pin;
bonding one end of a whisker element to a preselected position on the surface of said semiconductor body;
coaxially aligning a dummy pin with said crystal pin adjacent the other end of said whisker element;
bonding the other end of said whisker element to the end of said dummy pin;
slidably positioning a cylindrical housing over the adjacent ends of both pins, said whisker element and said semiconductor body; and
thereafter hermetically sealing said housing to both of said pins.

3,281,923
METHOD OF ATTACHING LEADS TO THIN FILMS
Howard S. Best and Norman M. Edelson, Raleigh, N.C., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Aug. 27, 1964, Ser. No. 392,393
7 Claims. (Cl. 29—155.5)



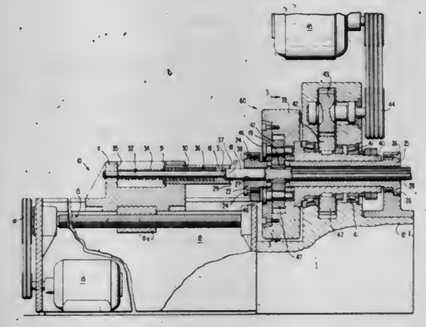
1. A method of attaching a lead to a thin electroconductive film applied to a flat apertured substrate wherein said aperture also extends through said film comprising the steps of
(a) providing a lead having an outwardly extending flange intermediate the ends thereof,
(b) inserting one end of the flanged lead through said aperture so that a portion of said one end extends beyond said substrate while said flange is disposed adjacent the aperture bordering region of said substrate,
(c) applying a force to said lead along the longitudinal axis thereof to upset said portion of said lead and clamp the substrate-film combination between said flange and the upset portion, and
(d) heating the lead to a temperature sufficient to fusably unit said lead to said film at the aperture bordering region thereof by dissipating electrical energy within said lead.

3,281,924
PROCESS FOR PRODUCING ELECTRICAL RESISTANCE HEATERS
Harold H. Hirsch, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 27, 1963, Ser. No. 333,986
5 Claims. (Cl. 29—155.62)



1. A process for manufacturing electrical resistance heating elements, said process comprising providing an electrically insulated electric resistance wire shaped in the form of a helix having a plurality of turns, surrounding the helix and each of the turns thereof with thermally conductive metal powder, and compacting the metal powder and simultaneously flattening the turns of the helically-shaped resistance wire into flat sinuous form, thereby densifying the metal powder and elongating and flattening the helix.

3,281,925
METHOD AND APPARATUS FOR FORMING TOOTHED PARTS
Edward Hanna, P.O. Box 358, Blue Ridge Summit, Pa.
Filed June 11, 1964, Ser. No. 374,314
19 Claims. (Cl. 29—159.2)

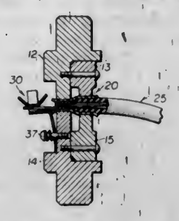


1. A method of forming a toothed contour on a workpiece by plastically deforming the workpiece, said method comprising the steps of:
feeding an unformed workpiece axially through the central opening of an integral, continuous annulus in which said opening has a tooth-shaped cross sectional contour having each peripheral segment complementary to a corresponding segment of the contoured workpiece, and
alternately applying and releasing an inwardly directed force on opposing segments of said annulus to flex it elastically and displace opposing segments of said tooth-shaped opening radially around the periphery into and out of deforming contact with said workpiece,
whereby repeated impact of all sectors of surfaces defining said tooth-shaped opening deforms the exterior of said workpiece as it is fed through said opening and conforms the surface of said workpiece to the toothed contour of said opening.

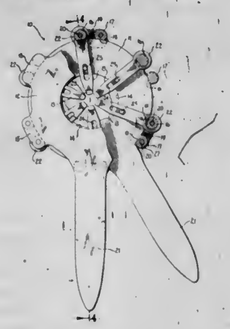
3,281,926
MEANS FOR POSITIONING CONNECTORS
Frank Frastaci, Parma, and Richard B. Freeman, Cleveland, Ohio, assignors to ETG Incorporated, Cleveland, Ohio, a corporation of Ohio
Filed Aug. 21, 1963, Ser. No. 303,476
7 Claims. (Cl. 29—203)

1. In combination with a plurality of relatively movable dies having die surfaces for crimping a ferrule portion of a connector to an electrical conductor, a device for axially positioning the ferrule portion of the connector in a fixed position relative to the die surfaces prior to a crimping operation, comprising means fixed to one of the dies for resiliently clamping a projecting end of a connector in a predetermined position so that the ferrule portion is properly positioned on a die surface prior to a

crimping operation, said clamping means permitting axial and radial elongation of said ferrule portion and permitting said projecting end to move axially within the clamping means during a crimping operation.



3,281,927
TOOL FOR DILATING ELASTIC RINGS AND TUBES
Rolland Buslaff, W233 N671 Highway 164, Waukesha, Wis.
Filed June 22, 1964, Ser. No. 376,637
8 Claims. (Cl. 29—235)



1. A tool for dilating articles such as elastic rings and tubes, characterized by:

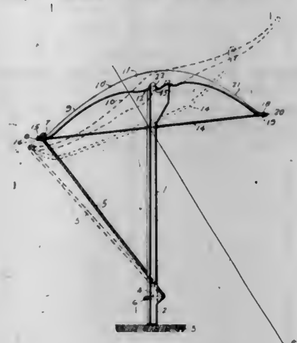
A. a pair of coaxial annular disc-like members, one of said members providing a lever mounting disc and the other providing a lever actuating disc;

B. means connecting said members together in flatwise juxtaposition and constraining them to relative rotary motion about their axis;

C. a number of substantially identical levers slidably confined between the discs and pivotally carried by the lever mounting disc for swinging motion about axes which are equispaced radially from and circumferentially about the disc axis and parallel thereto, said levers extending inwardly from their pivots beyond the edge of the central hole in one of the discs, and having fingers which project axially through said hole;

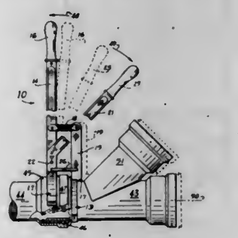
D. and means connecting the levers with the lever actuating disc at locations spaced equal distances from their pivots, and operable upon rotary movement of either disc relative to the other to simultaneously impart swinging motion to all of said levers to effect either iris-like dilating or contracting movement to the fingers on the inner ends of the levers depending upon the direction of such relaitve rotary motion of the discs, whereby an elastic tube or ring encircling the fingers can be dilated in consequence of relative rotary motion of the discs in one direction.

3,281,928
BOW STRINGER
Wilbur A. Dolch, Westlake, La., assignor to Dolch Enterprises, Inc., Westlake, La., a corporation of Louisiana
Filed May 24, 1965, Ser. No. 458,044
2 Claims. (Cl. 29—235)



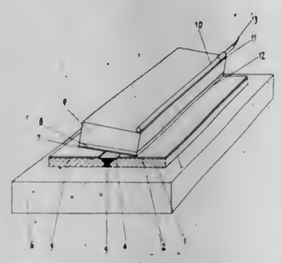
1. A bow stringer device for stringing and unstringing archery bows comprising a post with flexible anchor means attached near the lower end of said post and extending upwardly therefrom for attachment to the lower limb of an archery bow, a socket means near the upper end of said post for receiving the middle portion of an archery bow.

3,281,929
APPARATUS FOR ASSEMBLING BELL-AND-SPIGOT PIPING
John P. Shinnick, Orange, Tex., assignor of one-fourth to Ernest R. Archambeau, Jr., Houston, Tex., and three-eighths to Clyde Granger, Orange, Tex.
Filed Apr. 25, 1966, Ser. No. 544,783
10 Claims. (Cl. 29—237)



1. A tool for assembling or disassembling piping members respectively having a female or bell end adapted to receive the male or spigot end of the other and comprising: first and second pipe-engaging means spaced apart from one another and each including rigid extension means extending laterally therefrom and substantially parallel to one another, one of said pipe-engaging means having a portion adapted to abuttingly engage the bell end of a piping member; means adapted for releasably securing the other of said pipe-engaging means to the spigot end of a piping member to be introduced or removed from the bell of the first-mentioned piping member; linkage means pivotally interconnecting one of said extension means to an intermediate position on the other of said extension means for holding said one extension means spaced from said intermediate position; lever means pivotally mounted to said first pipe-engaging means; and force-transmitting means interconnecting said lever means to said second pipe-engaging means.

3,281,930
JOINING CLAD METAL PARTS
Stanley Fordham, West Kilbride, Scotland, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed Oct. 24, 1963, Ser. No. 318,604
Claims priority, application Great Britain, Oct. 24, 1962, 40,279/62
6 Claims. (Cl. 29—470.1)



1. A method of joining together separate pieces of clad metal, each of which comprises a base metal substrate having a cladding metal thereon and edges to be joined, said method comprising joining together the edges of the base metal substrates by fusion thereby forming a discontinuity in the cladding metal, placing a strip of said cladding metal over the discontinuity at the resulting joint so that said strip extends over a portion of the cladding metal on each side of the joint, covering the strip with a layer of explosive and detonating the explosive thereby bonding said strip of cladding metal to the cladding metal bonded to the substrate.

3,281,931
HIGH TEMPERATURE CERAMIC-METAL SEAL
Joseph W. Ritz, Little Silver, N.J., assignor to The Bendix Corporation, Eatontown, N.J., a corporation of Delaware
No Drawing. Filed Oct. 10, 1963, Ser. No. 315,337
2 Claims. (Cl. 29—473.1)

2. A method of making a ceramic-metal seal which comprises coating a predetermined area of a ceramic body with a mixture in the following ranges: 5 to 0.25% yttrium oxide and 95 to 99.75% tungsten powder, firing said ceramic body at a temperature over 1450° C. to sinter said mixture with said ceramic body, plating said sintered area, and brazing to a metal member to form a vacuum-tight seal.

3,281,932
WELDING COMPOSITION AND METHOD
Lionel Cinamon, Point Drive S., Lake Peekskill, Putnam Valley, N.Y.
No Drawing. Filed Nov. 19, 1963, Ser. No. 324,878
11 Claims. (Cl. 29—495)

1. A liquid, reaction weld-enhancer mixture composition flow-coatably applicable at the site and along the route of a weld to be made in metal, which composition comprises

(A) as a minor portion thereof a mixture of finely divided weld-improving agents which include,

(a) as by far the major part of said mixture of said agents, a mixture of oxygen-getter elements consisting essentially of,

(i) by far its minor fraction, the metalloid silicon, and

(ii) by far its major fraction, at least one member of the class of light weight metals consisting of aluminum, magnesium, and zinc; and

(b) as by far the minor part of said weld-improving agents, at least one weld-enhancer material member of the class consisting of the multivalence heavy metals molybdenum, titanium and zirconium, and the alkaline earth metal carbonates; said mixture of weld-improving agents being admixed in

(B) a flow-coatable, non-carbonizing, adherent-film-leaving, organic suspending-binding vehicle which is the major portion of said composition and comprises

(a') an organic thermo-setting film-forming resinous binder soluble in substantially hydrocarbon solvents and inert to said weld-improving agents, which binder, after evaporation of the solvent medium in which it is dispersed, serves to hold the particles of said agents fixedly dispersed in an adherent film on the surface of the metal to be welded with said film being substantially dry-to-the - touch, non - peeling and non - flaky after thermo-setting and non-combustible when subjected on the surface of said metal to a temperature about 500° F. and without appreciable change in adhesion thereto at about 700° F. and substantially non-carbonizing when finally burning away at higher temperature; and,

(b') as the major content of said vehicle, a primarily hydrocarbon solvent for said binder, which solvent is otherwise inert to said binder and to said weld-improving agents, and being volatilizable from a film-coating of said mixture composition deposited on said metal to be welded, at from ambient temperature to a temperature under the flash point of the solvent below the welding temperature, to leave behind a substantially completely continuous and adherent film of the binder having the admixed weld-improving agents fixedly dispersed within it; said composition containing by weight from at least about 0.1 percent of at least one of the aforesaid weld-enchancer materials up to a total of about 5 percent of any of them included, and from about 0.5 to about 1.5 percent of silicon; the total of admixed weld-improving agents being so proportioned to the suspending-binding vehicle to enable the complete liquid composition to be applied by flow-coating to the metal to be welded, and the resinous binder being so proportioned to the solvent and the mixture of all of said weld-improving agents to enable a substantially completely continuous, firmly adherent, dry-to-the-touch, non-peeling and non-flaky thermo-set film of the resinous binder with the particles of the admixed weld-improving agents fixedly dispersed therein to be applied to the metal to be welded.

3,281,933
METHOD FOR PREPARING A TILTED NIB
Hans Reinhard Fehling, Zug, Switzerland, and Edward Henry Harvey, London, Alfred Dennis Street, Pinner, Middlesex, and James John Pateman, West Harrow, Middlesex, England, assignors to I.R.C. Limited, London, England, a company of Great Britain
Filed May 29, 1963, Ser. No. 284,175
Claims priority, application Great Britain, June 1, 1962, 21,137/62
14 Claims. (Cl. 29—520)

1. A method of making a writing extremity having an offset ball socket for a ball point writing instrument

from a blank which includes a ball-receiving socket portion at the forward end and a rearwardly extending tubular portion comprising applying a longitudinal restraining force to the blank symmetrically about its axis and applying to the blank at a location laterally displaced from the axis of the tubular portion by relative motion of a member in a direction parallel to the axis of the blank a component of force directed generally parallel to the axis of the tubular portion so as to tilt the axis of the socket portion with respect to the axis of the tubular portion.

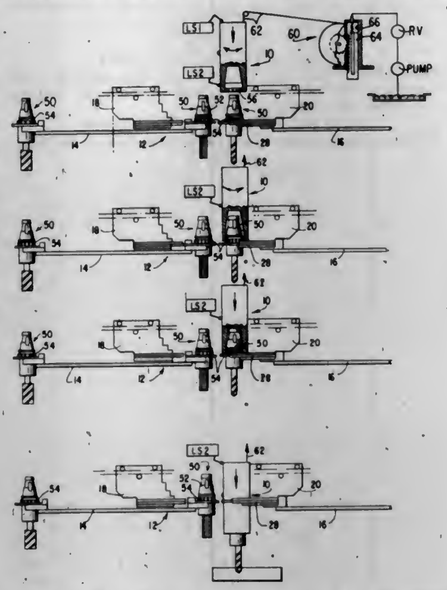
14. A method for making a writing extremity having an offset ball socket for a ball point writing instrument from a blank which includes a ball-receiving socket portion at the forward end, a rearwardly extending tubular portion, and an intermediate portion joining the socket portion and the tubular portion and having an internal abutment which extends transversely to the axis of the tubular portion comprising disposing the blank between a collar having a key formation and arranged to engage the outer surface of the blank rearwardly of the ball-



receiving socket in the socket portion and an opposed tubular mandrel member arranged to engage the abutment at a location laterally spaced from the axis of the tubular portion comprising inserting the mandrel member into the tubular portion so as to engage the abutment at the laterally spaced location, and, by relative axial movement between the mandrel member and the collar, forcing the collar over the blank and onto the mandrel member so that the tubular portion of the blank is reduced in diameter so as to affix it to the mandrel member and so that the axis of the socket portion is tilted with respect to the axis of the tubular portion and the collar becomes affixed to the mandrel member with the key formation oriented in predetermined angular relation to the plane of tilting of the socket portion.

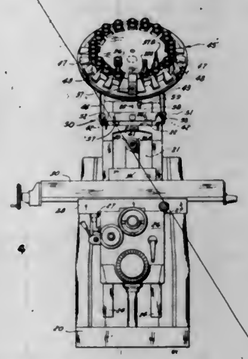
3,281,934
SPINDLE OSCILLATOR FOR TOOL CHANGER APPARATUS
Robert A. Lehmkuhl, Appleton, and Jack A. Wohlfeil, Fond du Lac, Wis., assignors to Giddings & Lewis Machine Tool Company, Fond du Lac, Wis., a corporation of Wisconsin
Filed Feb. 24, 1964, Ser. No. 346,690
5 Claims. (Cl. 29—568)

1. In a machine tool including an axially movable, rotatable spindle adapted to receive a cutting tool, said spindle and cutting tool having a multiplicity of closely spaced mating drive elements respectively, and the combination comprising, power means for mechanically changing tools in said spindle including means for holding a tool in alignment with said spindle for insertion therein upon relative axial movement therebetween, means for oscillating said spindle with periods of delay between periods of motion as an incident to said relative axial movement of said spindle and said tool to secure mating engagement of said drive elements, and means for con-



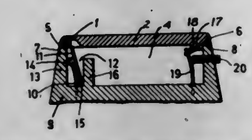
trolling said oscillations including means for selectively timing said periods of motion and for timing said periods of delay.

3,281,935
MACHINE TOOL WITH A TOOL CHANGER
Frank Zankl and Earl R. Lohneis, Milwaukee, Wis., assignors to Kearney & Trecker Corporation, West Allis, Wis., a corporation of Wisconsin
Original application Aug. 30, 1962, Ser. No. 220,413, now Patent No. 3,218,706, dated Nov. 23, 1965. Divided and this application Nov. 17, 1965, Ser. No. 508,208
11 Claims. (Cl. 29—568)



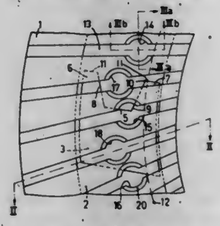
1. In a machine tool:
a base;
a column mounted on said base and extending upwardly therefrom;
a removable housing mounted on the top of said column;
means securing said housing to said column in operating position;
a tool receiving spindle journaled in said column;
tool storage means supported by said housing for storing the tools that are to be used in said spindle;
a tool transfer member movably carried by said housing for interchanging tools between said spindle and said storage means; and,
actuating means mounted in said removable housing and connected to said tool transfer member for actuating said member in its movements for performing the tool transfer operation.

3,281,936
FLIP-TOP HEAD FOR DRY SHAVER
Jan de Haan and Eduard Willem Tietjens, Drachten, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 23, 1963, Ser. No. 332,453
Claims priority, application Netherlands, Jan. 22, 1963, 288,053
8 Claims. (Cl. 30—41.6)



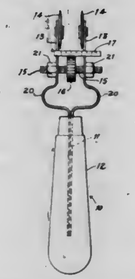
1. A shaving head for mounting on a housing of a dry shaving apparatus having a recessed portion with an outer rim for supporting said shaving head comprising the lower edge of said shaving head bearing on said outer rim, said shaving head having at least one shear plate, a movable wing stanchion in the recessed portion of said housing, a mounting shaft for an edge of said shaving head and connected to said wing stanchion, means for pivotally mounting said shaft and being located in the interior of said housing, a spring engaging said wing stanchion and adapted to displace said wing stanchion and said shaving head a relatively small distance in a direction substantially at right angles to said wing stanchion when said shaving head is moved to its open position.

3,281,937
SHAVING HEAD SHEAR PLATE WITH VARIOUS DEPTHS OF APERTURES THEREIN
Gerrit Starre, Arie Fransen, and Henricus Josef Driessen, Drachten, Netherlands, assignors to North American Philips Company Inc., New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 266,910, Mar. 21, 1963. This application June 9, 1965, Ser. No. 462,671
Claims priority, application Netherlands, Apr. 16, 1962, 277,302
2 Claims. (Cl. 30—43.6)



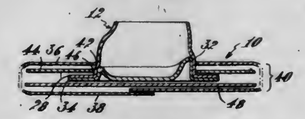
1. A shaving head for use in a dry shaver comprising a U-shaped movable cutting member having cutting surfaces on the top of the legs of said cutting member and a further cutting surface on the bight portion of said cutting member, the opposed sides of said U-shaped cutting member extending obliquely to the direction of movement of said cutting surfaces of said cutting member and being at an angle of less than 45° to the direction of movement of said cutting member, and a skin-contacting shear plate having a plurality of slots therein, an annular groove in said shaving head located underneath said shear plate, said U-shaped cutting member being movable in said annular groove, the portion of said shear plate adjacent to said annular groove having a central part of smaller cross-section than the outer parts thereof, the cross-section of the central part of said portion of the shear plate being uniform throughout its entire width, and the cutting surfaces on the top of the legs of said cutting member co-acting with the outer parts of said portions of said shear plate while the further cutting surface co-acts with the central part thereof.

3,281,938
MARKING DEVICE FOR THE GARMENT TRADES, ETC.
Bob Nakayama Lee, 1616 78th St., Brooklyn, N.Y.
Filed June 3, 1965, Ser. No. 466,359
1 Claim. (Cl. 30—365)



A marking tool comprising an elongated member including bifurcations at one end and elongated shank portions at the other end, enlarged rounded bends joining the bifurcations to the shank portions for imparting flexibility thereto, said bifurcations comprising arms terminating in marking members, threaded nuts integrally secured to said arms, the arms having threaded openings corresponding to and communicating with the threaded openings of the nuts, and a threaded bar in cooperative engagement with said nuts for adjusting the distance between said arms.

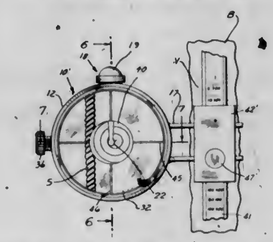
3,281,939
TRANSPARENT SHOE FORM
James R. McGinnity, Danvers, Mass., assignor to Mrs. Day's Ideal Baby Shoe Company, Inc., Danvers, Mass., a corporation of Massachusetts
Filed Oct. 10, 1963, Ser. No. 315,166
14 Claims. (Cl. 33—3)



1. A transparent shoe form comprising a hollow shell having top and bottom parts which collectively provide a space into which a foot may be thrust, said space having an interior contour corresponding in shape and size to a shoe of a predetermined size, means joining the parts com-

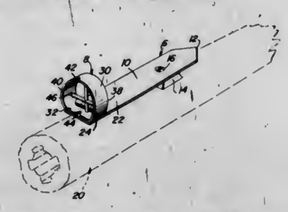
prising a first peripheral flange extending downwardly from the bottom part providing a peripheral face, a second peripheral flange extending downwardly from the lower edge of the top part telescopically engageable with the face of the first peripheral flange, and a peripheral flange extending laterally outward from the lower edge of the first peripheral flange in the plane of the bottom part providing a support for the form and for the lower side of the second peripheral flange.

3,281,940
BOW SIGHT AND METHOD OF SIGHTING SAME
Matthew J. Harrigan, 1369 Evergreen Ave., Schenectady, N.Y.
Filed Aug. 11, 1964, Ser. No. 388,885
15 Claims. (Cl. 33—46)



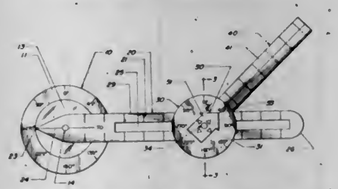
1. A sighting device for attachment to an archery bow having a bowstring connected between opposite end portions thereof comprising: an assembly providing a reflecting surface having a sighting window immediately adjacent thereto and means for attaching said assembly at one side of the central zone of an archery bow with the reflecting surface directed towards the bowstring so that the target may be sighted through the sighting window and the bow and bowstring may be rotated as a unit when held in a vertical plane to align the reflection of the bowstring in the reflecting surface to intersect the sighting window.

3,281,941
DUAL PURPOSE GUNSIGHT
Joe Oblack and Leona L. Oblack, both of Rte. 3, Box 387–A, Gold Beach, Oreg.
Filed Dec. 18, 1964, Ser. No. 419,389
3 Claims. (Cl. 33—53)



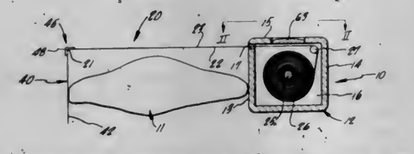
1. In combination with the barrel of a firearm having a front sight, a dual purpose rear sight including base means secured to said barrel, a convertible rear sight including a substantially closed frame defining a medial plane and including a pair of opposite sides disposed on opposite sides of said medial plane and also defining a base edge portion extending along one marginal portion of said frame, means pivotally securing said base edge portion to said base means for oscillation relative thereto about an axis extending along said base edge portion and transversely of said barrel between a first position with said medial plane disposed generally normal to the longitudinal center line of said barrel and a second position with said medial plane rotated approximately 90° and generally paralleling said center line, said frame including portions thereof projecting inwardly of its peripheral portions and defining a visual reference point centrally disposed relative to said frame and usable in conjunction with said front sight to define a line of sight extending therebetween when said frame is in said first position, said frame including notch means opening upwardly of said frame and lying on said line of sight when said frame is in said second position whereby said portions projecting inwardly of the peripheral portions of said frame and defining a visual reference point and said notch means may be selectively utilized in the corresponding positions of said frame to define the same line of sight.

3,281,942
NAVIGATIONAL COURSE FINDER
William E. Preuit, 1014 N. Custer, Grand Island, Nebr.
Filed Oct. 4, 1965, Ser. No. 492,483
2 Claims. (Cl. 33—98)



2. A navigational course finder device comprising:
(A) A horizontal circular diso primary compass rose having planar upper and lower surfaces adapted to lie substantially parallel upon a cartographic chart, said compass rose having a vertical primary pin intersecting the geometric center of the compass rose, the lower portion of said vertical central pin being of a convergent configuration to provide a lower anchor means, a central portion of the compass rose between the vertical pirmary pin and the peripheral angular indicia being visually transparent,
(B) A primary elongate flexible arm having planar upper and lower surfaces superimposed upon the primary compass rose, said elongate arm being rotatably and pivotably attached to the primary compass rose with said vertical central primary pin, said vertical central pin passing through the primary elongate arm nearer to the first end thereof, the primary arm first end extending beyond the primary compass rose transparent central portion so as to be adjacent to the peripheral angular indicia thereof, the primary arm first end being integrally provided with a pointer means, said primary elongate arm having a graduated cartographic distance scale commencing at the vertical central primary pin and extending toward the primary arm second end, the graduate scale length of the primary arm having a longitudinal central slot, said primary arm including a lug slidably disposed along the primary arm longitudinal slot,
(C) A secondary compass rose of disk-like shape and having a planar bottom surface that is frictionally engaged with the primary arm upper surface, said secondary compass rose being pivotably and revolvably attached to the slidable lug by means of a secondary vertical pin intersecting the geometric center of the secondary compass rose and the slidable lug, said secondary pin extending upwardly from said secondary compass rose and extending downwardly from the slidable lug,
(D) A pivotal indicator having a planar lower surface that is frictionally engaged with the secondary compass rose upper surface, said pivotal indicator being pivotably engaged by the upward extension of the secondary pin, and
(E) A visually transparent secondary elongate arm having planar upper and lower surfaces, the upper surface thereof abutting the lower surface of the primary elongate arm, the lower extension of the secondary vertical pin passing through the secondary elongate arm adjacent to the first end thereof so that the secondary elongate arm is pivotably and revolvably engaged with the slidable lug, said secondary elongate arm having a graduated cartographic distance scale markings along the longitudinal length thereof, the longitudinal central axis of the secondary elongate bar being visually marked, the vertical thickness of the secondary elongate arm being substantially equal to the thickness of the primary compass rose transparent central portion.

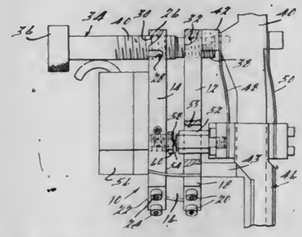
3,281,943
TAPE MEASURE
John Maksim, Jr., 8165 Cornwall Ave., Etiwanda, Calif.
Filed Nov. 13, 1964, Ser. No. 412,286
14 Claims. (Cl. 33—138)



1. Apparatus for measuring a linear dimension comprising a housing defining an enclosed chamber therein and having a straight exterior side and a slot aperture from the chamber to the side at one end thereof, an elongated strip substantially inelastic in the direction of its elongate extent and resiliently flexible in the direction of its thickness, the strip passing through the slot aperture so that one end of the strip is disposed in the chamber and the other end is disposed exteriorly of the housing, one side of the strip carrying a scale calibrated in selected units of measurement, the scale having its origin at the other end of the strip, reeling means in the housing coupled to the one end of the strip operable to coil the strip on itself when the other end of the strip moves toward the housing, an elongated normally straight post member similar to said strip having resilient flexibility in the direction of its thickness for coiling in the housing with the strip when the post member is aligned and engaged with the strip and the strip is substantially fully coiled in the housing and having sufficient length that it is coiled with the strip in the housing when the strip is substantially fully coiled in the housing, and hinge means hingably connecting one end of the post member to the other end of the strip for movement of the post member into and out of parallel alignment and overlying engagement with the strip, the hinge means including means for limiting movement of the post member out of alignment with the strip to a position in which the post member is normal to the thickness of the strip.

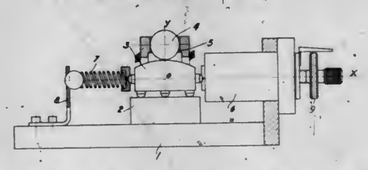
3,281,944
VERNIER ADJUSTMENT
Charles W. Youngblood, Royal Oak, Mich., assignor to Micromatic Hone Corporation, Detroit, Mich., a corporation of Michigan
Filed Aug. 28, 1964, Ser. No. 392,835
14 Claims. (Cl. 33—163)

1. In a measuring apparatus in which the relative distance between two gauging members is used as an indication of a measured dimension and including sensing means for sensing said relative distance and for providing said indication and in which one of the gauging members includes a device for accurately, selectively preadjusting that relative distance, said device comprising: a fixed base structure located on and immovably fixed to the one gauging member, a longitudinally extending, movable base member spaced from and generally overlying said fixed base structure, connecting means resiliently, pivotably connecting one end of said movable base member to said fixed base structure for movement of said movable base member towards or away from said fixed base structure and hence towards or away from the other gauging member, adjustment means connecting the opposite end of said movable base member to said fixed base structure comprising an adjustment bolt having first



and second threaded portions with different thread pitches, first and second means each having threaded portions and threadably connecting said first threaded portion of said adjustment bolt with said fixed base structure and said second threaded portion of said adjustment bolt with said movable base member, respectively, such that rotation of said adjustment bolt moves said movable base member relatively to said fixed base structure, and hence relatively to the other gauging member, in accordance with the difference between said different thread pitches, and alignment means for maintaining said threaded portions of said first and second means substantially in coaxial alignment over the range of movement of said movable base member relative to said fixed base structure by manipulation of said adjustment bolt.

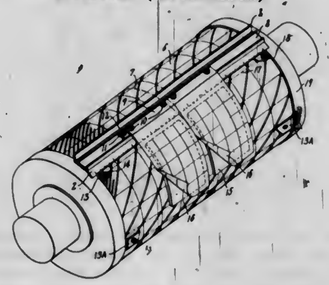
3,281,945
ADJUSTMENT DEVICE
Sébastien Frindel, Annecy, France, assignor to Societe Anonyme Societe Alsacienne de Constructions Atomiques de Telecommunications et d'Electronique "Alcatel," Paris, France, a corporation of France
Filed Apr. 29, 1964, Ser. No. 363,576
Claims priority, application France, May 4, 1963, 933,713
3 Claims. (Cl. 33—170)



1. A device for the very highly sensitive adjustment of movements in translation of a mobile mechanical piece, comprising in combination, a plate having surface plate flatness resting on a base; a mobile mechanical piece having a first surface of revolution; means for supporting said mechanical piece on said plate for movement such that all points on said surface of revolution move along lines that are parallel to said surface plate, said means consisting of at least three legs riding on said plate; an

element constituting a ball means in tangential engagement with the first surface of revolution of said mechanical piece; means for constraining said element to movement at right angles to said surface plate; michrometric means consisting of a differential screw for moving said mechanical piece parallel to said plate; and resilient means consisting of a coil spring in axial alignment with said micrometric means and abutting said mechanical piece in opposition to said micrometric means, the remote end of said spring being held by a ball, said ball being fixedly supported by a bracket cooperating with said plate.

3,281,946
PRINTING APPARATUS
John P. Walsh, 802 E. Front St., Plainfield, N.J.
Filed May 22, 1963, Ser. No. 282,501
2 Claims. (Cl. 33—184.5)



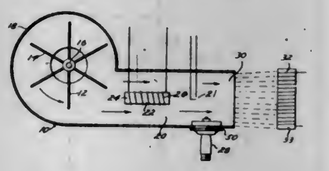
1. A combination rotary lineup and register system to position and register printing plates on plate cylinders of a rotary press, including a rotary press having a framed plate cylinder, a straightedge and master bar member being mounted to the cylinder frame of the rotary press in a manner permitting said member to be inclined until either edge thereof rests on said cylinder, means for releasably locking said straightedge and master bar member in its inclined position without impairing rotation of the cylinder, the improvement of which is the combination of this apparatus with (1) position and register gauges which are slidably mounted circumferentially around each edge of said cylinder, and (2) a channel centrally positioned along the length of the straightedge and master bar member containing slidably mounted master slide bars to carry a sheet of transparent plastic film, and means for locking said master slide bars in a manually set position.

3,281,947
CONSTANT BUBBLE INDICATOR
William B. McDowell, 845 6th St., Boulder, Colo.
Filed June 21, 1963, Ser. No. 289,553
3 Claims. (Cl. 33—212)



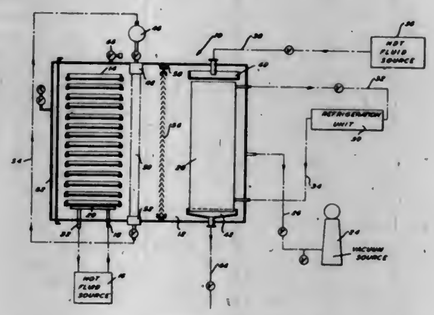
1. A bubble tube comprising an elongated tubular member of transparent material, a bulbous member mounted on one end of said tubular member, sealed bellows means filled with a fluid mounted in said bulbous member, said bulbous member being in fluid communication with the interior of said tubular member, said tubular member being curved so as to confine a bubble to a single locale at any operable position of said tubular member, liquid essentially filling said tubular member leaving a small bubble in said tubular member and filling the space around said bellows means, said fluid in said bellows being different than the liquid in said tubular member, and said bellows means arranged to accommodate expansion and contraction of said filling liquid so as to maintain a substantially uniform size of bubble.

3,281,948
METHOD FOR DRYING AND TREATING HAIR OR OTHER FIBERS VIA ULTRASONICS
Ralph W. Goble, Boulder, Colo., assignor to Engineering & Development Company, Boulder, Colo., a corporation of Colorado
Filed Sept. 13, 1965, Ser. No. 486,811
10 Claims. (Cl. 34—3)



1. The method of treating natural fibers comprising the steps of arranging the fibers into a predetermined configuration, wetting the fibers with a liquid material characterized by having a weak bonding structure adapted to be easily ruptured with a release of free ions and radicals, and subjecting the same to a stream of fluid which is modulated at ultrasonic frequencies.

3,281,949
FREEZE DRYING APPARATUS AND METHOD
Reuben K. Tyson, Abington, Pa., assignor to Pennsalt Chemical Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed July 6, 1964, Ser. No. 380,524
8 Claims. (Cl. 34—5)

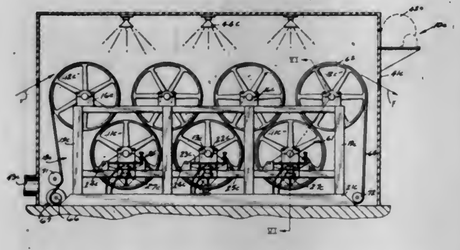


4. A freeze drying process comprising the steps of heating a frozen product in an evacuated chamber, causing the ice freezing said product to sublime, collecting the sublimed water vapors on a condenser, causing the collected vapors to solidify on said condenser, opening said chamber to the atmosphere adjacent said product, establishing a curtain of high velocity air between said product and said condenser, removing said product from said chamber, and defrosting said condenser.

3,281,950
FREEZE-DRYING PROCESS
Kurt Kautz, Dahlenburg, near Luneburg, Germany
No Drawing. Filed Oct. 5, 1964, Ser. No. 401,719
14 Claims. (Cl. 34—5)

1. A process for freeze-drying a fluid substance within a gas tight chamber comprising the steps of: introducing a cooling gas into the gas tight chamber, maintaining said cooling gas within the gas tight chamber at a temperature of less than 0° C., combining the fluid substance with a boost gas, spraying into the gas tight chamber the combined boost gas and fluid substance in the form of a fine dispersion composed of droplets of such size as to be frozen upon contact with said cooling gas before contacting the inner surface of the gas tight chamber, and producing sublimation of the frozen moisture contained in the fluid substance so as to cause drying thereof.

3,281,951
FILM DRYING PROCESS AND APPARATUS
David H. Greene, 2626 Oakland Drive, Kalamazoo, Mich.
Filed July 31, 1963, Ser. No. 298,896
9 Claims. (Cl. 34—12)



9. In a process for drying a nonfibrous cellulose film, which is capable of substantial lengthwise and transverse shrinkage during drying, by using a series of dryer rolls, the steps comprising:

arranging a plurality of the rolls for rotation around parallel axes, the periphery of each roll being opposed to and closely adjacent the periphery of at least one other roll so that nips are formed between adjacent rolls, at least alternate ones of said rolls having a resiliently compressible surface layer thereon;

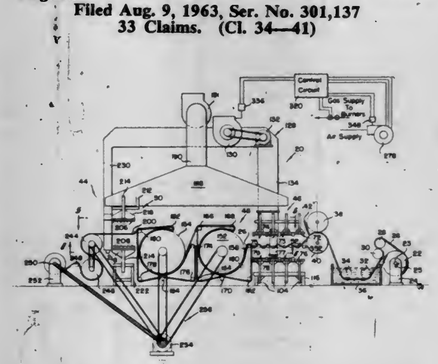
continuously and successively moving a web of said film around said series of dryer rolls so that the entire width of said web is in continuous contact with a substantial part of the periphery of each dryer roll in said series, said web passing through the nip between adjacent rolls as said web moves from one of said rolls to the next, said web at all times during a normal drying operation being in continuous contact wtih each of said rolls;

positioning said rolls so that the spacings therebetween at the nips are less than the thickness of the web passing through the respective nips so that each pair of adjacent rolls simultaneously applies a light contact pressure on opposite sides of said web as it passes through the nip therebetween during its movement from one roll to the next, each resilient surface layer being compressed and deformed so that the portion thereof forming one side of the nip assumes substantially the shape of the portion of the other roll forming the other side of the nip so that the contact pressure is simultaneously applied over an area of said web on opposite sides thereof by both rolls as said web passes through each nip and the contact pressure is sufficient to hold the web against transverse shrinkage;

causing said dryer rolls to rotate and permitting slippage of the force applied to each of said rolls so that the rolls rotate at the same peripheral speeds and the web is thereby advanced from one roll to the next at a uniform speed, so that said film is held snugly against said portion of the peripheral surface of each of said dryer rolls; and

subjecting said web to a drying action as it passes around the dryer rolls.

3,281,952
APPARATUS AND METHOD FOR PRODUCING CREPE PAPER AND THE LIKE
Thomas F. Mullaney, Birmingham, Mich., assignor to Hupp Corporation, Cleveland, Ohio, a corporation of Virginia
Filed Aug. 9, 1963, Ser. No. 301,137
33 Claims. (Cl. 34—41)



33. A method for continuously drying and stretching a continuous web of wet paper comprising the steps of

(a) imparting continuous linear movement to said web,

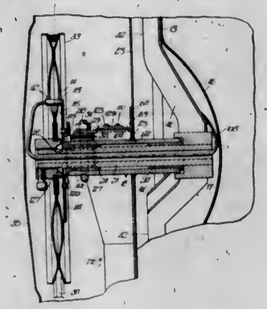
(b) evaporating a predetermined amount of moisture in the moving web by applying radiant energy thereto, and

(c) subsequent to the application of said radiant energy, subjecting said moving web to further drying and to a stretching action by increasing the linear velocity of a succeeding portion of said web relative to its direction of travel.

3,281,953
ELECTRODE CONSTRUCTION FOR A LAUNDRY DRYER
Floyd F. Mueller, Owen E. Clayton, Paul R. Virnoche, Jr., and John A. Shimon, Two Rivers, Wis., assignors to Hamilton Manufacturing Company, Two Rivers, Wis., a corporation of Wisconsin
Filed Nov. 13, 1962, Ser. No. 237,090
4 Claims. (Cl. 34—45)

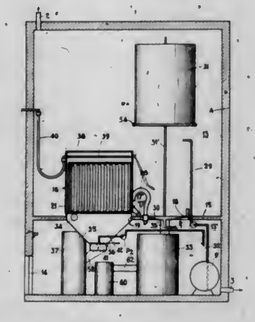
1. In a laundry dryer including a drum having a peripheral side wall, an end wall, a tubular shaft connected to and extending outwardly from said end wall and rotatably journaled in a support, and an electrical control system responsive to the dryness of laundry in said drum for controlling the operation of the dryer, an electrode mounted in said drum for transmitting current from said control system to laundry in said drum, and an electrical circuit for conducting current from said control system to said electrode, said circuit including a first wire extending through said shaft, a second wire mounted on said drum and connecting said first wire to said electrode, and a commutator having a rotating part mounted on said shaft and connected to said first wire, said rotating part having a portion formed to provide a connec-

tion for said first wire and said shaft being provided with a pulley at its outer end for rotating said drum, said pulley having an opening permitting said first wire to



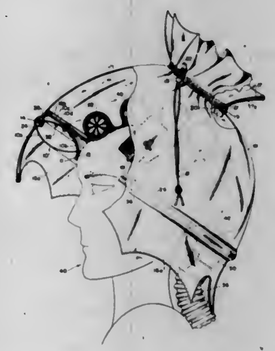
extend therethrough for connection to said portion of said rotating part, and a stationary part adapted to be connected to said control system.

3,281,954
FREEZE-DRYING APPARATUS
Arnold Baer, Fontenay-aux-Roses, and Marcel Tribout, Orly, France, assignors to Compagnie Francaise Thomson-Houston, Paris, France, a corporation of France
Filed June 7, 1965, Ser. No. 462,030
Claims priority, application France, June 8, 1964, 977,448, Patent 1,406,556
16 Claims. (Cl. 34—92)



1. Freeze-drying apparatus comprising:
a frame having a set of trays supported in parallel-spaced stacked relation therein;
pivot means connected with the frame for rotating the frame about a generally horizontal axis between a first, charging-and-freeze-drying position in which the stacked trays are disposed horizontally in vertically-spaced relation and and a second, discharging position in which the trays are disposed generally vertically in horizontally-spaced relation;
a sealable enclosure surrounding the frame and set of trays at least in said first position of the frame;
a charging line connectable with a source of material to be freeze-dried and connected with the enclosure for charging all the trays with metered charges of material;
means connected with the enclosure for exposing the trays to prescribed low-pressure and temperature conditions for freeze-drying the charges of material therein;
receiver means positioned to underlie the spaces between the vertically-disposed trays when the frame is in said second position to receive freeze-dried material therefrom;
and means for moving the frame alternately between its positions for a charging-and-freeze-drying stage, and a discharging stage, respectively, of a freeze-drying cycle.

3,281,955
HAIR DRYER BONNET
Joseph H. Clark, Jr., Trumbull, Conn., assignor to General Electric Company, a corporation of New York
Filed Nov. 26, 1963, Ser. No. 325,863
5 Claims. (Cl. 34—99)

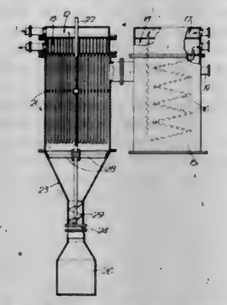


1. A hair dryer bonnet assembly comprising: a support ring substantially larger than the human head; a torus of flexible air impervious material having an outer boundary secured to said ring for said ring to hold said outer boundary of said torus away from the head of the user and an inner boundary defining a flexible head engaging band; an air inlet in the lower wall of said torus positioned between said ring and said band; said inlet being adapted to be connected to a source of drying air; a plurality of air jet openings in the upper surface of said torus to discharge air generally upwardly through the hair of the user; flexible bonnet means secured to the outer portion of said torus and extending upwardly from said torus to confine the air to the proximity of the head; and air outlet means formed in said bonnet means for allowing the escape of the moisture-laden air.

3,281,956
APPARATUS FOR FREEZE DRYING
Peter Barry Mason, London, England, assignor to Mitchell Engineering Limited, London, England, a British company
Filed Nov. 23, 1964, Ser. No. 413,151
Claims priority, application Great Britain, Nov. 22, 1963, 46,271/63
13 Claims. (Cl. 34—92)

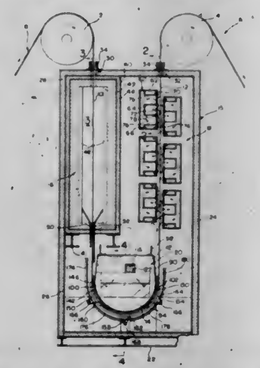
1. A freeze drying apparatus for liquid materials comprising
(a) a closed chamber for receiving said liquid material to be dried
(b) at least one pipe extending into said chamber
(c) means for generating a flow of refrigerating medium through said pipe
(d) means for bringing said pipe clear of the liquid with portions of the liquid frozen around it

(e) means for subjecting the pipe with material frozen around it to vacuum so as to effect sublimation
(f) a scraper encircling the pipe



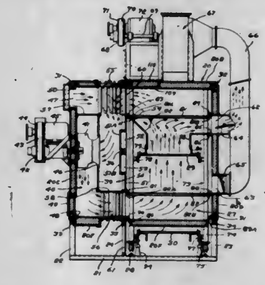
(g) means for effecting relative movement between said pipe and scraper in the direction of the length of the pipe whereby the dried material is scraped off the outside of said pipe.

3,281,957
APPARATUS FOR PROCESSING STRIP MATERIAL
Neil J. Ranney, Mentor, and William I. Callaghan, Painesville, Ohio, assignors to Production Machinery Corporation, Mentor, Ohio, a corporation of Ohio
Filed Apr. 22, 1963, Ser. No. 274,734
15 Claims. (Cl. 34—156)



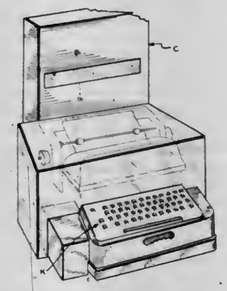
1. In an apparatus for processing a continuously moving strip comprising, a chamber filled with an atmosphere of gaseous material, a first pass for performing a preliminary operation on said strip, a second pass for performing a finishing operation on said strip, at least one of said passes being in said chamber, said passes being substantially vertical and substantially parallel to each other, and means for guiding said strip between said passes, the improvement comprising: said means including a support having a generally cylindrical surface, an orifice network coextensive with said surface and defining a generally rectangular strip support portion on said surface, and power means for forcing said gaseous material from said network toward said strip in sufficient volume and under sufficient pressure to maintain the strip spaced from said surface, said support including a plenum chamber coextensive therewith, said network including elongated orifices communicating said plenum chamber with said surface, and said power means comprising a means for supplying said fluid under low pressure and in high volume to said plenum chamber, a first and second shutter plate spaced transversely from each other, said plates being positioned adjacent said surface and adapted to close said orifices, and means for moving said plates transversely on said surface for limiting the transverse width of said orifice network.

3,281,958
MATERIAL PROCESSING APPARATUS
Robert D. Lambert, Tyngsborough, and David S. Hansen, Shirley, Mass., assignors to C. G. Sargent's Sons Corp., Graniteville, Mass., a corporation of Massachusetts
Filed Mar. 12, 1963, Ser. No. 264,517
18 Claims. (Cl. 34—222)



1. In apparatus for use in the treatment of materials with a gaseous fluid, a support for the material, a treating chamber in which the support is located, first and second vertical conduits laterally of said chamber, gas circulating means in said first conduit having its intake in communication with the second conduit, first and second inlet conduits in communication with the chamber one above and the other below said first and second conduits and said support, means adjustable to place either one of said vertical conduits in communication with either one of said inlet conduits, and means to close the inlet ends of said inlet conduits.

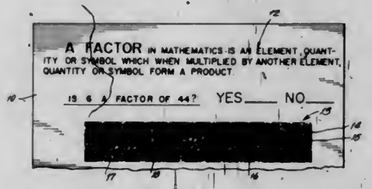
3,281,959
EDUCATIONAL SYSTEM AND APPARATUS
Richard Kobler, West Orange, N.J., and Omar K. Moore, Guilford, Conn., assignors to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware
Filed Apr. 6, 1962, Ser. No. 185,616
51 Claims. (Cl. 35—6)



1. A teaching machine comprising an electric typewriter having a keyboard with characters designated on the respective keys, a reproducing machine including a prerecorded record, means for selectively activating said reproducing machine to pronounce said respective characters, an exhibiting machine having a record medium, pointer means and means for shifting said pointer means

relative to a mounted record medium to designate successive characters printed thereon, means for supplying power to said machine including a selector switch having an "off" position and successive phase positions: a Phase I position for supplying power only to said typewriter, a Phase II position for supplying power to both said typewriter and said reproducing machine, and a Phase III position for supplying power concurrently to said typewriter, reproducing machine and exhibiting machine, an electromechanical means associated with the key levers of said typewriter and controlled by said activating means for blocking the entire keyboard when all the keys are released and the reproducing machine is running, and means controlled by said selector switch for disabling said keyboard blocking means when said switch is in said Phase I position and for abling said blocking means when said switch is in its Phase II and Phase III positions.

3,281,960
EDUCATIONAL MEANS AND METHOD
Philip S. Gross, 609 E. 53rd St., Brooklyn, N.Y.
Filed Jan. 15, 1963, Ser. No. 251,638
3 Claims. (Cl. 35—9)



1. Educational means for facilitating the teaching of a subject, comprising a sheet having provided thereon visible printed text material relating to the subject being taught, and adjacently positioned on said sheet to such text material a section having hidden therein printed material corroborative of such visible text, said section being a composite of two different colored inks and constituting a mottled design in red ink disposed against a background of contrasting color and having embodied within the area thereof said corroborative material printed in a turquoise colored ink, said mottled design being of sufficient intricacy to render it difficult to interpret the corroborative material with the naked eye, said mottled design and said corroborative material being in overlying relation and both appearing to the human eye as a unitary design in which both are visible but not readily distinguishable from each other, and both being permanently mounted on such sheet to be used repeatedly as such unitary design in connection with the repeated use of said visible printed text material, and the ink of the overlying printed material in said section being a transparent ink, and a viewer for scanning said section and comprising a transparent sheet of red color such that when such section is viewed therethrough the contrast of the red ink with said background is materially reduced, and the presence of the turquoise ink of said corroborative material is enhanced so that such corroborative material can be clearly read by the reader.

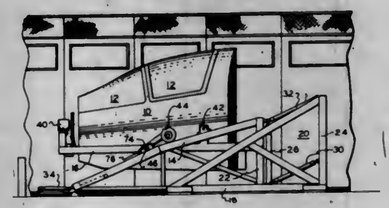
3,281,961
GLOBE STRUCTURE
Paul T. Tiddens, Northbrook, Ill., assignor to Rand McNally & Company, a corporation of Illinois
Filed Sept. 4, 1964, Ser. No. 394,542
5 Claims. (Cl. 35—9)

1. A globe structure comprising:
a support;
a globe ball;
means for carrying the globe ball on said support for rotation about an axis;
a base;
means for mounting the support on said base;
a shutter selectively carried on said base for rotation about said axis;
a question set movable with said shutter and arranged to be read from radially outwardly thereof relative to said axis;
a plurality of answer sets on said base observable selectively as a result of the selective movement of said shutter on said base, said answer sets being registered with the question sets on said shutter and arranged to be read from radially outwardly thereof relative to said axis adjacent said shutter;
indicia on said base corresponding to preselected portions of said globe ball;



aligning indicia means on the shutter for indicating the position of the shutter for viewing a selected one of said answer sets corresponding to a selected one of said indicia on said base;
indicia on the globe ball corresponding to information in the answer sets; and
indicia on the globe ball corresponding to said indica on said base, whereby each of said question set, a selected answer set, said aligning indicia means, a selected indicium on the base, said indicia on the globe ball corresponding to information in the selected answer set, and the indicia on the globe ball corresponding to the selected indicia on the base are readable from a single position radially outwardly thereof relative to said axis.

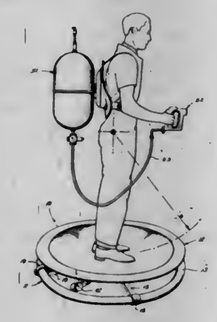
3,281,962
MOTION SYSTEM FOR AN AIRCRAFT FLIGHT SIMULATOR
Edward G. Pancoe, Broome County, N.Y., assignor to General Precision, Inc., Binghamton, N.Y., a corporation of Delaware
Filed July 31, 1964, Ser. No. 386,673
14 Claims. (Cl. 35—12)



1. A motion system comprising,
a cockpit housing representative of an aircraft being simulated;
a base member;

first and second generally rectangular yoke frames;
means coupling said cockpit housing member to said second yoke frame including a rear pivotal connection secured to said housing and a slotted forward supporting and restraining guide means secured to said second frame cooperating with the forward end portion of said housing;
further pivotal means coupling said second frame within said first frame; and
a four-bar parallelogram linkage mechanism coupling said first frame to said base member.

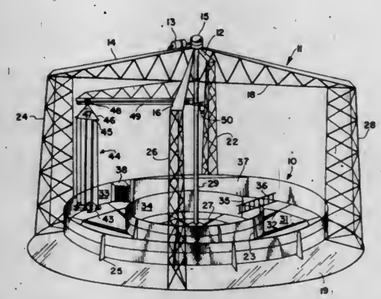
3,281,963
TRAINING VEHICLE FOR CONTROLLING ATTITUDE
Harold I. Johnson, Seabrook, Tex., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Dec. 8, 1964, Ser. No. 416,938
10 Claims. (Cl. 35—12)



9. A training vehicle comprising:
a base structure having a flat bottom surface and a concave upper surface, said surfaces having perforations therethrough;
means on said base structure for delivering pressurized air downwardly through the perforations in said flat bottom surface for floating said base structure on a film of air when said vehicle is placed over a level surface;
a platform; and
means on said base structure for delivering pressurized air upwardly through the perforations in said concave upper surface for floating said platform atop said concave upper surface on a film of air.

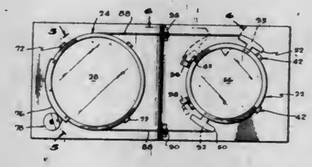
3,281,964
ROTATING SPACE STATION SIMULATOR
Donald E. Hewes, Newport News, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Apr. 13, 1965, Ser. No. 447,927
12 Claims. (Cl. 35—12)

8. A rotating space station simulator for simulating on earth the gravitational and attitude environment anticipated for space travelers in a particular space vehicle comprising:
a walkway to be traversed by a test subject,
means for supporting a test subject substantially perpendicularly disposed relative to said walkway and at a substantially zero earth gravity,
means for inducing a centrifugal force component acting along the long body axis of the test subject



so as to simulate an artificial gravitational component that would be acting along the long body axis of the test subject in a rotating space station.

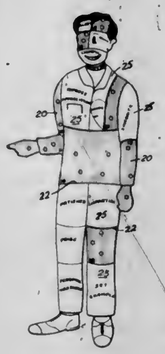
3,281,965
CONTROLLED VISIBILITY DEVICE FOR AN AIRCRAFT
Kirk S. Irwin, Lancaster, Calif., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Aug. 2, 1965, Ser. No. 476,761
1 Claim. (Cl. 35—12)



A controlled visibility device for mouhting in an aircraft cabin so as to control the visibility of a pilot operating the aircraft and thereby realistically simulate blind flying conditions, said visibility device comprising:
(a) a panel removably mounted over the cabin window of the aircraft;
(b) said panel having a first circular opening directly in front of the pilot, and a second circular opening at one side of the pilot;
(c) a first pair of superimposed discs of light polarizing material covering the first opening in said panel and a second pair of superimposed discs of light polarizing material covering the second opening in said panel;
(d) one of the discs in each pair of discs being mounted on said panel in a normally fixed position whereas the other disc in each pair is rotatably mounted on said panel;
(e) servo means mounted on the panel and connected to the rotatably mounted discs for rotating them in unison to continuously and selectively vary the visibility through said first and second pairs of superimposed discs from none to good visibility; said servo means including:
(1) a first annular frame member in which the rotatably mounted disc of superimposed discs is mounted, said frame member being supported for rotation by a plurality of roller bearing assemblies mounted to said panel around the periphery of the first opening in said panel;

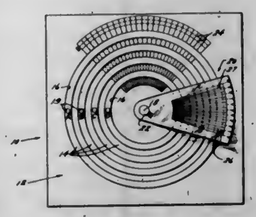
(2) a second annular frame member in which the rotatably mounted disc of said second pair of superimposed discs is mounted, said frame member being supported for rotation by a plurality of roller bearing assemblies mounted to said panel around the periphery of the second opening in said panel;
(3) an electric motor mounted on said panel,
(4) mechanical means connected between said electric motor and said first tand second frame members for rotation thereof by said electric motor; said mechanical means including:
(i) a pair of T-shaped members mounted in a spaced relation on said first annular frame member;
(ii) a gear segment mounted on said second annular frame member, said gear segment being in driving connection with said electric motor;
(iii) a first cable connected between one of said pair of T-shaped members and one end of said gear segment, and
(iv) a second cable connected between the other one of said pair of T-shaped members and the other end of said gear segment, whereby rotation of said second annular frame member by said electric motor and said gear segment, in either a clockwise or counterclockwise direction, will be translated to said first annular frame member through said first and second cables and said pair of T-shaped members.

3,281,966
EDUCATIONAL DEVICES
Richard Johnson, 5415 N. Diversey Blvd., Milwaukee, Wis.
Filed May 20, 1964, Ser. No. 368,908
2 Claims. (Cl. 35—21)



1. An educational device comprising, a flat base human manikin, visual means dividing said manikin into a plurality of sections, a plurality of separate cover plates conforming in size and configuration respectively to the sections of the manikin, each cover plate having written indicia indicative of separate and different characteristics of a human, certain plates exhibiting particular characteristics applied to sections of the manikin which represent those portions of a human being which conventionally have been associated with these characteristics, and means on the manikin and on the cover plates to releasably retain each cover plate on the manikin independently of each of the other cover plates.

3,281,967
MEASUREMENT TOOL
Morris Seltzer, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed Mar. 30, 1964, Ser. No. 356,693
2 Claims. (Cl. 35—24)



1. In a manually-operated tool for use in analysis of multiple machining operation cycles performed with a single machine operator:
a base member, said base member including a plurality of retaining means comprising a series of spaced concentric grooves in said base member surface, the upper surface area of said base member being at least partially calibrated in graduations having a specified linear time relationship;
a plurality of machining cycle indicators, there being one indicator for each of said cycles, said indicators being maintained in an overlying relatively movable relationship with respect to said base member by said retaining means and comprising ring members completely disposed in respective ones of said grooves for rotation about a center point;
a scale member movable relative to said base member and said indicators, said scale member being calibrated in a plurality of graduations having the same linear time relationship as said base member graduations;
and a plurality of visually differentiable elapsed time elements adapted for affixation to each of said indicators, one visually differentiable element representing elapsed machine operator time and another representing elapsed machining operation time for the functions for a given cycle performed by the machine operator and the machine, respectively, said indicators and said scale member being moved cooperatively with respect to each other and said base member for accurate simulation of total machine operator and total machine effective time and total machine operator and total machine idle time for one or more in a series of manufactures.

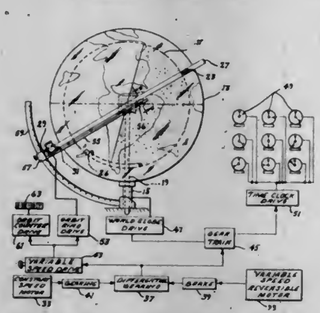
3,281,968
DICTATION TEACHING AID
Louis W. Culmone, Rockaway, N.J., assignor to Lustro Watch Incorporated, a corporation of New Jersey
Continuation of abandoned application Ser. No. 372,592, June 4, 1964. This application Jan. 26, 1966, Ser. No. 545,514
9 Claims. (Cl. 35—35)

1. A teaching aid comprising in combination with dictating material divided into substantially equal groups of words, each of said groups having a character indicating the end of a group and located at the end of said group, means for enabling dictation of said material at a preselected average rate, said means comprising a stop-watch including a dial and a second hand, said dial having a plurality of concentric circular bands thereon, each of said bands having graduations drawn to a different scale to enable dictation at a different preselected average rate, each of said bands having identifying indicia to indicate the dictation rate that said band will enable the graduations on each of said bands corresponding to said end of group characters, a preselected average dictation rate



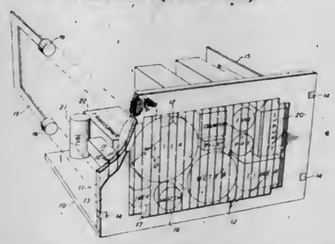
being maintained by controlling dictation so that the end of group characters are reached during dictation as said second hand passes adjacent the graduations on the single band corresponding to said preselected average rate.

3,281,969
SATELLITE ORBITAL MONITOR
Rudolph W. Ebacher, Bedford, and Donald M. Ferguson, Marblehead, Mass., Armando Mancini, Fairfax, Va., Lyndon L. Sheldon, Charleston AFB, S.C., and Bernard S. Wilson, Cambridge, and Theodore E. Wirtanen, Chelmsford, Mass., assignors to the United States of America as represented by the Secretary of the Air Force
Filed Oct. 22, 1965, Ser. No. 502,725
2 Claims. (Cl. 35—46)



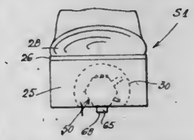
1. In a satellite orbital monitor for simulating the orbit of a planetary satellite for visual presentation, the combination of a rotatable geographical earth globe having a polar axis, first motive means operatively connected to said globe for rotation on said polar axis, a tiltable nonrotating inner sphere disposed concentrically within said globe, means for tilting said inner sphere such that a circumferential line therearound indicates the areas on earth which are in the twilight zone at specific times of day for a particular season of the year, a satellite ring having a simulated satellite thereon concentrically surrounding said globe and rotatable therearound, an elongate arcuate member substantially conforming to the curvature of said globe and fixedly atached to extend outwardly and upwardly from the lower axis terminal thereof, said satellite ring being slidable along said arcuate member for adjusting the angle of rotation of said satellite ring, second motive means operatively connected to said satellite ring for rotating said ring around said globe, said second motive means being independently adjustable to regulate the velocity of said satellite ring with respect to said globe, and control means for varying the velocity and direction of said satellite ring and said globe in proportionally equal amounts thereby visually projecting in time the location and observation conditions of the satellite.

3,281,970
THREE-DIMENSIONAL MODEL FOR ELECTRONIC EQUIPMENT DESIGN
Bela I. Sandor, Summit, N.J., assignor to Bell Telephone Laboratories Incorporated, New York, N.Y., a corporation of New York
Filed May 27, 1964, Ser. No. 370,423
5 Claims. (Cl. 35—53)



1. A mechanical design aid for electronic equipment which is to have some components mounted on a chassis and other components mounted on a front panel substantially perpendicular to the chassis comprising a grid of magnetic material having an area at least as large as the front panel under consideration, a base of rigid material having a surface at least as large as the chassis under consideration, a template of opaque material attached to said grid and having a cutout section substantially equal to the area which is available on the front panel for the mounting of components, a first set of models representing the chassis components positioned on said base in a proposed arrangement for the chassis components, a second set of models representing the front panel components, a plurality of magnets, at least one of said plurality of magnets magnetically attaching each model of said second set to the grid in a proposed position for the represented front panel component which permits the intermeshing with said chassis components and presents an efficient and aesthetically pleasing overall arrangement of front panel components.

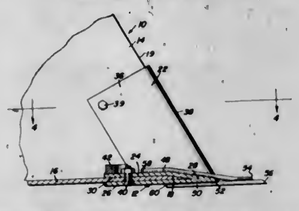
3,281,971
BUILT-IN ELEMENTS IN SHOES
Dorothea M. Weitzner, 8 E. 62nd St., New York, N.Y.
Filed Apr. 26, 1965, Ser. No. 450,823
19 Claims. (Cl. 36—2.5)



1. A multiple purpose shoe, comprising a thick sole having a cylindrical cavity therein open laterally at the bottom of the sole, a bar rotatably mounted in said cavity with a side of the bar exposed at the bottom of the sole, means for selectively locking the bar in each of a plurality of fixed circumferential positions so that a different side of the bar is exposed in each of said posi-

tions, and different radially outwardly projecting elements on the respective sides of the bar for selective projection of the elements beyond the sole of the shoe, said projecting elements being shaped and adapted to provide traction for the shoe on slippery surfaces.

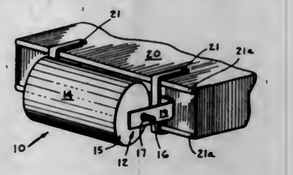
3,281,972
REMOVABLE BLADE
Sandor R. Kerestes, P.O. Box 64, La Follette, Tenn.
Filed Oct. 23, 1963, Ser. No. 318,433
4 Claims. (Cl. 37—141)



1. In combination, a forwardly opening bucket including upstanding side walls and a bottom wall connected to and extending transversely therebetween, a transversely extending forward cutting edge upon said bottom wall, cutting edges on said side walls extending upwardly and rearwardly from the ends of said forward cutting edge, a replacement blade assembly detachably mounted upon said bucket comprising a U-shaped body including a transversely elongated web with end pieces extending upwardly and rearwardly therefrom, said web and end pieces each having forwardly directed knife edges and a rearwardly opening pocket snugly and embracingly receiving the front portion of said bucket bottom and side walls, fasteners detachably securing said replacement blade assembly to said bucket side walls, a plurality of longitudinally spaced teeth secured to said web and projecting forwardly therefrom, each tooth comprising a V-shaped element including top and bottom members with a rearwardly opening space therebetween embracing the forward edge of said web, the bottom member having a knife edge at its forward end, said top member having its forward edge rigidly secured to said bottom member rearwardly of the bottom member forward edge, said web being secured to said bottom wall by a single removable fastener extending through both said bottom wall and web, and an arcuate rib-like guard bonded to and rising from the top surface of said web and at least partially encircling said removable fastener, said removable fastener being disposed rearwardly of a substantially centrally located tooth between the top member thereof and the guard.

3,281,973
ADVERTISING DEVICE
Jules W. Glaser, Scarsdale, N.Y.
(289 Nepperhan Ave., Yonkers, N.Y.)
Filed June 1, 1964, Ser. No. 371,424
17 Claims. (Cl. 40—33)

1. A device comprising a frame; an electric motor mounted on said frame; said motor having a pair of electrical inputs and a mechanical output shaft; said motor adapted to rotate its output shaft when energized by an electric potential being impressed across its inputs; a battery mounted on said frame; said battery having a first electric terminal, and a second electric terminal, and providing therebetween a potential sufficient to energize the motor; said first electric terminal being connected to one of the motor inputs; a housing surrounding said battery, motor and frame; said housing being mechanically connected to the output shaft of the motor, and adapted to be rotated by said output shaft; a shaft co-axial with said axis of rotation of said housing, mounted on the frame and extending from opposite ends of said housing, the ends of said shaft being electrically insulated from each other; one of said ends being electrically connected to the second terminal of the battery, and the other of

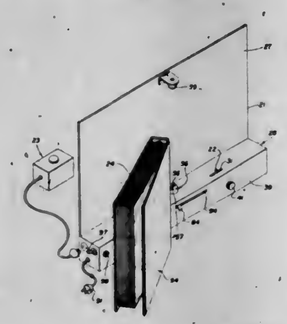


said ends being connected to the other of the motor inputs; and support-and-conducting means connected to the ends of said shaft for mechanically supporting said shaft and also providing an electrical contact therebetween to close the electrical path between the second terminal of the battery and the other input of the motor.

3,281,974
PAGE TURNER
Floyd J. Jensen, 908 Colonial Lane, Palo Alto, Calif.
Filed Aug. 20, 1964, Ser. No. 390,818
9 Claims. (Cl. 40—103)

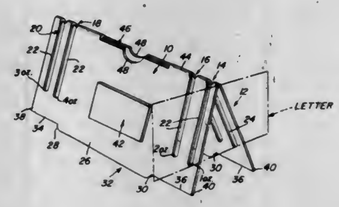
9. A page turning device comprising, in combination, a stand having a generally planar back support member and a bottom support member having an upper surface extending transversely from said back support member, a lower retaining member provided on said surface adjacent said back support and having an upper end with a diametrically extending groove therein, a clamp member hingedly mounted on said back support in opposed spaced relation with said retaining member, a carriage member pivotally mounted on said stand subjacent said upper surface and being movable between two positions, means resiliently urging said carriage into a first of said two positions disposed farthest from said surface, a manually operable knob rotatably mounted on said stand, a cam member secured to said knob and engageable with said carriage for selectively moving the latter into its second position disposed closest to said surface, said surface having an elongated slot therein disposed above said carriage and generally parallel with said back support, a release trigger pivotally mounted on said carriage for movement in a plane generally parallel to said back support and having an upper portion extending through said slot and positioned above said upper surface when said carriage is in said second position thereof, said trigger being movable between two positions relative to said carriage, means resiliently urging said trigger to a first of said positions relative to said carriage, an electrical rotary solenoid mounted on said carriage and coupled to said trigger for urging the latter into its second position relative to said carriage when said solenoid is energized, electrical circuit means including an operating switch coupled to said solenoid for selective energization thereof, said switch being positioned remotely from said stand, said trigger having three operating positions relative to said stand, said trigger being disposed in its first said operating position when said carriage is in its second said position and said trigger is in its first said position relative to said carriage, said trigger being disposed in its second operating position when said carriage is in its second said position and said trigger is in its second position relative to said carriage, and said trigger being disposed in its third operating position when said carriage is in its first said position, a book removably mounted on said stand and having a shaft positionable between said retaining member and clamp members, a ridge portion provided on the bottom end of said shaft for engagement

with said groove for fixedly securing said shaft in rotational position relative to said lower retaining member, said book including a plurality of page holders mounted on said shaft for rotation about the axis thereof, said holders each including a relatively rigid longitudinal portion disposed parallel to and adjacent said shaft and a bottom portion extending perpendicularly from said longitudinal portion and disposed adjacent to and spaced upwardly from said surface, said holder having a pair of overlying transparent sheets secured to said longitudinal and bottom portions thereof, said holders each having a pair of spaced annular bearings concentrically mounted on said shaft for rotation thereon, each said holder being movable on its bearings from a loaded position parallel with said back support member on one side of said shaft adjacent said trigger to an unloaded position parallel with back support member on the other side of said shaft, said pair of bearings for each holder being spaced the same distance apart with the respective bearings of one holder being spaced axially on said shaft in relation to the remaining bearings, a plurality of collar members each secured rigidly to said shaft axially adjacent one of the bearings of each holder for restraining the latter bearings against axial movement in one direction relative to said shaft, the other of said bearings for each holder having a central recess therein defining an annular space surrounding said shaft, a coil torsion spring disposed in each said annular space surrounding said shaft and secured be-



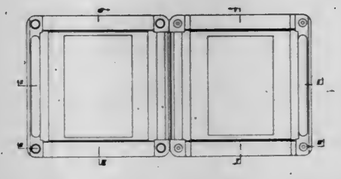
tween said shaft and corresponding other bearing for urging the corresponding holder into its unloaded position, a pair of right angle bracket members secured between each said longitudinal holder portion and the corresponding pair of annular bearings for said holder, said longitudinal portion and brackets of each said holder being spaced radially in relation to said shaft with respect to the remaining holders and brackets thereof whereby adjacent ones of said holders are positionable in generally parallel overlying relation to one another, a first plurality of said holders having said bottom portion thereof positioned in obstructing relation with said trigger when in said first operating position for restraining the latter holders against movement from loaded to unloaded position, said first plurality of holders being unobstructed by said trigger when in said second operating position, a second plurality of said holders having said bottom portions thereof positioned in obstructive relation with said trigger when in said second operating position for restraining the latter holders against movement from loaded to unloaded position, said second plurality of holders being unobstructed by said trigger when in said first operating position, said first plurality of holders being disposed in alternating stack relation with said second plurality of holders when both pluralities of holders are in said loaded positions thereof, and said trigger when in said third operating position being disposed out of obstructive relation with all of said holders, said lower retaining member being mounted for rotation about an axis disposed in alignment with the axis of said shaft, a manually operable lever extending radially from said lower retaining member for moving the latter into selective rotational positions, and means for selectively retaining said lower retaining member in said selected rotational positions thereof.

3,281,975
CALENDAR WITH LETTER WEIGHING MEANS
Edward J. Simone, 7851 General Sheridan Lane,
Affton, Mo.
Filed Mar. 30, 1964, Ser. No. 355,708
11 Claims. (Cl. 40—120)



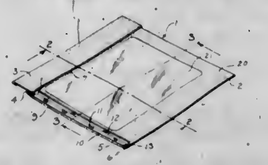
1. A desk calendar embodying self-standing portable support means including at least one upstanding self-righting panel having means adapted to support a calendar and fixed fulcrum means permitting the panel to tilt in a given manner and direction and also having slot means, said slot means embodying at least one slot for temporary reception and retention of an insertable and removable letter which is to be weighed.

3,281,976
TRANSPARENCY FRAMES AND MEANS FOR LOADING TRANSPARENCIES INTO SUCH FRAMES
Herbert Riedel, Spitalmuhlenstrasse 13,
717 Schwabisch-Hall, Germany
Filed Sept. 15, 1964, Ser. No. 400,299
Claims priority, application Germany, Sept. 18, 1963, R 36,148
5 Claims. (Cl. 40—152)



1. A film transparency frame comprising a molded front portion and an identical back portion; a flexural hinge extending the entire width of, and connecting, said portions; said hinge having a rib substantially in its center and extending the full length of said hinge; said back portion being provided with means for positioning said film; both said front and back portions being provided with means for accommodating cover glasses, means for keeping said portions in closed position; and loading and registering means for said film.

3,281,977
TRANSPARENCY HOLDER
Wilbert A. Koontz, Bayside, Wis., assignor to Milprint, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Oct. 22, 1964, Ser. No. 405,755
5 Claims. (Cl. 40—158)



1. A holder for transparencies comprising, in combination:

a sheet of flexible transparent material including a base panel and at least two side panels arranged on intersecting sides of the base panel;

at least one of the side panels being folded to define an upstanding first wall extending at an angle to the base panel and a second wall joined to the first wall and overlying part of the base panel, said second wall having one portion extending from the outstanding first wall towards the base panel and another portion connected thereto and extending away from the base panel;

at least one other side panel being folded to define a folded edge connecting it to the base panel, a first portion overlying part of the base panel, and a second portion folded back over the first portion;

an opaque border about the periphery of the base panel to frame a transparent portion thereof; and

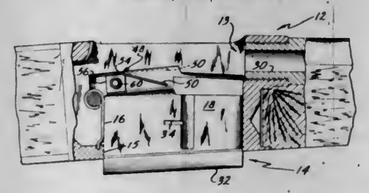
the side panels being adapted to receive a transparency under their portions overlying the base panel with one edge of the transparency abutting said upstanding first wall in said one side panel and with a second edge of the transparency abutting the folded edge between said other side panel and the base panel to thereby hold a transparency in position over the transparent area of the base panel.

3,281,978
DISPLAY HOLDER FOR SHOPPING CART
Wayne A. Drugan, Valley City, N. Dak., and Neil M. Clark, St. Louis Park, Minn., assignors, by direct and mesne assignments, to Drugan-Severson Inc., Valley City, N. Dak., a corporation of North Dakota
Filed May 26, 1964, Ser. No. 370,187



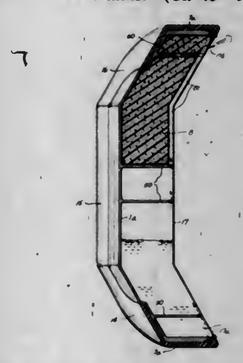
1. A display holder for a shopping cart having a wheeled support with a basket thereon and a tubular handle connected to the wheeled support and extending around one end of the basket comprising, a pair of collars of flexible material each having a radial slot therein and adapted to be deformed to slip over the tubular handle and mount thereon, shoulder means on one surface of each of said collars, each of said shoulder means having a plurality of wedge shaped sides which originate near the peripheral edge of the respective collar, an aperture located at the geometric center of each collar through which the tubular handle of the cart is adapted to extend, said collars with said shoulder means thereon being adapted to be positioned on the handle of the cart in a spaced parallel relationship with the shoulder means facing one another, a plurality of elongated transparent cover means positioned between said collar means and engaging the wedge shaped sides of the shoulder means being secured thereon, said holder being adapted to be rotatable on the handle of the cart and to have sheets of printed paper with advertising thereon positioned between the corresponding sides of the shoulder means of the respective collars and held in position by the cover means to be viewed therethrough.

3,281,979
CARTRIDGE AND MAGAZINE EJECTOR
Edward M. Stark, East Longmeadow, Mass., assignor to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut
Filed Aug. 18, 1965, Ser. No. 480,714
7 Claims. (Cl. 42—25)



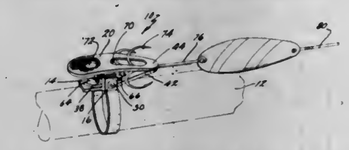
1. For use in firearms having a removable magazine box, a magazine ejector comprising a spring steel arm mounted in the receiver portion of the firearm and extending downwardly, in its relaxed condition, sufficiently to engage said magazine box before it is fully inserted into the receiver, means for latching the magazine in said receiver when fully inserted therein, said arm and latch means being disposed so that the spring arm is substantially tensioned upwardly when the magazine box is latched in the receiver.

3,281,980
PROGRESSIVELY FLOODING TRAWL DOORS
Frank J. Luketa, 5567 Greenwood Ave. N., Seattle, Wash.
Original application Aug. 24, 1962, Ser. No. 219,276. Divided and this application Nov. 5, 1964, Ser. No. 409,122
6 Claims. (Cl. 43—9)



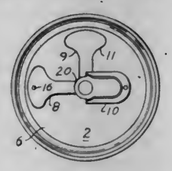
2. A hollow trawl door formed with lower holes for admission of water, and upper holes for escape of air adjacent its upper edge with lesser total area than the total area of said lower holes and communicating with said lower holes, whereby the air escapes from the hollow interior of the door at a limited rate when the door is first submerged.

3,281,981
LINE, HOOK AND BAIT HOLDER ATTACHMENT
William J. Dykhouse, 1118 Colfax St., Grand Haven, Mich.
Filed Aug. 7, 1964, Ser. No. 388,049
4 Claims. (Cl. 43—25.2)



2. A pole attachment fishhook holder comprising: an upper element having ears, and a lower element having ears; a pivot pin pivotally mounting said ears of said elements; a flexible elongated band connected on its opposite ends to opposite sides of said holder; a pair of set screws extending down through said lower element; and said upper element having cut-out portions allowing access to said set screws.

3,281,982
FISH LURES
Lyle P. Salisbury, 1192 Winston Court, Upland, Calif.
Filed Apr. 16, 1965, Ser. No. 448,804
3 Claims. (Cl. 43—42.5)



1. An opener combination for a container comprising a sealer element, a lift tab for removing the sealer element from the container, and a connector tab for joining a fishing hook to the lift tab and the sealer element, said sealer element, lift tab and connector tab each having only one of their ends commonly joined and secured to each other.

3,281,983
EXPENDABLE CASTING DEVICE
Leonard C. Blankenbecler, 1518 Hacienda Ave., San Clemente, Calif.
Filed Aug. 6, 1964, Ser. No. 387,952
5 Claims. (Cl. 43—43.12)

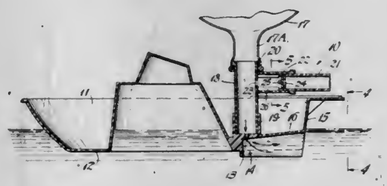


2. An expendable casting device comprising:

a non-buoyant body;

release means cooperating with said body for securing said body to a leader, said means including a buoyant member movable by the force of buoyancy when the member is in water from a position where the leader is secured to a position where the means releases the leader and the body may fall free of the leader, said release means being at least partially responsive to the tension on a leader to which the device is secured such that increased tension on the leader delays the action of the release means.

3,281,984
JET PROPELLED TOY DEVICE
Sammy S. Wechsler, 732 W. 183rd St., New York, N.Y.
Filed May 28, 1964, Ser. No. 371,014
1 Claim. (Cl. 46—95)



A jet propelled toy boat comprising,

(a) a body simulating the hull of a boat, said body having a bottom adapted to be submerged in water,

(b) means defining an exhaust channel formed beneath said bottom and which is submerged when placed in water, said channel having an upwardly inclining roof portion and opening towards the stern of said boat,

(c) means defining a small exhaust port formed in the roof of said exhaust channel,

(d) a nipple connected to said bottom circumscribing said exhaust port,

(e) a conduit having one end fitted into said nipple,

(f) a balloon connected to the other end of said conduit,

(g) means connected to said other end of said conduit for prohibiting the detachment of said balloon from said conduit when inflated,

(h) means defining an air inlet to said conduit,

(i) a branch conduit connected to said conduit in communication with said air inlet,

(j) a tubular mouthpiece having an outside diameter adapted to be frictionally fitted to said branch conduit to fixedly and immovably secure the same into the end of said branch conduit,

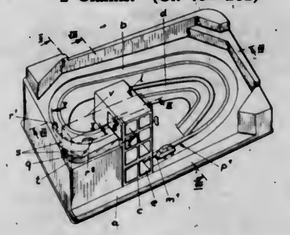
(k) said mouthpiece having an inturned flange adjacent the inner end thereof to define an opening,

(l) a check valve means interposed between said opening of said mouthpiece and said air inlet of said conduit,

(m) said check valve means including a free floating disc mounted for limited axial movement,

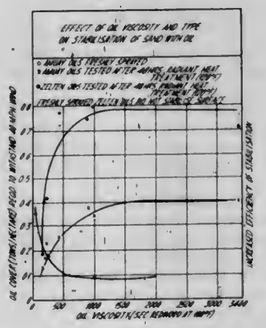
(n) and rib means formed on the internal surface of said branch conduit and said rib means having an end portion spaced from said inturned flange and which cooperates with said inturned flange of said mouthpiece for limiting the axial movement of said disc relative to said opening, said disc having a diameter greater than said opening but less than the internal diameter of said branch conduit whereby said disc permits said air blown into said mouthpiece to flow through said opening and around said disc to said balloon to inflate same and whereby the back pressure of the air in the balloon causes said disc to seal said opening of said mouthpiece to prohibit the escape of air therethrough when blowing has ceased, and thereby permitting the air to exhaust through said port through said exhaust channel to propel the boat through the water.

3,281,985
TOY VEHICLE TRACK ELEVATING DEVICE
Alfred Einfalt, Nuremberg, Bavaria, Germany, assignor to Gebruder Einfalt, Nuremberg, Germany
Filed June 25, 1964, Ser. No. 377,919
Claims priority, application Germany, Feb. 22, 1964, E 26,462
2 Claims. (Cl. 46—202)



1. A toy comprising: a track having a gradual slope for toy vehicles such as toy motor cars; a "sky-scraper" car park between the lower portion at the end of said track and a higher portion at the beginning of said track, said car park having an entrance at said track end and an exit at said track beginning; an elevating device connecting the beginning and end of said track; and first and second stops for arresting the toy vehicles at said entrance and said exit respectively, said first stop comprising a two-armed swivel lever controlled by said elevating device and one arm of which carries run-in stop means arresting the first vehicle arriving and the other arm carries advance stop means spaced from the entrance to said car park arresting the next and further vehicles arriving.

3,281,986
DUNE STABILISATION
Tadeusz L. Les, Drayton, England, assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed July 12, 1963, Ser. No. 294,505
Claims priority, application Great Britain, July 19, 1962, 27,827/62, 27,828/62, 27,830/62
1 Claim. (Cl. 47—9)

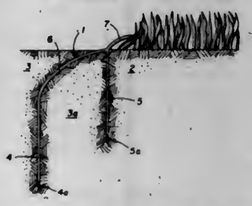


A method of stabilising sand and other top soil from deterioration through wind and water erosion which comprises applying to said sand and top soil a wax-containing petroleum hydrocarbon oil having a viscosity of from about 200 to about 1200 seconds Redwood I at 100° F. in an amount of between about ¾ of a ton and 2½ tons of said oil per hectare of sand and top soil area, thereby substantially preventing sand and top soil deterioration without substantially preventing breathing and moisture intake of said sand and top soil.

3,281,987
SOIL CONDITIONING
David B. Scott, Salinas, Calif., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed July 2, 1964, Ser. No. 380,073
9 Claims. (Cl. 47—9)

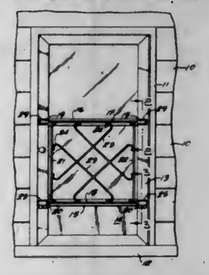
1. The method of inhibiting crusting of surface soils which consists of applying to the soil a synthetic additive chosen from the group consisting of cellulose compounds and aldehyde adducts thereof in doses of from one-half to one hundred pounds of the additive per acre of soil treated.

3,281,988
LAWN EDGING MATERIAL
Felix Cohen, 2465 S. Kearney St., Denver, Colo.
Filed Aug. 7, 1964, Ser. No. 388,131
15 Claims. (Cl. 47—33)



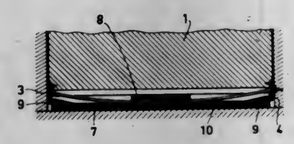
1. Edging material for separation of adjoining grassed and soil areas comprising an integral body of stiff material having substantially parallel depending portions adapted to be inserted into forwardly and rearwardly earth penetrating positions, at least one of said depending portions extending substantially below the soil surface, the forward position being disposed at a soil area and the rearward position being disposed in a bordering grassed area, the vertical extent of said one depending portion being substantially greater than the distance between said depending portions, an interconnecting portion being of arcuate section providing a sloping surface between the tops of the depending portions and merging with a cantilever portion extending rearwardly from the rearward depending portion in spaced overhanging relation to bordering grass in the grassed area.

3,281,989
STORM DOOR HAVING RELEASABLE GRILL
Henry R. Rosenblum, Niles, Ohio, assignor to Rosenblum Brothers Company, Niles, Ohio, a corporation of Ohio
Filed June 19, 1964, Ser. No. 376,397
2 Claims. (Cl. 49—57)



1. The combination of a storm door and a grill therefor, said door having grill receiving brackets thereon, said brackets each comprising a flat apertured body member having a right angular flange on its upper edge, a vertically positioned upstanding wall on said flange, the upper longitudinal edge of said wall being rolled to thicken the same transversely, said flange, wall and rolled longitudinal edge being formed of resilient material whereby said grill is normally retained in snug relation on said storm door.

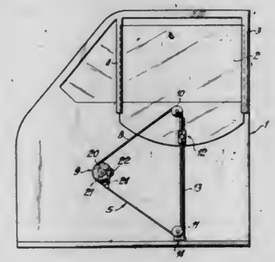
3,281,990
SEALING DEVICE FOR DOORS
Kurt Harald Nilsson, Nacka, Sweden, assignor to Ingeniorsfirma Limenco, Anders Nilsson & Co., Nacka, Sweden, a Swedish joint-stock company
Filed Sept. 8, 1964, Ser. No. 394,713
2 Claims. (Cl. 49—306)



1. A sealing device for doors, adapted to replace a fixed floor sill, comprising a door frame, a door having a downwardly facing groove in its lower edge portion, a sealing ledge substantially in said groove for vertical movement to an upper position clearing the floor and a lower position engaging and sealing against the floor, said sealing ledge comprising a pair of spaced apart, elongated strips of sheet material extending substantially the length of said ledge, and a pair of spacing strips of elastic material one above the other, the lower of said spacing strips extending below said strips of sheet material and serving as the seal when engaging the floor, the upper one of said elastic strips being shorter than said lower elastic strip and being spaced therefrom forming a tunnel below itself; actuating means for said sealing ledge comprising an elongated spring rod located in said groove, articulated means connecting one end of said spring rod to said door and said spring rod extending through said tunnel above said lower elastic strip and below said upper elastic strip, the other end of said spring rod extending out of said groove to engage said door frame when the door is closed to press on the said other end of said spring rod to cause said spring rod to bend downwardly in its central portion to force said sealing device into sealing engagement with the floor, and said spring rod being disengaged from said door frame when the door is opened whereby said spring rod straightens and raises said sealing device by engagement beneath said upper elastic strip.

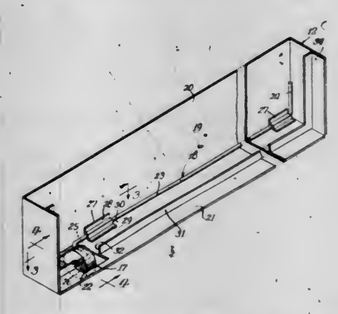
3,281,991
OPERATING MECHANISM FOR RETRACTABLE VEHICLE WINDOWS
Hans Colell, Schwieberdingen Kreis Ludwigsburg, Germany, assignor to Firma Dr. Ing. h.c. F. Porsche K.G., Stuttgart-Zuffenhausen, Germany
Filed Oct. 20, 1964, Ser. No. 405,192
Claims priority, application Germany, Nov. 27, 1963, P 33,074
6 Claims. (Cl. 49—352)

1. Operating mechanism for retractable windows of vehicles, particularly side windows of motor vehicles, comprising a window, means for guiding said window during sliding movement between first, second and intermediate positions, and driving means for said window including a flexible toothed belt operatively connected to said window and supported in closed circuit arrangement by a drive wheel and at least one guide roller, said drive wheel being mounted for rotation on a shaft serving simultaneously as an axle of rotation for a bell crank, and tension roller means supported on one end of said bell crank in contact with said toothed belt for adjustably maintaining the tension in said belt at a preselected value, adjustable mounting means associated with the other end of said bell crank for selectively securing said bell crank at various angular positions representative of different amounts of tension in said toothed belt,



said adjustable mounting means including a segment portion on said bell crank and a clamping member cooperating with said segment portion to adjustably secure said tension roller means in contact with said toothed belt.

3,281,992
WHEEL SUPPORT FOR DOORS
John F. Morrison, St. Paul, Minn., assignor to Whirlpool Corporation, a corporation of Delaware
Filed May 15, 1964, Ser. No. 367,813
5 Claims. (Cl. 49—396)

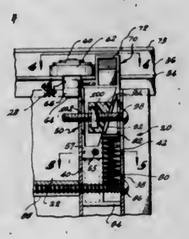


1. Structure for supporting a door for swinging movement about a vertical axis over a subjacent surface, comprising: means defining a door having a bottom and a free edge portion spaced from said axis; a wheel; and means rotatably mounting the wheel on said door at said free edge portion to extend below said bottom for engaging the subjacent surface to support the door thereon, said mounting means including a torsion spring having an elongated torsion portion extending in the direction of the width of said door for yieldably adjusting the position of the wheel for maintained engagement with the subjacent surface during swinging movement of the door thereover, and means on said door for retaining said elongated spring portion against transverse displacement, means at one end of the spring at said free edge portion of the door for mounting said wheel for rotation about an axis parallel to the elongate axis of the elongated spring portion, and means at the other end of the spring for locking said other end against rotation about said axis only in the direction of rotation of the wheel about said axis in moving upwardly relative to said door bottom.

3,281,993
REVERSIBLE SLIDING DOOR AND WINDOW CONSTRUCTION

Harry M. Riegelman, Rolling Hills, Calif., assignor to Ador Corporation, Fullerton, Calif., a corporation of California

Filed May 12, 1964, Ser. No. 366,720
10 Claims. (Cl. 49—425)



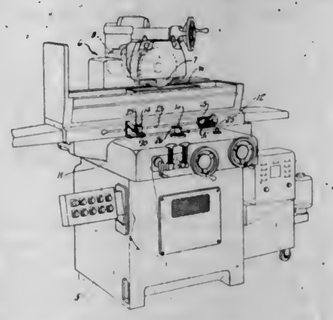
1. A reversible sliding sash construction, comprising:
a pair of normally vertical stiles;
a pair of normally horizontal upper and lower rails joined to said stiles to make up the frame of said sash;
an upper roller means housing removably mounted within each stile at the upper end thereof and extending outwardly therefrom to project above said upper rail;
a wheel carried at the upper end of each housing, said wheel being rotatable about a vertical axis;
integral shielding means extending from the upper end of each housing adjacent each wheel housing, said shielding means having low friction surfaces projecting above and laterally beyond the outer peripheral edges of the wheel carried by said housing;
means for spring-biasing each housing and wheel outwardly from its stile;
mean for adjustably limiting the extent of projection of each of said housings and wheels from their respective stiles;
a lower roller means housing removably mounted at the lower end of each stile, each of said lower roller means housings being physically interchangeable with each of said upper roller means housings;
a wheel carried at the lower end of each of said lower roller means housings, said wheel being rotatable about a horizontal axis;
and means for spring-biasing each of said lower housings and wheels to projected positions below said lower rail.

3,281,994
SURFACE GRINDER

La Roy E. Robinson, Hopkins, and Charles E. Cleland, Minneapolis, Minn., assignors to Continental Machines, Inc., Savage, Minn., a corporation of Minnesota

Filed May 22, 1964, Ser. No. 369,546
8 Claims. (Cl. 51—92)

1. In a surface grinder wherein a rotary power driven grinding tool member and a work-carrying member are mounted and arranged to have relative reciprocatory work-performing traverse and the length of said traverse is greater than the length of the work surface along the line of traverse, so that contact between the grinding tool and the work is repeatedly broken and remade as the direction of relative traverse changes, the combination of:
(A) power means to drive the rotary grinding tool member;
(B) power means to reciprocate one of said members with respect to the other;
(C) reversing means operatively connected with the power means which effects the reciprocation, and arranged to be acted upon by the reciprocated member when work-performing contact between the grinding tool and the work is broken, to reverse the direction said power means moves the reciprocatory member; and

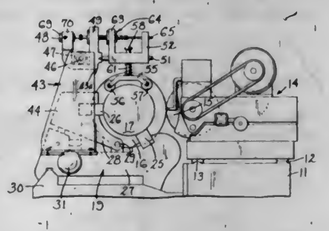


(D) modifying means to unpredictably modify the effect which one of said three means has upon its respective structure, to thereby unpredictably vary the point on the periphery of the rotary grinding tool which first makes contact with the work surface each time contact therebetween is remade, so as to avoid the formation of a visually discernable regular pattern on the ground surface of the work.

3,281,995
MACHINE TOOL

Alfred T. Parrella, Newtown, and Gene R. Gagliardi, Bethany, Conn., assignors to Farrel Corporation, Ansonia, Conn.

Filed Dec. 20, 1963, Ser. No. 332,018
17 Claims. (Cl. 51—165)

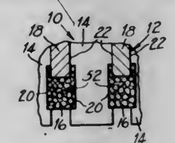


3. In a roll grinder of the type wherein a mill roll is supported on journal ends thereof on journal supports and arranged to be axially aligned with a reference axis, the improvement comprising; means for detecting the center of each journal at its journal support, support means including guide means, said detecting means being movable on said guide means in a direction substantially perpendicular to the axis of a mill roll supported on the grinder, and means responsive to movement of each of said detecting means for indicating the distance of the detected centers from a reference axis.

3,281,996
SAW BLADE

Harlan D. Cuklanz, Worcester, Mass., assignor to Norton Company, Worcester, Mass., a corporation of Massachusetts

Filed Apr. 27, 1964, Ser. No. 362,834
16 Claims. (Cl. 51—204)

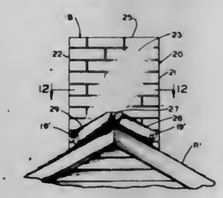


1. A thin abrasive saw comprising a thin metallic support having a narrow edge surface, a cutting portion adjoining said narrow edge surface consisting of at least two layers of abrasive grits disposed in continuous phase between spaced planar side surfaces both substantially perpendicular to a cutting surface generally parallel to said narrow edge surface whereby the outer extremities of all of the abrasive grits adjoining the respective planar side surfaces of said cutting portion are coincident with one of said planar side surfaces, and an electrodeposited bond material in continuous phase interlacing said abrasive grits and adherent to said thin metallic support.

3,281,997
CHIMNEY-SIMULATIVE ROOF EMBELLISHMENTS

John R. Leonard, 12164 Criterion, St. Louis County, Mo.

Filed Dec. 10, 1962, Ser. No. 243,437
12 Claims. (Cl. 52—57)

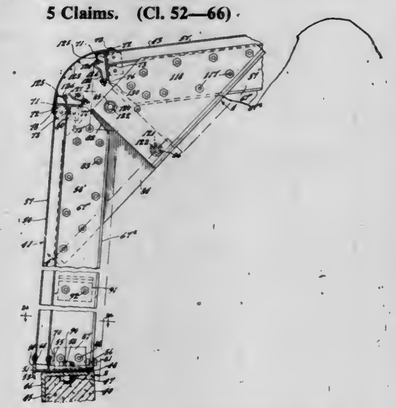


8. A simulated chimney provided for attachment to roofs and similar supporting structures having first and second planar roof surfaces which intersect at a dihedral angle; said simulative-chimney comprising a rectangular block of relatively light weight having faces contoured to simulate a masonry chimney, said block having first and second spaced parallel side faces perpendicularly intersected by front and back spaced parallel faces, said faces having upper and lower coplanar margins, a hinge-forming member rigidly mounted in said block and extending outwardly from said first and second side faces, said hinge-forming member being equally spaced from said front and back faces in upwardly spaced relation to said lower margins, first and second gravity responsive guide-forming members having straight edges and being swingably mounted on the outward extensions of said hinge-forming members in overlying relationship to said first and second side faces, said first guide-forming members being adapted to hang in a vertical position across the side faces of the block when the front face is brought into facewise abutment with the first roof surface in such a manner that the lower margin thereof is presented horizontally above the upper margin thereof whereby the straight edges of the first guide-forming members establish a first plane along which the block can be cut in the formation of an angularly presented first bottom face, said first plane being located at a first angle with respect to the front face of the block, said second guide-forming members being adapted to hang in a vertical position across the side faces of the block when the back face is brought into facewise abutment with the second roof surface in such a manner that the lower margin thereof is presented horizontally above the upper margin thereof whereby the straight edges of the second guide-forming members establish a second plane along which the block can be cut in the formation of an angularly presented second bottom face which intersects the first bottom face in the formation of a dihedral angle equal to the dihedral angle of said roof, said second plane being located at a second angle with respect to the back face of the block, said first and second angles being complementary to the respective angles the first and second roof surfaces form with the horizontal, said first and second bottom faces being adapted for adhesive securement to the first and second roof surfaces, respectively, so as to present the block in an upstanding chimney-simulative position, means for securing said first and second guide-forming members to said side faces at said first and second angles, respectively and flange-like members projecting outwardly from said guide-forming members along the straight edges thereof and adapted for securement to the roof surfaces.

3,281,998
SELF-SUSTAINING COLLAPSIBLE BUILDING STRUCTURE

Ludwig Honold, Concordville, and Frederick N. Feer, Jr., and Frederick J. Mack, Media, Pa., assignors to Ludwig Honold Manufacturing Company, Folcroft, Pa., a corporation of Pennsylvania

Original application Jan. 24, 1962, Ser. No. 168,376. Divided and this application Feb. 1, 1965, Ser. No. 429,550
5 Claims. (Cl. 52—66)



1. In a building construction comprising a pair of opposed side panels and a pair of opposed roof panels, wherein the panels are composed of a plurality of metallic extrusions arranged side by side and having snap-in interlock connections with one another, the extrusions having webs on one side forming a continuous outer surface for the panels, the other side having strengthening flanges integral therewith extending inwardly from the web, a connection between the roof panels disposing them at a pitch oppositely inclined to the horizontal and pivotal connecting means attached between a strengthening flange of the side panels and a strengthening flange of an adjoining roof panel disposing the side walls generally vertically, said pivoted connecting means allowing the wall panel to swing into a position generally conforming to the roof panels so as to form a compact self-contained shipping unit which can be readily erected at a building site to form a self-sustaining building structure.

3,281,999
PREFABRICATED BUILDING CONSTRUCTION

Clifford D. Keely, Palisades Park, N.J.; Abram A. Lebson and Milton Prigoff, executors of said Clifford D. Keely, deceased, assignors to Daniel Keely, Sussex County, N.J.

Filed Apr. 12, 1962, Ser. No. 186,925
9 Claims. (Cl. 52—82)



3. In a building construction of equilateral polygonal form having more than four sides, the side walls of said construction comprising

wall panels,

studs separating adjacent of said panels with means for joining said panels to said studs,

a foundation for said construction comprising

sill pieces of uniform size and uniform trapezoidal shape adapted to receive the lower ends of said panels,

tie pieces connecting middle portions of adjacent sill pieces and bridging said studs, the so-connected sill pieces thereby forming a ring,

a concrete slab poured in the area within the ring formed by said sill pieces,

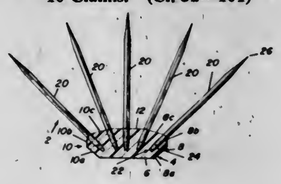
securing bolts extending in a general horizontal direction through said sill pieces and for an appreciable distance into said concrete, and

means secured to said bolts and depending therefrom and holding in place one or more circumferential concrete reinforcing peripherally disposed rods so positioned as to reinforce said concrete.

3,282,000
BIRD PROOFING DEVICE

John B. Shaw and Robert E. Shaw, both % 900 First National Bank Bldg., Johnstown, Pa.

Filed Aug. 22, 1963, Ser. No. 303,866
10 Claims. (Cl. 52—101)



1. A bird proofing device comprising:

(a) an elongated strip-type base support having a bottom surface, side walls extending upwardly from said bottom surface, and a top wall joining said side walls and spaced from said bottom surface;

(b) at least one of said side and top walls having a plurality of recessed sockets spaced therealong;

(c) a plurality of elongated shaft elements;

(d) said shaft elements having a plug at one end thereof, said plug being shaped to be tightly received in said sockets;

(e) said shaft elements being sharply pointed at the opposite ends thereof;

(f) the plug on each of said shaft elements being disposed in one of said sockets whereby said shaft elements each extend from a different one of said sockets;

(g) said sockets being so spaced on said side walls of said base support, and said shaft elements being so disposed with respect to said sockets that the distance between adjacent sockets having a shaft element extending therefrom is less than the length of said shaft members;

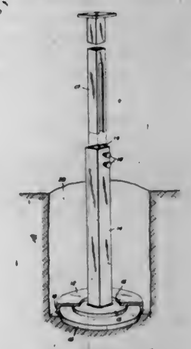
(h) at least some of the shaft elements extending from the sockets along said base support having longitudinal axes disposed angularly to the longitudinal axes of other shaft elements extending from the sockets disposed along the base support;

(i) the depth of said base support being substantially less than the length of said shaft elements.

3,282,001
BASE CONSTRUCTION FOR SUPPORTING A COLUMN

Ivan W. Bigalow, Ross Township, Allegheny County, Pa., assignor to United States Steel Corporation, a corporation of Delaware

Filed May 6, 1963, Ser. No. 278,022
3 Claims. (Cl. 52—111)



1. In combination, a vertical column and a base supporting said column, said base comprising a flat stationary plate, a cover having an opening, means fixing said cover to said plate in spaced relation thereabove, and a flat adjustable plate supported on said stationary plate in the space between it and said cover, said column being fixed to said adjustable plate and extending through said opening, said opening being larger than the cross-sectional dimensions of said column to enable adjustment of said adjustable plate with respect to said stationary plate to rotate said column and shift it horizontally in any direction, but smaller than said adjustable plate, whereby said cover retains said adjustable plate, said column remaining vertical throughout adjustments of said adjustable plate.

3,282,002
KEYING DEVICE FOR EMBEDMENT ANCHOR

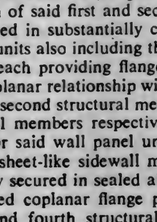
Taylor H. Jefferson and Billy F. Narron, Alexandria, Va., assignors to the United States of America as represented by the Secretary of the Army

Filed Dec. 19, 1963, Ser. No. 331,980
7 Claims. (Cl. 52—162)

1. An improved embedment anchor having tip and tail sections with a substantially planar surface configuration therebetween wherein substantially planar fin means are connected for movement to said tail section thereof,

said fin means

adapted for planar alignment with said planar surface configuration and adapted to pivot in the vicinity of the connection to said tail section, and cable attachment means for applying a withdrawal force disposed on said anchor at a selected distance from said fin means connection thereto such that application of a

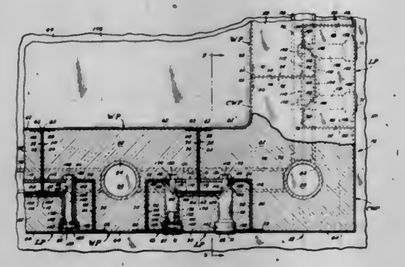


withdrawal force subsequent to embedment of the anchor will effect a pivoting of said anchor with respect said planar fin means.

3,282,003
MODULAR CONTROLLED ATMOSPHERE ENCLOSURE

Laurence B. Swift, Jr., Attleboro Falls, Mass., assignor, by direct and mesne assignments, to Precision Engineering Concern Inc., Norton, Mass., a corporation of Massachusetts

Filed Jan. 12, 1962, Ser. No. 165,915
2 Claims. (Cl. 52—220)

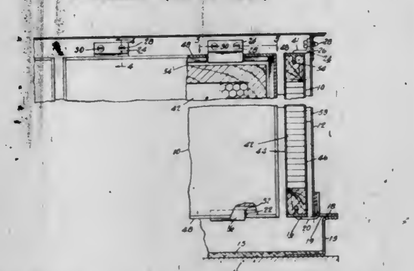


1. A modular enclosure comprising a supporting surface and a plurality of prefabricated interconnected wall panel units disposed on said supporting surface; each of said units including first and second vertically extending opposed spaced part structural members defining end-walls for said panel units, each of said first and second structural members providing a pair of spaced apart vertically extending flange portions extending transversely in a direction toward each other, respective ones of the flange portions of each of said first and second structural members being aligned in substantially coplanar relationship; said wall panel units also including third and fourth structural members each providing flange portions aligned in substantially coplanar relationship with the flange portions of said first and second structural members, said third and fourth structural members respectively defining top and bottom walls for said wall panel units, a pair of spaced apart opposing sheet-like sidewall members each respectively adhesively secured in sealed airtight relationship to respective aligned coplanar flange portions of said first, second, third and fourth structural members; the void space enclosed by said sidewalls and structural members being infilled with a relatively incompressible thermally insulating material bonded to said sidewalls and structural members adding structural rigidity to the wall panel units; each of said first and second structural members including a vertically extending sloping portion adjacent one side thereof defining a pair of wedging surfaces diverging in a transverse direction away from said wall panel unit; the sidewalls of one panel unit being in substantially coplanar relationship with the sidewalls of adjacent aligned wall units, the juxtaposed sloping wedge portions of each aligned pair of adjacent wall panel units converging in a direction away from said wall units, a vertically extending prefabricated locking panel overlapping the juxtaposed sloping wedge portions of each aligned pair of adjacent wall panel units, said locking unit including a pair of vertically extending sloping wedge surfaces in respective mating engagement with the overlapped juxtaposed pair of sloping wedge portions of said aligned pair of adjacent wall panel units; threaded fastener means detachably securing said locking panel to its respective pair of aligned adjacent wall panel units wedgingly securing said wall panel units into aligned and sealed relation; and selected ones of said wall panel units including utility means therein disposed in said void space enclosed by said sidewalls and structural members, and said thermally insulating material also being bonded to said utility means and being the sole means maintaining the latter in aligned position within the wall panel.

3,282,004
REVERSIBLE CAR PANELS

Morrison John Brounn, Flushing, N.Y., assignor to Otis Elevator Company, New York, N.Y., a corporation of New Jersey

Filed May 27, 1963, Ser. No. 283,505
8 Claims. (Cl. 52—269)



8. An elevator cab having an interior wall of multipanelled construction comprising a structural shell having vertically extending sides; a plurality of panels each having two finished decorative facing surfaces and a peripheral edge; panel supporting means secured to said shell having a first set of elements supporting said panels along their peripheral edges; said panels having a second set of elements along their peripheral edges cooperating with said first set of elements and holding said panels in spaced vertical and substantially parallel displacement with respect to the sides of said shell; elements of one set defining apertures and elements of the other set having legs inserted in said apertures so that either facing of any panel can be selectively displayed as part of the interior wall surface of the cab.

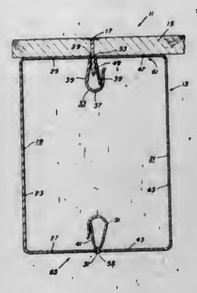
3,282,005
STRUCTURAL ELEMENTS

Benjamin F. Birdwell, Memphis, Tenn., assignor to Benco, Inc., Memphis, Tenn., a corporation of Tennessee

Filed June 11, 1963, Ser. No. 286,988
10 Claims. (Cl. 52—364)

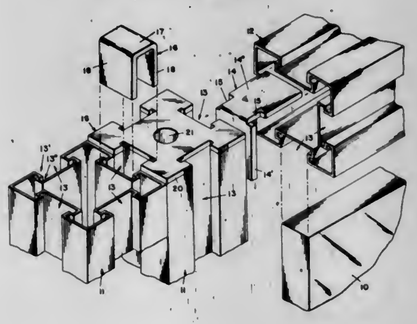
1. A structural box beam adapted for receiving attaching members, said box beam comprising two halves, one of said halves including a wall having a distal edge and the other of said halves including a wall having a distal edge in spaced paralled relationship to said distal edge of

said one of said halves to provide a groove therebetween, and resilient means respectively attached to said distal



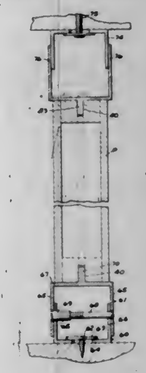
edges for urging said edges towards one another thereby being adapted to clamp attaching members therebetween.

3,282,006
PANELING STRUCTURES
Paul F. Halsey, 8014 E. Gilbert, and Daniel C. Tevis, 3740 Sleepy Hollow, both of Wichita, Kans.
Filed July 9, 1963, Ser. No. 293,724
2 Claims. (Cl. 52—475)



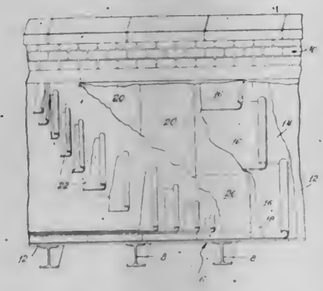
1. In a paneling structure, the combination of a rectangular panel member, a pair of elongated frame members for two adjacent side edges of said panel member, each of said frame members comprising a hollow extrusion of a rectangular cross-section having a width substantially greater than the thickness of said panel member, each frame member having each of its two opposite side walls extruded to form a central longitudinally extending channel of a T-shaped cross-section, said channel having a relatively narrow open outer side corresponding in width to the thickness of said panel and also having a relatively wider inner portion defined by a flat inner wall member and right-angular side edges, said frame members being disposed at right angles to each other with an end portion of one of them overlapping and abutting an end of the other at a corner of said panel member, one side edge of the panel projecting into one channel of the overlapping frame member and abutting the flat inner wall member of the channel, an adjacent side edge of the panel projecting into one channel of the overlapped frame member and abutting the flat inner wall member of the channel, and a right-angled clip for connecting said frame members together at the corner of the panel, said clip having one flat leg slidably inserted in the wide inner portion of said one channel of the overlapping frame member and a second flat leg slidably inserted in the wide inner portion of the other channel of the overlapped frame member, a portion of the second leg adjacent the first leg of the clip being recessed at opposite sides thereof to permit the second leg to project through the narrow outer side of said one channel of the overlapping frame member.

3,282,007
PARTITION STRUCTURE
Henry Fred Campbell, Belleville, and Lubomyr De Columna, Detroit, Mich., assignors to Unit Products Corporation, Detroit, Mich., a corporation of Michigan
Filed Jan. 23, 1962, Ser. No. 168,446
6 Claims. (Cl. 52—475)



1. In a partition structure, the combination comprising
a first U-shaped base channel adapted to be fastened to the floor of a room in which the partition structure is located,
a second U-shaped base channel telescoped over said first base channel,
means for fixing said second base channel relative to said first base channel in adjusted telescoped relation,
a first U-shaped side wall channel adapted to be fixed to the wall of a room in which the partition structure is located,
a second U-shaped side wall channel adapted to be telescoped over said first side channel,
means for fastening said second side channel in adjusted relation to said first side channel,
a first U-shaped ceiling channel adapted to be fixed to the ceiling of a room in which the partition structure is located,
a second U-shaped ceiling channel telescoped over said first ceiling channel,
means for fastening said second ceiling channel in adjusted telescoped relation to said first ceiling channel,
a plurality of wall panels interposed between said base, side and ceiling channels,
each said second base channel, second side channel, and second ceiling channel having a longitudinally extending rib on an outer face thereof,
the adjacent edges of said wall panels having complementary grooves into which said ribs extend,
and a joint assembly between adjacent edges of said wall panels comprising
a pair of diametrically opposed retainer members extending substantially the entire length of the adjacent edges of the wall panels,
each said retainer member having a longitudinally extending retaining rib on an outer face thereof,
each adjacent wall member having a complementary groove into which the rib on the retainer member extends,
a pair of mullion members extending longitudinally substantially along the entire length of the retainer members,
said mullion members having at least two angularly related surfaces along the edges thereof interengaging complementary surfaces on the edges of said retainer members,
and fastening means extending between opposed mullion members for clamping said mullion members against the edges of said retainer members to form a rigid box-like joint.

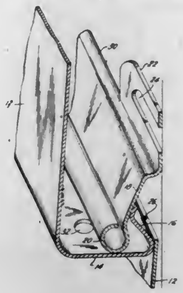
3,282,008
ROOF STRUCTURE
James Patrick Sheahan, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Feb. 14, 1963, Ser. No. 258,584
5 Claims. (Cl. 52—516)



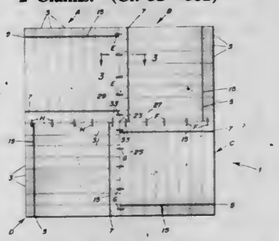
1. An improved roof structure which functions to prevent intensity increase and propagation of a fire under said roof structure as a result of melted roofing materials flowing into said fire, comprising in combination, a roof deck, a continuous coating of rubber base fire resistant adhesive on said deck, a non-combustible water-vapor pervious sheet adhered by said adhesive to said deck and completely covering said deck, a coating of waterproof substance completely covering said non-combustible sheet and adhered thereto, a layer of thermo-insulating material adhered to the top of said coating of waterproof substance and at least one layer of roofing material completely covering and adhered to said insulating material.

3,282,009
METAL SIDING
Alexander A. Chalmers, Caldwell, N.J., assignor to Brixlite Manufacturing Co., Inc., South Kearny, N.J., a corporation of New Jersey
Filed June 28, 1963, Ser. No. 291,495
6 Claims. (Cl. 52—531)

1. A metal siding comprising a generally upright but sloping panel bent inward at its lower edge to form a bottom, and then bent upward and outward to form a flange, the upper edge of the panel being bent reversely downward to form a lip in front of the panel, the lower edge of the lip being shaped to overlap and interlock with the aforesaid flange when lengths of siding are superposed on the side of a building, and tabs of metal being struck from the upper part of the panel and bent reversely to a position above the upper edge of the lip to act as nailing tabs, the vertical height of the tabs being less than that of the lip.



3,282,010
PARQUET FLOORING BLOCK
Andrew J. King, Jr., Box 72, Sevierville, Tenn.
Filed Dec. 18, 1962, Ser. No. 246,305
2 Claims. (Cl. 52—582)

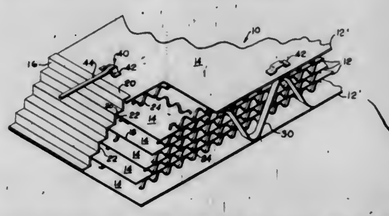


1. A flooring block including in combination, major components and minor components, and each major component being composed of a plurality of minor components, and a flooring block being composed of a plurality of major components, said minor components being arranged in edge to edge series relation and having a pair of spaced apart transversely extending continuous slots formed in the under side thereof, said slots extending upwardly into each minor component to substantially the thickness centers thereof, and a wire of relative rigidity received in each slot and maintained therein solely by a tight friction fit to hold the minor components together, forming a major component, said plurality of major components being arranged together with certain of their edges in abutting relation, and a plurality of separate bendable means fixed to adjacent major components and extending across the abutting edges thereof to connect the major components together forming a flooring block, whereby said major components may assume different angular relationships with respect to each other, while said minor components of each major component are maintained in coplanar relationship.

3,282,011
THERMAL INSULATING STRUCTURE
Robert H. Meserole, Middlesex, Richard E. Slack, South Plainfield, Raymond E. Smith, Whitehouse, and Joseph J. Verdine, Bernardsville, N.J., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Apr. 25, 1962, Ser. No. 190,051
5 Claims. (Cl. 52—573)

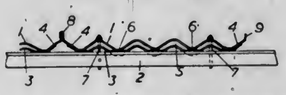
1. A thermal insulating system comprising:
(a) a plurality of panel units forming a layer,

(b) each of said units comprising a plurality of heat reflective metallic spaced apart shields,
(c) joined together by a pair of connectors, one at each of two opposing peripheral sides of said unit, to render each of said shields taut,
(d) each of said shields being sufficiently flexible to respond to thermal and pressure changes to be encountered without rupture,
(e) said connectors being of step formation,



(f) the peripheral sides of said shields being joined to the steps of said formation, and said shields being spaced apart from each other by the steps of said step formation,
(g) the corresponding and mating steps of adjacent panel units slidably engaging each other and providing a series of laterally staggered seals; and
(h) fastening means yieldingly interconnecting adjacent units to each other.

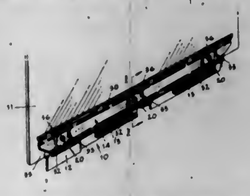
3,282,012
CORRUGATED MULTILAYER ROOFING ELEMENTS
Roger Viguier Du Pradal, "Hillbrook," Castleknock, Dublin County, Ireland
Filed Oct. 8, 1963, Ser. No. 314,684
Claims priority, application Ireland, Oct. 8, 1962, 842/62; Sept. 30, 1963, 950/63
7 Claims. (Cl. 52—618)



7. A rectangular corrugated roofing element comprising an upper sheet having corrugations which are straight superimposed upon a lower sheet having corrugations which conform to and coincide with those of the upper corrugated sheet around all four edges of the sheets but certain of which are not straight longitudinally so that the sheets are spaced apart intermediately, said edges being sealed together and the longitudinal edges of both sheets being turned up perpendicularly to the general plane of the element, portions of one of the sheets which lie adjacent to the turned-up edges thereof being each disposed in the same plane as said adjacent turned-up edge but out of contact with the other sheet.

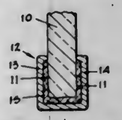
3,282,013
WINDOW MOUNTING
James H. Bokey, Toledo, Ohio, assignor to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Filed May 13, 1964, Ser. No. 366,990
4 Claims. (Cl. 52—624)

1. In a window mounting structure, a glass sheet having a plurality of apertures spaced along and inwardly from a marginal edge thereof, an elongated support plate opposite one surface of said sheet, a layer of resilient material between said support plate and said one surface, openings in said support plate in registry with said apertures in said sheet, ridge portions on the surface of said support plate facing said sheet, said ridge portions extending longitudinally of said elongated support plate on each side of said openings and substantially throughout the length of said support plate, an elongated clamping plate opposite the other surface of said sheet, a layer of resilient material between said clamping plate and said other surface, openings in said clamping plate in regis-



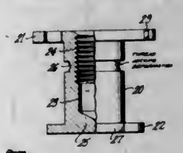
try with said apertures and with said openings in said support plate, longitudinally extending ridge portions on the surface of the clamping plate facing said sheet on each side of the openings in said clamping plate, said ridges on said clamping plate extending substantially throughout the length thereof, and fastening means extending through said apertures and the openings in the support and clamping plates and urging said support and clamping plates into engagement with said sheet.

3,282,014
AUTOMOTIVE WINDOWS
William P. Bamford, Maumee, Kenyon E. Golding, Waterville, and James Glenn Morgan, Toledo, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Filed July 6, 1964, Ser. No. 380,216
3 Claims. (Cl. 52—627)



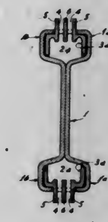
1. A transparent glazing panel for automobiles comprising a sheet of glass, a coating confined to and extending along a margin of said sheet and having a rough outwardly directed surface, a channel shaped mounting member in surrounding relation to said margin and a layer of permanently compressible material between said rough surface and said mounting member.

3,282,015
MOLDABLE INSERT FASTENER WITH DUAL POTTING PORTS IN HEAD
Frederick W. Rohe, 5191 S. Bradford, Placentia, Calif., and Charles S. Phelan, Tustin, Calif.; said Phelan assignor to said Rohe
Filed Apr. 20, 1962, Ser. No. 189,194
1 Claim. (Cl. 52—704)



An insert for installation in a sandwich panel embodying a fragile, low density core sandwiched between spaced skins of solid sheet material, and having a hole beginning with a circular aperture in one of said skin sheets, extending through said core and terminating adjacent the other skin sheet, said insert comprising: a mounting head of circular disc form of a diameter to fit closely within said aperture and having a port therein, adapted to receive the tip of a nozzle of a potting material injection gun, said head also having an inspection port, and a hollow body providing a fastener-receiving bore and of a diameter smaller than said head, extending axially therefrom and receivable in said hole within said core and adapted to receive a fastener element, said inspection port functioning to indicate the filling of said hole around said insert when potting material commences to exude therefrom, said ports being disposed eccentrically with reference to said bore and on opposite sides thereof.

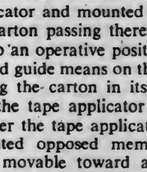
3,282,016
UPRIGHT ELEMENTS FOR CONSTRUCTING CONVERTIBLE, EXTENSIBLE, JUXTAPOSABLE, QUICK-ASSEMBLY AND DISASSEMBLY RACK-TYPE AND LIKE STRUCTURES OR UNITS
Jacques Dennery, Paris, France, assignor to Société Anonyme des Etablissements Dennery, Paris, France
Filed July 22, 1963, Ser. No. 296,719
Claims priority, application France, July 26, 1962, 905,170
1 Claim. (Cl. 52—732)



An upright element for constituting convertible, superposable and juxtaposable pieces of furniture adapted to be quickly assembled and disassembled, said element comprising a core and at least one light-alloy section, said core consisting of a web having a pair of opposed channel-shaped flanges forming a tubular recess at each end of the web, the free marginal edges of the opposed channel-shaped flanges being spaced from each other to provide rectilinear gaps, said light-alloy section slidably engaging one of the tubular recesses of said core and having at least one longitudinal series of holes and longitudinal ribs disposed on either side of the longitudinal series of holes, said ribs projecting to the outside through the rectilinear gap of said recess whereby said rectilinear gap permits access to said holes.

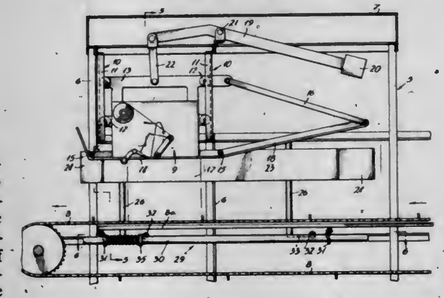
3,282,017
METHOD OF PROVIDING INCREASED STRENGTH TO COMPOSITE BEAM CONSTRUCTION
Frank C. Rothermel, 6234 Jerome Circle, Harrisburg, Pa.
Filed May 14, 1963, Ser. No. 280,371
2 Claims. (Cl. 52—741)

1. A method of fabricating a composite beam for a load-bearing structure comprising the steps of:
(a) rolling a steel I-beam having a pair of flanges of equal thickness and cross-sectional area interconnected by a web which lies centrally of and perpendicular to said flanges;
(b) removing equal widths and thicknesses from both sides of the upper flange of said beam along substantially continuous lines which extend along a major longitudinal portion of said beam;



(c) attaching upwardly-extending shear transfer devices to the upper flange of said beam;
(d) embedding said shear transfer devices in a continuous slab of concrete; and
(e) permitting said concrete to solidify.

3,282,018
APPARATUS FOR APPLYING ADHESIVE TAPE TO CARTONS
Frederick Victor George Bixley, Newnham, Tasmania, Australia, assignor to Newnham Industries Pty. Limited, Newnham, Tasmania, Australia, a company of Tasmania, Australia
Filed Nov. 24, 1961, Ser. No. 154,465
Claims priority, application Australia, Mar. 10, 1961, 2,361; May 8, 1961, 4,369; Sept. 7, 1961, 8,967
8 Claims. (Cl. 53—137)

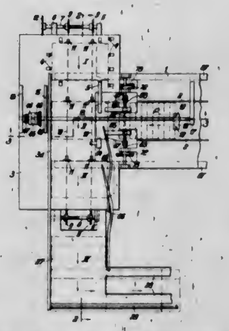


8. An apparatus for applying an adhesive tape, strip or the like to cartons, including a conveyor for feeding cartons through the apparatus, a tape applicator mounted for movement in a vertical plane in the apparatus and operable to apply a length of tape to a carton passing thereunder, height control means operatively connected to the tape applicator and mounted on the apparatus for actuation by a carton passing therethrough to move the tape applicator to an operative position for applying tape to said carton, and guide means on the apparatus for automatically aligning the carton in its desired lateral position relative to the tape applicator as the carton is fed towards and under the tape applicator, said guide means including elongated opposed members biassed toward each other and movable toward and away from each other, said guide means extending above the conveyor and at each side of the center line thereof, and means for biassing said elongated members toward each other, said height control means being attached to a panel on which is mounted the tape applicator, the panel being slidably located in vertical guides mounted in the framework of the apparatus.

3,282,019
MECHANISM ATTACHED TO MACHINES FOR THE MANUFACTURE OF ENVELOPES, FLAT BAGS OR THE LIKE FOR PACKING PACKETS OF THE FINISHED ENVELOPES IN FOLDING BOXES

Günter Ehlscheid, Niederbieber, Kreis Neuwied, Germany, assignor to Richard Winkler, Rengsdorf uber Neuwied, Germany, and Kurt Dunnebier, Wollendorf uber Neuwied, Germany

Filed Apr. 30, 1963, Ser. No. 276,828
Claims priority, application Germany, May 3, 1962, W 32,190
7 Claims. (Cl. 53—160)



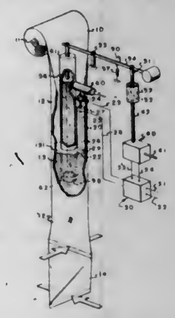
1. A packaging device for attachment to and coaction with an envelope-making machine to insert envelopes into cartons open at least at one side, said device comprising, in combination, a receiving table for successively receiving thereon finished envelopes in side-by-side upright relationship to form a stack of envelopes on said table; a stepwise operating conveyor means for feeding successive cartons along a rectilinear path extending transversely of the lengthwise axis of said stack with the open side of the cartons facing the leading end of the stack; envelope-inserting means for inserting envelopes from said stack into a carton fed into lengthwise alignment with said stack, said inserting means including a threaded rotary spindle mounted parallel to the lengthwise axis of stack, a carrier supported on said spindle in threaded engagement therewith for moving the carrier along said spindle by rotation thereof, and a pusher arm supported by said carrier, said pusher arm being lengthwise movable transversely of said spindle between a position extending between a group of envelopes in said stack at the leading end thereof to separate said group of envelopes from the remainder of the stack and a position withdrawn from the stack; drive means coacting with said pusher arm for moving the same into engagement with envelopes in the stack and coacting with said carrier for moving the same along said spindle to push the engaged group of envelopes into the carton aligned with the stack; and cycling means controlling said drive means to activate the pusher arm first to push the engaged group of envelopes into the aligned carton and then to return the pusher arm to a starting position.

3,282,020
QUANTITY CONTROL OF LIQUIDS FOR PACKAGING

Philip Norman Smith, Spartanburg, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware

Filed Aug. 12, 1963, Ser. No. 301,441
4 Claims. (Cl. 53—180)

1. Apparatus to produce liquid filled packages comprising: means supplying a flat web of packaging material, said material being formed into a tube, means transversely sealing closed a lower portion of said tube, means supplying a liquid into said tube, said liquid having a oscillating liquid level, said means supplying liquid into said tube being closed to the atmosphere and having an outlet below said liquid level, modulated valve means operably associated with said liquid outlet, liquid level sensing means in said tube operably associated with said liquid level which include as a portion of an actuating circuit a pair of liquid sensing contacts which conduct only upon simultaneous contact with liquid and not otherwise to produce conducting and non-conducting conditions with the rise and fall of the oscillating liquid level

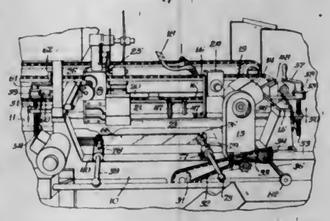


to produce pulses of rectified current, said liquid level sensing means being electrically communicated with an electrical filter means for transforming these pulses into a composite electrical output signal of direct proportion to the average liquid level of the liquid body, said electrical filter being coupled with pneumatic transducer means so that the said electrical output signal thereto is transformed into an output pressure directly proportional to the electrical input signal, and operatively associated with said pneumatic transducer means, pressure responsive means operative upon said valve means for opening and closing said valve to provide liquid from said source of supply to said liquid body.

3,282,021
BREAD WRAPPING MACHINE

James B. Hartman, Kansas City, Mo., assignor to Interstate Bakeries Corporation, Kansas City, Mo., a corporation of Delaware

Filed Aug. 30, 1963, Ser. No. 305,722
3 Claims. (Cl. 53—201)

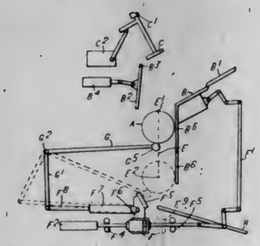


1. In a bread wrapping machine comprising a main frame, a movable subframe holding folding and sealing elements for one end of the bread loaf and wrapper therefor moving along a conveyor and apparatus to move said subframe only horizontally with respect to the main frame, the improvement comprising: means to releasably attach said apparatus to said subframe, whereby said subframe may be released for movement other than horizontal; means adapted to be connected to said released subframe to lift the subframe and move said elements out of the path of the end of a wrapper moving along said conveyor; a wrapper guide; and means to releasably mount the wrapper guide to intercept and guide the end of said wrapper.

3,282,022
TRANSFER MECHANISM FOR LOCATING A BODY IN TURN IN TWO OPERATIVE POSITIONS

Joseph Henri Alfred Serge Lagesse, Wembley, England, assignor to Tape Engineering Limited, London, England, a company of Great Britain

Filed Oct. 7, 1963, Ser. No. 314,369
19 Claims. (Cl. 53—210)



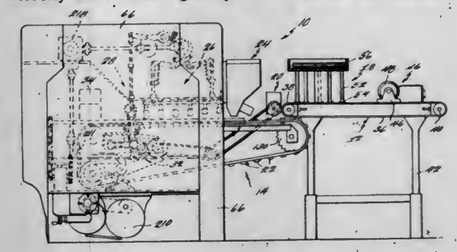
1. Transfer mechanism for locating a body (which at least for part of its length is of generally cylindrical shape having a diameter which may have any value within a predetermined range) in turn in two operative positions, in one of which (the "peripheral operative position") one of the generators of the cylindrical surface of the body coincides with a predetermined fixed datum line (the "fixed peripheral datum") whilst in the other (the "axial operative position") the cylinder axis of the body coincides with another predetermined datum line (the "fixed axial datum") parallel to the fixed peripheral datum, such transfer mechanism comprising in combination a gauging device for measuring the diameter of the body, control means responsive to the operation of the gauging device, a stop device position by the control means in accordance with the diameter of the body for engaging with part of the cylindrical surface of the body and thereby locating the body in one of its two operative positions, abutment means also positioned by the control means in accordance with the diameter of the body, and means for releasing the stop device to permit movement of the body into its second operative position determined by the abtument means.

3,282,023
BISCUIT PACKAGING MACHINE

Lawrence E. Steimen, Topsfield, Arthur H. Buckley, Salem, and Gregory C. Kekopoulos, Ipswich, Mass., assignors to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed Apr. 17, 1963, Ser. No. 273,775
29 Claims. (Cl. 53—237)

1. A dough-biscuit packaging machine comprising: endless conveyor means having an upper flight and a lower flight and including transverse rows of die cups extending along said conveyor means; a forming station and a charging station successively spaced along the upper flight of said conveyor means; means for indexing cams across said charging station below said upper flight; means for indexing said conveyor means in cooperative relationship with said can indexing means; means for depositing dough blanks into the rows of die cups before said forming station; a battery of pistons at said forming station operative to form said dough blanks in said die cups into the shape of a biscuit; and a battery of pistons at said charging station, and means to move said last mentioned pistons in a downward stroke at a velocity faster than gravity to accelerate the formed

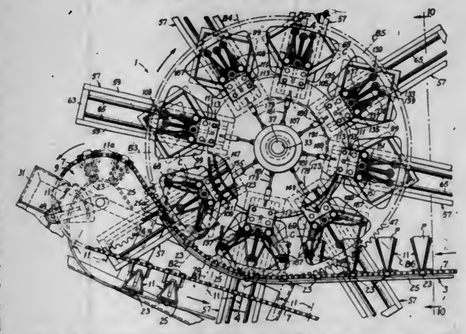


dough blanks carried thereby into the cans indexed therebelow and prevent tilting of the blanks as they are deposited in the cans.

3,282,024
PACKAGING APPARATUS FOR TETRAHEDRON-SHAPED CONTAINERS

Gordon S. Anderson, Framingham, Mass., assignor to Packaging Frontiers, Inc., Waltham, Mass., a corporation of Delaware

Filed Mar. 27, 1963, Ser. No. 268,265
23 Claims. (Cl. 53—247)



21. Apparatus for packing tetrahedron-shaped packages in multicornered open-top containers with the packages arranged in sets like a fan, with each set consisting of a number of packages with one end of each package in the set at the apex of the fan and the other ends of the packages in the fan constituting the outer edge of the fan, and with said sets positioned in the container with their apices at different corners of the container and with one fan overlying another, said apparatus comprising means mounting a container for movement successively to present different corners thereof in a loading position, and means for forming a number of said tetrahedron-shaped packages into a fan-shaped set of said packages and transferring the fan-shaped set of said packages into the corner of the container which is in loading position with the apex of the fan at that corner.

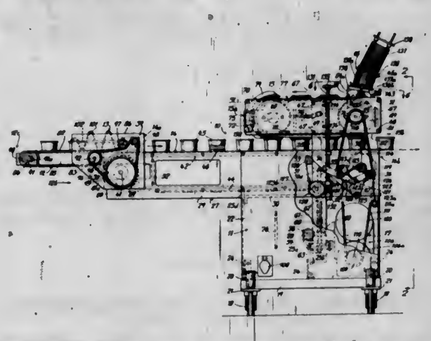
3,282,025
HIGH SPEED CAPPING MACHINE

Stephen W. Amberg, St. James, and Thomas Doherty, Stony Brook, N.Y., assignors to Lily-Tulip Cup Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 26, 1963, Ser. No. 275,987
40 Claims. (Cl. 53—304)

1. Apparatus for capping a lid on to a receptacle comprising a receptacle transport conveyor of the continuous

type and including means for determining the position thereon of a receptacle to be carried thereby, a lid transport conveyor of the continuous type and including means for determining the position thereon of a lid to be carried thereby, said receptacle transport and lid transport conveyors being arranged in parallel spaced apart relation with respect to each other, and means for driving said



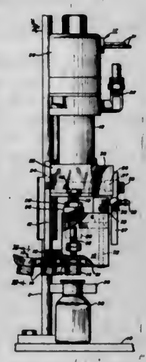
receptacle transport and lid transport conveyors at the same linear speed and in the same direction within the zone defined by said spacing between the conveyors, said respective positioning means of the conveyors being substantially in alignment with each other for receiving said receptacle therebetween when said respective positioning means are within the zone defined by said spacing between the conveyors.

3,282,026

APPARATUS FOR APPLYING STOPPERS TO BOTTLES

Joseph M. Cozzoli, North Plainfield, and Harold F. Scribner, Westfield, N.J., assignors to Cozzoli Machine Company, Plainfield, N.J., a corporation of New Jersey

Filed Aug. 20, 1963, Ser. No. 303,269
13 Claims. (Cl. 53—306)



1. Apparatus for receiving a stopper from a supply chute and applying the stopper to a bottle comprising,

(a) an operating head movable from a stopper-receiving position to a stopper-applying position,

(b) means forming a cavity of a predetermined, fixed volume in the head which cavity is open to a side wall and the bottom wall of the head, thereby to receive a stopper from the supply chute when the head is in the stopper-receiving position, the cavity opening in the bottom wall of the head normally permitting free fall of the stopper therethrough,

(c) separate stopper-supporting means movably carried by the said head, said means normally spanning the bottom opening of the cavity to support a stopper in said cavity,

(d) means for moving the head between the said positions thereby to apply the stopper to the bottle, and

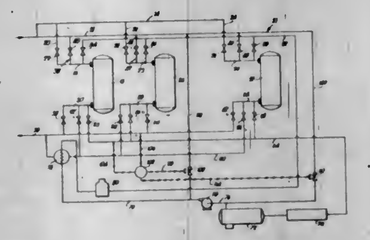
(e) actuating means carried by the head and moving the said stopper-supporting means out of engagement with the stopper when the said head has been moved a predetermined distance toward the stopper-applying position.

3,282,027

PRESSURE DIFFERENTIAL CONTROL APPARATUS AND A METHOD FOR ADSORPTION

Karl E. Johnson and Floyd E. Mertz, Prairie Village, Kans., assignors to J. F. Pritchard and Company, Kansas City, Mo., a corporation of Missouri

Filed June 2, 1965, Ser. No. 460,653
6 Claims. (Cl. 55—21)



1. In adsorption apparatus for removing a component from a wet gas stream comprising a main wet gas line, a main dry gas line at least two units having an agent therein capable of removing said component from the gas, a regeneration system for heating a fluid regenerate for said agent, and conduit means operably coupled to said main gas lines, the units and said system for cyclically (a) directing a portion of the wet gas from said main wet gas line through a first unit and (b) directing the hot regenerating fluid from said system through a second unit containing a quantity of said agent which has previously been loaded with said component, said regenerating system including a conduit separated from the main dry gas line by a valve, and fluid pump means in the system for circulating said fluid, regenerate through the system, the combination with said apparatus of:

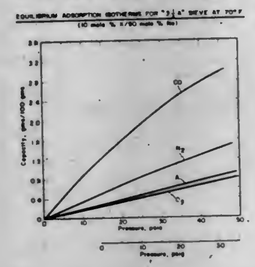
means for maintaining the pressure of said fluid regenerate in the conduit at a predetermined pressure below the pressure in said main dry gas line comprising, a first fluid line interconnecting said system downstream of the pump with the main wet gas line, a second fluid line interconnecting the system upstream of the pump with the main wet gas line, structure connected to said main dry gas line and said conduit for sensing the pressure differential therebetween, variable valve means in said first and second fluid lines respectively for individually varying the quantity of gas permitted to flow in each of said lines, and control means coupled to said structure and the variable valve means for varying the latter in response to variation of the pressure differential between the gas in said main dry gas line and the conduit to maintain a preselected pressure differential between the main dry gas line and the conduit to prevent leakage of regenerate fluid through said valve and into the main dry gas line.

3,282,028

SYNTHETIC MOLECULAR SIEVES

Norton H. Berlin, Matawan, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed Jan. 6, 1964, Ser. No. 336,007
12 Claims. (Cl. 55—66)



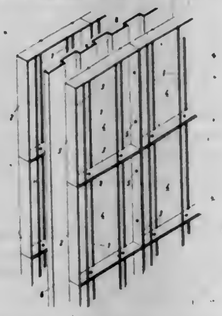
1. A method of preparing adsorbents suitable for separating nitrogen and oxygen which comprises reacting a 4A synthetic molecular sieve with an ionic solution containing potassium ions having the capacity to replace sodium ions in said molecular sieve with about 9 to 11 mole percent of potassium.

3,282,029

EMITTING ELECTRODE CONSTRUCTION FOR ELECTROSTATIC SEPARATORS

Walter Steuernagel, Frankfurt am Main, Germany, assignor to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany

Filed June 1, 1964, Ser. No. 371,652
Claims priority, application Germany, June 19, 1963, M 45,018
3 Claims. (Cl. 55—141)



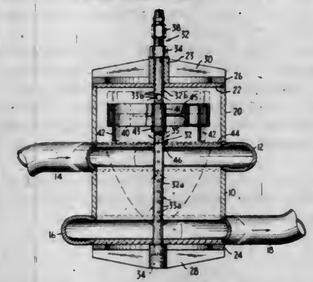
1. In an electrostatic dust separator having spaced rows of vertically disposed longitudinally extending plate-like precipitating electrodes forming a longitudinally extending gas passageway and a plurality of vertically disposed wire-like emitting electrodes positioned in said gas passageway substantially midway between said precipitating electrodes, the improvement comprising support means located in said passageway for supporting said emitting electrodes comprising a plurality of vertically arranged open-ended rectangular frames composed of flat iron strips, each said frame having connected flat top, bottom and side wall portions and having open ends facing said precipitating electrodes, said emitting electrodes being fixedly and electrically conductively secured to the peripheral edges of said flat top and bottom wall portions, said frames being stacked with said flat wall portions in surface contact with each other, and means securing and electrically connecting said frames to each other.

3,282,030

APPARATUS FOR FLUID TREATMENT

Joseph B. Griffo and Bohumir A. Larys, Woodstock, N.Y., assignors to Rotron Manufacturing Company, Inc., Woodstock, N.Y., a corporation of New York

Filed Sept. 25, 1963, Ser. No. 311,558
4 Claims. (Cl. 55—170)



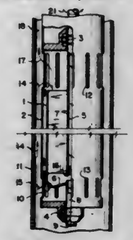
1. Apparatus for the treatment of liquid flowing through a conduit, which liquid may contain unwanted, entrained gases, comprising, chamber means coupled to said conduit for converting the straight liquid flow in said conduit into a free vortex flow and thereafter reconverting said free vortex flow into straight flow for continued passage along said conduit, the free vortex flow resulting in the gathering of the entrained gases substantially along the vortex axis, a valve housing coupled to said chamber means, a hollow tubular member mounted longitudinally along the vertical axis of said chamber means and extending into said valve housing to establish fluid communication between said chamber means and said housing, said tubular member having a plurality of apertures therealong for enabling both said liquid and said gases gathered along said vortex axis to enter said housing, a vertically oriented hollow stem mounted in said housing having an open upper end extending outside of said housing, at least one aperture in said stem at a point therealong within said housing, and a valve float movably mounted on said stem adapted to rise to an upper position to close said aperture when the liquid level in said housing rises and to fall to lower position to open said aperture when the liquid level falls.

3,282,031

CENTRIFUGAL GAS ANCHOR

Eduard A. Vos, Wichita, Kans., and Johannes J. M. van Oosterhout, Rijswijk, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Apr. 22, 1964, Ser. No. 361,803
Claims priority, application Great Britain, June 21, 1963, 24,899/63
8 Claims. (Cl. 55—203)



1. Apparatus for separating gas and liquid from a gas-liquid mixture comprising:

a cylindrical housing;

an elongated open-top cup-shaped member rotatably mounted within said housing and arranged about

the longitudinal axis thereof said top of said cup-shaped member being open at all times and defining a common gas-liquid intake and separated gas discharge opening;

tubular liquid discharge means located centrally and depending within said cup-shaped member, said tubular means having an open end near the bottom of said cup-shaped member;

means connecting the outer wall of said tubular means to the inner wall of said cup-shaped member;

means for rotating the cup-shaped member; and,

intake fluid passageway means through said housing for supplying the gas-liquid mixture outside the cup-shaped member so as to spill over the open top thereof;

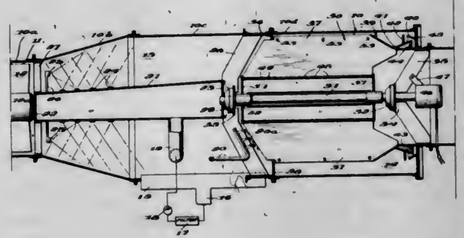
gas discharge means through the wall of said housing for leading away separated gas from the top of said cup-shaped member.

3,282,032

ROTATING ELIMINATOR

James F. King, Jr., and Agnew H. Bahnson, Jr., Winston-Salem, N.C.; Wachovia Bank and Trust Company, executor of said Agnew H. Bahnson, Jr., deceased, and said King assignor to The Bahnson Company, Winston-Salem, N.C., a corporation of North Carolina

Filed Mar. 12, 1964, Ser. No. 351,418
4 Claims. (Cl. 55—226)



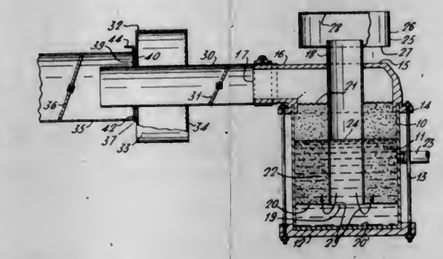
1. In a combined air washer and eliminator, the combination comprising a casing having an air inlet at one end and an air outlet at the other end, motor driven fan means for moving the air stream to be treated through said casing between said inlet and outlet, a washer chamber located within said casing and including water spray means for effecting contact with the air, an eliminator chamber located within said casing on the downstream side of said washer chamber, a rotatable shaft mounted bladed eliminator assembly located within said eliminator chamber, said eliminator assembly comprising a plurality of radially extending blades which are essentially planar between the air inlet and outlet edges thereof for producing a centrifugally induced helical outward flow path of liquid droplets separated out of the air stream, a windmill mounted on the shaft which mounts said eliminator assembly, said windmill being driven by the air stream passed through said washer and eliminator chamber and being provided with blades having adjustable pitch, and adjustable speed governor means on said windmill for changing the pitch of said windmill blades, said speed governor means being responsive to a change in a parameter related to use of the air discharged from said eliminator assembly for effecting a corresponding adjustment in the setting of said speed governor means thereby to effect a corresponding change in the speed of said windmill and eliminator assembly and hence a corresponding change in the amount of moisture removed from said air stream.

3,282,033

CARBURETORS

Ahto Seppanen, 36 Hullmar Drive, Downsview, Ontario, Canada

Filed Aug. 2, 1965, Ser. No. 476,317
7 Claims. (Cl. 55—234)



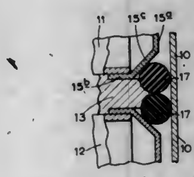
1. A carburetor comprising in combination a primary fuel receiving chamber connected to a supply source, a stand pipe extending vertically through said chamber to project beyond the upper end thereof, the lower end of said stand pipe opening into said chamber and occupying a horizontal plane spaced from the floor of said chamber, a lower horizontal supporting screen surrounding said lower stand pipe end and spanning said chamber, said chamber having a substantially vertically disposed discharge aperture in the vicinity of the upper end thereof, a substantially horizontal, primary conduit commuicating with said aperture, a mixture control valve in said conduit, a primary air filter communicating with said stand pipe externally of said chamber, a secondary conduit communicating with said primary conduit, a secondary air filter communicating with said secondary conduit, a variable air intake valve at the locus of communication between said primary and secondary conduits, a throttle valve in said secondary conduit, an upper horizontal screen surrounding said stand pipe slightly below said discharge aperture, the space within said chamber surrounding said stand pipe and between said upper and lower screens being occupied by fibreglass or the like substance.

3,282,034

EDGE SEALING MEANS FOR FILTER ROLLERS

Frederick Floyd, 101 Watling St., Strood, England

Filed Nov. 5, 1962, Ser. No. 235,333
8 Claims. (Cl. 55—354)



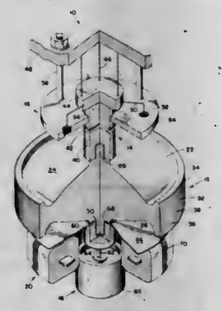
1. In a filter having a casing with side walls and a web of filter material to pass through said casing; rollers between which the filter material passes extending between the side walls and terminating at their end portions closely adjacent the side walls and pinching and compressing the edges of the web adjacent the side walls, each roller having a flexible wall contact member arranged to bear outwardly against a side wall of the casing and against the flexible member of an adjoining roller, the edge of the web being compressed between the flexible members.

3,282,035

MOLECULAR BEAM VELOCITY SELECTOR

Robert Steinberg, Berea, Ohio, assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Dec. 30, 1963, Ser. No. 334,678
8 Claims. (Cl. 55—400)



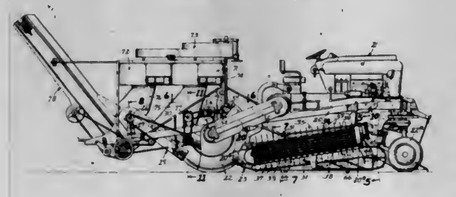
1. A molecular beam velocity selector comprising: a vertically supported disk having tapered upper and lower faces and an outer rim composed of longitudinally extending land and groove portions whereby said disk has optimum dimensional stability at high rotational speeds; a first permanent magnet attached to the upper face of said disk; a second permanent magnet dampingly suspended above said first permanent magnet; a needle-like pin bearing extending outwardly from the lower face of said disk; a cup-like bearing surface disposed beneath said pin bearing; and driving means attached to said disk for driving the same at extremely high rotational speeds.

3,282,036

MECHANICAL BEAN PICKER

Bernard S. Paulson and Bruce H. Paulson, both of Clayton, Wis., assignors, by mesne assignments, to Pixall Corporation, Clear Lake, Wis., a corporation of Wisconsin

Filed Mar. 5, 1964, Ser. No. 349,572
7 Claims. (Cl. 56—19)



1. A mechanical picker for beans and the like planted in rows comprising:

(a) a mobile frame;

(b) a first endless conveyor generally horizontally disposed generally longitudinally of the direction of travel of said frame and having a delivery flight portion in closely spaced relation to the ground;

(c) a pair of gathering rotors mounted for rotation in said frame in laterally spaced parallel relationship on axes extending generally longitudinally of the direction of travel of said frame, the axis of each rotor being disposed laterally outwardly of opposite longitudinal edges of said first conveyor, said rotors including a plurality of circumferentially and longitudinally spaced radially extended resilient picker tines, the outer ends of which are adapted to move upwardly and inwardly through the plants of adjacent rows to pick pods from said plants and carry the same toward the delivery flight of said first conveyor;

(d) a pair of longitudinally extended rows of resilient stripper fingers carried by said frame, one each adjacent a different one of said rotors, the stripper fingers of each row having resilient edge portions, said stripper fingers being arcuate and having a curvature of arc substantially the same as that described by the extended ends of the tines, said fingers working between the tines of their respective rotors;

(e) means for imparting rotation to said rotors; and

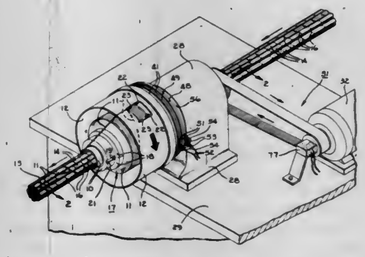
(f) a second endless conveyor sloping upwardly and rearwardly of the direction of travel of said frame, the upper end of said second conveyor being pivotally mounted and the lower end of said second conveyor extending below and overlapping the rearward end of said first conveyor, the lower end of said second conveyor being spring-supported.

3,282,037

APPARATUS FOR DETECTING A SUBSTANTIALLY DEPLETED OR MISSING BINDER THREAD CONDITION

Richard D. Barnett, Omaha, and William J. Rea, Ralston, Nebr., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 15, 1963, Ser. No. 273,036
7 Claims. (Cl. 57—18)



1. In combination with apparatus including a rotatable member for wrapping a thread about an article and a rotatable member for holding a supply of the thread, wherein the members rotate relative to one another during a wrapping operation and wherein the rotational speed differential between the members progressively changes during a wrapping operation and reaches a predetermined value as the supply member becomes substantially empty of the thread, mechanism which comprises:

a pulse generator mounted in part for rotation with the wrapping member and in part for rotation with the supply member so as to generate pulses at a frequency indicative of the speed differential between the members; and

sensing means responsive to the pulse frequency and being operable when the pulse frequency being generated is indicative of the predetermined value of the speed differential between the members.

3,282,038
SYNTHETIC PAPER YARN

James Donald Howell, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 2, 1962, Ser. No. 191,723
2 Claims. (Cl. 57—155)

1. A synthetic paper yarn comprising a twisted strip of a fused, uncalendered sheet of staple fibers having a denier within the range of from 0.5 to about 10 and a length from about ⅛ to about one inch that are bonded by physical entwinement with a plurality of supple wholly synthetic polymeric particles having one dimension of minor magnitude relative to their largest dimension, a large surface area and a fiber coarseness denier no greater than about 15, the said particles being further characterized by an ability to form a waterleaf having a couched wet tenacity of at least about 0.034 lb./in./oz./yd.² when a pulp of the said particles is deposited from a liquid suspension upon a foraminous surface, which waterleaf, when dried at a temperature below about 50° C., has a dry tenacity at least equal to its couched wet tenacity, said twisted strip having beween about 5 and 25 twists per inch and said strip before twisting have a width of between about 1/16 to 1¼ inches and a basis weight of less than about one ounce per square yard.

3,282,039
METHOD OF TREATING RAYON TIRE CORD

Charles J. Geyer, Jr., Berwyn, and James B. Curley, Wallingford, Pa., assignors to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Sept. 6, 1963, Ser. No. 307,260
6 Claims. (Cl. 57—164)



1. The method of preparing rayon tire cord for incorporation into a rubber body as a reinforcing agent comprising making a rayon tire cord having a substantially higher extensibility than desired in the finished product, wetting the cord with an aqueous solution of a cord-to-rubber bonding agent, stretching the cord while wet at least 10% to reduce the extensibility to the point desired in the finished product, and drying the cord while maintaining it in the stretched condition.

3,282,040
METHOD OF MAKING CABLE AND CABLE VALLEY FILLER

Felix Hirsch, Cambria Heights, N.Y., assignor to General Cable Corporation, New York, N.Y., a corporation of New Jersey

Original application June 15, 1964, Ser. No. 375,235. Divided and this application Oct. 22, 1965, Ser. No. 502,095
4 Claims. (Cl. 57—165)

4. The method of making a water repellant, light weight cable valley filler which comprises the steps of spraying creped paper with a wax in water dispersion at a temperature which prevents the wax from solidifying and separating, gathering and twisting the paper transversely of its length to a cord, limiting the application of the wax in water dispersion so as to leave the creped paper with a discontinuous coating of wax and a substantial

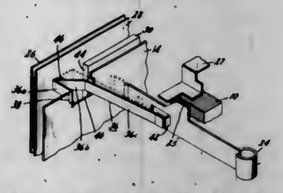


quantity of the interstices of the creped paper unfilled with wax, and drying the cord to evaporate the water.

3,282,041
ALARM SET INDICATING MEANS

Harry Albinger, Jr., and Chester B. Marble, Ashland, Mass., assignors to General Electric Company, a corporation of New York

Filed Feb. 14, 1962, Ser. No. 173,295
5 Claims. (Cl. 58—22.7)



1. In an alarm clock, a clock face dial, adapted to permit light to pass through a small portion of said dial, a light source positioned behind said dial, a flexible control member having one end attached to a fixed support behind said dial and adjacent said small dial portion, said control member having a reflective surface aligned with said small dial portion, said shutter member having a first position wherein said reflective surface reflects light from said source forwardly through said small dial portion so that a light spot appears on said dial in a darkened surrounding, said control member having a second position wherein said reflective surface blocks the passage of light from said source through said small dial portion, an alarm mechanism including a manual alarm shut-off lever which is movable between an alarm off and an alarm set position, said lever being connected to move said control member to said first position as the shut-off lever is moved to the alarm set position, and to said second position when the shut-off lever is placed in its alarm off position so that a light spot appears on said dial when the shut-off lever is in its alarm set position and does not appear when the lever is in its alarm off position.

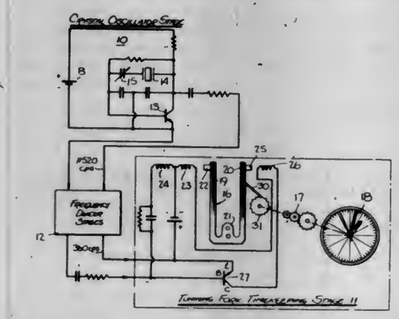
3,282,042
CRYSTAL CONTROLLED CHRONOMETER

Hans B. Schaller, Bienne, Switzerland, assignor to Bulova Watch Company, New York, N.Y., a corporation of New York

Filed Sept. 10, 1964, Ser. No. 395,424
6 Claims. (Cl. 58—23)

1. A chronometer comprising: an electronically-actuated tuning-fork timekeeper having a tuning fork whose

natural frequency exceeds 300 cycles per second, an electronic circuit to maintain said fork in vibration at its natural frequency and with substantially constant amplitude, said circuit including a battery to supply power thereto and means to convert the vibratory motion of the fork into rotary motion to operate the indicators of the timekeeper, said timekeeper being accurate to within a few seconds a day, and frequency oscillator means having a stability exceeding that of said timekeeper and including a crystal-controlled generator operating at a frequency in the kilocycle range whose lower limit is

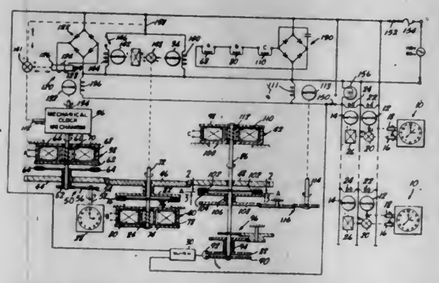


3000 kilocycles which is a multiple of the fork frequency in conjunction with a divider to apply periodic pulses which are a sub-multiple of the crystal frequency to said electronic circuit to synchronize the operation thereof whereby the precision of said timekeeper is governed by said oscillator means to an accuracy within a fraction of a second a day, said oscillator means being powered by a direct-current source independent of said battery, whereby upon failure of said oscillator means said timekeeper continues to function with a high degree of accuracy.

3,282,043
CLOCK SYSTEM

Rudolph M. Duris, South Norwalk, Conn., assignor to Edwards Company, Inc., a corporation of Connecticut

Filed June 16, 1964, Ser. No. 375,492
7 Claims. (Cl. 58—24)



1. In an electric clock system of the type having a plurality of electric clocks each having a first electric motor for driving the hands of the clock so as to keep the correct time and a second electric motor for driving the hands of the clock so as to make up lost time, a down-time accumulator comprising:

(a) an additional electric motor having an output which is rotated thereby;

(b) rotating member means having an input which rotates said rotating member means;

(c) switch means responsive to the position of the rotating member means to control the flow of electric current to the additional electric motor and the second electric motors, said switch means in one position of the rotating member means cutting off the flow of electric current to the additional electric motor and the second electric motors and in other positions of the rotating member means allowing electric current to flow to the additional electric motor and the second electric motors;

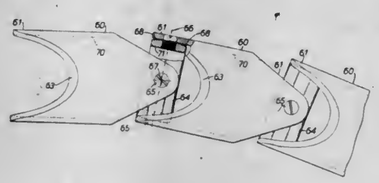
(d) a mechanical clock movement means; and

(e) electromagnetic clutch means coupling said mechanical clock movement means to the rotating member means when the supply of electric current to the electric clock system is interrupted to drive said rotating member means into said other positions to thereby permit current to flow to the second electric motors to make up the lost time when the supply of electric current is restored to the electric clock system and coupling said additional electric motor to said rotating member means when electric current is restored to the electric clock system to drive said rotating member means back into said one position to thereby cut off current flow to the second electric motors.

3,282,044
HOISTING CHAINS

Albert J. Maisey, Heston, Middlesex, England, assignor to Fairey Engineering Limited, Heston, Middlesex, England, a company of Great Britain

Filed Aug. 28, 1964, Ser. No. 392,956
Claims priority, application Great Britain, Aug. 30, 1963, 34,483/63
5 Claims. (Cl. 59—78.1)



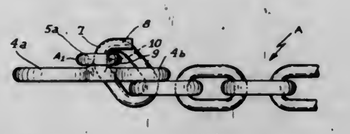
1. An elongated suspension means comprising in combination an articulated chain comprising a series of rigid open-ended tubular links pivotally interconnected in alignment with one another by means of universal-joint connections which permit each link to pivot through a limited angle relatively to the adjacent link about two transverse pivotal axes, and a number of flexible service leads extending through the aligned interiors of the tubular links from end to end of the chain, each link of the chain comprising a short open-ended length of rigid tube which is formed at each end with two axially-protruding tapering nose portion extending as continuations of its side wall on diametrically-opposite sides thereof, the protruding nose portions at each end being separated by corresponding re-entrant bays formed in intervening diametrically-opposite parts of the side wall, and the two pairs of nose portions at the oppsite ends of each link being angularly displaced by 90° with respect to one another around the longitudinal axis of the link, and adjacent ends of adjacent links being coupled together with the noses of one protruding into the re-entrant bays of the other by means of a gimbal ring to which the oppositely-directed noses of the two links are pivoted about transverse axes at right angles to one another.

3,282,045

MEANS FOR AN EYE-LINK FOR CHAINS

Yves Thélan, 15 Rue Theophile Lambert, Grand Couronne, France

Filed Mar. 6, 1964, Ser. No. 350,055
Claims priority, application France, Mar. 9, 1963, 927,573, Patent 1,351,086; July 31, 1963, 943,247
3 Claims. (Cl. 59—93)



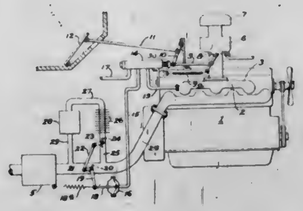
1. An eye-link for securing a chain, comprising two different diameter loops, one of said loops being larger than the width of the links of a chain to be secured and the other of said loops being smaller than said width, a waisted portion connecting said two loops and defining a communicating gap therebetween having a width slightly greater than the thickness of the chain links, and two generally parallel claws having base parts extending substantially at right angles to said waisted portion at opposite sides of said gap and end parts directed from said waisted portion toward the smaller of said loops and being spaced from the plane of said smaller loops so that, when a link of a chain is situated in said smaller loop, a next adjacent link of the chain can receive said claws and abut against said base parts thereof.

3,282,046

AUTOMATIC TREATMENT OF SELECTED PORTIONS OF EXHAUST GASES

Brooks Walker, 1280 Columbus Ave., San Francisco, Calif., and Fred V. Hall, San Francisco, Calif.; said Hall assignor to said Walker

Filed June 11, 1964, Ser. No. 374,549
6 Claims. (Cl. 60—29)



1. In an engine having a fuel feeding system, a throttle means connected to said fuel feeding system, a driver's operable throttle control, an exhaust pipe for conducting the exhaust gases from said engine, an exhaust treating container, a pipe connecting said container to said exhaust pipe, valve means connected to said exhaust pipe, said valve means controlling the portion of said exhaust gases that go to said treatment container, an intake manifold for said engine, a suction operated motor, a second valve, said second valve controlling the flow of the suction from said engine intake manifold to said motor, said second valve being mechanically connected to said throttle means, said motor operating said first valve to direct more exhaust gas to said exhaust treater at low or closed throttle operation than at full throttle operation.

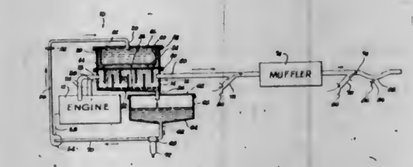
2. An engine having a throttle valve and control mechanism for controlling the rate of fuel feed and to control the power output of said engine, an exhaust manifold, main exhaust pipe, a by pass exhaust system adapted to receive exhaust from said main exhaust pipe and return exhaust gas to said exhaust pipe, an exhaust treating device in said by pass exhaust system, first valve means for closing off said main exhaust pipe so as to turn most of the exhaust for said engine through said auxiliary exhaust system and said exhaust treating system, said first valve means being connected to power means, second valve means independent of said throttle valve, said second valve means being controlled by the position of said control mechanism, said power means being controlled by the position of said throttle control mechanism through said second valve means so that less exhaust gas is treated at wide open throttle than at idle throttle position and most of said exhaust gas from said engine is treated when said throttle is closed.

3,282,047

PURIFYING APPARATUS TO ELIMINATE AIR POLLUTION FROM AUTOMOTIVE, INDUSTRIAL AND COMMERCIAL EXHAUST PRODUCTS

Sidney B. Wertheimer, 7403 Woodmar Ave., Hammond, Ind.

Filed Feb. 23, 1965, Ser. No. 434,547
4 Claims. (Cl. 60—30)



1. In an apparatus for cleaning and purifying waste gases,
the combination comprising a main housing having a chamber therein,
an inlet pipe connected to one end of said housing for conducting the waste gases into said chamber,
a discharge pipe connected to the opposite end of said housing for carrying away the purified gases,
a tank mounted above said housing containing a purifying liquid,
a finely perforated member in the upper end of said chamber and connected to said tank for spraying the purifying liquid into said chamber and into intimate contact with the waste gases passing through said chamber,
a filter basket in said tank for filtering the liquid before allowing it to pass to said perforated member.
a liquid outlet pipe connected to the lower end of said housing for removing the liquid from said chamber,
and a pump for recirculating the liquid from said outlet pipe to said tank.

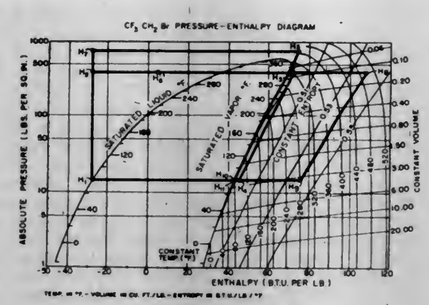
3,282,048

POWER FLUID

Kevin P. Murphy, Bernardsville, Sabatino R. Orfeo, Morris Plains, and William J. Cunningham, Rockaway, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed June 4, 1965, Ser. No. 461,424
10 Claims. (Cl. 60—36)

1. The method for converting heat energy to mechanical energy which comprises vaporizing a fluid comprising 1-bromo-2,2,2,-trifluoroethane, by passing the same in heat exchange relationship with a heat source, and utilizing the kinetic energy of the resulting expanding vapors to perform work.

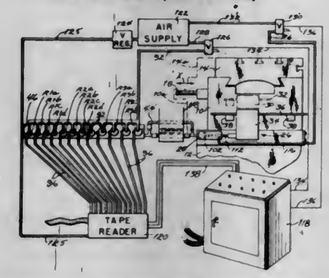


3,282,049

DIGITAL HYDRAULIC POSITIONING DEVICE

Robert C. Benton, State College, Pa., assignor to Chemcut Corporation, a corporation of Pennsylvania

Filed Feb. 15, 1965, Ser. No. 432,499
16 Claims. (Cl. 60—52)



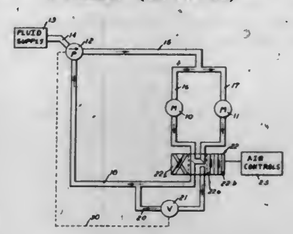
1. In a machine tool having workpiece carrying means, and automatic means controlled by the position of a driven piston for controlling point-to-point locations into which the workpiece is carried by the carrying means:
a driven piston which on the drive stroke is displaced from an initial starting position to a selected position therefrom and then restored on the return stroke;
a control assembly to control movement of the piston including a number of individually extensibly and retractively movable rams;
a ported hydraulic manifold for the number of rams and provided with a like number of side ports slidably receiving the rams, said manifold having a main central chamber which is common to the rams, and which is generally cylindrically elongated in the direction of the longitudinal axis of the manifold;
said rams each projecting inwardly through the plane of the receiving port to a point of adjacency to one another within, and free from contact with the interior of, their common chamber in the hydraulic manifold;
means for activating selected ones of said rams to cause displacement of liquid in said common hydraulic manifold which combines the output displaced by the activated rams; and
means in the output of said manifold providing at times a one way hydraulic drive column flowing from said rams and communicatively connected with an input to the driven piston providing input liquid flow to one side thereof; and
interconnecting means including a reservoir and providing at other times a one way return flow from the piston to the rams, via the reservoir.

3,282,050

STEERING SYSTEM

Raymond A. Hanson, % R. A. Hanson Company, Palouse, Wash.

Filed Oct. 23, 1965, Ser. No. 502,907
5 Claims. (Cl. 60—52)



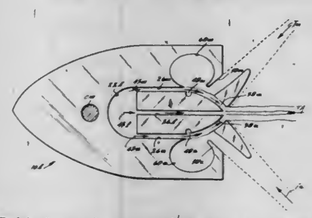
1. In an apparatus for controlling two fluid motors by a single pump having a pump inlet, a pump outlet and a pump control mechanism effective to vary the pump output at the pump outlet;
a fluid source;
means connecting the pump inlet to said fluid source;
first conduit means operatively connected between the pump outlet and the respective motor inlets;
second conduit means operatively connected to said pump inlet;
third conduit means operatively connected to said second conduit means;
a variable flow control valve interposed in said third conduit means;
a shiftable steering control valve having inlet ports operatively connected to the outlets of said motors and outlet ports respectively connected to said second and third conduit means;
and means interconnected between the pump control mechanism and said flow control valve to vary the restriction of said flow control valve responsive to variation in pump output.

3,282,051

FLUID DYNAMIC CONTROL DEVICE

Happy Hugh Unfried, Los Angeles, Calif., assignor to Mattel, Inc., Hawthorne, Calif., a corporation of California

Filed Feb. 4, 1965, Ser. No. 430,427
44 Claims. (Cl. 60—230)



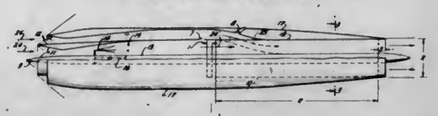
1. A fluid dynamic controlled device, comprising:
fluid-stream-forming means for forming a stream of fluid;
first boundary means laterally adjacent one side of said stream;
second boundary means laterally adjacent the other side of said stream, said second boundary means being generally opposite and downstream of said first boundary means;
separating means adjacent to and upstream of said first boundary means for creating a pressure gradient across said stream in a direction to deflect it onto said first boundary means; and

vibratory means for directing a vibratory flow of fluid at said stream adjacent said separating means to disturb said stream in such a manner that the pressure adjacent said second boundary means is reduced whereby the direction of said pressure gradient is reversed across said stream to switch said stream from said first boundary means to said second boundary means.

3,282,052
BYPASS RAMJET ENGINE WITH HEAT EXCHANGER

Ernest Lagelbauer, 410 E. 13th St., New York, N.Y.

Filed Apr. 8, 1964, Ser. No. 358,283
4 Claims. (Cl. 60—262)

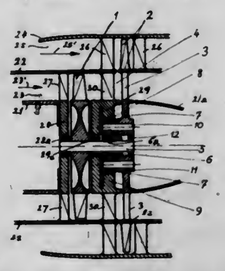


1. A bypass ramjet propulsion engine comprising in a first series flow path, a main ram air inlet, a combustion chamber including fuel nozzles and flame holders, a heat exchanger; a bypass duct in flow parallel with said first ram air inlet, combustion chamber and heat exchanger; said bypass duct defining in a second series flow path a second ram air inlet, a transition flow means, and said heat exchanger; said heat exchanger effecting an indirect transfer of heat from a high velocity gas flow from said combustion chamber to the air stream flowing from said bypass transition duct; the heat exchanger being made up of a first set of passages through which the high velocity burned gases are isentropically expanded to supersonic velocity and a second set of parallel passages through which the bypass gases flow at subsonic velocity in heat exchange relationship with the supersonic combustion gases; means at the downstream end of said second set of passages to expand the bypass gases isentropically; the combustion gas and bypass gas being mixed downstream of the heat exchanger.

3,282,053
DUCTED FAN ARRANGEMENT FOR AIRCRAFT

Willy Messerschmitt, Munich, Germany, assignor to Messerschmitt Aktiengesellschaft, Augsburg, Germany

Filed Sept. 24, 1964, Ser. No. 398,942
Claims priority, application Germany, Oct. 2, 1963, M 58,404
11 Claims. (Cl. 60—263)

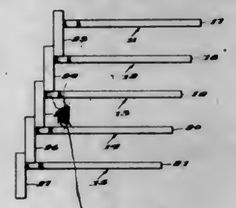


1. Fan arrangement for an aircraft, comprising, in combination, a plurality of tubular wall means having a common axis and forming an inner annular duct and an outer annular duct, said wall means including stationary tubular wall means between said outer and inner ducts having a narrow annular gap; supporting means secured to said wall means and having an inner part including bearing means located in the region of said axis; a shaft supported in said bearing means for rotation; a turbine rotor carried by said shaft and having radial turbine vanes located in said inner annular duct; fan means mounted for rotation about said axis and having radially extending spokes located in said inner annular duct, a narrow ring secured to the outer ends of said spokes and located in said annular gap flush with said tubular wall, and radial fan vanes projecting from said ring and located in said outer annular duct, said spokes having a profile offering low resistance to the flow of gases through said inner annular duct and causing no propulsion of gases in the same; and reduction transmission means connecting said shaft with said fan means for driving the latter at a selected rotary speed lower than the rotary speed of said turbine rotor so that the centrifugal force acting on said fan vanes does not exceed a predetermined limit.

3,282,054
BLOCK STRUCTURE FOR RETAINING WALLS

Irving Saginor, 2055 N. Vermont St., Apt. 302, Arlington, Va.

Filed Apr. 1, 1964, Ser. No. 356,585
3 Claims. (Cl. 61—35)



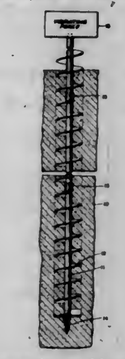
2. A retaining wall comprising
a plurality of prefabricated block structures arranged in horizontal rows which are superposed vertically, each of said prefabricated block structures comprising
a main body portion,
said main body portion being of a rectangular parallepiped configuration having substantially rectangular front and rear faces, and
a "T" shaped projection integral with said main body portion, said "T" shaped projection including
a cross-bar member and
a stem member projecting rearwardly from said rear face,
said cross-bar member being formed on the rear face of said main body portion and extending longitudinally equidistant on either side of the midpoint of said rear face with its longitudinal axis parallel to and located above the longitudinal axis of said main body portion,
the longitudinal extent of said cross-bar member being a substantial portion of the longitudinal extent of said main body portion whereby each block rests upon the cross-bar members of two adjacent supporting blocks located therebeneath to maintain a horizontal alignment of the blocks.

3,282,055
SOIL SETTLING METHOD

Richard E. Landau, Middle Village, N.Y. (717 Cornwell Ave., Hempstead, N.Y.)

Original application July 2, 1958, Ser. No. 746,099, now Patent No. 3,096,622, dated July 9, 1963. Divided and this application Mar. 26, 1963, Ser. No. 267,967
5 Claims. (Cl. 61—36)

1. A method of consolidating a granular earth formation comprising penetrating into the formation to the desired depth with an implement having an outwardly projecting vane or vanes and vibrating the vane or vanes for a period of time sufficient to accomplish the consolida-

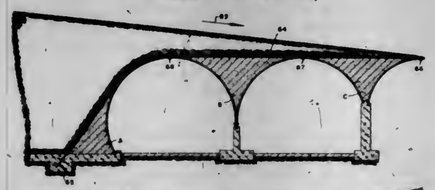


tion of the earth formation, said vane or vanes being operative as antenna to disseminate the vibrations through the earth formation.

3,282,056
FLEXIBLE RETAINING WALL STRUCTURE

Christopher L. Fisher, St. Boniface, Manitoba, Canada, assignor, by mesne assignments, to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio

Filed July 24, 1961, Ser. No. 128,340
12 Claims. (Cl. 61—39)



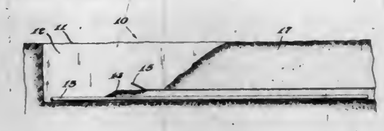
1. A load bearing structure comprising a corrugated sheet metal wall which is arcuate about a horizontal axis, said wall having an elongated substantially horizontal lower edge portion and an elongated upper portion substantially paralleling said lower edge portion, the corrugations in said wall running continuously from said lower edge portion thereof to said upper portion thereof, said corrugated wall by reason of its arcuate curvature having a concave side which is exposed and a convex side against which compacted fill material is positioned, means holding the said lower edge portion of said wall against movement downwardly and away from said fill in a horizontal direction, means for holding said upper portion of the wall against movement laterally of said upper portion and away from said fill, said last mentioned means comprising tying means attached to said upper wall portion and extending away from the convex side of said wall and anchoring means holding said tying means against movement in a direction away from the anchoring means.

3,282,057
UNDERGROUND LINE AND METHOD OF INSTALLING SAME

Adam W. Prosser, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed July 12, 1961, Ser. No. 123,504
16 Claims. (Cl. 61—72.1)

10. A backfilled trench in the ground having a line adjacent the bottom thereof and positioned intermediate

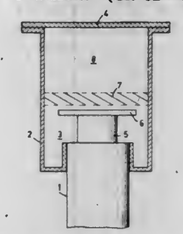


between said line and the surface of the ground a tearable plastic indicating sheet.

3,282,058
DEVICE FOR PRODUCING VERY LOW GAS PRESSURES

Albertus Venema and Gijsbert Prast, both of Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed July 6, 1965, Ser. No. 469,387
Claims priority, application Netherlands, July 17, 1964, 6408166
3 Claims. (Cl. 62—6)

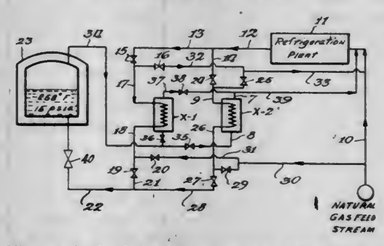


1. A device for producing very low pressures comprising a cold gas refrigerator provided with a plurality of expansion spaces, an enclosure to be exhausted having at least one wall constituted of a material of good thermal conductivity, said enclosure having a working space, said wall being in thermal contact with said expansion space having a higher average temperature than another expansion space, one of the walls of said other expansion space being in thermal contact with the wall arranged in the enclosure to be exhausted.

3,282,059
METHOD OF PURGING HEAT EXCHANGERS OF SOLIDIFIED IMPURITIES IN THE LIQUEFACTION OF NATURAL GAS

James B. Maher and James Mair, Chicago, Ill., assignors to Chicago Bridge & Iron Company, Oak Brook, Ill., a corporation of Illinois

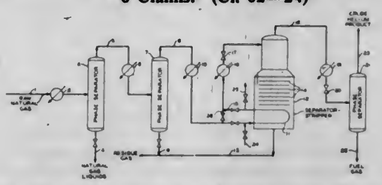
Filed Jan. 21, 1964, Ser. No. 339,227
3 Claims. (Cl. 62—12)



1. The method of liquefying natural gas which comprises subjecting an incoming stream of natural gas to refrigeration means to substantially cool the gas and place it under high pressure, passing the gas through the tube side alternately through one and then the other of two similar final heat exchangers placed in parallel arrangement just prior to liquefying the gas and cooled on

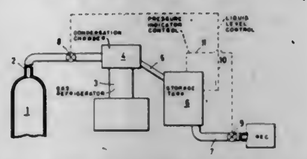
the shell side to a temperature substantially below the temperature of incoming gas, flashing the gas after it leaves said final heat exchanger to liquefy the gas, conveying the liquid gas to a storage tank, conveying cooled natural gas alternately through one and then the other of said final heat exchangers cooled on the shell side to a temperature substantially below the temperature of incoming gas on the tube side so that impurities normally present in the natural gas are solidified and adhere to the tube side surfaces of the heat exchanger, circulating natural gas from the feed source alternately through one and then the other of said final heat exchangers when not in use in the liquefaction system to vaporize solids therein, thereby removing the vaporized solids from the heat exchanger, and conveying the circulating natural gas containing the vaporized solids back to said incoming stream preceding said refrigeration means at a lower temperature for subsequent liquefaction.

3,282,060
SEPARATION OF NATURAL GASES
George E. Hays, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Continuation of application Ser. No. 168,667, Jan. 25, 1962. This application Nov. 9, 1965, Ser. No. 514,736
6 Claims. (Cl. 62—24)



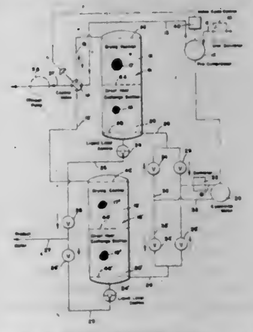
1. Gas separation apparatus comprising first indirect cooling means, conduit means communicating between a supply of mixed gases containing helium and said first cooling means, first vapor-liquid phase separator means, conduit means communicating between said first cooling means and said first separator means, conduit means communicating with a lower portion of said first separator means and adapted to withdraw a liquid therefrom, second indirect cooling means, conduit means communicating between said second cooling means and an upper portion of said first separator means and adapted to pass a vapor from said first separator means to said second cooling means, combined separator-stripper means comprising vapor-liquid contacting means disposed above an indirect heat exchange means, conduit means communicating between said second cooling means and said indirect heat exchange means, first expansion means, conduit means communicating between said indirect heat exchange means and said first expansion means, conduit means communicating between said first expansion means and a region above said vapor-liquid contacting means and adapted to pass a mixture of vapor and liquid from said first expansion means onto said vapor-liquid contacting means, conduit means communicating with a region below said indirect heat exchange means and adapted to withdraw a stripped liquid from said region, second expansion means, conduit means communicating between said second expansion means and a region above said vapor-liquid contacting means and adapted to pass a vapor from said region above said vapor-liquid contacting means to said second expansion means, second phase separator means, conduit means communicating between said second expansion means and said second phase separator means, conduit means adapted to withdraw a liquid from a lower region of said second phase separator means, and conduit means adapted to withdraw a crude helium-containing vapor product from an upper region of said second phase separator means.

3,282,061
GAS LIQUEFIER PLANT WITH LOW PRESSURE STORAGE
Johannes Rudolphus van Geuns, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 31, 1964, Ser. No. 341,696
Claims priority, application Netherlands, Feb. 4, 1963, 288,549
3 Claims. (Cl. 62—37)



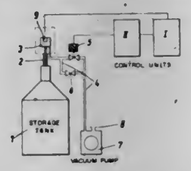
1. A gas liquefying plant comprising a gas supply under pressure, a refrigerator having a condensation chamber, a supply pipe connecting said gas supply to the condensation chamber of said refrigerator, the cold part of said refrigerator being in said condensation chamber, a storage container for said liquefied gas in open connection with the condensation chamber of said refrigerator, an inlet pipe for conducting condensed liquid from the condensation chamber to the storage container, an outlet pipe for said storage container, said condensation chamber being connected to said inlet pipe, a valve in both said supply and outlet pipes, a first control device operative after the liquid in said storage container has reached a given level to close the valve in said supply pipe and thereby close off the associated storage container, and a second control device which after cooling of the storage container opens the valve in said outlet pipe when the pressure in the storage container is substantially equal to a predetermined pressure.

3,282,062
NATURAL GAS PROCESSING SYSTEM
Ray E. Hudson and O. J. King, Odessa, Tex., assignors to Basin Recovery Corporation, Midland, Tex., a corporation of Texas
Filed Mar. 4, 1966, Ser. No. 531,675
4 Claims. (Cl. 62—39)



1. In a natural gas processing system, a direct heat exchange liquid recovery unit, comprising:
(A) first and second towers, each of said towers having a drying and heat exchange section;
(B) compressor means fed by raw gas;
(C) expansion motor means;
(D) control valve means for cycling flow of gas from said compressor to said drying section of said first tower while cycling flow of gas from said drying section of said second tower to exhaust and alternatively cycling flow of gas from said compressor to said drying section of said second tower while cycling flow of gas from said drying section of said first tower to exhaust;
(E) means for conveying gas to and from said heat exchange sections of said first and second towers to and from said expansion motor; and
(F) means for conveying product from the bottom of said heat exchange sections of said first and second towers.

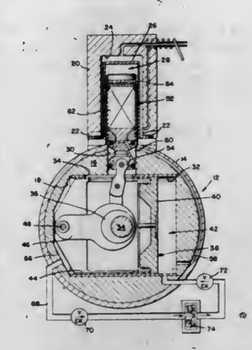
3,282,063
CONTROL ARRANGEMENT
Gustav Klipping, Berlin, Dieter Vetterkind, Dusseldorf, and Georg Walentowitz, Berlin, Germany, assignors to Max-Planck-Gesellschaft, Gottingen, Germany
Filed Feb. 24, 1965, Ser. No. 434,853
Claims priority, application Germany, Feb. 25, 1964, M 60,048
11 Claims. (Cl. 62—45)



1. An arrangement for controlling the temperature of an evaporator for liquid refrigerants having low boiling points, such as helium, wherein the refrigerant is supplied to the evaporator by means of a vacuum pump at a rate proportional to the temperature at a point within the evaporator body, said arrangement comprising, in combination:
a hollow evaporator body;
means for feeding refrigerant to said body;
periodically operable electromagnetic valve means for controlling the amount of such refrigerant entering said evaporator body through said feeding means;
temperature sensing means for sensing changes in temperature in said evaporator body; and
control means responsive to said sensing means for varying the transmission ratio of said valve as a function of the temperature changes sensed by said sensing means to increase the transmission ratio in response to a temperature rise in said body and to decrease the transmission ratio in response to a temperature drop in said body.

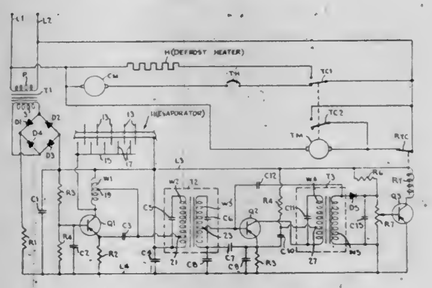
3,282,064
REFRIGERANT REGENERATION AND PURIFICATION AS APPLIED TO CRYOGENIC CLOSED-CYCLE SYSTEMS
Kenneth W. Cowans, Los Angeles, and John B. Glode, Santa Monica, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed June 29, 1965, Ser. No. 467,846
12 Claims. (Cl. 62—45)

1. In a closed-cycle refrigerator employing a refrigerating fluid,
a closed housing defining a first cylinder and a second cylinder,
said cylinders having longitudinal axes in angular relation to each other,
movable pistons disposed in the cylinders and defining therewith a work volume comprising compression and expansion chambers,
said work volume including passage means interconnecting the chambers,
a rotatable crankshaft operatively connected to the respective pistons to induce reciprocation thereof in a predetermined phase relationship between the pistons whereby refrigerating fluid is sequentially transferred between the chambers, said housing further defining a crankcase volume communicating with the cylinders and on the sides of the respective pistons remote from said chambers,



other passage means establishing one-way communication between the crankcase volume and the work volume, said other passage means accommodating transfer of refrigerating fluid from the crankcase volume to the work volume upon creation of a differential pressure between the volumes.

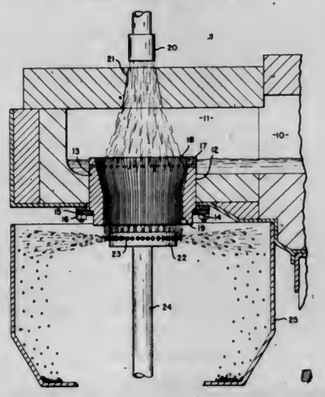
3,282,065
DEFROSTER CONTROL FOR REFRIGERATION APPARATUS
Charles D. Flanagan, Attleboro, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed June 24, 1965, Ser. No. 466,638
7 Claims. (Cl. 62—140)



1. A control for refrigeration apparatus having cooling means for absorbing heat from a refrigerated zone, said cooling means being subject to frost buildup, and defrost means adapted when energized to remove frost from said cooling means, said control comprising:
electrode means adapted to be positioned adjacent said cooling means to constitute therewith a capacitor having a capacitance which varies with frost buildup;
means interconnected with said capacitor and forming therewith a tuned circuit;
an oscillator circuit incorporating said tuned circuit for providing an A.C. signal the frequency of which is controlled by said tuned circuit and varies with frost buildup; and
means, responsive to such variations in said A.C. sig-

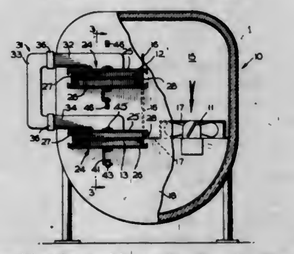
nal beyond a preselected limit, for energizing said defrost means whereby, when frost builds up on said cooling means beyond a preselected level, said defrost means is automatically energized to remove the frost.

3,282,066
APPARATUS FOR MAKING GLASS BEADS
William H. Searight, Toledo, Ohio, assignor to Cataphote Corporation, Toledo, Ohio, a corporation of Ohio
Original application Mar. 22, 1962, Ser. No. 181,563. Divided and this application Feb. 1, 1966, Ser. No 534,593
2 Claims. (Cl. 65—142)



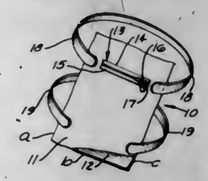
1. Apparatus for forming glass beads comprising:
means for gravitating a plurality of discrete glass streams of low viscosity arranged in an annular row;
means for directing a plurality of radially extending jets of high velocity heated gases normally against the direction of flow of said glass streams, said jets of high velocity heated gases being in numerical correspondence to said glass streams, said jets thereby causing said glass streams to be dispersed into a multiplicity of glass particles; and
annular chamber means surrounding said jet directing means in spaced relation to provide a suspension zone wherein said particles are spherulized and fall into a lower temperature zone to be collected.

3,282,067
SEALING MEANS FOR CONVEYOR PORTS OF A MATERIAL TREATMENT CHAMBER
Moshe Y. Dreksler, Waynesboro, Pa., assignor to Frick Company, Waynesboro, Pa., a corporation of Pennsylvania
Filed Apr. 1, 1965, Ser. No. 444,620
10 Claims. (Cl. 62—266)



1. In combination with a chamber having vertically spaced ports in the walls thereof through which a conveyor belt extends and wherein air pressure within the chamber adjacent a lower port is different from the air pressure adjacent an upper port, a sealing means for such ports comprising mechanical seal means consisting of a plurality of flexible walls disposed within the ports in spaced relationship to each other and engaging the conveyor belt to form at least one compartment within each of said ports, and conduit means for communicating each of said compartments to tend to equalize the pressure in the compartments of the vertically spaced ports.

3,282,068
REFRIGERANT-HOLDING ATTACHMENT FOR A CONTAINER
James B. Cain, 1710 Killarney Lane, Northbrook, Ill.
Filed Aug. 6, 1965, Ser. No. 477,825
1 Claim. (Cl. 62—457)

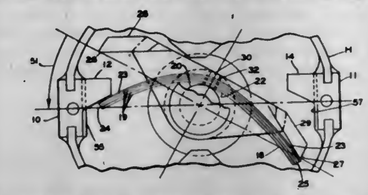


A refrigerant holding attachment adapted to be applied to a food container and comprising a generally rectangular flat expansible flexible bag-like structure defining, when expanded, an internal chamber designed for reception therein of a multiplicity of pieces of solid refrigerant, said structure being formed of flexible waterproof sheet material and including coextensive rectangular front and rear walls which, when the structure is devoid of refrigerant, lie in coextensive face-to-face contact and which, when the structure contains such refrigerant defines said internal chamber for the refrigerant, said front wall being formed with an elongated slot therein defining a filling opening for introduction of the refrigerant into the structure, said slot extending substantially horizontally of the front wall from a point adjacent one side edge thereof to a point adjacent the other side edge and with the slot being disposed near the upper edge of the front wall, a plastic zipper assembly operatively secured in position over said filling opening for sealingly closing the same, and a pair of vertically spaced elastic straps each of which has its opposite ends secured to said front wall at widely spaced points near the side edges of the rectangular structure, said straps in combination with said rear wall, defining closed loops adapted to encircle the cylindrical wall of a cylindrical container near the upper and lower ends thereof respectively so as to draw said rear wall into substantially coextensive face-to-face contact with a limited area of said cylindrical container wall.

3,282,069
PRELOADED OVERRIDE SPRING DEVICE
Oscar R. Wermlinger, Westwood, N.J., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed Nov. 27, 1964, Ser. No. 414,086
4 Claims. (Cl. 64—27)

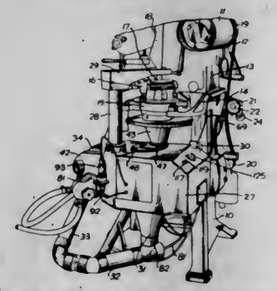
1. A fail operative preloaded override spring device comprising, a housing, a shaft in a rotatable relation to said housing, a pair of retainers mounted on said housing, spring means extending from one retainer to the other and having an intermediate portion offset by said shaft to flex the spring means and providing a preload condition between said shaft and said housing, for providing relative rotation of said housing and said shaft upon a torque applied to said housing exceeding the preload between said shaft and said housing, and wherein said shaft further

comprises a pair of wing members extending on each side of an intermediate portion thereof and wherein said retainers support said spring in said preload position and each of said wing members of said shaft being interposed between one retainer and one end of said spring means



and operable for disengaging said spring means off said one of retainers upon rotation of said housing in one direction due to a predetermined load exceeding the preload of said spring means between said shaft and said housing.

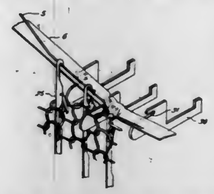
3,282,070
KNITTING OF TUBULAR FABRIC
Charles Willin Perkins, Leicester, England, assignor to Hosiery Equipment Limited, Leicester, England
Filed Oct. 29, 1963, Ser. No. 319,815
Claims priority, application Great Britain, Oct. 29, 1962, 40,830/62; Apr. 25, 1963, 16,317/63
14 Claims. (Cl. 66—147)



1. Apparatus for use with a circular knitting machine for separating articles produced thereon in succession in continuous tubular form, comprising in combination supporting means adapted for mounting on the circular knitting machine below the needle cylinder thereof, means for gripping and pulling the tubular knitted fabric, means mounting the gripping and pulling means on the supporting means at a position to co-operate with the fabric delivered by take down rollers of the circular knitting machine, clamping means on said supporting means for clamping the tubular knitted fabric at a position sufficiently higher than said gripping and pulling means to engage with the article next above that at the lower end of the tubular fabric and operative means for making the pulling means rapidly snatch the article at the end of the fabric when the clamping means is applied.

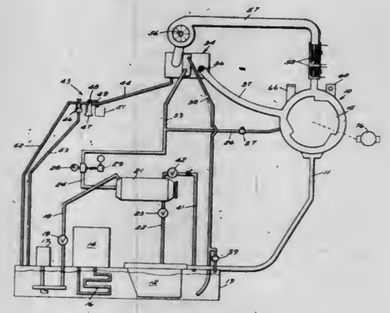
3,282,071
FABRIC
Ronald H. Marks and Lawrence R. Goodman, Dallas, Tex., assignors, by direct and mesne assignments, to American Can Company, New York, N.Y., a corporation of New Jersey
Original application Mar. 23, 1964, Ser. No. 354,023. Divided and this application Jan. 20, 1966, Ser. No. 521,935
6 Claims. (Cl. 66—169)

1. A new fabric comprising:
a backing of knit material, and
a plurality of strips of material, each of said strips having small portions of one edge gathered into the



needle loops of one course of said backing and the other edge free.

3,282,072
CLEANING APPARATUS HAVING A FILTER BLOCKAGE CONTROL
Neil W. Neumann, Stevensville, Mich., assignor to Whirlpool Corporation, Benton Harbor, Mich., a corporation of Delaware
Filed Aug. 27, 1964, Ser. No. 392,381
12 Claims. (Cl. 68—12)

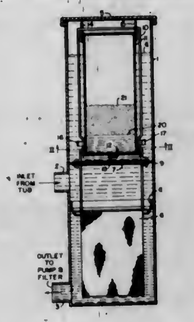


1. In a cleaning apparatus
(a) a container for receiving fabrics to be washed,
(b) a reservoir for storing washing fluid,
(c) a filter for cleaning the washing fluid,
(d) conduit means interconnecting said filter, said reservoir and said container for periodically circulating washing fluid therebetween,
(e) pump means arranged to circulate washing fluid between said reservoir and said container,
(f) sensing means actuated by the flow rate existing between said filter and said container,
(g) switch means actuated by said sensing means and controlling operation of said pump means, and
(h) counting means associated with said switch means to prevent deenergization of said pump means until after a predetermined plurality of operations of said switch means.

3,282,073
LAUNDRY APPARATUS
Edgar L. Zehrbach, Mansfield, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 12, 1963, Ser. No. 330,149
5 Claims. (Cl. 68—18)

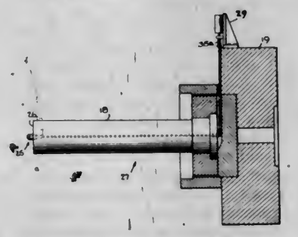
1. In a dry cleaning device wherein fabrics are subjected to the action of fluid solvents to extract therefrom soils of various kinds, in which said fluid solvent gradually accumulates a load of soils and in which a filter aid is used for cleaning said fluid solvent for reuse, means for dispensing filter aid consisting of a vertically disposed

container piped into said device so that fluid solvent may be periodically pumped thereinto while said fabrics are being subjected thereto, a removable device consisting of a screen and a button trap and a handle for removing said removable device from said container, said handle being shaped to act as a support for and suspending an open ended can of filter aid in said container, mesh screen



closure means for selectively and partially closing said open end of said can, hook means attached to said can for suspending said can on said handle, said hook means being disposed so that said open end of said can comprises the bottom thereof whereby fluid rising in said container will rise into said can a distance limited by air trapped therein and whereby a limited amount of filter aid is washed out and added to said fluid.

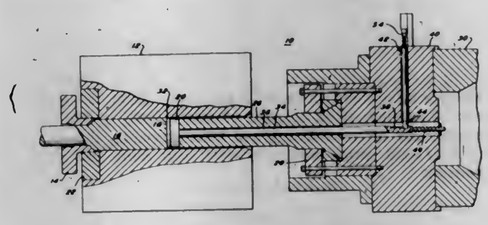
3,282,074
ALIGNMENT AND ORIENTATION DETECTOR FOR EXTRUSION PRESS DUMMY BLOCK
Donald P. Gardner, Irondequoit, N.Y., assignor to Farrel Corporation, Rochester, N.Y., a corporation of Connecticut
Filed May 17, 1963, Ser. No. 281,174
18 Claims. (Cl. 72—21)



1. In combination with an extrusion press having a billet loader, a ram and a container; a dummy block having a front face, a rear face, and sensing means mounted on the press for discriminating between said front and rear faces whereby the orientation of the dummy block may be detected.

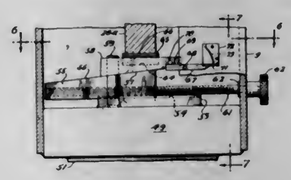
3,282,075
SAFETY APPARATUS FOR EXTRUSION PRESS DUMMY BLOCK
Walter Zhookoff, Swarthmore, Pa., assignor to Baldwin-Lima-Hamilton Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed July 3, 1963, Ser. No. 292,614
3 Claims. (Cl. 72—21)

1. Safety apparatus for extrusion presses comprising an extrusion stem, a dummy block having a working face and an extrusion stem receiving face on opposite sides thereof, said dummy block extrusion stem receiving face having a recess therein, sensing means carried by said extrusion stem for sensing the correct position of said dummy block, said sensing means including a first rod slidable in said extrusion stem, said first rod including a projection at one end thereof, means for biasing said first rod to an outward position, said projection being adapted to fit in said recess when said first rod is in said outward position, said first rod also including a laterally



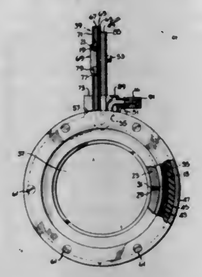
outwardly facing cam surface adjacent the other end thereof, said sensing means further including a trip rod, said trip rod being slidable in a direction generally perpendicular to said first rod, a cam follower portion rigidly disposed on one end of said trip rod and in slidable engagement with said cam surface so that movement of said first rod is transmitted directly to said trip rod, and means responsive to movement of said trip rod to provide a signal indicative of improper dummy block position.

3,282,076
BRAKES FOR FORMING PLATE OR SHEET WORKPIECES
Percy L. Cady, Jr., Media, Pa., assignor, by mesne assignments, to De Laval Turbine Inc., Trenton, N.J., a corporation of Delaware
Filed Dec. 20, 1963, Ser. No. 332,202
13 Claims. (Cl. 72—35)



1. In a brake, for forming plate or sheet workpieces, having a frame and a mandrel-equipped clamping ram adapted to cooperate with a working surface of a pivotally-mounted working member in the clamping and forming of a workpiece, and wherein the ram is movable so as to dispose the forming axis of the mandrel on, or at a distance from, the pivot axis of said pivotally-mounted working member, the combination, with said ram, of mechanism for moving and holding it comprising a movable stop positioned to limit the stroke of the ram relative to the frame and having an adjustable wedge device for variably setting it to determine the clamping position of the ram, and a fluid-pressure device having a cylinder element and a piston element, one of which elements acts against the frame and the other acts against and moves with the ram so as to urge the ram against the stop and hold it there, by fluid pressure, in its workpiece clamping position.

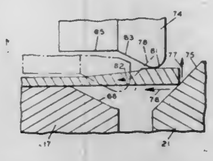
3,282,077
FORMING DEVICE
David F. Brower, San Diego, and Edward A. Day, Rancho Santa Fe, Calif., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed July 29, 1963, Ser. No. 298,111
2 Claims. (Cl. 72—56)



1. In an electromagnetic forming apparatus, a device for producing a magnetic field of high flux density, which device comprises an elongated member formed to provide at least one turn and including means defining a first and a second tubular section disposed in adjacent and generally coextensive relation to each other and interconnected at one of their adjacent ends by means defining an intermediate tubular section, said sections being formed of a current-conducting material and being arranged so as to define an elongated conduit having both its inlet and its outlet located at the end of said member opposite said one end, said conduit being adapted to receive a coolant, a generally cylindrical core formed of current conducting material and having an outer surface provided with a double helical groove, helical ribs separating adjacent grooves, said member being formed into a double helix having adjacent turns formed by each of said first and second tubular sections and wound upon said core with each of said turns disposed within a groove of said core and being spaced an equal distance from the longitudinal axis of said double helical groove, a layer of insulating and structural material disposed on the outer surface of said core and said first and second tubular sections, a continuous, conductive shell surrounding said layer, means for interconnecting the conduit defined by said sections with a source of coolant, and a bracket carried by said shell and projecting therefrom, said bracket supporting said intermediate section and said opposite ends of said first and second tubular sections and including a first contact connected to said intermediate section for effecting an electrical connection between said intermediate section and a source of high electrical potential, and a second contact connected to each of the said opposite ends of said first and second tubular sections for effecting an electrical connection between the said opposite ends and a source of low electrical potential.

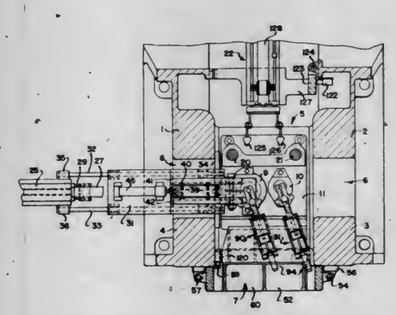
3,282,078
METHOD OF MAKING GROOVED HOLLOW ARTICLE
Carl W. Kaesemeyer, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed Dec. 23, 1963, Ser. No. 332,537
5 Claims. (Cl. 72—82)

1. The method of forming an outwardly-opening circumferential groove in a substantially tubular workpiece with a pressure forming tool, the workpiece being mounted on a mandrel provided with a relief on its outer end, comprising the steps of restraining the workpiece against axial inward movement on said mandrel, imparting relative rotation between the workpiece and the forming tool, pressing the forming tool into the workpiece over the unreduced portion of the mandrel and spaced inwardly from the outer end of the workpiece, moving the tool axially inward to reduce the wall thickness of the intermediate portion of the workpiece and cause it to extrude outwardly and extend beyond the outer end of the mandrel, applying axially inward and



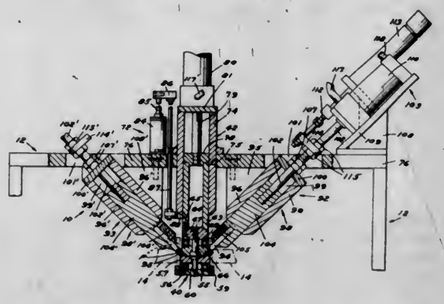
radially outward directed force components to the outer end of the workpiece by a conical surface on a pad pressed axially against the outer end of the workpiece, then feeding the forming tool inwardly against the surface of the workpiece adjacent to the outer end thereof while said force components are applied thereto so as to press the workpiece into the groove provided by the relief on the end of the mandrel and the conical surface on the pad to thereby form an outwardly opening groove on the end of the workpiece.

3,282,079
WORK HANDLING MECHANISM FOR FORGING PRESSES AND THE LIKE
Albert R. Kull, Beachwood, Ohio, assignor to The Ajax Manufacturing Company, Euclid, Ohio, a corporation of Ohio
Filed May 16, 1963, Ser. No. 280,965
31 Claims. (Cl. 72—13)



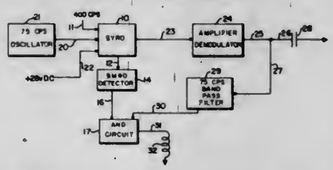
1. In a forging press of the type having an upstanding frame, a ram vertically movable in said frame, top dies carried by said ram for vertical movement therewith, corresponding bottom dies mounted on said frame vertically aligned with the respective dies carried by said ram and cooperating to forge workpieces therebetween; a transfer mechanism for transferring workpieces to successive cooperating dies comprising a pair of work gripping fingers, means mounting said pair of work gripping fingers for horizontal swinging movement about a vertically extending axis equally spaced from said successive cooperating dies, means to raise and lower said pair of fingers, and means operative to extend said fingers and close the same on a workpiece at the first of said successive cooperating dies and open said fingers and retract the same at the second of said successive cooperating dies.

3,282,080
THREAD ROLLING AND MACHINING APPARATUS
Elvin A. Taylor, Plymouth, Mich., assignor to Plymouth Stamping Company, Plymouth, Mich., a corporation of Michigan
Filed Oct. 17, 1963, Ser. No. 316,803
20 Claims. (Cl. 72—206)



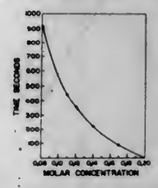
1. Equipment for use with a thread rolling machine to turn a rotating workpiece coordinately with the rolling of a thread on the latter by said machine, said machine being of the type having a thread forming roll movable into and out of thread-rolling engagement with the latter, and operating means to so move said roll; said equipment comprising mounting means fixedly applicable to said machine, a machining head mounted by said mounting means for movement in a path into and out of material removing engagement with said workpiece, a device operatively connected to said machining head to so move the latter reversibly in said path, control means operatively connected to said device to control the movement of the latter, and means operatively connecting said control means to said operating means of said machine for operation of said control means in timed relation to said movement of said thread forming roll, said last named means including means driven in said timed relation and operating said control means to cause said device to engage said machining head with said workpiece after said thread forming roll has had thread forming engagement with the workpiece.

3,282,081
GYROSCOPE TESTING SYSTEM
Boris Boskovich, St. Anthony Village, Charles L. Seacord, Minnetonka Village, Minn., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed July 30, 1964, Ser. No. 386,308
9 Claims. (Cl. 73—1)



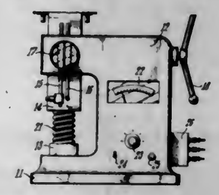
1. An in-flight gyroscope monitor for a gyroscope having a signal pick-off responsive to a change in a condition and said gyroscope also having a torquer for effecting further operation of the pick-off, comprising: means for energizing said torquer in opposite directions to effect oscillations of the pick-off and thus provide an oscillatory signal from the pick-off in addition to the signal therein provided by the change in the condition; means filtering the oscillatory signal from the signal due to normal response of the gyroscope due to the change in the condition; and utilization means responsive to the filtered signal.

3,282,082
APPARATUS FOR MOLECULAR WEIGHT DETERMINATION
Oliviero Fagioli, Florence, and Angelo De Ros, Milan-Greco, Italy, assignors to Lepetit S.p.A., Milan, Italy
Filed Dec. 26, 1963, Ser. No. 333,608
Claims priority, application Italy, Jan. 11, 1963, 625/63
4 Claims. (Cl. 73—15)



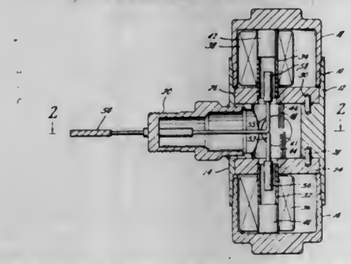
1. Apparatus for use in molecular weight determination, comprising means providing a plurality of cells, open at the top, one of the cells being adapted to receive a solution, in a liquid solvent, of a known concentration of a test substance whose molecular weight is to be determined, while the other cells are adapted to receive solutions, in the same solvent, of different molarities of a known compound, means for simultaneously and uniformly heating the contents of all of the cells, transparent cover means covering the tops of the cells, and means for simultaneously and uniformly cooling the cover means to cause condensation of vapor of the solvent upon the underside of the cover means over all of the cells, whereby upon removal of the cooling means and gradual rise of temperature of the cover means, the visible condensate films will disappear in a succession depending upon the molar concentrations in the solutions both of the known substance and of the test substance whose molecular weight is to be determined, whereby the time intervals for the disappearance of the dew from the cells containing the known and the unknown test substances provide data from which the molecular weight of the test substance can be calculated.

3,282,083
SPRING CHECKING APPLIANCE
Hans Conrad Sonderegger, Winterthur, Switzerland, assignor to Messers. Kistler Instrumente AG., Winterthur, Switzerland
Filed July 8, 1963, Ser. No. 293,927
27 Claims. (Cl. 73—161)



1. A test apparatus, comprising:
plunger means to exert a force on a resilient deformable test item;
a substantially non-compressible support means to support the test item and oppose the force exerted by said plunger means;
said plunger means and said support means being arranged so that the movement of said plunger means is a direct indication of the deformation of the test item;
first scale means rigidly mounted on said plunger means to indicate the space between said plunger means and said support means, to determine a dimension of the test item;
second scale means, including a portion mounted on said plunger means, to determine the movement of said plunger means;
means to adjustably mount said second scale means on the apparatus to adjust said scale means to indicate a zero movement of the plunger means when said plunger means is in contact with the test item before any force is exerted; and
said second scale means indicating the displacement of said plunger and the deformation of said test item.

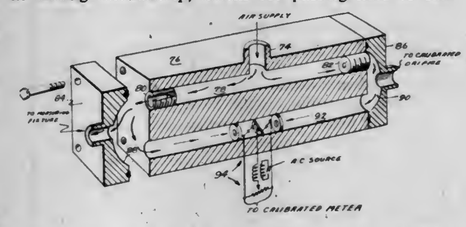
3,282,084
APPARATUS FOR DETERMINING PHYSICAL PROPERTIES OF MATERIALS
William B. Banks, Houston, Tex., assignor to Automation Products, Inc., Houston, Tex., a corporation of Texas
Filed Mar. 5, 1963, Ser. No. 263,006
11 Claims. (Cl. 73—32)



1. An apparatus for determining physical properties of a material comprising,
a housing,
flexible elongate vibratory means,
a sealing support means supporting the vibratory means at a point intermediate its ends,
said sealing means including a flexible tubular support member one end of which is adapted to be fixedly supported to the housing and the second end of which is sealably connected to the vibratory means thereby sealing the interior of the housing from the material,
material contacting sensing means secured to the vibratory means on one side of the support point outside the housing,
means on the second side of said support point in the housing adapted to transversely vibrate said vibratory means thereby transmitting transverse vibration to said material sensing means, and
means on said second side of said support point for detecting a change in the vibration of the vibratory means.

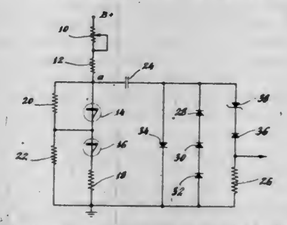
3,282,085
FLUID OPERATED FILAMENT DIAMETER MEASURING DEVICE
James M. Benson, Hampton, Va., and George F. Quittner, Cleveland Heights, Ohio, assignors to Hastings-Raydist, Inc., Hampton, Va., a corporation of Virginia
Filed Mar. 29, 1963, Ser. No. 269,013
5 Claims. (Cl. 73—37.7)

1. A fluid flow measuring device for measuring the mean diameter of a length of moving material comprising in combination: a pneumatic bridge having input and output connections, means for connecting a source of fluid supply to said input connection, a measuring fixture joined to said output connection, said measuring fixture comprising a channel plate having a flat surface thereon, a planar channel backplate adapted for mating relationship with the flat surface of said channel plate, said flat surface being provided with an elongated channel, said channel having outwardly flaring V-shaped notches at its ends, means external to said channel plate and channel backplate for detachably securing said plates in mating relationship, means for passing fluid to said



channel substantially at the center thereof, said fluid flowing from said supply to said channel through said bridge, means for passing said moving material through said channel to vary the flow resistance of said channel as a function of the mean diameter of said material, the flow of fluid through said bridge being dependent on the flow resistance of said channel, a flow transducer within said bridge, and indicating means connected to the output of said flow transducer, said flow transducer responsive to variations of flow within said bridge to actuate said indicating means.

3,282,086
ULTRASONIC PULSE TESTING APPARATUS
Lawrence W. McCorkindale, Bethany, Conn., and James F. McNulty, Westbury, N.Y., assignors to Automation Industries, Inc., El Segundo, Calif., a corporation of California
Filed Aug. 29, 1963, Ser. No. 306,409
11 Claims. (Cl. 73—67.8)

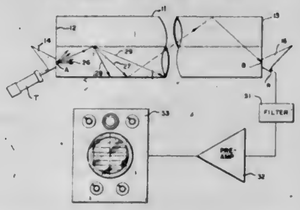


1. In ultrasonic testing apparatus including a pulser circuit for producing electrical driving pulses, an electromechanical transducer connected to receive said driving pulses and transmit ultrasonic vibrations corresponding thereto into a test object, means for receiving echo pulses from said object, and indicating means responsive to said pulses, the improvement wherein said pulser circuit comprises: capacitor means; charging circuit means connecting said capacitor means in charging relationship with a source of charging potential; bypass means connected to provide a discharge path from said capacitor means having a substantially open circuit first state and a substantially closed circuit second state, said bypass means being changeable from said first to said second state upon establishment of a preselected potential across said capacitor means to provide said discharge path; load impedance means connected in series with said capacitor means and said source of charging potential; relatively slow switch-

ing diode means connected in parallel with said load impedance means to provide a discharge path from said capacitor; said driving pulses being derived from the voltage drop across said load impedance means.

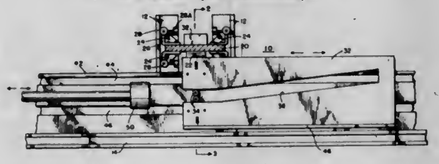
7. A pulser circuit which comprises; capacitor means; first impedance means in series with said capacitor means; means connecting said capacitor means and first impedance means in series relationship with a source of charging potential; bypass means connected in parallel with both of said capacitor means and first impedance means having a substantially open circuit first state and a substantially closed circuit second state, said bypass means changing from said first to said second state upon establishment of a preselected charge potential across said capacitor means to provide a discharge path therefrom; load impedance means and first diode means connected in series, the series circuit being connected in parallel across said first impedance means, said first diode means being polarized to conduct capacitor discharge current; second diode means in parallel with said first impedance means and polarized to conduct capacitor discharge current; whereby a voltage pulse is produced from said load impedance means.

3,282,087
APPARATUS FOR GENERATING ULTRASONIC WAVES
Ben Wade Oakes Dickinson III, 3290 Jackson St., San Francisco, Calif.
Filed Dec. 19, 1962, Ser. No. 245,862
3 Claims. (Cl. 73—71.5)



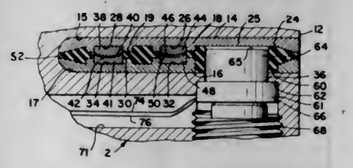
1. In apparatus for ultrasonically inspecting a member to be tested, said member being capable of carrying ultrasonic wave trains, a gun adapted to actuate an explosive charge for generating sound energy having a large component of the same lying in the frequency band above one megacycle and of high intensity, and means operatively connected to said member for coupling said sound energy into the member to be tested and to cause ultrasonic wave trains to be formed within the member and to travel through the member.

3,282,088
SHOCK FORMING MACHINE
Stephen C. Joannou, Elberon, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Sept. 9, 1963, Ser. No. 307,757
1 Claim. (Cl. 73—71.6)



A shock imparting machine comprising a plurality of L-shaped uprights fixedly attached to a horizontally elongated framework, an equipment support member slidably mounted within said uprights, said support member having a surface top and a base portion extending downwardly therefrom, means affixed to said surface top and in operative engagement with said uprights to permit vertical movement of said support member within said uprights and restrain the support member from lateral movement relative to said vertical movement, a plurality of roller bearings extending perpendicularly from the base portion of said support member, a substantially U-shaped cam assembly comprising a pair of elongated plates and a connecting cross bar that surrounds said base portion, said elongated plates having parallel inclined slots in each of said plates within which the roller bearings of said base are engaged, a second set of roller bearings extending perpendicularly from said elongated plates adapted to travel in said framework whereby when said cam assembly is rapidly thrust along said framework said support assembly will be rapidly elevated.

3,282,089
STRATA HARDNESS SENSING DEVICE
Victor H. Garmong, Kennerdell, and John H. Wagner, Franklin, Pa., assignors to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 16, 1963, Ser. No. 330,699
17 Claims. (Cl. 73—78)



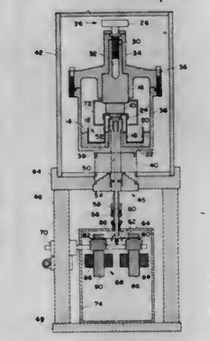
1. A strata sensing device comprising: a housing having portions adapted to move relative to each other; strata engaging means carried by one of said portions; means carried by said housing for sensing relative movement between said portions; and means carried by said housing and engagable with at least one of said portions after a predetermined relative movement therebetween has occured for varying the rate of further relative movement between said portions which further relative movement would be capable of being sensed by said sensing means.

3,282,090
APPLANATION TONOMETER
Adolph Posner, New York, and Richard Inglima, Brooklyn, N.Y., assignors to Institute for Glaucoma Research, Inc., New York, N.Y., a corporation of New York
Filed Dec. 23, 1963, Ser. No. 332,541
6 Claims. (Cl. 73—80)



1. An application tonometer comprising a hollow stainless steel body portion of generally cylindrical shape, an optically flat footplate of ceramic material adhesively secured to each end of the hollow body portion and closing the ends of the cylindrical cavity therein, a cylindrical weight freely movable in said cavity, a wire loop disposed around the central part of the body portion terminating in an indicia-bearing plate of magnetic material, said wire loop and plate being constructed so as to permit perhipheral clearance between said body portion and said wire loop, said wire loop being limited in its movement relative to said body portion by a pair of spaced annular ribs formed on said body portion, said plate being magnetically coupled to a handle in a plurality of different positions one of which enables the entire tonometer to be sterilized and another of which is for the application of the footplates to the corneas of human eyes to be examined for the determination of intraocular pressure.

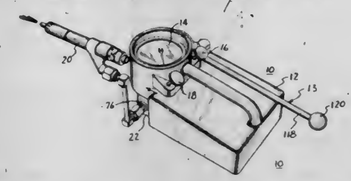
3,282,091
INSTRUMENT FOR MEASURING TORSIONAL CREEP AND RECOVERY
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Donald J. Plazek
Filed Oct. 29, 1963, Ser. No. 319,905
8 Claims. (Cl. 73—99)



4. An apparatus for impressing shear loading on a material specimen with a minimum of residual torque comprising a first housing, said first housing including a container for containing a fluid, a second housing oppositely secured to said first housing, an adjustable member disposed in said second housing and centrally located therein, means for moving said adjustable member toward and away from said first housing, a float immersed in the fluid supply between said adjustable member and said container for carrying the material specimen whereby a constant specimen height may be maintained by moving said adjustable member while in contact with the material specimen, a coupling rod secured to said float, a disc, said disc being secured to the opposite end of said coupling rod and suspended thereby, means for alternately producing eddy currents and a magnetic field in said disc thereby imparting a rotational force thereto, and means for projecting the angle of rotation of said float relative to said adjustable member when the material specimen is in contact with said float and said adjustable member and said float is at an equilibrium level in said fluid.

3,282,092
HYDRAULIC NOZZLE TESTER
John E. Lajza, Hickory Hills, Ill., assignor to Kiene Diesel Accessories, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Jan. 2, 1964, Ser. No. 335,205
2 Claims. (Cl. 73—119)

1. A portable hydraulic testing device comprising:
a hollow body member having an enclosed fluid reservoir therein,
a pump block secured to said body member at one end thereof,
a pump including a cylinder and a reciprocable piston positioned in said pump block,
intake passageway means in said pump block connecting the intake end of said cylinder with said fluid reservoir,
spring means normally urging said piston out of said cylinder and away from the intake end thereof,
a one-way valve in said cylinder intake end openable upon outward movement of said piston to permit fluid to flow into said cylinder,
a discharge port in said pump block,
second passageway means connecting said discharge port with said cylinder and adapted to accommodate fluid pumped therefrom,
a first manual valve in said pump block and operable to prevent fluid flow through said second passageway means,
a pressure gauge mounted on said pump block,

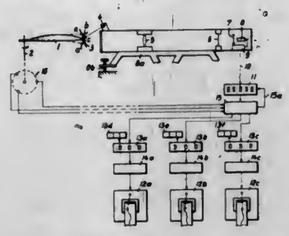


third passageway means connecting said pressure gauge with said second passageway means,
a second manual valve in said pump block and operable to prevent fluid flow through said third passageway means,
a disc-like cam pivotally mounted on said pump block for rotation about an eccentric axis,
said cam being positioned in alignment with said piston so that the peripheral surface of said cam is in constant engagement with the projecting end of said piston, and
an elongated handle rigidly connected to said cam and projecting away from said pump block and extending beyond the opposite end of said body member,
said handle being operable in one direction to rotate said cam permitting said spring means to urge said piston outwardly whereupon fluid from said reservoir is drawn into said cylinder,
said handle being further operable in the opposite direction to urge said piston into said cylinder to pump the fluid from said cylinder.

3,282,093
APPARATUS FOR MEASURING FLEXURE OF A ROTATING OBJECT
Hans Rehder, Frankfurt am Main, Germany, assignor to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany
Filed Apr. 25, 1963, Ser. No. 275,660
Claims priority, application Germany, Apr. 27, 1962, L 41,847
15 Claims. (Cl. 73—147)

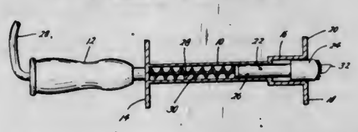
1. For use with a rotating object, an arrangement for measuring the distance which a point on the object is displaced, in a direction generally parallel to the axis about which the object rotates, during such rotation, said arrangement comprising, in combination:
(a) a reflection ball attached to said point of the object;
(b) means for illuminating said ball to produce an image of said ball which image moves along a line which is at right angles to said axis of rotation;

(c) a measuring raster arranged across said line and having raster lines extending transversely thereto, said raster lines being of different lengths so that the number of raster lines cut by the moving image depends upon how far said point is displaced in said direction parallel to said axis of rotation; and



(d) means responsive to the image for producing electrical pulses in accordance with the number of raster lines cut by the moving image and hence to the distance which said point is displaced in said direction parallel to said axis of rotation.

3,282,094
INSTRUMENT AND METHOD FOR TESTING COATINGS
Edwin R. Hinden, Houston, Tex., assignor to Houston Society for Paint Technology, % Federation of Societies for Paint Technology, Philadelphia, Pa., an association of Houston, Tex.
Filed Mar. 26, 1964, Ser. No. 354,877
9 Claims. (Cl. 73—150)

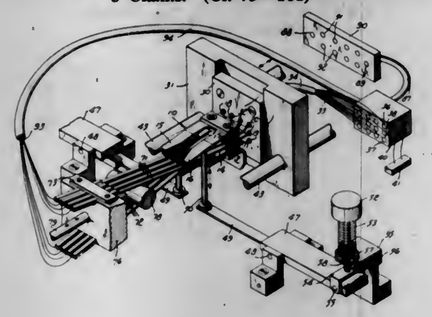


1. A testing instrument suitable for measuring the degree of cure of a synthetic polymeric material comprising a head element which includes a convex end face having a plurality of spaced-apart projections thereon, a support member upon which the element is slidably mounted for movement into and out of a position with said face extended beyond one end of the member, whereby said element may be moved into engagement with a surface of said material and yieldable means positioned for coaction with said element and member to yieldingly urge said element toward said position, whereby engagement of said element with the surface of said material provides an indication of the degree of cure of said material.

3,282,095
LOGGING OIL SATURATION IN RESERVOIR
William W. Owens, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
No Drawing. Filed Sept. 3, 1963, Ser. No. 306,276
7 Claims. (Cl. 73—151)

1. A method of measuring oil saturation of subsurface porous zones including the steps of
(1) measuring the formation water saturation of a plurality of adjacent rocks bounding a well,
(2) radiating said rocks with neutrons and producing a surface indication related to the resultant gamma radiation due to neutron radiation as a function of depth in said well whereby the total liquid content may be determined,
(3) injecting a hydrogen-containing liquid into said well in sufficient volume substantially to flood said plurality of adjacent rocks bounding said well, and
(4) repeating step (2) above while said plurality of rocks is flooded with said liquid whereby the total porosity may be determined, the above-mentioned steps thereby permitting the calculation of the oil saturation by determining the sum of the oil plus formation water saturation as the ratio of the total liquid content to the total porosity, and by subtracting therefrom the previously determined formation water saturation.

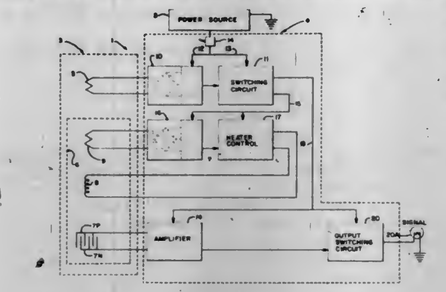
3,282,096
APPARATUS FOR TESTING RELAYS
John K. Bullard, Point Pleasant, Oswald I. Gilbertson, Nutley, and Wilbur E. Strube, Maywood, N.J., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed June 18, 1964, Ser. No. 376,123
3 Claims. (Cl. 73—161)



1. Apparatus for testing a relay spring pileup which pileup includes a plurality of contact springs and return spring means normally abutting at least one of the contact springs, which apparatus includes:
means for supporting the relay spring pileup,
a test set,
means for connecting the test set to the contact springs,
means for flexing the return spring means away from the contact springs to which they abut to remove the force thereof from the contact springs, and
means connected to the test set means for flexing the contact springs, after the force of the return spring means has been removed therefrom, to determine pressures exerted thereby.

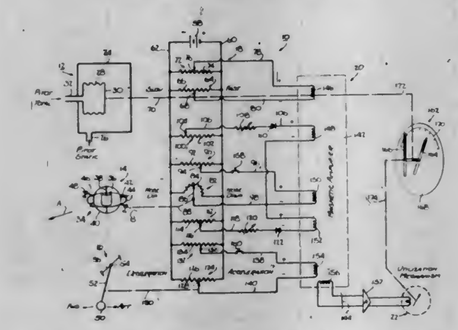
3,282,097
ATMOSPHERIC CONDITION SENSOR
Lee D. Schmid and Robert F. Woody, Phoenix, Ariz., assignors to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Continuation of application Ser. No. 101,231, Apr. 6, 1961. This application Mar. 10, 1965, Ser. No. 438,626
6 Claims. (Cl. 73—170)

1. A condition responsive system, comprising the combination of:
(a) an electrical circuit having sensor means responsive to the electrical resistance differential between dry air and water to control said circuit;
(b) heater means disposed adjacent said sensor means; and
(c) control means adjacent and in direct heat exchange relationship with said sensor and heater means and effective during the use of the condition responsive system in an ambient freezing temperature to control the application of heat by said heater means to said sensor means to positively maintain at least a portion thereof at a temperature at which moisture



will exist in a wet state between rapid vaporization and freezing phases.

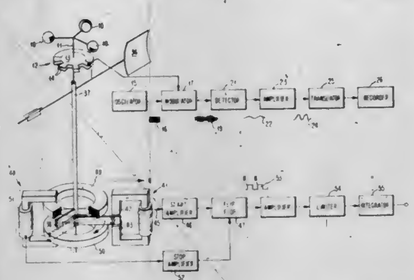
3,282,098
AIRPLANE INSTRUMENT FURNISHING A CONDITION-MODIFIED AIR SPEED DIRECTOR SIGNAL
Leonard M. Greene, Chappaqua, N.Y. (% Safe Flight Instrument Corp., 4 Water St., White Plains, N.Y.)
Filed Aug. 27, 1963, Ser. No. 304,915
12 Claims. (Cl. 73—178)



12. An airplane instrument comprising means having an output which varies as a function of the dynamic indicated air speed of an airplane, means having an output which varies as a function of the forward inertial acceleration of the airplane, means having an output which varies as a function of pitch angle beyond a preselected pitch angle threshold, and means combining said outputs to provide an air speed director signal that increases with increase in dynamic indicated air speed, that increases with positive forward inertial acceleration of the airplane and that decreases with a change of pitch angle beyond said preselected pitch angle threshold.

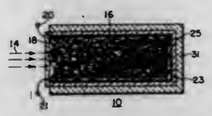
3,282,099
WIND SPEED AND DIRECTION TRANSDUCING APPARATUS
Edward F. Kingman, Saratoga, Calif., assignor to Climet Instruments Inc., Sunnyvale, Calif., a corporation of California
Filed Jan. 6, 1964, Ser. No. 335,953
11 Claims. (Cl. 73—189)

1. In a wind speed and direction transducing apparatus, wind direction detecting means comprising a first reference marker disposed to rotate continuously in a predetermined direction about an axis at a speed proportional to wind velocity, first sensing means disposed at a first angular disposition with respect to said axis to sense said first marker once each revolution, a second reference marker rotatable about the axis and positionable by the wind to a second angular disposition with respect to said axis, second sensing means including said second reference marker for sensing coincidence of said first



and second reference markers at said second angular disposition, and means for comparing the elapsed time between sensing said first reference marker at said first and second angular dispositions with the elapsed time between two successive sensings of said first reference marker at said first angular disposition to measure the angular displacement of said second reference marker from said first angular disposition thereby indicating wind direction.

3,282,100
FINE WIRE CALORIMETER
Robert M. Baker, Catonsville, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 10, 1963, Ser. No. 272,111
9 Claims. (Cl. 73—190)

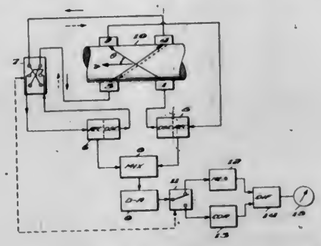


1. In a calorimetric device for measuring the output of an optical energy source the combination comprising: a container including an opening for the passage of optical energy inwardly thereof; a predetermined length of electrically insulated wire having a selected value of resistance randomly packed to form a loose, bundled mass of wire within said container for absorbing said energy; and means for making electrical connection to each end of said wire.

3,282,101
ULTRASONIC FLOW SPEED MEASURING APPARATUS
Miaki Yamamoto, Tokyo, Japan, assignor to Tokyo Keiki Seizosho Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Feb. 26, 1964, Ser. No. 347,444
Claims priority, application Japan, Feb. 27, 1963, 38/8,615
2 Claims. (Cl. 73—194)

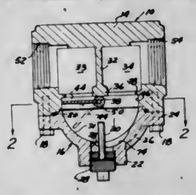
1. An ultrasonic flow speed measuring apparatus comprising a set of sing-around loop including a transmitter for emitting ultrasonic pulses into a fluid to be measured in a certain direction with respect to the direction of the fluid flow, a receiver for receiving the ultrasonic pulses and an electric circuit for causing the transmitter

in response to the receiving of an ultrasonic pulse to emit a next ultrasonic pulse; another set of sing-around loop having substantially the same composition as the first set of sing-around loop and having the distance between its transmitter and receiver made intentionally slightly different from that in the first set of sing-around loop; an electric circuit for producing a beat frequency between the repetition frequencies of ultrasonic pulses in the two sets of sing-around loop; switching means for reversing at any time the direction of ultrasonic pulse emission in either set of the two sets of sing-around loop; the difference between the transmitter to receiver distances of the two sets of sing-around loop being so



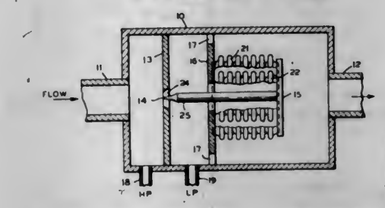
selected that the beat frequency produced when the directions of ultrasonic pulse emission are the same with respect to the direction of the fluid flow attains to a predetermined substantial value, at least in the order of several ten cycles per second; and means for combining in an electric circuit the output beat frequency produced when the directions of ultrasonic pulse emission in the two sets of sing-around loop are selected opposite to each other with respect to the direction of the fluid flow differentially with the output beat frequency produced when the directions of ultrasonic pulse emission in the two sets of sing-around loop are selected in the same direction with respect to the direction of the fluid flow.

3,282,102
FLOW INDICATORS
Nils O. Rosaen, Bloomfield Hills, Mich., assignor to Norco Products Incorporated, Detroit, Mich., a corporation of Michigan
Filed Feb. 7, 1966, Ser. No. 525,773
10 Claims. (Cl. 73—228)



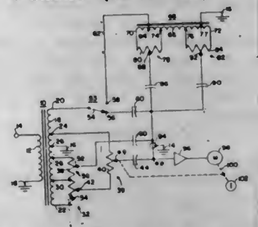
1. A flow indicator for a fluid system comprising,
(a) a housing having an inlet and an outlet adapted to be connected with said system,
(b) a vane member and means rotatably mounting said vane member in said housing intermediate said inlet and said outlet,
(c) said housing being provided with an interior wall having a substantially semi-spherical inner surface and said vane member having a substantially semi-circular edge rotatable adjacent said semi-spherical surface,
(d) the center of said semi-spherical surface being displaced from the center of the semi-sphere circumscribed by said circular edge upon rotation of said vane member whereby the space between said edge and said surface varies at each rotated position of said vane member, and
(e) means indicating the position of said vane member exteriorly of said housing.

3,282,103
MASS FLOWMETER
Dale I. Steele, Silver Spring, Md., assignor to National Instrument Laboratories, Inc., Rockville, Md., a corporation of Maryland
Filed Oct. 7, 1963, Ser. No. 314,296
5 Claims. (Cl. 73—210)



1. In an instrument for measuring mass flow of a gas comprising an annular orifice through which the gas passes formed between a plate member disposed transversely across the flow path and a shaped plug extending into the opening, said plate and plug being relatively movable whereby the area of said annular orifice is varied; a closed; fluid filled bellows for relatively moving the plate and plug according to line temperature and pressure changes of the flowing gas whereby the square root of the pressure differential across the orifice is proportional to the mass flow of the gas over a wide temperature and pressure range; and means for measuring the pressure differential across said orifice, the improvement which comprises: both a liquid and a permanent gas as the fluid filling the bellows, the liquid being relatively volatile over the normal operating temperature range of said instrument, whereby evolution of vapors from said volatile liquid provide temperature compensation for the spring constant of the fluid filled bellows over changes in the bellows length attributable to line temperature changes in the flowing gas.

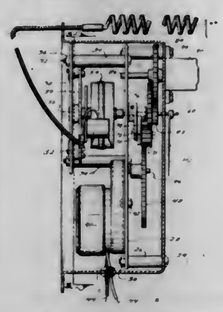
3,282,104
CAPACITANCE LEVEL GAUGE HAVING PLURAL SENSORS OF DIFFERING CAPACITANCE
John J. Exon, Fridley, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Dec. 19, 1963, Ser. No. 331,883
4 Claims. (Cl. 73—304)



1. Fuel gauge apparatus involving selective fuel quantity indication of a plurality of tanks wherein the tank measuring capacitors have at least two fuel quantity per capacitance relationships comprising, in combination:
first transformer means including primary and secondary winding means;

reference potential means connected to a tap on said secondary winding means of said first transformer means;
summing amplifier means including input means and output means;
switch means connected to one end of said secondary winding means of said first transformer means, said switch means selectively connecting a plurality of output contacts to said secondary winding means for receiving a first signal of a first phase therefrom;
first means for supplying a second signal of a phase opposite said first phase, said first means being connected to said secondary means of said transformer means;
reference first capacitive means connected between said first means and said input means of said summing amplifier means;
tank unit second capacitive means connected between one of said plurality of said output contacts on said switch means and said input means of said amplifier means;
second transformer means connected between another of said plurality of output contacts of said switch means and said reference potential means, said second transformer means including first and second variable potential outputs;
tank unit third capacitive means connected between said first output of said second transformer means and said input means of said amplifier means;
reference fourth capacitive means connected between said second output of said second transformer means and said input means of said amplifier means;
means connected between said output means of said amplifier means and said input means of said amplifier means for applying a rebalance signal thereto for minimizing the effective input signal applied to said amplifier means; and
indicator means connected to said output means of said amplifier means.

3,282,105
METHOD AND MEANS FOR MEASURING DEGREE DAYS
William A. Smith, Rte. 3, Newton, Iowa
Filed July 22, 1963, Ser. No. 296,591
7 Claims. (Cl. 73—339)



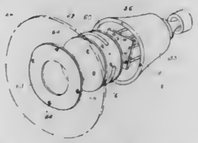
1. In a measuring device of the class described,
a supporting means,
a temperature responsive means on said supporting means,
said temperature responsive means including a shaft adapted to undergo a predetermined amount of rotational displacement upon a predetermined and corresponding change in temperature,
a limiting arm means fixed to said shaft to rotate therewith,
an idler arm movably connected to said supporting means,
an idler gear on said idler arm,
said idler arm being operatively movably connected to said limiting arm means so that the lower position and displacement of said idler arm and idler gear will be determined by the position and displacement of said limiting arm means,
a power shaft on said supporting means,
means for powering said power shaft,
a gear eccentrically mounted on said power shaft and positioned to intermittently mesh with said idler gear between the extreme rotational positions of said idler arm,
a counter mechanism on said supporting means,
and connecting means operatively connecting said idler gear and said counter mechanism whereby the proportional rotational displacement of said idler gear by said eccentrically mounted gear will be recorded when said motor is energized.

3,282,106
METHOD OF MEASURING BODY TEMPERATURE
Robert Bowling Barnes, Stamford, Conn., assignor to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware
Filed Jan. 28, 1963, Ser. No. 254,156
6 Claims. (Cl. 73—355)



1. A method of measuring body temperature of warm blooded animals which comprises aiming an infrared radiometer having radiation detecting means responsive to infrared for radiations from a 300° K. black body into a body cavity the surrounding tissues of which are isolated from environmental temperature changes and surround sufficiently to produce multiple reflections whereby the cavity, as a whole, radiates as a black body and reading temperature from the output of said radiometer.

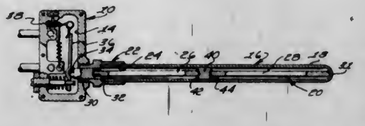
3,282,107
SURFACE TEMPERATURE THERMOCOUPLE FIXTURE
Regner A. Ekstrom, Jr., 15555 Millard Ave., Markham, Ill.
Filed May 21, 1965, Ser. No. 461,593
13 Claims. (Cl. 73—355)



4. In a surface temperature thermocouple wire fixture having a remote electro-responsive device connected by wires from the thermocouple wires calibrated to indicate the temperature to which the thermocouple wires are exposed:
(a) a plurality of pairs of thermocouple wires connected in series,

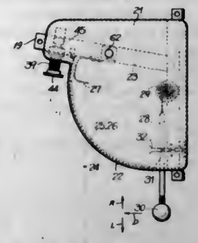
(b) each pair of wires (a) abutting at the other ends,
(c) an insulating plate of mica having holes spaced apart for insertion therethrough of each pair of wires before the ends (b) are abutted together, with the butted ends on the outer side of the plate and the holes also spaced apart for spacing each pair of wires from the other,
(d) the terminal wires of the series (a) having a compensating variable resistance inserted between them and the wires to the said indicating device,
(e) a surrounding bell holder open at one end in which the wires (a) and the plate (c) are enclosed with the said abutted ends (b) exposed within the plane of the open end of the bell.
(f) a pair of mica sheets spaced apart at their margins to form a thin dead air space and to engage the butted ends (b) on the outer side of plate (c) and
(g) a bezel insertable and secured in the open end of the bell (e) against the outer side of the spaced mica sheets (f) to press them against the butted wire ends (b) and the inner opening of the bezel forming a window through which radiated and convected heat will pass to the thermocouple abutted wire ends (b), and closing the outer end of the bell (e) from the entry of ambient currents to the said butted wire ends.

3,282,108
TEMPERATURE SENSOR
Jean Bordeaux and Douglas R. Scott, Santa Ana, Calif., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Sept. 24, 1963, Ser. No. 311,009
1 Claim. (Cl. 73—362.3)



A temperature sensor for use in a chamber attaining temperatures in the order of 1800° F. to 2200° F., and which sensor can operate properly after being subjected to bending forces, comprising, a temperature sensing tube having a relatively high coefficient of expansion, said tube having an open end and having a closed end adapted to be inserted into the chamber, the tube having relatively thin walls as compared to its diameter, solid cylindrical core means having a relatively low coefficient of expansion positioned within said tube in coaxial relationship therewith, said core means including at least two longitudinally aligned rods, and a spacer interposed between adjacent ends of said rods and slidably mounted within said tube, the adjacent ends of said rods being rounded, the spacer having surfaces conforming to and abutting the adjacent ends of said rods whereby said rods are prevented from having slidable contact with the interior surface of said tube, the diameter of said rods being substantially smaller than the inside diameter of said tube, the closed end of said tube having a surface conforming to the shape of the end of said rods, one end of one of said rods abutting the closed end of said tube, an insert slidably mounted within said tube and having one end extending outwardly from the open end of said tube and being adapted to actuate a control element, and the opposite end of said insert having a surface conforming to and abutting the opposite end of one of said rods whereby said rods are allowed to pivot relative to said tube to prevent breaking of the core means upon distortion of the tube.

3,282,109
APPARATUS FOR GOLF PRACTICE
Takeo Kamiya, 2200 2-chome, Yawara-cho, Tokyo, Japan
Filed Dec. 18, 1963, Ser. No. 331,588
5 Claims. (Cl. 73—379)

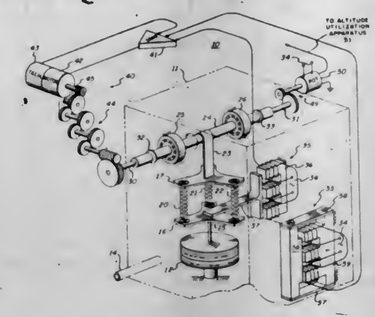


1. An apparatus for golf practice comprising: a case having a front wall, said wall having a slot formed therein, said slot having an end, an electrically conductive bar rotatably axially movably mounted in the case and normally resting against said end, said bar having a free end extending axially out of the case through said slot at one end thereof, conductive members respectively located at the edges of said slot, a ball mounted at the outer free end of the bar and disposed to be struck by a golf club, first electrical indicating means for indicating the force with which the ball is struck, second electrical indicating means for indicating excessive high and low movement of the ball after being struck, third electrical indicating means for indicating excessive right and left lateral movement of the ball with respect to said wall after the ball is struck, first movable means carried by said case and located at the other end of said slot for receiving a blow from the ball at its end of travel after being struck, second movable means inside the case responsive to radial movement of the bar relative to said bar mounting, first circuit means interconnecting said first movable means and first indicating means whereby the force with which the ball strikes said first movable means is indicated, second circuit means interconnecting said conductive members and said indicating means whereby an indication is obtained when said bar touches either conductive member during rotational movement of the bar thereby indicating excessive high and low movement of said ball, and third circuit means interconnecting said second movable means and said third indicating means whereby an indication is obtained when the bar moves radially thereby indicating excessive left and right movement of said ball, a second conductive member disposed to be contacted by the bar near the other end of said slot, electrical signal means, fourth circuit means connecting said second conductive member and said signal means for activating said signal means when the bar contacts said second conductive member, and means for deactivating said fourth circuit means only in the event an indication is provided by any of the second and third indicating means, whereby said electrical signal means indicates travel of the ball in a perfect predetermined trajectory after being struck.

3,282,110
PRESSURE RESPONSIVE DEVICE
John D. Weir, Huntington, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Nov. 29, 1961, Ser. No. 155,580
2 Claims. (Cl. 73—398)

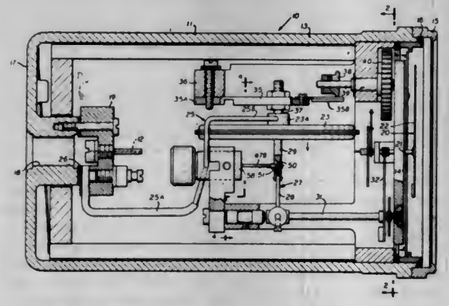
2. Pressure responsive apparatus comprising bellows means responsive to pressure variations for providing a force tending to cause a movement thereof in accordance

therewith, first pick-off means having one portion thereof connected to said bellows means for providing a signal representative of said movement, a shaft mounted for rotation around its longitudinal axis, a flexible member having one end thereof directly connected to and wound around said shaft, helical spring means connected between the other end of said flexible member and said one portion of the first pick-off for applying a resilient force varying with the angular position of said shaft for opposing the



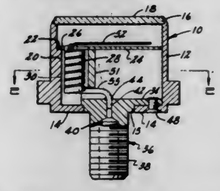
force provided by said bellows means, servo means responsive to said first pick-off signal for rotating said shaft in a direction tending to eliminate said pick-off signal by means of said spring means, said servo means including a servomotor responsive to said first pick-off signal and a speed reduction means connected between said servomotor and said shaft, and second pick-off means responsive to the rotation of said shaft for providing a measure representative of the pressure applied to said bellows means.

3,282,111
DIAL INSTRUMENT
John H. Andresen, Jr., Hewitt, N.J., assignor to Astek Instrument Corp., Armonk, N.Y., a corporation of New York
Filed Apr. 23, 1963, Ser. No. 274,972
2 Claims. (Cl. 73—410)



1. A dial instrument comprising:
(a) a housing,
(b) a pointer means mounted on said housing,
(c) a pressure responsive capsule means mounted within said housing, said capsule means being adapted to expand and contract in response to pressure variations,
(d) a conduit connecting the interior of said capsule to a pressure source exteriorly of said housing,
(e) a valve means for venting said capsule means,
(f) said valve means including a valve body connected in communication with said conduit and the interior of said capsule means,
(g) said valve body having an exhaust port defined by a valve seat opening to the interior of said housing,
(h) a valving member including a valve head and extending valve stem for valving said port,
(i) a resilient spring normally biasing said valve head in seating position on said valve seat to close said port,
(j) and a drive means operatively connecting said capsule means in driving relationship to said pointer means whereby the latter is actuated in response to the deflection of said capsule means,
(k) said drive means including a linking means connected to said capsule means, said linkage means having an opening therein for receiving the free end of said valve stem,
(l) said opening being larger than the diameter of said valve stem so that said capsule means and connected linkage has a limited free movement before the periphery of said opening engages the valve stem extending therethrough whereby said deflection causes said port to be opened to exhaust said capsule to relieve any excessive pressure within said capsule,
(m) said free end of said valve stem varying in width, and means for adjusting said valve stem with respect to said opening for adjusting the pressure at which said valve is actuated.

3,282,112
PRESSURE GAGE
Donald Robert Mitchell, Glendora, Calif., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 12, 1965, Ser. No. 439,201
5 Claims. (Cl. 73—418)

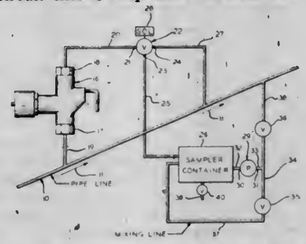


1. A pressure gage comprising a tubular housing; a Bourdon tube comprising a helical coil disposed within the housing with its axis parallel to, but offset from, the housing axis; said coil having an open end portion; fitting means connected to said open end portion and affixed to the housing for admitting fluid pressure to the interior of the coil to unwind same about its axis; and wall means within the housing for stabilizing the coil against vibrational movements crosswise of its axis; said stabilizing wall means comprising two wall structures cooperatively defining a cylindrical chamber which confines the coil therewithin; a first one of said wall structures defining a hollow cavity which partially surrounds the helical coil, but which is open along the side thereof which faces the axis of the housing; the second wall structure extending across the open side of the first wall structure to define the remaining portion of the cylindrical chamber.

3,282,113
PIPELINE SAMPLER
Norman H. Sachnik, Houston, Tex., assignor to Texsteam Corporation
Filed Aug. 26, 1964, Ser. No. 392,131
3 Claims. (Cl. 73—422)

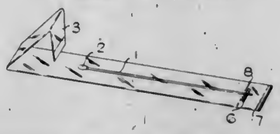
1. A pipeline sampler for a pipeline carrying fluid products therein comprising, a pump having a suction head

and a discharge head, means for connecting the suction head to said pipeline, a solenoid-actuated three-way valve having an inlet, two outlets and means for selectively connecting the inlet to either of said outlets, means connecting said inlet to said discharge head of said pump, means connecting one of said outlets to said pipeline downstream of the connection with the suction head, a sampler container, means connecting the other outlet to said container, flow measuring means on said pipeline, and electrical circuit means responsive to said flow measuring



means and said pump for actuating said valve to direct a sample into the sampler container, said circuit means including a first solenoid energized by a signal contact from said flow measuring means, means operated by said solenoid to render closing of first contacts and opening of second contacts by said pump, a first relay also energized by said signal contact to operate second contacts which in turn energizes a third relay, means deenergizing said solenoid and first relay upon opening of said second contacts, and said second relay being deenergized by said signal contact.

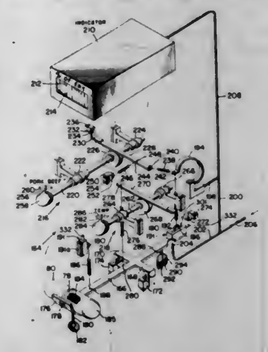
3,282,114
SAMPLER
Rodney Lang Pell, 11 Haynes Close, Blackheath, London, England
Filed Mar. 27, 1964, Ser. No. 355,176
Claims priority, application Great Britain, Apr. 9, 1963, 14,143/63
8 Claims. (Cl. 73—425)



1. A sampling device for specimens comprising an elongated sampler including an end having means for collecting a specimen, a bag of flexible sheet material longer than said sampler enclosing said sampler, said bag having a closed end and an opening adjacent the opposite end to permit a sample-collecting end of said sampler to be directed through the opening and exposed to enable a specimen to be collected while a portion of said sampler is still retained in said bag, said bag having an end portion which is foldable over the opening of said bag, and means on said bag for securing the folded-over portion of said bag over the opening to re-close the bag.

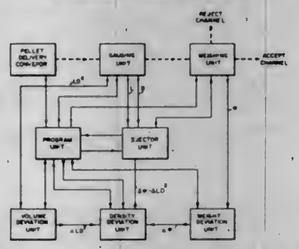
3,282,115
METHOD OF MEASURING THE PERCENT OF FAT IN ANIMAL TISSUE
William S. Taylor, Drexel Hill, and Robert C. Whitehead, Jr., Oreland, Pa., assignors to Honeywell Inc., a corporation of Delaware
Filed Feb. 7, 1964, Ser. No. 343,270
3 Claims. (Cl. 73—432)

1. A method to measure the percent of fat in animal tissue, comprising the first step of compressing the tissue to a preselected state, the second step of measuring the volume of said tissue while in said compressed state,



the third step of weighing said tissue, and the fourth step of measuring the percent of fat in the tissue by relating the volume of the compressed tissue to its weight.

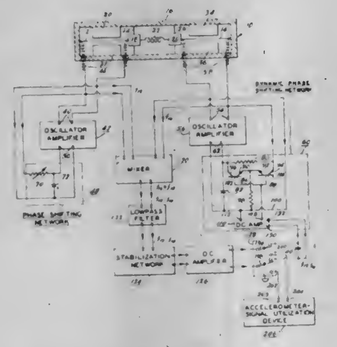
3,282,116
APPARATUS FOR DETERMINING THE DIMENSIONS, WEIGHT AND DENSITY OF OBJECTS
Wallace Jones, Saltsburg, Pa., assignor to Nuclear Materials and Equipment Corporation, Apollo, Pa., a corporation of Pennsylvania
Original application Mar. 14, 1961, Ser. No. 108,220, now Patent No. 3,221,152, dated Nov. 30, 1965. Divided and this application Dec. 2, 1964, Ser. No. 423,886
8 Claims. (Cl. 73—433)



3. Apparatus for determining the density of an object comprising a dimension gauging station including means for determining the dimensions of said object to determine its volume, a weighing station including weighing means for weighing said object, indexing means of the type that has a standby condition and a first condition and is actuable to pass through a cycle from said standby condition to said first condition and back to said standby condition, said indexing means operating by exerting advancing forces on said object throughout said cycle but being mechanically unlocked from said object throughout said cycle, means connected to said indexing means for actuating said indexing means from said standby to said first condition, means responsive to said indexing means as it is actuated from said standby to said first condition to exert a force on said object for advancing said object to one of said stations, means connected to the means included in said one station and to said indexing means and responsive to the completion of the processing of said object at said one station for actuating said indexing means from said first condition to said standby condition, said indexing means again exerting a force on said object for advancing said object from said one station to said other station as said indexing means is so actuated, said

object being disengaged from said indexing means in each of said stations, and computer means connected to said dimension determining means and to said weighing means for determining the density of said object.

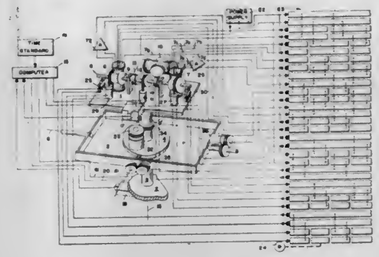
3,282,117
ACCELEROMETER SYSTEM
Stanley R. Sporn, Oceanside, and Robert E. Lockey, Cold Spring Harbor, N.Y., assignors to American Bosch Arma Corporation, Garden City, N.Y., a corporation of New York
Filed Apr. 16, 1964, Ser. No. 360,804
12 Claims. (Cl. 73—517)



1. Accelerometer apparatus comprising:
a pair of oscillators each having a different resonator for controlling its frequency of oscillation, said resonators being responsive to changes in acceleration thereof to vary the frequencies of said oscillators differently;
at least one of said oscillators having a frequency control circuit responsive to signals supplied to a control terminal thereof to vary the frequency of oscillation of said one oscillator;
means for comparing the frequencies of said oscillators to produce a control signal in response to departures of said frequencies from a predetermined relationship between them; and
means for applying said control signal to said control terminal of said frequency control circuit to alter the frequency of said one oscillator in a direction to reduce said departure substantially to zero, thereby automatically to maintain said predetermined relationship.

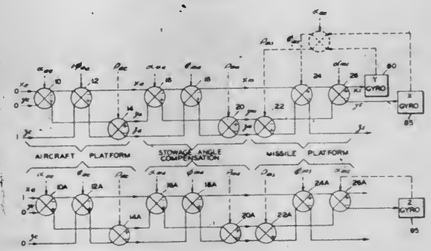
3,282,118
ALTERNATE DRIVE SYSTEM OF REVERSING GYROSCOPES ON A STABLE PLATFORM
Norman F. Parker, Whittier, Calif., assignor to North American Aviation, Inc.
Filed Sept. 2, 1955, Ser. No. 532,147
13 Claims. (Cl. 74—5.34)

1. A stable reference having, in combination, a stable element mounted with at least one axis of freedom, one pair of gyroscopes attached to said stable element, said gyroscopes having their input axes substantially parallel to said axis of freedom so as to detect the orientation of said stable element about said axis of freedom and thereby provide a reference, means for reversing direction of spin of the rotors of said gyroscope alternately, means for controlling the orientation of said stable element about said one axis of freedom according to the reference provided by said gyroscopes alternately, means operable to provide re-orientation of each said gyroscope individually about an axis parallel to said one axis of freedom, with



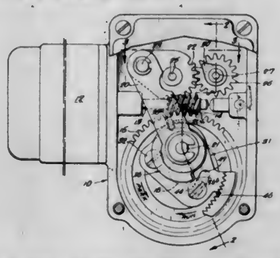
respect to said stable element, during intervals of control of said stable element by the other said gryoscope according to the reference provided by said other gyroscope.

3,282,119
MEANS FOR EFFECTING INITIAL ALIGNMENT OF A STABLE PLATFORM
Richard Shaw, Jr., Mahwah, and Bruno Di Tosto, Clifton, N.J., assignors to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed Sept. 23, 1963, Ser. No. 310,683
10 Claims. (Cl. 74—5.34)



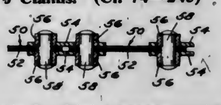
1. In an apparatus of a type including a first stabilized three-gimbal master platform, a second three-gimbal slave platform, three gyroscopes, said gyroscopes for stabilizing said slave platform, each of said gyroscopes including a torquer motor, both of said platforms including resolvers controlled by the angular positions of the gimbals of said platforms relative to supporting means for said gimbals; the improvement comprising additional resolvers for adjustment to compensate for misalignment of the supporting means for the slave platform relative to the supporting means for the master platform, a resolver chain means having a pair of electrical inputs and three electrical signal outputs, all of said resolvers being electrically connected in cascade in said resolver chain means so as to effect a transformation of components of a vector from coordinates fixed in the master platform to coordinates fixed in the slave platform, first means for connecting electrical pulses into said resolver chain means through said pair of eletcrical inputs, and second means for electrically connecting each of said electrical signal outputs so as to control the torquer motor of one of each of said gyroscopes in such a manner as to align the slave platform with the master platform.

3,282,120
WINDSHIELD WIPER MECHANISM
Curtis N. Compton, Wilmer, Ala., assignor to American Bosch Arma Corporation, Columbus, Miss., a corporation of New York
Filed Dec. 2, 1963, Ser. No. 327,330
10 Claims. (Cl. 74—75)



1. In a windshield wiper mechanism including a rotatable member adapted to be coupled to and driven by a motor, a frame supporting said motor and said rotatable member, an oscillating gear segment supported on said frame, a gear meshing with said gear segment supplying driving motion to a conventional windshield wiper, and an actuating link pivotally connected at one end to said gear segment and at the other end to said rotatable member at a radius from the axis of rotation of said rotatable member, the improvement comprising adjustable connecting means by which said other end of said actuating link is operatively connected with the rotatable member for changing the radius at which said actuating link is pivotally connected to said rotatable member.

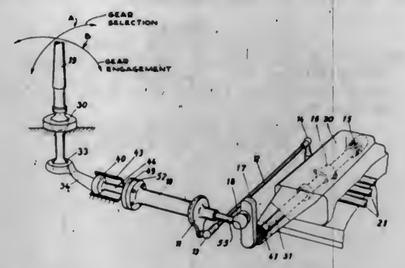
3,282,121
DRIVE CHAIN
William C. Wehner, Detroit, Mich., assignor to Moog Industries, Inc., St. Louis, Mo., a corporation of Missouri
Filed Mar. 24, 1964, Ser. No. 354,246
6 Claims. (Cl. 74—245)



1. A drive chain for driving engagement over sprockets lying in different planes comprising a succession of drive links connected together in end-to-end relation by single laminar torsional links, each drive link having drive bushing portions adjacent opposite ends thereof to provide drive surfaces for engaging sprocket teeth, each torsional link comprising a plurality of juxtaposed thin spring metal strips of a pitch length equal to at least twice the pitch length of said drive links and pivotally connected at opposite ends to said drive links in a plane substantially parallel to said drive links with said drive bushing portions projecting beyond opposite faces of each torsional link.

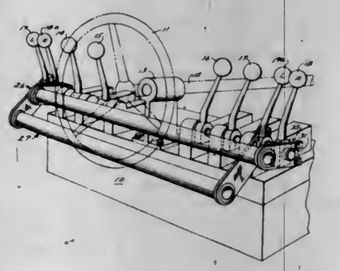
3,282,122
REMOTE CONTROL SHIFTING ARRANGEMENT FOR CHANGE SPEED GEARS OF MOTOR VEHICLES
Alfred Magg and Heinz Haessle, Friedrichshafen, Germany, assignors to Zahnradfabrik Friedrichshafen Aktiengesellschaft, Friedrichshafen, Germany
Filed June 23, 1964, Ser. No. 377,347
Claims priority, application Germany, June 26, 1963, Z 10,194
9 Claims. (Cl. 74—473)

1. A remote control shifting mechanism for a gear transmission comprising a manually operable shifting lever and means for supporting the lever for universal motion, a shaft connected to said lever and means for mounting said shaft for rotational and reciprocal movement responsive to rocking of said lever in a respective plane, means comprising a universal joint for connecting said



shaft to a gear selecting and actuating rod and means for mounting said latter rod for reciprocal and rotative motion for selecting and actuating gear shift rods, and a support rod means connected between said first-mentioned shaft and a fixed point, whereby motion of said first-mentioned shaft is supported as to side forces by said support rod.

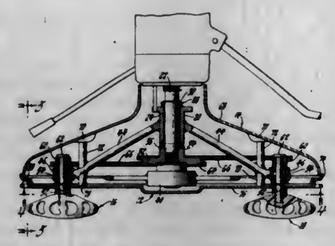
3,282,123
CONTROL CONSOLE FOR MOTOR GRADER
Dean C. Klingaman, Decatur, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Aug. 14, 1964, Ser. No. 389,609
3 Claims. (Cl. 74—479)



1. In power actuated blade depth controls for a motor grader or the like which comprises remotely positioned left end and right end depth control levers, two auxiliary levers mounted one adjacent each of the remote levers, and means connecting each auxiliary lever to the other of the remote levers.

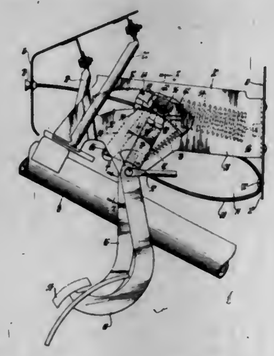
3,282,124
STEERING CONTROL ARRANGEMENT
Donald W. Peterson, Fenton, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 22, 1963, Ser. No. 325,571
9 Claims. (Cl. 74—494)

1. In a vehicle body having a steering shaft adapted to be connected to dirigible road wheels, a multiple ratio steering control arrangement wherein the steering ratio is selectable by the vehicle operator comprising in combination, support means movably mounted on said steering shaft, spaced control means movably mounted on said support means for movement therewith as a unit or movement relative thereto, means interconnecting each said control means and said shaft, movement of said control means and said support means as a unit providing a first steering ratio and movement of either of said con-



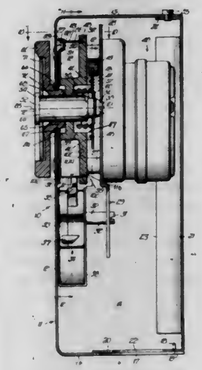
trol means relative to said support means providing a second steering ratio.

3,282,125
VEHICLE CONTROL PEDALS
Floyd I. Dully, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 23, 1963, Ser. No. 332,603
3 Claims. (Cl. 74—560)



1. In a vehicle body including a mechanism to be operated, the combination comprising, a pedal mounting member mounted on the body, a control pedal including a lever having an operating portion at one end thereof, support means mounted on said mounting member for movement relative thereto, means mounting the other end of said lever on said support means for rotation relative thereto and for movement as a unit therewith relative to said mounting member, connecting means adapted for connection to the mechanism to be operated and further connected to said lever intermediate said ends thereof, said connecting means providing a fulcrum for movement thereabout of said lever and said support means as a unit relative to said mounting member, and cooperating latch means on said support means and said mounting member selectively engageable or releasable to selectively hold or release said support means relative to said mounting member, forces applied to said operating portion while holding said support means stationary relative to said mounting member rotating said lever about said support means to cause said connecting means to operate said mechanism, forces applied to said operating portion while releasing said latch means moving said lever and said support means as a unit relative to said mounting member about the fulcrum provided by said connecting means to permit positional adjustment of said pedal relative to said body.

3,282,126
MOTOR DRIVEN TIME SWITCH
Richard J. Dykinga and Robert K. Pfleger, Miami, Fla., assignors to International Register Company, Chicago, Ill., a corporation of Illinois
Filed Jan. 15, 1965, Ser. No. 425,752
16 Claims. (Cl. 74—568)

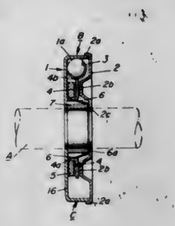


1. A device for controlling the portion of a time interval that a shiftable operator occupies one of two positions comprising: a cam plate adapted to be rotated about an axis at a predetermined speed, said cam plate having in one face a circular outer groove coaxial with said axis and an inner groove connected by a transverse groove to said outer groove with that portion of said inner groove extending from said transverse groove being circular and coaxial with said axis, a cam lever plate adapted to be manually rotated about said axis and having one side in parallel spaced relation to said face of said cam plate, and a flexible cam blade secured at one end to said cam lever plate, with one edge being juxtaposed to and guided on said one side of said cam lever plate; the other edge of said cam blade extending into and being guided by said outer groove, transverse groove and inner groove and slidable therealong in accordance with relative rotation of said cam lever plate with respect to said cam plate; the outermost surface of said cam blade being engageable with said shiftable operator for effecting movement thereof from one of said positions to the other in accordance with the position of said cam blade along said grooves.

3,282,127
BALANCE CORRECTING UNIT FOR ROTATING SHAFTS, ETC.
Alfred Deakin, Sebastopol, Calif.
(580 Jean St., Apt. 2, Oakland Calif. 94610)
Filed Jan. 10, 1964, Ser. No. 337,021
7 Claims. (Cl. 74—573)

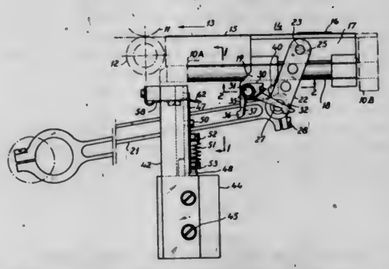
1. In a balancer unit for shafts and other rotarily driven elements having a heavy side and a light side, said balancer unit including weighty balls and means defining a circumferential ball-receiving and confining path about the axis of the shaft or other driven elements; said balls occupying substantially less than the circumference of said path; the improvement which comprises an annular

inner wall-providing but outwardly open ball carrier concentrically and fixedly mounted on the shaft, the inner wall of said carrier providing an outwardly extending circumferential flange defining the outer margin of said ball path, a removable closure secured to the open outer portion of said carrier, a shaft-surrounding weighty annular member in said carrier and having an internal diameter greater than the shaft diameter, circumferentially arranged yielding means interposed between the shaft and the inner periphery of said annular weighty member whereby to floatingly support the latter in concentric



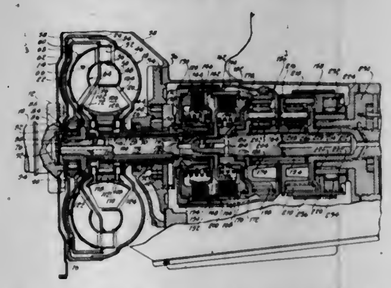
relationship with the shaft when the latter is in motion with the balls in operative shaft balancing position at the "light side" of the latter or when the shaft is stationary, a circumferential series of radially shiftable ball-engageable elements in said carrier and actuated outwardly by yielding means to normally engage balls in said ball path, cooperating means provided by annular weighty member and the ball engageable elements for moving inwardly those of the latter remotely located with reference to the direction of movement of the weighty member under centrifugal shaft-rotation-induced action so long as the shaft is out of balance.

3,282,128
MECHANICAL COUPLING ARRANGEMENT
Pieter Hendrik Hartel, Amsterdam Oost, Netherlands, assignor to Bull Nederland (Administratie-en Statistiekmachine MIJ., N.V.), Amsterdam, Netherlands
Filed Feb. 17, 1965, Ser. No. 433,287
Claims priority, application France, Mar. 5, 1964, 966,152, Patent 1,395,758
8 Claims. (Cl. 74—593)



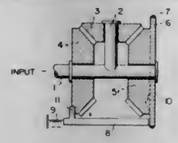
1. A mechanical coupling arrangement for connecting a driving member having a reciprocating movement to a member to be driven with a reciprocating movement in a direction determined by guide means, said arrangement comprising:
a carriage block to be driven, having a transverse pin situated at one end,
two lateral levers arranged to turn on said pin and urged to turn by a wire spring on each side of said block, each of said levers having an arm terminated by a detent tooth and a second, substantially vertical arm terminated by a bearing surface,
a driving connecting rod,
a connecting rod pin secured in one coupling end of said connecting rod,
two links, one on each side of said carriage block, which links are connected together by means of a pin mounted to turn in a centre part of said carriage block, said links having lower portions pivotally connected to the ends of said connecting rod pin which project on either side, these ends being in addition adapted to be normally engaged by the detent teeth of said levers, whereby the carriage block follows the reciprocating movement of said connecting rod, and
stop abutment means adapted to occupy one of two positions and so positioned that when these means are in a non-actuating position, they are engaged (in contact) with said bearing surfaces of the vertical arms of said levers when said carriage block reaches the end of its travel, said levers then turning against the action of said springs so as to decouple said end of the connecting rod from the carriage block.

3,282,129
MULTIPLE SPEED RATIO HYDROKINETIC POWER TRANSMISSION MECHANISM
Martin G. Gabriel, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 31, 1963, Ser. No. 334,882
4 Claims. (Cl. 74—677)



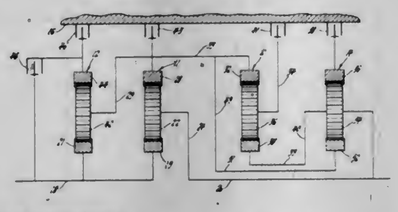
1. In a hydrokinetic power transmission mechanism, a dual range hydrokinetic torque converter, a pair of simple planetary gear units, each gear unit comprising a ring gear, a sun gear, a carrier and planet pinions rotatably journaled upon said carrier in meshing engagement with said sun gear and said ring gear, the carrier of a first of said gear units and the ring gear of a second of said gear units being connected to a driven member, means for anchoring the carrier of said second gear unit to accommodate torque reaction during low speed ratio forward drive operation and reverse drive operation, said sun gears being connected together for rotation in unison, second brake means for anchoring selectively said sun gears, said hydrokinetic torque converter mechanism comprising a bladed impeller, a bladed auxiliary impeller, a turbine and a stator situated in toroidal fluid flow relationship, said auxiliary impeller being located adjacent the flow exit region of said impeller, auxiliary impeller clutch means for clutching selectively said auxiliary impeller to said impeller for joint rotation as a common impeller assembly, selectively engageable clutch means for connecting said sun gears to said auxiliary impeller during high speed ratio operation and reverse drive operation, forward drive clutch means for connecting selectively the ring gear of said first planetary gear unit to said turbine during forward drive operation, and an overrunning coupling means for establishing a driving connection between said turbine and said auxiliary impeller during reverse drive operation when said first mentioned clutch means is disengaged.

3,282,130
SAFETY DEVICE FOR MECHANICAL POWER TRANSMISSION MECHANISMS
Masaharu Nishimura, Kodaira-shi, Japan, assignor to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan
Filed June 3, 1964, Ser. No. 372,233
Claims priority, application Japan, June 5, 1963, (utility model) 38/40,834
1 Claim. (Cl. 74—757)



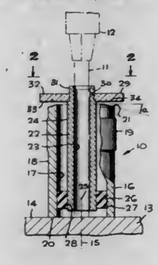
In a differential gear mechanism comprising an input shaft; an arm fixed at right angles to said input shaft; an idler gear and an output gear, both supported about said input shaft in a freely rotatable manner; and an intermediate gear rotatably supported by said arm and meshed with both said idler gear and output gear; a mechanical power transmission comprising locking means capable of locking the rotation of said idler gear until said output gear reaches a predetermined restrictive angle of rotation; and unlocking means rendering said idler gear rotatable immediately upon the rotation of said output gear reaching said predetermined restrictive angle of rotation; said looking means consisting of a stop urged onto a notch, provided on said idler gear, by means of a spring; and said unlocking means comprising a projection capable of disengaging said stop from said notch against the pushing force of said spring when said output gear reaches said predetermined restrictive angle of rotation.

3,282,131
TRANSMISSION
Marion D. Smith, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 9, 1963, Ser. No. 301,008
10 Claims. (Cl. 74—758)



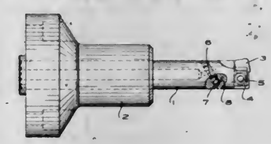
1. In a transmission,
(a) an input member and an output member,
(b) a first planetary gear set comprising a sun gear, a ring gear and a carrier having a pinion meshing with both said sun gear and said ring gear,
(c) a second planetary gear set comprising a sun gear, a ring gear and a carrier having a pinion meshing with both said sun gear and said ring gear,
(d) said input member being connected to said sun gear of said second gear set, said carrier of said second gear set being connected to said output member and said ring gear of said second gear set being connected to said ring gear of said first gear set,
(e) said sun gear of said first gear set being connected to said output member,
(f) a drive establishing brake to selectively retard said carrier of said first gear set and cause said output member to rotate in the same direction as said input member and at a reduced speed,
(g) and a drive establishing brake to selectively retard said ring gear of said second gear set and cause said output member to rotate in the same direction as said input member and at a reduced speed.

3,282,132
DRILL GUIDE
Robert Neuschotz, 1162 Angelo Drive, Beverly Hills, Calif.
Filed Feb. 4, 1964, Ser. No. 342,375
12 Claims. (Cl. 77—55)



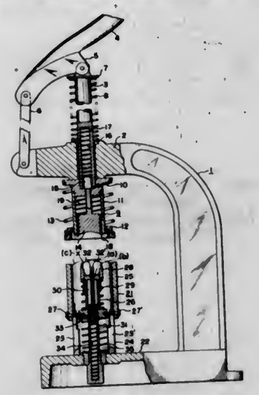
1. A drill holder comprising a body structure having a positioning surface to be held against an outer surface of a work piece to locate the body structure in a predetermined relation thereto, a guide having a passage for receiving and guiding a drill bit, an elastomeric material mounting said guide to the body structure for swinging movement relative to said body structure between a predetermined drilling position in which the guide is aimed to accurately direct a bit perpendicularly into said work piece surface and other non-perpendicular positions, and means for indicating to a user when said guide is in said perpendicular drilling position.

3,282,133
BORING TOOL WITH FLEXIBLE ADJUSTMENT
Leonard P. Dickinson, Detroit, and Clement J. Ratke, Huntington Woods, Mich., assignors to The Valeron Corporation, Detroit, Mich., a corporation of Michigan
Filed Sept. 16, 1964, Ser. No. 396,875
2 Claims. (Cl. 77—58)



1. A single point boring tool comprising a boring bar, a transverse slot projecting part way through said boring bar axially spaced from the cutting point, said slot having tapered walls converging toward the outer perimeter, a wedge element within said slot adapted to react against said walls and means for adjusting said wedge element to produce an adjustment in effective cutting diameter of said boring tool, said adjustment means including an adjustment screw seated in said wedge adapted to react against said boring bar.

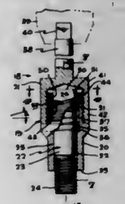
3,282,134
APPARATUS FOR FABRICATING COVERED BUTTONS
Bumpei Itoh, 3—2088 Naka-cho, Koganei-shi, Tokyo-to, Japan
Filed June 9, 1965, Ser. No. 462,680
4 Claims. (Cl. 79—5)



1. In an apparatus for producing covered buttons, a rigid frame having a base and an upper arm overhanging the base, a work holder assembly and a press head assembly arranged in coaxial relationship on the frame, said work holder assembly comprising a guide tube resting on the base, a sleeve-shaped work holder fitted for axial sliding movement on the guide tube, spring means cooperable with the work holder for urging the work holder in an upward direction, a sleeve slidably positioned about the upper part of the work holder, spring means cooperable with the sleeve for urging the sleeve upwardly with respect to the work holder, said work holder assembly being adapted to receive in superposed relationship a button lower part, a button upper part and a piece of button covering fabric, said press head assembly including a ram shaft mounted for axial sliding movement in the upper arm of the frame, a cylinder supported by the ram shaft for movement therewith, a press head mounted in the cylinder for upward and downward movement with respect to the cylinder, spring means cooperable with the press head for urging the press head downwardly, and lever means operably connected to the ram shaft for moving the shaft, cylinder and press head toward the work holder assembly whereby initially the fabric piece and button upper part enter the cylinder so that the peripheral edge of the fabric piece is folded downwardly by the inner peripheral rim of the cylinder and thereafter the cylinder of the press head assembly is fitted downward on the sleeve of the work holder assembly and is pressed onto the work holder for enabling the button lower part to be fitted into the button upper part with the downwardly folded peripheral edge of the fabric piece lying between such parts to produce the covered button.

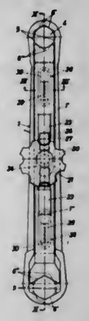
3,282,135
INSTALLATION TOOL FOR THREADED ELEMENT
Denny A. Hogan, Garden Grove, Calif., assignor to Newton Insert Co., Los Angeles, Calif., a corporation of California
Filed Mar. 19, 1965, Ser. No. 441,125
7 Claims. (Cl. 81—53)

1. A tool for installing a threaded element in a carrier part comprising a first section having a drive portion adapted to be turned about an axis, a second section carried by said first section and adapted to be driven about said axis by the first section and free for limited relative rotary and axial motion, a thread on said second section engageable with said threaded element to drive it, and means adapted to be pressed axially inwardly against said element by said first section to apply axially inward force to the element, said second section having a first portion extending axially outwardly within said first section and carrying a head of enlarged transverse dimension, said first section having a side wall extending at least partially about said second section and containing recess means within which said head projects essentially radially outwardly, said head having a side surface en-



gageable with said wall of the first section to transmit rotary motion from said first section to the second section, said head having at an axially inner side thereof an inner surface engageable with an opposed surface formed on said wall of the first section at the inner end of said recess means, at least one of said two last mentioned surfaces having an inclined camming configuration for reducing the extent to which said first section may move axially outwardly relative to the second section upon relative rotation of the first section in an installing direction, and for freeing said first section for increased axially outward movement upon relative rotation of the first section in a reverse unscrewing direction.

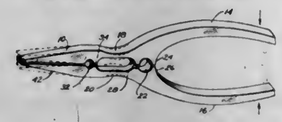
3,282,136
WRENCH
Karl Maichen, Lauterach 269, Austria
Filed June 12, 1964, Ser. No. 374,657
Claims priority, application Austria, Dec. 5, 1963, A 9,727/63; Apr. 9, 1964, A 3,091/64
6 Claims. (Cl. 81—77)



1. An adjustable double-ended wrench comprising a handle including two elongated members adjustable longitudinally with respect to one another, each member including a jaw at each end thereof, the jaws at adjacent ends of the members cooperating to form nut engaging and clamping surfaces, a rotatable disc on one of said members, and two stops spaced apart longitudinally on the other member, said disc being provided with an even number of indents, the diametrical opposed pairs of which

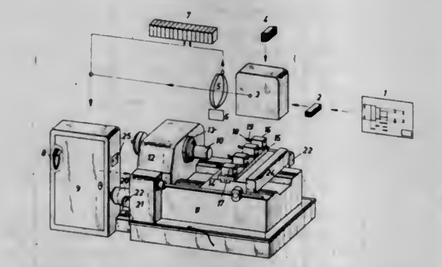
are engageable with said stops to simultaneously set and lock said cooperating jaws to desired nut sizes at both ends of the handle.

3,282,137
ACTUATING MECHANISM FOR PLIER TYPE DEVICES
Monte H. Lovelace, San Fernando, Calif., assignor to The Bendix Corporation, North Hollywood, Calif., a corporation of Delaware
Filed Dec. 30, 1964, Ser. No. 422,274
6 Claims. (Cl. 81—302)



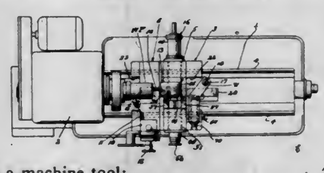
1. A hand tool comprising a unitary piece of solid material including a pair of elongated jaws which are normally displaced from each other;
means defining a first opening at the base of said jaws;
a gripping portion consisting of a pair of handle members adapted to be squeezed toward each other by an operator;
means defining a second opening at the base of said handle members, said means including a pair of projections on said handle members acting as stops;
an intermediate section positioned between said openings including first and second flexure sections extending longitudinally between said handle sections and said jaws;
a third flexure section positioned between said handle sections and adjacent said second opening;
and a fourth flexure section positioned adjacent said first opening, said third flexure section serving as a pivot around which the forces exerted on said handle members are applied to said first and second flexure sections and said fourth flexure section serving as a pivot around which forces from said first and second flexure sections are applied to said jaws to move said jaws toward each other.

3,282,138
SHORT-BED LATHE WITH NUMERICAL POSITIONING CONTROL
Paul Stöckmann and Erich Dozekal, Langen, Hesse, Germany, assignors to Pittler Maschinenfabrik Aktiengesellschaft, Langen, Hesse, Germany
Filed Oct. 15, 1964, Ser. No. 404,000
Claims priority, application Germany, July 8, 1964, P 34,651
2 Claims. (Cl. 82—14)



1. Short-bed lathe with numerical control including a lathe frame, a horizontally directed work spindle rotatably mounted in said frame, a longitudinal slide slidably mounted on said frame for horizontal movement in a direction parallel to the axis of the work spindle, a relatively long cross slide mounted on the said longitudinal slide for horizontal movement with respect thereto in a direction transverse to the axis of said work spindle, a plurality of individual tool holders capable of being preset off the machine in dependence on the workpiece to be produced, fastening means for securing the tool holders on the said cross slide at specific points for positioning the said tool holders in longitudinally spaced relationship to each other independently of the exact dimensions of the workpiece, information storage means, and numerical control means for controlling said slides as a function of the information of said information storage means in any desired sequence, with any desired speed and over any desired path, to the positions necessary for machining.

3,282,139
BORING AND TURNING LATHES
James N. Colebrook, Cincinnati, Ohio, assignor to The Lodge & Shipley Company, Cincinnati, Ohio, a corporation of Ohio
Original application July 3, 1961, Ser. No. 123,360, now Patent No. 3,186,269, dated June 1, 1965. Divided and this application Mar. 29, 1965, Ser. No. 443,191
3 Claims. (Cl. 82—2.5)

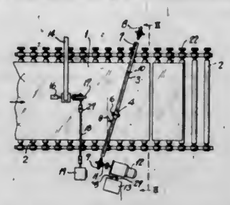


1. In a machine tool:
a carriage mounted for reciprocating motion along an axis;
means mounting a turning tool cross slide and a boring tool cross slide adjacent to one another on said carriage for independent reciprocating motion on the carriage along spaced apart, parallel axes extending normal to said carriage motion axis;
a generally U-shaped member, the bridge of the U being mounted on said boring tool cross slide with the legs of the U extending generally vertically;
support means disposed between said legs, the support having means for mounting a boring bar;
pivot connections between said support and said legs providing for the support to be rotatable about a horizontal axis to an operative position wherein a boring bar in the holder will extend generally horizontally across the path of motion of the turning tool slide and to an inoperative position wherein a boring bar will extend generally vertically and away from the path of motion of the turning tool slide; and
a stop member connected to and extending between the mouth of said legs, the stop member being positioned to be engaged by said support upon rotation thereof to the operative position.

3,282,140
METHOD OF AND APPARATUS FOR AUTOMATICALLY CUTTING A GLASS RIBBON
Shinsuke Sasabuchi, Tadashi Sakaki, and Isao Kawada, Kitakyushu, Japan, assignors to Asahi Glass Co., Ltd., Tokyo, Japan, a corporation of Japan
Filed Feb. 26, 1965, Ser. No. 435,484
Claims priority, application Japan, Feb. 29, 1964, 39/11,010
5 Claims. (Cl. 83—7)

1. An apparatus for automatically cutting a glass ribbon which comprises a roller conveyor which carries for-

ward a glass ribbon formed continuously from molten glass; a guide rail bridged across and above said roller conveyor in a direction oblique to the advancing pathway of the glass ribbon at an inclination angle θ; a cutter attached to the said guide rail so as to be able to move relatively to the glass ribbon and to score the surface thereof transversely; a pulse motor which causes the cutter to make a reciprocating movement along the guide

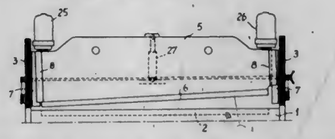


rail; a device for detecting the advancing speed of the said glass ribbon; a pulse generator for transforming the detected result to the pulses and translating the said pulses as frequency, the said pulse motor being rotated in conjunction with the pulses sent from the pulse generator and the cutting speed of the cutter being always maintained so as to be proportional to the advancing speed of the said glass ribbon.

3,282,141
GUILLOTINE SHEARING MACHINES

Raymond Gautron, La Courneuve, France, assignor to Corpet, Louvet & Cie, La Courneuve, France, a corporation of France

Filed Mar. 8, 1965, Ser. No. 439,137
Claims priority, application France, Mar. 13, 1964, 967,397, Patent 1,396,541; 967,398, Patent 1,396,542
6 Claims. (Cl. 83—527)



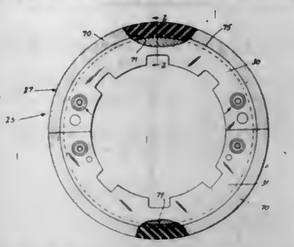
1. A guillotine shearing machine with adjustment of the blades, comprising a frame, slide means on said frame, a moving blade carrier mounted laterally on said slides, a first pivot pin coupled to the frame and pivotally mounting thereon the upper portion of each said slide, a second pivot pin pivotally mounting thereon the lower portion of each said slide, said second pivot pin having an eccentric mounting shaft which is pivotally mounted on the frame and is adjustable in angular position according to the clearance desired between blades, an eccentric pivot mounted on said frame and bearing thereon said eccentric mounting shaft, said eccentric pivot being adjustable in angular position with an amplitude of adjustment greater than that permitted by said eccentric shaft, each said slide having for that purpose a sliding mounting at its upper end about the first pivot pin.

3,282,142
ANVIL FOR ROTARY DIE CUTTING

Louis E. Sauer, St. Louis, Mo., assignor to L. E. Sauer Machine Company, St. Louis, Mo., a corporation of Missouri

Original application Sept. 17, 1962, Ser. No. 224,003. Divided and this application Oct. 20, 1965, Ser. No. 498,361
5 Claims. (Cl. 83—659)

1. In combination, a rotary anvil for die cutting comprising a base, and a resilient work engaging cover of resilient material mounted on said base, the cover having a continuous surface longitudinally of the anvil, the outer surface of the base and the inner surface of the cover having axially spaced annularly disposed interengaging sur-

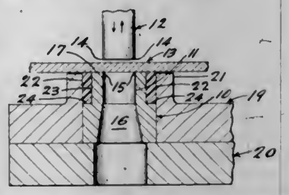


faces maintaining said cover on said base, said interengaging surfaces being of such a cross-section that said surfaces of said cover can be slipped into telescoped relation with said surfaces of said base.

3,282,143
DIE BUTTON

Hans W. Wierscheim, Norwalk, Ohio, assignor to Kuhlman Machine Company, Norwalk, Ohio, a corporation of Ohio

Filed Apr. 2, 1964, Ser. No. 356,862
6 Claims. (Cl. 83—680)



1. In a die button adapted to be rigidly secured in a punch die section and comprising a body portion, a punch aperture of preselected diameter axially extending throughout said body portion, said aperture being of uniform size from the upper face of said die button to a point intermediate said die button and outwardly flaring, radially increasing from said intermediate point to the lower face of said die button, the improvement comprising an upper body portion of decreased external size axially extending from said upper face to approximately said intermediate point, and an annular band of a resilient material circumjacent said upper body portion, the radially outer surface of said band extending slightly beyond the outer surface of said die button.

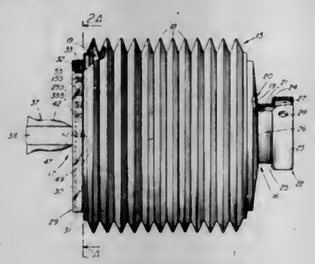
3,282,144
MUSICAL REED TOYS

Philip H. Knott, New York, N.Y.
(R.R. I, Koloa, Hawaii 96756)

Filed June 8, 1964, Ser. No. 373,478
14 Claims. (Cl. 84—375)

1. A musical reed toy comprising, in combination,
(a) a source of compressed air in the form of an alternately expansible and compressible bellows having
(b) a transverse closing back end structure carrying a hand grasp to be held in one hand of a player and an opposite head end structure to be engaged by the other hand with an interior air chamber defined between said end structures, the capacity of said air chamber being variable by expansion and compression of said bellows,

(c) reed support plate means mounted in said head end structure of said bellows provided with portions of a plurality of air flow passages extending therethrough each including at least one reed opening communicable to the bellows chamber through the passage which includes the latter,
(d) a bank of reeds carried by said plate means comprising a group tuned to sound notes of a musical scale with each mounted in one of the reed openings to sound the note thereof when air passes in an effective direction in the passage connected to the reed opening in which this reed is mounted,
(e) valving disk means mounted in said head end structure adjacent said plate means with one of said plate and disk means being rotatable relative to the other to constitute a rotary element,
(f) said valving disk means being provided with means defining other portions of the air flow passages

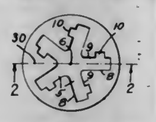


selectively communicable with the air flow passage portions in said plate means one at a time in different relative rotary positions of the rotary element of said plate and disk means to connect said bellows chamber therethrough to the reed opening included in the particular passage communicatively conditioned by the particular relative rotary position of the rotary element,
(g) manually engageable means embodied in said head end structure to rotate by the other hand of the player the rotary element of said plate and disk means relative to the other selectively to effect this communication for sounding the notes selectively, and
(h) index means embodied in said head end structure to dictate to the player the proper position of the rotary element for attaining the sounding of the desired notes.

3,282,145
SCREW SOCKET HAVING TANGENTIAL KEYWAYS

Wilmar L. Prescott, 5361 Russell Ave., Hollywood, Calif.

Filed Mar. 19, 1965, Ser. No. 441,184
1 Claim. (Cl. 85—45)



In a screw having a threaded shank and a head, the head formed with a socket having a plurality of symmetrically arranged equally spaced radial grooves, no two grooves of which are in diametrical alignment, the center for which is co-axial with the screw shank, each groove provided with parallel vertical side walls and a bottom wall sloping downwardly from the head of the screw to the center thereof, and one slot opening into the screw head from one of said side walls of each groove to define a keyway at right angles to the vertical side wall and extending substantially parallel to the axis of the shank, the side wall of each groove containing said slot corresponding to that in each of the other grooves, the radial grooves and the keyways adapted to receive a conforming bit of a screw driver.

3,282,146
METHOD OF MAKING COMBUSTIBLE CARTRIDGE CASES

Walter S. Baker, Joliet, Ill., assignor to the United States of America as represented by the Secretary of the Army

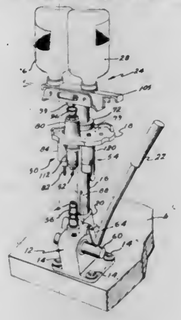
No Drawing. Original application Mar. 11, 1958, Ser. No. 720,800. Divided and this application Mar. 9, 1965, Ser. No. 452,429
3 Claims. (Cl. 86—10)

1. The method of making combustible cartridge cases comprising the steps of impregnating a fabric with a slurry comprising a perchlorate oxidizing agent, a resinous binding agent and an organic solvent and wrapping said impregnated fabric on a mandrel to form the cartridge case.

3,282,147
SHOTGUN SHELL RELOADING PRESS

Richard S. Havourd, Suffield, Conn., and William S. Winton, Chicopee Falls, Mass., assignors to Embart Corporation, Bloomfield, Conn., a corporation of Connecticut

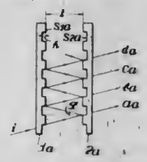
Filed Sept. 9, 1964, Ser. No. 395,180
5 Claims. (Cl. 86—25)



1. A shotshell reloading press comprising a base, primer insertion means disposed on said base, a tubular post extending upwardly of said base, a turret disposed on said shaft in axially fixed relation above said base, a ram slidable on said post above said primer insertion means, mechanical means to move said ram in a stroke toward and away from said turret, said turret being rotatable on said shaft, means for mounting on said turret, in circumferentially spaced relation, a plurality of implements used in shotshell reloading, detent means for releasably retaining said turret in a plurality of angular positions in which each of said implements is in registered alignment with said ram, a shot and powder charging assembly fixedly disposed above said turret, said turret including a primer ejector, a combination powder charging and wad compacting tube, and a spring compressed by upward movement of said compacting tube, indicia on said tube indicating the compression of said spring, and positive stop means adjustable to limit said compression of said spring to a predetermined value shown by said indicia in compacting a wad but permitting unlimited compression of said spring in response to upward movement of said ram, whereby said tube is raised

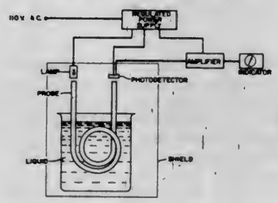
substantially above its wad compacting position for receiving a charge of shot, a crimping die including a shell extracting arm extending downwardly and outwardly of the outer surface of said crimping die, said arm being sufficiently flexible to be flexed into engagement with a sizing die carried on said ram to extract the shell from said sizing die by movement of said ram away from said turret.

3,282,148
INTERFEROMETER COMPRISING TWO OPTICAL FLATS WITH SUPERPOSED LAMINAR DIFFRACTION GRATINGS
Yahiko Yamada, Kitatama-gun, Tokyo-to, Japan, assignor to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan
Filed Jan. 15, 1963, Ser. No. 251,609
1 Claim. (Cl. 88—14)



An interferometer comprising two optical flats, each of which has a plurality of rectangular-section grooves formed at predetermined intervals on one of its two flat surfaces, which is rendered reflective by a reflecting coating film, whereby two laminar diffraction gratings are thus formed, the said two optical flats being disposed with their reflective surfaces in parallel relationship to each other and facing each other at a predetermined distance; the light reflected by said grooves being caused to interfere with repeated reflection at said surfaces so that only a wavelength region in the vicinity of monochromatic light can pass.

3,282,149
LINEAR PHOTOELECTRIC REFRACTOMETER
Robert Frank Shaw and Gerald Alvin Johnson, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Filed Apr. 10, 1963, Ser. No. 271,976
8 Claims. (Cl. 88—14)



1. A refractometer for measuring the index of refraction of a fluid comprising a coiled bar having at least 360° of curvature, a source of light of constant intensity so positioned that at least part of the light from said source is incident on one end of said bar, and directed along the length of the bar, and includes at least one wave length to which the bar is transparent, and a photodetection means at the other end of said bar to measure the transmitted radiant energy passed longitudinally through said bar, means to maintain the entire coiled portion of said coiled bar immersed in said fluid, and protect the bar and detection means from variable intensity stray light, whereby the transmitted light is subject to multiple internal reflections at the bar-liquid interface along said coiled portion of said bar so that the value of the transmitted light is a substantially linear function of the refractive index of said fluid.

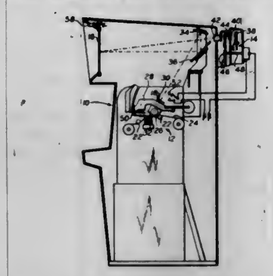
3,282,150
MINIATURIZED MARKER MAKING SYSTEM
Arnold H. Burton, 13 Ruth Road, Plainview, N.Y.
Filed Nov. 29, 1963, Ser. No. 327,014
10 Claims. (Cl. 88—24)



1. For use with a miniaturized marker system, a photographic equipment enabling rapid reproduction of enlargements of the lay-out on the planning board and utilizing a camera having a wide angle lense and a shutter, and operable to reproduce a positive and negative within a relatively short time after the taking of the picture, comprising:
a movable camera mount for said camera including a relatively fixed upright member and a bracket structure guided on and movable relative to said upright member,
drive means on said camera mount for raising and lowering said bracket structure,
electrically controlled actuating means for tripping said shutter,
a control unit secured to said upright member having selectively actuatable means for selectively raising and lowering said bracket structure and for remotely controlling the tripping of said shutter,
counter-weight means connected to said bracket structure to facilitate raising and lowering thereof,
and a daylight developer including a housing having a base member, an enlargement head receiving therein the negative and mounted on said housing, manual means within the enlarger housing for feeding enlarging paper over a predetermined length of the base member thereof, said enlarger head including a source of light, timer means for controlling the on-time of the source of light, paper cutting means within said enlarging unit, a developing unit, and manual means selectively for feeding the exposed enlarging paper after cutting thereof into said developing unit.

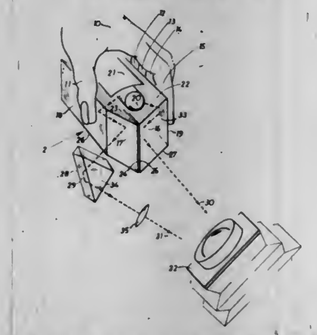
3,282,151
PROJECTION APPARATUS
Angelo Bottani, Milan, Italy, assignor to Societa Internazionale Fonovisione S.p.A., Milan, Italy, a corporation of Italy
Filed Feb. 12, 1964, Ser. No. 344,378
Claims priority, application Italy, Feb. 27, 1963, 3,919/63
10 Claims. (Cl. 88—24)

1. An image projection apparatus comprising a lamp, a screen, means for directing light from said lamp to said screen, means responsive substantially solely to the ambient light adjacent said screen, and means responsive



to said ambient light responsive means for varying the intensity of the light from said lamp impinging on said screen in accordance with said ambient light.

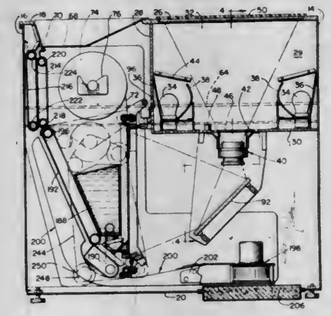
3,282,152
SIGNALMENT RECORDING APPARATUS
Jon H. Myer, 1906 Beryl Lane, Newport Beach, Calif.
Filed Apr. 15, 1964, Ser. No. 359,985
2 Claims. (Cl. 88—24)



1. Optical apparatus for simultaneously forming on a common plane an image of the skin ridge patterns of apposable digits of a hand comprising, in combination, a pair of prisms each having at least two parallel surfaces one of which exhibits total internal reflection, the other being such as to form an image by frustration of the total internal reflection at the points of contact of said digits, said prisms being juxtaposed at the totally internal reflecting ones of said parallel surfaces, means for illuminating the image forming internal reflecting surfaces of said prisms and means to direct reflected images from said internal reflecting surfaces in substantially parallel paths to said common plane.

3,282,153
DOCUMENT COPYING APPARATUS
Richard J. Chen, Brockton, and Paul B. Mason, Magnolia, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed May 19, 1964, Ser. No. 368,620
13 Claims. (Cl. 88—24)

1. In photographic apparatus including support means for locating successive sections of a photosensitive sheet in position for exposure, exposure means for exposing said successive sections and means for moving successive sections of said sheet into and from engagement with said support means, in combination, means for processing said sections of said photosensitive sheet comprising:
cutting means located adjacent said support means and the leading edge of a section of said sheet located in position for exposure by said support means, for severing said section of said sheet from the remainder of said sheet following exposure and movement of said section from engagement with said support means;
applicator means adjacent said cutting means for applying a processing liquid to each of said sections during movement of said each section relative to and in engagement with said applicator means;
first advancement means located in the path of movement of said each section between said cutting means and said applicator means for moving said each section relative to and into engagement with said applicator means;

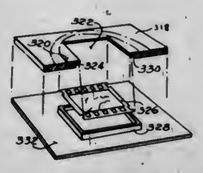


second advancement means located to the side of said applicator means opposite said cutting means for engaging said each section of said sheet to move said each section relative to and from engagement with said applicator means and along a path through said apparatus; and
control means including a sheet sensing element mounted in said path of movement of said each section of said sheet at a predetermined distance along said path from said cutting means and responsive to engagement by the leading edge of said each section for actuating said cutting means to sever said each section from the next succeeding section of said sheet and deactivating said means for moving said sections of said sheet into and from engagement with said support means, with said next succeeding section of said sheet located by said support means in position for exposure.

3,282,154
AUDIOVISUAL PROJECTION SYSTEM
Panayotis C. Dimitracopoulos, 2162 Sherbrooke St. W., and Constantine D. Pezaris, 2240 Lavallee St., both of Montreal, Quebec, Canada
Original application July 3, 1961, Ser. No. 121,734, now Patent No. 3,122,054, dated Feb. 25, 1964. Divided and this application Nov. 27, 1963, Ser. No. 326,620
2 Claims. (Cl. 88—28)

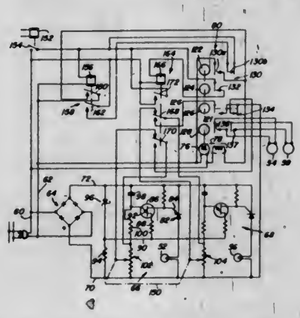
1. A unitary combined sound and picture-projection slide comprising a relatively flat rectangular support plate carrying on one face thereof a stationary open-spiral sound track whose radial width is small compared with the outer diameter of said track, said plate having a rectangular aperture defined by stepped-edge walls and being positioned wholly within the inner diameter of said sound track, a rectangular projection diapositive having major dimensions slightly larger than those of said aperture and being positioned in registered relation to said aperture within the recess provided by said stepped walls, frame

means received in said recess in engagement with said diapositive for holding the latter fixed in centered posi-



tion relative to said aperture, and means for securing said frame means to said plate.

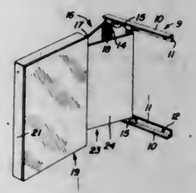
3,282,155
SLIDE PROJECTION CONTROL SYSTEM
James C. Cleary, Jr., 28 Pengilly Drive, New Rochelle, N.Y.; Walter O. Le Croy, Jr., 116 S. Buckhout St., Irvington, N.Y.; and John E. Porter, North White Plains, N.Y. (155 W. 68th St., New York, N.Y.)
Filed Sept. 25, 1964, Ser. No. 399,151
7 Claims. (Cl. 88—28)



1. In combination with a pair of slide projectors each having a slide changing mechanism and a projection lamp for alternatively projecting images onto a common screen area, a programming device producing slide changeover pulses synchronized with audio output signals, pulse controlled means operatively connected to said slide changing mechanisms for operation thereof in response to said changeover pulses, means operatively connected to said projection lamps for simultaneously dimming one of the lamps and illuminating the other of the lamps during a changeover cycle of the pulse controlled means, dissolve control means responsive to the duration of said pulses for controlling the time interval during which said lamps are respectively dimmed toward extinction and illuminated toward maximum brilliance, current control means connected in series with each lamp and rendered conductive for unidirectionally limiting flow of current to a minimum value maintaining, the lamps heated without incandescence, and means connected to the current control means for rendering thereof conductive to vary the voltage across the lamps in opposite directions at non-linear rates of change preventing image reddening during said time interval.

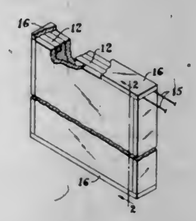
3,282,156
ADJUSTABLE MIRROR ASSEMBLY
James Oras Smith, 182 Belmont Drive, Grand Junction, Colo.
Filed Feb. 20, 1963, Ser. No. 259,809
6 Claims. (Cl. 88—91)

1. An adjustable mirror assembly comprising a supporting structure, a planar mirror positionable in overlying parallel relation to said structure, said mirror having first and second edges, a face and a back, a first mirror mounting arm having opposed ends, means hingedly securing a first end of the first arm to the structure at a fixed location for movement of said first arm from a first position paralleling said structure to a second position projecting outwardly therefrom, a means hingedly securing the second end of said first arm to the back of said mirror at a fixed location with respect to the mirror for outward movement of said mirror upon an outward movement of said first arm, a second mirror mounting arm longer than said first arm, said second arm having first and second ends, means hingedly securing the first



end of the second arm to the supporting structure at a fixed location spaced from the first end of the first arm for movement of said second arm from a first position paralleling said structure and overlying the first arm in its first position to a second position projecting outwardly therefrom, and means hingedly securing the second end of said second arm to the back of said mirror at a fixed location with respect to the mirror closer toward the second edge of said mirror than the second end of said first arm for effecting, in conjunction with said first arm, a movement of the mirror from a position paralleling the structure to a position generally perpendicular thereto as the two arms are swung outwardly.

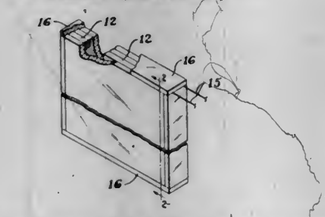
3,282,157
COLOR REVERSIBLE ELECTROCHEMICAL LIGHT FILTER UTILIZING ELECTROLYTIC SOLUTION
Giffin D. Jones and Ralph E. Friedrich, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Jan. 7, 1963, Ser. No. 249,858
3 Claims. (Cl. 88—107)



1. In an electrochemical light filter having a transparent gross electrode, a minor electrode in spaced relationship to the gross electrode and which is spaced and positioned to allow the passage of light, a light transmitting electrolyte occupying the space between said electrodes, an electrical power source and means for reversibly applying such electrical power to the electrodes, the improvement which comprises providing as said electrolyte an aqueous

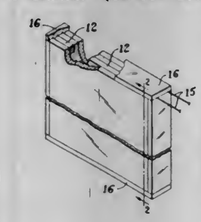
solution containing a coloring amount of complexed manganese ion stable in aqueous solution in the +2 and +3 valence state whereby the color of the aqueous solution is altered by sequentially applying pulses of electrical power of opposite polarity.

3,282,158
COLOR REVERSIBLE ELECTROCHEMICAL LIGHT FILTER UTILIZING ELECTROLYTIC SOLUTION
Giffin D. Jones and Ralph E. Friedrich, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Jan. 7, 1963, Ser. No. 249,859
4 Claims. (Cl. 88—107)



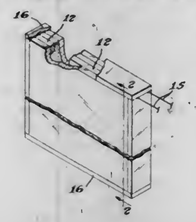
1. In an electrochemical light filter having a transparent gross electrode, a minor electrode in spaced relationship to the gross electrode and which is spaced and positioned to allow the passage of light, a light transmitting electrolyte occupying the space between said electrodes, an electrical power source and means for reversibly applying such electrical power to the electrodes, the improvement which comprises providing as said electrolyte an aqueous solution containing a coloring amount of complexed copper ion stable in aqueous solution in the +1 and +2 valence state whereby the color of the aqueous solution is altered by sequentially applying pulses of electrical power of opposite polarity.

3,282,159
COLOR REVERSIBLE ELECTROCHEMICAL LIGHT FILTER UTILIZING ELECTROLYTIC SOLUTION
Giffin D. Jones and Ralph E. Friedrich, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Jan. 7, 1963, Ser. No. 249,861
3 Claims. (Cl. 88—107)



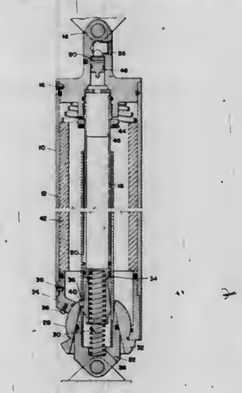
1. In an electrochemical light filter having a transparent gross electrode, a minor electrode in spaced relationship to the gross electrode and which is spaced and positioned to allow the passage of light, a light transmitting electrolyte occupying the space between said electrodes, an electrical power source and means for reversibly applying such electrical power to the electrodes, the improvement which comprises providing as said electrolyte an aqueous solution containing a coloring amount of a complexed titanium ion stable in aqueous solution in the +3 and +4 valence states whereby the color of the aqueous solution is altered by sequentially applying pulses of electrical power of opposite polarity.

3,282,160
COLOR REVERSIBLE ELECTROCHEMICAL LIGHT FILTER UTILIZING ELECTROLYTIC SOLUTION
Giffin D. Jones and Ralph E. Friedrich, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Jan. 7, 1963, Ser. No. 249,862
3 Claims. (Cl. 88—107)



1. In an electrochemical light filter having a transparent gross electrode, a minor electrode in spaced relation to the gross electrode and which is spaced and positioned to allow the passage of light, a light transmitting electrolyte occupying the space between said electrodes, an electrical power source and means for reversibly applying such electrical power to the electrodes, the improvement which comprises providing as said electrolyte an aqueous solution having a maximum pH of 3 and containing therein a coloring amount of complexed iron ion stable in aqueous solution in the +2 and +3 valance states whereby the color of the aqueous solution is altered by sequentially applying pulses of electrical power of opposite polarity.

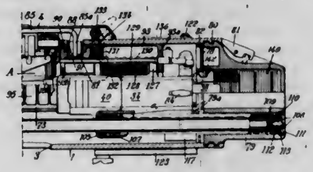
3,282,161
DUAL THRUST CATAPULT EJECTOR
Hugh D. MacDonald, Jr., Palmyra, and Norman J. Waecker, Masonville, N.J., assignors to the United States of America as represented by the Secretary of the Army
Filed Apr. 2, 1965, Ser. No. 445,289
4 Claims. (Cl. 89—1.818)

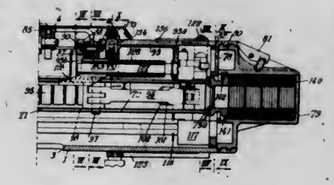


1. In a dual thrust catapult ejector for use in an aircraft for ejecting a mass therefrom the combination of
an elongate body comprising a nozzle housing at the lower end thereof;
means on the upper end of said body for attaching same to a mass to be ejected;
a pair of inner and outer telescoping tubes within said body, said inner tube fixed to said body and said outer tube removable from said body;

means on said outer tube for attachment to an aircraft;
means separably locking said outer tube and said body together;
means including a cartridge for releasing said locking means and for initially propelling said body;
a propellant within said body ignited by the gases of said cartridge for propelling said body after said body has separated from said outer tube;
a nozzle element rotatably received in said nozzle housing, in substantially longitudinal alignment with said body during initial propelling of said body, said nozzle element being constructed and arranged to rotate to a fixed position when said body separates from said outer tube to exhaust propellant gases angularly to the longitudinal axis of said body to produce a component of thrust through the mass to be ejected.

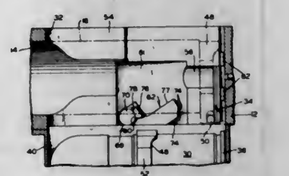
3,282,162
CARTRIDGE FEEDING MECHANISM FOR AUTOMATIC GUNS
Bernard Maillard, Geneva, Switzerland, assignor to Brevets Aero-Mecaniques S.A., Geneva, Switzerland
Filed Sept. 14, 1964, Ser. No. 396,030
Claims priority, application Luxembourg, Sept. 19, 1963, 44,465
18 Claims. (Cl. 89—33)





1. An at least partly self acting gun which comprises, in combination,
a tubular breech casing the inner and outer walls of which are substantially of cylindrical shape with circular cross sections,
a gun barrel rigid with said breech casing extending frontwardly thereof and coaxially therewith,
said breech casing being provided, in the upper portion thereof, with a longitudinal elongated cartridge introduction opening,
a cartridge feed device above said opening,
said breech casing being provided, in the under portion thereof and substantially in the same axial plane as said opening, with a longitudinal elongated cartridge case ejection opening,
a breech body slidable longitudinally in said breech casing,
two slideways for said breech body fixed, opposite each other, to the inner wall of said tubular casing parallelly to the generatrices of the cylindrical surface thereof, at least one of said slideways including, in one of the semi-cylindrical volumes limited by said axial plane inside said tubular breech casing, two guiding walls parallel to the axis of said breech casing and extending inwardly from the inner wall of said tubular breech casing and the edges of which form two guiding surfaces, an elongated space being left between said two guiding walls, said tubular breech casing, and the volume swept over by said breech body,
an elongated cam in said elongated space, said cam being journalled in said breech casing about an axis parallel to that of said breech casing,
means carried by said breech body for rotating said elongated cam about said last mentioned axis in response to the longitudinal movements of said breech body,
and means operatively connecting said cam with said cartridge feed device.

3,282,163
LINK GUIDE MECHANISM FOR EXTERNALLY POWERED AUTOMATIC GUNS
John G. Rocha, Westfield, Mass., assignor to the United States of America as represented by the Secretary of the Army
Filed May 18, 1965, Ser. No. 456,872
5 Claims. (Cl. 89—33)

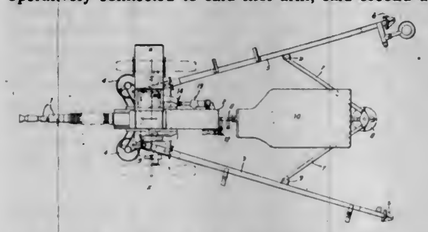


1. In an automatic gun having a receiver including a rectangular feedway extending transversely therethrough for the passage of a linked belt of cartridges, a barrel slidably mounted in the receiver for reciprocal longitudinal movement from and toward a fixed point adjacent the rear endwall of the cartridge belt feedway, and means for advancing the cartridge belt into the feedway in synchronism with the reciprocal movement of the barrel to position the leading cartridge in the belt in chambering alignment with the barrel, the improvement comprising a pair of link guide members pivoted at opposite locations in the feedway adjacent the entrance end thereof, and a lug projecting from each of said link guide members into the feeding path of the link on the leading cartridge in the belt whereby said guide members are pivoted thereby into position to restrain the link on the leading cartridge from tilting in the feedway during the movement thereof into chambering alignment with the barrel.

3,282,164
FIELD GUN MOUNTINGS
Roy Gilbert Vickers, Grantham, England, assignor to Brevets Aero-Mecaniques S.A., Geneva, Switzerland, a society of Switzerland
Filed Jan. 8, 1965, Ser. No. 424,370
Claims priority, application Great Britain, Jan. 9, 1964, 1,060/64
5 Claims. (Cl. 89—40)

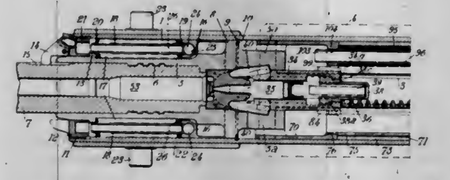
1. In a field gun mounting comprising a gun and a cradle forming an elevating mass of which the center of gravity lies forward of the elevation axis and gunner support means pivotally coupled to the elevating mass to apply thereto, rearward of the elevation axis, at least part of the weight of a gunner on said support means; the improvement which comprises spring means to apply to the elevating mass a moment acting about the elevation axis in the same direction as the weight of the elevating mass to counterbalance the applied weight of said gunner, said spring means comprising a crank pivoted on said elevating mass, said crank having a first arm and a second

arm, and a spring mounted on said elevating mass and operatively connected to said first arm, said second arm



being pivotally connected as a reaction arm to a relatively fixed part of the mounting.

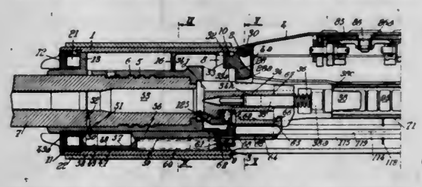
3,282,165
PIVOTED BREECH BLOCK LOCKING MEMBER FOR AUTOMATIC GUNS
Bernard Maillard, Geneva, Switzerland, assignor to Brevets Aero-Mecaniques S.A., Geneva, Switzerland
Filed Sept. 14, 1964, Ser. No. 396,035
Claims priority, application Luxembourg, Sept. 19, 1963, 44,465
4 Claims. (Cl. 89—190)



4. An at least partly self acting gun which comprises, in combination, a breech casing at least the front portion of the inner end wall of which is of cylindrical shape, with circular cross section, the inner wall of said breech casing front portion being provided with a circular groove located in a transverse plane of said breech casing front portion, a sleeve coaxial with said breech casing front portion and at least portions of the external wall of which fit in said breech casing front portion, a gun barrel rigid with said sleeve coaxially therewith, and a split ring fitting in said groove and projecting into said breech casing, said ring being operatively connected with said sleeve for at least contributing in securing it in said breech casing, a breech body slidable longitudinally in said breech casing, means for locking said breech body with respect to said breech casing, piston means for placing said locking means out of action, gas tap means for urging said piston means rearwardly, a block operatively connected with said split ring for being held longitudinally by it, a spring interposed between said piston means and said block, a resetting mechanism comprising a chain, and a guide for said chain supported by said block, and a return spring bearing against said block.

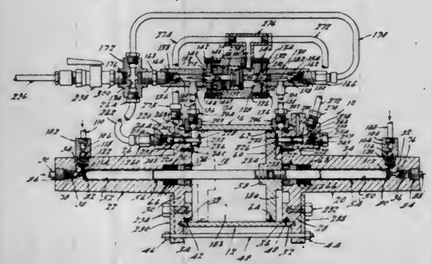
3,282,166
GAS OPERATED AUTOMATIC GUN
Bernard Maillard, Geneva, Switzerland, assignor to Brevets Aero-Mecaniques S.A., Geneva, Switzerland
Filed Sept. 14, 1964, Ser. No. 396,034
Claims priority, application Luxembourg, Sept. 19, 1963, 44,465
5 Claims. (Cl. 89—191)

3. An at least partly self acting gun which comprises, in combination,
a breech casing,
a gun barrel rigid with said breech casing,
a reciprocating breech body guided in said breech casing so as to be slidable longitudinally therein,
at least one locking member movably carried by said breech body and adapted to cooperate with said breech casing for locking said breech body with respect to said breech casing.
at least one locking control member slidable longitudinally in said breech body for actuating said locking member to move it into cooperating locking position with respect to said breech casing,
a gas tap cylinder rigid with said breech casing parallel to said gun barrel at a distance therefrom,
a gas tap piston slidable in said gas tap cylinder,
said gun barrel and said gas tap cylinder being provided with a tap passage for the flow of powder gases from



the inside of said gun barrel to said gas tap cylinder to act upon said gas tap piston,
an extension integral with said breech body provided with a longitudinal bore parallel to said gun barrel and intermediate between the axis thereof and the axis of said gas tap cylinder, and
a push-piece slidable in said bore and operatively connected with said control member in the longitudinal direction,
the only connection between said gas tap piston and said control member being through the portion of the rear edge of said gas tap piston nearest to the axis of said gun barrel bearing upon the portion of the front edge of said push-piece farthest from the axis of said gun barrel to produce rearward movement of said control member when a shot is fired.

3,282,167
RECIPROCATING FLUID MOTOR
William G. McKenzie, Racine, Wis., assignor to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware
Filed Apr. 9, 1964, Ser. No. 358,493
12 Claims. (Cl. 91—306)



1. In a combination pneumatic-hydraulic pumping device,
a pump housing comprising an annular shell and header means closing the opposite ends of said shell,
said header means defining hydraulic pumping chambers communicable with the interior of said shell,
a pneumatically actuated piston reciprocable within said shell,

hydraulic pumping means attached to the opposite sides of said piston and reciprocable within said hydraulic pumping chambers upon reciprocation of said piston in said shell,

valve means for selectively metering predetermined quantities of pressurized air into said shell on the opposite sides of said piston to effect the movement of said piston and said hydraulic pumping means,

said valve means comprising a valve housing and a pressure responsive piston reciprocable within said housing,

conduit means communicating said valve housing with said pump housing,

check valve means in said valve housing and being selectively engageable by said piston means in said valve housing to communicate pressurized air from said valve housing into said conduit means, and

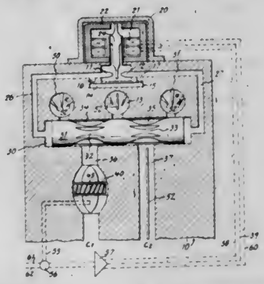
means including probe means slidably mounted in said pump housing and engageable by said pneumatically actuated piston to effect the actuation of said valve means.

3,282,168

HYDRAULIC SERVO CONTROL SYSTEMS

Paul F. Hayner, Lexington, and Gerald Leon Bernier, Lawrence, Mass., assignors to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware

Filed Sept. 5, 1963, Ser. No. 306,854
8 Claims. (Cl. 91—420)



1. In a hydraulic servo system having a hydraulic piston load, means including a plurality of liquid conduits for supplying liquid to opposite sides of said piston for actuation thereof, and a hydraulic servo valve for controlling flow of liquid to said piston load, said valve forming a piston movable in a chamber to open and close ports proportionately, said valve piston having circumferentially reduced portions defined by a smooth, continuous longitudinal curve so that said piston is gradually tapered to and from the minimum sectional dimension of said reduced portions, said valve piston presenting a convex surface to said ports to effect laminar flow of liquid passing therethrough said circumferentially reduced portions having a plurality of radially extending vanes disposed therein.

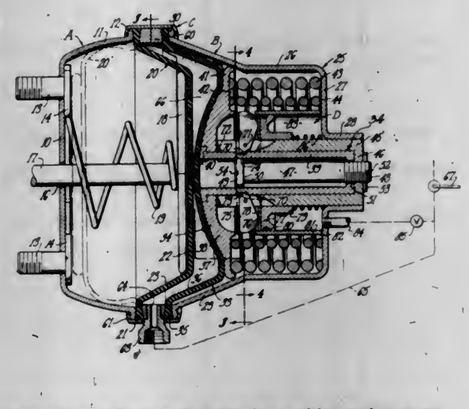
3,282,169

PNEUMATIC SERVICE BRAKE ACTUATOR AND SPRING - POWERED PARKING - EMERGENCY BRAKE ACTUATOR WITH TANDEM DIAPHRAGMS

Francis Leighton, Encino, Calif., assignor, by mesne assignments, to Rockwell-Standard Corporation, Pittsburgh, Pa., a corporation of Delaware

Filed July 24, 1962, Ser. No. 212,044
16 Claims. (Cl. 92—24)

1. In a brake actuator, in combination: an air brake diaphragm and a brake rod arranged to receive pressure from the front side of said diaphragm so as to be projected in a service-braking movement; a retractor diaphragm arranged behind said air brake diaphragm in pressure-transmitting association therewith, for moving said air brake diaphragm and brake rod in a braking movement when projected forwardly; a plunger engaging the rear side of said rectractor diaphragm, spring means acting on said plunger for projecting said diaphragms in an auxiliary braking operation; housing means mounting and cooperating with said diaphragms to define a pneumatic chamber in which air under pressure from a service air line will be effective to project said air brake diaphragm forwardly to service-braking position and to move said retractor diaphragm and plunger rearwardly to a retracted position of the plunger; positively acting holding means automatically operative in response to arrival of said plunger in said retracted position to engage the plunger for holding it in that position; and pneumatic control means operable in response to air pressure to maintain said holding means operative to hold said plunger in retracted position, and automatically responsive to a reduction in air pressure to cause said holding means to release said plunger for spring-energized auxiliary brake operation.

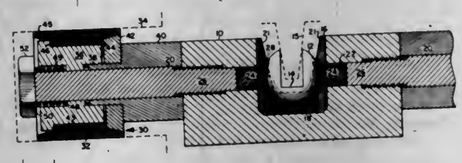


3,282,170

PISTON ASSEMBLY FOR VARIABLE DISPLACEMENT PUMP AND THE LIKE

Tom H. Thompson, Daytona Beach, Fla., assignor to Daytona Thompson Corporation, Daytona Beach, Fla., a corporation of Florida

Filed July 16, 1964, Ser. No. 383,110
14 Claims. (Cl. 92—84)



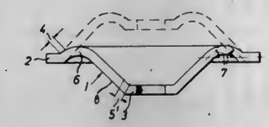
6. In a ball and socket joint, a ball, a rigid socket generally surrounding and supporting said ball for rotation therein, a plurality of generally cylindrical non-metallic deformable bearing members disposed about the ball within openings extending through said socket and extending generally radially of said ball, each bearing member being engaged at one end of the ball, and adjustable means acting on each of said bearing members to provide a force thereon in the direction of the ball sufficient to conform said one end of the bearing members generally to the spherical surface of the ball.

3,282,171

DIAPHRAGM DEVICE

Hans-Joachim Tückmantel, Burscheid, Bezirk Dusseldorf, Germany, assignor to Hochdruck-Dichtungs-Fabrik Schmitz & Schulte, Burscheid, Bezirk Dusseldorf, Germany

Filed Mar. 23, 1965, Ser. No. 442,082
Claims priority, application Germany, Mar. 25, 1964, H 52,161
9 Claims. (Cl. 92—99)



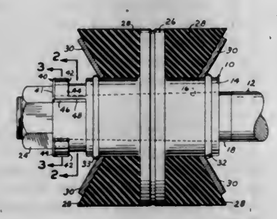
6. A diaphragm comprising a generally flexible circular body having inner and outer peripheral portions, said peripheral portions occupying axially spaced parallel planes, a non-deformable transition portion adjacent and inclined relative to each of said inner and outer peripheral portions, said transition portions being disposed to the same side of the planes of the adjacent peripheral portions. one of said transition portions merging into an arcuate portion having identical entrance and exit angles, and a frusto-conical portion between said arcuate portion and the other of said transition portions, whereby said arcuate portion is capable of movement between said transition portions while maintaining said identical angular relationship.

3,282,172

SLUSH PUMP PISTON

Alva D. Parker, 905 Frazier Drive, Oklahoma City, Okla.

Filed Nov. 9, 1964, Ser. No. 409,902
1 Claim. (Cl. 92—128)



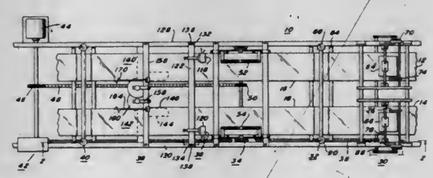
A piston to be used in conjunction with a piston rod having a conical portion near one end, comprising: a cylindrical piston body having a conical axial opening adapted to fit tightly on the conical portion of said piston rod, said piston having an annular radial flange near its mid-section; a pair of piston packing rings disposed over the ends of the piston body; and packing ring retaining means engaging the piston body to hold the packing against said flange, the end of said body having the smaller diameter opening including a portion extending coaxially beyond the packing retaining meaps at that end, said portion corresponding in diameter to said body, said portion having a pair of J-slots formed in its outer surface to engage a pulling tool, the hook portion of each J-slot being oppositely disposed diametrically of said portion, the leg portions of the J-slots extending partially around said portion in circumferential alignment forming a blind end for each J-slot leg portion, each J-slot leg portion having a width substantially equal to the spacing between the respective J-slot leg portion and the end surface of said body having the smaller diameter end, the width of each J-slot leg portion being substantially greater than its spacing from the packing retaining means at that end of said body, said portion being integrally connected through said body to said flange whereby when a pull is exerted on said portion it pulls both of said packing rings and said flange to remove them simultaneously from the rod with the remainder of the body.

3,282,173

THERMOPLASTIC BAG MANUFACTURING APPARATUS

Francis A. Davis, Jr., Lansdale, and Joseph F. Flannery, Mayfair, Pa., assignors to Paramount Packaging Corp., Chalfont, Pa., a corporation of Pennsylvania

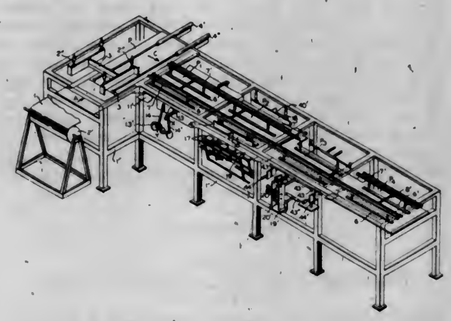
Filed Sept. 16, 1963, Ser. No. 309,230
5 Claims. (Cl. 93—8)



1. Thermoplastic bag manufacturing apparatus comprising frame, an intermittent side seam welder and cutter disposed on said frame, feed means associated with said frame for feeding a web of thermoplastic material longitudinally folded with a lowermost portion thereof extending further from the fold line than the uppermost portion thereof so as to define an exposed lip portion, a perforator on said frame, said perforator including at least one slitter positioned over the lip portion of the web as it is fed by said feed means, a printing unit disposed on said frame in spaced relation to said perforator, said perforator being disposed between said printing unit and said side seam welder and cutter, photocell pick-up apparatus disposed on said frame between said perforator and said side seam welder and cutter, drive means for said apparatus, and means mechanically coupling said drive means to said printing unit, said perforator and said side seam welder and cutter, said photocell pick-up apparatus being operatively connected to said drive means for actuating said drive means responsive to photocell markers on said web, whereby said printing unit, said perforator and said side seam welder and cutter are controlled by said photocell assembly.

3,282,174
EQUIPMENT FOR MAKING BAGS
Claudio Sperandio and Ezio Mazzotti, Mestre-Venezia, Italy, assignors to Edison, Milan, Italy, a corporation of Italy
Filed Nov. 27, 1963, Ser. No. 326,496
10 Claims. (Cl. 93—8)

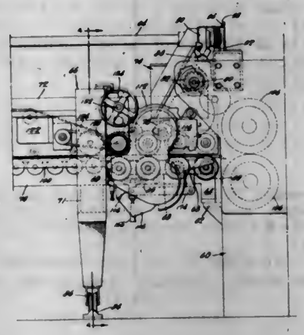
1. Equipment for the continuous production of bags from lay-flat tubing of flexible material, preferably of the type having squared bottoms with or without automatically closing valve, comprising means for the unwinding the lay-flat tubing from a reel, means for feeding said



lay-flat tubing on to a work plane on which, including cutting means, said tubing is cut up into tubular sections and slit along at least one of its ends for a certain length preferably along the flattening lines, so as to form at least one pair of free overlapping flaps, dragging means for shifting said shaped tubular section on another work plane means for spreading said flaps; cutting means, preferably with rotating knives, which carry out the longitudinal cuts in an offset disposition and at least one on each flap of at least one of the pairs of free flaps, means for effecting on another work plane the superimposition of the free flaps, consisting of a system of guiding elements, preferably a system of levers, means for the simultaneous welding on another plane of the flaps thus superimposed to form the bottoms and the filling valve, means for spreading open the tubular section at its ends on another work plane as well as means for the simultaneous welding of the lateral edges of the bottoms for their sealing and for the formation of the squared bottoms, and finally a mobile frame for shifting each flattened portion from one work plane to another.

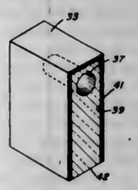
3,282,175
PROGRESSIVE SCORING MECHANISM FOR GLUED FLAP BOX GLUER-FOLDER MACHINES
Henry W. Moser, Haddonfield, N.J., and William Grobman, Philadelphia, Pa., assignors to Samuel M. Langston Company, Camden, N.J., a corporation of New Jersey
Filed Oct. 14, 1963, Ser. No. 316,067
10 Claims. (Cl. 93—58.1)

1. In a glued flap box gluer-folder machine, transversely spaced adjustably mounted support rails at the entry end of said machine, a set of lower scoring wheels mounted on said support rails, a set of mating scoring wheels mounted in said machine above each of said lower scoring wheels for cooperation with said lower scoring wheels, means supporting said lower scoring wheels in fixed lateral relationship with respect to their mating scoring wheels thereabove, means mounting one of said sets of wheels for individual selective vertical adjustment of a single wheel relative to its rail for varying nip pressure between said lower wheels and said mating



wheels, whereby a blank may be progressively scored deeper and deeper by passing between said wheels.

3,282,176
DEVICE FOR FORMING VISUAL CODE PATTERNS
John E. Morse and Leonard J. Seaberg, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Dec. 23, 1963, Ser. No. 332,545
6 Claims. (Cl. 95—1.1)

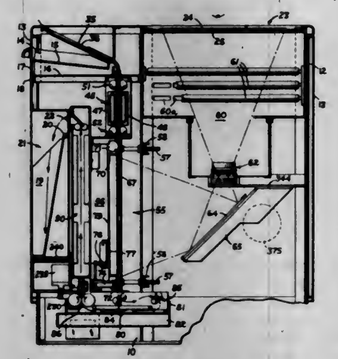


1. A device for forming a code pattern of uniformly illuminated, high intensity code targets to be photographically recorded, comprising:
(a) a plurality of solid blocks of substantially homogeneous translucent material, each block having a cavity therein for receiving a lamp;
(b) a light reflective coating substantially covering the exterior surface of each of said blocks except for at least a portion of one end which defines the code target;
(c) means for mounting the blocks in a side by side relation with at least a part of said uncoated portion of each block disposed in a common plane,
(d) whereby upon selectively energizing lamps disposed within said cavities a sharply defined code pattern is formed.

3,282,177
ELECTROPHOTOGRAPHIC APPARATUS
Arthur J. Stanton, Warrensville Heights, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Feb. 24, 1964, Ser. No. 346,718
9 Claims. (Cl. 95—1.7)

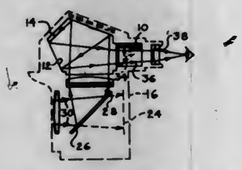
1. Apparatus for reproducing an original on an electrophotographic sheet comprising feed means to advance a sheet along a generally horizontal path, charger means disposed below said feed means to receive the sheet for

depositing an electrostatic charge thereon, said charger means including spaced corona charging units for depositing a charge on each side of the sheet, exposure frame means positioned in sheet receiving relation below said charger means, horizontally disposed object plane means laterally and vertically spaced above said exposure frame means, means defining a light path between said object plane means and said exposure frame means for one-shot exposure of a charged sheet to the reflected light image of an original to be reproduced, developing means positioned in sheet receiving relation below said exposure



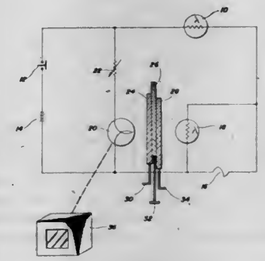
frame means, said developing means including means to treat a sheet having an electrostatic latent image thereon with a liquid developer, means for drying said sheet disposed in sheet receiving relation with said developer means and in parallel spaced relation with said exposure frame for defining a generally vertical path of travel for the developed sheet in a direction opposite to the path of travel through said exposure frame, discharge means in sheet receiving relation with said dryer means and positioned below said feed means for delivering the dry copy of the original, and means for advancing the sheet from said charger means to and through said discharge means.

3,282,178
LIGHT METERING MEANS FOR CAMERAS
Noel R. Nelson, Takoma Park, Md. (12813 Camellia Drive, Wheaton, Md.)
Filed Oct. 21, 1963, Ser. No. 317,420
7 Claims. (Cl. 95—10)



1. In a camera having a light metering means and an image viewing projection system,
a partially reflecting and partially transmitting beam splitter surface in said system in the path of the image viewing projection, and adapted to divert a small sample portion of the light beam out of said path, said portion being of an intensity proportional to that of the light beam,
said beam splitter surface having thereon a predominant reflective area of grid form which directs the major portion of said light beam in the path of the image viewing projection, and said beam splitter surface being located between the reflective grid areas which diverts a small portion of the light beam to a photocell, and
a light meter photocell located outside of said path and mounted in a position to receive said small portion of the light beam which is transmitted by the beam splitter surface.

3,282,179
USE OF PHOTOCONDUCTIVE CELL AS ATTENUATOR
Allen G. Stimson, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of Jersey
Filed May 20, 1964, Ser. No. 368,849
7 Claims. (Cl. 95—10)

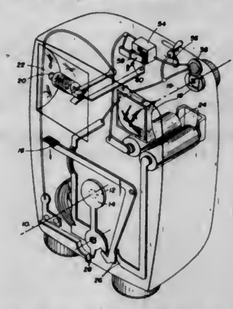


1. In an apparatus for controlling the exposure of a camera including a photoelectric circuit, an electric measuring instrument, a battery for energizing said instrument, and a first photoresistor illuminatable by scene light and connected in circuit with said battery for controlling energization of said instrument as a function of the illumination of said photoresistor, means for adjusting the sensitivity of said circuit, comprising, in combination: a lamp; means for energizing said lamp; a second photoresistor, illuminatable by said lamp and connected in circuit with said instrument; at least one variable optical attenuator interposed between said lamp and said second photoresistor; and means for varying said optical attenuator in accordance with changes in an exposure factor.

3,282,180
AUTOMATIC FLASH CONTROL DEVICE FOR PHOTOGRAPHIC CAMERAS
Miller R. Hutchison, Jr., Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Original application Aug. 6, 1962, Ser. No. 215,044. Divided and this application June 29, 1964, Ser. No. 378,848
Claims priority, application Great Britain, June 14, 1962, 22,844/62
2 Claims. (Cl. 95—11)

1. In a camera adapted to receive a flash lamp, the combination comprising:
means to electrically receive a flash lamp, a source of electrical potential and a switching means in series with said lamp receiving means;
a shutter synchronizing switch in series with said flash lamp receiving means to close the flash lamp receiving means circuit in timed relationship with operation of a shutter;
a photoresistive cell illuminatable by field light and in parallel electrically with said flash lamp receiving means;
an electromagnetic relay in series electrically with said photoresistive cell and in parallel with said flash lamp receiving means and said switching means;

spring means urging the switching means to a closed position to enable firing of a flashlamp in the receiving means, the relay overcoming said spring means to maintain the switching means in an open condition and prevent firing only when said relay is energized above a predetermined level whenever the



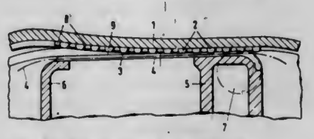
resistance in said photoresistive cell is below a predetermined level as determined by field light; and

shorting switch means in parallel with said photoresistive cell to permit said source to energize the relay and maintain the switching means in an open condition independently of the photoresistive cell.

3,282,181
FILM CAMERA HOUSINGS

Karl Heinz Lange, Bunde-Ennigloh, Westphalia, Germany, assignor to Balda-Kamerawerk Rudolf Gruter, Kommanditgesellschaft, Westphalia, Germany, a German company

Filed Oct. 16, 1964, Ser. No. 404,382
Claims priority, application Germany, Oct. 19, 1963, B 73,939
10 Claims. (Cl. 95—11)



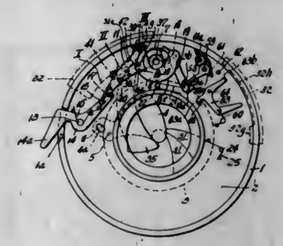
1. A film camera housing comprising:
(a) a camera body;
(b) a rear closure wall for said camera body, said wall consisting of a flexible, resilient material, said wall being inwardly convexly curved when open and unstressed for pressing down on said body in a planar condition when closed; and
(c) projections on the inner side of said wall providing an interrupted film guide surface.

3,282,182
PHOTOGRAPHIC INTRA-LENS SHUTTER WITH SETTING MEMBERS FOR DIAPHRAGM AND EXPOSURE TIME

Waldemar T. Rentschler, Calmbach (Enz), Germany, assignor to Alfred Gauthier, G.m.b.H., Calmbach (Enz), Germany, a corporation of Germany

Filed Sept. 15, 1964, Ser. No. 396,696
Claims priority, application Germany, Sept. 17, 1963 G 38,706
2 Claims. (Cl. 95—11.5)

1. A photographic shutter mechanism comprising a main shutter blade; a shutter driving mechanism; a control connected thereto to govern the operating speed thereof; a diaphragm iris capable of being set at different aperture sizes; a diaphragm control connected to said iris to control the aperture size thereof; said diaphragm control being associated to a normal scale of diaphragm values and at least one additional exposure value corresponding to the smallest diaphragm aperture size and an extremely short exposure time; an additional high-speed shutter blade; means connecting said high-speed shutter blade to said diaphragm control to place said high-speed shutter blade adjacent to the aperture in said iris only when said diaphragm control is set to a value of the additional scale respective exposure-value

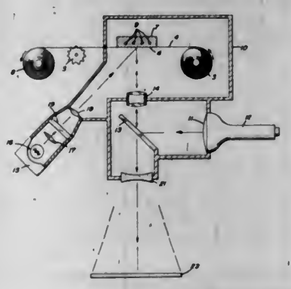


range; a shutter release; means to actuate said high-speed shutter blade when said shutter release is operated and only when said diaphragm control is set to the additional scale respective exposure-value range; a first contact switch connected to said shutter drive mechanism to be actuated thereby; and a second switch connected to said shutter driving mechanism only when the diaphragm control is set to the additional scale respective exposure-value range to make contact shortly before the smallest diaphragm aperture is uncovered.

3,282,183
PHOTOGRAPHIC APPARATUS FOR RECORDING, PROCESSING, AND PROJECTING DATA FOR RAPID VISUAL INSPECTION

Clifton M. Tuttle, Lenox, Mass., and Frank H. Jackson, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Apr. 13, 1964, Ser. No. 359,169
5 Claims. (Cl. 95—12)



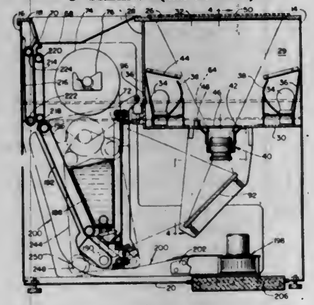
1. In a photographic apparatus for rapidly recording light data of the type produced by a cathode ray tube, on a photosensitive material that requires heat for processing, and which is suitable for projection onto a viewing screen, the combination comprising:
means for positioning an area of said photosensitive material at one station;
exposing means for directing light data on said area at said one station to expose said area and to form a latent image of said data thereon; and

means at said one station operating simultaneously with said exposing means for simultaneously (1) processing by the use of heat said latent image to a visible image, and (2) illuminating said visible image as it is being formed for projection onto a screen for viewing, and including
means for directing non-actinic radiation comprising visible radiant energy and radiant energy rich in infrared onto said exposed area.

3,282,184
PHOTOGRAPHIC APPARATUS WITH DRYING DEVICE

Richard J. Chen, Brockton, and Paul B. Mason, Magnolia, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed May 19, 1964, Ser. No. 368,591
3 Claims. (Cl. 95—14)



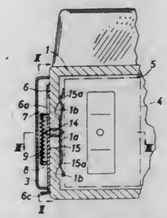
1. Photographic apparatus for exposing and processing a succession of light-sensitive sheets comprising, in combination:
liquid applicator means;
means for moving an exposed light-sensitive sheet relative to and above sheet applicator means with one side of said sheet facing downwardly for applying liquid to the lower side of said sheet;
a carrier having a sheet supporting section located at one end adjacent and above said applicator means in position to engage the upper surface of each of said sheets as said each sheet is advanced from said applicator means;
means for moving said sheet supporting section of said carrier member and said each sheet supported against said carrier member;
a blower for accelerating air;
duct means coupled with said blower for directing air from said blower against substantially the entire lower side of said sheet to press the upper side of said sheet into frictional engagement with said support section of said carrier member; and
heater means associated with said duct for heating air passing through said duct.

3,282,185
DEVICES FOR RELEASABLY HOLDING FILM CARTRIDGES IN CAMERAS

Dieter Engelsmann, Unterhaching, Munich, and Rolf Schröder, Munich, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany

Filed May 5, 1964, Ser. No. 365,090
Claims priority, application Germany, Dec. 20, 1963, A 44,851
10 Claims. (Cl. 95—31)

3. In a camera, in combination, camera housing means formed in its interior with a chamber for receiving a film cartridge, said camera housing means including a closure member movable to and from a position closing said camera housing means; spring means carried by said closure member for urging the latter away from said position; manually operable lock means carried by said camera housing means for movement between a locking position maintaining said closure member in opposition to said spring means in said position thereof and an unlocking position releasing said closure member for movement away from said position by said spring means; releasable holding means communicating with the interior of said chamber and having a release position releasing a cartridge for movement out of said chamber and a hold-

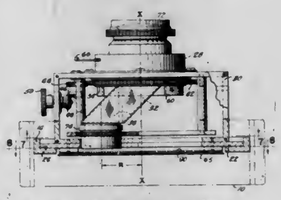


ing position holding a cartridge in said chamber, said holding means being operatively connected to said manually operable lock means for movement from said holding to said release positions when said lock means is displaced from said locking to said unlocking position and for movement back to said holding position when said lock means returns to said locking position, so that when said lock means is actuated to be displaced to said unlocking position thereof said holding means is automatically displaced to said release position releasing a cartridge for movement out of said chamber.

3,282,186
CAMERA LENS SYSTEM

Angus O. Niccolls, Dallas, Tex., assignor of twenty-five percent to Giles C. Clegg, Jr., Dallas, Tex.

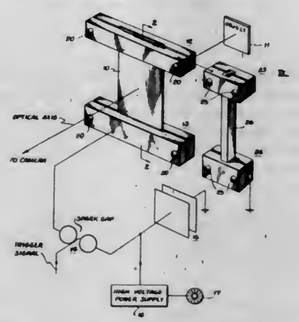
Filed Nov. 9, 1962, Ser. No. 236,639
8 Claims. (Cl. 95—38)



1. A camera lens system that comprises:
(a) a shutter;
(b) means for momentarily opening said shutter to permit image transmitting light waves to impinge upon the sensitized surface of a frame of film;
(c) optical means positioned between said shutter and said film for displacing the light waves from the axis of the shutter;
(d) said optical means including a first reflective device having a first reflective surface positioned in a plane extending obliquely across the axis of said shutter and a second reflective device having a second reflective surface in parallel, opposed, spaced apart relationship to said first reflective surface;
(e) masking means cooperating with said optical means to restrict the area of a frame of film exposed when said shutter is open;
(f) means for pivotably rotating said optical means about the axis of said shutter;

(g) said last named means including a circular gear having an aperture through which said light waves pass, means attaching said optical system to said circular gear and gear drive means for rotating said circular gear;
(h) means to index said optical system as it is rotated;
(i) means to indicate the angular position of said optical system as said optical system is rotated to different index positions; and
(j) means effective responsive to rotation of said optical system for cocking said shutter.

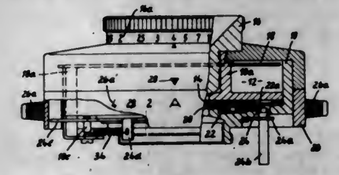
3,282,187
FAST-OPERATING, LARGE-APERTURE SHUTTER
Esther C. Cassidy, Chevy Chase, and Donald H. Tsai, Rockville, Md., assignors to the United States of America as represented by the Secretary of Commerce
Filed Mar. 9, 1965, Ser. No. 438,438
25 Claims. (Cl. 95—53)



1. A shutter comprising: a light shield including a plurality of conductive paths,
said shield being positioned to control the passage of light through an aperture so that in a first condition said shield blocks the passage of light through said aperture and in a second condition unblocks the passage of light through said aperture, and
means for generating and passing a surge of current through each of the conductive paths of said light shield, thereby setting up an electromagnetic field about each path which exerts electromagnetic forces on all others of the plurality of conductive paths,
the magnitude and direction of the current through each conductive path and the orientation of the conductive paths relative to each other being such that the resultant of the interacting electromagnetic forces substantially alone changes said shield from one of said first and second conditions to the other of said first and second conditions.

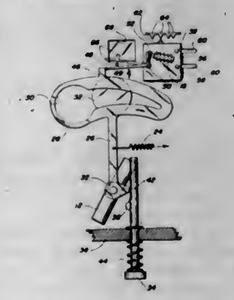
3,282,188
PHOTOGRAPHIC SHUTTER
Ewald Spiessl, Deisenhofen, near Munich, Germany, assignor to Compur-Werk Gesellschaft mit beschrankter Haftung & Co., Munich, Germany, a firm of Germany
Filed July 16, 1963, Ser. No. 295,442
Claims priority, application Germany, July 26, 1962, C 27,561
2 Claims. (Cl. 95—64)

1. In a photographic shutter, a time setting ring, an anchoring pin mounted on said time setting ring, a diaphragm setting ring, an arm on said diaphragm setting ring engageable with said anchoring pin, both of said rings being rotatable about the optical axis of the shutter, a coupling spring interconnecting said rings and maintaining the anchoring pin and arm in engagement, the longitudinal axis of the coupling spring extending perpendicular with respect to the engaging face of said arm, a pivoted latch engageable with said time setting ring, spring means on said latch normally urging said latch to a disengaged position with respect to the time setting ring,



a manually operable rotatable member, cam means on said member for engaging said latch and urging the latch to an engaged position with respect to the time setting ring, a shoulder on said member for engaging said diaphragm ring and shifting said ring to a selected position while retaining said time setting ring in a predetermined locked position.

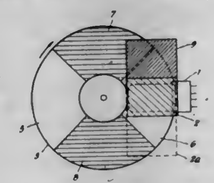
3,282,189
EXPOSURE CONTROL SYSTEM FOR CAMERAS
John W. McFarlane, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 6, 1964, Ser. No. 335,942
6 Claims. (Cl. 95—64)



1. For use in a camera having an exposure regulating device adjustable throughout a range of settings corresponding to a range of scene brightness values with the end points of said range of settings corresponding to a low scene light condition and a bright scene light condition, respectively, and having an electrical system for adjusting said device under normal conditions, a fail-safe system comprising in combination: means for sensing a failure in said electrical system; and means controlled by said sensing means, in response to said failure, for automatically adjusting said regulating device to a predemined setting intermediate said end points corresponding to a predicted value of average scene brightness.

3,282,190
PHOTOGRAPHIC COLOUR PRINTING
Denis Manktelow Neale, Ilford, Essex, England, assignor to Ilford Limited, Ilford, Essex, England, a British company
Filed Oct. 18, 1963, Ser. No. 317,190
Claims priority, application Great Britain, Oct. 25, 1962, 40,486/62
2 Claims. (Cl. 95—73)

1. A method of making from multicolour transparencies prints on photographic material containing at least two components selectively sensitive to two different spectral bands, which comprises allowing printing light to pass to a photocell through a didymium glass filter thereby restricting the response of the photocell to the said spectral bands; cyclically interposing in the path of said light a filter passing one of said spectral bands, but not the other, to said photocell; passing current from said



photocell through a logarithmic amplifier, adjusting the relative intensities of light in the two spectral bands to an adjusted proportion which produces in the output of the logarithmic amplifier an alternating current component of predetermined amplitude; and exposing said photographic material by printing light having relative intensities of light in the two spectral bands in such adjusted proportion.

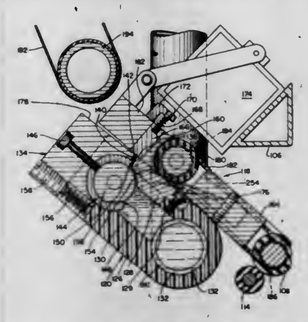
3,282,191
OPTICAL IMAGE TRANSFER DEVICE
John W. Hicks, Jr., Fiskdale, Mass., assignor to Mosaic Fabrications, Inc., Southbridge, Mass., a corporation of Massachusetts
Filed June 1, 1964, Ser. No. 371,467
3 Claims. (Cl. 95—73)



1. In a copy reproducing device, an image transfer member consisting of a plurality of light transmitting plates arranged in parallel relationship, spaced parallel light receiving and light emitting surfaces in normal arrangement to the planes of said plates, means for supporting an object to be copied in the optical path of the light receiving surface of said image transfer member, means for supporting an image receiving member in the optical path of the image emitting surface of said image transfer member, means for causing relative movement between the object to be copied and the image receiving member in planes parallel to the planes of the light receiving and light emitting surfaces along paths of travel intersecting at numerically identical small angles relative to the median plane parallel to the plates and normal to said light receiving and light emitting surfaces and in opposite directions relative to said median plane.

3,282,192
PHOTOGRAPHIC PROCESSING APPARATUS
Richard J. Chen, Brockton, Vaito K. Eloranta, Needham, and Nicholas Gold, Arlington, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed May 19, 1964, Ser. No. 368,619
11 Claims. (Cl. 95—89)

1. In photographic apparatus for exposing and processing a succession of light-sensitive sheets to produce photographic images in said sheets, means for applying a viscous processing liquid as a layer of predetermined thickness and extent to one surface of each of said sheets, said means comprising, in combination:
an applicator comprising first and second sections cooperating to provide a chamber for holding said liquid, said first and second sections including adjacent portions defining a passage communicating with said chamber and substantially equal in length to one dimension of said layer of liquid and being pivotable with respect to one another to open and close said passage, said portions including outer surfaces adjacent said passage lying substantially in a plane;
liquid feeding means within said chamber for forcing said liquid under pressure from said chamber through said passage;
resilient means mounted on said sections for biasing said sections into relative positions at which said passage is closed;
support means for holding said sheets against said outer surfaces during movement of said sheets across said surfaces and said passage therebetween;



said first section of said applicator being mounted in fixed position and said support means being mounted for movement toward and away from applicator between operative and inoperative positions;
actuating means coupled with said support means for moving said support means toward and away from said applicator between said operative and inoperative positions;
said support means including a pressure member at least equal in length to said passage and juxtaposed with said surfaces for resiliently urging said sheets against said surfaces in said operative position of said support means and engagement means for engaging and pivoting said second section with respect to said first section to open said passage during movement of said support means toward said applicator into said operative position; and
drive means mounted on said support means adjacent said pressure member in juxtaposition with said portion of said second section for movement in frictional engagement with said sheet to advance said sheet toward and across said passage between said surfaces and said pressure member.

3,282,193
AIR CURTAINS
Gerald Ernest Jennings, Ilford, Essex, England, assignor to Minikay Limited, Ilford, England, a British company
Filed Apr. 16, 1964, Ser. No. 360,245
Claims priority, application Great Britain, Apr. 19, 1963, 15,505/63
6 Claims. (Cl. 98—36)

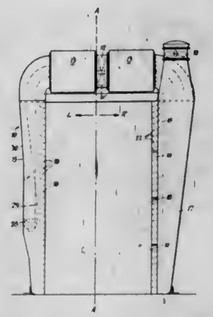
1. Apparatus for establishing across the door opening of a cold room an air barrier consisting of two contiguous

codirectional substantially laminar air curtains on the outside of said door for the maintenance inside said room of a substantially constant atmosphere of lower humidity and temperature than the ambient atmosphere outside said room, comprising

a self-contained duct system in the form of a unit assembly attachable to the outside of said door opening and peripherally embracing three sides of said door opening,

said duct system consisting of a first air discharge duct extending the length of one side of said door opening and having air discharge apertures adapted to blow a first substantially laminar curtain of air across said door opening and,

on the opposite side of said door opening, parallel to said first air discharge duct, an air collection duct likewise extending the length of the side of said door opening and having apertures facing the air discharge apertures of said first air discharge duct for the entry therethrough into said air collection duct of air comprising the air curtain discharged from said first air discharge duct after having traversed said door opening;



a connecting duct means between one end of said first air discharge duct and one end of said collection duct and extending adjacent one of the remaining sides of said door opening, said connecting duct means containing a blower or fan for extracting air from said collection duct and redelivering the same into said first air discharge duct;

a second air discharge duct adjacent said first air discharge duct and likewise provided with air discharge apertures adapted to blow a second substantially laminar curtain of air across said door opening in substantial contiguity and codirectionally with said first curtain of air on the outside thereof and,

associated with one end of said second air discharge duct, a blower or fan with an air intake for directly drawing in ambient air from the outside of said room and having an air outlet for delivering said outside air directly into said second air discharge duct,

said duct system being entirely devoid of devices or elements for heating or cooling air circulated or flowing through the ducts of said system.

3,282,194
CHIMNEY TOP ASSEMBLY
Robert D. Thulman, 10002 Frederick Ave., Kensington, Md.
Filed June 23, 1964, Ser. No. 377,247
10 Claims. (Cl. 98—59)

1. A chimney cap assembly comprising, in combination:

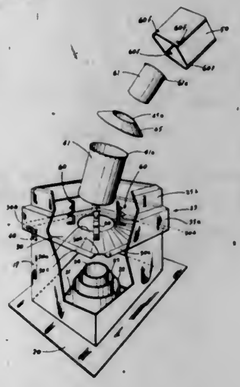
(a) a chimney top cap,

(b) a first rain baffle characterized in that it
(1) is attached to said cap
(2) in juxtaposition to the lower part thereof, and
(3) has a central opening therein,

(c) a second rain baffle characterized in that it
(1) is supported above said central opening and
(2) itself has a central aperture therein,

(d) a rain cap enclosure characterized in that it
(1) is supported above said second baffle,
(2) in surrounding relation to said central aperture,

(e) means for securing said second baffle and rain cap enclosure to said first baffle, said means comprising,
(1) a plurality of bracket members,
(2) means for securing said bracket members to said first baffle in spaced relation about said central opening,
(3) said bracket members characterized in that they have



(a) opposed shoulders intermediate their heights embracing the edge of said second baffle and
(b) outwardly projecting tang means adjacent the upper ends thereof,

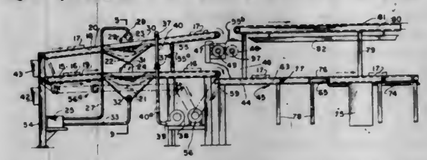
(4) said rain cap enclosure assembly
(a) embracing the upper ends of said brackets and
(b) having slots therein engaged by said tangs,

(5) said second baffle exerting outward pressure on said brackets at the shouldered portion thereof and said rain cap enclosure exerting inward pressure on said brackets adjacent the upper ends thereof when in assembled relation, whereby the parts may be snapped together and are resiliently retained against accidental disengagement and rattling.

3,282,195
MEAT TENDERIZING MACHINE
Jacob Young, Coral Gables, Raymond D. Mewshaw, Miami, and Harry T. O'Dell, Hialeah, Fla., assignors to Henderson's Portion Pak, Inc., Coral Gables, Fla., a corporation of Florida
Filed Feb. 12, 1964, Ser. No. 344,288
5 Claims. (Cl. 99—254)

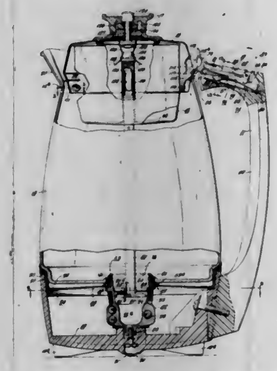
1. In meat tenderizing apparatus wherein the meat to be tenderized is a sucession of pre-portioned cuts, a receptacle for a tenderizing solution, a first meat conveyor trasversing said receptacle in a manner to immerse the meat in said solution, said conveyor including an endless belt of open wire mesh and conveyor driving

means, means for blowing excess solution from the meat as it emerges from the solution in said receptacle, said blowing means including an air blower and an air pipe arranged transversely of said first conveyor for projecting air jets against meat passing under said pipe, means



permitting the solution blown from the meat to flow back into said receptacle, a pair of cubing cylinders positioned to receive meat cuts from said first conveyor after removal of excess solution therefrom, and a second conveyor onto which the cubed meat cuts are delivered by said cylinders.

3,282,196
COFFEE PERCOLATOR
Luther P. Manship, Collingdale, and Charles R. Turner and Stephen W. Zamiska, Philadelphia, Pa., assignors to The Proctor-Silex Corporation, Philadelphia, Pa., a corporation of Connecticut
Filed July 31, 1964, Ser. No. 386,527
15 Claims. (Cl. 99—310)



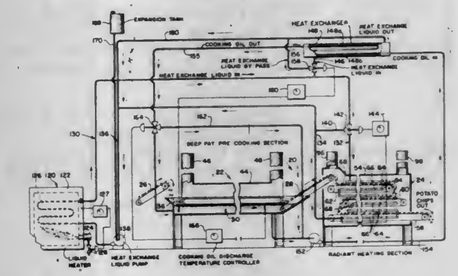
1. In an electric percolator, a base, a member mounted on said base having walls defining a heat-pump well, a removable imperforate container for liquid mounted on said member having an opening in the bottom thereof communicating with said well, sealing means between said container and said member, and releasable means operatively connected between said container and said base including a handle and latch means, said releasable means contacting a top portion of said container to exert downward pressure on said container to hold said container in sealing relationship with said member.

3,282,197
APPARATUS FOR COOKING FOOD
Horace L. Smith, Jr., Richmond, Va., assignor to Hupp Corporation, Cleveland, Ohio, a corporation of Virginia
Original application July 14, 1964, Ser. No. 382,498. Divided and this application Dec. 10, 1965, Ser. No. 512,848
7 Claims. (Cl. 99—405)

1. Apparatus for producing potato chips, roasted nuts, and like products, comprising:

(a) a first cooking means adapted to contain a cooking fluid through which the raw comestibles may be moved to at least partially cook said comestibles and reduce the moisture content thereof;

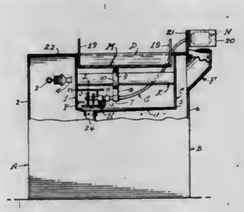
(b) second radiant heat cooking means separate from said first cooking means for removing at least most of the remainder of the water from the comestibles, said radiant heat cooking means comprising at least one radiator of the circulating liquid type;



(c) heating means including a single heating unit for maintaining both the temperature of the cooking fluid and the temperature of said radiator at the desired levels; and

(d) means for independently regulating the temperature level of the cooking fluid and the temperature level of said radiator.

3,282,198
GREASE-CIRCULATING ATTACHMENT FOR DEEP FAT FRIERS
Martin Paul Abo, 3048 Partridge Ave., Oakland, Calif.
Filed Apr. 26, 1965, Ser. No. 450,921
2 Claims. (Cl. 99—403)



1. The combination with a deep fat fryer including

(a) a grease container including a bottom and a plurality of side walls; and

(b) grease heating tubes extending substantially horizontally through said container between two of said walls; of

(c) a pair of horizontal and vertically spaced apart upper and lower baffles; the upper baffle being positioned near said tubes and having an edge spaced from one of said walls;

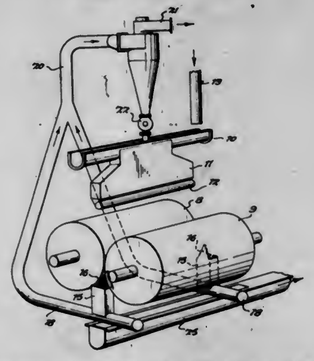
(d) said lower baffle being spaced above the bottom of said grease container and having an edge spaced from said one side wall a distance greater than the distance said first baffle edge is spaced from said one side wall;

(e) at least one impeller mounted between said baffles and having its axis extending substantially perpendicular to said one side wall of said container; and

(f) means for rotating said impeller for causing it to move the grease in the container toward said one side wall in sufficient volume to maintain the entire body of grease in movement so that the grease will be at a uniform temperature throughout;

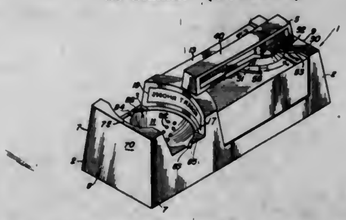
(g) the upper baffle preventing the immediate upward flow of grease from the impeller to the surface of the grease and thus preventing the ruffling of the grease surface;
(h) the lower baffle preventing the immediate downward flow of grease from the impeller to the container bottom and thus preventing sediment from being picked up from the bottom;
(i) the two baffles directing the grease flow to the wall and spreading the grease so that it will maintain the entire body of grease in a gentle movement and
(j) means to support said baffles in said container.

3,282,199
FLAKING OR CRUSHING ROLLS
Gene Clarence Mason and George Richard Greenbank, both of Piqua, Ohio, assignors to The French Oil Mill Machinery Company, Piqua, Ohio
Filed May 28, 1965, Ser. No. 459,624
7 Claims. (Cl. 100—90)



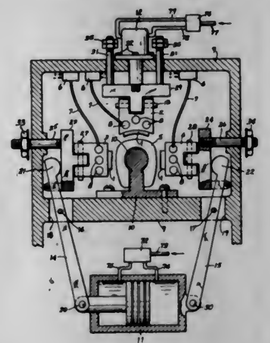
2. Apparatus comprising rolls with substantially parallel axes spaced with their peripheries in close proximity between which material being operated upon is passed and from the ends of which material not properly operated upon is deflected,
(a) receptacles at the ends of said rolls having openings adjacent to the ends of said rolls to receive deflected material,
(b) and air suction means connected with said receptacles and which convey material from said receptacles to the upper surfaces of said rolls for again passing deflected material between said rolls.

3,282,200
BALL MARKER
John R. Brandell, 300 N. State St., Chicago, Ill.
Filed Oct. 5, 1964, Ser. No. 401,328
18 Claims. (Cl. 101—4)



1. A ball marker comprising an elongated frame forming an upwardly opening pocket, at one end of the frame, for receiving a ball in position to be marked, said pocket embodying a front, rearwardly facing wall portion circularly curved in conformity with the circumference of the ball to be marked and forming an abutment for engaging equatorial portions of a ball in the pocket, a type carrying member forming marking means having a type carrying portion disposed at the side of the pocket diametrally opposite said abutment, said member being mounted in said frame for motion in a longitudinal path therein from a normally retracted position toward a marking position in which type on said carrying portion is markingly pressed upon equatorial portions of the ball disposed antipodally with respect to the abutment engaging equatorial portions thereof, and a cam turnable about an axis disposed at the pocket remote end of the frame and extending normal to the equatorial plane of a ball seated in the pocket, said cam operatively engaging said marking means for moving the same between said retracted and projected positions to perform a ball marking stroke in response to turning movement thereof.

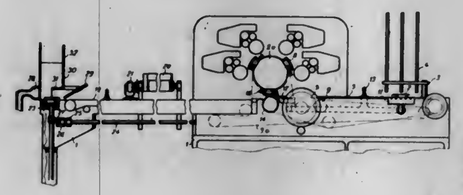
3,282,201
GUN STOCK CHECKERING
Michael J. Sobran, Woodbridge, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Original application June 12, 1963, Ser. No. 287,274, now Patent No. 3,229,401. Divided and this application June 30, 1964, Ser. No. 385,540
1 Claim. (Cl. 101—9)



A machine for embossing an ornamental permanently hardened surface contour over an area of an elongated hollow wooden work piece comprising a holder for mounting said work piece, said holder having an axis of elongation, a pair of jaw members mounted on opposite sides of said holder and adapted to be simultaneously reciprocated toward and away from said holder, each of said jaw members having pivotal movement about an axis perpendicular to the axis of said holder, said pair of jaw members having a common median plane of movement, a third jaw member mounted for reciprocal movement toward and away from said holder in a median plane perpendicular to said median plane of said pair of jaw members, said third jaw member having pivotal movement about an axis perpendicular of said holder and perpendicular to the pivotal axis of said pair of jaw members, die means mounted on each of said jaw members, said die means having plurality of sharp angled diamond pyramidal teeth the base portions of said teeth forming a first series of parallel elongated recessed portions intersected by a second series of parallel elongated recessed portions, means for reciprocating said jaw members to develop a predetermined pressure between said die

means and a work piece mounted on said holder for a predetermined interval of time, control means for regulating said predetermined pressure, heating means for heating said die means, control means for regulating the temperature of said heating means, and means for regulating said interval of time.

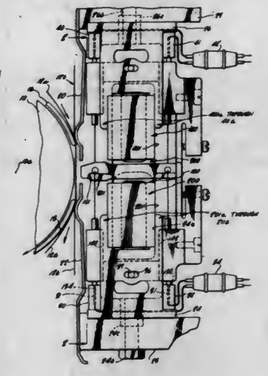
3,282,202
ROTARY PRINTING APPARATUS
Kurt Groth and Werner Lehmann, both of Fribourg, Switzerland, assignors to Polytype AG, Freiburg, Switzerland
Filed June 9, 1965, Ser. No. 462,549
Claims priority, application Switzerland, June 15, 1964, 7,740/64
14 Claims. (Cl. 101—37)



1. Automatic apparatus for printing lids or covers comprising, in combination, a relatively elongated feed table; a cover supply device above said table for delivering covers to said table; a conveyor element extending along said table and having spaced abutments extending laterally of the later to move covers along said table to a printing station spaced from said supply device, a rotatable carrier at said printing station; plural printing segments on said carrier at uniformly spaced locations thereround; means driving said conveyor element and rotating said carrier in synchronism with each other; means cooperable with said carrier to receive covers from said conveyor element and press each cover against a segment to print the covers; drying means receiving the printed covers; and stacking means receiving the dried covers; said holder for swinging over said feed table and away tending upwardly from said holder and means mounting said holder for swinging over said feed table and away from the latter about a vertical axis.

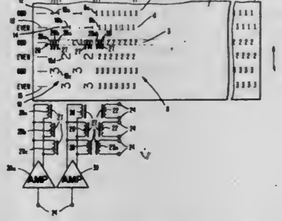
3,282,203
MAGNETICALLY OPERATED PRINT HAMMERS IN HIGH SPEED PRINTERS
John Frederick Kalbach, Altadena, and Walter Griffin Paige, Pasadena, Calif., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 16, 1964, Ser. No. 360,194
15 Claims. (Cl. 101—93)

1. A printing device comprising: a rotatable type drum; a plurality of parallelepiped shaped ceramic magnets positioned in a substantially straight row parallel with the axis of said type drum, each of said magnets cooperating with the adjacent magnet, at both sides, to define slot-shaped gaps therebetween; and a hammer assembly for each gap comprising an elongated member having a hammer tip at one end, a substantially flat coil mechanically connected intermediate the ends of said member with the axis of the coil perpendicular to the elongation of said member and means including a pair of flatsprings connected to the hammer assembly and adapted for supporting each hammer assembly such that the coil is free to move in the corresponding gap toward and away from the surface of said drum, the springs comprising an electrically conductive material and connected to the ends of said coil for providing an electrical current path thereto, the magnets being magnetized parallel to the axes of the coils so that current applied



through the springs to a particular coil causes a force between the coil and adjacent magnets forcing the hammer tip of the connected member into a printing position with the drum.

3,282,204
HIGH SPEED PRINTING DEVICE FOR PRINTING CHARACTERS OF DIFFERENT PHYSICAL SIZES
Gustave David Cerf, Ambler, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed May 15, 1964, Ser. No. 367,697
3 Claims. (Cl. 101—93)



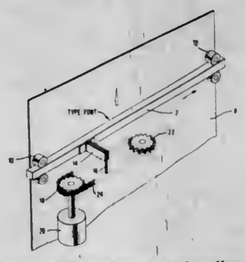
1. In a high speed printing apparatus, for printing in a plurality of character spaces across the width of a record, a printing assembly including: a movable printing type carrier having a plurality of character printing type thereon arranged in lines in the direction of movement of said type carrier, said printing type comprising: a first group of printing type of a first size equivalent to a single character space width and arranged in first preassigned lines and a second group of printing type of a second size, equivalent to more than a single character space width and arranged in second preassigned lines; a plurality of printing hammers supported in positions to strike said printing type, one of said printing hammers being associated with each line of said printing type of said first group and a plurality of printing hammers being associated with each line of said printing type of said second group, each of said printing hammers being sufficiently large to strike the entire height of its associated printing type; a plurality of printing hammer actuators, one for each printing hammer; coupling means, one for each line of said second printing type group, each coupling means coupled to all of the printing hammer actuators associated with one of

said lines in said second printing type group; and circuit means coupled to said coupling means and said printing hammer actuators of said first printing type group to actuate the printing hammers in accordance with the location and size of the character to be printed.

3,282,205
PRINT CONTROL MEANS FOR HIGH SPEED PRINTER WITH TRAVELING PRINT BAR

George Richmond Cogar, Doylestown, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed May 19, 1964, Ser. No. 368,606
17 Claims. (Cl. 101—93)



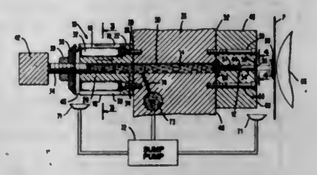
1. In an apparatus for printing a plurality of characters in a plurality of character spaces across the width of a record, a printing control unit comprising: a memory having a plurality of addressable locations, a first group of said locations storing coded representations of a plurality of printable characters of a printing font and a second group of said locations storing coded representations of a plurality of characters to be printed; a first steppable addressing means coupled to said memory for addressing individual addresses of said first group of locations, one of said first group of locations being addressed for each stepping thereof; a second steppable addressing means coupled to said memory for addressing individual addresses of said second group of locations, one of said second group of locations being addressed for each stepping thereof; stepping means coupled to said first and second addressing means to step said first and second addressing means in such a manner as to address their associated group of locations sequentially; readout means coupled to said memory to read out the coded representations in said first and second groups at each sequential location; and comparison means coupled to said readout means to compare the coded representations of said printable characters with the coded representations of said character to be printed, said comparison means providing a first signal when the coded representations of a printable character from said first group of locations bears a predetermined relationship to the coded representation of a character to be printed from said second group of locations.

3,282,206
HYDRAULICALLY ACTUATED PRINT HAMMER FOR HIGH SPEED PRINTERS

John Presper Eckert, Jr., Gladwyne, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Dec. 21, 1964, Ser. No. 419,752
11 Claims. (Cl. 101—93)

1. A hydraulically actuated printing apparatus comprising: a low mass print hammer; means mounting said hammer for reciprocal movements between a retracted rest position and an advanced printing position; an electromagnet having an armature separated therefrom by a small air gap; means confinding a low mass hydraulic fluid column coupling said hammer and said armature whereby said armature is effective through said fluid coupling when said eletromagnet is energized to draw said armature through said small air gap immediately to drive

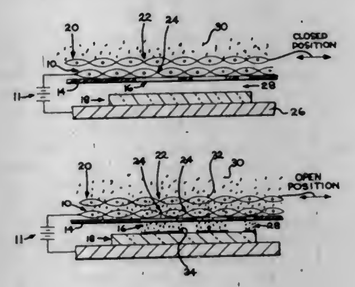


said hammer at high velocity through a greater distance than the movement of said armature to its advanced printing position.

3,282,207
SCREEN PRINTING IN WHICH SCREEN MEMBERS ARE GIVEN RELATIVE MOVEMENT TO CONTROL INK FLOW

Charles E. Plymale, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

Filed May 12, 1964, Ser. No. 366,701
8 Claims. (Cl. 101—114)



1. In a printing system,
a container having an opening,
a decorating screen carrying a printing image through which a fluid printing ink can be passed, said decorating screen being extended across said opening of said container in planar array, with the printing image exposed,
a metering screen mounted within said container in closely adjacent relationship to said decorating screen,
said screens being so formed that when the mesh openings thereof are positioned in coinciding relationship, a fluid ink material will flow through the screens,
means mounting said metering screen within said container and for linear movement parallel to and relative to said decorating screen,
means for moving said metering screen relative to said decorating screen to permit flow of a fluid ink therethrough,
a body of fluid ink within said container,
means imposing a hydraulic pressure on said body of ink tending to force said ink to flow through said screens on a flow setting thereof,
means for positioning an article to be printed in printing relationship relative to said decorating screen,
and means for passing the periphery of said article to be printed and said decorating screen in printing relationship with one another when said printing image is loaded with ink.

3,282,208
PLANOGRAPHIC PRINTING PLATE AND PROCESS

Milton M. Ruderman, 230 Grist Mill Lane, Great Neck, Long Island, N.Y.

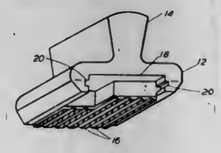
No Drawing. Filed Sept. 25, 1963, Ser. No. 311,325
9 Claims. (Cl. 101—149.2)

1. A positive working planographic printing plate having a water-insoluble diazo coating thereon which has been exposed to light directly under a continuous tone master pattern without the use of a halftone screen and subsequently developed, said diazo coating having an image thereon which is inked with a greasy printing ink in continuously varying amounts in the various areas thereof in amounts proportional to the tones of the corresponding areas of the master pattern.

3,282,209
SLIDING SECTION STAMP

Nathan Muskin, Prairie Clinic, 2602 J St., Omaha, Nebr.

Continuation of application Ser. No. 285,649, June 5, 1963. This application Mar. 1, 1965, Ser. No. 438,462
1 Claim. (Cl. 101—373)

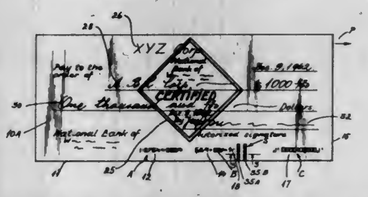


A multiple section hand stamp assembly for the simultaneous printing of a unitary composite design of differing colors; said stamp assembly comprising a main printing section having a body portion provided with opposing surfaces and a periphery, one of said surfaces being formed partially with printing characters defining a main printing surface, said body portion being formed with a cavity opening through the periphery and having spaced opposing walls, said cavity opening through the one of said surfaces so that the printing characters cover less than the entire cross-sectional area of the one of said surfaces, at least one secondary printing section having a body portion provided with wall portions slidable relative to the walls of the cavity in the body portion of the main printing section, interlocking means provided between the walls and the wall portions to releasably secure the secondary printing section in place in the cavity, said body portion of the secondary printing section having a surface provided with printing characters thereon and defining, when the printing sections are in assembled relation, a secondary printing surface coplanar with and complemental to the main printing surface for the simultaneous printing of the composite design by said printing surfaces with a single stamping action, said body portion of the secondary printing section being slidable in the cavity through the peripheral opening of the cavity in a plane parallel to the coplanar plane in which the printing surfaces lie when the printing sections are in assembled relation, a handle element extending from the body portion of the secondary printing section and disposed out of the plane in which the printing surface of the secondary printing section lies, said handle element extending beyond the periphery of the body portion of the main printing section when the printing sections are in assembled relation so that the handle element can be used to effect a quick assembly and disassembly of the printing sections and to permit an independent inking of the printing surface of the secondary printing section when it is free from the main printing section and a handle extending from the other of the said surfaces of the body portion of the main printing section for independent inking of the printing surface of the main printing section with the secondary printing section removed therefrom and for effecting simultaneous stamping of both the printing surfaces when the printing sections are in assembled relation so as to obtain the printing of the composite design in a single stamping action.

3,282,210
CERTIFIED CHECK CODED FOR REJECTION IN SORTING MACHINE

Morris O. Weig, 68 Lloyd Ave., Lynbrook, N.Y.

Filed Apr. 10, 1963, Ser. No. 272,105
1 Claim. (Cl. 101—426)

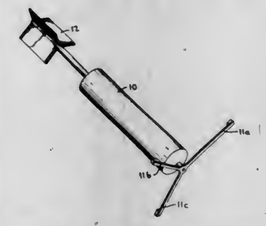


The method of certifying and marking a magnetically coded bank check so that it will be automatically rejected when passing through a magnetic reading and sorting machine, consisting of the step of impressing a certification stamp on the face of the check and simultaneously impressing, with the same stamp, in magnetic ink to which the electronic circuits of the machine are responsive, in an area responsive to the electronic circuits of the machine in relation to the coded symbols identifying the particular account against which the check is drawn, in the direction of movement of the check through the magnetic reading and sorting machine, coded symbols adapted to actuate the machine and automatically reject the check.

3,282,211
FOLIAGE-SENSITIVE BOMB FUZE

Edward T. Winston, Falls Church, Va., assignor to the United States of America as represented by the Secretary of the Army

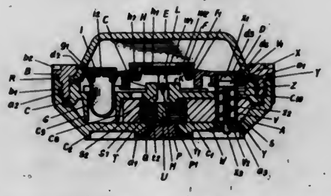
Filed Oct. 7, 1963, Ser. No. 314,568
3 Claims. (Cl. 102—7.4)



1. A high-explosive projectile comprising:
(a) a body having an explosive charge therein,
(b) an electrically-operable exploding means for said charge,
(c) a source of electrical power,
(d) a plurality of flexible wands extending radially from said body,
(e) an inertial switch mounted at the extremity of each of said wands away from said body, said inertial switch including an inertial member movable relative to another member to close an electric circuit in response to relative motion of said members, and
(f) an electrical circuit connecting said source to said exploding means through said switch,

(g) whereby electrical current is applied to said exploding means in response to closing of said switch.

3,282,212
ANTIMAGNETIC WAR-MINE SUITABLE FOR RAPID SETTING AND SOWING
Guido Romano, Pura, Tessin, Switzerland, assignor to Anstalt Brind, Triesen, Liechtenstein, a corporation of Liechtenstein
Filed Sept. 24, 1964, Ser. No. 399,016
8 Claims. (Cl. 102—8)



1. In a non-magnetic war mine, a basin made of non-magnetic molded plastic material, an explosive charge contained in said basin, a resilient non-magnetic cap mounted over said basin and having a marginal separating flange engaging said basin, said cap and basin forming together an air chamber, a resilient flexible inflatable bag communicating through a calibrated hole with said air chamber, said bag being so arranged as to be inflated when pressure is applied to said cap, a locked striker, a releasing device adapted to release said striker, said releasing device being adapted and mounted to be released by said bag when it is inflated, and a resilient membrane mounted for displacement by the application of pressure on said cap, said membrane being mounted when displaced to displace said striker and to strike said explosive charge, said releasing device being irresponsive to a sudden applied shock.

3,282,213
WIRE CARRIERS FOR OIL WELL PERFORATORS
William T. Bell, Winton B. Blair, and Robert M. Shapiro, Houston, Tex., assignors to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas
Filed July 1, 1964, Ser. No. 379,518
12 Claims. (Cl. 102—20)



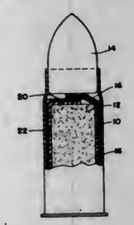
1. In a retrievable carrier for holding explosive charges in a well perforating apparatus, an undulating wire member having, in a cross-sectional plane perpendicular to the longitudinal axis of said wire member, a major transverse axis in the plane of its undulation and a minor transverse axis and adapted in conjunction with another similar wire member having opposed undulations to carry a plurality of explosive charge devices between the opposed undulations thereof and to resist fracture upon detonation of the charges.

3,282,214
PROJECTILE
Madison H. Briscoe, 160 Valleywood Drive, Athens, Ga.
Filed Dec. 14, 1964, Ser. No. 418,036
9 Claims. (Cl. 102—38)



1. A bullet comprising a body portion and a leading end portion generally at the forward end of the body portion, and means for separating said body portion and said leading end portion along complementary surfaces upon impact with a target, the surface of separation of said body portion being such that an unbalanced surface area is presented on the forward end portion of said body portion causing the bullet to turn into a broadside position in the target after separation of the leading end portion.

3,282,215
ADDITIVES FOR REDUCTION OF GUN WEAR
Milton Roth, Rockaway, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Apr. 30, 1965, Ser. No. 452,408
14 Claims. (Cl. 102—38)



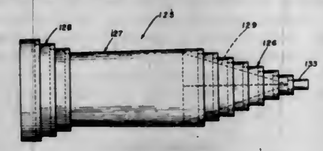
1. In a cartridge having a propellant charge, a projectile, a sheet surrounding at least an upper half of said propellant, said sheet comprising a textile impregnated with a dispersion of a hydrocarbon and a chemical additive selected from the group consisting of $CaSO_4$, $CaCO_3$, a mixture of $CaSO_4$ and TiO_2 and a mixture of $CaCO_3$ and TiO_2.

ERRATUM

For Class 102—66 see:
Patent No. 3,282,714

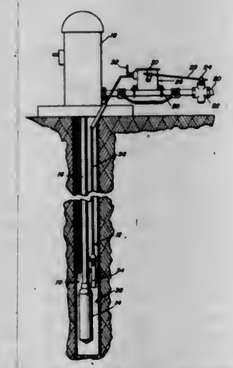
3,282,216
NOSE CONE AND TAIL STRUCTURES FOR AN AIR VEHICLE
Clifford T. Calfee and Virgil T. Calfee, both of 3294 S. Polk St., Dallas, Tex.
Filed Jan. 30, 1962, Ser. No. 173,856
8 Claims. (Cl. 102—92.5)

1. In an air vehicle, a nose section, a main body portion, and a tail section, said main body section including an outer wall surface having a slight rearwardly and inward taper, each said nose and tail sections including a plurality of stepped outer wall portions, and each stepped



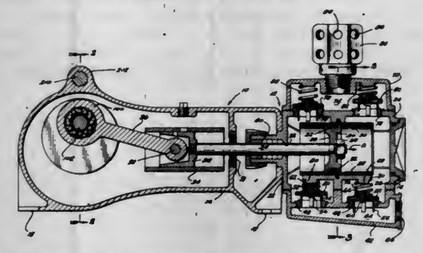
portion decreasing in size toward the forward end of the vehicle.

3,282,217
AUTOMATIC CONTROL FOR PUMPING LIQUID
Eugene L. Slover, 1409 S. 2nd, and Charles E. Bruton, Box 295, both of Lamesa, Tex.
Filed Sept. 30, 1963, Ser. No. 312,584
3 Claims. (Cl. 103—11)



1. In combination with a source of liquid having an unknown and variable liquid inflow rate and a pumping mechanism for withdrawing liquid from said source, a choke valve for controlling the discharge flow rate of liquid from said pumping mechanism and means operatively connected to said choke valve for modulating said discharge flow rate in proportion to said variable liquid inflow rate comprising, reversible motor means for controlling the position of said choke valve, sensing probe means fixedly mounted immersed in said liquid to a predetermined depth, signal means operatively connecting said sensing probe means to the motor means for displacement of the choke valve in response to variation in the liquid level to correspondingly vary the discharge flow rate, and position control means responsive to restoration of the liquid level at which the sensing probe means is immersed said predetermined depth for stopping the motor means at a position of the choke valve to maintain said liquid level constant, said sensing probe means comprising a pair of parallel electrodes, and elongated spacer mounting said electrodes and a tubular shield enclosing said electrodes having an open bottom disposed below the level of liquid and vent holes above the liquid level, said signal means comprising a balancing relay device operatively connected to the motor means for energization thereof in response to a change in the conductivity of the liquid in contact with said electrodes at said predetermined depth, and limiting means for deenergizing the motor means upon displacement beyond a preset amount, said position control means comprising a balancing potentiometer driven by the motor means to a position rendering the balancing relay device operative to deenergize the motor means.

3,282,218
METERING PUMP
Arthur A. Bauers, Beatrice, Nebr., assignor to Hoover Ball and Bearing Company, Saline, Mich., a corporation of Michigan
Filed Jan. 15, 1964, Ser. No. 337,770
5 Claims. (Cl. 103—38)

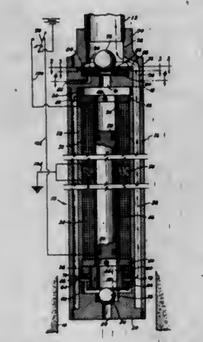


1. In a pump mechanism, a crankcase having side and end walls, a drive sleeve extended through one of said side walls and having an inner end positioned in said crankcase and an outer end disposed outside said crankcase, a reciprocal element extended through one of said end walls for reciprocation along a path normal to said sleeve, anti-friction bearings mounted on said one side wall and constituting the sole support for said sleeve so that said sleeve is rotatable in said bearings about the sleeve axis, a connecting link having a pair of ends, means rotatably mounting one end of said connecting link in said crankcase, said connecting link being pivotally connected at its opposite end to said reciprocal element for reciprocating said element in response to movement of said one end of the connecting link in a circular path about said sleeve axis, shaft means extending substantially axially through said sleeve, coacting means on said shaft means and said sleeve disposed in said crankcase and operable upon relative rotation of said sleeve and shaft means to adjust the diameter of said circular path, means outside said crankcase secured to said shaft means for adjustably connecting said shaft means and said sleeve in different relatively rotated positions, a drive sprocket, anti-friction bearing means rotatably supporting said sprocket on said sleeve, a clutch collar slidably mounted on said sleeve for axial movement relative thereto toward and away from said sprocket, said collar being secured to said sleeve so that rotation of said collar causes rotation of said sleeve, and engageable tooth means on said sprocket and said collar providing for driving of said collar by said sprocket in one position of said collar.

3,282,219
DOUBLE-ACTING SOLENOID PUMP
Wayne V. Blackwell, 3721 Cardinal Ave., and Lee R. Stark, 2819 Niles St., both of Bakersfield, Calif.
Filed Dec. 28, 1964, Ser. No. 421,581
7 Claims. (Cl. 103—53)

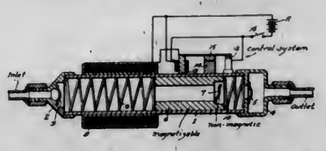
1. A double-acting solenoid pump for immersion in fluid to be pumped and comprising an imperforate uninterrupted cylinder, a solid cylindrical ferrous double-acting piston having imperforate opposed end faces and reciprocable freely within said cylinder, said piston comprising a solenoid armature, a pair of solenoid coils surrounding the exterior surface of at least the opposite ends of said cylinder for support thereby and separated from each other by insulating means surrounding the intermediate portion of said cylinder, an imperforate inner cylindrical housing extending between and enclosing said coils, said housing being coaxial with said cylinder, and the opposite ends extending beyond the ends of said cylinder a limited distance, an outer cylindrical housing surrounding said inner housing in radially spaced relationship and coaxial therewith, upper and lower heads threadably connected to the

respective upper and lower ends of said inner and outer housings to connect the same in assembled operative position, said heads being no greater in diameter than said outer housing, discharge port means in said upper head connectable to a fluid line arranged to receive fluid therefrom for unidirectional flow, inlet ports in both of said heads communicating with the exterior of said pump, valve means and passageways in said heads operable sequentially to control and direct the flow of fluid successively inwardly from the inlet ports in said heads for sequential flow into the opposite ends of said chamber by



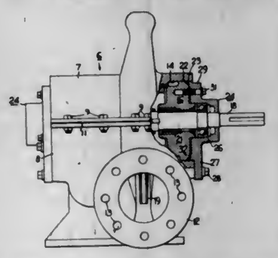
reciprocation of said piston therein and said check valves functioning at the completion of reciprocation of said piston in one direction to close and discontinue flow sequentially through said inlet ports and permit discharge of fluid from said discharge port in said upper head, an electric circuit connected to said solenoid coils and connectable to a source of current, and switch means in said circuit operable at a predetermined rate sequentially to energize and deenergize said coils to effect free reciprocation of said piston-armature in opposite directions within said cylinder to effect substantially constant delivery of fluid through said discharge means in said upper head.

3,282,220
PUMP
Fred Waldo Inman, P.O. Box 206, Sierra Vista, Ariz.
Filed Jan. 7, 1965, Ser. No. 424,155
1 Claim. (Cl. 103—53)



Pump and motor means comprising: a substantially cylindrical casing; means to close one end of said casing; fluid inlet means adjacent to said end; inlet valve means for said fluid inlet means; means to close the other end of said casing; fluid outlet means adjacent to said other end of said casing; an outlet valve for said pump and motor means; magnetizable pump plunger means in said casing; means urging said plunger means in one direction; electromagnetic means urging said plunger means in the opposite direction when energized; and means to energize said electromagnetic means when said plunger means is moved to a position toward said outlet end; said means to energize said eletromagnetic means comprising; a magnetic member adjacent to said cylindrical casing; a magnetizable member operable to close and open a circuit to said electromagnetic means; said magnetizable plunger means serving as a magnetic conductor to transmit magnetic force from said magnetic member to said magnetizable member as said plunger approaches said other end of said casing to thereby close said circuit to said electromagnetic means and move said magnetizable pump plunger toward said one end of said casing; said magnetic member comprising an electromagnet with one end of the magnetic core adjacent to said cylindrical casing; and an additional outlet valve in the path of fluid flow past said plunger.

3,282,221
END SEALING ARRANGEMENT FOR SPLIT CASING PUMP
John K. Kilbane, Wauwatosa, and Cyril A. Kukuvich, West Allis, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Oct. 12, 1964, Ser. No. 403,265
2 Claims. (Cl. 103—111)

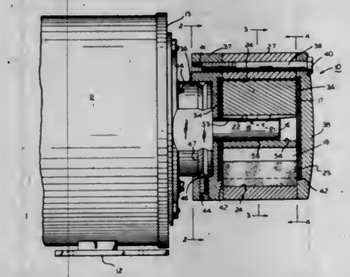


1. In a pump the combination comprising: a casing having axially spaced aligned end bores, said casing constructed of a pair of sections releasably connected along a longitudinal joint; a pair of end closures in said end bores combining with the inner peripheral surface of said bores to form continuous annular grooves therebetween, said grooves being open in the axially outward direction; a sealing element in said grooves; and a pair of bearing housings each having a flange connected to one of said casing sections and to said end closures to hold said housings, pump casing and end closures against relative movement, said bearing housings being free of connection to said other of said pair of casing sections whereby said other easing section may be removed without removing said end closures or said bearing housings.

3,282,222
ROTATING VANE MACHINES
Robert Raufeisen, Barrington, and Marvin Peter Schwartz, Arlington Heights, Ill., assignors to International Telephone and Telegraph, New York, N.Y., a corporation of Maryland
Filed Oct. 13, 1964, Ser. No. 403,552
1 Claim. (Cl. 103—118)

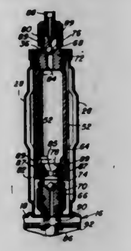
The improvements in the combination of a prime mover and a pump driven thereby and mounted thereon, where said prime mover has a protruding shaft support with a driving shaft protruding from said protruding shaft support, an inner end member for said pump adapted to be adjustably mounted on said protruding shaft support with said protruding shaft extending therethrough, a plurality of radially mounted threated adjusting means held in said inner end member and adapted to bear against said bearing support for adjustment of the position of said inner end member, a pump rotor mounted on that portion of the driving shaft extending beyond said inner body member and turning therewith, a key connecting said shaft to said rotor, said rotor having a bore therein of larger diameter than the diameter of said driving shaft except for a surface of revolution of small length located at the connection of said driving shaft to

said rotor at said key, a central body member having a cavity therein for said rotor, a plurality of bores in said central body member extending parallel to the axis of said driving shaft, screws of smaller diameter than said bores for holding said central body member to said inner end member and providing for adjustment of said



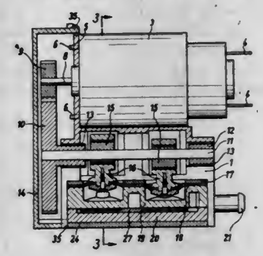
central body member with respect to said inner end member in directions transverse to the axis of rotation of said rotor to provide proper clearance of said rotor with respect to a land in the wall of said cavity, and an outer end member adapted to be secured to said inner body member.

3,282,223
HANDLE AND PUMP CONSTRUCTION
Henry E. Karkut, Baldwinsville, N.Y., assignor to Henry E. Karkut, Inc., a corporation of New Jersey
Filed June 26, 1964, Ser. No. 378,318
8 Claims. (Cl. 103—148)



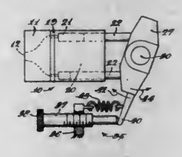
1. A fluid pump construction adapted to be connected in a fluid flow line between adjacent sections thereof, said fluid pump construction including a resilient tubular section adapted to be intermittently squeezed, means at opposite ends of said tubular section adapted for fluid tight connection to the adjacent ends of said adjacent fluid flow line sections and including check valve means for controlling the flow of fluid through said tubular section, a pump actuator assembly including a channel defining portion in which at least a portion of said resilient tubular section is disposed, first and second fixed and movable handle elements supported from said actuator assembly, opposing jaw elements supported from said assembly and disposed in said channel on opposite sides of said portion of said resilient tubular section and movable toward and away from each other for squeezing said portion of said resilient tubular member therebetween, and means operatively connected between said movable handle element and said jaw elements for moving the latter toward and away from each other in response to movement of said movable handle element relative to said fixed handle element.

3,282,224
MEMBRANE OR PISTON PUMP
Willy Bock and Erich Mutschler, Bietigheim, Wurttemberg, Germany, assignors to SWF-Spezialfabrik fur Autozubehor Gustav Rau G.m.b.H., Bietigheim, Wurttemberg, Germany
Filed Nov. 30, 1964, Ser. No. 414,791
Claims priority, application Germany, Dec. 12, 1963, S 88,679
4 Claims. (Cl. 103—152)



1. A pump comprising a housing defining a pump chamber therein and having an opening with a side wall on each side of the opening, said housing having an exterior surface defining a mounting for a driving motor, said housing having a bearing wall adjacent said mounting with a first opening for the driving motor shaft and a second opening extending into the pump chamber for the pump shaft, a pump shaft rotatably mounted in said pump chamber and extending through the second opening, piston means connected to said pump shaft for actuation by rotation of said pump shaft, said chamber having passage and valve means for taking in and discharging fluid in response to the rotation of said shaft, an electric driving motor mounted on said housing on said motor mounting with its shaft extending through said first opening and arranged substantially parallel to said pump shaft, said pump shaft being connected exteriorly of said bearing wall by impact and shock dampening force transmitting means, a cover plate closing the opening of said pump chamber; said pump shaft, said piston means, and said passage and valve means being mounted on said cover and positioned in said pump chamber when said cover closes the opening of said pump chamber.

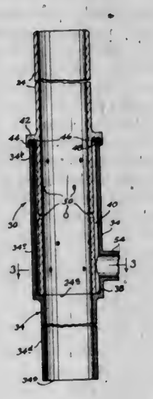
3,282,225
PUMP SWASHPLATE CONTROL
Harry C. Moon, Jr., Rockford, Ill., assignor to Sunstrand Corporation, a corporation of Illinois
Filed June 4, 1965, Ser. No. 461,356
12 Claims. (Cl. 103—162)



1. A multiple piston hydraulic pump, comprising; a port member having inlet and outlet passages therein for receiving and delivering fluid, a cylinder block rotatable relative to said port member and having a plurality of cylinders therein successively communicating with said passages during said relative rotation, pistons slidably mounted in said cylinder block, a cam member pivotally mounted adjacent said cylinder block on an axis and connected to said pistons for reciprocation thereof, the cam pivot axis being positioned so that the pistons cause a

stroke reducing fluid pressure moment on the cam member, said cam member being movale from a neutral position where the pistons will not reciprocate to a maximum displacement position on one side of neutral, manually operable means for positioning the cam member in any desired position between neutral position and said maximum displacement position, and resilient means for continuously urging said cam member in a stroke increasing direction against the stroke reducing piston forces, said resilient means being operable and constructed to just balance the stroke reducing piston forces produced at a predetermined maximum desired pressure in all positions of the cam member whereby the cam member will move toward said neutral position if said forces increase above said predetermined value.

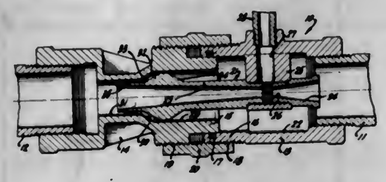
3,282,226
AIR LIFT
Fred J. Repp, Portland, Oreg., assignor to Cornell Manufacturing Co., Portland, Oreg., a corporation of Oregon
Filed June 29, 1964, Ser. No. 378,745
5 Claims. (Cl. 103—232)



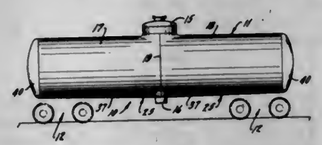
1. An air lift comprising
a socket portion open at top and bottom ends,
a pipe including a bottom end, which bottom end extends downwardly into said socket portion, said bottom end being removable through said open top of said socket portion,
a skirt portion joined to the pipe extending radially of the pipe and supporting the pipe on the top of said socket portion,
a seal between the skirt and top of the socket portion urged into sealing relationship between the two by the weight of the pipe,
aperture means in the wall of the pipe connecting the inside of the pipe with the inside of said socket, and means for supplying air to the inside of said socket portion.

3,282,227
ADJUSTABLE VENTURI INJECTOR
Adolph Nielsen, Oakland, Calif., assignor to Nielsen Mfg. Co., Oakland, Calif., a corporation of California
Filed June 22, 1964, Ser. No. 376,768
3 Claims. (Cl. 103—271)

1. An adjustable injector comprising a housing having first and second coaxial sections adjustably connected in end-to-end relation; a venturi tube mounted within said housing and supported from said first section, said tube being spaced from the inner walls of said housing to form an annular flow path therebetween; said second section and tube having complementary flow restricting surfaces limiting the amount of fluid flow passing through said annular flow path; and a threaded collar adjustably connecting said first and second sections in axial relationship for adjusting the spacing between said complementary flow restricting surfaces.



3,282,228
TANK CAR
Charles L. Spees, Elmhurst, Ill., assignor to Union Tank Car Company, Chicago, Ill., a corporation of New Jersey
Filed Feb. 18, 1964, Ser. No. 345,770
1 Claim. (Cl. 105—358)



A center drain storage tank for incorporation in a railway tank car or the like, comprising: partial cylinder means disposed in substantially horizontal relationship, said partial cylinder means defining a gap along its bottom between longitudinally extending free edges of the cylinder means, bottom means seated in said gap and secured to said free edges of the cylinder means, said bottom means defining trough means extending from adjacent the opposite ends of said cylinder means substantially toward the center thereof, and drain means in said bottom means in communication with said trough means, said bottom means comprising a pair of elongated bottom plates having substantially arcuate cross-sectional configurations, each of said bottom plates including longitudinally extending outer portions with a predetermined radius of curvature equal to the radius of curvature of said partial cylinder means and a longitudinally extending inner portion, each inner portion having a constantly increasing radius of curvature from adjacent its outer end to adjacent its respective inner end, whereby said trough means constantly deepens from the outer ends of said bottom plates to the adjacent inner ends of said bottom plates, said bottom plates being welded together at adjacent inner ends where said inner portions have their greatest radius of curvature.

3,282,229
ANCHOR FITTING
Edwin C. Elsner, Pasadena, Calif., assignor to Aeroquip Corporation, Jackson, Mich.
Filed Oct. 27, 1964, Ser. No. 406,837
6 Claims. (Cl. 105—369)

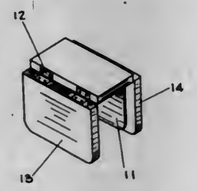
1. An anchor fitting comprising, in combination,
(a) a body having a given width and an end portion,
(b) a slot defined in said end portion,
(c) an enlarged pad defined on said body having a width greater than said given body width, an abutment shoulder defined on said pad,

(d) load attachment means defined on said body adjacent said given width,
(e) a retainer means having a portion received within said slot, and



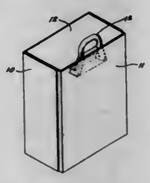
(f) a pivot pin bridging said slot pivotally mounting said retainer on said body for selective movement between operative and inoperative positions.

3,282,230
PORTABLE SURFACE
Carol L. Levy, 111A Robert Lane, Wilmington, Del.
Filed Oct. 11, 1965, Ser. No. 494,576
12 Claims. (Cl. 108—28)



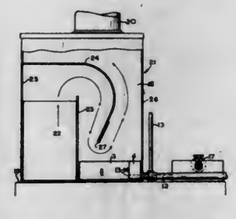
1. A portable surface comprising at least one collapsable surface, at least one U-bracket having a connecting member which extends in the dimension parallel to a collapsing surface edge connected to the U-bracket a distance which is substantial compared to the length of that edge, which member also provides a functioning surface, flexible means, for connecting the collapsable surface to the U-bracket and means for maintaining the collapsable surface in extended position.

3,282,231
REFRACTORY BRICK UNITS
John P. Walt, Chicago, Ill., assignor to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 26, 1965, Ser. No. 474,737
7 Claims. (Cl. 110—99)



1. A roof brick having a hot face and an opposed cold face with four sides extending between said hot face and cold face, an outwardly diverging generally truncated triangular depression formed through a side of said brick from said cold face to a position above the hot face, said truncated triangular depression terminating in an inwardly extending slot which extends into the body of the brick beyond said depression, a bent rod, said bent rod including an upper, downwardly-opening generally U-shaped first section terminating in outwardly-diverging legs, said legs terminating in inwardly-bent feet, said legs arranged to frictionally engage opposed side surfaces which in part define said depression, and the feet of said rod extending into and being encompassed by said slot, and metal casing attached to said brick arranged to hold said bent rod in position.

3,282,232
LIQUID TRAYS FOR USE IN INCINERATORS AND FOR OTHER PURPOSES
Felix Scholer, Castle Cove, New South Wales, Australia, assignor to Goodrid Incinerator Co. Pty. Limited, Sydney, New South Wales, Australia, a corporation of New South Wales, Australia
Filed July 30, 1964, Ser. No. 386,325
3 Claims. (Cl. 110—128)

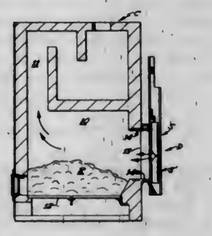


1. In combination, a soot arrestor for an incinerator comprising an enclosure having walls, a roof and a floor, a first partition extending upwards from the enclosure floor towards its roof and dividing the enclosure into first and second lower compartments, a second partition in the enclosure extending laterally from the enclosure wall which forms one boundary of the first compartment, said second partition extending over the first partition and downwardly into the second compartment with a lower edge of said second partition being beneath the level of the upper edge of the first partition, and opening in the floor of the first compartment for receiving combustion products from the incinerator, an opening in the roof for receiving combustion products from the second compartment and a flue connected at its lower end to the opening in the roof, and a container for a liquid on the floor of the second compartment below the lower edge of the second partition, said container including a weir wall dividing the container into a main liquid compartment and an auxiliary liquid compartment, first means for supplying liquid to the main compartment, means for maintaining the liquid at a level in the main compartment which is approximately at the level of the upper edge of the weir wall, second means near the floor of the main compartment for supplying flushing liquid to the main compartment, and means for discharging from the auxiliary compartment liquid which has overflowed the weir wall from the main compartment.

3,282,233
INCINERATOR DOOR
Edwin T. Richter, 8743 Penn Ave. S., Minneapolis, Minn.
Filed Sept. 15, 1964, Ser. No. 396,692
5 Claims. (Cl. 110—175)

1. A furnace structure comprising a combustion chamber having a charging opening, a split-guillotine furnace charging door for closing said opening, each section thereof comprising a horizontal series of vertical parallel juxtaposed tubes joined together in side abutting relationship, said tubes being open at both ends, the outer ends

of said tubes communicating with the atmosphere outside said furnace, means forming the open ends of the inner ends of said tubes so that the inner ends of said tubes re-



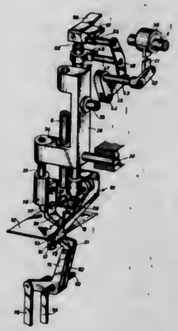
main unobstructed and communicate with the combustion chamber of said furnace when said sections of the charging door are in closed condition.

3,282,234

SEWING MACHINE INCLUDING WORK FOLDING MEANS

Hermann Herz, Erlenbrunn, Pirmasens, and Ernst Albrecht, Hochspeyer, Germany, assignors to G. M. Pfaff A.G., Kaiserslautern, Germany, a corporation of Germany

Filed July 16, 1963, Ser. No. 295,551
Claims priority, application Germany, July 16, 1962, P 29,828
12 Claims. (Cl. 112—51)



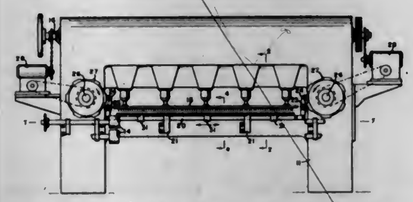
1. The combination with a sewing machine having a reciprocating needle and a loop taker cooperating therewith to form stitches in a work piece being operated on, of a stitching plate between said needle and loop taker having a lateral recess in the direction of the work feeding movement, said needle passing through said recess during operation, a work presser foot having a base overlying said plate and a depending lateral extension forming a guide overlying the lateral face of said plate ahead of said recess as viewed in the work feeding direction, for introducing a work piece with its partly folded edge through the angular passageway formed by said plate and base, work feeding means synchronized with and disposed behind said needle in respect to the work feeding direction and adapted for operation into feeding engagement with the work within said recess, and oscillating work folding means also synchronized with and disposed ahead of and close to said needle, to intermittently engage and completely reversely bend, in cooperation with said plate, the partly folded edge of the work within said recess immediately prior to the stitching thereof by said needle.

3,282,235

TUFTING APPARATUS HAVING FABRIC SHIFTING MEANS

Allan H. Crawford, 72 Evelyn Ave., Amsterdam, N.Y.

Filed Dec. 24, 1963, Ser. No. 333,160
3 Claims. (Cl. 112—79)



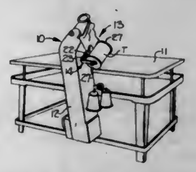
1. In a tufting machine having a supporting framework defining a throat, a throat plate supported by said supporting framework and partially overlying said throat, feed means operable to move a backing sheet over said throat plate and across said throat, yarn carrying needle means reciprocally operable to pierce said backing sheet, and looper means supported by said framework and operable to cooperate with said needle means during tufting operations, the improvement comprising a supporting member journaled in said framework, a plate-like member supported by said supporting member and extending over said throat plate, said plate-like member having means thereon for engaging said backing sheet, means for moving said plate-like member in directions transverse to the direction of movement of said backing sheet across said throat to move said backing sheet in directions transverse to the direction of movement of said backing sheet across said throat.

3,282,236

TAPE SPOOL BRACKET AND GUIDE ATTACHMENT FOR MACHINES USING NARROW TAPES

John T. Wardlaw, Wadesboro, N.C., assignor to Bo-Buck Mills, Inc., a corporation of South Carolina

Filed May 25, 1964, Ser. No. 369,873
2 Claims. (Cl. 112—152)



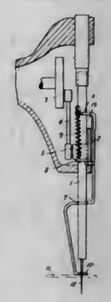
1. The combination of a tape edge machine having a stationary frame and stitching instrumentalities for stitching a narrow fabric tape around the edges of a mattress; an elongated spool of narrow fabric tape; and a tape spool bracket and guide attachment secured to said stationary frame for holding said elongated spool of tape thereon and for guiding the tape to said tape edge machine comprising a generally angular frame member secured to said stationary frame of said tape edge machine and having a generally upwardly extending leg and a generally horizontally extending leg, said legs being disposed at approximately 90° to each other, and a spindle member secured to said horizontally extending leg and extending generally upwardly therefrom for holding said elongated spool of narrow fabric tape, said upwardly extending leg having a notch therein for guiding the narrow tape from said elongated spool to the said tape edge machine without turning of the tape, said notch in said upwardly extending leg being bowed and having a generally rounded upwardly extending sidewall having a length greater than the width of the tape so that the tape is guided to said tape edge machine without turning over.

3,282,237

DEVICE FOR TENSIONING THE PRESSER FOOT OF AUTOMATIC EMBROIDERING MACHINES

Erwin Niekrawietz, Hamburg, Germany, assignor to Marco Stickautomaten-Gesellschaft Markscheffel & Co., Hamburg-Wandsbek, Germany, a firm

Filed Oct. 12, 1965, Ser. No. 495,137
Claims priority, application Germany, Mar. 16, 1965, M 51,025
1 Claim. (Cl. 112—236)



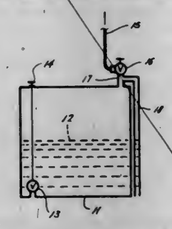
An embroidering machine having a presser foot, a needle bar, and a device for tensioning the presser foot comprising means slidably guiding said presser foot on said needle bar and at least one tension spring arranged between the presser foot and the needle bar in such a manner that during the contact of the presser foot with material to be embroidered and in the lowest position of the needle bar the presser foot can be pressed against the material to be embroidered with the largest spring tension, said tension spring being fixed with its upper end to the upper portion of the presser foot and with its lower end fixed to the lower portion of the needle bar, and an adjustable elastic buffer for intercepting the presser foot at the moment of contacting the material to be embroidered.

3,282,238

METHOD AND APPARATUS FOR DISCHARGING LIQUIDS FROM IMMERSED VESSELS

Augustine John Tucker, 911 S. Post Oak Lane, Houston, Tex.

Filed July 20, 1965, Ser. No. 473,404
14 Claims. (Cl. 114—52)



1. The method of discharging liquid from a liquid containing vessel immersed in an immersing medium, said method comprisng the steps of:

introducing a pressurized fluid into the vessel at a pressure sufficent to displace the liquid therefrom;

displacing the liquid from the vessel by application of the pressurized fluid; and

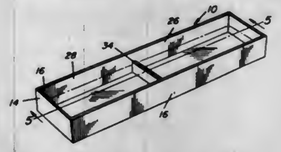
relieving the pressure inside the vessel when the pressure differential inside and outside the vessel exceeds a predetermined level by venting the pressurized fluid from a first point located inside the vessel and above the liquid level therein to a second point located exteriorly of the vessel and spaced below the first point a distance which is sufficient to cause the venting to occur when the pressure differential exceeds the predetermined level.

3,282,239

PASSIVE SHIP STABILIZATION SYSTEM USING DAMPING ALONG CENTER LINE ONLY

Sheldon B. Field, Floral Park, Thomas F. Bridges, Port Washington, Edward V. Lewis, Glen Head, and Lawrence W. Ward, Glen Cove, N.Y., assignors to John J. McMullen Associates, Incorporated, New York, N.Y., a corporation of New York

Filed July 30, 1964, Ser. No. 386,196
9 Claims. (Cl. 114—125)



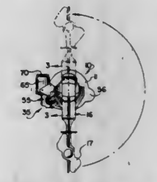
1. A passive stabilization system for water going vessels comprising an elongated liquid storage means having a longitudinal axis mounted in the roll plane of the vessel, damping means mounted within said liquid storage means at the longitudinal center region thereof, said storage means being substantially free of damping means throughout its length except for the said damping means at the center region thereof so that said damping means and liquid storage means define only two communicating compartments within said liquid storage means, a body of liquid partially filling said storage means so that an air space is provided above the surface of the liquid body, said body of liquid having a height such that the oscillations of the entire body are tuned to the oscillations of the vessel, said damping means enabling a substantial amount of liquid transfer to take place from one of said compartments to the other of said compartments in response to the roll of the vessel so that the timed accumulation of liquid in one compartment and reduction of liquid from the other compartment imparts a stabilizing moment to the vessel.

3,282,240

MARINE DRIVE APPARATUS

George R. Pipes, South Euclid, Ohio, assignor to Eaton Manufacturing Company, Cleveland, Ohio, a corporation of Ohio

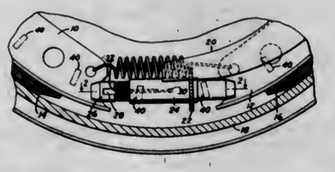
Filed Sept. 14, 1964, Ser. No. 396,258
20 Claims. (Cl. 115—41)



1. In a marine drive for a boat, an outboard power leg carrying a propeller for moving the boat through water, means supporting the outboard power leg for rotation relative to the boat about an axis extending longitudinally thereof and for movement axially for removal

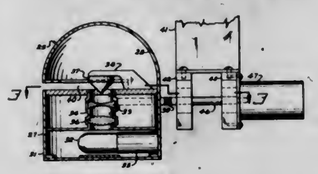
from the boat, latch means for holding the outboard power leg in operative position on the boat and releasable to permit rotation of the outboard power leg and axial movement of the outboard power leg for removal from the boat, and a drive mechanism including a rotatable drive member releasably connected to said outboard power leg when in its operative position for rotating said outboard power leg between first and second angularly related positions about said longitudinal axis, said outboard power leg and said drive member having cooperable means for effecting a driving connection therebetween and being disconnectable in response to axial movement of said outboard power leg from its operative position.

3,282,241
BRAKE LINING WEAR SIGNAL INCORPORATED IN SHOE ADJUSTING LINK
Lothrop M. Forbush, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 20, 1965, Ser. No. 488,589
5 Claims. (Cl. 116—67)



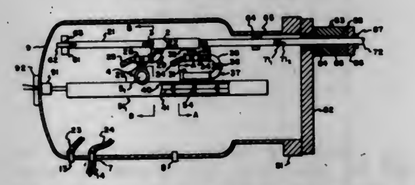
1. A brake wear sensing device for a brake system having an automatic adjuster, said device comprising: brake shoe means carried by a non-rotatable portion of a vehicle; turnbuckle means having an internal bore and being carried by said brake shoe means and expanding therewith as automatic brake adjusting takes place; brake drum means carried by a rotating portion of a vehicle proximate said turnbuckle means; and compressed spring means carried in said bore of said turnbuckle means and being adapted to assume a free form as said turnbuckle means assumes a predetermined amount of extension thereby interfering with said rotating brake drum means to create an audible noise indicative of shoe separation beyond predetermined limits.

3,282,242
ARTIFICIAL HORIZON INSTRUMENT FOR AIRCRAFT OPERATION
Clifton G. Wrestler, Jr., 48 Courtney Ave., Newport News, Va.
Filed Apr. 2, 1964, Ser. No. 356,995
3 Claims. (Cl. 116—114)



3. An artificial horizon instrument for aircraft comprising a closed cylindrical housing, a semicircular slot in the wall of said housing intermediate its ends, an electric lamp positioned in said housing adjacent one of said ends, a conical reflector affixed in said housing in alignment with said electric lamp and opposite said semicircular slot, optical focusing means positioned in said housing between said electric lamp and said conical reflector, a gimbal bracket rotatably fixed to the structure of said aircraft for rotation about a first axis, said closed housing carried by said gimbal bracket for rotational movement about a second axis perpendicular to said first axis, and gyroscopic means controlling the movements of said gimbal bracket about said first axis and the movements of said closed housing about said second axis, said housing positioned rearwardly of the windshield of said aircraft whereby a narrow flat beam of light from said semicircular slot is projected to the windshield of said aircraft and extends across the width thereof.

3,282,243
MOVABLE MEANS COMPRISING VAPOR-PLATING NOZZLE AND EXHAUST
Wilton Phillips, Jr., Baton Rouge, La., and Charles W. Watson, Jr., Wilmington, Del., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia
Filed Sept. 8, 1965, Ser. No. 492,965
(Filed under Rule 47(a) and 35 U.S.C. 116)
2 Claims. (Cl. 118—49)

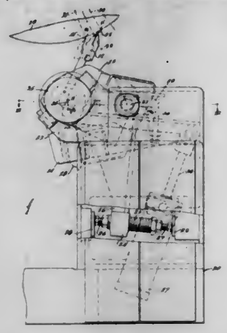


1. In a metal vapor plating apparatus having a plating chamber adapted to enclose and support a substrate to be plated and having means for heating said substrate to a temperature sufficient to decompose heat-decomposable metal plating vapors, the improvement comprising spray nozzle means mounted within said chamber for movement over the surface of the substrate and positioned to direct a stream of the metal plating vapors onto the heated substrate at an angle from substantially parallel to 20° inclination with respect to the path of travel and vapor exhaust means movable simultaneously with said spray nozzle means over the substrate surface so that the distance between said vapor spray nozzle means and said vapor exhaust means is maintained constant whereby the byproducts of decomposition are removed and the substrate surface is uniformly plated with the metal decomposed from the metal plating vapors.

3,282,244
TRAILING BLADE COATER WITH BLADE LOADING MECHANISM
Lester M. Hill and Arnold Joseph Schmitt, Beloit, Wis., assignors to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Sept. 6, 1962, Ser. No. 221,813
13 Claims. (Cl. 118—126)

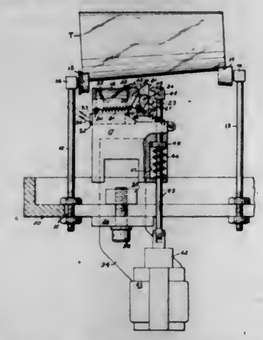
1. In a coating mechanism for a paper web coating machine, the combination comprising,
a backup roll for supporting a travelling web,
a doctor blade supported in a blade holder for smoothing coating on the web,
a pivotally mounted blade angle determining first arm,
a blade positioning and loading second arm pivotally mounted on said first arm,
a blade carrying third arm pivotally mounted on said first arm coaxial with the pivotal mounting of the second arm and supporting the blade holder,
blade positioning means for moving said pivotally mounted second arm between a retracted position and an operating position,

first blade loading means connected between said second and third arms for applying a blade loading force to the third arm sufficient to support the weight of the third arm and blade holder,



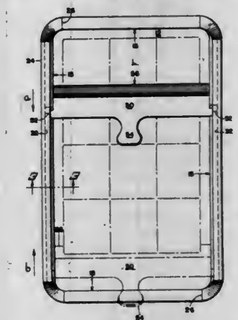
and second blade loading means connected between said second and third arms for applying a blade loading force to said third arm.

3,282,245
TUMBLER REGISTERING MARK APPLICATOR
Edward A. Nowak, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed July 31, 1964, Ser. No. 386,614
6 Claims. (Cl. 118—263)



1. Article marking apparatus comprising in combination a base, means for supporting an article in an elevated position with respect to said base and a marking device positioned on said base beneath the supported article, said marking device comprising a member clamped to said base and having a well formed in its upper surface containing a marking liquid, means carried by said member for heating said member in the region of said well to maintain the marking liquid at a preselected viscosity, a lever pivotally connected to said member adjacent said well with a portion of said lever abutting the upper surface of said member, spring means connected to said lever for biasing said lever into abutting relationship with respect to said member, an elongated marking needle connected to said lever and extending into said well with its end totally immersed therein, a dog pivotally connected to said lever engageable therewith, means biasing said dog for pivoting it in one direction, said lever including a portion engageable with said dog and rotating said lever in said one direction, said dog being free to pivot relative to said lever in the opposite direction, a tripper, means connecting the tripper and a carriage rod, guide means connected to the rod defining a path of movement providing engagement thereof with said dog, and means connected to said rod for reciprocating same, said tripper, upon engaging said dog in said one direction of movement pivoting said lever to raise the marking needle from the well and into contact with a supported article, said tripper on its movement in the opposite direction causing the dog to pivot independent of the lever, the marking needle being returned to the well by its said spring means.

3,282,246
MOISTENING DEVICE FOR GUMMED LABELS OR THE LIKE
James E. Guernsey and Edward J. Shlosser, Springfield, Mass., assignors to James E. Guernsey and Edward J. Shlosser, doing business as J. & E. Mfg. Co.
Filed Jan. 27, 1964, Ser. No. 340,255
1 Claim. (Cl. 118—264)

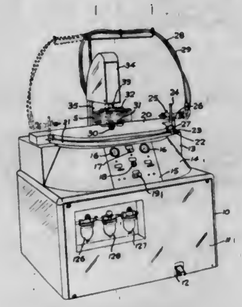


A moistening device for gummed labels comprising a tray like receptacle embodying a bottom wall and upstanding side and end walls unitary therewith and having a continuous lower pad recess along the inner faces of the side and end walls thereof and a pair of upper pressure bar recesses along the inner faces of the side walls thereof, a moisture retaining member within said receptacle and gripped within the lower pad recess, a pressure bar normally lying adjacent said moisture retaining member and adapted for manual reciprocation relative to said moisture retaining member and having pivot arms receivable in the pressure bar recesses of said receptacle, said pressure bar including a knife-like leading edge normally bearing on a gummed label resting on said moisture retaining member during moistening of the label, and adapted following moistening of the label for insertion under an edge thereof to lift a portion of the label from the moisture retaining member for removal from the receptacle.

3,282,247
APPARATUS FOR COATING THE EDGES OF SHOE SOLES
George Trevor Ralphs, Oadby, England, assignor to The Ralphs Engineering Company Limited, Leicester, England
Filed July 24, 1962, Ser. No. 212,039
Claims priority, application Great Britain, July 27, 1961, 27,247/61
11 Claims. (Cl. 118—323)

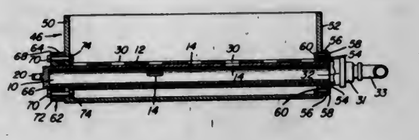
1. Apparatus for use in edge coating of shoe soles, comprising means for clamping a group of similar shoe soles superimposed in a stack one upon another with their edges coincident as seen in plan, means whereby the stack mounting means can be turned through approximately 180° about an axis at right angles to and passing through the shoe soles centrally thereof, spraying means,

a mounting for the spraying means to position the latter alongside the stack mounting means and directed towards the stack mounting means, means for effecting to and fro relative traversing movement between the spraying means and the stack mounting means lengthwise of shoe soles mounted in the stack to effect spraying along the sides of such shoe soles, and means for turning the stack of shoe



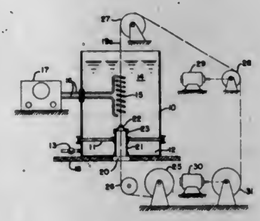
soles through approximately 180° to expose opposite sides of the stack in turn to the spraying means, wherein the parts are so arranged that the relative movement between the stack mounting means and the spraying means is performed along a path which extends along the length of the soles in the stack and is partly arcuate at the ends thereof to effect spraying on to the edges of the soles at their ends as well as along one side.

3,282,248
FLOW DISTRIBUTOR
Warren L. Mann, Westernport, Md., and Howard B. Mehlman, New Creek, W. Va., assignors to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware
Filed May 15, 1963, Ser. No. 280,519
6 Claims. (Cl. 118—612)



1. In a coating apparatus for applying a liquid coating material to a traveling web of paper and the like, in combination, a coating pan having a bottom, side walls and end walls, a first conduit extending longitudinally within said coating pan, said first conduit having openings spaced along its length, second conduit having openings spaced along its length, said second recited openings being helically arranged about said second conduit and spaced along the axial extent thereof so as to corerspond with said first recited openings, said second conduit being housed within said first conduit, means connecting with one of said conduits for continuously supplying a liquid coating material to said conduits, and driving means connecting with one of said conduits for continuously rotating said one conduit with respect to the other conduit whereby to communicate, one at a time, the openings of said second conduit with the corresponding openings of said first conduit and to provide flow paths for the liquid coating material into said coating pan.

3,282,249
APPARATUS FOR COATING FILAMENTARY METAL ARTICLE
Robert C. Ramsay, Reading, Pa., assignor to The Polymer Corporation, a corporation of Pennsylvania
Filed Aug. 6, 1957, Ser. No. 676,577
1 Claim. (Cl. 118—620)



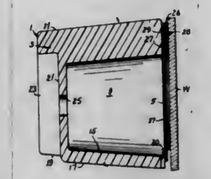
Apparatus for coating a filamentary metal body comprising a tank having a bottom and side walls and an open top, a horizontally disposed porous plate dividing the tank into a lower chamber and an upper chamber container portion adapted to receive a filling of powdered coating material, means for passing a gas under pressure into said lower chamber and through said porous plate to fluidize said coating material, an aperture in said plate in vertical registering relation with an aperture in the bottom of the tank, a cylindric sleeve extending vertically between and through the said apertures into the powder filling and having a resilient pierced closure fitted therein whereby to permit the filamentary body to be passed upwards into the tank through the closure, and an induction heating coil positioned in the tank in axial alignment with said sleeve adapted to have the filamentary body passed axially therethrough while in contact with said coating material.

3,282,250
MILKING SYSTEM
Harry C. Cain, 1836 Rosecrans Ave., Manhattan Beach, Calif.
Filed Mar. 27, 1961, Ser. No. 98,366
6 Claims. (Cl. 119—14.04)



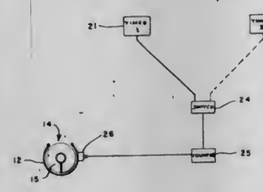
1. In a system of the character described for milking cows, the combination of: a platform conveyor to convey the cows in sequence through a zone for milking operation; a plurality of gates to divide the area of the platform conveyor into stalls for the individual cows; means to move said stall gates on a continuous path with the stall gates moving synchronously with the platform conveyor along one run of the path and returning along a second run of the path with the returning gates swinging successively from retracted positions to effective positions to form the successive stalls; and means operatively associated with the platform conveyor and the stall gate moving means and automatically operative to stop the movement of the platform conveyor and the movement of the stall gates in response to a cow obstructing the movement of a stall gate from its ineffective position to its effective position.

3,282,251
BIRD HOUSE
Theodore J. Dahmus, 3160 Myrtle Ave., Granite City, Ill.
Filed Aug. 11, 1965, Ser. No. 482,999
8 Claims. (Cl. 119—23)



6. A bird house having a front with an opening therein to permit the ingress and egress of a bird and having an opening at the rear, the bird house being made of a translucent material whereby the interior of the bird house can be illuminated by light passing through the bird house, and a one-way window over the rear opening so that the interior of the house may be observed from the outside but a bird cannot see out through said window.

3,282,252
LIVESTOCK FEEDER
Shaun A. Seymour, Ephrata, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Oct. 1, 1965, Ser. No. 491,947
3 Claims. (Cl. 119—51.11)



2. A method for feeding groups of livestock having different feed consumption requirements comprising, confining the groups in separate linearly juxtaposed feeding areas in descending order of quantitative feed consumption, withdrawing feed from a supply source adjacent the maximum consumption feeding area and uniformly distributing the feed throughout the length of an elongated container extending above all the feeding areas, then dumping the container to deposit feed simultaneosuly into each feeding area, then repeating the distributing and dumping cycles until a desired total amount of feed has been deposited in the minimum consumption feeding area farthest from the supply source, then repeating the distributing cycle over a shorter period of time to distribute feed in the container above all the feeding areas except the minimum consumption area farthest from the feed supply source, then repeating the dumping cycle to deposit feed simultaneously into each feeding area except said minimum consumption area, and then repeating the distributing and dumping cycles over progressively shorter periods of time to progressively eliminate the remaining minimum consumption area from the distributing cycle and terminating the feeding operation when a desired total amount of feed has been deposited in the maximum consumption feeding area adjacent the feed supply source.

3,282,253
PLAY INSTRUMENT FOR GAMES OF INTRIGUE
John W. Ryan, Bel Aire, and Conrad B. Sloop, Long Beach, Calif., assignors to Mattel, Inc., a corporation of California
Filed Feb. 18, 1965, Ser. No. 433,695
1 Claim. (Cl. 120—1)



A writing pen adapted for use in cloak-and-dagger games of children, said pen comprising:

(a) a hollow, longitudinally elongated barrel, said barrel having an encompassing sidewall, an open end and a closed end, a tip opening provided in said closed end concentric with the longitudinal axis of said barrel, said sidewall being provided with slots centrally thereof and on opposite sides thereof;

(b) a divider positioned within said barrel and intermediate said slots, said divider defining with said barrel a pair of opposed compartments in the area of said slots;

(c) a first ink cartridge having a first type of ink therein disposed within said barrel and having a segment thereof received within one of said compartments;

(d) a second ink cartridge disposed within said barrel and having a segment thereof received within the other compartment;

(e) means carried within the respective compartments and operatively engaging the respective cartridges to effectuate selective manual extension of the respective cartridges through said tip opening, said extension means including a push-button extending through a related slot for manual actuating thereof, said extension means comprising:

(I) a spring retajner disposed within said barrel between said divider and said tip opening, said spring retainer embracingly receiving said cartridges;

(II) coiled spring means disposed in each compartment and surrounding a related cartridge;

(III) abutment means carried by each extension means and engaging the terminus of a related cartridge, each of said coiled spring means being interposed between said spring retainer and an associated abutment means;

(IV) a ledge formed on each extension means and spaced from an associated abutment means; and

(V) a cantilever spring integrally formed with each extension means and directed annularly inwardly of said barrel, each of said cantilever springs being operative to pressure engage said divider upon manual movement of an associated extension means toward said tip opening, whereby an associated ledge is biasingly urged outwardly and into locking engagement with the edge of a related slot;

(f) a cylindrical top telescopically receiving said open end of said barrel, said top including a closed bottom wall and an encompassing sidewall, said sidewall having an inner surface which is reciprocatingly movable relative to said barrel and which defines with said bottom wall a cavity, the volume of said cavity being selectively variable in response to said reciprocating movement;

(g) said open end of said barrel being closed by seal means preventing the entry of deleterious matter into said compartments, said seal means including a portion disposed within said cavity and operatively interposed between said barrel and said inner surface

of said top in continuous peripheral engagement with said inner surface for effecuating a liquid seal therebetween; and

(h) pin-hole means establishing communication between said cavity and the atmosphere whereby said top and said seal means effectively coact both as a water gun and a closure member for said opposite end of said barrel.

3,282,254
MULTI-PURPOSE CONNECTOR
Curtis L. Malm, Norwalk, and Harris W. Young, Sherman Oaks, Calif., assignors to Paper Mate Manufacturing Company, Santa Monica, Calif., a corporation of Delaware
Filed June 30, 1965, Ser. No. 468,352
6 Claims. (Cl. 120—42.1)



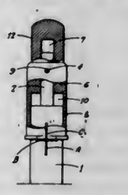
1. A multi-purpose device for positioning and holding an ink cartridge having a writing tip in axial alignment with another cartridge, comprising:

a cup-shaped connector having virtually cylindrical side walls, a bottom and a radially extending top flange, said connector being adapted to be slidably inserted into an open end of an ink cartridge with said flange in contact with the end of the cartridge;

a channel formed in the outer surface of said connector and extending into said flange to permit air ambient the upper end of a cartridge to flow into space below the bottom of the connector;

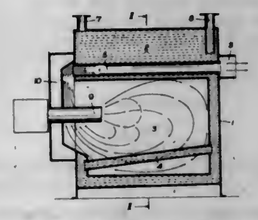
said cup-shaped connector having an interior surface adapted to frictionally grasp and hold the writing tip of another cartridge, the bottom of said connector isolating a writing tip inserted into the connector from vapors below said bottom.

3,282,255
PRESSURIZED BALL POINT PEN
Donald P. Killen, 130 Fountain Ave., Pacific Grove, Calif.
Filed Nov. 18, 1963, Ser. No. 324,356
3 Claims. (Cl. 120—42.4)



1. In combination with a barrel and an ink holding cartridge disposed in the barrel, the cartridge having a ball type writing point on its lower end and the upper end of said cartridge being open and projecting beyond the upper end of the barrel, a cap manually slidably and turnably mounted on the upper end of the barrel, the upper portion of the cap being provided with a central closed-top bore receiving the projecting end of the cartridge with a close substantially airtight running fit, the cartridge above the barrel and ink level being provided with an orifice in its side wall, the cap being provided with an orifice in its side wall adapted to register with the cartridge orifice only when the cap is disposed in a predetermined position on the barrel, and visual locating means on the manually relatively slidable and turnable barrel and cap to indicate when the orifices are out of register so that subsequent depression of the cap creates a pressure in the bore and places the ink in the cartridge under compression, or are in register to release such pressure and relieve the ink of compression, selectively.

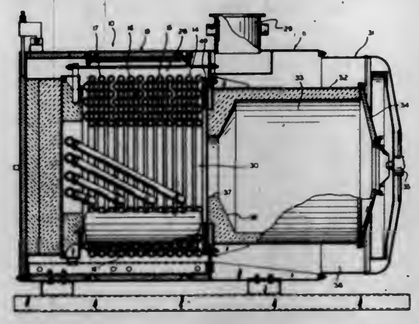
3,282,256
WATER HEATING FURNACE FOR GASEOUS OR LIQUID FUELS
Arnold Strasser, Grosse Neugasse 28, Vienna, Austria
Filed Nov. 1, 1965, Ser. No. 505,783
3 Claims. (Cl. 122—149)



1. A water heating furnace, which comprises chamber means defining a combustion chamber having a generally rectangular cross-section, said chamber means comprising two opposite end walls, two opposite side walls, a top wall, and a bottom wall, said walls being substantially flat, one of said end walls defining a flue gas exit opening, said walls totally enclosing said combustion chamber except for said smoke exit opening, a set of fire tubes communicating with said exit opening and extending over and substantially parallel to said top wall, a water tube grate extending in said combustion chamber throughout the length and across a major portion of the width thereof and dividing said combustion chamber into a large upper portion and a smaller lower portion, and an injecting tube for injecting a fuel-air mixture, said injecting tube projecting from said one end wall for a substantially extent into said upper portion of said combustion chamber substantially on the axis of an imaginary circular cylinder which is inscribed in said upper portion of said combustion chamber and contacts the inside surfaces of said top and side walls.

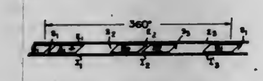
3,282,257
FLUID HEATING APPARATUS
Michael J. McInerney, Highland Park, Joseph L. Czyl, Harvey, and Warren H. Lauridsen, Bensenville, Ill., assignors to Vapor Corporation, Chicago, Ill., a corporation of Delaware
Filed June 5, 1963, Ser. No. 285,796
15 Claims. (Cl. 122—250)

10. An annularly-shaped bank of watertube coils for a steam generator comprising, a tube of uniform cross section throughout wound to form a plurality of tubes in substantially radially extending rows and concentrically arranged layers having a substantially rectangular cross-section, separator means arranged between adjacent tubes for equally spacing the tubes from each other in each row, and separator means arranged between adjacent layer for spacing the layers of tubes apart so that the outer layers are closer together than the inner layers, thereby defining radially extending flue gas paths between the inner and outer layers that are smaller in cross-section at the outer



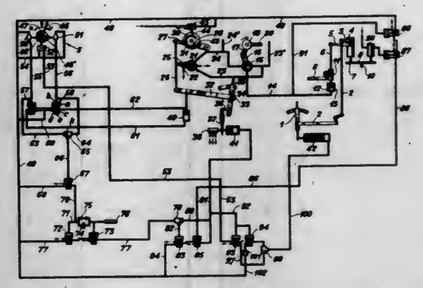
layers wherein the flue gas flows through said paths from the inner layer to the outer layer.

3,282,258
ROTARY ENGINE
Edmond L. Sinnott, Sinnott Lane, Marshfield, Mass.
Filed Aug. 6, 1964, Ser. No. 387,977
6 Claims. (Cl. 123—11)



1. A rotary internal combustion engine comprising the combination of: an engine housing having a rotatable drive shaft extending axially therethrough; rotors mounted for independent rotation about said shaft within said housing, said rotors having central hubs which cooperate with said housing to define an annular channel therebetween; inlet ports extending through one side of said housing to connect said annular channel with a common fuel supply; exhaust ports opposite to said inlet ports extending through the other side of said housing to connect said annular channel with a common exhaust outlet, said inlet ports and corresponding exhaust ports being disposed such that a line passing through the centers of said ports will be parallel to the axis of said shaft; two diametrically opposed impellers extending radially from the central hubs of each said rotors into said annular channel to subdivide said channel into four chambers, said impellers acting to close said opposed inlet and exhaust ports when positioned directly therebetween; means carried by each said impellers for alternately opening and closing opposed inlet and exhaust ports in a predetermined operational sequence; means for locking said central hubs to said shaft when said rotors rotate in one direction; means for preventing rotation of said rotors relative to said housing in a direction opposite to said one direction; extensions on said central hubs surrounding said drive shafts and protruding outwardly through the sides of said engine housing; ignition means operable to ignite charges of fuel drawn from said inlet ports into said annular channel following the compression thereof between adjacent impellers and said rotors rotate relative to each other in said one direction; and timing means associated with said hub extensions for controlling the operation of said ignition means.

3,282,259
REMOTE CONTROL ARRANGEMENT FOR A RECIPROCATING INTERNAL COMBUSTION ENGINE
Mario Moor, Winterthur, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a corporation of Switzerland
Filed Oct. 22, 1964, Ser. No. 405,895
Claims priority, application Switzerland, Oct. 22, 1963, 13,022/63
9 Claims. (Cl. 123—41)



7. A remote control system for an internal combustion engine propelling a vessel provided with a ship's telegraph, said engine including a device for starting the engine, and a device for adjusting the fuel supply to the engine, said system comprising:

a first servomotor for actuating said starting device,

a second servomotor for actuating said fuel-supply adjusting device,

a control device including means movable from a position corresponding to no fuel supply to consecutive positions corresponding to increasing fuel supply,

control-signal supply means operatively connected to said control device and to said first servomotor for actuating the latter to start the engine and to said second servomotor for actuating said fuel-supply-adjusting device to admit fuel to the engine at a rate suitable for starting, upon movement of said means of said control device from the position corresponding to no fuel supply,

an engine-speed-responsive device,

said control-signal supply means including means operatively connected to said engine-speed-responsive device for stopping control signal supply to said servomotors and stopping actuation of said starting device by the first servomotor and for stopping actuation of said fuel-supply-adjusting device by said servomotor, when the engine speed has reached a predetermined value,

said control-signal supply means including timing means stopping supply of control signals from said control device to said first and second servomotors for stopping actuation of said starting device and of said fuel-supply-adjusting device by said servomotors after a predetermined period of time and when the engine speed has reached a predetermined value, and

activating means for said control-signal supply means,

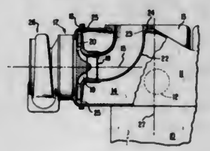
said ship's telegraph including an element capable of manipulation into a position corresponding to remote control of the engine,

said last mentioned element being operatively connected to said activating means for activating said control signal supply means when said element is in the position corresponding to remote control of the engine.

9. A remote control system as defined in claim 7 for an internal combustion engine having a reversing mechanism and wherein said means of said control device is movable into a position corresponding to forward drive

and into a position corresponding to reverse drive, said remote control system including means operatively connected to said control device and to said reversing mechanism for actuating the latter according to the position of said means of said control device, said element of the ship's telegraph including a cam groove, said reversing mechanism including a cam follower roller received in said cam groove, and said cam groove having a portion permitting free movement of said cam follower roller when said element of the ship's telegraph is in the position corresponding to remote control of the engine.

3,282,260
COMPRESSOR
Ulrich Conrad, Ludwigsburg-Osswell, Hans Dinger, Stuttgart, and Herbert Deutschmann, Stuttgart-Bad Cannstatt, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart, Unterturkheim, Germany
Filed Sept. 6, 1963, Ser. No. 307,237
Claims priority, application Germany, Sept. 15, 1962, D 39,850
14 Claims. (Cl. 123—55)



11. A blower assembly for internal combustion engines of V-type construction having engine intake means, comprising:

blower means including rotor means and provided with a substantially axial air inlet means into said rotor means and with substantialy radial air outlet means out of said rotor means, and substantially annularly-shaped diffusor means arranged about said rotor means,

air pressure tank means,

said air pressure tank means being provided with a lateral aperture for the air inlet means,

means forming an annular gap disposed radially adjacent said annularly shaped diffusor means, said annular gap means constituting a connecting passage joining said diffusor means and said air pressure tank means,

and air inlet line means extending from said air inlet means through said air pressure tank means,

said engine being provided with engine intake means,

said air pressure tank means being closed on the side thereof opposite said blower means and being provided with lateral aperture means for the connection with the engine intake means,

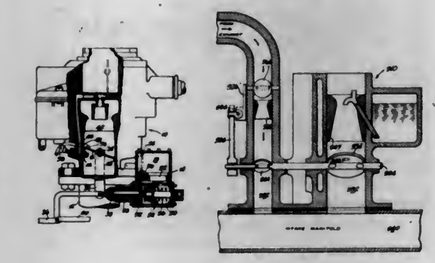
said air inlet line means including a bent conduit section which connects the air inlet means at the blower means with the lateral aperture provided in the air pressure tank means for the air inlet,

and said lateral aperture means and said air inlet aperture including said bent conduit section being disposed approximately opposite one another,

and an intermediate structural part inserted between said air pressure tank means and the engine intake means which is secured at the engine block and serves as bearer means for the air pressure tank means inclusive the flangedly connected blower means,

two blower means of substantially mirror-image-like arrangement being provided, one for each cylinder row, and both of said blower means being supported on said common bearer means between the cylinder rows of the engine.

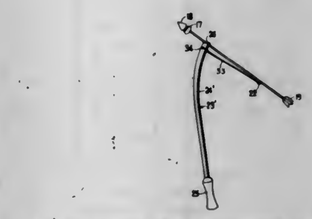
3,282,261
GASOLINE ENGINES
Earl Bartholomew, Birmingham, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
Filed Nov. 2, 1964, Ser. No. 408,135
26 Claims. (Cl. 123—119)



6. A method for keeping a gasoline engine firing during rapid deceleration from relatively high speeds while maintaining good engine braking, which method comprises checking the rate of throttle closure so that the reduction of the rate of mixture flow to the intake system is about 5 to 10% per second when the air flow rate reaches about 0.4 pound per hour per cubic inch displacement, limiting the shut-down of induction mixture flow to an air intake about 20 to 60% higher than the minimum for idling under no road load with 6° ignition advance before top center, retarding the ignition to reduce the engine power during the deceleration, and maintaining the flow of fuel throughout the deceleration.

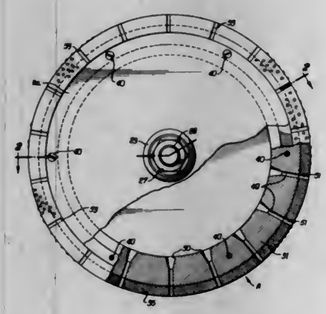
20. In an induction system for a gasoline engine having a throttle-controlled mixture intake and an exhaust recirculation intake, the improvement according to which the exhaust recirculation intake is throttled and such throttling is connected to cut off the recirculation when the mixture intake throttle is at idle and establish such recirculation at all other throttle positions except near maximum open position.

3,282,262
COMBINED LAUNCHER AND DART WITH DEPTH GAUGE
James C. Skinner, 3221 Sherman Court, Anderson, Ind.
Filed May 28, 1963, Ser. No. 283,819
6 Claims. (Cl. 124—5)



1. An amusement device embodying a dart, a launcher, said dart having a shaft, on one end of which is secured a triangular, solid rubber tip and a sponge rubber depth gauge movably mounted on the said shaft and behind the said tip, and the other end of the said shaft, on which is secured a plurality of stabilizing fins, the said shaft having means of temporary securement to the said launcher, the said launcher embodying a body member having its lower end terminated in a handle and the upper end adapted to receive the shaft of the said dart, thereby providing means of launching the said dart at a predetermined target by movements of one's hand.

3,282,263
FACE DISCHARGE CUTTING BLADES
Frank L. Christensen, Salt Lake City, and Lawrence Frear, Sandy, Utah, assignors to Christensen Diamond Products Company, Salt Lake City, Utah, a corporation of Utah
Filed July 29, 1963, Ser. No. 298,222
9 Claims. (Cl. 125—15)



1. In abrasive cutting apparatus: a rotatable supporting member; opposed disc members on said supporting member having inwardly opposed circumferentially continuous grooves at their marginal portions; means securing said disc members to said supporting member; and an annular abrasive cutting device between and secured to said disc members, said cutting device comprising a connector ring having oppositely outwardly directed portions in said grooves and a central leg portion projecting between said disc members and beyond the peripheries of said disc members, and a separate continuous rim matrix portion on opposite sides of said leg portion and projecting outwardly of the periphery of said leg portion and molded to said leg portion and overlying and disposed outwardly of the peripheries of said disc members and extending axially at least to the outer sides of said disc members, and diamond cutting elements embedded in the periphery and sides of said matrix portion.

3,282,264
BACK BRACE
Nicholas C. Connelly, Eaton Rapids, Mich., assignor to S. H. Camp & Company, Jackson, Mich., a corporation of Michigan
Filed Feb. 3, 1964, Ser. No. 341,915
6 Claims. (Cl. 128—78)

1. A body brace comprising, in combination

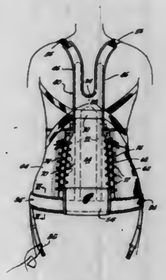
(a) flexible frame-covering means of an inverted T-shape configuration including a back-engaging portion having an upper end portion and longitudinally disposed lateral sides and a pelvic-engaging portion transversely disposed to said back-engaging portion having ends, said covering means being formed of flexible interconnected layers defining a frame-receiving pocket,

(b) a frame including a back portion and a pelvic band portion received within said covering means pocket,

(c) closure means defined on said covering means permitting said frame to be removed from said covering means pocket,

(d) right and left corset portions, each of said corset portions having a rear portion and a front portion, one of said corset portions being affixed at its rear portion to one of said covering means lateral sides, and the other of said corset portions being affixed at its rear portion to the other of said covering means lateral sides,

(e) fastening means mounted on said corset portions front portions adapted to interconnect said front portions,



(f) a right shoulder strap and a left shoulder strap, said straps each having first and second end portions, said shoulder straps first end portions being affixed to said covering means upper end portion,

(g) means slidingly connecting said straps to said covering means back engaging portion, said second end portion of said right shoulder strap being affixable to one of said corset portions and said second end portion of said left shoulder strap being affixable to the other of said corset portions, and

(h) cooperating means affixing said straps' second end portions to the associated corset portion.

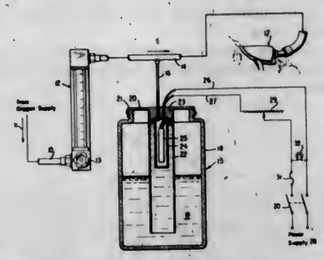
3,282,265
PLASTER OF PARIS PRODUCT AND PROCESS IMPROVEMENTS
David F. Smith, 120 Grove St., Bay Head, N.J.
No Drawing. Filed Feb. 10, 1965, Ser. No. 431,722
7 Claims. (Cl. 128—91)

1. A process for making a settable, dry plaster of Paris bandage which comprises in succession the steps of (1) making a slurry of powdered plaster of Paris in an aqueous solution containing from 4 to 20% by weight of NH_3 and 0.1 to 1% by weight of casein dissolved therein, while said slurry remains substantially unset; (2) impregnating the product of step (1) into crinoline in amount to yield a dry weight of from 205 to 255 grams per 4 inch by 5 yard strip thereof; (3) heating the product of step (2) at a temperature and for a time sufficient to substantially hydrolyze the dissolved ammonium caseinate to NH_3 and casein and to evaporate substantially all of the NH_3 and water so that a final, dry, settable bandage is obtained in which the set is not substantially retarded, but not heating substantially beyond the point where said dry bandage shows no substantial grittiness when wet with water after standing protected from moisture for 3 to 4 hours.

3,282,266
METHOD AND APPARATUS FOR HUMIDIFYING INHALATION MIXTURES
John M. Walker, Jr., Langhorne, Bucks County, Pa.
Filed Aug. 2, 1962, Ser. No. 214,393
14 Claims. (Cl. 128—209)

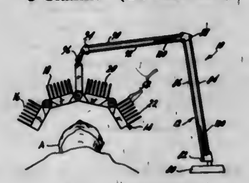
1. Humidifier apparatus comprising a conduit supplying an oxygen-rich gas stream intended for human respiration, means for metering the flow of said gas stream through said conduit, a steam generator, a capillary tube

leading from said steam generator to said conduit to inject a quantity of water vapor into said gas stream to form a transient molecularly dispersed mixture of said gas and water vapor, said mixture having a water vapor



content corresponding approximately to the water content of said gas stream when saturated at body temperature, and means for delivering said mixture for respiration before any substantial condensation of the water vapor in said mixture occurs.

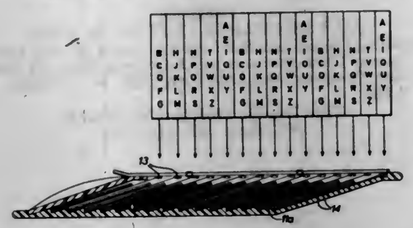
3,282,267
THERMOELECTRIC HYPOTHERMIA INSTRUMENT
William Eldus, 1 Bonnie Court, Spring Valley, N.Y.
Filed May 5, 1964, Ser. No. 364,936
8 Claims. (Cl. 128—399)



1. A hypothermia instrument comprising an adjustable stand, a thermo-electric assembly mounted on said stand and including a plurality of thermo-electric members hinged to each other, each thermo-electric member comprising an outer heat-transfer plate communicating with the atmosphere, a thermo-couple module having hot junctions and cold junctions, and means mounting the thermo-couple module flush against said heat-transfer plate with one of said junctions in heat-exchange relationship therewith, means for locking said thermo-electric members in adjusted hinged positions with the heat-transfer plates thereof at selected angles with relationship to each other, and means for connecting each of said thermocouple modules to a power source.

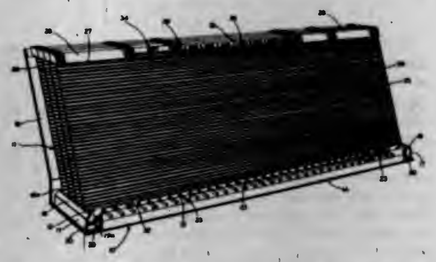
3,282,268
INDEX DEVICE
Egon Jacobs, 13 Rue Aldringer, Luxembourg, Luxembourg
Filed Mar. 29, 1965, Ser. No. 433,120
7 Claims. (Cl. 129—15)

1. A three-dimensional searching device comprising:
(a) a reference tray,
(b) a first index on an exposed face of said tray,
(c) said tray being provided with a plurality of sheets arranged in a stepped order, each of said sheets provided with a face portion for the receipt of index indicia, a first small portion of said face portion having a second index thereon, a second larger portion of said face portion further having a third index thereon,
(d) and note books positioned between successive ones of said sheets, said note books having a fourth index thereon corresponding to said first index on the face of said tray, wherein said first index corresponds to



a first letter of a word to be searched, said second index corresponds to a second letter, said third index corresponds to a third letter and said fourth index again corresponds to said first letter.

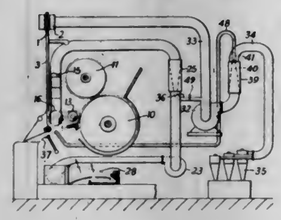
3,282,269
FILE CONSTRUCTION
Chauncey C. Raber and Charles Norris Smith, North Canton, Ohio, assignors to Diebold Incorporated, Canton, Ohio, a corporation of Ohio
Filed July 29, 1964, Ser. No. 385,855
1 Claim. (Cl. 129—16)



In visible record file construction of the type in which separators serving for main category indexing are mounted for limited forward and rearward pivotal movement in a frame; the combination of a frame having a bottom wall, upstanding end walls on the bottom wall, each end wall terminating in an inwardly angled flange having an inner edge, a raised platform on the frame provided with end walls, the platform end walls being spaced laterally inwardly from the frame end walls, the frame bottom wall and frame and platform end walls forming pivot channels extending from front to back of the frame along said end walls with the flanges laterally overhanging portions of said channels along the frame end walls; a separator having a flexible main panel provided with a lower edge, end edges and bottom corners between the lower and end edges; a pivot ball having a stem mounted on the panel extending downwardly of the panel end edge at each panel bottom corner with the ball spaced below the lower panel edge, each ball having a spherical surface portion located laterally outwardly of the panel end edge from which the ball stem projects, each ball having other spherical surface portions projecting forwardly and rearwardly of the separator panel; the pivot balls normally being located in the pivot channels pivotally mounting the separator in the frame, the lateral width of the channels between the frame and platform end walls being greater than the diameter of the pivot balls, the lateral spacing between the flange inner edges and the platform end walls being approximately equal to the diameter of said pivot balls,

and the spacing between the balls at the bottom corners of the separator being such that surface portions of the balls located laterally outwardly of the panel end edges normally underlie the flanges; and the separator being releasable from the frame by flexing the separator to decrease the spacing between the balls at the bottom corners of the separator to permit the balls to be withdrawn from the channels through the lateral spacing between the flange inner edges and the platform end walls.

3,282,270
TOBACCO-MANIPULATING APPARATUS
James Ernest Morris, Richmond, Va., and Ronald Harold Frederick Lee and Kenneth Francis Thomas, Deptford, London, England, assignors to The Molins Organisation Limited, a British company
Continuation of application Ser. No. 86,659, Feb. 2, 1961. This application May 4, 1965, Ser. No. 456,032
Claims priority, application Great Britain, Feb. 9, 1960, 4,587/60
1 Claim. (Cl. 131—84)



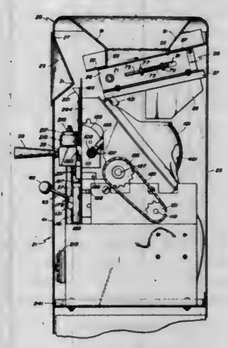
In a continuous rod cigarette-making machine comprising an air pervious conveyor, first dust extracting means, airflow producing means to draw air through the conveyor and supply the air to the first dust extracting means, means to form a continuous tobacco filler on the conveyor by supplying tobacco to a first length of the conveyor so that the tobacco filler is progressively built up on the conveyor and is conveyed away from the first length of the conveyor along a second length of the conveyor, said filler forming means comprising a duct extending upwardly to the first length of the conveyor and extending along the first length of the conveyor, whereby the aid which flows through the first length of the conveyor is initially drawn through the duct, means defining an inlet to the duct substantially parallel with the conveyor and of substantially the same length as the first length of the conveyor, and means to introduce tobacco into the inlet to the duct to be carried to the conveyor by the air flowing through the duct, a trimming device to remove surplus tobacco from the formed filler held to the second length of the conveyor by the air flowing therethrough to reduce the depth of the filler, the improvement comprising pipe means leading from the first dust extracting means and terminating adjacent to the inlet to the duct to convey the tobacco dust extracted by the first dust extracting means to the duct to introduce the dust into the air flowing through the duct, the pipe means terminating at a location along the duct for the dust to be carried by the air flowing through the duct into the portion of the tobacco filler which is retained on the conveyor after the surplus tobacco has been removed by the trimming device, a second dust extracting means, a conduit communicating with said first dust-extracting means and adapted to convey dust-laden air from the first to the second dust extracting means, said first dust-extracting means having an outlet means communicating with said pipe means and with said conduit, and valve means adjustable between a first position in which the dust-laden air from the first dust extracting means is directed into the pipe means to be conveyed to the duct, and a second position in which the dust-laden air is directed away from the pipe means and into the conduit to be carried therethrough to the second dust extracting means.

3,282,271
ADAPTOR FOR CIGARETTE HOLDERS
Michael Ambruch, 84 Coxeville, Beaver Meadows, Pa.
Filed Aug. 21, 1964, Ser. No. 391,236
1 Claim. (Cl. 131—198)



In a cigarette holder including a hollow stem and a mouthpiece on one end of said stem, a body substantially wholly within the other end of said stem, said body having an open outer end and an inner end and having a first bore of a diameter slightly greater than the diameter of a cigarette and a second bore opening into said first bore, there being a plurality of openings through the wall of said body outwardly of and adjacent to the inner end of said first bore and said body having grooves on the interior thereof extending from said openings to the exterior at the outer end of said body, said body having other grooves extending axially therealong on the exterior of said body from said openings to the inner end of said body, said other grooves, openings, and first named grooves providing means for cooling air to enter said stem to mix with smoke passing therethrough when a cigarette has an end portion seated in said second bore.

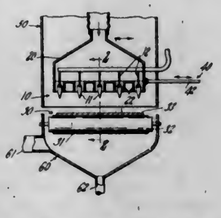
3,282,272
COIN HANDLING DEVICE
Raymond H. Griesemer, Park Ridge, and Wesley A. Golland, Franklin Park, Ill., assignors to Johnson Fare Box Company, Chicago, Ill., a corporation of Delaware
Original application Oct. 10, 1961, Ser. No. 144,075, now Patent No. 3,239,737, dated Mar. 8, 1966. Divided and this application Aug. 27, 1965, Ser. No. 483,189
4 Claims. (Cl. 133—1)



1. A sub-combination comprising:
(a) a conveyor adapted to be mounted in a coin handling device for conveying coins from one location therein to structure at a second location therein,
(b) a first roller and a second roller having an endless belt disposed around said rollers,
(c) means for adjusting the second roller to place tension on the endless belt,

(d) drive means for rotating one of said rollers,
(e) control means for said drive means, said control means adapted to permit the drive means to rotate the roller substantially 240° in a forward direction and in a reverse direction substantially 120° so that coins will not become jammed between the endless belt and the second location structure.

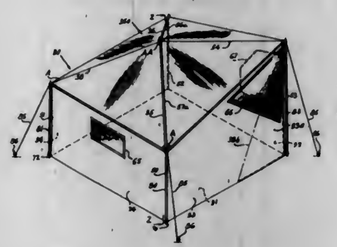
3,282,273
UNIFORM SPRAYING APPARATUS
Orin B. Johnston, 7428 Lyndale Ave. S., Minneapolis, Minn., and Charles M. Sheldon, 9404 E. Bush Lake Road, Bloomington, Minn.
Filed June 22, 1964, Ser. No. 376,632
5 Claims. (Cl. 134—102)



1. Equipment for pneumatic spraying of a liquid on workpieces comprising
an enclosing cabinet with a spraying chamber therein,
a sprayhead in said cabinet extending into said spraying chamber,
said sprayhead having means supplying thereto at a constant rate a liquid to be sprayed,
means supplying a propellent gas to said sprayhead at a constant rate to atomize and propel liquid therefrom into said spraying chamber in the form of a spray having a localized nonuniform spray pattern,
means reciprocating said sprayhead back and forth in a first direction normal to the spray from said sprayhead, transverse of said spraying chamber,
a holder supporting workpieces in said spraying chamber maintaining them at a fixed distance from said sprayhead in the direct path of liquid sprayed from said sprayhead,
said holder including means for moving said workpieces through said spraying chamber at a uniform rate in a second transporting direction normal to the spray from said sprayhead, transverse of said spraying chamber and substantially at right angles to said first direction of reciprocation concurrently with said reciprocation and
means in said spraying chamber for collecting gas and sprayed liquid from said sprayhead passing beyond said workpieces,
the said means reciprocating said sprayhead and said means for moving said workpieces in transporting direction concurrently being timed so that the localized non-uniform spray pattern reaching said workpieces is cancelled out and uniform distribution of the sprayed liquid is obtained on the workpieces.

3,282,274
TENTS
Victor L. Scott, 3105 Torrey Beach Drive, Fenton, Mich.
Filed Jan. 15, 1964, Ser. No. 337,815
2 Claims. (Cl. 135—3)

1. A tent structure comprising,
a generally rectangular floor portion,
a side wall portion extending generally vertically from adjacent each of the peripheral edges of the floor portion,
adjacent ones of the side wall portions having a substantially trapezoidal configuration with the longer sides thereof being disposed adjacent each other to define an apex,
one of said trapezoidal wall portions having an access opening therein disposed adjacent the apex together with a flap member for closing the access opening,
the remaining adjacent wall portions being of substantially rectangular configuration having a height substantially equal to the shorter sides of the trapezoidal wall portions,
said rectangular wall portions having the adjacent sides thereof defining a corner with each other and with the shorter sides of the adjacent trapezoidal wall portion with the corners terminating at a distance upwardly from the floor portion that is substantially less than the distance of the apex defined by the trapezoidal wall portions from the floor portion,



an elongate ridge pole member extending between two of the corners,
said ridge pole member being disposed diagonally relative to the floor portion and defining an obtuse angle at a location intermediate the end portions thereof, and
a top portion supported by the ridge pole member and extending generally outwardly therefrom and attached to the upper edge portions of each of the wall portions to define run off edges therealong,
said top portion having a plurality of ridge lines one of which is disposed substantially parallel to the floor portion and extends from the obtuse angle defined by the ridge pole member to the apex defined by the trapezoidal wall portions with the remaining ridge lines being generally downwardly inclined toward the floor portion from the obtuse angle defined by the ridge pole member whereby liquid may flow along the top portion in a direction away from the access opening toward the run off edges.

3,282,275
BEACH UMBRELLA
Morton Pearlstine, Cynwyd, Pa.
(1419 Old Welsh Road, Huntingdon Valley, Pa.)
Filed Feb. 12, 1965, Ser. No. 432,239
2 Claims. (Cl. 135—20)

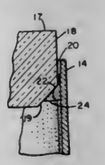
1. In a beach umbrella or the like having a substantially vertically positioned hollow support member, a plurality of generally radially arranged fabric supporting ribs each mounted at one end on the top of the member and an equal number of rods connected to the ribs and a collar mounted for vertical movement on the surface of the support member to open and close the fabric supporting ribs, apparatus for raising and lowering the collar to move the ribs into the desired open position comprising
an axial slot formed in the support member and extending a portion of its length,

an upper sprocket shaft extending transversely through the hollow member adjacent to its top end and a sprocket mounted on the shaft within the hollow member for independent rotation therein,
a lower sprocket shaft extending transversely through the hollow support member adjacent to its bottom end having a sprocket and handle fixedly mounted thereon, said sprocket being located within the hollow member and the handle being mounted outside thereof,
an endless chain formed in an extended loop and located within the hollow member, said chain being mounted on and connecting the top and bottom sprockets so that the chain moves as the lower sprocket is rotated,
an L-shaped rib collar support connecting the collar and the chain at a selected point along its vertical length, the horizontal leg of the support being attached at



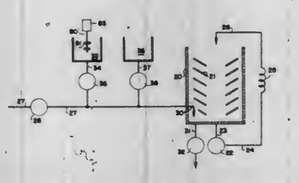
the end thereof to the chain and extending through the axial slot in the support member, the vertical leg being attached at the end thereof to the rib collar outside of the support member, and
a ratchet fixedly mounted on the lower sprocket shaft outside of the hollow support member and a pawl mounted proximate the ratchet for engagement therewith when in the engaged position, said pawl and ratchet being complementarily shaped so that when the pawl is in the engaged position it prevents rotation of the ratchet, shaft, bottom sprocket and chain in the direction which causes the collar to descend and the fabric supporting ribs to close, but upon disengagement of the pawl and rotation of the handle in the opposite direction the chain moves so as to raise the collar support and collar thereby opening the fabric supporting ribs of the umbrella into the desired position.

3,282,276
HIGH VACUUM VALVES
John T. Mark, Lancaster, Pa., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
Continuation of application Ser. No. 841,643, Sept. 22, 1959. This application May 5, 1965, Ser. No. 453,531
1 Claim. (Cl. 137—1)



A method of valving with a cylindrical, metal tube having opposite first and second open-ends and a plastically deformable metallic coating on its inside diameter between said ends, and a ceramic plug having an outer annular ridge, comprising instrumentally thrusting said plug telescopically into said tube elastically and plastically to deform a first portion of said tube extending from said ridge to said first open end and plastically to flow a first portion of said coating to form a first valve seat bulge between said tube and plug intermediate said ridge and said second open end, instrumentally removing said plug from said first open end, and instrumentally reinserting said plug telescopically into said tube toward said second open end elastically and plastically to deform a second portion of said tube extending from said first portion toward said second open end and plastically to flow a second portion of said coating to form from said first valve seat bulge a second valve seat bulge between said tube and plug intermediate said ridge and said second open end disposed toward said second open end from the position of said first bulge.

3,282,277
WATER CONDITIONING SYSTEM
Richard H. Hayman, 2534 Hallowell Road, Huntingdon Valley, Pa.
Filed Feb. 25, 1964, Ser. No. 347,214
7 Claims. (Cl. 137—3)

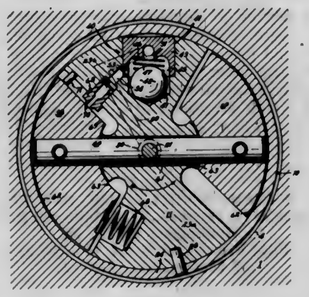


1. In a system for automatically removing through a blowdown valve a portion of chemically conditioned circulating water fed by makeup water from a makeup water line and circulated and recycled alternately through a flow circuit including cooling and heat exchange apparatus, and automatically maintaining a predetermined quantity of chemical in the circulating water; an impulse meter in the makeup water line for measuring the makeup water and sending electrical impulses as a function of the quantity of makeup water measured, an impulse counter for receiving the electrical impulses from the meter, a chemical feed pump for adding the chemical to the flow circuit, and a timer responsive to a preset number of impulses received by the impulse counter to actuate the blowdown valve and the chemical feed pump for a preselected amount of time.

3,282,278
MULTIPLE CONDITION SPEED CONTROL
Charles A. Kubilos, Oxnard, Calif., assignor to Abex Corporation, a corporation of Delaware
Filed Sept. 6, 1963, Ser. No. 307,158
4 Claims. (Cl. 137—26)

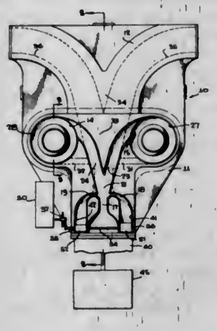
4. A speed control for a rotary hydraulic motor comprising,
a body having a circular cavity therein,
a hollow cylindrical casing rotatable within said cavity,
a rotor within said casing and mechanically secured to said casing for rotation therewith in said cavity,
a shaft in said body connected to at least one of said rotor and casing for rotating the same together in said cavity,
first and second ports provided by said rotor,
passage means for introducing pressure fluid through said body to flow sequentially through said ports to an outlet in said body,
radially movable means associated with one of said ports forming a variable orifice therewith responsive to the rate of rotation of said rotor for establishing a pressure drop across said orifice in accordance with said rate,

circumferentially movable means associated with the other of said ports forming a variable orifice therewith responsive to changes in the rate of rotation of said rotor for establishing a pressure drop across said orifice in accordance with said changes,



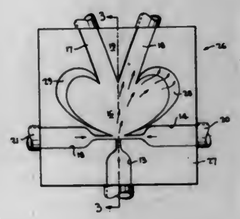
said circumferentially movable means being mounted for rotation relative to said rotor and casing about the axis of said rotor and being circumferentially surrounded by said casing.

3,282,279
INPUT AND CONTROL SYSTEMS FOR STAGED FLUID AMPLIFIERS
Francis M. Manion, Rockville, Md., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland
Filed Dec. 10, 1963, Ser. No. 329,439
8 Claims. (Cl. 137—81.5)



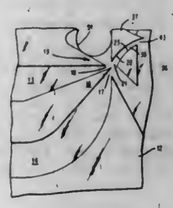
8. A fluid system for delivering a constant volume of fluid comprising a fluid amplifier having a power nozzle, a pair of output channels and a pair of control nozzles disposed on opposite sides of said power nozzle for deflecting a stream of fluid issued by said power nozzle as a function of a differential in fluid flow to said control nozzles, a different fluid passage connected to each of said nozzles, each of said passages having a fluid ingress opening, all of said ingress openings lying parallel to a common plane, means for supplying fluid flow across said plane and into each of said ingress openings, and means for differentially varying fluid flow through said control nozzles such that the total volume of flow across said plane is constant in the presence of a constant volume of flow supplied to said plane by said means for supplying.

3,282,280
PRESSURE EQUALIZED FLUID AMPLIFIER
Billy M. Horton, Kensington, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed Dec. 17, 1963, Ser. No. 331,326
5 Claims. (Cl. 137—81.5)



1. A pure fluid amplifier including a power nozzle for issuing a power stream from the orifice thereof, at least one control nozzle angularly disposed with respect to the power nozzle for issuing a control stream in interacting relationship with the power stream, an interaction chamber for receiving and confining the interacting power and control streams, opposed sidewalls forming said interaction chamber, said sidewalls set back substantially remotely from the orifice of said power nozzle so as to prevent boundary layer attachment between said sidewalls and the power stream, and a passage in said amplifier for interconnecting areas of said interaction chamber adjacent said sidewalls for equalizing the pressure between the power stream and said opposed sidewalls, said sidewalls adjacent the extremities of said passage being inclined in the direction of fluid flow into said passage.

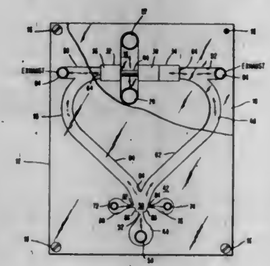
3,282,281
FLUID OR GATE
Trevor D. Reader, King of Prussia, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 23, 1963, Ser. No. 332,544
6 Claims. (Cl. 137—81.5)



1. A fluid OR gate comprising in combination; chamber means, first channel means terminating in an orifice in said chamber means, second channel means terminating in an orifice in said chamber means, said first and second channel means being in substantially adjacent relationship, wedge means disposed between said first and second channel means extending somewhat beyond said orifices into said chamber means for separating said orifices from each other for isolating the inputs to said first and second channel means from each other, output channel means having an opening in said chamber means disposed relative to said orifices to receive the fluid outputs therefrom, opening means in said chamber means on each

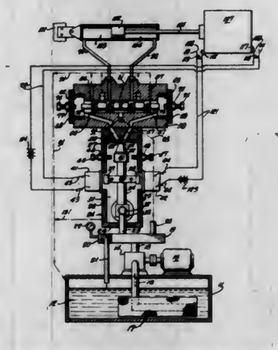
side of said output channel means connecting said chamber means to the atmosphere whereby fluid pressure build-up within said output channel means due to excess fluid is prevented.

3,282,282
FLUID POWER OUTPUT DEVICE
Edwin U. Sowers III, Silver Spring, Md., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 18, 1964, Ser. No. 345,779
3 Claims. (Cl. 137—81.5)



1. A fluid device which comprises:
a first source of relatively high energy utilization fluid stream;
a utilization channel having an inlet connected to said first source and an outlet which in turn is adapted for connection with utilization means;
an elongated valve seat channel intersecting said utilization channel, said valve seat channel having first and second fluid ports at first and second ends thereof, respectively;
a spool valve member having first and second end surfaces which is slideably mounted in said valve seat channel with its first and second end surfaces exposed to said first and second fluid ports, respectively, and movable by fluid pressure selectively applied to its first and second end surfaces to a first position at one end of said valve seat channel wherein said spool valve member blocks flow through said utilization channel of said utilization fluid stream and movable to a second position at the other end of said valve seat channel wherein said spool valve member permits flow through said utilization channel of said utilization fluid stream;
a second source of relatively low energy power fluid stream;
a digital type fluid amplifier including a power stream input channel connected to said second source, and at least first and second power stream output channels respectively connected with said first and second fluid ports;
control means connected with said fluid amplifier for selectively directly its said power fluid stream into either of said first or second power stream output channels; and
first and second exhaust channels coaxial with the valve seat channel and respectively communicating with said first and second power stream output channels at locations immediately exterior to the respective end of said valve seat channel so that said exhaust channels are continuously operable to exhaust fluid from said valve seat channel and said power stream output channels at all times irrespective of the position of said spool valve member in said valve seat channel.

3,282,283
HYDRAULIC REGULATING SYSTEM AND APPARATUS
Michio Takeda, Toyonaka, Japan (% Gocko Regulator Co., Ltd., Dojima Bldg., 50 Kinugasa-cho, Kita-ku, Osaka, Japan)
Filed Dec. 23, 1963, Ser. No. 332,682
16 Claims. (Cl. 137—83)

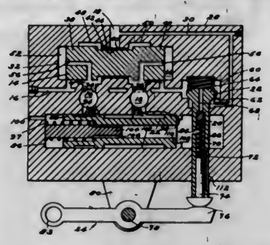


1. A regulating apparatus comprising a housing, a first hydraulic system and a second hydraulic system in said housing, a pivotable jet pipe near said housing, a source of hydraulic power for continuously transmitting hydraulic fluid under pressure and causing a jet stream of hydraulic fluid to emerge continuously from a free end of said jet pipe, a first receiving hole for said first hydraulic system, a second receiving hole for said second hydraulic system, said first and second receiving holes having equal diameters and being located slightly spaced apart from each other, a truncated conical nozzle on the free end of said jet pipe having a flat end from which said jet stream is discharged, the apex of said nozzle being normally positioned closely opposite and intermediate said two receiving holes for projecting said jet stream into said two holes simultaneously, a first bleed control port for said first hydraulic system, a second bleed control port for said second hydraulic system, both of said bleed control ports being substantially smaller than said respective first and second receiving holes whereby back pressure is induced in said first and second hydraulic systems during the flow of said jet stream to cause reflex reverse hydraulic streams to flow out of said receiving holes and to impinge upon opposite respective sides of said conical nozzle with sufficient force normally to maintain the free end of said jet pipe in equilibrium by hydraulic action only at a neutral position intermediate both said holes, and a valve positioned in said housing between said first and second hydraulic systems and cooperating with said first and second bleed control ports for varying the amount of hydraulic fluid being drained through said respective bleed control ports.

3,282,284
FLUID PRESSURE CONTROL VALVING
Dennis Harris, Birmingham, John Rankin, Warwickshire, and Jan Szambir, Birmingham, England, assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Mar. 18, 1963, Ser. No. 265,730
Claims priority, application Great Britain, Mar. 19, 1962, 10,347/62
14 Claims. (Cl. 137—110)

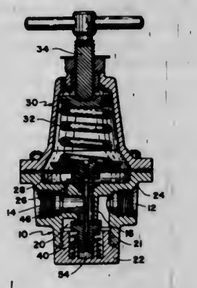
1. Fluid pressure control means comprising, in combination, a plurality of alternating high and low pressure fluid sources, high and low pressure fluid lines, and conduit means connecting the fluid from said sources to said

fluid lines, selective means in said conduit means connecting the highest pressured fluid source to said high pressure line and the remaining of said fluid sources to said low pressure line, other means operable at times to con-



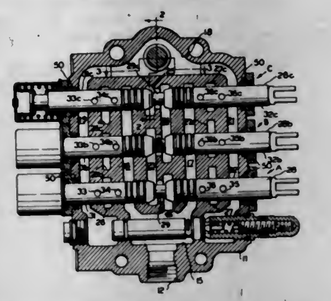
nect said sources to each other and maintain said sources connected, and selectively operable means to disconnect said sources from each other to restore the highest pressured fluid to said high pressure line.

3,282,285
AIR LINE PRESSURE REGULATOR
Herbert G. Hanson, Arlington Heights, Dan E. Gorman, Mount Prospect, and Edward W. Veres, Arlington Heights, Ill., assignors to The Bastian-Blessing Company, Chicago, Ill., a corporation of Illinois
Filed July 12, 1963, Ser. No. 294,671
6 Claims. (Cl. 137—116.5)



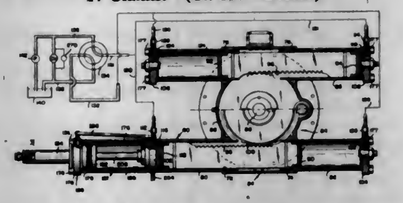
1. In a pressure regulator, a body having inlet and outlet conduits and a diaphragm compartment in communication with the outlet conduit for equalizing pressures therebetween, a valve seat defining the entrance of said outlet conduit and having a predetermined diameter, a back cap having a well of a diameter slightly less than said predetermined diameter and disposed coaxial with and valve seat, a valve head slidably and sealingly mounted in said well for movement towards and away from said valve seat, means for balancing pressures on opposite sides of the valve head over opposing areas the size of said well area including a conduit for placing said well below said valve head in communication with fluid pressure that is effective upon one of the sides of said diaphragm, said valve head conduit having a shoulder therein disposed within the confines of the well, a valve stem pin loosely engaging said shoulder at one end and extending from said outlet conduit into said diaphragm compartment at the other end through an opening in the body therebetween, motion snubbing means frictionally interengaging said body and pin in said opening to dampen any axial oscillation of the pin, and a diaphragm sealing said compartment having a safety relief opening closed by said other end of the pin while said inlet and outlet conduits are in communication with each other through said valve seat.

3,282,286
DISTRIBUTING VALVE
James L. Glidden, Toledo, Ohio, and Robert C. Westveer, Kalamazoo, Mich., assignors to The New York Air Brake Company, a corporation of New Jersey
Filed July 17, 1964, Ser. No. 383,310
3 Claims. (Cl. 137—119)



1. In a distributing valve of the type including inlet and exhaust ports, a plurality of valving units provided with service ports to which and from which they control the flow of fluid, an exhaust manifold connected with the exhaust port and to which the valving units direct fluid from their service ports, and a supply manifold that directs fluid from the inlet port to the valving units, the improvement which comprises
(a) a by-pass passage interconnecting the supply and exhaust manifolds;
(b) a check valve responsive to the pressure differential between the two manifolds and arranged to permit flow through the by-pass passage from the exhaust manifold to the supply manifold but to block flow in the reverse direction; and
(c) a variable flow restrictor interposed in the connection between the exhaust manifold and the exhaust port and operatively connected with the check valve, the operative connection being so arranged that the degree of restriction afforded by the flow restrictor increases and decreases, respectively, as the check valve opens and closes.

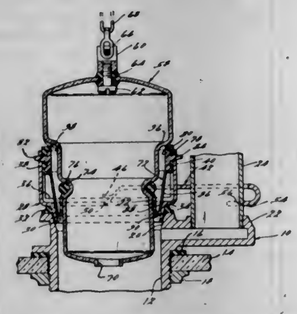
3,282,287
AUTOMATIC VALVE LUBRICATING DEVICE
Herman H. Fowler, Kearney, Nebr., assignor to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 9, 1963, Ser. No. 301,157
17 Claims. (Cl. 137—246.13)



1. An apparatus for effecting automatic lubrication of a plug valve of the type wherein a plug is mounted on a seating surface in a valve body for rotation between angularly spaced apart fully valve closed and opened positions where it blocks and provides for fluid flow through said body, said apparatus comprising
(a) means for supplying pressurized lubricant to said seating surface, and

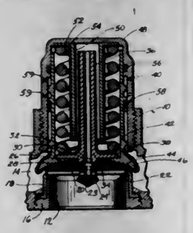
(b) means responding to rotation of said plug to block the supply of lubricant to said seating surface during movement of said plug between a predetermined intermediate position and said opened position, said intermediate position being located angularly between said fully closed and opened positions.

3,282,288
PRESSURE-RESPONSIVE CONTROL VALVE
William L. Sheppard, Romulus, Mich., assignor of one-half to Edwin J. Lukas, Dearborn, Mich.
Filed July 3, 1961, Ser. No. 121,438
24 Claims. (Cl. 137—315)



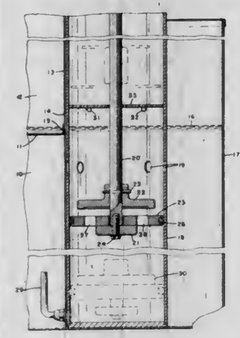
16. In a flush valve assembly for association with an existing valve base in a closet tank in lieu of an existing ball valve, the combination of a generally tubular valve seat member seatable on the existing valve base, a float coaxial with said valve seat and movable axially with respect thereto, a flexible diaphragm interjoining said valve seat and said float, and means for securing said valve seat member to the valve base.

3,282,289
HOT GAS RELIEF VALVE
Ralph L. Vick, Granada Hills, Calif., assignor to The Bendix Corporation, North Hollywood, Calif., a corporation of Delaware
Filed Sept. 28, 1964, Ser. No. 399,621
11 Claims. (Cl. 137—375)



1. A hot gas relief valve comprising a casing defining an inlet passage extending inwardly from the exterior of the casing and defining a valve seat element at the inner end of said passage and an outlet passage extending from said seat element to the exterior of said casing;
a poppet element within said casing movable between open and closed positions with respect to said seat element to interconnect and disconnect said passages respectively;
said elements having cooperating annular contact portions contacting each other when said poppet is in its said closed position;
said poppet element comprising an outer portion remote from said contact portion including a cylindrical member open at its outer end and connected with said contact portion at its inner end by flow-restricting means, said cylindrical member having a radially extending spring-retaining surface and being at least partially coated with a layer of heat-insulating material;
a cap member adjustably fastened to said casing including an annular spring-retaining surface and a cylindrical baffle member of high heat transfer material substantially enclosing said cylindrical member and cooperating therewith to provide an elongated path for gas flow between said inlet passage and the exterior of said cylindrical baffle member; and
a spring interposed between said spring-retaining surfaces whereby the inlet gas pressure tending to open said poppet element is opposed by gas pressure acting against said outer portion and the force of said spring.

3,282,290
SOLVENT-CIRCULATING SYSTEM
Harry Szczepanski, 755 Oakleigh NW., Grand Rapids, Mich.
Filed Jan. 30, 1964, Ser. No. 341,347
4 Claims. (Cl. 137—565)

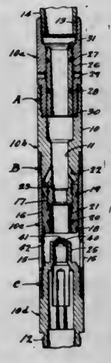


4. In combination with a cleaning chamber, a pressurized system for inducing circulation of a solvent, said system comprising:
a tank disposed to receive liquid accumulating in said cleaning chamber;
a dam disposed at said opening to maintain a predetermined depth of liquid in said chamber; and
a pump for inducing flow of liquid from said tank and into said cleaning chamber, said pump including:
a cylinder having an inlet communicating with said tank;
a head normally secured to said cylinder, said head having an opening for receiving a piston rod,
a piston rod mounted for reciprocation in said cylinder and cylinder head opening;
means for reciprocating said piston rod;
a piston assembly secured to the normally lower extremity of said piston rod; and
a barrier plate disposed within said cylinder above said piston assembly and traversed freely by said piston rod, said cylinder having support means for said barrier plate providing freedom of movement of said barrier plate above said support means.

3,282,291
CIRCULATING AND BLEED VALVE STRUCTURE FOR DOWNWELL PUMPS

Peter S. Bloudoff, Whittier, Calif., assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio

Filed Mar. 30, 1964, Ser. No. 355,750
3 Claims. (Cl. 137—608)



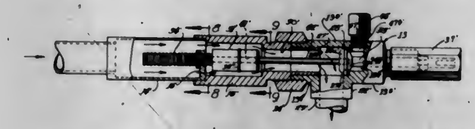
2. In a circulating valve for insertion in a pressure supply conduit of a fluid actuated downwell pump, said conduit having a flow passage which will pass a ball of predetermined diameter, said valve comprising: a tubular valve body having a central passage therethrough with a pressure inlet at its top end and an outlet at its bottom end, said tubular body having sidewalls with at least one circulating port through the sidewalls at a point between said inlet and outlet, said housing having a first partition between said inlet and said circulating port, said partition having a downwardly extending annular boss on its lower end with a central flow passage through said partition and boss, said partition having an upwardly facing valve seat surrounding said central flow passage and against which a ball of predetermined size received through said inlet will seat, said housing also having a second partition positioned below said first partition and said circulating port with an upwardly extending annular boss positioned opposite said circulating port and spaced from said downwardly extending boss, a tubular valve having an upper position with its lower end above said circulating port and said upwardly extending boss and with its upper end telescoped over said downwardly extending boss to form a seal between said sidewalls of said tubular valve body and said downwardly extending boss, said tubular valve being slidable to a lower position clear of said downwardly extending boss and telescoped over said upwardly extending boss to form a seal between said upwardly extending boss and said sidewalls of said valve body above said circulating port to close off said circulating port, and means for communicating pressure upstream from said valve seat to the portion of said central passage between said sidewalls of said valve body and said downwardly extending boss for forcing said tubular valve from said upper position to said lower position.

3,282,292
COMBINATION BREAK-AWAY SERVICE VALVE ASSEMBLY

Anthony M. Castello, Wichita, Kans., assignor to The Coleman Company, Inc., Wichita, Kans., a corporation of Kansas

Filed Aug. 24, 1965, Ser. No. 482,199
5 Claims. (Cl. 137—614.15)

1. Combination break-away and service valve assembly for insertion in the refrigerant transfer conduit of a refrigeration system, comprising a pair of hollow casing sections arranged in axial alignment, releasable coupling means sealingly connecting the adjacent ends of said sections to provide a break-away joint, the inner portions of each of said sections internally providing a valve seat adjacent said joint on one side thereof, rotatable valve means mounted within each of said sections for movement respectively into and out of engagement with the seat provided by its section, drive shaft means interconnecting said valve means for simultaneously opening and closing said valve means by applying rotational movement to one of said valve means, one of said casing sections having an intermediate portion outwardly of the valve seat therein providing a lateral port in the side wall thereof defining a laterally-extending flow passage for connection to one end of said transfer conduit, the outer end of the other of said casing sections being connectable

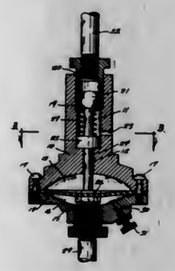


to the other end of said transfer conduit, said one casing section also having an outer portion providing a service port communicating with the interior thereof, a removable closure for said service port, a valve seat provided within said one casing section between said service port and said lateral port, the said valve means in said one casing section being a double acting valve seating agains said last-mentioned valve seat in its outer position and against the first-mentioned valve of said one casing section in its inner position, and means for rotating said last-mentioned valve means extending through said casing outer portion and externally thereof, said valve means in the other of said casing sections being a cylindrical valve having an axial range of seating positions with respect to the said seat provided for coaction therewith, said cylindrical valve being driven by said drive shaft means.

3,282,293
MEANS FOR EXITING A FLUID FROM A COMPARTMENT

Lloyd D. Barger, 6833½ Douglas, Des Moines, Iowa

Continuation of application Ser. No. 776,093, Nov. 24, 1958. This application May 23, 1963, Ser. No. 282,812
5 Claims. (Cl. 137—614.19)



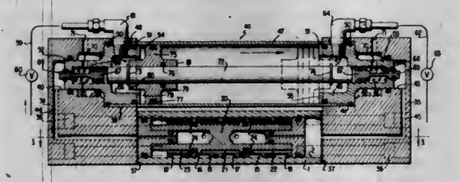
1. A fluid releasing means, comprising in combination:
a housing having a well formed in its upper area and a cavity formed in its lower area,
said housing having a bore formed therein extending between said well and said cavity,
a valve seat at the upper end of said well,

a supply conduit operable to transmit fluid from a source external said housing, through said valve seat into said well at times,
a valve normally closing said valve seat to block the path of fluid into said well at times,
said housing having a single discharge port formed therein for communicating said well to the atmosphere, intermediate the length thereof,
a rod slidably extended through said bore from said cavity to said well; and
being movable to raised and lowered positions with respect to said cavity, said rod engageable with said valve to dislodge it from seating engagement with said valve seat when in a raised position,
a piston valve on said rod, slidable in said well below said discharge port when said rod is in a lowered position,
and means operable within said cavity to slidably reciprocate said rod between its raised and lowered positions,
said piston valve operable to simultaneously close said discharge port when said rod dislodges said valve from its seating engagement with said valve seat thereby causing said well to be in communication only with said supply conduit and being operable to simultaneously open said discharge port when said rod moves to its lowered position to permit said valve to engage said valve seat thereby causing said well to be in communication only with the atmosphere through said discharge port.

3,282,294
SELF-RECYCLING TIME DELAY VALVE

John P. Corniello, New Haven, Conn., assignor of one-half to Rocco Iezzi, New Haven, Conn.

Filed Oct. 2, 1964, Ser. No. 401,035
11 Claims. (Cl. 137—624.14)

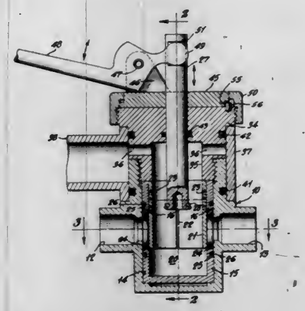


1. In combination with a slide valve means of the type adapted to alternately connect and supply fluid pressure to a pair of outlet ports, from an inlet port adapted for connection to a source of fluid pressure when fluid pressure is alternately released from opposite ends of the slide valve, means connecting opposite ends of said slide valve means to said inlet port, a pair of bleeder valve means connected to opposite ends of the slide valve means, longitudinally shiftable means connected between said pair of bleeder valve means to open one bleeder valve of said pair when longitudinally shifted, a pair of stop surfaces connected in spaced relation on said longitudinally shiftable means, piston means connected for sliding movement on said longitudinally shiftable means between said pair of stop surfaces, and means connected to the pair of outlet ports for alternately supplying fluid pressure to opposite sides of said piston means for sliding said piston means along said longitudinally shiftable means into contact with corresponding stop surfaces to thereby shift said longitudinally shiftable means to alternately open opposite bleeder valve means of said pair to release pressure from one end of the slide valve means and move it to the opposite state.

3,282,295
MIXING VALVE

Rudolph A. Skriletz and Frank R. Holycross, Jr., Marysville, Ohio, assignors to The Murray Corporation of America, New York, N.Y., a corporation of Delaware

Filed May 6, 1963, Ser. No. 278,243
5 Claims. (Cl. 137—625.17)



1. A mixing valve comprising
a body having a bore formed therein,
a plurality of fluid inlet ports formed in said body and communicating with said bore,
a fluid outlet port extending from said bore to the exterior of said body,
a sleeve stationarily disposed within said bore and defining therewithin a cylindrical mixing chamber, said sleeve having openings formed therein communicating between said inlet ports respectively and said mixing chamber,
a hollow cylindrical valve member movably mounted in said chamber to control flow of fluids from said inlet ports to said outlet port, said valve member having ported areas selectively movable into communication with said sleeve openings,
an operating stem extending axially from said cylindrical valve member to a point outside said body,
an inlet seal O-ring freely and replaceably supported within each sleeve opening extending around the perimeter of the opening with which it is associated, each said inlet seal O-ring being pressed between the wall of said bore and the exterior of said valve member to seal against fluid leakage between said sleeve and said cylindrical valve member, and
a static seal O-ring disposed between said bore and said sleeve and replaceably mounted in a groove on the exterior of said sleeve circumscribing each of said sleeve openings and the inlet seal O-ring associated therewith, said circumscribing static seal O-ring for each sleeve opening being pressed between said bore and said sleeve to prevent cross leakage between said inlet ports and leakage to said outlet port from said inlet ports.

3,282,296
BALANCED VALVE HEAD ASSEMBLY

Clarence O. Glasgow, 2620 S. Yorktown, Tulsa, Okla.

Filed June 12, 1964, Ser. No. 374,576
7 Claims. (Cl. 137—625.34)

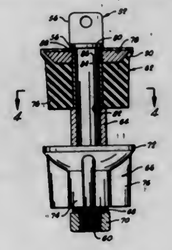
1. A valve head assembly comprising:
an elongated stem having a circumferentially extending flange located on one end portion and having the other end portion threaded;
a first valve head formed from resilient material located on said stem adjacent said flange;
a tubular spacer member on said stem adjacent said first valve head;

a second valve head formed from a resilient material located on said stem and spaced from said first valve head by said spacer member;

said valve heads including:

a generally frusto-spherical upper portion, a cylindrical portion extending from said frusto-spherical portion,

a plurality of radially projecting guide members extending from said frusto-spherical portion and along said cylindrical portion,

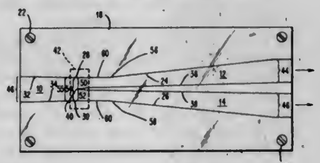


a relatively rigid reinforcing member imbedded in said frusto-spherical member, and

a tubular member extending axially through said cylindrical portion and in supporting engagement with said reinforcing member; and,

a nut engaging the threads on said stem, whereby said valve heads and spacer member are retained on said stem.

3,282,297
FLUID CHANNEL DIVIDER
Peter Bauer, Germantown, Md., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed July 30, 1964, Ser. No. 386,158
12 Claims. (Cl. 138—39)



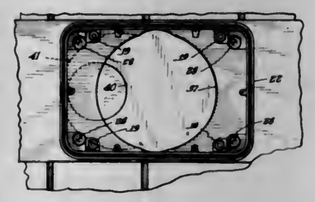
1. A fluid channel divider which comprises:

(a) an entrance fluid channel with an input flow area at one end for receiving a fluid stream, a slightly smaller output flow area at its opposite end, and a wall surface therebetween without abrupt changes in contour so as to insure full channel flow throughout its length;

(b) sharp divider tip means located at said entrance channel opposite end and facing upstream for dividing said entrance channel output flow area into a plural number N of smaller output flow areas; and

(c) a plural number N of exit fluid channels without abrupt changes in wall contour, each having one end thereof smoothly and unabruptly joined both to said entrance channel opposite end and to said divider tip means such that each exit channel input flow area is coextensive with a different one of the said entrance channel smaller output flow areas, and wherein a critical region, in which fluid tends to separate from channel walls, extends immediately upstream and downstream from said divider tip means; with each exit fluid channel further commencing, at a first point downstream and spaced apart from said critical region, to gradually diverge from a flow area equal to its own said input flow area towards a larger output flow area at its opposite end.

3,282,298
HEADERDUCT FOR CELLULAR FLOOR
James W. Hudson, Lexington, Ky., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed May 14, 1963, Ser. No. 280,233
1 Claim. (Cl. 138—92)

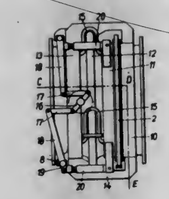


In a multi-cellular underfloor duct system including a plurality of loosely-joined sections of multi-cellular floor, each section having a plurality of cells the centers of which are equally spaced from one another by a predetermined distance but the loose joining of said sections permitting cumulative errors over a plurality of sections in the spacing of the center of an end cell of one of said sections from the center of the adjacent end cell of an adjacent section as compared with said predetermined distance, the improvement comprising a tubular headerduct of generally rectangular cross section, said headerduct having a plurality of access openings in a top wall portion thereof, the centers of said access openings being equally spaced from one another longitudinally of said headerduct by an exact multiple of said predetermined distance, and an elongated substantially rectangular access unit secured to said headerduct over one of said access openings with the longer dimension thereof extending longitudinally of said headerduct, said longer dimension of said access unit being greater than the width of said headerduct, and said access unit being readily removable whereby said top wall portion of said headerduct may be cut away to enlarge said one of said access openings lengthwise of said headerduct to a dimension lengthwise of said headerduct greater than the width of said headerduct to compensate for said cumulative errors in the spacing of the centers of said cells due to said loose joining of said sections of multi-cellular floor and said access unit may then be secured back in position to cover said enlarged access opening.

3,282,299
CONTROL SYSTEM FOR SLIDABLE GATES IN GAS PIPES
Karl Steiner, Homburg-Bruchhof, Germany, assignor to Dinglerwerke Aktiengesellschaft, Zweibrucken, Germany, a corporation of Germany
Filed Dec. 22, 1964, Ser. No. 420,286
Claims priority, application Germany, Dec. 27, 1963, D 43,268
5 Claims. (Cl. 138—94.3)

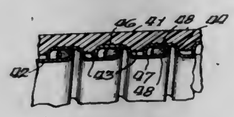
1. In combination with a gas pipe, a gate system including a casing enclosing the pipe at a predetermined location, said casing including two rigidly interconnected outer stationary sections perpendicular to the pipe axis and a medial section adapted to the shifted between said stationary sections in a direction parallel with the axis of the pipe, a gate including an open section and a solid section, adapted to be shifted transversely, said gate being inserted between one stationary section of the casing and the movable section of the casing, and adapted to be

shifted between a position for which the open section of the gate registers with the inside of the pipe and a second position for which the solid section of the gate registers with the inside of the gate, packing means inserted between each side of each section of the gate and the cooperating sections of the casing, a compensator carried inside the casing between the medial section and the other



stationary section thereof U-shaped torsion springs fitted closely around the periphery of the compensator between said other and medial sections of the casing and urging the medial shiftable section of the casing against the shiftable gate, the pressure exerting surfaces of said springs extending in substantial registry with the packing means provided on either section of the gate registering with the pipe.

3,282,300
JACKETED METAL HOSE AND METHOD OF PREPARATION
Harold W. Kinander, Roselle, Ill., assignor to Electri-Flex Company
Filed Oct. 16, 1963, Ser. No. 316,747
11 Claims. (Cl. 138—139)



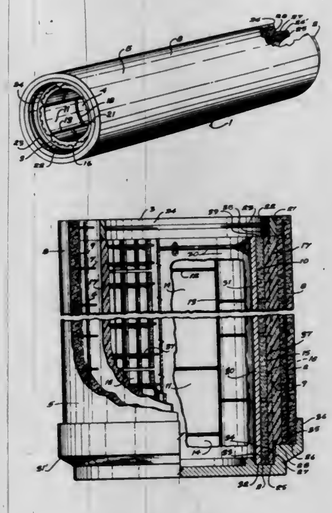
1. Jacketed strip wound flexible metal hose having axially interlocking helical convolutions, said convolutions being axially movable when said metal hose is in an unjacketed state, said convolutions being spaced apart when said metal hose is in its jacketed and unstressed state by a distance between about 0.20 and about 0.80 millimeters, and a seamless jacket of plastic material fitting snugly about the outer surface of said hose, the inner surface of said jacket having ridges penetrating into the interstices between said convolutions whereby relative axial movement between said metal hose and said plastic jacket is prevented and axial movement of said metal hose together with said jacket is permitted in both compression and extension.

3,282,301
LINED PIPE CONSTRUCTION
Elmer R. Ligon, Pittsburg, Kans., assignor to W. S. Dickey Clay Manufacturing Company, Kansas City, Mo., a corporation of Delaware
Filed June 15, 1964, Ser. No. 375,091
6 Claims. (Cl. 138—175)

1. A pipe structure comprising:

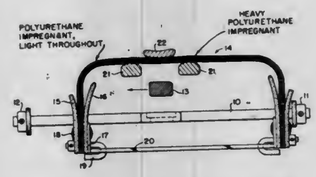
(a) an outer shell of concrete having an external and an internal surface,

(b) an inner cylindrical shell spaced radially inwardly of said outer shell and including spaced apart liner plates forming grooves therebetween, said liner plates each having an inwardly directed flow surface and an outer surface, and



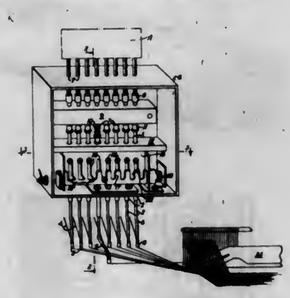
(c) an intermediate integral shell of resilient closed cell foamed resin located between and bonded to said liner plate outer surfaces and said outer shell internal surface and substantially filling the space therebetween, said resin shell protruding between said liner plates and substantially filling said grooves.

3,282,302
MOLDED CHECK STRAP
Chester R. Messer, Concord, N.H., assignor to Page Belting Company, Concord, N.H., a corporation of New Hampshire
Filed Apr. 19, 1965, Ser. No. 448,971
3 Claims. (Cl. 139—161)



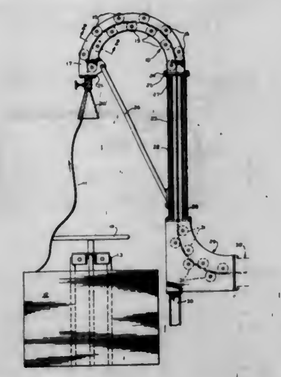
1. A check control comprising a guide rod in combination with a woven fabric loop perforated at both ends to slide upon the guide rod, impregnated throughout its length with a stiffening compound, molded to present right angle bends at a fixed distance from its perforated ends correspoding to the distance of the guide rod from the path of picker stick oscillation and having an excess stiffening impregnant in an intermediate area as compared to the remainder of the loop whereby the loop is reciprocated on the guide rod without appreciable flexing.

3,282,303
WEFT STOP MOTIONS FOR SHUTTLELESS LOOMS
Victor Marie Joseph Ancet and Marius Fayolle, dit Marcel Fayolle, Lyon, France, assignors to Brelic International Inc., a company of Panama
Filed Dec. 20, 1962, Ser. No. 246,264
Claims priority, application France, Jan. 3, 1962, 42,162, Patent 1,309,084
6 Claims. (Cl. 139—370)



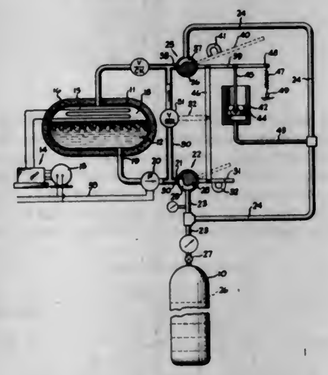
1. A weft stop motion device for a shuttleless loom arranged to operate using weft thread from a plurality of weft supplies, said stop motion device including a plurality of rotatable weft supply rods, one for each weft supply, an electrical switching device common to all of said supply rods, means for operating said switching device by rotation of said supply rods about their longitudinal axes, said weft threads causing said rotation upon increase of tension therein during insertion of a pick, said stop motion device being arranged to stop said shuttleless loom in the absence of an increase in weft tension due to non-operation of said electrical switching device.

3,282,304
WIRE UNCOILING DEVICE
Fred K. Coleman, Los Alamitos, Calif., assignor to American Pipe and Construction Co., Monterey Park, Calif., a corporation of California
Filed Nov. 12, 1963, Ser. No. 322,718
6 Claims. (Cl. 140—147)



1. A device for uncoiling wire from packaged coils comprising: a plurality of sheaves rotatably supported in an arcuate arrangement, the periphery of each sheave providing points of contact along a curved pathway, said sheaves being disposed on both sides of said pathway to retain the wire within the grooves of said sheaves, and means for guiding the wire into the groove of the first contacted sheave; said sheaves having a total torque substantially less than the torque of a single sheave having the radius of said curved pathway.

3,282,305
CYLINDER FILLING APPARATUS
John P. Antolak, Chicago, Ill., assignor to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 20, 1964, Ser. No. 346,319
4 Claims. (Cl. 141—5)

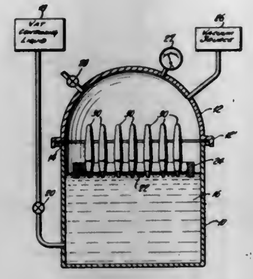


3. For use in a system for charging a container with a desired quantity of liquid which at normal atmospheric temperature rapidly becomes gas unless stored in a sealed container under a pressure considerably above that of the atmosphere, the process which includes,
(a) a pumping liquid from a refrigerated supply of said liquid under pressure into a sealed container until there is developed within the container a predetetermined gas pressure significantly higher than the pressure of the supply,
(b) utilizing the pressure differential between the supply and container to vent the gas from the container to the supply to permit evaporation of a portion of said liquid contained in the container and reduce the temperature and vapor pressure of the liquid in the container substantially below said predetermined pressure but not below the pressure of the supply liquid,
(c) and continuing to introduce the liquid and vent the gas until the charging of the container has been completed.

3,282,306
PROCESS AND APPARATUS FOR THE CHARGING OF CONTAINERS
Marvin S. Greenhut, Massapequa, N.Y., assignor to Pastemaster, Inc., Seaford, N.Y., a corporation of New York
Filed Apr. 2, 1964, Ser. No. 356,721
8 Claims. (Cl. 141—7)

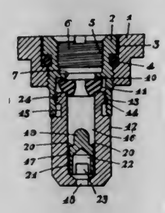
1. The process for charging with liquids a plurality of containers each having a single opening therein comprising the steps of:
maintaining said containers inside a vessel, containing said liquid, with their respective openings in continuous communication with said liquid regardless of its level;

evacuating said vessel and the air in said containers through said liquid; and



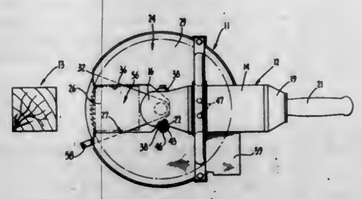
allowing said vessel to reachieve ambient pressure whereby the liquid is sucked up into said containers.

3,282,307
VALVE FOR A LIQUEFIED GAS FUEL LIGHTER
Tsuneo Harikae, 12/21 2-chome, Asakusa-Kotobuki-cho, Taito-ku, Tokyo, Japan
Filed Feb. 7, 1964, Ser. No. 343,348
Claims priority, application Great Britain, Jan. 27, 1964, 3,473/64
10 Claims. (Cl. 141—295)



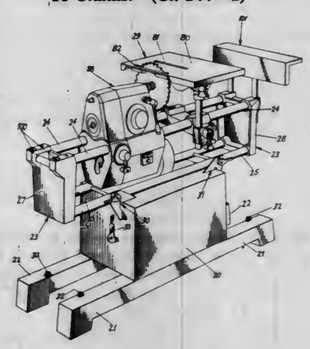
10. A valve for a liquefied gas fuel lighter having a fuel reservoir which is refilled from a filling vessel having a spout, said valve comprising a tubular member for receiving the spout of said filling vessel, said tubular member having an inlet passage for inflow of liquefied gas fuel under pressure, a first internal annular radially inwardly extending projection in said tubular member, a second internal annular projection in said tubular member axially spaced from said first projection, said tubular member having an exhaust passage for connecting said reservoir with atmosphere and having an outlet opening between said projections, an annular closure member disposed in said tubular member, said annular closure member being movable into engagement with said first projection for closure of said exhaust passage and movable out of engagement with said first projection by said spout for opening of said exhaust passage, and a movable member disposed in said tubular member freely movable inwardly under the action of pressure of inflowing fuel to open said inlet passage and freely movable outwardly under the action of fuel pressure in said reservoir after completion of a filling operation to engage said annular member and effect closure of said inlet and exhaust passage against escape of fuel from said fuel reservoir.

3,282,308
STUD CUTTING ADAPTER
John S. Sprague, San Leandro, Calif. (Rte. 1, Box 334, Oroville, Calif.)
Filed Nov. 3, 1964, Ser. No. 408,622
7 Claims. (Cl. 143—43)



1. A stud cutting device comprising a substantially circular housing having a substantially rectangular guideway extending radially thereinto to a position beyond the axis thereof, a pair of upstanding ears projecting from said housing on opposite sides of said guideway adjacent the aixs of said housing, said ears having bores through their free ends, a substantially U-shaped handle secured to said housing in alignment with said guideway and on the opposite side of said housing therefrom, said handle having a spider depending from the web thereof, said spider having bores therethrough, a rotary power tool including an elongated body having a head with a rotary drive shaft depending therefrom, said head having taps in the sides thereof, said body having taps in the top thereof rearwardly of said head, said tool disposed with said body aligned with and oppositely directed from said guideway and said drive shaft extending coaxially into said housing, said taps in the sides of said head aligned with said bores of said ears, said taps in the top of said body aligned with said bores of said spider, bolts extending through said bores and threading said taps, and a circular saw blade coaxially disposed in said housing and secured to said shaft.

3,282,309
MULTI-PURPOSE POWER TOOL
Henry M. Parker and Frank H. Field, Cincinnati, Ohio, assignors to Magna American Corporation, Cincinnati, Ohio, a corporation of Ohio
Filed Jan. 29, 1964, Ser. No. 341,041
16 Claims. (Cl. 144—1)

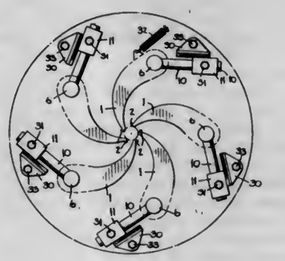


1. In a multi-purpose power tool including a headstock assembly, a spindle, and a work table assembly, the improved universal mounting comprising:
(a) a base;

(b) machinery mounting means adapted to mount at least said headstock assembly and said work table assembly, said mounting means being longer than said base; and

(c) spaced apart releasable pivot means securing said mounting means to said base adjacent the end edges of said base whereby said machinery mounting means may be selectively secured in a horizontal position, a vertical position adjacent one end of said base, or an inverted vertical position adjacent the other end of said base.

3,282,310
PRUNING MACHINE
Stig Emil Uno Morenius and Karl Bernt Harry Morenius, both of Postbox 425, Sundsvall, Sweden
Filed Sept. 28, 1962, Ser. No. 229,258
Claims priority, application Sweden, Sept. 30, 1961, 9,739/61
13 Claims. (Cl. 144—2)



10. In a debarking machine of tbe hollow-head type in which a log is fed through a rotatable hollow-head so as to be debarked, a debarking and pruning tool comprising:

an arm having a first end and a second end, said arm being pivotally mounted at said second end to said head,

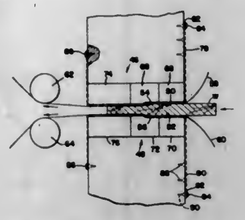
means for resiliently pressing said first end of said arm against whatever log may be fed through said head,

a debarking edge at said first end of said arm, said debarking edge being disposed so that there is a plane containing said debarking edge which is substantially parallel to the axis of rotation of said head, and

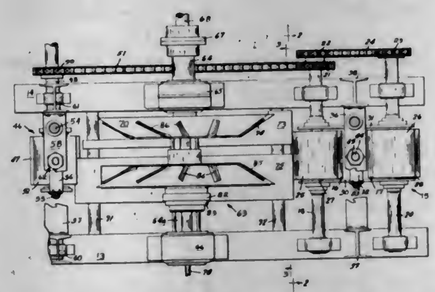
a pruning edge near said first end of said arm, the line of said pruning edge being skew to the line of said debarking edge, said pruning edge being disposed so that there is a plane containing said pruning edge which is substantially parallel to the axis of rotation of said head.

3,282,311
GRID BEARING SHEET
Carroll H. Van Hartesveldt and Buddy D. Wahl, Toledo, Ohio, assignors to Hoover Ball and Bearing Company, Ann Arbor, Mich., a corporation of Michigan
Filed Dec. 11, 1962, Ser. No. 243,946
11 Claims. (Cl. 144—2)

1. A surface compressing mechanism comprising a platen having a stepped forming surface, a travelling carrier sheet, and a flexible thin planar bearing sheet stationarily located between the platen and carrier sheet including wires arranged in a screen-like unit having a high tensile strength in a longitudinal direction with respect to the travel of the carrier sheet, said bearing sheet having a relatively soft bearing material coating said wires and impregnating the interstices between the wires for slidingly engaging the travelling flexible sheet carrying the product along the stepped forming surface.



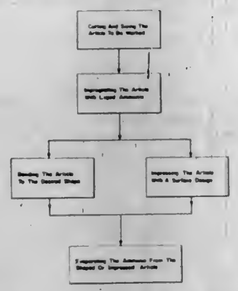
3,282,312
CHIPPER KNIFE AND APPARATUS
George M. Standal, Chemainus, British Columbia, Canada
Original application May 27, 1960, Ser. No. 32,346. Divided and this application Mar. 9, 1964, Ser. No. 350,368
6 Claims. (Cl. 144—220)



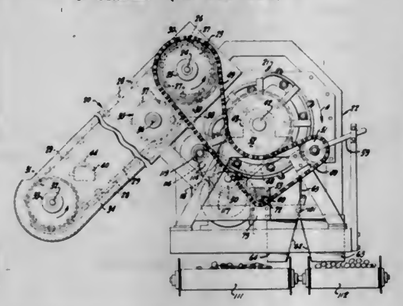
2. The combination with a cutting head having a face surface and an angular side surface intersecting said face surface and extending outwardly therefrom, the periphery of said face surface and side surface being provided with a plurality of angular openings intersecting at the joinder thereof; of a plurality of knives mounted individually within each of said openings, comprising a first blade portion having a straight beveled cutting edge, a second blade portion formed integrally with said first blade portion at an angle thereto and having a straight beveled cutting edge intersecting the beveled edge of said first blade portion, the beveled edges of the two portions terminating in a single plane which is perpendicular to both of said portions, and mounting means clamped to the cutting head adapted to hold the knives in place with said beveled edges projecting beyond the surfaces of the crowned face and conical sides.

3,282,313
METHOD OF FORMING WOOD AND FORMED WOOD PRODUCT
Conrad Schuerch, Syracuse, N.Y., assignor to Research Corporation, New York, N.Y., a non-profit corporation of New York
Filed Nov. 24, 1964, Ser. No. 413,551
7 Claims. (Cl. 144—327)

1. A process for modifying wood which includes the steps of impregnating the wood with substantially anhydrous ammonia in an amount equal to at least 10% by weight of the dry wood in excess of the amount molecularly equivalent to the moisture content of the wood, forming the impregnated wood to a desired configuration and removing the ammonia from the formed wood.



3,282,314
DRUPE PITTING METHOD AND APPARATUS INCLUDING SEGREGATING MEANS FOR PITTED AND UNPITTED FRUIT
John D. Cantoni, Alfred W. Gerrans, and Robert W. Selleck, Santa Clara, Calif., assignors to Sunsweet Growers, Inc., San Jose, Calif., a corporation of California
Filed June 17, 1965, Ser. No. 464,653
9 Claims. (Cl. 146—238)



1. In a machine for removing the pit from drupaceous fruit, apparatus for discriminating between pitted and unpitted fruit and segregating one from the other which comprises:

(a) a probe mounted for movement into engagement with said pit, said probe having a collar;

(b) resilient means mounted for application against said collar for urging said probe into said engagement;

(c) means for propelling said fruit along a path during said engagement;

(d) means for altering said path of said fruit depending upon the position of said probe during said engagement, said means including a lock-out lever mounted for actuation by said collar and a deflector plate operatively associated therewith; and

(e) segregated receiving means for receiving said pitted and unpitted fruit respectively.

8. A method for discriminating between pitted and unpitted fruit and segregating one from the other which comprises:

(a) pushing the pit from said fruit into pitting die,

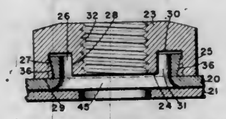
(b) holding said pit in said die,

(c) directing a probe and index toward said pit in a direction opposing the direction of entry of said pit into said die to thereby engage said pit,

(d) propelling said fruit along a path, and

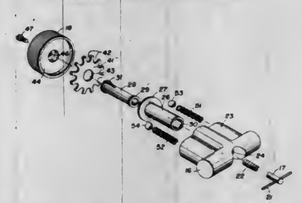
(e) obstructing said path of said fruit depending upon the position of said index during said engagement to thereby segregate pitted from unpitted fruit.

3,282,315
NUT MECHANICALLY FUSED IN PLACE
Victor F. Zahodiakin, Summit, N.J.; Tania Zahodiakin, administratrix of said Victor F. Zahodiakin, deceased
Filed July 9, 1964, Ser. No. 381,491
3 Claims. (Cl. 151—41.73)



1. A cylindrical nut having a discal body and two extensions concentric therewith and with each other, one said extension being an annular rim in outer surface continuation of the periphery of the discal body and having a bottom end in a plane parallel to said discal body, and the other said extension comprising a hollow hub internally screw threaded and having an end in a plane substantially at and parallel to the first said plane, and said nut having an annular groove between said rim and hub and said groove being open at the bottom face of the nut, said hub having an external cylindrical surface intersecting said end of the hub perpendicular to said plane thereat, thereby providing a right-angle shearing corner reenforced by the full thickness of said hub, said rim having channels in the internal periphery thereof directed parallel to the axis of said nut and substantially trapezoidal in cross-section with the smaller trapezoidal dimension nearer to the axis being less than the trapezoidal dimension more remote from the axis, the radially outward faces of the channels being parallel to said axis, said channels being separated successively each from the next by an interposed projection substantially rectangular in cross-section normal to the axis and having radially inward faces tapering toward the axis with direction of taper converging below said bottom face of the nut.

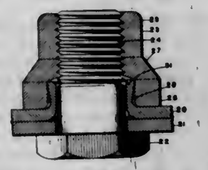
3,282,316
HOLD-DOWN FOR AVIATION EQUIPMENT WITH FRICTION NON-TURN DEVICE
Wallace Robert Griswold, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Mar. 29, 1965, Ser. No. 443,436
3 Claims. (Cl. 151—41.5)



1. A fastening means for attaching a first member to a second member comprising a threaded shaft, means for pivotably attaching one end of the shaft to the first member, a T-shaped member formed with an opening through which the shaft extends, a lug on the second member against which the T-shaped member bears, a threaded knob receivable on the shaft, a depression formed in the face of the knob and a detent member within said depression against which the T-shaped member bears, an opening formed in the T-shaped member, a spring and ball

received in the opening such that the ball engages the detent member of the knob, means for limiting the outward motion of the ball so it is retained in the opening and is movable relative to the T-shaped member when the detent is engaged, a sleeve extending through the T-shaped member and the shaft extending therethrough and means on either end of the sleeve to attach the sleeve to the knob and to the T-shaped member such that limited longitudinal motion of the knob relative to the T-shaped member may occur.

3,282,317
RECEPTACLE MECHANICALLY FUSED IN PLACE
Victor F. Zahodiakin, Summit, N.J.; Tania Zahodiakin, administratrix of said Victor F. Zahodiakin, deceased
Filed Feb. 15, 1965, Ser. No. 436,415
9 Claims. (Cl. 151—41.73)



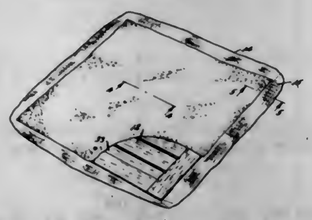
1. In combination, a flat sheet metal basal member and a receptacle constituted as a body of revolution about an axis, said receptacle at opposite ends having bores of different size, one smaller than the other, said bores meeting coaxially with an intervening flare, the smaller bore being screw threaded and the larger bore having longitudinal serrations projecting inwardly thereof toward the axis, said screw threads having major and minor diameters and said serrations having major and minor diameters, the minor diameter of the serrations being substantially larger than the major diameter of the screw threads, the end edge of said receptacle having said larger bore engaging against said flat basal member, a neck upstanding from said basal member within the larger bore of the receptacle therearound, and said serrations interlocked at the outer periphery of said neck, said basal member providing a hole therethrough coaxial to said bores commensurate with the major diameter of said screw threads for receiving and guiding a bolt therethrough to synchronize the threads of the bolt coaxially with the screw threads of said receptacle to screw thereinto.

3,282,318
CHAIN
Kare Jörgen Nylund, Mandal, Norway, assignor to Norsk Kjettingindustri A/S Alf Nosted, Mandal, Norway, a corporation of Norway
Filed Dec. 11, 1963, Ser. No. 329,656
Claims priority, application Norway, Dec. 14, 1962, 146,821; May 15, 1963, 148,679
4 Claims. (Cl. 152—243)



1. Chain devised during service to lie against an even base, for example, a snow chain for motor tires, said chain comprising a plurality of links, each link having a pair of long sides and a pair of ends, each link having one long side bent upwards from its middle resting on the base in direction of both ends, while the curved ends of the link are each bent in such a way that from the transition from the said one long side they incline downwards toward the ends of the link's other long side resting against the base, the links in the chain being arranged alternately with the first-mentioned long side lying on the one or other side of the chain.

3,282,319
TIRE PATCH
Ernest E. Barnett, Salem, Va., assignor to Myers Industries, Inc., Akron, Ohio
Filed Aug. 13, 1965, Ser. No. 479,422
10 Claims. (Cl. 152—367)



1. A patch for use in the repair of pneumatic tires made of rubber-like material and embedded cord comprising
(a) a layer of flat strips laid in edge to edge spaced parallel relation,
(b) said strips being made of a fabric including parallel cords running generally lengthwise of the strip embedded in an elastomer material, and
(c) means joining said individual flat strips and forming a substantially flat unitary patch.

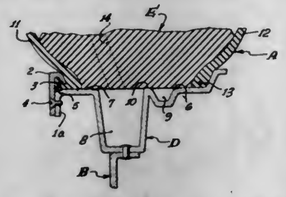
3,282,320
TIRE REPAIR PATCH
Eugen F. Klouza, New York, N.Y., assignor to German Stahlgruber Otto Gruber & Co., Munich, Germany, a company
Filed Mar. 8, 1965, Ser. No. 438,024
10 Claims. (Cl. 152—370)



1. A tire repair body for repairing punctures in tires consisting of a pair of layers, said layers being a first layer of non-vulcanized material adapted to remain uncured and plastic after said body is inserted into the puncture of the tire, a second layer of vulcanized material joined to said non-vulcanized layer for supporting said non-vulcanized layer, and said layers being folded over with said vulcanized layer exposed and said non-vulcanized layer innermost.

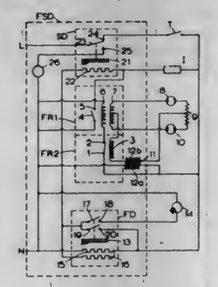
3,282,321
RIMS FOR SAFER PNEUMATIC WHEEL ASSEMBLY
Tilden William Johnson, 5630 Sawtelle Blvd., Culver City, Calif.
Filed Jan. 11, 1965, Ser. No. 424,745
6 Claims. (Cl. 152—379)

6. An internal tire buffer composed of flexible material having means to buffer pneumatic tires and reduce wheel drop characterized by having in combination a thin reinforced membrane coated with air sealing material capable of extending under the bead of a tubeless tire and terminating in a substantial bead outside said tire whereby said outside buffer bead can be engaged in a hooked shaped rim removable flange whereby said tubeless tire and said buffer are secured against lateral dirt



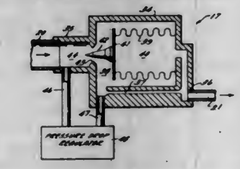
wedging and curve negotiation lateral displacement of said tire and buffer from said removable flange.

3,282,322
FLAME SUPERVISION DEVICES FOR BURNERS
Fritz Ludwig Felix Steghart, Gerrard's Cross, and Peter Leslie Kershaw, Slough, England, assignors to Satchwell Controls, Ltd., Slough, Buckinghamshire, England, a corporation of Great Britain
Filed July 13, 1965, Ser. No. 471,675
Claims priority, application Great Britain, July 24, 1964, 29,767/64
7 Claims. (Cl. 158—28)



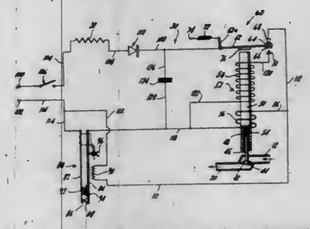
1. A flame supervision device for a burner, the device comprising two detectors each adapted to provide an electrical signal when exposed to radiation from the flame, a first relay means adapted to respond to the signal from at least one of the detectors when flame is present to prevent interruption of supply of fuel to the burner, and a second relay means adapted to respond to a difference between the signals from the two detectors departing from a predetermined value to cause the device to interrupt the supply of fuel.

3,282,323
VISCOSITY RESPONSIVE DEVICES
Herbert Katz, Peabody, Arnold Mandius Heitmann, Swampscott, and Theodore Ruggles Timble, Marblehead, Mass., assignors to General Electric Company, a corporation of New York
Filed Apr. 14, 1965, Ser. No. 448,030
16 Claims. (Cl. 158—36)



1. For use in combination with a gas turbine engine, means for delivering fuel to said engine,
means for controlling delivery of fuel thereto and including,
a main fuel control,
a viscosity flow control providing a path parallel to said main fuel control for delivery of fuel to said engine,
said viscosity fuel control including means directly responsive to viscosity of the fuel for modulating the amount of fuel delivered during ignition of said engine in a predetermined relation to the viscosity of the fuel and in increasing amounts with increasing viscosity.

3,282,324
AUTOMATIC FUEL IGNITION AND HEAT DETECTION SYSTEM
Pat Romanelli, Bronx, N.Y., assignor to Ram Domestic Products Company, Englewood, N.J., a partnership
Filed Oct. 11, 1965, Ser. No. 494,376
10 Claims. (Cl. 158—126)

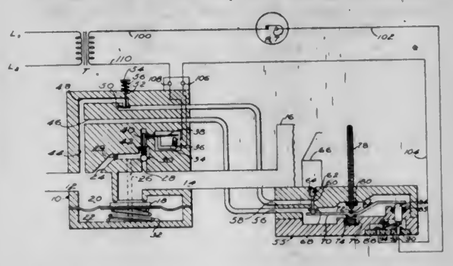


1. An automatic fuel ignition and heat detection system for gas fired devices having a source of electrical power, a burner provided with an outlet, and a normally closed fuel valve for controlling the flow of gas into said burner, said system comprising variable resistance means in proximity to said burner outlet for igniting gas flowing therethrough and to receive the heat of the flame emitted by said burner, electromechanical means responsive to a first predetermined amplitude of current for opening said fuel valve, electrical circuit means connecting said variable resistance means in series with said electromechanical means across said power source for energization and heating of said variable resistance means when said circuit means is completed, said electromechanical means being responsive to a second, higher amplitude of current for maintaining said fuel valve in open condition and reducing the electrical energization of said variable resistance means, said variable resistance means being responsive to increases in temperature for initially maintaining the current in said circuit below said predetermined amplitude and for increasing the current in said circuit to said first predetermined amplitude when the variable resistance means is energized to a temperature sufficient to ignite the burner gas, said variable resistance means being also responsive to the heat of the ignited burner gas to increase the current in said circuit to said second amplitude of current.

3,282,325
BURNER CONTROL APPARATUS
Wilbur F. Jackson, Rolling Hills, and John W. Wright, Long Beach, Calif., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed June 3, 1964, Ser. No. 372,220
3 Claims. (Cl. 158—129)

1. Apparatus for controlling a flow of fuel in a fuel burning system having main and pilot burners, the combination comprising a main control device casing having an inlet adapted to be connected to a fuel source and an outlet adapted to be connected to the main burner, main valving means in said casing having electric actuator means for controlling a fuel flow therethrough, conduit

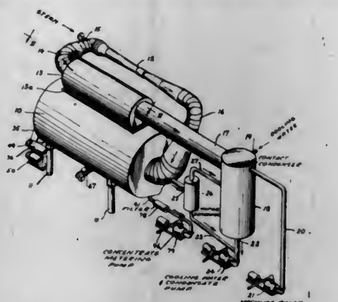
means for a flow of pilot burner fuel bypassing said main valving means, said conduit means having a first branch defining a regular pilot flow and a second branch defining a reset pilot flow, a pilot control device housing disposed adjacent the main burner and having a pair of inlet passages and an outlet passage, one of said inlet passages communicating with said first branch and the other of said inlet passages communicating with said second branch, means mounting the pilot burner on said housing in communication with said outlet passage, valve means in said housing movable between a first position wherein the said one inlet passage is in communication with said outlet passage and a second position wherein the said one inlet passage is closed off from communication with said outlet passage, flame responsive means having a portion dis-



posed adjacent the pilot burner and a movable portion disposed in said housing, lever means in said housing having an intermediate portion operatively connected to said movable portion, one end of said lever means being operatively connected to said valve means, switch means in said housing operatively connected to the other end of said lever means, said lever means being operative in one direction to close said switch means and to move said valve means to its first postion and in another direction to open said switch means and to move said valve means to its second position, and electric circuit means electrically connecting said switch means to said electric actuator means for actuating said main valving means and said valve means in response to movement of said flame responsive means.

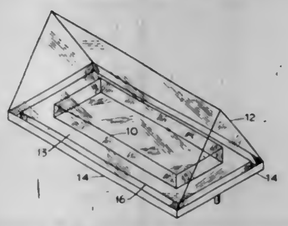
3,282,326
EVAPORATING METHOD AND APPARATUS THEREFOR OF THE ROTATING DRUM TYPE
Erik Jensen, Soborg, and Peter Harald Pedersen, Holte, Denmark, assignors to Novo Terapeutisk Laboratorium A/S., Copenhagen, Denmark
Filed July 27, 1964, Ser. No. 385,404
Claims priority, application Denmark, Mar. 17, 1964, 1,364/64
16 Claims. (Cl. 159—12)

1. A process for evaporating a liquid from a solution comprising the steps of throwing a thin layer of said solution onto the lower portion of the exterior surface of a substantially cylindrical heat conducting drum from a container extending below said drum for a substantial part of the length thereof, the exterior surface of said drum being provided with a multiplicity of relatively deep axially extending corrugation, said solution being thrown onto the drum over a substantial part of the length thereof, concurrently rotating said drum about a substantially horizontal axis, subjecting the outer surface of said drum to vacuum and supplying heat to the interior of said drum to vaporize a portion of the solution supplied to the drum, collecting an unvaporized portion of said solution from said drum and returning it to said container, feeding fresh solution to and removing unevaporated solution from said container at points spaced apart in the longitudinal direction of the drum and repeatedly throwing said collected solution and said fresh solution



onto said drum as the drum rotates, the liquid level in said container being lower than the surface of the drum onto which said solution is thrown.

3,282,327
SOLAR EVAPORATION WITH FLOATING POLYMERIC-CARBONACEOUS MATERIAL
John F. Hardy, Andover, Merrill E. Jordan, Walpole, and Avrom I. Medalia, Newton, Mass., assignors to Cabot Corporation, Boston, Mass., a corporation of Delaware
Filed Apr. 8, 1965, Ser. No. 446,673
15 Claims. (Cl. 159—47)



1. A process for improving the evaporation rate of an aqueous solution which is exposed to solar radiant energy which comprises applying to the surface of said solution a water permeable coating comprising a polymeric material associated with a finely-divided carbonaceous material comprising above about 35% by weight elemental carbon and having an average particle diameter of less than about 5 microns.

3,282,328
MAGNETIC SHOWER CURTAIN HOLDER
Victor G. Mushro, Grosse Pointe Park, Mich., and John H. Dawson, 13370 Freeland Ave., Detroit, Mich.; said Mushro assignor to said Dawson
Filed Dec. 3, 1963, Ser. No. 327,727
2 Claims. (Cl. 160—349)

1. A magnetic shower curtain holder comprising a hollow plastic body having a front face engageable with the outer face of a shower curtain at its bottom edge; and a rear face adapted to engage the interior wall of a metal based tub;

a snap button projecting from the front face engaging the curtain;

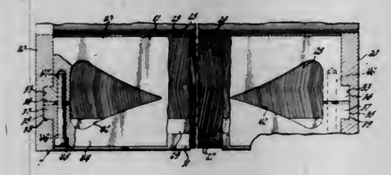
an elongated flexible fastener strap as a part of and extending from said body adapted to engage around and under the edge of the curtain, including an apertured end portion interlocked over said button and portions of said curtain surrounding said button; and

a permanent magnet nested and retained within said body for cooperative securing registry with the inner



wall of said tub, the securing of said magnet including an internal flange at the rear of said body retainingly engaging edge portions of said magnet.

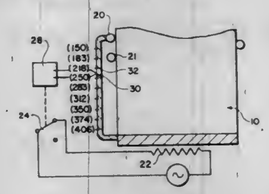
3,282,329
REGENERATOR MATRIX
Laurence B. Haig, Berea, Ohio, Robert J. Moffat, Palo Alto, Calif., and James R. Mondt, Warren, and Paul T. Vickers, Royal Oak, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 26, 1964, Ser. No. 392,183
6 Claims. (Cl. 165—8)



2. A rotary regenerator matrix of the radial-flow type comprising annular coaxial mutually spaced rims, a plural number of spacers extending between and connected to the rims, the spacers being distributed around the circumference of the rims to provide a rigid structural connection between the rims and define with the rims heat transfer cells, and heat transfer material porous to flow of fluid in a radial direction through the material mounted in the said cells, characterized by rim and spacer structure in which end faces of the spacers bear against the inner faces of the rims, the rims have circumferential dovetail slots in their inner faces, the ends of the spacers bear dovetail tenons engageable in the said slots, and the ends of the spacers are bifurcated so that the tenons are reducible for insertion into the slots and are elastically expanded to lock within the dovetail slots.

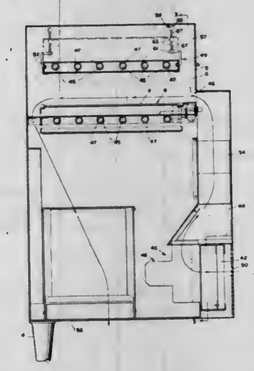
3,282,330
DIFFUSION PUMP SAFETY CONTROL
Arthur A. Landfors, Sharon, Mass., assignor to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts
Filed Nov. 4, 1964, Ser. No. 408,945
1 Claim. (Cl. 165—11)

In a diffusion pump comprising a vertically arranged tubular wall, a boiler means at the bottom of said pump for vaporizing a working fluid within the tubular wall, means for cooling the wall above the boiler means whereby a first heat transfer path is created along the tubular wall between the boiler means and the cooling means, and a temperature responsive means comprising a temperature responsive sensing element and signal output means responsive to said element to provide an output signal varying as a function of temperature sensed by the element, the improvement comprising elongated thermal conductor means, connecting the boiler and cooling means and arranged in parallel with the tubular wall structure



to provide a second heat transfer path in parallel with the said first heat transfer path provided by the tubular wall structure between said boiler means and cooling means, the said temperature sensing element of said temperature responsive means being connected to said conductor means to detect temperature in a zone of the conductor means between its connections to the boiler and cooling means.

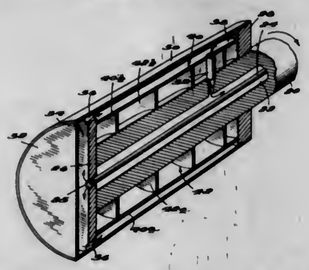
3,282,331
APPARATUS FOR RECONSTITUTING FROZEN FOODS
Lawrence H. Foster, 11 Ogden St., Scarsdale, N.Y., and Harold C. Bush, Hudson, N.Y.
Filed Apr. 16, 1964, Ser. No. 360,254
13 Claims. (Cl. 165—12)



1. In a unit for thawing frozen foods, the combination of, a cabinet, a refrigeration system including an evaporator to maintain the air in said cabinet at a predetermined temperature, means to supply impulses of radiant heat to food within said cabinet to raise the temperature of the food from a subfreezing temperature to above the thawing temperature with each impulse of heat being delivered to the food in a time cycle which includes a period during which heat delivered to the outer surface of the food passes to the interior of the food, and conveyor means to pass the food through said cabinet in a

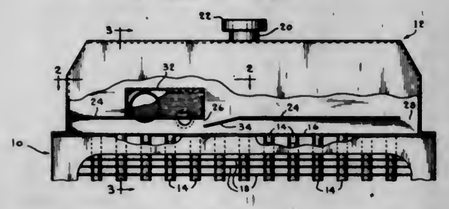
controlled manner, said conveyor means being arranged to move the foods at a predetermined rate and for a selected distance past said means to supply impulses of radiant heat whereby said conveyor means acts as timer means to determine the time during which the food is subjected to the impulses of radiant heat.

3,282,332
TOW-TRANSPORTING ROLL
Charles Valentine Burdick, Jr., Seaford, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Oct. 30, 1963, Ser. No. 320,139
2 Claims. (Cl. 165—89)



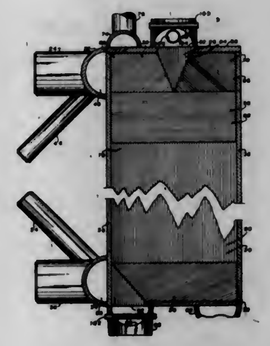
1. A tow-transporting roll comprising: a driven shaft having an axial bore; a pair of spaced, circular, plate members fixed to said shaft; a cylindrical shell fixed to the peripheries of said plate members and extending outwardly beyond the end of said shaft; a closure for the open end of said shell; a tubular partition extending between and attached to said plate members in spaced relationship to said shaft, said shell and said partition defining an uninterrupted annular space extending substantially through the length of said partition; a first conduit means extending through said bore to the space within said closure, the outer plate member having radially spaced, peripheral notches communicating with said annular space; and a second conduit means extending from said partition to said bore.

3,282,333
RADIATOR CONSTRUCTION
Robert G. Jensen, Hales Corners, Wis., assignor to Perfex Corporation, Milwaukee, Wis., a corporation of Wisconsin
Continuation of application Ser. No. 251,643, Jan. 15, 1963, which is a continuation of application Ser. No. 760,948, Sept. 15, 1958. This application July 26, 1965, Ser. No. 477,355
8 Claims. (Cl. 165—72)



1. In a radiator construction;
a core;
a top tank mounted over said core;
a flat, horizontally disposed imperforate baffle in said top tank overlying said entire core and forming an upper chamber and a lower chamber;
an inlet conduit for said top tank communicating with said lower chamber to direct flow of liquid coolant to said lower chamber and then through said core;
a first opening in said baffle adjacent said inlet conduit;
a second opening in said baffle located remotely from said first opening; and
diverting means for creating a pressure differential between said first and second openings to thereby cause a small portion of the liquid coolant to flow through one of said openings in the baffle along the top surface of said baffle to the other of said openings and then through said other openings to said lower chamber.

3,282,334
HEAT EXCHANGER
William H. Stahlheber, La Crosse, Wis., assignor to The Trane Company, La Crosse, Wis., a corporation of Wisconsin
Filed Apr. 29, 1963, Ser. No. 276,441
12 Claims. (Cl. 165—166)



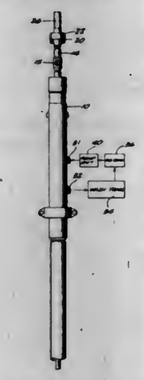
1. A plate type heat exchanger apparatus comprising a plurality of elongated metallic plates disposed in superposed spaced relationship defining a plurality of elongated plate-like passages in the spaces therebetween; said plurality of passages including a first group of passages and a second group of passages, the passages of said first group being disposed in heat exchange relationship with the passages of said second group; sealing means sealingly extending between said plates along the periphery thereof defining the width and length of said passages; header means for conducting a first heat exchange fluid through said first group of said passages for heat exchange with fluid in said second group of said passages; each passage of said second group of passages including an inlet adjacent one end of said heat exchanger and an outlet adjacent the other end of said heat exchanger for ingress and egress of heat exchange fluid; a header overlying said inlets for conducting a gaseous heat exchange fluid thereto; a sparge pipe mounted within said header externally of said inlets; means for supplying a gaseous heat exchange fluid to said header and a liquid heat exchange fluid to said sparge pipe; a plurality of liquid fluid outlets spaced longitudinally along said sparge pipe each in alignment with one of said inlets for directing a liquid heat exchange fluid uniformly into said inlets; and distributor means within each of said passages of said second group adjacent the inlet thereof for substantially uniformly distributing across the width of each passage both gaseous and liquid heat exchange fluids simultaneously introduced into said inlets from said header and said sparge pipe respectively.

3,282,335
HEAT TRANSFER TUBE
Pierre de Haller, Winterthur, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a corporation of Switzerland
Filed Sept. 4, 1964, Ser. No. 394,496
Claims priority, application Switzerland, Sept. 6, 1963, 11,014/63
7 Claims. (Cl. 165—183)



1. A heat transfer tube comprising:
a plurality of fins extending substantially parallel to the longitudinal axis of the tube and extending substantially radially from the tube,
said fins being provided with channels extending at a slant through the fins, such channels having the axes thereof placed along helical lines extending around said tube.

3,282,336
PRODUCTION METHOD AND APPARATUS
Charles E. Wakefield, Jr., Bakersfield, Calif., assignor to Richfield Oil Corporation, Los Angeles, Calif., a corporation of Delaware
Filed Sept. 25, 1962, Ser. No. 225,983
8 Claims. (Cl. 166—.5)



8. An underwater production system for pumping oil and gas from a well drilled in a formation underlying a body of water from a structure over the body of water, through a production head comprising a first tubular member having a side outlet disposed within but flow isolated from a second tubular member having a side outlet with means in said second tubular member for supporting said first tubular member within said second tubular member, the improvement comprising: a downhole pump positionable through said first tubular member, a valved member connected to said first tubular member for shutting off fluid flow above said first tubular member, a tubular riser extending from said first tubular member to said structure, and means for retrieving said pump to said structure through said first tubular member and said riser when said valved member is open.

3,282,337
WATER FLOODING PROCESS FOR THE RECOVERY OF PETROLEUM
David J. Pye, Alamo, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Dec. 9, 1963, Ser. No. 329,256
9 Claims. (Cl. 166—9)

1. In a process for recovering crude oil from a compact subterranean oil bearing formation which comprises injecting into said formation through an input well communicating with said formation an aqueous flooding medium having dissolved therein a polymeric agent whereby oil is displaced in the formation toward at least one output well communicating with the same formation, the improvement which consists in the combination of using for the polymeric agent, a water-soluble, substantially linear organic polymer characterized by a resistance property of at least about 1.5; the amount of the polymer used being sufficient to impart to the aqueous flooding medium a viscosity within the range from about ½ to about 15% of the viscosity of the crude oil within the oil bearing formation and using an aqueous flooding medium substantially free of molecular oxygen.

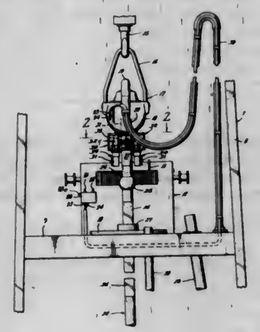
3,282,338
METHOD FOR CONSOLIDATING MATERIAL
Herbert C. Walther, David A. Kuhn, and Derry D. Sparlin, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Oklahoma
No Drawing. Filed June 6, 1962, Ser. No. 200,310
11 Claims. (Cl. 166—33)

1. In the method for consolidating an incompetent subterranean formation containing siliceous material in an amount sufficient to react with a functional group of coupling agent which method comprises injecting into the formation an age-hardenable resinous composition, the improvement which comprises injecting into the formation prior to the injection of said age-hardenable composition a plugging retardant and a coupling agent for chemically bonding said age-hardenable composition to the formation, said coupling agent comprising a chemical compound containing a first functional group which reacts with the particles of the formation and a second functional group which reacts with the age-hardenable composition whereby the consolidation of said formation is improved.

3,282,339
ARRANGEMENT FOR CONNECTING A TUBULAR MEMBER IN A WELL STRING
Malvern M. Hasha, 414 South Coast Bldg., Houston, Tex.
Original application Apr. 12, 1962, Ser. No. 187,059, now Patent No. 3,212,578, dated Oct. 19, 1965. Divided and this application Dec. 18, 1964, Ser. No. 419,467
1 Claim. (Cl. 166—77.5)

An arrangement for connecting a joint of drill pipe that is supported in a mousehole into a rotary drilling rig well string comprising:
(a) a well string having a noncircular kelly threadedly engaged at its lower end with the uppermost joint of drill pipe in the well string,
(b) means for supporting the well string and noncircular kelly in the rotary drilling rig, said means including cable means carrying a traveling block, said traveling block having a hook thereon for engaging and supporting a swivel,

(c) means connecting said swivel to said noncircular kelly,
(d) a rotary table for imparting rotation to the well string,
(e) draw works for raising and lowering said traveling block, swivel and well string relative to said rotary,
(f) a mousehole including means for receiving and supporting a joint of drill pipe therein with the upper end of said drill pipe joint extending above the upper end of said mousehole,
(g) said rotary table suspending the well string when said noncircular kelly is threadedly disengaged from the drill pipe joint connected immediately therebeneath with the upper end of said disconnected drill pipe joint projecting upwardly above said rotary table when disengaged from said noncircular kelly,
(h) means connected between said noncircular kelly and said swivel for imparting rotation to said noncircular kelly when it is disengaged from said joint of drill pipe supported in said rotary table so that said noncircular kelly may thereafter be rotated and threadedly engaged with said joint of drill pipe in said mousehole,



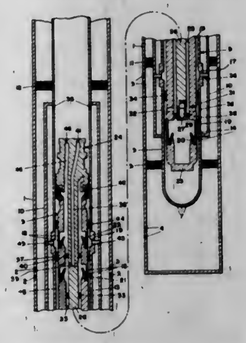
(i) said draw works thereafter operable to raise said traveling block, swivel, and noncircular kelly until said drill pipe joint connected to said kelly is moved out of said mousehole and the lower end thereof engaged with the upper end of said drill pipe joint supported in said rotary table,
(j) said means connected between said noncircular kelly and swivel thereafter imparting rotation to said supported noncircular kelly and drill pipe joint connected therewith to threadedly engage said drill pipe joint into the upper end of said drill pipe joint supported in said rotary table,
(k) said means connected between said noncircular kelly and swivel including motor means for imparting rotation thereto to effect connection of said noncircular kelly into said drill pipe joint in said mousehole and to thereafter impart rotation adjacent the upper end of said noncircular kelly to connect said noncircular kelly and drill pipe joint engaged therewith into said drill pipe supported in said rotary table, and
(l) clutch means to completely disengage the rotational effect of said rotation imparting means relative to said noncircular kelly during normal rotary drilling operations to substantially eliminate drag between said rotation imparting means and well string when said well string is rotated by said rotary table during drilling operations.

3,282,340
RETRIEVABLE PUMP AND ANCHOR APPARATUS
Robert O. Park, Lakewood, Calif., assignor to Baker Oil Tools, Inc., Los Angeles, Calif., a corporation of California
Filed July 5, 1963, Ser. No. 292,926
16 Claims. (Cl. 166—106)



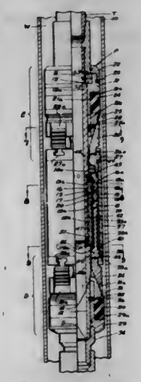
1. In apparatus adapted to be disposed in a tubular string within a well bore: a pump operable by sucker rods; a body to which said pump is releasably secured and from which said pump can be released while said body and pump are in the well bore; normally retracted means on said body; means responsive to manipulation of said body by the sucker rods and pump for expanding said normally retracted means against the tubular string; means for releasably locking said normally retracted means in said expanded condition against the tubular string; and holding means preventing release of said locking means when in one position and movable with respect to said body to another position permitting such release.

3,282,341
TRIPLE FLOW CONTROL DEVICE FOR FLOW CONDUCTORS
James W. Hodges, Beaumont, Tex., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed Sept. 25, 1963, Ser. No. 311,472
17 Claims. (Cl. 166—114)



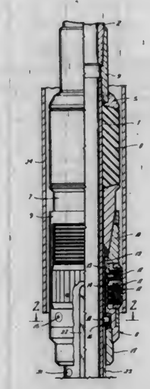
1. A flow control device, for well tubing having first and second lateral ports communicating with the interior of said tubing, including: an elongated housing positioned in said tubing and provided with an internal flow passage for communication at its upper end with the interior of said tubing, provided with a first side port intermediate the ends of the housing for communication with the exterior of the housing and said internal flow passage and with said first lateral port, provided with a second side port intermediate the ends of the housing for communication with the exterior of the housing and said internal flow passage and with said second lateral port, and provided with a third side port adjacent the lower end of the housing for communication with the exterior of the housing and said internal flow passage and with the lower open end of said tubing; an inner member releasably securable to the upper end of said housing, said inner member having means extending into said internal flow passage providing with said internal flow passage, when the inner member is secured to the housing, a first flow passage communicating with said first side port and opening upwardly into the tubing above said first lateral port, providing a second flow passage communicating with said second side port and opening upwardly into the tubing, and providing a third flow passage communicating with said third side port; seal means on said housing for sealing between the tubing and the housing intermediate said lateral ports; seal means on said housing for sealing between the tubing and the housing below said second lateral port; and means carried by said housing permitting flow in one direction only into said internal flow passage through said first lateral port and said first side port.

3,282,342
WELL PACKER
James D. Mott, Houston, Tex., assignor to C. C. Brown
Filed Nov. 21, 1963, Ser. No. 325,435
12 Claims. (Cl. 166—120)



8. A well tool assembly adapted to be lowered on a tubing string and anchored within a well bore including,
an upper tubular section secured to the tubing string and having an upper external abutment at its upper end,
a lower tubular section having a lower external abutment at its lower end,
threaded means connecting said upper and lower sections against movement in an axial direction with respect to each other,
an upper anchor unit mounted on the upper section and confined against upward movement by the upper abutment,
a lower anchor unit mounted on the lower section and confined against downward movement by the lower abutment,
hydraulically-actuated setting means between said upper and lower anchor units for moving said units in directions toward the abutments to set said units into anchoring position,
means for directing fluid pressure to said hydraulically-actuated setting means to actuate the same and set the anchor units, and
means for releasably mounting the threaded means in a position connecting said upper and lower sections whereby the sections remain in connected position during the setting of said anchor units.

3,282,343
WELL PACKER
Gilbert H. Tausch, Houston, Tex., assignor to Camco, Incorporated, Houston, Tex., a corporation of Texas
Filed June 1, 1964, Ser. No. 371,432
6 Claims. (Cl. 166—138)



6. In a well packer having a deformable packing collar, a tubing string mandrel having a collar abutment formation and controlling collar deformation solely by mandrel reciprocation, a set of clutch pin guideways in the mandrel including a circular transfer passage and relatively long and short longitudinal guideways extending from the transfer passage toward said abutment formation, collar abutment means sleeved on the mandrel and provided with a friction block for friction slide bearing on a well wall, a clutch pin projecting inwardly from said collar abutment means for reception by the guideways in controlling relative mandrel reciprocation within said collar abutment means and a clutch pin carrying ring rotatably mounted in said collar abutment means for accommodating clutch pin rotative travel through the transfer passage and between the circularly longitudinal guideways.

3,282,344
TUBING-GRIPPING ROD SCRAPER
James C. Tripplehorn, 1013 Mary Ellen St., Pampa, Tex.
Filed Mar. 12, 1964, Ser. No. 351,366
13 Claims. (Cl. 166—172)

2. In oil well equipment, a scraper and guide comprising a structure molded of resilient deformable material including two annular collar members each having a bore therethrough and the axes of the bores being mutually aligned, and plural outwardly bowed members disposed symmetrically about the axis longitudinally aligned therewith and attached at their opposite ends to different collar members and said bowed members supporting the latter in mutually spaced relationship, the

collars both having slots through one side into the bore but narrower in width than the diameter of the bore and



the collar members having lip portions along the sides of the slots flared outwardly to a mutual separation greater than the slot width.

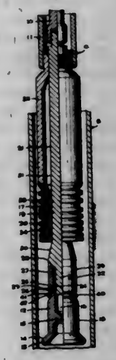
3,282,345
GUIDE AND SCRAPER
James C. Tripplehorn, 1013 Mary Ellen St., Pampa, Tex.
Filed Mar. 9, 1964, Ser. No. 350,168
13 Claims. (Cl. 166—176)



4. In oil well equipment, a guide and scraper to be attached to a sucker rod, said guide and scraper comprising an elongated body of resilient deformable material with a longitudinal bore therethrough to receive the rod, the diameter of the bore being slightly less than the diameter of the rod, the body having a slot through its side disposed transversely of the bore and extending to the full depth thereof and wider than the diameter of the bore, and said body having two longitudinal slots therethrough communicating with said bore and narrower in width than the diameter thereof, and these two slots extending from opposite ends of the transverse slot to opposite ends of the body, and the exterior contour of said body tapering down in diameter from the transverse slot toward at least one end of the body to provide at that end thereof a generally frustoconical surface, each of said two slots being flared for part of its length and thereby widened where it opens into the transverse slot to a width greater than the diameter of said bore.

3,282,346
SUBSURFACE WELL PACKERS
Jackson R. Claycomb, Tempe, Ariz., assignor to Baker Oil Tools, Inc., Los Angeles, Calif., a corporation of California
Filed Mar. 9, 1964, Ser. No. 350,206
18 Claims. (Cl. 166—182)

13. In a well packer adapted to be set in a conduit disposed in a well bore: body means; an initially retracted soft aluminum sleeve adapted to surround said body means; expander means movable relatively longitudinally within said sleeve to enlarge its internal and external diameters and force it against the conduit; and



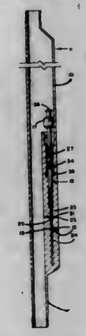
means for shifting said sleeve and expander means simultaneously in opposite longitudinal directions to enlarge said sleeve.

3,282,347
WELL BORE BRIDGE APPARATUS
David V. Chenoweth, Houston, Tex., assignor to Baker Oil Tools, Inc., City of Commerce, Calif., a corporation of California
Filed Mar. 9, 1964, Ser. No. 350,265
18 Claims. (Cl. 166—196)



1. In a bridging apparatus adapted to be lowered and set in a well bore: a body; a malleable deformable bridging member surrounding said body and comprising a plurality of longitudinally extending ribs; means for relatively moving the upper and lower ends of said ribs toward each other to expand the intermediate portions of said ribs outwardly of said body and to stress said ribs beyond their yield point; and means for preventing movement of said upper and lower ends of said ribs away from each other to retain said intermediate portions expanded outwardly.

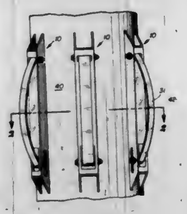
3,282,348
CIRCULATING DEVICE
Wade J. Artigue, Lake Charles, La., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed June 3, 1963, Ser. No. 284,899
6 Claims. (Cl. 166—224)



1. A down-hole circulating device which comprises:
a side-pocket mandrel adapted to be positioned in a string of well tubing,
first port means in said mandrel, communicating the side pocket of said mandrel with the exterior of said mandrel,
valve means adapted to be positioned in said side pocket, said valve means comprising an elongated member having a longitudinal cavity therein, lower circulating port means and upper circulating port means in communication with said cavity, check valve means positioned between said upper and lower circulating port means to unidirectionally control the fluid flow through said valve means,
positioning means for maintaining said valve means in said side pocket so as to maintain said lower circulating port means in flow communication with said first port means when said circulating device is open, but permitting said elongated member to slide longitudinally within said side pocket when a preselected pressure differential is established across said device to break said flow communication,
sealing means cooperating with said elongated member adjacent said first port means to effectively seal said side pocket from the exterior of said mandrel upon breaking of said flow communication, and
latch means for latching said valve means in place in said side pocket to maintain said seal.

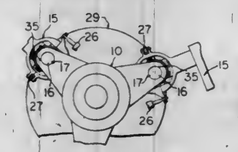
3,282,349
CASING CENTRALIZER
James H. Cobbs, Herbert L. Bolen, and Ascencion Gonzalez, all of Tulsa, Okla., assignors to Fenix & Scisson, Inc., Tulsa, Okla., a corporation of Oklahoma
Filed Jan. 22, 1964, Ser. No. 339,515
4 Claims. (Cl. 166—241)

3. A centralizer comprising:
an elongated support having a top plate and spaced apart side plates depending one each from the longitudinal edges of said top plate;
two registering perforations provided one each in corresponding first end portions of said end side plates and a first opening in said top plate proximate said perforations;
two registering longitudinally elongated slots provided one each in corresponding second end portions of said side plates and a second opening in said top plate proximate and at least as long as said slots;
an elongated longitudinally curved leaf spring having first and second ends received in said first and second openings in said top plate, said spring being prestressed into an outwardly curved arcuate configuration;



means pivoting one end of said leaf spring with said registering perforations in said support side portions; and
a retainer element affixed to the other end of said spring slidably received in said elongated slots.

3,282,350
ROTOR BLADE MOUNTING CONSTRUCTION
Adrian V. Kisovec, Morton, Pa., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Oct. 20, 1965, Ser. No. 498,477
18 Claims. (Cl. 170—160.12)

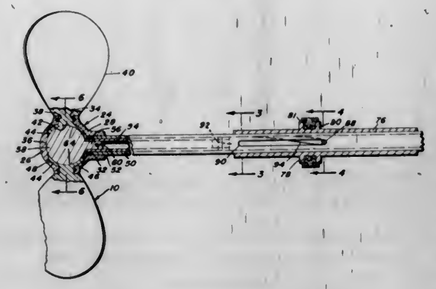


1. A rotor including a hub adapted to be rotated, a blade, means connecting said blade to said hub for rotation with said hub, elastomer bearing means to permit movement of said blade in lead-lag and flapping planes with respect to said hub, and means to permit said blade and said elastomer bearing means to be pivoted together to a folded position about an axis adjoining said elastomer bearing means.

3,282,351
VARIABLE PITCH, REVERSING AND FEATHERING PROPELLER
Holmes F. Troutman, 132 Cocoa Ave., Indialantic, Fla.
Filed Mar. 10, 1966, Ser. No. 533,369
17 Claims. (Cl. 170—160.44)

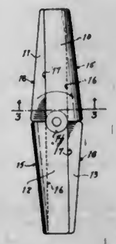
1. A propeller with adjustable pitch blades, said propeller including a hollow hub or housing defining a small diameter and generally spherical cavity and a hollow journal neck portion opening into said cavity with the center of said cavity lying on the longitudinal center axis of said neck portion, said housing also including a plurality of circumferentially spaced radial bores opening through the walls of and inwardly of said housing and disposed generally normal to said center axis, said housing including inwardly facing recessed inner thrust bearing surface portions disposed about each of the inner ends of said bores, a plurality of generally radially extending blade members each including an inner end shank portion journalled in the corresponding bore and an inner diametrically enlarged base portion including outwardly facing bearing surface portions mating with the corresponding thrust

bearing surfaces, the inner ends of said base portions defining partial concave spherical surfaces, each having the center of said cavity as the center of its curvature, an operating shaft journalled through said journal neck portion and including an enlarged head portion on its inner end including convex spherical surface bearing portions complementary to and engaged with at least portions of



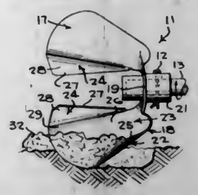
the surfaces of said housing defining said cavity and at least portions of said partial concave spherical surfaces, said base portions and said head portion including coacting means operable, in response to rotation of said head portion about said center axis relative to said housing, to simultaneously adjustably rotate said shank portions in said bores.

3,282,352
DUAL AIR SCREW PROPELLER
Fred M. Siptrott, 3011 Hardies Lane, Santa Rosa, Calif.
Filed Oct. 1, 1965, Ser. No. 491,961
6 Claims. (Cl. 170—165)



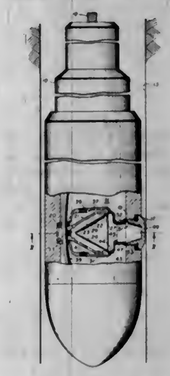
1. A multi-blade screw propeller, comprising a supporting hub having two propellers with blades extending radially in axially spaced parallel and partially overlapping relation at opposite sides of said hub, said blades being of uniformly diminishing chord from said hub to the tips thereof, and characterized by the fact that the leading edges of the blades of the forward propeller are disposed at a swept back angle with respect to a radial line passing through the body of the blade and a trailing edge disposed rearwardly of and parallel with said radial line, and further characterized by the fact that the leading edge of the rearward propeller blades have their leading edges forward of and parallel with said radially extending line and trailing edges rearwardly of and disposed at a swept forward angle with respect to said radial line with the pitch of said blades increasing toward their ends.

3,282,353
SOIL CUTTING IMPLEMENT FOR ROTARY TILLERS
John S. Troyer and Margarita G. Troyer, both of Trevilians, Va.
Filed July 9, 1965, Ser. No. 470,783
2 Claims. (Cl. 172—43)



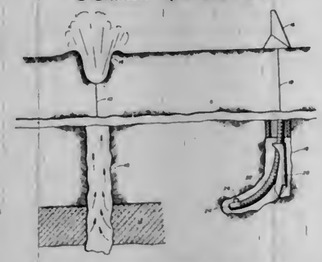
1. A rotary tilling implement for cultivating the soil adapted to be mounted upon an elongated, longitudinal, outwardly extending power shaft driven by a motive means over the ground surface, the power shaft being arranged at right angles to the direction of implement travel, the improvement comprising a hub affixed in detachable relation with the power shaft means, a yoke member mounted at right angles upon the hub, a plurality of tilling blades mounted upon the yoke member and extending outwardly from the power shaft at a divergent angle with respect to the longitudinal centerline of the power shaft, each tilling blade having a leading portion and an intermediate portion and a trailing portion, the trailing portion being of planar surface configuration, the planar surface intersecting the intermediate portion at a sharp angle so that the plane in which the planar surface lies projects toward the longitudinal centerline of the shaft, each tilling blade being concave in overall configuration with respect to the longitudinal centerline of the power shaft to effect scooping of the soil into the concavity of the tilling blade thereby creating a furrow, each blade being adapted to effect removal of the scooped soil from the blade and to deposit the soil outwardly from the furrow in a predetermined path.

3,282,354
PROTECTIVE SHAPED CHARGE
John R. Hakala and James R. Holden, Fort Worth, Tex., assignors, by mesne assignments, to Harrison Jet Guns Ltd., Houston, Tex., a limited partnership
Filed Apr. 26, 1962, Ser. No. 190,480
4 Claims. (Cl. 175—4.6)



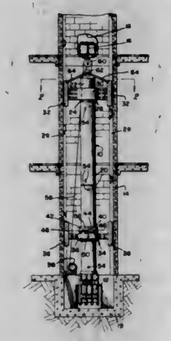
1. A well perforating apparatus which comprises:
(a) a pressure-resistant hollow body having a central bore with a lateral port extending from said bore;
(b) a shaped charge structure having an inner case with an open mouth and a liner confining a quantity of an explosive therebetween;
(c) an outer case encompassing and supporting said inner case at its mouth and apex but maintained in substantial spaced relation from said inner case in the region remote from said mouth of said inner case;
(d) sealing means in said port and coupled to said charge structure for supporting said structure in said central bore with said mouth aligned with and facing said lateral port; and
(e) means for detonating said explosive charge at a point remote from said mouth.

3,282,355
METHOD FOR DIRECTIONAL DRILLING A RELIEF WELL TO CONTROL AN ADJACENT WILD WELL
John K. Henderson, 4012 E. 41st Place, Tulsa, Okla.
Filed Oct. 23, 1965, Ser. No 503,633
8 Claims. (Cl. 175—61)



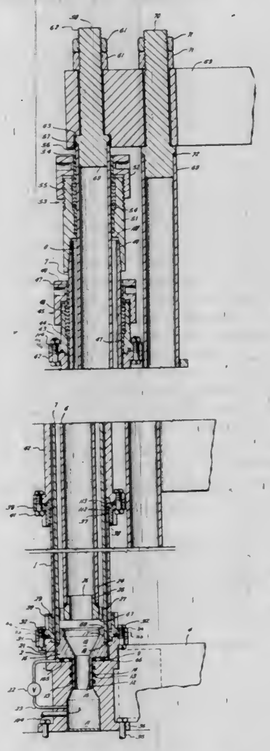
8. A method of determining the direction of the source of uncontrollable fluid flow from a well comprising:
detecting the direction of emanation of sonic vibrations caused by said uncontrollable fluid flow with a vibration receiving means at at least one location remote from said well; and
interpreting the detected direction of emanation of sonic vibration to provide the direction of said source of uncontrollable fluid flow.

3,282,356
DRILLING DEVICE
Loree A. D. Paulson and John W. Adams, Phillipsburg, N.J., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 2, 1963, Ser. No. 327,362
4 Claims. (Cl. 175—103)



1. The combination with an elevator shaft having longitudinal guide means positioned interiorly of said shaft and opposing each other comprising,
(a) a support within said shaft displaced longitudinally from the bottom of said shaft,
(b) a rock drilling device of the rotary percussive type suspended from said support to be lowered to and retracted from the bottom of said shaft, and
(c) a centralizer slidably mounted on said guides having a central portion to receive and maintain said rock drilling device in a central position relative to said elevator shaft.

3,282,357
HYDRAULIC DERRICK ASSEMBLY
John R. Bunn, 325 W. 4th St., Tyler, Tex.
Filed May 12, 1965, Ser. No. 459,144
11 Claims. (Cl. 175—122)



4. A drilling derrick, comprising as one of the supporting legs
a cylinder;
an outer ram coaxially carried within and movable relative to and at least partially extendable from one end of said cylinder,
said outer ram having a hydraulic actuating surface area transverse to the direction of movement of said outer ram;
an inner ram coaxially carried within said outer ram and movable relative to and at least partially extendable from one end of said cylinder,
said inner ram having a hydraulic actuating surface area transverse to the direction of movement of said inner ram different from the hydraulic surface area of said outer ram;

a source of pressure including a chamber, said chamber in communications with the hydraulic actuating surface area of said inner ram;

a passage communicating said chamber with the hydraulic actuating surface area of said outer ram; and

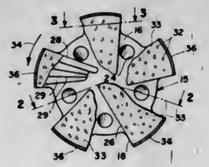
a valve for selectively controlling the flow of fluid from said chamber to the hydraulic actuating surface area of said outer ram.

3,282,358

DRILLING TOOL

Willis S. Carothers, Houston, Tex., assignor to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 13, 1964, Ser. No. 359,291
10 Claims. (Cl. 175—411)



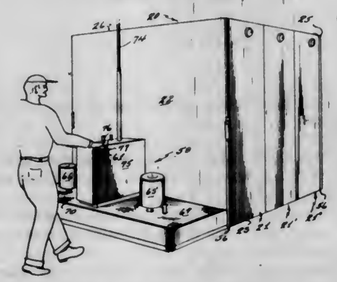
1. A milling tool for rotation within a well bore comprising: an elongated body member having an end surface substantially normal to the axis of rotation of said body member; said body member having a plurality of cutter support members extending axially at least in part from said end surface, said cutter support members having rear surfaces with respect to a direction in which said body member is rotated, said rear surfaces extending from said end surfaces and terminating in outer edges substantially parallel to said end surface, said cutter support members extending chordally across respective portions of said end surface, at least some of said edges being of non-radial orientation with respect to said axis, said cutter support members having forward areas with respect to said direction of rotation extending generally inwardly from said outer edges and forwardly to said end surface; and cutter means formed upon and bonded to each of said forward areas.

3,282,359

APPARATUS SUPPORTED ON AIR CUSHIONS FOR HANDLING UNITIZED LOADS

Rigsby C. Satterfield, Jr., 593 Waughtown St., Winston-Salem, N.C.

Filed Dec. 15, 1961, Ser. No. 159,725
7 Claims. (Cl. 180—7)



1. In cargo handling apparatus, the combination including, load-bearing structure means having a horizontal flat bottom wall provided with a plurality of peripherally arranged downwardly projecting flexible flap means, said flap means having horizontally extending flexible free edges to frictionally engage with a substantially flat supporting surface to form an air chamber below the bottom wall, and blower means having horizontally elongated nozzle means to supply air to said chamber, said nozzle means being co-extensive in length with one of said flap means to supply air to the air chamber below said flap means and being provided with sealing means operatively engageable with the exterior of said load-bearing structure above the flap means and also with said supporting surface to minimize air leakage.

3,282,360

DIRIGIBLE AIR BEARING TRANSPORT DEVICE

Charles A. Amann, Birmingham, and John S. Collman and Jerold W. Scheel, Detroit, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Michigan

Filed Apr. 17, 1962, Ser. No. 188,179
5 Claims. (Cl. 180—7)



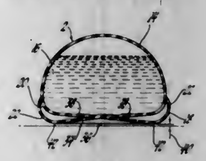
4. A load supporting and transporting device comprising a shallow rigid tray, a duct having a first portion connected to and extending substantially inwardly toward the center portion of said tray and including an outwardly and upwardly inclined cylindrical neck portion rigid with respect to said tray and external of the tray, a rigid pressurized air conducting tube telescopingly and rigidly engaging said neck portion, an annular flexible diaphragm connected in peripherally sealed relation to said tray to form an inflatable annular cavity, means forming an opening in said tray providing communication between said first portion of said duct and said annular cavity, means formed near the inner periphery of said diaphragm for venting said cavity into the space beneath said diaphragm, and means fixedly securing the inner periphery of said diaphragm to the center portion of said tray.

3,282,361

COLLAPSIBLE CELL FOR TRANSPORTING LIQUIDS

Harry A. Mackie, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed June 20, 1962, Ser. No. 203,830
2 Claims. (Cl. 180—7)



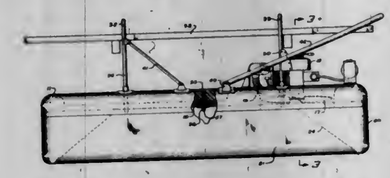
2. A ground mobile collapsible fluid transport cell comprising: a one-piece elastomeric body including a generally cylindrical portion defining a fluid storage compartment and an outer flexible member depending therefrom having portions spaced from and cooperating with the lower periphery of said cylindrical portion to define an annular inflatable support compartment underlying said storage compartment, means for inflating said support compartment to establish a plenum cavity between said cell and the ground, and means in said outer flexible member for venting said support compartment into the space defined by said plenum cavity to form a low pressure air cushion supporting said cell in substantially friction free relation with the ground.

3,282,362

AIR CUSHION VEHICLE FOR A STRETCHER

Alexander Burns, Hampton, Va., assignor to the United States of America as represented by the Secretary of the Army

Filed Aug. 18, 1964, Ser. No. 390,487
3 Claims. (Cl. 180—7)



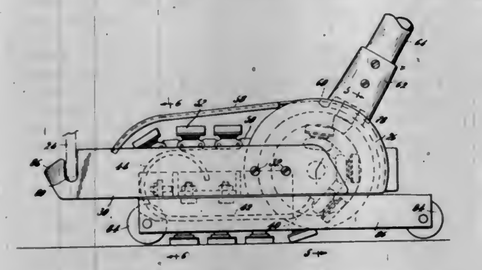
1. In an air cushion vehicle for use in carrying a stretcher including a rigid platform having an air passage opening therethrough, an air impeller mounted on said platform above said opening, drive means for said impeller, an inflatable skirt of flexible sheet material disposed below said platform and comprising an outer wall secured at its upper edge entirely around said platform and depending vertically therefrom, a bottom wall extending inwardly from the lower portion of said outer wall, an inner wall disposed within said skirt providing a plenum chamber, said bottom wall having a series of spaced air outlet slots communicating with said plenum chamber, the improvement comprising a reinforcing molding extending marginally around the upper surface of said platform, at least two spaced U-shaped stanchions secured to said molding including a recessed bight portion projecting above said platform, and a stretcher removably seated in said recessed bight portion.

3,282,363

TRACTOR MEANS FOR EXTENDING AND RETRACTING BLEACHER STAND SECTIONS

Richard S. Curra, Jr., North Berwick, Maine, assignor to Hussey Manufacturing Company, Inc., North Berwick, Maine, a corporation of Maine

Filed Oct. 26, 1964, Ser. No. 406,498
7 Claims. (Cl. 180—9.22)



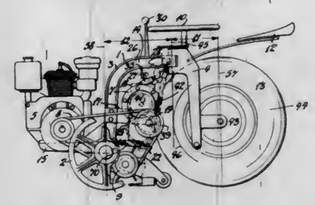
1. A tractor for use in extending and nesting the sections of a bleacher provided with telescoping sections, comprising a chassis, a shaft on the chassis, a pair of sprockets on the shaft, curved guides on the chassis spaced from the shaft, a tractor tread entrained about the sprockets and the guides, a drive gear fixed to the shaft, a pinion meshing with the drive gear, a drive shaft to which the pinion is fixed, an electric motor-driven hand tool having a motor shaft provided with a threaded portion and an adapter connected to the drive shaft, said adapter having a portion threaded onto the motor shaft.

3,282,364

MOTOR VEHICLE HAVING FRICTIONALLY-DRIVEN TRACTION WHEEL

David L. Cramp, Sesekinika Lake, Ontario, Canada

Filed July 31, 1964, Ser. No. 386,662
13 Claims. (Cl. 180—26)



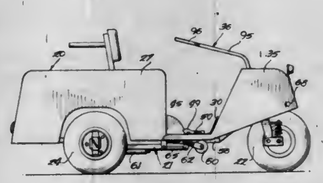
1. In an automotive vehicle, in combination, a ground-wheel supported framework, a steerable traction-wheel pivotally connected to said framework for swivelling motion about a vertical axis, and steering means for effecting said motion, a source of power on said framework, a propulsion unit operatively connected to said source of power, said traction-wheel including a tire having a tread of arcuate cross-sectional configuration, said propulsion unit including at least one driving-element rotatable about a horizontal axis in perimetrical contact with said tread, the axis of said pivotal connection, when produced downwardly being approximately tangent to a point on the annular centreline from which the radius of an arc on the horizontal cross-section of said tread springs, whereby swivelling of said traction-wheel about said vertical axis relative to said driving-element causes rotation of said tread in a horizontal plane against said driving-element approximately about said centreline, thereby remaining in rolling contact with substantially the same perimetrical surface-portion of said driving-element regardless of the width or transverse cross-sectional configuration of the perimeter of said driving element.

3,282,365

SELF-PROPELLED GOLF CART

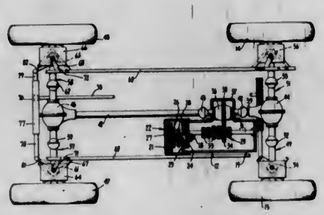
Lowell R. McReynolds, 103 S. Moore St., McLean, Ill.

Filed Mar. 25, 1964, Ser. No. 354,542
11 Claims. (Cl. 180—27)



1. A self-propelled vehicle including a body divided into first and second sections and connected by a transversely extending hinge with each section having at least one ground-engaging wheel, a trailer hitch positioned under said first section and rigid with said second section, said first section being rotatable about said hinge connection from an operating position wherein the first section fits over the trailer hitch to a second or folded position wherein the trailer hitch is uncovered and accessible, and releasable locking means holding said first section selectively in the operating position and in the folded position.

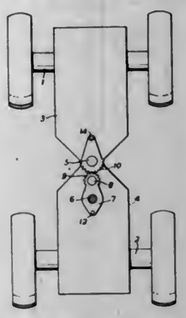
3,282,366
FOUR-WHEEL-DRIVE AND STEERED VEHICLE WITH SHORT WHEEL BASE FOR OFF-THE-ROAD SERVICE
John S. Sprague, San Leandro, Calif.
(Rte. 1, Box 334, Oroville, Calif.)
Filed July 8, 1963, Ser. No. 293,366
3 Claims. (Cl. 180—45)



2. In a vehicle including front and rear wheels supported by a chassis, a four wheel drive power transmission system comprising an engine assembly mounted upon said chassis; said assembly including in an integral unit an engine having a crankhaft, a transfer gear, a change speed gear transmission having its transmission shaft and the axes of its variable speed change gears respectively parallel to and laterally adjacent said crankshaft with the ends of said transmission shaft intermediate the ends of said crankshaft, gearing including said transfer gear and a clutch on said crankshaft and said transmission shaft for selectively coupling said crankshaft to said transmission shaft and a differential coupled to the variable speed output of said transmission and mounted laterally of the tranmission shaft and the engine crankshaft and intermediate the ends of said transmission shaft; a pair of output shafts connected to said differential and extending therefrom in opposite directions longitudinally of said chassis; and second and third differentials mounted upon said chassis and respectively coupling the free ends of said output shafts in driving relation to said front and rear wheels whereby said vehicle can be provided with a short wheel base conducive to off-road travel and maneuverability.

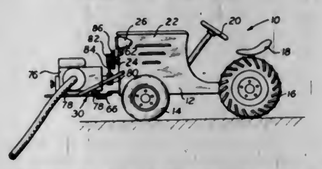
3,282,367
FOUR-WHEEL DRIVE TRACTORS WITH TRAILER ARTICULATION MEANS MOVED LATERALLY AUTOMATICALLY IN RESPONSE TO THE RELATIVE ANGULAR POSITIONS OF THE TRACTOR AXLES
Leonard S. Mathew, Kingswood, Surrey, and George W. A. Chapman, Croydon, Surrey, England, assignors to Matbro Limited, Horley, Surrey, England, a British company
Filed Apr. 8, 1963, Ser. No. 271,119
Claims priority, application Great Britain, Apr. 9, 1962, 13,647/62
6 Claims. (Cl. 180—51)

5. A four-wheel drive tractor comprising a pair of supporting frames pivotally connected to each other on a frame pivoting vertical axis between said frames, a driving axle on each frame with the frame pivoting vertical pivot axis between said axles, an articulation point member for the attachment of an articulated trailer, and means on one of said supporting frames and on which said articulation point member is mounted for automatically moving said articulation point member laterally in relation to the supporting frame on which it is positioned in the same direction as the tractor is steered, the amount of such relative lateral movement being dependent on the relative angular position of said axles and means under the control of the operator and coupled to said mounting and moving means for overriding said



means for automatically moving said articulation point member.

3,282,368
VEHICLE FRONT END STRUCTURE FOR PROTECTING THE POWER TAKE-OFF AND SUPPORTING A DRIVEN MECHANISM
Frederick Pittera, 200 East End Ave., New York, N.Y.
Filed May 24, 1963, Ser. No. 283,081
3 Claims. (Cl. 180—53)

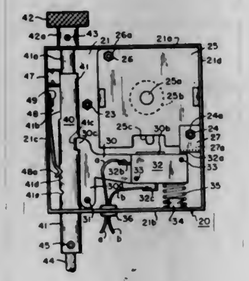


1. The combination with an automotive vehicle having a power take-off, of a frame, hinge means connecting the frame with the vehicle and on which the frame is angularly movable between an upwardly-extending position and a substantially horizontally-extending position, the frame in its upwardly-extending position covering the power take-off as a safety guard to prevent persons adjacent to the vehicle from bumping against the power take-off, and the frame in its horizontally-extending position being at a location to support a mechanical device in position to be driven from the power take-off, a pulley on the end of the power take-off, and a mechanical device on the frame with a pulley in substantial transverse alignment with the pulley of the power take-off and motion-transmitting connections by which the pulley of the mechanical device is driven from the pulley of the power take-off.

3,282,369
SECURITY HOOD LATCHING DEVICE FOR MOTOR VEHICLES
Arthur R. Pangborn, 317 Greenlee Road, Pittsburgh, Pa.
Filed July 15, 1964, Ser. No. 382,895
14 Claims. (Cl. 180—82)

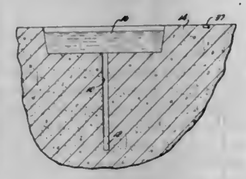
1. A lock-switch device for preventing an unauthorized opening of a hinged hood of an engine compartment of and for preventing an unauthorized energization of the electric ignition system of a motor vehicle which comprises, a lock operatively mounted in said housing, an electric switch in said housing connected to the ignition system, hood latch means for operative positioning within the engine compartment to in one position latch-engage the hood and hold it in a closed position and to in another position unlatch the hood whereby the hood may be swung to an open position, a latch plunger operatively positioned for

in and out movement within said housing and extending therefrom, means for operatively connecting said latch plunger to said hood latch means for latching and unlatching said hood latch means in accordance with the movement of said latch plunger, an arm member operatively positioned for movement within said housing; said arm member having a latching portion to, when said arm member is in one position, engage said latch plunger for positively retaining it in a position at which said hood latch means is in latching engagement with the hood;



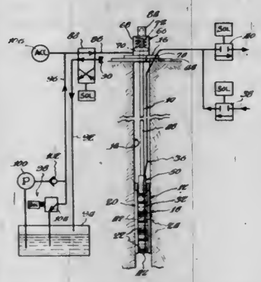
means cooperating with said arm member and said lock for opening said electric switch when said arm member is moved to the one position and for closing said switch when said arm member is moved to a second position; and cam means positioned within said housing and operatively associated with said lock to, when said lock is unlocked, engage said arm member and move said arm member from its one to its second position at which said latching portion disengages said plunger, whereby said plunger may be moved within said housing to move said hood latch means to its other hood unlatching position.

3,282,370
METHOD FOR REFLECTING AND REFRACTION SEISMIC PROSPECTIONS
Giuliano N. Perna, Viale Bolognini 18/B, Trento, Italy
Filed Nov. 12, 1963, Ser. No. 322,801
4 Claims. (Cl. 181—.5)



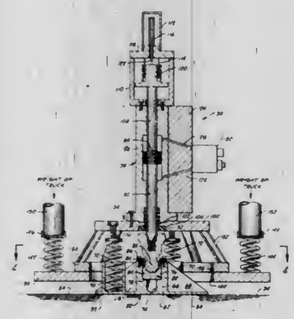
1. A method of reflective and refractive seismic prospecting comprising the steps of:
positioning a seismic charge below the earth's surface, and
artificially creating an additional layer on the earth's surface overstanding the seismic charge by sprinkling liquids on the surface, with said layer having the capacity to diminish the amount of reflected energy in the seismic waves resultant from the detonation of the seismic charge that propagating upwardly normally have a substantial portion of their incident energy reflected downwardly from the earth's surface.

3,282,371
METHOD OF AND APPARATUS FOR GENERATING SEISMIC WAVES
Park H. Miller, Jr., Del Mar, Calif., assignor to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 204,739, June 25, 1962. This application July 21, 1965, Ser. No. 477,347
10 Claims. (Cl. 181—.5)



1. A method of generating seismic waves in the earth, which method comprises disposing an anchor in a hole in the earth, disposing a second anchor on the surface of the earth, said second anchor contacting substantially more surface area than the cross sectional are of the hole, and applying time varying forces to each of said anchors in the direction of the other of said anchors effective to move each of said anchors in a direction opposite to the direction of movement of the other of said anchors to produce time varying compression of the earth therebetween while keeping the earth between said anchors only in compression.

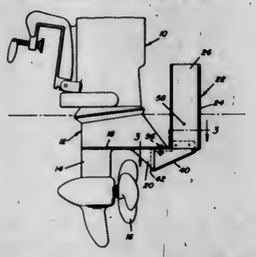
3,282,372
DIRECT DRIVE METHOD AND APPARATUS FOR GENERATING SEISMIC VIBRATORY SIGNALS
Graydon L. Brown, Delbert W. Fair, and Lorenzo E. Jarrett, Jr., Ponca City, Okla., and Langdon H. Berryman, Hacienda Heights, Calif., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Oklahoma
Filed Nov. 14, 1962, Ser. No. 237,662
7 Claims. (Cl. 181—.5)



1. A device for inducing seismic signals in the earth comprising:
a coupling member for engaging a surface of the earth having a contact area sufficiently large as not to appreciably penetrate the surface of the earth;
a reaction mass system; and,

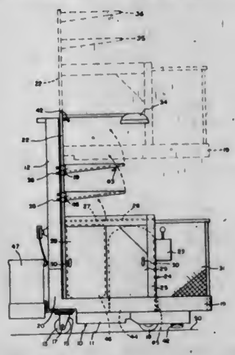
motor means interconnecting the coupling member and the reaction mass system for reciprocating the coupling member relative to the reaction mass system; the coupling member having a mass sufficiently low as to have a natural resonant frequency above 80 c.p.s. when coupled to the earth.

3,282,373
OUTBOARD MOTOR TROLLING MUFFLER
Matthew R. Gazzara, 345 White Horse Pike, Hammonton, N.J.
Filed July 15, 1965, Ser. No. 472,217
11 Claims. (Cl. 181—39)



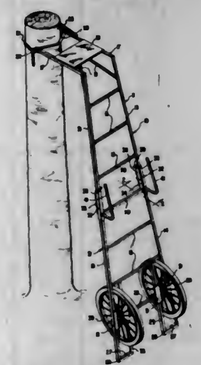
1. In combination with an outboard drive assembly of the type including a depending power leg having a horizontally outwardly end rearwardly projecting cavitation flange adjacent its lower end, a downwardly and rearwardly projecting exhaust outlet projecting below the rear end portion of said cavitation flange, a trolling muffler attachment comprising an upstanding tubular member disposed rearwardly of said power leg and terminating at its lower end portion in a forwardly opening and directed open end portion supportingly engaged with said exhaust outlet and said cavitation flange so as to form a continuation of said exhaust outlet, said tubular member projecting above the normal water level on said power leg.

3,282,374
ELEVATING STOCK PICKER TRUCK
Clinton B. Allen, R.F.D. 1, Box 492, Morehead City, N.C., and Lawrence C. Hattwick, 821 Cumberland Drive, Woodbridge, Va.
Filed Sept. 8, 1965, Ser. No. 491,479
2 Claims. (Cl. 182—12)



1. An elevating stock picker truck for use in selecting and replenishing loose stock in storage bins comprising a frame having horizontal and vertical portions, an electronic guidance means incorporated in said frame, a liftable platform having a forward operator's compartment, a rearward storage compartment, and an elevated U-shaped rear portion including opposed leg members positioned adjacent the vertical portion of said frame, a screen carried by said U-shaped portion at least two sleeve bracket members slidably mounted on said leg members on opposite sides of said elevated rear portion, at least one shelf pivotally secured to said bracket members, means maintaining said shelf in a horizontal position, an elongated slot on each side of said shelf, a rod extending through said slots and secured to said bracket members, a clamp carried by said screen holding the forward portion of said shelf, and drive means propelling said truck in cooperation with said guidance means.

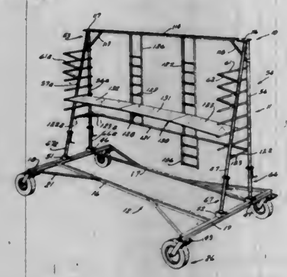
3,282,375
MOBILE STAND FOR HUNTERS CONVERTIBLE TO A HAND CART
Kenneth V. Ray, P.O. Box 303, Devers, Tex.
Filed Apr. 22, 1965, Ser. No. 449,962
5 Claims. (Cl. 182—16)



1. A hunter's elevated stand readily convertible to a hand cart for transporting game comprising first and second frame sections of approximately equal length each having longitudinal side bars and longitudinally spaced cross bars secured to the side bars and adapted to serve as ladder rungs when the first and second frame sections are longitudinally extended and lie substantially in a common plane, means hingedly connecting adjacent ends of the first and second frame sections whereby the latter may be extended longitudinally or folded in substantially superposed coextensive relation with the second frame section beneath the first frame section, a platform extension secured to the second frame section substantially at its end remote from said means and projecting generally at right angles thereto beyond one side thereof only, and a laterally spaced pair of wheels on the first frame section near the end thereof remote from said means, the arrangement being such that folding of the second frame section underneath of the first frame section causes said platform extension to project upwardly above the first and second frame sections substantially at right angles thereto between and adjacent to said wheels so as to form a forward abutment on the cart for securing game thereon.

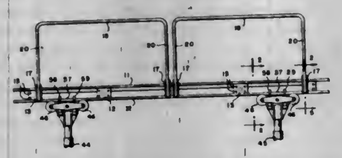
3,282,376
MOBILE PLATFORM
William W. Merriman, 1942 Oakland Drive, Kalamazoo, Mich.
Filed Dec. 28, 1964, Ser. No. 421,481
6 Claims. (Cl. 182—17)

1. A mobile elevated platform construction comprising the combination:
a substantially rectangular chassis and caster means fixed adjacent the corners thereof for allowing movement of said chassis;
a substantial rigid frame including a longitudinally spaced pair of end units, each of said end units comprising a first normally upright leg and a second sloped leg affixed at its upper end to said upright leg and extending downwardly away therefrom;
a vertically spaced set of normally horizontal brackets connecting said legs, extending beyond the sloped one of said legs and being spaced above the lower ends of said legs;



normally horizontal platform means extending between said end units and supported upon corresponding ones of said brackets, said frame including means for connecting said end units and for supporting said platform between said end units;
an extensible jack substantially rigidly affixed to the lower end of each of said legs and substantially axially aligned therewith;
a ball and socket joint affixed to the lower end of each of said jacks and rigidly affixed to said chassis;
whereby adjustment of the length of said jacks and pivotal motion thereof with respect to said chassis allows said platform to be maintained horizontal when said chassis is sloped.

3,282,377
ELEVATED WORK-SUPPORTING PLATFORM
Joseph J. Pfeiffer and Harold M. Peterson, Kirkland, Wash., assignors to ReDeMan Corporation, a corporation of Washington
Filed Mar. 12, 1965, Ser. No. 439,218
15 Claims. (Cl. 182—36)



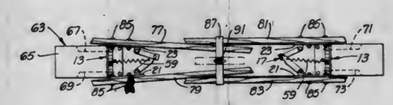
1. An elevated work-supporting platform comprising, in combination: a pair of spaced-apart vertical hoists, a deck, a rigid framework for the deck, said framework including a pair of parallel stringers extending longitudinally of the framework one at one side and the other at the other side of the longitudinal median line of the framework formed so that the underneath surface serves as a track rail, at least one trolley extending transversely of the framework in a position underlying the framework at one end thereof and providing wheels at each of the opposite sides tracking upon said underneath surface of the rails, means for mounting the trolley upon the head end of one of the hoists, and means for mounting the end of the framework which lies opposite that occupied by the trolley upon the head end of the other hoist, hold-down means being provided to prevent the rails being lifted off the wheels.

3,282,378
SAFETY SCAFFOLD
George A. Pierce, 61 Valley St., San Francisco, Calif.
Filed Sept. 14, 1964, Ser. No. 396,016
7 Claims. (Cl. 182—113)



1. A safety scaffold, comprising:
a plank structure, containing an outer plank member constructed of folded sheet metal having a top section including a substantially elongated rectangular top surface with depending flanges extending downward on each side thereof to form a pair of side sections and inner flanges disposed along a bottom to define a substantially flattened rectangular cross-section with a substantially open bottom, said inner flanges being secured in parallel relation by a plurality of straps extending therebetween, an inner plank member constucted in the form of a hollow sheet metal unit of substantially rectangular cross-section and formed with a top section and side sections similar to the outer plank member but sized to fit slidably within said outer member in a sufficiently tight relation to prevent lateral play in any direction, said top section of the outer plank member including a thin edge adapted to fit in close relation to the top of the inner plank member;
a back rail, containing an outer hollow metal back rail member open at one end, and an inner hollow metal back rail member, said outer and inner members having smooth surfaces fitting in tight slidable relation;
and brackets formed for carrying the plank structure and back rail structure in substantial parallel relationship, said back rail structure being mounted for telescoping adjustment independent of the adjustment of the plank structure.

3,282,379
COLLAPSIBLE SAWHORSE AND HINGE THEREFOR
Dick Jones, Chino, Calif., assignor to Joe D. Cox and William I. Flinn, both of Los Angeles, Calif.
Filed Apr. 5, 1965, Ser. No. 445,329
10 Claims. (Cl. 182—155)



7. A collapsible sawhorse comprising:
a body member;
a pair of spaced legs for supporting said body member;
an integral resilient generally trough-shaped strap hav-

ing a base and two spaced generally opposed sides integral with said base, said base being pivotally secured to said body member for pivotal movement about a pivotal axis, one of said sides being secured to one of the legs of said pair of legs and the other of said sides being secured to the other of said pair of legs, said legs extending downwardly from said sides in spaced apart relationship and supporting said body member in an operative position of the sawhorse, said resilient strap being bendable in the area of the junctures of said sides and said base in response to an inwardly directed force to allow substantial portions of said legs to move bodily toward each other, said legs being movable to a collapsed position by moving said substantial portions of said legs bodily toward each other against the resilience of said strap and pivoting said strap about said pivotal axis; and

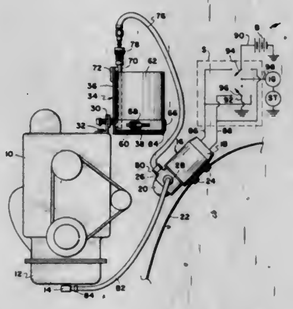
means for locking said legs in said collapsed position against the resilient force of said strap.

3,282,380

AUTOMATIC OIL CHANGER

George G. Burrell, Wickes, and Buryl Dean Burrell, Fort Smith, Ark., assignors to Bos Manufacturing Co., Inc., Wickes, Ark., a corporation of Arkansas

Filed Aug. 26, 1964, Ser. No. 392,167
6 Claims. (Cl. 184—1.5)



1. Apparatus for changing the oil in the vehicle motor of an automotive vehicle through the drain outlet of the oil pan of said vehicle motor comprising an upright bracket mounted under the hood of said vehicle for supporting an oil container thereon in upright position, a reversible pump mounted under said hood, an electric motor mounted under said hood in driving relation with said pump, an electrical switch interconnected between said motor and a standard vehicle battery in said vehicle, an open fitting received in the drain outlet of the oil pan of said vehicle motor, a tube mounted on said bracket passing through a hole in said container, the lower end of said tube terminating adjacent the bottom of said container, a first hydraulic conduit connecting from said fitting to a first port on said pump, a second hydraulic conduit connecting from a second port on said pump to the upper end of said tube, said switch being operable to connect the electric motor to the battery in such a manner as to rotate said electric motor and pump in one direction to pump oil from the vehicle motor into the oil container, said switch also being operable to connect the electric motor to said battery in such a manner as to rotate said electric motor and said pump in an opposite direction so as to pump oil from said oil container back into said vehicle motor, and means for pivoting said bracket from its upright position to a substantially horizontal position.

3,282,381

MULTI-CELLULAR ABSORPTIVE MAT

Raymond P. Fitzpatrick, 59 Aberdeen Road, Hauppauge, N.Y.

Filed July 20, 1964, Ser. No. 383,787
6 Claims. (Cl. 184—106)



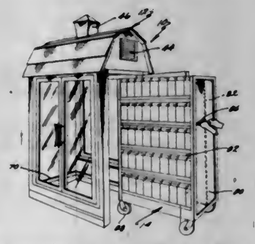
1. A multi-cellular absorptive mat comprised of an upper wall of oil-absorptive material and a lower wall of oil-resistant material, said upper and lower walls being disposed in superposed relation, said walls being integrally connected along spaced intersecting longitudinal and transverse seams to form a plurality of individual sealed compartments, said seams lying in the same plane, each compartment being peripherally defined by said intersecting seams and portions of said upper and lower walls, said upper and lower wall portions being in spaced relation and an oil-absorptive substance being sealed within each said individual sealed compartment.

3,282,382

MILK MERCHANDISING APPARATUS

Oliver H. Thompson, 716 Cherry Ave., Big Rapids, Mich.

Filed Aug. 27, 1964, Ser. No. 392,434
6 Claims. (Cl. 186—1)



1. A dairy-to-retail store milk handling and merchandising system, comprising: a retail store display housing having a floor, a top, ends, and sides, forming an enclosed display space, and having contained refrigeration means with cool air outlet means directed into said display space; display and access means on the sides of said housing; wheeled container supporting, display, and transporting cart means in said housing, having open sided shelves adjacent said access means; display cart inlet means on the end of said housing extending to said floor and higher than said cart means to receive said wheeled cart means; normally closed door means for said cart inlet means; cart guide and orienting means in said housing adjacent said inlet means and access means, to guide loaded cart insertion for optimum display and access of containers through said access means; said display and access means being on both sides of said housing, and said cart having a central vertical partition and open sided shelves on both sides thereof, opening toward the respective access means.

3,282,383

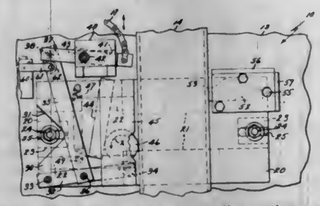
FREE-FALL SAFETY BRAKE

Anthony R. Chasar, Mentor, Ohio, assignor to The Triax Company, Cleveland, Ohio, a corporation of Ohio

Filed June 30, 1964, Ser. No. 379,122
8 Claims. (Cl. 187—88)

1. A free-fall safety brake for an elevator structure, the structure having hoisting means and being disposed closely adjacent to a vertical, fixed column; said brake comprising means providing an upwardly tapered pocket having an open side adjacent to one side of the column;

means providing a laterally tapered pocket having its larger end open and disposed adjacent to the other side of the column; said means providing said pockets being mounted on a single base member; means laterally shiftably mounting said member to the elevator structure in use; a wheel loosely disposed in the bottom of said upwardly tapered pocket and normally spaced from the column; a generally horizontal bar disposed in said laterally tapered pocket and normally spaced from said column; means connecting said brake to the hoisting means;



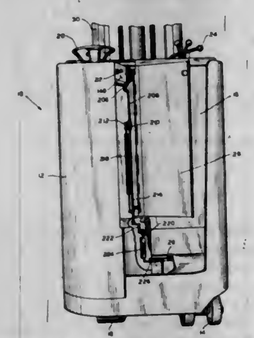
said last mentioned means including means responsive to failure of the hoisting means and moving said wheel upwardly within said upwardly tapered pocket whereby said wheel is cammed against the column and upon fall of said elevator structure, said base member is shifted laterally and an end of said bar is brought into engagement with the column, said bar pivoting upwardly within said laterally tapered pocket whereby an edge of said bar is caused to bite into said column and said elevator structure is stopped.

3,282,384

MOTOR AND BRAKE CONTROL FOR LIFT TRUCKS

Henry J. Thomas and George J. Trusock, Battle Creek, Mich., assignors to Clark Equipment Company, a corporation of Michigan

Filed June 1, 1964, Ser. No. 371,469
5 Claims. (Cl. 192—2)



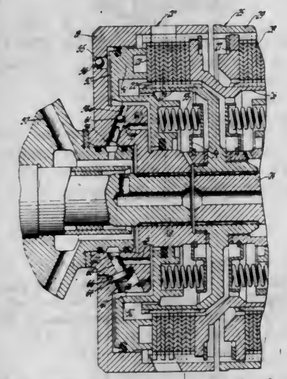
1. For use with a vehicle having a motor speed control which is actuated by an outwardly biased plunger, a brake and a brake pedal for actuating the brake, linkage comprising a bell crank pivotally connected to the vehicle and having first and second arms, the said first arm being disposed to engage the plunger, a first rod connected to the said second arm, a second rod disposed to engage the said first rod so that movement of the said second rod in one direction causes the said first rod to move in the same direction and pivot the said bell crank so that the said first arm engages the plunger and causes it to be actuated inwardly, the said second rod being engageable by the brake pedal so that movement of the brake pedal to release the brake causes the said second rod to move in a direction opposite to the said one direction, and spring means connected to the said second rod for biasing the said second rod in the said one direction with sufficient force to overcome the outward bias of the plunger.

3,282,385

DEVICE FOR CONTROLLING RATE OF ENGAGEMENT OF HYDRAULIC CLUTCH

Kenneth E. Snyder, Northville, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 31, 1964, Ser. No. 393,289
8 Claims. (Cl. 192—85)



1. In a transmission, a rotatable clutch drum, an engageable and releasable clutch, fluid pressure responsive means for engaging and releasing said clutch forming with said drum a chamber adapted to receive fluid under pressure to engage said clutch, a fluid pressure source, a valve connected to said source for controlling admission of pressure to and exhaust of pressure from said chamber, passage means connecting said valve to said chamber including first and second passages in said drum, a fixed restriction in said first passage for restricting fluid flow to said chamber upon admission of fluid pressure to said passage, a second valve in said second drum passage movable in response both to centrifugal force and to fluid pressure admitted to said second passage to permit unrestricted fluid flow to said chamber, said second valve being movable in response to pressure rise in said chamber to block off fluid flow to said chamber through said second passage.

3,282,386

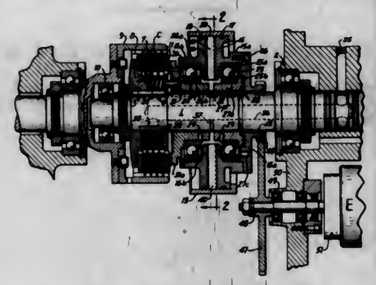
ACTUATING MECHANISM OF THE CENTRIFUGALLY OPERATED ROTATING FLUID CYLINDER TYPE

George R. Aschauer, Racine, Wis., assignor to Twin Disc Clutch Company, Racine, Wis., a corporation of Wisconsin

Filed Nov. 17, 1964, Ser. No. 411,900
10 Claims. (Cl. 192—105)

1. An actuating mechanism comprising, a rotatable drive member, a cylinder around said drive member, anti-friction bearing means supported by said drive member, a pair of pistons within said cylinder and mounted on said bearing means and defining an expansible fluid chamber with said cylinder, an actuatable member, at least one of said pistons being mounted for axial shifting to provide relative axial movement between said pistons and thereby form said expansible chamber, said one piston being associated with said actuatable member to cause actuation thereof when said piston is shifted, said pistons and cylinder forming a fluid cylinder assembly

which is rotatable on said bearing means independently of said drive member and said actuatable member, passage means for introducing fluid into said chamber while said cylinder is rotating, and positive control means for



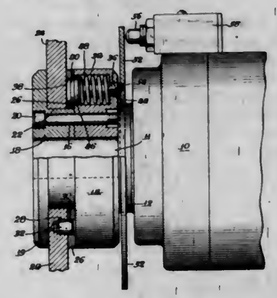
rotating said cylinder assembly at various speeds to thereby cause a centrifugal head to be generated in said chamber and a consequent axial thrust by said one piston which is proportional to the rotative speed of said assembly.

3,282,387

OVERLOAD CLUTCH

Leonard H. Becker, Country Club Hills, and Ronald H. Kenny, Addison, Ill., assignors to Commercial Cam & Machine Co., Chicago, Ill., a corporation of Illinois

Filed Oct. 30, 1964, Ser. No. 407,675
7 Claims. (Cl. 192—150)



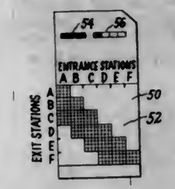
1. In an overload clutch, comprising a driver member, a driven member rotatable with respect thereto and a releasable connection between the members, the improvement comprising a plunger plate movable with the driver member and having transverse openings near the outer edge, said openings each having a first portion which is cylindrical through most of the plate and a second portion which is reduced in size at one side, plungers movable end wise in the transverse openings, each plunger having a button head at one end to slide in said first portion of said opening and a reduced stem in said second portion of said opening, thereby guiding the plunger at both ends, a wear plate secured to the driven member in juxtaposition to the other side of the plunger plate and having chamfered openings registering with the plunger openings, each plunger having a flat end at the outside of the button head with chamfered edges to register with one of said wear plate chamfered openings, and a coil spring surrounding the stem of each plunger in the first portion of the plunger opening and engaging the under side of the button head at one end and the wall of the plunger plate surrounding said second portion of the plunger opening at the other end.

3,282,388

TIME CODING MEANS FOR TRANSIT TICKETS

Howard L. Lester, Alplaus, and Dallas E. Cain, Scotia, N.Y., assignors to General Electric Company, a corporation of New York

Filed Sept. 18, 1963, Ser. No. 309,730
6 Claims. (Cl. 194—4)



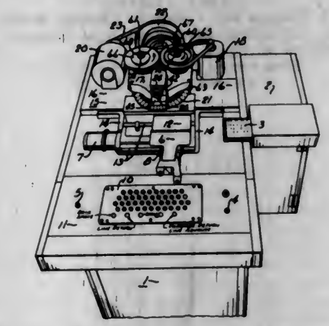
1. A transit ticket provided with a time coding means comprising: a ticket member; a pair of time areas on said ticket member, one of said time areas being completely coated with magnetizable material, the other of said time areas being divided into parts and each of said parts being coated with magnetizable material according to an allowable time for a trip indicated by the transit ticket.

3,282,389

ROTARY IMPRINTING MACHINE MOVING SELECTED CHARACTER TO IMPRINTING POSITION BY SHORTEST ARC

Walter E. Rudisch, East Amherst, N.Y., and Frank D. Gross, Freedom, Pa., assignors to The Pannier Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 13, 1964, Ser. No. 389,364
6 Claims. (Cl. 197—6.6)



2. An imprinting machine having a frame, an indicia and logic disc means mounted on said frame for selective directional rotation by independently operated directional circuit means to position indicia for imprinting, and which consists of a logic circuit means having an arcuate contact on said disc means substantially semicircular in length and an insulating portion, an annular series of brush means supported from said frame to engage in the rotary path of and to engage said arcuate contact and said insulated portion as said disc means rotates, each of said brush means representing a specific selective indicia circuit including said circuit connection with said arcuate contact, circuit means to energize a specific brush means to rotate said disc means in one direction when its respective energized brush means is in engagement with said arcuate contact, and in the opposite direction when said energized specific brush means is not in engagement with said semicircular contact and thereby determine the shortest distance for said selected indicia to travel for imprinting, and which also includes in said logic circuit means

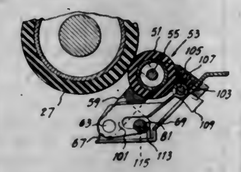
a second contact substantially less in arcuate length than said semicircular contact and mounted on said disc means to be engaged by said respective energized specific brush means at the position of imprinting, a brake means mounted on said frame to engage and stop said disc means when energized, said respective energized specific brush means engaging said second contact on said disc means to close a circuit and energize said brake means to stop said disc means.

3,282,390

FEED ROLL MECHANISM

John C. Morris, East Norwalk, and Nels E. Tranberg, Fairfield, Conn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 2, 1964, Ser. No. 335,179
7 Claims. (Cl. 197—138)



1. A worksheet feed mechanism for a business machine such as a typewriter or the like comprising:
(a) a platen having a cylindrical surface of predetermined length;
(b) means mounting said platen for rotation about an axis passing through the center thereof;
(c) feed roll means including
(1) a feed roll having a cross shaft and a single uninterrupted surface disposed between the ends of said shaft, said surface being a cylindrical feed roll surface of resilient material having a substantially uniform diameter and a length substantially equal to said length of said platen surface,
(2) means mounting said feed roll for rotation about another axis passing through the center thereof in parallel with said platen axis, said feed roll mounting means having
(i) a first roll support engaging one end of said feed roll cross shaft,
(ii) a second roll support engaging the other end of said feed roll cross shaft, and
(iii) at least one other roll support engaging said feed roll surface and having rolling contact at a feed roll surface portion axially spaced from and intermediate said cross shaft ends, and
(3) a plurality of means each acting on a different one of each of said roll supports for yieldably urging said feed roll toward said platen axis, said feed roll urging means coacting with said supports to provide a uniform longitudinal distribution of pressure along the contacting portions of said platen and feed roll surfaces and whereby a worksheet placed between said platen and feed roll surfaces is moved without slippage and wrinkling when said platen and said feed roll are rotated.

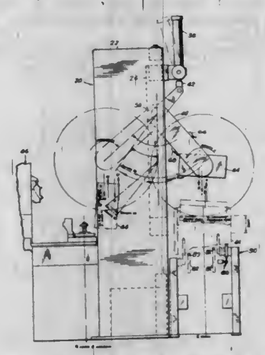
3,282,391

ARTICLE HANDLING TRANSFER APPARATUS

Louis Solet, Gibraltar, and Dewey Maine Evans, Livonia, Mich., assignors to Ajem Laboratories, Livonia, Mich.

Filed Mar. 8, 1965, Ser. No. 437,865
6 Claims. (Cl. 198—19)

5. Apparatus for processing articles of manufacture which are being fed to a plurality of processing machines from a common conveyor section, said apparatus comprising
a conveyor having a plurality of positions through which said articles are passed and on which said articles rest,
a plurality of article-transfer machines arranged alongside said conveyor section and each forming means for picking up said article from said conveyor, depositing said article on a processing machine, and then returning said article to said conveyor section,
a parts programming device cooperatively associated with said article-transfer machine and said conveyor section
said programming device comprising
a plate geometrically representative of said conveyor section,
actuating means adjacent the perimeter of plate,
signal means adjacent the perimeter of said plate,
said plate and said actuating and signal means being mounted in moveable relationship thereby providing relative movement of said plate past said actuating



and signalling means which movement is analagous to the linear movement of a position of conveyor section past said processing units,
a plurality of contactors on said plate so spaced in relationship to said actuating and signal means as to represent parts moving on said common conveyor section,
said actuating means forming means to alter a characteristic of said contactor,
and wherein actuating means is responsive to the completion of the processing of an article by a first said processing machine,
each said contactor in its altered condition being operative to actuate said signal means when said relative movement brings said contactor in register therewith,
said signal means communicating with another processing machine further down said conveyor line to prevent its processing of said completed article, as it is conveyed therepast,
and wherein said relative movement is achieved by synchronizing the movement of said plate with the movement of said conveyor section.

3,282,392

ARTICLE FEEDING AND TRANSFERRING APPARATUS

William H. Fowler, Danielsville, Pa., assignor to Western Electric Company Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 10, 1964, Ser. No. 417,278
7 Claims. (Cl. 198—24)

1. In an apparatus for advancing articles from an intermittently driven conveyor onto a receiving trackway,

a pair of pushers moveably mounted for engaging and transferring articles from said conveyor onto said trackway,

means for alternately advancing said pushers at a rapid speed and then a slow speed to engage and transfer each succeeding article advanced by said intermit-



tently driven conveyor, whereupon each succeeding article is advanced to overtake and engage each preceding article, and

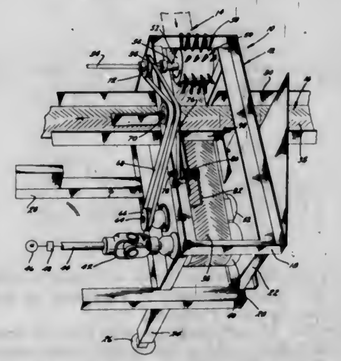
means for alternately withdrawing said pushers from said articles following engagement of each succeeding article with each preceding article.

3,282,393

TRANSFER DEVICE FOR EGG CONVEYORS

Jewel Graves, Holland, and Willis R. Voran, Zeeland, Mich., assignors to Big Dutchman Inc., a corporation of Michigan

Filed Apr. 20, 1964, Ser. No. 361,151
1 Claim. (Cl. 198—25)



An egg transfer device for conveyor belts moving in different directions, comprising: a pair of conveyor belts and support means therefor; said support means arranged to allow movement of the first belt adjacent to and over the second belt; transfer means at the juncture of said belts to shift eggs from the lower belt to the upper belt; said transfer means comprising an elongated generally cylindrical element rotatably mounted above said lower belt at the edge of the upper belt on an axis generally normal to the direction of movement of said lower belt; a plurality of flexible, resilient, elongated bristles mounted to and projecting radially from said element toward said belts to move adjacent said belts; and drive means operably connected with said rotatable element to rotate said element and bristles in the direction of movement of said lower belt, to gently push eggs up over the edge of said upper belt for movement on said upper belt.

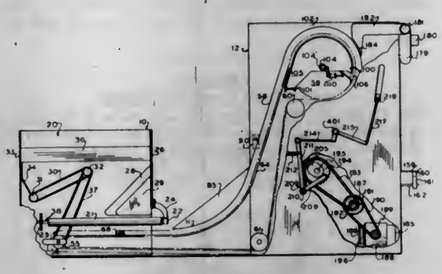
3,282,394

BOTTLE ORIENTING MACHINE

Morris P. Neal and James L. Neal, Clearwater, and Donald G. Reichert and Sylvan V. Dice, Tarpon Springs, Fla., assignors to A-B-C Packaging Machine Corporation, Largo, Fla., a corporation of Illinois

Filed Aug. 30, 1963, Ser. No. 308,923
7 Claims. (Cl. 198—33)

1. A machine for orienting randomly-arranged bottles, each of said bottles having a lengthwise axis and an upper end and said machine comprising, in combination, a hopper having a plurality of rollers positioned parallel to each other and with the distance between adjacent rollers being just sufficient for a bottle to pass between adjacent rollers with its lengthwise axis parallel to the said rollers, a



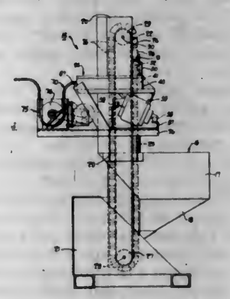
bottle righting mechanism having means for positioning said bottles with the upper ends of all bottles extending in the same direction, and an input conveyor extending from beneath the said rollers to the said bottle righting mechanism.

3,282,395

WORK FEEDING APPARATUS

Richard H. Crotty, Mentor, Ohio, assignor to Production Feeder Corporation

Filed Nov. 5, 1964, Ser. No. 409,093
13 Claims. (Cl. 198—33)



1. Article feeding apparatus comprising:

(a) a hopper;

(b) an article orienting mechanism above said hopper;

(c) a feeding belt extending from within said hopper to above said orienting mechanism;

(d) said orienting mechanism including:

(i) a pan positioned to receive articles from said belt;

(ii) said pan including spaced troughs;

(iii) a pair of spaced rails aligned with each trough; and,

(iv) means for vibrating said mechanism to feed articles along said troughs and aligned rails;

(e) distributor means positioned to receive articles from said feeding belt and to distribute the articles on said pan;

(f) a chute extending from the ends of each pair of rails and beyond said apparatus; and,

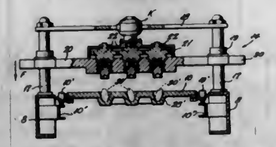
(g) a magnetic drive wheel adjacent each chute for feeding articles therealong.

3,282,396

MECHANICAL APPARATUS FOR ORIENTATING FRUIT AND VEGETABLES OF ELONGATED SHAPE

Giordano Tomelleri, 22 Via Montorio, Verona, Italy

Filed Nov. 12, 1964, Ser. No. 410,499
Claims priority, application Italy, Nov. 18, 1963, 23,861/63
7 Claims. (Cl. 198—33)



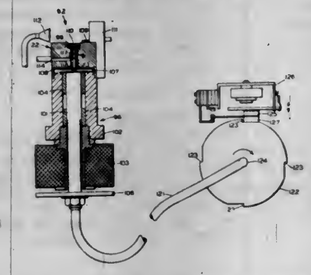
1. Mechanical apparatus for orientating fruit and vegetable products of elongated shape accommodated in individual cavities provided on an endless conveyor adapted to be moved intermittently comprises a plate adapted to be displaced towards and away from the conveyor, means for guiding the plate during displacement, said plate supporting a rotatable member extending towards the conveyor, means for rotating said rotatable member, a head member supported for rotation with the rotatable member, a cavity being provided on the head member adapted to contact part of the product to effect its rotation, means for altering the length of the head member to suit the length of the product, a tapering spiral arm carried by said head member and extending downwardly therefrom and diverging in a direction toward said conveyor and adapted to contact and initially position said product correctly in its cavity during orientation of said product.

3,282,397

APPARATUS FOR FEEDING ARTICLES

Peter M. Grunwald, Zurich, Switzerland, assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Original application June 4, 1963, Ser. No. 285,438, now Patent No. 3,240,332, dated Mar. 15, 1966. Divided and this application Sept. 1, 1965, Ser. No. 505,442
11 Claims. (Cl. 198—33)



1. An orienting device for rotating an article to a desired angular direction, which comprises:

rotatable means movable between a first and a second position, in said first position said rotatable means being out of engagement with an article to be rotated and in said second position said rotatable means being in engagement with and holding said article;

means for moving said rotatable means between said first and second positions;

means for imparting rotary motion to said rotatable means; and

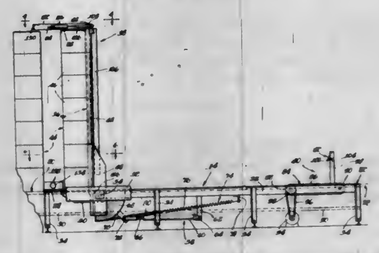
control means for controlling the rotation of said rotary imparting means in accordance with a desired angular direction of said article, said control means including a plurality of selectively actuable time delay circuits, the time delay of each circuit corresponding to the time required for the rotary imparting means to rotate through a particular angle.

3,282,398

LAYDOWN UNSTACKER

Sigmund P. Skoli, Elmwood Park, and Richard W. Anthony, Chicago, Ill., assignors to Mojonnier Bros. Co., Chicago, Ill., a corporation of Illinois

Filed June 23, 1964, Ser. No. 377,297
2 Claims. (Cl. 198—35)



1. For use in a materials handling system, the combination comprising: conveyor means continuously operable in a straight line path through an unstacking station; carrier frame means located at said station and mounted to be swung in a vertical arc between a substantially vertical position where it can receive a stack of cases being transported by said conveyor means and a substantially horizontal position where it can release the received cases individually to said conveyor means, said carrier frame means including a plurality of rigidly interconnected elements; selectively operable stack-retention means on said carrier frame means for receiving and holding a stack of cases in assembled relationship during swinging of said frame means from said vertical position to said horizontal position and for releasing said cases thereafter, including a pair of arms rotatably mounted on said rigidly interconnected elements to be pivoted about respective axes parallel with the longitudinally axis of said carrier frame means, said arms being pivotally convergible to inward positions obstructing passage of cases and being pivotally retractable to lateral positions free of said cases whereby to permit swinging of said frame means back to its vertical position before the final case of a laid down stack has been cleared from the downstream end of said frame means by said conveyor means; fluid-actuated jack means mounted on said carrier frame means and connected to said arms for rotating said arms; and control means for said jack means, including first position responsive switch means disposed to be actuated by the situation of said frame means in its substantially horizontal position and second position responsive switch means disposed to be actuated by the return of said frame means to its vertical position, said first and second switch means being connected in fluid circuit with said jack means for operating said jack means.

3,282,399

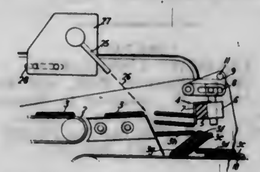
METHOD AND APPARATUS FOR STACKING BISCUITS

David Charles Morton, Twyford, England, assignor to Baker Perkins Limited, Northamptonshire, England, a British company

Filed Dec. 4, 1964, Ser. No. 415,989
14 Claims. (Cl. 198—35)

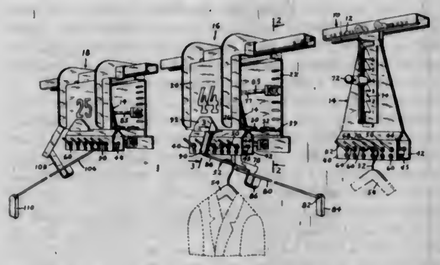
1. Apparatus for stacking biscuits comprising a substantially horizontal conveyor, a stationary plate im-

mediately following and approximately in line with the conveyor, a stop spaced away from the end of the stationary plate for arresting biscuits projected over the plate by the conveyor, a guide situated beneath the level of



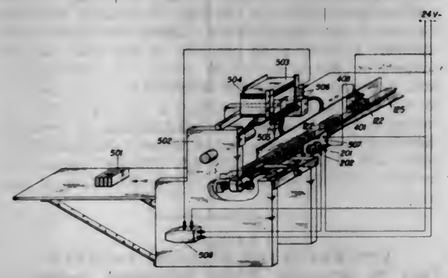
the plate for engaging successive biscuits on the side opposite to that engaged by the stop, and a second conveyor for receiving biscuits from the guide and conveying away the stack thus formed.

3,282,400
PENDULUM UNLOADER
Henry C. Jönson, Kungsbacka, Sweden, assignor to Aktiebolaget Valida Maskiner, Kungsbacka, Sweden, a corporation of Sweden
Filed Feb. 5, 1965, Ser. No. 430,676
5 Claims. (Cl. 198—38)



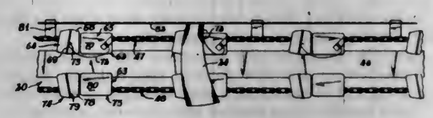
1. On a conveyor having a plurality of movable transporters for carrying articles along a predetermined path, each of said transporters having at least one article holding device, a plurality of unloading stations located along said predetermined path, each of said unloading stations and each of said transporters having selectively interengageable means effective in at least one predetermined unloading station to move said article holding device from an article holding position to a position wherein an article held by said device is released for gravitational movement which is initiated in one predetermined direction laterally away from said predetermined path, and take-away means associated with each of said unloading stations for receiving articles unloaded from the associated station and for conducting said unloaded articles out of said predetermined path, the improvement wherein the take-away means associated with at least one of said unloading stations comprises a rod, means supporting one end of said rod for swinging movement about an axis spaced from said predetermined path laterally in the direction in which unloading movement of an article is initiated, means yieldably urging said rod into a first position sloping downwardly in said opposite direction, said rod in said first position having a portion extending substantially transversely across said predetermined path and terminating in a free end located at a point spaced from said path laterally in said opposite direction, said rod in said first position being so positioned lengthwise of said predetermined path as to catch any article unloaded from said associated station and to conduct said unloaded article across said predetermined path to the free end of said rod, means mounted adjacent the free end of said rod in said first position for receiving article from said free end, and said portion of said rod when in said first position being engageable by articles retained and carried through said associated station by said transporters whereby continued movement of each engaged article is effective to swing said rod about said axis and against said yieldable means temporarily into a second position to permit each engaged article to pass beyond the free end of said rod.

3,282,401
CONTROL DEVICES FOR AUTOMATIC PACKING MACHINES
Alfred Schmermund, 62 Kornerstrasse, Gevelsberg, Westphalia, Germany, and Erich Beermann and Siegfried Knecht, both of Gevelsberg, Westphalia, Germany; said Beermann and said Knecht assignors to said Schmermund
Filed Oct. 6, 1964, Ser. No. 401,867
Claims priority, application Great Britain, Oct. 10, 1963, 39,939/63
9 Claims. (Cl. 198—40)



1. In an automatic packing machine, a control arrangement comprising a conveyor path for articles, a counting device for counting articles fed along said conveyor path, an impulse storage device, means for controlling said storage device by said counting device, means for initiating a working operation of said packing machine, means for actuating said initiating means by said storage device after a predetermined number of articles fed along said conveyer path have been counted.

3,282,402
CONVEYOR CHAIN AND SUPPORT THEREFOR
Walter D. Ayres, Jr., Oaklawn, Ill., assignor to B. H. Bunn Company, Chicago, Ill., a corporation of Illinois
Original application May 6, 1963, Ser. No. 278,053, now Patent No. 3,189,163, dated June 15, 1965. Divided and this application June 1, 1965, Ser. No. 460,033
7 Claims. (Cl. 198—189)



1. In combination, an endless roller chain conveyor, and means for supporting said roller chain, said roller chain being movable in a generally horizontal direction and having an upper load supporting flight and a lower return flight; laterally extending projections on the chain, said supporting means comprising a fixed frame, a hollow

member on the frame and having a slot on its under side extending the length thereof, said chain being received in said slot with the laterally extending projections overlying the edges of said slot, whereby to support the lower return flight, a rail on the frame for supporting the load-bearing flight, and vertically extending projections on the sides of the chain and adapted to receive the rail between them to retain the chain on said rail.

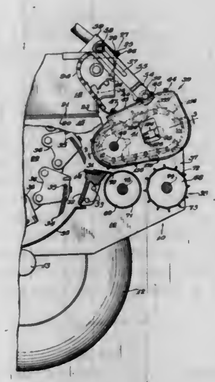
3,282,403
BELT CONVEYOR SUITABLE FOR USE AS AN UNDERGROUND COAL MINING FLOOR CONVEYOR
Terrill G. Todd, Beaver, W. Va., assignor to Wilcox Manufacturing Company, Raleigh, W. Va., a corporation of West Virginia
Filed Mar. 31, 1964, Ser. No. 356,151
16 Claims. (Cl. 198—139)



1. A belt conveyor assembly suitable for use as an underground coal mining floor conveyor in conjunction with face machinery and a bridge conveyor operatively connected between the face machinery and the floor conveyor comprising a discharge end section having a drive roller and a movable take up roller, a receiving end section including a receiving end roller, an endless belt assembly trained about said rollers so as to provide an upper coal carrying flight and a lower return flight, a plurality of separate longitudinally spaced transversely extending roller stand units disposed between said end sections, each of said roller stand units including an upper trough shaped roller assembly for supporting the upper coal carrying flight of said belt assembly in trough like configuration and a lower return flight roller assembly for supporting the lower return flight of said belt assembly, a plurality of separate elongated rigid side rail sections extending between the ends of each pair of adjacent roller stand units, and means for detachably connecting each end of each roller stand unit to the adjacent ends of the associated side rail sections in fixed horizontal relation and in limited vertical articulated relation, said side rail sections when connected with said roller stand units providing a pair of parallel substantially continuous upwardly facing rail surfaces for rollingly supporting the discharge end of a bridge conveyor assembly or the like.

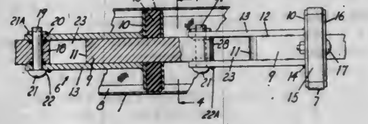
3,282,404
FEED APRON CONSTRUCTION
James Corwith, Bettendorf, Iowa, Wilbur H. Clendenin, Memphis, Tenn., and Manfried L. Hoch, Lockport, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Feb. 11, 1965, Ser. No. 431,850
5 Claims. (Cl. 198—167)

1. In a harvesting machine having a body with a crop processing casing, a lower feed assembly mounted on said body, an upper feed assembly disposed above said lower feed assembly in delivering relationship therewith to said casing, said upper feed assembly comprising a structure including a pair of laterally spaced side walls presenting confronting faces, means mounting said upper feed assembly from said body for vertical movement with respect to said lower feed assembly, said upper feed assembly comprising a conveyor having a plurality of feed members extending transversely of said side walls and having end portions terminating adjacent to respective faces, guards mounted on said side walls and extending beyond the respective faces toward each other in overlapping relation to the respective end portions of said feed members, and said guards encompassing opposite



ends of said conveyor, whereby in the event of breakage of said conveyor it is retained by said guards from being fed into said casing.

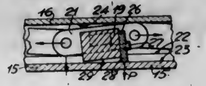
3,282,405
TUBULAR CONVEYORS
Charles R. Larson, 532 Capital, Bellevue, Mich., and John J. Wallace, 5131 Maple Ridge Drive, Kalamazoo, Mich.
Filed Sept. 8, 1964, Ser. No. 394,930
9 Claims. (Cl. 198—168)



1. In a tubular conveyor having a closed tube arranged in a plane with an inlet opening at one position and an outlet opening from an advanced position along the tube,
a conveyor for advancing material through said tube comprising a plurality of similar center bar and pusher flight assemblies,
said center bars having ends rounded in the plane of said tube and having pusher plates positioned midway of their length and around the bars,
link plates welded to the sides of said bars behind said pusher plates in planes parallel to the plane of said tube and having their forward ends secured by welding to said pusher plates,
said link plates projecting rearwardly from the rear ends of said bars and having pivot holes in their rear ends,
flight blocks positioned around said bars and against said pusher plates and projecting beyond the edges of the pusher plates,
clamp plates positioned around said bars and clamped against the leading sides of said flight blocks by bolts passed through said pusher plates and clamp plates,
pivot holes formed through the forward ends of said bars perpendicular to the plane of said tube and hav-

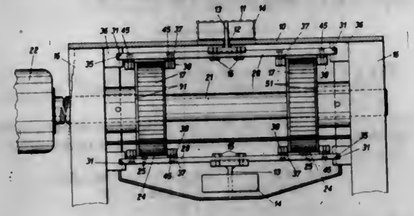
ing annular seal recesses formed around the ends of the pivot holes,
the forward ends of said bars fitting between the rearwardly projecting ends of said link plates on the preceding bar,
pivot pins passed through said holes in said link plates and said bars having heads flatted on one side and restrained against rotation by projections welded to one of said link plates,
cross pins passed through the other ends of said pivot pins removably holding the pivot pins in place,
deformable seals in said seal recesses around said pivot pins and compressed therearound by said link plates, and a driving sprocket positioned in the plane of said tube and having peripheral recesses spaced to receive said flight blocks with teeth between the recesses having forward edges with forwardly and outwardly curved shoulders conforming to the curved rear ends of said bars and having rear edges curved in radially inwardly divergent relation to the forward edges of said teeth to engage the leading ends of succeeding bars.

3,282,406
TRANSPORTING AND CONVEYING DEVICE FOR ROAD PAVING MACHINES SPREADING BITUMINOUS CONGLOMERATES
Domenico Domenighetti, Via Nosetto 6, Bellinzona, Switzerland
Filed May 25, 1964, Ser. No. 369,810
Claims priority, application Switzerland, Aug. 6, 1963, 9,798/63
4 Claims. (Cl. 198—174)



1. A conveyor arrangement for a road paving machine and the like comprising, in combination:
(a) a base plate having a normally upwardly directed horizontally extending face;
(b) two elongated chains, each chain including a plurality of hingedly connected links, each link having two terminal portions spaced in the direction of chain elongation;
(c) guide means secured to said plate for guiding movement of said chains in respective parallel, longitudinal, transversely spaced paths,
(1) said guide means having two upwardly directed guide faces substantially parallel to said face of the base plate and upwardly spaced therefrom,
(2) each chain engaging a respective guide face;
(d) a plurality of bars spaced longitudinally of said paths and having respective longitudinal axes transverse of said paths,
(1) each bar having a pair of axial end portions fixedly secured to links of said chains respectively,
(2) each bar having a bottom face directed toward said base plate;
(e) a scraper sheet projecting from a portion of said bar spaced from the axis thereof in the direction of said paths beyond said bottom face into engagement with said base plate over a distance sufficient to tilt said bar about the axis thereof and thereby to lift one of the terminal portions of each associated link from the associated guide face while the other terminal portion engages said guide face during said movement of said chains.

3,282,407
PACKING MACHINES
Alfred Schmermund, 62 Kornerstrasse, Gevelsberg, Westphalia, Germany
Filed Sept. 23, 1964, Ser. No. 398,628
Claims priority, application Great Britain, Sept. 27, 1963, 38,153/63
4 Claims. (Cl. 198—175)



1. In and for a packing machine, a conveyor arrangement comprising a plurality of members for conveying articles from one place to another, two endless parallel pull-resisting conveyor belts, a plurality of elements extending transversely to said conveyor belts, each transverse element carrying one of said conveying members, means for clamping each of said transverse elements to said conveyor belts and for distancing said transverse elements from said belts, teeth provided on each conveyor belt, toothed wheels for driving said conveyor belts, and teeth on said toothed wheels, said teeth of said toothed wheels being complementary to and meshing with teeth on said belts, wherein said clamping means each comprise a first H-shaped clamping part at one side of a conveyor belt, a second H-shaped clamping part at the other side of said conveyor belt, each H-shaped clamping part having parallel longitudinal portions and a transverse portion between said longitudinal portions, the length of said transverse portion being at least equal to the width of said conveyor belt, said transverse portion of said second clamp part being adapted to engage a gap between adjacent teeth of said conveyor belt, the longitudinal portions being parallel to the adjacent margin of said conveyor belt, and a plurality of bolts each passing outside the conveyor belt through a pair of registering holes in the longitudinal portions of said first and second clamping parts and through holes in one of said transverse elements whereby said transverse element and said first and second clamping parts are clamped to said conveyor belt.

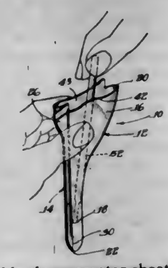
3,282,408
COMBINATION AUGER AND FOLD-BACK FINGER FEEDER
Howard R. Lohrentz, Hesston, Kans., assignor to Hesston Manufacturing Company, Inc., Hesston, Kans., a corporation of Kansas
Filed Nov. 9, 1964, Ser. No. 409,666
1 Claim. (Cl. 198—211)



In a crop handling unit for a farm implement:
an elongated cylinder having shaft means supporting the same for rotation about its longitudinal horizontally disposed axis, said cylinder having a plurality of longitudinally extending circumferentially spaced

recesses, each recess opening radially outwardly of the cylinder, there being a pair of interconnected angularly offset walls within the cylinder defining the inner surfaces of each recess, respectively, each wall extending inwardly from the periphery of the cylinder in chord-like disposition;
a pair of spaced ends mounted in the cylinder for each of said recesses extending radially inwardly from said periphery,
bearings in the recesses secured to each end respectively;
a swingable tine assembly in each recess respectively oscillatable with corresponding bearings; and
crank means operably interconnecting the assemblies with the shaft means for oscillating the former upon rotation of the cylinder and its shaft means, one wall of each recess respectively having a slot for clearing a component of said crank means, the cylinder otherwise enclosing the crank means and being out of communication with said recesses.

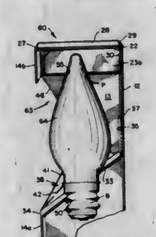
3,282,409
QUICK RELEASABLE THERMOMETER SHEATH
Walter E. Hidding, 505 Banbury Road, Addison, Ill.
Filed Dec. 7, 1964, Ser. No. 416,560
8 Claims. (Cl. 206—16.5)



8. A disposable thermometer sheath comprising: a pair of overlyingly disposed, flexible, thermoplastic resinous leaves, corresponding edges of said leaves defining a mouth; and fusion joint means tracing a generally looped path between spaced points along said mouth and joining said leaves away from said mouth whereby to define a tubular boot, a funnel-shaped portion between said mouth and said boot, and a handle relatively weakly connected to a said leaf at a corner of said mouth and relatively securely connected to said boot, said fusion joint means defining a common straight lateral side for said funnel-shaped portion and said boot, said handle being aligned parallel with said straight side, whereby said handle may be grasped by a person's fingers and pulled from said funnel-shaped portion to rupture the relatively weak connection and to permit relocation of the thus released end of the handle to a position away from said mouth for use in unsheathing a thermometer received in said sheath without exposing the fingers to contact with said tubular boot or that portion of the handle adjacent said boot at the relatively secure connection.

3,282,410
CARTON
Raymond A. Cote, Doraville, Ga., assignor to Riegel Paper Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 2, 1965, Ser. No. 436,429
10 Claims. (Cl. 206—45.14)

4. A package including a flame-shaped light bulb or the like and display carton therefor erected from a one-piece paperboard blank, comprising
(a) an open bottom tubular sleeve having consecutively articulated rear, first side, front and second side walls,
(b) said front wall being divided into spaced upper and lower portions with an intermediate platform panel of a length greater than full carton width hinged to said lower portion along an arcuate hinge line and defining an aperture therein whose edges supportingly engage lower portions of said bulb,
(c) bellows means formed in each of said side walls and being connected with at least the rear edge portions of said platform panel,
(d) said platform panel and bellows means being foldable inwardly of said tubular sleeve to define a window extending across the full width of said carton and into each of said side walls,



(e) bulb engaging flap means of greater than full carton width articulate dto the upper edge of one of said side walls and defining a second aperture therein whose edges supportingly engage upper portions of said bulb,
(f) top flap means hinged to the upper edge of the other side wall,
(g) cover means hinged to an upper edge of said sleeve and including a tuck flap,
(h) said bulb-engaging flap means being folded inwardly of said sleeve and engaging said other side wall, and
(i) means locking said cover in a sleeve-closing relation.

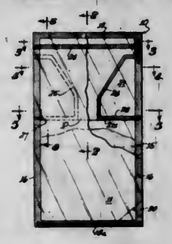
3,282,411
FLEXIBLE PLASTIC CONTAINER
William N. Jardine, % W. N. Jardine Co., P.O. Box 740, Honolulu, Hawaii
Continuation of application Ser. No. 801,897, Mar. 25, 1959. This application Mar. 1, 1963, Ser. No. 264,998
13 Claims. (Cl. 206—46)



1. A flexible plastic container filled with fluent material contents, such as liquids and the like, and adapted to be supported in stable upright position on a supporting surface; and comprising a flexible body portion transversely seamed at the top and bottom ends thereof to confine the contents, the bottom end including opposed end flaps and a flattened central supporting area displaced toward and of lesser longitudinal extent than the top of the body portion and confined between said end flaps disposed in positions not substantially below coincidence with the plane of the flattened central area and with the bottom seam in face-to-face contact with the end flaps and the flattened central area and extending across the flat-

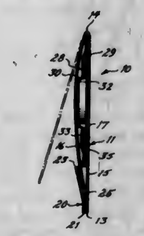
tened area and the end flaps to add stiffness tending to maintain the confined central area in its flattened condition, said body portion providing two opposed faces decreasing in width and two opposed faces increasing in width as they approach one of the transverse seams.

3,282,412
VALVED MIXING CONTAINER OR PACKAGE
Arthur P. Corella, North Hollywood, and William S. Schneider, Glendale, Calif., assignors of ten percent to Wayne V. Rodgers, South Pasadena, Calif.
Filed Nov. 6, 1963, Ser. No. 321,958
18 Claims. (Cl. 206—47)



1. A package containing a product to be mixed with a substance to be added, comprising:
a pair of opposed, flexible outer walls enclosing an interior product-receiving space;
a quantity of product in said space;
and a pair of opposed, flexible inner walls disposed between the outer walls and joined to each other and to only one outer wall at two spaced areas that extend inwardly from one edge of the outer walls to define opposite boundaries of a filling passage between said inner walls and communicating at its inner end with said space;
said inner walls being attached respectively to one adjoining outer wall at said one edge thereof,
and said inner walls having between said spaced attachment areas and adjacent the inner end of the passage an arched configuration that holds the two walls of the passage in mutual contact independently of the presence of a product in said space to prevent escape of the product through said passage.

3,282,413
CATCH-COVER PACKAGE AND METHOD OF MANUFACTURE
George C. Sparks, 101 Rorer St., Erdenheim, Pa.
Filed Sept. 22, 1965, Ser. No. 495,750
8 Claims. (Cl. 206—56)



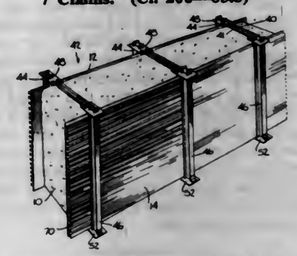
1. A catch-cover package comprising a relatively large generally rectangular main sheet having opposite edges, a relatively small elongate auxiliary sheet extending entirely along one of said opposite edges in facing engagement with said main sheet, adhesive means adhesively securing the outer longitudinal edge margin of said auxiliary sheet to said main sheet, the inner longitudinal edge of said auxiliary sheet being entirely free of said main sheet, and container means carried by said main sheet adjacent to and inward of said auxiliary sheet, said main sheet being folded entirely over said container means to swing the other opposite edge of said main sheet into engagement beneath the inner edge of said auxiliary sheet for removable retention thereby.

3,282,414
HERMETICALLY SEALED PACKAGED PROPHYLACTIC
Stanley Penksa, Worcester, N.Y.
Filed Mar. 12, 1965, Ser. No. 439,318
10 Claims. (Cl. 206—63.2)



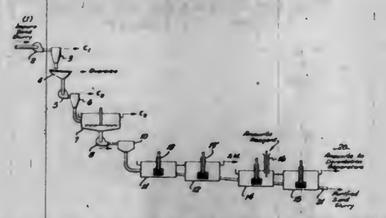
1. A hermetically sealed packaged prophylactic comprising a rolled prophylactic sheath of thin sheet rubber, an annularly disposed lubricating tube peripherally disposed about said rolled prophylactic sheath, said annularly disposed lubricating tube having a concave portion on the inner portion thereof for receiving said rolled prophylactic sheath, and a plurality of lubricating ducts disposed along an inner edge of said annularly disposed lubricating tube for discharging lubricant means on the outer side of said sheath as the sheath is unrolled under the lubricating ducts, and said annularly disposed lubricating tube having sufficient freedom to be moved upon said rolled prophylactic sheath for dispensing said lubricating means throughout any portion of said sheath, as desired.

3,282,415
EXPANDED CELLULAR PRODUCTS
Fred Buff, Paramus, N.J., and Marcus E. French, Hazleton, and Warren N. Pollock and Michael A. Ricciardi, Conyngham, Pa., assignors to General Foam Corporation, New York, N.Y., a corporation of New York
Filed June 1, 1964, Ser. No. 371,607
7 Claims. (Cl. 206—83.5)



7. A shipping pallet for transporting an expanded cellular product comprising a pair of parallelly disposed relatively-movable rigid surfaces, a pair of opposed relatively-movable rigid surfaces, each of said surfaces comprising a plurality of parallelly disposed substantially I-shaped beams having a flange portion of each beam abutting the flange portion of the adjacent beam for forming a substantially complete surface, means releasably interconnecting said beams, a plurality of casters, means mounting said casters on the other flange portion of said I-shaped beams, a plurality of substantially I-shaped reinforcing beams disposed transversely of and in engagement with said surfaces, a bearing plate disposed towards each end of said I-shaped reinforcing beam, said bearing plate having a substantially I-shaped cut-out for receiving said I-shaped reinforcing beam, hinge means interconnecting said I-shaped reinforcing beams with said bearing plates respectively, severable strap means interconnecting the bearing plates associated with one surface with the corresponding bearing plates associated with the other surface respectively, said bearing plates being provided with a plurality of cut-outs for receiving the end portions of said strap means, said end portions being adapted to pass through said openings and be crimped thereby fixedly attaching said strap means to said bearing plates, said strap means being fixedly attached to said bearing plates subsequent to the positioning of said expanded cellular product between said surfaces and said strap means being adapted to urge said surfaces one towards the other to retain said cellular product in compression therebetween.

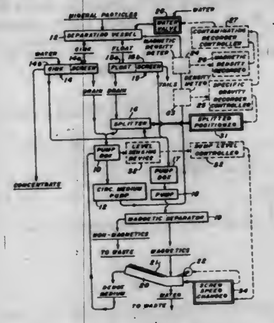
3,282,416
METHOD OF TREATING QUARTZ SANDS
Hugh W. Coke, Jamestown, Calif., assignor, by mesne assignments, to International Pipe and Ceramics Corporation, East Orange, N.J., a corporation of Delaware
Filed Oct. 22, 1962, Ser.No. 232,098
11 Claims. (Cl. 209—12)



1. In a method of beneficiating quartz sands containing a high and variable content of highly refractory aluminum silicates including highly refractory aluminous material of the anauxite-type, the steps of:
removing clay-like foreign matter from impure quartz sands by washing and decantation with water to produce a sand slurry;
adjusting the pH of the slurry to a point away from neutrality but to not below a pH of 2.5 nor above pH 11;
adding between about 0.3 and 0.5 lbs. of a primary fatty amine whose alkyl groups contain between 8 and 22 carbon atoms to the slurry per ton of solids in such slurry;
subjecting the slurry so treated to flotation with agitation and introduction of air to float off a fraction containing refractory aluminous material of the anauxite-type and produce a residual sand containing not more than about 0.2% of refractory alumina.

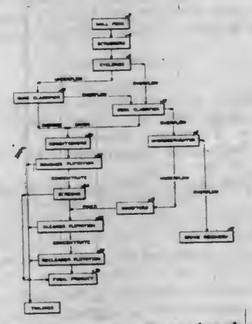
3,282,417
METHOD AND APPARATUS FOR CONTROLLING CLEANNESS OF A HEAVY MEDIUM SUSPENSION
Paul W. Chase, Mountain Iron, and Luther G. Hendrickson, Duluth, Minn., assignors to United States Steel Corporation, a corporation of Delaware
Filed Nov. 13, 1962, Ser. No. 236,945
8 Claims. (Cl. 209—12)

1. In a heavy medium minerals separation process in which mineral particles are introduced to a water suspension of magnetic particles, heavier mineral particles sink in the suspension while lighter mineral particles float, the resulting sink and float products are successively drained of suspension and washed with water, both the wash water and a variable fraction of the drained suspension are treated to remove nonmagnetic contaminants and water and thereby produce a densified suspension, said densified suspension together with the remainder of the drained suspension is transferred to a pump box, and the suspension feeds from the pump box to a vessel where the mineral particles are introduced, the combination therewith of a method of controlling the cleanness of the



suspension within said vessel comprising determining the content of nonmagnetic contaminants in the suspension at a location representative of the vessel, introducing a variable volume of water to said vessel to maintain a relatively constant set content of contaminants in the suspension within said vessel, and adjusting the content of magnetic particles in the suspension entering said vessel after the water volume changes, thereby compensating for changes in the specific gravity of the suspension brought about by variations in the water volume and maintaining the specific gravity of the suspension within said vessel at a relatively constant set value.

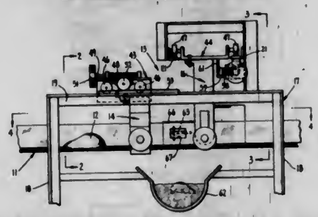
3,282,418
SYLVITE RECOVERY PROCESS
Charles W. Abernethy and Milton H. Klein, Carlsbad, N. Mex., assignors to American Metal Climax, Inc., New York, N.Y., a corporation of New York
Filed Oct. 31, 1963, Ser. No. 320,388
8 Claims. (Cl. 209—12)



2. In a flotation process for improving the recovery of sylvite values from ores comprising comminuting, conditioning, and submitting to flotation, sylvinite ore, the improvement in combination therewith of dividing said comminuted ore into a fraction of relatively small particles and a fraction of relatively large particles condi-

tioning said large fraction only, only subjecting said conditioned fraction to a rougher froth flotation, recovering a coarse concentrate of sylvite values as first product from said rougher flotation, admixing an intermediate concentrate from said rougher flotation with said small fraction, submitting said admixture to, and recovering sylvite value as second product from, a cleaner froth flotation step.

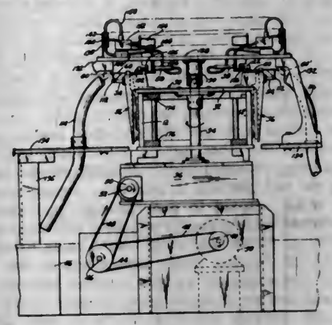
3,282,419
PHOTOELECTRIC SYSTEM FOR GRADING OBJECTS ACCORDING TO LENGTH AND WIDTH
Frank C. Rock, Jr., Santa Rosa, Calif., assignor to George E. Laser, Oakland, Calif.
Filed Nov. 30, 1964, Ser. No. 414,570
19 Claims. (Cl. 209—74)



1. A size grading system comprising first and second longitudinally spaced photoelectric means for generating electric pulses in response to objects to be graded passing the positions thereof, third photoelectric means adjacent said first photoelectric means for generating electric pulses in response to said objects passing the position thereof, means for guiding said objects lengthwise past the positions of said first, second, and third photoelectric means and at a predetermined transverse distance from said third photoelectric means whereby an object having a length greater than the distance between said first and second photoelectric means causes pulses to be respectively generated therefrom with a time coincidence and an object having a width greater than said predetermined transverse distance causes a pulse to be generated from said third photoelectric means, a control circuit coupled in receiving relation to said first, second, and third photoelectric means for generating an output pulse only in response to a coincidence of pulses from said first and second photoelectric means and a pulse from said third photoelectric means initiated at a time preceding the initiation of a pulse from said second photoelectric means, and ejector means coupled in receiving relation to the output of said control circuit for ejecting objects passing said photoelectric means in response to output pulses from said control circuit.

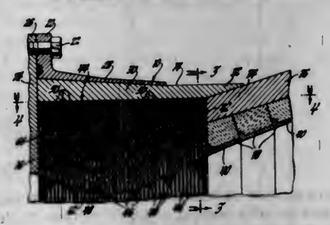
3,282,420
TESTING AND SORTING MACHINE FOR ELECTRONIC COMPONENTS
Raymond A. Frechette, Woonsocket, R.I., assignor to General Instrument Corporation, Newark, N.J., a corporation of New Jersey
Filed Jan. 11, 1963, Ser. No. 250,865
13 Claims. (Cl. 209—75)

1. A testing machine for electronic components, said machine comprising an intermittently rotatable turret carrying sockets to receive the components, a brush holder having a plurality of brushes for each socket, and connections between the sockets and the brushes, a stationary cylinder of arcuate contact segments to be slidably engaged by said brushes, the contact segments corresponding to test stations, test equipment connected to said segments, some segments being short in arcuate length and wide in axial direction, each brush holder having one brush for each contact segment, the brushes of one holder being at a different height relative to the wide segments than those of another holder, some segments being long in arcuate length and narrow in axial direction, and so



positioned in axial direction as to be engaged by the brushes of one holder or another.

3,282,421
REACTION MOTOR EXHAUST NOZZLE INCORPORATING A FUSIBLE COOLANT
Joe C. Prosser, Ladoga, and Richard H. Singleton, Indianapolis, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 21, 1961, Ser. No. 162,311
5 Claims. (Cl. 239—127.3)

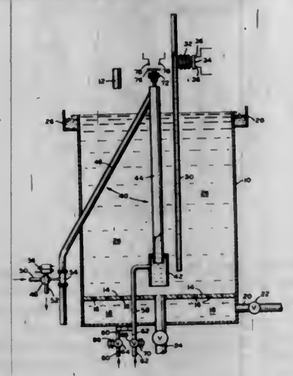


1. A reaction motor cooled exhaust nozzle of the throated convergent-divergent type, the throat portion of said nozzle having a liner secured therein, said liner comprising a plurality of axially stacked radially disposed thin sections sealed at their radially outer peripheries, each of said sections comprising an annular flat refractory washer having a plurality of radially extending circumferentially spaced refractory wires secured along the face of said plate in a flat spoke-like manner, the spaces between the wires containing a solid coolant fusible at a temperature lower than that of the exhaust fluid passing through the nozzle, the securing of said sections in said throat sealing one end thereof, the heat of the exhaust fluid passing through the nozzle into contact with said sections melting and expanding the coolant therein, the pressure of expansion of said coolant in said spaces being greater than the pressure of the exhaust fluid passing through the nozzle to effect flow of the coolant onto the throat surface to cool it.

3,282,422
HYDRAULIC CLASSIFYING APPARATUS SIPHON CONTROL
Victor R. Reynolds, Weston, and Augustus W. Cummings, Jr., Fairfield, Conn., assignors to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware
Filed Jan. 14, 1963, Ser. No. 251,379
3 Claims. (Cl. 209—158)

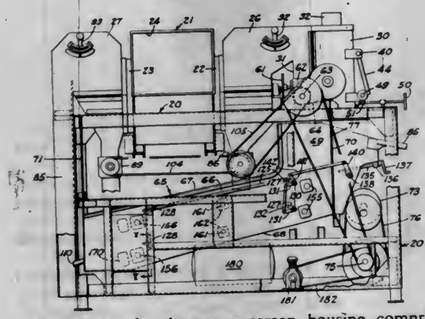
2. Hydraulic classifying apparatus comprising: a tank, means supplying solids to said tank to be classified, means

providing a teeter column in said tank for receiving and classifying the solids according to settling rate, said latter means including liquid introduction means adjacent the base of the teeter column to provide an upward flow of liquid in the teeter column to accumulate solids of predetermined settling characteristics near the base of the teeter column, siphon means opening near the base of the column to withdraw the accumulated solids, means supplying dilution liquid to said siphon means to facilitate the siphoning of the solids, control means operatively connected to be responsive to the density of solids in



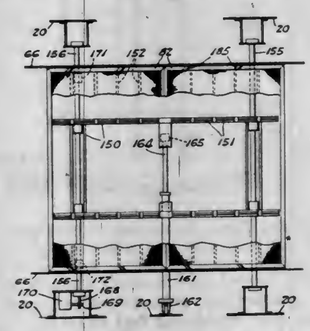
the teeter column, said control means being interconnected with said dilution liquid supply means so that said dilution liquid supply means is inoperative and does not supply dilution liquid to said siphon means when the density of solids in the teeter column is below a predetermined minimum, valve means in said siphon means to control the siphonic flow therein by constricting the cross-sectional flow area of said siphon means, said density responsive control means being operatively interconnected with said siphon flow control means to allow flow of solids through said siphon means when the density of the teeter column is above a predetermined minimum.

3,282,423
CLAMPING MEANS FOR GRAIN CLEANING APPARATUS
Robert D. Mitchell, Buffalo, N.Y., assignor to S. Howes Co., Inc., Silver Creek, N.Y.
Original application Nov. 22, 1961, Ser. No. 154,245. Divided and this application Apr. 29, 1965, Ser. No. 461,222
2 Claims. (Cl. 209—319)



1. In a grain cleaner, a screen housing comprising opposed side walls and opposed vertically spaced pairs of rails at the interiors of said side walls, a screen section adapted to seat on each pair of said rails, an opposed pair of locking bar members disposed above each pair of said rails, longitudinally spaced rock arms on each of said bar members mounting the latter for parallel movement toward and away from said rails linkage means connecting between a pair of vertically spaced rock arms at a corresponding longitudinally spaced position on at least one side of said screen housing forming with said bar members a parallelogram linkage at said one side, and common control means operable to simultaneously move each opposed pair of said locking bar members toward and away from said rails to selectively clamp and release said screen sections.

3,282,424
SCREEN CLEARERS FOR GRAIN CLEANING APPARATUS
Robert D. Mitchell, Buffalo, N.Y., assignor to S. Howes Co., Inc., Silver Creek, N.Y.
Original application Nov. 22, 1961, Ser. No. 154,245. Divided and this application Apr. 29, 1965, Ser. No. 461,221
2 Claims. (Cl. 209—388)



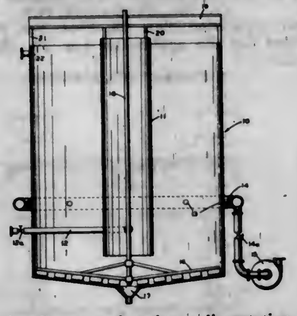
1. In a grain cleaner, a supporting frame, a screen and means mounting the same for vibratory movement relative to the frame, a brush frame disposed beneath said screen having brush members engageable against the under side of said screen, means mounting said brush frame for sliding movement beneath and generally parallel to said screen, air pressure actuated piston and cylinder means connecting between said supporting frame and said brush frame for sliding the latter, and means arranged in controlling relation to said air pressure means including an operating member mounted on said supporting frame movable in response to engagement with said mounting means, said air pressure actuated piston and cylinder means being operable to reciprocate said brush frame in response to said latter movement.

3,282,425
COMBINATION CLARIFIER AND STORAGE TANK
Walter Christiani, Hayward, Calif., assignor to Dorr-Oliver Incorporated, Stamford, Conn.
Filed Sept. 24, 1963, Ser. No. 311,129
Claims priority, application Great Britain, Feb. 21, 1963, 7,096/63
8 Claims. (Cl. 210—83)

6. Apparatus for clarifying liquor comprising; tank means having a bottom, a confining marginal wall upstanding therefrom and means determining the maximum level of liquor in said tank; sediment raking means operably associated with the bottom of said tank for raking settled material towards a sediment discharge outlet; feed means in said tank above said raking means; feed conduit

means communicating with said feed means for introducing raw liquor to be clarified into said tank clarified effluent discharge means located substantially below the upper level of said tank defining therebelow a clarification tank and thereabove a storage tank in substantially unobstructed hydraulic communication with said clarification tank, said clarified effluent discharge means having at least one effluent receiving opening functionally remote from said feed means, means for accumulating in said storage tank substantially without hydraulic obstruction clarified liquor uprising from said clarification tank when the feed rate of raw liquor being fed into the tank is increased relative to the discharge rate of clarified effluent, and means for discharging stored clarified liquor substantially without hydraulic obstruction from said storage tank when the discharge rate is greater than said feed rate.

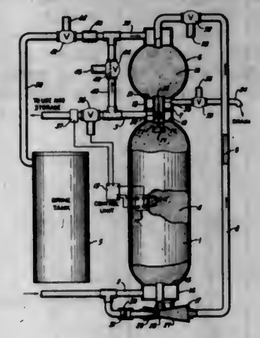
8. The method of conducting a clarification operation which comprises; establishing in a tank a clarification



zone containing liquor undergoing sedimentation, establishing in said tank a storage zone superjacent to said clarification zone containing clarified liquor uprising from said clarification zone, said clarification zone being in substantially unobstructed hydraulic communication with said storage zone, introducing feed liquor into said clarification zone at a substantially constant feed rate, clarifying said feed liquor in said clarification zone, discharging clarified liquor at a controlled rate through a zone between said clarification zone and said storage zone, accumulating in said storage zone substantially without hydraulic obstruction clarified liquor uprising from said clarification zone to store said clarified liquor when said discharge rate is smaller than said feed rate thereby causing the liquid level in the tank to rise and removing said stored clarified liquor substantially without hydraulic obstruction from said storage zone when the discharge rate is greater than said feed rate to allow the level of stored clarified liquor to fall when the discharge rate is greater than said feed rate.

3,282,426
ION EXCHANGE SYSTEM
James S. Entringer, Elm Grove, Wis., assignor, by mesne assignments, to Culligan, Inc., North Brook, Ill., a corporation of Delaware
Filed Dec. 23, 1963, Ser. No. 332,562
9 Claims. (Cl. 210—96)

5. A water softening system comprising,
(a) a recirculating resin system including a softener tank, a regeneration tank mounted on top of the softener tank and a transfer conduit connecting the bottom of the softener to the top of the regeneration tank,
(b) a transfer tube connecting the bottom of the regeneration tank with the top of the softener tank,
(c) an ion exchange resin completely filling said system whereby movement in any portion thereof is accompanied by a similar movement in other portions,
(d) a check valve in the transfer tube controlling movement of the resin downward therethrough,
(e) a drainline connected to the regeneration tank,



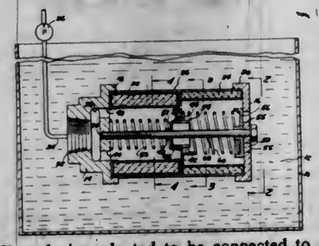
(f) a valve means in the transfer conduit for selective opening and closing of the transfer conduit,
(g) a venturi section connecting the lower end of the softener tank to the transfer conduit, and
(h) control means connected with said softener tank for selective actuation of said valve means.

3,282,427
SELF-CLEANING EXPANSIBLE DIAPHRAGM FILTER
Vincent C. Mandarino, St. Joseph, and Raymond W. Spiegel, Stevensville, Mich., assignors to Whirlpool Corporation, St. Joseph, Mich., a corporation of Delaware
Filed Nov. 18, 1963, Ser. No. 324,324
16 Claims. (Cl. 210—168)



14. In a cleaning apparatus,
means forming a hydraulic circuit including a treatment zone and pump means for circulating liquid alternatively in opposite directions from the treatment zone through the circuit and back to the treatment zone, and a hollow enclosed fluid-tight filter having a pair of fluid ports connected in said circuit for circulating the liquid through the interior of said filter,
said filter comprising a pair of impervious confronting adjacent walls having flat inner faces and mating baffle means thereon movable toward one another when the circulating liquid enters said filter through one of said ports to form a tortuous filter path and movable away from one another when the circulating liquid enters said filter through the other of said ports for self cleaning said filter.

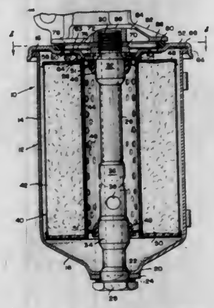
3,282,428
MULTIPLE FILTER DEVICES
Nils O. Rosaen, Bloomfield Hills, Mich., assignor to The Rosaen Filter Company, Hazel Park, Mich., a corporation of Michigan
Filed Apr. 23, 1965, Ser. No. 450,494
9 Claims. (Cl. 210—132)



1. A filter device adapted to be connected to an outlet pipe and to be submerged in a fluid reservoir, said device comprising
(a) a filter carrier structure submerged in said reservoir and having an outlet adapted for connection to said outlet pipe,
(b) said carrier structure comprising a first annular member and a second annular member,
(c) a first filter element and a second filter element carried by said structure intermediate said annular members and each having an inlet side exposed to the fluid in said reservoir and an outlet side communicating with said outlet.
(d) a normally closed valve means carried by said structure intermediate the outlet sides of said filter elements and operable to regulate fluid flow from the outlet side of said of first filter element in response to changes in the pressure differential between the outlet sides of said filter elements, and
(e) said valve means comprising a rod carried by said carrier structure and securing said annular members together and said filter elements therebetween, a wall carried by said carrier structure intermediate said first filter element and said second filter element and having an opening therein, a valve member comprising a hollow body normally extending into said opening and having a closed end opposite sides of which are exposed to the outlet sides of said filter elements, a shoulder portion on the outer surface of said body axially spaced from said closed end, and a plurality of annularly spaced slots extending axially from the open end of said body to a point adjacent said shoulder portion, and biasing means engaging said shoulder portion and normally urging said body toward a position in which said shoulder portion engages said wall to close fluid flow through said opening.

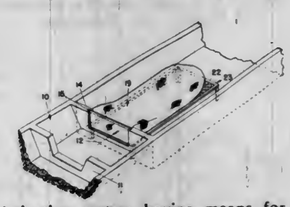
3,282,429
OIL FILTER ASSEMBLY WITH REPLACEABLE ELEMENT
Herman A. Wood and Robert L. Houser, Flint, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 5, 1963, Ser. No. 328,348
3 Claims. (Cl. 210—136)

1. In a detachably mounted cartridge type fluid filter assembly, a casing, a filter cartridge disposed within said casing, a closure cover for said casing, inlet means in said closure cover, one-way valving means in said inlet means, a stud mounted at one end of said casing and extending through said closure cover, mounting means at the opposite end of said stud for mounting said filter assembly to an interal combustion engine, outlet means in said stud,



abutment means on said stud between said mounting means and the outer surface of said closure cover, and a spiraled coiled compression spring between said abutment means and said closure cover whereby said filter assembly may be detached from said internal combustion engine as a fluid tight unit.

3,282,430
IRRIGATION CHANNEL WEED SEED SCREEN
Felix L. Kinne, Box 1197, Quincy, Wash.
Filed Aug. 16, 1963, Ser. No. 302,526
7 Claims. (Cl. 210—162)

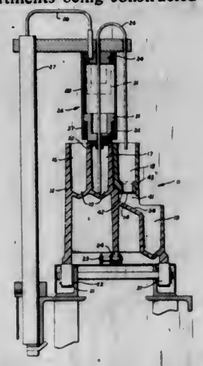


1. An irrigation system having means for screening weed seeds and the like from water flowing in said system, comprising: an irrigation channel,
means in said channel including an aperture for directing the full flow of water in said channel through said aperture;
a sack of sieving mesh material having an open mouth;
means communicating said mouth and said aperture to effect said flow of water into said sack, whereby to catch said weed seeds and the like as said water flows through said sack.

3,282,431
SAMPLE CONVEYING AND CONDITIONING UNIT
Hans Baruch, Berkeley, and Dalny Travaglio, Kensington, Calif., assignors, by mesne assignments, to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J.
Filed July 2, 1962, Ser. No. 207,122
6 Claims. (Cl. 210—241)

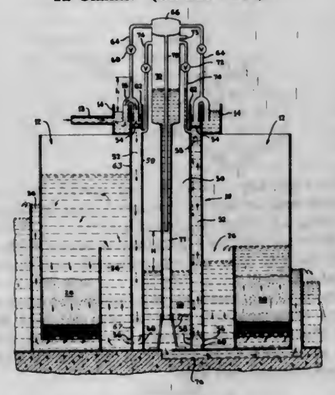
1. A sample carrying and conditioning unit for separation of a component of a sample in automated analytical apparatus, comprising a plurality of discrete conditioning sections each containing walls defining an open-top upper compartment and an open-top lower compartment disposed vertically and laterally offset from said upper compartment, with a passage in communication between the

bottom of the upper compartment and the lower compartment, pervious sample conditioning means disposed across said passage between the upper compartment and said lower compartment, the walls of one of said upper and lower compartments being constructed as a remove-



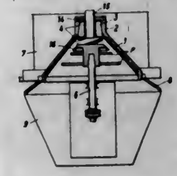
able unit to facilitate replacement of said conditioning means, and means maintaining the compartments in a lateral linear arrangement whereby successive compartments may be conveyed to and through a fixed reference position.

3,282,432
MULTIPLE UNIT BACKWASHING FILTER
John W. Greenleaf, Jr., Coral Gables, Fla., assignor to Greenleaf Enterprises, Inc., Miami, Fla., a corporation of Florida
Filed Feb. 18, 1963, Ser. No. 259,452
12 Claims. (Cl. 210—264)



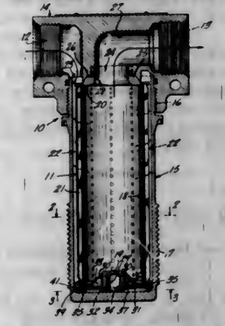
6. A multiple unit gravity filter comprising an upright central core, a plurality of filter units, each having a horizontal filter bed, an influent compartment over said bed, an effluent compartment beneath said bed communicating with an effluent chamber, an inlet trough supported at the upper end of said core, said core being formed with inlet passages operative to deliver influent from said trough to the respective units, said core further defining an enclosed central chamber and backwash syphons opening outwardly into communication with the respective filter units below the normal effluent level in said effluent chamber and opening inwardly into communication with said central chamber, said central chamber containing a supply of liquid above said inward openings to provide liquid seals for said syphons, a source of vacuum and means selectively operable to prime each said syphon by connecting it to said source and to vent same by placing it in communication with the atmosphere.

3,282,433
CENTRIFUGES
Dieter Pohl and Joachim Pohl, both of Salinenstr. 28, Bad Salzdethfurth, Germany
Filed July 10, 1963, Ser. No. 294,012
Claims priority, application Germany, July 11, 1962, P 29,796
4 Claims. (Cl. 210—369)



1. In a centrifuge for the separation of solids from liquid in a fluent heterogeneous mixture thereof, in combination, housing means forming an enclosure; a downwardly diverging perforate centrifuge drum rotatable within said housing about a generally vertical axis; and inlet means for feeding said mixture onto the interior of said drum, said inlet means including a tubular body coaxially mounted with respect to said drum and rotatable therewith at an upper end thereof, said body being formed with a passage for said mixture terminating at an outlet within the interior of said drum, a baffle body axially spaced from said tubular body and formed with a wall extending transversely to the axis thereof forwardly of said outlet in the direction of flow of said mixture, and at least one rod-shaped elongated deflecting member extending downwardly from said tubular body to said baffle body in at least one axially diverging spiral segment with adjacent spiral passageways transverse to said axis, the space bounded by said deflecting member between said tubular body and said baffle body being unobstructed, the bodies and said deflecting member being jointly rotatable with said drum for limiting upward movement of the mixture discharged at said outlet.

3,282,434
SPRING-MOUNTED FILTER ELEMENT
David B. Pall, Roslyn Estates, N.Y., assignor to Pall Corporation, Glen Cove, N.Y., a corporation of New York
Filed June 7, 1965, Ser. No. 471,490
10 Claims. (Cl. 210—440)



1. A filter unit comprising a cylindrical filter element, a filter housing enclosing the filter element to direct flow

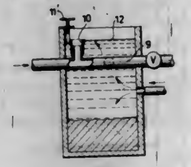
fluid therethrough having a head portion and a bowl portion, an inlet and an outlet in said head portion, first seat means in the head of the housing receiving one end of the filter element, said one end of the filter element being in communication with the outlet, second seat means in the bottom of the bowl portion of the housing, stud means mounted at the bottom of the filter element, retaining means attached at the lower end of the stud means, bearing means rotatably mounted on the stud means above the retaining means, said bearing means having a conical surface, the bottom of the filter element being formed with a conical surface to engage the conical surface on the bearing, and spring disk washer means positioned between the bottom of the filter element and the bottom of the bowl portion, urging the filter element toward the first seat means and deformable thereby, to engage and hold the filter element firmly in position within the housing.

3,282,435
CLAY FILTER AID AND PRODUCTION THEREOF
Morris M. Goldberg, Brooklyn, N.Y., and Aldo P. Allegrini, Westfield, and Tom A. Cecil, Highland Park, N.J., assignors to Minerals & Chemicals Philipp Corporation, Menlo Park, N.J., a corporation of Maryland
No Drawing. Filed Oct. 15, 1963, Ser. No. 316,453
6 Claims. (Cl. 210—500)

1. In a method for making a filter aid powder from attapulgite clay wherein a small amount colloidal attapulgite clay is strongly agitated in an aqueous solution of a polyphosphate dispersing agent to form a deflocculated clay slip and the slip is dried quiescently, ground and then calcined to dehydrate the clay,

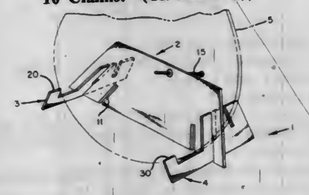
the improvement which comprises centrifuging the deflocculated slip at 15 percent to 22 percent clay solids at a speed and for a time sufficient to effect a separation of the slip into a finer suspended fraction containing particles substantially all of which are finer than 2.5 microns, and into a fraction containing larger particles, separating the fractions, discarding said fraction containing larger particles and subjecting said finer suspended fraction to said quiescent drying, grinding and calcining.

3,282,436
COMBINED BY-PASS AND/OR DISTRIBUTION SEDIMENT-THICKENING UNIT FOR SEWAGE PURIFICATION PLANTS
Lars Gösta Malm, Roslags Nasby, Sweden, assignor to Industrikemiska Aktiebolaget, Stockholm, Sweden, a corporation of Sweden
Filed June 17, 1963, Ser. No. 288,345
1 Claim. (Cl. 210—519)



A combined flow distribution and sludge thickening apparatus for a sewage purification plant, said apparatus comprising a well, a sludge inlet means connected to said well above the bottom thereof for introducing sewage sludge to be thickened into said well, the lower part of said well being adapted to serve as a collector for the thickened sludge, a sewage inlet and at least two sewage outlets connected to said well, a closed branched pipe disposed in said well in communication with said sewage inlet and each of said sewage outlets, an adjustable weir comprising an open-ended pipe registering with said branched pipe and communicating with the interior of said well so that sludge water separated from the thickened sludge may enter said branched pipe through said weir and leave said branched pipe through oue of said outlets together with sewage entering through said sewage inlet, and means to regulate the length of said weir according to the level of sludge water in said well.

3,282,437
DISPLAY HOLDERS
Henry O. Hansen, Seaside, Calif. (1108 Sylvan Road, Monterey, Calif.)
Filed Oct. 9, 1964, Ser. No. 402,848
10 Claims. (Cl. 211—41)



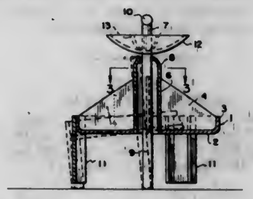
1. A display holder comprising a back support member and two side support members, each of said members having a lower edge engageable with a flat surface and having an opposing upper edge, each of said side members having a forward end with an upturned toe, each of said side members having a first slot in its upper edge adjacent its rearward end, said slot being so oriented relative to said lower edge that the slot is substantially normal to a flat surface on which said holder is positioned, each of said side members having a second slot in its upper edge intermediate said toe and said first slot, said second slots being inclined rearwardly from their bases to their upper ends, said back member having in its lower edge a first pair of slots adjacent its opposite ends and a second pair of slots spaced inwardly from said first pair of slots, and an abutment screw tbreaded in said back support member.

3,282,438
SLICED FOOD SERVING RACK
Ernest A. Frechette, 365 Winnepoge Drive, Fairfield, Conn.
Filed Nov. 30, 1964, Ser. No. 414,530
4 Claims. (Cl. 211—49)



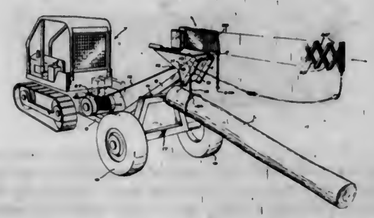
3. A serving rack comprising: an elongated member having a plurality of holes passing crosswise through said elongated member and extending lengthwise along said elongated member; a plurality of rods, each rod extending through a different one of said holes whereby said elongated member supports each rod and separates each rod into two sections such that one section extends outwardly beyond one side of the elongated member and the other section extends outwardly beyond the opposite side of the elongated member; and a plurality of pairs of wall members, each pair of wall members being supported on a different one of said rods such that one of the wall members is pivoted on said one section of the rod and the other of the wall members is pivoted on said other section of the rod.

3,282,439
PARTS HOLDER
Frank Vitale, 4212 Merrick, Dearborn Heights, Mich.
Filed Dec. 10, 1964, Ser. No. 417,446
6 Claims. (Cl. 211—131)



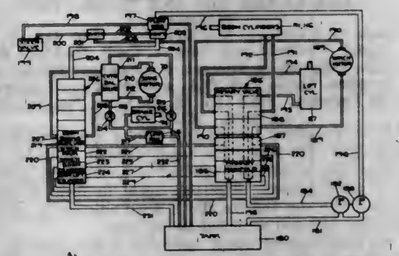
1. A parts holder comprising
(a) a recessed, annular receptacle, having an outer periphery, and having,
(b) a bottom wall
(c) a tubular sleeve rigidly, concentrically secured to said bottom wall, and forming an inner periphery of said receptacle,
(d) two or more walls disposed within said receptacle to form compartments therein, at least two of said walls converging radially within said receptacle to mutually form an approximately triangular compartment extending from said outer periphery to said inner peripbery, each wall having at least a portion of its inner edge secured to said sleeve to truncate the inner apex of said triangular compartment,
(e) a post extending concentrically through the sleeve and the bottom wall,
(f) a lower end portion of the post projecting downwardly beneath the bottom wall,
(g) means to rigidly suspend the compartmented receptacle from said post,
(h) two or more spaced apart legs secured to the receptacle, said legs being spaced from said post, and projecting downwardly from the bottom wall, whereby said construction may rest upon said post and at least two of said spaced apart legs.

3,282,440
RIGGING SLINGER EMBODYING AN EXTENDABLE AND RETRACTABLE LAZY TONG BOOM
Albert R. Wirkkala, Naselle, Wash.
Filed Aug. 18, 1965, Ser. No. 480,694
6 Claims. (Cl. 212—7)



1. A log moving vehicle comprising, in combination, a traction vehicle, a mobile logging arch having an articulated draft connection with said traction vehicle, a forward cable winding drum mounted on said traction vehicle, a platform mounted by and above the arch, an extendable and retractable boom mounted on said platform, said boom being of lazy-tong construction embodying a succession of pivotally joined crossed links disposed for opening and closing to extend or retract the boom, a fairlead mounted on said arch below said platform, a haul-in cable wound on said drum and extendable therefrom over said fairleader, log pickup means attached to the extendable end of the haulin cable and operable over said fairleader for the drawing in of the logs thereby to said arch by said cable winding drum to said arch for their moving by said vehicle; said boom having means at its extendable end for its attachment to said log pickup means, and powered means for extending the boom to draw out said cable, and log pickup means beyond the fairleader and arch for their attachment to logs to be drawn in by the cable and moved by the vehicle.

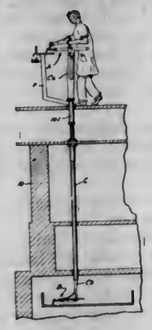
3,282,441
HYDRAULIC SYSTEM FOR SWINGING A CRANE BOOM
Robert E. Stauffer, Galion, Ohio, assignor to Jeffrey Galion Manufacturing Company, a corporation of Ohio
Original application Dec. 26, 1963, Ser. No. 333,322. Divided and this application May 12, 1965, Ser. No. 455,172
3 Claims. (Cl. 212—35)



1. In a crane having a boom, a rotatable supporting structure on which the boom is mounted to swing the boom, means including a hydraulic motor for rotating said supporting structure and swinging the boom, means for controlling the supply of hydraulic fluid under pressure to said hydraulic motor in which said controlling means is opened to supply hydraulic fluid under pressure to the hydraulic motor to rotate said boom supporting structure and said controlling means is closed to stop the supply of hydraulic fluid under pressure to the hydraulic motor to stop rotation of said boom supporting structure, a counterbalance valve connected to said motor for flow of the hydraulic fluid through the counterbalance valve to and from the hydraulic motor, said counterbalance valve including hydraulic fluid pressure relief means for dissipating the energy of said motor when the supply of hydraulic fluid is stopped by closing said controlling means, brake means for holding said rotating means in stationary position, a hydraulic cylinder operative by hydraulic fluid to release the brake, means connecting said counterbalance valve to said hydraulic cylinder to supply hydraulic fluid under pressure to the hydraulic cylinder when said controlling means is opened thereby to release said brake by operation of the hydraulic cylinder and means for applying the brake when there is no hydraulic fluid supplied to the hydraulic motor.

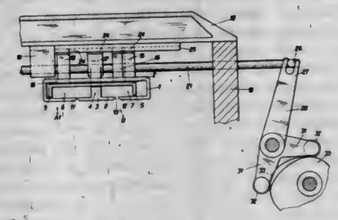
3,282,442
REMOTE CONTROL MANIPULATORS
William H. Biggley and Ronald C. Culshaw, Deep River, Ontario, Canada; Betty Anne Biggley, administrator of William H. Biggley, deceased, assignors to Atomic Energy of Canada, Limited, Ottawa, Ontario, Canada
Filed June 23, 1964, Ser. No. 377,293
6 Claims. (Cl. 214—1)

1. A remote control manipulator comprising a master unit, a slave unit and means for mounting said units on a fixed structure, each said unit comprising
(a) a first frame member and means pivotally mounting said first frame member on the fixed structure to turn about a first axis,
(b) a second frame member and means pivotally mounting said second frame member on said first frame member to turn about a second axis generally perpendicular to said first axis,
(c) an elongated slider and means mounting said slider on said second frame member for longitudinal movement relative thereto, the direction of said longitudinal movement extending generally perpendicularly to said second axis,
(d) a support member and means pivotally mounting said support member on an end of said slider to turn about a third axis generally parallel to said second axis,
(e) a tool head and means pivotally mounting said head on said support member to turn about a fourth axis generally perpendicular to said third axis.
(f) means extending in the direction of said first axis interconnecting the respective first frame members of each of said units for rotation in unison about said first axis,
(g) means sensitve to rotation of the second frame member of the master unit about its said second axis, and means driven by said sensitive means for rotating the second frame member of the slave unit



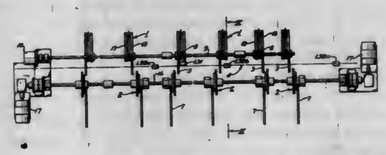
about its said second axis in unison with the second frame member of the master unit.
(h) means sensitive to longitudinal travel of the slider of the master unit, and means driven by such last-mentioned sensitive means for moving the slider of the slave unit in unison with the slider of the master unit.
(i) wherein said means (h) comprise a sprocket wheel mounted on each of the first frame members to turn freely about a respective second axis, a spur wheel connected to each sprocket wheel, a rack extending along each slider and meshing with a respective spur wheel, and a chain extending in a closed loop around said sprocket wheels to drivingly interconnect the same,
(j) means sensitive to rotation of the support member of the master unit about its said third axis, and means driven by such last-mentioned sensitive means for rotating the support member of the slave unit about its said third axis in unison with the support member of the master unit,
(k) and means sensitive to rotation of the tool head of the master unit about its said fourth axis, and means driven by such last-mentioned sensitive means for rotating the tool head of the slave unit about its said fourth axis in unison with the tool head of the master unit.

3,282,443
GUIDING DEVICES IN CIGARETTE HANDLING MACHINES
Alfred Schmermund, 62 Kornerstrasse, Gevelsberg, Westphalia, Germany
Filed Oct. 21, 1964, Ser. No. 405,498
Claims priority, application Great Britain, Oct. 23, 1963, 41,800/63
8 Claims. (Cl. 214—1)



1. For a cigarette handling machine, a device for guiding blocks of cigarettes from a first station to a second station and compacting the cigarettes, the device comprising:
a first, outer, member including first and second portions of a first wall, said first and second portions forming a gap between them,
a second wall opposite said first wall,
a second, inner, member including a third wall, and a fourth wall, said third and fourth walls extending between said first and second walls,
a third member including a third portion of said first wall and a partition wall extending between said first and second walls, said third portion being carried by said partition wall and located within said gap to form two cells separated from each other by said partition wall, said third portion being narrower than said gap to form a slit between said third portion and said first portion when said third portion is contiguous with said second portion and to form another slit between said third portion and said second portion when said third portion is contiguous with said first portion, and
means for moving said third member through a greater distance than said first member and moving said second member through a greater distance than said third member to vary the width of each of said two cells between a wide and a narrow condition and to provide a slit only in a cell when in its narrow condition.

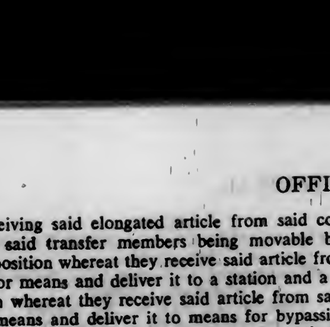
3,282,444
APPARATUS FOR HANDLING ELONGATED ARTICLES
William M. McConnell, Pittsburgh, Pa., assignor to Taylor-Wilson Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 30, 1965, Ser. No. 452,173
5 Claims. (Cl. 214—1)



1. In apparatus for handling elongated articles having conveyor means for advancing an elongated article for delivery to a first station, the invention comprising at least two spaced apart movable transfer members disposed

for receiving said elongated article from said conveyor means, said transfer members being movable between a first position whereat they receive said article from said conveyor means and deliver it to a station and a second position whereat they receive said article from said conveyor means and deliver it to means for bypassing said article from said station, motor means operatively connected to said transfer members for moving same between said first and second positions, control means connected to said motor means for regulating movement of said transfer members between said first and second positions, said control means including first sensing means located for detecting presence of said article advanced by said conveyor means and disposed for delivery to said station and including second sensing means located for detecting presence of said article at said station, said second sensing means being responsive to presence of said article at said station for preventing said transfer members moving from said second position to said first position, said first sensing means being responsive to absence of said article at said station to operate said motor means and move said transfer members from said second position to said first position to deliver said article to said station.

3,282,445
TANKER UNLOADING SYSTEM
Walter J. Wallace, Jr., Batavia, Ill., assignor to W. J. Wallace Systems, Inc., Batavia, Ill., a corporation of Delaware
Continuation of application Ser. No. 329,841, Dec. 11, 1963, which is a continuation of application Ser. No. 50,657, Aug. 19, 1960. This application Oct. 24, 1965, Ser. No. 512,038
12 Claims. (Cl. 214—15)



4. Solid material handling apparatus for digging into a mass of solid material, removing solid material therefrom, suspending the removed material, bearing the removed material away from the mass of solid material, and placing the removed material in loose form in a location spaced from said mass of solid material,

said apparatus comprising the combination of an endless flexible conveying element including an endless train of buckets each having a bottom and a continuous peripheral side wall adjoining the bottom,

each bucket having an open end facing in a direction generally parallel to the adjacent portion of the conveying element,

first and second support wheels journalled for rotation about generally parallel and generally horizontal axes which are spaced apart horizontally by an amount exceeding the diameter of each of said wheels,

said endless flexible conveying element being trained over said first and second support wheels to have an upper run extending therebetween and a lower run suspended between said wheels,

said lower run having substantial slack and extending along a curved path between said wheels,

power driving means interconnected with said flexible conveying element to circulate said conveying element in a predetermined direction extending downwardly from said second wheel and upwardly to said first wheel,

said buckets being oriented on said endless conveying element with the open ends of said buckets facing in the direction of travel,

a third wheel journalled for rotation about an axis generally parallel to the axes of said first and second wheels,

said third wheel being positioned between said first and second wheels but closer to said first wheel,

said upper run of said endless conveying element being trained under said third wheel so that a running portion of said endless conveying element extends downwardly at a steep angle between said first and third wheels to invert and dump said buckets,

and solid material receiving means positioned adjacent said first wheel for receiving the material dumped from said buckets,

the lower run of said conveying element being freely suspended between said first and second wheels for causing the buckets along said lower run to dig into the mass of solid material solely by the gross weight of said conveying element and the tension therein,

the lower run of said endless conveying element being free to flex and move vertically and horizontally in any direction so that said conveying element is entirely free to conform itself to the shape of the mass of solid material as the conveying element is dragged therealong.

11. A method of digging solid material from a mass thereof, suspending the solid material, and bearing the suspended material to a location spaced from the mass of solid material,

said method comprising the steps of providing an endless train of buckets,

providing first and second horizontally spaced support wheels having parallel and horizontal axes,

training said endless train of buckets around said support wheels to provide a lower run of buckets extending along a freely hanging curve between said wheels,

circulating said endless train of buckets around said wheels,

engaging said lower run of buckets with a mass of solid material and thereby dragging the lower run of buckets along the solid material,

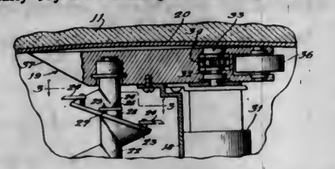
emptying the buckets adjacent said first wheel,

and continuously maintaining said lower run of buckets in a freely suspended condition for free flexing movement in all horizontal and vertical directions and thereby causing the buckets to dig into the mass of solid material solely by the gross weight of said train of buckets and the tension therein,

whereby the train of buckets is entirely free to conform itself to the shape of the solid material as the buckets are dragged along the mass of solid material.

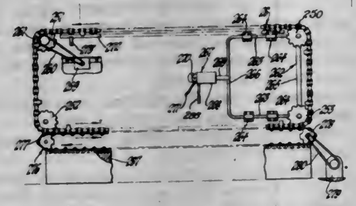
3,282,446
UNLOADING MECHANISM FOR SILOS
Jonathan J. Laidig, Mishawaka, Ind., assignor to Laidig Silo Unloaders, Inc., a corporation of Delaware
Filed Oct. 13, 1964, Ser. No. 403,558
5 Claims. (Cl. 214—17)

1. In a silo having a floor with an axial opening and having an upright cylindrical wall, unloader means comprising: a radial sweep arm adjacent the floor; means mounting said arm for rotation about the axis of the silo; drive means for rotating the arm; a driven auger conveyor on said arm for moving silage toward the axial opening, said conveyor having a shaft and a helical flight on the shaft; and cutting means comprising a plurality of blades which are mounted on the periphery of the flight and extend radially beyond the margin of the flight, said blades



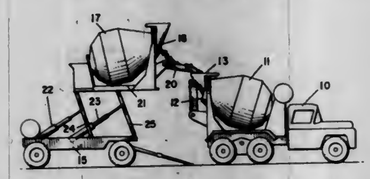
being substantially tangent to imaginary cylinders that are substantially concentric with the silo wall, whereby as the sweep arm is rotated the blades may cut grooves in the silage without exerting any substantial component of force radially of the silo.

3,282,447
CONVEYING APPARATUS
Harold A. McMaster, Woodville, Ohio, assignor to Permaglass, Inc., Woodville, Ohio, a corporation of Ohio
Continuation of application Ser. No. 328,222, Dec. 5, 1963. This application July 15, 1965, Ser. No. 478,521
22 Claims. (Cl. 214—21)



20. Apparatus for conveying an article comprising a continuous member forming an elongated loop entrained around and having two reaches extending between spaced rotatable members, means adjacent one end of said elongated loop for driving said loop, means adjacent the other end of said elongated loop for tensioning said loop, said loop having means for contacting the article and moving it with one of the reaches of said loop, and means for urging the other reach of said loop in the direction of said tensioning means.

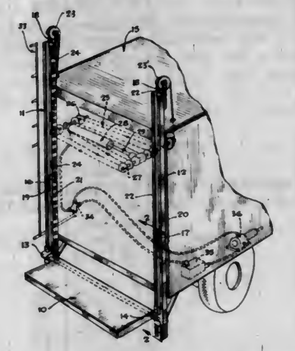
3,282,448
METHOD AND APPARATUS FOR CONVEYING CONSTRUCTION MATERIAL
Robert A. McNeil, 1915 Ontario, Oxnard, Calif.
Filed July 22, 1964, Ser. No. 384,375
2 Claims. (Cl. 214—38)



1. A method of conveying construction material of a semi-liquid characteristic from a first location to a second location in which a portion of said material is disposed in a pulling vehicle and another portion in a trailer connected to said pulling vehicle, comprising the steps of: parking said pulling vehicle and said trailer at said first location; disconnecting said pulling vehicle from said trailer; driving said pulling vehicle to said second location; depositing said portion of material from said pulling vehicle at said second location; returning said pulling vehicle to a position at said first location adjacent to said trailer; raising said another portion of material in said trailer to a position above said pulling vehicle; transferring said another portion of said material from said trailer to said pulling vehicle by gravity flow; driving said pulling vehicle to said second location; and depositing said another portion of said material at said second location.

2. An apparatus for conveying semi-liquid construction material to a given location comprising, in combination: a pulling vehicle having a first containing means for carrying a portion of said material; a trailer having a second containing means similar to said first containing means for carrying another portion of said material; means for connecting and disconnecting said pulling vehicle and trailer; and means on said trailer for raising said second containing means to a level above said first containing means on said pulling vehicle whereby said another portion of said material alone may be transferred from said second containing means on said trailer to said first containing means on said pulling vehicle after said first mentioned portion has been deposited at said given location by said pulling vehicle alone.

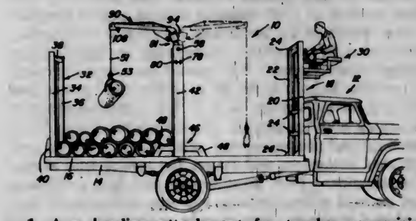
3,282,449
TRUCK ELEVATOR SAFETY MECHANISM
Charles Y. Buford, Elmhurst, Ill., assignor to Darling & Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 23, 1964, Ser. No. 405,955
5 Claims. (Cl. 214—75)



1. In a vehicle having in combination an elevated load-supporting floor, an elevator apparatus mounted on said vehicle and adapted to move vertically between the ground level and the level of said supporting floor with said elevator apparatus including a load-supporting member and at least one vertical lift member attached thereto and supported for vertical movement relative to a fixed vertical guide means by a flexible lift means and having power means connected with said lift-supporting element which is adapted to raise and lower said load support member, the improvement comprising; a spring actuated plunger pin mounted on said lift member and engageable by said flexible lift means, said flexible lift means adapted to be in engagement with said plunger pin intermediate the ends of said lift means and hold said plunger pin in retracted position while said flexible lift means remains under normal tension and allow said plunger to extend outwardly from said lift member when said flexible lift means is without normal tension, and a plurality of plunger pin receiving means formed in said guide means with which said plunger pin is adapted to engage when said flexible lift means is

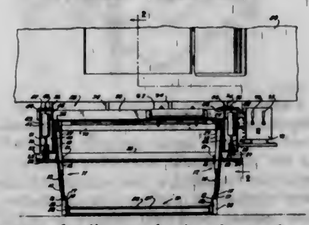
without normal tension; whereby said guide means and said lift member are locked against relative vertical movement until tension is restored to said flexible lift means.

3,282,450
TILT BOOM LOADER
Hubert P. Atcheson, Rte. 1, Dallas, Ga.
Filed Feb. 24, 1965, Ser. No. 434,816
4 Claims. (Cl. 214—75)



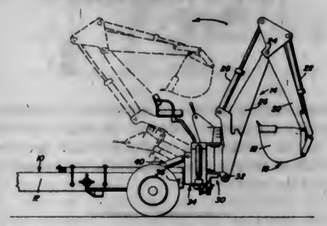
1. A a loading attachment for trucks, comprising a horizontal frame secured to the chassis of said truck, a pair of upright spaced apart parallel post members secured to said horizontal frame intermediate its ends, a mast support means secured between said parallel posts adjacent the top of said posts for limited rotational adjustment about a horizontal axis transverse to the truck body, a generally upright tubular mast carried by said mast support means, an elongated tubular boom extending at an angle from said tubular mast and rotatably secured thereto for rotation about an axis longitudinal of said mast, a power winch disposed adjacent the base of said upright posts, said winch including a cable having an end extending upwardly between said posts, through the mast and outwardly through the boom, said cable including a free end disposed beyond the outer end of said boom, load engaging means connected to said free end of the cable, and means adapted to couple said winch to a power takeoff shaft of the truck.

3,282,451
FOLDABLE LOAD LIFTING APPARATUS
Quentin D. Corley, Jr., 326 S. Rock Island, Dallas, Tex.
Filed Apr. 7, 1965, Ser. No. 446,365
7 Claims. (Cl. 214—77)



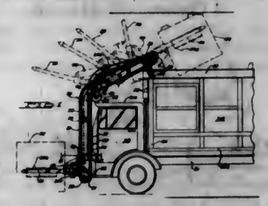
1. In a cargo loading mechanism for trucks and trailers, a platform lift having a main frame attachable to a vehicle frame, and hydraulic means in said main frame for raising and lowering said platform, a linkage comprising a pair of parallel arms connecting each end of said platform to said main frame to raise and lower the same, each pair of said arms having inner and outer sections hingedly connected intermediate their ends whereby to fold inwardly to retract said platform horizontally into said frame, when said platform is in its intermediate plane of operation, a lever assembly in said main frame for operating said arms to folded and extended positions, hydraulic means in said main frame for actuating said lever assembly, and hydraulic means in said main frame acting on said arms to raise and lower said platform in loading and unloading operations.

3,282,452
HYDRAULIC INTERLOCK MECHANISM ON BACK HOE
Edward M. Parsen, Box 123, Miller, S. Dak.
Filed May 22, 1964, Ser. No. 369,479
10 Claims. (Cl. 214—138)



1. A foldable power operated boom construction comprising in combination a vehicle having a chassis,
(a) a boom assembly movable between a loaded, lifted and inoperative position in which it is lifted and folded back over said chassis and an unloaded, lowered and operative position,
(b) a support assembly mounted upon the rear end of said chassis for swinging movement about a horizontal axis extending transversely of said chassis,
(c) actuating means connected to said chassis and to said support assembly for vertically tilting the latter about said horizontal axis,
(d) a turntable pivotally mounted upon said support means for turning about a vertical axis,
(e) said boom assembly being mounted upon and carried by said turntable,
(f) a hydraulically operated lock means for maintaining said turntable fixed against rotation about said vertical axis with said boom assembly disposed in longitudinal alinement with said chassis,
(g) a source of hydraulic fluid under pressure,
(h) a control valve connecting said source to said turntable lock means,
(i) means operable only when said lock means is locking said turntable for connecting said source to said actuating means and to selectively effect raising and lowering of said support means, turntable and boom assembly.

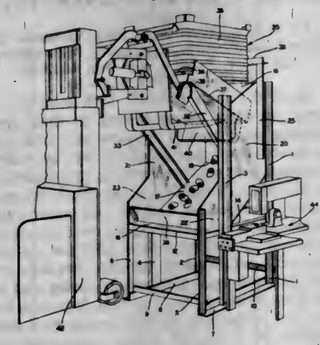
3,282,453
FRONT END LOADERS FOR REFUSE TRUCKS AND THE LIKE
Louis S. Wood, 1605 Grant Blvd., Findlay, Ohio
Filed Apr. 15, 1965, Ser. No. 448,402
5 Claims. (Cl. 214—302)



1. A front end loader for raising, dumping and lowering refuse boxes into a truck having a wheeled chassis, a front end driver's cab and a load carrying body mounted on said chassis rearwardly of said cab, said front end loader comprising

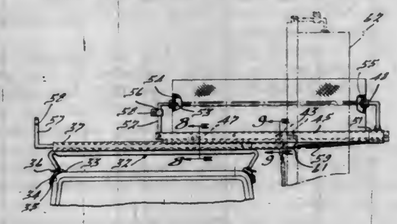
a loader frame fixedly mounted on said chassis and extending over said cab and the forward end of said truck body,
said loader frame including a pair of laterally spaced vertically disposed girders bent diagonally upwardly and rearwardly over said cab to and in spaced relationship over the forward end of said truck body,
a pair of channel shaped skip tracks mounted on each said girder, one skip track following the said girder throughout its entire length while the other skip track follows said girder along the vertical portion thereof and is spaced in a generally flat arch shaped form above the said upwardly and rearwardly portion of said girder,
an endless power chain mounted on and supported by each girder along the entire length thereof with the power flight of said power chain disposed along the forwardly disposed face of said girder,
a skip including a pair of loader arms each pivotally connected to double trunnions running in said one skip track and by a fixed arm to a single trunnion running in said other skip track at a point spaced above and laterally of said double trunnions, said fixed arms holding said loader arms and said double and single trunnions in right angular relationship to each other,
means laterally spacing said trunnions of each loader arm in alignment with their skip tracks,
means connecting each loader arm to said power flight of said power chain, and
manually controlled hydraulic means moving said power chains in a selected direction whereby to lift said loader arms and a load box engaged thereby to and from a dumping position,
the said loader arms turning over a load box carried thereby responsive to the double trunnions running along each said one skip track and said single trunnion running along said other skip track as said loader arms carrying said load box are raised by said power chains first vertically along said skip tracks and then upwardly and rearwardly beyond the vertical portion of said skip tracks.

3,282,454
MATERIALS HANDLING REVERSE FLOW POSITIONING STAND CONSTRUCTION
William A. Ruffing, Pottstown, Pa., assignor to The Union Metal Manufacturing Company, Canton, Ohio, a corporation of Ohio
Filed July 12, 1965, Ser. No. 471,194
3 Claims. (Cl. 214—302)



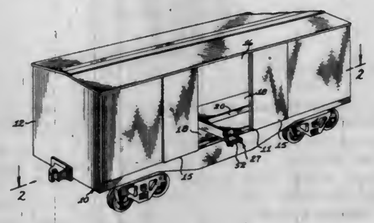
1. Materials handling positioning stand construction for use with a bottom dump box of a type adapted for storing, transporting and dumping through fork-lift truck operation and having rectangular front, side, and rear enclosure walls formed with a bottom opening closed by a hinged bottom wall and being provided with laterally spaced rear support means and front support means on the bottom wall and with a box hangar on the front enclosure wall; the stand including base and leg members forming frame means; a point-of-use tray front mounted on the frame means; side, rear, and slanting bottom walls forming a hopper open at the top and front and mounted on the frame means with the hopper communicating with the tray front; a cross member mounted at the top of the frame means offset forwardly of the rear hopper wall; spaced support means mounted on the frame means having box-engaging ends located above the tray front and within the confines of the hopper side walls; and the cross member being engaged by and supporting the front box hangar, and the spaced support means being engaged by the box bottom wall rear corners adjacent the spaced rear box support means when a box is deposited by a fork-lift truck on the stand.

3,282,455
RAISING AND LOWERING MECHANISM FOR CAR ROOF CARRIER
Willard Homer Demarais, 20524 Lauder, Detroit, Mich.
Filed Feb. 20, 1964, Ser. No. 346,310
22 Claims. (Cl. 214—450)



1. In a carrier for a vehicle top, a pair of spaced brackets securable transversely across the top, a pivotal carrier on each said bracket adjustable outwardly at one end thereof, releasable locking means for said carrier on said brackets, roller means on said carriers, a rail member supported on the roller means of each said carrier, and means supported on said rail members and movable to one side of the body and tiltable therewith with said carriers to a substantial vertical position.

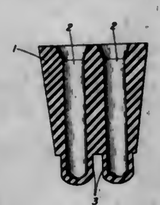
3,282,456
CONVEYOR SYSTEM
Ernest E. Hawes, Rte. 1, Queen Creek, Ariz.
Filed May 28, 1964, Ser. No. 370,811
2 Claims. (Cl. 214—519)



1. A conveyor system for unloading bulk materials from freight cars having:
(A) an existing floor,

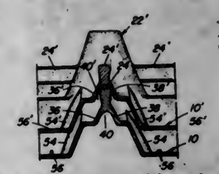
(B) ends and sides connected to said existing floor including openings in said sides,
(C) a load supporting floor mounted on and immediately above said existing floor,
(D) longitudinal conveyor channels formed in said load supporting floor,
(E) longitudinal conveyors in said longitudinal conveyor channels discharging toward each other at the center of said load supporting floor,
(F) a transverse conveyor channel formed intermediate the ends of said load supporting floor intersecting said aforementioned channels,
(G) a demountable transverse conveyor adapted to be placed in and removed from said transverse conveyor channel discharging materials received from said longitudinal conveyors out through said door openings so as to unload the contents from the freight car,
(H) said transverse conveyor comprising a frame,
(I) a rear belt cylinder journaled at the rear end of said frame,
(J) a rear idler roller journaled on said frame adjacent to and in front of said rear belt cylinder,
(K) a front belt cylinder journaled at the front end of said frame outside of said freight car existing floor and below said rear belt cylinder,
(L) a front idler roller journaled on said frame adjacent to and behind said front idler roller,
(M) belt support strips fixed on said frame extending between said idler rollers,
(N) a conveyor belt having a top horizontal load carrying portion slidingly supported on said strips moving forwardly toward said front belt cylinder, then around and under and up over said front idler roller and then rearwardly closely adjacent the underside of said belt support strips to the bottom of said rear belt cylinder, then up and over said rear belt cylinder and finally down and under said rear idler roller,
(O) and means for rotating said front belt cylinder to cause operative travel of said transverse conveyor belt.

3,282,457
MULTI-PURPOSE ELASTIC STOPPERS
Rodney L. Sirois, Easthampton, Mass., assignor to United Elastic Corporation, Easthampton, Mass., a corporation of Massachusetts
Filed Oct. 1, 1965, Ser. No. 492,244
2 Claims. (Cl. 215—47)



1. A dual purpose elastic stopper comprising a stopper body of elastomer, at least one hole forming an open passageway running therethrough from the top of the stopper to the bottom, a closed-end hollow projection over the bottom of any hole present, the outer diameter of the projection being small in comparison to the diameter of the bottom of the stopper and being positioned inwardly from the periphery of the bottom of the stopper, said projection being sufficiently weak so that it can be twisted off but sufficiently strong to resist puncturing or rupture under operating conditions.

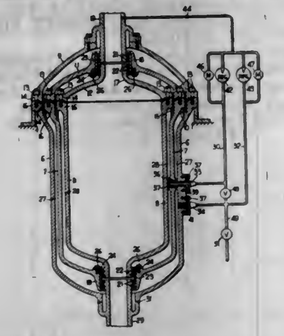
3,282,458
NESTABLE EGG TRAYS
Gerald Arthur Rudd, Corton, near Lowestoft, Suffolk, England, assignor to Diamond International Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 11, 1964, Ser. No. 417,651
Claims priority, application Great Britain, Dec. 24, 1963, 50,934/63
4 Claims. (Cl. 217—26.5)



1. A molded pulp tray comprising a body member having a generally normal thickness and including a peripheral margin defining a base plane, said body member including a plurality of hollow posts extending vertically from said base plane and a plurality of hollow cells depending from said base plane, said posts being alternately disposed in transverse rows, said body member including ribs spaced in 90° intervals about said posts and connecting certain of said posts to each other, said ribs including a linear upper edge disposed in a plane above said base plane and extending continuously between said posts, the improvement characterized in that said ribs have an upper bulbous solid portion of larger cross section than, and converging downwardly into, the portion of the ribs therebeneath and substantially thicker than the normal thickness of said body member and integrally formed with pairs of legs of normal thickness disposed below said base plane and diverging in a downwardly opening groove disposed below said base plane and extending the length of said ribs and having a concave cross section distinct from said solid bulbous rib portions and extending upwardly into the base of said ribs for preventing impaction of nested trays and permitting ready denesting therebetween, said legs terminating in lateral foot portions disposed in a plane below said base plane, said foot portions being connected to downwardly diverging side wall portions of said cells whereby when at least a pair of trays are nested only the juxtaposed upper edge portion of the ribs of the lowermost tray is engaged with side wall portions of the grooves of the uppermost tray.

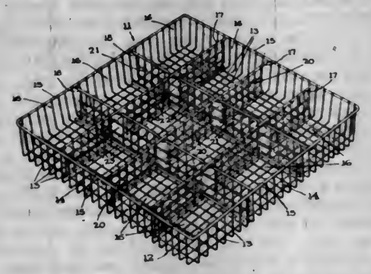
3,282,459
PRESSURE VESSEL HAVING CONCENTRIC CASINGS
Charles D. Wilson, West Allis, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Oct. 2, 1964, Ser. No. 401,076
2 Claims. (Cl. 220—3)

1. A vessel for high pressure high temperature fluid comprising: an inner casing having an inlet opening; a fluid inlet pipe positioned in registery with said inlet opening and spaced from said inner casing; an intermediate casing encompassing said inner casing, said casings defining an inner chamber therebetween; an outer casing encompassing said intermediate casing, said outer casing and said intermediate casing defining an outer chamber therebetween; means providing a fluid tight seal between said pipe and said outer casing; pressure breakdown means positioned between said intermediate casing and said pipe and said inlet opening resisting fluid flow into both said chambers and permitting relative longitudinal movement therebetween; fluid conduit means connecting said inlet pipe in fluid communication with both said inner and outer chambers; a first regulator valve in said conduit means adapted to maintain the pressure in said inner chamber at a first predetermined pressure below the pressure in said inlet pipe; a second regulator valve in said conduit means adapted to maintain the pressure in said outer chamber at a second predetermined pressure below the pressure in said inner chamber; first discharge conduit means connecting said inner chamber in fluid communication with a low pressure area; first normally closed valve means in said first discharge conduit means adapted to open when the fluid pressure in said inner chamber



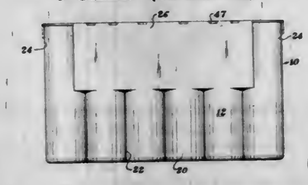
exceeds said first predetermined pressure; second discharge conduit means connecting said outer chamber in fluid communication with a low pressure area; second normally closed valve means in said second discharge conduit means adapted to open when said fluid pressure in said outer chamber exceeds said second predetermined pressure; and outlet means in fluid communication with said inner casing.

3,282,460
APPARATUS FOR PREPARING FRIED CHICKEN
John P. Boznango, Dayton, Ohio, assignor to The Red Barn System, Inc., Dayton, Ohio, a corporation of Ohio
Filed May 4, 1964, Ser. No. 364,523
2 Claims. (Cl. 220—19)



1. A stackable compartmented metal basket particularly adapted for cooking orders of fried chicken, each order consisting of a predetermined number of different pieces of chicken, comprising two sets of horizontal laterally spaced wires extending at right angles to one another and lying in substantially the same horizontal plane to form a rectangular grid-like bottom of the basket, the extremities of said wires extending upwardly at slightly outward angles from the vertical to form the sides of the basket, a rim member secured to the upper ends of said wires and forming the top edge of the basket, two sets of horizontal laterally spaced rods extending at right angles to one another and to the sides of said rim member and dividing the interior of the basket into a plurality of compartments, the ends of said rods being secured to the bottom surface of said rim member so that the upper surfaces of said rods lie in a horizontal plane parallel to, but spaced below, the plane of the upper surface of said rim member, the outside dimensions of the bottom of the basket being less than the inside dimensions of said rim member so that one basket may be stacked on top of another with the bottom of one basket nesting inside the rim member of the basket below and resting on the upper surfaces of said rods, and a plurality of vertically extending dividers secured to and depending from said rods and forming in combination with each other and the sides of the basket the walls of said compartments, each of said vertically extending dividers comprising a grid of vertically and horizontally extending wires secured to one another at their intersections and having the upper and lower ends of the vertically extending wires secured to said rods and to the wires forming the bottom of the basket, respectively.

3,282,461
TOTE CASE FOR BOTTLES AND THE LIKE
Robert L. Beesley and Rudolph H. Matthias, Saginaw, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Jan. 21, 1964, Ser. No. 339,161
9 Claims. (Cl. 220—21)



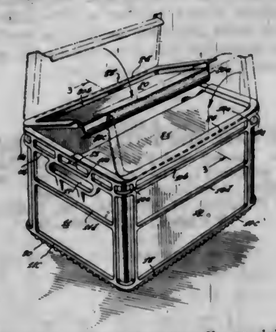
1. A tote case for bottles and the like, said case comprising generally rectangularly-shaped side walls and end walls and a bottom wall, a network integrally molded with said walls and defining a plurality of individual adjoining compartments extending from said bottom wall to a height about one-half that of said side and end walls, scallops formed about said side and end walls extending from said bottom wall to a height substantially that of said compartments and having configurations substantially conforming to that of the outer periphery of the peripheral ones of said compartments, said side and end walls meeting at corners, said corners having a generally rounded cross-section protruding beyond the outer extent of said scallops and to a height greater than that of said scallops, flat billboard areas occupying the area of said side and end walls above said scallops and extending between adjacent corners, cover parts integral with and hingedly connected to the upper extent of the flat billboard area of each of said side walls and extending across the top of said case upwardly toward each other, when in a closed position, so as to form a juncture substantially preventing any light from entering therebetween.

3,282,462
PLASTIC CARRYING CASE
Theodor M. Box, 200 Plandome Road, Manhasset, N.Y.
Original application Nov. 26, 1962, Ser. No. 239,891, now Patent No. 3,186,586, dated June 1, 1965. Divided and this application Mar. 30, 1965, Ser. No. 443,973
5 Claims. (Cl. 220—29)

1. A unitary molded plastic case for the storing of bottles and the like comprising in combination:
(1) a pair of side walls, a pair of end walls, and a bottom wall, each of said side and end walls have first outwardly extending flanges and
(2) a cover therefor consisting of
(a) a pair of panels hingedly connected to the outer edges of said first outwardly extending

flanges, to enable said panels to be swung inwardly toward the center of the case for the closing of the case upon the inner edges of said panels engaging one another,

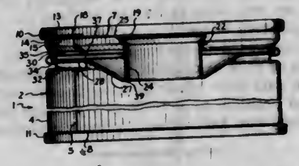
(b) shoulders extending at right angles from said panels in a direction away from the case, said shoulders located adjacent the inner top edges of said walls, and second outwardly extending flanges at right angles to the upper edges of said shoulders and hinged to the outer edges of said side walls' outwardly extending flanges,



(c) flanges extending downwardly at right angles from the inner edges of said panels,

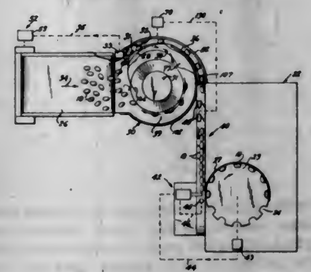
(d) said shoulders and inner edge flanges having a spacing distance from one another, to position and lock said panels with a snap action in the closed position parallel to said bottom wall solely by the action of said inner edge flanges engaging one another and by said shoulders engaging the adjoining inside walls of the case, with said second outwardly extending flanges overlying and in engagement with said first outwardly extending flanges.

3,282,463
CAN
Robert Stuart, Chicago, Ill., assignor to National Can Corporation, Chicago, Ill., a corporation of Delaware
Filed May 13, 1964, Ser. No. 367,154
11 Claims. (Cl. 220—54)



1. A container comprising a container body having an end portion and an enveloping body wall that surrounds the central axis of said body, a cap-supporting seat on said body at said end portion and projecting toward said central axis and defining an opening, a removable and replaceable resilient cap for said end portion and having a peripheral part supported on said seat and closing the opening defined by said cap seat, and cap-retaining means axially intermediate said peripheral part of the cap and the adjacent axial end of the body for preventing accidental retraction of the cap from said end portion, the cap-retaining means being on the body and projecting toward said central axis an amount less than the extent of projection of said seat toward said axis but sufficient to provide axial interference with the peripheral part of the cap, said cap being sufficiently resilient to enable its peripheral part to pass over the cap-retaining means as the cap is manually urged toward the seat and retracted from the seat during removal and replacement of the cap.

3,282,464
HIGH-SPEED AUTOMATIC ORIENTATION, ALIGNMENT AND SUPPLY MACHINERY FOR CONFECTIONARY ARTICLES
Peter C. Kohl, Stamford, and Thomas F. Bombero, Trumbull, Conn., assignors to A. E. L. Food Machinery Division, Inc., (subsidiary of Automation Engineering Laboratory, Incorporated), Stamford, Conn.
Filed Apr. 29, 1963, Ser. No. 276,339
14 Claims. (Cl. 221—1)



1. A system for processing confections for receiving a large mass of confections right side up and randomly positioned and oriented and for gently orienting and aligning the confections while maintaining them right side up to protect the appearance of their upper surfaces comprising a wide smooth belt for receiving the large mass of confections thereon right side up, intermittent drive means for advancing said belt with short forward strokes, a vibratory platform for receiving the confections fed by said belt and arranged for rotary vibratory reciprocation about an axis, an elongated arcuate ridge on said platform extending generally concentric with said axis, said ridge having a first slope extending outwardly and downwardly from said ridge and a second slope extending inwardly and downwardly from said ridge, rotary vibratory drive means vibrating said platform with rotary vibratory reciprocation about said axis for propagating the confections along said platform outside of said ridge, deflector means outside of said ridge and near to said first slope for guiding the confections up said slope adjacent to said ridge, outlet means from said platform beyond said deflector means for the confections which have remained on said first slope after passing said deflector means, guide means on said platform for recirculating the confections which have passed over said ridge onto said second slope around said axis and back to the initial position outside of said ridge, a continuously moving belt for receiving the confections from said outlet means, stop means for restraining the lead confection on said moving belt for forming a supply line of adjacent confections, and transfer means for feeding the confections out of said supply line.

3,282,465
ELONGATED ARTICLE EJECTION BOX
William M. Davis, Smyrna, Tenn.
(R.R. 2, Oaktown, Ind.)
Filed Nov. 12, 1964, Ser. No. 410,452
8 Claims. (Cl. 221—64)

1. A box for containing and ejecting an elongated article comprising:

(a) opposed side walls,

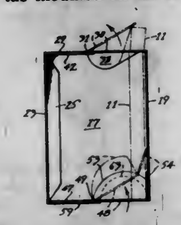
(b) first and second end walls connecting opposite ends of said side walls,

(c) a bottom wall connecting said first end wall and adjacent portions of said side walls, and having an edge remote from said first end wall and spaced from said second end wall to form a bottom opening,

(d) a bottom flap adapted to cover said bottom opening,

(e) means hingedly connecting said bottom flap to said bottom wall edge to open and close said bottom opening,

(f) a bottom tab mounted on the bottom of said bot-



tom wall and extending beyond said edge to form a stop for said bottom flap,

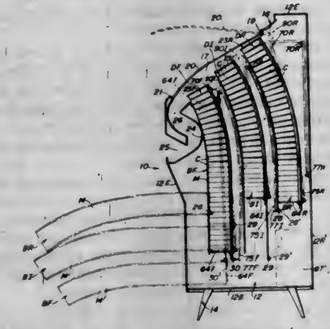
(g) a top wall connecting said first end wall and adjacent portions of said side walls and having an edge remote from said first end wall and spaced from said second end wall to form a top opening,

(h) a top flap adapted to cover said top opening,

(i) means hingedly connecting said top flap to said top wall edge to open and close said top opening, and

(j) a top tab mounted on the bottom of said top wall and extending beyond said top wall edge to form a stop for said top flap.

3,282,466
MAGAZINE STRUCTURES FOR VENDING MACHINES
Henryk W. Meresz, Chicago, and Marino R. Perpignani, La Grange, Ill., assignors, by mesne assignments, to The Seeburg Corporation, Chicago, Ill., a corporation of Delaware
Filed Sept. 11, 1964, Ser. No. 395,668
11 Claims. (Cl. 221—124)



7. In a vending machine, improved magazine structure comprising:

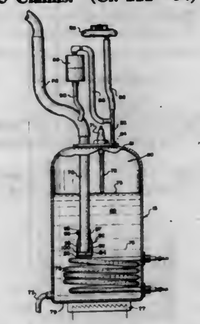
a magazine section adapted to contain a column of vendible articles, the said magazine section being pivotally mounted in the vending machine between a generally vertical article-vending disposition and a generally horizontal article-loading disposition;

an elevator dolly reciprocally movable in the magazine section, the said dolly being adapted to support a column of vendible articles disposed within the magazine section; and

spring biasing means adapted to urge the elevator dolly upwardly only when the magazine section is disposed in its article-vending disposition, the said spring biasing means being adapted to withdraw the elevator dolly away from the column of vendible articles when the magazine section is disposed in its article-loading disposition,

whereby vendible articles articles are dispensible from the magazine section in a first-in-first-out sequence.

3,282,467
BEVERAGE APPARATUS
Milton Immermann, Piermont, Robert H. Ensign, Bronxville, and George H. Woods, New York, N.Y., assignors, by mesne assignments, to General Foods Corporation, White Plains, N.Y., a corporation of Delaware
Original application Jan. 26, 1961, Ser. No. 85,080, now Patent No. 3,181,732, dated May 4, 1965. Divided and this application May 3, 1965, Ser. No. 482,644
5 Claims. (Cl. 222—54)



5. Apparatus for conveying a liquid at its boiling point, comprising a vessel for holding liquid therein, means for supplying liquid to said vessel, means for limiting the amount of liquid in said vessel to a predetermined level, a conduit extending from a location outside said vessel to a position within said vessel in which an end of said conduit is below said level, means for heating said liquid, a vent in said vessel at a location above said level, and diaphragm-actuated switch means responsive to the vapor pressure in said vessel for closing said vent when the liquid in said vessel has been heated to its boiling point.

3,282,468
HOT WATER SUPPLY APPARATUS
Harvey R. Karlen, Chicago, Ill., assignor to Cory Corporation, a corporation of Delaware
Filed Dec. 6, 1963, Ser. No. 328,540
11 Claims. (Cl. 222—67)

1. Apparatus for providing a preselected quantity of hot brewing liquid comprising:

means defining a first chamber;

means defining a second chamber;

passage means communicating with said chambers for conducting liquid seriatim to said first and second chambers;

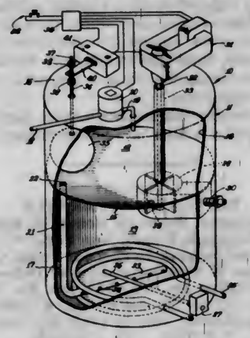
means for heating liquid in one of said chambers;

means for sensing the level of liquid in the other of said chambers; and

means for effecting a delivery of liquid from said second chamber, said delivery effecting means including control means responsive to the level sensing means

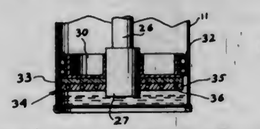
(a) to terminate the delivery of the liquid from the second chamber when the liquid level sensed by said sensing means reaches a pre-

selected low level and substantially concurrently initiate a delivery of liquid through said passage means into said first chamber, and



(b) to terminate the delivery of liquid to said first chamber when the level sensed by said sensing means reaches a preselected high level.

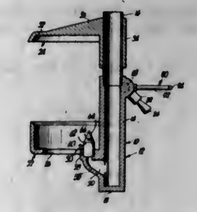
3,282,469
HEATED DISPENSING APPARATUS
Albert W. Skonberg, 3400 Barbour Lane, Louisville, Ky.
Filed Apr. 16, 1965, Ser. No. 448,762
5 Claims. (Cl. 222—146)



1. Apparatus for dispensing material from a container comprising: a stationary assembly; a movable assembly carried by said stationary assembly; said movable assembly including a follower member adapted to enter the container through one end thereof; resilient wiping means disposed about said follower member and adapted to engage the interior surface of the container; heating means carried by and below said follower member; said follower member and said heating means each having an opening therethrough; and pump means having an inlet; said inlet extending through the openings in said follower member and said heating means and terminating no higher than the lower surface of said heating means.

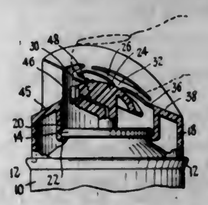
3,282,470
AUTOMATIC SALT DISPENSER FOR POPCORN MACHINES
Frank J. Thomas, Overland Park, Kans., assignor to Manley, Inc., Kansas City, Mo., a corporation of Missouri
Original application May 13, 1963, Ser. No. 279,994. Divided and this application July 13, 1965, Ser. No. 482,656
18 Claims. (Cl. 222—166)

1. Apparatus for dispensing a measured amount of a flowable material, said apparatus comprising:
a tube having an open end and a closed end;
means mounting the tube for tilting movement from a material-retaining position to a material-dispensing position;
a container adapted to receive a supply of said material and provided with a discharge opening therein;
means mounting said container externally of the tube in a location permitting gravitational flow of the material through said opening and with the opening being at a higher elevation than said closed end of the tube when the latter is in said material-retaining position; and
an elongated, unobstructed conduit communicating with said tube at a lower elevation than said opening and extending upwardly to said opening for receiving the flow of material from said opening when said



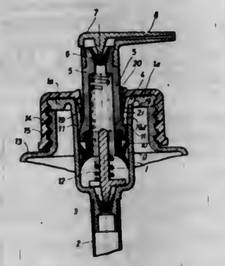
tube is in said material-retaining position and for directing a quantity of the same into said tube until said material reaches a predetermined level therewithin, whereby said quantity is dispensed through the open end of the tube when the latter is tilted into said material-dispensing position.

3,282,471
PLASTIC ONE-PIECE ACTUATOR AND NOZZLE FOR SMALL DISPENSERS
Herbert G. Lehmann, % Valve Corporation of America, 1720 Fairfield Ave., Easton, Conn.
Filed Dec. 22, 1965, Ser. No. 515,541
7 Claims. (Cl. 222—182)



1. A one-piece plastic actuator and nozzle for small dispensers, comprising in combination:
(a) a tubular cap body having means at one end for securing it to the discharge end of a container,
(b) the other end of the cap body having an integral, elongate connecting strip of substantially U-shape, disposed in a plane transverse to its axis,
(c) having a depress button, and a nozzle on and discharge passage in, said button,
(d) said button having means for mounting it on a tubular discharge stem of a dispenser with said passage and nozzle in communication therewith,
(e) said cap body including integral tie webs connecting opposite forward portions of the button to forward portions of the connecting strip at spaced points and in spaced relation therewith,
(f) including connecting means comprising integral outer tie webs connecting the connecting strip to said other end of the cap body at a plurality of spaced points and in spaced relation therewith,
(g) and including an integral tie web connecting a rearward portion of the button to said connecting strip,
(h) said tie webs being disposed in staggered relation with each other to provide for maximum relative movement between the button and said other end of the cap body.

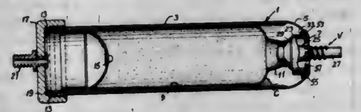
3,282,472
PISTON-ACTUATED DISPENSING PUMP
Eberhard Roder, 4 Paulstrasse, Lubeck, Germany
Filed Nov. 30, 1964, Ser. No. 414,788
Claims priority, application Germany, Nov. 30, 1963, R 36,689
7 Claims. (Cl. 222—321)



1. A reciprocating piston pump for dispensing pumpable material out of a container, said pump comprising a closure cap for said container, a pump cylinder connected to said cap, check valve means arranged in the bottom of said cylinder, a suction tube extending from the bottom of said cylinder to a location adjacent to the bottom of said container, a tubular piston slidably guided within said cylinder and extending upwardly out of said cylinder, and outwardly through said closure cap, spring means arranged within said cylinder and said tubular piston yieldingly urging said piston upwardly into a normal position of rest, said piston being actuated from outside against the force of said spring means, an elastic sealing collar provided at the lower end of said tubular piston sealingly bearing against the cylinder wall, further check valve means arranged in the upper part of said tubular piston, means defining an outlet passage connected through said further check valve means to the interior of said tubular piston, an elastic annular flange formed integrally with said closure cap and projecting with clearance downwardly into said cylinder and surrounding said tubular piston with clearance thereby defining a first annular gap between the upper part of said cylinder wall and said annular flange, said cylinder wall having an aperture formed therein through which said first gap communicates with the interior of said container and a second annular gap between said tubular piston and said annular flange communicating with the atmosphere, both of said gaps and said aperture defining a passage allowing atmospheric air to flow into said container when said tubular piston is depressed, and sealing means moving with said piston and cooperating with said annular flange for controlling the passage of atmospheric air into said container, said sealing means forming a tight seal when said tubular piston is urged by said spring means into said normal position of rest.

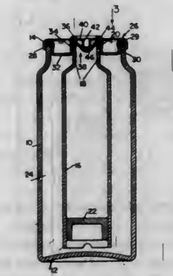
3,282,473
DISPENSERS FOR SEALANTS, ADHESIVES, CAULKING COMPOUNDS AND THE LIKE
Thomas B. Moore, Manchester, Mo.
(7730 Carondelet, St. Louis, Mo.)
Filed June 10, 1964, Ser. No. 374,022
5 Claims. (Cl. 222—327)

1. A dispenser comprising a barrel having a cylindric body open at one end constituting its rearward end and having a head at its other and forward end, said head having an axial hole therein, a cartridge extending lengthwise in the barrel having a neck at its forward end, a dispensing valve removably mounted at the forward end of the barrel, said valve comprising a base and a nozzle movable relative to the base for opening the valve, said base engaging the inside of said head around said hole and said nozzle extending out through said hole, and means for applying endwise pressure to the cartridge to hold the forward end of the neck of the cartridge in seal-



ing engagement with the base of the valve, said head being integral with the barrel, and said base being clamped by said endwise pressure between the neck of the cartridge and the head.

3,282,474
PISTON TYPE AEROSOL UNIT
William G. Gorman, East Greenbush, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 12, 1964, Ser. No. 410,693
6 Claims. (Cl. 222—389)

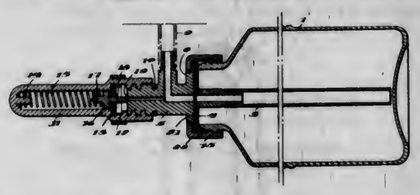


1. A piston type aerosol unit comprising an outer container having a closed end and an open end, an inner smaller container having both ends open and located within the outer container with an end of the inner container generally aligned with the open end of the outer container, a movable piston in the inner container whereby pressure in the outer container will provide pressure on the contents of the inner container, a valve for the inner container at its end opposite the piston, said valve including a resilient gasket, an actuator for said valve to open the same to provide expression of the contents of the inner container to the atmosphere, means closing the open end of the outer container, the last-named means holding the inner container within the outer container and including an inwardly directed guide engaging the gasket and stretching the same to a limited extent, said actuator including a stem for sliding reception in the guide and impinging thereon to stretch the gasket to open position thereof.

3,282,475
FLUID PACKAGE AND DISPENSER
Warren O. Harder, 561 Prospect Ave., Rivervale, N.J.
Filed Nov. 17, 1965, Ser. No. 508,216
4 Claims. (Cl. 222—399)

1. In a combined fluid package and dispenser, a fluid container having a fluid entry and discharge neck portion with exterior fastening means for association with a connected unit, fluid dispensing means detachably joined with the neck portion of the container, said dispenser means including a stand tube structure having a stand tube extension within the container to a point closely adjacent the container bottom but spaced therefrom and having at its outer end a flat surface annular flange overlying with its

marginal edge portion the end of the container neck portion, an intermediate connector and fluid discharge unit having opposite connnector end portions and an intermediate spout portion, one end portion of said unit having a flat surface annular flange in overlying abutting engagement with the flange end of the stand tube structure and a surrounding rotatable means having an inturned flange engaged behind the annular flange of said unit and a skirt portion with means engaged with the associated fastening means on the container neck portion holding the unit in tight sealed connection with the container, the other or outer end of the unit having outer screwthreads and a spaced annular recess formed therein, a ring gasket surrounding the end portion and seated in said recess, said unit having a fluid passage in conductive registry with the passage through the stand tube extended through the spout portion and a relatively restricted centrally disposed passage for gas through the other end portion in open connection with said fluid passage, and a precharged gas pressure capsule in adjustable screwthreaded connection with the threaded end of the unit, said capsule comprising a hollow cylindrical plastic composition body defining a closed end gas chamber in one end portion and



an open end attachment portion of larger diameter with internal screw threads formed therein adjustably connected with the unit screwthreads, said attachment portion having a smooth inner end surface outwardly of the screwthreads and inwardly of the screwthreads and substantially at the juncture of the smaller and larger diameter portions with an annular inner projection and a spaced flat surface annular shoulder, a centrally apertured partitioning valve seat having a peripheral portion thereof held between said shoulder and projection, a reinforcing compression band surrounding the capsule at position of the valve seat, a movable valve within the gas chamber having a fluted stem with beveled end extending through the valve seat aperture into the open attachment end of the capsule in position to engage the end of said unit at one side of the restricted passage, and a helical tensioned spring between the closed end of the gas chamber and the valve holding the valve seated on the valve seat sealing gas within the chamber when the capsule is in a retracted position in its connection with the unit, said capsule being movable from the retracted position inwardly on the unit to engage the gasket and displace the valve from its seat to pressurize the combination.

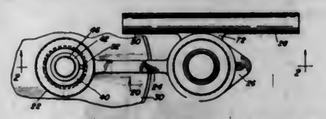
3,282,476
COMBINATION CAPTIVE CLOSURE AND POURING TUBE
Gerald T. Tracy, Clarendon Hills, Ill., assignor to National Can Corporation, Chicago, Ill., a corporation of Delaware
Filed Feb. 8, 1965, Ser. No. 431,785
6 Claims. (Cl. 222—484)

1. A combination captive closure and pouring spout unit for a tin can, comprising, in combination,

(a) a base member, including an axially oriented relatively large liquid passage disposed centrally thereof, and a relatively smaller air vent passage therein, said base member further including can end-receiving means, and a plurality of upper sealing surfaces adapted to sealingly receive a cap member containing complementary sealing surfaces,

(b) a flexible strap member attached to said base member,

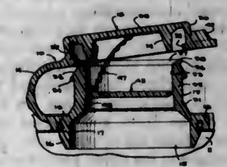
(c) a cap member attached to said strap member, said cap member including means for sealing said air



passage and said liquid passage and having sealing surfaces complementary to said upper sealing surfaces on said base member, and, attached to said cap member,

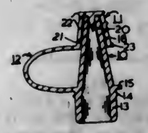
(d) a liquid pouring tube member adapted to be removably received in said central opening in said base member.

3,282,477
PLASTIC DISPENSING NOZZLE WITH REMOVABLE SEAL AND CAPTIVE CAP
John Henchert, River Forest, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Jan. 19, 1961, Ser. No. 83,727
14 Claims. (Cl. 222—541)



1. In a dispensing nozzle of the type having a throat and a removable cap normally sealing the upper end of said throat, a removable sealing disc initially closing said throat below said cap, a pull tab secured to said sealing disc for removing the same, said pull tab being formed of a resilient material and projecting out of said nozzle when said cap is removed from said nozzle with said cap holding said pull tab in a depressed position within said throat.

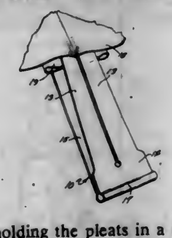
3,282,478
CAPTIVE CLOSURE CAP
John Keith Russell, 42 Valecrest Drive, Islington, Ontario, Canada
Filed Dec. 9, 1964, Ser. No. 417,059
1 Claim. (Cl. 222—542)



An integral one-piece captive cap closure formed of polyethylene and adapted to yieldably engage a dispensing aperture of a container comprising a nozzle including an outlet aperture therein, a cover to close said aperture, and a strap integral with said nozzle and with said cover and interconnecting the two; said nozzle having a major portion of hollow frusto-conical shape and of uniform thin walls providing a frusto-conical interior surface terminating in said outlet aperture, the exterior surface of said nozzle being provided with an annular rib near said outlet aperture and having a minor portion of

generally cylindrical shape and of uniformly thin walls providing a cylindrical interior surface which terminates in an inlet aperture; said cover being of generally truncated conical shape and being provided with an interior upstanding centrally located frusto-conical projection, adapted to enter said outlet aperture of said nozzle to provide primary sealing contact between the exterior frusto-conical face of said projection and the interior frusto-conical face of said outlet aperture, the interior surface of said cover being provided with an inner annular rib spaced from the base thereof adapted to be moved beyond the annular rib on said frusto-conical nozzle and thereby to provide secondary sealing contact between said nozzle and said cover; and said strap extending from the base of said cover to the area of union between the frusto-conical and cylindrical portions of said nozzle.

3,282,479
PLEAT HOLDER
Betty Jane Esterbrooks, 1016 Upham Road, Duluth, Minn.
Filed Sept. 14, 1965, Ser. No. 487,154
1 Claim. (Cl. 223—35)



A device for holding the pleats in a garment in predetermined position during pressing of the garment,

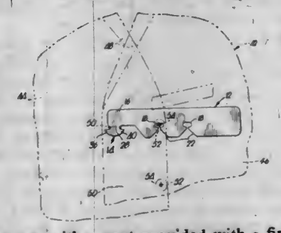
comprising a pair of flat fingers lying in closely proximal spaced edge-to-edge relation with each other and substantially in a plane, said fingers having inner edges in confronting relation with each other and oriented in juxtaposition with each other to define a linear slot therebetween to receive the creased edges of the garment pleats as the fingers are extended into the ends of the pleats and thereby facilitate pressing of the creases along said edges, and slot having an inner end, said fingers also having outer edges and end portions,

a finger mounting plate common to both of said fingers and formed integrally thereof, said plate lying substantially in said plane and at the inner end of said slot,

a substantially flat backing plate disposed in confronting and oblique relation with said flat fingers and finger mounting plate and having a lower end portion extending beyond the end portions of said fingers to confront the end portions of the fingers in spaced relation therewith entirely within the periphery of the plate, said backing plate cooperating with said fingers to underly the pleated portion of the garment and to hold the pleats in substantially closed and stationary condition as to permit pressing of the pleats of the garment, said backing plate having a breadth extending transversely beyond the outer edges of the fingers to provide access to the pleat edge portions overlying the backing plate for inspection and straightening preparatory to pressing, said backing having an upper portion nearly contiguous with said finger mounting plate, the spacing between said fingers and backing plate progressively decreasing upwardly along said backing plate to facilitate ready acceptance of the garment pleats along the fingers and in the slot and to also effect firm clamping of the pleats adjacent the inner end of the slot,

a looped portion common to both said finger mounting plate and said backing plate and formed integrally thereof and resiliently biasing said fingers toward the plate when deflected by the garment pleats.

3,282,480
COAT RETAINER
Edward J. Goush and Carl O. Jones, Kansas City, Mo., assignors to Midwest Hanger Co., Liberty, Mo., a corporation of Missouri
Filed May 26, 1965, Ser. No. 459,031
2 Claims. (Cl. 223—71)



1. For use with a coat provided with a first panel having a button held thereon by thread and a second panel having a buttonhole therein for receiving said button during wearing of the coat, a form retainer for holding said panels in overlapping relationship to one another during nonuse of the coat comprising:

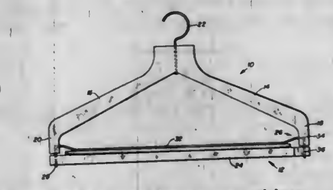
an elongated retainer member having an elongated slot therein extending longitudinally of the member and spaced from an end portion thereof for receiving said thread,

said member being provided with a longitudinal edge having an opening therein communicating with said slot intermediate the ends thereof; and

fastener means on said portion for insertion into said buttonhole, and including an elongated guide element projecting longitudinally outwardly of the member, whereby to enable the fastener to be readily inserted in the buttonhole by a longitudinal movement of the member,

said member including means restricting said opening at its junction with said slot to form a relatively narrow passage only of sufficient width to clear the thread during attachment of the member to and removal from the coat.

3,282,481
COAT HANGER
Stuart L. Maxwell, 727 Dayton, Muskogee, Okla.
Filed Apr. 20, 1965, Ser. No. 449,458
1 Claim. (Cl. 223—91)



An improved garment hanger comprising:

a body having extending arm portions forming an inverted obtuse V, each of the arm portions terminating at the outer end with a downwardly extending portion, the downwardly extending portions defining first and second vertical portions;

an upwardly extending hanger hook affixed to said body at the V apex;

spaced paralleled rods each bent at one end at a right angle forming paralleled downwardly extending portions, one of said rods bent at the opposite end at a right angle forming a single downwardly extending portion, the portions of said rods forming said right angles encompassed within the lower end portions of said first and second vertical portions whereby said parallel rods extend horizontally between said first and second vertical portions, said parallel downwardly extending portions of said rods extend downwardly from the lower end of the first vertical portion, the single rod portion extending downwardly from said second vertical body portion and bent to form a crossbar hook; and

a crossbar having a first end affixed to said parallel downwardly extending portions of said rods extending from said first vertical body portion, said paralleled downwardly extending portions of said rod forming a hinge permitting limited hingeable movement of said crossbar, said crossbar being of T-shaped cross-sectional configuration having an intergral horizontal and vertical portion, the horizontal portion being adjacent, parallel and below said paralleled rods and having an upper surface defiined substantially as a segement of a circle, the second end of said crossbar being removably received and supported by said crossbar hook.

3,282,482
HARNESS FOR HOLDING A FISHING ROD OR THE LIKE
John A. Scharsu, 1551 Price Road, Youngstown, Ohio
Filed June 1, 1965, Ser. No. 460,032
4 Claims. (Cl. 224—7)



1. A harness for holding a fishing rod or the like and comprising a waist encircling belt and a strap having its opposite ends adjustably secured to said belt and arranged to be positioned over the shoulder of a person, a plurality of eyelets spaced longitudinally of said belt and comprising components of snap fasteners and a pair of body members each of which has clamping arms extending outwardly therefrom provided with resilient pins engageable with said eyelets and forming components of snap fasteners.

3,282,483
BACK PACK
Kenneth L. Babcock, P.O. Box 4034, Riverside, Calif.
Filed Sept. 29, 1964, Ser. No. 400,161
2 Claims. (Cl. 224—25)

2. A back pack comprising:

a packframe, said packframe including a U-shaped member forming oppositely disposed first and second side members, a first crossbar fixedly connected to said side members at the lower portion thereof, a second crossbar fixedly connected to said side members at the upper portion thereof, a third crossbar fixedly connected to said side members on the side of said first crossbar remote from said second crossbar, and a pair of brace members fixedly secured in holes in each of said crossbars and disposed substantially parallel to said side members, said first and second crossbars and said side members including a plurality of holes spaced linearly thereon;

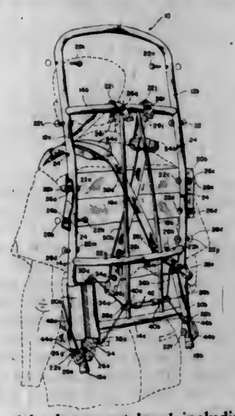
a first back support band mounted on said side members adjacent the lower end thereof, said back support band being lapped around said side members having a loop at each end thereof;

a pair of tubular members respectively positioned in said loops of said first back support band, each of said tubular members having flared end shoulders adapted to hold it within said loop;

a turnbuckle having the shank of each of its eyebolts in contact with a respective one of said brace members of said packframe;

a pair of connectors each comprising a triangular-shaped rod having opposite end portions positioned within the ends of a respective one of said tubular members, the apex portion of each of said connectors being positioned in the eye of a respective one of said eyebolts of said turnbuckle;

a second back support band mounted on said side members intermediate the upper and lower ends thereof,



said second back support band including a plurality of grommets fixedly secured therein adjacent each end thereof, each end of said second back support band being connected to a respective one of said side members of said packframe by means of a plurality of clevis pins each respectively positioned within one of said holes spaced linearly on said side members and within one of said grommets in said back support band;

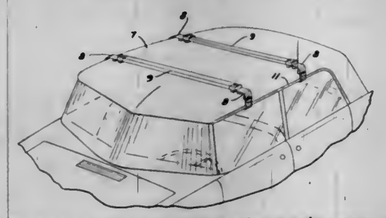
a pair of waist straps each having a grommet fixedly secured therein adjacent one end thereof, each of said waist straps being connected to a respective one of said side members of said packframe by means of a clevis pin positioned within said grommet and within a hole in the side member adjacent the lower end thereof, one of said waist straps having a buckle connected thereto at the end thereof remote from said packframe;

a pair of bifurcated shoulder straps each including a first segment having a buckle connected to one end and a grommet fixedly secured therein adjacent the other end thereof, each of said grommets being positioned on a respective one of said clevis pins which connect said waist straps to said side members, thus connecting said first segments to said side members adjacent the lower end thereof, each of said shoulder straps also including second and third segments each connected intermediate its ends to a respective one of said buckles connected to said first segments thereof, said second and third segments each including a plurality of grommets fixedly secured therein and spaced linearly along the end thereof remote from said buckle, said second segments each being connected to said first crossbar and said third segments each being connected to said second crossbar by means of a clevis pin positioned within a preselected on one of said grommets in said segments and within a preselected one of said holes spaced linearly on said first and second crossbars respectively;

a pair of shoulder pads each fixedly attached to the second segment of a respective one of said shoulder straps, each said shoulder pad including a loop attached to its upper side, the third segment of the same shoulder strap being threaded through said loop; and

a pack sack secured to the upper portion of said packframe by means of clevis pins each respectively positioned within one of said holes spaced linearly on said side members and within grommets fixedly secured in the side edge portions of said packsack.

3,282,484
CAR TOP CARRIER
Archie L. Jerore, 17607 Huntington Road, Detroit, Mich.
Filed Apr. 6, 1965, Ser. No. 445,995
3 Claims. (Cl. 224—42.1)



1. In a carrier for a car top having a rain gutter, the combination of an arcuate resilient metal strap, means to secure said strap to a cross member, said strap having its lower end received in and contacting the said gutter, there being a butt hinge member having its butt secured by welding to the lower end to said metal strap, the movable leaf of said hinge member having an inturned element received under said rain gutter and threaded means to secure said movable leaf to said metal strap.

3,282,485
ACCELERATION AND SPEED CONTROL DEVICE
Bjorn F. Floden, Palmyra, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed July 24, 1964, Ser. No. 384,998
10 Claims. (Cl. 226—169)

1. A device for raising the speed of a shaft close to but less than a predetermined rotational speed and for applying a drag to said shaft when it attains said predetermined speed, said device comprising

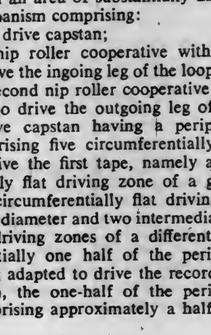
(a) a first friction wheel mounted on said shaft,

(b) frictional drive means tending to rotate said first mentioned shaft at said predetermined speed,

(c) a power driven shaft,

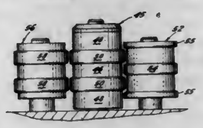
(d) a second friction wheel mounted on said power driven shaft,

(e) a rotationally mounted puck for engagement with said friction wheels, the ratio of the diameters of said friction wheels being such that, when the periphery of said puck non-slippingly engages the peripheries of said friction wheels, said first shaft will be driven at less than, but close to, said predetermined rotational speed by said power driven shaft, and



(f) means for non-slippingly engaging the periphery of said puck with the peripheries of said friction wheels and for slippingly engaging the periphery of said puck with the peripheries of said friction wheels at different times, whereby the rotational speed of said first shaft will be slowed down if it exceeds said predetermined speed.

3,282,486
DIFFERENTIAL CAPSTAN FOR MULTIPLE TAPE SIZES
Dean L. De Moss, Glendale, Calif., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Nov. 7, 1963, Ser. No. 322,151
3 Claims. (Cl. 226—181)



1. A drive mechanism for use interchangeably with a first tape of a first width and a second tape of a second width less than the first width to form the tape into a tensioned loop around a return capstan with an ingoing leg of the loop traveling from the drive mechanism to the return capstan and an outgoing leg of the tensioned loop traveling from the return capstan to the drive mechanism and with transducer means adjacent at least one of the two legs in an area of substantially uniform tension, said drive mechanism comprising:

a rotary drive capstan;

a first nip roller cooperative with the drive capstan to drive the ingoing leg of the loop;

and a second nip roller cooperative with the drive capstan to drive the outgoing leg of the loop,

the drive capstan having a peripheral driving area comprising five circumferentially flat driving zones to drive the first tape, namely a central circumferentially flat driving zone of a given diameter, two end circumferentially flat driving end zones of the same diameter and two intermediate circumferentially flat driving zones of a different diameter,

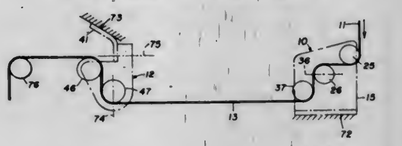
substantially one half of the peripheral driving area being adapted to drive the record tape of the second width, the one-half of the peripheral driving area comprising approximately a half portion of the cen-

tral zone, a particular portion of the end zone of substantially the same width as the half portion of the central zone and the full width of the corresponding intermediate driving zone, the width of the intermediate driving zone being approximately equal to the sum of the widths of the half portion of the central zone and the particular portion of the end zone,

one of the two nip rollers having three circumferential portions of a diameter to cooperate respectively with the central circumferential driving zone and the two end circumferential driving zones of the drive capstan,

the other of the two nip rollers having two circumferential zones of a diameter to cooperate respectively with the two intermediate zones of the drive capstan.

3,282,487
WEB ALIGNING DEVICE
Elmer E. Boase, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed July 27, 1964, Ser. No. 385,170
17 Claims. (Cl. 226—190)



6. Apparatus for maintaining lateral alignment of a moving web, comprising in combination:

a first roller assembly for engaging the web and guiding it from a first path into a second path substantially perpendicular to that of said first path, said first assembly including at least one web engaging roller mounted for rotation about its longitudinal axis and for pivotal movement about an axis that is substantially perpendicular to the center line of said web in said first path in response to any angular displacement of said web in said second path for equalizing the tension in the edges of said web;

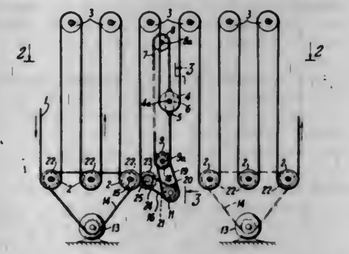
a rotatable steering roller for engaging said web in said second path and guiding it into a third path substantially perpendicular to said second path, said steering roller having a rotational axis and being movable about an axis, substantially perpendicular to said rotational axis, in response to any angular displacement of said web in said second path;

a rotatable idler roller for engaging said web leaving said steering roller and guiding it into an outgoing path substantially perpendicular to that of said third path; and

means for mounting said steering roller and said idler roller for movement as a unit about an axis substantially perpendicular to the rotational axis of said steering roller in response to any change in path length of said web between said first roller assembly and said steering rollers, whereby changes in the lateral alignment of the web are corrected.

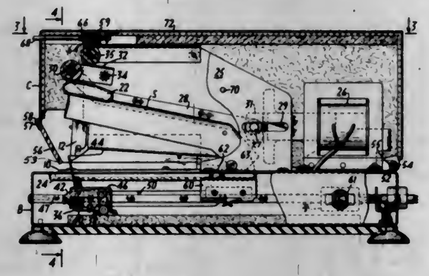
3,282,488
WEB CONVEYING APPARATUS
Fritz E. Bauer and Thomas Beall, North Adams, Mass., assignors to Crompton & Knowles Corporation, Worcester, Mass., a corporation of Massachusetts
Filed Feb. 4, 1965, Ser. No. 430,391
4 Claims. (Cl. 226—195)

1. Web conveying apparatus comprising a plurality of rotary transport rolls disposed for engagement of their peripheries with a web to be transported, substantially constant speed driving means operatively connected to at least one of said rolls for rotating the same to pull the web along a path in engagement with said peripheries, a dancer roll movable vertically in position to be supported by a loop of the web in said path, a first rotary element operatively connected to said driving means and rotatable thereby in one direction at substantially constant speed, a second rotary element, an operative connection between the dancer roll and said second element for rotating the second element at a speed proportional



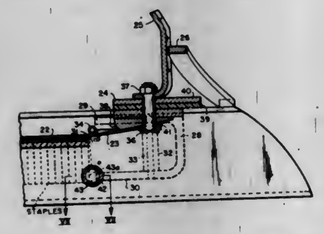
to the speed of vertical movement of the dancer roll and in a direction determined by the direction of said vertical movement, said connection being operable to rotate the second element in the same direction as the rotation of said first element as the dancer roll descends, and an overrunning clutch interposed between said rotary elements and operable to interconnect them in response to rotation of the second element in said same direction at a speed greater than the rotational speed of the first element, whereby said driving means are operable to brake the descent of the dancer roll.

3,282,489
PORTABLE SOLENOID DRIVEN STAPLER
Earl T. March, Florham Park, N.J., assignor to Thomas Collators, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 12, 1965, Ser. No. 425,689
7 Claims. (Cl. 227—7)



1. In a machine for fastening together a group of sheets, a fastening device having a knob and an anvil, a cage mounted on said base enclosing said knob, a puller link having a roller journaled therein engaging said stapler knob, a toggle link having at one end a fixed pivot in said cage above said knob and the other end connected to said roller, and a solenoid mounted on said base in back of said anvil for pulling said roller journaled puller link to cause said toggle link to swing about its fixed pivot and thrust against the journal of said roller to push down the front end of said stapler knob and slide rearwardly therealong as it goes down to exert an increasing pressure on the stapler knob.

3,282,490
REAR LOADING STAPLE MAGAZINE
Edsell M. Eady, Butler Township, Butler County, Pa., assignor to International Staple & Machine Company, Butler, Pa., a corporation of Pennsylvania
Filed Oct. 23, 1964, Ser. No. 406,473
1 Claim. (Cl. 227—120)



A rear loading staple magazine for stapling machines having a staple driving throat and a driving blade moving in the throat to drive staples comprising,

(A) magazine channel having

(1) a first track on which sticks of staples slide towards said throat,

(2) a staple follower having movable fingers which engage the legs of the last staple of a stick of staples to move the staples toward said throat and which ride over the legs of staples in a stick when the follower is moved away from said throat,

(B) a second track for guiding said follower and spaced vertically above said first track when the magazine is in a horizontal position,

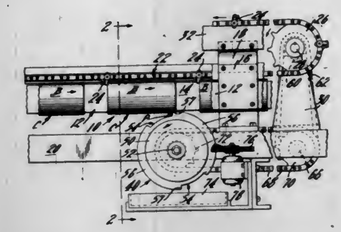
(C) a stop positioned adjacent the end of the channel remote from the throat and beneath said first track to engage the legs of the rear staple in a staple stick and prevent rearward movement of the stick when the follower is moved away from the throat and rides over the legs of staples held by said stop,

(D) the vertical distance between said first track and said stop being such that staples on said track are engaged by said stop and the vertical distance between said second track and said stop being such that a stick of staples can be inserted at the end of the channel away from said throat between said tracks and over said stop and then dropped in front of said stop, and

(E) a spring for resiliently urging said follower toward said driving throat to move sticks of staples towards said throat which spring comprises flat steel spring stock connecting said magazine and said follower, said spring stock being coiled at one of its ends and the coil being so positioned vertically with respect to the staple sticks that the natural tendency of the spring to unwind presses the portion of the spring above the staple stick downwardly against the sticks to hold them down against the first track.

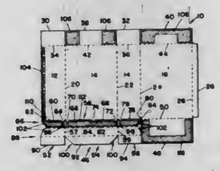
3,282,491
SOLDERING MACHINE WITH FLUX WIPER ROLLER
Sydney J. Wallace, Stamford, Conn., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 30, 1964, Ser. No. 422,165
6 Claims. (Cl. 228—22)

1. A solder wiping mechanism, comprising a radially deformable non-metallic wiper roll having at least one operative and one non-operative segment said non-operative segment consisting of a notch in the periphery of said roll, means for feeding articles past said wiper roll in spaced longitudinal procession, and means for timing said



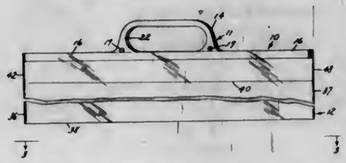
wiper roll to the procession of articles so that said operative segments engages at least a portion of the articles fed past said wiper roll.

3,282,492
CARTON HAVING A HINGED END CLOSURE
John G. Vergobbi, Quincy, Mass., assignor to Pneumatic Scale Corporation, Limited, Quincy, Mass., a corporation of Massachusetts
Filed Dec. 2, 1963, Ser. No. 327,464
5 Claims. (Cl. 229—51)



1. A hinged upper end closure for a rectangular carton having a body portion closed at its lower end and comprising front and rear side wall panels connected along their side edges to a pair of end wall panels, said hinged end closure being formed by integral extensions from the top edges of said wall panels, and including: an integral three-section extension portion extending from said rear and said end wall panels and connected to the top edges thereof by weakened lines providing frangible connecting portions, said top edges lying in a common plane, and said three-section portion being folded downwardly and upwardly to provide a two-ply band about the upper portion of said front and side wall panels, the confronting surfaces of said two-ply band being integral and uninterrupted by weakened lines throughout the extent thereof and being adhesively secured together, and there being relatively short, separate front and end flaps projecting upwardly from said two-ply band which are folded inwardly, said three-section portion being provided with parallel vertical score lines connecting the sections thereof, said score lines being offset outwardly from the side edges of said front wall panel just sufficiently to allow clearance for folding the two-ply band about the front corners of the upper portion of the carton without effecting bowing of said front wall panel; and on inwardly folded flap hingedly connected to the top edge of said rear wall panel and adhesively secured to said relatively short, inwardly folded front and end flaps to provide a hinged cover connected to the top edge of said front and end wall panels by said frangible connecting portions.

3,282,493
SYNTHETIC RESINOUS BAG CONSTRUCTION HAVING FRANGIBLE SEALING MEANS
Seymour Kamins, Oceanside, and Norman Rosenberg, Bayside, N.Y., assignors to C-Thru Products, Inc., Brooklyn, N.Y., a corporation of New York
Filed Aug. 5, 1965, Ser. No. 477,383
3 Claims. (Cl. 229—54)



1. In a bag of thin flexible sheet material having an opening defined by two opposed walls, and a handle member secured to each of said walls substantially at said opening, the improvement comprising: first and second inner walls, each having a first edge secured to an edge of said opening, and second edges forming a frangible mutual interconnection disposed in the area of said opening, movement of said handle members in mutually opposed directions serving to sever said interconnection.

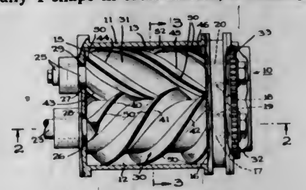
3,282,494
COIN WRAPPER WITH WINDOW THEREIN
John W. Tarn, Whitehall, Pa.
(530 McDowell Ave., Minerva, Ohio)
Filed Mar. 8, 1965, Ser. No. 437,699
4 Claims. (Cl. 229—87.2)



1. A coin wrapper construction comprising:
a longitudinally extended substantially flat sheet of opaque material having upper and lower edges and opposed side edges;
said upper lower edges being folded over toward one another to form longitudinally extending margins spaced apart from one another;
a window fabricated of transparent material extending across the spacing between said margins and being secured to each of said margins along the full length thereof;
said window permitting visual examination of the interior of said coin wrapper whereby, when said coin wrapper is filled with coins, at least a portion of the periphery of each such coin therewithin is visible through said window.

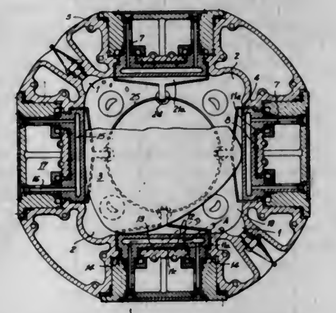
3,282,495
SEALING ARRANGEMENT FOR SCREW-TYPE COMPRESSORS AND SIMILAR DEVICES
Joseph D. Walls, Connersville, Ind., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Apr. 29, 1964, Ser. No. 363,387
4 Claims. (Cl. 230—143)

1. In a fluid handling device of the type having a housing provided with intersecting cylindrical bores and suction and discharge ports adjacent the opposite ends of said housing, a pair of mating helically threaded rotors rotatably supported within said cylindrical bores and having threads and troughs cooperating with each other and said housing to form pockets which receive fluid from the suction port, axially advance the fluid from the suction end to the discharge end of the housing and discharge the fluid through said discharge port as the rotors revolve in opposite directions about the axes thereof, the improvement comprising a first longitudinally extending channel in the perimetric surface of each thread of said rotors, a pair of longitudinally extending channels adjacent said first channel, said pair of channels being disposed in opposed relationship and spaced from the perimetric surface of the thread, each channel of said pair of channels opening into said first channel to form therewith a slot substantially T-shape in cross-section, a backing member



and a metallic honeycomb sealing element secured thereto and forming therewith a wearable sealing strip substantially T-shape in cross-section, said sealing strip being rigidly mounted in said slot with the backing member being positioned in the pair of longitudinally extending channels and the honeycomb element being positioned in the first longitudinally extending channel and extending beyond the perimetric surface of said thread for sealing engagement with the housing and with the troughs of the mating rotor within which said threads are received as the rotors revolve.

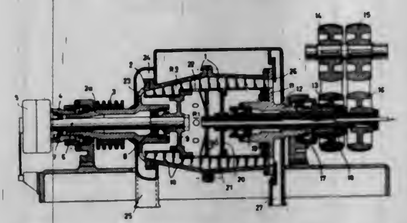
3,282,496
SEALING MEANS FOR A POWER DRIVEN MACHINE WITH A ROTARY PISTON
Maciej Radziwill, Kozietulskiego Str. 2, Fl. 1, and Andrzej Cezary Broel-Plater, Smolna Str. 14/10, both of Warsaw, Poland
Filed Nov. 7, 1963, Ser. No. 322,579
Claims priority, application Poland, Nov. 8, 1962, P 100,014
8 Claims. (Cl. 230—145)



1. An engine comprising a body having an internal surface defining a chamber, a piston member in said chamber and having relative rotation therein, said piston member having a peripheral surface which contacts the internal surface of the chamber, said chamber being restricted to provide only flat surfaces where it is contacted by the peripheral surface of the piston, said flat surfaces being formed by slidable elements mounted in said body, said peripheral surface of the piston forming the envelope of the cooperating flat surfaces of the chamber to form combustion chambers therein for a

working medium and means defining passage extending from the interior of the chamber to the rear of the slidable elements for the flow of working medium from within the chamber towards said slidable elements such that the resultant force of the working medium acting on the slidable elements urges the same against the peripheral surface of the piston member.

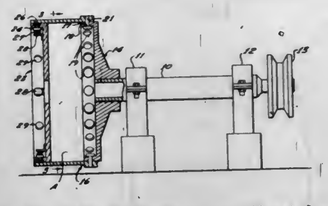
3,282,497
PROCESSES AND APPARATUS FOR THE SEPARATION OF SOLIDS FROM A SUSPENSION
Ludwig Schmiedel, Socking, near Starnberg, Germany, assignor to Starcosa G.m.b.H. & Co., Wunstorf, Germany
Filed July 13, 1964, Ser. No. 382,257
Claims priority, application Germany, July 25, 1963, Sch 33,616
17 Claims. (Cl. 233—7)



1. Apparatus for separating solids of different particle sizes in a liquid suspension, said apparatus comprising a rotatable drum having opposite ends, first and second worm members axially supported in end-to-end relation within said drum for independent rotation, means connected to the first worm member for rotating the first worm member at a particular rotational speed which is lower than that of the drum to provide relative rotational motion between the drum and first worm member, means connected to the second worm member for rotating the second worm member at a particular rotational speed which is greater than that of the first worm member but still less than that of the drum to provide relative rotational motion between the drum and second worm member which is less in speed than the speed of the relative rotational motion between the first worm member and the drum, means adjacent the drum for introducing the liquid suspension containing the particles of different sizes into the drum whereby the solids of larger particle size are separated in the drum and are axially advanced in one direction by the first worm member and the solids of finer particle size are separated in the drum and are axially advanced in said one direction by the second worm member while the liquid of the suspension flows in the opposite direction, outlet means at the end of the drum at the discharge end of the first worm member for the discharge of separated solids and outlet means at the other end of the drum for the discharge of liquid free of the solids.

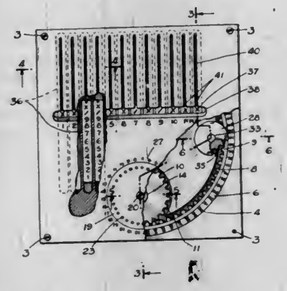
3,282,498
CONSTRUCTION FOR HIGH GRAVITY CENTRIFUGES AND THE LIKE
Lloyd B. Smith, 824 N. 31st St., Birmingham, Ala.
Filed June 10, 1963, Ser. No. 286,849
7 Claims. (Cl. 233—27)

1. In a high gravity centrifuge having a cylindrical shell-like part open at both ends and subject to increase in diameter in response to centrifugal force and a radial driven part concentric with the shell-like part, the improvement comprising a plurality of elongated members radially disposed relative to the periphery of the radial part, and means fixedly securing said members to one of said parts for sliding movement relative to the other thereof, whereby rotational force is transmitted between the inner part and the outer part through said members while permitting unrestrained increase in diameter of the



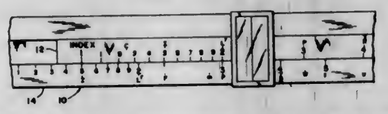
shell-like part when subjected to centrifugal force, and means to hold the rotational axes of the shell-like and radical parts in alignment while the shell-like part increases in diameter.

3,282,499
BOWLING SCORE COMPUTER AND INDICATOR
Oskar Zentarra, 335 Oak St., Glendale, Calif.
Filed Feb. 10, 1965, Ser. No. 431,503
5 Claims. (Cl. 235—65)



1. In a bowling score computer and indicator, a frame structure comprising a relatively thin, flat base member and a thin, flat cover member overlying and secured to said base member, an enclosed annular raceway formed in said base and enclosed by the juxtaposed face of said cover member, an internally toothed ring gear rotatable in said raceway and guided by engagement with a peripheral wall of said raceway, an opening in said cover member disposed over said raceway to render a portion of the face of said ring gear which is adjacent to said cover member exposed to view, said face of said ring gear carrying a series of consecutive numbers equally spaced thereon and extending from "00" to "99" and constituting the units and tens components of the score, means journaled in axially aligned bearing means in said base and cover members and including a gear in constant mesh with the teeth of said ring gear and means disposed externally of said cover member manually operable to effect rotation of said gear with resultant rotation of said ring gear in desired increments of movement of thirty of said numbers or less a second gear journaled in axially aligned bearing means carried by said base and cover members and provided with teeth engageable by one only of the teeth of said ring gear and having a face exposed by said opening; said second gear being intermittently operated by said one tooth of said ring gear as the number "00" traverses said opening with resultant shifting of the rotative position of said second gear to indicate the hundreds component of the score.

3,282,500
CALCULATING DEVICE FOR SOLVING UNKNOWN QUALITATIVE PARAMETERS
Alfred B. Pikus, Oaklyn, N.J., assignor to Keuffel & Esser Company, Hoboken, N.J., a corporation of New Jersey
Filed Aug. 11, 1965, Ser. No. 478,864
7 Claims. (Cl. 235—70)

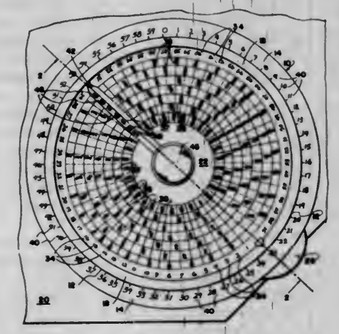


7. A device for determining the quality of an unknown function comprising a plurality of elements including indicia thereon representing qualitative functions, said qualitative functions representing characteristics of physical entities, said indicia being arranged in a predetermined order, said elements being manipulable by an operator so that movement of certain selected elements representing known qualitative functions results in the manifestation of indicia representing said unknown function, said predetermined order of said indicia being determined by the following formula:

$$f(x)=(x_1-r_1)(x_2-r_2)\ \ldots\ (x_1-r_1)\ \ldots\ (x_n-r_n)=0$$

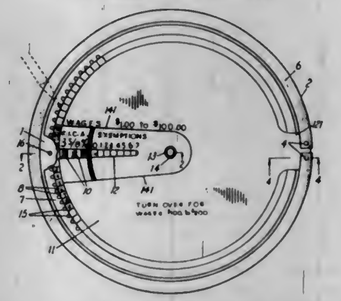
where x_1 is a physical quality which has an arbitrarily assigned numerical value r_1 for a root;
where x_2 is another physical quality which has an arbitrarily assigned numerical value r_2 for a root;
where x_1 is still another physical quality which has an arbitrarily assigned numerical value r_1 for a root;
where x_{1+1} to x_n are physical qualities to which numerical values r_{1+1} to r_n for roots correspond, which values are determined by solving simultaneously physical equations (laws) relating x_{1+1} through x_n to x_1 through x_1, and which values are numerically consistent therewith.

3,282,501
TIME, SPEED AND DISTANCE COMPUTER
John W. Copeland, 161 S. Oliver, Wichita, Kans.
Filed Mar. 1, 1965, Ser. No. 436,129
4 Claims. (Cl. 235—78)



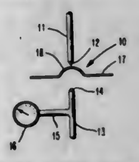
4. A computer comprising, means annularly disposed, a disc rotatably mounted within said means annularly disposed, said means annularly disposed having an inwardly projecting means and said disc having portions cooperating with each other to maintain said disc within said means annularly disposed, means rotatably supporting said disc relative to said means annularly disposed, means for rotating said disc relative to said means annularly disposed, first pointer means movable with said disc in the outer edge thereof and extending radially outwardly therefrom, first unit indicia disposed along the periphery of said disc, second unit indicia disposed on said means annularly disposed and corresponding to said first unit indicia, second pointer means rotatably mounted centrally of said disc, means to lock said second pointer means relative said disc, a plurality of radially spaced indicating indicia on said second pointer means, a plurality of unit scale indicia arranged concentrically on said disc in alignment with said plurality of indicating indicia in said second pointer means, said computer adapted to correlate unit variables expressed by said first unit indicia, said second unit indicia, said indicating indicia, and said unit scale indicia.

3,282,502
WITHHOLDING TAX COMPUTER
Julius N. Cayo, 1904 Highway M–139, Benton Harbor, Mich.
Filed Feb. 15, 1965, Ser. No. 432,572
3 Claims. (Cl. 235—88)



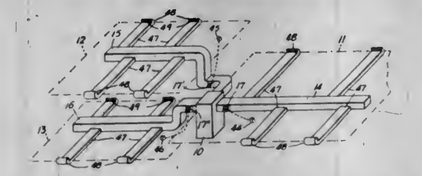
1. In a device of the class described, the combination of a plate-like body member, a disk-like indicia member, said body member having a centrally disposed pivot with which said indicia member is rotatably engaged, said indicia member having an annular series of wage indicia and a series of radially disposed tax indicia disposed inwardly of and in alignment with each of said wage indicia, said indicia member also having perforations therein disposed at the outer side of and in radial alignment with said wage indicia, and a face plate, said face plate having a radially disposed slot dimensioned to expose related radially disposed tax indicia, said body member having a portion with which an adjusting implement may be slidably engaged and having a recess therein disposed in alignment with said slot and adapted to receive the point of an implement used for adjusting said indicia member.

3,282,503
FLUID MEMORY DEVICE
Marvin Jacoby, Fort Washington, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed June 29, 1964, Ser. No. 378,794
9 Claims. (Cl. 235—201)



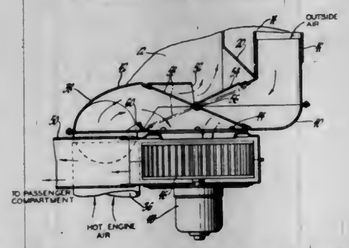
1. In a fluid memory, a thin sheet of plastic having at least one dimple formed therein, said dimple being capable of being flexed from a first stable state to a second stable state by a predetermined force, a tube having at one end an orifice adjacent said dimple and substantially closed by said dimple when said dimple is in said second stable state, a source of fluid connected to the other end of said tube, pressure sensitive means connected to said tube detecting any increase of pressure in said tube when said dimple is in said second stable state and said source of fluid is providing fluid at a pressure force less than said predetermined force.

3,282,504
ZONE CONTROL AIR VALVE DAMPER FOR HEATING OR COOLING SYSTEMS
Richard N. Foster, 160 Rock Hill Road, Clifton, N.J.
Filed Nov. 12, 1964, Ser. No. 410,555
17 Claims. (Cl. 236—1)



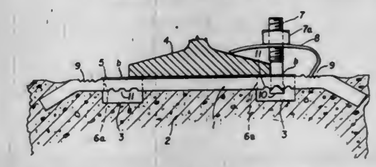
8. In an air conditioning system of the character defined, an air control unit comprising a casing having spaced louvers therein for control of passage of air therethrough, a drive member in operative engagement with the louvers for movement of said louvers into open and closed positions, the casing having a mounting plate for support of the casing in an air circulating duct of a system, an actuator supported on said unit, said actuator having a motor driven shaft projecting through a wall thereof, a crank fixed to said shaft, a link coupled with the crank and with said drive member for movement of the louvers into open and closed positions, and said actuator including means controlling operation of said crank and movement imparted to said louvers.

3,282,505
VENTILATING AND HEATING SYSTEM FOR AIR COOLED ENGINE CAR
Robert M. Harter, Lyndonville, N.Y., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 13, 1965, Ser. No. 447,661
5 Claims. (Cl. 237—12.3)



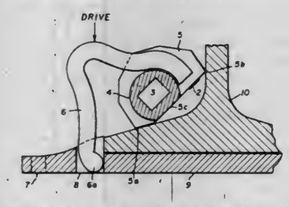
1. A ventilating and heating system in a car having a passenger compartment and an air cooled engine compartment, said compartments being separated by an open space defined by partitions of said car, a blower with discharge duct work arranged to guide air from said blower to said passenger compartment, a casing forming an air inlet chamber communicating with the inlet of said blower, heated air duct work and outside air duct work arranged as separate air inlets to said casing, an air outlet connecting said casing to said space, and damper means arranged in said casing to control air flow through the latter.

3,282,506
RAIL FASTENINGS FOR CONCRETE TIES
Fred W. Holstein, Hopatcong, N.J., assignor to The Rails Company
Filed Dec. 18, 1963, Ser. No. 331,606
2 Claims. (Cl. 238—287)



1. An assemblage comprising a rail having a base and a concrete tie and means to fasten said rail to said tie comprising
a one-piece anchor bar embedded in said tie and extending across the top thereof under said rail,
a recess in said tie below said anchor bar at each side of said rail base,
the under side of said bar having a plurality of notches in said recess,
a bolt having a head selectively engageable with any one of said notches and extending upwards through a hole in said bar adjacent the edge of said rail base and said notches,
a notched portion on the upper side of said bar spaced from said rail edge, and
a resilient clip member engaging said upper notched portion and said rail and having an opening through which said bolt passes, and flexing and securing means engaging said bolt above and abutting said clip whereby to clamp said rail to said bar.

3,282,507
DRIVEN TORQUE RAIL ANCHOR CONSTRUCTION
Frederick W. Holstein, Hopatcong, N.J., assignor to The Rails Company, Maplewood, N.J.
Filed Aug. 11, 1964, Ser. No. 388,777
1 Claim. (Cl. 238—349)



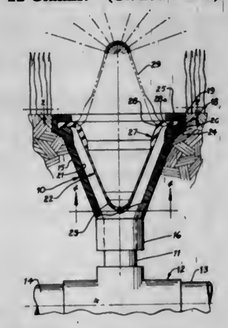
In a driven torque anchor construction for railroad rails including a rail having a base and a web, a tie and a tieplate spiked in position and provided with a rail spike opening adjacent the rail base edge, a semi-circular wedge member having a reduced central portion and a long diametrical side at one end of which is an angularly disposed flat land said wedge member having a polygonal periphery between said flat land and said diametrical side the angular relation between said diametrical side and said flat land being such that the flat land and the end of the diametrical side opposite said land will abut, simultaneously, evenly the top surface of the rail base and the rail web, respectively, so as to preliminarily position stably the wedge member with respect to said spike opening in the tieplate and a V-shaped spring clamp of substantially uniform section with one leg adapted to be fitted over the reduced central portion of the wedge member to serve as a pivot bearing for the wedge member, and having a blunt hooked end on the other leg projecting into

said rail spike opening, said spring clamp also having an upwardly projecting loop at the V-junction of the legs to provide a driving head aligned with the blunt end so situate that a blow thereon will drive said blunt end into the tie and hook said end under the tieplate whereby to give tension and set to said spring.

ERRATUM

For Class 239—127.3 see:
Patent No. 3,282,421

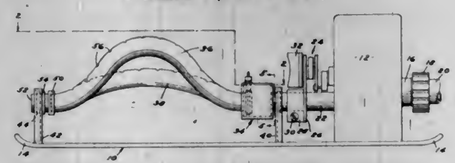
3,282,508
SELF-RETRACTING LAWN SPRINKLER NOZZLE
Simon Roberts, 20177 McIntyre, Detroit, Mich.
Filed June 24, 1964, Ser. No. 377,594
12 Claims. (Cl. 239—204)



1. In an underground lawn sprinkling system, the combination comprising: a water supply means; a tubular body member connected at the lower end thereof to the water supply means and being open at the upper end thereof; a self-retracting sprinkler nozzle mounted in said tubular body member; said sprinkler nozzle being made primarily from a pliable material; the lower end of said nozzle being provided with a plurality of holes; the upper end of said nozzle being provided with an outwardly extended flange and immediately adjacent thereto, a connective radius portion, said flange being disposed on the axial end of the periphery of the open upper end of said tubular body member; said outwardly extended flange and said connective radius portion each having a thicker cross section than the lower end of said nozzle; means for retaining the outwardly extended flange on the upper end of said self-retracting sprinkler nozzle in sealing detachable engagement with the axial end of said tubular body member; and, said connective radius portion of said self-retracting nozzle being stressed upon extension of said nozzle outwardly of said tubular body member when water under pressure is admitted through said water supply means and into said tubular body member and said nozzle being retracted into said tubular body member by the stress conditions in the connective radius portion when the water supply is shut off.

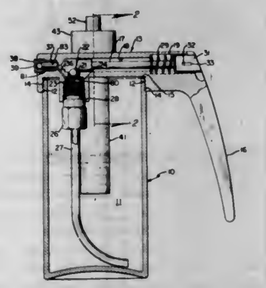
8. In an underground lawn sprinkling system, the combination comprising: a water supply means; a tubular body member connected at the lower end thereof to the water supply means and being open at the upper end thereof; a self-retracting sprinkler nozzle mounted in said tubular body; said sprinkler nozzle being made from a pliable material; the lower end of said nozzle being provided with a plurality of holes; the upper end of said nozzle being provided with an outwardly extended flange disposed on the periphery of the open upper end of said tubular body member; means for retaining the upper end of said self-retracting sprinkler nozzle in sealing detachable engagement with said tubular body member; said self-retracting nozzle being extendable outwardly of said tubular body member when water under pressure is admitted through said water supply means and into said tubular body member and said nozzle being self-retractable into said tubular body member when the water supply is shut off; and, said means for retaining the upper end of said self-retracting sprinkler nozzle on said tubular body member comprising a retaining ring threadably mounted in the upper end of said tubular body.

3,282,509
OSCILLATING SPRINKLER
Albert C. Starr, 260 N. Main St., Nephi, Utah
Continuation of application Ser. No. 325,402, Nov. 21, 1963. This application Oct. 24, 1965, Ser. No. 504,731
2 Claims. (Cl. 239—242)



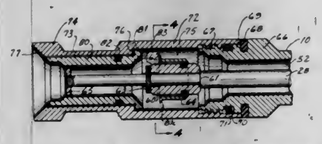
1. A lawn sprinkler comprising a base; a pair of bracket means mounted on and upstanding from the base in spaced apart alignment thereon; a main water delivery conduit journaled for oscillation in one of said bracket means; a closed water chamber communicatively coupled to said main conduit; a pair of apertured water distributing conduits communicatively coupled with said water chamber spaced from said main conduit and extending generally longitudinally of said base and terminating adjacent the other of said bracket means; support means for said distributing conduits journaled for oscillation in said other bracket, said main conduit, chamber, distributing conduits and support means defining a unitary structure conjointly oscillatable about a common axis; valve means associated with said chamber in flow-controlling communication with said distributing conduits and selectively operable to open one of said conduits while closing the other of said conduits; and motive means coupled to said main delivery conduit for oscillating such conduit and said delivery conduits conjointly.

3,282,510
AEROSOL SPRAY DEVICE
Zolly Carleton Van Schwartz, Englewood, Colo., assignor to Deena S. Strauss and Don S. Strauss, Denver, Colo.
Filed July 6, 1964, Ser. No. 380,326
2 Claims. (Cl. 239—373)



1. An aerosol spray device comprising: a cannister; a removable lid for said cannister; a removable plug cap attached in a hole extending through said lid; a sight tube axially aligned with said hole and attached to the bottom of said lid; a gas repressurization valve in said plug cap; a relief valve in said plug cap; said lid having a longitudinal passageway and a vertical passageway therein connected together and a nozzle bore connected to the upper end of said vertical passageway; a supply tube supported at the bottom of said vertical passageway; a control valve in said vertical passageway controlling the passage of fluid from said vertical passageway to said nozzle bore; a ball valve element seated in the top of said vertical passageway for actuating said control valve; an actuating rod in said passageway for actuating said ball valve element and normally spring-biased out of actuating contact with said ball valve; a nozzle in said nozzle bore having a channel and an orifice; a nozzle plug in said channel having a bevelled front face and a pair of off-set radial grooves in said front face connecting said channel and said orifice whereby a whirling motion is imparted to liquid leaving said orifice.

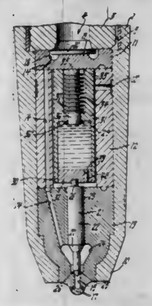
3,282,511
SPRAY GUN FOR FIRE APPARATUS AND THE LIKE
Benjamin D. Barton, 2626 Rose St., Sarasota, Fla.
Filed June 30, 1964, Ser. No. 379,084
3 Claims. (Cl. 239—459)



1. A spray gun for fire fighting apparatus including a nozzle housing defining therein a substantially cylindrical valve chamber, a nozzle member within said nozzle housing defining a valve seat, an integral valve guide, and a fluid flow passage, an operating rod extending through said chamber and into said nozzle member, valve means on said operating rod operatively engageable with said valve seat in response to axial movements of said rod, and a flow pattern control disk on said rod moveable within said fluid flow passage of said nozzle member, said guide maintaining alignment of said valve means with respect to said valve seat and alignment of said flow pattern control disk with respect to said nozzle flow passage despite relative movement of said nozzle housing and said nozzle member, whereby movement of the flow pattern control disk within the passage of the nozzle with movement of said valve means will alter the flow pattern as the valve means is moved to approach and recede from said valve seat, thus providing coordinated volumetric flow control and flow pattern control.

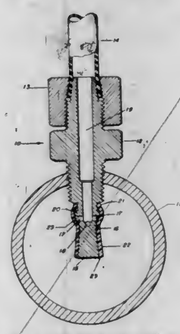
3,282,512
UNIT FUEL INJECTOR WITH FLUID INJECTION VALVE SPRING
Elmer Bluhm, Grandville, and Frederick T. Vaas, Jr., Grand Rapids, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 9, 1963, Ser. No. 328,895
6 Claims. (Cl. 239—533)

3. In a unit fuel injector having a pump chamber with a plunger therein for developing an injection charge of fuel under pressure, a fuel charge delivery passage leading from said pump chamber and terminating with an outlet, a valve normally closing said outlet but having an area exposed to fuel pressure in said passage and operable to open said valve in response to said pressure reaching a predetermined value, and a spring yieldably opposing opening movement of said valve, said spring comprising a quantity of fluid and a chamber confining said fluid, said chamber including a rigid hollow body having an opening and a bellows, said bellows having a fixed head and a movable head, said movable head being connected to the valve for movement toward said fixed head with opening movement of the valve, said movable head having an opening through which the interior of the bellows



is in direct fluid pressure communication with the interior of said body via said body opening, said bellows having an effective area against which said fluid pressure acts in opposing said movement of said movable head, said chamber being of sufficient volume in relation to said effective area and the modulus of elasticity of said fluid to accommodate said movement upon application of injection pressure to the fuel in said passage.

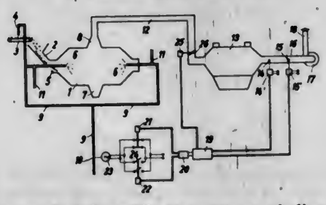
3,282,513
SELF-CLEANING INJECTION NOZZLE
Harry A. Savage, Miami, Fla., assignor of fifty percent to Donald W. Barlow, Miami, Fla.
Filed Jan. 7, 1965, Ser. No. 424,055
3 Claims. (Cl. 239—534)



1. A self-cleaning injection nozzle comprising a substantially arcuate body member of varying cross sectional areas having a base portion and a discharge portion, said body member having a portion of minimal cross sectional area intermediate said base portion and said discharge portion, said discharge portion being of uniform increasing cross sectional area from said minimal cross sectional area to said discharge portion, a peripheral ridge extending about said body member at said base portion, said body member having a discharge port at said peripheral ridge, a substantially resilient sleeve mounted over and engaging substantially the entire surface of said body member extending from said base portion to said discharge portion, said peripheral ridge forming a chamber about said body member at said discharge port, said

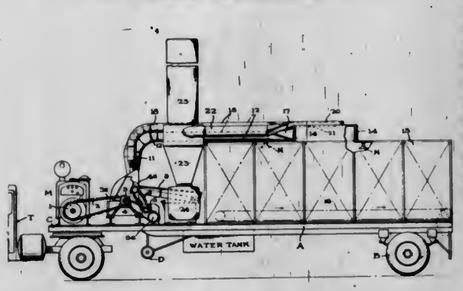
body member having a fluid passageway communicating with said discharge port for the flow of fluid under pressure to said resilient sleeve adjacent said peripheral ridge whereby upon the flow of fluid under pressure said resilient sleeve will expand in an undulating movement.

3,282,514
METHOD FOR CONTROLLING THE AMOUNT OF LIQUID ADDED TO HEAT ABSORBING GASES
Rudolf Putz, Frankfurt am Main, Germany, assignor to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany
Filed Mar. 11, 1964, Ser. No. 351,144
Claims priority, application Germany, Mar. 12, 1963, M 56,078
4 Claims. (Cl. 241—17)



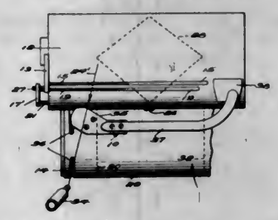
1. In a method for adding water to a grinding mill for moistening gas passing through said mill for removing heat from said mill, and in which the gas is then passed through a dust separator, the improvement comprising adding said water to said gas at a rate controlled by the temperature difference between the temperature and the dew point of the heated gas for maintaining optimum constant dust separating conditions in the dust separator.

3,282,515
MOBILE CLASSIFIED MATERIALS DISINTEGRATOR
Harold Z. Smith, Tyler, Tex., assignor to J. B. Sedberry, Inc., Tyler, Tex., a corporation of Tennessee
Filed Sept. 17, 1963, Ser. No. 309,551
1 Claim. (Cl. 241—48)



In an apparatus for reducing classified material to an impalpable fine powder, the combination comprising,
an accumulator chamber including top, side, bottom and end walls for collecting powdered material,
a motor driven high speed disintegrator mill,
means for feeding raw material into said mill,
a fan at the exhaust side of the hammer mill,
a dust precipitating and distributing head rising from and communicating with the top wall of said chamber, said head comprising a circular outer wall and a superimposed elevated top wall together forming a material receiving chamber which is shallow in depth as compared with the depth of the accumulator chamber, the top wall of said head having an opening of smaller diameter than said head, said opening located over the vortex area of the dust eddy area of said head when the apparatus is in operation to take off recoverable fines,
a main duct for conveying air and entrained pulverized material from the fan and directing it tangentially to said head,
a return flow duct disposed radially to the axis of said head and leading back to the hammer mill,
an air escape duct on top of said head communicating with said top wall opening,
a cyclone for receiving dust discharged from said air escape duct,
and upper and lower fines collecting bags disposed axially one above the other and communicating with the cyclone.

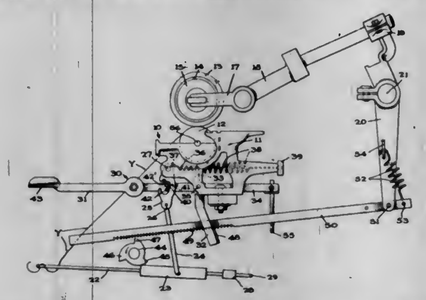
3,282,516
YARN WINDUP
William Donnie Porter, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed July 23, 1965, Ser. No. 474,225
15 Claims. (Cl. 242—18)



1. In a windup including a yarn source, a rotatably driven package support and a self-threading traverse guide through which the yarn advances as a package is wound on said support, a transfer-tail guide comprising: an arm extending lengthwise of said support in proximal relationship thereto and terminating near one limit of the traverse stroke, said support having means thereon beyond said one limit for snagging yarn to initiate a package; a plate member mounted on the terminal end of said arm, said plate member having an outer peripheral edge adapted for engagement by the yarn after it is snagged and around which the yarn then traverses to a position in the path of travel of said traverse guide; and a wheel rotatably mounted on said plate, said wheel having at least one tooth projecting outwardly beyond said edge in a position to interrupt yarn traverse around the edge, said wheel being adapted for rotation responsive to a minimum level of yarn tension.

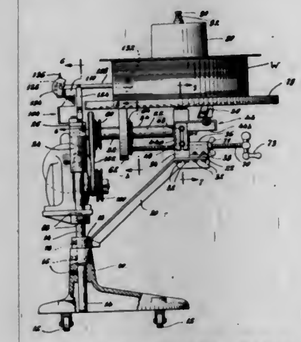
3,282,517
STOP MOTION FOR YARN WINDING MACHINES
Julian B. Chavis, Box 939, Gastonia, N.C.
Filed July 23, 1964, Ser. No. 384,627
2 Claims. (Cl. 242—37)

1. In a quick traverse winding machine having a frame and a plurality of winding units mounted thereon, each winding unit including a holder having a winding package thereon and a cam drum rotating said package by frictional engagement therewith, means for stopping the operation of a single winding unit comprising an integral four-armed lever pivoted on said frame, latch means pivoted on said frame, a stop pin on a first arm of said four-armed lever, an adjustable stop on said latch means, spring means connecting said latch means and a second arm of said four-armed lever to hold said stop in engagement with said stop pin, a continuously rotating cam, a yarn fault detector rotatably mounted on said latch means, an abutment on said detector intermediate the ends thereof, whereby yarn failure causes said detector to move upwardly, bringing said abutment into engagement with said rotating cam, engagement of said rotating cam with said abutment causing said latch means to pivot, thereby disengaging said stop and stop pin, a rock frame carrying said package and holder, means connecting said rock frame and the third arm of said four-armed lever, spring



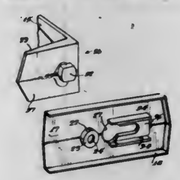
means connecting said frame and said second-named arm of said four-armed lever for causing said third arm to move said connecting means to operate said rock frame upon disengagement of said stop and stop pin, means on said fourth arm of said four-armed lever for releasing said connecting means from said third arm, and a finger piece on said first arm of said four-armed lever for operating said lever to restore the parts to winding position.

3,282,518
COIL REEL
Frank C. Holmes, Trumbull, Conn., assignor to The U.S. Baird Corporation, Stratford, Conn., a corporation of Connecticut
Filed Dec. 11, 1964, Ser. No. 417,709
11 Claims. (Cl. 242—54)



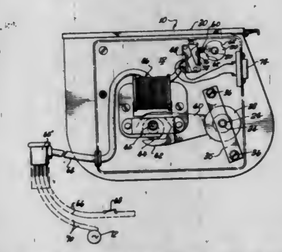
1. A coil reel which comprises: support means; a substantially vertical shaft having a lower first end and an upper second end, and mounted on said support means at said first end; a coil support tray rotatably mounted about said vertical shaft and including a central hub portion encircling said vertical shaft; a drive wheel mounted below said tray and in frictional engagement therewith, said drive wheel being rotatable in a plane substantially perpendicular to the radius of rotation of said tray at the point of contact between said drive wheel and said tray; positioning means for selectively positioning said drive wheel along said radius of rotation; drive means arranged to drive said drive wheel and rotate said tray; and screw means positioned in said hub means for vertical downward advancement against the upper second end of said vertical shaft to lift said hub portion and disengage said tray from said drive wheel.

3,282,519
PAPER TOWEL HOLDER
Jack A. Rheinstrom, 249 E. 48th St., New York, N.Y.
Filed Apr. 6, 1964, Ser. No. 357,466
8 Claims. (Cl. 242—55.2)



7. A device for wall mounting a roll of paper towels or the like comprising mounting means, a pair of roll supporting arms, each including an arm portion rigidly connected to and integral with a leg portion and projecting in a generally perpendicular direction relative thereto, each arm portion including a surface for receiving an end of the roll of paper towels or the like, and means for slidably receiving and removably locking said leg portions to said mounting means against pivotal movement relative thereto with said roll engaging surfaces facing each other and said arm portions properly spaced to receive the roll of paper towels or the like, said arm portions being sufficiently flexible for insertion of a roll of paper towels or the like into an inserted position between end of the roll of paper towels or the like, and means including means blocking removal of the roll supporting arms with the roll in inserted position.

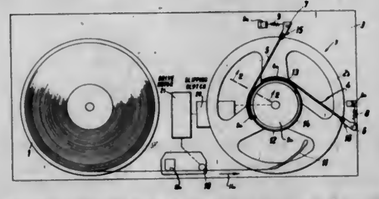
3,282,520
FILM TRANSPORT MECHANISM
Charles J. Hunt, Orange, Calif., assignor to Beattie-Coleman, Inc., Anaheim, Calif., a corporation of California
Filed Oct. 5, 1964, Ser. No. 401,321
8 Claims. (Cl. 242—55.11)



1. A method of advancing a film in the focal plane of a camera to produce a series of frames of a given dimension longitudinally of the film with a small spacing between frames, comprising:
oscillating a one-way rotary clutch continuously several times a second through a range of small magnitude with the clutch connected to the take-up roll of the camera to advance the film by increments equal to a small fraction of said given dimension with the increments progressively increasing with increasing diameter of the wound film on the take-up roll and with the maximum increments less than said spacing; and

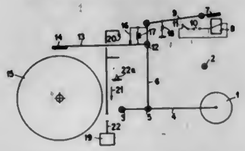
terminating the continuous oscillation of the one-way clutch when the total of the progressively increasing increments equals the given dimension plus the spacing.

3,282,521
TAPE REEL THREADING MEANS
Eduard Schüller, Wedel, Holstein, and Fritz Radensleben, Leveste, Hannover, Germany, assignors to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany
Filed Oct. 30, 1963, Ser. No. 320,128
Claims priority, application Germany, Nov. 2, 1962, T 22,952
4 Claims. (Cl. 242—55.12)



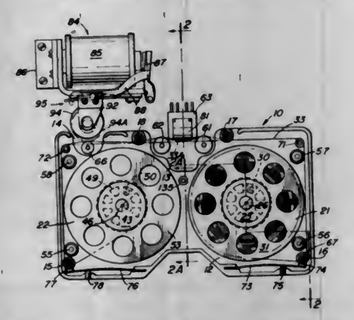
4. In combination with a tape recorder: a take-up reel having a central drum portion and two spaced apart flanges, at least one lever pivotably mounted on the tape recorder for movement into and out of an operative position in which said lever extends between said flanges of said take-up reel, spring means coacting with said lever for biasing the same into said operative position thereof, said lever being configured to deflect tangentially toward said central drum portion of said reel a tape leader which is introduced between said flanges of the reel while the reel is rotating, and said drum portion being provided with an overload clutch which comprises two semi-circular segments encompassing said central drum portion and an outer ring made of elastic material and pressing said segments centrally toward said drum portion.

3,282,522
QUICK STOP ARRANGEMENT FOR A TAPE RECORDER/REPRODUCER
Friedrich Louzil, Vienna, Austria, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed July 8, 1964, Ser. No. 381,152
Claims priority, application Austria, July 16, 1963, A 5,678/63
6 Claims. (Cl. 242—55.12)



1. A quick stop arrangement for a tape recorder/reproducer having a tape supply means, a capstan and associated pressure roller for driving the tape of said recorder/reproducer, comprising a first means moveably supporting said pressure roller, a brake for engaging said tape supply means, a second means for moveably supporting said brake, a moveable member connected with said first means and pivotally connected with said second means, an energy source and means interconnecting said source and said movable member for imparting a first movement thereto whereby said brake is released and the tape is driven, a quick stop manually operated key means, said key means being connected with said second means for pivoting said second means relative to said moveable member, and substantially simultaneously moving said moveable member for separating said pressure roller and said capstan.

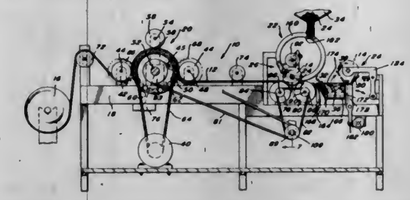
3,282,523
MAGNETIC TAPE APPARATUS
Colin D. Murdoch, Union City, Calif., assignor of twenty percent to Chad W. Pennebaker, San Leandro, Calif.
Filed Mar. 6, 1964, Ser. No. 349,810
3 Claims. (Cl. 242—55.13)



1. Tape drive and storage apparatus for a magnetic tape recording and reproducing system comprising:
a tape cartridge comprising two tape reels mounted in tandem relation within a cartridge housing, a plurality of guides within said housing, and a magnetic tape extending from one of said reels around said guides to the other of said reels, in a substantially U-shaped path,
said tape reels being movable both axially and laterally within said housing and each having an axial bore aligned with openings in opposed walls of said housing,
said cartridge having first and second openings along the bight of said U-shaped path across which first and second portions of said tape extend;
a rigid support deck;
tape guide means comprising a pair of spaced guide posts having tapered ends mounted on said deck and projecting outwardly thereof for a given length;
a capstan, having a tapered end, mounted on said deck in spaced relation to said guide means and projecting outwardly thereof for a similar length;
and a pair of spindles, having tapered ends, mounted on said deck and projecting outwardly thereof for a substantially greater length than said guide posts and said capstan, the positions of said spindles, said guide posts, and said capstan corresponding to the positions of said housing apertures, said first opening, and said second opening in said cartridge, respectively;
said cartridge being initially mounted in accurate alignment on said spindles by first engaging said spindles in said axial bores of said tape reels and subsequently moving said cartridge toward said deck to engage said guide posts and said capstan with said first and second portions, respectively, of said tape.

3,282,524
AUTOMATIC WINDING MACHINE
Reginald Couzens, Wallingford, and Michael M. Young, Merion, Pa. (both % Dietz Machine Works, Inc., 3105 W. Allegheny Ave., Philadelphia, Pa.)
Filed Jan. 3, 1964, Ser. No. 335,585
12 Claims. (Cl. 242—56)

1. In an automatic winding machine having a frame adapted to support at least one web of material, power means for driving a web along the frame, a winding station on the frame adapted to rotatably support at least one empty core, means for applying one end of a web to an empty core whereby a web can be wound thereabout, pressure contact means including a roll mounted adjacent said winding station for holding a core on the winding station as the web is wound, said roll being reciprocal to be brought into and out of seated engagement on a web as it is wound and to compensate for increasing the web diameter as a web is wound, a finishing station adjacent said frame, and pickup and delivery means supported ad-



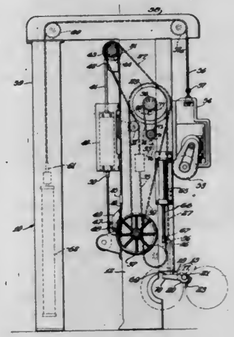
jacent the winding station for simultaneously positioning another empty core in the winding station while delivering a wound core from the winding station to said finishing station, said last-named means including a pair of spaced arms rotatable through a predetermined path, a sweeper arm intermediate said spaced arms, and spaced fingers reciprocable along said sweeper arm in a direction perpendicular to the path of movement of said arms, the movement of said arms and roll being synronized so that the roll is taken out of seated engagement with a wound core when the arms deliver said core to said finishing station.

3,282,525
WEB SLITTING AND GROOVING APPARATUS AND METHOD
Henry W. Rehr, Concord, Calif., assignor to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada
Filed Sept. 23, 1963, Ser. No. 310,794
41 Claims. (Cl. 242—56.2)



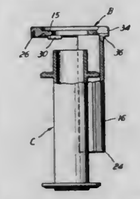
1. In apparatus for making a spirally wound roll of paper toweling or the like having an integral support element at one end thereof, means for advancing along a predetermined path a web of material from which such roll is wound, a knife disposed along such path for engagement with such web to cut the same longitudinally during the advancement thereof and being supported for reciprocable displacements transversely of the web, actuating mechanism for reciprocably displacing said knife transversely of such web during the advancement thereof, control means for energizing said actuating mechanism in timed relation with the advancement of such web to effect at predetermined locations therealong displacement of said knife first in one transverse direction with respect to the web and thereafter in the opposite direction with respect thereto to cut the same in a predetermined pattern along a longitudinal edge portion thereof, and means for winding the thusly cut web in spiral convolutions to form such roll whereby said support element is integrally defined in said roll by the spirally wound web forming the same, said control means including means responsive to the radial dimension of the roll being wound in such spiral convolutions for energizing said actuating mechanism.

3,282,526
DRUM WINDER FOR PAPER AND THE LIKE
David A. Daly, Exton, Pa., assignor to Beloit Eastern Corporation, Downingtown, Pa., a corporation of Pennsylvania
Filed Dec. 6, 1963, Ser. No. 328,626
6 Claims. (Cl. 242—66)



1. In a drum winder for winding webs of paper and the like into rolls, a horizontal winder shaft, a pair of winder drums on opposite sides of said shaft and adapted to support and wind a web about said shaft into the form of a roll, rectilinear guide means for opposite ends of said shaft, accommodating movement of said shaft upwardly as the roll of paper increases in diameter, fluid pressure reacting means at each end of said shaft and exerting upward lifting forces on opposite ends of said shaft during winding of the roll, other fluid pressure reacting means at each end of said shaft and exerting opposite cantilever bending forces on opposite ends of said shaft, and pressure regulator means operable in accordance with the diameter of the roll of paper, for maintaining fluid under pressure in each of said fluid pressure means at opposite ends of the shaft at progressively increasing pressures as the diameter of the roll increases.

3,282,527
MAGAZINE FOR PHOTOGRAPHIC FILMS
Lodovico D'Incerti, Milan, Italy, assignor to Società per Azioni Ferrania, Milan, Italy, a corporation of Italy
Filed Nov. 2, 1964, Ser. No. 408,108
Claims priority, application Italy, Nov. 14, 1963, 40,960/63
5 Claims. (Cl. 242—71.1)



1. A magazine for containing photographic films;
said magazine comprising a hollow cylindrical envelope extending along a longitudinal axis, and a lid;

said envelope having a first end and a second end and having an internal wall surface extending therebetween; a first means closing said first end; said lid being positioned to cover said second end;

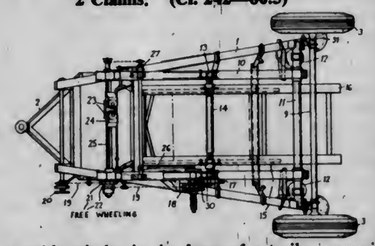
said envelope having a slit passing completely therethrough which extends substantially parallel to said longitudinal axis of said envelope for the passage of film from within said envelope to without the same;

a finlike member affixed to said lid; said member having a convexly arcuated surface; said member extending into said envelope with said arcuated surface thereof spaced away from and substantially parallel to said internal wall surface of said envelope along a first portion of the length of said member, thereby defining an arcuated duct for the passage of film; said first portion extending an arcuate length which is sufficient to permit light entering said duct to be blocked from passing completely through said duct into said magazine;

said first portion extending away from one side of said slit in a first direction;

a second portion of said arcuated surface extending past said slit; the internal surface of said envelope on the other side of said slit including a projecting region for contacting said second fin portion to prevent the entry of light into said magazine.

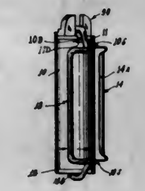
3,282,528
WINDER FOR SMALL CABLE
André Henri Antoine Tilloy, Versailles, France, assignor to Societe Generale d'Entreprises, Colombes, Seine, France, a French body corporate
Filed July 20, 1964, Ser. No. 383,883
Claims priority, application France, July 19, 1963, 942,127
2 Claims. (Cl. 242—86.5)



1. A cable winder in the form of a trailer comprising a fixed chassis having a tow-bar at the front and two trailer wheels at the rear of said chassis, a movable chassis to support a cable reel, said movable chassis being articulated along a transverse axis at the front on to the rigid chassis and supported at the rear by jacks enabling the movable chassis to be raised or lowered relative to said fixed chassis, a winding mechanism comprising a transmission clutch, a transmission including a frictional coupling to drive said cable reel, said trailer wheels being attached to the rear of said fixed chassis by vertical pivots associated with locking means enabling the trailer wheels to be placed parallel or perpendicular to the longitudinal axis of said chassis, both said fixed chassis and said movable chassis comprising at the rear a rigid cross-bar.

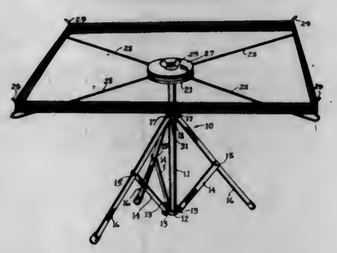
3,282,529
SEAT BELT RETRACTOR
Alec Greenfield, Chicago, Ill., assignor to The Greenfield Company, Elk Grove Village, Ill., a corporation of Illinois
Filed May 25, 1964, Ser. No. 369,936
16 Claims. (Cl. 242—107.11)

13. In a seat belt retractor of the type having a cylinder on which the belt web is wound and unwound, end plugs in the opposite ends of the cylinder, a torque arm pivotally supported by said end plugs so that the cylinder and arm can rotate one with respect to the other, spring means acting on the cylinder and arm when tensioned in one direction to produce relative rotation as aforesaid in the opposite direction, the combination of a unitary throw-away ratchet dog seating upon a certain one of said



end plugs and removably held thereon by, and held in engagement with a part of said torque arm, and coacting ratchet means on said ratchet dog and said certain end plug permitting relative rotational displacement between the cylinder and torque arm in a certain direction to tension said spring means, but preventing such displacement by action of the spring means in retrograde direction opposite from said certain direction.

3,282,530
SKEIN HOLDER
Peter J. Rash, 563 W. Lance Drive, Des Plaines, Ill.
Filed June 15, 1964, Ser. No. 375,063
2 Claims. (Cl. 242—127)



1. A skein holder providing a supporting structure having an elongated hollow standard and a tripodial stand collapsibly carried by said standard and including:

(a) a supporting hub rotatably mounted on one end of said standard and adapted to be disposed in a horizontal plane when said tripodial stand is in its extended position,

(b) a plurality of radially extending elongated wire arms connected to said hub and provided at corresponding free ends with vertically extending skein-receiving hooks disposed within the radii defined by said arms and beyond the extremities of the extended tripodial stand,

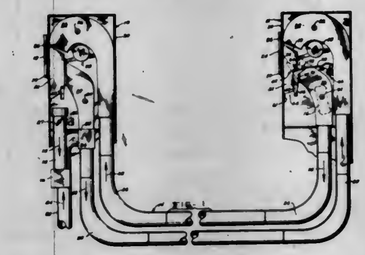
(c) said supporting hub having formed therein a plurality of apertures equally spaced from each other and from the center of said hub a predetermined distance,

(d) each of said arms having their corresponding opposite ends formed to provide longitudinally extending offset mountings,

(e) said offset mountings providing an inset portion extending through selected apertures formed in said supporting hub, with the ends of said offset mountings beyond said inset portion lying in facial abutment with the underside of said hub to bear the weight of said arms and to pivotally and removably connect the same to said hub,

(f) and a circular latch plate removably attached to said hub for frictionally securing therebetween said arms in a predetermined adjusted radial position relative to said standard.

3,282,531
PNEUMATIC DISPATCH SYSTEM
George M. Stewart, Indianapolis, Ind., assignor to T.V. Bank Equipment Corporation, Toledo, Ohio, a corporation of Ohio
Filed Dec. 7, 1964, Ser. No. 416,505
10 Claims. (Cl. 243—1)



1. Service apparatus for the dispatching of a material cartridge between a first station and a second station, comprising:

a pair of pneumatic tube lines operatively interconnecting the said stations, one of said lines adapted to convey a cartridge from the first station to the second station, and the other of said lines adapted to convey a cartridge from the second station to the first station;

a receiver at each station, each receiver being adapted to receive a cartridge dispatched through the associated one of said lines;

each of said lines terminating in a downwardly-directed stretch to provide that the cartridge will enter the receiver downwardly, the receivers being operatively open at the top to receive the cartridge through the top when the receiver is in receiving position;

an access door at each station;

the said receivers being movably supported for movement between a receiving position for receiving a cartridge from one line leading from the other station, and a dispatching position in which the bottom of the receiver is operatively aligned with the other line for dispatching a cartridge to the other station;

each receiver being operatively connected to the access door of the respective station to provide that when the door is closed the receiver is in receiving position and when the door is open the receiver is in dispatching position;

motor means at each station for moving the associated door and receiver combinations between the positions designated above;

first abutment means at each station for blocking movement of a cartridge moving into the respective receiver from the other station, the said abutment means being operative to block a cartridge when the receiver is in receiving position but not blocking a cartridge when the receiver is in dispatching position;

second abutment means at each station and adapted to block movement of a cartridge when the associated receiver is in dispatching position;

said second abutment means each comprising a blocking member carried by said receiver and movable between a blocking position in which it operatively blocks movement of a cartridge, and a non-blocking position in which it does not block such movement;

means biasing the said blocking member to non-blocking position;

a control member operatively connected to the blocking member of the second station;

a control pawl at the said second station;

the pawl having a first means operatively engageable with said control member to position said blocking member in blocking position when said receiver is in dispatching position;

the pawl having a second means operatively engageable with said control member to position said blocking member in non-blocking position when said receiver is in dispatching position;

motor means at the second station for moving the control pawl to bring selectively each of the said means into operative engagement as described above;

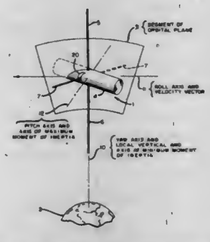
means at the first station for controlling the door-and-receiver motor means at both the first and second stations;

means at the first station for controlling the motor means, at the second station, which controls the control pawl;

sensing devices adjacent the beginning of each of the said lines and adapted to energize the associated door-and-receiver motor means to close the associated door and to position the associated receiver into receiving position upon the passing of a cartridge past the respective said sensing device; and

sensing devices adjacent the end of each of the said lines and adapted to energize the associated door-and-receiver motor means to open the associated door and to position the associated receiver into dispatching position upon the passing of a cartridge past the respective said sensing device.

3,282,532
STABILIZATION OF GRAVITY ORIENTED SATELLITES
Bruce E. Tinling and Vernon K. Merrick, Los Altos Hills, Calif., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed July 27, 1964, Ser. No. 385,527
14 Claims. (Cl. 244—1)



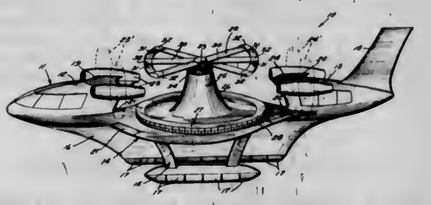
1. A space satellite structure comprising a composite main body portion and damping body portion, said composite satellite structure having a first axis of minimum moment of inertia and a second axis of maximum moment of inertia in a plane at right angles to said first axis, and damping means biasing said damping body portion to an equilibrium position in which said damping body portion is at an angle to said first axis and skewed with respect to said second axis.

3,282,533
RIGIDIZABLE EXPANDABLE STRUCTURES AND SYSTEM
Raymond G. Spain, 2000 Stayman Drive, Dayton, Ohio
Filed Aug. 7, 1962, Ser. No. 215,470
6 Claims. (Cl. 244—1)



1. A foldable, expandable, rigidizable structure comprising wall means for defining a hollow construction having a predetermined shape, said wall means including a multi-ply laminate in which there is an inner polymerizable layer of resin that becomes rigid upon contact with a predetermined vapor.

3,282,534
COMBINATION AIRCRAFT
Constantine A. Serriades, Chicago, Ill.; Michael Lascaris and Costas Pandaleon, executors of said Constantine A. Serriades, deceased
Filed Nov. 27, 1964, Ser. No. 414,068
17 Claims. (Cl. 244—6)

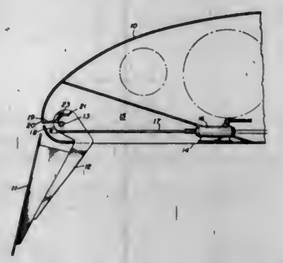


1. A transport aircraft comprising:
a fuselage having spaced front and rear cabins;
wing means interconnecting said front and rear cabins and extending beyond both sides of said fuselage;
said wing means having a top surface including a central portion and a peripheral portion surrounding said central portion and being positioned below the top surfaces of said front and rear cabins;
air moving means mounted on said wing means in surrounding relation to said central portion for compressing and directing air only radially outwardly of said air moving means across the peripheral portion of said wing means; and
a plurality of jets attached to said aircraft to propel said aircraft.

3,282,535
LEADING EDGE SPOILER AND FLAP WING STALL CONTROL MEANS
John E. Steiner, Bellevue, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Nov. 12, 1964, Ser. No. 410,542
12 Claims. (Cl. 244—42)

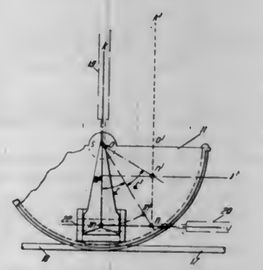
1. A method for controlling the stalling speed of an aircraft wing having a retractable leading edge flap and a retractable leading edge spoiler comprising,

(a) retracting the spoiler with extension of the flap to provide a smooth leading edge surface in the low speed configuration of the wing, and



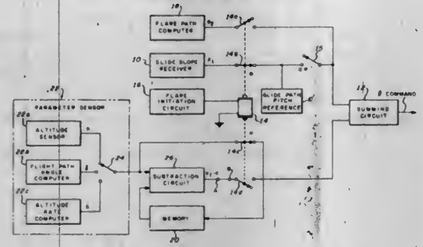
(b) extending the spoiler with retraction of the flap to roughen the leading edge for improved stall control of the wing in the high speed configuration.

3,282,536
AIRCRAFT CONTROLS
Kenneth James Iddon, Send, Surrey, England, assignor to Hawker Siddeley Aviation Limited, London, England
Filed Aug. 20, 1964, Ser. No. 390,928
Claims priority, application Great Britain, Aug. 26, 1963, 33,713/63
9 Claims. (Cl. 244—75)



1. A flying control system for a V/STOL aircraft of the vectored thrust type, wherein the control transmission between the pilot's control means and the propulsion plant includes at least one resolver device to translate pilot's control movements, transmitted in terms of demands for changes in the vertical and horizontal thrust or velocity vectors, into appropriate settings of engine throttle opening and engine thrust deflection angle, the device being arranged so that a change in pilot demand in respect of one vector will not cause any change in the velocity of the aircraft in the direction normal to the modified vector, said resolver device comprising two orthogonally-disposed actuators to which the pilot's vertical and horizontal command signals are respectively applied and which have a common coupling point, and angularly moving members connected to said common coupling point and arranged to deliver, in response to movements of said coupling point, a first output in the form of an angular deflection to control the angular direction of engine thrust, and a second output in the form of a rectilinear displacement to control engine throttle setting.

3,282,537
AIRCRAFT CONTROL SYSTEMS
Norman Lowell, Massapequa, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Feb. 26, 1964, Ser. No. 347,582
7 Claims. (Cl. 244—77)



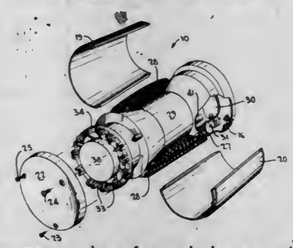
1. In a landing control system for aircraft, the combination comprising:
(a) means for producing a reference pitch attitude signal adapted to control an aircraft to maintain a substantially linear approach path to a predetermined flare-out altitude,
(b) means for producing a second signal adapted to control said aircraft to maintain a predetermined flare-out path,
(c) means for producing a third signal proportional to the difference between the steepness of the flare-out path at said predetermined altitude and the instantanous steepness of the flare-out path below said predetermined altitude,
(d) and autopilot means responsive to said reference attitude signal for controlling said craft above said predetermined altitude and responsive to said reference attitude signal and said second and third signals for controlling said craft below said predetermined altitude, said reference attitude signal and said third signal being of a sense such that they mutually oppose one another,
whereby the path of said craft below said predetermined altitude is controlled primarily by said second signal without opposition from said pitch attitude reference signal.

3,282,538
EJECTION DEVICE
Herbert W. Mulkins, Newark, Del., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Aug. 16, 1965, Ser. No. 479,953
5 Claims. (Cl. 244—122)



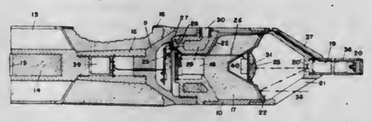
1. In a device for ejecting a seat from an aircraft:
a catapult tube fixedly connected at one end thereof to said aircraft;
a rocket motor comprising a casing and a thrust nozzle pivotally mounted on the aft end of said casing, the forward end of said casing being fixedly connected to said seat and the aft end of said casing and said thrust nozzle being respectively positioned within said catapult tube;
means for pivoting said thrust nozzle relative to said casing after said rocket motor has been ejected from said catapult tube; and
means for locking said thrust nozzle on said casing after it has pivoted to a predetermined canted position relative thereto, so that the line of thrust of said rocket motor is selectively positioned relative to the center of gravity of said seat and mass connected therewith.

3,282,539
RECOVERY SYSTEM
Harry W. Wiant, Itasca, Ill., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Dec. 23, 1964, Ser. No. 420,836
4 Claims. (Cl. 244—138)



1. A recovery package for retrieving a special purpose test capsule deployed from a rocket-powered carrier vehicle at high altitude over water comprising:
(a) a plurality of releasable doors forming the skin of said package,
(b) means attached to said package interiorly of said doors for containing a second stage decelerator,
(c) said containing means and said doors forming a compartment therebetween,
(d) a first stage decelerator stored in said compartment and secured to said containing means,
(e) a separable cover member enclosing said second stage decelerator and retaining said doors in position, and
(f) said first stage decelerator providing means for stabilizing said capsule during descent and providing means for floating said capsule in the water.

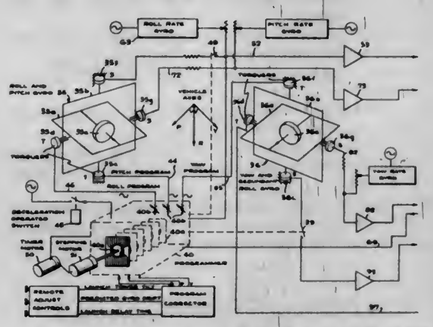
3,282,540
GUN LAUNCHED TERMINAL GUIDED PROJECTILE
Henry S. Lipinski, Philadelphia, Pa., assignor to the United States of America as represented by the Secretary of the Army
Filed May 5, 1964, Ser. No. 365,216
4 Claims. (Cl. 244—3.16)



1. In a gun fired, fin stabilized projectile having rotation, said projectile comprising a casing attached to a nose, a major portion of the cross-sectional area of said nose being transparent to radiations from a target, an explosive charge carried by said projectile and adapted to fire said charge through a nozzle to produce a thrust transversely of the longitudinal axis of said projectile,

electronic means operable to fire said charge in response to radiations from a target received through said transparent area, said electronic means including a detector of target radiations operable to fire said charge in response to such received radiations, means including a mask located in front of said detector, and rotatable with said projectile and provided with an aperture radially displaced from said longitudinal axis but substantially opposite said nozzle, said aperture being located a sufficient distance from said longitudinal axis to admit target radiations to said detector when said longitudinal axis is at a definite angle with the line of sight from said projectile to said target, a mirror located to direct target radiations to said detector through said mask aperture after being reflected from a substantially axial reflecting surface, a shaped charge located forward of said explosive charge and provided with a piezoelectric impact fuze located at a forward end of said nose, and electrical connections from said fuze to said shaped charge for firing said shaped charge, the combination therewith of the improvement for shortening the overall length of said projectile and enhancing the stability and accuracy of said projectile, said improvement comprising said mirror being disposed adjacent a forward portion of said shaped charge, and said transparent portions of said nose constituting sectors bounded by radial supporting ribs having included equal obtuse angles.

3,282,541
ATTITUDE CONTROL SYSTEM FOR SOUNDING ROCKETS
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of Howard J. Robbins and Zbiggie E. Zebrowski
Filed Feb. 19, 1965, Ser. No. 434,148
9 Claims. (Cl. 102—50)



1. In combination with a ballistic vehicle having a propellant system, an attitude control system comprising:

a pair of gyroscopes mounted in said vehicle each having an axis fixed parallel to the roll axis of the vehicle and each having a second axis normally mutually orthogonal to each other, and one of said gyroscopes having an axis parallel to the pitch axis and one of said gyroscopes having an axis parallel to the yaw axis of the vehicle;

roll nozzle means positioned to expel gas from the vehicle tangentially to produce correction roll torque upon the vehicle;

pitch nozzle means positioned to expel gas from the vehicle normal to the pitch axis of the vehicle;

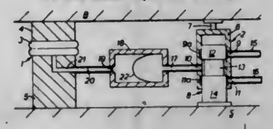
yaw nozzle means positioned to expel gas from the vehicle normal to the yaw axis of the vehicle;

a supply of gas for said nozzle means;

means for sequentially applying torquing signals to said gyroscope to introduce roll, pitch and yaw corrections into the vehicle orientation; and

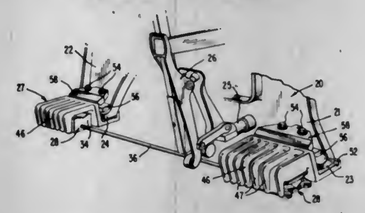
means responsive to the termination of powered flight of the vehicle for commencing operation of said last means.

3,282,542
ANTI-VIBRATION MOUNTING
Aubrey John Hutchinson Goodwin, Shandon, Michael Carl Hartnell-Beavis, Drymen, and Myles Gordon Ogilvie, Bearsden, Scotland, assignors to Yarrow and Company Limited, Glasgow, Scotland, a British company
Filed July 9, 1964, Ser. No. 381,393
Claims priority, application Great Britain, July 12, 1963, 27,827/63
16 Claims. (Cl. 248—9)



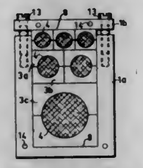
1. An anti-vibration mounting which comprises a variable-volume gas-filled vessel adapted to be interposed between a body and a support, a chamber, an orifice opening into said chamber through which the interior of the variable-volume vessel is in communication with the chamber, and control valve means, the said control valve means comprising a valve-chamber and a valve member movable within said valve-chamber and adapted to be moved by relative movement between the said body and the said support, the valve having a supply port for the supply of a fluid under pressure to the valve-chamber, an exhaust port for the escape of fluid from the valve-chamber and an output port through which the valve-chamber is in pressure-communication with the first mentioned chamber, and the valve member having a first range of positions in which the output port is in communication with the supply port and is blocked from the exhaust port, a second range of positions in which the output port is in communication with the exhaust port and is blocked from the supply port and a third range of positions separating the said first and second ranges in which the output port is blocked from both said ports.

3,282,543
VIBRATION ISOLATING SUPPORT FOR MACHINERY
Walter Engels, Tryon, N.C., assignor to H & S Co., Inc., Greenville County, S.C., a corporation of South Carolina
Filed July 21, 1964, Ser. No. 384,087
18 Claims. (Cl. 248—22)



1. A vibration isolating support for machinery comprising a pair of spaced base members adapted to rest directly on a floor and having upper bearing faces including longitudinally curved portions which slope in opposite directions downwardly from points which lie in a common horizontal plane, means adjustably interconnecting the base members and allowing their longitudinal spacing to be varied, a pair of complementally-shaped runner members overlying the base members and adapted for direct attachment to feet of said machinery for transmitting the weight of the machinery to the base members, and friction reducing means interposed between the opposed faces of the base and runner members.

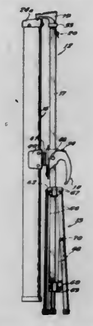
3,282,544
TIGHT LEAD-THROUGH INLET FRAME DEVICE FOR ELECTRICAL LINES
Nils Arthur Johan Brattberg, Karlskrona, Sweden, assignor to A B Lyckeaborgs Bruk, Torskors, Sweden
Filed Mar. 9, 1964, Ser. No. 350,313
Claims priority, application Sweden, Mar. 11, 1963, 2,660/63
8 Claims. (Cl. 248—56)



1. A device for mounting around a plurality of electrical lines to support the latter relative to a wall on or in which the device is adopted to be mounted, said device comprising a rectangular frame whose aperture is partly filled with a modular set of rectangular-section parallelepipedal blocks four of whose plane faces are parallel to the sides of the frame, which blocks are at least partly resilient and a plurality of which are divided centrally intermediate two of said plane parallel faces with mutually-complementary semi-cylindrical recesses in the juxtaposed surfaces of each of the divided blocks for through passage of an electrical line, at least one wedge system extending across the full width of the aperture, said wedges in the absence of pressure having a rectangular cross-section in the plane of the frame and being movable in this plane relative to one another for exerting a uniform and constant compressive force on said blocks across the full width and length of said aperture and in the direction in the plane of said aperture and normal to the planes of the block divisions to compress the filling of the frame and to clamp through passing electrical lines, said frame blocks and wedges being a unit which is attachable to and detachable from a wall.

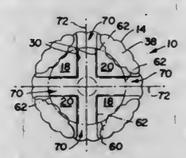
3,282,545
HANDLE ACTUATED TRIPOD STRUCTURE
Hillard J. Bleschke, Schiller Park, Ill., assignor to Knox Manufacturing Company, a corporation of Illinois
Filed Apr. 9, 1965, Ser. No. 446,904
8 Claims. (Cl. 248—171)

1. A stand adapted to be maintained in an upright position upon a supporting surface, comprising: an elongated standard; a plurality of leg members swingably mounted on the lower end portion of the standard for movement together between a closed position adjacent the standard and a spread supporting position in which the standard is maintained uprightly; a bracing link extending between one of the leg members and the lower end portion of the standard having one end pivotally secured to said lower end portion of the standard and the other end pivotally secured to said one leg member; spring means positioned at the lower end portion of the standard; lever means extending inwardly of the pivot at the one end of said bracing link so as to be positioned to receive thrust exerted from the spring means and to transmit that thrust to the bracing link in a direction tending to swing said bracing link toward the standard and thereby fold the leg members and the bracing link adjacent to the standard; means intermediate the ends of the standard for imparting stress to the spring means when the legs are in supporting position so as to provide thrust upon the lever means, said means having a connecting portion operatively engaging the spring means, said stress imparting means being movable on the standard to move the connecting portion so as to deform and impart stress to the spring means; and locking means for holding the stress imparting means in



position upon the standard in opposition to the stress in the spring means so as to maintain the thrust against the lever means when the leg members are in supporting position, whereby when the stand is removed from the supporting surface the lever means and said bracing link will be rotated by the thrust of the spring means to pivot the bracing link and leg members inwardly to closed position adjacent the standard.

3,282,546
CAKE PLATE AND SUPPORT THEREFOR
Stuart Beckerman, Pittsburgh, Pa., assignor to Package Products, Inc., Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 22, 1965, Ser. No. 500,950
8 Claims. (Cl. 248—174)

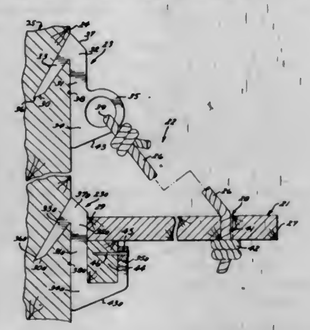


1. A cake plate formed from a piece of flat corrugated paperboard having a central portion adapted to support a cake and a plurality of segments connected to the periphery of said central portion, said segments being bendable out of the plane of said central portion and inwardly toward the center of said central portion, and means for connecting said segments to said central portion, said segments maintaining said central portion spaced from a supporting surface whereby edge portions of said central portion are free to be grasped to lift the plate from said supporting surface.

3,282,547
SUPPORTING HOOK STRUCTURE
Daniel R. Ables, 2000 Dufour Ave., Redondo Beach, Calif.
Filed May 6, 1965, Ser. No. 453,733
16 Claims. (Cl. 248—217)

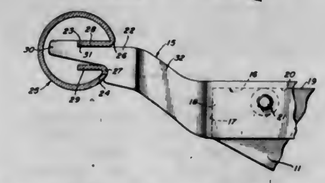
1. A supporting hook structure adapted to be driven into mounted relationship with respect to a penetrable auxiliary mounting member and to be driven out of engagement therewith when desired, comprising: an inter-

connecting tensile shank member having an upper end provided with a first coupling member and having a lower end provided with a second coupling member, said upper first coupling member being adapted to be effectively coupled with respect to a penetrable auxiliary mounting member in a manner effectively supported thereby and said lower second coupling member being adapted to be effectively coupled with respect to an object which is to be carried in effective supporting and carrying relationship with respect thereto, said upper first coupling member comprising an angularly downwardly and outwardly directed penetrating mounting barb member having a forwardly converging penetrating point at the end thereof and defining an included angle of less than 45 degrees with respect to said interconnecting tensile shank member, said upper end of said tensile shank



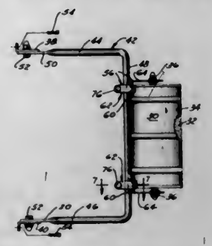
member and the effective rear end of said barb member being effectively provided with an impact-receiving penetration anvil means angularly outwardly and downwardly inclined with respect to said tensile shank member and in substantially transverse relationship to the longitudinal direction of said barb member and adapted to receive impact blows from a driving tool of substantial mass for causing penetration of said barb member into said penetrable auxiliary mounting member, said lower end of said tensile shank member being effectively provided with an impact-receiving removal anvil means angularly outwardly and upwardly inclined with respect to said tensile shank member and adapted to receive impact blows from a driving tool of substantial mass for causing ejection and removal of said barb member from said auxiliary mounting member while moving substantially along a side surface thereof.

3,282,548
HANG ROD ASSEMBLY
Richard R. Ruhnke, Skokie, Ill., assignor to Garcy Corporation, a corporation of Illinois
Filed Dec. 3, 1964, Ser. No. 415,750
5 Claims. (Cl. 248—243)



3. A hang rod assembly comprising an adapter and a tubular hang rod, said adapter having a horizontally disposed end portion and a shoulder projecting vertically from said end portion, said tubular hang rod having two vertically spaced walls defining a slot and extending inwardly from its outer surface and in engagement with opposite surfaces of said end portion, one of said vertically spaced walls having a free end abutting said shoulder to hold said hang rod against accidental displacement from said adapter in any direction transverse of the longitudinal axis of said hang rod.

3,282,549
REAR VISION TRUCK MIRROR ASSEMBLY
Frank C. Crawford, Chicago, Ill., assignor to Monarch Tool & Machinery Co., Chicago, Ill., a corporation of Illinois
Filed Oct. 15, 1964, Ser. No. 403,996
4 Claims. (Cl. 248—276)

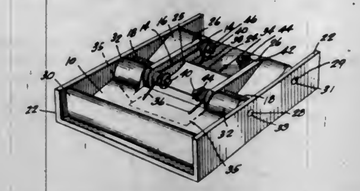


1. A rear vision mirror assembly adapted to be attached to and extend outwardly from the driver's entrance door of the cab of a tractor or other automotive vehicle and including a generally rectangular mirror frame movable between an operative retracted position wherein it is close to said door and the setting thereof will accommodate a driver's rear view when the tractor is devoid of a trailer, and an operative extended position wherein it is remote from said door and the setting thereof will accommodate the driver's rear view when a trailer is operatively attached to the tractor, said mirror assembly, in addition to said mirror frame, including a generally C-shaped yoke formed of cylindrical stock and having upper and lower yoke arms and a vertical connecting bight portion, means at the distal ends of said yoke arms for attaching the arms to said entrance door so that the arms extend horizontally while the bight portion extends substantially vertically, said mirror frame being provided at its top and bottom with coaxial trunnion supports, and a pair of radially disposed supporting arms of substantially equal length secured at their inner ends for swinging movement in respective horizontal planes about the axis of said bight portion, said trunnion supports being secured to the outer ends of said supporting arms for rotation of the mirror about the common axis of said trunnion supports, said mirror frame thus being capable of orbital movement about the vertical axis of said bight portion between said extended and retracted positions and being independently rotatable about the axis of said trunnion supports for independent adjustment in azimuth in either of said positions.

3,282,550
CARGO PALLET LATCH
Robert A. Warren, Long Beach, Calif., assignor to Douglas Aircraft Company, Inc., Santa Monica, Calif.
Filed Jan. 18, 1965, Ser. No. 426,109
9 Claims. (Cl. 248—361)

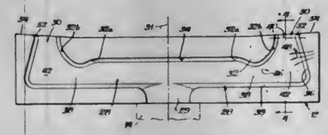
1. A latch comprising:
a frame;
a latch lever having an inner end portion pivotally mounted on said frame and an engaging end portion, said lever being pivotable between an erect position and a retracted position;

ratchet means positioned on said inner end portion of said lever;
pawl arm means having a first end portion pivotally mounted on said frame and having a ratchet-engaging end portion located adjacent said inner end portion of said lever and movable past said ratchet means when said lever is rotatably moved to said erect position, for engaging said ratchet means and preventing pivoting of said lever to said retracted position;



first spring means for biasing said lever in a direction toward said retracted position;
second spring means for biasing said ratchet-engaging end portion of said pawl arm against said lever inner end portion, to cause said ratchet engaging end portion to lock said lever in said erect position; and
pedal means associated with said pawl arm means for enabling the application of force to said pawl arm to cause its disengagement from said ratchet means.

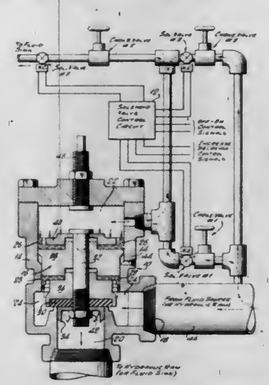
3,282,551
MOLD GATE CONSTRUCTION
Paul J. Neff, Jr., Lansing, Ill., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey
Filed Mar. 20, 1964, Ser. No. 353,401
10 Claims. (Cl. 249—109)



1. A gate construction comprising a body member having a continuous passageway therethrough including a bottom vertical inlet passage, a horizontal passage leading therefrom, and a top vertical outlet passage leading from the extended end of the horizontal passage, said outlet passage including an end wall extending generally upwardly but inclined toward the central vertical axis of the inlet passage so as to confine flow of molten metal upwardly from the outlet passage in a generally upward direction forming an outlet flow generally symmetrical about a central axis in which all portions flow substantially in the same direction relative to said central axis.

3,282,552
HYDRAULIC VALVE AND CONTROL MEANS THEREFOR
Julian J. Sommese, Sr., 127—15 160th St., Jamaica, N.Y.
Filed Aug. 28, 1963, Ser. No. 305,074
5 Claims. (Cl. 251—26)

1. A hydraulic valve and control means therefor comprising a valve body having a piston member slideably mounted therewithin and movable between first and second limiting positions, a first fluid chamber within said valve body in fluid communcation with one end of said piston member, a second fluid chamber within said valve body in fluid communication with the opposite end of said piston member, a fluid inlet port and a fluid outlet port communicating into said second fluid chamber, means coupled to said piston member for variably obstructing the passage of fluid between said inlet and outlet ports in accordance with the position of said piston member, a third port communicating into said first fluid chamber, and means for forcing fluid into and out of said first fluid chamber via said third port and sealing said fluid to position said piston at any desired position between said first and second limiting positions, thereby producing any desired rate of fluid flow between said inlet and said outlet ports between a minimum rate defined by one of said limiting positons of said piston and a maximum rate defined by the other limiting position thereof, the area of one end of said piston is larger than the area of the other end thereof, whereby equal pressures in said first and second fluid chambers produce differing

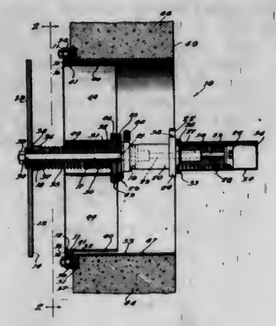


forces on opposite ends of said piston member, said larger area of said piston comprising the end thereof in fluid communication with said first fluid chamber, whereby equal pressures in said first and second fluid chambers produces a force differential urging said piston member away from said first fluid chamber and toward said second fluid chamber; and means for forcing fluid into and out of said first fluid chamber comprising a first fluid coupling including a normally open solenoid valve coupled between said third port and one of the other two ports, and a second fluid coupling including a first normally closed solenoid valve coupled between said third port and a fluid sink, means for closing said normally open valve, and means for opening said first normally closed valve, and a third fluid coupling including a second normally-closed solenoid valve coupled between said third port and said one of the other two ports, and means for opening said second normally-closed valve.

3,282,553
BLAST VALVE
Vincent A. Bicicchi, Lombard, Ill., assignor to Henry Pratt Company, a corporation of Illinois
Filed Apr. 1, 1964, Ser. No. 356,497
3 Claims. (Cl. 251—62)

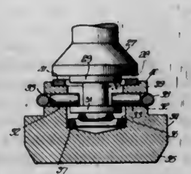
1. A blast valve comprising: a valve body defining a passage to be closed; a closure member for closing said passage; a carrier; means for movably supporting said closure member on said carrier for selective movement with said carrier and movement relative to said carrier for disposing said closure member alternatively in an outer passage-open position and an inner passage-closing position; a first fixed abutment on said valve body; first spring

means having one end engaging said abutment and an opposite end engaging said carrier for moving said carrier and said closure member therewith inwardly to dispose said closure member in said passage-closing position; fluid pressure means for selectively overcoming said spring means to dispose said carrier in an outer position; a sec-



ond fixed abutment on said valve body; and second spring means having an end engaging said second abutment and an opposite end engaging said closure member for biasing said closure member outwardly to dispose said closure member in said passage-open position when said carrier is disposed in said outer position.

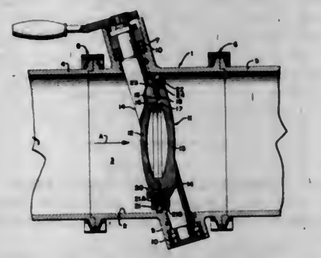
3,282,554
SWIVEL VALVE
Evan Jones, Evanston, Ill., assignor to Henry Valve Company, Melrose Park, Ill., a corporation of Illinois
Filed May 22, 1963, Ser. No. 282,279
2 Claims. (Cl. 251—88)



1. In a valve wherein a reciprocatingly rotatable valve stem has mounted thereon a relatively rotatable valve member for movement of said valve member into and out of engagement with a valve seat, said valve stem including thrust means axially engaging said valve member in the valve seat engaging position of said valve member, said thrust means and valve member being formed from dissimilar materials exhibiting different coefficients of expansion, the improvement comprising the provision of a bearing member on said valve member in opposed relation to said thrust means for engagement solely therewith in the valve seat engaging position of said valve member, said bearing member being formed from material similar to the material of said thrust means and exhibiting a similar coefficient of expansion, said bearing member being in the form of a washer relatively loosely mounted in a recess in said valve member for variable expansion and contraction relative thereto, the thickness of said washer being greater than the depth of said recess to project therefrom and being greater than the greatest axial distance between said thrust means and washer at any reciprocated position of said valve stem.

3,282,555
FLOATING CONVOLUTE SEAL FOR BUTTERFLY VALVES
Richard C. Mallonee II, and Irvin D. Burke, Phoenix, Ariz., assignors to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed Dec. 1, 1958, Ser. No. 777,447
1 Claim. (Cl. 251—84)

A valve comprising: a housing formed to include a fluid passage; a butterfly element pivotally mounted in said housing, said element being formed of divisions; a shim disposed between the divisions of said butterfly element to form an annular channel at the periphery thereof; fastening means for joining said divisions; bushing means closely fitted in said butterfly element divisions and employed with said fastening means to form a lock to prevent relative movement between said divisions; and a continuous annular flexible convoluted seal member disposed



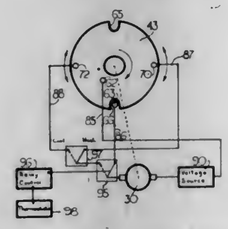
and supported in said channel for lateral movement relative to said butterfly element toward and away from the wall of said passage, said butterfly and said seal cooperating to close said passage against the flow of fluid therethrough.

3,282,556
THROTTLING BUTTON FOR DIAPHRAGM VALVE
Robert T. Hancook, Plainfield, Ind., assignor to Hoffman Specialty Mfg. Corp., Indianapolis, Ind., a corporation of Indiana
Filed June 12, 1964, Ser. No. 374,613
3 Claims. (Cl. 251—122)



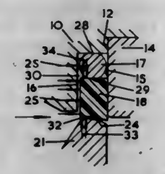
1. In a diaphragm valve having a valve seat and a diaphragm comprising a disk-like body adapted to seat against the valve seat and, projecting centrally from one face of said body, a throttling button which enters the valve seat as the diaphragm body moves toward seated position, said button having a central core and a ring of rigid material surrounding said core at its junction with said body, said body and core being formed as an integral unit of flexible elastomeric material, said core projecting beyond said ring, said button being of progressively smaller diameter away from the diaphragm body and the outer surface of said ring being substantially flush with the surface of that portion of the core which projects beyond the ring.

3,282,557
ELECTRICALLY ACTUATED UNIDIRECTIONAL ROTARY DRIVE HAVING ADJUSTABLE STOPS FOR DAMPER CONTROL AND THE LIKE
Randolph P. Capps, Lynchburg, Va., assignor to Multi-Zoner, Inc., Lynchburg, Va., a corporation of Virginia
Filed Mar. 16, 1964, Ser. No. 352,187
4 Claims. (Cl. 251—134)



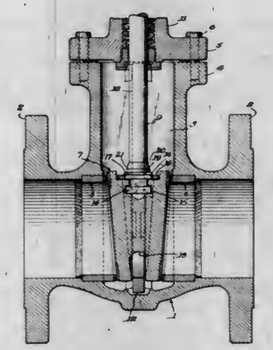
1. An electrically actuated damper apparatus for controlling flow in a duct comprising a damper; a shaft rotatably mounting said damper in said duct; a housing secured to one side of said duct; a rotatable member mounted in said housing coaxial with said shaft; means drivingly connecting said member and shaft; a unidirectional electric motor; means drivingly connecting said motor and member; a disc arranged for co-rotation with said member, said disc having a major central electrically conducting portion and a peripheral conducting portion which includes a pair of diametrically opposed peripheral non-conducting areas; a first wiper contact arranged to constantly engage said central portion; a second and third circumferentially spaced wiper contacts arranged to engage said peripheral portion such that one is always disengaged from said non-conducting areas when the other is engaged and such that at least one is available in its peripheral position; a voltage source; and means to selectively place said motor, source and first contact in series with whichever one of said second and third contacts is on a conducting portion of said peripheral portion thereby enabling said first contact to be paired with the adjustable contact to establish a circuit for bringing said damper to a position, as for closing, which can be regulated by adjusting the adjustable contact and to be paired with the other contact to establish a circuit for bringing the damper to another independent position, as for opening.

3,282,558
ANNULAR SEALING MEANS
Frank Edward Swain, "Hilltop" Kirkstone Close, Glenfield Frith Drive, Leicester, England
Filed Sept. 3, 1963, Ser. No. 306,196
Claims priority, application Great Britain, Sept. 8, 1962, 34,469/62
2 Claims. (Cl. 251—174)



1. A valve including a housing having a bore therein and an annular recess in the wall of the bore, a valve member having a circular cross-section and positioned in said bore, a seating ring capable of making sealing engagement with the periphery of the valve member and accommodated in said annular recess, the seating ring being of smaller axial thickness than the width of said recess whereby the seating ring is movable axially in the recess to an extent dictated by axial movement of said valve member in said housing, as a result of fluid pressure applied to one or other end face of said seating ring until the opposite end face has made contact with the adjacent radial face of said recess, and a sealing ring of a resiliently compressible material positioned co-axially in said recess between the peripheral wall thereof and the outer periphery of said seating ring, said sealing ring having a radial cross-section of substantially circular shape, before it has been placed in the recess co-axially around said seating ring, the diameter of said circular cross-section being greater than the radial distance between the outer periphery of said seating ring and the peripheral wall of the recess, whereby when the sealing ring has been located in the recess co-axially around said seating ring, said sealing ring is radially deformed into non-circular shape thereby to make sealing engagement with the peripheral wall of the recess and with the outer periphery of said seating ring, the median planes of the seals effected between the sealing ring and the peripheral wall of the recess and between the sealing ring and the outer periphery of the seating ring being aligned with the median plane of the seal where the valve member engages the radially inner face of said seating ring, when the valve member is closed, the axial thickness of said sealing ring when so deformed also being less than the axial width of the recess and approximately equal to the axial thicknes of the seating ring, whereby said sealing ring is movable in unison with said seating ring to permit fluid to flow between the adjacent end faces of said seating and sealing rings and the radial face of said recess at the upstream side of said valve member and to prevent fluid flow between the peripheral wall of the recess and said sealing ring and between said sealing and seating rings to the downstream end faces of said rings.

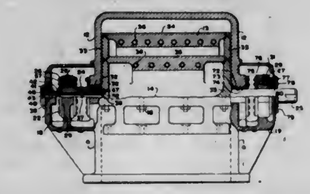
3,282,559
TORQUE PLATE FOR VALVES
Kurt B. Bredtschneider, Chicago, Ill., assignor to Crane Co., Chicago, Ill., a corporation of Illinois
Filed June 1, 1964, Ser. No. 371,600
11 Claims. (Cl. 251—327)



1. In a torque resisting mechanism for gate valves or the like, the combination of a valve casing having side disposed internal guide means, a reciprocably movable closure member, a valve stem for actuating said closure member, connecting means between said valve stem and closure member, a torque plate surrounding said stem positioned

between said closure member and an enlarged portion on said stem, the distance between said closure member and said enlarged portion being greater than the thickness of said plate to thereby permit limited axial movement of said plate, means provided by said stem for non-rotatably receiving said torque plate, the said torque plate having means for engaging said guide means to thereby prevent rotation of said stem and closure member relative to said casing.

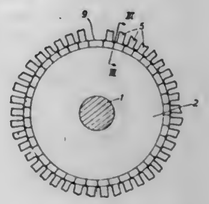
3,282,560
JET REACTION TURBINE
Loyal W. Kleckner, Riant-Chateau, Ave. Riviera 4, Territet, Switzerland
Filed June 15, 1965, Ser. No. 464,004
5 Claims. (Cl. 253—77)



1. In a jet turbine, a combination of a satisfactory housing consisting of a lower and an upper part and a hollow jet rotor having a hollow shaft end extending laterally from said rotor on one side thereof and a solid shaft end extending laterally from said rotor on the other side thereof, said rotor rotatably located in said housing, said housing having end walls, bracket extensions at opposite ends of said lower part of said housing outside said end walls, anti-friction bearings located on said brackets, said bearings supporting said hollow shaft and said solid shaft, separate caps on said bearings and on said brackets, first means in said end walls of said housing for sealing of said shafts, second means sealing separately said bearings and third means on said bracket extensions sealing said shaft ends extending therethrough.

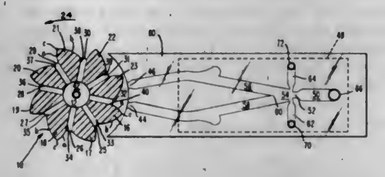
3,282,561
TURBINE ROTORS
Adolf Frankel, Altrincham, and George Jenson, Swinton, Manchester, England, assignors to Associated Electric Industries Limited, London, England, a British company
Filed Oct. 29, 1965, Ser. No. 505,631
Claims priority, application Great Britain, Dec. 14, 1964, 50,808/64
12 Claims. (Cl. 253—39)

1. A bladed disc of a rotor of a turbine comprising:
(a) a disc;
(b) a circumferential row of blades extending radially from the disc;
(c) at least one circumferential tongue and a co-operating circumferential groove provided on the periphery of the disc and the radially inner ends of the blades, the tongue and groove having cross-sections which permit the tongue to be inserted into the groove by a radial movement into a fitted position;
(d) recesses formed in the sides of the groove and in the sides of the tongue which match to provide circumferentially extending channels for receiving members serving to lock the blades to the disc against radial movement;
(e) locking members fitted into each channel constituting a hoop segmented to permit insertion of a segment of the hoop after a blade which it is to lock into place has been inserted radially into its fitted position, the circumferential extent of the blades being such that with all the blades in their fitted positions but at least some of the blades offset circumferentially from their final positions, the final segment of the hoop can be inserted in place; and



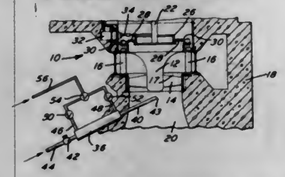
(f) locking means by which the blades, having been adjusted circumferentially to their final positions, can be retained in those positions against circumferential movement.

3,282,562
FLUID ESCAPEMENT MECHANISM
Peter Bauer, Germantown, Md., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed June 8, 1964, Ser. No. 373,272
20 Claims. (Cl. 253—101)



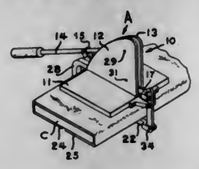
1. An escapement mechanism comprising: a member mounted for motion in at least one predetermined direction and carrying a plurality of tooth-like configurations spaced apart along its line of motion, with each tooth-like configuration having first and second opposed faces joined together at an apex asymmetrically located with respect to the bases of said faces such that the force of a fluid jet stream perpendicularly oriented to said line of member motion at any point of impingement on at least one predetermined face of the tooth-like configuration is resolved into at least one force component which is parallel to said one predetermined direction so as to cause motion of said member therein; a plurality of fluid receiving holes located one between the side bases of each adjacent pair of tooth-like configurations for receiving a perpendicularly oriented fluid jet stream when directly aligned therewith in order to arrest member motion; and at least one pair of fluid nozzles spaced apart along the line of member motion, with each nozzle being oriented to direct a fluid jet stream substantially perpendicular to said line of motion so as to impinge upon said plurality of teeth, with the spacing between said nozzles relative to the asymmetrical location of said teeth apexes and said receiving holes being such that a fluid jet stream alternately appearing from said nozzles will cause stepwise member motion in said one predetermined direction.

3,282,563
HYDRAULIC MACHINES
Richard B. Willi, Norristown, Pa., assignor to Baldwin-Lima-Hamilton Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Jan. 17, 1966, Ser. No. 521,075
5 Claims. (Cl. 253—117)



1. A hydraulic machine comprising a rotating element, said rotating element including a shaft and a runner connected to said shaft, a plurality of blades connected to said runner, and selectively positionable means for injecting or withdrawing air beneath said blades at various positions with respect to said blades.

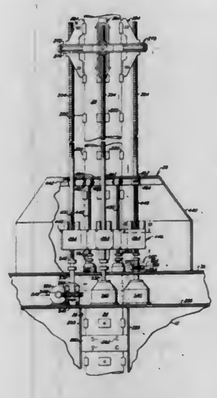
3,282,564
CARPET STRETCHER FOR FREE STANDING AND OTHER STAIRWAYS AND HALLWAYS
Lewis J. Weaver, 2403 Pebble Beach Drive, San Jose, Calif.
Filed June 1, 1965, Ser. No. 460,023
7 Claims. (Cl. 254—63)



3. A carpet stretcher for stretching a length of carpeting around a free standing stair tread comprising:
a frame for mounting on a free standing stair tread,
anchor means connected at one end thereof to the frame and formed to extend around one edge of the frame and along the under side of a free standing stair tread upon which the frame is mounted,
first carpet engaging means on the other end of the anchor means for engaging one edge portion of such carpeting,
an actuating lever pivotally connected to the frame,
force transmitting means operatively connected at one end thereof to the actuating lever and extending around the other edge of the frame and along the under side of such free standing stair tread, and
second carpet engaging means mounted on the other end of the force transmitting means and movable into gripping engagement with the other edge portion of such length of carpeting.

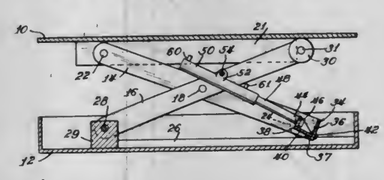
3,282,565
OFFSHORE EQUIPMENT SUPPORTS
John R. Sutton, P.O. Box 32, Beaumont, Tex.
Original application Apr. 22, 1960, Ser. No. 24,120, now Patent No. 3,201,945, dated Aug. 24, 1965. Divided and this application Nov. 10, 1964, Ser. No. 438,440
5 Claims. (Cl. 254—92)

1. Apparatus for supporting equipment above the surface of a body of water comprising a platform adapted to be towed to an offshore location, at least one vertically extending column mounted in an opening which extends through the platform, jack means for effecting relative vertical movement between the platform and the column, said jack means comprising yoke means surrounding the column and movable vertically, at least one lift-head pivotally connected to the yoke means and movable with respect to the yoke means towards and away from the column for selectively connecting or disconnecting the yoke means and the column at any one of a number of positions along the column, vertically extending shaft



means, ball bearing means threadedly connecting the shaft means and the lift-head so that rotation of the shaft means causes relative movement between the shaft means and the yoke means, bearing means for connecting the shaft means to the platform against vertical movement with respect to the platform, joint means in the shaft for allowing the shaft to pivot towards and away from the column, and power means for rotating the shaft means.

3,282,566
SCISSORS OPERATING LINKAGE
Jesse E. Clarke, Hinsdale, Ill., assignor to Autoquip Corporation, Chicago, Ill., a corporation of Illinois
Filed May 18, 1964, Ser. No. 368,249
2 Claims. (Cl. 254—122)



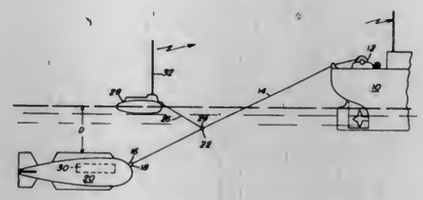
1. In a lift table having a base and a top connected by a scissor linkage comprising at least two legs pivotally connected intermediate their ends and with one end of one leg pivotally connected to the top and one end of the other end pivotally connected to the base and hydraulic means including a cylinder and piston connected for controlling the angular position of the legs with respect to each other, which linkage is of the type that may be collapsed to the extent that the two legs are substantially parallel, the improvement comprising, a first pivotal mounting connection on the cylinder and a second pivotal mounting connection on the piston, said connections being spaced apart in a direction at right angles to the axis of the cylinder a distance greater than the internal diameter of the cylinder, whereby extension of the piston from the cylinder will create a force component at the connections in a direction normal to the axis of the cylinder.

3,282,567
WEED DIGGING APPARATUS
Robert E. Weniger, 238 Brookside, Wichita, Kans.
Filed Sept. 29, 1964, Ser. No. 400,036
2 Claims. (Cl. 254—132)



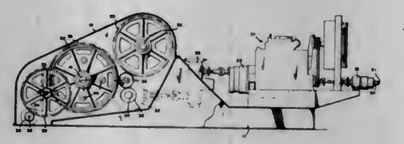
1. A weed digging and holding device comprising, a spade element having a rod portion, and a flat flared blade portion provided with a V-shaped cutting edge integrally joined to said rod portion, an elongated tubular shaft having a curved handle portion on the upper end, a tubular shaped handle grip of resilient material on said handle portion, a means to secure said space element to the lower portion of said shaft comprising, a creased portion on the lower end of said shaft having opposed folded portions with aligned apertures therein, a rivet disposed in said apertures to force the creased shaft portion into frictional engagement with the rod portion of said space element, a gripping means having an arcuate shaped clamping arm, a transversely extending enlarged portion on one end, a sleeve of resilient material disposed about said transversely extending portion, a transverse shaft welded to an intermediate portion of clamping arm and positioned in an aperture in the shaft to pivotally mount said arm on said shaft to enable said transverse portion to selectively grip weeds and the like between same and said spade, said clamping arm having an aperture on the end opposite said transverse portion, a lever mounted adjacent said handle, said lever having spaced parallel portions with a first pair of aligned apertures adjacent the ends, a second pair of apertures spaced inwardly from said first pair of apertures, and an extending elongated opposite end, a first pin disposed in the first pair of apertures and an aperture in said shaft pivotally mounting said lever on said shaft adjacent the upper end thereof with said extending opposite end portion of said lever positioned adjacent said handle grip, a link having on each end thereof a transverse portion joined to a longitudinal portion, one end of said link pivotally disposed in one of said second apertures on said lever, and the other end disposed in the end aperture of said clamping arm, a first coil-type tension spring having hooked ends, one of said hooked ends disposed in the other of said second apertures on said lever, and the other of said hooked ends disposed in an aperture in the intermediate portion of said shaft, a bolt having an eyelet disposed in an aperture in the intermediate portion of said shaft with said link disposed in said eyelet, a pry stand on said shaft having a flat base portion, inwardly inclined side portions and spaced parallel end portions having a third pair of aligned apertures adjacent the ends and a fourth pair of aligned apertures spaced from the ends, said transverse shaft on said clamping arm disposed in said third pair of apertures thereby pivotally mounting said pry stand on said shaft, a pin having an eyelet disposed in said fourth pair of apertures, an extending bracket having an end aperture secured to said shaft, a coil-type tension spring having one end secured to said eyelet and the other end secured to the extending end of said bracket, said digging and holding device adapted in use to remove weeds and the like when said spade element is inserted in the soil adjacent a weed or the like, the clamping arm closed against the spade with the lever, and a prying action applied using the pry stand as a fulcrum.

3,282,568
COMBINED ELECTRICAL SIGNALS FOR CONSTANT DEPTH TOWED SUBMERGED BARGES
John Davis Shuster, Braintree, Mass., assignor to The Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Oct. 12, 1964, Ser. No. 403,166
3 Claims. (Cl. 254—173)



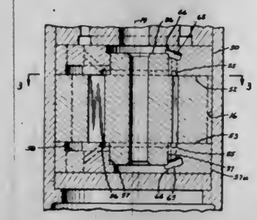
1. A system for controlling pay-out and haul-in of cable of a winch assembly mounted on a towing vessel and connected to a towed submersed barge comprising a reversible drive motor to drive said winch in either direction, a main power source, an electrical conduit connecting source to said motor, a direction and speed control across said conduit, a depth sensor on said barge having an electrical output proportional to barge depth, means for detecting salinity and temperature mounted on said barge, each of said means having an electrical output indicative of the salinity and temperature of the surrounding water respectively, means for combining the output from said depth sensor and said means for detecting salinity and said means for detecting said temperature to produce a combined output, means causing said motor to drive said winch in response to said combined output and said means including a magnetic amplifier to couple said output to said drive motor.

3,282,569
INFINITE-RATIO DRIVING INTERLOCK FOR YARDER
James R. Thompson, Seattle, Wash., assignor to Washington Iron Works, Seattle, Wash., a corporation of Washington
Filed Mar. 15, 1965, Ser. No. 439,898
10 Claims. (Cl. 254—184)



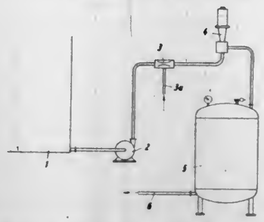
1. An interlocking yarder for use with a tail block for spooling the main and the haul-back ends of a cable strung through said block, comprising: a respective spooling drum for each of said cable ends, a power plant, a driving connection between the power plant and one of said spooling drums, a driving connection including a sun gear, planetary gears, and spider of a planetary gear system between the power plant and the other of said spooling drums, the planetary gears being meshed by a gear wheel driven from the power plant, the sun gear being fixed to the other spooling drum, the sun gear and the gear wheel comprising the output and input end, respectively, of the planetary gear system, and power-driven means independent of said last-named drive connection made functional to the spider component of the planetary gear system for either increasing or decreasing, at will, the ratio between the speeds at which the input and output ends of the planetary gear system turn, said independent power-driven means comprising a reversible hydraulic motor, the fluid system for said hydraulic motor selectively causing a hydraulic lock to be established upon the hydraulic motor for responsively holding said spider in an arrested condition.

3,282,570
VIBRATOR
George L. Malan, Los Angeles County, Calif. (560 E. Rowland, Covina, Calif.)
Filed June 23, 1965, Ser. No. 466,204
17 Claims. (Cl. 259—1)



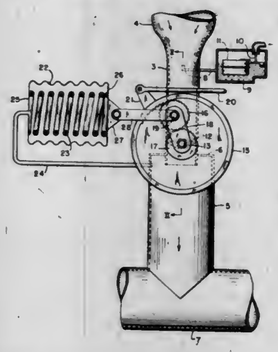
1. A vibrator comprising: a case having an internal cavity with a central axis and supply and exhaust ports; a cylindrical compartment-forming surface partially bounding said cavity having a first diameter centered on said central axis; a free rotor in said cavity adapted to roll around inside the case in bearing contact therewith in order to exert unbalanced centrifugal forces on said case, the rotor having a central axis; an external cylindrical compartment-forming surface on said rotor having a second diameter which is smaller than said first diameter and centered on the central axis of the rotor, said rotor having a plurality of vane recesses opening into the rotor from its compartment-forming surface, and also opening into the rotor from a boundary surface which is a surface of revolution that lies obliquely to the axis, the axes of the rotor and the cavity being parallel; a vane slidably disposed in each of said vane recesses and adapted to extend beyond the compartment-forming surface of the rotor to make contact with the compartment-forming surface of the cavity and to be retracted into the respective recess by force exerted on it by the compartment-forming surface of the cavity, respective compartments being formed between adjacent vanes and the compartment-forming surfaces; a vane chamber being formed inside each recess which is bounded by the vane and the walls of the recess, and which opens on the boundary surface; and an eccentric element comprising a body having a pair of offset but parallel bearings, the first being rotatably mounted to the case on its central axis, and the second being rotatably mounted to the rotor on its central axis, whereby the eccentric element rotates around the case axis when the rotor orbits in the case; and ports and passages so disposed and arranged in the eccentric element as sequentially and periodically to supply fluid under pressure to the vane chambers and to the compartments, and to exhaust the same, whereby to cause the rotor to orbit in the cavity.

3,282,571
METHOD FOR DISSOLVING GASES IN LIQUIDS
Johann Guggenberger, Munich, Germany, assignor to Holstein & Kappert Maschinenfabrik Phonix G.m.b.H., Dortmund, Germany
Filed Mar. 30, 1964, Ser. No. 355,649
Claims priority, application Germany, Mar. 28, 1963, H 48,668
3 Claims. (Cl. 261—1)



1. Method of dissolving a gas in a liquid comprising the steps of subjecting a liquid to a predetermined degree of superatmospheric pressure; introducing gas into said liquid while the same is under said predetermined pressure in an amount such that said predetermined pressure exceeds the saturation pressure required for maintaining said gas in solution; and subjecting the thus formed mixture of gas and liquid to vibrations of sonic character having an amplitude so chosen that the pressure drop corresponding to the negative portion of said amplitude is smaller than the difference between said predetermined pressure and said saturation pressure.

3,282,572
METHOD AND APPARATUS FOR SUPPLYING FUEL-AIR MIXTURES TO INTERNAL COMBUSTION ENGINES
Bela Karlovitz, Pittsburgh, Pa., assignor to Combustion and Explosives Research, Inc., Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 24, 1965, Ser. No. 487,958
9 Claims. (Cl. 261—23)

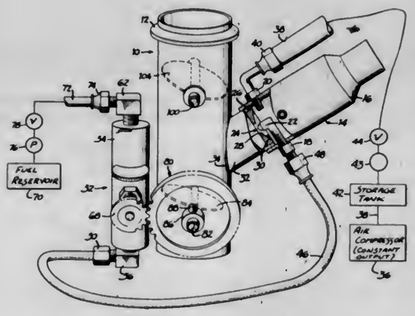


1. Apparatus for supplying fuel-air mixtures to the cylinders of an internal combustion engine comprising an air intake channel, a fuel nozzle opening into the channel, a throttle valve in the channel downstream of the fuel nozzle, a turbulence chamber positioned immediately downstream of the throttle valve into which the fuel-air mixtures flow from the channel, said turbulence chamber providing an abrupt increase in cross-sectional area for the fuel-air flow, said turbulence chamber having a diameter which is at least twice the diameter of the intake channel and a length in the direction of flow of the fuel air mix-

tures which is at least four times the diameter of the intake channel, said turbulence chamber having at least one outlet for the flow of the fuel-air mixtures to the engine cylinders, and means actuated by the difference in pressure between atmospheric pressure and pressure in the turbulence chamber for approximately maintaining at full power operation at all engine speeds a predetermined pressure drop between atmospheric pressure and the pressure in the entrance portion of the turbulence chamber.

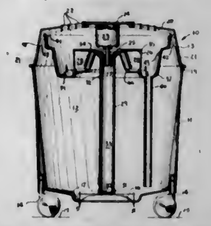
9. A method of supplying a fuel air mixture to cylinders of an internal combustion engine which comprises flowing through a channel air containing coarse fuel droplets past a variable constriction in the channel to form high velocity jets of air containing fuel droplets, injecting said jets immediately into the central portion of a turbulence chamber having a larger cross section than said channel to prevent said jets impinging on the walls of said chamber and to convert a substantial portion of the kinetic energy of said jets into kinetic energy of turbulent motion and reduce the size of the fuel droplets, flowing the fuel air mixture from the turbulence chamber to the engine cylinders, and automatically approximately maintaining a predetermined sufficient minimum velocity of flow of the fuel air jets into the turbulence chamber at all engine speeds and at full power operation to obtain said energy conversion.

3,282,573
FUEL FEEDING SYSTEM
Harold E. Phelps, 220 Burroughs, Plymouth, Mich.
Filed Sept. 5, 1963, Ser. No. 306,817
2 Claims. (Cl. 261—28)



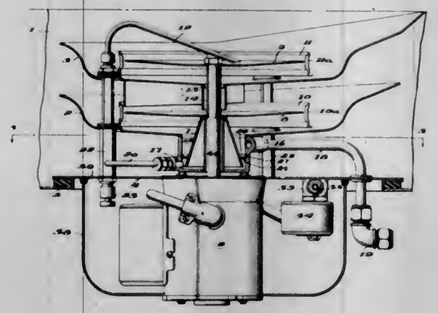
1. In a fuel feeding apparatus,
a hollow housing having an atmospheric air inlet and a fuel mixture outlet,
a fuel mixture flow control valve of the butterfly type pivotally mounted between said inlet and said outlet and effective to regulate flow through said housing, said flow control valve being mounted on a rotatable shaft extending transversely of said housing,
means including a fogging nozzle connected into the side of said housing to deliver a fog of primary air and finely dispersed liquid fuel droplets into said housing between said atmospheric air inlet and said flow control valve, a compressor metering orifice arrangement adapted to deliver a constant flow of a substantially like amount of cubic feet of air per minute to said fogging nozzle regardless of the quantity of liquid fuel delivered thereto,
means including a metering valve connected to said housing to deliver liquid fuel to said fogging nozzle, said metering valve having a rotatable valve element to establish adjusted flow and said valve element having an exposed portion,
a toothed wheel operably mounted on said exposed portion,
a toothed wheel mounted on said rotatable shaft carrying said flow control valve,
and said tooth wheels being operably intermeshed,
whereby movement of the butterfly valve is effective to adjust the metering valve for delivery of liquid fuel to the fogging nozzle in accordance with the position of the butterfly valve.

3,282,574
HUMIDIFIER
Laddie A. De Pas, Sodus, Mich., assignor to Whirlpool Corporation
Filed Aug. 10, 1964, Ser. No. 388,536
1 Claim. (Cl. 261—29)



A humidifying apparatus for imparting substantially impurity-free liquid vapor to air in a space to be humidified, comprising: vertically extending reservoir means for containing liquid having impurities therein, said reservoir means having an upper open end terminating in an upwardly directed annular rim; cover means having an angular upwardly extending annular portion removably supported at its lower end on said annular rim and a top portion integral with and closing the upper end of said angular portion, said cover means cooperating with said reservoir means to define an enclosed chamber, said cover means having a plurality of air inlet openings in the lower end of its angular portion and air outlet openings in its top portion; annular collector means having a central aperture therethrough and means surrounding said aperture defining an annular collector tray portion, an annular slightly inclined shoulder portion connected to the upper end of said tray portion and extending radially outwardly therefrom, and a liquid return portion communicating said tray portion with said reservoir, said collector means being supported by said cover means for removal therewith and positioned intermediate said air inlet and said air outlet openings for defining an air flow path; rotatable liquid translation means comprising a disc-shaped member positioned in said air flow path radially inwardly of and on the same level with said annular slightly inclined shoulder portion and a tubular member extending from said disc-shaped member through said aperture in communication with said liquid in said reservoir means for uninterrupted distribution of said liquid in the form of droplets from said disc-shaped member to said annular slightly inclined shoulder portion upon rotation of said liquid translation means; drive means attached to and depending from said top portion of said cover means centrally thereof and operatively connected to said liquid translation means for rotation thereof; and curved blade means operatively connected to the bottom of said disc-shaped member for flowing air from said space to be humidified through said air inlet openings to said air flow path for humidification thereof, and humidified air from said air flow path through said air outlet openings to said space upon operation of said drive means, said blade means affecting the centrifugal separation of droplets from the humidified air by imparting a centrifugal motion to said air during and after humidification thereof, whereby said air flowing through said air flow path partially evaporates said droplets and the unevaporated, impurity-laden portion of said droplets impinges upon said annular slightly inclined shoulder portion and is collected by said collector means and returned to said reservoir for substantially impurity-free and droplet-free humidification of the air.

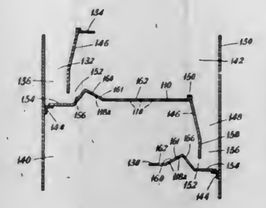
3,282,575
HUMIDIFIER
Luther H. Allcorn, Jr., Lewisville, N.C., assignor to The Bahnson Company, Winston-Salem, N.C., a corporation of North Carolina
Filed May 25, 1964, Ser. No. 369,760
7 Claims. (Cl. 261—36)



1. A humidifier comprising a motor driven atomizer unit adapted to be placed within an air duct for entraining atomized water into an air stream passing through the duct, a pump, said pump including a motor driven rotor rotatable in an upright pump chamber located below said atomizer unit, said pump chamber constituting the only reservoir for water within said humidifier and including in the wall thereof upper and lower positioned outlets, said upper outlet being connected to a drain tube and said lower outlet being connected to a feed tube delivering water upwardly to said atomizer unit as a result of being forced out of said lower wall outlet by rotation of said pump rotor, means providing a gravity return flow for such atomized water as is not entrained in said air stream into said pump chamber for re-cycling and the level of the water in said pump chamber being determinative of the amount of overflow water removed from the humidifier through said upper wall outlet and drain tube.

3,282,576
APPARATUS FOR IMPROVED LIQUID-VAPOR CONTACT
Walter Bruckert, Feldstrasse, Germany, and David I-J. Wang, Buffalo, N.Y., assignors to Union Carbide Corporation, a corporation of New York
Continuation of application Ser. No. 436,430, Mar. 2, 1965. This application Jan. 28, 1966, Ser. No. 532,040
6 Claims. (Cl. 261—114)

1. A liquid-gas contacting tray for use in a distillation tower which comprises:
(a) an imperforate inlet surface forming part of the perimeter of such tray, adapted to be secured normal to the inner wall of said distillation tower for receiving liquid;
(b) a downcomer member adapted to be positioned substantially parallel to the distillation tower inner wall, spaced above and coextensive with the inlet surface (a) and inwardly from the tray perimeter so as to form an exit path beneath the lower end of said downcomer member for said liquid from such inlet surface;
(c) a wall contiguously associated and coextensive with the innermost edge of inlet surface (a) and extending upwardly from such edge being inwardly positioned from downcomer member (b) so as to constitute a liquid approach path communicating with said exit path;
(d) a downwardly and inwardly inclined wall contiguously associated and coextensive with the upper edge of wall (c) having perforations across the entire surface thereof and of sufficiently small cross-sectional area for only upward gas flow therethrough, with the perforation walls being inclined to the top surface of such inclined perforated wall (d) so that the angle of inclination with respect to the downhill side of said top surface is in the first quadrant, thereby permitting the bubbling of rising gas into the downwardly flowing liquid of reduced depth;

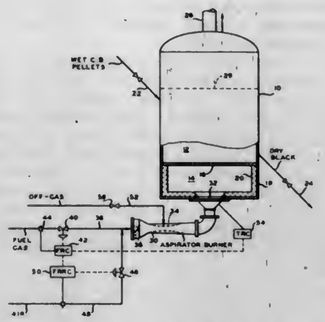


(e) a liquid-gas contact member having a first edge contiguously associated and coextensive with the lower edge of downwardly and inwardly inclined perforated wall (d) constructed to extend transversely across at least part of the distillation tower cross-section, inwardly from inlet surface (a), downcomer member (b), wall (c), and downwardly inclined perforated wall (d), having a multiplicity of openings therethrough for gas flow from the bottom side to the top side and bubbling through the already bubbling liquid-gas mixture flowing across the top side thereof from the downwardly and inwardly inclined perforated wall (d); and
(f) a liquid discharge opening at the perimeter of said tray opposite from said imperforate inlet surface (a) being contiguously associated with a second edge of said liquid-gas contact member (e) opposite to the first edge of such member.

3,282,577
FLUIDIZED BED FOR DRYING CARBON BLACK
John E. Cottle, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 23, 1963, Ser. No. 332,790
5 Claims. (Cl. 263—21)

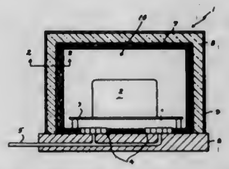
1. Apparatus in combination comprising:
(1) a fluidized-bed dryer in upright cylindrical form having
(a) means for introducing pellets thereto,
(b) means for withdrawing pellets therefrom,
(c) a gas distribution plate across a lower section thereof separating said dryer into an upper drying compartment and a lower gas distribution compartment,
(d) a gas outlet in the top thereof, and
(e) a single hot gas inlet in the bottom of the gas distribution compartment of (c) axially disposed with respect to the dryer;

(2) a single aspirator type burner positioned with its outlet end in communication with the inlet of (1)(e);
(3) a pressure fuel line connected with the inlet end of the burner of (2);



(4) a pressure air line connected with the inlet end of the burner of (2); and
(5) an off-gas line connected with an aspiratory port of the burner of (2).

3,282,578
FURNACE LINER
Richard W. Ulbrich, 126 W. Dixon Ave., Dayton, Ohio
Filed Jan. 3, 1964, Ser. No. 335,535
7 Claims. (Cl. 263—40)

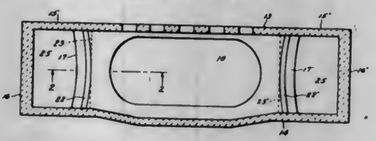


5. In an apparatus adapted to produce heat and which includes walls arranged to define a heat chamber in which the heat is adapted to be produced, a liner for the chamber comprising multiple layers of heat resistant, mesh screens arranged in juxtaposition and positioned relative to said chamber to receive heat therefrom and radiate it back into said chamber.

3,282,579
REFRACTORY LINING
Eldon D. Miller, Jr., Bridgeville, and Raymond S. Beals, Pittsburgh, Pa., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Oct. 10, 1962, Ser. No. 229,734
5 Claims. (Cl. 263—46)

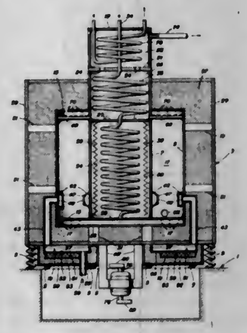
1. As at least a part of a high temperature refractory lining, a composite section which includes a back-up portion and a hot face portion, both the back-up portion and the hot face portion being high alumina refractory monolith compositions containing at least about 50% Al_2O_3, the back-up portion, upon firing, being mineralogically characterized as coarse textured, and having relatively coarse particles of high alumina refractory material relatively loosely bonded in place, said fired back-up portion being further mineralogically characterized by a network of tesselated cracks, which network encompasses a major portion of most of the coarse alumina particles, said hot face portion, upon firing, being mineralogically characterized as coarse textured, having coarse textured high alumina refractory particles interspersed through a dense, rigid, matrix, said matrix characterized as having very small and highly dispersed voids and the back-up portion and the hot face ceramically bonding to each other over abutting interfaces upon firing of the lining to provide a monolithic construction including both the back portion and the hot face portion.

3,282,580
REFRACTORY BOTTOM FOR OPEN HEARTH FURNACE
Jack E. Brazill and Robert W. Lintner, Johnstown, and Morgan Kirkpatrick, Conemaugh, Pa., assignors to Bethlehem Steel Company, a corporation of Pennsylvania
Filed Aug. 4, 1964, Ser. No. 387,310
4 Claims. (Cl. 263—46)



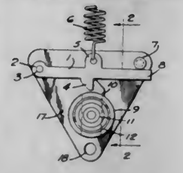
1. In an open-hearth furnace having side walls, end walls, charging wall and back wall, a hearth pan with horizontal projections, a hearth having vertical end portions, a bridgewall adjacent each of said vertical end portions, uptake passages at each end of said furnace between the said bridgewall and end walls of said furnace, the combination with a protective means interposed between the said bridgewall and said vertical end portion of said hearth, of support means fastened to said horizontal projections of said hearth pan to support said protective means.

3,282,581
METAL REDUCTION PROCESS
Robert L. McBrayer, Lincoln Park, Mich., assignor to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan
Filed June 18, 1962, Ser. No. 204,662
6 Claims. (Cl. 266—24)



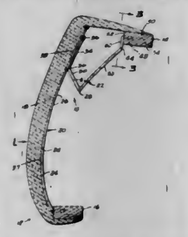
4. An apparatus for reducing a metal compound with a gaseous reducing agent to produce a metal comprising a heat exchange means, a reactor, resilient means for supporting said reactor, partitioning means provided in said reactor to define a central chamber and an outer chamber surrounding said central chamber, heating means provided within said central chamber, means for conducting said gaseous reducing agent through said heat exchange means and then through said central chamber in a manner to permit heating said gaseous reducing agent by said heating means, means for conducting heated gaseous reducing agent from said central chamber into said outer chamber, means for vaporizing said metal compound and for conducting it into said outer chamber, means for introducing a body of said metal in particulate form into said outer chamber and for removing said metal in particulate form from said outer chamber, means for conducting gaseous material produced by reacting said gaseous reducing agent with said metal compound in said outer chamber through said heat exchange means in heat interchange relationship with said gaseous reducing agent and vibrator means for vibrating said reactor.

3,282,582
TIMING DEVICE
Allen E. Dilliard, Fraser, Mich., assignor to the United States of America as represented by the Secretary of the Army
Filed Apr. 1, 1966, Ser. No. 547,684
3 Claims. (Cl. 267—1)



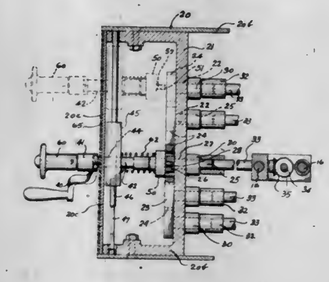
1. A delay timing device comprising:
(a) a deformable bar pivotally supported at one end between two mutually spaced supporting plates, said bar having stop means at its opposite end;
(b) spring means for applying an approximately constant load during the timing period to the center of said bar; and
(c) a rotatable spring loaded triggering mechanism mounted between said plates and engaging said deformable bar, said triggering mechanism being released at a predetermined deformed state of said deformable bar.

3,282,583
SPRING UNIT
Walter V. Slominski, Lexington, Ky., assignor to Hoover Ball and Bearing Company, Saline, Mich., a corporation of Michigan
Filed Feb. 1, 1965, Ser. No. 429,299
3 Claims. (Cl. 267—107)



1. In a seating structure which includes spaced frame rails, a load supporting spring unit attached to and extending between said rails, said spring unit being of a zigzag wire construction having spaced torsion bars connected by spacer bars, one end of said unit being attached to one face of a frame rail so that the endmost torsion bar at said one end is in a plane parallel to and in engagement with said one face, said unit having a torsion bar adjacent to said endmost torsion bar disposed substantially in said plane and outwardly adjacent one edge of said face, a spacer bar extending between said endmost and adjacent torsion bars and having at least a portion thereof engaged with said face, said unit extending from said last-mentioned torsion bar at an inclined angle relative to said face so that compressive forces in said unit have a force component transmitted to said adjacent torsion bar in a direction perpendicular to said face tending to torsionally distort said adjacent torsion bar and embed said spacer bar in said face.

3,282,584
ORTHOPEDIC TABLE
Roger Anderson, 5421 1st Ave. S., Seattle, Wash.
Filed July 22, 1963, Ser. No. 296,688
5 Claims. (Cl. 269—325)

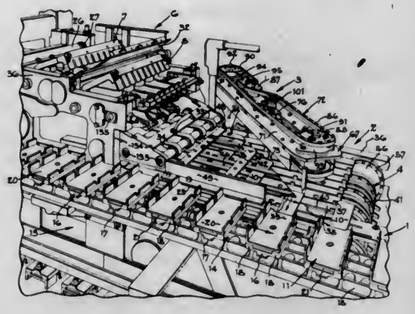


1. A surgical table comprising a supporting housing, a plurality of table top adjusting rods positioned in and extending from said housing, a table top section interconnected to one end of each of said adjusting rods, adjusting means for selectively and independently functionally moving said adjusting rods and thereby altering the position of the table top section interconnected therewith, said adjusting means including a crankshaft, a mounting means on said housing for movably mounting said crankshaft, a plurality of interconnecting means for selectively interconnecting said crankshaft with said adjusting rods, each of said interconnecting means including a rotatable connecting rod, means on one end of each of the connecting rods to releasably join the selected connecting rod to said crankshaft and means on the opposite end of the selected connecting rod interconnecting a respective connecting rod with a respective adjusting rod whereby the joining of said crankshaft with a respective connecting rod provides means for altering the position of a respective table top section incident to the actuation of said crankshaft.

3,282,585
SHEET FEEDING MECHANISM FOR CARTONING MACHINES
Julian A. Dieter, Cincinnati, Ohio, assignor to R. A. Jones and Company, Inc., Covington, Ky., a corporation of Kentucky
Filed June 8, 1964, Ser. No. 373,356
14 Claims. (Cl. 271—3)

1. A sheet feeding mechanism for a cartoning machine, said cartoning machine including an article conveyor having a series of article transport buckets mounted thereon, a respective pocket formed in the lower portion of each of said article transport buckets, said pockets extending tranversely of said buckets, and a driving system for advancing said article conveyor in the downstream direction, said sheet feeding mechanism comprising:
a sheet feeding mechanism, folding mechanism for receiving individual sheets from the sheet feeding mechanism and for folding each sheet at least once upon itself;

a sheet conveyor extending longitudinally in parallelism with said article conveyor and interconnected with said driving system, adapting the sheet conveyor to be advanced in the downstream direction at a rate corresponding to the rate of advancement of the article conveyor;



means delivering the folded sheets from the folding mechanism to the sheet conveyor;

and a pusher mechanism mounted with respect to said sheet conveyor and extending transversely thereof;

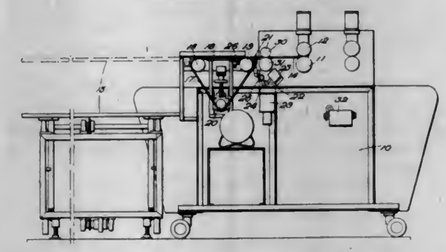
said pusher mechanism including means adapted to engage and shift said folded sheets transversely across the sheet conveyor and into the pockets of the article transport buckets of said article conveyor.

3,282,586
CONVEYOR FOR SHEET-FEEDING APPARATUS IN SHEET-PROCESSING MACHINES
Adolf Schwebel, Offenbach am Main, Germany, assignor to Mabeg Maschinenbau G.m.b.H. Nachf. Hense & Pleines G.m.b.H. & Co., Offenbach am Main, Germany
Filed Sept. 22, 1964, Ser. No. 398,290
Claims priority, application Germany, Oct. 15, 1963, M 58,816
11 Claims. (Cl. 271—45)



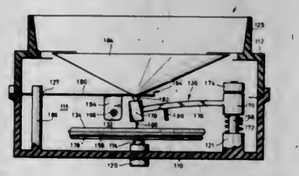
1. A sheet feeder for a sheet processing machine, said sheet feeder comprising, in combination, a band conveyor having a sheet supporting upper side and a lower side, said conveyor including lengthwise spaced apertures and in its lower side a lengthwise, laterally closed groove communicating with said apertures, a feed table, guide means guiding said conveyor across said table, sealing means sealing said groove against said table substantially at the beginning and at the end respectively of the travel of the conveyor across the table, and suction means communicating with the portion of the groove sealed against the table to generate suction in the apertures in communication with the sealed groove portion whereby sheets placed upon the upper side of the conveyor are retained thereon while travelling across the table and are released at the end of such travel.

3,282,587
APPARATUS FOR PRODUCING A STREAM OF PARTLY LAPPING SHEETS
Brian Albert Bolton, Ashford, Middlesex, England, assignor to Morane Plastic Company Limited, Ashford, Middlesex, England, a British company
Filed May 27, 1964, Ser. No. 370,572
Claims priority, application Great Britain, Dec. 23, 1963, 50,765/63
7 Claims. (Cl. 271—50)



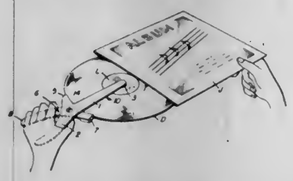
1. In combination with a machine for operating on a stream of partly lapping sheets, means for feeding the stream to the machine, means defining a path for the stream of sheets so fed, a stop member movable into and out of the path and operable when in the path to hold back a sheet lying intermediate in the stream and means operating in timed relation with the feeding means to move the stop member into the path behind the front edge of each sheet in turn to hold back the next sheet and out of the path when that edge has advanced a predetermined distance from the stop member and from the sheet so held back, said distance being of such a magnitude that the rear end of said first sheet is lapped over the front edge of the sheet so held back when the stop member is withdrawn.

3,282,588
SOUND REPRODUCING APPARATUS
Anton Ashmele, 10 Belchenstrasse, Trossingen, Wurttemberg, Germany
Filed July 26, 1963, Ser. No. 297,798
Claims priority, application Germany, Aug. 3, 1962, T 15,006; Oct. 19, 1962, T 22,890
13 Claims. (Cl. 274—1)



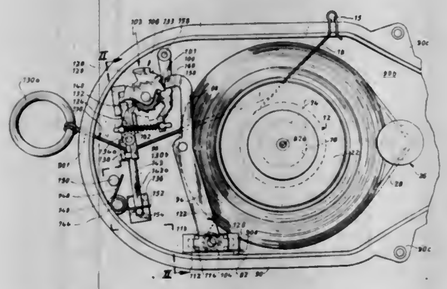
4. A sound reproducing apparatus, comprising a housing defining an internal chamber; and a sound reproducing mechanism accommodated in said chamber, said mechanism comprising a rotary disk, a rewindable spring for rotating the disk, means for winding the spring including a flexible element which extends from said housing, said flexible element being stretched when the spring is held against unwinding and being slack when the spring unwinds to rotate the disk, a stylus overlapping said disk and movable between a starting position at a first distance and a second position at a second distance from the periphery of said disk, deformable retainer means normally biasing said stylus into engagement with the disk so that, when the spring unwinds to rotate the disk, the stylus is compelled to travel from said starting position to said second position, deforming means responsive to stretching of said flexible element for deforming said retainer means so that the stylus may be disengaged from said disk, and means comprising a resilient member for automatically returning the stylus to said starting position when the stylus is disengaged from said disk.

3,282,589
SOUND RECORDING DISC HANDLER
Thomas R. Morrison, 1721 Lansing Road, Glen Burnie, Md.
Filed Sept. 26, 1963, Ser. No. 311,850
9 Claims. (Cl. 274—1)



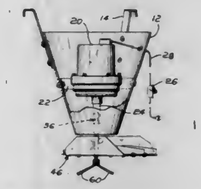
9. A phonograph record handling device, comprising means including an elongated member having at one end an element engaging the spindle hole of a phonograph record and spaced from said element a pair of pivotally mounted diverging members each having means engaging the periphery of said record, and means operatively connected with the opposite end of said elongated member pivoting said diverging members towards said element to effect a triangular grip on said record permitting handling of said record without touching its recording grooves.

3,282,590
SOUND REPRODUCING APPARATUS
Anton Ashmele, Trossingen, Wurttemberg, Germany, assignor to Trossinger Metallstimmenfabrik Hans Eisen, Trossingen, Wurttemberg, Germany
Filed Nov. 4, 1964, Ser. No. 409,000
Claims priority, application Germany, Nov. 5, 1963, T 25,013
14 Claims. (Cl. 274—1)



1. In a sound reproducing apparatus, a rotary disk having an exposed side provided with a series of independent concentric helical sound grooves each having an outer convolution and an inner convolution respectively located at a first and second distance from the periphery of said disk; a rewindable spring for rotating said disk; a device for winding said spring including a flexible element which is stretched when the spring is held against unwinding and which is slack when the spring unwinds to rotate said disk; a tone arm including a stylus overlying said disk and being movable with the stylus between a series of starting and second positions respectively located at a first and second distance from the periphery of said disk, said stylus being aligned with the outer convolution of a different sound groove in each starting position and with the inner convolution of the respective sound groove in each second position of said tone arm, said stylus normally engaging said disk to track a sound groove when the disk rotates and said tone arm being arranged to separate stylus and disk in responds to stretching of said flexible element; means for returning the tone arm to one of said starting positions when the stylus is disengaged from said disk; and stop means for arresting the tone arm in one of said starting positions, comprising a rotary arresting member having a plurality of stop faces each disposed at a different distance from the axis of said arresting member, said stop faces being movable into the path of said tone arm to arrest the stylus in different starting positions, and motion transmitting means operatively connected with said flexible element for rotating said arresting member and comprising a reciprocable member arranged to move in a direction to rotate said arresting member in response to stretching of said flexible element.

3,282,591
MATERIAL SPREADER
Harlan J. Donelson, Jr., W. Highway 330, Marshalltown, Iowa
Filed July 8, 1964, Ser. No. 381,115
9 Claims. (Cl. 275—15)



1. In a spreader assembly,

a funnel unit having an inlet and an outlet opening,

a shaft means positioned in said funnel and extending from said outlet opening,

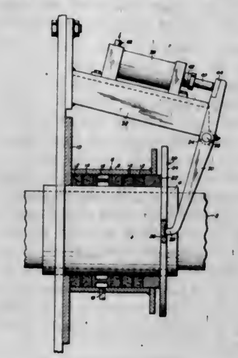
a power means secured to said shaft means to cause its rotation, and

a scattering assembly positioned at the outlet opening of said funnel, said scattering assembly including a channel shaped member open at at least one end and having a transversely extending element rotatably secured to the side walls of said channel member, said element being fixedly secured to said shaft means and the bottom wall of said channel member having a slot extending longitudinally thereof and said shaft extending through said slot.

3,282,592
TIMER ACTUATED SHAFT SEALING DEVICE
Lubomyr M. O. Cymbalisty, Edmonton, Alberta, Canada, assignor, by direct and mesne assignments, of thirty percent to Cities Service Athabasca Inc., New York, N.Y., a corporation of Delaware, thirty percent to Imperial Oil Limited, a corporation of Canada, thirty percent to Atlantic Richfield Company, a corporation of Pennsylvania, and ten percent to Royalite Oil Company Limited, a corporation of Canada
Filed June 28, 1963, Ser. No. 291,514
12 Claims. (Cl. 277—3)

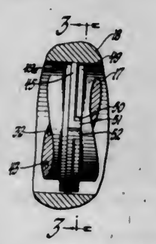
1. A shaft sealing device comprising a stuffing box, shaft packing material within said stuffing box and surrounding said shaft, fluid pressure means applying a compressive force against said packing material, first and second sources of fluid pressure in communication with said

fluid pressure means, said second source having a greater pressure than said first source, normally closed valve means obstructing the flow from said second source to



said fluid pressure means, whereby said valve means may be opened for relatively short time intervals to compress said packing to compensate for wear.

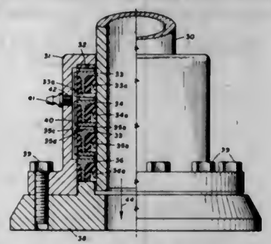
3,282,593
ROTATING GOVERNOR SEAL RING
Kenneth E. Snyder, Northville, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 28, 1963, Ser. No. 319,259
5 Claims. (Cl. 277—12)



1. In a governor of the type having a rotatable body disposed in fixed axial relationship with respect to and supported for rotation in a housing and having a fluid passage in said housing and a fluid passage in said rotatable body coacting with said housing passage for transmitting fluid, said rotatable body and said housing being disposed in coaxial relationship and having a common longitudinal axis, means for rotating said rotatable body about said longitudinal axis, said governor also having oil seal rings for preventing loss of fluid at the juncture of said passages, the improvement which comprises means connecting said oil seal rings to said rotatable body for rotating said seal rings in response to rotation of said rotatable body, to thereby prevent wear of said rotatable body due to relative rotation of said body and seal rings.

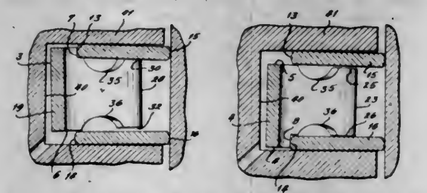
3,282,594
SWIVEL SEAL
John H. Wheeler, P.O. Box 10823, Dallas, Tex.
Filed July 9, 1964, Ser. No. 381,374
8 Claims. (Cl. 277—68)

1. A seal which comprises:
(a) a flat-bottomed rigid ring having an upfacing curved groove in the upper surface thereof,
(b) a rigid upstanding right cylinder integral with said ring and of diameter intermediate the inner and outer diameters of said ring and adjacent to one side of said groove, and
(c) a resilient body seated in said groove and molded to the upper surface of said ring and to the sides of said cylinder with a cylindrical lip extending upward from and outward beyond one wall of said ring on one



side of said cylinder at a point below the top of said cylinder, and on the other side of said cylinder extending above said cylinder and of diameter equal the diameter of said ring on said other side of said cylinder for deformation away from said other side beyond said diameter when placed under compression.

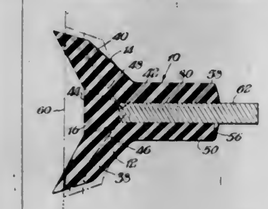
3,282,595
PISTON RING ASSEMBLY OF FLEXIBLE CIRCUMFERENTIALLY COMPRESSIBLE SPRING EXPANDER-SPACER AND PISTON RINGS
Donald C. Hill, Affton, Mo., assignor to McQuay-Norris Manufacturing Company, St. Louis, Mo., a corporation of Delaware
Filed Apr. 13, 1964, Ser. No. 359,378
2 Claims. (Cl. 277—139)



1. In a compressible and expansive non-bottoming type of piston ring assembly diametrically and axially dimensioned to be received in a piston ring groove with its inner periphery spaced from the bottom of the piston ring groove when held compressed in said groove by the wall of a cylinder for the piston, a pair of split annular radially expansible and contractible piston rings in said piston ring assembly each having a plain radial face for sealing contact with one side of the piston ring groove, and each having an outer peripheral face for sealing contact with the wall of a cylinder, an annular corrugated circumferentially expansible and compressible spring expander-spacer control ring in said piston ring assembly having oppositely directed humps some of which are directed between said pair of piston rings to act as spacers, and relatively rigid axially extending cantilever type fingers forming a continuation of, and projecting from, some of said humps on said spring expander-spacer control ring and offset radially inwardly from the outer periphery of said control ring and offset a lesser degree in opposite axial directions from said control ring to engage an inwardly facing peripheral edge on each of said pair of piston rings so that when said assembly is in

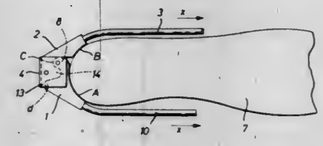
operative position, said control ring is held compressed in said piston ring groove to a minimum diameter greater than the diameter at the bottom of said piston ring groove, the improvement comprising,
(a) a plurality of ring engaging surfaces on said axial extending cantilever type fingers for directly engaging said inwardly facing peripheral edge on each of said pair of piston rings, said surfaces facing in the same direction on top and on the bottom with respect to the portion of a piston ring in contact therewith, and said surfaces being spaced along said control ring to engage with said pair of piston rings at points spaced circumferentially around said piston rings in an alternating manner therebetween, and
(b) means forming spaced resilient portions in said control ring between said cantilever type fingers to provide flexibility for distortion axially along said control ring,
said annular piston rings being dimensioned diametrically and in width so that when said assembly is compressed to said operating condition, said inwardly facing peripheral edges press radially inwardly against said alternately arranged ring engaging surfaces on said cantilever type fingers with a force sufficient to cause circumferential compression in said control ring by radial inward displacement of said fingers on opposite sides of said control ring and twisting in opposite directions axially therealong, causing the humps adjacent said cantilever type fingers which act as spacers between said piston rings to exert more axial pressure on the radial face of one of said piston rings than on the other, oppositely top and bottom, circumferentially around said control ring, to urge each of said piston rings into sealing engagement with a side of the piston ring groove with resilient axially directed forces which are less than, but proportional to, the radial forces exerted on said piston rings by said control ring through said cantilever type fingers.

3,282,596
ELASTOMERIC DOUBLE FLANGE SEAL
Sherman L. Wood and George M. Staples III, Salisbury, Md., assignors to Symington Wayne Corporation, Salisbury, Md., a corporation of Maryland
Filed June 17, 1963, Ser. No. 288,087
Claims priority, application Great Britain, June 19, 1962, 23,485/62
3 Claims. (Cl. 277—206)



1. A sealing member made of an elastomeric material which swells and shrinks when acted upon by a liquid for insertion between a relatively sliding shaft and bearing means comprising a flanged ring having a pair of flanges extending on opposite sides of the plane of said ring, the ends of said flanges having an original diameter before said elastomeric material swells and shrinks, said flanges being disposed at an obtuse angle to each other to form a shallow V, a junction section made entirely of said elastomeric material at the root of said V, a base portion connected to said flanges for attaching said ring to a supporting member, said junction section being integral with said flanges whereby the swelling and shrinking of said junction section is transmitted to said flanges, said junction section having an end portion remote from said ends of said flanges, means for rigidly anchoring said remote end portion of said junction section to cause the remaining portion of said junction section to move in an obstructed manner upon said swelling and shrinking in a direction normal to said plane of said ring to rotate said flanges respectively away from and toward each other when said elastomeric ring swells and shrinks, and said junction section comprising compensating means including the radial thickness of said junction section being equal to the average thickness of one of said flanges whereby said junction section causes said flanges to rotate away from each other a sufficient extent when said elastomeric ring swells to maintain said ends of said flanges at their original diameter and causes said flanges to rotate toward each other a sufficient extent when said elastomeric ring shrinks to maintain the ends of said flanges at their original diameter.

3,282,597
COUPLING DEVICE FOR SKI BINDING CABLE
Ludwig Berchtold, Bergstrasse 85, Krailling, near Munich, Germany, and Albert Schuster, Munchner Strasse 15, Planegg, near Munich, Germany
Filed Mar. 13, 1964, Ser. No. 351,811
Claims priority, application Germany Mar. 22, 1963, B 71,255; Feb. 6, 1964, B 75,315
15 Claims. (Cl. 280—11.35)

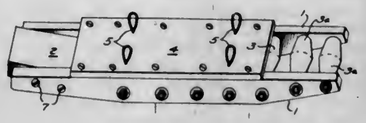


1. A coupling device for detachably connecting ends of a cable around the heel of a boot to a ski, in which said cable is attached to the ski in a position forward of the rearmost portion of said heel; said device comprising a pair of coupling members, each attached to a corresponding cable end and each comprising a hook portion, a recess portion and a stop portion, the hook portion of each of said coupling members engaging a corresponding recess portion in the other member in a coupled position to form a yoke extending around said heel, a portion of the engaging surfaces of said hook and recess portions being approximately parallel with respect to the longitudinal axis of said ski, so that tightening of said cable in a longitudinal direction with respect to said ski results in lateral forces acting on said engaging surfaces to strengthen said coupling, each stop portion being spaced from its respective hook and recess portion and being arranged so that when a predetermined lateral force on said boot is exceeded, said stop portions mutually engage to form a fulcrum for pivotable uncoupling movement of said coupling members.

3,282,598
LAND SKIER
Charles W. Goodwin, Box 34, Charlemont, Mass.
Filed Aug. 27, 1964, Ser. No. 392,487
2 Claims. (Cl. 280—11.2)

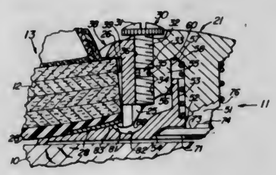
1. A land skier having two parallel rails, a plurality of rotating devices connected between the said rails, said rotating devices having their bottom surfaces extending below the bottom of said rails, the bottom of said rails having an upward plane in the front and an upward extending plane to the rear with a horizontal plane therebetween,

said rotating devices at the front of the said rails being in the upwardly extending plane, a braking device for controlling speed being located between the rear of the rails



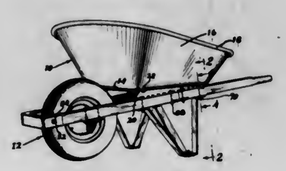
and extending below the lower surface of the rails, and a plate for securing said rails together and supporting a user.

3,282,599
SOLE-PROTECTING TOE SKI BINDING
Hjalmar Hvam, Rte. 1, Box 404, Beaverton, Oreg.
Filed July 10, 1964, Ser. No. 381,647
11 Claims. (Cl. 280—11.35)



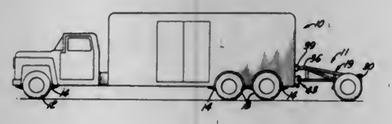
1. In a toe-holding clamp for a ski,
a base means adapted to be secured to a ski,
arm means having one end pivotally secured to the base and having a pair of generally vertical, sole-engaging ridges spaced apart and extending downwardly to a predetermined level,
and support means on the base means in front of the ridges having a supporting surface above said level for holding entirely above the bottoms of the ridges the front end of a sole of a ski boot positioned on the ski.

3,282,600
WHEELBARROW
Roger Tonelli, Chicago, Ill., assignor to Radio Steel & Mfg. Co., Chicago, Ill., a corporation of Illinois
Filed Apr. 29, 1964, Ser. No. 363,462
10 Claims. (Cl. 280—47.31)



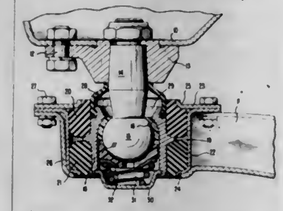
1. A wheelbarrow formed of separable parts including:
(1) a bowl;
(2) a pair of elongate handles each having a length greater than the bowl and in which each of the handles is separable into parts of substantially equal length;
(3) a bumper plate and means for mounting the bumper plate onto the ends of the assembled handles when in position of use;
(4) a cross brace member having channel shaped sections on the opposite ends spaced one from the other by an amount corresponding to the spaced relationship between the handles in their assembled relationship and having a width corresponding to the width of the handles in an intermediate portion thereof to receive the handle portions in fitting relationship within the channel sections and having a length dimensioned to extend beyond the ends of the handle pieces when aligned in abutting relationship one with the other to form the handle and means for securing the handle pieces in the channel sections of the cross brace member;
(5) a pair of leg members comprising elongate strips of a structurally strong material bent to V-shape with the apex of the V lowermost in the assembled relationship to provide a foot rest for the wheelbarrow and with the legs of the V-shaped members extending angularly upwardly and outwardly to engage portions of the handle pieces spaced longitudinally from the abutting edges and means for connecting the ends of the legs to the longitudinally spaced apart portions of the handle pieces and with the leg members spaced laterally one from the other by an amount corresponding to the spaced relationship between the assembled handles;
(6) means for connecting the handles in their laterally spaced apart relationship to the underside of the bowl;
(7) said cross brace member having a portion extending downwardly and outwardly from an intermediate portion thereof to the apex portions of each of the leg members and means for interconnecting said downwardly extending portions with the apex portions of the leg members to prevent spread of the legs and to provide vertical bracing; and
(8) a wheel, and means rotatably mounting the wheel onto the leg members between the forward end portions thereof.

3,282,601
CARGO VEHICLE WITH LOAD DISTRIBUTING ACCESSORY
Henry C. Harbers, Pasadena, Calif., assignor to Western Unit Corporation, City of Industry, Calif., a corporation of California
Filed Jan. 4, 1965, Ser. No. 423,047
16 Claims. (Cl. 280—81)



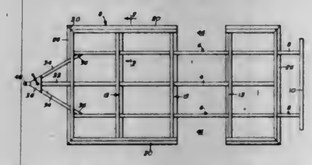
1. A load sharing accessory for attachment to the rear end of a cargo vehicle comprising an elongated rigid frame supported at one end on a carriage equipped with air bellows suspension means, means coupling the other end of said rigid frame to the rear end of a cargo vehicle for limited pivotal movement about a vertically elongated axis capable of transferring cargo load forces from said vehicle to said load sharing accessory, and said air bellows suspension means being inflatable sufficiently to assume a share of said cargo load which otherwise would be carried by the rear wheels of the cargo vehicle to which said accessory is coupled.

3,282,602
RESILIENT BALL JOINT CONNECTION FOR VEHICLE SUSPENSIONS
Walter Willingshofer, Hofingen, Wurttemberg, and Alf John Muller, Stuttgart-Bad Cannstatt, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Nov. 6, 1964, Ser. No. 409,409
Claims priority, application Germany, Nov. 22, 1963, D 42,994
15 Claims. (Cl. 280—96.2)



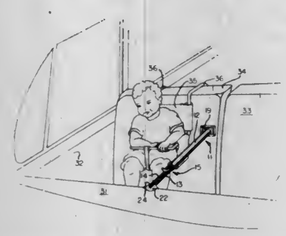
1. A bearing support for supporting a wheel guide member of motor vehicles at the vehicle superstructure comprising:
wheel guide means for guiding the vehicle wheel,
a relatively fixed vehicle part,
and means for supporting said wheel guide means at said fixed part including ball joint means having socket means and being secured at said fixed part and two rubber ring means arranged one above the other and operatively interposed between said wheel guide means and said ball joint means, said wheel guide means being provided with outer sleeve means,
said rubber ring means being inserted into said outer sleeve means and being axially supported thereby, and inner housing means enclosing the socket means of the ball joint means and supporting the rubber ring means in the opposite direction from the outer sleeve means,
said inner housing means and said outer sleeve means being so dimensioned that the rubber ring means are held under stress.

3,282,603
VEHICULAR FRAME AND METHOD OF CONSTRUCTION
Robert E. Barth, Milford, Ind.
(R.R. 1, Warsaw, Ind.)
Filed Jan. 24, 1964, Ser. No. 339,991
4 Claims. (Cl. 280—106)



1. A vehicular frame construction for towed vehicles which comprises
an under-frame consisting of a plurality of horizontal parallel spaced main support members and a plurality of parallel spaced cross support members perforated therethrough, said main support members extending through the perforations in said cross support members and rigidly attached thereto,
a top frame which comprises a plurality of parallel spaced horizontal framing members, and a plurality of parallel spaced cross framing members, said cross framing members extending through perforations in said horizontal framing members and rigidly attached thereto,
a pair of opposed side frames which comprises a plurality of parallel spaced horizontal framing members and a plurality of parallel spaced vertical framing members perpendicular thereto, said vertical members extending through perforations in said horizontal framing members and rigidly attached thereto,
a pair of rear end abutting frames, each comprising a plurality of parallel spaced horizontal framing members and a pluraltiy of parallel spaced vertical framing members perpendicular thereto, said vertical members extending through perforations in said horizontal members and rigidly attached thereto, one of said pair of frames inclining forwardly at an angle of between about 5° to 10° from the vertical, and the other of said pair inclining forwardly at an angle of between about 8° to 15° from the vertical, said inclination beginning at the point of abutment,
a front frame comprising a plurality of parallel spaced horizontal framing members and a plurality of parallel spaced vertical framing members, said vertical members extending through perforations in said horizontal members and rigidly secured thereto, said front frame inclining outwardly from the bottom thereof at an angle of between about 5° to 10° from the vertical, and
corner squaring members of right angled W cross-sectional configuraton interposed at the conjunction of the said top frame with said side and rear frames and at the conjunction of each side frame member with said pair of rear frames and said front frame, said corner squaring member being so adjusted that the sides of the interior angle form an extension of the inner surfaces of the conjoining frames and being rigidly secured to the ends of said conjoining frames.

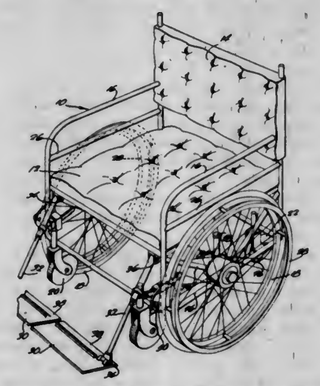
3,282,604
SAFETY BAR FOR AUTOMOBILE SEATS
Abraham G. Goldberg, deceased, late of Chestnut Hill, Mass., by Morris I. Goldberg, executor, Newton, Mass., assignor to International Manufacturing Company, Boston, Mass., a corporation of Massachusetts
Filed Feb. 16, 1965, Ser. No. 433,217
3 Claims. (Cl. 280—150)



1. A safety brace adapted to extend between the exposed portion of the cowl of an automobile and the front surface of the rear portion of the front seat thereof and to prevent the unintentional forward motion of said rear portion of said seat, said brace comprising a first hollow tubular member, a second tubular member, said second tubular member adapted to be posiitoned within said first tubular member, means associated with said second tubular member to limit the movement of said second tubular member within said first tubular member, a flexible member provided with a seat engaging portion positioned at the free end of said first tubular member and adapted to rest against said seat, a flexible distortable member provided with a normally flat cowl engaging portion posi-

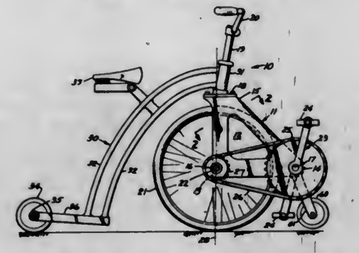
tioned at the free end of said second tubular member and adapted to rest against said cowl, and means associated with said second tubular member and adapted optionally to engage the side of said flexible distortable means and when engaged to distort said member into a curved form adapted to cooperate with the curved portion of said cowl.

3,282,605
RUNABOUT WHEELCHAIR
Russell E. Nihlean, 4153 N. Melvina Ave., and Fred A. Sass, 4333 N. Marmora Ave., both of Chicago, Ill.
Filed Jan. 8, 1965, Ser. No. 424,374
5 Claims. (Cl. 280—211)



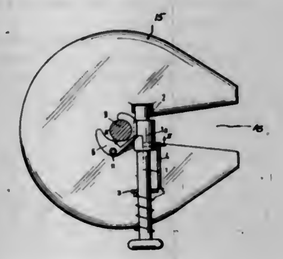
1. A runabout wheelchair comprising a wheelchair frame mounted on a pair of front wheels, a pair of rear wheels, and a pair of driving wheels intermediately mounted between the set of other pair of wheels, a pair of leg supports having a platform, said leg supports being pivotally mounted from the wheelchair frame for adjustment in a swinging fore and aft direction, telescopic leg members included in the leg supports for adjusting the length thereof and stabilizing the length thereof by a slot adjustment means, and a rack and pinion lock mechanism for adjusting the forward and aft position of the leg members separately with respect to each other, said platform being mounted on the end of each telescopic leg member by a limited hinged connection for individually adjusting the position thereof.

3,282,606
OPERATOR-PROPELLED CYCLE
Burton L. Casner, Box 817, Perris, Calif.
Filed Sept. 20, 1965, Ser. No. 488,368
12 Claims. (Cl. 280—239)



1. A cycle having a nominal forward direction comprising: a principal frame; a main wheel journal and a crank journal parallel to the main wheel journal, both carried by said principal frame; a main wheel having a driving axle, said driving axle being journaled in the main wheel journal; a crank journaled to the crank journal, the crank journal being positioned forwardly of the front wheel; a steering post projecting from said principal frame; drive means interconnecting said crank and driving axle for rotating the main wheel in response to rotation of the crank; a trailing frame; a steering post journal carried by said trailing frame in which the steering post is journaled; a seat carried by said trailing frame, said crank journal and said seat being on opposite sides of an upright steering axis that passes through the main wheel journal, the seat being located rearwardly of the main wheel journal and the crank journal; and a trailing wheel supporting said trailing frame rearwardly of the main wheel.

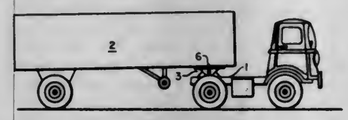
3,282,607
FIFTH WHEEL KING-PIN LATCHING DEVICE FOR TRACTOR-TRAILERS
Joseph H. Steinway, % Turnta Inc., 23rd floor, 60 Broad St., New York, N.Y.
Filed Aug. 28, 1964, Ser. No. 392,764
Claims priority, application Germany, Aug. 28, 1963, J 24,331
5 Claims. (Cl. 280—434)



1. In a fifth wheel arrangement, in combination:
(a) a fifth wheel member formed with an elongated recess, said recess having an inner end portion;
(b) a king pin member movable in said recess toward and away from an operating position in said inner end portion;
(c) a latch member mounted on said fifth wheel member for movement toward and away from a locking position in which said latch member retains said king pin member in said operating position thereof;
(d) a locking pin member mounted on said plate member for rotation about an axis transverse of the direction of elongation of said recess, and for axial movement; and
(e) eccentric means on said locking pin member, said eccentric means being alignable with said latch member by said axial movement of said locking member, and engaged with the aligned latch member for urging the same toward said locking position thereof when said locking pin member is rotated about said axis in a predetermined direction.

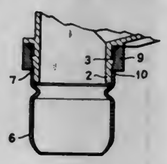
3,282,608
TILT-LOCKING FIFTH WHEELS
Ray A. Braunberger, 221 N. La Salle St., Chicago, Ill.
Filed Aug. 28, 1964, Ser. No. 392,771
2 Claims. (Cl. 280—438)

1. A fifth wheel having trunnions, a shaft supported on said trunnions, a fifth wheel plate supported on said shaft and normally free to tilt thereon, the distance between the under side of said plate and the upper surface of said trunnion decreasing as the shaft is approached, and tilt locking means comprising wedges that can be inserted between the trunnion and the fifth wheel plate at each side of said shaft, tension bars that can be placed



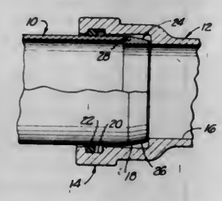
in front and behind said trunnions, and means to draw said wedges toward said tension bars until each wedge engages both the trunnion and the fifth wheel plate to prevent said plate from tilting.

3,282,609
PIPE CONNECTION
Pieter Cornelis van der Ham, Grouw, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 17, 1964, Ser. No. 419,069
Claims priority, application Netherlands, Dec. 20, 1963, 302,334
3 Claims. (Cl. 285—7)



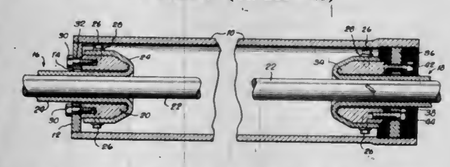
1. A pipe connection between telescoped pipe ends comprising a first pipe member having a junction portion, at least one integral cam means projecting radially outwardly from said junction portion, a second pipe member being of a relatively flexible material and having a portion telescoped over said junction portion and having at least one aperture therein for receiving said cam means, and a reinforcing ring member having at least one inwardly directed integral cam means, said ring member closely surrounding the telescoped portion of said second pipe member, said inwardly directed cam means being received in said aperture of said second pipe member to retain said reinforcing sleeve in position, both of said cam means together substantially filling said aperture, said reinforcing ring preventing deformation and release of said second pipe member upon the application of bending stresses.

3,282,610
PIPE JOINT AND INSERT THEREFOR
William M. White, 23199 Sanderson Ave., San Jacinto, Calif.
Filed Mar. 9, 1964, Ser. No. 350,330
1 Claim. (Cl. 285—18)



A coupling comprising, in combination:
a thin-walled pipe;
an associated fitting having an opening into which one end of said pipe is inserted;
an O-ring sealing the clearance between said pipe and said opening;
an insert ring for use in joining said pipe to said fitting, said ring being of substantially greater thickness than said pipe and being formed with a circumferential groove providing a reduced-diameter portion terminating in an annular shoulder;
said reduced-diameter portion being inserted into the interior of said pipe, with the end of the pipe abutting against said annular shoulder;
said ring having a second portion projecting beyond the end of said pipe, said second portion having a conical outer surface which fairs smoothly into the outer surface of said pipe;
said insert ring forming a tapered nose portion for said pipe to facilitate insertion of said one end of the pipe into said fitting and through said O-ring, said conical outer surface of said insert ring serving to stretch said O-ring and lift the same onto the outer surface of said pipe without damage to the O-ring; and
said insert ring being split substantially parallel to its axis and having the ends defining the split spaced apart slightly so as to provide a degree of flexibility permitting the ring to be compressed slightly to fit within the interior of an undersized pipe; said ring being resilient and expanding to engage the interior of the pipe snugly.

3,282,611
COUPLING DEVICE
Mario Pierazzuoli, Milan, Italy, assignor to Pirelli Societa Per Azioni, Milan, Italy, a corporation of Italy
Filed Jan. 24, 1964, Ser. No. 340,102
Claims priority, application Italy, Feb. 9, 1963, 2,752/63
10 Claims. (Cl. 285—45)

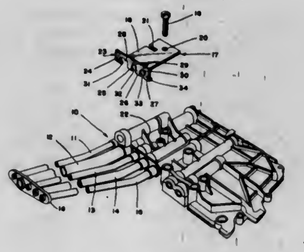


1. A device for joining together the armor covering two metallic bodies, said device comprising a cylindrical sleeve having a substantially smooth outer surface and capable of withstanding tensile stresses to which such metallic bodies may be subjected, a pair of annular shaped elements disposed within said cylindrical sleeve, each annular shaped element having extending therethrough folded thereabout, and fastened thereto the armor at the end of a respective one of said elongated bodies in a manner leaving the outwardly facing surfaces of the annular shaped elements exposed, said annular shaped elements being interconnected with said cylindrical sleeve by means of end rings secured to each end of said sleeve and enclosing said annular shaped elements connecting screws extending between the exposed outer surface of each annular shaped element and a corresponding one of said end rings.

3,282,612
TUBE RETAINER
Gilbert W. Younger, 2627 Merced Ave., El Monte, Calif.
Filed Nov. 29, 1965, Ser. No. 510,207
1 Claim. (Cl. 285—137)

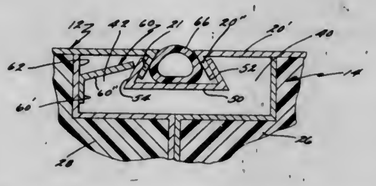
In a hydraulic control assembly including bores adapted to receive enlarged diameter end portions of a plurality of fluid distribution tubes, a retaining means comprising: plate means adapted to be secured to said assembly; header flange means extending downwardly from an end

of said plate means, said header flange means including a plurality of leg members spaced apart to define a plurality of slots for receiving said tubes adjacent to the shoulders formed by said enlarged diameter end portions; each of said leg members having a width substantially equal to the distance between the adjacent tubes, said leg members being spaced outwardly from said shoulders; and



abutment means on said leg members, said abutment means including a flange extending laterally from each of said leg members in a direction generally underlying and parallel to said plate means for engaging said shoulders on adjacent tubes for restraining said tubes against axial and lateral movement with respect to said hydraulic control assembly.

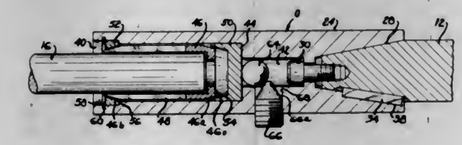
3,282,613
PANEL CONNECTOR
Folke A. Axelsonn, Grand Haven, Mich., assignor to Airspace, Inc., Fruitport, Mich., a corporation of Michigan
Filed Feb. 28, 1964, Ser. No. 348,183
5 Claims. (Cl. 287—20.92)



2. A panel assembly comprising: a pair of adjacent panels placed edge to edge; each of said panels having an edge portion in abutment with the adjacent edge portion, and each having a recessed edge portion; each of said panels having a flange projecting into said recessed portion and bent back at an angle greater than 90 degrees; a channel receiving the two adjacent flanges, and having legs formed to fit closely against said bent portions; and a resilient seal strip impressed into said channel to seal the connection and form a substantially flush, smooth joint surface.

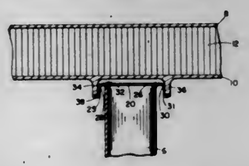
3,282,614
COUPLING DEVICE
Raymond A. Entrikin, East Liverpool, Ohio, assignor to Patterson Industries, Inc., East Liverpool, Ohio, a corporation of Ohio
Filed Oct. 10, 1963, Ser. No. 315,146
2 Claims. (Cl. 287—114)

1. A shaft coupling device including a housing having a bore extending into at least one surface thereof, a portion of the bore adjacent its opening being defined by a tapered surface in the bore, a sleeve within said bore having slots therein whereby said sleeve may be compressed, said sleeve having a longitudinal opening therethrough for receiving a shaft to be coupled to said housing, the outer end of said sleeve having a tapered exterior surface engaging said first mentioned tapered surface, the inner end of said sleeve having a tapered exterior surface, means retaining said sleeve within said bore, a wedge element slidably received within the inner end of said bore, said wedge element having a tapered interior surface portion adapted to engage said tapered exterior surface of said inner end of said sleeve and further having an end



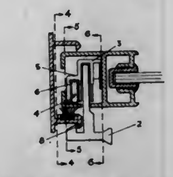
surface remote from said sleeve, an adjustable clamping element threaded in said housing and movable along an axis normal to the longitudinal axis of said bore, the inner end of said clamping element having a conical surface concentric with said axis normal to the axis of said bore, and a ball element confined between said conical surface and said end surface of said wedge element whereby said adjustable clamping element may be actuated to vary the position of said conical surface along said axis to increase or decrease the force applied by said ball element upon said wedge element and correspondingly upon said compressible sleeve.

3,282,615
WELDED STRUCTURE AND METHOD OF MAKING SAME
Vene L. Darby, Redondo Beach, and Edwin E. Hatter, Torrance, Calif., assignors to North American Aviation, Inc.
Filed Sept. 17, 1962, Ser. No. 224,126
23 Claims. (Cl. 287—189.36)



1. Structural connection means between two workpiece portions of generally plate-like form arranged substantially in perpendicular relationship, comprising:
at least one flange on one of said workpiece portions, said flange having a first distal edge,
at least one flange on the other of said workpiece portions, said last stated flange having a second distal edge, spaced from said other portion,
said first and second distal edges being in substantially continuous coplanar alignment and said flanges being in substantially continuous coextensive surface contact when said two workpiece portions are arranged in said substantially perpendicular relationship, and
a welded connection across said first and second distal edges joining said flanges together to secure said two workpiece portions permanently in said substantially perpendicular relationship.

3,282,616
SLIDING CLOSURE LATCHES
Alex M. Johnston, Norwalk, Calif.
(4802 Pinehurst, Garland, Tex. 75040)
Filed May 11, 1964, Ser. No. 366,502
2 Claims. (Cl. 292—128)



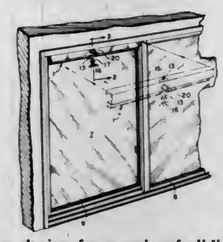
1. A latch device adapted for securing a closure to a closure frame strike means, comprising: relatively enlarged, opposite, angularly related, rigidly connected handle and stop portions adapted for limited pivotal movement through a portion of the closure, with the adjacent parts of said portions forming a pivot with a part of the closure, an edge of said handle portion forming a bevelled hooked end latch, a part of said edge adjacent said pivot being bevelled to provide clearance with the closure frame strike means when said device is retracted, and means resiliently urging said latch device for latching engagement with the strike means.

3,282,617
LOCKING MEANS FOR GATES
Robert G. Wason, West Hollywood, Fla., assignor to Invisibloc Corporation, Fort Lauderdale, Fla., a corporation of Florida
Filed July 28, 1964, Ser. No. 385,687
3 Claims. (Cl. 292—171)



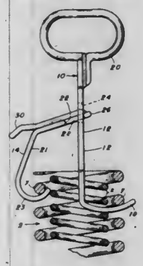
2. A gate locking device comprising, a hinged gate having a hollow vertical post at one end, a spring-biased bolt housed within the post and having a lower end normally projecting from the bottom of the post under the force of the spring bias, a recessed striker plate below the post for the reception of the lower end of the bolt, a plug fitted within the post at its upper end, said plug having a central aperture, a cap fitted over the upper end of the post and over the top of the plug, said cap being non-rotative but axially slidable to a limited extent on the post, the cap having a stiff centrally-positioned tube extending downwardly from it, said tube being slidably guided through the central aperture in the plug, and a flexible cable having one end fixed within the tube, said cable extending downwardly through the interior of the post and having its lower end attached to the bolt.

3,282,618
LOCKING MEANS FOR SLIDING DOORS
Edward James Adickes, 425 5th Ave., Indialantic, Melbourne, Fla.
Filed Nov. 25, 1964, Ser. No. 413,701
8 Claims. (Cl. 292—258)



1. A locking device for a pair of sliding doors comprising, a door frame having two doors slidably mounted in it, a bar fitted on top of one of the doors in a position so that it blocks movement of the two doors relatively to one another, and an adjustable bolt member threadable through the bar and engaging against the inside of the door frame to maintain the bar in door-blocking position.

3,282,619
APPARATUS AND METHOD FOR HANDLING COIL SPRINGS
John V. Loosemore, Crown Point, Ind., assignor to United States Steel Corporation, a corporation of Delaware
Filed Sept. 18, 1964, Ser. No. 397,384
9 Claims. (Cl. 294—15)



1. Apparatus for handling a coil spring comprising a main member having a shank and a hook portion at the lower end of said shank for hooking onto a winding on one side of said spring, and a second member having a second shank and a second hook portion at the bottom end of said second shank for hooking onto a winding on the side of said spring opposite from said first named hook portion, said hook portions being disposed in substantially the same plane and extending from their respective shanks in substantially the same direction, and said shanks being pivotally connected together in a manner permitting said second member to be rotated in said plane in which the hook portions of said members are disposed.

3,282,620
TOOL FOR USE IN REMOVING POSTAGE STAMPS FROM WATER
Jacques Carmeleau Antoine, 1601 Hamlin St. NE., Washington, D.C.
Filed Oct. 21, 1964, Ser. No. 405,487
1 Claim. (Cl. 294—15)

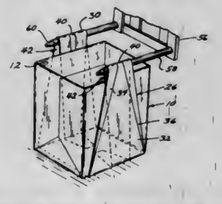
An article of manufacture for use in the process of removing a water-soaked postage stamp from a water bath and transferring same to a dry surface which com-

prises a handle portion, and a pickup portion connected to said handle portion, said pickup portion including an orifice and a pickup surface, said pickup surface substantially surrounding said orifice and being coplanar with a horizontal plane which is disposed substantially perpendicularly to an axis of said orifice extending therethrough, said pickup portion being substantially oval when viewed in a plane perpendicular to the axis of said orifice, the



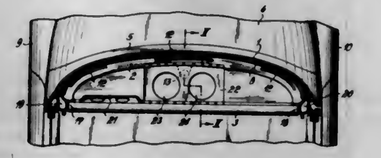
area of said pickup surface being of sufficient amount whereby adherence of a stamp thereto is sufficient to permit the removal of a stamp in a wet condition from said water and insufficient to disengage a stamp in a wet condition from said dry surface, the stamp engageable parts of said pickup portion other than said pickup surface being rounded and without projections or edges capable of injuring a stamp in the normal process of removing same from said water bath.

3,282,621
COMBINATION LIFTING PALLET AND COLLAPSIBLE STORAGE AND SHIPPING CONTAINER
Thomas G. Peterson, 1614 SW. Evans, Des Moines, Iowa
Filed Dec. 26, 1963, Ser. No. 333,761
8 Claims. (Cl. 294—67)



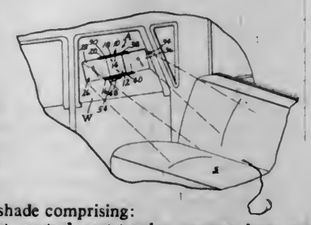
1. In a storage and shipping container,
a first sheet means of continuous unitary construction,
said sheet means including top, bottom and two end edge portions,
said end edge portions being secured together in overlapping condition,
said bottom portion being folded upon itself to form a container bottom,
a second sheet means of continuous unitary construction,
said second sheet means including a center portion and two end portions,
the center portion of said second sheet being positioned underneath said container bottom,
the end portions of said second sheet means being folded upon themselves to form loop portions,
said loop portions being secured to said first sheet means,
a recessed passageway between the container bottom and the center portion of said second sheet means, said container bottom and said center portion of said second sheet means having registering discharge openings,
and a baffle element removably extending into said passageway.

3,282,622
INSTRUMENT PANEL FOR VEHICLES
Erwin Komenda, Stuttgart, Germany, assignor to Firma Dr. Ing. h.c.F. Porsche K.G., Stuttgart-Zuffenhausen, Germany
Filed June 1, 1964, Ser. No. 371,611
Claims priority, application Germany, June 27, 1963, P 32,087
2 Claims. (Cl. 296—70)



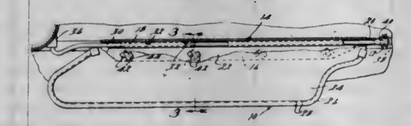
1. In a vehicle, especially in a motor vehicle having a windshield curved in a transverse plane, an instrument panel arranged below the windshield and composed of several parts, comprising:
a pressed-out means extending generally horizontally along the windshield and provided with apertures in proximity to the windshield,
approximately rectilinearly and vertically extending wall means connected at the ends thereof with said pressed-out means,
and cover means bridging the two parts consisting of the first pressed-out means and the wall means,
said cover means including a pre-shaped part provided with elastic protective padding means, said padding means including padded bulge means within the area of the wall means,
said cover means being provided with a channel-shaped recess between the windshield pane and the padded bulge means and serving as storage space,
and strip means delimiting the channel-shaped recess against the windshield, said strip means extending within the area of the apertures of the pressed-out means and being provided with slots cooperating with said apertures.

3,282,623
EXTENSIBLE SUN VISOR
Fern T. Paro, 59 Davis Drive, Silver Bay, Minn.
Filed Sept. 21, 1964, Ser. No. 397,778
2 Claims. (Cl. 296—97)



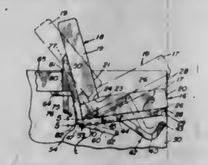
1. A sunshade comprising:
(a) a flat central rectangular opaque base member having
(b) a first flange extending along one edge thereof at a right angle thereto and
(c) a second flange extending at a right angle from said base along an edge opposite said first flange,
(d) each of said first and second flanges having parallely disposed first and second slots formed therein,
(e) a first flat opaque extension member having
(f) a tab member extending from each of two opposed edges thereof and extending through said first slot of said first and second flanges,
(g) a second flat opaque extension member having
(h) a tab member extending from each of two opposed edges thereof and extending through said second slot of said first and second flanges,
(i) a hanger member having a pivotal connection with said central base member, and
(j) means for mounting said hanger member on a support.

3,282,624
VISOR CONSTRUCTION
Ralph G. Doerfling, Walled Lake, Mich., assignor to Detroit Gasket and Manufacturing Company, New York, N.Y., a corporation of Delaware
Filed July 1, 1964, Ser. No. 379,582
3 Claims. (Cl. 296—97)



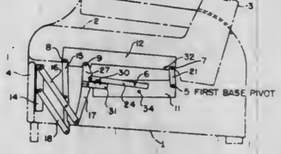
1. A visor assembly comprising a hinge member including a flange, an arcuate portion integrally formed with and extending longitudinally along one edge of said flange for at least a portion of the length thereof, and a tubular section integrally affixed to at least one end of said arcuate portion and extending in longitudinal axial alignment relative to the longitudinal axis of said arcuate portion beyond one of the end edges of said flange, the projecting end of said tubular section integrally formed with an arcuate closure wall, a panel disposed in overlying relationship with one surface of said flange, means integrally formed with said flange for securing said flange to said panel, cover means positioned in overlying relationship over said panel and said flange and said arcuate portion of said hinge member, and means disposed in coacting engagement with said arcuate portion providing for restrained relative pivoting movement of said visor assembly about the longitudinal axis of said arcuate portion.

3,282,625
CONVERTIBLE VEHICLE SEAT AND BED APPARATUS
Reuben R. Logan, 1301 San Mateo SE., Albuquerque, N. Mex.
Filed Oct. 14, 1965, Ser. No. 496,049
6 Claims. (Cl. 297—65)



1. In a convertible seat and bed apparatus for use in vehicles, seat means, brace means secured beneath said seat means and at opposite edges of said seat means, back means having brace means secured to seat means at the outer edges of said back means, said back means adapted to be inclined at an angle to said seat means to constitute a seat, said back means and seat means adapted to be arranged in coplanar relationship to constitute a bed, supporting means including a pair of spaced and vertical supports adapted to be secured to the vehicle adjacent the outer edges of said seat and back means leaving the space beneath said seat and back means substantially unencumbered, linkages means pivotally secured between the respective brace means and to said support means, and stop means to lock said seat and back means in the respective seat and bed orientations, said linkage means comprising: cantilever support arms pivotally mounted on the respective supports and pinned to said brace means on said seat means, said cantilever support arms engageable with said stop means when said seat means and back means are in a bed orientation to prevent further forward rotation of said seat means, traveling arm means secured to said brace means of said back means and pivotally mounted on the respective supports, said traveling arm means supporting said back means when in a bed position against downward forces thereon, traveling tie means pinned between the respective brace means of said seat means and back means, said traveling tie means having a generally right angle curvature to support said seat and cushion means when inclined to one another when in the seat orientation, and back support arms secured to the rearward and upper portions of said brace means for said back means, said back support arms being pivotally mounted on said supports and movable into a generally vertical relationship when said back means is in its seat orientation to support said back means against downward forces, and each of said respective brace means having portions thereon for interlocking engagement with one another.

3,282,626
TV RECLINER
Edward L. Hampton, Louisville, Ky., assignor, by mesne assignments, to American Metal Products Company, Detroit, Mich., a corporation of Michigan
Filed Nov. 25, 1964, Ser. No. 413,694
12 Claims. (Cl. 297—89)



11. A mechanism for a reclining chair responsive to the movement of the individual sitting in said chair having an upright, an intermediate-reclined T.V. position, and a fully reclined position comprising:
(A) a base frame member having front and rear base pivot points,
(B) a seat frame member having front and rear seat member pivots,
(C) seat member support linkage including:
(1) a rear support link pivoted at one end at said rear base pivot and at its other end at said rear seat member pivot,
(2) front support linkage having:
(a) a first front support link pivoted at one end at said front seat pivot, and
(b) a second front support link for controlling said first front support link pivoted at one end at said front base pivot point to said base and at its other end to the other end of said first front support link at a point spaced substantially forwardly from said front base pivot point when said seat member is in said upright position,
(D) means for defining a rearward limit to the rotation of said rear support link about said rear base pivot when said seat member moves from said upright to said intermediate-reclined position with respect to said base member,

(E) means for limiting said rotation of said seat member about said rear seat pivot when said seat rotates from said intermediate-reclined to said fully-reclined position with respect to said base member,

(F) a legrest support frame member normally disposed with one end lower than the other, and being positioned forwardly of said seat member and forming an angle therewith,

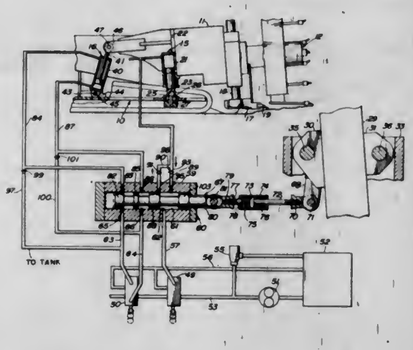
(G) means including a link member rigidly connected to said first front support link for forming with said first front support link a legrest control link,

(H) means for operably coupling said legrest member to said legrest control link for increasing the distance of said legrest member from said seat and simultaneously increasing said angle toward 180° by means of the rotary movement of said legrest control link in a first direction about said seat.

3,282,627
HYDRAULIC TILT LIMITING CONTROL FOR CONTINUOUS MINER

Charles J. Arndt, Harvey, Ill., assignor to Goodman Manufacturing Company, Chicago, Ill., a corporation of Illinois

Filed Dec. 26, 1963, Ser. No. 333,302
6 Claims. (Cl. 299—1)



1. In a continuous mining machine,

a main frame,

a cutter frame structure mounted on said main frame and having a rotary cutting assembly at its forward end,

fluid pressure operated means elevating said cutter frame structure and rotary cutting assembly to mine at different working heights relative to said main frame,

other fluid pressure operated means operable to tilt said cutter frame structure and rotary cutting assembly at each working height of said rotary cutting assembly about an axis extending transversely of said main frame,

valve means and fluid pressure lines connected between said valve means and said fluid pressure operated means for elevating and tilting said cutter frame structure,

angle sensing means carried by one frame and actuated by tilting movement of the other frame, sensing the angle of tilt of said cutter frame structure,

and a shut off valve operably connected to said angle sensing means and connected with said fluid pressure lines to shut off tilting pressures tending to increase the degree of tilt beyond a predetermined range.

3,282,628
ADJUSTABLE BORING HEAD FOR CONTINUOUS MINER

Charles J. Arndt, Harvey, Ill., assignor to Goodman Manufacturing Company, Chicago, Ill., a corporation of Illinois

Filed Dec. 26, 1963, Ser. No. 333,432
1 Claim. (Cl. 299—80)



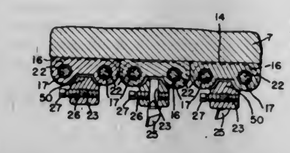
In a continuous mining machine, a mobile main frame, a cutter frame mounted on said main frame for vertical adjustable movement with respect thereto, a rotary boring arm supported on said cutter frame and extending in advance thereof and rotatably driven about an axis extending longitudinally of said main frame, said rotary boring arm including a rotatably driven shaft, a radial arm extending radially of said shaft, a telescopic arm telescopically movable with respect to said radial arm to effect adjustment of the cutting diameter of said boring head, a cutter support on the outer end of said telescopic arm and extending forwardly therefrom and being formed on an arc in end view, conforming to the arc of rotation of said cutter support in a mean position of adjustment of said cutter support, and struck from an axis extending through the center of rotation of said boring head and along said radial arm, and spaced from the center of rotation of said boring head a distance equal to the vertical adjustable movement of the axis of said boring head required to position said cutter support to cut tangentially of the ground, a plurality of circumferentially spaced cutter blocks mounted on said cutter support and conforming generally to the arc of travel of said cutter support and having cutter bits mounted thereon and projecting forwardly therefrom at the same cutting gauge, said cutter blocks being positioned to extend angularly of said cutter support to each side of the center of said cutter support and to extend in generally centered relation with respect to said cutter support and each cutter block having bit holding means accessible from an end of the cutter block, said cutter blocks being spaced sufficient distances apart to afford access to said bit holding means and supporting said cutter bits at the same cutting depth to cut in non-repetitive cutting patterns with all bits of like cutting positions cutting at the same cutting diameter in all positions of adjustment of said boring head.

3,282,629
TOOL AND SUPPORT THEREFOR

Lester G. Rollins, 936 Liberty St., Franklin, Pa.

Filed Aug. 5, 1965, Ser. No. 479,691
12 Claims. (Cl. 299—85)

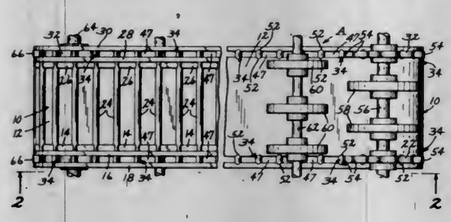
1. A mining machine comprising, a rotatable boring head, said head having a plurality of mounting blocks secured thereto, each of said mounting blocks having at least one hole extending therethrough, tool holding blocks mounted on said mounting blocks respectively, at least one tool secured in each of said tool holding blocks, each of said tool holding blocks having at least one hole therein, said tool holding block holes being aligned with said holes of said mounting blocks respectively, said holes of said mounting block being larger in cross section than the cross section of said holes of said tool holding blocks, securing means extending through said aligned holes respectively for retaining said tool holding blocks on said mounting blocks in spaced relationship therewith for providing a chattering action of said tool holding blocks on said mounting blocks, and said securing means providing a clearance space and a frictional fit between said securing means and said holes of said mounting blocks and tool holding blocks respectively.



3,282,630
ENDLESS TRACK FOR POWERED VEHICLES

Richard E. Harrison, 29 3rd St. NE., and Glen E. Gutzman, 8 3rd Ave. SW., both of Crosby, Minn.

Filed Nov. 20, 1964, Ser. No. 412,684
4 Claims. (Cl. 305—38)



1. In an endless track for powered vehicles having spaced chains each comprising interconnected links each formed with an outer side portion and an inner plate like base, lip portions extending across said side portion and base at one end thereof and constituting a bearing having a longitudinal slot therein, a lip portion extending across said side portion and base at the other end of said side portion and base adapted to enter the bearing of an adjacent link and serving as a journal, the combination of:

(a) an endless sheet-like flexible body member,

(b) said chains being disposed at the marginal portions of said body member,

(c) outer ridge portions at the outer edges of said chains and in which the outer side portions and the outer ends of the bearings of the links are imbedded,

(d) inner ridge portions at the inner edges of said chains and in which the inner ends of the bearings and the inner portions of said plate like bases are imbedded,

(e) said inner ridge portions being integral with said body member,

(f) shoulder portions extending along said inner ridge portions and integral therewith and in which the remainders of the bases are imbedded and,

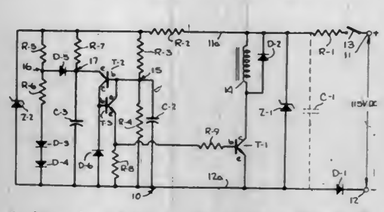
(g) cleats extending across said body member on the outer surface thereof and integral therewith,

(h) said cleats being integral with said shoulder portions.

3,282,631
TIME DELAY CIRCUITS

Waclaw Mosinski, Freeport, N.Y., assignor to Allied Control Company, Inc., New York, N.Y., a corporation of New York

Filed Dec. 30, 1963, Ser. No. 334,428
20 Claims. (Cl. 307—88.5)

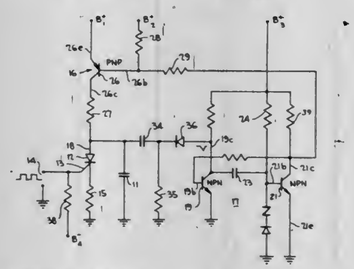


1. In a time delay circuit having incorporated therein "on-off" switch means operable to connect a source of energizing voltage to and disconnect the same from the circuit, and a time delay-determining R–C type charging circuit arranged to be energized by closing of said switch means and to provide, upon discharge, a current flow utilizable for energizing a load; the improvement comprising means connected with said charging circuit and operable upon closing of said switch means to enable an initial relatively rapid charging of the capacitor of said charging circuit to a first value and an immediately subsequent relatively slow charging of said capacitor from said first value to a second and higher value, means constituting a part of a discharge current circuit for said capacitor and responsive to the rise of the charge on said capacitor to said second value for initiating the discharge of said capacitor to a third value less than said first value but still greater than zero, and means responsive to the decrease of the charge on said capacitor to said third value for maintaining the current flow in said discharge circuit for the entire period during which said switch means is closed.

3,282,632
CAPACITOR FIRING CIRCUIT WITH AUTOMATIC RESET

Collins Arsem, Bethesda, Md., assignor to the United States of America as represented by the Secretary of the Army

Filed June 26, 1964, Ser. No. 378,475
2 Claims. (Cl. 307—88.5)



1. In apparatus having:

(a) a firing capacitor,

(b) a source of charging potential,

(c) means for charging said capacitor from said source,

(d) a silicon-controlled rectifier and a load resistor connected in series across said capacitor, and

(e) means for applying a firing pulse to said silicon-controlled rectifier and for thereby discharging said capacitor through said load,

an improvement for automatically resetting said apparatus after said capacitor has discharged in response to a firing pulse, said improvement comprising:

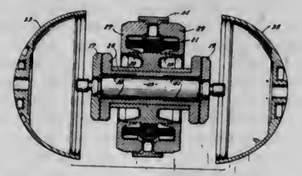
(f) a transistor switch having two switching terminals and a control terminal, said switching terminals connected in series between said source of charging potential and said capacitor, said switch being normally conducting,

(g) means for deriving a fixed-duration pulse from the discharge of said firing capacitor, and

(h) means for applying said fixed-duration pulse to said control terminal of said transistor switch to stop conduction therethrough for the duration of said fixed-duration pulse,

(i) whereby the apparatus is automatically reset after each discharge of said capacitor.

3,282,633
DYNAMICALLY STABLE GAS SPIN BEARING
Donald E. Moors, Los Angeles, Calif., assignor to Litton Systems, Inc., Beverly Hills, Calif.
Filed Aug. 7, 1961, Ser. No. 129,851
4 Claims. (Cl. 308—9)



1. A dynamically stable gas spin bearing, comprising:

a first journal member having a first axially extended cylindrical surface and a second bearing member having a second axially extended cylindrical surface said second surface being positioned in registry with said first surface to form an aperture between said first and second surfaces, one of said first and second members being rotatable with respect to the other;

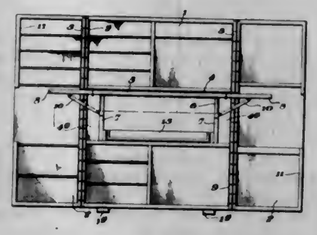
a gas pervading the aperture between said first and second surfaces;

means responsive to relative rotation of said first and second members for supporting said first and second members apart on a pressurized layer of said gas, said means including apparatus responsive to the relative rotation for developing an axially increasing pressure of said gas from a predetermined first region of said aperture to an axially remote second region of said aperture, said apparatus comprising a plurality of spiral grooves established in one of said cylindrical surfaces and generally extending between said first and second regions and responsive to the relative rotation for pressurizing said gas toward said second region,

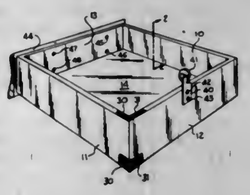
said apparatus further including means for substantially preventing outflow, from said second region of said aperture, of gas pressurized toward said second region by said spiral grooves.

3,282,634
ARTICLE OF FURNITURE HAVING A DRAW-LEAF PLATFORM
Maurice Marcus, 87–95 Hertford Road, London, England
Filed Apr. 14, 1965, Ser. No. 448,113
1 Claim. (Cl. 312—199)

A combined desk and cabinet comprising an open-front carcase section having a back, side walls, a top and a bottom, said carcase section having compartments including a desk-housing compartment which extends from one to the other of said side walls, said desk-housing compartment having a floor, compartmental side wings attached to the side walls of said carcase section by hinges situated at the front of said side walls, inner walls standing up from the floor of said desk-housing compartment of the carcase section, said inner walls being spaced from the respective adjacent side walls of said carcase section, a desk platform mounted in said desk-housing compartment, said desk platform comprising a main platform section and drop-down extension flaps carried by said main platform section at the respective ends thereof, runners unitary with and situated beneath said main platform section, said runners being slidable on said inner walls of the desk-housing compartment to allow the desk platform to be drawn out at the front of said carcase section, and foldable support stays arranged to support said drop-down flaps from said runners, said drop-down flaps extending in front of the said side wings when said flaps are raised after drawing out said desk platform, said flaps, when lowered, being accommodated in the spaces between the said inner walls of the desk-housing compartment and the respective adjacent side walls of said carcase section when said desk platform is slid back into said desk-housing compartment.

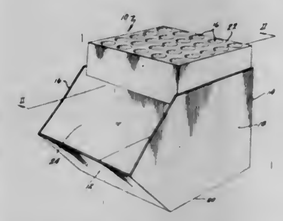


3,282,635
HOLLOW-WALL DRAWER
Louis E. Himelreich, Louisville, Ky., assignor to H. J. Scheirich Company, Louisville, Ky., a corporation of Kentucky
Filed July 23, 1965, Ser. No. 474,264
5 Claims. (Cl. 312—214)



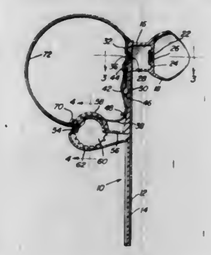
1. A drawer comprising a pair of hollow side members, a hollow back member, and a hollow front member; each of said members having a uniform transverse cross-section and having ends formed to abut against complementary ends of adjacent members and to provide right-angle corners for the drawer, means for holding the abutting ends of said members in engagement with each other at said corners, said cross-section of said members including an inner wall portion, an outer wall portion, a top portion and a bottom portion, said top and bottom portions joining the respective inner and outer wall portions adjacent the upper and lower edges of the wall portions, an upper web joining said wall portions beneath said top portion and forming an upper space within said members, a lower web joining said wall portions above said bottom portion and forming a lower space within said members, a recess in said inner wall portion facing the interior of said drawer and employing a part of the upper surface of said lower web as the lower face of said recess, and a floor member having its peripheral edge engaged within said recess and contacting the confronting surfaces of said recess.

3,282,636
AMMUNITION SHELL HOLDER
Preston D. Rigterink, 1656 Wolverins St., Holland, Mich.
Filed Sept. 28, 1964, Ser. No. 399,578
4 Claims. (Cl. 312—280)



1. A firearm accessory for holding cartridges, comprising: an enclosure having interjoined side, top, and bottom portions forming a cartridge receiving space under said top portion; a plurality of upright spaced chambers formed in said top portion above said space for holding armed cartridges in fixed spaced relation relative to each other, said chambers each being of a predetermined size determined by the size of cartridges to be held thereby; the horizontal cross-sectional width of said chambers in all directions being slightly greater than the diameter of said cartridges and the depth of said chambers being less than the length of said cartridges to allow the same to protrude upwardly from said top whereby said cartridges can be readily inserted and withdrawn therefrom; and an access opening formed in at least one of said portions for admitting spent cartridges into said space, said access opening being located directly adjacent said top portion, whereby empty cartridges may be deposited therein with the same motion necessary for reaching toward said top portion to select live cartridges therefrom.

3,282,637
FILM VIEWER
Henry H. Lemonjian, 8904 65th Drive, Rego Park, N.Y.
Filed May 1, 1964, Ser. No. 364,086
3 Claims. (Cl. 352—129)

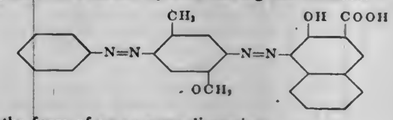


1. A film viewer comprising an elongated handle having a laterally extending eyepiece on one end thereof for positioning in adjacent relation to the eye of a viewer for enabling the eyepiece to be manually held in place, said eyepiece including a viewing lens incorporated therein, guide means on the handle for guiding a film strip past the lens, said handle including aperture means incorporated therein in alignment with the viewing lens for enabling the film strip to be observed by holding the eyepiece adjacent the eye and aiming the lens toward a source of light, means attached to said handle for advancing said film strip, and arcuate guide means for guiding the film strip from the handle to the strip advancing means, said means for advancing the film strip including a drive wheel having a plurality of projections thereon for engaging holes disposed along the side edge of the film strip, a convex guide surface for the film strip, said wheel being disposed under said convex surface and projecting through an arcuate slot therein so that the projections on the drive wheel may engage the holes in the film strip.

CHEMICAL

3,282,638
DISAZO DISPERSE DYESTUFF
Eiji Koike and Fujio Kanazawa, Toyonaka-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan and Toyo Spinning Co., Ltd., Osaka, Japan, both corporations of Japan
No Drawing. Original application Aug. 16, 1963, Ser. No. 302,734, now Patent No. 3,214,424, dated Oct. 26, 1965. Divided and this application Mar. 10, 1965, Ser. No. 438,766
Claims priority, application Japan, Sept. 24, 1962, 37/41,814
2 Claims. (Cl. 8—41)

1. A method for dyeing fibers, films and the like articles containing polyolefines, characterized by applying thereto a disazo dyestuff having the formula:



in the form of an aqueous dispersion.

3,282,639
PROCESS FOR PREVENTING YELLOWING OF MOIST RAW WOOL THROUGH TREATMENT WITH FORMALDEHYDE
Harold P. Lundgren, Berkeley, and Clay E. Pardo, Jr., Albany, Calif., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Apr. 8, 1963, Ser. No. 271,524
3 Claims. (Cl. 8—127.6)

1. In the process wherein sheep are sheared at a time when their fleece is damp, the individual damp fleeces are folded into bundles, the bundles of fleece are packed into an assembly which is substantially impervious to diffusion of moisture, and said assembly is shipped and stored, the improvement which comprises distributing on the fleeces prior to folding, an agent selected from the group consisting of formaldehyde, trioxymethylene, and paraformaldehyde in an amount about from 0.1% to 2% by weight based on the weight of fleece.

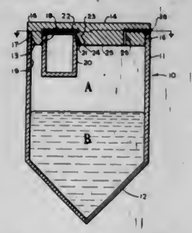
2. A process for preventing the yellowing of raw wool when stored in a damp condition which comprises distributing on the damp raw wool an agent selected from the group consisting of formaldehyde, trioxymethylene,

and paraformaldehyde in an amount about from 0.1% to 2% by weight based on the weight of raw wool and storing said treated raw wool in its original damp condition.

3,282,640
ISOCYANATE AND β-PROPIOLACTONE TREATMENT OF WOOL
Nathan H. Koenig, Berkeley, and Rosa A. Crass, Oakland, Calif., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Aug. 2, 1963, Ser. No. 299,674
8 Claims. (Cl. 8—128)

1. A process for chemically modifying wool which comprises reacting wool under anhydrous conditions with a mixture containing 5 to 95% by weight of β-propiolactone and 95 to 5% by weight of an organic isocyanate selected from the group consisting of aliphatic, aromatic, and aromatic-aliphatic isocyanates.

3,282,641
SCAVENGER AND PROCESS FOR PURIFICATION OF METAL FLUORIDES
Marko Sâligoj, South Euclid, and Carl F. Swinehart, University Heights, Ohio, assignors to The Harshaw Chemical Company, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 9, 1963, Ser. No. 314,953
6 Claims. (Cl. 23—88)



1. A method of preparing purified crystals from a member of the group consisting of alkaline earth metal, rare earth metal, and magnesium fluorides and mixtures thereof, initially containing a small amount of an impurity normally associated therewith, which comprises:

heating said member at reduced pressure to a temperature and for a period of time sufficient to provide a molten mass and an associated vapor phase formed from said member;

contacting said member in said vapor phase with a scavenger also in the vapor phase, said scavenger being selected from a group consisting of manganese trifluoride, cobalt trifluoride, and mixtures thereof;

slowly moving the molten mass at a controlled rate from a region hotter than its solidification temperature to a region cooler than said temperature and maintaining a temperature gradient between said regions near the boundary of said mass;

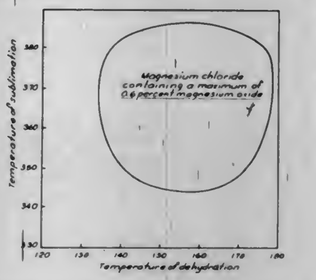
thereby crystallizing said member free from said impurity and in a substantially colorless condition.

3,282,642
PREPARATION OF ANHYDROUS MAGNESIUM CHLORIDE FROM HYDROUS AMMONIUM CARNALLITE
Robert D. Goodenough and Remigius A. Gaska, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Nov. 4, 1963, Ser. No. 320,994

1. The method for preparing substantially anhydrous magnesium chloride from hydrated ammonium carnallite type compounds which is comprised of:

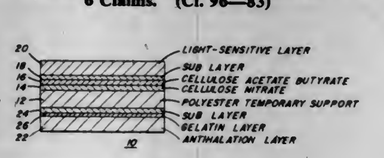
(a) heating in a reactor a hydrated ammonium carnallite compound to a temperature within the range of from about 135° to about 178° C. until all the water of hydration is substantially removed therefrom;

(b) heating the so-dehydrated composition to a temperature within the range of from about 345° to about 385° C. until all the ammonium chloride is substantially sublimed and



(c) blowing an inert sweep gas containing not more than 10 p.p.m. of water through said reactor during and after said sublimation step.

3,282,643
PHOTOGRAPHIC STRIPPING FILM
Carl F. Smith, Clemens B. Starck, and Gale F. Nadeau, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed June 11, 1962, Ser. No. 201,566
6 Claims. (Cl. 96—83)



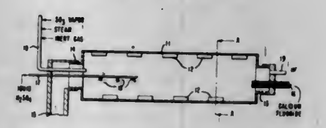
1. A photographic stripping film comprised of

(A) a high molecular weight linear polyester temporary support,

(B) a permanent support comprised of a layer comprised of cellulose nitrate, said layer comprised of cellulose nitrate being contiguous with a surface of the temporary support, and

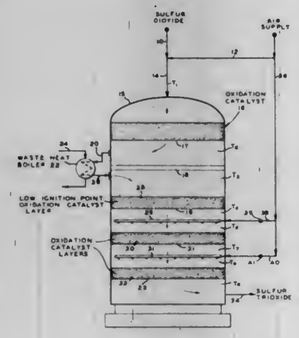
(C) a light-sensitive gelatino-silver halide layer on the permanent support.

3,282,644
PROCESS FOR THE MANUFACTURE OF HYDROGEN FLUORIDE
Charles C. Quarles, Baytown, Tex., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Feb. 15, 1965, Ser. No. 432,523
2 Claims. (Cl. 23—153)



1. In a process for producing hydrogen fluoride from calcium fluoride wherein solid particles of said fluoride having a partial size "not less than 75% through 100 mesh" are contacted with a gas-containing sulfur trioxide vapor, water vapor, and sulfuric acid vapor in a closed reactor at conditions whereby sulfuric acid condenses on said solid particles and the heat liberated thereby supplies the endothermic heat required to react the condensed acid with the fluoride of said solid particles, the improvement comprising supplying an amount of energy input to said solid particles throughout its reaction with sulfuric acid in excess of 4000 ft. lbs./lb. of feed.

3,282,645
CONVERSION OF SULFUR DIOXIDE WITH LOW IGNITION CATALYSTS
Bernard G. Mandelik, Pleasantville, N.Y., assignor to Pullman Incorporated, a corporation of Delaware
Filed Aug. 5, 1963, Ser. No. 299,844
7 Claims. (Cl. 23—176)

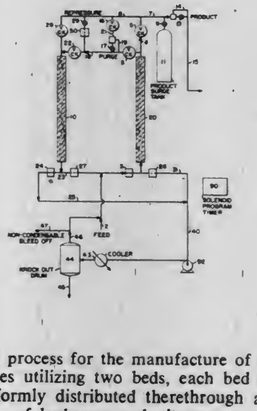


1. A method of converting sulfur dioxide to sulfur trioxide which comprises passing a gaseous mixture comprising sulfur dioxide and oxygen at an elevated temperature between about 750 and about 850° F. on contact with a first bed of oxidation catalyst to convert a portion of said sulfur dioxide to sulfur trioxide thereby heating such mixture to a superelevated temperature between about 1000 and about 1175° F., passing such mixture in indirect heat exchange with a coolant material to cool said mixture to a subelevated temperature between about 675 and about 750° F., passing such mixture at such subelevated temperature in contact with an oxidation catalyst having an ignition point substantially below the ignition point of the catalyst in said first bed and below about 750° F. to convert a further portion of sulfur dioxide to sulfur trioxide.

3,282,646
PRODUCTION OF SULFUR DIOXIDE
John H. Bonfield, East Aurora, N.Y., and Francis L. Bohn, Chester, Va., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Dec. 3, 1963, Ser. No. 327,799
16 Claims. (Cl. 23—177)

9. A process for the decomposition of ammonium sulfate to obtain therefrom ammonia and sulfur dioxide comprising heating ammonium sulfate at temperatures between 200 and 300° C. until substantially all of the ammonia has evolved therefrom, heating the resultant ammonium bisulfate at temperatures between 400 and 500° C. while contacting said ammonium bisulfate with a stream of gas which does not oxidize inorganic sulfites to inorganic sulfates and which has a flow rate of at least .25 ml./minute per gram ammonium bisulfate present and recovering sulfur dioxide from the gas stream.

3,282,647
PRESSURE CYCLING OPERATION FOR THE MANUFACTURE OF AMMONIA
Charles W. Skarstrom, Montvale, N.J., Richard P. Crowley, Milton, Mass., and William O. Heilman, Short Hills, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Feb. 5, 1964, Ser. No. 344,802
9 Claims. (Cl. 23—199)



4. Improved process for the manufacture of ammonia which comprises utilizing two beds, each bed of which comprises uniformly distributed therethrough a catalyst for the fixation of hydrogen and nitrogen to synthesize ammonia and an adsorbent for the ammonia, each bed of which is also characterized by having a one end and another end, said process comprises the steps of flowing a feed stream of gaseous mixture comprising nitrogen and hydrogen from one end to the other end through a first bed initially relatively free of said ammonia at a preselected initial relatively high pressure and in a positive flow direction in an initial cycle, discharging said gaseous mixture stream from said first bed as a primary effluent, segregating a portion of said primary effluent and passing the same in reverse flow from the other end to the one end through a second bed comprising a catalyst and adsorbent at a relatively low pressure, which adsorbent is relatively saturated with said ammonia as compared to said first bed at the start of said initial cycle, withdrawing the same as a secondary effluent, whereby as said initial cycle continues, said first bed becomes relatively saturated with said ammonia progressively from said one end toward said other end and whereby said second bed becomes relatively freed from said ammonia from said other end toward said one end continuing said initial cycle for a time period less than that required to secure saturation of said first bed at said other end and that required to secure freedom from said ammonia of said second bed at said one end; thereafter introducing said freed stream into said one end of said second bed in positive flow direction at said initial relatively high pressure; discharging said gaseous mixture stream from said other end of said second bed as a primary effluent; segregating a portion of said last named primary effluent and withdrawing the same; passing the remainder of said last named primary effluent in reverse flow from said other end to said one end through said first bed of adsorbent at said relatively low pressure and withdrawing the same as a secondary effluent, and thereafter cyclically continuing the operation.

3,282,648
PROCESS FOR THE PREPARATION OF NICKEL CARBONYL FROM NICKEL CHLORIDE AND CARBON MONOXIDE

Gian Paolo Chiusoli and Giuseppe Mondelli, both of Novara, Italy, assignors to Montecatini Societa Generale per l'Industria Mineraria e Chimica, Milan, Italy, a corporation of Italy

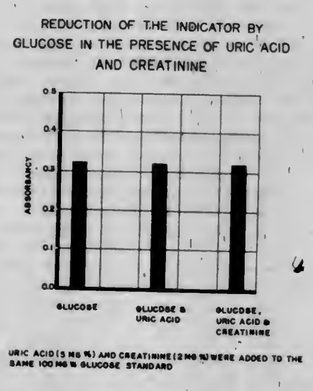
No Drawing. Filed June 20, 1962, Ser. No. 203,704
Claims priority, application Italy, June 23, 1961, 11,603/61
4 Claims. (Cl. 23—203)

1. A process for preparing nickel carbonyl, which comprises reacting, while agitating, iron powder of such fineness as to pass a 16,000 mesh/sq. cm. screen with nickel chloride and carbon monoxide, in a liquid medium selected from the group consisting of water, aqueous methanol, and methanol under correlated temperature and pressure conditions of from 20° C. to 60° C. and from atmospheric pressure to 15 atmospheres, the upper temperatures in the range 20° C. to 60° C. being at 15 atmospheres, and in the presence of from 0.05 to 0.15 mol, per mol of nickel chloride, of at least one sulfurated promoter selected from the group consisting of sodium sulfide, sodium thiosulfate and mixtures of sodium sulfide and sodium thiosulfate, the iron powder being present in the liquid reaction medium in an amount of from about 1.0 to 1.5 mols per mol of nickel chloride.

3,282,649
DETERMINATION OF OXIDIZING AND REDUCING SUBSTANCES

Donald L. Bittner, St. Mary's Hospital, 2200 Hayes St., San Francisco, Calif.

Filed May 4, 1962, Ser. No. 192,564
15 Claims. (Cl. 23—230)



1. A method for the colorimetric quantitative analysis of reducing and oxidizing substances capable of reacting with copper to change the valence state of the copper comprising:

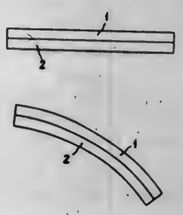
(a) contacting at least one of said substances in liquid phase with an indicator consisting essentially of a preformed chelate of substantially completely bound copper with a member of the group selected from 2,2'-biquinolines and 2,9-substituted-1,10-phenanthrolines under valence changing conditions for said copper;

(b) and then measuring the amount of copper valence change by reference to the light transmittance of said liquid phase, and determining the amount of substance being analyzed by comparing the light transmittance to a standard.

3,282,650
ION INDICATING DEVICE

John Thornton Bannigan, Klemzig, Australia, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Feb. 11, 1963, Ser. No. 257,460
2 Claims. (Cl. 23—253)

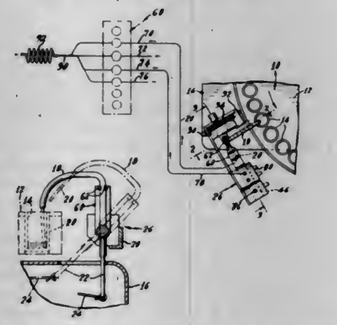


1. An ion sensitive structure comprising a resilient strip one side of which is fixed to a continuous coating of an ion-exchange resin, said ion exchange resin having volume change characteristics dependent on absorption of ions, whereby, when the structure is contacted with an ionized solution, deformation of the device will occur.

3,282,651
SAMPLE AND REAGENT AND/OR WASH LIQUID SUPPLY APPARATUS

Andrés Ferrari, Scarsdale, and Joseph J. Woods, Hawthorne, N.Y., assignors to Technicon Instruments Corporation, Chauncey, N.Y., a corporation of New York

Filed July 12, 1963, Ser. No. 294,587
5 Claims. (Cl. 23—253)

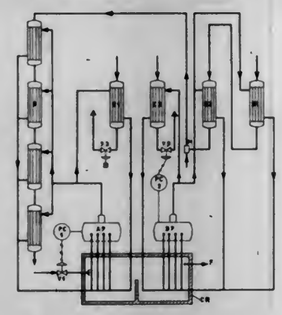


1. Automatic analysis apparatus for analyzing a plurality of liquids comprising: a sampler including a plurality of sample containers each adapted to contain a liquid sample, off-take means having an off-take tube with an inlet end which is adapted to enter a said container, and an outlet end, support means for supporting said sample containers, for sequentially presenting said sample containers to said off-take means and for inserting said inlet end of said off-take tube in a presented sample container; sample treating means including mixing means having an inlet and an outlet, pump means having a plurality of pumping conduits each having an inlet and an outlet respectively, said outlets of said conduits being coupled to said inlet of said mixing means; said outlet end of said off-take tube being coupled to the inlet of one of said pump means conduits, whereby when said inlet end of said off-take tube is disposed within a sample container containing a liquid sample, such sample is off-taken and transmitted to said mixing means; valve means having an inlet for coupling to a source of treating liquid and an outlet coupled to the inlet of another one of said pump means conduits, whereby when said inlet is open to said outlet, treating liquid is transmitted to said mixing means; and actuating means for said valve means coupled to said support means for opening said inlet of said valve means in a predetermined phase relationship with the insertion of said inlet end of said off-take tube into a sample container and for closing said inlet of said valve means in a predetermined phase relationship with the removal of said inlet end of said off-take tube from such a sample container.

3,282,652
APPARATUS FOR PYROLYSIS OF DICHLOROETHANE

Pasquale Barretta, Terni, Italy, assignor to Montecatini Societa Generale per l'Industria Mineraria e Chimica, Milan, Italy

Filed May 15, 1963, Ser. No. 280,751
Claims priority, application Italy, May 17, 1962, 9,827/62
2 Claims. (Cl. 23—262)

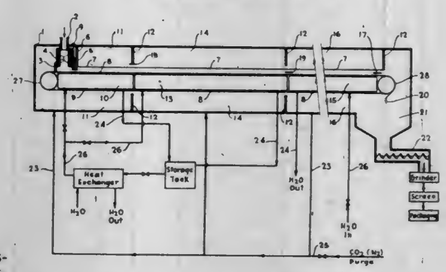


1. Apparatus for pyrolysis of dichloroethane comprising preheaters S_1, S_2 for bringing the dichloroethane vapor to the state of incipient decomposition, a reactor R, wherein pyrolysis occurs, a low temperature boiler BP containing mercury and a high temperature boiler AP containing mercury for producing mercury vapors of respectively different pressures, a combustion chamber CB for heating both said boilers, which is supplied with fuel through a control valve V_1, a stack F through which the combustion gases leave said combustion chamber, air cooled condensers C_1, C_2, conduit means connecting said low-temperature boiler BP with said preheaters S_1, S_2 and conduit means connecting said high temperature boiler AP with said reactors R for transmitting heat from said heating means through the mercury vapors to said preheaters S_1, S_2 and reactors R respectively and said air-cooled condensers C_1, C_2 connected in said respective conduit systems for starting up the respective boilers and for temperature and pressure adjustment achieved by producing in the boilers AP and BP a slight excess of vapor and by conveying said excess to the respective condensers, wherein an air delivery is passed which in the high-pressure condenser is maintained at a constant value, air-admittance control valves V_2, V_3, said air-admittance control valves V_2, V_3, connected with respective condensers C_1, C_2, said heating means having a fuel-supply control valve V_1, a controller PC_1 responsive to the vapor pressure in high-temperature boiler AP and connected to fuel-supply control valve V_1 for controlling the latter whereby, when the air-admittance control valve V_3 for condenser C_1 connected with high-temperature boiler AP is set for producing a slight excess vapor pressure in the high temperature boiler, the fuel supply-control valve V_1 is controlled to regulate the pressure in high-temperature boiler AP, another controller PC_2 connected to the low-temperature boiler BP and responsive to the vapor pressure in said boiler, the controller PC_2 being connected to the air-admittance control valve V_2 for controlling it to regulate the pressure in said low-temperature boiler BP, a mixer M interposed between preheaters S_1, S_2 and reactors R for injecting oxidizing fluid into the preheated dichloroethane vapors prior to their entering into reactors R, said dichloroethane preheaters comprising at least two preheating devices S_1, S_2 connected in sequence, the subsequent device S_2 having a specific delivery of dichloroethane lower than the preceding heating device S_1 and the subsequent device S_2 having preheater tubes containing filler bodies to increase the active surface area for improving thermal exchange and inhibiting premature reactions.

3,282,653
APPARATUS FOR THREE STAGE CONTROLLED COOLING AND SOLIDIFICATION OF PHOSPHOROUS PENTASULFIDE

Stephen Robota, North Tonawanda, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

Filed Feb. 25, 1963, Ser. No. 260,747
4 Claims. (Cl. 23—273)



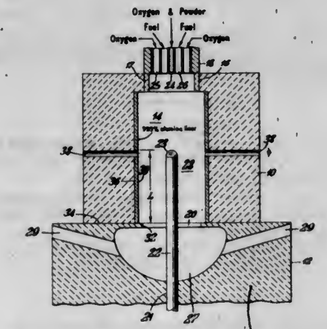
1. An apparatus for cooling molten phosphorus pentasulfide which comprises, in combination, a substantially horizontal outer casing member, a substantially horizontal endless conveyor belt disposed within the casing member, substantially vertical baffle members disposed within the casing member and extending from the outer casing member to a region adjacent the conveyor belt so as to form three separate cooling zones within the casing member, said cooling zones being formed within the casing member so as to effect sequential cooling of phosphorus pentasulfide from the molten state to the solid state as it is passed through the zones, said conveyor belt being positioned so as to transport molten phosphorus pentasulfide deposited thereon sequentially through the three separate cooling zones means for introducing molten phosphorus pentasulfide into the first of the cooling zones and depositing it on the conveyor belt, means for removing solid phosphorus pentasulfide from the last of the cooling zones, separate means for circulating cooling liquid through each of the cooling zones contiguous to and in heat-transfer relation with the conveyor belt, means for sensing the temperature of phosphorus pentasulfide within each cooling zone and means responsive thereto for controlling the rate at which the cooling liquid is circulated in each of said cooling zones respectively, said temperature sensing and control means operating to cool the molten phosphorus pentasulfide to incipient solidification in the first zone, through phase transition in the second zone, and from phase transition to a predetermined temperature below the phase transition temperature in the third zone, and means for introducing a gaseous medium, nonreactive with the phosphorus pentasulfide, into the casing member

so as to form a nonreactive atmosphere in each of the three separate cooling zones.

3,282,654
CRYSTAL GROWING FURNACE WITH AN ALUMINA LINER

Ralph L. Hutcheson, Gary, Ind., assignor to Union Carbide Corporation, a corporation of New York

Filed May 18, 1964, Ser. No. 368,149
11 Claims. (Cl. 23—273)



1. Apparatus for growing unicrystalline bodies comprising a furnace composed of low purity alumina and having a chamber, a first opening into said chamber, a second opening into said chamber, means for extending a support with a crystal seed thereon through said first opening into said chamber to a crystal growing zone therein, burner means in said second opening with a discharge nozzle discharging into said furnace chamber for directing flames and crystal constituent material into said chamber to impinge upon said crystal seed for crystal growth thereon, and a thermal shock resistant, noncontaminating liner consisting of at least 99.9 percent purity alumina disposed in said chamber laterally surrounding substantially all of the crystal growing zone.

3,282,655
PRODUCTION OF ^{131}I

Forrest N. Case and Elick H. Acree, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Feb. 18, 1966, Ser. No. 530,252
6 Claims. (Cl. 23—324)

1. A method for preparing ^{131}I from an irradiated target material containing same, comprising the steps of dissolving said target material in a caustic solution, filtering said resulting caustic solution to remove formed solids, acidifying the resulting filtrate with sulfuric acid while sparging said filtrate with an oxygen-containing gas and thereafter recovering said ^{131}I in purified form.

4. The method of claim 1 wherein said oxygen-containing gas is ambient air.

3,282,656
PREPARATION OF PLUTONIUM MONOSULFIDE AND PLUTONIUM MONOPHOSPHIDE

Owen L. Kruger, Westmont, John B. Moser, Evanston, and Bernard J. Wrona, Joliet, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Mar. 26, 1965, Ser. No. 443,115
3 Claims. (Cl. 23—344)

1. A process of preparing a plutonium compound selected from the group consisting of plutonium monosulphide and plutonium monophosphide comprising reacting plutonium metal with hydrogen at up to 200° C. whereby a plutonium-hydride-containing product is formed; cooling the reaction product; pulverizing the reaction product; heating the reaction product to about 400° C. under reduced pressure whereby partial dehydriding takes place; contacting the partially dehydrided product at about 400° C. with a reactant selected from the group consisting of hydrogen sulfide and phosphine; subjecting the product to at least two more dehydriding-reaction cycles, each subsequent cycle being carried out at a higher temperature than the preceding one, and vacuum heating the product at between 1400 and 1600° C. for homogenization.

3,282,657
CLIP FOR STRADDLING AND GRIPPING A SUPPORTING FLANGE AND BLANK THEREFOR

Robert Granville Bright, Leamington Spa, England, assignor to Bright Manufacturing Company Limited, Coventry, England

Filed May 8, 1963, Ser. No. 278,858
Claims priority, application Great Britain, Feb. 13, 1963, 5,870/63
13 Claims. (Cl. 29—183.5)

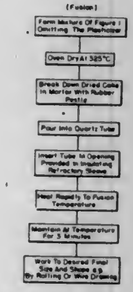


1. A clip for straddling and gripping a supporting flange, said clip comprising a series of juxtaposed inverted substantially U-shaped ribs, connector portions integral with said ribs retaining the latter in spaced relationship, said connector portions being situated adjacent to the longitudinal axis of the clip about which bending movement of the clip will take place, said longitudinal axis being substantially midway of the depth of the clip.

3,282,658
FIBER REINFORCED METALS CONTAINING BOND PROMOTING COMPONENTS

Eugene Wainer, Shaker Heights, Ohio (2905 E. 79th St., Cleveland, Ohio)

Original application July 20, 1962, Ser. No. 211,284, now Patent No. 3,218,697, dated Nov. 23, 1965. Divided and this application July 26, 1965, Ser. No. 485,139
3 Claims. (Cl. 29—183.5)

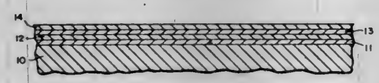


1. A composite consisting of a nickel chromium alloy metal matrix containing between 1.5% and 20% by weight, based on the weight of the metal matrix, of sapphire alpha alumina fibers distributed throughout said metal matrix, said fibers having lengths between about 0.0625 and 0.5 inch and diameters between about 0.5 and 7 microns, and, as material promoting a bond between said fibers and said metal matrix at least one alkaline earth compound; there being present an amount of alkaline earth metal corresponding to from 3.5 to 6.5 parts by weight of calcium, on a weight basis, per 100 parts of alumina fiber on a weight basis and there being present at the surfaces of said metal exposed to said alumina an amount of chromium corresponding to between 0.1 and 1% by weight of the fibers.

3,282,659
PLATED ZINC BASE ARTICLES AND METHOD OF MAKING

Robert E. Harrover, Jr., Baltimore, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 24, 1965, Ser. No. 490,760
14 Claims. (Cl. 29—183.5)

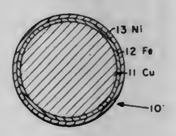


1. An article fabricated from a metal selected from the group consisting of zinc and zinc alloys being plated with an electrodeposited protective decorative coating of respective layers of (1) a barrier metal selected from the group consisting of nickel and iron, (2) copper up to about 0.005 inch thick, (3) nickel up to about 0.005 inch thick and (4) chromium up to about 0.0001 inch thick.

3,282,660
HIGH-TEMPERATURE ELECTRICAL CONDUCTOR AND METHOD OF MAKING

Wesley W. Pendleton and Richard D. Cornell, Muskegon, Mich., and Harry L. Saums, Seal Beach, Calif., assignors to Anaconda Wire and Cable Company, a corporation of Delaware

Filed Mar. 26, 1964, Ser. No. 354,885
4 Claims. (Cl. 29—193)



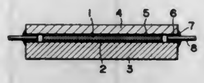
1. A wire having high electrical conductivity comprising a copper core, a barrier layer of commercially pure iron directly covering said core, and an outermost metal layer consisting of nickel, directly covering said layer of iron.

3,282,661
COMPOSITE METALLIC PLATES OF TITANIUM AND DISSIMILAR MOTHER METALS

Masayoshi Kawai, Kiyohiko Kizuki, Hideo Hara, Hachiro Kobayakawa, and Kameichi Shimizu, Nagasaki, Japan, assignors to Mitsubishi Seiko Kabushiki-Kaisha, Tokyo, Japan, a Japanese company

Filed Aug. 10, 1964, Ser. No. 389,822
Claims priority, application Japan, Mar. 29, 1962, 37/12,387, 37/12,388
5 Claims. (Cl. 29—196)

2. A composite metal plate comprising an iron alloy mother plate and a veneer of titanium bonded to at least one face of said mother plate, said iron alloy mother plate consisting essentially of iron and an alloying metal taken from the group consisting of 0.3 to 10.0% by weight of molybdenum, 0.3 to 10.0% by weight of vanadium,



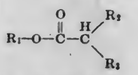
0.3 to 10.0% by weight of niobium, from 0.3 to 6.0% by weight of zirconium, and from 0.3 to 10.0% by weight of tungsten.

3,282,662
ORGANIC CO-ANTIKNOCK AGENTS

Hubert T. Henderson, Walnut Creek, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 22, 1961, Ser. No. 97,451
12 Claims. (Cl. 44—69)

1. Gasoline for use in spark ignition internal combustion engines consisting essentially of a hydrocarbon base fuel, an octane number improving amount of a tetraalkyllead antiknock agent and an octane number improving amount but not more than 2.0% of the fuel of a gasoline soluble co-antiknock agent composed solely of carbon, hydrogen and oxygen having the structural formula:



wherein R_1 is selected from the group consisting of alpha-unsaturated alkenyl radicals containing up to 8 carbon atoms and cycloalkyl radicals having up to 10 carbon atoms and R_2 and R_3 are selected from the group consisting of hydrogen atoms, and alkyl and alkenyl radicals containing up to 8 carbon atoms.

3,282,663
BICYCLOHEPTADIENE OLIGOMERS

Ernst W. Muller, St. Augustin, Hermann Beecken, Bonn, and Friedrich W. A. G. K. Korte, Hangelar, Germany, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 21, 1965, Ser. No. 457,787
Claims priority, application Germany, Aug. 30, 1962, S 81,199
7 Claims. (Cl. 44—80)

1. A composition useful as a high energy fuel comprising a low-melting mixture of bicycloheptadiene dimers, said mixture having at least 40% by weight of hexacyclo-$(7.2.1.0^{2,8}.1^{3,7}.1^{5,13}.0^{4,6})$tetradec-10-ene.

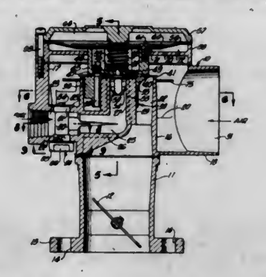
3,282,664
FUEL MIXER

Richard Baverstock, North Long Beach, Calif., assignor to Imperial Machine Products Co., South Gate, Calif., a corporation of California

Filed Aug. 1, 1963, Ser. No. 299,297
4 Claims. (Cl. 48—184)

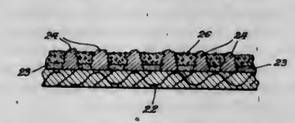
1. In an air-fuel mixer device, the combination of: a housing having concentric inner and outer walls defining a space therebetween, the inner wall defining an axial discharge passage centrally therein, a distributor ring secured on said inner wall and extending radially into said space to divide it into a first chamber and a second chamber, the outer wall having a lateral air inlet pipe positioned to deliver air primarily into said second chamber, the inner wall having a seat at one end in communication with said first chamber and positioned to receive air flowing radially inward from said first chamber, said distributor ring serving to minimize vortex action of air entering

through said seat, an air valve member mounted for axial movement in the housing toward and away from the seat, a fuel valve element fixed concentrically within the air valve member and movable as a unit therewith, a fuel



supply conduit having an axial opening cooperating with said fuel valve element to control flow of fuel into said discharge passage, and means for axially moving the air valve member and the fuel valve element.

3,282,665
COMPOSITION FOR CLEANING AND LUBRICATING ABRASIVE SURFACES
Charles M. Myers, Chicago, Ill., assignor, by direct and mesne assignments, to Thomas G. Poulakidas, Chicago, Ill.
Filed June 2, 1960, Ser. No. 33,550
1 Claim. (Cl. 51—304)



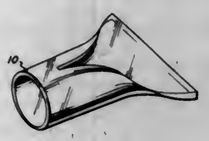
A liquid composition for application to an abrading surface for removing loading or impacted material from such surface and for cleaning such surface, whereby to maintain the abrading characteristics of such surface while simultaneously using the thus treated abrading surface in cutting engagement with a work piece, consisting of an intimate mixture of the essential ingredients thereof which are, 22 parts by weight of tallow, 32 parts by weight of kerosene, and 42 parts by weight of trichloroethylene, said trichloroethylene being substantially nontoxic and also being highly volatile and also being noninflammable and also rendering the entire composition noninflammable, said trichloroethylene also imparting to said composition the ability to substantially instantaneously clean the abrading surface and loosen and remove the loading or impacted material therefrom when the composition is applied to such abrading surface.

3,282,666
PROCESS FOR MANUFACTURING FIBER OPTIC DEVICES
Terence J. Gallagher, Mount Prospect, and Joseph Singer, Jr., Arlington Heights, Ill., assignors to Chicago Aerial Industries, Inc., Barrington, Ill., a corporation of Delaware
Filed Dec. 3, 1962, Ser. No. 242,016
6 Claims. (Cl. 65—4)

1. A process for manufacturing fiber optical shape transducers from a generally cylindrically shaped slit fiber optic tube assembly comprising a plurality of optical fibers arranged parallel to each other in touching relationship and parallel to the longitudinal axis of symmetry of said slit tube assembly, said slot of said slit tube assembly being parallel to both said longitudinal axis of symmetry and to the axis of said optical fibers, comprising the steps of

positioning said slit fiber optic tube assembly in a fixture adaptable for rotation about an axis, said fixture having recesses axially concentric with its rotational axis, said tube having its ends received into said recesses,

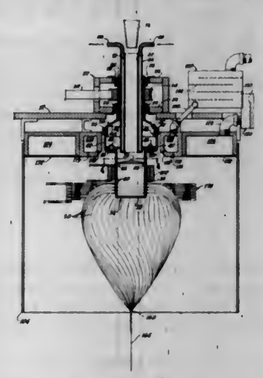
subjecting the fixture to an elevated temperature sufficient to reduce the viscosity of the tube assembly at its center to between 10^7 and 10^{13} poises,



rotating the fixture at a speed sufficient to create a centrifugal force sufficient to deform said slit tube assembly and maintaining that speed until the slit tube assemblies shape conforms with that of the form blocks within the fixture, and

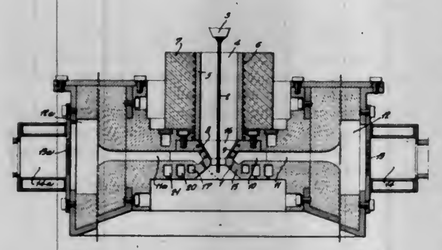
removing the formed slit tube assembly from the fixture and dividing it into two parts along a line transverse the tube axis.

3,282,667
METHOD OF MAKING HOLLOW GLASS FIBERS
Charles J. Stalego, Harold E. Leaman, and Cletis L. Roberson, Newark, and Roger W. Roth, Granville, Ohio, assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Aug. 30, 1962, Ser. No. 220,516
6 Claims. (Cl. 65—8)



1. The method of forming attenuated hollow fibers of glass including the steps of delivering glass into a hollow chamber having an orificed surface, applying just sufficient heat to the glass in the chamber to maintain the glass at a relatively high viscosity, restricting delivery of glass into the chamber to maintain on the orificed surface a thin film of glass of a thickness sufficient to cover the surface, rotating the surface to exert centrifugal forces effective to deliver the glass of the film and air from the interior of the chamber through the orifices in the form of tubular bodies of glass, and applying forces to the tubular bodies to attenuate the bodies to hollow fibers.

3,282,668
APPARATUS FOR THE PRODUCTION OF FIBERS FROM ORGANIC OR INORGANIC THERMOPLASTIC MATERIALS
Marcel Mabru, Paris, France, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France, a corporation of France
Filed July 2, 1962, Ser. No. 207,115
Claims priority, application France, July 13, 1961, 867,892
9 Claims. (Cl. 65—12)



2. In an apparatus of the class described, a fiber drawing device having a circular opening therein, a passage for a freely dropping thread of viscous thermoplastic material above said opening, said device having a plurality of downwardly and tangentially directed orifices of small cross-section in non-intersecting relation to the thread through which is adapted to be discharged jets of a gaseous fluid to impart rapid rotary movement to the thread, and an annular chamber having openings below said orifices for directing hot gases or flames in a vertical direction concentric to said thread for re-heating the thread of viscous material after the action thereon by the gaseous fluid.

3,282,669
HEAT SEALING GLASS TO THE SURFACE OF A BODY
Robert M. Pinkham and Robert M. Tribble, Winston-Salem, N.C., assignors to Western Electric Company Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 29, 1963, Ser. No. 305,441
8 Claims. (Cl. 65—59)

1. In a method of heat sealing glass to a body which is more readily heated by radiant energy than clear glass, the steps of

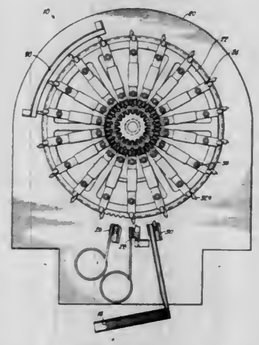
placing glass having a predetermined quantity of radiant energy absorbing material incorporated therein in contact with said body, and

projecting sufficient radiant energy through the glass and onto the body to distribute the energy between the glass and the body in accordance with the quantity of radiant energy absorbing material incorporated in the glass and effect a heat seal between the glass and the body.

3,282,670
METHOD OF AND APPARATUS FOR MAKING SEALED SWITCHES
Harry Chanowitz, Skokie, and George F. Weinreich, Cary, Ill., assignors to C. P. Clare & Company, Chicago, Ill., a corporation of Delaware
Filed Sept. 17, 1963, Ser. No. 309,449
8 Claims. (Cl. 65—59)

1. A method of making a sealed switch from a glass tube and a pair of switch elements in which the elements are partially inserted into opposite ends of a glass tube and sequentially sealed therein by heating the opposite ends of the tube until a seal is formed between the glass and the elements, the method also including the step of displacing a given one of the elements after the other element has been sealed in the tube, the improvement which comprises the steps of heating one end of the glass tube to start the softening of the glass before the said other switch element is inserted so that the heat loss occasioned by conduction through the said other element is reduced; starting the heating of the other end of the glass tube, in which end the said given one of the elements has been inserted, prior to the termination of the heating of the one end; and terminating the heating of the one end of the tube during the heating of the other end of the tube to start the cooling of the seal at the said one end of the tube prior to the displacement of said given one of the elements.

4. In a machine for making sealed switches from a dielectric tube and a pair of magnetic elements, which machine is of the type having a support movable over a fixed path, a tube chuck carried on the support, a pair of magnetic element chucks carried on the support and disposed on opposite sides of the tube chuck, first and second heating means carried on the tube chuck and disposed on opposite sides of the tube chuck to heat opposite ends of a tube carried in the tube chuck, the first and second heating means being movable toward and

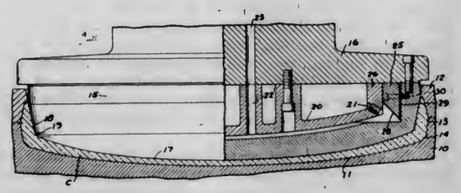


away from the tube chuck, tube and magnetic element feeding stations disposed at fixed points along the path of movement of the support for feeding a tube and two magnetic elements to the chucks, a control linkage coupled to the tube chuck and the magnetic element chucks for separating these three chucks to receive the tube and the two magnetic elements and for moving these three chucks together to insert the magnetic elements into the opposite ends of the tube in the tube chuck, said movements of the chucks occurring during movement of the support along the path, and first means coupled to the first heating means to move the first heating means away from the tube chuck when the tube chuck and the magnetic element chucks are separated to permit the feeding of the tube to the tube chuck, said first means holding the first heating means spaced from the tube chuck until the tube and magnetic element chucks are moved together, the improvement comprising second means coupled to the second heating means for momentarily moving the second heating means away from the tube chuck during the interval in which the tube chuck and the magnetic element chucks are separated so that the tube can be fed to the tube chuck and the second heating means returned to a position for heating one end of the tube in the tube chuck prior to moving the chucks together.

3,282,671
MOLD AND PLUNGER WITH INTERNAL COOLING STRUCTURE

Roy B. Lanker, Gahanna, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

Filed Apr. 10, 1963, Ser. No. 272,094
9 Claims. (Cl. 65—319)



1. An apparatus for forming a glass article having one portion connected to the other by a curved portion of small radius comprising a mold and a plunger which is moved relative to the mold to press the gob of glass, the internal surface of the mold having a configuration corresponding to the external surface of the article which is to be formed, said plunger having an external surface corresponding to the internal surface of the article to be formed and comprising a base portion and a flange portion connected to said base portion by a sharply curved portion at the area of juncture with the base portion and extending upwardly from the base portion, said plunger having an internal surface, means for circulating a liquid coolant across said internal surface to continuously remove heat and cool the plunger, and means positioned adjacent the internal surface of the flange portion of said plunger and preventing the direct impingement of liquid coolant against the internal surface of the flange portion of the plunger in such a manner that the temperature of the external surface of the flange portion of the plunger and the external surface of the sharply curved portion of the plunger are maintained near but below the glass sticking temperature and the temperature of the external surface of the base portion of the plunger is maintained near but above the glass crizzle temperature.

3,282,672
METHOD FOR PREVENTING PLANT GROWTH

Gustav Weissenberger, Zurich, Switzerland, assignor to Monsanto Company, a corporation of Delaware

No Drawing. Original application Apr. 9, 1962, Ser. No. 185,797. Divided and this application May 24, 1965, Ser. No. 473,540
Claims priority, application Switzerland, Apr. 28, 1961, 5,058/61
6 Claims. (Cl. 71—2.3)

1. A method for preventing plant growth comprising applying a growth-inhibiting amount of a triorganotin oxime of the formula $R^1R^2C{=}N{-}O{-}SnR^3R^4R^5$ wherein R^3, R^4 and R^5 are alkyl having not more than 18 carbon atoms, and R^1 is selected from the class consisting of alkyl having not more than 6 carbon atoms, phenyl, furyl and hydrogen, R^2 is selected from the class consisting of R^1 and

$$R^3R^4R^5SnO{-}N{=}C{-}\quad (R^1)$$

and R^1 and R^2 when taken together with the carbon atom to which they are attached are

$$=C\begin{<}{CH_2CH_2}{CH_2CH_2}>C{=}N{-}O{-}SnR^3R^4R^5 \text{ groups}$$

3,282,673
HERBICIDAL COMPOSITIONS AND METHODS

Arthur E. Pflaumer, P.O. Box 309, Norristown, Pa.

No Drawing. Filed Sept. 26, 1963, Ser. No. 311,647
18 Claims. (Cl. 71—2.6)

1. A herbicidal composition comprising:
(A) a liquid hydrocarbon solvent having dissolved therein,
(B) the equivalent of at least about 1 pound of herbicidal polychlorophenoxyacetic acid per gallon of solution as material selected from the group consisting of,
(a) free herbicidal polychlorophenoxyacetic acid solubilized in said hydrocarbon solvent by the presence of amide of an alkylene polyamine and a monocarboxylic acid containing between 6 to 24 carbon atoms, and
(b) the salt of herbicidal polychlorophenoxyacetic acid with amide of an alkylene polyamine and a monocarboxylic acid containing between 6 and 24 carbon atoms, and
(c) the amide of herbicidal polychlorophenoxyacetic acid and an alkylene polyamine.

3,282,674
PRODUCTION OF GRANULATED AMMONIUM SULFATE NITRATE

Siegfried Mohr, Ludwigshafen (Rhine), Dietrich Luetzow, Limburgerhof, Pfalz, and Hans Schulz, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Aug. 20, 1963, Ser. No. 303,432
Claims priority, application Germany, Sept. 4, 1962, B 68,703
6 Claims. (Cl. 71—64)

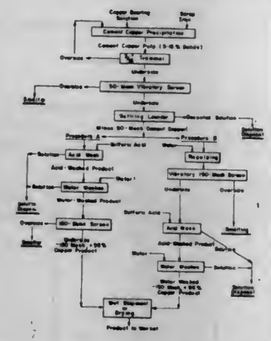
1. A process for the production of granular ammonium sulfate nitrate which compises prilling a mash of ammonium sulfate and ammonium nitrate at temperatures of 160 to 182° C., said mash containing an amphoteric oxidic compound selected from the group consisting of oxides, hydroxides and hydrated oxides of trivalent iron and aluminum in an amount of 0.3 to 3.5% by weight, a weakly alkaline reacting compound selected from the group consisting of ammonia, calcium carbonate, magnesium carbonate, dolomite, magnesium oxide, sodium bicarbonate, potassium bicarbonate, monohydrogen dipotassium phosphate, monohydrogen disodium phosphate, monohydrogen diammonium phosphate, triammonium phosphate and sodium tetraborate of 0.1 to 2.0% by weight, and a water-binding salt selected from the group consisting of magnesium sulfate, magnesium nitrate, calcium sulfate, calcium sulfate semihydrate, calcium nitrate and sodium sulfate in an amount of 0.5 to 5% by weight, said percentages being based on anhydrous ammonium sulfate nitrate, to obtain solidified, essentially granular particles having high grain hardness which is retained after several months storage.

3,282,675
UP-GRADING CEMENT COPPER

Wesley H. Parker, Inspiration, Ariz., assignor to Inspiration Consolidated Copper Company, a corporation of Maine

Filed May 27, 1964, Ser. No. 370,409
12 Claims. (Cl. 75—.5)

1. The method of producing copper powder which comprises precipitating copper from a copper sulfate solution with metallic iron to produce a low-grade cement copper mixed with iron and suspended in a solution containing dissolved copper and iron salts, screening the pulp so produced through a 40-mesh to 70-mesh screen to remove undesirable oversize material and coarse undissolved scrap iron, separating the undersize product of such screening operation from the solution in which it was suspended, treating the resulting coarse-screened product with a sulfuric acid solution to dissolve acid soluble impurities and precipitated salts that agglomerate copper particles, allowing the cement copper particles to settle, separating

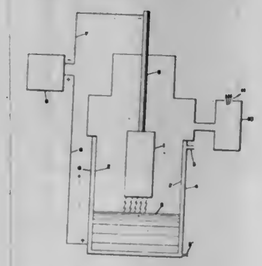


the acid solution from the copper particles, subjecting the residual copper particles to successive water washings, and screening the washed copper product through a screen at least as fine as 150 mesh to produce a high-grade copper powder product.

3,282,676
PROCESS FOR PRODUCTION OF ULTRA-CLEAN STEEL

Thomas E. Perry, North Canton, and Roderick J. Place, Massillon, Ohio, assignors to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey

Filed May 14, 1962, Ser. No. 194,446
12 Claims. (Cl. 75—12)

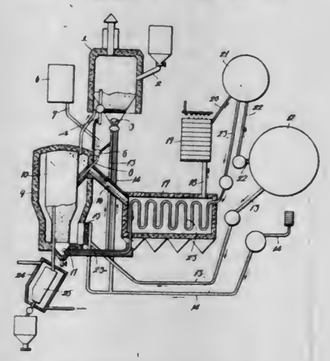


1. A process for the preparation of an ultra-clean steel consisting of the steps of
(a) blending finely divided carbon with a finely divided iron powder having no more than 0.01 percent by weight of sulfur and no more than 0.01 percent by weight of phosphorus therein, the amount of said carbon being such that the combined weight of carbon in the iron powder and of the added carbon powder is sufficient to supply the carbon aim for the ultimate steel product and to react with the oxygen contained in said iron powder for conversion to carbon monoxide,
(b) forming the resultant mixture into a shape and of sufficient cohesive character to be adapted for ultimate use as an electrode in a consumable electrode vacuum electric arc furnace,
(c) applying said shaped iron electrode as the electrode in a consumable electrode vacuum electric arc furnace adapted to apply and maintain a vacuum in the melting region of said furnace and adapted to receive the melt from said electrode in a water-cooled metal crucible,
(d) thereafter reducing the pressure in the electrode region of said furnace to a pressure of less than 100 microns of mercury,
(e) passing current through said electrode and thereby heating said electrode and maintaining a pressure of less than 100 microns of mercury until said electrode is completely melted and collected in said metal crucible, and
(f) cooling and removing the resultant melt ingot from said crucible, and
(g) thereafter shaping said ingot for its ultimate use without any further consumable electrode vacuum melting.

3,282,677
METHOD OF MANUFACTURING IRON BY LOW TEMPERATURE REDUCTION WITH USE OF METHANE GAS

Magoichi Futakuchi, 20-banchi, Hayashi-cho, Bunkyo-ku, Tokyo, Japan, and Kanji Wada, Abeno-ku, Osaka, Japan; said Wada assignor to said Futakuchi

Filed Apr. 30, 1963, Ser. No. 276,910
7 Claims. (Cl. 75—34)



1. A method of manufacturing iron by the low temperature reduction of iron ore in powder form, comprising mixing cast iron chips with said iron ore in an amount of from 3 to 5% by weight of the resulting mixture, and feeding the mixture into a reduction furnace heated to a temperature of 500 to 700 C., while supplying methane gas under pressure into said reduction furnace, to reduce said iron ore.

2. A method of manufacturing iron by the low temperature reduction of iron ore in powder form, comprising mixing bauxite with said iron ore in an amount of from 3 to 5% by weight of the resulting mixture, and feeding the mixture into a reduction furnace heated to a temperature of 500 to 700° C., while supplying methane gas under pressure into said reduction furnace, to reduce said iron ore.

3,282,678
SMELTING REDUCED IRON ORE PELLETS IN THE BLAST FURNACE

Norwood B. Melcher and Morris M. Fine, Minneapolis, Minn., and Philip L. Woolf, Pittsburgh, Pa., assignors to the United States of America as represented by the Secretary of the Interior

No Drawing. Filed Jan. 16, 1964, Ser. No. 338,268
2 Claims. (Cl. 75—41)

1. A method for the production of pig iron from iron ores by reduction employing coke and limestone in a blast furnace, and wherein an iron ore partially prereduced to a higher total iron content prior to charging said

ore to a blast furnace is employed, the improvement comprising adding coke in an amount in lbs. per ton of hot metal produced which is less than the amount required for a non-prereduced ore in the blast furnace by k_1R, where k_1 is a constant having a value of about 5.7 and R is the percentage of prereduction of the iron ore, whereby the percentage increase in productivity in a given time over pig iron produced in the blast furnace employing non-prereduced ores is k_2R wherein k_2 is a constant having a value of about .6 and R is the percent of prereduction of the iron ore.

3,282,679
PRODUCTION OF ALLOY STEEL

Adolf Richter, Munich, and Hansgeorg Bauer, Witten (Ruhr), Germany, assignors to Gusstahlwerk Witten Aktiengesellschaft, Witten (Ruhr), Germany, a company of Germany

No Drawing. Filed Aug. 26, 1963, Ser. No. 304,683
Claims priority, application Austria, Sept. 18, 1962, A 7,420/62
13 Claims. (Cl. 75—52)

1. A process for the production of stainless steel from crude iron and solid alloy carrier consisting at least in part of chromium, nickel and molybdenum by oxygen top blowing, said process including the steps of charging liquid crude iron, which forms between 20% and 75% by weight of the total charge, into a blowing crucible, said crude iron being selected from the group consisting of pig iron and hot air cupola furnace iron, blowing said liquid crude iron in a first blowing phase beneath a highly basic slag, which is rich in ferric oxide, to yield an intermediate product having a phosphorus content of less than 0.025%, removing said slag, adding a main portion of solid alloy carrier bearing nickel and molybdenum together with a heat carrier to said crucible, continuing blowing said charge in a second phase until said main portion of solid alloy carriers is liquefied, and a predetermined carbon content is reached adding another portion of alloy carrier bearing chromium, silicon and carbon, continuing blowing in a third blowing phase beneath a new basic slag having a CaO/SiO_2 ratio of at least 2.5 until the carbon and silicon introduced with said other portion of alloy carrier have been removed, treating said new basic slag with reducing agents to reduce the slag alloy constituents and adding the remainder of said alloy carrier to said crucible.

3,282,680
PROCESS OF DEGASSING COPPER ALLOYS

James E. Dore, Milford, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Oct. 1, 1963, Ser. No. 312,898
1 Claim. (Cl. 75—76)

A process for degassing copper base alloys which comprises: providing molten copper base alloy and bubbling gaseous aluminum chloride through said molten alloy, said aluminum chloride being such that it will volatilize in the molten alloy and react with cuprous oxide in liquid solution in the alloy to form insoluble reaction products separable from the melt by gravity.

3,282,681
SEPARATION OF URANIUM AND PLUTONIUM VALUES

James B. Knighton, Joliet, and Robert K. Steunenberg, Naperville, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Feb. 8, 1966, Ser. No. 526,328
10 Claims. (Cl. 75—84.1)

1. A process for the separation of plutonium values from uranium values comprising: dissolving said values in a molten alloy of magnesium in which uranium is present in a metallic phase, contacting said alloy with a molten salt containing magnesium chloride to oxidize the plutonium to plutonium chloride which dissolves in the salt, and contacting the salt with a molten zinc alloy containing 2–10 weight percent magnesium to reduce the plutonium chloride to plutonium which precipitates from the molten zinc alloy as a plutonium-zinc intermetallic compound.

3,282,682
PROCESS FOR THE EXTRACTION OF COPPER

George E. Harlan, Phoenix, Ariz., assignor to Powder Metals Corporation, Phoenix, Ariz., a corporation of Arizona

Original application Aug. 31, 1961, Ser. No. 135,280, now Patent No. 3,262,870, dated July 26, 1966. Divided and this application Jan. 13, 1966, Ser. No. 520,435
9 Claims. (Cl. 75—117)

1. A process for extracting copper from a copper-containing ore comprising: leaching said ore to extract soluble copper therefrom until the copper content in solution is between about 25–45 gms./liter; the leaching solution used for said leaching step being an aqueous sulfate solution containing approximately 8–9% by weight of sulfuric acid; the temperature of said leaching solution being between about 110–130° F.

3,282,683
SUPERIOR WHITE CAST IRON

William H. Moore, Larchmont, N.Y., assignor to Meehanite Metal Corporation, a corporation of Missouri

Filed June 11, 1962, Ser. No. 201,704
2 Claims. (Cl. 75—123)



1. A tough wear resistant white cast iron article of manufacture having a greater proportion of plate type carbides and a lesser proportion of eutectic type carbides produced by providing an initial melt having a first carbide value of less than 1 times white and free graphite in the structure not exceeding about 25%, adding a carbide forming element to the melt in sufficient amount to provide a second carbide value in the range of from 1 to 1¼ times white with substantially no free graphite in the structure, and thereafter casting the melt.

3,282,684
STAINLESS STEEL AND ARTICLES

Paul M. Allen, Middletown, Ohio, assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio

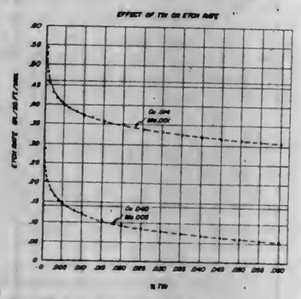
No Drawing. Filed July 31, 1963, Ser. No. 299,110
8 Claims. (Cl. 75—125)

1. Stainless steel essentially consisting of carbon up to about .15%, manganese .40% to 2.00%, silicon .15% to 1.00%, chromium 16.0% to 19.0%, nickel 5.5% to 8.0%, copper .5% to 3.5%, nitrogen .04% to .10%, and remainder essentially iron.

3,282,685
LOW CARBON STEEL ALLOY FOR VITREOUS ENAMELING

Edward H. Mayer, Hilton N. Rahn, and Evan M. Oliver, Bethlehem, Pa., assignors, by mesne assignments, to Bethlehem Steel Corporation, a corporation of Delaware

Filed Aug. 8, 1963, Ser. No. 300,849
2 Claims. (Cl. 75—125)



1. An iron base alloy containing:

	Percent
Carbon, maximum	.010
Manganese	.15/.75
Molybdenum, maximum	.049
Copper	.014/.060
Tin	.001/.030

by weight, the molybdenum, copper and tin in said alloy being in the relationship expressed by the equation

$$(.00489/\text{percent Cu})-(6.605\times\text{percent Mo})-(.084\times\log_{10}\text{percent Sn})-(.1367)=X$$

where X is a number between .14 and .46, the balance of said alloy consisting essentially of iron.

3,282,686
STAINLESS STEEL AND ARTICLES

Paul M. Allen, Middletown, Ohio, assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio

No Drawing. Filed Feb. 1, 1965, Ser. No. 429,656
7 Claims. (Cl. 75—125)

1. Stainless steel essentially consisting of carbon up to about .15%, manganese .5% to 2.00%, silicon .15% to 1.00%, chromium 16.0% to 19.0%, nickel 6.5% to 7.9%, copper 1.5% to 2.9%, residual nitrogen, and remainder essentially iron.

3,282,687
IRON-BASE ALLOYS

Arthur T. Cape, Monterey, Calif., assignor to Coast Metals Inc., Little Ferry, N.J., a corporation of Delaware

No Drawing. Filed Jan. 31, 1963, Ser. No. 255,202
1 Claim. (Cl. 75—128)

An iron-base alloy consisting of from about 1.25% to about 1.75% carbon, from about 21% to about 23% chromium, from about 1% to about 2.5% molybdenum, from about 3% to about 5% nickel, from about 7% to about 9% cobalt, and the balance substantially all iron, said alloy having an unstable austenitic structure, and the cobalt being increased as the nickel is increased.

3,282,688
ALUMINUM BASE ALLOY

Michael J. Pryor and Douglas S. Keir, Hamden, and Philip R. Sperry, North Haven, Conn., assignors to Olin Mathieson Chemical Corporation

No Drawing. Filed Oct. 21, 1965, Ser. No. 500,262
4 Claims. (Cl. 75—138)

1. An aluminum base alloy consisting essentially of between 0.01 and 0.5% tin, where the tin is retained in solid solution in an amount from 0.01 to 0.06%, balance essentially aluminum.

3,282,689
WELDING WIRE CONSISTING OF NICKEL-TITANIUM-CARBON-SILICON-COPPER

John J. Santner, Wauwatosa, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

No Drawing. Filed July 3, 1963, Ser. No. 292,766
4 Claims. (Cl. 75—170)

1. A welding wire consisting essentially of 62 to 69 percent nickel, 1.5 to 3.0 percent titanium, 0.08 to 0.15 percent carbon, 0.4 to 0.6 percent silicon, and the balance being copper.

3,282,690
ALLOY

Eugene J. Delgrosso, Wallingford, and John J. Kaminsky, Cromwell, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

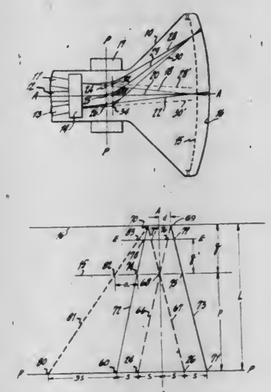
No Drawing. Filed Dec. 2, 1963, Ser. No. 327,552
5 Claims. (Cl. 75—174)

1. An article of manufacture having good strength, creep resistance, corrosion resistance and fabricability up to temperatures of about 2400° F. which consists essentially of, by weight, 1–8% zirconium, and 0.05–1% carbon, balance columbium having a low oxygen and nitrogen interstitial content.

3,282,691
METHOD OF FABRICATING CATHODE RAY TUBE SCREEN

Albert M. Morrell, East Petersburg, and Richard H. Godfrey, Lancaster, Pa., assignors to Radio Corporation of America, a corporation of Delaware

Filed July 6, 1962, Ser. No. 208,044
13 Claims. (Cl. 96—35)



1. The method of laying down a pattern of phosphor dots by a direct photographic process on a screen support of a cathode ray tube having a multi-apertured shadow mask and means for projecting an electron beam along its first order color center path and through the apertures of said mask and onto said screen support, and wherein the magnification of the tube varies from a minimum at the center of the screen to a maximum at the edge thereof, said method comprising:

(a) depositing a photosensitive coating on said screen support,

(b) exposing said coating through the apertures of said mask to a small area light source positioned substantially at a second or higher order color center

of said beam so that light rays from said source which print a given phosphor dot pass through a different aperture than does the electron beam which excites said given dot, and

(c) developing said exposed coating.

3,282,692

PHOTOCROSSLINKABLE MATERIAL AND METHOD OF COPYING

Wesley R. Workman, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Sept. 27, 1965, Ser. No. 490,621
5 Claims. (Cl. 96—35)

1. Method of copying comprising forming on the smooth surface of a supporting substrate a thin uniform dry photocrosslinkable coating consisting essentially of normally light-stable saturated non-polymerizable organic cellulose ether polymer and a substituted anthraquinone photoactivatable auxiliary component, exposing portions of said coating to ultraviolet radiation in a desired image pattern and to an extent sufficient to cause cross-linking of said polymer, and submitting the entire coating to an agency for visibly distinguishing the exposed and unexposed areas of said coating.

3,282,693

PHOTOGRAPHIC PRINTOUT METHODS AND MATERIALS UTILIZING ORGANIC AZIDE COMPOUNDS AND COUPLER COMPOUNDS THEREFOR

John J. Sagura and James A. Van Allan, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 1, 1962, Ser. No. 227,561
17 Claims. (Cl. 96—49)

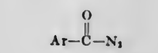
12. A process for forming a printout image in a light-sensitive photographic element comprising the step of exposing the light-sensitive layer of said element to activating radiation through an original image, said element having a light-sensitive layer containing:

(1) an organic colloidal binder;

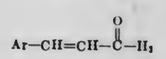
(2) at least one light-sensitive organic azide selected from the class consisting of those having the formulas:

(I) $Ar\text{-}N_3$

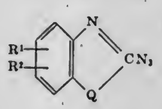
(II)



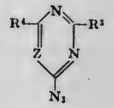
(III)



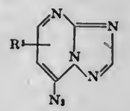
(IV)



(V)

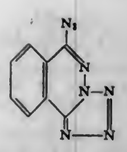


(VI)



and

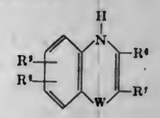
(VII)



wherein Ar represents an aryl group; Q represents a group selected from the class consisting of the oxygen atom, the sulfur atom, the selenium atom, and a NR group; R represents a group selected from the class consisting of the hydrogen atom, an alkyl group, an aryl group, an alkylsulfonyl group, an arylsulfonyl group, an alkoxy group, an aroyl group, a carbalkoxy group, and a carbamyl group; R^1 and R^2 each represents a group selected from the class consisting of the hydrogen atom, an alkyl group, an alkoxy group, an aryl group, the nitro group, a halogen atom, and the nonmetallic atoms such that when the R^1 and R^2 groups are attached to adjacent carbon atoms in the benzene ring and the said R^1 and R^2 groups taken together with said carbon atoms in the benzene ring complete a fused cyclic ring; R^3 represents a group selected from the class consisting of the azide group, and an alkyl group; R^4 represents a group selected from the class consisting of the azide group, an alkyl group, and an amina group; Z represents a group selected from the class consisting of the CH group and the nitrogen atom; and R^5 represents a group selected from the class consisting of the hydrogen atom and an alkyl group; and

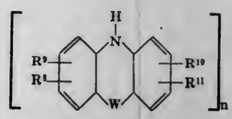
(3) at least one coupler compound selected from those having the formulas:

(VIII)



and

(IX)



wherein R^6 and R^7 each represents a group selected from the class consisting of the hydrogen atom, an alkyl group, and an aryl group; R^8 and R^9 each represents a group selected from the class consisting of the hydrogen atom, an alkyl group, an alkoxy group, an aryl group, the nitro group, a halogen atom and the nonmetallic atoms such that when the R^8 and R^9 groups are attached to adjacent carbon atoms in the benzene ring, and the said R^8 and R^9 groups taken together with said carbon atoms in the benzene ring, the said nonmetallic atoms complete a fused cyclic ring; R^{10} and R^{11} each represents a group selected from the class consisting of the hydrogen atom, an alkyl group, an alkoxy group, an aryl group, the nitro group, a halogen atom, the hydroxy group, the oxygen atom, and the nonmetallic atoms such that when R^{10} and R^{11} are attached to adjacent carbon atoms in the benzene ring, and the said R^{10} and R^{11} groups taken together with said carbon atoms in the benzene ring, the said nonmetallic atoms complete a fused cyclic ring; and such that when R^{10} represents the oxygen atom, R^{11} also represents the oxygen atom and said oxygen atoms are attached to the nucleus through double bonds; W represents a group selected from the class consisting of the sulfur atom, the selenium atom, the oxygen atom, the $S^{\oplus}R^{12}X^{\ominus}$ group, the NR^{13} group, and the CH_2 group; R^{12} represents an alkyl group; $X^{\ominus}$ represents an acid anion; R^{13} represents a group selected from the class

consisting of the hydrogen atom, and an alkyl group; and *n* represents an integer of from 1 to 2; such that at least one of the positions on a benzene ring ortho and para to an imino group of said coupler compound is unsubstituted.

17. A process of claim 12 in which the print-out image formed is stabilized by heating the said element to a temperature of from about 75° C. to about 150° C.

3,282,694

N-SUBSTITUTED AMINOALKYL MERCAPTAN METAL SALT FIXING AGENTS

George W. Luckey, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 23, 1965, Ser. No. 516,145
14 Claims. (Cl. 96—61)

2. A process for stabilizing a developed photographic silver halide emulsion layer by contacting said layer with a composition containing water and a metal salt of an N-substituted aminoalkyl mercaptan having the formula:

RSMX

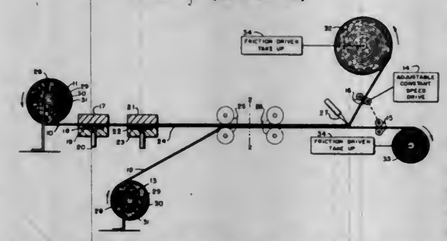
wherein R represents an N-substituted aminoalkyl group selected from the class consisting of an N-alkyl' aminoalkyl group, an N,N-dialkyl' aminoalkyl group and an N-morpholino alkyl group in which the alkyl moiety has from 1 to 4 carbon atoms and the alkyl' moiety has from 1 to 3 carbon atoms; M is a metal selected from the class consisting of zinc, cadmium, and lead; X is an acid anion.

3,282,695

PHOTOGRAPHIC METHOD AND APPARATUS

Leo H. Narodny, Westport, Conn., assignor to the United States of America as represented by the Secretary of the Army

Filed Jan. 29, 1964, Ser. No. 341,153
2 Claims. (Cl. 96—61)



1. A method for processing photosensitive material, comprising preparing an alkaline photo developing solution containing 35 grams of polyacrylamide, per liter of developing solution preparing an acid photographic fixing solution containing 33 milliliters of glyoxal per liter of fixing solution to a pH of 4.0 separately applying the developer and fixer to the surface of a carrier member permitting the solution to mix while in their liquid phase until a gel-like coating is formed, pressing the coating into contact with the exposed sensitive emulsion of a photosensitive sheet and after processing is complete stripping said carrier from the photosensitive sheet whereby the gel-like coating is completely removed from the sensitive sheet leaving the processed sensitive sheet ready to use.

2. A method for processing photosensitive material comprising preparing an acid photographic developing solution containing 15 grams of polyacrylamide, per liter of developing solution preparing an alkaline fixing solution containing 33 milliliters of glyoxal per liter of fixing solution to a pH of at least 7, separately applying the said solutions to the surface of a carrier sheet while in their liquid phase, permitting the solutions to mix and form a gel-like coating, pressing the gel-like coating into contact with the sensitive surface of an exposed photosensitive sheet, permitting processing to take place and then stripping the carrier sheet and its gel-like coating from the photosensitive sheet at a sharp angle to the photosensitive sheet.

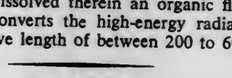
3,282,696

PHOTOGRAPHIC SILVER HALIDE ELEMENTS CONTAINING ANTI-BRONZING AGENTS

Jozef Frans Willems, Hendrik Adolf Pattijn, and Gerard Michiel Sevens, Wilrijk-Antwerp, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel-Antwerp, Belgium, a Belgian company

No Drawing. Filed Jan. 7, 1963, Ser. No. 249,595
Claims priority, application Belgium, Jan. 5, 1962, 41,269, Patent 612,311
8 Claims. (Cl. 96—67)

1. A photographic material comprising a support and at least one light-sensitive silver halide emulsion layer, wherein the light-sensitive silver halide emulsion layer contains, as an antibronzing agent, an operable amount of at least one compound of the formula:



wherein:

R_1 is an aryl group,

R_2 is an organic bivalent aliphatic group, and

X_1 is a member selected from the group consisting of an oxygen atom and an —NH group, and

X_2 is a member selected from the group consisting of a hydrogen atom, an alkali metal atom, an ammonium group and a silver atom.

3,282,697

TRANSPARENT INTENSIFIER FOILS FOR USE WITH PHOTOGRAPHIC MATERIALS FOR RECORDING X-RAYS, γ-RAYS OR CORPUSCULAR RAYS

Rudolf Blank, Cologne-Dunnwald, Reinhart Matejec, Imbach uber Opladen, and Roderich Rause, Leverkusen, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Oct. 9, 1962, Ser. No. 229,487
Claims priority, application Germany, Oct. 17, 1961, A 38,575
9 Claims. (Cl. 96—82)

1. A photographic material for recording high-energy radiation comprising at least one silver halide emulsion layer sensitive to said high-energy radiation and in intimate contact therewith a transparent foil of a film-forming polymer which contains benzene rings selected from the group consisting of polystyrene, polyesters, polyvinyl toluene, polydiphenyl butadienes, polytetraphenyl butadienes, polydiphenyl hexatrienes and mixtures thereof, said polymer having dissolved therein an organic fluorescent compound that converts the high-energy radiation into light having a wave length of between 200 to 600 mμ.

ERRATUM

For Class 96—83 see:
Patent No. 3,282,643

3,282,698

PHOTOGRAPHIC STRIPPING FILMS

Johan Lodewijk Verelst, Kontich, and Marcel Nicolas Vrancken, Berchen-Antwerp, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel-Antwerp, Belgium, a Belgian company

No Drawing. Filed Jan. 8, 1963, Ser. No. 250,028
Claims priority, application Netherlands, Jan. 15, 1962, 273,549
3 Claims. (Cl. 96—83)

1. A photographic stripping film comprising in the indicated sequence (1) a hydrophobic flexible support, (2)

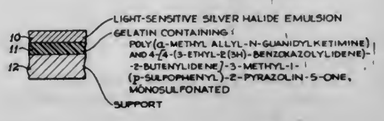
a stripping layer, (3) a hydrophobic flexible membrane which is soluble in organic solvents, (4) a subbing layer, (5) a thin layer predominantly consisting of gelatin having the amino groups thereof substituted and which is soluble in water of 30–40° C., and (6) a light-sensitive silver halide emulsion layer, the binding agent of which predominantly consists of a hydrophilic colloid which is hardenable with a hardening agent selected from the group consisting of aldehydes and quinones and which in unhardened state is soluble in water of 30–40° C.

3,282,699

PHOTOGRAPHIC ELEMENTS CONTAINING BLEACHABLE MORDANTED DYE LAYERS

Jean E. Jones and Kirby M. Milton, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Jan. 22, 1962, Ser. No. 167,666
17 Claims. (Cl. 96—84)



1. A photographic element comprising a support having coated thereon:

(1) a layer coated from a composition containing a water-permeable hydrophilic colloid, a polymeric mordant having recurring basic groups and a benzoxazole pyrazolone merocyanine dye having on the pyrazolone nucleus a sulfophenyl group, and substituted on the benzene ring of said benzoxazole nucleus an acidic group selected from the class consisting of a sulfo group and a carboxy group, said composition containing said hydrophilic colloid, said polymeric mordant and said merocyanine dye prior to coating on said support, and having coated over said layer,

(2) a layer coated from a light-sensitive silver halide emulsion.

3,282,700

CHEMICAL SENSITIZATION OF PHOTOGRAPHIC SILVER HALIDE EMULSIONS WITH MAGNESIUM METAL POWDER

John Figueras, Jr., and Charles A. Goffe, both of Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Jan. 20, 1964, Ser. No. 338,634
7 Claims. (Cl. 96—108)

7. A photographic silver halide emulsion which has been chemically sensitized by the incorporation of powdered magnesium, said emulsion being substantially free of unreacted powdered magnesium.

3,282,701

PROCESS FOR PREPARING FOODSTUFF INTERMEDIATES IN CHIP FORM

Benjamin Wong and Joe H. Wong, both of 118 12th Ave., Rochester, Minn.

No Drawing. Filed Mar. 30, 1965, Ser. No. 444,041
5 Claims. (Cl. 99—1)

1. A method for the preparation of a foodstuff intermediate comprising the steps of:

(a) making an aqueous, homogeneous mixture containing, for each quart of water, the following quantities of components (dry weight basis):

	Ounces
Starch having a protein content less than 5% (based on total starch weight)	25 to 45
Egg whites	0.2 to 1.0
Baking powder	0.3 to 1.0
Inert additives	3.0 to 10.0

(b) heating said mixture at a temperature of from about 150° to 212° F. until said mixture becomes a self-supporting dough having a generally translucent appearance,

(c) refrigerating said dough at a temperature substantially cooler than said heating temperature until said dough loses in the range of approximately two to 10 weight percent of its initial weight while maintaining an atmosphere having a moisture content equivalent to approximately a 55% to 85% relative humidity,

(d) forming the resulting refrigerated dough into chip structures each having an average thickness not greater than about 5/16 inch in at least one dimension, and

(e) drying said chip structures in an inert gaseous atmosphere at a temperature below about 125° F. until said chip structures have a brittle consistency.

3,282,702

PROCESS FOR REMOVING HYDROGEN PEROXIDE FROM LIQUIDS

Heinz R. Schreiner, Tonawanda, N.Y., assignor to Union Carbide Corporation, a corporation of New York

Filed July 16, 1963, Ser. No. 295,357
7 Claims. (Cl. 99—54)

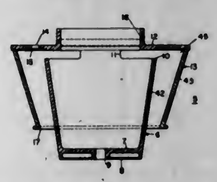
1. A process for removing hydrogen peroxide from a liquid containing hydrogen peroxide which process comprises (1) contacting said liquid with an enzymatically-active, water-insoluble, catalyst composition consisting essentially of catalase bonded to a normally solid, water-insoluble polymeric carrier having at least one electrophilic functional group capable of replacing an active hydrogen atom in an amino group to form a carbon-to-nitrogen linkage, said catalyst being chemically bonded to said polymeric carrier via a covalent linkage formed from nucleophilic functional groups on the protein moiety of the catalase and the electrophilic functional groups on the polymeric carrier and (2) separating the liquid from the catalyst composition.

3,282,703

METHOD FOR BREWING AND DISPENSING BEVERAGES

Peter W. T. Broadhurst, 114 Wolfdale Drive, Box 23, Oakville, Ontario, Canada

Filed May 21, 1963, Ser. No. 282,086
Claims priority, application Canada, Mar. 14, 1963, 870,852
2 Claims. (Cl. 99—71)



1. A method of brewing intermittently a single unit serving of fresh coffee beverage comprising, brewing in a mixing chamber a unit serving of dry, finely ground coffee beans and slightly more than a unit serving of heated water to form a brew mixture, forcing said brew mixture into a separator chamber upwardly and outwardly by rotating said mixing chamber, leaving said mixing chamber substantially clear for the next cycle of operation, in said separator chamber forcing said brew mixture upwardly and outwardly and forcing the grounds to the outside of brewed coffee beverage by rotating said brew mixture, removing a unit of brewed beverage by forcing the same upwardly and outwardly through a screen at the top of the separator chamber while limiting the upward movement of the grounds and delivering said unit of brewed beverage to a dispensing unit, leaving in the separator chamber excess brewed beverage and grounds in the form of waste, terminating abruptly, after the unit of brewed beverage has been removed, the rotation of the separator chamber such that the waste continues to rotate, decreasing the radius of rotation as said rotating waste is lowering due to gravity so that the circular momentum of the waste is maintained, enabling the waste to scour the side of the separator chamber, and removing the waste through the bottom of the separator chamber after the waste has lowered due to gravity.

3,282,704

METHOD OF PREPARING A POTATO PRODUCT UTILIZING TOASTED DEHYDRATED POTATOES AND PRODUCT

Edward L. Fritzberg, Minneapolis, Minn., assignor to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware

No Drawing. Filed Apr. 11, 1962, Ser. No. 186,655
10 Claims. (Cl. 99—100)

1. In a dough adapted for forming into a food product, said dough comprising dehydrated mashed potatoes and water in an amount sufficient to yield a formable dough, the improved dough in which at least 50 but less than 100 percent by weight of the dehydrated mashed potato is toasted.

3,282,705

MONOGLYCERIDE OF FATTY ACID PREPARATION AND METHOD OF PREPARING SAME

Francis Frederick Hansen, 224 E. Poplar St., Walla Walla, Wash.

No Drawing. Filed Oct. 14, 1965, Ser. No. 496,172
9 Claims. (Cl. 99—118)

1. A white creamy paste comprised principally of distilled monoglyceride of a fat-forming fatty acid, said monoglyceride being one which is solid at room temperature, water, and hydroxylated lecithin in the range of about 10% to about 30% of the weight of the monoglyceride, bicarbonate of soda in an amount between 0% and 3% of the weight of the monoglyceride and the water exceeds the weight of the monoglyceride and is in an amount sufficient to disperse the other constituents but insufficient to form a flowable liquid.

3,282,706

SUCROSE-AMMONIATED GLYCYRRHIZIN SWEETENING AGENT

Robert E. Muller and Robert J. Morris, Jr., Cherry Hill, N.J., assignors to MacAndrews & Forbes Company, Camden, N.J., a corporation of New Jersey

No Drawing. Filed Nov. 23, 1964, Ser. No. 413,351
1 Claim. (Cl. 99—141)

A sweetening agent consisting essentially of sucrose and ammoniated glycyrrhizin in which the ammoniated glycyrrhizin is present in an amount not less than 0.2 nor more than 2.2 parts, by weight, per 100 parts, by weight, of sucrose to provide a resulting sweetness value in excess of the sum of the known individual sweetness values of surcrose and ammoniated glycyrrhizin but insufficient to impart the flavor of licorice.

3,282,707

TABLE SYRUP EMULSION AND METHOD OF MAKING SAME

Harry H. Topalian and Charles C. Elsesser, Dover, Del., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 23, 1964, Ser. No. 354,125
14 Claims. (Cl. 99—142)

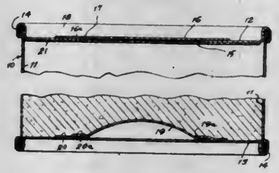
1. An edible, stable, pourable oil-in-water emulsion suitable for use as a table syrup, comprising an aqueous phase containing at least about 65 percent sugar solids, an oil phase containing edible oil in an amount of about 1 to 40 percent by weight of said emulsion, lecithin in an amount of about .02 to .5 percent of said emulsion, and gum ghatti in an amount of about .1 to 1.0 percent of said emulsion.

3,282,708

PROCESS FOR MOISTURIZING STALE BAKED DOUGH PRODUCTS AND PACKAGE UTILIZED THEREFOR

Walton W. Cushman, 36483 Gloucester Drive, Moravian Meadows, Fraser, Mich.

Filed Mar. 9, 1964, Ser. No. 350,615
5 Claims. (Cl. 99—172)



1. In an apparatus for moisturizing stale, steam permeable, dough product, comprising a container housing the said dough product and having top and bottom walls, a frangible, heatable, water-containing capsule within said container in contact with the inner surface of said bottom wall and disposed between said bottom wall and said dough product, and an impermeable membrane of flexible material underlying said top wall above said dough product providing a further seal for the contents of the container, said top wall having an opening therein, and removable means, having a tear strip, closing said opening, whereby when said opening is uncovered and a sufficient quantity of heat is applied to the bottom of said container, the water in the capsule boils, fractures said capsule and emits steam which ascends through said dough product, pushes the membrane through the opening and, upon puncture of the membrane, exhausts through said opening.

3,282,709

PRESSURE INDICIA TRANSFER SHEETING AND METHOD OF PRODUCING SAME

Gerry H. Ehrhardt, West Des Moines, and Robert R. Wissinger, Des Moines, Iowa, assignors, by mesne assignments, to Pacific Industries, Inc., New York, N.Y., a corporation of California

No Drawing. Filed Mar. 1, 1962, Ser. No. 176,792
3 Claims. (Cl. 106—27)

1. A transfer composition for copy paper, comprising, by weight, approximately

(a) seventy-three percent stearic acid,

(b) fifteen percent mineral oil,

(c) four percent wax,

(d) five percent carbon black, and

(e) three percent aluminum stearate.

3,282,710
DENTAL IMPRESSION MATERIALS
Jacque C. Morrell, 8 Oxford St., Chevy Chase, Md.
No Drawing. Filed Sept. 23, 1965, Ser. No. 489,760
22 Claims. (Cl. 106—38.5)

11. A dental impression composition consisting essentially of a mixture of an alkali metal alginate, hydrated calcium sulphate, a metal fluoride, a metal oxide neutralizer, an inert filler, and a retarder, the said fluoride consisting of lithium fluoride, and being present in an amount of from about 1% to about 10%, said fluoride being adapted to eliminate fixing of said composition while maintaining controlled setting time and minimizing deterioration with age, and to provide smooth and accurate impression and casts.

14. A dental impression composition consisting essentially of a mixture of an alkali metal alignate, hydrated calcium sulphate, a metal fluoride and an inert filler, a retarder, the said fluoride consisting of lithium fluoride combined with another fluoride selected from the group consisting of potassium fluoride, sodium fluoride, and zinc fluoride and being present in a total amount of from about 1% to 10% said fluoride being adapted to eliminating fixing of said composition while maintaining controlled setting time and minimizing deterioration with age, and to provide smooth and accurate impressions and casts.

3,282,711
PRESHAPED TWO-PHASE GLASS CERAMIC BODY AND PROCESS FOR PREPARING THE SAME
Francis C. M. Lin, Plum Township, Allegheny County, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 3, 1961, Ser. No. 107,365
11 Claims. (Cl. 106—39)

1. A process for the preparation of a two-phase glass-ceramic body consisting essentially of (1) preparing a crystallizable glass body from a charge containing at least one component selected from the group consisting of SiO_2, PbO, B_2O_3, GeO_2 and P_2O_5, and at least one oxide selected from the group consisting of Al_2O_3, CaO, BeO, MgO, CoO, ZnO, ZrO_2, SrO, CdO, BaO, PbO, MnO, Fe_2O_3 and NiO, and containing as the sole nucleating agent from 0.01% to 10% by weight, of at least one nucleating agent selected from the group consisting of the elements copper, gold, and silver; oxides of copper, cobalt, cadmium, calcium, antimony, and manganese; carbonates of calcium, cobalt, and cesium; sulfides of copper, cadmium, and cobalt; chlorides of cadmium, cobalt, gold, silver, and manganese; and fluoride of cadmium, bringing the glass body to a predetermined elevated first temperature at which the nucleating agent is activated, said elevated first temperature ranging from slightly less than the deformation temperature of the glass composition to 50° C. below the deformation temperature, (2) maintaining said first temperature for a period of time sufficient to establish thermodynamic equilibrium, (3) cooling the body from 50° C. to 100° C. at a rate of from 2.5° C. to 8° C. per minute, whereby the nucleating agent will precipitate substantially uniformly throughout the body, (4) increasing the temperature of the body at a rate of from 2° C. to 10° C. per minute to a second temperature from 50° C. to 100° C. above said first temperature, (5) maintaining the second temperature for a period of time of from 2 to 4 hours, (6) increasing the temperature of the body to a temperature within 100° C. to 200° C. of the liquidus temperature of the body, whereby crystallization of the glass about the precipitated nucleating agent is initiated, (7) maintaining said last temperature for a period of time of from 2 hours to 4 hours, whereby from at least 50% to almost 100% by weight of the body is crystallized about the precipitated nuclei, and (8) cooling the resulting body to room temperature.

3,282,712
METHOD OF PREVENTING SCUM FORMATION IN GLASS MELTS, AND GLASS-CERAMIC PRODUCTS
Megumi Tashiro, Kyoto, and Kiyoshi Takagi, Shiga, Japan, assignors to Nippon Electric Glass Co., Ltd., Shiga, Japan
No Drawing. Filed Oct. 3, 1962, Ser. No. 227,997
Claims priority, application Japan, Mar. 31, 1962, 37/13,014; Apr. 3, 1962, 37/13,388
12 Claims. (Cl. 106—39)

8. In a method of preventing scum formation in the production of a glass composition comprising 1 to 4 percent ZrO_2, 1 to 3 percent TiO_2, 55 to 70 percent SiO_2, 20 to 35 percent Al_2O_3 and 3 to 5 percent Li_2O, all percentages being by weight, the step of including 1 to 5 percent P_2O_5 to promote production of a homogeneous melt of said composition, said ZrO_2, TiO_2, SiO_2, Al_2O_3, Li_2O and P_2O_5 totaling at least 95 percent of the composition.

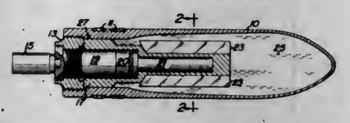
3,282,713
CERAMIC REFRACTORY
George D. McTaggart and Emmerson K. Norman, Horseheads, N.Y., assignors to Corhart Refractories Company, Louisville, Ky., a corporation of Delaware
Filed Nov. 19, 1964, Ser. No. 415,560
3 Claims. (Cl. 106—59)

1. A shaped sintered ceramic refractory product:
(a) analytically consisting essentially of, by weight, 3 to less than 15% TiO_2, 0.8 to 25% Cr_2O_3, 40 to less than 95% MgO, the sum of

$$TiO_2+Cr_2O_3+MgO$$

being at least 75%, up to 15% Fe_2O_3, less than 7.5% Al_2O_3, less than 2% SiO_2 and less than 1% CaO,
(b) having a homogeneous mineralogy on a macroscopic scale,
(c) microscopically comprising essentially an intimate, intergrown mixture of fine periclase crystals and fine mixed magnesium-spinel crystals with substantial direct mineralogical bonding of these crystals to those adjacent thereto, and at least a major portion of said periclase crystals containing therein fine exsolved magnesium-spinel crystals and discontinuous microcracks.

3,282,714
BALLISTICALLY STABILIZED WHITE PHOSPHORUS SHELL
Russell I. Wessells, Baltimore, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed Nov. 2, 1964, Ser. No. 408,444
3 Claims. (Cl. 102—66)



1. A phosphorus disseminating projectile comprising:
(1) a hollow ogive-shaped body means having an opening in the base end;
(2) burster casing means mounted in sealing relationship with said opening and extending a predetermined axial distance interiorly of said body;
(a) said casing means having fuze means sealed therein adjacent to said opening;
(b) said casing means having a portion thereof containing explosive means remote from said opening and detonatably connected to said fuze;
(c) said casing means having a plurality of radially and longitudinally extending fin means being wholly supported by and integral with said explosive charge portion.

3,282,715
INHIBITED CLAY SLURRY COMPOSITION
Edgar W. Sawyer, Jr., Metuchen, and Michael Pavol, Jr., New Brunswick, N.J., assignors to Minerals & Chemicals Philipp Corporation, Menlo Park, N.J., a corporation of Maryland
No Drawing. Filed Oct. 2, 1963, Ser. No. 313,175
10 Claims. (Cl. 106—72)

1. A fluid clay slurry comprising a concentrated aqueous dispersion of kaolin clay dispersing agent, and 3,5-dimethyltetrahydro-1,3,5,2H-thiadiazine-2-thione in amount sufficient to reduce substantially the quantity of microorganisms in said slurry but insufficient to affect the color and odor of said slurry.

3,282,716
COATING COMPOSITIONS CONTAINING BUTYRIC ACID ESTERS OF CELLULOSE
Charles H. Coney and Robert M. Simons, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Oct. 17, 1963, Ser. No. 317,069
3 Claims. (Cl. 106—186)

1. A lacquer coating composition consisting esssentially of a clear homogeneous solution of the following ingredients:
(A) from 5 to 30 percent by weight of an ethyl alcohol soluble butyric acid ester of cellulose,
(B) from 5 to 30 percent by weight of ethyl alcohol soluble dimethylol urea,
(C) a minor portion of a catalyst capable of promoting cross-linking between a dimethylol urea and a butyric acid ester of cellulose, and
(D) the remaining portion being a solvent comprising 75 to 100 percent, by weight of the solvent, of ethyl alcohol and 0 to 25% by weight of the solvent, of a solvent compatible with the above-identified ingredients.

3,282,717
PRINT PASTE THICKENER
Edward L. Kelley, Ho-Ho-Kus, N.J., assignor to Kelco Company, San Diego, Calif., a corporation of Delaware
No Drawing. Filed Apr. 23, 1963, Ser. No. 274,942
11 Claims. (Cl. 106—205)

10. The process of modifying the rheological character of an aqueous print paste formulation which comprises incorporating therewith an alkali metal alginate and a guar gum within the relative ratio thereof of 80:20 and 60:40, the total amount of the said alginate and guar gum being present in the said formulation in an amount from 0.25% to 4.0% of the weight thereof.

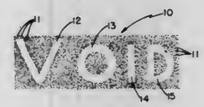
3,282,718
CARBONACEOUS MATERIAL
Mark J. Smith, Wilson, N.Y., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
No Drawing. Filed Feb. 28, 1963, Ser. No. 261,861
9 Claims. (Cl. 106—269)

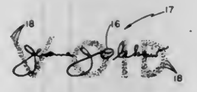
1. A carbonaceous mixture for electrodes and the like having improved extrusion properties consisting essentially of a carbonaceous filler material a coal-tar pitch binder and from about 1% to about 4% by weight of an organic amide containing from 12 to 52 carbon atoms.

3,282,719
PELLETIZED CARBON BLACK
Andries Voet, Borger, Tex., assignor to J. M. Huber Corporation, Locust, N.J., a corporation of New Jersey
No Drawing. Filed Sept. 3, 1963, Ser. No. 306,324
10 Claims. (Cl. 106—307)

1. A pelletized carbon black suitable for compounding in elastomers consisting of a fluffy carbon black and a quantity of an oleaginous pellet binding material of from 1.0% to 90% of the oil absorption value of the carbon black, with the individual kinetic particle units of the carbon black separately coated with a film of the oleaginous pellet binding material.

3,282,720
METHOD OF APPLYING SIGNATURES TO NEGOTIABLE INSTRUMENTS
Jerome J. Oleksiw, Weston, Mass., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Nov. 1, 1963, Ser. No. 320,813
11 Claims. (Cl. 117—1)





1. In the method of printing a signature the steps comprising:
(a) imprinting on a negotiable instrument an imprint comprising a partial background which defines at least in part a predetermined word; and
(b) imprinting at least part of a validating signature together with a further imprint arranged and adapted to complete said background and render said predetermined word indistinguishable in said background.

3,282,721
LEATHER-LIKE CLOTH AND ITS PREPARATION
Tetuya Iseki, Suginami-ku, Tokyo, Japan, assignor, by direct and mesne assignments, to Tetuya Iseki, Tokyo, Japan, and T. Takase Company, Honolulu, Hawaii, a partnership
Filed Apr. 16, 1964, Ser. No. 360,223
4 Claims. (Cl. 117—7)



1. A leather-like cloth comprising a shrunk fabric base having raised nap on at least one face thereof having a length of from 0.3 to 5 mm. high, a layer of set bonding agent covering at least part of the length of the nap, said fabric base being substantially free of bonding agent, and a layer of fine leather powder slightly com-

pressed and firmly secured to the bonding agent, said leather powder layer having leather-like creases therein.

3,282,722
METHOD OF FLAME TREATING POLYVINYL BUTYRAL AND THE PRODUCT THEREOF

Robert Burleigh Hallstone, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed July 22, 1963, Ser. No. 296,655
8 Claims. (Cl. 117—16)

1. In a process for the preparation of plasticized polyvinyl butyral sheeting suitable for use in the preparation of laminated safety glass, the step which comprises flaming at least one surface of a plasticized butyral sheeting.

6. The process of claim 4 in which the plasticized polyvinyl butyral sheeting is coated on its surfaces with sodium bicarbonate powder which comprises less than about 15 percent by weight of the powdered sheeting.

3,282,723
ELECTROLESS DEPOSITION AND METHOD OF PRODUCING SUCH ELECTROLESS DEPOSITION

Manlio B. Melillo, Inglewood, Calif., assignor to The Electrada Corporation, Culver City, Calif., a corporation of Delaware

Filed Nov. 18, 1960, Ser. No. 70,224
16 Claims. (Cl. 117—47)

Material	Grams per Liter Approximately Ranges Each		
	1	2	3
Nickel Acetate $Ni(C_2H_3O_2)_2 \cdot 4H_2O$	30	30	25
Urea $CO(NH_2)_2$	60	10	20
Sodium Hypophosphite $NaH_2PO_2 \cdot H_2O$	12	10	15
Sodium Potassium Tartrate $NaKC_4H_4O_6 \cdot 4H_2O$	30	40	30
Ferrous Sulphate $FeSO_4 \cdot 7H_2O$	10	15	12
Ammonium Hydroxide NH_4OH as required for pH 8 to 10			
Sodium Citrate $Na_3C_6H_5O_7 \cdot 2H_2O$		80	60

3. A method of electrolessly depositing on a surface a magnetic material including the element of iron and a second element selected from the group consisting of cobalt and nickel, including the steps of:

cleaning the surface to prepare the surface for the deposition of the magnetic material including the iron;

sensitizing the surface by applying to the surface a bath containing palladium ions; and

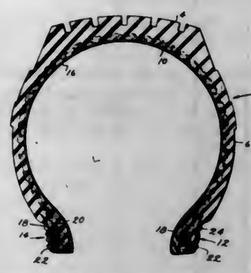
immersing the sensitized surface in a bath including ions of iron and the second element, including a reducing agent to reduce the ions of iron and the second element, a complexing agent to prevent the precipitation of the second element from the bath and including urea as a sequestering agent to prevent the precipitation of the iron from the bath and for a sufficient length of time to provide for a controlled deposition on the prepared surface of the magnetic material including the iron and the second element.

3,282,724
TIRE FABRIC AND METHOD OF MAKING SAME

Everett C. Atwell, Greensboro, N.C., assignor to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware

Filed Apr. 18, 1963, Ser. No. 273,865
12 Claims. (Cl. 117—62.2)

1. A process for preparing an air-impervious tire fabric which comprises impregnating a fabric composed of synthetic multifilament hydrophobic yarn with a latex composition, then treating said fabric with dilute volatile acid which will not degrade the fabric whereby said latex is coagulated in situ, drying said fabric, then impregnating

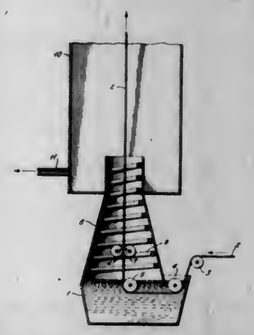


said fabric with a resole/latex composition and again drying.

3,282,725
SOLVENT REMOVAL FROM A COATED LACQUER FILM

Roelof van Zalinge, Palestro, Pavia, Italy, assignor to Algemene Kunstzijde Unie, N.V., Arnhem, Netherlands, a corporation of the Netherlands

Filed May 16, 1963, Ser. No. 280,826
Claims priority, application Netherlands, May 28, 1962, 279,000
4 Claims. (Cl. 117—64)



1. In the continuous method for the coating of a film wherein the film is guided through a bath consisting of a lacquer solution and subsequently dried in a drying shaft by contact with heated circulating air, and which film after it has left the lacquer bath and before contact with the heated air is guided through an intermediate zone in which excessive ventilation is avoided and in which an atmosphere is maintained containing solvent vapor in a concentration higher than that maintained in the drying shaft, the improvement comprising maintaining the atmosphere in said zone at an adjustable temperature which is higher than that of the lacquer bath and lower than that of the heated drying air.

3,282,726
METHOD OF IMPREGNATING LEATHER AND RESULTANT ARTICLE

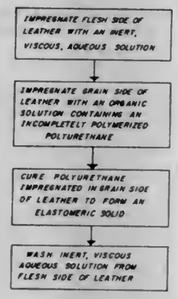
Ludwig Seligsberger, Newton Center, Mass., assignor to the United States of America as represented by the Secretary of the Army

Filed Aug. 12, 1963, Ser. No. 304,715
11 Claims. (Cl. 117—68)

1. A method of treating leather having flesh and grain layers which comprises:

(a) impregnating said leather from the flesh surface inwardly with an aqueous solution of a thickening agent which will not react with the leather, said aqueous solution having a viscosity which will allow the solution to penetrate into and substantially fill the inter-fiber spaces of the flesh layer but not penetrate into the smaller inter-fiber spaces of the grain layer,

(b) subsequently impregnating the leather, while the inter-fiber spaces of the flesh layer are still impregnated with the aqueous solution of the thickening agent, from the grain surface inwardly to substantially fill only the inter-fiber spaces of the grain layer with an organic liquid composition comprising



(1) an isocyanate-terminated urethane prepolymer having a molecular weight between 750 and 10,000,

(2) a polyhydroxy containing cross-linking agent capable of cross-linking said prepolymer to an elastomeric solid and

(3) an organic solvent not having an active hydrogen in its structure, said organic liquid composition being immiscible with said aqueous solution,

(c) and then curing said urethane prepolymer in the inter-fiber space of said grain layer to form an elastomer; whereby a flexible, impregnated leather is obtained that is resistant to penetration by water, petroleum products and vesicant gasses.

3,282,727
PRESSURE-SENSITIVE ADHESIVE TAPES WITH IMPROVED RELEASE COATINGS

John W. Crone, Jr., Hickory, and Charles O. Pike, Newton, N.C., assignors to Shuford Mills, Inc., Hickory, N.C., a corporation of North Carolina

No Drawing. Filed Oct. 30, 1962, Ser. No. 234,239
4 Claims. (Cl. 117—68.5)

1. A pressure-sensitive adhesive tape characterized by:

(a) ability to be unwound from a roll in which the tape is wound upon itself with relatively low unwind tension,

(b) good stability of such low unwind tension over extended periods of time and varying temperature conditions, and

(c) freedom from tendency to deposit a film-like haze upon a highly polished metal surface with which the tape is brought in contact,

said tape comprising:

(A) a unified paper backing,

(B) a pressure-sensitive adhesive coating firmly affixed upon one surface of said paper backing, and

(C) a release coating on the surface of said paper backing opposite to said adhesive coating, said release coating consisting essentially of a resin binder material and between about 0.5 to 10% by weight, based upon the weight of the total release coating, of p-phenylene diamine distearamide.

3,282,728
PROCESS FOR SUPPRESSING ELECTROSTATIC CHARGES ON SULPHUR

Robert Lacroux, Saint-Clair-du-Rhone, and Jean-Paul Zwilling, Pau, France, assignors to Societe Nationale des Petroles d'Aquitaine, Paris, France, a society

No Drawing. Filed May 1, 1962, Ser. No. 191,412
Claims priority, application France, May 9, 1961, 861,203
9 Claims. (Cl. 117—100)

1. A process for treating solid sulphur particles to be transported in bulk in order to suppress electrostatic charges thereon and to reduce combustibility thereof, which comprises adding to the sulphur, in an amount of from 0.1 to 1.0% by weight thereof, an aqueous solution consisting essentially of a solvent, from 0.5 to 15% by weight of an electrolyte from the group consisting of alkali metal hydroxides, carbonates, borates and phosphates and ammonium hydroxide, and alkali metal and alkaline earth salts of strong acids, and from 0.2 to 10% by weight of a surface active agent from the group consisting of non-ionic alkyl-alkoxy-phenol, cationic quaternary ammonium derivatives, and fatty amines, and forming a thin, substantially uniform charge-suppressing coating of said electrolyte on the sulphur particles.

3,282,729
BARRIER COATED THERMOPLASTIC OLEFIN POLYMER SUBSTRATES

Stanley H. Richardson, Millington, and Gretchen Smitmans Schaufelberger, Basking Ridge, N.J., assignors to Union Carbide Corporation, a corporation of New York

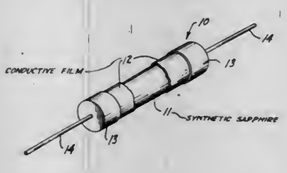
No Drawing. Filed Feb. 27, 1963, Ser. No. 261,527
13 Claims. (Cl. 117—138.8)

1. Barrier coated article comprising thermoplastic olefin high polymer capable of supporting its own weight without warping at 200° F. and adhering thereto a film comprising a cured mixture of 100 parts by weight of substantially completely hydrolyzed polyvinyl alcohol and at least 6 parts by weight of a trimethylolphenol compound.

3,282,730
PRECISION ELECTRICAL RESISTOR

William R. Johnston and Howard A. Cramer, Independence, Kans., assignors to Electra Manufacturing Company, Kansas City, Mo., a corporation of Missouri

Filed Nov. 14, 1962, Ser. No. 237,557
2 Claims. (Cl. 117—212)



1. An electrical resistor comprising, in combination, a resistor substrate formed of a rod of synthetic sapphire, said rod being ground to a uniform diameter with a highly polished surface having surface irregularities of less than about 20 to 30 micro-inches per inch, and a vapor deposited film of nickel-chromium alloy applied on said highly polished surface of said rod to define a path of high electrical resistance on said resistor.

3,282,731
EMBRITTLEMENT-FREE PICKLING OF FERROUS METAL

Robert M. Hudson, Churchill Borough, and Kermit J. Riedy, King of Prussia, Pa., assignors to United States Steel Corporation, a corporation of Delaware

No Drawing. Filed May 28, 1963, Ser. No. 283,717
6 Claims. (Cl. 134—41)

1. A method for embrittlement-free pickling of ferrous metal comprising the step of subjecting said metal to an aqueous solution consisting essentially of a strong mineral acid, adapted to pickle ferrous metal, and an acetylenic carboxylic acid selected from a group consisting of acetylene dicarboxylic acid and propiolic acid, the concentration of said latter acid being sufficient to inhibit dissolution of the ferrous metal and to reduce hydrogen absorption therein.

3,282,732
METHOD OF MAKING A SILVER OXIDE ELECTRODE

Charles J. Bradley, Asbury Park, and Kennceth E. Meade, Oceanport, N.J., assignors to the United States of America as represented by the Secretary of the Army

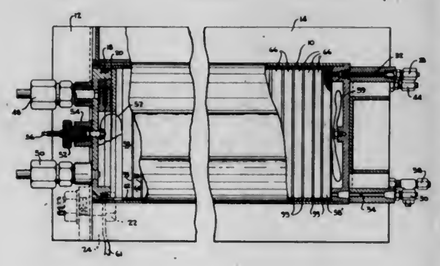
No Drawing. Filed Nov. 1, 1963, Ser. No. 320,970
3 Claims. (Cl. 136—20)

1. The method of making a divalent silver oxide electrode for a battery comprising pasting a silver grid with an aqueous solution of carboxy methyl cellulose, immediately thereafter applying divalent silver oxide to the grid, mechanically levelling out the pasted grid, and applying pressure of at least 1000 pounds per square inch to the pasted grid.

3,282,733
PROCESS OF OPERATING A FUEL CELL UTILIZING INERT GAS TO MAINTAIN PRESSURE DIFFERENTAL

Laurence R. Alexander, Greenwich, Conn., and Nicholas Charyszyn, Jamaica, and Leonard J. Rzewinski, Brooklyn, N.Y., assignors to Leesona Corporation, Cranston, R.I., a corporation of Massachusetts

Filed Mar. 30, 1961, Ser. No. 99,591
1 Claim. (Cl. 136—86)

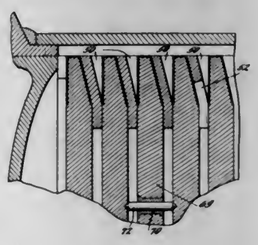


A process for the direct production of electrical energy from a fuel and oxidant in a ful cell comprising a fluid-tight housing, a plurality of bi-polar electrode assemblies mounted in a stack in said housing, each including an electrode mount having a pair of electrodes thereon, and a gas impermeable membrane between said electrodes, means for feeding fuel gases between said membranes and said electrodes, an end amount at each end of said stack of bi-polar assemblies having only one electrode thereon, fluid seals between each of said mounts for retaining electrolyte in an electrolyte chamber between adjacent electrodes of adjacent bi-polar assemblies and means for feeding electrolyte thereto, a gas space between said bi-polar assemblies and said fluid-tight housing, comprising the steps of (1) feeding fuel gases to said cell between said membranes and said electrodes; (2) feeding an electrolyte to said electrolyte chamber; (3) feeding an inert gas into said gas space between said bi-polar assemblies and said housing; and (4) maintaining the inert gas in said gas space at a pressure greater than the pressure of said fuel gases in said cell, thereby reducing the pressure differential on said fluid seals.

3,282,734
FUEL CELL WITH SERIES OF ELECTRODE SETS

Leonard J. Rzewinski, Brooklyn, N.Y., assignor to Leesona Corporation, Cranston, R.I., a corporation of Massachusetts

Filed Sept. 26, 1961, Ser. No. 140,770
3 Claims. (Cl. 136—86)



1. A fuel cell comprising a tank, a series of electrode sets with an electrolyte space therebetween positioned within the tank and spaced apart along its longitudinal axis, electrically insulating sealing means positioned between the outer edges of all of said electrodes and the inner surface of said tank and between the outer edges of said electrodes to space the sets apart as aforesaid and to provide the said electrolyte space between the electrodes of each set, said sealing means comprising an annular gasket adjacent each electrode having an inner portion lying in a radial plane and an outer portion longitudinally displaced therefrom, the outer edges of said electrodes on one side being cut back from a radial plane to a lesser degree but in the same direction as the outer portions of said gaskets, and the displaced portion of said gaskets bearing against the cut back portions of said electrodes.

3. A fuel cell comprising a series of electrode sets with an electrolyte spaced therebetween, electrically insulating sealing means positioned between the outer edges of said electrodes to space the sets apart and to provide said electrolyte space between the electrodes of each set, at least one electrode of said series of electrodes having an electric insulator extending from one side to the other and an electrical conductor protruding through said insulator, and not contacting said one electrode, and into contact with the electrodes on either side of said one electrode.

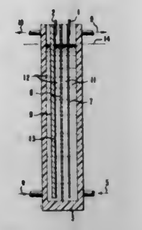
3,282,735
FUEL CELL INCLUDING PLATINUM CONTAINING ELECTRODES

Elbert V. Kring and William R. Wolfe, Jr., Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Feb. 25, 1963, Ser. No. 260,496
6 Claims. (Cl. 136—86)

1. A fuel cell comprising: (a) an acidic aqueous electrolyte; (b) a membrane separating said electrolyte into a catholyte portion having dissolved therein a peroxygen compound and an anolyte portion having dissolved therein a fuel, said membrane being permeable to hydronium ions but impermeable to said peroxygen compound and

said fuel; (c) a cathode in contact with said catholyte portion, which cathode comprises an active electrodeposited platinum surface which has been heated at a temperature of at least 200° C. in an atmosphere comprising molecular

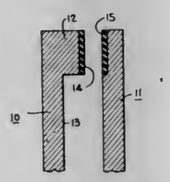


oxygen; and (d) an anode in contact with said anolyte portion, which anode comprises a porous electroconductive support having an active coating of a mixture of platinum, acetylene black and a binder.

3,282,736
FUEL CELL STRUCTURE AND METHOD FOR MAKING SAME

Kenneth I. Rapp, Roslyn Heights, N.Y., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts

Filed Dec. 16, 1964, Ser. No. 420,854
5 Claims. (Cl. 136—86)



1. A fuel cell for the direct generation of electrical energy from a fuel and oxidant comprising as elements, a metal housing, at least one fuel electrode, and at least one oxidizing electrode, said elements being maintained in working association and separated from each other with an insulating material, said insulating material between said metal housing, and at least one electrode being a non-conductive green nickel oxide which is formed as an integral part of at least one of said elements.

3,282,737
ELECTRODES AND ELECTRODE MATERIAL

Hans E. Hintermann, Yardley, Pa., and Madison W. Reed, Jr., Irving, Tex., assignors to The Electric Storage Battery Company, a corporation of New Jersey

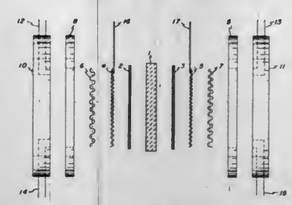
Filed Aug. 27, 1962, Ser. No. 219,504
20 Claims. (Cl. 136—120)

1. A method for preparing a porous electrode which comprises depositing a first metallic catalyst coating on a metallic surface of a finely divided substrate by a chemical displacement technique, depositing on said first catalyst coating a second metallic catalyst coating by a chemical reduction technique, and subsequently fabricating the coated, finely divided substrate into a porous electrode and using said porous electrode in a fuel cell for the direct conversion of chemical energy into electrical energy by electrochemical means.

3,282,738
PROCESS FOR PREPARING MOLDED ELECTRODES

Stanley Harold Langer, Stamford, Conn., and Henry Patrick Landi, Yorktown Heights, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed Feb. 28, 1963, Ser. No. 261,770
6 Claims. (Cl. 136—120)

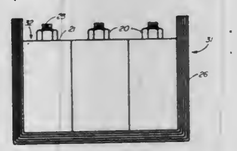


1. In the preparation of a molded, catalytic fuel cell electrode, whereby a discontinuous film is formed thereon so as to prevent harmful flooding, the improvement which consists essentially in the steps of: admixing (a) an electrically conductive filler in an amount equal to between about 40% and about 80%, (b) an electrochemical catalyst in an amount ranging from about 1% to less than about 95% and (c) a water-repellent composition equal to from about 1% to about 40% introduced as a polyethylene aqueous emulsion containing discrete particles of from about one to about five microns in diameter, said percentages being based on the weight of the electrode solids mixture; and, thereafter, pressure molding the latter mixture under superatmospheric pressure and at a temperature not to exceed about 135° C.

3,282,739
NON-MAGNETIC BATTERY CASE

Thomas J. Hennigan, Chillum Terrace, Md., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Oct. 29, 1963, Ser. No. 319,894
12 Claims. (Cl. 136—132)



1. An electrochemical device including an outer housing having terminals affixed thereto and containing therein an electrolyte, positive and negative electrodes and separators positioned between said positive and negative electrodes, the improvement comprising: an epoxy resin impregnated woven glass tape formed about said housing.

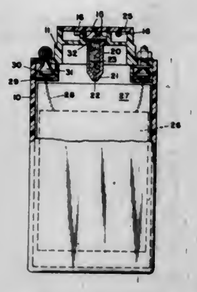
3,282,740
SEALED BATTERY GAS MANIFOLD CONSTRUCTION

Gayle M. Wylie, Cary, N.C., assignor, by mesne assignments, to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Apr. 20, 1964, Ser. No. 360,878
5 Claims. (Cl. 136—170)

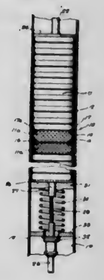
1. In a sealed electric storage battery having a plurality of cells containing a liquid electrolyte, the improvement which comprises a tortuous path gas manifold top piece

displaced from and interconnecting all of the cells of the battery, said gas manifold top piece comprising a series of compartments defining a volume which is substantially



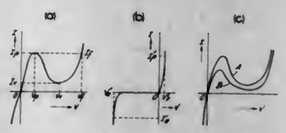
free of electrolyte, partitions and tubes, the tubes which interconnect the compartments through the partitions being arranged in a non-aligned manner so as to form a tortuous path interconnecting the cells.

3,282,741
THERMOELECTRIC FUEL ELEMENT
Thomas H. Pigford, Kensington, and John B. Dunlay, Solana Beach, Calif., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 10, 1961, Ser. No. 101,928
4 Claims. (Cl. 136—211)



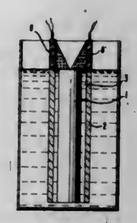
1. An elongated thermoelectric fuel element for effecting the direct conversion of fission heat to electrical energy, which fuel element comprises at least one fissionable fuel body having a pair of planar surfaces disposed transversely of the longitudinal axis of the fuel element, a first semiconductor element secured in thermal and electrical contact to at least a portion of one of the planar surfaces of said fuel body, a second semiconductor element secured in thermal and electrical contact to at least a portion of the other of the planar surfaces of said fuel body and having thermoelectric characteristics dissimilar to the thermoelectric characteristics of said first semiconductor element, a first support member thermally and electrically connected to said first semiconductor element, said first support member extending in a direction outwardly from the longitudinal axis of said fuel element beyond the periphery of said fuel body, a second support member thermally and electrically connected to said second semiconductor element, said second support member extending in a direction outwardly from the longitudinal axis of said fuel element beyond the periphery of said fuel body and in spaced relation to said first support member, and a housing of thermally conductive cladding material disposed in spaced relation about said fuel body and said semiconductor elements, said housing being thermally connected to the extending spaced apart support members so that a path for heat flow is provided from said fuel body to said housing and a thermal electromotive force is generated across said semiconductor elements.

3,282,742
SEMICONDUCTOR MANUFACTURING METHOD
Kuniharu Nemoto and Yuichiro Daihisa, Minatoku, Tokyo, Japan, assignors to Nippon Electric Company Limited, Minatoku, Tokyo, Japan
Filed Feb. 3, 1964, Ser. No. 341,882
Claims priority, application Japan, Feb. 8, 1963, 38/6,560
2 Claims. (Cl. 148—1.5)



1. A method for making a semiconductor device characterized by the tunnel effect of quantum mechanics and having a narrow p-n junction wherein transition of impurity concentration from a degenerate p-type region to a degenerate n-type region is abrupt, said method comprising shifting the peak current characteristic of said device from a first value to a second predetermined value by developing a current through said narrow p-n junction in the forward or backward direction while monitoring the current-voltage characteristic thereof, said current having a value greater than twice the peak current of the current-voltage characteristic of said device, and maintaining said current for a time sufficient to produce said predetermined value.

3,282,743
PROCESS FOR RELIEVING RESIDUAL STRESSES IN METALS
Arnold H. Holtzman, Cherry Hill Township, Gloucester County, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Apr. 22, 1964, Ser. No. 363,058
6 Claims. (Cl. 148—4)



1. A process for relieving stresses in a metal object which comprises positioning said object in spaced relationship to a detonating explosive, placing a shock-wave-transfer medium therebetween, and detonating said explosive, the pressure wave resulting from said detonation of said explosive and traversing said metal object having an intensity which exceeds, but is less than about five times, the Hugoniot elastic limit of said object.

3,282,744
CHROMATE CONVERSION COATING
Fred Corwin Goldsmith, Painesville, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio
No Drawing. Filed May 8, 1963, Ser. No. 278,990
12 Claims. (Cl. 148—6.2)

1. A composition adapted for the corrosion-proofing of metal articles which consists essentially of a dilute aqueous solution of

(A) partially reduced chromic acid in which the ratio of hexavalent chromium to trivalent chomium is within the range from about 0.5 to about 5, and

(B) calcium dichromate;

in which solution from about 20 to about 80 percent of the chromium content thereof is contributed by component A.

3,282,745
HIGH STRENGTH FABRICATIONS OF ALUMINUM BASE ALLOYS CONTAINING COPPER
George S. Foerster, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed May 27, 1963, Ser. No. 283,595
9 Claims. (Cl. 148—12.7)

1. A process for preparing high strength aluminum base alloy articles which comprises:

(1) preparing an aluminum base alloy in molten droplet form consisting essentially of from about 4.0 to about 15.0 weight percent copper, from about 0.3 to about 10.0 weight percent of an additive metal, the balance being aluminum, said additive metal being a member selected from the group consisting of calcium, chromium, iron, manganese, mischmetal, nickel, and silicon, the minimum percent of copper being within the range of from about 4.0 to about 15.0 percent and determined in accordance with the equation:

$$\text{Wt. percent copper} = 4 + KX$$

where X is the concentration of the selected additive metal and the corresponding K value for each additive is as follows:

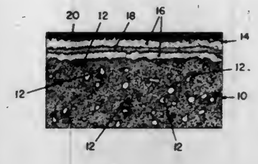
Calcium	5.0
Chromium	0.5
Iron	2.0
Manganese	0.5
Mischmetal	1.5
Nickel	1.3
Silicon	0

(2) solidifying the so-prepared aluminum base alloy molten droplets;

(3) and fabricating said alloy into a useful shape by rolling or forging, thereby providing a high strength aluminum base alloy article.

3,282,746
METHOD OF HARDENING WEAR SURFACES AND PRODUCT
Thaddeus F. Zlotek, Center Line, and Edward J. Vargo, Lincoln Park, Mich., assignors to Formsprag Company, Warren, Mich., a corporation of Michigan
Filed Nov. 18, 1963, Ser. No. 325,838
19 Claims. (Cl. 148—16.6)

1. A method for the surface hardening treatment of ferrous articles, comprising subjecting the article to a nitriding heat treatment, quenching the article and then subjecting the article to a chromizing heat treatment to



produce a chromized external layer on the article modified by a chromium nitride phase.

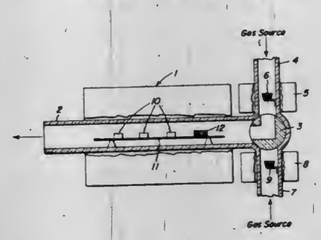
3,282,747
ANNEALING CUBE TEXTURE IRON-SILICON SHEETS
Karl Foster, Wilkins Township, and Alex Goldman, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Apr. 13, 1964, Ser. No. 359,459
13 Claims. (Cl. 148—113)

1. In a process for the annealing of iron-silicon sheets in stacks or coils to obtain transformation to cube texture, coating the sheets on at least one side thereof with a slurry comprising water and alumina powder, the alumina powder having been obtained by the decomposition of an aluminum salt at elevated temperature and thereafter calcined to produce alpha-phase Al_2O_3, heating the coated sheet to dry the slurry leaving a continuous porous coating of non-reactive alumina powder on the sheet, and annealing the sheet to develop cube texture therein.

3,282,748
WELD-STRENGTHENING PROCESS
Charles H. Martens, Huntsville, Ala., assignor to the United States of America as represented by the Secretary of the Army
No Drawing. Filed Jan. 13, 1964, Ser. No. 337,504
9 Claims. (Cl. 148—125)

1. The method of strengthening weld and the metal adjacent the weld after joining at least two pieces of metal by welding, said method comprising mechanically working said weld and the metal adjacent to said weld while maintaining the temperature of said weld and said metal adjacent to the weld at a temperature of about —100° F. or less.

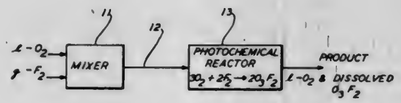
3,282,749
METHOD OF CONTROLLING DIFFUSION
Henry H. Woodbury, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Mar. 26, 1964, Ser. No. 354,838
4 Claims. (Cl. 148—189)



1. A method of controlling the rate of diffusion of an impurity in a semiconductive compound having a first component selected from the group consisting of zinc and

cadmium and a second component selected from the group consisting of sulfur, selenium and tellurium which comprises the steps of preparing a crystal of said compound, placing said crystal and a quantity of said impurity in a furnace, heating said crystal and said impurity to an elevated temperature, providing an atmosphere in said furnace including first predetermined partial pressures of the respective elements of said compound, said partial pressures each lying between zero and the saturation value at said elevated temperature, so as to provide a predetermined rate of diffusion of said impurity, and maintaining said crystal, said impurity and said atmosphere at said elevated temperature for a time sufficient to diffuse a portion of said impurity a predetermined depth into said crystal and changing said atmosphere to provide second predetermined partial pressures of the respective elements of said compound so as to change said rate of diffusion.

3,282,750
TRIOXYGEN DIFLUORIDE IN LIQUID OXYGEN
Russell A. Hemstreet, Mountainside, N.J., assignor to Air Reduction Company Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 31, 1964, Ser. No. 422,618
2 Claims. (Cl. 149—1)



1. A process for the production at a temperature of about 90° K. of O_3F_2 in liquid oxygen comprising, introducing gaseous fluorine at a temperature in the range of about ambient to about that temperature of liquid oxygen into a pool of liquid oxygen, irradiating said mixture of oxygen and fluorine with radiation of a wave length of between about 2,000 and 5,000 A. and subjecting the mixture to said radiation for a period of time sufficient to produce more than about .05 weight percent and up to .11 weight percent O_3F_2 in liquid oxygen.

3,282,751
HIGH STRENGTH NITROCELLULOSE PROPELLANT
Joseph B. Quinlan, Philadelphia, Pa., and John J. Scanlon, Jr., Willingboro, N.J., assignors to the United States of America as represented by the Secretary of the Army
No Drawing. Filed Jan. 27, 1965, Ser. No. 428,582
2 Claims. (Cl. 149—18)

1. A high strength solid propellant consisting of a single base nitrocellulose propellant and a binder mixture in an amount of approximately 1.0 milliliter of binder mixture for approximately 27.0 grains of propellant, said binder mixture comprising about 10% by volume of acetone and about 90% by volume of a low nitrogen nitrocellulose wherein said nitrogen is present within the range of 7 to 10% by weight, the balance being a 50–50 volume mixture of ethanol and ethyl ether.

3,282,752
SLURRY TYPE BLASTING AGENTS
Robert B. Clay, Bountiful, and William N. Bryan, Salt Lake City, Utah, assignors to Intermountain Research and Engineering Company, a corporation of Utah
No Drawing. Filed Sept. 21, 1965, Ser. No. 489,052
17 Claims. (Cl. 149—22)

1. An explosive composition comprising at least 45% by weight of oxygen supplying salts, at least half of such salts being ammonium nitrate and at least 5% being sodium nitrate, the remainder being selected from a group which consists of ammonium nitrate, alkali metal nitrate, alkaline earth metal nitrates, and the chlorates and perchlorates of ammonia and of the alkali metals, an amount of sulfur to make a weight ratio with the sodium nitrate between 0.8 and 3.0 *SN/S*, 0.1 to 8% of particulate metal selected from the group which consists of aluminum, magnesium, boron, and mixtures thereof, a sufficient quantity of water to form a pourable slurry or gel, and 0.1 to 4% of a thickening agent to inhibit gravity separation of undissolved components of said slurry.

3,282,753
SLURRY BLASTING AGENT CONTAINING NON-EXPLOSIVE LIQUID FUEL
Melvin A. Cook, Salt Lake City, Robert B. Clay, Bountiful, and Thomas K. Collins, Salt Lake City, Utah, assignors to Intermountain Research and Engineering Company, a corporation of Utah
No Drawing. Filed June 29, 1964, Ser. No. 378,965
15 Claims. (Cl. 149—46)

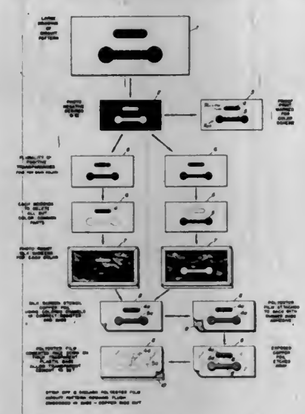
9. A blasting composition in the form of a pourable liquid slurry essentially free of voids and air spaces, said composition comprising a major proportion of an oxidizer selected from the group which consists of an inorganic normally explosive chlorate and a mixture of such chlorate with a normally explosive inorganic nitrate, a liquid component including 1 to 10 percent by weight, based on the total composition, of water, and 5 to 20 percent by weight of a liquid fuel selected from the group which consists of water soluble lower aliphatic alcohols, polyhydric alcohols and ketones, and water insoluble oil with a dispersant.

3,282,754
NITRIC ACID BLASTING COMPOSITION
Neil E. Gebrig, Schuylkill Haven, Pa., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware
No Drawing. Original application May 13, 1963, Ser. No. 280,128, now Patent No. 3,164,503, dated Jan. 5, 1965. Divided and this application Oct. 21, 1964, Ser. No. 411,173
13 Claims. (Cl. 149—74)

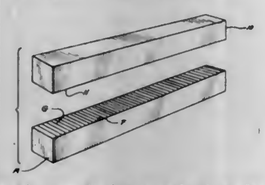
1. A blasting agent consisting essentially of a stable dispersion of
nitric acid,
water, and
an insensitive, immiscible fuel material,
said fuel being substantially unreactive with the nitric acid component under normal conditions of mixing and storage,
said dispersion being stable for at least 8 hours.

3,282,755
METHOD OF MAKING PLASTIC EMBEDDED COLOR-CODED PRINTED CIRCUIT
Morris Tischler, Baltimore, Md., assignor to Electronic Aids, Inc., Baltimore, Md., a corporation of Maryland
Continuation of application Ser. No. 113,508, May 29, 1961. This application June 14, 1965, Ser. No. 470,266
2 Claims. (Cl. 156—3)

1. A process for manufacturing a plastic embedded colored printed circuit pattern, comprising, applying colored enamel characters to a sheet of degreased copper foil, baking said sheet, attaching a thin flexible film to the back of said baked copper foil using an adhesive, etching said backed copper foil to dissolve the exposed copper and expose said thin flexible film with the colored characters remaining unchanged but having underlying replica of themselves of said copper foil and positioned relative to each other on said thin flexible film, cementing said thin flexible film character face down to a transparent plastic base material, and subsequently removing said thin flexible film, with said characters remaining embedded in said plastic base material with the copper foil side exposed and the colored characters visible on the reverse side thereof.



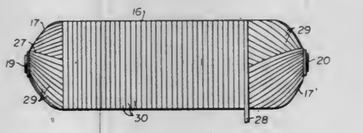
3,282,756
METHOD FOR REPRODUCING PRECISION SCALES FROM A MASTER BY ETCHING
John B. Hawley, Jr., Wayzata, Minn., assignor to Northern Pump Company, Minneapolis, Minn., a corporation of Minnesota
Filed Jan. 23, 1964, Ser. No. 339,707
4 Claims. (Cl. 156—13)



1. A process for producing standard scales from a master scale consisting in the following steps:
(a) applying a radioactive emission material to the graduations of a master scale;
(b) providing material from which a scale is to be produced and coating at least one surface thereof with a photosensitive resist material;
(c) exposing said resist material by placing the same in face-to-face contact with said radioactive emitting material;
(d) developing said photosensitive resist material to produce a plurality of raised resist material lines on the scale material and thereafter,
(e) etching the scale material to produce a standard scale with graduations located thereon in corresponding location to the graduations of the master scale.

3,282,757
METHOD OF MAKING A FILAMENT REINFORCED PRESSURE VESSEL
Richard C. Brussee, Cleveland, Ohio, assignor to Structural Fibers, Inc.
Filed July 7, 1965, Ser. No. 470,003
11 Claims. (Cl. 156—69)

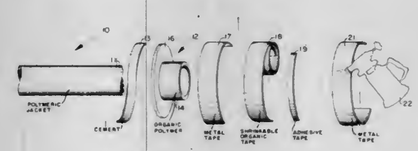
1. A method of producing a pressure vessel comprising:
(a) providing a distensible bladder formed of a stretchable elastomeric material capable of being locally expanded during inflation,
(b) surrounding said bladder with reinforcing strand windings impregnated with a heat curable material,
(c) inflating and expanding said bladder,
(i) free of external restraint except for said windings,
(ii) with sufficient pressure to cause each of said windings to be substantially uniformly tensioned,



(d) and heating the wound bladder while inflated to cure the impregnating material and form a vessel wall containing said windings.

3. The method as claimed in claim 1 wherein said bladder has end walls and a fitting in at least one wall providing a fluid port, and wherein at least some of the windings on said bladder are adjacent said fitting in said one end wall and extend to a substantially diametrically opposed zone in the other end wall.

3,282,758
METHOD OF BONDING A SLEEVE TO A CABLE
Ralph G. D'Ascoli, Yonkers, N.Y., assignor, by mesne assignments, to Anaconda Wire and Cable Company, a corporation of Delaware
Filed July 26, 1962, Ser. No. 212,568
1 Claim. (Cl. 156—86)

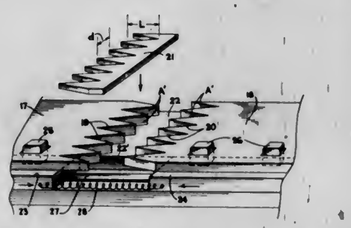


The method of bonding a sleeve to a cable jacket comprising the steps of:
(A) applying a heat and pressure-sensitive cement between said sleeve and said jacket,
(B) wrapping said sleeve with a single turn of metal tape, slightly overlapped,
(C) wrapping said tape with a plurality of layers of heat-shrinkable organic tape,
(D) wrapping over said organic tape a second metal tape,
(E) heating said second tape so as to shrink said organic tape and heat said cement.

3,282,759
METHOD AND APPARATUS FOR SPLICING FILM
Otto R. Nemeth, 11907 San Vicente Blvd., Los Angeles, Calif.
Continuation of application Ser. No. 177,286, Mar. 5, 1962. This application Feb. 14, 1966, Ser. No. 539,238
2 Claims. (Cl. 156—157)

1. A method of splicing two film ends together, comprising the steps of: changing the butt end of each of said film ends from a straight transverse end to an end

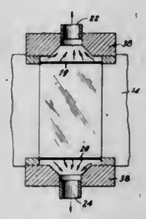
extending in straight lines alternately inwardly and outwardly a plurality of times to increase the total butt end area of each end by a factor greater than 2, said ends being mirror images of each other when one film end is turned over 180° and is in opposing relationship to the other film end; inserting adhesive between the increased butt end areas of said two film ends; urging the increased butt end areas of said two film ends together into pressing engagement without overlapping of any portion of said butt end areas; confining the upper and lower surfaces of the two films adjacent to their ends when pressing the ends together to limit the escape of said adhesive from between the ends; and holding said butt end areas in pressing engagement until said adhesive has set, the increased area of bonding by said adhesive being such as to provide a strength for said splice at least equal to the strength of an unspliced portion of the film.



3,282,760
HEAT SEALING THERMOPLASTIC WRAPPED PACKAGES

Carlos D. Gutierrez, Middlesex, N.J., assignor to Union Carbide Corporation, a corporation of New York

Filed Nov. 14, 1961, Ser. No. 152,211
11 Claims. (Cl. 156—213)



1. Method for heat sealing packages overwrapped with thermoplastic films and having at least two sealing portions thereon which comprises:

(a) heating at least two spaced porous plates each having a mean pore opening of from 4 to 30 mircons;

(b) positioning said package between the thus heated porous plates in such a manner that the sealing portions of said package are each in close proximity to one side of each of said heated porus plates;

(c) drawing the sealing portions of said package into direct contact with said heated porous plates by applying subatmospheric pressure to the other sides thereof thereby removing trapped air from between folds of the film, exerting uniform pressure throughout the entire seal area and heat sealing said overwrapped thermoplastic film;

(d) passing cold air under pressure through said porous plates thereby cooling the thus sealed portions and releasing said package away from said porous plates.

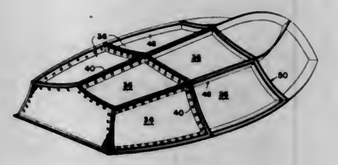
ERRATUM

For Class 65—142 see:
Patent No. 3,282,066

3,282,761
MOLDING METHOD, APPARATUS AND PRODUCT

Felix A. Evangelist, 238 Burgess Ave., Alexandria, Va.

Filed Aug. 22, 1963, Ser. No. 303,859
5 Claims. (Cl. 156—249)

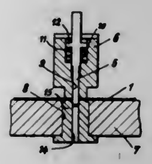


1. The method of molding a boat hull comprising mounting thin partitioning strips upon the outer surface of a master mold of the same shape as the boat hull to be molded in sufficient number to sub-divide the outer surface into relatively small surface area portions, coating the interior and sides of said partitioning strips on said master mold with a mold-releasing agent, molding therein a thin-walled molding corresponding in shape to the master mold bottom and partitioned sides of each subdivided surface area, said moldings being formed of reenforcing glass fiber mat wet with a casting resin, stripping the set individual cast flanged sections after setting in said master molds, reassembling and fastening said cast flanged sections together to form a boat shape of the contiguous bottoms of the correspondingly reassembled castings, coating the contoured surface shaped to a boat hull formed by said reassembled castings with a mold-releasing agent, casting a continuous reenforcing mat of glass fiber impregnated with casting resin upon said reassembled mold surfaces, and then removing the precast molded shapes from said cast boat hull.

3,282,762
MANUFACTURE OF TUBE ELEMENT

Fritz Stork and Waltraud Wegner, Ulm (Danube), and Berthold Bosch, Ulm-Soflingen, Germany, assignors to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany

Filed June 20, 1962, Ser. No. 203,790
Claims priority, application Germany, June 28, 1961, T 20,344; June 29, 1961, T 20,356; Dec. 22, 1961, T 21,316
15 Claims. (Cl. 156—253)

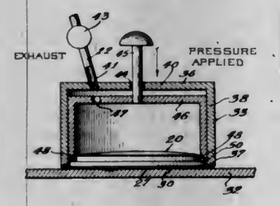


1. A process for making flat cathodes for electrical discharge and vacuum tubes and the like, comprising: punching from a sheet of foil containing alkaline earth carbonates a cathode of the required size; and, thereafter, and by means of the element doing the punching, adhering the cathode foil onto the surface of a cathode holder.

3,282,763
METHOD OF ADHERING A LIGHT REFLECTOR UNIT TO A MOUNTING SURFACE

Ralph R. Gunderson, 7100 S. Shore Drive, Chicago, Ill.

Filed Mar. 8, 1962, Ser. No. 178,400
6 Claims. (Cl. 156—286)

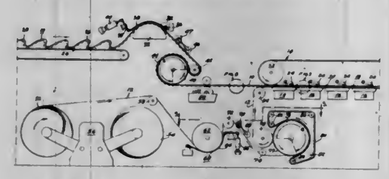


1. The method of adhering a light reflector unit having an inner cavity to a mounting surface, comprising the steps of: confining air pressure within the inner cavity by positioning a flexible adhesive backing in hermetically sealed relation across the opening to the inner cavity; positioning the reflector unit so that the flexible adhesive backing is adjacent the mounting surface; placing an airtight enclosure about the reflector unit; and exhausting air pressure from within the enclosure so as to cause confined air pressure in the inner cavity of the reflector unit to urge the flexible backing into an intimate adhering contact with the contour of the mounting surface.

3,282,764
APPARATUS AND METHOD FOR PRODUCING CORRUGATED PAPERBOARD

Walter J. Goettsch, Kenilworth, Ill., assignor to Samuel M. Langston Company, Camden, N.J., a corporation of New Jersey

Filed Aug. 16, 1963, Ser. No. 302,596
5 Claims. (Cl. 156—292)



4. In a method of operating apparatus for processing paperboard comprising the steps of positively feeding and metering web components to a double facer machine by extending at least one of the web components into intimate circumferential frictional contact with a feed roll adjacent the inlet end of said machine, joining the web components into double-faced board at the double facer machine, cutting double-faced board produced by the double facer machine into unit lengths, synchronizing the speed of cut-off with the surface of the feed roll, and maintaining the web component between the feed roll and the double facer machine taut by operating the double facer at a speed of about .5 percent to 20 percent greater than the surface speed of the feed roll.

3,282,765
PROCESS FOR STRIPPING ADHESIVE FROM A METAL BASE

Herbert Joseph Pine, Fords, and Charles Walter Smith, Red Bank, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Nov. 15, 1962, Ser. No. 237,995
2 Claims. (Cl. 156—344)



1. A process for the recovery of a metal support from the contiguous adhesive stratum of an initial photopolymerizable element having an addition polymerizable stratum adherent to the adhesive stratum,

(a) said polymerizable stratum comprising a solid photopolymerizable layer comprising a cellulose carboxylic acid ester, an ethylenically unsaturated monomer capable of forming a high polymer by photoinitiated addition polymerization and an addition polymerization initiator activatable by actinic light and thermally inactive at 180° C. and below, and

(b) said adhesive stratum consisting of (1) about 75 parts by weight of the copolyester prepared by reacting an excess of ethylene glycol and dimethyl hexahydroterephthalate, dimethyl sebacate and dimethyl terephthalate, the latter reactants in a molar ratio of 8:1:1 respectively, (2) about 2.4 parts by weight of benzoyl peroxide as a thermally sensitive initiator, and (3) about 22.5 parts by weight of triethylene glycol diacrylate containing about 0.1 part by weight of p-methoxyphenol as a thermal polymerization inhibitor,

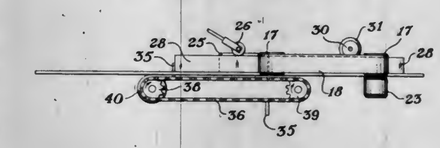
(a) polymerizing said adhesive stratum to the extent that the concentration of the triethylene glycol diacrylate in said stratum is not more than 1.5% by weight on a dry basis, and

(b) bathing said element in a chlorinated hydrocarbon solvent and separating the treated adhesive in one piece by stripping it and any layers carried by it from the supporting plate.

3,282,766
APPARATUS FOR EDGE TO EDGE JOINING OF EXPANDED THERMOPLASTIC RESINOUS PLANKS

Donald R. Wright, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed May 23, 1963, Ser. No. 282,738
6 Claims. (Cl. 156—499)

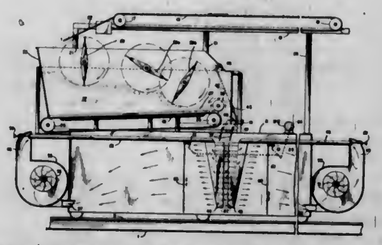


1. An apparatus for joining expanded thermoplastic resinous planks in edge to edge relationship comprising in cooperative combination

an elongated table having a working surface, a first end and a second end, said table defining in its working surface a plurality of elongated slots extending from said first end toward said second end,

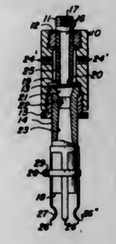
a pad disposed within each of said slots adapted to engage the terminal portion of a plank to be joined,
each of said pads being supported on an endless belt, said belt being adjustably connected to a drive shaft positioned remote from said working surface (each of said slots terminating toward said second end in a pad passing opening), said shaft being cooperatively connected to drive means,
a plurality of elongated heating elements extending generally vertically from said table surface and positioned generally adjacent the slots, each of said elements being positioned generally centrally between and parallel to adjacent pairs of slots,
each of the elements having smooth generally parallel surfaces and heating means located therein,
a plurality of pressure rolls positioned adjacent the terminal portions of said slots disposed adjacent each of said heating elements in such a manner that a plank having an edge portion passing adjacent the heater is resiliently urged toward the working surface,
a pair of pressure means oppositely disposed to each other on adjacent sides of said table, said pressure means being positioned remote from said slots and generally adjacent the terminal portions of said heaters toward said second end and adapted to resiliently urge the planks together in edge to edge relationship after said planks have been moved past said heaters, each of said
pressure means comprising a pair of spaced sheaves having an endless belt positioned therebetween, said belt having a generally flat configuration and having its major flat portions disposed in a plane generally parallel to the plane of the heating elements, said belt adapted to engage the outer edges of an assembly of a plurality of planks positioned on said working surface,
a pressure shoe disposed within said belts adapted to force said belts against said plank edges,
a pressure roll positioned adjacent the surface of said table and adapted to force a plurality of planks into contact with the surface of said table, said roll having an axis generally perpendicular to a plane containing said heating elements, said roll being adapted to frictionally engage and to move said planks away from said heaters toward said second end of said table,
and means to space said planks adjacent said heaters and remote from said pressure means.

3,282,767
METHOD AND APPARATUS FOR THE PRODUCTION OF PARTICLE BOARD PANELS
Ernst Greten, Springe, Hannover, Germany, assignor to Metallwerk Bahre K.G., Springe, Hannover, Germany, a firm of Germany
Filed Apr. 16, 1962, Ser. No. 187,469
9 Claims. (Cl. 156—373)



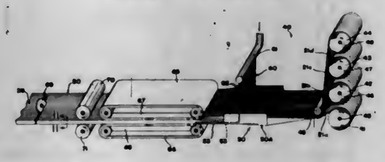
1. Apparatus for air laying mats of loose discrete particles suitable for subsequent compressing to form cured panels of predetermined dimension comprising a particle distributing chamber, particle supply means of a length at least equal to the width of a desired panel extending transversely of said distributing chamber to supply particles in proximity to the longitudinal center thereof, means to impel particles toward opposite ends of said distribution chamber embracing means for drawing air in one direction under particle impelling force through passageways spaced transversely of a plenum chamber extending across said distribution chamber at the approximate longitudinal center thereof and means for drawing air in an opposite direction under particle impelling force through passageways spaced transversely of said plenum chamber and offset laterally from said first mentioned passageways.

3,282,768
APPARATUS FOR BLOOMING FILTER TOW
James F. Caines, Richard F. Dyer, and James Knox Pannill, Jr., Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New York
Filed Sept. 26, 1962, Ser. No. 226,432
9 Claims. (Cl. 156—441)



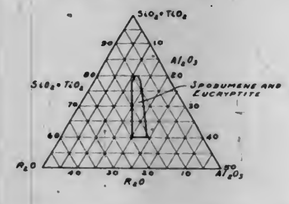
1. An apparatus arrangement for converting a bundle of filaments into a rod-like element comprising feed rolls for withdrawing the bundle of filaments from a supply thereof, means in series with the feed rolls for applying addenda to the filaments and for blowing the filaments including a circular air jet adapted to subject the filaments to relatively streamline air flow in series direction, spring finger filament retarding means between the exit from the jet and further rolls in series, said latter rolls being adapted to withdraw the processed filaments and supply the filaments to filter element forming and wrapping means in series.

3,282,769
APPARATUS FOR MAKING COMPOSITE COREBOARD
Clarence J. Rodman and Thorne K. Broome, Alliance, Ohio, assignors of one-half to C. J. Rodman, doing business as Alliance Tool Company
Original application Jan. 14, 1963, Ser. No. 251,096, now Patent No. 3,185,611, dated May 25, 1965. Divided and this application Feb. 23, 1965, Ser. No. 440,987
4 Claims. (Cl. 156—461)



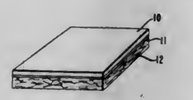
1. Apparatus for making composite coreboard from flat, ribbon-like strips and a core material comprising, a plurality of supply rollers for discharging flat, ribbon-like, flexible strips, a plurality of side-by-side spaced apart turning guides, finger means on said guides for folding the edge portions of the strips emanating from said supply rollers into substantially channel-shaped in cross-section skin elements, said turning guides constructed and arranged to partially nest the skin elements formed in adjacent turning guides so as to provide longitudinal cell space between successive skin elements, charging conduit means to feed core material into said longitudinal cell spaces and forming and transporting means to bond together the nested skin elements.

3,282,770
TRANSPARENT DIVITRIFIED STRENGTHENED GLASS ARTICLE AND METHOD OF MAKING IT
Stanley D. Stookey and Loris G. Sawchuck, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed May 16, 1962, Ser. No. 195,223
5 Claims. (Cl. 161—1)



5. A transparent article comprising a glass body having on its surface a thin, compressive, crystalline layer, said crystalline layer being formed by exposing a glass body consisting essentially, on the oxide basis in mole percent, of 56–73% SiO_2, 4–7% TiO_2, 8.5–20% total of at least one alkali metal oxide selected from the group consisting of Li_2O, Na_2O, and K_2O, the ratio $Li_2O:R_2O$ being not more than 0.9 and 11–24% Al_2O_3, the ratio $Al_2O_3:R_2O$ being at least 1.0 but not more than 1.5, the sum of said SiO_2, TiO_2, R_2O, and Al_2O_3 comprising at least about 96% of said glass, to a temperature of at least about 600° C., but not higher than about 750° C., maintaining thereat for a period of time as generally defined by curve AB in FIGURE 2, thereafter contacting said glass body with a lithium salt-containing material at a temperature of at least about 800° C., but not higher than about 900° C., for a time sufficient to attain surface crystallization, and then cooling said body to room temperature.

3,282,771
POLYVINYL CHLORIDE FILM ADHERED TO A SELF-BONDED WEB OF CONTINUOUS ORIENTED POLYPROPYLENE FILAMENTS
Albert Goodman and Martin Richard Levy, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Dec. 17, 1962, Ser. No. 245,190
1 Claim. (Cl. 161—150)



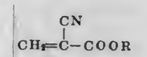
A laminate having a thickness of between about 20 and 200 mils comprising a film of calendered polyvinyl chloride and a base layer comprising a self-bonded web of continuous oriented polypropylene filaments adhered to said film, the filaments being between 1 and 20 denier per filament and having an initial modulus of at least 10 grams per denier, the film having a thickness of between about 1 and 15 mils and constituting between about 1% and 40% of the weight of the laminate and the bonded web having a density of between about 15 lbs./ft.^{3} and 45 lbs./ft.^{3} with at least 30% by weight of the composite structure being fibrous material.

3,282,772
LAMINATED GLASS
Curtis W. Davis, Sr., Toledo, Ohio, assignor to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Filed June 28, 1965, Ser. No. 472,387
5 Claims. (Cl. 161—165)

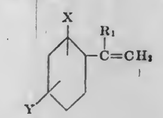
1. A laminated structure consisting essentially of two sheets of glass and a polyvinyl butyral interlayer interposed between the glass sheets and bonded thereto to provide a unitary structure, one of said glass sheets having a thickness in the range of .130 inch to .170 inch, the second glass sheet having a thickness in the range of .040 inch to .110 inch and said polyvinyl butyral interlayer having a thickness in the range of .015 inch to .045 inch but less than the thickness of said second glass sheet, with the thickness of the thicker glass sheet being greater than the combined thicknesses of the said second glass sheet and interlayer.

3,282,773
ADHESIVE COMPOSITION AND METHOD OF BONDING USING α-CYANOACRYLATE ESTERS AND VINYL AROMATICS
Thomas H. Wicker, Jr., and Newton H. Shearer, Jr., Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed July 20, 1961, Ser. No. 125,380
14 Claims. (Cl. 161—188)

8. The method of bonding two surfaces together in a quick and lasting bond which comprises coating one of the surfaces to be bonded with an adhesive composition of a monomeric ester of α-cyanoacrylic acid of the formula:



wherein R is selected from the group consisting of alkyl groups of 1–8 carbon atoms, cyclohexyl groups, phenyl groups, and alkenyl groups; coating the other surface to be bonded with a monomeric vinyl aromatic hydrocarbon having the formula:



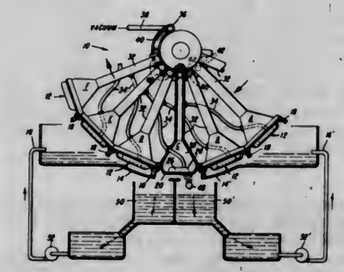
wherein R_1 is a member selected from the group consisting of hydrogen and methyl and X and Y are selected from the group consisting of chlorine, lower alkyl, hydrogen, vinyl, and alkenyl; and thereafter placing together the two surfaces to be bonded, and bonding them together within a few minutes.

9. The product formed by the process of claim 8.

3,282,774
METHOD AND APPARATUS FOR MAKING MULTI-LAYERED OR SELECTIVELY THICKENED MOLDED PULP ARTICLES
Roger Wells, Stamford, Conn., assignor to Diamond International Corporation, a corporation of Delaware
Filed Feb. 5, 1964, Ser. No. 342,691
15 Claims. (Cl. 162—219)

1. A method of pulp molding comprising:
(a) passing a series of pulp molds through at least one pulp slurry in a pulp slurry containing vat;

(b) applying vacuum to a first selected area of each of said molds through a first path as each said mold passes a particular point in its travel;
(c) applying vacuum to a second selected area of each of said molds through a second path independent of said first path as each said mold passes a second point in its travel;
said applications of vacuum, for different molds at different points of travel, being drawn through a common path and simultaneously both through said first path to a said selected area of one mold and through a said second path to a different said selected area of another mold; and
(d) adding fresh pulp to said pulp slurry vat.



14. A pulp molding apparatus comprising: a series of pulp molds; means for passing said series of pulp molds through at least one pulp slurry; a pulp vat for containing said at least one slurry; each of said molds having a first selected area and a second selected area; and a means for supplying vacuum to each said selected area of each of said molds at a different point during the travel of each said mold.

3,282,775

SPORICIDAL COMPOSITIONS COMPRISING A SATURATED DIALDEHYDE AND A CATIONIC SURFACTANT

Albert Adam Stonehill, Plainfield, N.J., assignor to Ethicon, Inc., a corporation of New Jersey

No Drawing. Filed May 10, 1963, Ser. No. 279,588
11 Claims. (Cl. 167—22)

7. A method for disinfecting medical and surgical instruments and household objects which comprises: subjecting said objects to treatment with a composition comprising a saturated dialdehyde containing from 2 to 6 carbon atoms and a cationic surface active agent.

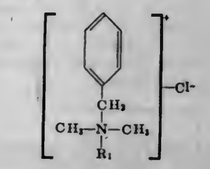
3,282,776

AEROSOL GERMICIDAL COMPOSITIONS

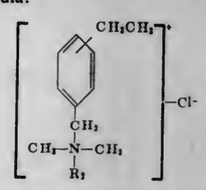
Eugene D. Kitzke, South Milwaukee, and Rodney W. Schrader, Racine, Wis., assignors to S. C. Johnson & Son Inc., Racine, Wis.

No Drawing. Filed May 17, 1965, Ser. No. 456,466
14 Claims. (Cl. 167—39)

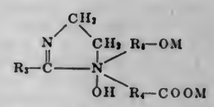
1. A two phase, pressurized surface disinfectant-air sanitizing composition comprising a gaseous phase and a stable homogeneous liquid phase wherein said liquid phase contains:
(a) at least about 10% by weight water,
(b) at least about 15% by weight of a normally gaseous halogenated hydrocarbon propellant,
(c) ethanol in a concentration sufficient to form a homogeneous solution with said water and propellant,
(d) at least about 0.050% by weight of a mixure of quaternaries comprising:
(1) compounds represented by the structural formula:



wherein R_1 represents a mixture of n-alkyl groups comprising from about 55% to about 65% C_{14}, from about 25% to about 35% C_{16}, from about 2% to about 8% C_{12}, and from about 2% to about 8% C_{18}, and
(2) compounds represented by the structural formula:



wherein R_2 represents a mixture of n-alkyl groups comprising from about 45% to about 55% C_{12}, from about 25% to about 35% C_{14}, from about 12% to about 22% C_{16}, and from about 1% to about 8% C_{18} alkyl groups, and
(e) an amphoteric surfactant in a concentration from about 0.05% to about 1.0% by weight, represented by the structural formula:



wherein R_3 represents a hydrocarbon radical having from about 4 to about 18 carbon atoms, R_4 is selected from the group of aliphatic hydrocarbon and oxygenated aliphatic hydrocarbon groups consisting of:
(1) aliphatic hydrocarbon groups having from 1 to 4 carbon atoms,
(2) hydroxy substituted hydrocarbon groups having from 1 to 4 carbon atoms,
(3) aliphatic ether groups, having from 2 to 4 carbon atoms with each of said groups having a single ether linkage therein,
(4) aliphatic hydroxy substituted ether groups having from 2 to 4 carbon atoms,
(5) aliphatic keto groups containing from 2 to 4 carbon atoms, and
(6) aliphatic hydroxy substituted keto groups having from 2 to 4 carbon atoms, and
M is selected from the group consisting of potassium, sodium, and hydrogen.

3,282,777

ANTI-BACTERIAL CHEMICAL PROCESS

John J. Ceriotti, St. Clair Shores, Mich., assignor to Andrew Peru, Dearborn, Mich.

No Drawing. Filed Feb. 6, 1962, Ser. No. 171,344
5 Claims. (Cl. 167—43)

5. The method of disinfecting an aqueous soluble oil formulation comprising the steps of introducing iodine

ions therein in an amount sufficient to provide a total available iodine concentration of from about 1 p.p.m. to about 50 p.p.m., acidifying and buffering said formulation to a pH ranging from about 5.5 to about 6.5, oxidizing at least a portion of the iodide ions to the elemental state in which they are effective to attack and destroy any microbial contamination in said formulation, controlling the oxidation so as to provide a continuous concentration of said elemental iodine in an amount ranging from about 1 p.p.m. to about 50 p.p.m., and reoxidizing said iodide ions formed as a result of the reduction of the elemental iodine back to the elemental state.

3,282,778

MEDICINAL PREPARATION CONTAINING ACETYL SALICYLIC ACID AND A PYRIDOXINE COMPOUND

Mervyn Joseph Lobel, 25 W. 54th St., New York, N.Y.

No Drawing. Filed Sept. 2, 1960, Ser. No. 53,624
3 Claims. (Cl. 167—55)

1. A medicinal preparation comprising in combination (1) a material selected from the group consisting of acetyl salicylic acid and acetyl salicylic acid combined with aluminum glycinate, (2) a non-toxic pyridoxine compound and (3) sodium bicarbonate.

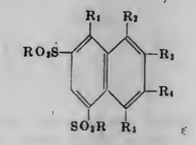
3,282,779

COMPOSITIONS CONTAINING A TETRACYCLINE ANTIBIOTIC AND POTENTIATING AGENTS THEREFOR

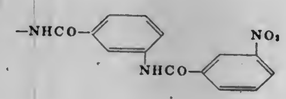
Joseph M. Pensack, Trenton, N.J., and Charles N. Huhtanen, New Hope, Pa., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Jan. 15, 1963, Ser. No. 251,477
4 Claims. (Cl. 167—53)

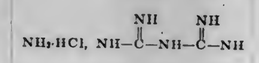
1. An animal feed composition effective in accelerating the growth rate and combating disease of non-ruminants which comprises a nutritionally-balanced animal feed to which as added from about 50 to 1000 parts per million based on the weight of the feed of a tetracycline antibiotic and from about 1 to 5 parts by weight per 1,000 parts by weight of the feed of a compound of the formula



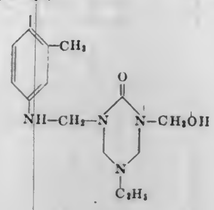
wherein R is a member of the group consisting of H and alkali metal; R_1 is a member of the group consisting of H and NH_2; R_2 is a member of the group consisting of H and OH; R_3 is a member of the group consisting of H and

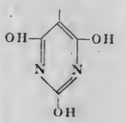


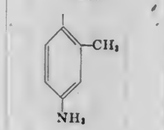
R_4 is a member of the group consisting of H, NH_2, OH,

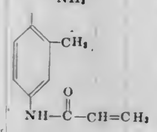


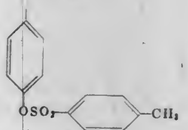
and $-N=N-Z$ wherein Z is a member of the group consisting of phenyl,

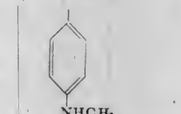


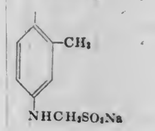


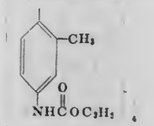




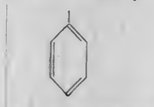








and



and R_5 is a member of the group consisting of H and phenylazo.

3,282,780
LINCOMYCIN SALT

David G. Martin, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Mar. 4, 1963, Ser. No. 262,310
4 Claims. (Cl. 167—65)

4. A fluid pharmaceutical preparation for oral administration comprising: from about 2 to about 25% of lincomycin bis-4-biphenylylphosphate, dispersed in a liquid pharmaceutical carrier.

3,282,781
INHALANT COMPOSITIONS

Thomas J. Macek, Glenside, and Wayne M. Grim, North Wales, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Nov. 25, 1960, Ser. No. 71,426
16 Claims. (Cl. 167—54)

1. A substantially anhydrous self-propelling medicament composition for inhalation therapy comprising a homogeneous solution of a medicament, a non-toxic propellant, a non-toxic organic solvent and a non-toxic hygroscopic glycol, the ratio of said solvent to said glycol in said composition being from about 3:1 to about 5:1 and the combined amount of organic solvent and glycol comprising from about 2% to about 25% by weight of the composition.

3,282,782
METHOD OF RELIEVING PAIN IN CANCER BY INJECTING LYSOZYME FREE OF PROTEINACEOUS IMPURITIES

Enea Giuseppe Scolari, Florence, Italy, assignor to Societa Prodotti Antibiotici, Milan, Italy

No Drawing. Filed Apr. 2, 1962, Ser. No. 184,597
10 Claims. (Cl. 167—65)

1. Method of relieving the pain of a patient suffering from cancer, which comprises injecting such patient with lysozyme which is free of proteinaceous impurities.

3,282,783
METHOD FOR CAUSING HYPOCHOLESTEROLEMIC ACTIVITY IN ANIMALS WITH POLY-N-LOWER ALKYL DERIVATIVES OF POLYAMINO ANTIBIOTICS

Hubert Vanderhaeghe, Kessel-lo, Belgium, assignor to Recherche et Industrie Therapeutiques R.I.T., Genval, Belgium, a Belgian corporation

No Drawing. Filed Mar. 25, 1963, Ser. No. 267,835
Claims priority, application Great Britain, Apr. 3, 1962, 12,790/62; Oct. 15, 1962, 38,953/62
4 Claims. (Cl. 167—65)

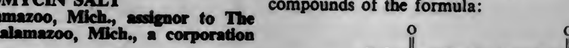
1. The method of causing hypocholesterolemic activity in animals comprising administering orally an effective amount of a hypocholesterolemic compound having no substantial antibiotic activity, said compound being selected from the group consisting of poly-N-lower alkyl derivatives of neomycin, neamine, kanamycin, zygomycin, catenulin, hydroxymycin, paromomycin and amminosidin.

3,282,784
HYPOGLYCEMIC COMPOSITIONS AND METHODS OF DITHIODIACETIC ACID DERIVATIVES

Samuel Gordon, Pearl River, and Herman Westley Levin, Spring Valley, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Apr. 26, 1963, Ser. No. 276,063
10 Claims. (Cl. 167—65)

7. The method of inducing hypoglycemia which comprises administering orally to a mammal in whom a hypoglycemic effect is desired an amount ranging from 2.5 mg. to 25 mg. per kilogram of body weight per day of compounds of the formula:



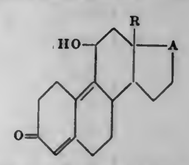
wherein R_1 and R_2 are each selected from the group consisting of hydrogen and lower alkyl.

3,282,785
3-KETO-4,9-DIENIC-11β-HYDROXY-19-NOR STEROIDS USEFUL IN THE TREATMENT OF HYPERCHOLESTEROLEMIA

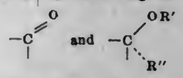
Robert Joly, Montmorency, Julien Warnant, Neuilly-sur-Siene, and Jean Jolly, Clichy-sous-Bois, France, assignors to Roussel-UCLAF, Paris, France, a corporation of France

No Drawing. Filed June 5, 1964, Ser. No. 373,048
Claims priority, application France, July 10, 1963, 941,004; Oct. 22, 1963, 951,379; Jan. 17, 1964, 960,726
18 Claims. (Cl. 167—65)

16. A process for treatment of hypercholesterolemia which comprises administering a safe but effective dose of an 11β-hydroxy steroid selected from the group consisting of compounds of the formula



wherein R is a lower alkyl and A is a divalent linkage selected from the group consisting of



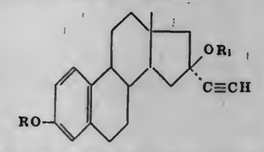
R′ is a member selected from the group consisting of hydrogen and the acyl radical of an organic carboxylic acid having from 1 to 18 carbon atoms and R″ is a member selected from the group consisting of hydrogen, lower alkenyl and lower alkynyl.

3,282,786
NOVEL 16α-ETHYNYL-19-NOR-$\Delta^{1,3,5(10)}$-ANDROSTATRIENES

Georges Muller, Nogent-sur-Marne, France, assignor to Roussel-UCLAF, Paris, France, a corporation of France

No Drawing. Filed Jan. 18, 1965, Ser. No. 426,369
Claims priority, application France, Jan. 24, 1964, 961,482
7 Claims. (Cl. 167—65)

5. A method of treating hypercholesterolemia in warm-blooded animals which comprises administering daily to the animals an effective amount of a 16α-ethynyl-19-nor-$\Delta^{1,3,5(10)}$-androstatriene of the formula



wherein R is selected from the group consisting of hydrogen, lower alkyl having 1 to 7 carbon atoms and an acyl radical of an organic carboxylic acid having 1 to 8 carbon atoms and R_1 is selected from the group consisting of hydrogen and an acyl radical of an organic carboxylic acid having 1 to 8 carbon atoms.

3,282,787
ACTINOMYCIN Z AND METHOD OF PRODUCING SAME

Ernst Gaeumann and Vladimir Prelog, Zurich, and Ernst Vischer, Basel, Switzerland, assignors to Ciba Corporation, a corporation of Delaware

Filed July 23, 1959, Ser. No. 828,982
Claims priority, application Switzerland, July 25, 1958, 62,213; June 5, 1959, 74,048
10 Claims. (Cl. 167—65)

1. Process for the manufacture of the antibiotic actinomycin Z, which comprises cultivating *Steptomyces fradiae* NRRL 2765 in an aqueous nutrient solution containing inorganic salts, and a source of nitrogen and carbon, under aerobic conditions, until the nutrient solution shows a substantial antibacterial action, and the antibiotic actinomycin Z is then isolated.

3. The crystalline antibiotic reddish-orange actinomycin Z prepared by the process of claim 1, melting at 260–264° C., having the optical rotation $[\alpha]_D^{22}=-314°$ (c.=0.246 in chloroform), giving in the elementary analysis the following values: C=54.88%, 54.65%; H=6.42%, 6.57%; N=12.25%, 12.03%; O (calculated)=26.60% the ultraviolet spectrum of which in ethanol exhibits maxima at

242 mμ (log $E^{1\%}_{1cm}$=2.34), at 429 mμ (log $E^{1\%}_{1cm}$=2.25) and at 443 mμ (log $E^{1\%}_{1cm}$=2.27)

and the infra red spectrum taken in potassium bromide, bands at 2.89μ, 3.36μ, 3.40μ, 5.70μ, 6.05μ, 6.30μ, 6.60μ, 6.67μ, 7.07μ, 7.31μ, 7.58μ, 7.65μ, 8.36μ, 9.00μ, 9.12μ, 9.39μ, 13.30μ, and 14.40μ.

3,282,788
EXTRACTS OF MAMMALIAN KIDNEY

Edward G. Daniels and Jack W. Hinman, Portage, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed June 8, 1964, Ser. No. 373,502
3 Claims. (Cl. 167—74.6)

1. In a process of preparing extracts of mammalian kidney the steps comprising:

(1) applying a solution of mammalian kidney extract in water-saturated 1-butanol to a cross-linked dextran gel having a water regain value of from about 2.3 to about 8 gm. per gm. of dry weight,

(2) fractionally eluting adsorbed material from the gel with 1-butanol-saturated water,

(3) collecting and discarding a first portion of eluate equivalent to about 0.3 of the volume of the gel,

(4) collecting a second portion of eluate equivalent to from about 0.3 to about 0.7 of the volume of the gel, and concentrating said second portion to dryness in vacuo at a temperature no higher than about 40° C., and

(5) collecting a third portion of eluate equivalent to from about 0.7 to about twice the volume of the gel, and concentrating said third portion to dryness in vacuo at a temperature no higher than about 40° C.

3,282,789
STABLE LIQUID COLLOIDAL TANNATE COMPOSITIONS

Bernard Adolph Marty, Decatur, and Lyle Buddy Lathrop, Mount Zion, Ill., assignors to Neisler Laboratories, Inc., Decatur, Ill., a corporation of Delaware

No Drawing. Filed May 17, 1963, Ser. No. 281,323
22 Claims. (Cl. 167—82)

6. A liquid composition suitable for oral administration comprising:

(a) a stable aqueous colloidal dispersion of a water insoluble therapeutically active tannate in a concentration up to 10%;

(b) a pharmaceutically acceptable alcohol in a concentration of 2 to 20 percent; and

(c) a pharmaceutically acceptable gum in a concentration of from 0.5 to 5.0 percent.

3,282,790
ENTERIC COATED TABLET

Richard H. Johnson, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed May 31, 1963, Ser. No. 284,392
8 Claims. (Cl. 167—82)

1. A solid medicinal dosage form surrounded by an enteric coating, said coating comprising homogenously intermixed methylcellulose and a member selected from the group consisting of hydrolyzed styrene-maleic anhydride copolymer and cellulose acetate phthalate, said methylcellulose having a concentration of from about 25 to about 90% of said coating and said member having a concentration of from about 10 to about 75% of said coating.

3,282,791
INHALATION AEROSOL SUSPENSION OF ANHYDROUS DISODIUM DEXAMETHASONE PHOSPHATE, PROPELLENTS, AND SORBITAN TRIOLEATE

Thomas J. Macek, Glenside, Pa., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Aug. 17, 1965, Ser. No. 480,509
2 Claims. (Cl. 167—82)

1. A substantially anhydrous self-propelling dexamethasone phosphate composition suitable for inhalation aerosol therapy and capable of being administered in substantially reduced dosages as compared to other modes of administration consisting essentially of a suspension of substantially anhydrous disodium dexamethasone phosphate having a particle size in the range of from about 1 to 10 microns in a liqui dnontoxic propellent having a vapor pressure between about 15 and 70 pounds per square inch gauge at 70° F. with sorbitan trioleate as a dispersing agent, the ingredients being present within the ranges:

	Percent by weight
Disodium dexamethasone phosphate	0.001 to 0.18
Sorbitan trioleate	0.01 to 2
Propellant	Remainder (substantially)

3,282,792
STABILIZED STANNOUS FLUORIDE DENTIFRICE COMPOSITIONS

Anthony J. Fiscella, Redbank, N.J., assignor to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 9, 1964, Ser. No. 336,644
12 Claims. (Cl. 167—93)

1. An aqueous composition to which has been added between about 0.1% and 5% of stannous fluoride and between about 0.05% and 10% of a stabilizer therefor selected from the class consisting of malic acid and the water-soluble salts of citric acid and hydroxyl substituted aliphatic dicarboxylic acids.

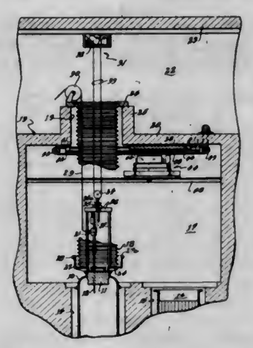
3,282,793
APPARATUS FOR CONTROLLING THE ATMOSPHERE OVER A NUCLEAR REACTOR

Aloysius R. Jamrog, Chicago, Ill., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Mar. 3, 1966, Ser. No. 533,383
3 Claims. (Cl. 176—27)

1. In an assembly in which the cover of a reactor vessel is considerably below the top opening of a concrete containment structure and an argon atmosphere exists above

the reactor vessel and within the containment structure and electric controls for a control rod are provided on top of the reactor vessel cover, the combination with the top opening, the cover, and the electric controls, of a long axially collapsible bellows containing the electrical con-



trols and having its ends sealed to the opening and the cover so as to provide an air atmosphere for the electrical controls, and means for hoisting the cover and electrical control into and through the opening while collapsing the bellows.

3,282,794
METHOD OF PRODUCING CITRULLINE BY BACTERIAL FERMENTATION
Shinji Okumura, Yokohama-shi, and Masao Shibuya, Shimpachi Konishi, Teruo Shiro, and Noboru Katsuya, Kawasaki-shi, Japan, assignors to Ajinomoto Co., Inc., Tokyo, Japan
No Drawing. Filed Sept. 11, 1964, Ser. No. 395,914
Claims priority, application Japan, Sept. 19, 1963, 38/49,438
5 Claims. (Cl. 195—29)

1. A method of producing L-citrulline which comprises culturing an arginine requiring auxotrophic mutant strain of *Bacillus subtilis* on an aqueous nutrient medium under aerobic conditions, said medium including an assimilable carbon source, an assimilable nitrogen source, an organic nutrient, essential inorganic ions, and an amount of arginine substantially between 5 and 100 milligrams per decliter of said medium.

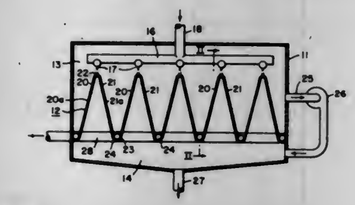
3,282,795
PRODUCTION OF 2-KETOGLUCONIC ACID BY *SERRATIA MARCESCENS*
Theressa J. Misenheimer, Peoria, Ill., assignor to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Oct. 5, 1964, Ser. No. 401,742
1 Claim. (Cl. 195—47)

A rapid process for forming 2-ketogluconic acid in substantially theoretical yields in a buffered fermentation medium containing about 12 percent by weight of glucose, a nitrogen source, trace metal compounds, and sufficient $CaCO_3$ for forming the salt of the said acid, said process comprising inoculating 100 parts by volume of said medium with 5 parts of a 32-hour subculture from an aqueous dispersion of a 24-hour slant of *Serratia marcescens* NRRL B–486 on a tryptone-agar medium, aerating and agitating the inoculated fermentation at rates respectively of 0.5 to 0.75 v./v./min. and 300–400 r.p.m., and harvesting the desired 2-ketogluconic acid as the calcium salt at about 16 hours after adding the inoculum.

3,282,796
MICROBIOLOGICAL PROCESS FOR PRODUCING ERGOBASINE
Jurg Rutschmann, Oberwil, Basel-Land, and Hans Kobel, Basel, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland
No Drawing. Filed Aug. 27, 1964, Ser. No. 392,596
Claims priority, application Switzerland, Aug. 29, 1963, 10,638/63
9 Claims. (Cl. 195—81)

1. Process for the production of ergobasine, which comprises culturing one of the strains of *Claviceps paspali* Stevens and Hall, NRRL 3081 or 3082, in a nutrient medium which contains a carbon source and nitrogen source and isolating the ergobasine formed therefrom.

3,282,797
THIN FILM LIQUID EVAPORATOR FORMED OF A THIN CORRUGATED SHEET-LIKE MEMBER
Joel B. Hammer, Penn Hills, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 25, 1962, Ser. No. 197,660
15 Claims. (Cl. 202—236)



1. A liquid evaporator structure formed of a thin corrugated sheet-like member extending downwardly and means utilizing surface tension characteristics of a liquid for spreading the liquid over said member in a thin film comprising

downwardly extending ridges provided on said member having a predetermined height,

each of said ridges having a centrally disposed downwardly extending liquid distributing groove and having a pair of convex surfaces extending in opposite directions away from said groove,

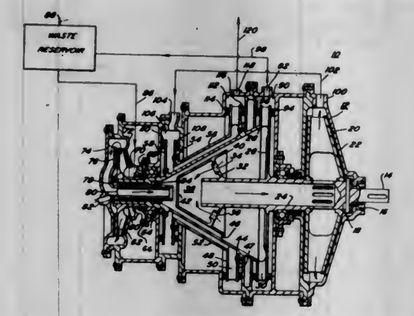
said groove having a depth substantially less than the height of said ridges,

whereby as liquid flows through said groove by gravitation, the surface tension of said liquid establishes a pressure gradient across said convex surfaces that drives the liquid in opposite directions from said groove and across said convex surfaces to form a thin liquid film.

3,282,798
APPARATUS FOR COMPRESSING VAPORS IN THE DISTILLATION OF A ROTARY CONICAL FILM
Robert A. Tidball, Swarthmore, Pa., assignor to Baldwin-Lima-Hamilton Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Jan. 30, 1963, Ser. No. 254,987
9 Claims. (Cl. 202—236)

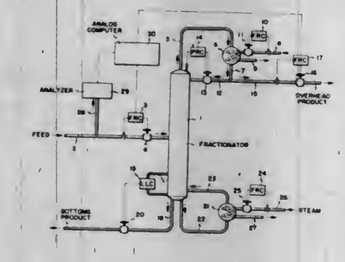
1. Distillation apparatus operative under zero gravity conditions comprising a hollow stationary housing, first pumping means for pumping liquid into said housing, a rotary baffle, said pumping means adapted to force the liquid against said baffle, first and second conical surfaces rotatably mounted about the same axis, said second conical surface being larger than said first conical surface to form a conical passageway between said first and second conical surfaces, said rotary baffle being

adapted to direct liquid impinging thereon to the small diameter end of said conical passageway, a liquid collector adjacent the large diameter end of said second conical surface to collect liquids centrifuged to the second



conical surface, and a second pumping means located within said first conical surface for pumping water vapor adjacent said first conical surface to separate said water vapor from said liquid.

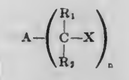
3,282,799
FRACTIONATOR CONTROL SYSTEM USING AN ANALOG COMPUTER
Eugene C. MacMullan, Wharton, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Feb. 16, 1962, Ser. No. 173,627
4 Claims. (Cl. 203—2)



3. In a continuous fractional distillation process wherein a multicomponent mixture is separated into relatively higher boiling and relatively lower boiling fractions by flowing the mixture as feed into a fractionation distillation zone, withdrawing the higher boiling fraction from the lower region of the zone, adding heat to the lower region of the zone, withdrawing a vapor stream from the upper region of said zone, condensing the vapor stream, returning a portion of said condensed stream to the upper region of said zone as reflux and withdrawing a portion of said condensed stream as said relatively lower boiling fraction, an improved method for controlling the quality of said fractions comprising the steps of maintaining the pressure in the zone at substantially a preselected level by increasing the rate of flow of reflux as the pressure increases and decreasing the rate of flow of reflux as the pressure decreases, continuously deriving the rate of flow of the lower boiling fraction in the multicomponent feed mixture by continuously measuring the rate of flow of the multicomponent feed mixture and by continuously analyzing the composition of said multicomponent mixture, and continuously adjusting the rate of withdrawing said lower boiling fraction in response to the rate of flow of the lower boiling fraction in said multicomponent mixture.

3,282,800
PURIFICATION OF α-HALOALKYLATED AROMATICS
John L. Lang, 42 Windgate Drive, Box 820–III, Murrysville, Pa.
No Drawing. Filed Aug. 27, 1965, Ser. No. 483,357
7 Claims. (Cl. 203—6)

1. A process for the purification of an α-haloalkyl aromatic compound having the general formula:



wherein A is a benzene ring in which at least one of the hydrogen atoms is replaced by a substituent selected from the group consisting of the methyl, ethyl, n-propyl, isopropyl, n-butyl, isobutyl, secondary butyl, tertiary butyl, vinyl, isopropenyl, allyl, (1-chloromethyl), (1-bromomethyl), (1-chloroethyl), bromomethyl, (1-chloroisopropyl) and (1-bromoisopropyl) substituents, R_1 and R_2 are substituents selected from the group consisting of hydrogen and the lower alkyl groups, X is an atom selected from the group consisting of chlorine and bromine, and *n* is a number from 1 to 3, inclusive; which comprises the steps of mixing with said compound an alcohol selected from the group consisting of butyne-1, 4-diol; homologs of butyne-1, 4-diol; 3-butyne-2-ol; homologs of 3-butyne-2-ol; 1-ethynyl-cyclohexanol-1; homologs of 1-ethynyl-cyclohexanol-1; 1-ethynyl-cyclohexenol-1; homologs of 1-ethynyl-cyclohexenol-1; 3-phenyl-1-butyne-3-ol; homologs of 3-phenyl-1-butyne-3-ol; bis-(hydroxycyclohexyl) acetylene; and homologs of bis(hydroxycyclohexyl) acetylene, the amount of said alcohol being at least an amount effective to prevent thermally induced deterioration of the α-haloalkyl aromatic compound when in the presence of an agent which enhances decomposition, and in the presence of an agent which enhances decomposition, adding heat to the mixture and distilling the same to produce an essentially pure α-haloalkyl aromatic compound.

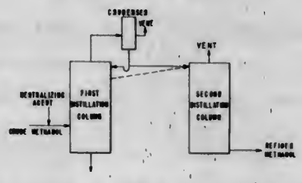
3,282,801
EXTRACTIVE DISTILLATION OF TETRAFLUOROETHYLENE WITH AN OXYGENATED HYDROCARBON
Herbert Albert Wiist, Vienna, W. Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Feb. 6, 1963, Ser. No. 256,520
6 Claims. (Cl. 203—60)

1. A process for separating tetrafluoroethylene from fluorocarbons containing from 1 to 2 carbon atoms and, in addition to fluorine, elements selected from the class consisting of hydrogen and halogen, having atomic numbers from 17 to 53 inclusive in admixture with the tetrafluoroethylene, the steps of distilling the mixture, by extractive distillation in the presence of an oxygenated hydrocarbon, liquid at distillation conditions and selected from the class consisting of alcohols, ethers, ketones and esters, said oxygenated hydrocarbons having the general formulas R_1OH, R_2OR_3, R_4COR_5 and R_6COOR_7, where R_1 to R_7 are radicals selected from the class consisting of saturated aliphatic and aromatic hydrocarbon radicals, and removing the tetrafluoroethylene as an overhead from the distillation zone.

3,282,802
PROCESS FOR REFINING METHANOL

William E. Clark, Charleston, W. Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Dec. 27, 1962, Ser. No. 247,563
4 Claims. (Cl. 203—82)

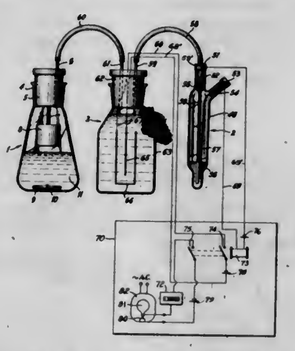


1. In a process for refining crude methanol typically containing about 93 to 98% by weight methanol, 1 to 3% high boilers, some which are capable of degrading to low boiling impurities under distillation conditions, and 1 to 4% low boilers, the steps of introducing crude methanol into the bottom half portion of a first distillation column, distilling said crude methanol by withdrawing a bottom stream containing substantially all of the high boilers while withdrawing an overhead stream containing low boilers, methanol, and substantially free of high boilers, introducing said overhead stream into the upper half portion of a second distillation column, and removing overhead in said second column the low boilers while withdrawing from the bottom of this second column a liquid stream of refined methanol substantially free from oxidizable impurities and low boilers.

3,282,803
MEASURING OXYGEN ABSORPTION

Franz Poepel and Helmut Steinecke, Stuttgart, Germany, assignors, by mesne assignments, to J. M. Voith G.m.b.H., Heidenheim (Brenz), Germany

Filed Feb. 20, 1962, Ser. No. 174,443
Claims priority, application Germany, Feb. 22, 1961, H 41,805
7 Claims. (Cl. 204—1)



1. In a method of measuring oxygen absorption, including the biochemical oxygen absorption of water, when ascertaining the biochemical oxygen demand in a water supply, by supplying and measuring the quantity of oxygen necessary to compensate for the drop in pressure created by consumption in a system closed to the atmosphere and in which said system contains a sample to be tested, the improvement in which oxygen is supplied by electrolysis

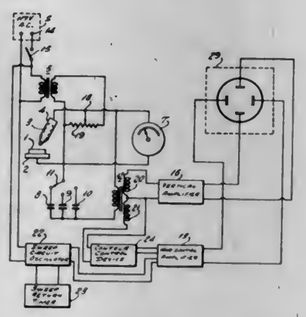
(a) discontinuously at a constant quantity per time unit during a period responsive to the consumption of oxygen by the sample; and

(b) oxygen is supplied automatically after a first predetermined pressure has been reached and the supply is automatically discontinued after a second higher predetermined pressure has been reached.

3,282,804
METHOD AND APPARATUS FOR ANALYZING METALS, ALLOYS AND SEMICONDUCTORS

Robert F. Stearn, Midland Road, P.O. Box 105, Pinehurst, N.C.

Filed Apr. 25, 1963, Ser. No. 275,617
11 Claims. (Cl. 204—1)

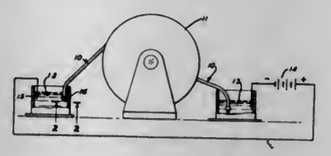


11. A method for making analytical examinations of compositions of matter having the characteristics of metals, alloys and semi-conductors, comprising applying an alternate current action across two galvanically dissimilar electrodes bridged by an electrolyte, one of which is the unknown specimen, to produce corrosive effects on the skin of said specimen, and manifesting the said effects graphically with an oscilloscope.

3,282,805
METHOD OF DETECTING DISCONTINUITIES IN CABLE CONDUCTORS

William B. Brown, Pasadena, Md., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed June 4, 1963, Ser. No. 285,519
6 Claims. (Cl. 204—1)



1. A method of detecting discontinuities in conductors of a multiconductor cable, comprising the steps of:

cutting one end of a cable transverse to the cable,

polishing the cut end of the cable along a common plane so as to finish the cable,

immersing the cut end of the cable in a plating bath,

applying a direct current potential difference between the conductors of the cable and an anode contacting the plating bath whereby the ends of the continuous conductors in the plating bath will be plated with cations of the plating bath, and

detecting the unplated ends of the discontinuous conductors.

3,282,806
ELECTROREFINING OF PLUTONIUM

Jack L. Long and Robert D. Schweikhardt, Arvada, Colo., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Aug. 4, 1965, Ser. No. 477,334
4 Claims. (Cl. 204—1.5)

1. The plutonium electrorefining process which comprises melting in contact with plutonium to form an electrolyte and molten plutonium a mixture including magnesium chloride with sodium chloride and potassium chloride, maintaining the melted electrolyte and molten plutonium at a temperature of from about 700° C. to about 830° C. and simultaneously stirring the same for a period of from about 30 to 120 minutes to acquire a supply of plutonium ions in the melted electrolyte, and thereafter initiating electrolysis through the electrolyte.

3,282,807
PROCESS FOR PURIFYING ELECTRODE SURFACES

John Burnham, 10960 Verano Road, Los Angeles, Calif.

No Drawing. Filed Mar. 30, 1962, Ser. No. 183,757
2 Claims. (Cl. 204—37)

1. A method for removing carbon from the surface of a sintered tantalum capacitor anode which includes the steps of:

electrolytically forming a tantalum oxide coating on said surface;

heating said anode under a vacuum of from about 10^{-6} to about 10^{-9} mm. of mercury at a temperature of about 1800° C. to about 2300° C. for a period of at least about five minutes; and

cooling the so-heated anode anode to about room temperature.

3,282,808
NICKEL IMPREGNATED POROUS CATHODE AND METHOD OF MAKING SAME

Ludwig Kandler, 10 Allescherstrasse, Munich-Solln, Germany

Filed June 11, 1962, Ser. No. 201,468
Claims priority, application Germany, June 14, 1961, K 43,999
4 Claims. (Cl. 204—37)



1. Process for the manufacture of a cathode for the electrolysis of alkali metal chlorides in a diaphragm cell which comprises depositing a compound selected from the group consisting of nickel and iron oxides and hydroxides in the pores of a metallic electrically conducting porous frame by electrolysis between said frame as cathode and an anode in an acid electrolyte containing the ions of the metal of the compound to be deposited while maintaining the electrolyte outside the cathode at a pH value which will prevent the precipitation of said compound, said electrolyte containing also reducible ions the reduction potential of which is more positive than the separation potential of said metallic ions, removing said frame and deposited compound from said electrolyte and reducing the deposited compound to the metallic state.

2. A cathode for a diaphragm cell for the electrolysis of alkali metal chlorides consisting essentially of a metallic electrically conducting porous frame the pores of which contain a finely divided metal selected from the group consisting of iron and nickel made by the process defined in claim 1.

3,282,809
IRON COATING FOR REFRACTORY METAL

Joseph F. Cerness, Cleveland, Milton L. Selker, Shaker Heights, and Betty Lee Berdan, Willowick, Ohio, assignors to Clevite Corporation, a corporation of Ohio

No Drawing. Filed Nov. 7, 1962, Ser. No. 236,155
7 Claims. (Cl. 204—37)

1. A part having a high strength-weight ratio for applications involving frictional wear composed of a base metal selected from the group consisting of titanium and alloys predominantly of titanium, a combined zinc and titanium anodized layer on said base metal, and an electroplated layer of iron superimposed on said zinc-titanium anodized layer, said layer of iron being carburized.

3,282,810
METHOD OF ELECTRODEPOSITING A CORROSION RESISTANT NICKEL-CHROMIUM COATING AND PRODUCTS THEREOF

Jules Marie Odekerken, Vught, Netherlands, assignor to N.V. Research-Holland, Hertogenbosch, Netherlands, a limited-liability company

No Drawing. Filed Nov. 27, 1962, Ser. No. 240,445
Claims priority, application Netherlands, Nov. 27, 1961, 271,860
13 Claims. (Cl. 204—41)

1. A method of producing a micro-porous chromium plating on an object comprising the steps of electroplating a layer of nickel on said object from a nickel electroplating bath and electroplating a layer of chromium on said nickel layer from a chromium plating bath, one of said plating baths being an emulsion whereby the chromium layer which is produced is micro-porous, the emulsified liquid particles of said emulsion being oxidation resistant under the electroplating conditions.

3,282,811
ACID NICKEL ELECTROPLATING BATHS AND PROCESSES

Wennemar Strauss, Dusseldorf-Holthausen, and Alfred Kirstahler, Dusseldorf, Germany, assignors to Dehydag Deutsche Hydrierwerke G.m.b.H., Dusseldorf, Germany, a corporation of Germany

No Drawing. Filed Nov. 20, 1963, Ser. No. 325,174
Claims priority, application Germany, Dec. 4, 1962, D 40,436
26 Claims. (Cl. 204—49)

1. A Watts type nickel electroplating bath to which has been added a compound having the general formula



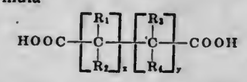
where R_1, R_2, R_3, R_4 is lower alkyl, and when terminal a member selected from the group consisting of lower alkyl and carbonamide groups, whereat one or all of these groups may be missed, X is a member selected from the group consisting of sulfonamide, disulfamide and sulfocarbonimide groups,



is a cyclic quaternary ammonium group, n is an integer from 0 to 1, o is an integer from 0 to 1, where n and o are not simultaneously 0, m is an integer from 0 to 1, p is an integer from 0 to 1, q is an integer from 0 to 1, where p and q are not simultaneously 0, in sufficient quantity to obtain bright, level nickel electrodeposits.

3,282,812
ELECTRODEPOSITION OF CHROMIUM
Henry Brown, Huntington Woods, and Edward A. Romanowski, Troy, Mich., assignors to The Udylite Corporation, Warren, Mich., a corporation of Delaware
No Drawing. Filed Feb. 20, 1964, Ser. No. 346,116
12 Claims. (Cl. 204—51)

1. A bath for the electrodeposition of chromium comprising an aqueous acidic hexavalent chromium plating solution containing a ratio of CrO_3 to sulfate ion greater than about 100 to 1 and less than about 400 to 1 and containing dissolved therein about 0.1 gram/liter to about 20 grams/liter of a dicarboxylic acid characterized by the following formula



where x is selected from 0, 1 and 2 and y is selected from 1 and 2, and when x is 0 and y is 1, R_3 and R_4 are selected from F, Cl, and Br, and when x is 1 and y is 1, R, and R_3 are selected from F and Cl, and R_2 is selected from F, Cl and Br, and R_4 is selected from F, Cl, Br and H, and when $x+y$ is selected from 3 and 4, R_1, R_2, R_3 and R_4 are selected from F and F plus Cl, wherein fluorine atoms at least equal in number the number of chlorine atoms.

ERRATA

For Class 204—162 see:
Patent No. 3,282,832

For Class 204—168 see:
Patent No. 3,282,833

For Class 204—180 see:
Patent No. 3,282,834

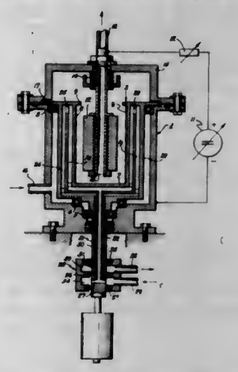
3,282,813
METHOD OF RECLAIMING USED LUBRICANTS BY SUBJECTING TO ELECTRICAL FIELD IN PRESENCE OF NON-ASH POLYMERIC DISPERSANTS
Charles H. Bailey, Berkeley, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 30, 1963, Ser. No. 255,081
3 Claims. (Cl. 204—184)

1. A process for removing sludge and contaminants from used mineral lubricating oil composition containing from 0.1% to 2% of an oil-soluble copolymer of vinylpyridine and a mixture of dissimilar C_{14-18} alkyl methacrylate esters by subjecting the used mineral lubricating oil composition to an electrical field intensity of from 2500 to 15,000 volts per centimeter for from 10 to 24 hours and thereafter separating the purified mineral lubricating oil composition from the sludge and contaminants.

3,282,814
METHOD AND DEVICE FOR CARRYING OUT GAS DISCHARGE PROCESSES
Bernhard Berghaus, Zurich, Switzerland, assignor to Elektrophysikalische Anstalt Bernhard Berghaus, Vaduz, Liechtenstein, a corporation of Liechtenstein
Filed Dec. 11, 1962, Ser. No. 243,955
Claims priority, application Switzerland, Dec. 13, 1961, 14,398/61
9 Claims. (Cl. 204—192)

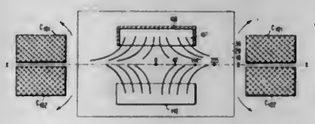
1. The method of cathodically disintegrating powdered materials in a glow discharge, comprising the steps of: producing a glow discharge in a gas in a predetermined space having an anode therein; rotating a carrier in said space and about an axis therein adjacent said anode, said carrier having a supporting surface spaced from said anode and extending generally in the direction of said axis; placing said powdered materials on said supporting surface whereby they rotate therewith and are held thereagainst by centrifugal force; and applying a cathodic potential to said carrier.

4. Apparatus for cathodically disintegrating powdered materials in a glow discharge, comprising: means defining a chamber; means for circulating a gas through said chamber; an anode in said chamber; a carrier element



rotatably mounted in said chamber about an axis adjacent said anode, said carrier element having a generally cylindrical wall concentric to said axis and defining a carrier surface spaced from but facing said anode; means for rotating said carrier element; and means for at least periodically applying to said carrier element a potential negative with respect to said anode.

3,282,815
MAGNETIC CONTROL OF FILM DEPOSITION
Eric Kay, Campbell, and Arthur P. Poenisch, San Jose, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed July 1, 1963, Ser. No. 291,736
7 Claims. (Cl. 204—192)



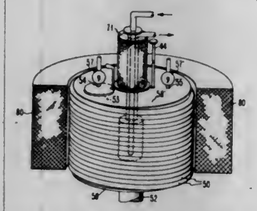
1. In a method of coating an article by sputtering including arranging said article within a closed vessel having a cathode and an anode and imposing within said vessel a suitable pressure of ionizable gas and a suitable anode-cathode voltage potential difference to thereby obtain abnormal glow discharge conditions therein, said discharge comprising electron-collision ionization of said ionizable gas and, in turn, ion-bombardment and impact-erosion of a surface of said cathode, as well as secondary electron emission at said cathode, said discharge thereby occurring about an axis centrally located and perpendicular to said surface of said cathode, the improvement comprising the steps of:

superposing a magnetic field having a major transverse component substantially perpendicular to said discharge axis and radially symmetric thereabout;

locating said major transverse component of said field at a point along said axis between said cathode and said anode within 60 mm. from said surface of said cathode to thereby increase the mean free path of said electrons; and

positioning said article in the negative glow region of said discharge and within the bounds formed by said surface of said cathode, said bounds being viewed through forming a cylindrical surface extending parallel to said axis, to thereby provide uniform deposition thereon.

3,282,816
PROCESS OF CATHODE SPUTTERING FROM A CYLINDRICAL CATHODE
Eric Kay, Campbell, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Sept. 16, 1963, Ser. No. 309,159
5 Claims. (Cl. 204—192)



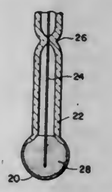
1. The process of coating an article by sputtering in a sputtering apparatus including an anode and a cathode, said cathode comprising a right-circular-cylindrical surface, said method comprising the steps of:

arranging said article such that it is disposed along the axis of said cylindrical cathode for uniform deposition thereon,

imposing within said apparatus a suitable pressure of ionizable gas and a suitable anode-cathode voltage potential difference to thereby obtain abnormal glow discharge conditions within said cathode, such that said discharge is radially symmetrical about said axis; and

superposing upon said discharge a magnetic field having a major component parallel to said axis and transverse to said discharge, said field being radially symmetric about said axis and of sufficient intensity to induce electron spiralling within said discharge and yet maintain said discharge.

3,282,817
GLASS ELECTRODE AND METHOD OF MAKING THE SAME
John H. Riseman, Cambridge, James W. Ross, Newton, and Robert A. Wall, Wakefield, Mass., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Feb. 20, 1963, Ser. No. 259,947
10 Claims. (Cl. 204—195)



1. An electrode structure for measuring concentration of an ionic species in aqueous solution, said structure comprising, in combination:

a membrane of glass sensitive to said ionic species in said aqueous solution;

a metallic, electrically-conductive lead, said lead being selected from the metal from which said salt is derived or a noble metal; and

a solid, fused, electrically-conductive, crystalline, substantially integral mass selected from the salts of silver and thallium, and in intimate physical and electrical contact with both said lead and one surface of said membrane.

3,282,818
ELECTROCHEMICAL LIQUID JUNCTION STRUCTURE AND METHOD FOR PRODUCING SAME
Robert W. Nolan, Altadena, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Mar. 12, 1963, Ser. No. 264,653
9 Claims. (Cl. 204—195)



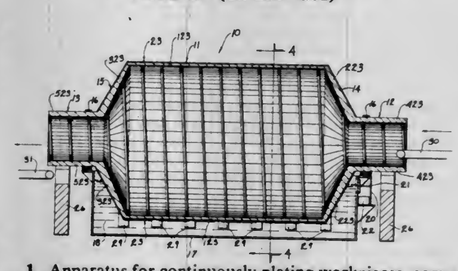
1. An electrochemical liquid junction structure comprising:

a glass wall separating two zones and having a small opening therethrough interconnecting said zones;

a porous sintered plug in said opening formed of a presintered mixture of substantial amounts of white ware casting clay and particles of glass, and about 9% to 13% by weight of ethylene glycol; and

the glass of said mixture being fused to the glass of said wall.

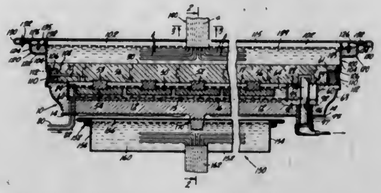
3,282,819
TREATING OF WORKPIECES
Leonard B. Hovanic, 1746 Oak St. SW., Warren, Ohio
Filed Dec. 5, 1962, Ser. No. 242,419
4 Claims. (Cl. 204—201)



1. Apparatus for continuously plating workpieces, comprising a tank for containing a plating solution, a drum rotatable about a generally horizontal axis and open at both ends for respectively receiving and discharging workpieces, said drum having a main section positioned for rotation in the plating solution, a reduced diameter end section above the plating solution, and a plurality of longitudinally extending, current-conductive members electrically insulated from each other and arranged about the drum axis and in part forming the inner periphery of said drum, said drum being pervious to provide for free flow of the plating solution thereinto and said members spanning said main drum section and extending into said drum end section, each member being greater in width at said drum main section than at said drum end section and greater in thickness at said drum end section than at said drum main section to provide a cross-sectional member area which is generally constant from member end-to-end, means for advancing workpieces through said drum from end-to-end thereof upon drum rotation, means for rotating

said drum about its axis, and brush means electrically engaged with said conductive members at said drum end section and connected to an electrical plating circuit to establish an electrical connection between the latter and said drum members at the underside of said drum and a consequent electrical connection with the workpieces engaged with said drum members.

3,282,820
CURRENT SUPPLY SYSTEM FOR ELECTROLYTIC CELLS
Joshua Szechtman, Byram, Conn., assignor to Chlormetals Incorporated, New York, N.Y., a corporation of Delaware
Filed June 20, 1962, Ser. No. 203,929
14 Claims. (Cl. 204—219)



1. In combination with an electrolytic cell of the horizontal type constructed to operate at elevated temperatures above the melting point of sodium chloride and having a sole adapted to support a liquid metal cathode, a plurality of anodes, and a cover in electrically-conducting relationship with the anodes of the cell, means for connecting said sole and said cover in an electric circuit, said means comprising means defining a first receptacle, a body of a metal molten at the temperature of operation of said cell confined in said first receptacle in electrically-conductive contact with said cover, first bus bar means extending into said first receptacle for at least partial immersion in said metal, whereby said first bus bar means are free from direct contact with said anodes but are in electrically-conductive relationship with said anodes through said metal confined in said first receptacle, first cover means for covering said first receptacle, means for connecting said first cover means to said receptacle in relatively slidable but fluid-tight relationship, means defining a second receptacle, a body of a metal molten at the temperature of operation of said cell confined in said second receptacle in electrically-conductive contact with said sole, second bus bar means extending into said second receptacle for at least partial immersion in said metal, whereby said second bus bar means are free from direct contact with said sole but are in electrically-conductive relationship with said sole through said metal confined in said second receptacle, second cover means for covering said second receptacle, and means for connecting said second cover means to said second receptacle in relatively slidable but fluid-tight relationship.

3,282,821
APPARATUS FOR MAKING PRECISION RESISTORS
Anthony B. Cistola, Vestal, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 13, 1962, Ser. No. 202,236
2 Claims. (Cl. 204—228)

1. A system for modifying the resistance value of a resistor, said system comprising

a container adapted to contain an electrolyte therein, means for mounting said resistor in said electrolyte, an electrode and means for mounting said electrode in said electrolyte,

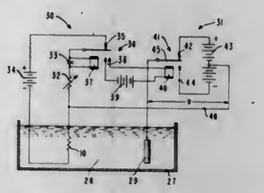
a source of D.C. voltage having positive and negative terminal means associated therewith, and

a control circuit comprising

switching means having a first position for connecting said D.C. voltage source in series coupling relationship with said resistor and said electrode mounted in said electrolyte at said positive and negative terminal means, respectively, to effectuate etching action between said resistor and said electrode in said electrolyte,

said switching means further having a second position for connecting said D.C. voltage source in series coupling relationship with said resistor and said electrode at said negative and positive terminal means, respectively, to effectuate electroplating action between said resistor and said electrode in said electrolyte,

said resistor, and



means responsive to the resistance value of said resistor in said electrolyte to provide a control signal for periodically actuating said switching means, said control signal periodically placing said switching means in its respective first and second positions for equal plating and etching time periods when said resistor has a predetermined resistance value, said control signal periodically placing said switching means in its respective first and second positions for a plating time period longer than the etching time period whenever said resistor has a resistance value higher than said predetermined value, and said control signal periodically placing said switching means in its respective first and second positions for an etching time period longer than the plating time period whenever said resistor has a resistance value lower than said predetermined value, and the periodic actuation of said switching means by said control signal providing periodic reversing of the current in said resistor, said current being derived from said D.C. voltage source.

3,282,822
ELECTROLYTIC CELL FOR THE PRODUCTION OF TITANIUM
John C. Priscu, Las Vegas, Nev., assignor to Titanium Metals Corporation of America, New York, N.Y., a corporation of Delaware
Filed May 20, 1963, Ser. No. 281,709
9 Claims. (Cl. 204—246)

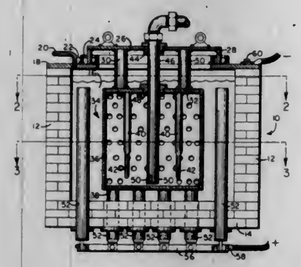
1. An electrolytic cell for production of metallic titanium by electrolysis of a titanium chloride contained in a fused halide salt bath comprising;

(a) a container adapted to hold a body of the fused salt of said bath and to exclude the ambient atmosphere therefrom;

(b) a cathode structure in the form of a four-sided closed box of square horizontal section suspended in the body of fused salt in said container, said cathode box having all four sides perforated and its top and bottom imperforate;

(c) a titanium tetrachloride feed pipe intruding centrally into said cathode box from the top thereof, terminating near the bottom of said cathode box and having an outlet near its lower end,

(d) a plurality of cathode rods of circular horizontal section suspended inside said cathode box by attachment to the top thereof said rods being spaced apart from the sides of said cathode box and from said $TiCl_4$ feed pipe and also being symmetrically arranged with respect to the center of said cathode box,



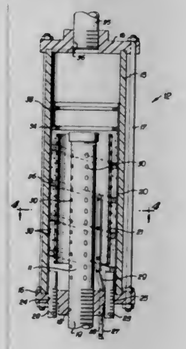
(e) a plurality of anode rods of circular cross section immersed in said fused salt bath, said anode rods being symmetrically aligned facing the four sides of said cathode box but spaced apart therefrom and with a plurality of said anode rods in each line facing each side of said cathode box,

(f) means for venting chlorine from said container,

(g) means for connecting the positive pole of a source of direct electric current to said anodes, and,

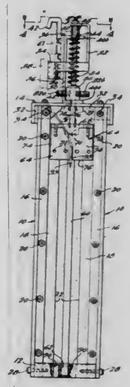
(h) means for connecting the negative pole of such source of electric current to said cathode box.

3,282,823
ELECTROLYSIS CELL FOR PRODUCTION OF CHLORINE
John A. Richards, West Covina, Calif., assignor to Swimquip, Inc., El Monte, Calif., a corporation of California
Filed Sept. 10, 1962, Ser. No. 222,377
9 Claims. (Cl. 204—272)



1. In an electrolysis cell: a housing; a pair of electrodes extending in radially spaced concentric cylindrical array having a common axis in the housing; said electrodes being longitudinally coextensive for at least a substantial portion thereof; the inner electrode being perforated; an inlet member for the housing; an outlet member from the housing; means inducing a circular motion of the liquid in the housing and about the common axis of said electrodes; particulate matter dispersed in the housing for impinging upon the electrodes; and helical means disposed between the electrodes and electrically isolated therefrom cooperating with said inducing means for directing the particulate matter along said axis for preventing the accumulation of mineral deposits on said electrodes; said particulate matter having an abrasive characteristic relative to said mineral deposits.

3,282,824
DUAL SIDED PLATING RACK
Earl D. Creese, St. Johns, Mich., assignor to Federal-Mogul-Bower Bearings, Inc., Detroit, Mich., a corporation of Michigan
Filed Dec. 17, 1962, Ser. No. 245,028
7 Claims. (Cl. 204—297)

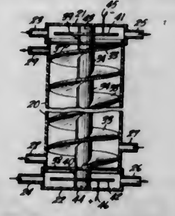


1. A work rack for treating the concave surfaces of workpieces comprising a framework including a pair of spaced side members and a pair of spaced end members, an electrode disposed between said side members and extending between said end members, each of said side members including a nonconductive web extending therealong and projecting inwardly toward said electrode with the opposed edges of the webs spaced substantially equally therefrom, a pair of clamping shoes mounted on one of said end members and disposed on each side of a plane through said webs and longitudinally movable relative to said one of said end members, means for independently urging each of said clamping shoes toward the opposite one of said end members for removably clamping a stacked column of workpieces therebetween, first contact means for electrifying said electrode, and second contact means for electrifying the workpieces with a charge opposite to that of said electrode.

3,282,825
ELECTRODIALYSIS PROCESS AND APPARATUS USING A HELICALLY FORMED MEMBRANE
Jerry Hugh Brown, Springdale, and David Guy Conning, Stamford, Conn., assignors to American Machine & Foundry Company, a corporation of New Jersey
Filed Apr. 3, 1963, Ser. No. 270,453
15 Claims. (Cl. 204—301)

2. In an electrodialysis apparatus, ion selective membrane material formed into a helical construction, a cylindrical cover disposed about said helical construction, an inlet tube leading inside said cover and an outlet tube

leading from said cover, electrodes disposed beyond the ends of said helical construction, said helical construction and said cylindrical cover defining at least one helical



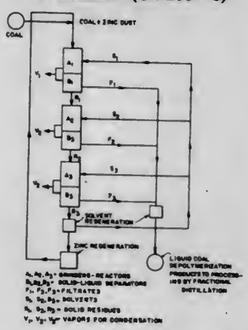
fluid treatment path between said electrodes, said inlet and outlet tubes connected to at least one helical fluid treatment path.

3,282,826

DEPOLYMERIZATION OF BITUMINOUS COAL UTILIZING FRIABLE METAL REACTANTS

Joseph Winkler, 5707 Hemlock St., Sacramento, Calif.

Filed Apr. 30, 1963, Ser. No. 277,422
19 Claims. (Cl. 208—8)



1. A process for the depolymerization of bituminous coal to lower molecular weight fractions which comprises intimately mixing in a grinding operation solid particles of coal with friable particles of metals, said metals being present in an amount sufficient to react with a major portion of the chemically bonded oxygen and sulfur in the coal macromolecule, to produce lower molecular weight liquid organic fractions from the depolymerization of said coal while the metal is simultaneously converted to oxides and sulfides, and recovering the said lower molecular weight fractions by separating same from said metal oxides and sulfides.

3,282,827

RE-REFINING OF LUBRICATING OILS

Michael Grysiak, Jr., Altoona, Pa., assignor to Norvel Company, Inc., Duncanville, Pa.

No Drawing. Filed Oct. 11, 1963, Ser. No. 315,670
16 Claims. (Cl. 208—180)

7. A process for removing impurities from a used high detergent lubricating oil comprising admixing at least about one part by volume of an aqueous cleansing agent at a temperature between about 50 and 100° F. to each three parts by volume of used high detergent lubricating oil, agitating said cleansing agent and said high detergent lubricating oil at a temperature within the aforesaid range until an emulsion is formed, heating said emulsion to effect breaking of the emulsion, and separating the cleansed oil from the spent aqueous cleansing agent and from the precipitated solids; said aqueous cleansing agent comprising a sufficient quantity of a mixture of polyoxyalkylene compounds to effect emulsification and possessing high detergent activity at about room temperature but practically no detergent activity at an elevated temperature of about 150 to 200° F. consisting of oxypropylene groups, oxyethylene groups and nucleus of a nitrogen containing reactive hydrogen compound having not more than 6 carbon atoms and being selected from the group consisting of ammonia, primary alkylamines, alkylene polyamines, alkanolamines, piperazine and carbon-substituted alkylpiperazines, hydroxylamine and aminophenol, the structure of the compounds being such that substantially all of the oxypropylene groups are present in oxypropylene chains that are attached to the reactive hydrogen compound at the sites of the reactive hydrogen atoms, and substantially all of the oxyethylene groups are present in oxyethylene chains that are attached to the ends of the oxypropylene chains, the average molecular weight of the oxypropylene chains being at least about 2500 and up to about 3000, and the oxyethylene groups being present in an amount so as to constitute about 10 to 30 weight percent of the mixture of said polyoxyalkylene compounds.

3,282,828

HYDROREFINING OF PETROLEUM CRUDE OIL WITH VANADIUM HALIDES

William K. T. Gleim, Island Lake, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Aug. 31, 1964, Ser. No. 393,426
6 Claims. (Cl. 208—264)

1. A process for hydrorefining a hydrocarbon charge stock which comprises admixing said charge stock with a chloride of vanadium, reacting the resulting mixture with hydrogen at a temperature above about 225° C., removing a metal-containing sludge from the reaction effluent and recovering a hydrorefined liquid product.

3,282,829

PROCESS FOR THE SEPARATION OF UNSATURATED HYDROCARBONS FROM MIXTURES CONTAINING SUCH HYDROCARBONS

Manfred Förderreuther, Ulrich Schwenk, and Günter Mau, all of Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Apr. 17, 1962, Ser. No. 188,264
Claims priority, application Germany, Apr. 21, 1961, F 33,725
3 Claims. (Cl. 208—311)

1. A process for separating a hydrocarbon having at least one carbon-to-carbon double bond from a fluid mixture thereof with a saturated hydrocarbon which comprises contacting said fluid mixture with an aqueous solution consisting essentially of silver borofluoride and fluoboric acid in which the numerical proportion of silver ions to borofluoride ions is within the range of 1:1.1 to 1:2.

3,282,830

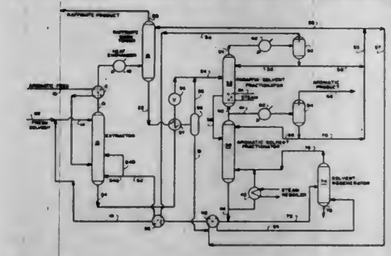
SOLVENT EXTRACTION OF AROMATICS WITH AN ALKANOL AMINE SOLVENT

Asmund Boyum, Brooklyn, N.Y., and Harold H. Stotler, Westfield, and Percival C. Keith, Peapack, N.J., assignors to Hydrocarbon Research, Inc., New York, N.Y., a corporation of New Jersey

Filed June 8, 1965, Ser. No. 462,231
4 Claims. (Cl. 208—323)

1. A continuous process for recovering a mixture of aromatic hydrocarbons, substantially free of non-aromatics, from a mixture of hydrocarbons comprising the steps of contacting said feed mixture in an extraction zone at temperatures ranging from 250° to 340° F. and under

sufficient pressure to keep the flowing contents liquid, with a solvent mixture consisting essentially of an aqueous solution of a monoalkanolamine selected from the group consisting of monoethanolamine and monopropanolamine and mixtures thereof in which the water content is in the order of 2 to 20 weight percent and the ratio of aqueous solvent to hydrocarbons is in the order of 2 to 1 to 20 to 1 by weight, so as to form separable raffinate and extract phases, removing and cooling the raffinate phase,



water washing said raffinate phase to remove solvent in the raffinate, removing said extract phase, distilling said extract phase to remove substantially all of the non-aromatic hydrocarbons, recycling said non-aromatic hydrocarbons containing some aromatic hydrocarbons to the extraction zone, further distilling said extract phase to remove aromatic hydrocarbons substantially free of non-aromatics, said distillation steps being operated in the pressure range of 1 to 3 atmospheres and at temperatures in the range of 270° to 350° F.

3,282,831

REGENERATION OF ANIONIC EXCHANGE RESINS

George E. Hamm, Houston, Tex., assignor to Signal Oil and Gas Company, Los Angeles, Calif.

No Drawing. Filed Dec. 12, 1963, Ser. No. 329,947
5 Claims. (Cl. 210—32)

1. A method of regenerating anionic exchange resin containing absorbed carbonyl sulfide, which method comprises regenerating anionic exchange resin containing carbonyl sulfide by contacting said resin with a solution containing regenerating agent effective to remove carbonyl sulfide intact from said resin, said regenerating agent being selected from the group consisting of monoethanolamine, propanol amine, hydrochloric acid, sulfuric acid and acetic acid, said regenerating agent being present in an amount sufficient to remove sufficient unhydrolyzed carbonyl sulfide from said resin to restore the activity of said resin to at least about initial resin activity and suppress the hydrolytic activity of said resin, thereafter washing the regenerated resin free of said regenerating agent, contacting the resulting regenerated resin with aqueous base, whereby said regenerated resin is converted to the hydroxyl cycle and is ready for use in the removal of carbonyl sulfide from a hydrocarbon stream.

3,282,832

PRODUCTION OF KETONES, ACIDS AND ESTERS FROM OLEFINES

Donald Holroyde Hey, Tadworth, and John Ivan George Cadogan, Southborough, Tunbridge Wells, England, assignors to The Distillers Company Limited, Edinburgh, Scotland, a British company

No Drawing. Filed Mar. 3, 1961, Ser. No. 93,016
Claims priority, application Great Britain, Mar. 11, 1960, 8,583/60
6 Claims. (Cl. 204—162)

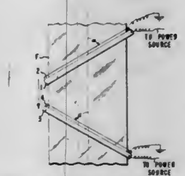
1. A process for the production of a chemical compound selected from the group consisting of ketones, acids and esters which comprises heating an olefine selected from the group consisting of octene-1, octene-2, cyclohexene and decene-1 with a compound selected from the group consisting of diethyl malonate, ethyl acetoacetate and acetyl acetone in the presence of an initiator for free radical formation for 20 to 96 hours.

3,282,833

ELECTRICAL DISCHARGE TREATMENT OF FILM AND APPARATUS

James F. Pfeffer, Jr., Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Jan. 22, 1963, Ser. No. 253,183
6 Claims. (Cl. 204—168)



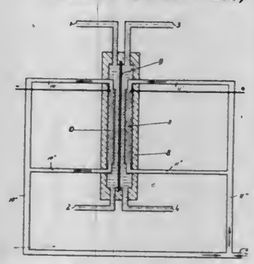
1. In a continuous process for treating a plastic film to render the surface thereof adherent to printing, coatings and the like wherein said film is passed through and subjected to the action of an electrical discharge, the improvement which comprises passing said film successively through at least two elongated zones of electrical discharge, said zones being disposed transversely of the film and at an oblique angle with respect to the axis of film travel, the oblique angles of successive zones being of opposite rotation to the zone preceding.

3,282,834

PROCESS FOR REVERSIBLE ELECTRODIALYSIS

Eduard Justi and August Winsel, Braunschweig, Germany, assignors, by mesne assignments, to Varta Aktiengesellschaft, Frankfurt am Main, Germany, and Siemens-Schuckert-Werke Aktiengesellschaft, Erlangen, Germany, both corporations of Germany

Filed Jan. 26, 1961, Ser. No. 85,163
Claims priority, application Germany, Jan. 30, 1960, R 27,218
2 Claims. (Cl. 204—180)



2. In a process of operation of an electrochemical cell having a dialysis membrane separating the anode and cathode electrodes of the cell for electrodialysis of aqueous K_2CO_3 solutions in the cell, wherein hydrogen is evolved at one of said electrodes from the electrodialysis of ions of water used as solvent during operation of the cell, the improvement which comprises operating such electrochemical cell under direct current supply thereto for electrodialysis of such K_2CO_3 solution while effecting the electrodialysis in the presence of reversible electrodes serving as anode and cathode electrodes of the cell to achieve reversible electrodialysis of said water, conduct-

ing the hydrogen obtained from the electrodialysis of water at the reversible electrode on one side of the dialysis membrane in the cell to the reversible electrode of opposite polarity on the other side of said membrane in the cell, and electrochemically redissolving such hydrogen thereat into ions once again to reduce the energy requirement for effecting the over-all electrodialysis.

3,282,835
CARBONATED BRIGHT STOCK SULFONATES AND LUBRICANTS CONTAINING THEM
Peter A. Asseff, Cleveland, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio
No Drawing. Filed Feb. 12, 1963, Ser. No. 257,862
12 Claims. (Cl. 252—33.2)

5. An oil-soluble composition suitable for use as a detergent having a reduced tendency to emulsify water consisting essentially of a carbonated, basic alkaline earth metal salt prepared by carbonating a mixture consisting essentially of (A) an acidic substance selected from the class consisting of bright stock sulfonic acids and mixtures of at least about 50% of a bright stock sulfonic acid and less than about 50% of a carboxylic acid and having at least about 12 aliphatic carbon atoms, (B) an alcohol, and (C) at least about 3 equivalents of an alkaline earth metal base per equivalent of (A) at a temperature from about 25° C. to the boiling point of the mixture; and thereafter heating the carbonated mixture to rid of volatile components.

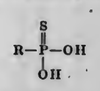
10. A lubricating composition suitable for use in a diesel engine comprising a major proportion of a mineral lubricating oil and a minor amount, sufficient, to impart detergency to said oil, of the oil-soluble composition of claim 5.

3,282,836
CORROSION RESISTANT LIQUID HYDROCARBONS CONTAINING MIXTURE OF ALKYL SUCCINIC ACID AND POLYAMINE SALT THEREOF
James R. Miller, Florissant, Mo., and Howard M. Lurton, Dow, Ill., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 22, 1963, Ser. No. 267,341
12 Claims. (Cl. 252—34.7)

1. A liquid hydrocarbon composition consisting essentially of a major amount of a liquid hydrocarbon and from about 0.001% to about 2% by weight of a mixture of (1) a C_{6-36} hydrocarbyl succinic acid, said hydrocarbon radical being selected from the group consisting of C_{6-36} alkyl and C_{6-36} alkenyl radicals, and (2) a polyamine salt of a C_{6-36} hydrocarbyl succinic acid, the hydrocarbyl radical being the same as in the free acid compound, the polyamine being selected from the group consisting of N-tetrapropenyl propylene diamine, N-octyl diethylene triamine, N-C_{12-18} alkenyl propylene diamine, N-cocoanut propylene diamine, 1-aminoethyl-2-heptadecenyl imidazoline and 1-hydroxyethyl-2-heptadecenyl imidazoline; the free C_{6-36} alkenyl or alkyl succinic acid constituting from about 1% to about 20% of the additive mixture in the balance, 99% to 80%, being the polyamine salt.

3,282,837
HYDROXY THIOPHOSPHONOXY GLYCERIDE ESTERS
David D. Reed, Glenham, N.Y., and Herman D. Kluge, deceased, late of Fishkill, N.Y., by Hazel E. Kluge, administratrix, Fishkill, N.Y., and Joseph F. Lyons, Poughkeepsie, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed June 5, 1963, Ser. No. 286,136
7 Claims. (Cl. 252—46.6)

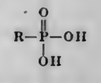
1. A lubricating oil containing a hydroxy phosphorus containing glyceride in an amount sufficient to impart the detergent properties thereto, said phosphorus containing glyceride produced by contacting an acid member selected from the group consisting of



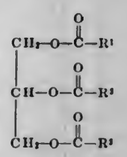
and a mixture of a major portion of



and a minor portion of



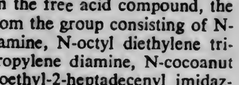
where R is a radical derived from a polyolefin having an average molecular weight between about 250 and 50,000, with an epoxidized unsaturated fatty acid triester glyceride of the formula:



where R^1, R^2 and R^3 are saturated aliphatic hydrocarbon radicals of from 3 to 17 carbons having at least one epoxy group therein, at a temperature between about 50 and 200° C. in a mole ratio of said triester glyceride to said acid member of between about 1:1.0 and 1.0:1.0.

3,282,838
PETROLEUM LIQUIDS CONTAINING AMINE SALTS OF MOLYBDIC ACID
Edwin C. Knowles, Poughkeepsie, N.Y., Edward L. Kay, Akron, Ohio, and Howard V. Hess, Glenham, and George W. Eckert, Wappingers Falls, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed May 10, 1960, Ser. No. 28,000
10 Claims. (Cl. 252—49.7)

1. A composition comprising a major amount of a petroleum liquid and a minor amount sufficient to inhibit carrosion of an amine salt of the formula

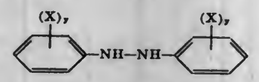


where R^1 is an alkyl radical of from 1 to 30 carbons, where R^2 and R^3 are radicals selected from the group consisting of hydrogen and alkyl of from 1 to 30 carbons, where M is a molybdic ion having a valence of +6 and where n is an integer of from 1 to 2 inclusively.

4. A composition in accordance with claim 1 wherein said petroleum liquid is a mineral oil of lubricating viscosity.

3,282,839
MINERAL LUBRICATING OIL COMPOSITIONS
Duk Hi Lee, Berkeley, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 23, 1964, Ser. No. 362,184
6 Claims. (Cl. 252—49.9)

1. A mineral lubricating oil composition comprising a major amount of mineral lubricating oil and from about 0.01% to about 2% each of (1) an aromatic hydrazo-compound selected from hydrazonaphthalene and a compound of the formula



where X is a radical selected from alkyl, alkoxy, halogen and hydrogen, and (2) bis(3,5-di-tertiarybutyl-4-hydroxyphenyl)methane.

5. The compositions of claim 1 containing minor amounts of each of (1) copolymer of 2-methyl-5-vinyl pyridine and a mixture of stearyl and lauryl methacrylates (2) dicresyl phosphate and (3) tricresyl phosphate.

3,282,840
STABLE LUBRICATING COMPOSITION AND INHIBITOR MIXTURE THEREFOR
Lloyd P. Foster, Jr., and Earl W. Wilson, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed June 13, 1963, Ser. No. 287,481
8 Claims. (Cl. 252—50)

4. A lubricant composition consisting essentially of a lubricant and, at an oxidation and corrosion inhibiting concentration, a mixture consisting essentially of phenyl-α-naphthylamine and a diphenylamine selected from the group consisting of diphenylamine and alkylated styrenated diphenylamine, the weight ratio of one to the other being in a range from about 4:1 to about 1:4; said alkylated styrenated diphenylamine consisting essentially of (1) p,p'-di-t-octyldiphenylamine, (2) p,p'-di-α-phenethyldiphenylamine, (3) p-t-octyl-p'-α-phenethyldiphenylamine, (4) p-mono-t-octyl-diphenylamine and (5) p-mono-α-phenethyldiphenylamine in the ratio of 50–70% by weight of (1), (2) and (3) and 30–50% by weight of (4) and (5).

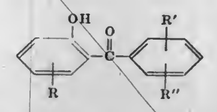
3,282,841
LUBRICATING OIL COMPOSITION
Pieter H. van der Mey, Amsterdam, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 4, 1963, Ser. No. 313,772
Claims priority, application Netherlands, Nov. 30, 1962, 286,212
6 Claims. (Cl. 252—51.5)

1. A lubricating oil composition comprising a major amount of lubricating oil and minor amount of block copolymer containing blocks of nitrogen-free units containing oleophilic alkyl radicals of from 6 to 20 carbon atoms selected from the group consisting of alkyl methacrylate, alkyl-substituted alpha-methyl styrene, and alpha-olefin and blocks of heterocyclic nitrogen-containing units selected from the group consisting of vinyl pyridine and vinyl pyrimidine, the block copolymers being formed in the presence of an anionic initiator.

3,282,842
LUBRICATING OIL COMPOSITIONS
Francis J. Bonner, Wilmington, Del., and Nicholas V. Messina, Glassboro, N.J., assignors to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Mar. 6, 1964, Ser. No. 350,098
14 Claims. (Cl. 252—51.5)

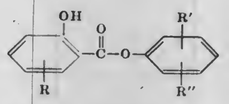
1. A lubricating oil composition comprising a major amount of a mineral lubricating oil which normally discolors during use and a minor amount sufficient to inhibit discoloration and oxidation of said oil of an oil-soluble inhibitor, said inhibitor comprising at least one member of the group consisting of:

(I) Compounds represented by the general formula



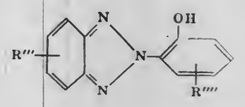
wherein R, R' and R'' each represents a member of the group consisting of hydrogen, halogen, alkyl, alkoxy and hydroxy;

(II) Compounds represented by the general formula



wherein R, R' and R'' have the same meansings as given above with reference to the first-given formula; and

(III) Compounds respresented by the general formula



wherein R''' represents a member of the group consisting of hydrogen and alkyl and R'''' has the same meaning as R, R' and R'' wherein the number of carbon atoms in each one of the said alkyl and alkoxy groups is in the range of from 1 to about 18.

3,282,843
EMULSIFIER COMPOSITIONS
James R. Alburger, 5007 Hillard Ave., La Canada, Calif.
No Drawing. Filed Jan. 14, 1966, Ser. No. 520,392
20 Claims. (Cl. 252—52)

1. A water-soluble emulsifier composition comprising a normally liquid glycol ether in a volume concentration within the approximate range of 1%–25%, a normally liquid ethoxylated alkylphenol having an ethylene oxide content within the approximate range of 7–15 mols ethylene oxide per mol of alkylphenol and being present in a volume concentration within the approximate range of .5%–25%, a normally liquid ethoxylated alkylphenol having an ethylene oxide content within the approximate range of zero to 5 mols ethylene oxide per mol of alkylphenol and being present in a volume concentration within the approximate range of .5%–10%, and an oily, water-insoluble extender solvent, said composition being adapted to tolerate in clear solution the addition of water in excess of 1%.

3,282,844
MINERAL LUBRICATING OIL COMPOSITIONS CONTAINING POLY (10-PINANYLMETHYL METHACRYLATE)
Alfred E. Borchert, Cherry Hill, N.J., and Anne M. Karrash, Allentown, Pa., assignors to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Dec. 10, 1964, Ser. No. 417,519
4 Claims. (Cl. 252—57)

1. A lubricating oil composition comprising a major amount of mineral lubricating oil and an oil-soluble minor amount of poly(10-pinanylmethyl methacrylate).

3,282,845
MINERAL LUBRICATING OIL COMPOSITIONS CONTAINING COPOLYMERS OF ETHYLENE/STILBENE

William S. Anderson, Oakland, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 9, 1963, Ser. No. 329,295
4 Claims. (Cl. 252—59)

1. A mineral lubricating oil composition comprising a major amount of mineral lubricating oil and from 0.01% to 5% of an oil-soluble copolymer of ethylene and stilbene obtained by reacting said monomers in the mole ratio of 1:10 to 10:1 respectively, between —40° C. and 50° C., at a pressure of from 5,000 to 100,000 p.s.i., in the presence of an organo lithium catalyst and a solvent mixture of an aromatic hydrocarbon and a polar-containing compound selected from the group consisting of an oxygen-containing compound and a nitrogen-containing compound, said copolymer having a molecular weight of from about 1,000 to about 1,000,000.

3,282,846
INHIBITED SINGLE-PHASE ANTI-FREEZE FORMULATIONS AND METHOD

William P. Scott, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Oklahoma

No Drawing. Continuation of application Ser. No. 12,914, Mar. 7, 1960. This application May 28, 1962, Ser. No. 197,876
24 Claims. (Cl. 252—75)

1. A corrosion inhibited single-phase anti-freeze formulation comprising a water miscible glycol containing a corrosion inhibiting amount of a corrosion inhibitor system on a weight basis consisting of the following two ingredients, sodium borate in an amount equivalent to about 2 to about 3 parts of sodium tetraborate pentahydrate, sodium metasilicate in an amount equivalent to about 0.01 to about 0.3 part of sodium metasilicate pentahydrate, and additionally about 1.0 to about 5.0 parts of water with the further provision that said amount of water is at least three times as much as said sodium metasilicate employed in the inhibitor system.

5. An additive composition for use in water miscible glycolic anti-freeze formulations on a weight basis consisting of sodium borate in an amount equivalent to about 2 to about 3 parts of sodium tetraborate pentahydrate, sodium metasilicate in an amount equivalent to about 0.01 to about 0.3 part of sodium metasilicate pentahydrate, about 1.0 to about 5.0 parts of water, about 0.005 to about 0.5 part of sodium mercaptobenzothiazole, and about 0.01 to about 2.0 parts of tributoxyethylphosphate.

3,282,847
HYDRAULIC FLUIDS

Karl Schneider, Leverkusen, and Hans-Werner Kauczor, Cologne, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed July 28, 1965, Ser. No. 475,571
5 Claims. (Cl. 252—78)

1. A fluid composition consisting essentially of (A) a hydraulic fluid consisting of a member selected from the group consisting of aryl ester and an alkylaryl ester of phosphoric acid and (B) about .1–15% by weight of an amide additive obtained by reacting (a) a component selected from the group consisting of 2-ethyl hexylamine, n-octylamine, di-n-butyl amine, dodecylamine, oleyl amine, stearyl amine, benzylamine, and ω-phenyldodecylamine with (b) a component selected from the group consisting of phosphoric acid diphenyl ester mono-chloride, phosphoric acid octyl phenyl ester monochloride, phosphoric acid dicresyl ester monochloride, and phosphoric acid dicresyl ester monobromide, the molar proportion of (b) to (a) being about 1:2–4.

3,282,848
PROCESS AND COMPOSITION FOR THE REMOVAL OF TARNISH ON METALS

John H. Haslam, Landenberg, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 28, 1964, Ser. No. 340,778
14 Claims. (Cl. 252—105)

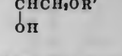
5. A composition for use in removing oxygen containing tarnishes on metals selected from the group consisting of copper, zinc, cadmium, cobalt, lead, nickel, tin, and alloys containing these metals comprising a compound having a maximum of 6 carbon atoms of the formula



where

R is selected from the group consisting of hydrogen, —COOH, alkyl containing from 1 through 5 carbon atoms, hydroxyalkyl containing from 1 through 5 carbon atoms which have from 1 through 5 OH groups; and

X is selected from the group consisting of $(CH_2)_nNH_2$, hydrogen, $(CH_2)_nOH$, $(CH_2)_{n-1}COOH$, and



where

R′ is selected from the group consisting of alkyl containing from 1 through 4 carbon atoms; and

n is a whole number selected from the group consisting of 1 and 2; and

when X is hydrogen, R must be selected from the group consisting of COOH and alpha and beta hydroxyalkyl containing from 1 through 5 carbon atoms having 1 through 5 OH groups,

and the alkali metal, alkaline earth metal, ammonium and amine salts of said compound in admixture with an antioxidant selected from the group consisting of the sulfite, bisulfite, metabisulfite and hydrosulfite of sodium, potassium and lithium, the ratio by weight of said compound to said antioxidant ranging from about 10:1 to 1:5.

3,282,849
GERMICIDAL CLEANSING COMPOSITION

Hans G. Diehn, North Olmstead, Ohio, and Donald J. Berenschot, Chicago, and James M. Willholte, La Grange, Ill., assignors to Armour and Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Apr. 5, 1961, Ser. No. 100,828
1 Claim. (Cl. 252—106)

A cleansing composition consisting essentially of water; a water soluble non-ionic detergent; and a long-chain quaternary ammonium salt selected from the group consisting of the dodecyl benzyl chloride quaternary of N,N dimethyloctadecylamine, the dodecenyl chloride quaternary of N,N dimethyloctadecylamine, the propargyl chloride quaternary of N-methyl-N, -N di-(hydrogenated tallow)amine, the dodecenyl chloride quaternary of N,N-dimethyldodecylamine, and the dodecylbenzyl chloride quaternary of N-tallow tris-(hydroxyethyl)-trimethylenediamine, said quarternary ammonium salt being present in an amount sufficient to thicken said cleansing composition.

3,282,850
CORROSION INHIBITION WITH DIPROPARGYL BUTYLAMINE

George Davidowich, Bayonne, and Morton W. Leeds, Murray Hill, N.J., assignors, by mesne assignments, to Cumberland Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 15, 1964, Ser. No. 360,074
4 Claims. (Cl. 252—148)

1. An aqueous solution of a mineral acid containing a corrosion-inhibiting amount of dipropargyl butylamine.

3,282,851
REMOVAL OF METAL CHALCOGEN SCALE

Paul E. Muehlberg and Fred N. Teumac, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 5, 1962, Ser. No. 235,550
3 Claims. (Cl. 252—152)

1. A metal chalcogen scale removal solvent solution of (1) from about 2 to 20 weight percent of a hydroxylamine mineral acid salt, (2) from about 5 to 40 weight percent of polyethylenimine having a molecular weight of at least 500, and (3) from about 40 to 93 weight percent water; said polyethylenimine and hydroxylamine salt being employed in a polyethylenimine:hydroxylamine salt weight ratio of from 1:1 to about 5:1.

3,282,852
HEAVY DUTY LIQUID DETERGENTS

Frederick William Trusler, Toronto, Ontario, and Alexander Napier Hunter, Buckingham, Quebec, Canada, assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 23, 1963, Ser. No. 274,934
Claims priority, application Canada, May 11, 1962, 848,966
7 Claims. (Cl. 252—152)

1. A detergent composition which consists essentially of about 10 to 40% by weight of a mixture of a water-soluble alkyl mononuclear aryl sulfonate detergent salt having about 8 to 15 carbon atoms in the alkyl group and a multi-branched alkyl polyoxyethylene ethanol having about 8 to 18 carbon atoms in the alkyl group which has a molecular configuration corresponding to that in the saturated aliphatic alcohol produced by the Oxo process from a polymerized olefin of 3 to 4 carbons and an average of about 5 to 30 moles of ethylene oxide, the ratio of said alkyl aryl sulfonate to polyethoxamer being from about 10:1 to 1:4 by weight with at least 3% of each material being present in the composition, 5 to 20% by weight of a water-soluble alkanolamine having 2 to 3 carbons in the alkanol group, about 1 to 15% by weight of a water-soluble alkali metal lower alkyl substituted benzene sulfonate hydrotropic salt having up to 3 carbons in each alkyl group, and the balance being primarily water, said composition having an alkaline pH and being in the form of a substantially homogeneous, pourable liquid.

3,282,853
AZEOTROPIC COMPOSITION AND PROCESS FOR ATTENUATING MAGNETIC INK CHARACTERS

Edward J. Bennett, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 24, 1964, Ser. No. 354,426
5 Claims. (Cl. 252—172)

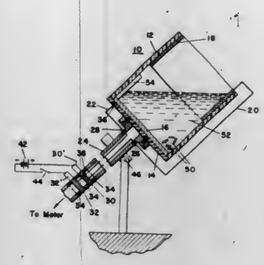
1. An azeotropic composition consisting of about 92.8% by weight of 1,1,2-trichloro-1,2,2-trifluoroethane and about 7.2% by weight of chloroform, and having a boiling point of 47.57° C. at 761.9 mm. Hg pressure.

3,282,854
RADIOACTIVE SILVER AND CADMIUM BATH COMPOSITION AND BARREL PLATER THEREFOR

Fred Pearlstein, Philadelphia, Pa., assignor to the United States of America as represented by the Secretary of the Army

Filed May 6, 1965, Ser. No. 457,245
3 Claims. (Cl. 252—301.1)

1. A bath composition for both immersion depositing radioactive silver on copper and copper plated articles and electrodepositing an overlying cadmium layer thereon, said composition consisting essentially of about 20 g. CdO, about 120 g. NaCN, about 5 g. NaOH, about 10 g. Na_2CO_3, about 3 to 15 microcuries Ag–110 added thereto



in the form of $Ag^{110}NO_3$, and the balance being water to make one liter.

3,282,855
METHOD OF MAKING THERMOLUMINESCENT MANGANESE-ACTIVATED CALCIUM FLUORIDE

Richard C. Palmer, Goleta, Vincent D. Poirier, Santa Barbara, and Ernest F. Blase, Goleta, Calif., assignors to Edgerton, Germeshausen and Grier, Inc., Bedford, Mass., a corporation of Massachusetts

Filed Aug. 2, 1965, Ser. No. 476,635
2 Claims. (Cl. 252—301.4)

1. The method of making thermoluminescent, manganese-activated calcium fluoride that comprises:

mixing an aqueous slurry of calcium carbonate and 1 to 10 mole percent of manganous carbonate, said carbonates having at least reagent grade purity, with a concentrated solution of hydrofluoric acid to produce a precipitate consisting of calcium fluoride having manganese ions intermixed in the crystal lattice thereof;

washing the precipitate sufficiently to remove all hydrofluoric acid and other byproducts of the reaction;

drying the precipitate to produce a powder of calcium fluoride having manganese ions intermixed in the crystal lattice thereof;

heating said powder in a flushing, dry inert gas atmosphere at a temperature of 900° C. to 1250° C. for a time period of 15 minutes to 4 hours to convert said powder to thermoluminescent, manganese-activated calcium fluoride; and

cooling said manganese-activated calcium fluoride in said flushing, dry inert gas atmosphere.

3,282,856
LUMINESCENT COMPOSITIONS CONTAINING EUROPIUM AND THE OXYANION-YIELDING INGREDIENT ALUMINUM, GALLIUM OR GERMANIUM

Hans J. Borchardt, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 21, 1965, Ser. No. 515,461
10 Claims. (Cl. 252—301.4)

1. A luminescent composition consisting essentially of a substantially colorless luminophor of the formula:

$$(RE_{1-x}Eu_x)_2O_3 \cdot A$$

wherein RE is at least one rare earth element selected from the group consisting of scandium, yttrium, lanthanum, gadolinium and lutetium, *x* is 0.03 to 0.8 and A is an inorganic oxyanion consisting of oxygen and one of the group consisting of aluminum, gallium and germa-

nium, the europium component being in solid solution with the RE component.

3,282,857

PREPARATION OF AQUASOLS OF CRYSTALLINE ZIRCONIA AND/OR HAFNIA

Frederick T. Fitch and Jean G. Smith, Baltimore, Md., assignors to W. R. Grace & Co., Clarksville, Md., a corporation of Connecticut

No Drawing. Filed Dec. 21, 1962, Ser. No. 246,356

The portion of the term of the patent subsequent to Sept. 22, 1981, has been disclaimed

6 Claims. (Cl. 252—313)

1. A process for preparing aquasols of crystalline particles of oxides of elements selected from the group consisting of zirconium and hafnium which comprises the steps of:

(a) preparing an aqueous solution of a basic salt of said element,

(b) electrodialyzing said salt solution to prepare a sol of amorphous particles in the 3 to 7 millimicron size range,

(c) heating said sol in a closed vessel at a temperature of 100 to 200° C. for about 1 to 40 hours to insure particle growth and crystallization,

(d) cooling said sol,

(e) deionizing, concentrating to 10 to about 30 percent solids and recovering the product sol.

3,282,858

HYDROCARBON FUEL ADDITIVE AND HYDROCARBON FUEL

Richard W. Simmons, Bellingham, Wash., and Claude R. Usher, Burnaby, British Columbia, Canada, assignors to Feronol Chemicals Limited, Vancouver, British Columbia, Canada, a corporation of British Columbia, Canada

No Drawing. Filed July 18, 1961, Ser. No. 126,830

1 Claim. (Cl. 252—428)

An improved process for the manufacture of a liquid hydrocarbon fuel catalyst comprising the steps of dissolving one part of copperas in water, adding a solution of 0.35 part of sodium carbonate in water, mixing, washing the precipitated solids in water and in alcohol, treating the resultant alcoholic suspenion with hydroquinone (0.1 part) and 1.69 parts of wet picric acid, crystallizing the reaction product, dissolving it in 179 parts of fusel oil, mixing this solution with 1,280 parts of a non-oxidizing hydrocarbon solvent whose flash point exceeds 80° F. and whose aromatic content exceeds 70% and in which 60.5 parts of wet picric acid have been dissolved, drawing off the water which drops out, and treating the mixture with 13 parts of silica gel.

3,282,859

PROCESS FOR PREPARING CATALYSTS FOR USE IN THE PRODUCTION OF NITRILES

Richard W. Baker and William A. Stover, Ellicott City, and Preston L. Veltman, Severna Park, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Mar. 22, 1962, Ser. No. 181,797

2 Claims. (Cl. 252—432)

1. A process for preparing a catalyst suitable for the conversion of adipic acid to adiponitrile which comprises impregnating a gamma type alumina with a quantity of boric acid equal to 6% of the weight of the base, drying the impregnated base, reimpregnating said base with a quantity of phosphoric acid equal to about 10% of the weight of the catalyst base, drying, calcining and recovering the catalyst product.

3,282,860

CATALYST AND PROCESS FOR PREPARING THE SAME

Edgar L. McDaniel and Howard S. Young, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Original application July 31, 1961, Ser. No. 127,824, Divided and this application June 16, 1965, Ser. No. 464,562

5 Claims. (Cl. 252—451)

1. A catalyst composition consisting essentially of a calcined mixture of from about 1 to 25 parts by weight of bismuth oxide and from 1 to 25 parts by weight of hexamolybdochromic acid.

3,282,861

OXIDATION CATALYST FOR HYDROCARBON COMBUSTION EXHAUST GASES

William Beveridge Innes, Upland, Calif., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed Dec. 10, 1964, Ser. No. 417,405

8 Claims. (Cl. 252—455)

1. An oxidation catalyst comprising a major portion of alumina, between from about 2% to about 10% of vanadia, and between from about 2% to about 10% of copper, said percentages being by weight.

3,282,862

POLYMERIZATION OF ALKYLENE OXIDES USING ZINC OXIDE-NONMETAL COMPOUND

Alberto Malatesta, Roselle, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed July 29, 1963, Ser. No. 298,485

9 Claims. (Cl. 260—2)

1. A process for polymerizing an alkylene oxide compound containing an oxirane group, which comprises contacting said alkylene oxide compound with zinc oxide containing about 0.5 to 5 weight percent of a Group VI–A non-metal selected from the class consisting of sulfur, selenium and tellurium.

3,282,863

RESIN FOAMS

James E. Carey, Millburn, and Paul D. Jones, Union, N.J., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 1, 1961, Ser. No. 156,494

18 Claims. (Cl. 260—2.5)

1. The method of forming a foamed resin body which comprises mixing a liquid epoxy resin containing a plurality of terminal epoxy rings, a volatile chlorofluorocarbon that boils at not substantially above room temperature, an emulsifying agent, and a coordination compound of boron trifluoride, the mixture being at a temperature below the boiling point of the chlorofluorocarbon, and allowing the mixture to warm up without application of external heat whereby to foam and cure the same.

3,282,864

DI(SULFONYLAZIDES) AS CROSSLINKING AGENTS FOR HYDROCARBON POLYMERS

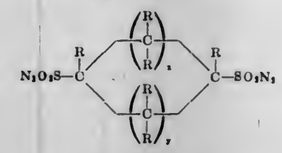
Howard W. Bost and John E. Mahan, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed May 31, 1963, Ser. No. 284,367

8 Claims. (Cl. 260—2.5)

1. An olefin polymer formed from at least one material selected from the group consisting of a homopolymer of ethylene and a homopolymer of propylene cured and

foamed with a cycloalkane-di(sulfonylazide) of the formula



wherein x is a positive integer ranging from 2 to 9, inclusive, y is a positive integer ranging from 0 to 9, inclusive, and the sum of x and y ranges from 3 to 10, inclusive; wherein each R is selected from the group consisting of hydrogen and 1 to 3 carbon alkyl radicals, and wherein the total number of carbon atoms in the molecule does not exceed 20.

3,282,865

COMPOSITION OF HEXAMETHOXYMETHYL-MELAMINE WITH VISCOUS PLASTICIZERS

Frank Russell Spencer, Stamford, Conn., assignor to Formica Corporation, Cincinnati, Ohio, a corporation of Delaware

No Drawing. Filed Sept. 27, 1963, Ser. No. 311,979

12 Claims. (Cl. 260—2.5)

1. A composition capable of expanding to a hard, rigid foam comprising a blend of

(a) from about 99% to 70% by weight of hexamethoxymethylmelamine,

(b) from about 1% to 30% by weight of polyvinylbutyral,

(c) from about 2% to 25% by weight of a nitrogenous blowing agent, and

(d) from about 0.01% to 5.0% by weight of an acid catalyst,

the weight of each ingredient being based on the total weight of (a) and (b).

3,282,866

COMPOSITIONS FOR COATING PAPER

Heinz Pohlemann, Limburgerhof, Pfalz, Karl Hasse, Frankenthal, Pfalz, and Immo Reinbold and Diethelm Bruening, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Oct. 22, 1963, Ser. No. 318,107

Claims priority, application Germany, Oct. 25, 1962, B 69,380

14 Claims. (Cl. 260—8)

1. A coating composition for paper, comprising an aqueous polymer dispersion, a pigment and a member selected from the group consisting of starch and casein, wherein the dispersion contains:

(i) a polymer of 40 to 70 parts by weight of styrene, 40 to 70 parts by weight of an acrylic ester of an aliphatic alcohol having two to twelve carbon atoms and 0.5 to 5 parts by weight of methacrylamide and

(ii) an emulsifier mixture comprising

(a) an alkylated phenol having a carbon chain with six to twenty carbon atoms, which has been reacted per mole with at least nine moles and at the most 50 moles of a member selected from the group consisting of ethylene oxide, propylene oxide and mixtures thereof and then sulfonated, and

(b) a reaction product of at least ten moles and at the most 50 moles of ethylene oxide per mole of a compound selected from the group consisting of an alkylated phenol having a carbon chain with six to twenty carbon atoms and aliphatic alcohols with 12 to 20 carbon atoms.

3,282,867

WATER BASE INTERPOLYMER COATINGS

Eldon E. Stahly, Birmingham, Oscar M. Grace, Madison Heights, and Oliver W. Burke, Jr., Grosse Pointe Park, Mich.; said Stahly and said Grace assignors to said Burke

No Drawing. Filed Nov. 23, 1959, Ser. No. 854,560

5 Claims. (Cl. 260—17)

1. The process for producing an interpolymer coating composition in aqueous dispersion by at least two sequential steps of addition polymerization of monomer materials which contain and are polymerizable through at least one ethenoid group, in the presence of a free radical polymerization catalyst; which process comprises

(a) dispersing, in an aqueous medium containing a free radical polymerization catalyst and from 0.0 to 0.5% by weight of an emulsifier based on the weight of said monomer materials, from 50 to 97% butadiene and from 3 to 50% of acrylonitrile,

(b) polymerizing said monomer materials in a first step to produce a polymer thereof in said aqueous dispersion,

(c) dispersing at least two different such monomer materials in said aqueous dispersion of said produced polymer,

(d) polymerizing said monomer materials with said polymer in said aqueous dispersion in the presence of a free radical polymerization catalyst and from 0.0 to 0.5% by weight of an emulsifying agent based on the weight of the polymer and monomer in step (c), in a second step,

(e) one of said monomer materials in at least one of said polymerization steps being vinylidene monomer material selected from the group consisting of vinylidene fluoride, vinylidene chloride, and vinylidene cyanide, and mixtures of the foregoing,

(f) the polymerized vinylidene monomer constituting at least 50% by weight of the total interpolymer of the composition,

(g) the mixture of monomer materials copolymerized in said step (b) resulting in the formation of a flexible, film-forming polymer,

(h) at least one of said polymerization steps being effected in the presence of an emulsifying agent, and

(i) removing the resulting flexible, film-forming interpolymer composition in an aqueous dispersion having a solids content not in excess of 60%.

3,282,868

HORTICULTURE CONTAINER-COMPOSITION AND PROCESSES

Daniel C. Frysinger, Glen Mills, and Oliver R. Odhner, West Grove, Pa., assignors to Rhoads Molded Products, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 5, 1964, Ser. No. 342,817

2 Claims. (Cl. 260—17.3)

1. A process of producing a horticulture container comprising forming a first mixture of 15.21% liquid urea formaldehyde, 1.17% iron oxide, 1.52% water and 0.01% cetyl trimethyl ammonium bromide, forming a second mixture of 7.87% wax emulsion, 0.76% ammonium chloride, 0.08% ammonium nitrate and 3.03% urea wherein the ratio of urea to formaldehyde is between 1.1 to 1 and 1 to 1, forming a third mixture by mixing said first mixture with said second mixture and finally mixing said third mixture with 82.40% sawdust, all of said percentages being by weight of the composition, and molding at a temperature of from 200 to 350° F. and a pressure of from 600 to 3500 pounds per square inch.

2. A horticulture container which is lightweight. strong, water-resistant, fracture-resistant, porous, water-permeable, free from adversely affecting the plants by burning and requiring less watering of the plants, consisting essentially of 80% sawdust, 11.41% liquid urea formaldehyde, said urea formaldehyde having 75% solids and a ratio of formaldehyde to urea of 1.6 to 1, 3.54% of a low grade paraffinwax emulsion, said wax having a melting point of 125° F., 1.17% iron oxide, 0.76% ammonium chloride, 0.01% cetyl trimethyl ammonium bromide, 3.03% free urea powder, said urea powder changing the ratio of urea to formaldehyde from 1.6 to 1 to between 1.1 to 1 and 1 to 1, and 0.08% ammonium nitrate, said free urea and ammonium nitrate preventing burning of said plants by reacting with and combining with free formaldehyde released during the molding, said percentages being by weight of the composition.

3,282,869

PHENOLIC RESIN ADHESIVE WITH HEAT-TREATED PENTOSAN RESIDUE EXTENDER

Fred Bryner, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 17, 1962, Ser. No. 244,926
14 Claims. (Cl. 260—17.2)

1. A liquid glue composition comprising:
(a) 1 part by weight of a soluble, thermosetting phenolaldehyde resin;
(b) from about 0.25 up to about 2.5 parts by weight of a specially conditioned, finely divided residue from the acid hydrolysis of pentosan-containing materials, said residue being specially conditioned by:
(1) having been heated at a temperature within the range from about 80° to about 200° C. until the residue achieved a weight loss of at least 3 but no more than 20 percent of its original weight, and
(2) digestion with from about 1.5 to 15 percent by weight of an alkali metal hydroxide based on the weight of the heated residue;
(c) a catalytic amount of a base catalyst suitable for initiating the thermosetting reaction of the phenolic resin; and
(d) sufficient water such that the total solids of the liquid adhesive composition is within the range from about 35 to about 65 percent by weight of the total composition.

8. A method for the production of a highly extended liquid phenolic resin glue formulation which comprises mixing together in any order:
(1) 1 part by weight of a soluble, thermosetting phenolaldehyde resin,
(2) from about 0.25 up to about 2.5 parts by weight of a finely divided residue from the acid hydrolysis of pentosan-containing materials, said residue being characterized by having been heated at a temperature within the range from about 80° to about 200° C. until the residue achieved a weight loss of at least 3 percent, but no more than 20 percent of its original weight,
(3) a catalyst amount of a basic catalyst suitable for initiating the thermosetting reaction of the resin,
(4) form about 1.5 to about 15 percent by weight of an alkali metal hydroxide based on the weight of the heated finely divided residue,
(5) sufficient aqueous dispersing medium such that the total solids of the liquid adhesive composition is within the range from at least 35 to 65 percent by weight of the total glue composition, hereinafter designated M.

3,282,870

STARCH AND POLYCARBOXAMIDE REACTION PRODUCTS

David E. Harmer, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 29, 1963, Ser. No. 327,116
3 Claims. (Cl. 260—17.4)

1. A method which comprises the steps of:
mutually dissolving a water-soluble polyalkane having a plurality of substituent carboxamide groups and a water-soluble starch product in an inert aqueous solvent;
heating the resulting solution at an elevated temperature within the range from about 50 to about 200° C. under a pressure sufficient to maintain the desired reaction temperature whereby a water-swellable reaction product is obtained;
separating the reaction product from the inert reaction medium and including the additional sequential step of drying and pulverizing the interaction product obtained from the reaction medium.

3,282,871

LIGNIN REINFORCED RUBBER USING COMBINATION OF HIGH AND LOW MELTING LIGNINS

Mitchell S. Dimitri, Charleston, S.C., assignor to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 19, 1963, Ser. No. 296,399
5 Claims. (Cl. 260—17.5)

1. A lignin-rubber coprecipitate comprising 100 parts by weight of a butadiene type rubber and from about 25 to 100 parts by weight of lignin, the lignin in said coprecipitate being composed of about 10 to 60% of a lignin having an acetone solubility greater than 50% and from about 90 to 40% of a lignin having an acetone solubility less than 30%.

5. The method which comprises preparing an aqueous alkaline mixture containing 100 parts by weight of a butadiene type rubber latex and from 25 to 100 parts by weight of lignin, said lignin being composed of from 10 to 60% by weight of a low melting lignin having an acetone solubility greater than 50% and from 90 to 40% by weight of a high melting lignin having an acetone solubility of less than 30%, coprecipitating said lignin and latex from said aqueous mixture, subjecting the lignin-rubber mixture after drying to mastication at a temperature between 300 and 450° F., and compounding and curing said lignin-rubber mixture.

3,282,872

POLYADDITION PRODUCTS FROM POLYAMIDES OF POLYBASIC ARALIPHATIC CARBOXYLIC ACIDS

Josef Baltes, Hamburg, and Friedrich Weghorst and Zdzislaw Makus, Hamburg-Harburg, Germany, assignors to Harburger Fettchemie Brinckman & Mergell G.m.b.H., Hamburg-Harburg, Germany, a corporation of Germany

No Drawing. Filed Apr. 25, 1963, Ser. No. 275,525
Claims priority, application Germany, Mar. 18, 1963, H 46,141
9 Claims. (Cl. 260—18)

1. A composition of matter comprising 5–95% of a hardenable epoxy compound having terminal epoxy groups and from 95–5% of a polyamide prepared by a process which comprises condensing a polyamine having 2 to 5 amino groups with a polybasic araliphatic carboxylic compound, said compound having been prepared by subjecting a conjugated unsaturated fatty acid compound selected from the class consisting of conjugated unsaturated fatty acids and C_1 to C_4 alkanol esters of said acids to ionic copolymerization with an aromatic vinyl

compound selected from the class consisting of styrene, alpha-methyl styrene and vinyl toluene in the proportion of 1 mole of fatty acid compound to 0.2 to 5 moles of aromatic vinyl compound and controlling the temperature of the reacting mass to prevent the mass temperature from exceeding at any time a temperature of about 200° C., said polyamide forming process comprising controlling the mass temperature throughout the course of the resulting reaction to maintain the temperature within the range of 120 to 230° C.

3,282,873

COMPOSITION COMPRISING THE REACTION PRODUCT OF A RESINOUS POLYESTER, HEXIONIC ACID, WATER AND AMMONIUM HYDROXIDE

George H. Slack, 7104 Hohman Ave., Hammond, Ind., and C. Roy Gleason, 5200 Sheridan Road, Chicago, Ill.

No Drawing. Filed Oct. 30, 1963, Ser. No. 319,949
9 Claims. (Cl. 260—22)

1. A method for the production of a penetrating resin dispersion comprising the steps of combining a resin formed of phthalic anhydride and one member of the group consisting of propylene glycol and triethylene glycol with a composition having the empirical formula $C_6H_{20}O_{24}P_6$ (hexionic acid), pelargonic acid, water and ammonium hydroxide, and heating the combination at a temperature of at least about 400° F.

3,282,874

METHOD FOR DISSOLVING WATER-SOLUBLE POLYMERS

Ralph E. Friedrich and Rex G. Martin, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 30, 1963, Ser. No. 334,601
4 Claims. (Cl. 260—29.2)

1. A process for dissolving a finely divided, solid, water-soluble organic polymer in water which comprises the steps of dispersing the preformed organic polymer in an inert, water-immiscible, organic liquid which is a non-solvent for the polymer and mixing water with the organic liquid-polymer dispersion in the form of a suspension of the water in a second body of an inert, water-immiscible, organic liquid, which is a non-solvent for the polymer and which second body of organic liquid is further characterized by solubility in the organic liquid-polymer dispersion, the amount of said water being sufficient to provide an aqueous polymer solution of a predetermined concentration.

3,282,875

FLUOROCARBON VINYL ETHER POLYMERS

Donald James Connolly, Longwood, and William Franklin Gresham, Alapocas, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 22, 1964, Ser. No. 384,545
25 Claims. (Cl. 260—29.6)

1. A fluorocarbon ether having the general formula

$$MSO_2CFR_fCF_2O[CFYCF_2O]_nCF{=}CF_2$$

where R_f is a radical selected from the class consisting of fluorine and perfluoroalkyl radicals having from 1 to 10 carbon atoms, Y is a radical selected from the class consisting of fluorine and the trifluoromethyl radical, *n* an integer of one to three inclusive, and M a radical selected from the class consisting of fluorine, the hydroxyl radical, the amino radical and radicals having the formula —OMe where Me is a radical selected from the class consisting of alkali metals and quaternary ammonium radicals.

17. Copolymers of the vinyl ether having the formula

$$MSO_2CF_2CF_2OCF(CF_3)CF_2OCF{=}CF_2$$

where M is a radical selected from the class consisting of fluorine, the hydroxyl radical, the amino radical and radicals having the formula —OMe where Me is a radical selected from the class consisting of alkali metals and quaternary ammonium radicals, and at least one monomer selected from the class (A) consisting of ethylene and halogenated ethylenes and at least one monomer selected from the class (B) consisting of perfluorinated alpha-olefins and perfluoro(alkyl vinyl ethers) having the formula

$$CF_2{=}CF{-}O{-}(CF_2)_nCF_3$$

where *n* is 0 to 5.

25. An aqueous dispersion in which the dispersed particles are a polymer of a vinyl ether having the formula

$$FSO_2CFR_fCF_2O[CFYCF_2O]_nCF{=}CF$$

where R_f is a radical selected from the class consisting of fluorine and perfluoroalkyl radicals having from 1 to 10 carbon atoms, Y is a radical selected from the class consisting of fluorine and the trifluoromethyl radical, and *n* is an integer from one to three inclusive.

3,282,876

POLYMER LATICES COMPRISING ALPHA,BETA-ETHYLENICALLY UNSATURATED MONOCARBOXYLIC ACIDS AND COPOLYMERIZABLE MONOMERS

Charles R. Williams, Longmeadow, and George J. Anderson, Wilbraham, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Apr. 13, 1964, Ser. No. 359,453
11 Claims. (Cl. 260—29.6)

1. A particulate interpolymer comprised of an emulsion polymerized product of (A) an alpha,beta-ethylenically unsaturated monocarboxylic acid, and (B) an organic compound selected from the group consisting of aliphatic and aromatic hydrocarbons containing at least one vinylidene group, vinyl halides, vinylidene halides, esters of monocarboxylic acids containing at least one vinylidene group with 1–18 carbon atom monohydric alcohols, amides and nitriles of monocarboxylic acids, containing at least one vinylidene group, vinyl esters of 1–18 carbon monocarboxylic acids, di-esters of maleic acid and fumaric acid with 1–18 carbon atom monohydric alcohols, and mixtures thereof which is interpolymerizable with said alpha,beta-ethylenically unsaturated monocarboxylic acid, wherein the interpolymer particles based on a total interpolymer weight of 100 parts consists of (1) an inner core comprising 20–90 parts of an interpolymer of 6–40 parts of (A) with 94–60 parts of (B), and (2) an outer shell around said core comprising, correspondingly, 80–10 parts of an interpolymer of 0–3 parts of (A) with 100–97 parts of (B); said polymer particles having a particle size of 0.01–5.0 microns.

3,282,877

HIGH ACRYLONITRILE POLYMER SOLUTIONS CONTAINING BROMINATED SALICYLANILIDES

Fred J. Lowes, Jr., Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed July 26, 1965, Ser. No. 474,944
11 Claims. (Cl. 260—29.6)

1. Bacteriostatic compositions comprising a spinnable solution of (1) a fiber-forming acrylonitrile polymer which contains in the polymer molecule at least about 85 weight percent of acrylonitrile, any balance being another monoethylentically unsaturated monomeric material copolymerizable with acrylonitrile, (2) an aqueous saline solvent for polyacrylonitrile, said solvent having additionally dissolved therein (3) at least about 5 weight

percent based on said fiber-forming polymer weight of 3,4'5-tribromosalicylanilide.

3,282,878

HIGH ACRYLONITRILE POLYMER SOLUTIONS CONTAINING 2,4,6-TRICHLOROPHENOL

Fred J. Lowes, Jr., Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed July 26, 1965, Ser. No. 475,011
11 Claims. (Cl. 260—29.6)

1. Bacteriostatic composition comprising a spinnable solution of (1) a fiber-forming acrylonitrile polymer which contains in the polymer molecule at least about 85 weight percent of acrylonitrile, any balance being another monoethylenically unsaturated monomeric material copolymerizable with acrylonitrile, (2) an aqueous saline solvent for polyacrylonitrile; said solvent having additionally dissolved therein (3) at least about 10 weight percent based on said fiber-forming polymer weight of 2,4,6-trichlorophenol.

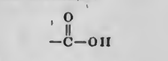
3,282,879

PROCESS FOR TREATING IMINATED VINYL ACETATE EMULSION POLYMERS WITH WATER-SOLUBLE BISULFITES

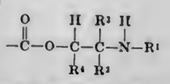
Ervin R. Werner, Jr., Levittown, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 27, 1964, Ser. No. 406,896
10 Claims. (Cl. 260—29.6)

1. In the process for forming an aqueous dispersion suitable for use as a coating composition which comprises (A) reacting an alkylene imine with a polymeric latex consisting essentially of a vinyl addition polymer containing vinyl acetate units to form a polymer having attached to the carbon atoms of the polymer backbone monovalent radicals of the formulas



and



wherein R^1 is selected from the group consisting of hydrogen, benzyl and C_1 to C_5 alkyl radicals, R^2 and R^3 are selected individually from the group consisting of hydrogen, benzyl, aryl, and C_1 to C_5 alkyl radicals, and R^4 is selected from the group consisting of hydrogen and C_1 to C_5 alkyl radicals; said latex containing about 0.05–10% based on the weight of the polymer of a surfactant of the group of anionic surfactant and a mixture of anionic and nonionic surfactants, and said polymer having an amino nitrogen content of about 0.01–2% by weight and an acid equivalent of about 0.05–2.3 milliequivalents per gram per polymer; the improvement in combination therewith comprising (B) treating said polymeric latex with about 0.5–3% by weight, based on the weight of the polymer, of a water-soluble bisulfite salt, said steps A and B being carried out in any order.

3,282,880

PROCESS FOR SOLUTION POLYMERIZATION OF ACRYLONITRILE USING A SULFUR CONTAINING OXIDIZING AGENT AND A SALT OF EITHER LANTHANUM OR GADOLINIUM

Clarence C. Dannelly and John R. Caldwell, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 23, 1965, Ser. No. 504,170
21 Claims. (Cl. 260—30.4)

1. A process for preparing an acrylonitrile polymer which comprises polymerizing acrylonitrile in an organic liquid which is a solvent for polyacrylonitrile, at a temperature of from —70 to 100° C., with a salt of a lanthanide metal selected from the group consisting of lanthanum and gadolinium and an oxidizing agent selected from the group consisting of monoperoxysulfuric acid, peroxydisulfuric acid, ammonium salt of monoperoxysulfuric acid, ammonium salt of peroxydisulfuric acid, an alkali metal salt of monoperoxysulfuric acid, an alkali metal salt of peroxydisulfuric acid and sulfur tetroxdie in combination with water.

3,282,881

HOT-MELT ADHESIVE COMPOSITIONS CONSISTING ESSENTIALLY OF ETHYLENE-VINYL ACETATE AND CHLORINATED TERPHENYLS

Thomas P. Flanagan, Greenbrook Township, N.J., assignor to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 7, 1965, Ser. No. 424,115
2 Claims. (Cl. 260—33.8)

1. A composition comprising a solid, thermoplastic, hot-melt adhesive capable of bonding similar and dissimilar solid substrates, said composition consisting essentially of 100 parts by weight of a copolymer of ethylene and vinyl acetate and from 25 to 400 parts, by weight of the copolymer, of a resinous material consisting of a chlorinated terphenyl resin containing from about 42% to 60%, by weight, of chlorine.

3,282,882

ALLYLIC COMPOUNDS DERIVED FROM HALOGENATED POLYPHENOLS AND FIREPROOFING AGENTS AND PROCESS FOR PREPARATION OF SAME

Jacques Vuillemenot, La Mulatiere, Maurice Troussier, Pierre-Benite, and Edouard Grimaud, Oullins, France, assignors to Societe d'Electro-Chimie, d'Electro Metallurgie et des Acieries Electriques d'Ugines, Paris, France, a corporation of France

No Drawing. Filed Feb. 6, 1963, Ser. No. 256,552
Claims priority, application France, Feb. 10, 1962, 887,627; July 23, 1962, 904,795
9 Claims. (Cl. 260—37)

1. A product comprising at least one inflammable polymer and a derivative of an allylic polyfunctional compound having the formula

$$(CH_2{=}CH{-}CH_2{-}O)_nR$$

in which n is a cardinal number with values from 2 to 4 and R is a halogenated diphenyl radical having the valency n; said derivative having the formula

$$(YCH_2{-}CHX{-}CH_2{-}O)_{n_1}R_1$$

in which Y is a member selected from the group consisting of an atom of fluorine, chlorine, bromine, and a halogenated methyl radical, X is a member selected from the group consisting of an atom of hydrogen, an atom of fluorine, chlorine and bromine, n_1 is a cardinal member with values from 2 to 4 and R_1 is a halogenated diphenyl radical having the valency n_1.

3,282,883

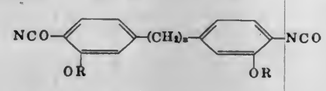
ADHESIVE COMPOSITION

William M. De Crease and John H. Shafer, Erie, Pa., assignors to Lord Corporation, a corporation of Pennsylvania

No Drawing. Filed Dec. 2, 1963, Ser. No. 327,503
17 Claims. (Cl. 260—41)

1. An adhesive composition consisting essentially of a solution of chlorsulfonated polyethylene in which are

suspended dinitrosobenzene and at least one ortho alkoxy aryl diisocyanate having the formula



where R is an alkyl group containing from 1 to 3 carbon atoms, and where n is selected from the group consisting of 0 and 1 in which the chlorsulfonated polyethylene is present in an amount between about 30 and about 70%, the dinitrosobenzene is present in an amount between about 4 and about 30%, and the ortho alkoxy aryl diisocyanate is present in an amount between about 20 and about 50%, said percentages being by weight based on the weight of the three stated ingredients, and the solids content of the composition being between about 10 and about 40%.

3,282,884

NITROSO RUBBER VULCANIZATES AND THEIR PREPARATION

Joseph Green, Dover, Nathan B. Levine, Colonia, and Robert C. Keller, Morris Plains, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Nov. 1, 1963, Ser. No. 320,923
19 Claims. (Cl. 260—41)

1. A vulcanizable novel perhalonitrosoalkane-perhaloalkylene polymer composition comprising as its essential ingredients, 100 parts by weight of a perhalonitrosoalkane-perhaloalkylene polymer gum and from 2 to 50 parts by weight of a vulcanizing agent selected from the group consisting of the poly-sodium salts of aromatic diphenols, the poly-sodium salts of aromatic polyphenols, the poly-sodium salts of halogenated aromatic diphenols, the poly-sodium salts of halogenated aromatic polyphenols, the poly-sodium salts of halogenatedalkanediols and the poly-sodium salts of halogenatedalkanepolyols.

3,282,885

PROCESSING POLYACETALS

Erich Schwartz, Mannheim, Ernst Ricker, Frankenthal, Pfalz, and Franz Schmidt, Mannheim, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Sept. 17, 1964, Ser. No. 397,305
Claims priority, application Germany, Sept. 28, 1963, B 73,682
4 Claims. (Cl. 260—45.7)

1. Method for working up polyacetals selected from the group consisting of a solid polyoxymethylene homopolymer and copolymers having melting points above 150° C. and having polymer chains containing (*a*) 80 to 99.9 mol percent of $—OCH_2—$ units interspersed with (*b*) 0.1 to 20 mol percent of —O—R— units in which R is a divalent radical containing at least two carbon atoms directly linked to each other and positioned in the polymer chain between the two valences of R, any substituents in R being inert, said polyacetals containing therein a catalyst selected from the group consisting of boron trifluoride and a boron trifluoride coordination complex, said method comprising

(a) adding from 0.01 to 5% by weight of a neutral metal halide selected from the group consisting of lithium fluoride, lithium chloride, sodium fluoride, sodium chloride, potassium fluoride, potassium chloride calcium fluoride, strontium fluoride and barium fluoride, and

(b) melting and homogenizing the resulting composition.

4. Polyacetals selected from the group consisting of a solid polyoxymethylene homopolymer and copolymers having melting points above 150° C. and having polymer chains containing (*a*) 80 to 99.9 mol percent of $—OCH_2—$ units interspersed with (*b*) 0.1 to 20 mol percent of —O—R— units in which R is a divalent radical containing at least two carbon atoms directly linked to each other and positioned in the polymer chain between the two valences of R, any substituents in R being inert, said polyacetals containing therein a catalyst selected from the group consisting of boron trifluoride and a boron trifluoride coordination complex and worked up by a method comprising

(a) adding from 0.01 to 5% by weight of a neutral metal halide selected from the group consisting of lithium fluoride, lithium chloride, sodium fluoride, sodium chloride, potassium fluoride, potassium chloride, calcium fluoride, strontium fluoride and barium fluoride, and

(b) melting and homogenizing the resulting composition.

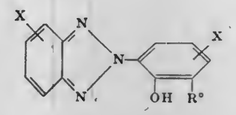
3,282,886

POLYCARBONAMIDES OF IMPROVED PHOTOSTABILITY AND DYE LIGHTFASTNESS

Filon Alexander Gadecki, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 27, 1962, Ser. No. 212,999
10 Claims. (Cl. 260—45.7)

1. A fiber- and film-forming synthetic linear polycarbonamide containing a manganese salt in an amount providing at least 5 parts per million of Mn^{++}, based on the weight of the polycarbonamide, and exhibiting a synergistic effect in terms of dye light fastness and light stability, said polycarbonamide having recurring carbonamide linkages as an integral part of the polymer chain containing chemically bonded thereto in the proportion of 0.05 to 10 mol percent, based upon the number of said carbonamide linkages, an ultraviolet absorbing benzotriazole radical of the formula



wherein:

one X is a carbonamide linkage connecting the benzotriazole radical to the polycarbonamide chain,

the other X is selected from the group consisting of hydrogen, alkyl of 1 to 6 carbon atoms, and said carbonamide linkages connecting the benzotriazole radical to the polycarbonamide chain, and

R° is selected from the group consisting of hydrogen and alkyl of 1 to 6 carbon atoms,

it being further provided that when both X's are carbonamide linkages said benzotriazole radicals are intralinear units of the said polycarbonamide, and that when one of said X's is other than a carbonamide linkage said benzotriazole radicals are chain terminators of the said polycarbonamide.

3,282,887

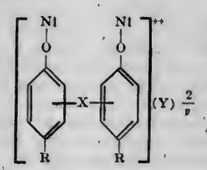
NICKEL PHENOLATES AND THEIR USE AS LIGHT STABILIZERS FOR POLYOLEFINS

Mary Lou Soeder, Minneapolis, Minn., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Aug. 6, 1962, Ser. No. 214,834
7 Claims. (Cl. 260—45.75)

1. A polyolefin selected from the group consisting of polyethylene and a stereoregular polymer of an alpha-olefin having from 3 to 6 carbon atoms containing from

about 0.01% to about 5% by weight of the polyolefin of a nickel phenolate of the formula:



wherein R is an alkyl radical containing 1 to 20 carbon atoms, X is selected from the group consisting of sulfoxide and sulfonyl radicals, Y is an anion, and v is the valence of the anion Y.

2. The composition of claim 1 also containing from 0.01% to 5% by weight of the polyolefin of phenolic compound selected from the group consisting of polyalkylphenols, alkylidene-bis(alkylphenol)s, 2-(2'-hydroxyphenyl)-2,4,4-polyalkylchromans, 4-(2'-hydroxyphenyl)-2,2,4-polyalkylchromans, thiobisphenols and adducts of an alkylphenol and a cyclic terpene.

3,282,888

STABILIZATION OF POLYOLEFINS WITH ETHYLENE BIS(α-IMINO-o-HYDROXYARYL)ACETIC ACIDS AND SALTS THEREOF

Robert M. Pines, Spring Valley, N.Y., assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Filed July 9, 1962, Ser. No. 208,598
6 Claims. (Cl. 260—45.8)

1. A composition comprising a member selected from the group consisting of polypropylene and polyethylene, from about 0.01% to about 0.5% of ethylene bis(α-imino-o-hydroxyphenylacetic acid) and from about 0.1% to about 0.5% at least one member selected from the group consisting of 6-(4-hydroxy-3,5-di-t-butylanilino)-2,4-bis-(n-octylthio)-1,3,5-triazine; 2-(n-octylthio)-4,6-bis-(4-hydroxy-3,5-di-t-butylphenoxy)-1,3,5-triazine; di-(n-octadecyl)-4-hydroxy-3,5-di-t-butylbenzylphosphonate; noctadecyl β-(4-hydroxy-3,5-di-t-butylphenyl)propionate; and dilauryl thiodipropionate, all percentages based on weight of total composition.

3,282,889

DI BETA NAPHTHYL-p-PHENYLENE DIAMINE STABILIZED PROPYLENE POLYMERS

Arthur R. Tomlinson, Chester, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Aug. 12, 1964, Ser. No. 389,211
6 Claims. (Cl. 260—45.9)

1. A process comprising mixing a solid, substantially crystalline polymer of propylene with a stabilizing quantity comprising from about 0.05% to about 5.0% by weight of di-beta-naphthyl-para-phenylene diamine, melting the resulting mixture, and forming from said melted mixture fibers having improved resistance to environmental factors causing degradation, said crystalline polymer being selected from the group consisting of propylene homopolymers and block copolymers of propylene and at least one alpha-olefin from the group consisting of ethylene and alpha-olefins having between 4 and 10 carbon atoms.

3,282,890

POLY-α-OLEFINS CONTAINING A DIESTER OF 3,3'-THIODIPROPIONIC ACID AND 3-HYDROXY-2,2,4-TRIMETHYLPENTYL ISOBUTYRATE AND OPTIONALLY A STERICALLY HINDERED PHENOL AS STABILIZERS

Hugh J. Hagemeyer, Jr., Vernon K. Park, and Alfred G. Robinson, Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed July 25, 1962, Ser. No. 212,485
18 Claims. (Cl. 260—45.85)

1. Normally solid poly-mono-α-olefinic material of at least one mono-α-olefin having 2–10 carbon atoms, containing the diester of 3,3'-thiodipropionic acid and 3-hydroxy-2,2,4-trimethylpentyl isobutyrate at a stabilizing amount.

5. Normally solid poly-mono-α-olefinic material of at least one mono-α-olefin having 2–10 carbon atoms, containing at a protective concentration a synergistic mixture consisting essentially of (1) the diester of 3,3'-thiodipropionic acid and 3-hydroxy-2,2,4-trimethylpentyl isobutyrate and (2) a sterically hindered phenolic antioxidant selected from the group consisting of 2,6-dialkyl-p-cresols, alkylidene bisphenols and thio bisphenols, the weight ratio of the diester to the sterically hindered phenolic antioxidant being in a range from about 1:20 to about 20:1.

17. A composition capable of synergistic stabilizer activity when incorporated in poly-α-olefinic material, said composition consisting essentially of (1) the diester of 3,3'-thiodipropionic acid and 3-hydroxy-2,2,4-trimethylpentyl isobutyrate and (2) a sterically hindered phenolic antioxidant, the weight ratio of the diester to the sterically hindered phenolic antioxidant being in a range from about 1:20 to about 20:1.

3,282,891

POLYPROPYLENE STABILIZED WITH A COMBINATION OF GLYCEROL AND PHENOLS

Delos E. Bown, Norman P. Neureiter, and Isaac J. Satterfield, Baytown, Tex., assignors to Humble Oil & Refining Company

No Drawing. Filed Feb. 16, 1959, Ser. No. 793,272
8 Claims. (Cl. 260—45.95)

1. A color stable polymer composition comprising normally solid high molecular weight polypropylene contaminated with less than 100 p.p.m. of titanium and having incorporated therein from about 0.05 to 2 weight percent of glycerol and about .005 to 5 weight percent of an oxidation inhibitor selected from the class consisting of

2,2'-methylenebis(4-methyl-6-tertiarybutylphenol),
4,4'-thiobis(3-methyl-6-tertiarylbutylphenol),
4,4'-methylenebis(2,6-ditertiarybutylphenol) and
4,4'-methylenebis(2-methyl-6-tertiarybutylphenol).

3,282,892

POLYAMIDES CONTAINING A PHOSPHATE, AN ALKALI IODIDE AND AN IRON COMPOUND AS STABILIZERS

Wolfgang Griehl and Siegfried Schaaf, Chur, Switzerland, assignors to Inventa A.-G., fur Forschung und Patentverwertung Lucerne, Lucerne, Switzerland

No Drawing. Filed May 27, 1963, Ser. No. 283,541
Claims priority, application Switzerland, July 11, 1962, 8,357/62
2 Claims. (Cl. 260—45.75)

1. A composition containing a polyamide and 0.1–5.0% by weight in relation to the polyamide of an alkali iodide, 0.1–2.0% by weight in relation to the polyamide of a phosphate having a boiling point of over 200° C. and of the class consisting of an alkali phosphate, an earth-alkali phosphate and an organic phosphate, and 0.01–0.2% by weight in relation to the polyamide of an iron salt of the class consisting of iron(II)naphthenate, iron(II)diethanolamine sulphate and ferrous sulphate.

3,282,893

PROCESS FOR PREPARING SYNTHETIC RESINS

Leon Shechter, Summit, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed July 3, 1961, Ser. No. 121,322
7 Claims. (Cl. 260—47)

1. In the process for preparing polycarbonate resins which comprises condensing a dihydric phenol with a diaryl carbonate at elevated temperatures and under reduced pressure, the improvement which consists in purging through the reaction mass during the condensation reaction from about 0.1 to about 20.0 weight percent steam per hour based on the weight of reactants.

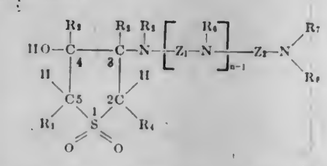
3,282,894

CURABLE MIXTURES OF EPOXY RESINS AND HYDROXYSULFOLENE-ADDUCTS

Erwin Nikles, Allschwil, Hans Batzer, Arlesheim, Otto Ernst, Pfeffingen, Basel-Land, and Heinz Zumstein, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Apr. 2, 1962, Ser. No. 184,561
Claims priority, application Switzerland, Apr. 6, 1961, 4,005/61; Feb. 6, 1962, 1,420/62
8 Claims. (Cl. 260—47)

1. A process for curing an epoxy resin which comprises contacting a 1,2-epoxy compound having a 1,2-epoxy equivalency greater than 1 with an adduct of the general formula



in which each of the radicals R_1 to R_8 is a member selected from the class consisting of hydrogen atom and lower alkyl group with 1 to 4 carbon atoms; Z_1 and Z_2 each are members selected from the class consisting of divalent aliphatic hydrocarbon, cycloaliphatic hydrocarbon, araliphatic hydrocarbon and aromatic hydrocarbon radical, and n is a whole number from 1 to 4.

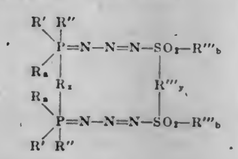
3,282,895

TRIAZENE DERIVATIVES

John E. Franz, Crestwood, and Carl Osuch, Kirkwood, Mo., assignors to Monsanto Company, a corporation of Delaware

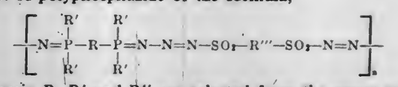
No Drawing. Filed Jan. 4, 1963, Ser. No. 249,316
5 Claims. (Cl. 260—47)

1. A phosphazide of the formula



wherein R, R' and R'' are selected from the group consisting of alkyl, aryl, and dialkylamino containing from one to 18 carbon atoms; R''' is selected from the group consisting of alkyl, aryl, aralkyl, and aroxy containing from one to 18 carbon atoms and heterocyclic selected from the group consisting of β-pyridyl, morpholinyl, piperidinyl and pyrrolidinyl; x, y, a and b are whole numbers from 0 to 1, with the maximum sum of x and y being 1, the sum of a and x being 1, and the sum of b and y being 1.

5. A polyphosphazide of the formula,



wherein R, R' and R'' are selected from the group consisting of alkyl, aryl, and dialkylamino containing from one to 18 carbon atoms; R''' is selected from the group consisting of alkyl, aryl, aralkyl, and aroxy containing from one to 18 carbon atoms and heterocyclic selected from the group consisting of β-pyridyl, morpholinyl, piperidinyl and pyrrolidinyl; and n is an integer greater than one.

3,282,896

LINEAR POLYURETHANES FORMED BY REACTING DIMETHYLOL PHENOL WITH A DIISOCYANATE

Fred J. Einberg, Philadelphia, Pa., assignor to the United States of America as represented by the Secretary of the Army

No Drawing. Filed Feb. 6, 1963, Ser. No. 256,772
7 Claims. (Cl. 260—47)

1. A polyurethane composition consisting essentially of the reaction product of, as sole reactants, equimolar quantities of a diisocyanate with a compound selected from the group consisting of a mononuclear dimethylol phenol and a mononuclear dimethylol phenol ether.

3,282,897

PROCESS FOR PREPARING A POLYAMIDE-ESTER

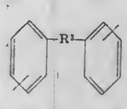
Rudolph J. Angelo, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 25, 1963, Ser. No. 311,326
7 Claims. (Cl. 260—47)

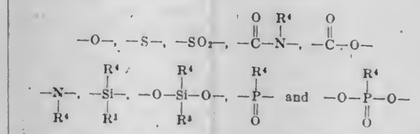
1. A process for preparing shapeable polymeric compositions which comprises reacting at least one diamine having the structural formula

$$H_2N—R^1—NH_2$$

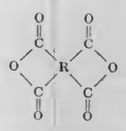
wherein R^1 is arylene, the two amino groups of said diamine each attached to separate carbon atoms of R^1, said R^1 being selected from the group consisting of phenylene, naphthylene, biphenylene, anthrylene, furylene, benzfurylene and



wherein R^3 is selected from the group consisting of an alkylene chain having 1–3 carbon atoms,

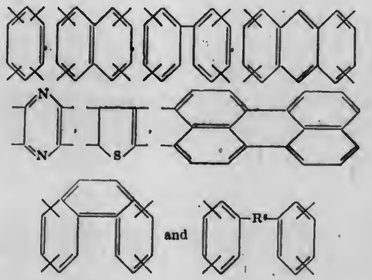


wherein R^4 and R^5 are selected from the group consisting of alkyl and aryl; with at least one aromatic tetracarboxylic acid dianhydride of the formula



wherein the four carbonyl groups of said dianhydride are directly attached to an aromatic ring of said dianhydride,

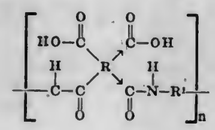
and wherein R is an aromatic tetravalent organic radical selected from the group consisting of



wherein R^6 is selected from the group consisting of R^3 and



in an organic solvent for at least said diamine, said solvent being inert to the system, while maintaining the temperature throughout the reaction sufficiently below 175° C. to form a polymeric composition containing at least about 50% by weight of a polyamide-acid consisting essentially of recurring units of the formula:



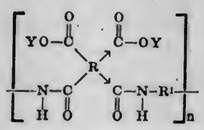
wherein

the arrows denote isomerism;

R and R^1 have the same meaning as above; and

n is an integer sufficiently high to provide a polymer having an inherent viscosity of at least 0.1 as measured at 30° C. on an 0.5% by weight solution in N,N-dimethylacetamide;

treating said polyamide-acid with a metal salt of a Group I metal and a carboxylic acid, Group I being defined in Mendeleef's Periodic Table of the Elements, Handbook of Chemistry and Physics (25th ed.), published by Chemical Rubber Publishing Co., said metal salt being used in an amount of 0.1 to 2 moles of said metal per said recurring unit of said polyamide-acid; to form a polymeric composition containing 0.05 to 15% by weight of a polyamide-acid salt consisting essentially of recurring units of the formula



wherein

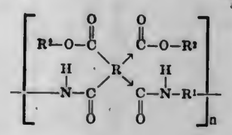
Y is a Group I metal as defined above;

the arrows denote isomerism; and

R, R^1 and *n* have the same meaning as above;

treating said polyamide-acid salt, at a temperature in the range of 0°–100° C., with a hydrocarbon halide selected from the group consisting of the chlorides, bromides and iodides of hydrocarbon radicals selected from the group consisting of alkyl, allyl and benzyl;

to form a polymeric composition containing a polyamide-ester consisting essentially of recurring units of the formula



wherein

the arrows denote isomerism;

R^2 is said hydrocarbon radical defined above; and

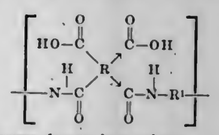
R, R^1 and *n* have the same meaning as above.

3,282,898
TREATMENT OF AROMATIC POLYAMIDE-ACIDS WITH CARBODIIMIDES

Rudolph J. Angelo, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

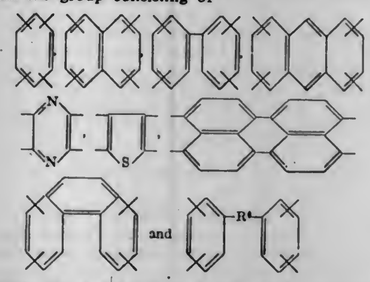
No Drawing. Filed Nov. 21, 1963, Ser. No. 325,479
1 Claim. (Cl. 260—47)

The process of preparing a polymeric imide which comprises treating in an inert organic solvent, a polyamide-acid consisting essentially of recurring units of the formula

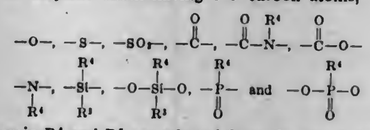


wherein the arrows denote isomerism;

R is an aromatic tetravalent organic radical selected from the group consisting of



wherein R^6 is selected from the group consisting of an alkylene chain having 1–3 carbon atoms,



wherein R^4 and R^5 are selected from the group consisting of alkyl and aryl; and

R^1 is arylene;

said polyamide-acid having an inherent viscosity of at least 0.1 as measured at 30° C. on an 0.5% by weight solution in N,N-dimethylacetamide; with a compound of the formula

$$R^7—N=C=N—R^7$$

wherein R^7 is selected from the group consisting of alkyl and aryl; at a temperature and for a time sufficient to form a polymeric imide having a strong absorption in its infrared spectrum at 5.55 microns and 10.0 to 11.0 microns and substantially no absorption at 13.85 microns.

3,282,899
CHEMICAL PROCESS FOR COPOLYMERIZING CHLORAL AND DICHLOROACETALDEHYDE

George H. McCain, Donald E. Hudgin, and Irving Rosen, Painesville, Ohio, assignors to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware

Filed Sept. 20, 1963, Ser. No. 310,345
25 Claims. (Cl. 260—67)

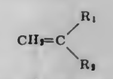
1. A process for polymerizing a monomer mixture containing from about 99 to 30 mol percent of chloral and from about 1 to 70 mol percent of dichloroacetaldehyde directly into a tough and durable formed copolymer article, which process comprises thoroughly mixing in a reaction chamber the said monomer mixture and a polymerization catalyst therefor, withdrawing from the said reaction chamber the flowable reaction mixture prepared and charging it to a forming means, effecting the substantial polymerization of the monomer mixture while it is thus supported by the forming means and is maintained at the reaction temperature, thereafter removing the formed copolymer product from the said forming means and finally washing and drying said product.

3,282,900
TWO STAGE POLYMERIZATION PROCESS INVOLVING NON-GASEOUS VINYL MONOMERS WITH ALUMINUM ALKYLS AND α,α′-AZOBISISOBUTYRONITRILE

Rajendra N. Chadha and Thomas E. Ferington, Silver Spring, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed May 21, 1963, Ser. No. 282,150
30 Claims. (Cl. 260—78.5)

1. A composition comprising (A) a vinyl monomer of the formula



wherein R_1 is a member of the group consisting of hydrogen and an organic radical and R_2 is an organic radical, (B) 0.01–25% by weight of said vinyl monomer of an aluminum alkyl compound and (C) 0.05–10% by weight of said vinyl monomer of α,α′-azobisisobutyronitrile.

8. A two stage polymerization process which comprises (1) initiating the first stage polymerization by exposing the composition of claim 1 to an oxygen-containing atmosphere and after 1 to 60 minutes initiating the second stage polymerization by, preferably in an oxygen-free atmosphere, decomposing the α,α′-azobisisobutyronitrile into free radicals.

13. A two stage polymerization process which comprises applying the composition of claim 1 to a surface and initiating the first stage polymerization by exposing the coated surface to an oxygen containing atmosphere and after 1 to 60 minutes, preferably in an oxygen-free atmosphere, initiating the second stage polymerization by decomposing the α,α′-azobisisobutyronitrile into free radicals.

3,282,901
PROCESS FOR THE PRODUCTION OF POLYMERIC MERCAPTANS

Paul F. Warner and Richard D. Franz, both of Phillips, Tex., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Nov. 6, 1961, Ser. No. 150,122
4 Claims. (Cl. 260—79)

1. In a process for the production of polymeric mercaptans comprising contacting a liquid copolymer of a conjugated diene of 4 to 10 carbon atoms with H_2S at an elevated temperature and a fixed bed of a cobalt molybdate catalyst active for promoting the reaction of said polymer with H_2S to form said polymeric mercaptan, and recovering said mercaptan product so produced, the improvement which comprises carrying out said contacting in the presence of a small amount of added uncombined hydrogen ranging from 0.1 to 5 mols per diene monomer unit in said polymer sufficient to minimize the formation of insoluble materials during said contacting, thus extending the life of said catalyst.

3,282,902
CURABLE POLYSULFIDE COMPOSITIONS, METHODS AND VULCANIZATES

Julian R. Panek, Newtown, Pa., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Dec. 4, 1963, Ser. No. 328,054
12 Claims. (Cl. 260—79.1)

1. A curable composition comprising, in weight ratio, (a) one hundred parts by weight of polysulfide polymer that is ordinarily liquid at 25° C. and of the formula $HS(RSS)_nRSH$, wherein R is a divalent aliphatic radical selected from the group consisting of alkylene, oxahydrocarbon and thiahydrocarbon radicals; (b) about one to twenty parts by weight of metal oxide curing agent; and (c) about two to fifty parts by weight of orthonitroanisole.

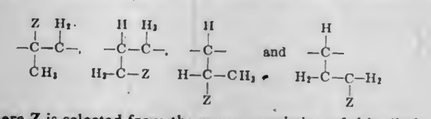
5. A method for curing liquid polysulfide polymer of the formula $HS(RSS)_nRSH$ wherein R is a divalent aliphatic radical selected from the group consisting of alkylene, oxahydrocarbon and thiahydrocarbon radicals comprising, (a) admixing with said polymer about 2 to 50 parts by weight of orthonitroanisole and one to twenty parts by weight of metal oxide curing agent per one hundred parts by weight of polymer, and (b) subjecting the admixture of step (a) to elevated curing temperatures.

3,282,903
PROCESS AND PRODUCTS OF MODIFIED COPOLYMERS OF ETHYLENE AND PROPADIENE

Stanley Tocker, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 24, 1965, Ser. No. 458,371
7 Claims. (Cl. 260—79.5)

1. A modified copolymer of 65–99 mole percent of ethylene and 1–35 mole percent of propadiene, said modification being by reaction with a thiol compound selected from the group consisting of hydrogen sulfide, ethanethiol, 1-propanethiol, 2-propanethiol, 1-hexanethiol, 1-decanethiol, benzenethiol, thiosalicylic acid and mercaptobenzothiazole, to provide 1–35 mole percent of a random selection of recurring units selected from the group consisting of



where Z is selected from the group consisting of thioalkyl, thioaryl and thioaryl carboxylic acid radicals.

3,282,904
PHOSPHORUS-CONTAINING COPOLYMERS

Fritz B. Marktscheffel, Berkeley Heights, and Albin F. Turbak, New Providence, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

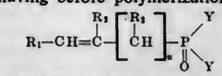
No Drawing. Filed Apr. 19, 1963, Ser. No. 274,309
16 Claims. (Cl. 260—88.1)

1. A copolymer being at least 50% crystalline comprising a major portion of aliphatic alpha olefin units having before polymerization the general formula

$$R—CH=CH_2$$

where R is a C_1–C_{18} alkyl radical and a minor por-

tion of 1-alkenyl phosphorus units, said 1-alkenyl phosphorus units having before polymerization the formula:



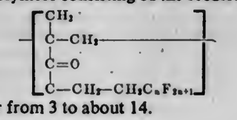
wherein R_1, R_2 and R_3 each represent a substituent containing no more than 9 carbon atoms selected from the group consisting of a hydrogen atom, an alkyl radical and an aromatic radical and at least one of R_1 nd R_2 being a hydrogen atom, n is an integer of 0 to 5 inclusive, and each Y represents a substituent containing no more than 9 carbon atoms selected from the group consisting of an alkyl radical, an alkoxy radical, an aromatic radical and haloalkoxy radical.

3,282,905
FLUORINE CONTAINING ESTERS AND POLYMERS THEREOF

Ross Wade Fasick, Newark, and Stuart Raynolds, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 9, 1965, Ser. No. 431,459
2 Claims. (Cl. 260—89.5)

2. Homopolymers consisting of the recurring unit



n is an integar from 3 to about 14.

3,282,906
POLYMERIZATION CATALYST AND PROCESS

John Boor, Jr., El Cerrito, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 17, 1962, Ser. No. 224,199
8 Claims. (Cl. 260—93.7)

6. In the polymerization of alpha-monoolefinic hydrocarbon material of 3 to 7 carbon atoms per molecule to form solid, crystallizable polymer, the improvement which comprises effecting the polymerization in liquid dispersion in hydrocarbon diluent and in the presence of a catalyst consisting essentially of an alkyl aluminum dichloride wherein the alkyl radicals contain 1 to 12 carbon atoms, titanium trichloride selected from the group consisting of the active alpha, beta, gamma and delta forms of titanium trichloride and a third compound having the formula $(R'O)_2CO$ wherein R' is an alkyl group of 1 to 10 carbon atoms, the molar ratio of said third compound to said aluminum dichloride being with the range of 0.1:1 to 1:1.

3,282,907
POLYMERIZATION CATALYST SYSTEM AND PROCESS

Robert O. Lindblom, Pleasant Hill, and Joseph B. Byrne, Antioch, Calif., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 3, 1962, Ser. No. 242,849
26 Claims. (Cl. 260—93.7)

12. A polymerization process comprising the step of polymerizing an olefinic compound having no more than 30 carbon atoms therein selected from the class consisting of olefins having a $CH_2{=}CH{-}$ group and derivatives thereof in which each derivative group is selected from the class consisting of cycloalkyl, aryl and haloaryl groups, in which haloaryl groups each halogen atom is attached directly to the aromatic nucleus of the aryl group, at a temperature of room temperature to 250° C., at a pressure of atmospheric pressure to 20,000 pounds per square inch, in the presence of a catalyst composition comprising the reaction product obtained upon mixing the following three components:

(A) a sodium derivative of an alkanolamine of no more than 60 carbon atoms having the formula $NaOZNR_2$ wherein Z is a divalent radical selected from the class consisting of divalent aliphatic hydrocarbon radicals of no more than 30 carbon atoms and derivatives thereof in which the derivative radicals are each selected from the class consisting of OR', ONa, and NR_2'' radicals, said divalent radical having at least 2 and no more than 4 carbon atoms between said valencies; R' represents a radical selected from the class consisting of hydrogen, alkyl and acyl radicals having no more than 20 carbon atoms therein; R represents a radical of the class consisting of hydrogen, alkyl radicals and derivatives of alkyl radicals in which the derivative radicals are each selected from the class consisting of OR', ONa, and NR_2'' radicals; R'' represents a radical selected from the class consisting of hydrogen, alkyl radicals and derivatives of alkyl radicals in which the derivative radicals are each selected from the class consisting of OR', ONa, and NR''' radicals; and R''' represents a radical selected from the class consisting of hydrogen and alkyl radicals; said alkyl radicals represented by R, R'' and R''' each having no more than 20 carbon atoms therein, the total number of carbon atoms in said compound being no more than 60, the number of soduim atoms and nitrogen atoms each being no more than 3, and the number of oxygen atoms being no more than 6;

(B) a compound selected from the class consisting of halides, oxides, alcoholates and esters of metals of the periodic groups IV(b), V(b), VI(b), VIII and manganese; and

(C) a component selected from the class consisting of metals of periodic groups I, II, III, IV(b), V(b) and VI(b) and derivatives thereof in which each derivative group is selected from the class consisting of hydrogen and hydrocarbon radicals.

3,282,908
DYEABILITY OF POLYOLEFINS

Louis Port, Buffalo, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Nov. 13, 1963, Ser. No. 323,242
8 Claims. (Cl. 260—93.7)

1 A process for improving the dyeability of an alpha olefin hydrocarbon polymer which comprises contacting a composition consisting of said hydrocarbon polymer prior to the addition of dyestuff thereto with an organic isocyanate selected from the general formula

$$R\cdot(N{:}CO)n$$

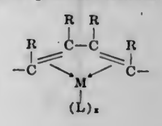
wherein n is 1, 2 or 3 and R is selected from the group consisting of heterocyclic radicals and aromatic and aliphatic hydrocarbon radicals containing 2 to 20 carbon atoms at an elevated temperature.

3,282,909
METALLO-ORGANIC POLYMERS, THEIR PREPARATION AND UTILITY

Thomas A. Manuel, Westfield, and Martin Berger, East Brunswick, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed May 18, 1965, Ser. No. 456,865
19 Claims. (Cl. 260—94.7)

1. A process for preparing a vulcanizable organo-metallic polymer having the general formula:



where M is a metal selected from the group consisting of iron, cobalt and nickel, R is selected from the group consisting of hydrogen and hydrocarbons, L is a carbonyl group and x is a number from 1–4, which comprises reacting at a temperature of between about 30° and about 200° C. in an inert atmosphere a nonconjugated ethylenically high unsaturated hydrocarbon polymer having an average molecular weight of 1,000 to 3,000,000 with a metal carbonyl compound wherein the metal is selected from the group consisting of iron, cobalt and nickel, said metal carbonyl compound being present in the reaction in a concentration of 0.15 to 2.50 moles of metal carbonyl per mole of ethylenical unsaturation in the polymer.

3,282,910
MANUFACTURE OF CHLORINATED HIGH-PRESSURE POLYETHYLENES

Helmut Klug and Karl-Heinz Mittelberger, Gersthofen near Augsburg, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

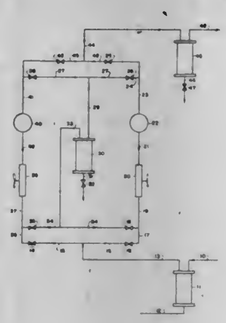
No Drawing. Filed July 25, 1962, Ser. No. 212,434
11 Claims. (Cl. 260—94.9)

1. A process for the manufacture of a chlorinated polyethylene having rubber elastic properties and an improved solubility which comprises contacting a dispersion of (1) a finely divided solid material being inert to the chlorination reaction and (2) a finely divided high-pressure polyethylene having a molecular weight of from 10,000 to 50,000, in an aqueous medium with gaseous chlorine at a temperature of at least 70° C.

3,282,911
PROCESS FOR TREATING ETHYLENE RECYCLE STREAMS

Michael Erchak, Jr., Ridgewood, N.J., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

Filed Aug. 8. 1962, Ser. No. 215,707
4 Claims. (Cl. 260—94.9)



1. In a process for removing small quantities of condensable constituents from an ethylene recycle stream in a high pressure ethylene polymerization process, the improvement involving continuous heating and cooling cycles which comprises the steps of:

(a) removing and entraining condensable constituents deposited on a condensing surface from a prior cooling cycle with said ethylene recycle stream at a temperature in the range of about 375° to 600° F. during a heating cycle,

(b) reducing the velocity of said ethylene stream from said heating cycle and removing a portion of the entrained condensable constituents in said ethylene stream in an enclosed zone,

(c) cooling the ethylene stream from said enclosed zone and depositing further entrained condensable constituents onto another condensing surface during a cooling cycle, and

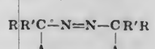
(d) reversing the flow of said ethylene recycle stream from the first mentioned condensing surface to the second mentioned condensing surface and repeating the steps of (a), (b), and (c).

3,282,912
α,α'-AZOALKANES

Erhard P. Benzing, Kirkwood, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Aug. 11, 1965, Ser. No. 478,991
Claims priority, application Switzerland, Dec. 22, 1958, 67,627/58; Mar. 16, 1959, 71,136/59; Aug. 29, 1960, 9,717/60
30 Claims. (Cl. 260—158)

1. An α,α'-substituted azoalkane of the formula



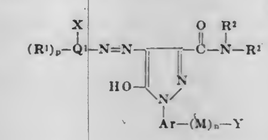
wherein A is selected from radicals of the class consisting of N_3, O(O)CH, O(O)CR''', S(O)CR'', S(S)CR'', OOR''', S(S)COR'', OCN, SCN, SR'', the 2-benzothiazolylthio radical and one A as CN with the other A being any one of the previously named radicals and including the OR''' radical, where R, R', and R'' are selected from the class consisting of aliphatic, araliphatic, monocyclic aromatic and cycloaliphatic hydrocarbons having not more than about 10 carbon atoms, R and R' taken together form cycloalkyl radicals, and R''' is defined in the same manner as R'', provided R and R' are aliphatic when A is OR''' and R is aromatic when A is O(O)CR'''.

3,282,913
3-CARBAMYLPYRAZOLONE AZO COMPOUNDS

Milton Green, Newton Centre, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed Aug. 9, 1963, Ser. No. 301,197
11 Claims. (Cl. 260—163)

1. A compound of the formula:



wherein R^1 is a radical selected from the group consisting of lower alkyl, lower alkoxy, chlorine and trifluoromethyl radicals; p is an integer from 0 to 4, inclusive; X is a radical selected from the group consisting of hydrogen, chlorine, lower alkyl, lower alkoxy, and trifluoromethyl radicals, said X being located ortho to said —N=N— group; Q^1 is a radical selected from the group consisting of phenyl and naphthyl radicals; Ar is a phenylene radical; M is a lower alkylene radical; n is an integer from 0 to 1, inclusive; Y is a radical selected from the group consisting of ortho- and para-dihydroxyphenyl radicals and lower alkyl and chlorine derivatives thereof; and R^2 and R^3 each are selected from the group consisting of hydrogen and lower alkyl radicals, and R^2 and R^3 taken together may be a pentamethylene radical.

3,282,914
3-AZO-ESTRANE-COMPOUNDS

Erich Hecker, Munich, Germany, assignor to Schering Aktiengesellschaft, Berlin, Germany

No Drawing. Filed Jan. 8, 1963, Ser. No. 250,022
Claims priority, application Germany, Apr. 22, 1959, Sch 25,922
3 Claims. (Cl. 260—192)

1. 3-(2,4-dinitrophenyl)-azo-17β-acetoxy - $\Delta^{1,3,5(10)}$-estratriene.

2. 2,4-dinitrophenylhydrazone of 2,4-dinitrobenzene-[1-azo-3]-$\Delta^{1,3,5(10)}$-estratrienone-(17).

3. 2,4-dinitrophenylhydrazone of 2,4-dinitrobenzene-[1-azo-3]-17β-acetyl-$\Delta^{1,3,5(10)}$-estratriene.

3,282,915
3-(DINITRO AND DIAMINOPHENYLAZO)ESTRA-1,3,5(10)-TRIEN-17β-OLS

James Jiu, Morton Grove, and Arthur H. Goldkamp, Deerfield, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed June 15, 1959, Ser. No. 820,088
2 Claims. (Cl. 260—192)

1. 3 - (2,4-dinitrophenylazo)estra-1,3,5(10)-trien-17β-ol.

2. 3 - (2,4 - diaminophenylazo)estra-1,3,5(10)-trien-17β-ol

3,282,916
POLYSACCHARIDE AND PROCESS FOR PRODUCING SAME

Gustav Richard Jansen, Scotch Plains, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 9, 1964, Ser. No. 409,952
3 Claims. (Cl. 260—209)

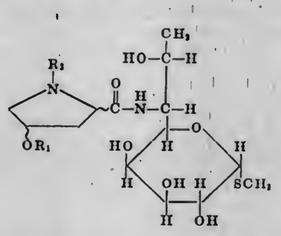
1. The process of producing a complex polysaccharide, which comprises cultivating the microorganism ATCC accession number 15192 under submerged aerobic conditions in an aqueous carbohydrate solution containing a nitrogenous nutrient at a temperature of substantially from 22° to 32° C. and for between about one and six days.

3,282,917
METHYL N-(1-ALKYL-4-ALKOXY-PROLYL)-α-THIOLINCOSAMINIDE COMPOUNDS AND PROCESS THEREFOR

Barney J. Magerlein, Portage, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Aug. 17, 1964, Ser. No. 390,176
9 Claims. (Cl. 260—210)

1. A methyl N-(1-alkyl-4-alkoxypropyl)-α-thiolincosaminide of the formula:



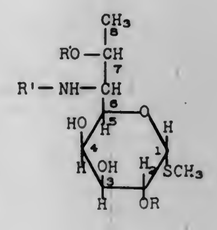
wherein R_1 and R_2 are alkyl radicals having from 1 to 12 carbon atoms, inclusive.

3,282,918
2,7-DI-O-ACYLLINCOMYCINS, INTERMEDIATES, AND PROCESSES FOR PREPARING THEM

Herman Hoeksema, Cooper Township, Kalamazoo County, Robert D. Birkenmeyer, Comstock Township, Kalamazoo County, and Barney J. Magerlein, Portage, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Apr. 13, 1964, Ser. No. 359,410
21 Claims. (Cl. 260—210)

1. A compound of the formula:



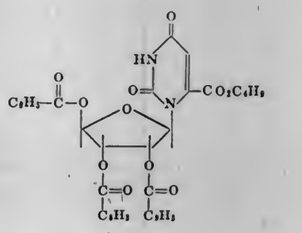
wherein R is selected from the group consisting of a carboxylic acid acyl radical of not more than 12 carbon atoms; or a halo-, nitro-, hydroxy-, amino-, cyano-, thiocyano-, and loweralkoxy-substituted hydrocarbon carboxylic acid acyl radical of not more than 12 carbon atoms; and wherein R′ is trans-4-propyl-L-hygröyl.

3,282,919
PROCESS FOR PREPARING OROTIDINE

William Vincent Curran and Robert Bruce Angier, Pearl River, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Feb. 6, 1964, Ser. No. 343,149
1 Claim. (Cl. 260—211.5)

The method of preparing orotidine which comprises reacting n-butyl orotate with a mercuric salt to form the monomercury derivative of n-butyl orotate, reacting said monomercury derivative with 2,3,5-tri-O-benzoylribofuranosyl chloride to form the tribenzoyl n-butyl ester of orotidine of the formula:



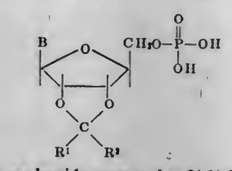
and hydrolyzing said tribenzoyl n-butyl ester to obtain orotidine.

3,282,920
METHOD FOR PRODUCING 5′-NUCLEOTIDES

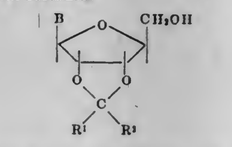
Shunji Ouchi, Hiraku Yamada, Kozo Tsunoda, Naohito Kameyama, and Saburo Senoo, all of Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Kita-ku, Osaka, Japan, a corporation of Japan

No Drawing. Filed Mar. 18, 1964, Ser. No. 352,954
Claims priority, application Japan, Mar. 19, 1963, 38/12,774
5 Claims. (Cl. 260—211.5)

1. A process for preparing 5′-nucleotides (nucleoside 5′-phosphates) having the general formula:



by reacting a nucleoside protected at 2′,3′-O-positions having the general formula:



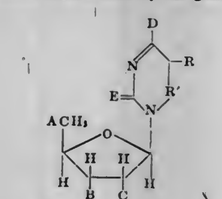
wherein B represents a base selected from the group consisting of adenine, guanine, hypoxanthene, uracil, and cytosine, and when R_1 is hydrogen, R_2 is selected from the group consisting of methyl and phenyl, and when R_1 is methyl, R_2 is methyl, with an excess amount of phosphorus oxytrichloride, while maintaining the temperature in the range of 0°–60° C., and then distilling off the unreacted phosphorus oxytrichloride and admixing the thus obtained residue with cold water.

3,282,921
HALO-DEOXYNUCLEOSIDES AND PROCESSES FOR THE PREPARATION THEREOF

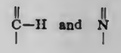
Julien P. H. Verheyden and John G. Moffatt, both of Palo Alto, Calif., assignors to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed June 4, 1964, Ser. No. 372,712
22 Claims. (Cl. 260—211.5)

1. A compound represented by the general formula:



wherein A, B and C are each selected from the group consisting of hydrogen and halogen, with no more than two of A, B and C being fluorine, and when any of A, B and C are halogen, at least one of them being other than fluorine; R is selected from the group consisting of hydrogen, halogen, halo-lower alkyl, amino, amido, nitro, cyano and carboxy, with R being other than halogen and halo-lower alkyl when all of A, B, C and D are other than chloro, fluoro or iodo; R′ is selected from the group consisting of



groupings; D is selected from the group consisting of hydroxyl, amino, halogen and halo-lower alkyl, with D being other than halogen and halo-lower alkyl when all of A, B and C are other than chloro, fluoro or iodo, and E is selected from the group consisting of keto, imino and thio.

3,282,922
CYANOETHYLSUCROSE ACYLATES

George P. Touey and John E. Kiefer, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 28, 1963, Ser. No. 319,531
5 Claims. (Cl. 260—234)

1. A sucrose derivative having the formula:

$$(\text{sucrose-o})(CH_2CH_2CN)_x(COC_{2n+1})_y$$

where sucrose-o represents sucrose minus 8 hydrogens and

$x=1$ to 7, inclusive
$y=1$ to 7, inclusive
$x+y=6$ to 8, inclusive
$n=1$ to 9, inclusive

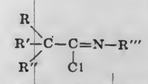
3,282,923
PROCESS FOR THE PREPARATION OF IMIDOCHLORIDES AND/OR HYDROCHLORIDES OF IMIDOCHLORIDES

Johannes H. Ottenheym, Sittard, and Johan W. Garritsen, Geleen, Netherlands, assignors to Stamicarbon N.V., Heerlen, Netherlands

No Drawing. Filed Oct. 30, 1961, Ser. No. 148,730
Claims priority, application Netherlands, Oct. 31, 1960, 257,446, 257,447
11 Claims. (Cl. 260—239)

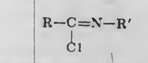
1. A process for the preparation of a member of the group consisting of imidochlorides having one of the following formulae:

(a)



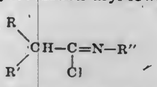
wherein R, R′, R″ and R‴ are substituents selected from the group consisting of lower alkyl, hydrocarbon aryl, hydrocarbon aryl lower alkyl and lower alkyl-hydrocarbon aryl;

(b)



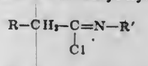
wherein R is selected from the group consisting of cyclic lower alkyl, hydrocarbon aryl and lower alkyl-hydrocarbon aryl and R′ is selected from the group consisting of lower alkyl and hydrocarbon aryl-lower alkyl;

(c)



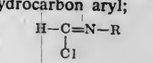
wherein R, R′ and R″ are selected from the group consisting of lower alkyl, hydrocarbon aryl, hydrocarbon aryl lower alkyl and lower alkyl-hydrocarbon aryl;

(d)



wherein R is selected from the group consisting of hydrogen, lower alkyl, hydrocarbon aryl, hydrocarbon aryl lower alkyl and lower alkyl-hydrocarbon aryl, and R′ is selected from the group consisting of lower alkyl, hydrocarbon aryl, hydrocarbon aryl lower alkyl and lower alkyl-hydrocarbon aryl;

(e)



wherein R is selected from the group consisting of lower alkyl, hydrocarbon aryl, hydrocarbon aryl lower alkyl and lower alkyl-hydrocarbon aryl; and

(I) 

wherein *n* has a value >2, and the hydrochlorides of said imidochlorides, said process comprising the steps of reacting the corresponding N-monosubstituted acid amide with phosgene in the presence of an inert organic solvent and maintaining throughout said reaction at least one mole of phosgene per mole of acid amide with the proviso that the molar ratio of phosgene to acid amide is between 1:1 and 2:1 when preparing the compounds represented by Formulae *c–f*, and then recovering the respective imidochloride.

3,282,924
METHOD OF PREPARING HALOIMINIUM SALTS

Gerhard H. Alt, 730 Mosley Road, and Angelo John Speziale, 544 Fairways Circle, both of Creve Coeur, Mo.

No Drawing. Filed Aug. 22, 1963, Ser. No. 303,936
9 Claims. (Cl. 260—239)

1. The method of preparing haloiminium salts which comprises mixing PX_5, wherein X is selected from the group consisting of chlorine and bromine with a compound of the structure:



wherein R_1 is selected from the class consisting of alkyl having up to four carbon atoms and radicals such that R_1 and R_2 together are alkylene of one to ten carbon atoms to provide a closed ring of four to eight carbon atoms; and wherein R_2 is selected from the class consisting of hydrogen, alkyl having up to four carbon atoms and radicals such that R_1 and R_2 together are the said alkylene radicals; and wherein R_3 and R_4 are selected from the class consisting of alkyl having up to four carbon atoms and radicals such that R_3 and R_4 together are divalent radicals selected from the alkylene having from two to eight carbon atoms, —R—O—R— in which R is alkylene from two to six carbon atoms and —R—S—R— in which R is alkylene from two to six carbon atoms, in the presence of an inert organic solvent at a temperature between 50° C. and 180° C.

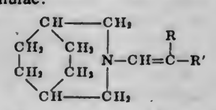
8. The method of preparing a haloiminium salt which comprises heating 3-N-hexamethyleniminocyclohex-2-en-1-one with PCl_5 at the reflux temperature in an aromatic solvent boiling between 50° C. and 180° C.

3,282,925
ENAMINE DERIVATIVES OF 3-AZABICYCLO-[3.2.2]NONANE

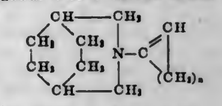
Vada L. Brown, Jr., and Theodore E. Stanin, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Feb. 27, 1964, Ser. No. 347,699
4 Claims. (Cl. 260—239)

1. A compound from the group represented by the following formulae:

(I) 

wherein R and R′ are selected from the group consisting of (a) lower alkyl and (b) lower alkylene which, with the carbon atom to which they are attached, form cycloalkylidene of about 4 to 6 carbon atoms and

(II) 

wherein *n* is an integer from 2 to 4.

2. 3-(2-methylpropenyl)-3-azabicyclo[3.2.2]nonane.

3,282,926
α-CARBOXY-3-THIENYLMETHYLPENICILLIN

Edward George Brain, London, and John Herbert Charles Nayler, Coombelea, Cliftonville, Dorking, Surrey, England, assignors to Beecham Group Limited, Brentford, England, a British company

No Drawing. Filed Apr. 17, 1964, Ser. No. 360,760
Claims priority, application Great Britain, Apr. 23, 1963, 15,889/63
1 Claim. (Cl. 260—239.1)

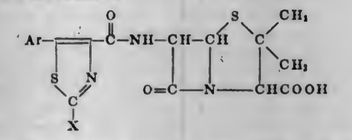
α-Carboxy-3-thienylmethylpenicillin.

3,282,927
5-PHENYL-4-THIAZOLYLPENICILLINS

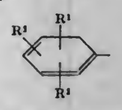
Thomas Alfred Montzka, Manlius, N.Y., assignor to Bristol-Myers Company, New York, N.Y.

No Drawing. Filed May 21, 1964, Ser. No. 369,278
8 Claims. (Cl. 260—239.1)

1. A compound selected from the group consisting of an acid of the formula



wherein X represents a member selected from the group consisting of hydrogen, (lower)alkyl, carbobenzyloxyamino, amino and Ar—$(CH_2)_n$— and *n* represents an integer from zero to three inclusive and Ar represents a radical of the formula



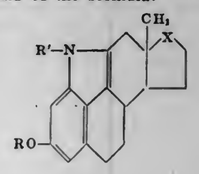
wherein R^1, R^2 and R^3 each represent a member selected from the group consisting of hydrogen, fluoro, chloro, bromo, iodo, trifluoromethyl, (lower)alkyl, (lower)alkoxy, nitro, methylsulfonyl, di(lower)alkylamino and (lower)alkylmercapto; and nontoxic, pharmaceutically acceptable salts thereof.

3,282,928
1,11-IMINOESTRATETRAENES

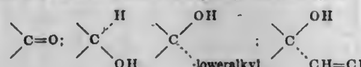
Edward Warren Cantrall, New City, Ransom Brown Conrow, Pearl River, and Seymour Bernstein, New City, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Apr. 23, 1964, Ser. No. 362,194
17 Claims. (Cl. 260—239.5)

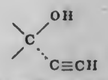
1. A compound of the formula:



wherein R is selected from the group consisting of hydrogen and lower alkyl; R′ is selected from the group consisting of hydrogen, lower alkyl, lower alkanoyl, mono-nuclear aroyl, and lower alkoxy mono-nuclear aroyl; X is selected from the group consisting of



and



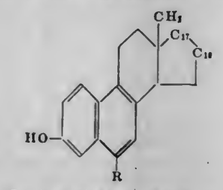
and acid addition and quaternary ammonium salts thereof.

3,282,929
METHOD FOR PREPARATION OF AROMATIC A RING STEROIDS

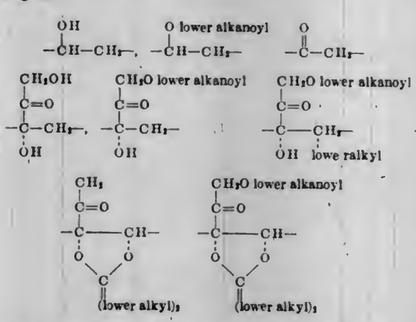
Milton Heller, New City, N.Y., Robert Herman Lenhard, Ridgefield Park, N.J., and Seymour Bernstein, New City, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed July 6, 1964, Ser. No. 380,618
11 Claims. (Cl. 260—239.55)

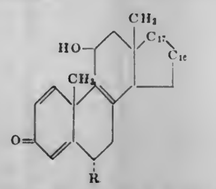
1. A method of preparing steroids of the formula:



wherein C_{17}—C_{16} is a divalent radical of the group consisting of



and R is a member of the group consisting of hydrogen, fluorine and lower alkyl which comprises contacting a steroid of the formula:



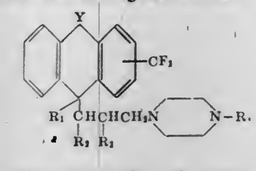
where C_{17}—C_{16} and R are defined as above in a polar solvent with the elements of a hydrogen halide at a temperature within the range of about 0° C. to about 150° C. and recovering said product therefrom.

3,282,930
HYDROXYALKYLENEPIPERAZINE DERIVATIVES AND ANALOGS THEREOF

Paul N. Craig, Roslyn, and Charles L. Zirkle, Berwyn, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Aug. 17, 1962, Ser. No. 217,535
10 Claims. (Cl. 260—240)

1. A compound of the class consisting of a free base and its nontoxic, pharmaceutically acceptable, acid addition salts the free base having the formula:



in which:

Y is a member selected from the group consisting of sulfur and oxygen;

R_1 and R_2 are members selected from the group consisting of hydrogen and, when taken together, a single bond;

R_3 is a member selected from the group consisting of hydrogen and methyl; and

R_4 is a member selected from the group consisting of hydroxyalkylene, lower alkanoyloxyalkylene, benzoyloxypropyl, carbamoyloxyethyl, di-lower alkylcarbamoyloxyethyl, hydroxyethoxyethyl and hydroxyethoxyethoxyethyl,

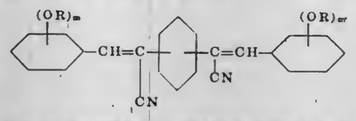
each of said alkylene moieties having 2 to 5 carbon atoms and separating the nitrogen and oxygen atoms to which it is attached by at least 2 carbon atoms.

3,282,931
DIBENZYLIDENE-BENZENEDIACETONITRILES

Ferdinand B. Zienty, Warson Woods, and Myron J. Holm, St. Louis, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Feb. 2, 1962, Ser. No. 170,833
8 Claims. (Cl. 260—240)

1. A di-(epoxyalkoxybenzylidene) - benzenediacetonitrile having the structural formula:



wherein R is epoxyalkoxy containing from 3 to 18 carbon atoms inclusive, and

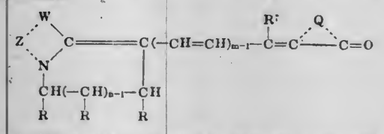
m is an integer from 1 to 3 inclusive.

3,282,932
MEROCYANINE SENSITIZERS FOR SILVER HALIDE

Lewis L. Lincoln and Donald W. Heseltine, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Sept. 27, 1962, Ser. No. 226,757
8 Claims. (Cl. 260—240.4)

1. A photographic silver halide sensitizing dye having the formula:



wherein W represents a member selected from the class consisting of the oxygen atom, the sulfur atom and the

selenium atom; Z represents the nonmetallic atoms necessary to complete a heterocyclic nucleus containing from 5 to 6 atoms in the heterocyclic nucleus selected from the class consisting of a thiazole nucleus, a benzothiazole nucleus, a naphthothiazole nucleus, a thionaphtheno-7',6',4,5-thiazole nucleus, an oxazole nucleus, a benzoxazole nucleus, a naphthoxazole nucleus, a selenazole nucleus, a benzoselenazole nucleus, and a naphthoselenazole nucleus; *n* is an integer of from 1 to 2; m represents an integer of from 1 to 2; the R groups represent only one of the following: (*a*) identical groups selected from the class consisting of the hydrogen atom, an alkyl group having from 1 to 6 carbon atoms, and a phenyl group, and (*b*) different radicals selected from the class consisting of the hydrogen atom, an alkyl group having from 1 to 6 carbon atoms, and a phenyl group; R^7 represents a group selected from the class consisting of the hydrogen atom, an alkyl group having from 1 to 2 carbon atoms and a phenyl group; and Q represents the nonmetallic atoms necessary to complete a heterocyclic nucleus containing from 5 to 6 atoms in the heterocyclic nucleus selected from the class consisting of a thiazolone nucleus, a 2-thio-2,4-thiazolidinedione nucleus, a 2-thio-2,5-thiazolidinedione nucleus, a 2-alkylmercapto-4(5)-thiazolone nucleus, a thiazolidone nucleus, a 2-diphenylamino-4(5)-thiazolone nucleus, a 5(4)-thiazolone nucleus, a 2-alkylphenylamino-4(5)-thioazolone nucleus, a 2-thio-2,4-oxazolidinedione nucleus, a pseudohydantoin nucleus, a 5(4)-oxazolone nucleus, a 5(4)-isooxazolone nucleus, a hydantoin nucleus, a 2-thiohydantoin nucleus, a 2-alkylmercapto-5(4)-imidazolone nucleus, a thionaphthenone nucleus, a pyrazolone nucleus, an oxindole nucleus, and a 2,4,6-triketohexahydropyrimidine nucleus.

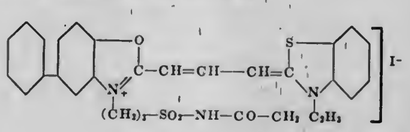
3,282,933

METHINE DYES

Jean Marie Nys and Henri DePoorter, Mortsel-Antwerp, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel, Belgium, a Belgian company

No Drawing. Filed Dec. 19, 1960, Ser. No. 76,525
Claims priority, application Great Britain, July 5, 1957, 21,350/57
5 Claims. (Cl. 260—240.6)

1. A cyanine dye of the formula:



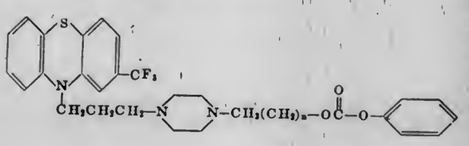
3,282,934

NITROGENOUS ESTERS OF HYDROXYLALKYL-AMINO PHENOTHIAZINES

Margaret H. Sherlock, Bloomfield, and Nathan Sperber, North Caldwell, N.J., assignors to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Filed May 15, 1964, Ser. No. 367,880
5 Claims. (Cl. 260—243)

1. A compound of the group consisting of phenyl carbonate esters having the formula:



and the acid addition salts thereof wherein *n* is a natural number less than 3.

3,282,935

4-OXO-2-(HALO-LOWER ALKYL)-2,3-DIHYDRO-BENZO-1,3-OXAZINES

Aldo Garzia and Andrea Bottazzi, Milan, Italy, assignors to Istituto Chemioterapico Italiano S.p.A., a corporation of Milan, Italy

No Drawing. Filed Oct. 14, 1963, Ser. No. 316,134
Claims priority, application Italy, Oct. 17, 1962, 20,526/62
14 Claims. (Cl. 260—244)

1. 6 - amino - 4 - oxo - 2 - (halo- lower alkyl) - 2,3 - dihydrobenzo-1,3-oxazine and non-toxic acid addition salts thereof.

3,282,936

PROCESS FOR THE CONVERSION OF CIS-2-PHENYL-3-METHYLMORPHOLINE TO TRANS-2-PHENYL-3-METHYLMORPHOLINE

Christopher J. Tscharner, Warwick, R.I., assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

Filed May 1, 1963, Ser. No. 277,399
6 Claims. (Cl. 260—247)

1. The process of converting cis-2-phenyl-3-methylmorpholine to trans-2-phenyl-3-methylmorpholine which comprises treating cis-2-phenyl-3-methylmorpholine with concentrated sulfuric acid.

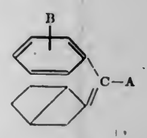
3,282,937

BICYCLICALLY SUBSTITUTED AMINO-ALKANES

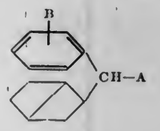
Wilfrid Klavehn, Schwetzingen, and Helmut Kraft, Mannheim-Neckarhausen, Germany, assignors to Knoll A.-G., Ludwigshafen (Rhine), Germany

No Drawing. Filed June 4, 1963, Ser. No. 285,217
Claims priority, application Germany, June 9, 1962, K 46,969
17 Claims. (Cl. 260—247)

1. A compound of the group consisting of (1) bicycloheptylidene amino alkanes of the formula



(2) bicyclo-heptyl amino alkanes of the formula



and (3) the salts of physiologically tolerable acids thereof, wherein A represents a member of the group consisting of lower dialkylamino-lower alkylene, piperidino-lower alkylene, pyrrolidino-lower alkylene, morpholino-lower alkylene, and N-lower alkyl piperidyl, and B represents a member of the group consisting of hydrogen, lower alkyl, lower alkoxy and chlorine.

6. 1-phenyl-1 - [bicyclo-(2,2,1) - heptylidene-2] - 3-morpholino-propane.

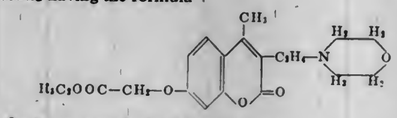
3,282,938

3-TERTIARY AMINOLOWERALKYL-4-LOWER ALKYL OR PHENYL - 7 - LOWER CARBALKOXY LOWER ALKYL OR CARBOXY LOWER ALKYL COUMARINS

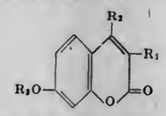
Heinrich Ritter, Dornigheim, Kreis Hanau, and Rudi Beyerle and Rolf-Eberhard Nitz, Frankfurt am Main-Fechenheim, Germany, assignors to Cassella Farbwerke Mainkur Aktiengesellschaft, Frankfurt am Main-Fechenheim, Germany

Filed July 26, 1962, Ser. No. 212,657
Claims priority, application Germany, Aug. 12, 1961, C 24,871; Nov. 9, 1961, C 25,468; Jan. 26, 1962, C 26,091, C 26,092
9 Claims. (Cl. 260—247.2)

4. 3-β-morpholinoethyl-4-methyl-coumarin-7-ethyl oxyacetate having the formula



9. A compound of the formula



wherein R_1 is selected from the group consisting of piperidino lower alkyl, morpholino lower alkyl, pyrrolidino lower alkyl and lower dialkylamino lower alkyl; R_2 is selected from the group consisting of lower alkyl and phenyl; and R_3 is selected from the group consisting of lower carbalkoxy lower alkyl and carboxy lower alkyl.

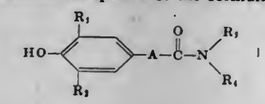
3,282,939

STABILIZATION OF ORGANIC MATERIAL WITH STABILIZERS CONTAINING A SUBSTITUTED PHENOL GROUP

John D. Spivack, Spring Valley, and Martin Dexter, Briarcliff Manor, N.Y., assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 29, 1963, Ser. No. 276,191
11 Claims. (Cl. 260—247.7)

1. The stabilizer compound of the formula:



wherein

A is a member selected from the group consisting of lower alkylene and iso-lower-alkylene;

R_1 is a tertiary alkyl group, having 4 to 18 carbon atoms;

R_2 is a member selected from the group consisting of alkyl, having from 1 to 18 carbon atoms, and hydrogen;

R_3 is a member selected from the group consisting of (i) alkyl, having from 1 to 24 carbon atoms, (ii) hydrogen, (iii) $—CH_2CH_2—$ when R_4 is the

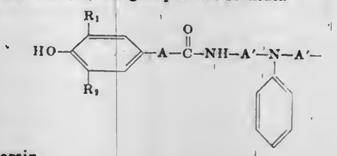
$$—CH_2CH_2O—$$

group, (iv) alkylphenyl, having 7 to 24 carbon atoms, (v) alkylbenzyl, having 8 to 24 carbon atoms, (vi) hydroxy-lower alkyl;

R_4 is a member selected from the group consisting of (i) alkyl, having from 1 to 24 carbon atoms, (ii)

$$—CH_2CH_2O—$$

when joined to N and to R_3 to form the morpholino radical, (iii) alkylphenyl, having from 7 to 24 carbon atoms, (iv) alkylbenzyl, having from 8 to 24 carbon atoms, (v) (alkylthio)lower alkylene, having 2 to 20 carbon atoms, (vi) (di-lower alkylamino)lower alkylene having 3 to 15 carbon atoms, (vii) (carbalkoxy) lower alkylene, having 3 to 14 carbon atoms, (viii) alkanoamido)lower alkylene, having 3 to 14 carbon atoms, and (ix) the group of the formula



wherein

R_1, R_2 and A are as defined above, and A' is defined the same as A.

3. 3,5-di-t-butyl-4-hydroxyphenylacetomorpholide.

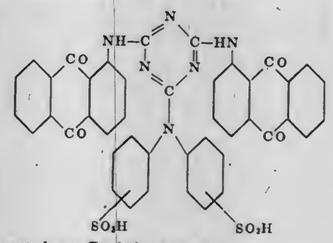
3,282,940

ANTHRAQUINONYL AMINO TRIAZINE VAT DYESTUFFS

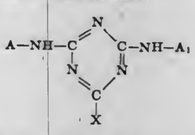
Kurt Weber, Basel, Paul Hugelshofer, Muttenz, and Albert Riegler and Max Staeuble, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Dec. 24, 1964, Ser. No. 421,098
Claims priority, application Switzerland, Sept. 8, 1961, 10,467/61; Feb. 1, 1962, 1,307/62; Mar. 19, 1962, 3,232/62; Aug. 3, 1962, 9,300/62
2 Claims. (Cl. 260—249)

1. The vat dyestuff of the formula



2. A vat dyestuff of the formula



in which X is pyrenylamino and A and A_1 each represents an anthraquinonyl radical.

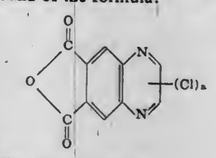
3,282,941

CHLORO-QUINOXALINE-DICARBOXYLIC ANHYDRIDES

Yu-Wei Chang, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 5, 1962, Ser. No. 242,351
3 Claims. (Cl. 260—250)

1. A compound of the formula:



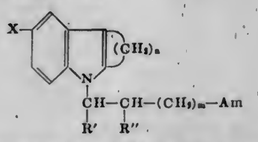
wherein *n* is the integer 1 to 2.

3,282,942
SUBSTITUTED CYCLOALKANOINDOLES

Leonard M. Rice, Baltimore, Md., and Meier E. Freed, Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 24, 1961, Ser. No. 147,190
14 Claims. (Cl. 260—268)

1. A substance selected from the group consisting of bases having the formula



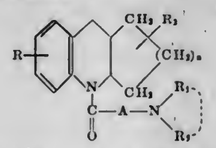
wherein X represents a member of the group consisting of hydrogen, methyl, halogen, nitro and amino, R′ is a member of the group consisting of hydrogen and phenyl, R″ is a member of the group consisting of hydrogen and methyl, *m* is selected from the group consisting of zero and one, *n* is an integer of from 5 to 13 inclusive, and Am is a member selected from the group consisting of amino, lower alkylamino, dilowerалkylamino, hydroxyloweralkylamino, piperidino, morpholino, pyrrolidino, piperazino, lower alkyl piperazino and hydroxy lower alkyl piperazino of no more than 8 carbon atoms, and the acid addition salts of said bases with pharmaceutically acceptable acids.

3,282,943
N-SUBSTITUTION PRODUCTS OF POLYMETHYLENE-TETRAHYDROQUINOLINES

Klaus Landgraf and Ernst Seeger, Biberach an der Riss, Germany, assignors, by mesne assignments, to Boehringer Ingelheim G.m.b.H., Ingelheim (Rhine), Germany, a corporation of Germany

No Drawing. Filed Nov. 1, 1962, Ser. No. 234,862
Claims priority, application Germany, Nov. 14, 1961, T 21,109
9 Claims. (Cl. 260—279)

1. A compound selected from the group consisting of 1-aminoalkanoyl-2,3,-polymethylene-1,2,3,4 - tetrahydroquinolines of the formula



wherein A is alkylene of 1 to 5 carbon atoms,
R is selected from the group consisting of hydrogen, halogen, lower alkyl and lower alkoxy,
R_1 is selected from the group consisting of hydrogen, lower alkyl and hydroxy-lower alkyl,
R_2 is selected from the group consisting of lower alkyl and hydroxy-lower alkyl,
R_1 and R_2, together with each other and the adjacent nitrogen atom, are basic heterocycles selected from the group consisting of pyrrolidino, lower alkyl-substituted pyrrolidino, piperidino, lower alkyl-substituted piperidino, morpholino,
R_3 is selected from the group consisting of hydrogen and lower alkyl, and
n is an integer from 1 to 3, inclusive,
their non-toxic, pharmacologically acceptable acid addition salts, their 1-[ω-(quaternary ammonium)-alkanoyl] salts formed with quaternizing agents selected from the group consisting of alkyl halides, aralkyl halides and aromatic sulfonic acid esters, cis-stereoisomers of said tetrahydroquinolines and their non-toxic salts and trans-stereoisomers of said tetrahydroquinolines and the non-toxic salts.

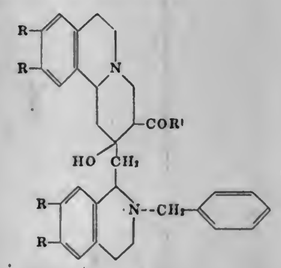
5. 10 - (γ - dimethylamino-butyryl)-trans-1,2,3,4,9,9a, 10,10a-octahydro-acridine hydrochloride.

3,282,944
INTERMEDIATES FOR EMETINE

Thomas Walker, Wembley, England, Rupert Frederick Keith Meredith, Rhondda, Glamorgan, Wales, and Alexander Crawford Ritchie, Harrow, England, assignors to Glaxo Laboratories Limited, Greenford, Middlesex, England, a British company

No Drawing. Original application May 23, 1961, Ser. No. 111,908, now Patent No. 3,105,835, dated Oct. 1, 1963. Divided and this application July 6, 1962, Ser. No. 213,080
Claims priority, application Great Britain, May 27, 1960, 18,899/60
3 Claims. (Cl. 260—287)

1. A compound of the formula



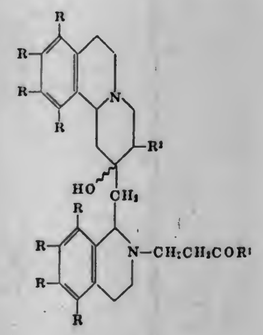
where R is lower alkoxy and R^1 is lower alkyl.

3,282,945
2′ - QUATERNARIES IN THE SYNTHESIS OF EMETINE, 2-DEHYDROEMETINE AND RELATED COMPOUNDS

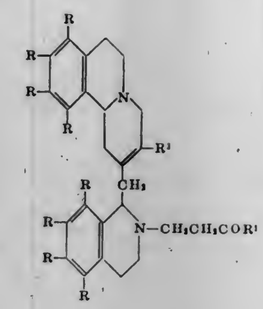
Alexander Crawford Ritchie, Harrow, and Dennis Edward Clark, Windsor, England, Rupert Frederick Keith Meredith, Glamorgan, Wales, and Keith Desmond Eric Whiting, Brookmans Park, England, assignors to Glaxo Laboratories Limited, Greenford, England, a British company

No Drawing. Filed Sept. 27, 1962, Ser. No. 226,745
Claims priority, application Great Britain, Oct. 2, 1961, 35,554/61
13 Claims. (Cl. 260—288)

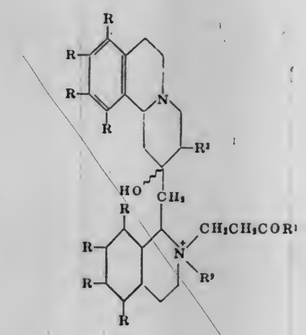
13. A process for the preparation of compounds useful as intermediates in the synthesis of emetine, 2-dehydroemetine and related compounds, comprising the steps of reacting a compound of the formula selected from the group consisting of



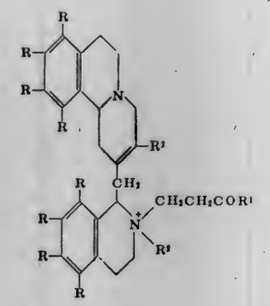
and



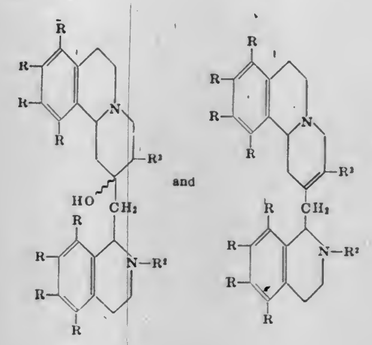
where R is hydrogen, lower alkoxy or methylene dioxy; R^1 is lower alkyl monocarbocyclic aryl methyl or monocarbocyclic aryl and R^3 is $—CH_2R^1$ or $—COR^1$ with the compound R^2X where R^2 is monocarbocyclic aryl methyl, lower alkyl, lower hydroxy alkyl or lower alkenyl and X is an anion forming group to form a quaternary compound having a cation of the formula selected from the group consisting of



and



where R, R^1, R^2 and R^3 have the above meanings and removing the 3-oxoalkyl from the 2′-position to form a compound of the formula selected from the group consisting of



and

3,282,946
MANUFACTURE OF ORGANIC BASES

Ian Campbell and John Anthony Corran, Widnes, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed July 2, 1964, Ser. No. 380,048
Claims priority, application Great Britain, July 19, 1963, 28,718/63
19 Claims. (Cl. 260—290)

1. A process for the manufacture of pyridine or lower alkyl pyridines which comprises interacting an ether of 2-hydroxy-3,4-dihydro-2H-pyran or of a lower alkyl derivative of 2-hydroxy-3,4-dihydro-2H-pyran with ammonia in the vapor phase at a temperature in the range 200° C. to 500° C. in the presence of a catalyst comprising a compound or compounds of boron and phosphorus.

3,282,947
UNSYMMETRICALLY SUBSTITUTED 3,9-DIAZASPIRO(5,5)UNDECANE COMPOUNDS

Charles H. Grogan, Falls Church, Va., and Leonard M. Rice, Baltimore, Md., assignors to The Geschickter Fund for Medical Research, Inc., Washington, D.C., a corporation of New York

No Drawing. Filed May 17, 1962, Ser. No. 196,564
6 Claims. (Cl. 260—293)

1. A compound of the formula



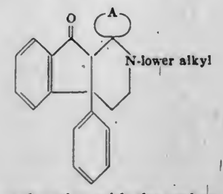
wherein R and R′ are each selected from a different one of the group consisting of:
(a) hydrogen
(b) lower alkyl
(c) aralkyl selected from the group consisting of pyridyl lower alkyl and phenyl lower alkyl
(d) di-lower alkylamino lower alkylene
(e) hydroxy lower alkylene.

3,282,948
SUBSTITUTED SPIROCYCLOALKANE-1,1'-HEXAHYDROINDENOPYRIDINES

Marshall D. Draper, Woodland Hills, Calif., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

No Drawing. Filed Feb. 12, 1965, Ser. No. 432,375
3 Claims. (Cl. 260—294.7)

1. A compound of the formula



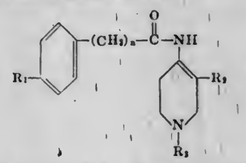
wherein A in conjunction with the carbon atom to which it is joined forms a cycloalkyl ring having 6 to 8 carbon atoms.

3,282,949
SUBSTITUTED LOWER FATTY ACID AMIDES AND PROCESSES

Leo Berger, Montclair, Alfred John Corraz, Packanack Lake, and John Lee, Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed July 3, 1963, Ser. No. 292,768
10 Claims. (Cl. 260—295)

1. A compound of the formula



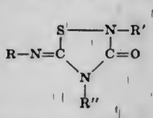
wherein R_1 is selected from the group consisting of hydrogen, halogen, nitro, amino, lower alkylamino, phenyl-lower alkylamino, halo-substituted-phenyl-lower alkylamino, lower alkoxy-substituted-phenyl-lower alkylamino, and di-lower alkylamino; R_2 and R_3 are lower alkyl groups; and *n* is a whole number selected from the group consisting of 1, 2, and 3.

3,282,950
SUBSTITUTED 5-IMINO-1,2,4-THIADIAZOLIDIN-3-ONES AND PROCESS THEREFOR

Gerhard F. Ottmann, Hamden, and Haywood Hooks, Jr., West Haven, Conn., assignors to Olin Mathieson Chemical Corporation, New Haven, Conn., a corporation of Virginia

No Drawing. Filed Jan. 21, 1965, Ser. No. 427,084
8 Claims. (Cl. 260—306.7)

1. Substituted 5-imino-1,2,4-thiadiazolidin-3-ones having the formula



wherein

R is alkyl having 1–18 carbon atoms, cycloalkyl having 5–7 carbon atoms, halogenated phenyl, nitrated phenyl, benzyl or phenyl having a lower alkoxy substituent;

R' is alkyl having 1–18 carbon atoms, cycloalkyl having 5–7 carbon atoms, aryl having 6–10 carbon atoms, halogenated phenyl, nitrated phenyl, benzyl or phenyl having a lower alkoxy substituent; and R'' is alkyl having 1–18 carbon atoms or aryl having 6–10 carbon atoms.

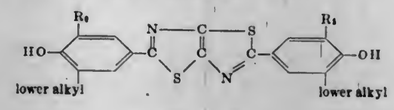
7. A process for preparing substituted 5-imino-1,2,4-thiadiazolidin-3-ones which comprises reacting S-[N'-(chlorocarbonyl)-amino] isothiocarbamyl chlorides with a compound selected from the class consisting of ammonia and primary amines in the presence of an inert organic diluent.

3,282,951
CERTAIN THIAZOLO-[5,4-d]-THIAZOLE COMPOUNDS

John D. Spivack, Spring Valley, David H. Steinberg, Bronx, and Martin Dexter, Briarcliff Manor, N.Y., assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Filed May 9, 1962, Ser. No. 193,601
2 Claims. (Cl. 260—306.8)

1. A compound of the formula

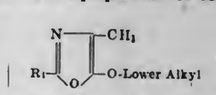


3,282,952
PROCESS FOR PREPARING A 4-LOWER ALKYL-5-LOWER ALKOXY-OXAZOLE AND INTERMEDIATE

Sidney Frank Schaeren, Bottmingen, Switzerland, assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

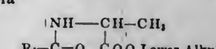
No Drawing. Filed June 29, 1965, Ser. No. 468,098
Claims priority, application Switzerland, July 6, 1964, 8,853/64
14 Claims. (Cl. 260—307)

1. A process for the preparation of compounds of the formula



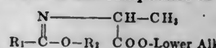
(I)

wherein R_1 is selected from the group consisting of hydrogen and lower alkyl which comprises reacting a compound selected from the group consisting of compounds of the formula



(II)

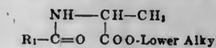
wherein R_1 is as above and compounds of the formula



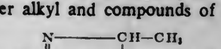
(IIa)

wherein R_1 is as above and R_2 is a hydrocarbon radical, with a member selected from the group consisting of boron trifluoride and etherates thereof of the formula $BF_3.(\text{lower alkyl})_2O$, whereby to prepare an adduct selected from the group consisting of a boron trifluoride adduct of compounds of Formula II above and a boron trifluoride adduct of compounds of Formula II*a* above and subsequently dehydrating the so-formed adduct with a dehydrating agent.

7. The boron trifluoride adduct of a compound selected from the group consisting of compounds of the formula



wherein R_1 is selected from the group consisting of hydrogen and lower alkyl and compounds of the formula



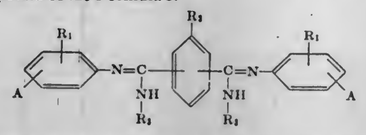
wherein R_1 is as above and R_2 is a hydrocarbon radical.

3,282,953
PHTHALAMIDINE COMPOUNDS

Rudolf Hirt, Muri, near Bern, Switzerland, assignor to Dr. A. Wander S.A., Bern, Switzerland, a corporation of Switzerland

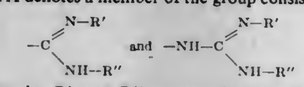
No Drawing. Filed Nov. 20, 1962, Ser. No. 239,076
10 Claims. (Cl. 260—309.6)

1. A member of the group consisting of a polybasic compound of the Formula I:



(I)

wherein A denotes a member of the group consisting of



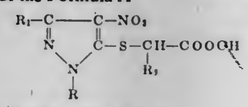
and wherein, R' and R'' representing, interchangeably, members of the group consisting of hydrogen, alkyl, alkenyl, hydroxyalkyl and alkoxyalkyl with each carbon containing group having not more than 5 carbon atoms, and when R' and R'' are taken together, ethylene, propylene, and ethylene and propylene wherein at least one hydrogen atom thereof is replaced by lower alkyl and thereby adding a total of less than 5 carbon atoms to said ethylene and propylene; R_1 denotes a member of the group consisting of hydrogen, halogen, lower alkyl and lower alkoxy; R_2 denotes a member of the group consisting of hydrogen, halogen, nitro, lower alkyl and lower alkoxy; and R_3 denotes a member of the group consisting of hydrogen and alkyl with 1 to 5 carbon atoms; and therapeutically useful acid addition salts thereof.

3,282,954
SUBSTITUTED PYRAZOLYLTHIOACETIC ACIDS AND ESTERS THEREOF

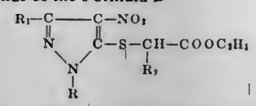
Robert G. Stein and Hollis G. Schoepke, Waukegan, Ill., assignors to Abbott Laboratories, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Aug. 7, 1964, Ser. No. 388,270
18 Claims. (Cl. 260—310)

1. A compound selected from the group consisting of compounds of the Formula A



and compounds of the Formula B



wherein R, R_1 and R_2 are independently selected from the group consisting of hydrogen, loweralkyl, phenyl, halophenyl, loweralkylphenyl and loweralkoxyphenyl.

3,282,955
REACTION PRODUCTS OF ACYLATED NITROGEN INTERMEDIATES AND A BORON COMPOUND

William M. Le Suer, Cleveland, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Filed Apr. 29, 1963, Ser. No. 276,208
6 Claims. (Cl. 260—326.3)

1. An oil-soluble, nitrogen- and boron-containing composition prepared by the process comprising forming an acylated nitrogen intermediate by the reaction of one equivalent of a substantially hydrocarbon-substituted succinic acid-producing compound having at least about 50 aliphatic carbon atoms in the substantially hydrocarbon substituent with at least about one-half equivalent of a hydroxy-hydrocarbon amine having the structural formula

wherein R is selected from the class consisting of hydrogen, inert hydrocarbon, hydroxy-hydrocarbon radicals, at least one of the two R radicals in said formula being a hydroxy-hydrocarbon radical and reacting said acylated nitrogen intermediate with a boron compound selected from the class consisting of boron oxide, boron halides, boron acids, ammonium salts of boron acids, and esters of boron acids in an amount to provide from about 0.1 gram-atomic-weight of boron for each mole of said acylated nitrogen intermediate to about 10 gram-atomic-weight of boron for each gram-atomic-weight of nitrogen of said acylated nitrogen intermediate.

3,282,956
TRANS-4-PROPYL-L-HYGRIC ACID AND DERIVATIVES

Ross R. Herr, Kalamazoo, and William Schroeder, Pavilion Township, Kalamazoo County, Mich., assignors to The Upjohn Company, a corporation of Delaware

No Drawing. Filed Apr. 13, 1964, Ser. No. 359,449
8 Claims. (Cl. 260—326.3)

1. A compound selected from the group consisting of 4-propylhygric acid having a rotation $[\alpha]_D^{25}$—66°

(c.=1.02 in water)

and lower alkyl esters thereof wherein alkyl has from 1 to 8 carbon atoms, inclusive.

3,282,957
4-PROPYL-HYGRAMIDE SALTS

Barney J. Magerlein, Portage, and Robert D. Birkenmeyer, Comstock Township, Kalamazoo County, Mich., assignors to Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Apr. 13, 1964, Ser. No. 359,487
2 Claims. (Cl. 260—326.3)

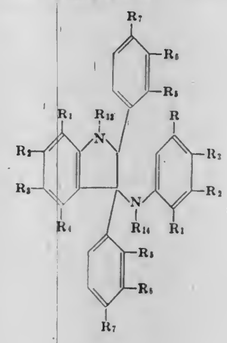
1. Trans-4-propyl-L-hygramide hydrochloride.

3,282,958
DERIVATIVES OF 4b,5,9b,10 TETRAHYDRO-4b,9b-DIPHENYLINDOLO-[3,2-b] INDOLE AND PROCESS FOR THEIR PREPARATION

Werner Metlesics, Clifton, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed May 19, 1965, Ser. No. 457,180
5 Claims. (Cl. 260—326.9)

1. A compound of the formula



wherein R_1, R_2, R_3 and R_4 are selected from the group consisting of hydrogen, halogen, lower alkoxy, lower alkylthio, and trifluoromethyl, except that at least one of R_1, R_2, R_3, and R_4 is other than hydrogen; R_5, R_6, and R_7 are selected from the group consisting of hydrogen, halogen, lower alkoxy, lower alkylthio, lower alkyl and trifluoromethyl; and R_{13} and R_{14} are selected from the group consisting of hydrogen and lower alkyl.

3. 3,8 - dichloro - 4b,5,9b,10 - tetrahydro - 4b,9b - diphenylindolo-[3,2-b]indole.

3,282,959
7-CHLORO-α-METHYLTRYPTAMINE DERIVATIVES

John Robert Vane, Radlett, and Henry Oswald Jackson Collier, London, England, assignors to Parke, Davis & Company, Detroit, Mich., a company of Michigan

No Drawing. Filed Mar. 21, 1962, Ser. No. 181,480
Claims priority, application Great Britain, Apr. 6, 1961, 12,478/61
3 Claims. (Cl. 260—326.15)

1. A compound selected from the class consisting of the free base 7-chloro-α-methyltryptamine and acid addition salts thereof.

3,282,960
PROPYLENE MONOTHIOCARBONATE AND PROCESSES FOR MAKING AND USING THE SAME

Edward Broderick, Perkasie, Pa., and José Luis Villa, Cream Ridge, N.J., assignors to Thiokol Chemical Corp., Bristol, Pa., a corporation of Delaware

No Drawing. Filed Sept. 29, 1964, Ser. No. 400,251
10 Claims. (Cl. 260—327)

1. A method of making propylene monothiocarbonate which comprises reacting propylene oxide and carbonyl sulfide at a temperature between about 30° C. and 90° C. in the presence of a basic catalyst of the formula

$$M(OR)_n$$

wherein R is selected from hydrogen and alkyl and aryl radicals having 1 to 6 carbon atoms, M is selected from the alkali and alkaline earth metals and *n* is selected from the integers 1 and 2, and recovering propylene monothiocarbonate from the reaction products.

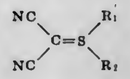
7. A method according to claim 1 and wherein the propylene monothiocarbonate produced is heated at a temperature between 140° and 210° C. to form propylene sulfide and carbon dioxide, and said propylene sulfide is recovered as a product.

3,282,961
SULFONIUM METHYLIDE COMPOUNDS

Peter J. Graham, Gladwyne, Pa., and William J. Linn and William J. Middleton, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 11, 1963, Ser. No. 272,200
7 Claims. (Cl. 260—329)

1. A compound having the formula



wherein R_1 and R_2 are selected from the group consisting of

(A) separate groups selected individually from
(1) C_1 to C_{20} alkyl and C_2 to C_{20} substituted alkyl having a substituent selected from the group consisting of —F, —Cl, —Br, —CN, —OCH_3 and —CO_2R wherein R is a lower alkyl in the case of R_1, and
(2) aryl, substituted aryl selected from the group consisting of p-bromophenyl, p-methoxyphenyl, and p-thiomethoxyphenyl and the groups listed for R_1 in the case of R_2, and

(B) a single C_3 to C_6 alkylene group which together with the sulfur atom to which the single group is attached forms a non-aromatic cyclic group.

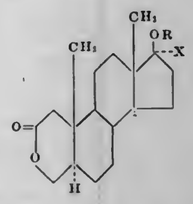
7. Tetramethylenesulfonium dicyanomethylide.

3,282,962
(OPTIONALLY 17-ALKYLATED)-17-OXYGENATED-3-OXA-5α-ANDROSTAN-2-ONES AND INTERMEDIATES THERETO

Raphael Pappo, Skokie, and Mike G. Scaros, Arlington Heights, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Dec. 21, 1964, Ser. No. 420,204
10 Claims. (Cl. 260—343.2)

1. A compound of the formula



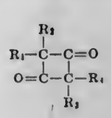
wherein R is a member of the class consisting of hydrogen and a lower alkanoyl radical, and X is selected from the group consisting of hydrogen and a lower alkyl radical.

3,282,963
PREPARATION OF 2,2,4,4-TETRAALKYL-3-HYDROXY-3-BUTENOIC ACID BETA-LACTONES

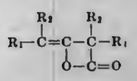
Ronald G. Nations, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 12, 1965, Ser. No. 447,539
9 Claims. (Cl. 260—343.9)

1. The process which comprises contacting a tetraalkyl-1,3-cyclobutanedione of the formula



with a metal cyanide catalyst selected from the group consisting of alkali metal cyanides, and the stable cyanides of silver, copper, mercury, calcium, cadmium barium, cesium, indium, lead, rhenium, cobalt, platinum, and nickel, to produce a beta-lactone of the formula



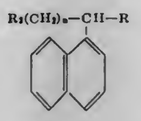
wherein R_1, R_2, R_3 and R_4 are members selected from the group consisting of lower alkyl groups having 1 to 4 carbon atoms and the pair R_1 and R_2, and the pair R_3 and R_4, are lower alkylene groups which, with the carbon atom to which each is attached, form a saturated carbocyclic ring having 5 to 7 carbon atoms in the ring.

3,282,964
NEW α-SUBSTITUTED CARBOXYLIC ACID DERIVATIVES

Etienne Szarvasi, Lyon, and Liliane Neuvy, Paris, France, assignors to Lipha, Lyonnaise Industrielle, Pharmaceutique

No Drawing. Original application Feb. 21, 1962, Ser. No. 174,684, now Patent No. 3,257,420, dated June 21, 1966. Divided and this application Sept. 3, 1965, Ser. No. 485,085
Claims priority, application France, Feb. 23, 1961, 853,642
10 Claims. (Cl. 260—346.1)

1. An α-substituted carboxylic acid derivative represented by the general formula



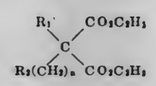
wherein
n is an odd number at most equal to 3,
R is a member of the group consisting of the CN and $CONH_2$ radicals, and
R_2 is a member of the group consisting of the furyl and tetrahydrofuryl radicals—when *n* denotes the number 1—the vinyl and 1-propenyl radicals.

3,282,965
ETHYL MALONATES DISUBSTITUTED BY AT LEAST ONE CYCLIC RADICAL

Etienne Szarvasi, Lyon, and Liliane Neuvy, Paris, France, assignors to Lipha, Lyonnaise Industrielle Pharmaceutique

No Drawing. Original application Feb. 21, 1962, Ser. No. 174,684, now Patent No. 3,257,420, dated June 21, 1966. Divided and this application Sept. 3, 1965, Ser. No. 485,092
Claims priority, application France, Feb. 23, 1961, 853,642, Patent 1,289,597
5 Claims. (Cl. 260—347.4)

1. An α-substituted carboxylic acid derivative represented by the general formula



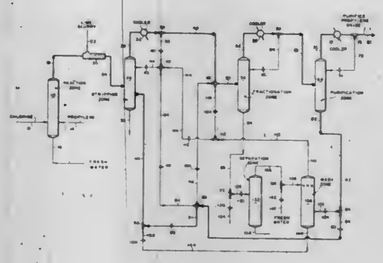
wherein *n* is an odd number at most equal to 3, R_1 is the naphthyl methyl radical and R_2 is a member of the group consisting of the furyl and tetrahydrofuryl radicals.

3,282,966
RECOVERY OF PURIFIED PROPYLENE OXIDE BY PLURAL STAGE DISTILLATION

John J. Naugle, Jr., Groves, Tex., assignor to Jefferson Chemical Company, Houston, Tex., a corporation of Delaware

Filed Mar. 1, 1965, Ser. No. 440,667
5 Claims. (Cl. 260—348.6)

3. In a method wherein chlorine is reacted with propylene in the presence of a large excess of water to provide propylene chlorohydrin and wherein the propylene chlorohydrin is contacted with an aqueous lime slurry to provide a treated product comprising in excess of about 90 wt. percent of water, not more than about 5 wt. percent of propylene oxide, the balance comprising calcium compounds, propylene dichloride, diisopropylene, propylene glycol and propionaldehyde, the improvement which comprises distilling said treated product in a first distillation column under distillation conditions to obtain a bottoms fraction comprising water, calcium compounds, propylene chloride and other impurities, and a first distillate fraction comprising from about 40% to about 90% propylene oxide, the remainder comprising mostly water, propionaldehyde and propylene dichloride, separating said first distillate fraction in a second intermediate distillation column under distillation conditions to provide a second bottoms fraction composed principally of water and containing substantially all of the impurities present in the said first distillate fraction, and a second distillate fraction containing 95% to 99.9% of propylene oxide, from about



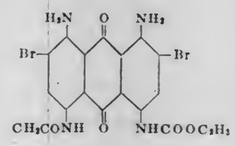
0.1% to 5% of water, propionaldehyde and minor quantities of impurities, separating said second distillate fraction in a third purification distillation column into a third distillate anhydrous propylene oxide fraction containing more than 99% propylene oxide and less than 50 parts per million of impurities and a third bottoms fraction containing from about 10 to about 90 wt. percent of propylene oxide, together with water, propionaldehyde and other impurities, countercurrently contacting said third bottoms fraction with from about 50 to about 95 vol. percent of water at a temperature within the range of about 100° to about 200° F. to obtain a substantially propionaldehyde-free raffiinate and recycling at least a portion of said raffinate a distillation zone in advance of said third purification distillation zone.

3,282,967
ACYLATED TETRAMINO-DIHALO-ANTHRAQUINONES

Paul Grossmann, Binningen, Switzerland, assignor to Ciba Limited, Basel, Switzerland

No Drawing. Original application May 1, 1962, Ser. No. 191,444, now Patent No. 3,234,234, dated Feb. 8, 1966. Divided and this application May 10, 1965, Ser. No. 454,733
Claims priority, application Switzerland, May 10, 1961, 5,487/61
4 Claims. (Cl. 260—377)

1 The dyestuff of the formula



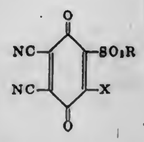
3,282,968

2,3-DICYANO - 5 - SULFONYL-6-SUBSTITUTED PARA - BENZOQUINONE AND THE CORRESPONDING HYDROQUINONE

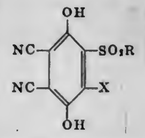
Richard M. Scribner, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 8, 1963, Ser. No. 250,030
13 Claims. (Cl. 260—396)

1. Compounds selected from the group consisting of (I) dicyanosulfonyl-p-benzoquinones of the formula



and (II) dicyanosulfonyl-p-hydroquinones of the formula



wherein R in each formula represents a radical, free from aliphatic carbon-to-carbon unsaturation and selected from the class consisting of hydrocarbyl, halohydrocarbyl wherein said halogen is of atomic number 9–35 inclusive, cyanohydrocarbyl and nitrohydrocarbyl and X in each formula is a member of the class consisting of hydrogen, halogen, CN, NO_2, RSO_2, CHO, CO_2H, CF_3, and $N(CH_3)_3^+$, wherein R is as defined as above.

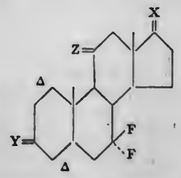
3,282,969

7,7-GEM-DIFLUORO STEROIDS OF THE ANDROSTANE AND PREGNANE SERIES

George A. Boswell, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 2, 1964, Ser. No. 380,067
6 Claims. (Cl. 260—397.3)

1. A compound having the structural formula



wherein X represents a member selected from the class consisting of (—R^1, —R^2), (=O), and (—F, —F); Z represents a member selected from the class consisting of (—H, H), (—H, —OH), and (=O); Y represents a member selected from the class consisting of (—H, —OH), (—H, OAcyl), and (=O); R^1 represents a group selected from the class consisting of H, OH, and OAcyl; R^2 represents a group selected from the class consisting of H, —C≡CH, —CH=CH_2, —CF_2CH_3, —$COCH_3$, —$COCH_2OH$, —$COCH_2OAcyl$, —$CH(CH_3)OH$ and $CH(CH_3)OAcyl$; Acyl represents a hydrocarbon carboxylic acyl group of from 1 through 10 carbon atoms; and Δ represents a bond of the class consisting of single and double bonds.

4. 7,7,17,17-tetrafluoroandrostane-3-one.

3,282,970

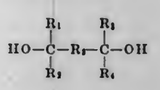
PROCESS OF REACTING EQUIMOLAR AMOUNTS OF A MONOUNSATURATED DIOL, A POLYALKYLENE POLYAMINE, AND A MONOCARBOXYLIC ACID AND PRODUCT

Olen L. Riggs, Jr., Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Oklahoma

No Drawing. Filed Oct. 16, 1962, Ser. No. 230,982
17 Claims. (Cl. 260—404.5)

1. A process which comprises:

(a) reacting approximately equimolar quantities of an unsaturated diol of the formula



where R_1, R_2, R_3, and R_4 are selected from the group consisting of hydrogen, methyl, and ethyl, and R_5 is selected from the group consisting of —C≡C— and —CH=CH—, with a polyalkylene polyamine of the formula

$$H_2N—(R_6—NH)_x—R_6—NH_2$$

where R_6 is a radical selected from the group consisting of ethylene and propylene and x is an integer from 1 to 4, inclusive, in the presence of a small amount of an ionizable compound of a chelate-forming metal, whereby about one mole of water, per mole of said diol, is formed and removed during the course of the reaction; and then

(b) reacting the product of step (a) with about one mole of an organic acid selected from the group consisting of aliphatic and alicyclic monocarboxylic acids having at least 5 carbon atoms, and aromatic monocarboxylic acids, whereby about two moles of water, per mole of said acid, is formed and removed during the course of the reaction.

2. The reaction product formed in accordance with claim 1.

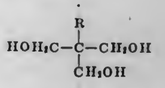
3,282,971

FATTY ACID ESTERS OF POLYHYDRIC ALCOHOLS

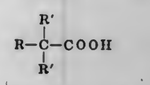
Stephen J. Metro, Scotch Plains, Elaine M. Hoffman, New Brunswick, and Alfred H. Matuszak, Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed June 19, 1963, Ser. No. 288,890
6 Claims. (Cl. 260—410.6)

1. A fully esterified ester of a polyhydric alcohol represented by the general formula:



wherein R is a member selected from the group consisting of C_1 to C_6 alkyl groups and CH_2OH groups, which polyhydric material is esterified with 1 to 2 molecular proportions of a non alpha hydrogen carboxylic acid of the general formula:



wherein R is an aliphatic saturated hydrocarbon group of 3 to 12 carbon atoms and R′ is a C_1 to C_2 alkyl group, said polyhydric material being further esterified with a C_4 to C_{14} fatty acid.

3,282,972

METHOD FOR THE CONTINUOUS RENDERING OF ORGANIC MATERIAL

Ira Merils, Whitemarsh, Pa., assignor to Acme Process Equipment Company, Oreland, Pa., a corporation of Pennsylvania

Filed Aug. 22, 1962, Ser. No. 218,748
3 Claims. (Cl. 260—412.6)

1. A method of continuously rendering offal which comprises (1) reducing same to small particle sizes in a distintegrator, (2) flash-heating said distintegrated particles in an evaporator-cooker at a temperature of about 212° F. to form an oily slurry of solids and liquids wherein water and volatile constituents are evaporated from said slurry and (3) subsequently separating the substantially dehydrated oily liquids from the solids and (4) recycling any undehydrated liquids wherein the water is in excess of 0.5% to the evaporator-cooker.

3,282,973

SYNTHESIS OF CARBOXYLIC ACIDS

John Devine, Liverpool, and James Francis Davies, Rock Ferry, England, assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Mar. 1, 1963, Ser. No. 262,187
Claims priority, application Great Britain, Mar. 7, 1962, 8,814/62
10 Claims. (Cl. 260—413)

1. In a process for the synthesis of a carboxylic acid which process includes the step of reacting an olefinic compound with carbon monoxide under conditions to produce a carboxylic acid, the improvement comprising providing for the presence in the reaction mass of an organic sulfonic acid catalyst selected from the group consisting of (a) the sulfonic acids of aliphatic hydrocarbons having from 1 to 20 carbon atoms, (b) the sulfonic acids of benzene and naphthalene, and (c) the sulfonic acids of the hydroxy and alkyl derivatives of benzene and naphthalene, the alkyl groups having from 1 to 20 carbon atoms, the mole ratio between said sulfonic acid and said olefinic compound being between about 1:3 and 30:1.

3,282,974

PREPARATION OF ALUMINUM TRIALKYL COMPOUNDS

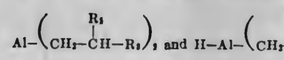
Günter Bruno, Cologne-Deutz, Bruno Blaser, Dusseldorf-Urdenbach, and Hubert Schirp, Dusseldorf, Germany, assignors to Henkel & Cie. G.m.b.H., Dusseldorf-Holthausen, Germany, a corporation of Germany

No Drawing. Filed Jan. 12, 1961, Ser. No. 82,156
Claims priority, application Germany, Jan, 16, 1960, H 38,402; May 17, 1960, H 39,451
6 Claims. (Cl. 260—448)

1. A process for the production of trialkyl aluminum compounds wherein the alkyl radicals are predominantly primary alkyl radicals and have 6 to 30 carbon atoms per alkyl radical which comprises reacting an olefin having the formula



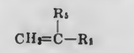
wherein R and R_1 are alkyl radicals and R_2 is selected from the group consisting of hydrogen and an alkyl radical and the sum of the carbon atoms in R, R_1 and R_2 is between 4 and 28 with an aluminum alkyl having a formula selected from the group consisting of



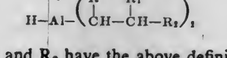
wherein each of R_5 and R_6 represents a member selected from the group consisting of hydrogen and alkyl radicals and wherein R_5 and R_6 together with the



to which they are connected may also represent a cycloalkyl radical, the sum of the carbon atoms in R_5 and R_6 being between 0 and 6 at temperatures between 100 and 150° C. while removing olefins having the formula



wherein R_5 and R_6 have the above definitions to form an aluminum hydride of the formula



wherein R, R_1 and R_2 have the above definitions, isomerizing the said hydride by heating at temperatures between 150 and 250° C. in the presence of more than equimolar amounts of an olefin having 6 to 30 carbon atoms to form trialkyl aluminum compounds wherein the alkyl radicals are predominantly primary alkyl radicals with 6 to 30 carbon atoms per alkyl radical and recovering the said trialkyl aluminum compounds.

3,282,975

PROCESS FOR PRODUCING STABLE, UNDISTILLED TOLYLENE DIISOCYANATE COMPOSITIONS

Cecil A. Friedman, Buffalo, Bernard Taub, Williamsville, and Charles R. Wagner, Hamburg, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed July 8, 1963, Ser. No. 293,280
4 Claims. (Cl. 260—453)

1. A process for preparing stable, liquid undistilled tolylene diisocyanate compositions from unstable liquid undistilled tolylene diisocyanate compositions prepared by the phosgenation of tolylene diamine compositions containing material which possesses a well defined absorbance maximum of infra-red radiation at 7.37 microns and which on standing at ambient temperature deposit solid material which comprises heating said unstable composition to a temperature between 100° C. and the boiling point thereof and adding phosgene to the heated composition until the said mixture on removal of solvent by distillation and degassing is substantially devoid of material possessing a well defined absorbance maximum of infra-red radiation at 7.37 microns.

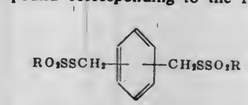
3,282,976

α,α-BIS(SUBSTITUTED SULFONYLTHIO)-XYLENES

Joseph E. Dunbar, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Oct. 28, 1963, Ser. No. 319,525
7 Claims. (Cl. 260—453)

1. A compound corresponding to the formula



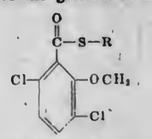
wherein R represents lower alkyl, phenyl, lower alkylphenyl, halophenyl, lower alkylhalophenyl, lower alkoxyphenyl and benzyl, in which halo represents a member of the group consisting of chloro, bromo and iodo.

3,282,977
2-METHOXY-3,6-DICHLOROTHIOBENZOIC ACID ESTERS

Eugene F. Barnas, Chicago, Ill., assignor to Velsicol Chemical Corporation, a corporation of Illinois

No Drawing. Filed Feb. 18, 1963, Ser. No. 259,440
6 Claims. (Cl. 260—455)

1. A compound of the general formula



wherein R is selected from the group consisting of phenyl radicals and aliphatic radicals containing one to ten carbon atoms.

3,282,978
PROCESS FOR PREPARING S-(2-HYDROXYL) ESTERS

Edward A. Swakon, Hammond, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed July 19, 1962, Ser. No. 211,119
6 Claims. (Cl. 260—455)

1. A method of preparing S-(2-hydroxyl) esters of N,N-dihydrocarbon-substituted monothiocarbamic acids which comprises reacting an ammonium salt of a N,N'dihydrocarbon-substituted monothiolcarbamic acid with an olefin oxide selected from the group consisting of ethylene oxide, propylene oxide, 2,3-epoxy butane, styrene oxide, 4-methyl styrene oxide, octylene oxides and cyclohexene oxide at a temperature in the range of 0 to 300° C., wherein said dihydrocarbon substituents are selected from the class consisting of diethyl, dipropyl, dibutyl, diamyl, dicyclohexyl, diphenyl, dibenzyl, methylphenyl and methylcyclohexyl hydrocarbon substituents on the nitrogen of the respective ester product and the monothiolcarbamic acid.

3,282,979
PHENOLIC THIOETHERS

Walter Reifschneider, Midland, and Jacqueline S. Kelyman, Auburn, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 17, 1963, Ser. No. 288,511
9 Claims. (Cl. 260—465)

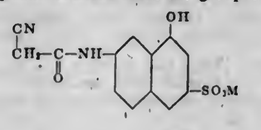
1. p-Cyano(ethylthio) m-cresol.
2. 1,2-bis(p-hydroxyphenylthio) ethane.

3,282,980
CYANOACETAMIDO-1-NAPHTHOL-3-SULFONIC ACID AND SALTS THEREOF

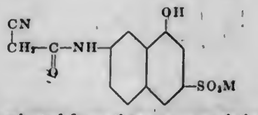
Werner Victor Cohen, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 1, 1965, Ser. No. 468,993
3 Claims. (Cl. 260—465)

1. A compound selected from the group consisting of



and



wherein M is selected from the group consisting of hydrogen, an alkali metal, an alkaline earth metal and the ammonium radical.

3,282,981
ACTIVATED ADDITION OF HYDROGEN CYANIDE TO OLEFINS

Darwin Darrell Davis, Orange, Tex., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 23, 1963, Ser. No. 318,188
2 Claims. (Cl. 260—465.3)

1. In the process of producing aliphatic nitriles by the addition of hydrogen cyanide to lower aliphatic olefins by contacting a mixture of hydrogen cyanide and a lower aliphatic olefin in contact with nickel cyanide as a catalyst at a temperature in the range between 300° C. and 400° C., the improvement which comprises adding from about 1 to about 33% by volume of hydrogen to the said mixture.

3,282,982
PROCESS FOR THE OXIDATION OF OLEFIN-AMMONIA MIXTURES TO UNSATURATED NITRILES

James L. Callahan, Bedford, Ohio, and Berthold Gertisser, New York, N.Y., assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Original application Oct. 15, 1962, Ser. No. 230,684, now Patent No. 3,200,081, dated Aug. 10, 1965. Divided and this application Jan. 11, 1965, Ser. No. 440,653
6 Claims. (Cl. 260—465.3)

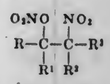
1. A process for the oxidation of propylene and isobutylene to acrylonitrile and methacrylonitrile, respectively, which comprises the step of contacting in the vapor phase at a temperature within the range from about 550 to about 1100° F. a mixture of ammonia, oxygen and an olefin selected from the group consisting of propylene and isobutylene and mixtures thereof, in a molar ratio of olefin to ammonia within the range from a bout 1:05 to about 1:5, and a molar ratio of oxygen to olefin within the range from about 0:5:1 to about 4:1, in the presence of a catalyst composition consisting essentially of an active catalytic oxide complex of antimony and manganese as an essential catalytic ingredient, the Sb:Mn atomic ratio being within the range from about 1:50 to about 99:1, said complex being formed by heating the mixed oxides of antimony and manganese in the presence of oxygen at an elevated tempearture above 500° F. but below their melting point for a time sufficient to form said active catalytic oxide complex of antimony and manganese.

3,282,983
PREPARATION OF NITROALKYL NITRATES

Donald R. Lachowicz and Kenneth L. Kreuz, Fishkill, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

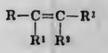
No Drawing. Filed June 24, 1965, Ser. No. 466,846
4 Claims. (Cl. 260—467)

1. A method of preparing a nitroalkyl nitrate having at least 4 carbons of the formula:

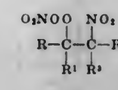


where R, R^1, R^2 and R^3 groups are hydrogen or alkyl and where at least one of said R and R^1 members is alkyl, comprising:

(1) simultaneously contacting an alkene of the formula:



having at least 4 carbons, where R, R^1, R^2 and R^3 are as heretofore defined, with oxygen and dinitrogen tetroxide at a temperature between about —40 and 20° C. in a mole ratio of said alkene to said dinitrogen tetroxide to said oxygen of between about 1:0.5:1 and 1:1.5:30 to form nitroalkylperoxy nitrate of the formula:



where R, R^1, R^2 and R^3 are as heretofore defined,

(2) contacting said nitroalkylperoxy nitrate with a reducing agent at a temperature between about —20 and 30° C. utilizing a mole ratio of said nitroalkylperoxy nitrate to said reducing agent of between about 1:1 and 5:1 to form said nitroalkyl nitrate.

3,282,984
RACEMIZATION OF OPTICALLY ACTIVE TRANS-CHRYSANTHEMIC ACID

Masanao Matsui, Tokyo, and Kosuke Yoshioka, Hirakata-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed Dec. 17, 1963, Ser. No. 331,100
Claims priority, application Japan, Dec. 25, 1962, 37/58,845, 37/58,846
10 Claims. (Cl. 260—468)

1. A process for the racemization of an optically active trans-chrysanthemic acid, which comprises a series of steps of oxidizing the optically active trans-chrysanthemic acid with a permanganate salt to yield an optically active 2,2 - dimethyl-3-(1'-oxo-2'-methyl-2'-hydroxypropyl) - 1, 3-trans-cyclopropane-1-carboxylic acid, esterifying the resulting acid to yield an optically active lower-alkyl ester thereof, racemizing the optically active ester with an alkali metal lower-alcoholate and then hydrolyzing the ester to yield the racemic acid, and reducing the racemic acid with hydrazine by the aid of a basic catalyst to yield racemic trans-chrysanthemic acid.

6. Optically active or racemic 2,2-dimethyl-3-(1'-oxo-2'-methyl-2'-hydroxypropyl)-1,3-trans-cyclopropane - 1 - carboxylic acids, or the lower alkyl ester thereof.

3,282,985
METHOD FOR PRODUCING DEXTRO-TRANS-PYRETHRIC ACID

Masanao Matsui, Tokyo, and Hiroshi Meguro, Sendai-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed Dec. 17, 1963, Ser. No. 331,123
Claims priority, application Japan, Dec. 25, 1962, 37/58,844
6 Claims. (Cl. 260—468)

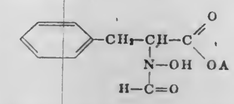
1. A method for producing dextro-trans-pyrethric acid, which comprises half-saponifying dimethyl dextro-trans-chrysanthemum dicarboxylate with the approximately equimolar amount of a member of alkali metal hydroxide and lower-alcoholate, treating the mixture of the monomethyl esters with the approximately equimolar amount of quinine to form a mixture of the salts thereof, subjecting the mixture of the salts to a fractional crystallization with an organic solvent to separate the quinine salt of dextro-trans-pyrethric acid from that of dextro-trans-β-(2,2-dimethyl-3-methoxy - carbonyl - cyclopropyl)methacrylic acid, and hydrolyzing the separated salt to yield free dextro-trans-pyrethric acid.

3,282,986
N-ACYLATED HYDROXAMIC ACIDS AND DERIVATIVES THEREOF

Edward A. Kaczka, Union, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Oct. 6, 1960, Ser. No. 60,813
The portion of the term of the patent subsequent to Aug. 24, 1982, has been disclaimed
4 Claims. (Cl. 260—471)

1. A compound having the structure:



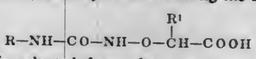
wherein A is selected from the group consisting of hydrogen and alkyl.

3,282,987
α-UREIDOOXYCARBOXYLIC ACIDS AND THEIR DERIVATIVES

Linus M. Ellis, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 29, 1962, Ser. No. 206,154
12 Claims. (Cl. 260—471)

1. α-Ureidooxycarboxylic acids having the formula



wherein R is selected from the group consisting of hydrogen and hydrocarbon and chlorohydrocarbon of up to 12 carbons and R' is selected from the group consisting of hydrogen and alkyl of up to 12 carbons; and (1) the ammonium, alkali metal and alkaline earth metal salts of said acids and (2) the esters of said acids with alkanols of 1–12 carbons.

3,282,988
PROCESS FOR PRODUCING HALF ESTER ACYL CHLORIDES OF AROMATIC DICARBOXYLIC ACIDS

Gustav Renckhoff and Walter Rudolph, Witten (Ruhr), Germany, assignors to Chemische Werke Witten G.m.b.H., Witten (Ruhr), Germany

No Drawing. Filed Feb. 23, 1962, Ser. No. 175,312
Claims priority, application Germany, Mar. 11, 1961, C 23,620
8 Claims. (Cl. 260—475)

1. A process for the production of half ester acyl chlorides of aromatic dicarboxylic acids and the nuclear-chlorine substituted derivatives thereof which comprises heating an ester selected from the group consisting of trichloromethylbenzoic acid esters of primary alcohols containing from 1 to 5 carbon atoms and nuclear-chlorine substituted trichloromethylbenzoic acid esters of primary alcohols containing from 1 to 5 carbon atoms in the presence of a coordinately unsaturated inorganic polyhalogen compound as catalyst with an essentially equimolecular amount of the corresponding methylbenzoic acid at a reaction temperature above approximately 100° C. for a period of time sufficient to produce a reaction mixture containing aromatic dicarboxylic acid half ester acyl chloride and methylbenzoic acid chloride, and thereafter separating the reaction mixture to recover said aromatic dicarboxylic acid half ester acyl chloride and methylbenzoic acid chloride, said reaction temperature being below the decomposition temperature of said aromatic dicarboxylic acid half ester acyl chloride and methylbenzoic acid chloride.

3,282,989

PROCESS FOR PREPARING HALF ESTER ACYL CHLORIDES OF AROMATIC DICARBOXYLIC ACIDS

Gustav Renckhoff and Walter A. S. Rudolph, Witten (Ruhr), Germany, assignors to Chemische Werke Witten G.m.b.H., Witten (Ruhr), Germany

No Drawing. Filed Jan. 24, 1963, Ser. No. 254,044
Claims priority, application Germany, Feb. 2, 1962, C 26,151
9 Claims. (Cl. 260—475)

1. A process for the preparation of half ester acyl chlorides of benzene dicarboxylic acids and the nuclear-chlorine substituted derivatives thereof which comprises reacting approximately equimolecular amounts of (I) an ester selected from the group consisting of trichloromethylbenzoic acid esters of primary saturated aliphatic alcohols of from 1 to 5 carbon atoms and nuclear-chlorine substituted trichloromethylbenzoic acid esters of primary saturated aliphatic alcohols of from 1 to 5 carbon atoms with (2) a corresponding monoester of an organic acid selected from the group consisting of benzene dicarboxylic acids and nuclear-chlorine substituted benzene dicarboxylic acids with a primary saturated aliphatic alcohol of from 1 to 5 carbon atoms at an elevated temperature in the presence of a catalytic amount of a coordinately unsaturated inorganic polyhalogen compound.

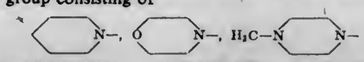
3,282,990

MERCAPTOETHYL CARBAMATES

Delbert D. Reynolds, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Original application Apr. 26, 1961, Ser. No. 105,568, now Patent No. 3,213,091, dated Oct. 19, 1965. Divided and this application Jan. 4, 1965, Ser. No. 423,343
12 Claims. (Cl. 260—482)

1. A compound selected from the group consisting of 1,4-piperazine bis mercaptoethyl carbamate, 1,2-ethylenediamine bis mercaptoethyl carbamate and those having the formula $GCO_2CH_2CH_2SH$ wherein G is selected from the group consisting of



$CH_2{=}CHCH_2NH{-}$, $C_6H_5CH_2NH{-}$, and RR'N— wherein R is selected from the group consisting of hydrogen and R', and wherein R' is an alkyl radical having from 1–18 carbon atoms.

7. The process which comprises contacting ethylene monothiolcarbonate with up to a stoichiometric equivalent of an organic monoamine selected from the group consisting of pyridine, morpholine, N-methylpiperazine, allylamine, benzylamine and R,R'N wherein R is selected from the group consisting of hydrogen and R', and wherein R' is an alkyl radical having from 1 to 18 carbon atoms and recovering a 2-mercaptoethyl carbamate.

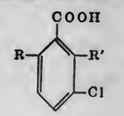
3,282,991

ALKYLDICHLOROBENZOIC ACIDS

David X. Klein, Montclair, and Theodore A. Girard, Wayne Township, Passaic County, N.J., assignors to Tenneco Chemicals, Inc., formerly Heyden Newport Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 29, 1963, Ser. No. 319,703
12 Claims. (Cl. 260—501)

1. A compound selected from the group consisting of monoalkyldichlorobenzoic acids having the formula:



wherein one of the symbols R and R' is a chlorine atom and the other is an alkyl group containing from 1 to 4 carbon atoms; the alkali metal salts of such acids, the alkaline earth metal salts of such acids, the ammonium salts of such acids, the mono- and dialkylamine salts of such acids in which the alkyl groups contain from 1 to 4 carbon atoms, and the mono- and dialkanolamine salts of said acids; and mixtures thereof.

3,282,992

METHOD FOR THE PREPARATION OF ACETOPHENONE AND BENZOIC ACID

James P. Harris, Littleton, Colo., assignor to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio

No Drawing. Filed July 2, 1964, Ser. No. 380,021
5 Claims. (Cl. 260—524)

1. A method for oxidizing ethylbenzene to produce acetophenone and benzoic acid comprising:
reacting ethylbenzene with an aqueous solution of ammonium dichromate at a temperature of from 175° to 275° C.

3,282,993

CARBONYLATION PROCESS

Harry Chafetz, Poughkeepsie, and John A. Patterson, Fishkill, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 19, 1962, Ser. No. 174,242
4 Claims. (Cl. 260—533)

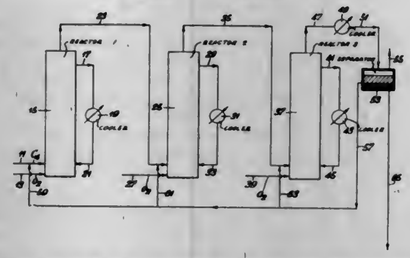
1. In a method for producing a monobasic fatty acid by contacting an olefin, carbon monoxide and essentially a stoichiometric amount of water under an elevated carbon monoxide pressure of between about 400 and 50,000 p.s.i., at a temperature between about —40 and 60° C., and in the presence of an inorganic acid carbonylation catalyst to form said fatty acid: the improvement which comprises contacting the final reaction mixture under essentially anhydrous conditions with a C_3 to C_{20} liquid alkane at a temperature between about —40 and 75° C. to form a fatty acid containing solvent phase and catalyst phase, separating the two phases from one another, subsequently separating said fatty acid from said solvent phase and recycling the separated catalyst to said olefin and said carbon monoxide reaction.

3,282,994

OXIDATION OF BUTANE

Norman R. Cox and Philip C. Johnson, St. Albans, and Donald R. Mosher, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

Filed July 3, 1962, Ser. No. 207,297
4 Claims. (Cl. 260—533)



1. A process for increasing the productivity of oxygenated organic compounds predominating in acetic acid and methyl ethyl ketone and having improved ratio of methyl ethyl ketone to acetic acid which comprises the steps:
(a) reacting butane and oxygen in the first of a plurality of reaction zones in series, the length to diameter ratio of each reaction zone being less than about 15:1,
(b) effecting the reaction essentially in the liquid phase in each reaction zone at a temperature of from about 125° C. to about 250° C., a pressure of from about 500 p.s.i.g. to about 2000 p.s.i.g. and an oxygen concentration of from about 1 to about 20 weight percent based on the weight of butane in the reactor,
(c) introducing the effluent from each reaction zone to the next reaction zone together with added oxygen and maintaining essentially the same conditions in each reaction zone,
(d) maintaining a liquid residence time of at least 30 seconds in each reaction zone,
(e) withdrawing the effluent from the last reaction zone, cooling said effluent and degasifying said cooled effluent in a separation zone wherein two liquid layers are formed, an upper butane layer and a lower reaction product layer,
(f) externally recycling said upper layer to said reaction zones at the rate of about 0.1 to about 100 gallons of recycle per gallon of reaction zones,
(g) withdrawing liquid reaction product mixture from each reaction zone, cooling and returning same to its respective reaction zone at the rate of about 1 to about 5 gallons per gallon of said external recycle, and
(h) withdrawing the lower layer from said separation zone as product.

3,282,995

PROCESS FOR OXIDATION OF OLEFIN WITH A COPPER ARSENO-VANADATE CATALYST

Bernard Patrick Whim, Widnes, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed May 15, 1963, Ser. No. 280,716
Claims priority, application Great Britain, May 25, 1962, 20,174/62
15 Claims. (Cl. 260—533)

1. In a process for the manufacture of a compound selected from the group consisting of acrolein, acrylic acid, methacrolein and methacrylic acid by reacting oxygen and an olefin selected from the group consisting of propene and isobutene in the vapor phase at superatmospheric temperature and in the presence of a catalyst for said reaction, the improvement which comprises utilizing, as the catalyst, one consisting essentially of copper, arsenic, vanadium and oxygen, said copper, arsenic and vanadium are in their higher valence states.

3,282,996

PROCESS FOR SEPARATING AND PURIFYING α-AMINO-β-HYDROXY-LOWER ALKANOIC ACIDS

Hirotoshi Samejima and Yuji Nagano, Tokyo, Japan, assignors to Kyowa Hakko Kogyo Co., Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Mar. 3, 1965, Ser. No. 436,937
Claims priority, application Japan, June 16, 1962, 37/24,456
5 Claims. (Cl. 260—534)

1. A process for separating and purifying α-amino-β-hydroxy-lower alkanoic acids which comprises converting a mixture containing α-amino-β-hydroxy-lower alkanoic acid and other α-amino carboxylic acids to copper complex salt, contacting an aqueous solution of the copper complex salt with strongly basic anion exchange resin of the quaternary ammonium type to adsorb the α-amino-β-hydroxy-lower alkanoic acid-copper complex salt onto anhydrous non-hydroxylic organic solvent with lithium tion, removing the copper from the eluate with a decoppering agent, and recovering α-amino-β-hydroxy-lower alkanoic acid from the decoppered eluate in crystalline form.

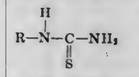
3,282,997

PROCESS FOR PREPARING THIOUREAS

Joseph Levy, Paramus, N.J., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Oct. 19, 1965, Ser. No. 498,139
10 Claims. (Cl. 260—552)

1. A process for preparing a thiourea of the formula:



where R is selected from the group consisting of aliphatic, cycloaliphatic and aryl substituted aliphatic groups which comprise reacting an amine of the formula: $R{-}NH_2$ where R has the same meaning as above, with ammonium thiocyanate first at a temperature within the range of about 25° C. to 110° C. and then at a temperature of from about 110° C. to 160° C., and thereafter recovering the thiourea.

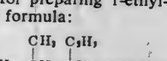
3,282,998

PROCESS FOR PREPARING 1-ETHYL-2-METHYL PENTANOYL UREA

Phillip Adams, Murray Hill, Benedict R. Juliano, Elizabeth, and Howard Feilich, North Plainfield, N.J., assignors to Millmaster Onyx Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Oct. 15, 1965, Ser. No. 496,658
4 Claims. (Cl. 260—553)

1. A process for preparing 1-ethyl-2-methyl pentanoyl urea having the formula:



which comprises condensing the acid chloride of 2-ethyl-3-methyl pentanoic acid with urea in the presence of a diluent selected from the group consisting of nitromethane, nitroethane, nitropropanes, acetonitrile and sulfolane.

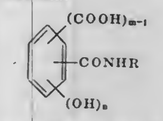
3,282,999

BARIUM SALTS OF N-ALIPHATIC AMIDES OF BENZENE HYDROXY CARBOXYLIC ACIDS

John W. Nelson, Lansing, Ill., assignor, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application Aug. 3, 1959, Ser. No. 831,051, now Patent No. 3,110,670, dated Nov. 12, 1963. Divided and this application Aug. 30, 1962, Ser. No. 227,099
4 Claims. (Cl. 260—559)

1. The barium salt of a primary N-aliphatic amide having the structural formula:



where R is a primary N-alkenyl radical of about 12 to 20 carbon atoms and *m* and *n* are 1 to 2.

3,283,000

NEUTRAL SULFATE SALTS OF TETRACYCLINES

Harold Mendelsohn, Nanuet, N.Y., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Oct. 9, 1964, Ser. No. 402,930
5 Claims. (Cl. 260—559)

1. The compound 6-demethyltetracycline neutral sulfate having the empirical formula $(C_{21}H_{23}N_2O_8)_2SO_4$.

3. The process of preparing tetracycline neutral sulfate which comprises slurrying tetracycline in a solution of acetone having dissolved therein 1 equivalent of sulfuric acid per mole of tetracycline, stirring the resulting slurry at about room temperature for a period of time of from about 18 to about 32 hours, and recovering tetracycline neutral sulfate therefrom.

3,283,001

1-AMINOADAMANTANE AND PROCESS FOR PURIFYING SAME

Robert L. Brown, West Chester, Pa., and Jack A. Snyder, Claymont, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 5, 1964, Ser. No. 365,134
4 Claims. (Cl. 260—563)

1. A hydrate of 1-aminoadamantane having the following properties:

(A) melting point in the range of 70 to 150° C.,
(B) containing 0.5 to 2.0 moles of water per mole of 1-aminoadamantane,
(C) colorless and
(D) turns litmus paper blue.

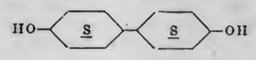
3,283,002

PROCESS FOR PREPARING BIS CYCLOHEXYLAMINE COMPOUNDS

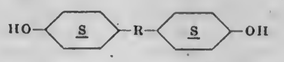
Loren D. Brake, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 13, 1965, Ser. No. 447,915
16 Claims. (Cl. 260—563)

1. The process comprising reacting in the liquid phase a diol compound selected from the group consisting of



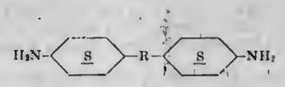
and



where R is selected from the group consisting of methylene, isopropylidene, ethylidene, beta-butylidene, beta-pentylidene, gamma-pentylidene, cyclopentylidene, cyclohexylidene and hexahydrobenzylidene, with at least a stoichiometric amount of ammonia, at a temperature from about 200° to 400° C. and at autogenous pressure, in the presence of a catalytic amount of a hydrogenation catalyst selected from the group consisting of nickel, cobalt, platinum, palladium, ruthenium, rhenium, iridium, osmium, and rhodium, to produce the corresponding diamino compound selected from the group consisting of



and



where R has the same meaning as above.

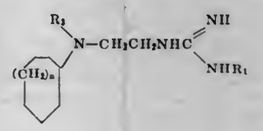
3,283,003

2-(N-LOWER ALKYL-N-CYCLOHEPTYL- AND CYCLOOCTYLAMINO)ETHYL GUANIDINES

David Jack, Gustard Wood, near Wheathampstead, Robert Geoffrey William Spickett, Harpenden, and Graham John Durant, St. Albans, all of England, assignors, by mesne assignments, to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Dec. 19, 1961, Ser. No. 160,627
Claims priority, application Great Britain, Dec. 23, 1960, 44,284/60
5 Claims. (Cl. 260—564)

1. A chemical compound selected from the group consisting of compounds having the following formula:



in which:

R_1 is a member selected from the group consisting of hydrogen and amino;
R_3 is lower alkyl; and
n is an integer of from 1 to 2;

and nontoxic, pharmaceutically acceptable, acid addition salts thereof.

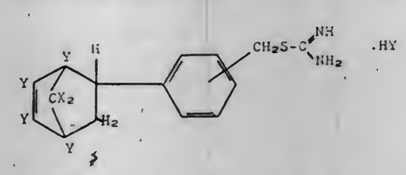
3,283,004

2-[p-(HALOGENATED-BICYCLO-[2.2.1]-HEPT-5-EN-2-YL)BENZYL] - 2 - THIOPSEUDOUREA COMPOUNDS

Carleton W. Roberts, Midland, and Daniel H. Haigh, Beaverton, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 6, 1963, Ser. No. 321,680
3 Claims. (Cl. 260—564)

1. Compound of the formula



wherein X represents a member of the group consisting of hydrogen and halogen of atomic weight less than 50, and Y represents halogen of atomic weight of 25 to 100.

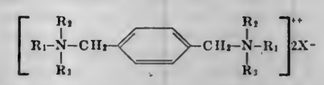
3,283,005

p-XYLYLENE BIS QUATERNARY AMMONIUM COMPOUNDS

Phillip G. Abend, Cleveland Heights, Ohio, and Eric Jungermann, La Grange, Ill., assignors to Armour and Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Apr. 29, 1963, Ser. No. 276,157
7 Claims. (Cl. 260—567.6)

1. As a composition of matter the compound represented by the formula



wherein R_1 is an aliphatic hydrocarbon group having from 14 to 22 carbon atoms, R_2 and R_3 are members of the class consisting of hydroxyethyl and hydroxypropyl, and X is an ammonium salt anion.

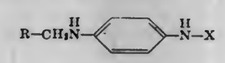
3,283,006

N-ALICYCLICMETHYL PHENYLENEDIAMINES

Milton Kosmin, Creve Coeur, Mo., and John R. Le Blanc, Wilbraham, Mass., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Apr. 18, 1963, Ser. No. 273,831
5 Claims. (Cl. 260—576)

1. A compound of the structure



where R is alicyclic of from 5 to 6 ring members and X is selected from a group consisting of phenyl and R—CH_2 where R has the same meaning as above.

3,283,007

PRODUCTION OF AMINE OXIDES

Albert F. Chadwick, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 28, 1963, Ser. No. 291,273
6 Claims. (Cl. 260—583)

1. In a method for reacting aqueous hydrogen peroxide and a tertiary aliphatic amine of the formula



wherein each of R^1 and R^2 is from the group consisting of methyl and ethyl radicals and R^3 is an alkyl radical having from 10 to 20 carbon atoms, to produce an aqueous amine oxide product solution, said reaction being effected employing at least a stoichiometric amount of said aqueous hydrogen peroxide but not more than about a 10% excess thereof, the improvement comprising employing as the amine reactant an amine of said formula which contains heavy metal impurities and, prior to its use in the reaction, mixing therewith from 0.005 to 3%, based upon the weight of said amine, of a chelating agent of the group consisting of diethylenetriaminepentaacetic acid and its ammonium and alkali metal salts.

3,283,008

PROCESS FOR THE PREPARATION OF 3-KETOBUTYRALDEHYDE DIMETHYLACETAL-(1)

Hans Niedenbruck and Walter Stumpf, Marl, Germany, assignors to Chemische Werke Huls Aktiengesellschaft, Marl, Germany

No Drawing. Filed Aug. 23, 1963, Ser. No. 304,273
Claims priority, application Germany, Sept. 14, 1962, C 27,931
6 Claims. (Cl. 260—594)

1. A process for the production of 3-ketobutyraldehyde-dimethylacetal-(1), which process comprises (1) reacting 1-methoxy-butene-(1)-yne-(3) with methanol and water in the presence of a mineral acid at a temperature of about 60–75° C., thereby yielding said 3-ketobutyraldehyde-dimethylacetal-(1) and as a by-product 1-methoxybutenone-(3); (2) lowering the reaction temperature to about 0–30° C., and (3) maintaining the reaction mixture at 0–30° C. for a sufficient time to react said 1-methoxybutenone-(3) by-product with methanol present in said mixture, thereby forming additional 3-ketobutyraldehyde-dimethylacetal-(1) product and reducing the concentration of said by-product therein, and then (4) neutralizing the reaction mixture.

3,283,009

ALDEHYDE SYNTHESIS

Hugh J. Hagemeyer, Jr., and Max Statman, Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Mar. 29, 1962, Ser. No. 183,398
1 Claim. (Cl. 260—604)

In a process for making acrolein by contacting in a reaction zone in vapor phase propylene with oxygen in the presence of water and in the presence of bismuth phosphomolybdate the improvement which comprises introducing hydrogen bromide in minor concentration into the reaction zone and wherein the mole ratio of water to the olefin is in the range from 1:1 to 20:1.

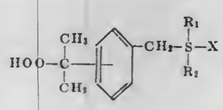
3,283,010

SULFONIUM SALTS OF CATIONIC HYDROPEROXIDES

William G. Lloyd, Millburn, N.J., and Wendell L. Roelofs, Bloomington, Ind., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Original application Dec. 10, 1962, Ser. No. 243,656, now Patent No. 3,234,230, dated Feb. 8, 1966. Divided and this application Apr. 12, 1965, Ser. No. 459,491
2 Claims. (Cl. 260—607)

1. A sulfonium salt of the formula



wherein X is chlorine, bromine, or iodine; and R_1 and R_2 are each primary alkyl of 1–6 carbon atoms, hydroxyalkyl of 1–6 carbon atoms having two hydrogen atoms attached to the alpha carbon atom, or carboxyalkyl of 1–6 carbon atoms having two hydrogen atoms attached to the alpha carbon atom.

3,283,011

PREPARATION OF NITROPHENOLS

William L. Cox, Mount Prospect, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Feb. 21, 1962, Ser. No. 174,717
6 Claims. (Cl. 260—622)

1. In the preparation of a nitrophenol by the hydrolysis of a halonitrobenzene with an aqueous solution of an alkali metal hydroxide at a temperature of from about 100° C. to about 200° C., wherein there are formed ammonia and dark colored materials, the improvement which comprises introducing a free oxygen-containing gas to the reaction mixture and intimately contacting the gas with and dispersing the same throughout the reaction mixture during the hydrolysis of the halonitrobenzene to substantially eliminate the formation of said ammonia and dark colored materials, whereby to enhance the yield and quality of the nitrophenol product.

4. In the preparation of a nitrophenol by the hydrolysis of a halonitrobenzene with an aqueous solution of an alkali metal hydroxide at a temperature of from about 100° C. to about 200° C., wherein there are formed ammonia and dark colored materials, the improvement which comprises mixing and intimately contacting the reactants with a hydroperoxide during the hydrolysis to substantially eliminate the formation of said ammonia and dark colored materials, whereby to enhance the yield and quality of the nitrophenol product.

3,283,012
PROCESS FOR PREPARING 2-PERFLUORO-ALKYLETHANOL

Richard Irving Day, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 29, 1962, Ser. No. 198,437
5 Claims. (Cl. 260—633)

1. A process for preparing fluorinated hydrocarbon alcohols which comprises reacting $R_fCH_2CH_2I$, wherein R_f is a perfluoroalkyl group containing from one to twenty carbon atoms, with oleum at a temperature at which the reactants are liquid thereby obtaining an intermediate fluoralkyl hydrogen sulfate of the formula

$$R_fCH_2CH_2OSO_2OH$$

hydrolyzing said intermediate by heating the intermediate in an aqueous sulfuric acid medium, and recovering the corresponding alcohol $R_fCH_2CH_2OH$ from the reaction mixture.

3,283,013
PROCESS FOR THE PREPARATION OF 2,3-DIBROMO-1-PROPANOL

Robert W. Rimmer, Pennsville, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 28, 1962, Ser. No. 205,833
2 Claims. (Cl. 260—633)

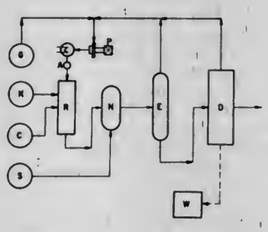
1. The process for the preparation of 2,3-dibromo-1-propanol which comprises

(a) brominating allyl alcohol,
(b) at a temperature of about −20° C. to 100° C.,
(c) with about 1 mol of elemental bromine for each mol of the allyl alcohol,
(d) in the presence of about 5% to about 50% by weight, based on the allyl alcohol, of calcium bromide dihydrate,
(e) in about 50% to about 500% by volume, based on the allyl alcohol, of a liquid, inert, non-polar organic solvent having a normal boiling point in the range of about −20° C. to about 185° C.

3,283,014
ACETYLENIC ALCOHOLS FROM KETONES AND ACETYLENE USING AQUEOUS ALKALINE HYDROXIDE CATALYST

Agostino Balducci and Marcello de Maldé, San Donato Milanese, Italy, assignors to S.N.A.M. S.p.A., Milan, Italy, a company of Italy

Filed Mar. 11, 1963, Ser. No. 264,447
Claims priority, application Italy, Mar. 15, 1962, Patent 665,066
13 Claims. (Cl. 260—638)



1. A process for the preparation of acetylenic alcohols comprising reacting acetylene with a ketone in liquid ammonia, the ketone being of the general formula R—CO—R', wherein R and R' are selected from the group consisting of aryl groups and of alkyl groups having 1 to 4 carbon atoms, and in the presence of an alkaline hydroxide in aqueous solution as a catalyst, the operation being effected in the presence of water in a quantity that initially is not less than 0.025% and that in the course of the reaction does not total more than 10% by weight with respect to the solvent used, including the water formed in the reaction, and at temperatures of from −40° C. to +40° C., the acetylene being in molar excess with respect to the ketone, the molar ratio of the acetylene to the ketone being in the range 1.5:1 to 10:1.

3,283,015
REMOVAL OF DIOLS FROM ALCOHOLS USING ZEOLITES

Charles M. Starks, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Oklahoma

No Drawing. Filed Aug. 26, 1963, Ser. No. 304,628
11 Claims. (Cl. 260—643)

1. A process for removing alkandiols from admixture with alkanols, which alkanols have at least 5 carbon atoms, which process comprises: contacting said mixture in the liquid state with crystalline zeolite sorbent having a pore size of about 4–20 angstroms; and separating sorbent from a liquid alkanol product of decreased alkandiol content.

3,283,016
NITROGEN CONTAINING INDAN DERIVATIVES

Thomas F. Wood, Wayne, and John T. Angiolini, Clifton, N.J., assignors to The Givaudan Corporation, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Sept. 28, 1964, Ser. No. 399,901
6 Claims. (Cl. 260—645)

1. A member selected from the group consisting of:
(a) a compound coming within the scope of the following general formula:

wherein R^1 is a member selected from the group consisting of H, and alkyl radicals having from 1 to 3 carbon atoms; R^2 is a member selected from the group consisting of alkyl radicals having from 1 to 5 carbon atoms and cycloalkyl radicals; A is a member selected from the group consisting of O and H with the proviso that at least one A must be 0; m is an integer from 2 to 3; n is an integer from 1 to 2, the sum of $m+n$ not exceeding 4, with the proviso that at least one R^1 must be H and the further proviso that where more than two of the R^1's are H, then m can be an integer from 1 to 3;
(b) 4,6-dinitro-2-ethyl-1,1,3,3,5-pentamethylindan and
(c) 4,6-dinitro-5-ethyl-1,1,3,3-tetramethylindan.

3,283,017
VAPOR PHASE CONDENSATION PROCESS AND PRODUCT

Edward D. Weil, Lewiston, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Dec. 14, 1962, Ser. No. 244,563
14 Claims. (Cl. 260—650)

1. A process for the preparation of an aromatic compound substituted by at least one perhalogenated unsaturated carbocyclic radical which comprises reacting in the vapor phase at a temperature between about 300 degrees and 650 degrees centigrade a perhalogenated cyclopentadiene, wherein the halogen is selected from the group consisting of chlorine and bromine containing at least one chlorine substituent, with an aromatic compound selected from the group consisting of benzene and benzene substituted by a substituent selected from the group consisting of chlorine, bromine, phenyl, phenoxy, trihalomethyl, perhalovinyl, wherein the halogen is selected from the group consisting of chlorine and bromine, and alkyl of about 1 to 6 carbon atoms, and recovering the desired product.

7. A process for the preparation of an aromatic hydrocarbon substituted by at least 1 pentahalocyclopentadienyl radical which comprises reacting, in the vapor phase, at a temperature between about 300 degrees and 650 degrees centigrade, a hexahalocyclopentadiene selected from the group consisting of hexachlorocyclopentadiene and hexabromocyclopentadiene, with benzene and recovering the desired products.

8. A process for the preparation of an aromatic hydrocarbon substituted by at least 1 pentahalocyclopentadienyl radical which comprises reacting, in the vapor phase, at a temperature between about 300 degrees and 650 degrees centigrade, a hexahalocyclopentadiene selected from the group consisting of hexachlorocyclopentadiene and hexabromocyclopentadiene, with toluene.

10. Compositions of the following general formula:



wherein n is an integer from one to two inclusive.

13. Compositions of the following general formula:



wherein X is a halogen selected from the group consisting of chlorine and bromine and n is an integer from one to two, inclusive.

3,283,018
DECOMPOSITION OF AROMATIC FLUOROFORMATES AND FLUOROTHIOFORMATES TO AROMATIC FLUORIDES

Karl O. Christe and Attila E. Pavlath, Berkeley, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 7, 1965, Ser. No. 454,215
6 Claims. (Cl. 260—650)

1. A process for producing substituted aromatic compounds selected from the group consisting of phenyl and naphthyl compounds and having at least one fluorine atom bonded directly to an aromatic carbon atom and having further substituents selected from the group consisting of hydrogen, fluorine, chlorine, bromine, methyl and trifluoromethyl; comprising the thermal decomposition of said substituted aromatic compounds having at least one substituent selected from the group consisting of fluoroformyl (—OCOF) and fluorothioformyl (—SCOF), the only other substituents being selected from the group consisting of hydrogen, fluorine, chlorine, bromine, methyl and trifluoromethyl, at temperatures between 350° C. and 900° C. to convert said fluoroformyl and fluorothioformyl group to form the corresponding fluoro-substituted aromatic compound.

2. A process for producing substituted aromatic compounds selected from the group consisting of phenyl and naphthyl compounds and having at least one fluorine atom bonded directly to an aromatic carbon atom and having further substituents selected from the group consisting of hydrogen, fluorine, chlorine, bromine, methyl and trifluoromethyl; comprising the thermal decomposition of said substituted aromatic compounds having at least one substituent selected from the group consisting of fluoroformyl (—OCOF) and fluorothioformyl (—SCOF), the only other substituents being selected from the group consisting of hydrogen, fluorine, chlorine, bromine, methyl and trifluoromethyl, in the presence of a platinum catalyst at temperatures between 600° C. and 850° C. for 2 to 30 seconds retention time to convert said fluoroformyl and fluorothioformyl groups to form the corresponding fluoro-substituted aromatic compound.

3,283,019
PRODUCTION OF ORGANO-HALIDES

Tillmon H. Pearson, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Nov. 14, 1963, Ser. No. 323,600
6 Claims. (Cl. 260—652)

1. The process of manufacturing an organo-halide by the reaction with a halogen selected from the group consisting of chlorine, bromine and iodine of an organo-metal compound of the formula $R_m—Me—X_n$, wherein R is a hydrocarbon radical, Me is a metal selected from the class consisting of aluminum, antimony, bismuth, cadmium, copper, gallium, germanium, indium, lead, mercury, thallium, tin and zinc, X is one of a group including halogens selected from the group consisting of chlorine, bromine and iodine and hydrogen, and m and n are numbers whose sum totals the valency of Me and of which n but not m may be zero, which process comprises gradually adding an organo-metal compound as above defined to a liquid mixture of an inert organic solvent and a complexing chemical selected from the class consisting of the tertiary alkyl amines, the azines, the alkyl-azines and the halo-azines while agitating and cooling the resulting liquid mixture to a temperature ranging from about 15° C. to 30° C. to remove the exothermically generated heat therefrom, then adding a halogen selected from the group consisting of chlorine, bromine and iodine slowly to said liquid mixture with the exclusion of light, while continuing the cooling, at such a rate as to maintain the liquid mixture at a temperature ranging from about 15° C. to 30° C., whereby the halogen added reacts with the organo-metal to produce an organo-halide and a metal halide, the latter reacting as it is formed with the said complexing chemical to produce a metal halide complex which is not reactive with the organo-metal or the organo-halide, and recovering the organo-halide from the liquid mixture.

3,283,020
PROCESS FOR THE PRODUCTION OF PERFLUOROETHYLIODIDE

Raymond E. Parsons, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

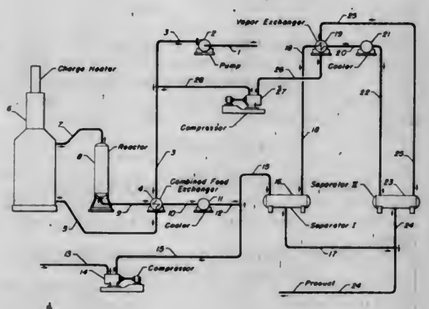
No Drawing. Filed Dec. 20, 1962, Ser. No. 246,023
7 Claims. (Cl. 260—653)

1. A process for the production of perfluoroethyl iodide comprising reacting in a closed reaction zone, at 0°–120° C., 1,2-diiodotetrafluoroethane, iodine pentafluoride, and tetrafluoroethylene in the presence of a small amount of a catalyst selected from the group consisting of (1) antimony pentafluoride, and (2) a combination of antimony trifluoride and iodine, said antimony compounds being present in an amount of at least 0.01 mol per mol of 1,2-diiodotetrafluoroethane, and the amount of iodine being about 0.02–0.2 mol per mol of 1,2-diiodotetrafluoroethane.

3,283,021
HYDROCARBON CONVERSION PROCESS

Leslie C. Hardison, Arlington Heights, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Aug. 15, 1963, Ser. No. 302,347
6 Claims. (Cl. 260—666)



2. A conversion process which comprises catalytically isomerizing a hydrocarbon in a reaction zone in admixture with a hydrogen-rich gas formed as hereinafter set forth, removing the resultant reaction mixture from said zone and, prior to separating said reaction mixture adding thereto an impure hydrogen makeup gas stream containing a major proportion of hydrogen and a minor proportion of normally gaseous hydrocarbons, separating the mixture thus formed into a liquid fraction and a vapor fraction, refrigerating said vapor fraction to a temperature below about 5° C. and separating a second liquid fraction therefrom, thereby forming a gaseous fraction containing a greater proportion of hydrogen than said makeup gas stream, supplying said gaseous fraction to the reaction zone as said hydrogen-rich gas, and withdrawing said liquid fractions from the process.

3,283,022
1-CYCLOPROPYL-5-VINYL CYCLOPENTENE AND 8-VINYL BICYCLO[3,3,0]OCTENE-1 PREPARATION

Arthur D. Ketley, Bethesda, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Dec. 17, 1964, Ser. No. 419,205
7 Claims. (Cl. 260—666)

1. A process which comprises heating 1,1-dicyclopropyl-1,3-butadiene in vapor form in a substantially inert reaction zone at a temperature in the range of 300 to 475° C. for a period of time sufficient to form a vapor comprising 1-cyclopropyl-5-vinylcyclopentene and 8-vinyl bicyclo[3,3,0]octene-1, and condensing the resulting vapor.

3,283,023
POLYMERISATION MODIFIERS

Thomas Aitken, Ipswich, Suffolk, England, assignor to B.X. Plastics Limited, London, England, a British company

No Drawing. Filed Aug. 5, 1963, Ser. No. 300,053
Claims priority, application Great Britain, Aug. 8, 1962, 30,438/62
14 Claims. (Cl. 260—669)

1. A process for the manufacture of an α-methyl styrene dimer composition, which comprises forming an emulsion of dilute sulphuric acid having a concentration within the range of 30 to 65% by weight and monomeric α-methyl styrene in the presence of a surface active agent which is inert under the reaction conditions and is a compound of the general formula



in which R_1 is an alkyl group containing from 8 to 18 carbon atoms and R_2, R_3 and R_4 are each substituted or unsubstituted alkyl groups containing from 1 to 7 carbon atoms, and heating the emulsion to a temperature within the range of 15° C. to 105° C.

3,283,024
HYDROCARBON CONVERSION

Clarence L. Dulaney, Robert J. Evans, and Marvin Lee Owens, Jr., Texas City, Tex., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Feb. 28, 1963, Ser. No. 261,839
8 Claims. (Cl. 260—673.5)

1. A process for increasing the production of aromatic hydrocarbons from the non-catalytic thermal cracking of paraffin hydrocarbons which comprises subjecting a paraffin hydrocarbon feed containing 20 to 100 percent by weight of paraffin hydrocarbons of 6 to 40 carbon atoms to a temperature of 400 to 900° C. and a pressure of from atmospheric to 1000 p.s.i.g. in a thermal reaction zone in the absence of a catalyst and in the presence of an organic compound having the formula

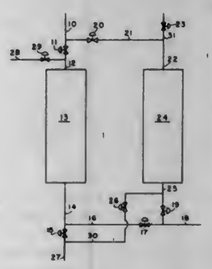


wherein R_1 is a hydrocarbon radical of 1 to 20 carbon atoms and wherein R_2 is a radical selected from the group consisting of hydrogen and hydrocarbon radicals of 1 to 20 carbon atoms, said organic compound being present in an amount of from 0.1 to 10 mole percent of the paraffin hydrocarbons in the feed.

3,283,025
HYDROCARBON PURIFICATION

Robert E. Lenz and George D. Oliver, Texas City, Tex., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed Dec. 31, 1963, Ser. No. 334,751
10 Claims. (Cl. 260—677)

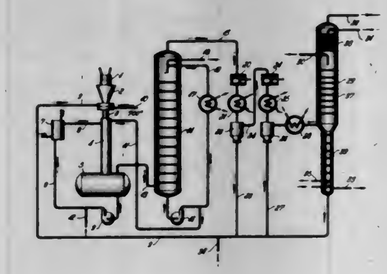


1. A process for the purification of an impure normally gaseous hydrocarbon fraction selected from the group consisting of monoolefinic hydrocarbons, polyolefinic hydrocarbons and acetylenic hydrocarbons having as impurities small amounts of nitrogen-containing organic compounds which comprises passing said impure hydrocarbon fraction through an adsorption zone comprising silica gel, the temperature of said adsorption zone being approximately —70 to 140° C. selectively absorbing said nitrogen-containing organic impurities on said silica gel, continuing said adsorbing until said silica gel has adsorbed its maximum capacity of said impurities, stopping the passage of said impure hydrocarbon fraction through said adsorption zone, subsequently regenerating said silica gel by passing an inert gas through said adsorption zone maintained at a temperature of 220 to 275° C. until the silica gel is regenerated, and thereafter again passing an impure hydrocarbon fraction through said silica gel.

3,283,026
PURIFICATION OF CRUDE GAS OBTAINED BY THERMAL ARC SPLITTING OF HYDROCARBONS

Joachim Kandler, Knapsack, near Cologne, Gunter Legutke, Bruhl, near Cologne, Franz Pohl, Leverkusen-Wustenhof, Erich Schallus, Cologne, and Kurt Sennewald and Lothar Strie, Knapsack, near Cologne, Germany, assignors to Knapsack Aktiengesellschaft, a corporation of Germany

Filed Dec. 24, 1963, Ser. No. 333,216
Claims priority, application Germany, Dec. 29, 1962, K 46,600
15 Claims. (Cl. 260—679)

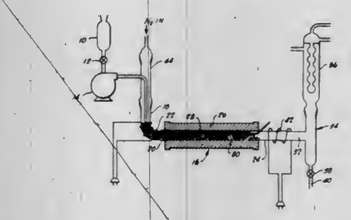


1. A process for purifying an acetylene and ethylene-containing crude gas mixture as obtained by pyrolysing hydrocarbons with hydrogen heated to high temperatures in an electrical arc by separating cleavage products having more than two carbon atoms, tarry and soot-like constituents therefrom, which comprises quenching the hot crude gas mixture in a first stage with a thermally stable quenching oil at a temperature of between about 150 to 250° C., the quenching oil which provides for heat exchange being employed in an excess proportion such that it is merely partially evaporated, cooling the resulting mixture consisting of evaporated quenching oil and quenched crude gas in a second stage with a precooled wash oil conducted countercurrently to the said mixture and cycled within said second stage until the oil portion of the mixture is substantially condensed, compressing the crude gas substantially freed from quenching oil under a pressure within the range of about 10 to 20 atmospheres absolute, precooling the compressed crude gas at a temperature within the range of about —30 to —50° C. and supplying it to a third stage, wherein higher boiling cleavage products having more than two carbon atoms are removed from the crude gas by washing it countercurrently with feed hydrocarbon precooled at a temperature of about —60 to —80° C. and having a boiling point of at least 35° C.

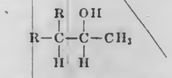
3,283,027
PREPARATION OF ALPHA-OLEFINS BY DEHYDRATION OF 2-ALCOHOLS

Allan J. Lundeen and William Robert Van Hoozer, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Oklahoma

Filed Dec. 20, 1962, Ser. No. 250,199
12 Claims. (Cl. 260—682)



1. A process of preparing α-olefins by selectively dehydrating 2-alcohols comprising contacting a 2-alcohol having the formula:



wherein R is selected from the group consisting of hydrogen, hydrocarbon radicals and substituted hydrocarbon radicals with the further provisions that at least one R is hydrocarbon in nature, that the hydrocarbon radical is selected from the group consisting of alkyl, alkenyl, alkynyl and cycloalkyl radicals, and the substituents on the substituted hydrocarbons are selected from the group consisting of keto, hydroxyl, alkoxy, ester groups and aryl radicals with the further provision that when the substituent is an aryl radical it is no closer to the alcohol 2-carbon than the 4 position, when the substituent is a keto group it is no closer than the 5 position, when the substituent is one of the group of a double bond, triple bond, hydroxyl, alkoxy and ester groups the substituent is no closer than the 6 position, in the vapor state with a metal oxide catalyst selected from the group consisting of thorium oxide, scandium oxide, yttrium oxide, and oxides of the rare earth metals at a temperature in the range of about 330° to about 600° C., and recovering an olefin product of which at least about 90% is alpha-olefin.

3,283,028
THERMAL CONVERSION PROCESS AND APPARATUS THEREFOR

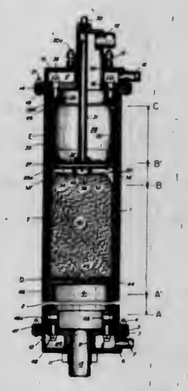
Eric V. Bergstrom, Byram, Conn., and John G. Mitchell, Larchmont, N.Y., assignors to Mobil Oil Corporation, a corporation of New York

Filed Oct. 31, 1961, Ser. No. 149,069
16 Claims. (Cl. 260—683)

1. A method for effecting relatively high temperature thermal reactions which comprises passing a thermally-convertible reactant into a preheat zone of a continuous confined path comprising successively a preheat zone, a conversion zone and a quench zone and in which path the reactant is preheated in the preheat zone to an elevated temperature but below thermal conversion temperature, the thus preheated reactant passes into the conversion zone wherein it is thermally converted and the resulting conversion product passes into the quench zone wherein it is quenched to a temperature sufficient to prevent substantial further reaction of the conversion product, said

quenching of the conversion product in the quenching zone, conversion of the preheated reactant in the conversion zone and preheating of the reactant in the preheat zone being effected by passing an oxidizing gas at a temperature substantially lower than quench temperature into indirect heat exchange with said quench zone to quench conversion product passing into said zone and to raise the temperature of the oxidizing gas to a temperature that supports combustion of a mixture of said oxidizing gas with a combustible fuel, mixing a combustible fuel with said oxidizing gas raised to said combustion temperature whereby the mixture undergoes combustion and by indirect heat exchange with the conversion zone the mixture under combustion supplies the necessary heat flux to the conversion zone, and following said indirect heat exchange with the conversion zone, passing the combusted mixture into indirect heat exchange with the preheat zone whereby sensible heat of the combusted mixture preheats the reactant in the preheat zone.

13. An apparatus, adapted for carrying out relatively high temperature thermal reactions, comprising an elongated confined annulus having an inlet means at one end portion adapted to pass reactant into a preheat chamber in said annulus and an outlet means at the opposite end



portion for discharge of reaction product from a quench chamber in said annulus, said annulus being characterized by comprising successively and in open communication a preheat chamber, a conversion chamber and a quench chamber with the conversion chamber having internal wall surfaces adapted to confine reactant passed from the preheat chamber into the conversion chamber to a stream which, in cross-section, has a minor axis averaging not more than about 0.1 inch, means adapted for passing an oxidizing gas into indirect heat exchange with the quench chamber whereby to abstract heat from the reaction product passed from the conversion chamber into the quench chamber and the oxidizing gas is raised to a temperature that supports combustion with a combustible fuel, mixing means for mixing said oxidizing gas at combustion temperature with a combustible fuel whereby the resulting mixture undergoes combustion, and means for passage of the mixture under combustion into indirect heat exchange with the conversion chamber to provide the necessary heat flux in said conversion chamber and for passage of the resulting combusted mixture into direct heat exchange with the preheat chamber whereby sensible heat of the combusted mixture preheats reactant passed into the preheat chamber of said chamber.

3,283,029

HYDRAULIC FLUIDS

Michel Louis Lucien Brilland and Pierre Anthelme Tardy, Le Havre, France, assignors to Compagnie Francaise de Raffinage, Paris, France

No Drawing. Filed Sept. 25, 1963, Ser. No. 311,321
Claims priority, application France, Sept. 26, 1962, 910,547, Patent 1,357,634
4 Claims. (Cl. 260—683.9)

1. A process for the preparation of stable mixtures of saturated petroleum hydrocarbon polymers having low freezing points and high boiling points and high viscosity indexes, said mixtures being substantially non-corrosive to metals and substantially inert to rubbers and like elastomers and being particularly adapted for use as hydraulic fluids, which comprises the steps of subjecting a mixture of light olefins to catalytic polymerization to form a mixture of olefinic polymers substantially all of which contain about 12 to 18 carbon atoms per molecule, separating from said mixtures of polymers a fraction having a boiling range of about 200° to 300° C., and subjecting said separated fraction to catalytic hydrogenation until said olefinic polymers have a substantially zero bromine value.

3,283,030

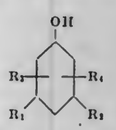
UNSATURATED POLYESTERS PREPARED BY THE SEQUENTIAL REACTION OF A PHENOL-ALDEHYDE WITH A MONO-OXIRANE OR OTHER HYDROXYETHER FORMING COMPOUND, AND A POLYCARBOXYLIC ACID

Claude Thomas Bean, Jr., Niagara Falls, and Donald H. Thorpe, Williamsville, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Oct. 25, 1962, Ser. No. 233,141
34 Claims. (Cl. 260—842)

1. An unsaturated polyester resin obtained by the process which comprises the steps of:

(1) reacting a phenol having the formula:



wherein R_1 and R_2 are each selected from the group consisting of hydrogen, and substantially straight chain aliphatic radicals, R_3 is selected from the group consisting of alkyl, alicyclic, aryl and aralyl groups, and R_4 is an aralkyl group, with a compound selected from the group consisting of aldehydes and ketones to form a phenolic condensation product, employing a ratio of up to 0.85 mole of aldehyde or ketone per mole of phenol,

(2) reacting the phenolic condensation product with a substance reactive with the phenolic hydroxyl groups thereof, and selected from the group consisting of a monooxirane ring compound, an alkylene halohydrin, an alkylene carbonate, and mixtures thereof to form a hydroxyether derivative, and

(3) esterifying the hydroxyether derivature by reacting it with a polycarboxylic compound selected from the group consisting of polycarboxylic acids, polycarboxylic acid anhydrides, polycarboxylic acid halides, and mixtures thereof to produce an unsaturated polyester resin, at least one polycarboxylic compound being ethylenically unsaturated;

the resulting polyester resin containing at least one isolated addition-polymerizable carbon-to-carbon double bond.

3,283,031

RIGID POLYVINYL CHLORIDE COMPOSITIONS CONTAINING POLYURETHANE ELASTOMERS, AND A COPOLYMER OF A STYRENE AND AN ETHYLENICALLY UNSATURATED NITRILE

Charles E. Greene, Akron, and Francis J. Maurer, Tallmadge, Ohio, assignors to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Mar. 13, 1963, Ser. No. 264,748
4 Claims. (Cl. 260—859)

1. A rigid, impact-resistant, age-resistant, thermoplastic composition comprising (a) 47 to 77% by weight of a polymer composed predominantly of polymerized vinyl halide, (b) about 13 to 35% by weight of a resinous copolymer of a compound selected from the group consisting of styrene, alpha methyl styrene and nuclear substituted styrenes and a copolymerizable ethylenically unsaturated nitrile, said copolymer containing from about 15 to 40% by weight of said nitrile, and (c) about 10 to 18% by weight of a rubbery polyurethane selected from the group consisting of rubbery polyesterurethanes and rubbery polyetherurethanes.

3,283,032

METHOD OF CROSSLINKING UNSATURATED POLYESTERS BY DIELS-ALDER REACTION WITH A MONOMER CONTAINING TWO PAIRS OF CONJUGATED ETHYLENIC LINKAGES

Richard John Martin, Cambridge, Bryan Dobinson, Duxford, and Bernard Peter Stark, Stapleford, England, assignors to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed Nov. 29, 1963, Ser. No. 327,085
Claims priority, application Great Britain, Dec. 3, 1962, 45,705/62
1 Claim. (Cl. 260—867)

A heat hardenable composition of matter which comprises

(a) a 1,3-diene selected from the group consisting of the glycol dihydrobenzoates, the pentaerythritol-sorbaldehyde acetals, the sorbyl sorbates and bis(dichlorobutadienyl) ketone and

(b) an unsaturated polyester which is obtained by the condensation of at least one saturated aliphatic polyalcohol with at least one ethylenically unsaturated dicarboxylic acid anhydride and at least one other dicarboxylic acid anhydride.

3,283,033

CROSSLINKED OLEFIN-OLEFINIC DICARBOXYLIC ACID COMPOUND INTERPOLYMERS AND PROCESS OF PREPARATION THEREOF

John H. Johnson, Kirkwood, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed July 31, 1963, Ser. No. 299,098
12 Claims. (Cl. 260—878)

1. In a process for forming a crosslinked olefin-olefinic dicarboxylic acid compound interpolymer wherein an olefinic hydrocarbon and an olefinic dicarboxylic acid compound are reacted at a temperature and a pressure and for a time sufficient to cause polymerization in the presence of a free radical catalyst and a crosslinking agent, the improvement wherein said crosslinking agent is a polymerized olefinic ester of an olefinic acid.

3,283,034

RIGID POLYVINYL CHLORIDE COMPOSITION

Anthony J. Urbanic, Akron, and Francis J. Maurer, Tallmadge, Ohio, assignors to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed Feb. 7, 1963, Ser. No. 258,109
4 Claims. (Cl. 260—891)

1. A rigid, tough, general purpose, thermoplastic composition of (a) 44 to 70 percent by weight of a compound selected from the group consisting of polyvinyl chloride and copolymers composed of at least 70% by weight of vinyl chloride and the balance another copolymerizable monoolefinic monomer, (b) 23 to 40 percent by weight of a copolymer consisting of (1) a compound selected from the group consisting of styrene and alpha- and nuclear-substituted alkyl and chloro-styrenes and (2) an acrylonitrile, said copolymer containing from 15 to 40 percent by weight of said nitrile, and (c) 7 to 16 percent by weight of a rubbery copolymer consisting of a polymerizable conjugated diolefin having less than eight aliphatic carbon atoms and acrylonitrile, said rubbery copolymer having a nitrile radical for each 11 to 30 carbon atoms in the direct chains of said copolymer.

3,283,035

HIGH IMPACT STRENGTH VINYL CHLORIDE POLYMER COMPOSITIONS CONTAINING AN ETHYLENE-VINYL ALKANOATE COPOLYMER AND A CHLORINATED POLYOLEFIN

David F. Schnebelen, Jr., Plaquemine, La., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 17, 1964, Ser. No. 375,940
10 Claims. (Cl. 260—897)

1. A homogeneous, vinyl chloride polymer composition comprising a vinyl chloride polymer and, blended therewith, from about 3 to 8 parts by weight per 100 parts of said vinyl chloride polymer of an ethylene-vinyl alkanoate copolymer containing from about 2 to 65 percent by weight of the vinyl alkanoate component and from about 3 to 10 parts by weight per 100 parts of said vinyl chloride polymer of a chlorinated polyolefin.

3,283,036

NON-REFLECTIVE COATING COMPOSITION CONTAINING FINELY DIVIDED POLYPROPYLENE

Craig W. Larson, Grand Rapids, Mich., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 257,744, Feb. 11, 1963. This application Feb. 16, 1965, Ser. No. 433,212
9 Claims. (Cl. 260—897)

1. A coating composition comprising an organic film-forming material and from 0.5% through 90%, by weight of the total solids present, of particulate polypropylene having a mean particle diameter of no greater than about 20 microns and a particle size distribution such that there are substantially no particles with diameters in excess of about 75 microns.

3,283,037

BIS(CYCLIC 2,2-DIMETHYLTRIMETHYLENE) 1,4-CYCLOHEXANEDIMETHYLENE PHOSPHITE

Herman E. Davis, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Sept. 12, 1963, Ser. No. 308,369
9 Claims. (Cl. 260—927)

1. Bis(cyclic 2,2-dimethyltrimethylene) 1,4-cyclohexanedimethylene phosphite.

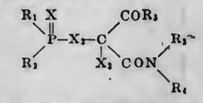
5. A process for making a bis(cyclic 2,2-dimethyltrimethylene 1,4-cyclohexanedimethylene phosphite, which comprises heating a mixture of neopentyl phenyl phosphite, a 1,4-cyclohexanedimethanol and a basic catalyst at a catalytic concentration.

3,283,038
PHOSPHORUS CONTAINING COMPOUNDS

Walter Lorenz, Wuppertal-Vohwinkel, and Gerhard Schrader, Wuppertal-Kronenberg, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Oct. 13, 1961, Ser. No. 144,854
Claims priority, application Germany, Oct. 14, 1960, F 32,338
21 Claims. (Cl. 260—942)

1. A compound of the formula



in which R_1 and R_2 stand for members selected from the group consisting of lower alkyl, phenyl, lower alkoxy and lower alkylmercapto; X stands for a member selected from the group consisting of oxygen and sulfur; X_2 stands for sulfur; X_3 stands for a member selected from the group consisting of hydrogen, lower alkyl, phenyl and a halogen atom; wherein R_3 and R_4 are each selected from the group consisting of hydrogen, lower alkyl, and phenyl when considered separately and morpholino, piperidino, piperazino, pyrrolidino when taken with the nitrogen atom, R_5 is a member selected from the group consisting of

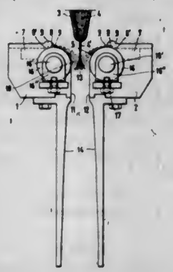


lower alkoxy and lower alkyl mercapto.

3,283,039
METHOD FOR DIVIDING A MATERIAL INTO FIBERS

Alfred Walz, Emmendingen, Baden, Manfred Mayer, Mannheim-Almenhof, and Hans Hermann Fernholz, Kohlbach, Germany, assignors, by mesne assignments, to Alfred Walz, Baden, Germany

Filed Aug. 28, 1963, Ser. No. 305,163
Claims priority, application Germany, Aug. 29, 1962, G 35,810
11 Claims. (Cl. 264—12)

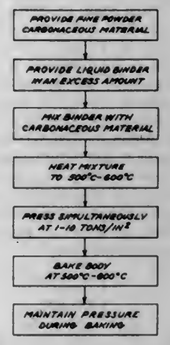


1. A method for dividing a material comprising continuously supplying the material in one direction into the inlet of a passage extending in said direction; and directing fluid at an angle to said direction onto curved guide face means at such a speed that the fluid adheres to said curved guide face means due to the Coanda effect and flows along the same; and disposing at least one face portion of said guide face means in the region of said inlet substantially in said direction whereby the fluid is diverted by said curved guide face means to flow substantially in said direction into said passage so that the material is divided by said fluid while being prevented from contact with said guide face means and with said passage.

3,283,040
METHOD OF FORMING A CARBON BODY

Edward R. Stover, Niskayuna, N.Y., assignor to General Electric Company, a corporation of New York

Filed May 28, 1965, Ser. No. 459,674
2 Claims. (Cl. 264—29)



1. In a method for preparing a baked carbonaceous mass for the production of a graphite body wherein a mixture containing powdered carbonaceous material and carbonaceous binder is heated to and baked at elevated temperatures during the simultaneous application of pressure thereto, the improvement comprising:

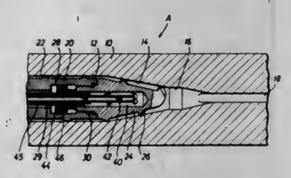
(a) using a weight percent of carbonaceous binder of at least about 0.85 times the weight percent of powdered carbonaceous material, and

(b) maintaining a pressure of at least about 10 tons per square inch during the baking step.

3,283,041
APPARATUS AND METHOD FOR CONTROLLING PRESSURE IN A PLASTIC EXTRUDING MACHINE

Franz Sommerfeld, Frankfurterstr. 46, Porz-Wahn, Germany

Filed May 9, 1963, Ser. No. 279,126
Claims priority, application Germany, May 10, 1962, R 32,671
8 Claims. (Cl. 264—40)

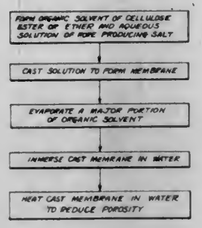


1. A method of controlling the pressure of plastic material flowing through an extruding machine having a cylindrical bore leading to an exit orifice and a feed screw having a body and a nose and rotating in said bore, the method comprising the following steps: cooling said nose only, with a fluid cooling medium flowing in a chamber in heat exchange relationship with said bore, sensing the deviation of the pressure of said plastic material in said bore with respect to a predetermined pressure, and controlling the flow of said cooling medium in accordance with said deviation to maintain the pressure desired to be imparted to said plastic material in said bore and adjacent said exit orifice.

3,283,042
METHOD OF FORMING POROUS MEMBRANES

Sidney Loeb, Los Angeles, Calif., and Gargeswari R. Nagaraj, Lawrence, Kans., assignors to the Regents of the University of California, Berkeley, Calif.

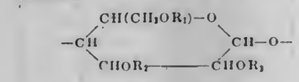
Filed Aug. 23, 1963, Ser. No. 304,228
9 Claims. (Cl. 264—49)



1. A method of preparing a semipermeable membrane adapted to permit substantially selective diffusion therethrough of a component of solution, comprising:

(a) dissolving:

(I) a cellulosic ether or ester derivative having the formula



wherein R_1, R_2 and R_3 are members of a group consisting of H, R_4 and CR_5O wherein R_4 is an alkyl group containing 1 to 8 carbon atoms and R_5 is an alkyl group containing 1 to 7 carbon atoms, and

(II) an aqueous solution of a pore producing salt having an anion from the class consisting of iodide, bromide, tetraphenyl boron, salicylate, chlorate, tetraiodomercurate and fluosilicate,

in an organic solvent which is miscible with water and dissolves said cellulosic derivative and said pore producing salt:

(b) casting said solution to form a membrane of substantially uniform thickness;

(c) evaporating a major portion of said organic solvent;

(d) immersing the cast membrane in water to remove said salt; and

(e) heating the cast membrane in water to reduce its porosity.

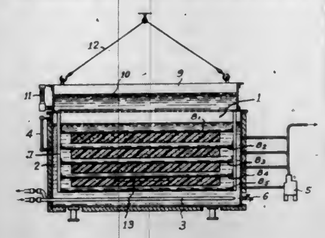
6. A method as stated in claim 1 wherein said evaporation period is in the range of about 3 to 20 minutes.

3,283,043
METHOD AND APPARATUS FOR IMMERSION MOLDING A FOAMABLE POLYVINYL CHLORIDE AND POLYISOCYANATE PREFORM

Yvan Landler, Sceaux, Joseph Reygrobellet, Meaux, and Michel Ferdinand Vernon and Andre Leclercq, Trilport, France, assignors to Société anonyme dite: Pneumatiques, Caoutchouc Manufacture et Plastiques Kleber Colombes, Colombes, France

Filed Feb. 4, 1963, Ser. No. 255,876
Claims priority, application France, Feb. 5, 1962, 887,184
13 Claims. (Cl. 264—54)

1. A method for the manufacture of a polyvinyl chloride cellular object which comprises immersing a preformed cellular object comprising polyvinyl chloride and an isocyanate or polyisocyanate in an aqueous bath and maintaining the upper surface of said immersed object in contact with at least approximately horizontal shelf means and opposing the hydrostatic thrust directed from the bottom of the bath in the upward direction to which said

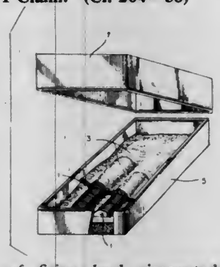


object is subjected, whereby said object is expanded and shaped to a desired dimension.

3,283,044
METHOD OF FIRING CERAMICS

Arthur E. Brown, Red Bank, and Robert J. Fischer, West Long Branch, N.J., assignors to the United States of America as represented by the Secretary of the Army

Filed Dec. 26, 1962, Ser. No. 247,421
1 Claim. (Cl. 264—58)

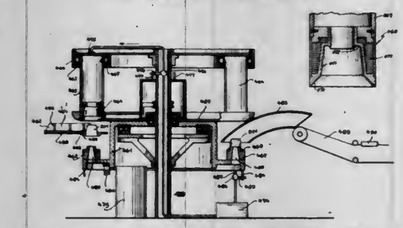


The method of firing lead zirconate-lead titanate ceramics comprising laying down a bed of sand sized lead zirconate in an alumina sagger, stacking and embedding lead zirconate-lead titanate ceramic discs in rows in the bed of sand sized lead zirconate, covering the ceramic discs with the sand sized lead zirconate, placing an alumina muffle cover over the sagger, and firing the covered sagger at 2260° F. for ¾ hour in a globar fired furnace.

3,283,045
PROCESS FOR THE PRODUCTION OF THIN-WALLED PLASTIC ARTICLES

Alfons Wilhelm Thiel, Kaiserstr. 63, Mainz, Germany

Original application Aug. 24, 1960, Ser. No. 51,669, now Patent No. 3,161,915, dated Dec. 21, 1964. Divided and this application Oct. 1, 1964, Ser. No. 400,642
Claims priority, application Germany, Nov. 8, 1957, T 14,382, T 14,383, T 14,384; Aug. 31, 1959, T 17,146; Nov. 3, 1959, T 17,421
13 Claims. (Cl. 264—89)



5. A process for producing a thin-walled, hollow thermo-plastic article having a beaded, hollow rim of

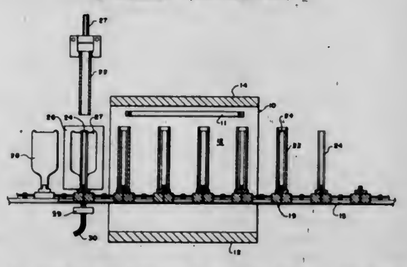
rounded contour encircling a longitudinal axis comprising the steps of shaping said article from a sheet of thermo-plastic material to provide a rim portion having a rounded contour encircling said axis and a substantially unbeaded, flared skirt extending outwardly and backwardly from said rim portion, said article being shaped by applying a vacuum to draw a portion of said sheet of thermo-plastic material into a shaping cavity, applying a stretching force to said thermo-plastic material to direct it into said cavity, and applying pulses of compressed air to said thermo-plastic material to assist in directing it into said cavity, cutting the thusly shaped article out of said sheet to leave at least a portion of said skirt extending from said rim portion, progressively backwardly bending said skirt of the thusly cut-out article by engaging said skirt with a first heated die ring surface beginning at the free marginal portions of said skirt and progressing inwardly toward said rim portion until said skirt is approximately parallel with said longitudinal axis, and thereafter curling said skirt towards the underside of said rim portion by so engaging the free marginal portions thereof with a second, curved, heated die ring surface as to produce a smooth finished bead of rounded, hollow contour on the rim of said article.

3,283,046

METHOD FOR FORMING HOLLOW ARTICLES

Earl G. De Witt and Frederick T. Tulley, Baton Rouge, La., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

Filed Sept. 28, 1964, Ser. No. 399,605
6 Claims. (Cl. 264—92)



1. A method for forming a hollow article comprising;
(a) surrounding a vertically disposed, rigid, thermoplastic parison with a close fitting, heat conducting container;
(b) moving said parison with said surrounding container through an area having a temperature sufficiently high to soften said parison;
(c) separating said container from said softened parison;
(d) enclosing said softened parison substantially within a blow mold cavity;
(e) introducing a pressurized fluid into the interior of said softened parison to expand said parison to form the hollow article; and
(f) removing the hollow article from the interior of said mold.

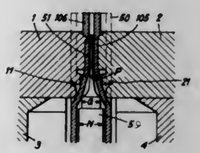
3,283,047

METHOD FOR MANUFACTURING A HOLLOW PLASTIC ARTICLE

André Savary, Neuilly-sur-Seine, France, assignor to Kunststoff-Maschinen A.G., Stansstad, Switzerland

Filed Jan. 13, 1964, Ser. No. 337,417
Claims priority, application France, Jan. 11, 1963, 921,065, Patent 1,372,433
3 Claims. (Cl. 264—98)

1. A method for manufacturing a hollow plastic article constituting a bottle integral with a closing device therefor, comprising in combination the steps of pressure-molding in a heated state one end portion of a length of plastic tubing by means of parts of compression mold laterally engaged therewith until this mold is closed, and by means of a male die advanced through the remaining portion of the plastic tubing, to form a bottle neck unitary with a hollow closing plug and with a tubular extension on the top of this plug, of retracting the male die from the plastic tubing, of laterally engaging parts



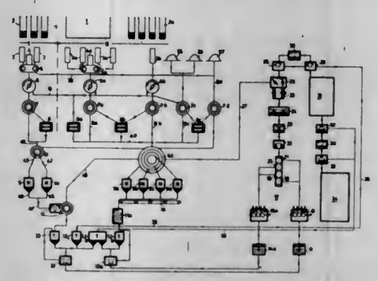
of a blow mold to strangulate the other end portion of the plastic tubing by means of prong portions of these blow mold parts, to form a closed bottom portion of the bottle, of introducing a blowing tube through said tubular extension and subsequently blow molding a portion of the plastic tubing intermediate to said portions, thereby forming a body portion of the bottle, and of retracting the blowing tube and disengaging the parts of the compression mold and of the blow mold from the formed article.

3,283,048

METHOD AND APPARATUS FOR PRODUCING PRESSED PLATES

Walter Hoppeler, Haus Lampitschen, Klosters, Graubuenden, Switzerland

Filed July 17, 1962, Ser. No. 210,524
Claims priority, application Switzerland, July 19, 1961, 8,461/61
8 Claims. (Cl. 264—113)



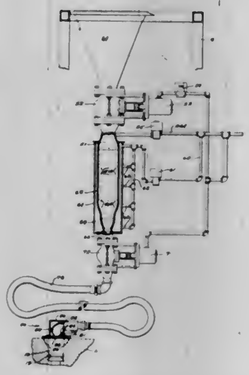
1. In a method of producing pressed plates by hot pressing mixtures consisting essentially of wood particles of different size ranges and hardenable binder material, the improvement which consists in separating said wood particles into portions each of which contains only wood particles of one of said different size ranges; withdrawing from each of said separated portions of different size ranges a quantity of each portion which is selected in such a manner that said withdrawn quantities of wood particles of different size ranges, respectively, are in a predetermined proportion relative to each other; forming a first homogeneous mixture of said withdrawn quantities of separated wood particles of different size ranges; intimately mixing said first homogeneous mixture with hardenable binder material so as to form a second mixture adapted to be hot pressed into a pressed plate; and subjecting the thus formed second mixture to hot pressing so as to form a pressed plate thereof.

3,283,049

PROCESS FOR MAKING REFRACTORY BRICK

John M. O'Donnell, San Francisco, Calif., and Richard O. Platt, Bethel Park, and Charles D. Gabor, Verona, Pa., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 12, 1965, Ser. No. 447,260
2 Claims. (Cl. 264—121)



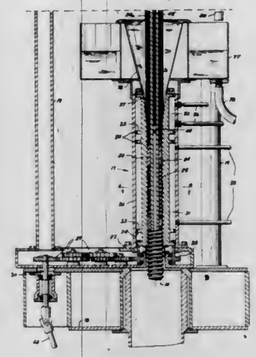
1. The method of manufacturing a plurality of refractory shapes of substantially uniform density on a brickmaking machine having at least one brickmaking cavity, which comprises the steps of:
(A) preparing a size-graded refractory brickmaking mixture of refractory brickmaking material, said mixture characterized by substantial uniformity of materials makeup,
(B) continuously removing smaller but separate batches from the mixture, said batches being substantially identical in weight and materials makeup, and delivering said batches one at a time to a stationary closable chamber,
(C) closing said chamber and entraining a contained batch in a fluid carrier medium, there being a movable distributing nozzle interconnected with said stationary chamber and arranged to move from a position spaced away from said brickmaking cavity to a sealed position over said brickmaking cavity,
(D) moving said distributing nozzle over said cavity and into sealing relationship therewith,
(E) conveying an entrained batch from said closed chamber to said distributing nozzle substantially without loss of any material from the batches,
(F) charging said conveyed entrained batch through said distributing nozzle substantially uniformly across the bottom of the cavity while allowing escape of the fluid carrier medium from the cavity,
(G) moving said nozzle away from said brickmaking cavity,
(H) actuating the brickmaking machine to make a shape from the batch distributed in the cavity, and
(I) subsequently conveying other substantially identical entrained batches, one at a time, from the closable chamber through said nozzle to said cavity and making shapes therefrom.

3,283,050

METHOD AND APPARATUS FOR MAKING CONTINUOUS LENGTHS OF THREADED FIBER REINFORCED RESIN ARTICLES

Le Roy R. Boggs, Bristol, Tenn., assignor to Universal Moulded Fiber Glass Corp., Bristol, Va., a corporation of Delaware

Filed Apr. 6, 1965, Ser. No. 445,896
22 Claims. (Cl. 264—137)



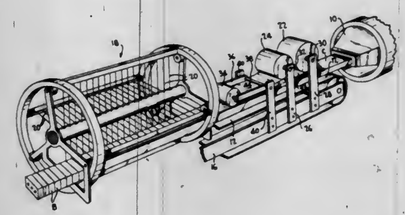
22. A method for making continuous lengths of a threaded fiber reinforced resin article comprising impregnating fiber reinforced resin with a liquid heat hardenable resin material, feeding the impregnated reinforcement into the entrance end of an annular forming passage one side of which is defined by a cylindrical threaded wall, heating the resin material to solidify the resin while it is in the forming passage, and thereby form a solidified article and advancing the resin and reinforcement through the forming passage and delivering the solidified article from the discharge end of the forming passage by pulling on the solidified article beyond the discharge end of the forming passage and concurrently rotating and thus unscrewing the threaded wall from the threaded article as it is formed.

3,283,051

BRICKMAKING MACHINE AND PROCESS

William B. Anderson, Atlanta, Ga., assignor to Chattahoochee Brick Company, Atlanta, Ga., a corporation of Georgia

Filed July 26, 1963, Ser. No. 297,754
8 Claims. (Cl. 264—148)



3. In a brickmaking machine of the class in which an extruded column of plastic clay is moved into and through an intermittently operating cutter having a dull cutting element for passage downwardly through the column to divide it into a plurality of bricks, the improvement comprising means for continuously applying a strip of paper over the flat upper surface of said clay column while

the latter is en route to the cutter, to be engaged and drawn into the clay column by the cutter element during operation of the cutter and prior to severing of the paper, thereby causing the corners and edges of the column adjoining the respective cuts to be irregularly rounded and distorted.

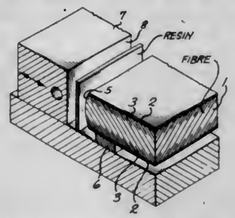
7. The process of forming decorative bricks comprising the steps of continuously extruding a horizontal plastic clay column of rectangular cross section, applying over and against one flat face of said column an overlay of flexible and tearable sheet material, then with the column still in its plastic state, severing said column into a plurality of bricks by pressing a series of parallel blunt cutting elements transversely through said overlay in a direction to first engage said overlay and then to drag it partially into and through the column before parting of the overlay, whereby to irregularly round and deform the edges of the resulting bricks around the brick faces comprised by segments of said flat face of the column.

3,283,052

METHOD AND APPARATUS FOR COATING THE EDGE PORTIONS OF COMPRESSED WORKPIECES

Edmund Munk, Oberstenfeld, Wuerttemberg, Germany, assignor to Furnier- und Sperrholzwerk J. F. Werz, Jr., K.G., Werzalit-Pressholzwerk, Oberstenfeld, Wuerttemberg, Germany

Filed July 16, 1963, Ser. No. 295,457
8 Claims. (Cl. 264—248)



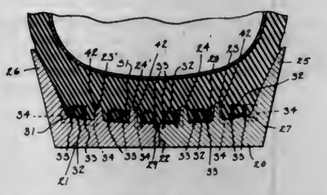
1. A method of uniformly bonding sheet material with a resin to the lateral surface of a compressed workpiece wherein the inner parts of said workpiece have a lower compressive strength than the outer parts thereof, comprising the steps of: forming a convex surface on the lateral edge portion of said compressed workpiece; placing said sheet material adjacent said convex surface; compressing said sheet material onto said convex surface on said lateral edge portion with heat and pressure to form a flat surface on said lateral edge portion to provide said lateral edge portion with substantially the same compressive strength as said outer parts and to uniformly migrate said resin into said lateral edge portion of said workpiece and bond uniformly said sheet material to the surface of said lateral edge portion.

3,283,053

METHOD FOR FORMING NON-SKID TIRE TREADS

Paul J. Felker, Marshfield, Wis., assignor to Penetred Corporation, Marshfield, Wis., a corporation of Wisconsin

Filed Jan. 21, 1965, Ser. No. 426,900
3 Claims. (Cl. 264—277)



1. In a method of forming non-skid siped tire treads with the use of a tire molding machine the steps of securing sipe-forming strips in the bottom of the mold with circumferentially-directed extents arranged in pairs of circumferentially-extending lines so that the lines of each pair form opposite sides of a channel having the bottom wall of the molding recess for the bottom of the channel, supplying elongated traction-augmenting members of a width to be snugly received in said channels, placing one of said elongated traction-augmenting members in each of said channels to extend around the circumference of the mold and so that said sipe strips will serve the dual function of maintaining the traction-augmenting members in laterally-located position and of creating sipes in the tire to be molded, and then while the traction-augmenting members are thus held and positioned forming a siped tire tread with the elongated traction-augmenting members therein.

3,283,054

PROCESS FOR PREPARING FILAMENTARY TOW

Terence Francis McDonald, Waynesboro, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 27, 1963, Ser. No. 290,921
4 Claims. (Cl. 264—344)

1. A process for preparing a spandex tow which is substantially free from interfilament adhesion comprising the steps of

(1) heating a spandex tow comprised of a plurality of filaments containing at least 25% by weight of talc at a temperature of at least 130° C. for at least five minutes,

(2) washing said heat-treated tow to remove substantially all loose talc particles,

(3) adjusting the talc content of said filaments to provide at least 10% by weight of talc on said filaments, and thereafter

(4) drying said filaments at a temperature below 130° C.

ELECTRICAL

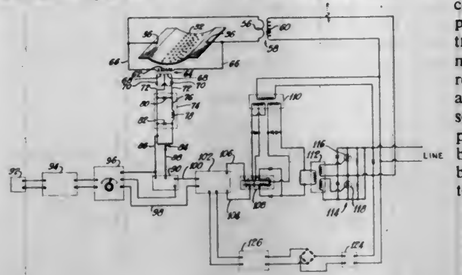
3,283,055

TEMPERATURE CONTROL SYSTEM FOR HIGH TEMPERATURE MELTERS OR THE LIKE

William C. Trethewey, Newark, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware

Filed Aug. 15, 1963, Ser. No. 302,264
12 Claims. (Cl. 13—6)

11. In combination with apparatus for producing high strength, highly refractory glass filaments, which apparatus includes a bushing having a perforated heater plate extending therethrough and through which glass being melted must pass, a pair of leads connected to spaced portions of said heater plate, power means for supplying power to said leads, a plurality of bushing tips at the bottom of said bushing, means for supplying refractory material to said bushing over said heater plate, and means for attenuating glass filaments from molten glass at the bushing tips, a temperature control system for controlling the temperature of said heater plate and of the glass flowing therethrough, said temperature control system comprising means connected across said heater plate at spaced portions thereof for sensing voltage across said heater plate and for producing a signal in response thereto, and means responsive to said voltage sensing means for controlling the flow of current to said perforated heater plate through said leads from said power means.

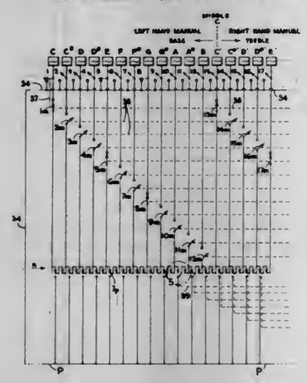


3,283,056

CONTROLLED HARMONIZATION FOR MUSICAL INSTRUMENTS

Jack C. Cookerly, North Hollywood, and George R. Hall, Sherman Oaks, Calif., assignors to Chicago Musical Instrument Co., Chicago, Ill., a corporation of Delaware

Filed Feb. 8, 1962, Ser. No. 171,905
16 Claims. (Cl. 84—1.01)



1. In a keyed musical instrument including a series of tone signal sources and an output means, each of said signal sources including a coupling circuit for coupling the tone signal source to the output means, the combination comprising:

(a) first means, responsive to the depression of given tone-producing keys, for partially completing the coupling circuits of a predetermined number of harmonically related signal sources; and

(b) second means, responsive to the depression of a further single tone-producing key, for completing the partially completed coupling circuits, thereby coupling said predetermined number of signal sources simultaneously therewith to said output means.

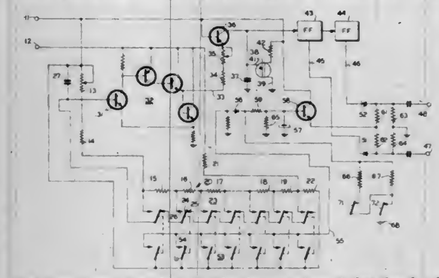
3,283,057

KEYBOARD OSCILLATOR CIRCUIT

Richard H. Campbell, Jr., Gilford, N.H., assignor to The Seeburg Corporation, Chicago, Ill., a corporation of Delaware

Filed June 26, 1964, Ser. No. 378,296
2 Claims. (Cl. 84—1.01)

1. A keyboard operated tone generator comprising a unijunction transistor, a capacitor connected across the junction of said transistor, a controlled variable charging circuit for said capacitor said charging circuit including a constant current transistor connected to charge said capacitor and a transistor feedback circuit connected to control said constant current transistor to supply a predetermined range of current values, a keyboard, an adjustable resistor and a plurality of fixed resistors proportioned according to the notes of said keyboard connected in series across a regulated voltage source, a memory capacitor, switch means operated by the keys of said keyboard to charge said memory capacitor to the voltage between adjacent ones of said resistors corresponding to the actuated key of said keyboard, a connection from



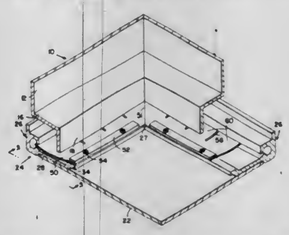
said memory capacitor to the input of said feedback circuit for controlling said charging circuit to make the relaxation period for charging said capacitor connected across said junction to the voltage breakdown level of said junction inversely related to the tone frequency for said actuated key, means for coupling a pulse wave from said transistor corresponding to the frequency of breakdown of said junction, and means responsive to said pulse wave for deriving a tone frequency wave integrally related to said pulse wave, said adjustable resistor controlling by means of a single adjustment the relative tuning spread between the respective keys of said keyboard irrespective of the tone frequency range of said tone generator.

3,283,058

RADIO FREQUENCY SHIELDING ENCLOSURE

Ernest E. Johnson, Jr., Liverpool, and Emmons R. Radford, Warners, N.Y., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Sept. 27, 1965, Ser. No. 490,754
5 Claims. (Cl. 174—35)



1. A radio frequency shielding enclosure adapted for shielding electronic equipment housed therein, said enclosure including:

a main body portion made of a material capable of radio frequency shielding formed by a plurality of side walls, said body portion being open at one end, said side walls terminating in an annular indented portion adjacent said open end, said indented portion being formed by a first flange extending inwardly toward the central axis of said main body and a terminal wall portion extending normally from the inner

edge of said first flange whereby the exposed rim portion of said terminal wall portion defines an access opening of smaller area than the area defined by the side walls of the main body portion;

a closure member made of a material capable of radio frequency shielding disposed so as to close said access opening;

a radio frequency shield device secured about the perimeter of said closure member on the side thereof facing said access opening, said device comprising a plurality of elongated, U-shaped channel sections joined together in end-to-end relationship, each said section including an elongated generally rectangular base and a pair of legs extending in normal relationship from the longitudinal edges thereof, one of said legs having the terminal end thereof adapted for abutting engagement with said first flange, a protruding ridge extending from the interior of said base throughout the length thereof, said ridge being disposed adjacent said one leg, and a plurality of thin, rectangular strips joined together in end-to-end relationship, each said strip being formed of electrically conductive spring material disposed in spaced, parallel relation with the interior surface of each said base, each said strip having a first longitudinal edge secured to the other of said legs and a second longitudinal, free edge extending in overlapping relation with said ridge, each said strip resting for support on said ridge along a portion thereof intermediate said first and second edges and adjacent said free edge;

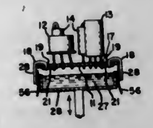
whereby, upon movement of said closure member to a closed position wherein said strips are engaged by said exposed rim portion along a portion thereof intermediate said first edge and said ridge, said strips will be flexed in a direction toward said channel base, the degree of flexing being limited by engagement of said one leg and said first flange.

3,283,059
COMBINED CABLE SPLICE RACK AND PROTECTOR THEREFOR
Walter A. Plummer, 3546 Crownridge Drive, Sherman Oaks, Calif.
Filed June 4, 1965, Ser. No. 461,481
2 Claims. (Cl. 174—38)



2. In combination with a vertically disposed cable splice rack having a generally circular base ring encircling its lower end, that improvement which comprises a moisture-proof protector adapted to be assembled about and to be removed from said cable splice rack from one side thereof, said protector being formed entirely in one unitary piece from thin flexible sheet plastic material having excellent dielectric properties, said protector having a normally flat bag-like main body equipped with a readily separable and reclosable plastic seam extending from end-to-end thereof, one end of said main body being heat-sealed closed in a fluid-tight manner by a permanent seam extending across the adjacent closed end of said plastic seam thereby preventing full opening of said seam, and the opposite lower open end of said protector having at least one permanently closed seam extending across the flattened rim edges of said open end at an angle to the longitudinal center line of said protector to restrict the girth of said open end to a value substantially less than the girth of said splice rack base ring whereby said protector can be assembled about said splice rack while said seam is open by wrapping the open sides thereof about said rack from the opposite sides thereof and then closing said seam to lock said protector in place.

3,283,060
DIP-SOLDERED MODULE AND METHOD OF MAKING THE SAME
James A. Wiese, Whitesboro, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 23, 1963, Ser. No. 333,796
7 Claims. (Cl. 174—68.5)



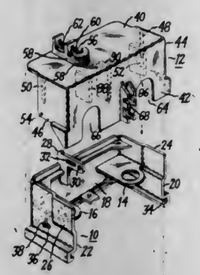
1. A circuit module comprising a circuit board provided with at least one terminal opening therethrough and having an area including said terminal opening in which component leads are attached to the circuit board, and a connector lead having two legs extending generally in the same direction and positioned with a first leg thereof extending into said terminal opening in a direction from the first to the second side of said circuit board and attached to the circuit board, and with the second leg thereof extending in a direction from the first to the second side of the circuit board at a location outside of said area in which the component leads are attached to the circuit board.

3,283,061
WIRE CONNECTOR UNIT
Pehr O. Bolling, 5119 N. Sayre Ave., Chicago, Ill.
Filed Apr. 2, 1965, Ser. No. 445,147
5 Claims. (Cl. 174—87)



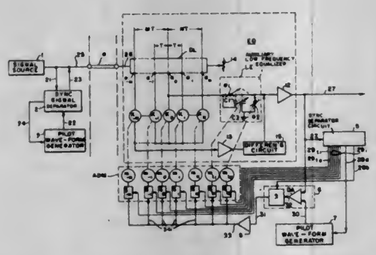
1. A wire connector unit for electrically connecting two insulated wires, said connector unit including a sleeve of deformable metal composition, a tubular sheath of deformable metal composition in which said sleeve is disposed with snug slide fit, said sheath having an open end through which said sleeve has entry to the area within said sheath and having a closed end against which said sleeve is seated to establish a fully confined position of said sleeve within said sheath, said sleeve having two areas thereof spaced apart lengthwise of its longitudinal axis provided with inwardly extending teeth which cut through the insulation of a pair of insulated wires inserted in said sleeve to engage the conductor core of said wires when said sleeve is deformed into engagement with said wires, an inwardly extending projection on said sheath, a recess in said sleeve in which said projection is received, said recess presenting an edge which engages said projection to prevent withdrawal of said sleeve from said fully confined position within said sheath, and a coating of insulation material enclosing said sheath except for the open end thereof, said coating being composed of material having the quality of transmitting forces therethrough to deform said sheath and said sleeve without rupture of said coating.

3,283,062
TERMINAL ENCLOSURE
Franklin R. D'Entremont, Dover, N.H., assignor to General Electric Company, a corporation of New York
Filed Aug. 31, 1965, Ser. No. 484,015
3 Claims. (Cl. 174—138)



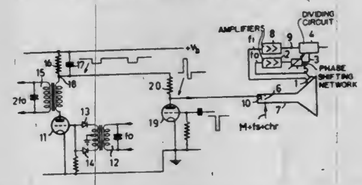
1. A terminal enclosure for secondary terminals comprising, in combination, a pair of cooperating members, one member being a fixed member and including tab means extending from a wall thereof for fixing said fixed member to secondary terminals, raised portions on said fixed member substantially square-shaped for slidably receiving a second member, said second member being a movable member and provided with raised portions which cooperate with said square-shaped raised portions of said fixed member to slidably engage said fixed member in either of two positions, said movable member having openings in one side for passage of secondary terminal leads.

3,283,063
AUTOMATIC EQUALIZER SYSTEM
Masao Kawashima, Yokohama-shi, and Tsukumo Higeta, Kawasaki-shi, Japan, assignors to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan
Filed Apr. 10, 1963, Ser. No. 272,024
Claims priority, application Japan, Apr. 11, 1962, 37/14,613
12 Claims. (Cl. 178—5)



1. A system, comprising signal transmitting means including means for producing a main signal; first pilot waveform generating means for producing a pilot waveform outside the time and waveform of said main signal; and transmitting means for transmitting said pilot waveform together with said main signal through a transmitting medium; and waveform equalizing receiver means for said transmitting means, said waveform equalizing receiver means comprising delay means, a plurality of intermediate taps on said delay means, a main tap on said delay means, an output line, adjustable low-frequency equalizer means connecting the main tap of said delay means to said output line, a plurality of adjuster means connecting corresponding ones of said intermediate taps to said output line, second pilot waveform generating means synchronized with the pilot waveform produced by said first pilot waveform generating means for producing an output pilot waveform corresponding to the transmitted pilot waveform produced by said first pilot waveform generating means comparator means having an input connected to said output line and an input connected to said second pilot waveform generating means for comparing the output waveform of said waveform equalizing means with the output waveform of said second pilot waveform generating means and for producing an error signal corresponding to the difference between said inputs, and correction means responsive to the error signal of said comparator means and coupled between said comparator means and said adjusting means and said low-frequency equalizer for adjusting said adjusting means and said low frequency equalizer.

3,283,064
CIRCUIT ARRANGEMENT FOR USE IN A COLOR TELEVISION RECEIVER
Bernardus Henricus Jozef Cornelissen and Hendrik Breimer, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 10, 1963, Ser. No. 307,871
Claims priority, application Netherlands, Sept. 12, 1962, 283,157
6 Claims. (Cl. 178—5.4)

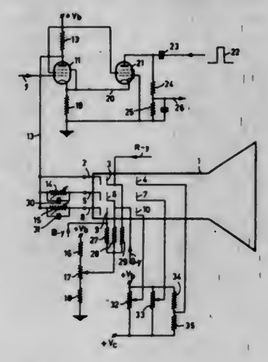


1. In a color television receiving system of the type employing a cathode ray tube having a single electron gun for producing an electron beam and a screen with a picture defining area with a plurality of parallel color strips and indexing strips, and a run-in area with a plurality of run-in strips, whereby said beam scans said run-in area before said picture defining area during the scanning of each line, said system further being of the type including means for producing a run-in signal and an indexing signal when said beam scans said run-in strips and said indexing strips respectively, means for converting said indexing signal to a switching signal, and means for preventing the intensity of said beam from dropping below a predetermined minimum intensity when scanning said picture defining area, whereby said beam always has sufficient intensity that said indexing signal is continuously produced during the scanning of said picture defining area; means for minimizing the value of said predetermined intensity comprising means for increasing the intensity of said beam to a value substantially greater than said predetermined minimum intensity during at least a part of the time said beam scans said run-in area.

3,283,065
REPRODUCTION DEVICE FOR COLOR TELEVISION SYSTEMS

Antonius Boekhorst, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company Inc., New York, N.Y., a corporation of Delaware

Filed Oct. 28, 1963, Ser. No. 319,211
Claims priority, application Netherlands, Nov. 13, 1962, 285,460; May 2, 1963, 292,267
4 Claims. (Cl. 178—5.4)



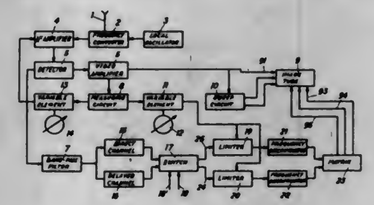
1. A color television receiver comprising display means having a plurality of electron gun means, each gun having a cathode and a control grid, a source of operating potential having first and second terminals, a source of luminance signals comprising an amplifier device with an output electrode, and output circuit connecting said output electrode to said first terminal, whereby said luminance signals are provided at said output circuit, direct current conductive means for connecting said output circuit to each said cathode, a source of a plurality of color difference signals, means applying said color-difference signals to separate control grids, and brightness control means comprising potentiometer means connected between said first and second terminals, said potentiometer means having a tap, and direct current conductive means connecting said tap to all of said control grids, the direct current conductive means for connecting said output circuit to at least one of said cathodes comprising negative feedback resistor means in series between said output circuit and said one cathode, the direct current conductive means for connecting said output circuit to at least another one of said cathodes comprising substantially non-resistive conducting means.

3,283,066
COLOUR TELEVISION SIGNAL DEMODULATING CIRCUITS

Maurice Sauvanet, Levallois, France, assignor to Compagnie Francaise de Television, a corporation of France

Filed Jan. 20, 1964, Ser. No. 338,689
Claims priority, application France, Jan. 21, 1963, 922,046, Patent 1,354,180; Aug. 6, 1963, 943,875
15 Claims. (Cl. 178—5.4)

1. A colour television signal demodulating circuit for use in a colour television system wherein the complex video signal comprises a first picture signal and a subcarrier which is frequency-modulated by a second picture signal, said demodulating circuit comprising: a general input of applying thereto said colour television signal; a first signal-translating network, coupled to said general input, for delivering said first picture signal; a second signal-translating network, coupled to said general input, for delivering said second picture signal; said second signal-translating network comprising at least one frequency demodulator including a limiter and frequency discriminating means mounted in series; and means for

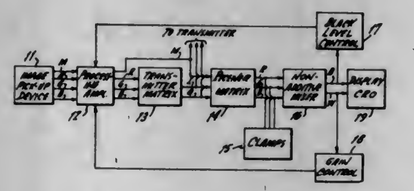


causing the limitation threshold of said limiter to vary automatically as a function of a reference signal included in said video complex signal.

3,283,067
SIGNAL PROCESSING APPARATUS FOR COLOR SYSTEMS UTILIZING SEPARATE LUMINANCE SIGNAL PICKUP

Lucas J. Bazin, Stratford, Robert A. Dischert, Burlington, and David M. Taylor, Edgewater Park Township, Burlington County, N.J., assignors to Radio Corporation of America, a corporation of Delaware

Filed Apr. 3, 1964, Ser. No. 357,030
3 Claims. (Cl. 178—5.4)

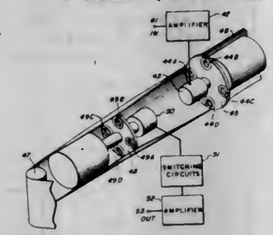


1. In apparatus for processing signals in a color television system in which there are produced by a pickup device a luminance signal and red, green and blue color signals, the combination comprising:
- an amplifier having individual channels respectively for said luminance signal and red, green and blue color signals;
- a first matrix coupled to receive said color signals produced by said pickup device and operative to convert them into two color difference signals for further processing preparatory to transmission, each color difference signal including different proportions of said red, green and blue color signals minus any luminance signal information;
- a second matrix coupled to receive said luminance and color difference signals and operative to convert them into red, green and blue color signals including said luminance signal information;
- means for selecting the one of said converted red, green and blue color signals having the largest instantaneous amplitude to produce a first control signal;
- means for selecting the one of said converted red, green and blue color signals having the smallest instantaneous amplitude to produce a second control signal; and
- means for applying said control signals to utilization apparatus including said amplifier for controlling its operation.

3,283,068
TELEVISION SCAN RATE CONVERSION USING MAGNETIC RECORD

Denis Edward Urry, Kent, and John Lewis Edwin Baldwin, Surrey, England, assignors to Bush and Rank Cintel Limited, a British company

Continuation of abandoned application Ser. No. 34,793, June 8, 1960. This application July 9, 1963, Ser. No. 293,781
Claims priority, application Great Britain, June 18, 1959, 20,964/59
7 Claims. (Cl. 178—6.6)

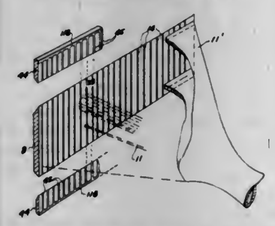


6. Apparatus for the conversion of a first television signal having a specified number of frames per second to a second television signal having a different number of frames per second, said apparatus comprising: first and second magnetic tapes; a recording assembly comprising a plurality of magnetic recording heads mounted to engage each of said tapes in succession to record said first television signal thereon; recording drive means traversing each said recording head over said tapes at a constant speed; recording tape drive means traversing both said tapes past said assembly at the same constant speed; a reproducing assembly comprising a plurality of magnetic read-out heads mounted to engage each of said tapes in succession; reproducing drive means traversing said read-out heads over said tapes at a constant speed; reproducing tape drive means traversing said tapes past said reproducing assembly in opposite alternation at a first speed such that said different number of frames of said recorded signal pass said assembly in one unit of time and at a second speed such that the average over a period of the number of frames passing said assembly in said unit of time is said specified number; and switch means operating to derive an output signal from those of said read-out heads which at any time are engaged with that one of said tapes which is moving at said first speed.

3,283,069
ELECTRON EMISSION CONTROL TUBE AND METHOD

Jack E. MacGriff, 17205 Lahser Road, Detroit, Mich.

Original application Apr. 22, 1960, Ser. No. 24,168, now Patent No. 3,242,261, dated Mar. 22, 1966. Divided and this application Feb. 9, 1966, Ser. No. 526,306
25 Claims. (Cl. 178—6.6)



1. In an electron emission control tube including an evacuated envelope, an electron gun assembly, beam forming and control elements and a deflection system;

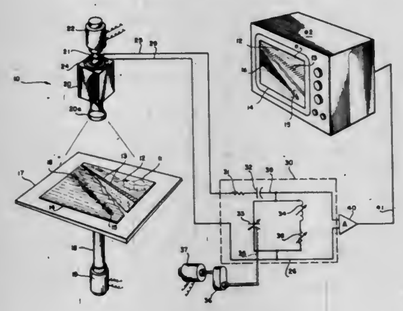
the improvement including an electron beam target assembly comprising a substantially monoplanar electrically insulating support plate, and a series of substantially monoplanar non-intersecting electrical conductors affixed in insulated position to said plate, said conductors terminating at the periphery of the support plate in ends adapted to receive and emit electrons;
and the peripheral extremities of the emission ends external to the envelope, with a portion of said conductors exposed to the cathode ray electron beam, and substantially perpendicular to the tube axis;
said beam being modulated by an exterior control signal transmitted to the electron gun assembly;
said beam being deflectable for scanning individual conductors in said series to provide selective transmission of electrons through said conductors to the exterior of said tube;
and stationary electrodes spaced laterally from the exterior edges of said support plate parallel to and opposite from the respective ends of said conductors.

18. In combination, an elongated insulating plate;
a series of coplanar elongated conductors affixed in insulation position to said plate;
and a plurality of electron emission control tubes adapted for transmitting electrons to the exterior thereof through a series of insulated conductors, the respective conductors of each tube being in contact respectively with corresponding conductors on said exterior insulating plate, with the electrons emitted from each tube simultaneously transmitted to the respective conductors on said exterior insulating plate.

3,283,070
ELECTRICAL APPARATUS AND METHOD FOR SCENE ENHANCEMENT

Morris D. Prince, Atlanta, Ga., assignor to Lockheed Aircraft Corporation, Los Angeles, Calif.

Filed Apr. 8, 1963, Ser. No. 271,330
7 Claims. (Cl. 178—6.8)

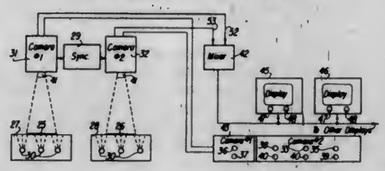


6. Scene enhancement apparatus comprising in combination:
- means for scanning a scene and producing an electrical signal which varies in amplitude as a function of the scene brightness in the scanned direction;
- means for effecting angular movement of the scanning direction with respect to the scene;
- means for operating upon said signal to enhance a selected band of frequencies about a center frequency; and
- means for displaying said enhanced signal.

7. Scene enhancement apparatus comprising in combination:
- means for scanning a scene and producing an electrical

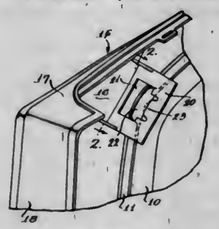
signal which varies in amplitude as a function of the scene brightness in the scanned direction;
means for operating upon said signal to enhance a selected band of frequencies about a center frequency;
means for periodically varying said center frequency over said band of frequencies; and
means for displaying said enhanced signal.

3,283,071
METHOD OF EXAMINING X-RAYS
Samuel W. Rose, Forest Park, and Frank E. Bullard, Hillside, Ill., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed June 4, 1963, Ser. No. 285,395
4 Claims. (Cl. 178—6.8)



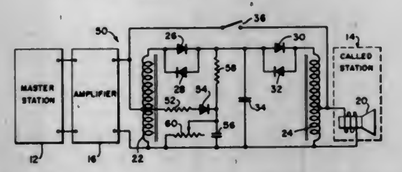
1. A method of conducting an X-ray examination of a subject during which a contrast medium is injected into the subject, said method including the steps of:
(a) taking a first X-ray photograph of the subject prior to the injection of the contrast medium,
(b) taking a similar second X-ray photograph of the subject after the injection of the contrast medium,
(c) positioning said first X-ray photograph before a first television camera and said second X-ray photograph before a second television camera,
(d) converting said first X-ray photograph into a first electrical signal by means of said first television camera and converting said second X-ray photograph into a second electrical signal by means of said second television camera,
(e) reversing the polarity of one of said first and second electrical signals to form a negative picture,
(f) combining said one reversed polarity electrical signal and the other electrical signal to form a composite electrical signal,
(g) providing a television reproduction of said composite electrical signal, and
(h) positioning one of said first and second X-ray photographs so that said composite electrical signal represents said first and second X-ray photographs exactly superimposed.

3,283,072
PICTURE TUBE CATCH DEVICES
John A. Pestka, Park Ridge, and Dominick A. Massa and Donald H. Larson, Arlington Heights, Ill., assignors to Warwick Electronics Inc., a corporation of Delaware
Filed Sept. 27, 1963, Ser. No. 312,224
9 Claims. (Cl. 178—7.9)



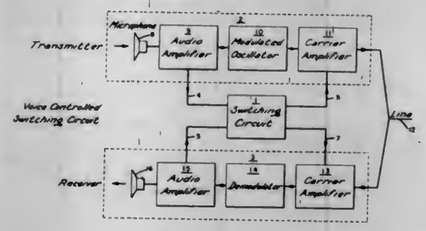
1. In a television set having a cabinet and a picture tube with an integral implosion shield, means for holding the tube to the cabinet comprising, a plurality of members fixed within the cabinet, each of said members being flexible and having means defining an interior opening for receiving a portion of the periphery of the implosion shield, and a coplanar tab on each of said members extending into the opening and engageable behind the implosion shield for locking the member to the tube.

3,283,073
INTERCOMMUNICATION SYSTEM AND EAVESDROPPING PREVENTING MEANS THEREFOR
Richard H. Campbell, Rockford, Ill., assignor to Webster Electric Company, Racine, Wis., a corporation of Delaware
Filed Nov. 30, 1962, Ser. No. 241,332
16 Claims. (Cl. 179—1)



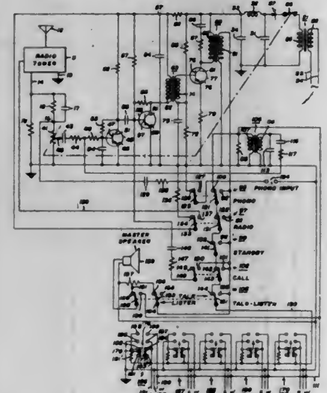
1. In a signaling system, bidirectional amplifying means providing a high level alternating current output signal, station means including a bilateral electroacoustical transducer providing a low level alternating current output signal, and a signaling channel connected between the amplifying means and the station means for transmitting high level signals from the amplifying means to the transducer and for preventing the transmission of low level signals from the transducer to the amplifying means, said channel including two pairs of oppositely poled and parallel connected diodes, the pairs being connected in series at a point of connection.

3,283,074
VOICE-CONTROLLED COMMUNICATION SYSTEM
Antal Csicsatka, Utica, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 31, 1962, Ser. No. 248,704
7 Claims. (Cl. 179—1)



1. A voice-controlled communication station comprising:
(a) an acoustic-electric transducer responsive to a voice to provide an audio frequency electrical signal;
(b) monostable electronic switch means connected to said acoustic-electric transducer and responsive to the audio frequency electrical signal therefrom to change from a first mode of conduction to a second mode of conduction;
(c) transmitter means connected to said switch means and responsive to the mode of conduction thereof to enable transmission only during said second mode of conduction; and
(d) time delay means connected to said switch means to provide a delayed change from said second mode of conduction to said first mode of conduction in the absence of an audio frequency electrical signal from said acoustic-electric transducer, whereby said transmitter is enabled in response to voice at said transducer more quickly than inhibited in response to cessation of voice, the timing of said transmitter means and delay means being such that the transmitter remains enabled between words in normal voice transmissions.

3,283,075
LOAD CIRCUITS FOR INTERCOMMUNICATION SYSTEM
Harwood B. Moore, Sauquoit, N.Y., assignor to General Electric Company, a corporation of New York
Filed Mar. 26, 1963, Ser. No. 267,976
3 Claims. (Cl. 179—1)



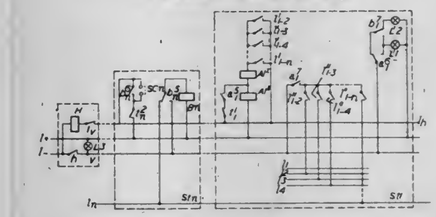
1. A load circuit for an intercommunication system having an audio amplifier and a plurality of remote stations adapted to be selectively connected to a signal output line of the amplifier by means of a plurality of control switches, comprising a load resistor and switching means forming a part of each of said control switches, each of said switching means having reception, inactivation, and transmission positions with said switching means connecting the associated load resistor into said circuit through said signal output line in lieu of the associated remote station whenever the associated control switch is in the inactivation and the transmission positions which disconnects the remote station from the signal output line.

3,283,076
VOLUME CONTROL CIRCUITS FOR INTERCOMMUNICATION SYSTEMS
Harwood B. Moore, Sauquoit, N.Y., assignor to General Electric Company, a corporation of New York
Filed Mar. 26, 1963, Ser. No. 267,977
3 Claims. (Cl. 179—1)



2. An intercommunication station comprising a listen signal input circuit and a talk signal output circuit, a loudspeaker, a potentiometer having an adjustable tap, and switching means having a listen position for electrically connecting said potentiometer across said listen signal input circuit and for electrically connecting said loudspeaker between said adjustable tap and an end of said potentiometer, said switching means further having a talk position for electrically connecting said loudspeaker across said talk signal output circuit and for electrically disconnecting said potentiometer from across said listen signal input circuit.

3,283,077
CIRCUIT ARRANGEMENT FOR LOUDSPEAKING INTERCOMMUNICATION SYSTEMS
Rudolf Bayer, Vienna, Austria, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed May 28, 1963, Ser. No. 283,864
Claims priority, application Austria, June 7, 1962, A 4,591/62
9 Claims. (Cl. 179—1.4)

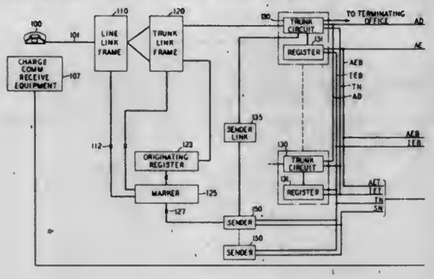


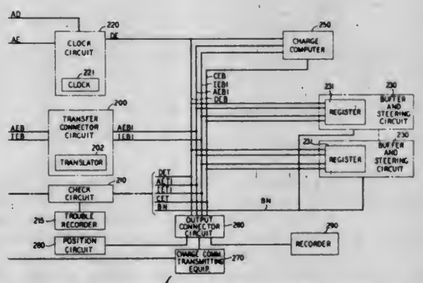
1. A circuit arrangement for transducer equipped loudspeaking intercommunication systems having a plurality of stations, voltage source means having positive and negative terminals, positive and negative leads common to all of said stations connected to said terminals, individual leads coupled to the transducer at each of said stations, line leads common to all of said stations for carrying communications therebetween, connecting leads individual to each of said stations traversing all of said stations, a central amplifier unit connected to said line leads, first and second relay means at each of said stations, calling means at each of said stations comprising means for connecting said first relay means in calling ones of said stations to said positive and negative leads for operating said first relay means, means responsive to the operation of said calling means and said first relay in said calling station for connecting said second relay means in called ones of said stations to said positive and negative leads for operating second relay, and means responsive to the operation of said first and second relays for connecting said individual leads to said common line leads at said calling and said called stations to communicatively interconnect said calling one of said stations and said called one of said stations.

3,283,078
TELEPHONE CALL CHARGE DETERMINATION SYSTEM
Robert C. Avery, Jackson Heights, N.Y., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 5, 1963, Ser. No. 321,598
15 Claims. (Cl. 179—9)

1. In a telephone switching system having a plurality of trunk circuits, a plurality of trunk registers individually associated with respective ones of said trunk circuits, means for registering information pertaining to a call connection over one of said trunk circuits in the associated one of said trunk registers, buffer register circuitry, call charge computation means for translating information pertaining to a call connection into charges for said call connection, information transfer busses, means in-

cluding said information transfer busses operative upon termination of a call connection over one of said trunk circuits for selectively interconnecting the associated one of said trunk registers with said buffer register circuitry for transferring call connection information from said trunk register to said buffer register circuitry, means including said information transfer busses for providing



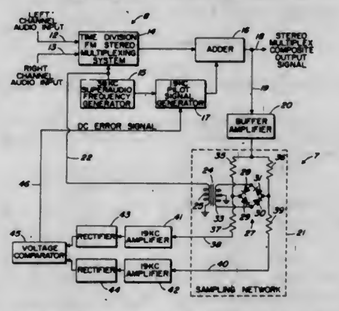


said call connection information to said call charge computation means and for registering said charges for said call connection in said buffer register circuitry, output utilization circuitry, and means including said information transfer busses for providing said call connection information and said charges from said buffer register circuitry to said output utilization circuitry.

3,283,079
PHASE CONTROL NETWORK FOR A STEREOPHONIC SYSTEM

Charles E. Dixon, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed July 14, 1964, Ser. No. 382,610
10 Claims. (Cl. 179—15)

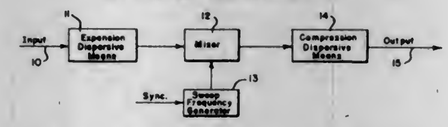


1. A phase control network for a stereophonic system wherein a pilot signal is transmitted along with a harmonically related signal centered at a superaudio frequency, said network comprising: superaudio frequency generating means producing a superaudio signal at a predetermined frequency; pilot signal generating means producing a pilot signal at a predetermined frequency that is harmonically related to said predetermined superaudio signal frequency; sampling means including a diode bridge and a transformer, said transformer being connected to opposite junctions of said diode bridge, said sampling means receiving said superaudio and pilot signals and producing a first output signal that includes a portion of said pilot signal and a second output signal that includes a different portion of said pilot signal; said first and second output signals being taken from the other opposite functions of said diode bridge; first and second rectifying means receiving said first and second output signals, respectively, from said sampling means; and a voltage comparator connected to said rectifying means and producing an error signal the magnitude of which is determined by the difference between said first and second output signals, said error signal controlling the phase of one of said generating means to thereby automatically and precisely control the phasing between said superaudio and pilot signals.

3,283,080
SWEEP-HETERODYNE APPARATUS FOR CHANGING THE TIME-BANDWIDTH PRODUCT OF A SIGNAL

William J. Caputi, Jr., East Northport, N.Y., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware

Filed July 6, 1962, Ser. No. 208,070
19 Claims. (Cl. 179—15.55)



1. Signal translation apparatus comprising,
means for producing a dispersed signal having a plurality of different frequency components that are progressively delayed as a function of frequency thereby to impart a sloping frequency-time characteristic to said dispersed signal,
means for producing a sweep frequency signal having a frequency-time characteristic whose slope is different from that of said dispersed signal,
mixing means for mixing said expanded dispersed signal and said sweep frequency signal to produce a resultant dispersed signal whose frequency-time characteristic has a finite desired slope relative to that of said dispersed signal,
compression dispersive means having a frequency-time characteristic whose slope is substantially equal and opposite to that of said resultant dispersed signal for compressing the time period of occurrence of frequency components of said resultant dispersed signal.

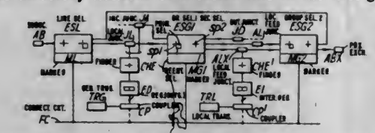
3,283,081
SELECTION SYSTEMS

Jacques Pierre Louis Basset and Rene Leon Bizollier, Paris, and Pierre Albert Camus, Antony, Seine, France, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed May 9, 1962, Ser. No. 193,502
Claims priority, application France, May 10, 1961, 861,351, Patent 1,296,679
5 Claims. (Cl. 179—18)

1. In an automatic telecommunication switching system, first and second groups of lines with the lines of each group having individual directory numbers assigned

thereto, line switching means terminating the lines of the first group of lines, group switching means terminating the lines of said second group of lines, first and second control equipments, outgoing register means included in said first control equipment for registering called line directory numbers, general translating means associated with said outgoing register means in said first control equipment, intermediate register means included in said second control equipment for registering called line directory numbers, local translating means associated with said intermediate registering means in said second control equipment, said translating means in the first control equipment operated responsive to the receipt of a portion of the directory number of a called line in the first group

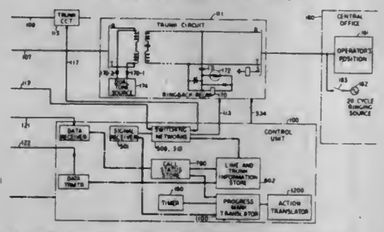


for identifying the called line as belonging to said first group and for controlling the said line switching means to extend a connection from the calling line to the desired called line in said first group of lines responsive to the receipt of the balance of the directory numbers, means in said first control equipment operated responsive to the receipt of a portion of the directory number of a called line in the said second group of lines for transferring the received portion of the directory number to the said second control equipment, and means in the second control equipment including said local translating means operated responsive to the receipt of the directory number of a called line in said second group of lines to control the said group and line switching means to extend a connection from the calling line to the desired called line.

3,283,082
TELEPHONE SWITCHING SYSTEM INCORPORATING SELECTIVELY CONTROLLED RINGBACK

Frank S. Vigliante, Piscataway Township, Middlesex County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed May 24, 1963, Ser. No. 282,956
13 Claims. (Cl. 179—27)

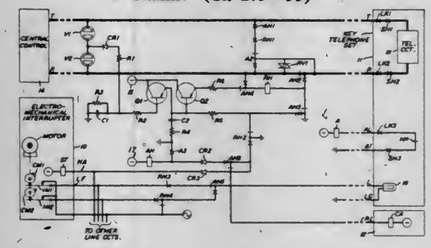


1. A telephone switching system comprising a telephone central office, a plurality of remote switching units, a control unit common to said switching units, data trunks for connecting said control unit to each of said switching units, a plurality of extensions terminating at each of said switching units, a plurality of central office trunks terminating at each of said switching units and selectively connectable through said switching units to said extensions, and signaling trunks interconnecting each of said switching units and said control unit for trasmitting signaling information from said switching units to said control unit, means for detecting a predetermined supervisory condition exhibited by calls extended between said extensions and said central office, means in said central office trunks for converting ringing signals from said central office to signaling information recognizable by said control unit, means in said control unit for generating and transmitting control data over said data trunks to control said switching units to connect the central office trunks serving calls exhibiting said predetermined supervisory condition to said signaling trunks, and means in said control unit for detecting the appearance of said converted recognizable signaling information on said signaling trunks.

3,283,083
TELEPHONE SUBSCRIBER'S LINE CIRCUIT

Donald A. MacLeod, Oakland, Calif., assignor to American Telephone and Telegraph Company, New York, N.Y., a corporation of New York

Filed Mar. 13, 1963, Ser. No. 264,829
8 Claims. (Cl. 179—99)

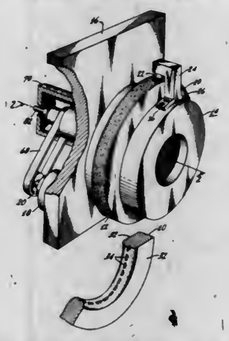


1. In a line circuit for a key telephone system including a subscriber's telephone line and a telephone set connected thereto, local signaling means, means responsive to ringing current from a remote location for initiating the operation of said local signaling means, circuit means responsive to the termination of said ringing current after a predetermined interval of time following said termination for disabling said local ringing means and means for holding said subscriber's line, said initiating means and said holding means each including a common multifunction relay connectable across said telephone line, the impedance of said relay being substantially equivalent to the impedance of said telephone set, thereby avoiding any requirement for a holding bridge network as a part of said line holding means.

3,283,084
FLUID SUPPORTED APPARATUS

Albert L. Witchey, Erlton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

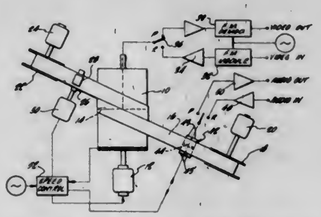
Filed May 17, 1962, Ser. No. 195,464
9 Claims. (Cl. 179—100.2)



9. Apparatus for utilizing pressurized air comprising (a) a cylindrical ring having an inner periphery semicircular in cross-section,

(b) a cylinder having a notch around the outer periphery thereof, said notch being semicircular in cross-section and having a radius larger than said semicircular ring inner periphery,
(c) said ring being disposed around said cylinder with said ring inner periphery nested in said notch,
(d) said cylinder having a plurality of spaced orifices therein extending from the surface of said notch, said orifices respectively being oriented at predetermined acute angles with respect to lines tangent to said cylinder at the entrace thereof into said cylinder,
(e) a shaft connected to said cylinder,
(f) bearing means rotatably supporting said shaft,
(g) said shaft having an axial bore therein,
(h) said cylinder having passages therethrough communicating said orifices with said shaft bore,
(i) said ring having a plurality of scoop notches therein spaced from each other along said inner periphery thereof, and
(j) means for flowing said pressurized air through said shaft bore, said passages and said orifices and onto said scoop notches for simultaneously driving said ring and establishing an air bearing for supporting said ring.

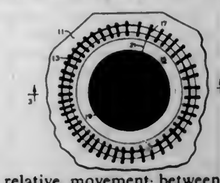
3,283,085
METHOD AND APPARATUS FOR RECORDING AND REPRODUCING VIDEO AND AUDIO SIGNAL SIMULTANEOUSLY ON MAGNETIC TAPE
James U. Lemke, Los Angeles, Calif., assignor, by mesne assignments, to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 22, 1962, Ser. No. 231,935
5 Claims. (Cl. 179—100.2)



1. A method of recording two separate signals on one side of a single magnetic tape comprising the steps of recording one signal in a first track extending lengthwise of the tape and subsequently recording the second signal at a saturation level in a plurality of tracks extending in spaced apart parallel relationship at a small oblique angle to the margin of the tape and overlying the first track, each of said plurality of tracks being substantially narrower in width than the first track, the width of the first track being sufficiently large to span several of the overlying narrow tracks in a direction perpendicular to the edges of the tape.

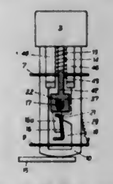
3,283,086
VERSATILE EXTENSIVE AREA SOUND REPRODUCER OR AUDIO TRANSDUCER
Willis F. Evans, 2 Cousineau Road, Navy Point, Warrington, Fla.
Filed June 17, 1963, Ser. No. 288,282
10 Claims. (Cl. 179—115.5)

1. An extensive area transducer comprising, in combination, a flat diaphragm; means for resiliently supporting the diaphragm in a taut state; a continuous conductor coil deployed on both sides in spreading configuration from the central area of the diaphragm toward its edges; and means disposed adjacent one side of the diaphragm for producing magnetic flux lines linking substantially all increments of the conductor to generate current build-up



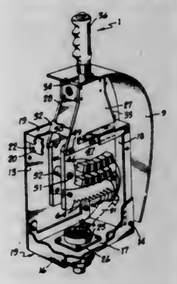
therein upon relative movement between the flux lines and conductor coil.

3,283,087
BUTTON ARRANGEMENT IN MAGNETIC RECORDING AND/OR PLAY-BACK APPARATUS
Arne Appel, Vienna, Austria, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed June 16, 1964, Ser. No. 375,605
Claims priority, application Austria, June 19, 1963, A 4,910/63
7 Claims. (Cl. 200—5)



1. In combination with the operating members of a key array for controlling operations of a magnetic tape recorder/reproducer comprising, electric contact means, a pivotally mounted holding bar, means for pivoting said holding bar in response to movement of a member of said array from its rest position to its operative position, means supporting said holding bar for movement transversely of its longitudinal axis in the plane of movement of said member; and means for imparting said transverse movement to said holding bar for closing said electric contact means.

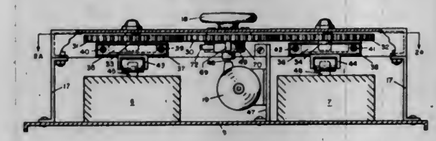
3,283,088
MULTIPLE CIRCUIT SWITCH APPARATUS WITH IMPROVED PIVOT ACTUATOR STRUCTURE
Jim Scow, Hampton, Va., and James L. Jones, Santa Clara, Calif., assignors to the United States of America as represented by the National Aeronautics and Space Administration
Filed Sept. 1, 1965, Ser. No. 484,489
25 Claims. (Cl. 200—6)



1. A multiple circuit switch apparatus comprising a support frame, an operating lever having a handle and

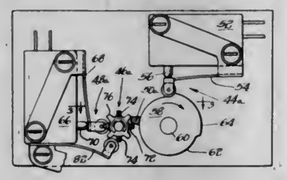
circuit actuating means, said operating lever being pivotally supported on said frame for movement of said circuit actuating means along an arc in a given plane, a plurality of circuit switching means on said support frame and spaced apart along said arc, means for moving said operating lever and circuit actuating means transverse to said plane to cause operative engagement between said circuit actuating means and said switching means, and said switching means being spaced transversely from said plane and being out of operative engagement by said actuating means when said actuating means is in said plane.

3,283,089
ELECTRIC CONTROL DEVICE WITH AN IMPROVED MECHANISM FOR OPERATING CIRCUIT INTERRUPTING MEANS
Robert G. Anderson, Streetsville, Ontario, and William Donald, Toronto, Ontario, Canada, assignors to Canadian Westinghouse Company, Limited, Hamilton, Ontario, Canada
Filed Sept. 3, 1964, Ser. No. 394,107
25 Claims. (Cl. 200—18)



1. In combination, a pair of circuit interrupters, means supporting said circuit interrupters in a spaced relationship, each of said circuit interrupters comprising a pair of contacts and an operating member reciprocal between operating positions to open and close the associated contacts, a mechanism for operating said circuit interrupters, said mechanism comprising a unidirectional motor, an actuator for each of said circuit interrupters, means supporting each of said actuators for reciprocal movement, means connecting each of said actuators to the associated operating member whereby reciprocation of the actuator will operatively reciprocate the associated operating member, and means connecting said actuators with said motor whereby unidirectional operation of said motor will operatively reciprocate both said actuators.

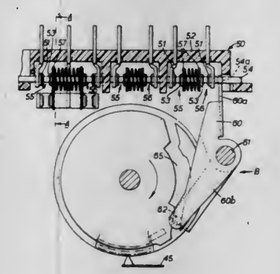
3,283,090
NUMBER-INDICATING SWITCH ASSEMBLY
Donald C. Hausser, Chicago, and Raymond L. Meeder, Palos Heights, Ill., assignors to Nuclear-Chicago Corporation, Des Plaines, Ill., a corporation of Delaware
Filed Apr. 15, 1963, Ser. No. 272,965
14 Claims. (Cl. 200—18)



5. A gear-actuated alternating-condition switch assembly comprising

(a) a switch having a reciprocating actuator,
(b) a gear having a first portion with an even number of teeth and a second portion with only alternate members of said teeth,
(c) and intermittent drive means repeatedly engaging the first portion to rotate it through an angle corresponding to one tooth thereof,
(d) the actuator being in contact with the second portion for operation of the switch.

3,283,091
TIMER WITH ARC SUBTENDING CAM SURFACE
Roger John Cartier, Vimercate, Italy, assignor to Controls Company of America, Melrose Park, Ill., a corporation of Delaware
Filed Apr. 28, 1964, Ser. No. 363,192
10 Claims. (Cl. 200—38)

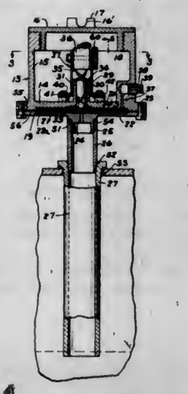


1. An interval timer comprising,
a plurality of switches,
a plurality of programming cams,
means for rotating said cams at intervals to operate said switches sequentially in accordance with the desired programme,
a sub-interval cam having a primary inner subtending surface and a secondary outer peripheral surface,
means for rotating said sub-interval cam in a continuous manner in phase with said programming cams,
a cam follower biased into engagement with the sub-interval cam,
a switch,
a coupling connecting said cam follower to said switch,
control means operative to prevent said cam follower from engaging the primary surface of the sub-interval cam, and
means carried by one of said programming cams for actuating said control means.

3,283,092
LIQUID LEVEL INDICATOR
Norman L. Grostick, Lexington, Mich., assignor to The Bin-Dicator Company, Detroit, Mich., a corporation of Michigan
Filed Apr. 15, 1963, Ser. No. 272,890
6 Claims. (Cl. 200—61.2)

1. In a sensing device which includes a housing and a diaphragm on the housing movable in response to differential pressure on opposite sides thereof, a switch adjacent one of said sides of said diaphragm and adapted to be actuated by movement of said diaphragm, means for mounting and adjusting the position of said switch toward and away from said diaphragm which comprises
support means on which said switch is mounted,
a bracket member mounted on said housing,

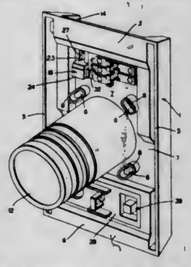
and eccentric means between said support means and said bracket means for universally moving said support member and, in turn, said switch toward and away from said diaphragm.



3,283,093
PLASTIC INLET VALVE FOR CENTRAL VACUUM CLEANING SYSTEM

Harold P. Bishop, deceased, late of Louisville, Ohio, by Mabel G. Bishop, executrix, 508 S. Mill St., Louisville, Ohio

Filed Apr. 27, 1965, Ser. No. 451,354
13 Claims. (Cl. 260—61.6)



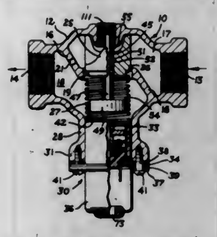
1. An inlet valve construction including a body portion and a lid, means hingedly connecting one edge portion of the lid to an adjacent edge portion of the body portion, a plurality of terminals on said body portion, an electric circuit connected to said terminals, a motor in said circuit, a sliding contact movable relative to said terminals and flexible means rigidly connected at one end to said sliding contact and pivotally connected at the other end to said lid, whereby movement of the lid to a predetermined partially open position will move the sliding contact into contact with certain of said terminals to operate the motor and movement of the lid to further open position will move the sliding contact to position to cut off the motor.

3,283,094
FLOW CONTROL VALVE AND SWITCH

Kenneth R. Lung, Morehead City, N.C., assignor to The Tait Manufacturing Company, Dayton, Ohio, a corporation of Ohio

Filed Apr. 23, 1964, Ser. No. 362,082
6 Claims. (Cl. 200—81.9)

1. A valve and switch combination wherein said switch is operated in response to a predetermined flow through said valve, said valve comprising body means having an inlet and outlet passage, means dividing said body into an inlet chamber and an outlet chamber communicating respectively with said inlet passage and said outlet passage, said dividing means including means defining a passageway providing fluid communication between said inlet chamber and said outlet chamber, poppet means slidably mounted in said passageway for movement from one of said chambers through said passageway into the other one of said chambers in response to flow through said valve, means normally biasing said poppet toward said one chamber to a normal position, an operating member slidably mounted on said poppet, a switch mounted on said

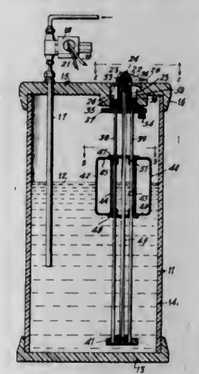


valve in sealed relationship with respect to said other chamber, said switch including a fluid tight non-magnetic housing having a contact actuating member therein, one of said members being magnetic and the other being of magnetically permeable material, means carried by said operating member for maintaining said operating member spaced from said switch with said poppet in said normal position, and the effective surface area of said poppet being coordinated and correlated with respect to the strength of said poppet biasing means to move said operating member into and out of switch operating relation in response to a predetermined flow through said valve.

3,283,095
FLOAT CONTROLLED MAGNETICALLY OPERATED SWITCH WITH A ROD FOR ROTATING A MAGNET INCLUDING A PAIR OF OPPOSED CONNECTED HELICES

Frank M. Iannelli, 5 Penwood Road, Livingston, N.J.

Filed Sept. 18, 1964, Ser. No. 397,450
3 Claims. (Cl. 200—84)



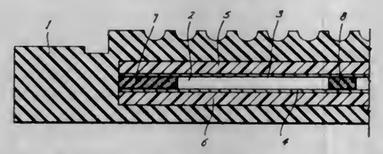
1. A float-controlled magnetically operated switch for use in a liquid holding tank that has a non-magnetic top closure, a pair of contacts at least one of which is a leaf contact and magnetic with one end fixedly mounted and with its other end free and resiliently flexible toward and from the other contact, means mounting said contacts on

the upper side of said top closure, a permanent bar magnet mounted at the opposite side of said top closure to rotate about an axis, the free end of said magnetic contact being responsive to the magnetic field of the magnet, providing for movement of said magnetic contact into and out of engagement with the other contact upon turning of the bar magnet in opposite directions respectively, and means for rotating said magnet about said axis including an helical rod rotatable on the second-mentioned side of top closure about said vertical axis and connected to said bar magnet to turn it about said axis upon rotation of the rod, and a float adapted to be mounted in said tank for movement in accordance with the changes in the liquid level in the tank and meshing with said helical rod to rotate the rod upon vertical movement of the float, said rod having portions helically twisted in opposite directions from an intermediate point in the length thereof whereby when the float is moved along said rod the magnetic contact will be successively moved into and out of engagement with the other contact.

3,283,096
MAT SWITCH HAVING A PAIR OF REINFORCING MEMBERS ON THE OUTSIDE SURFACE OF THE CONTACT PLATES

Dee D. Horton, Corpus Christi, Tex., assignor to Horton Automatics, Inc., Corpus Christi, Tex., a corporation of Texas

Filed July 16, 1964, Ser. No. 383,149
5 Claims. (Cl. 200—86)

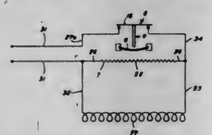


5. In a switching mat, a tread housing, a chamber in the said tread housing, opposing contact members in said chamber having outer and inner surfaces, means for preventing buckling or creasing of said contact members consisting of sheets of reinforced plastic material generally contiguous with the outer surface of each of said contact members and abutting the upper and lower inside walls of said chamber, respectively, the inner surfaces of said contact members being adapted to be moved into contacting relation with each other and to complete an electrical circuit and means for maintaining said members yieldably apart.

3,283,097
THERMO-ELECTRIC TIMER

Merle R. Koeppel and Ludwig E. Dobrovolny, Roanoke, Va., assignors to Graham-White Sales Corporation, Salem, Va., a corporation of Virginia

Filed June 6, 1962, Ser. No. 200,462
4 Claims. (Cl. 200—122)

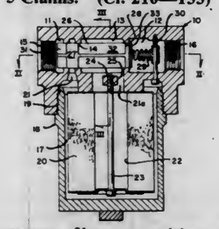


1. In an electrical circuit connectable to a power source, the combination of a self-inductive electrical device and a thermo-electric timer for cyclically operating said device, said timer comprising a normally closed thermal switch connected in series with said device, and a heater connected in series with said switch and in parallel with said device respectively for heating said switch and preventing arcing thereat on opening thereof, said switch throughout the connection of said circuit to said power source being responsive to the condition of said heater and opening and closing after predetermined intervals respectively on energizing and de-energizing of said heater.

3,283,098
HIGH PRESSURE FILTER HAVING A RELIEF VALVE IN THE BASE

Edwin K. Bair, Roseville, Calif., and Robert F. Hodgson, Canfield, Ohio, assignors to Commercial Shearing & Stamping Company, a corporation of Ohio

Filed June 15, 1964, Ser. No. 375,017
5 Claims. (Cl. 210—133)

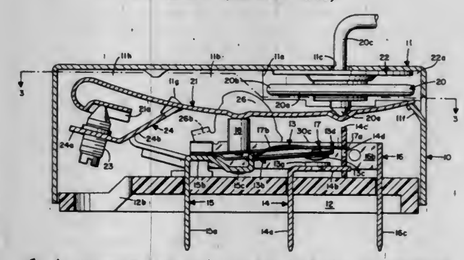


1. A high pressure filter comprising a base having spaced inlet and outlet chambers and an intermediate diversion chamber, an inlet port communicating with the inlet chamber, an outlet port communicating with the outlet chamber, a passage extending through said inlet, outlet and diversion chambers, a filter chamber on said base, filter means in said filter chamber, a first filter port means communicating from one side of the filter means to the inlet chamber, a second filter port means continuously communicating from the other side of the filter means to the diversion chamber, a sliding spool in the passage movable lengthwise thereof, means on the spool acting in one position of the spool to close all of the chambers in the base, in a second position to open the inlet chamber to the first filter port and the diversion chamber to the outlet chamber and in a third position opening all chambers through the passage to provide communication directly from the inlet to the outlet ports bypassing the filter chamber and resilient means continuously urging the spool means to the first position, said resilient means being adjusted to permit the spool to move successively from the first to the third position at pre-selected fluid input pressures.

3,283,099
HEAT RESPONSIVE SNAP ACTING SWITCH

John Liebermann, Columbus, and Donald L. Coning, Gahanna, Ohio, assignors to Ranco Incorporated, Columbus, Ohio, a corporation of Ohio

Filed Jan. 15, 1965, Ser. No. 425,883
5 Claims. (Cl. 200—140)



1. A pressure responsive control device comprising: (a) a housing;

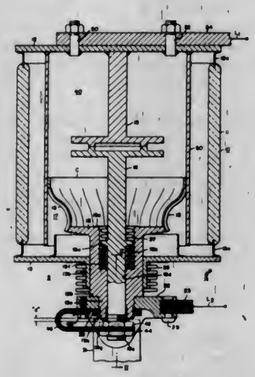
(b) an electric switch in said housing including a movable actuating member;
(c) a vapor filled expansible power element;
(d) means interconnecting said power element and said switch actuator comprising a generally flat spring strip having one end supported by said housing at one end of said housing and adjacent to said power element and the intermediate portion thereof engaging said actuator, the other end of said spring having a reversely curved portion adjacent the end of said housing opposite said one end thereof;
(e) a lever pivoted to an intermediate portion of said housing and having a swingable end extending adjacent to said reversely curved end of said spring;
(f) a thrust member carried by said swingable end of said lever and engaging the reversed portion of said spring;
(g) an arm connected to said lever; and
(h) manually operable means rotatably supported by said housing and engaging said arm for swinging said arm to shift said spring.

3,283,100

VACUUM CIRCUIT INTERRUPTER WITH CONDENSING SHIELD SERVING AS ONE OF THE MAIN CONTACTS

Russell E. Frink, Forest Hills, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 16, 1964, Ser. No. 411,259
11 Claims. (Cl. 200—144)



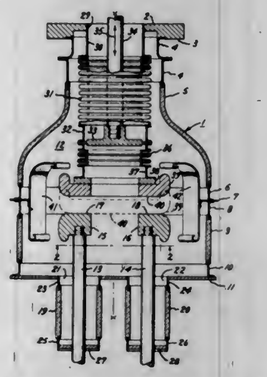
1. A vacuum-type circuit interrupter including a tubular envelope of insulating material, a tubular metallic condensing shield disposed internally of said envelope in generally concentric relationship with respect to said envelope for protecting said envelope from being coated with metallic particles, a pair of separable arcing contacts disposed within said condensing shield, a pair of separable main contacts within said envelope in electrically parallel relationship with respect to said separable arcing contacts, means separating the main contacts during the opening operation before separation of the arcing contacts, the condensing shield being electrically connected to one of the separable arcing contacts in the closed-circuit position, and said tubular metallic condensing shield comprising a component part of one of said separable main contacts to assist in carrying the continuous current through the interrupter.

3,283,101

DOUBLE-BREAK VACUUM SWITCH WITH BELLOWS MOUNTED MOVABLE BRIDGING CONTACT

James D. Cobine, Rexford, and Raymond H. Johnston, Cohoes, N.Y., assignors to General Electric Company, a corporation of New York

Filed Nov. 18, 1964, Ser. No. 412,159
4 Claims. (Cl. 200—144)



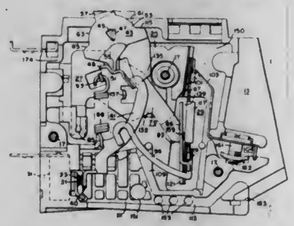
1. A double-break vacuum switch adapted to effect simultaneous contact closing and opening operations between two pairs of serially connected closable gaps upon actuation and comprising:
(a) An evacuable envelope, at least a portion of which is composed of insulating material to electrically isolate respective electrode leads;
(b) A pair of fixed electrode support rods insulatingly and hermetically sealed through a first wall of said envelope,
(bb) Said electrode support rods being parallel with one another and with the longitudinal axis of said envelope, and
(c) A fixed electrode mounted upon the inner end of each of said support rods, each of said fixed electrodes containing an arcing surface disposed in the same plane which is normal to said longitudinal axis
(d) A movable electrode support rod hermetically sealed through a second wall of said envelope, opposed to said first wall, by means of a first resilient vacuum-tight bellows sealed to said envelope at its one end and to the periphery of a flange on said movable electrode rod at its other end,
(dd) The interior of said first bellows being open to ambient pressure;
(e) A movable annular electrode member having a diameter and radial thickness sufficient to allow said annular electrode to make contact with the arcing surfaces of said fixed electrodes when urged into circuit making position to rest in a plane normal to said longitudinal axis, the centroid of said movable annular electrode being along said longitudinal axis, and
(f) A second flexible bellows affixed at one end to a disc rigidly affixed to said movable electrode rod and at the other end thereof to said movable annular electrode and being the only mechanical support and constraint connection between said movable electrode and said movable electrode support rod,
(ff) Said second bellows being characterized in exhibiting a ratio of forces of longitudinal motion to forces of rotational motion upon circuit opening as to allow said movable electrode to be withdrawn from said fixed electrodes at an angle to a plane which is normal to said longitudinal axis, whereby in the event of irregularities of contact surfaces, both of said gaps are simultaneously opened upon actuation of said movable electrode support rod in a circuit opening direction.

3,283,102

CIRCUIT INTERRUPTER WITH IMPROVED VENTING MEANS

Francis L. Gelzheiser, Fairfield, Conn., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Original application Aug. 25, 1960, Ser. No. 51,963. Divided and this application Apr. 12, 1965, Ser. No. 470,275
4 Claims. (Cl. 200—144)



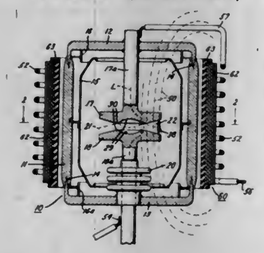
1. A circuit breaker comprising an insulating housing, said insulating housing comprising insulating barrier means separating said housing into two adjacent compartments, a separate circuit-breaker mechanism in each of said compartments, each of said mechanisms comprising a pair of contacts separable to establish an arc, each of said compartments comprising an arc-extinguishing and vent-passage area, said arc-extinguishing and vent-passage areas being separated by said barrier means, and opening means in said barrier means at said arc-extinguishing and vent-passage areas permitting passage of arc gases between said arc-extinguishing and vent passage areas.

3,283,103

MEANS FOR CONTROLLING PHASE RELATIONSHIP BETWEEN FLUX AND CURRENT IN A VACUUM INTERRUPTER

Allan N. Greenwood and Joseph W. Porter, Media, Pa., assignors to General Electric Company, a corporation of New York

Filed Dec. 6, 1963, Ser. No. 328,601
6 Claims. (Cl. 200—147)



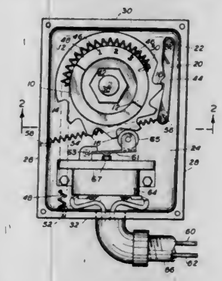
1. An alternating-current circuit interrupter of the vacuum type that is adapted to interrupt arcing currents having a predetermined maximum instantaneous value comprising:
(a) a highly evacuated envelope,
(b) a pair of relatively movable contacts disposed within said envelope and separable to establish a gap therebetween across which an arc is adapted to be formed,
(c) field-producing means for developing across said gap an axial magnetic field that has its lines of force extending across said gap generally parallel to the longitudinal axis of said arc,
(d) means for causing said field-producing means to be energized by a current that varies directly in accordance with the arcing current,
(e) means including a saturable core of magnetic material spaced from said arcing gap and magnetically in parallel with said gap for shunting a high percentage of the flux developed by said field-producing means through a path remote from and bypassing said gap during low arcing currents,
(f) said saturable core saturating when said arcing current reaches a predetermined level that is substantially beneath said maximum instantaneous value so that flux resulting from arcing current in excess of said predetermined level of current is available to provide said axial magnetic field across said gap.

3,283,104

ENGINE SHUTDOWN RESET CONTROL

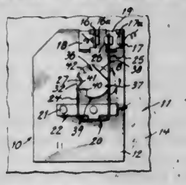
Arthur F. Sholl, 7906 Josept St., Fritioph M. Nelson, 2864 Titus, and Adolph W. Gebhardt, 5704 North 52, all of Omaha, Nebr.

Filed Nov. 16, 1964, Ser. No. 411,371
6 Claims. (Cl. 200—153)



1. A device for re-starting an engine comprising in combination:
a housing;
switch means mounted in said housing, said switch means operable when actuated to effect a re-starting of the engine;
switch actuating means movably mounted in said housing and engageable with said switch means, said switch actuating means operable upon movement to intermittently actuate said switch means;
means mounted in said housing, engaged with and tending to move said switch actuating means;
stop means mounted in said housing, engaged with said switch actuating means and preventing said switch actuating means from moving; and
release means insertable between said switch actuating means and said stop means and engageable with said stop means to effect a release of said switch actuating means by said stop means, said switch actuating means movable a predetermined distance to actuate said switch means;
said release means simultaneously disposed in the path of said switch actuating means and engageable by said switch actuating means after movement thereof said predetermined distance, defining thereby the limit of said distance of movement, while positioned to effect the release by said stop means.

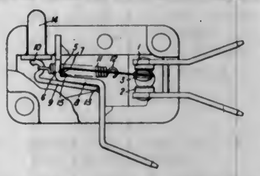
3,283,105
DETENT MEANS FOR A POSITIONABLE SWITCH ACTUATOR
David R. Locke and John F. Daniels, Jr., Bridgeport, Conn., assignors to Sperry Rand Corporation, a corporation of Delaware
Filed July 30, 1964, Ser. No. 386,275
8 Claims. (Cl. 200—153)



1. An electric switch of the class described, comprising
(a) a support member of nonconductive material,
(b) a pair of spaced stationary contact members secured to said support member,
(c) spring contact means mounted on said support member and including a spring contact arm extending between said pair of spaced stationary contacts,
(d) a rotatable actuator member on said support member and having an axis of rotation extending normal to said support member,
(e) cam means carried by said actuator member and in engagement with said movable spring contact arm,
(f) said actuator member having a first position wherein said cam means is operable to maintain said contact arm out of engagement with said stationary contacts,
(g) said actuator having a second position wherein said cam means is operable to move said contact arm into engagement with one of said stationary contacts,
(h) said actuator having a third position wherein said cam means is operable to move said movable contact arm into engagement with the other of said stationary contacts,
(i) detent means on said actuator including a plurality of recesses in the surface of said actuator equal in number to the number of positions of said actuator member,
(j) said spring contact means including a second resilient arm spaced from said first arm and biased in the direction of said first arm, and
(k) a latch hook provided on the free end of said second spring arm adapted to engage in said detent recess according to the selected position of said actuator to prevent ready movement of the said actuator to the remaining positions,
(l) said second spring arm being yieldable upon movement of said actuator to release said latch hook from said selected detent recess to allow said actuator to be manually rotated to one of said other two positions whereat said latch hook is adapted to engage in another of said detent recesses in said actuator member.

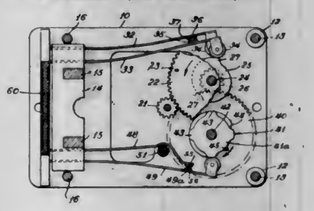
3,283,106
ELECTRICAL CONTACT ELEMENTS
Ernest McAlpine, Bill Quay, England, assignor to Burgess Products Company Limited, Hinckley, England, a company of Great Britain and Northern Ireland
Filed Mar. 2, 1965, Ser. No. 436,566
Claims priority, application Great Britain, Mar. 5, 1964, 9,350/64
8 Claims. (Cl. 200—166)

1. Electrical apparatus including first and second electrically conductive components, a knife edge and a notch formed on said first and second components respectively, the knife edge being pivoted in the notch, the second component being formed from a strip of non-precious conductive metal, a fillet of precious metal being carried on one surface thereof, said fillet being shaped so



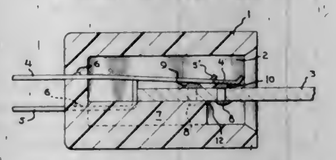
that a surface of the fillet forms the surface of the notch that the knife edge bears against.

3,283,107
INTERRUPTER HAVING POSITIVE STOP MEANS FOR CONTACT ELEMENTS
James H. Anson, Auburn, Ill., assignor to Sangamo Electric Company, Springfield, Ill., a corporation of Delaware
Filed July 20, 1964, Ser. No. 383,600
6 Claims. (Cl. 200—166)



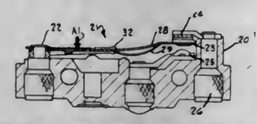
1. In a circuit interrupter, a cam, means for rotating said cam, a first switch blade having a cam follower and yieldingly urged toward said cam effectively holding said follower seated thereon, a second switch blade terminating short of said cam and opposed to and yieldingly urged toward said first blade, opposed contact elements on said blades, said cam being effective for moving said first blade away from said second blade and releasing said first blade for movement toward said second blade thereby opening and closing said contact elements, and stop means comprising a rigid, fixedly positioned member located in the path of travel of the second blade to limit movement of said second blade toward said first blade to an extent less than the movement of said first blade in the opening of said contact elements.

3,283,108
ELECTRICAL CONTACT MEMBERS HAVING CORROSION-RESISTANT ELECTRICALLY-CONDUCTIVE COATINGS WITH ONE COATING HAVING A GREATER LENGTH THAN THE OTHER
John Covell Collier, Farnworth, England, assignor to AMP Incorporated, Harrisburg, Pa.
Filed Nov. 27, 1964, Ser. No. 414,230
Claims priority, application Great Britain, Dec. 5, 1963, 48,025/63
8 Claims. (Cl. 200—166)



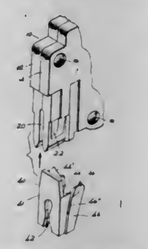
1. A printed circuit edge connector assembly comprising in combination, an insulating block having a channel, a series of spring contacts carried by the block and lying within the channel, a printed circuit panel removably received in the channel, a series of studs arranged in spaced relationship on the panel and each resiliently engaged by one of the spring contacts, a first corrosion-resistant electrically-conductive coating on each spring contact, and a second electrically-conductive corrosion-resistant coating on each stud, the portions of the contact springs engaged by the studs being flat and elongate in a direction perpendicular to the channel so that the lengths of the first coatings swept by the second coatings are greater than the lengths of the second coatings swept by the first coatings when the printed circuit panel is inserted into and removed from the channel.

3,283,109
SNAP-ACTION LEAF SPRING SWITCH
Theodore Y. Korsgren, Cary, Ill., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Nov. 30, 1964, Ser. No. 414,735
7 Claims. (Cl. 200—166)



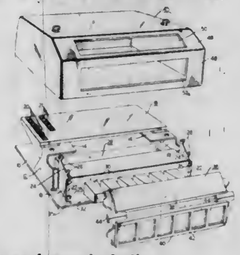
1. A multi-tine, leaf spring assembly having at least one tine member held in tension and one other tine member held in compression, said assembly being supported at one end of said tension tine member, said compression tine member biasing said assembly for monostable snap action responsive to an application of force upon said tension member, and generally inflexible bridge member mounted on said tension member between the ends thereof and extending along a substantial length of said tension member for receiving the applied force for reducing the differential required to move said tension member without affecting the resilience of said spring.

3,283,110
HALF-WIDTH CIRCUIT BREAKER MODIFICATION FOR FULL WIDTH LOAD CENTERS
George W. Knecht, Brooklyn, and Alexander R. Norden, New York, N.Y., assignors to Murray Manufacturing Corporation, Brooklyn, N.Y., a corporation of New York
Filed Oct. 21, 1964, Ser. No. 405,353
15 Claims. (Cl. 200—168)



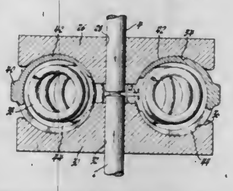
1. A circuit breaker adapted to be disposed on either side of a load center bus-blade for electrical contact therewith comprising:
a housing having an internal chamber communicating with the exterior through a pair of windows disposed on either side of the breaker at the front end thereof;
a flexible blade contact mounted within said chamber for movement of a portion thereof to said windows, said contact having a nose portion centrally located between said windows;
said housing including external access means for allowing maneuvering of said first mentioned portion of said flexible blade contact.

3,283,111
SWITCH ENCLOSURE HAVING ALTERNATE MOUNTING POSITIONS
Robert E. Wirsching, Greenfield, Ind., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 10, 1965, Ser. No. 462,972
10 Claims. (Cl. 200—168)



1. A switch enclosure including
a base;
a cover mounted over the base, the cover including a first and second surface inclined to one another, the first and second surfaces each having an opening therein of substantially the same configuration;
a switch mounted within the enclosure formed by the cover and the base, the switch alternatively positionable within the enclosure in either one of two positions, and the switch having an actuator that extends through one of the openings in the cover depending upon the position selected for the switch;
a closure member having a capping portion and a framing portion each of which has substantially the same peripheral configuration as the openings in the cover, the framing portion having an opening therein of a size to permit the actuator of the switch to extend therethrough, the closure member alternatively positionable within the enclosure so that no matter which opening in the cover the actuator of the switch extends through, the capping portion fills the opening through which the actuator does not extend and the framing portion fills the space between the actuator and the opening through which the actuator does extend.

3,283,112
INDUCTION BUTT WELDING
Guenter W. Roehrs, Rochester, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 13, 1965, Ser. No. 471,517
4 Claims. (Cl. 219—9.5)



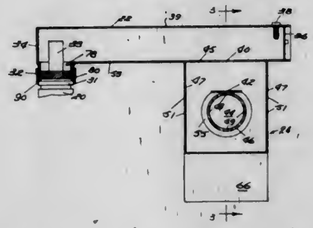
1. In welding apparatus for joining a plurality of parts together, a plurality of spaced relatively movable means

biased toward one another for supporting parts to be welded in alignment and to hold them in juxtaposition during welding and bias the adjacent surfaces together, said movable means being provided with complementary cavities forming a housing around the adjacent ends of the parts to be welded, a primary winding supported within said housing, the relatively movable means together with the parts to be welded forming a secondary winding, and biasing force means to apply pressure to force the parts toward each other and decrease the size of the housing as the weld progresses.

3,283,113
ELECTRONIC OVEN FOR VENDING MACHINE USE

Peter H. Smith, Maidenhead, England, assignor to J. Lyons & Company, Limited, London, England, a corporation of England

Filed July 9, 1963, Ser. No. 293,685
Claims priority, application Great Britain, June 12, 1963, 23,392/63
21 Claims. (Cl. 219—10.55)



1. In an electronic oven having a source of microwave energy, an oven compartment having at least first and second parallel walls and a third wall interconnecting said first and second walls, and means for introducing said energy in the form of radiation through an aperture in said third wall, the combination comprising an elongate cooking chamber disposed within said oven compartment and extending between said first and second walls, and a rectangular baffle plate interposed between said aperture and said cooking chamber, the end edges of said baffle plate abutting said first and second walls.

3,283,114
DIRECT CURRENT TUBE WELDING MACHINE

John Paul Thorne and Thomas J. Gelermann, Bay City, and Thomas V. De Agostino, Bangor, Mich., assignors to National Electric Welding Machines Co., Bay City, Mich., a corporation of Michigan

Filed Oct. 23, 1965, Ser. No. 503,075
11 Claims. (Cl. 219—59)

1. In a tube welding machine, the combination comprising:

a base;

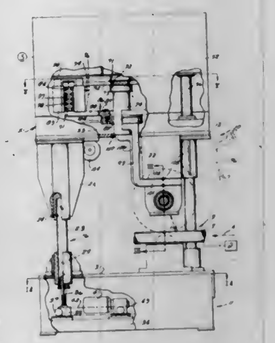
a plate vertically spaced above said base and means mounting said plate on and adjustably with respect to said base;

guide means on said base for guiding material to be welded therethrough;

a pair of shafts spaced below said plate and means including bearing means pendently and rotatably supporting said shafts from said plate;

circular welding electrodes on each of said shafts positioned for cooperation with said guide means to effect a desired operation;

direct current power source means fixedly supported on said plate, said plate being interposed between said power source means and said bearing means, and means independent of said bearing means for connecting the respective output terminals of said power source means with each of said shafts;

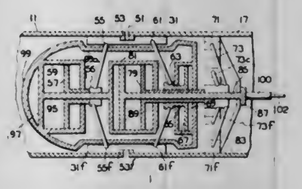


whereby a D.C. potential is supplied between said welding electrodes without restricting vertical adjustability thereof.

3,283,115
STRONG-BACK CLAMPING SYSTEM FOR HOLDING PIPE JOINTS DURING WELDING

Jerome W. Nelson and Fred A. De Saw, Columbus, Ohio, assignors, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware

Filed Dec. 31, 1964, Ser. No. 422,625
3 Claims. (Cl. 219—60)



1. An internal clamping means for holding the ends of adjacent pipe sections in precise alignment for girth welding, comprising, in combination; a plurality of individual radially distributed elongated clamping elements extending longitudinally of the pipe sections, each of said clamping elements having opposite ends arranged to selectably engage the internal surfaces of adjacent pipe sections, and a central outwardly facing relieved portion; first motor means for expanding one end of all of said clamping elements into contact with one of said pipe sections, second motor means for expanding the opposite ends of all of said clamping elements independently of the first ends into contact with the other of said pipe sections, a plurality of holding shoes, third motor means for expanding said shoes into internal contact with one of said pipe sections, a disc member, and fourth motor means connected to said disc member cooperative with said third motor means for longitudinally moving said disc member into contact with said holding shoes to thereby move one of said pipe sections into predetermined relationship with the adjacent pipe section prior to expansion of the opposite ends of said clamping elements into contact with said adjacent pipe section.

3,283,116
ELECTRICAL DISCHARGE MACHINING METHOD AND APPARATUS

August F. Scarpelli, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed May 4, 1962, Ser. No. 192,472
14 Claims. (Cl. 219—69)

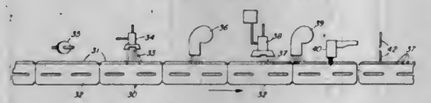


2. In the method of electrical stock removal, the steps of applying intermittent power across an ionizable fluid filled gap formed between cutting tool and workpiece electrodes so as to produce electrical discharges across the gap for eroding stock from the workpiece electrode and supplying current of the same polarity as and at lower voltage than the discharge voltage to the gap between the discharges and while the gap is conductive so as to cause a hardened layer of material to be formed on the cutting tool electrode surface from the eroded stock for reducing the wear of the cutting tool electrode.

3,283,117
METHOD FOR COATING CUTTING EDGES OF SHARPENED INSTRUMENTS

Joseph C. Holmes, Harrisonburg, Va., and George R. Stepanek, Akron, Ohio, assignors to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia

Filed Apr. 22, 1965, Ser. No. 449,941
10 Claims. (Cl. 219—76)

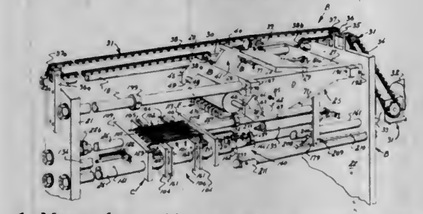


1. In the manufacture of cutting instruments in a continuous operation, a method for coating the sharpened cutting edges of the cutting instruments with a coating material to improve the cutting characteristics thereof comprising applying the coating material to the cutting edges while controlledly advancing the cutting instruments adjacent a stream of highly heated gas with said stream in contact with said coating material and cutting edges only, said stream of heated gas being adapted to heat said coating material and cutting edges to a temperature sufficient to cause said coating material to bond to said cutting edges.

3,283,118
RESISTANCE WELDED HONEYCOMB CORE AND METHOD OF AND MACHINE FOR MAKING SAME

Raymond B. Runkle, Berkeley, Calif., assignor to Hexcel Products Inc., Oakland, Calif., a corporation of California

Filed Dec. 10, 1956, Ser. No. 627,360
5 Claims. (Cl. 219—79)



1. Means for making a unitary resistance welded honeycomb structure from at least two webs of metal each defining first and second oppositely facing welding nodes, and wherein said webs are superposed one to the other with the first nodes of the first web resistance welded to the second nodes of the second web disposed above the first web comprising: first and second sets of parallel equidistantly spaced electrode fingers; the fingers of the first set disposed in staggered parallel relation to the fingers of the second set; the spacing between the center points of the fingers of each set being equal to the spacing between the center points of adjacent first nodes of the web; a work area in which the unwelded webs are superposed one to the other with the first nodes of the first web in contact with the second nodes of the second web; said sets of fingers independently positionable in said work area with each set of fingers disposed to alternately support the first nodes of the first web and the first nodes of the second web; a third set of electrodes comprising a plurality of aligned electrode wheels spaced in alignment with the fingers of the set of electrode fingers supporting the first nodes of the first web, and longitudinal wheel moving means to move said wheels longitudinally of said finger electrodes with each wheel traversing along a respectively associated second welding node of the second web; means to transversely move said welding wheels to a first position in alignment with the first set of fingers and to a second position in alignment with the second set of fingers; control means to cause said wheel moving means to move said wheels to the first position while said first set of fingers is in supporting position with the first nodes of the first web and to the second position while said second set of fingers is in supporting position with the first nodes of the first web, whereby said wheels are always disposed in alignment with the set of electrode fingers supporting the first node of the first web; said longitudinal wheel moving means operable to move said wheels in and out of the vertical plane of said work area; vertical wheel moving means to raise said welding wheels to an upper position above said webs and to a lower position with the wheels arranged with the rim of each wheel biased against a second node of the second web; said last named wheel raising means operable to maintain the wheels in lower position while the wheels are within the vertical plane of the work area and to raise the wheels while the wheels are out of the vertical plane of the work area; means for establishing a welding circuit through said first and second webs between said third electrode and said set of electrode fingers supporting the first nodes of the first web to cause resistance welding of said second nodes of said second web with the first nodes of said first web; and a resilient roller mounted rotatably on an axis parallel to the axis of rotation of the welding wheels with the periphery of said roller in contact with the rim of each wheel to resiliently urge said wheels against the web under substantially uniform welding pressure.

3,283,119
PROCESS AND APPARATUS FOR RESISTANCE SPOT SOLDERING

George P. Hromadka, Torrance, Calif., assignor to The Ryan Aeronautical Co., San Diego, Calif.

Filed June 20, 1963, Ser. No. 289,353
1 Claim. (Cl. 219—85)

Apparatus for resistance spot soldering, comprising:

a base;

non-conductive supports on said base having locating means to hold parts to be soldered;

an upright post on said base;

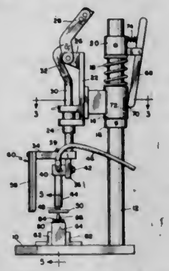
sleeve means slidably mounted on said post;

an upper stop and a lower stop adjustably fixed to said post above and below said sleeve means;

a spring between said sleeve means and said upper stop biasing the sleeve means downwardly;

a soldering head slidably mounted on said sleeve means and having a pair of downwardly extending elecrodes mounted on said soldering head and spaced to engage the parts to be soldered at spaced positions where held on said supports;

manual lever actuating means to move said soldering head relative to said sleeve means into a depressed position bringing said electrodes against the parts to be soldered, said actuating means including toggle linkage having an over-center action for releasibly



clamping the soldering head in said depressed position;

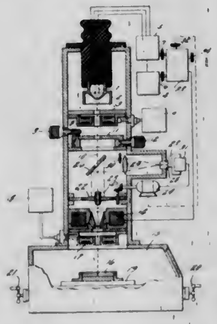
the effective stroke of said actuating means being greater than the initial clearance between said electrodes and the parts to be soldered, so that, when the electrodes are bearing on the parts to be soldered, said sleeve means is lifted against said spring, which biases the electrodes into firm contact with said parts with a constant predetermined pressure controlled solely by the adjustment of said upper stop.

3,283,120

APPARATUS FOR WORKING MATERIALS WITH A BEAM OF CHARGED PARTICLES

Helmut Spruck, Essingen, Kreis Aalen, Germany, assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Mar. 20, 1964, Ser. No. 353,324
Claims priority, application Germany, Mar. 23, 1963, Z 10,000
8 Claims. (Cl. 219—121)



1. Apparatus for working material with an energized beam comprising:

means for generating an energized beam;

means for focusing said beam at a material to be worked,

means for optically measuring the working distance between said focusing means and the material to be worked and for generating a signal indicative of a variation in said working distance from a desired value, and

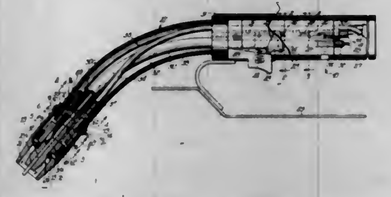
means responsive to said signal indicative of a variation in working distance for controlling said focusing means whereby said beam is maintained focused at the material to be worked.

3,283,121

ARC WELDING GUN

Arthur A. Bernard and Richard A. Bernard, both of Chicago Heights, Ill., assignors to Bernard Welding Equipment Company, Beecher, Ill., a corporation of Illinois

Filed July 21, 1965, Ser. No. 477,351
19 Claims. (Cl. 219—130)



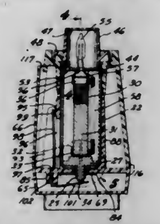
1. In an arc welding gun for applying shielding gas and mechanically-fed consumable electrode to the welding area, the combination at the arc end of said gun comprising: an electrically-conductive, cylindrical head member adapted to form a portion of the welding current-circuit and having a longitudinal bore; an electrically-conductive current contact member having a portion slidably inserted into said head member bore, said current contact member having a longitudinal bore for guiding said electrode and for providing electrical contact with said electrode, said inserted portion of said current contact member having a longitudinal recess in its outer surface with a portion of said recess intersecting said current contact member bore so as to expose said consumable electrode; a leaf spring mounted in said recess such that one portion of said leaf spring forces said inserted portion of said current contact member against a portion of the wall of said head member bore and such that another portion of said leaf spring urges said exposed consumable electrode into sliding contact with a portion of the wall of said member bore whereby said inserted portion of said current contact member is firmly held in said head member bore and whereby electrical contact with said electrode is established and maintained in a positive manner; a pair of annular bushings of electrical insulating material mounted in longitudinally-spaced relationship on said head member and protruding radially outwardly from said head member; a sleeve tightly mounted on said bushings so as to cooperate with said bushings and said head member to form an annular cooling chamber overlying said inserted portion of said current contact member, said head member having a pair of conduits connected to said annular cooling chamber to enable circulation of coolant through said annular cooling chamber; a nozzle for directing said shielding gas in an annular stream about the welding arc, said nozzle having a rearward portion inserted over the outer surface of said sleeve and provided with a plurality of longitudinal, circumferentially-spaced slots extending forwardly from the rearward portion of said nozzle; and an annular spring engaged about said radially-contractible rearward portion of said nozzle so as to maintain said nozzle tightly engaged on said outer surface of said sleeve whereby a heat transfer path is provided from said nozzle to said annular cooling chamber.

3,283,122

APPARATUS FOR USE IN CURLING HAIR

Samuel L. McNair, Fullerton, Calif., assignor, by mesne assignments, to The Songrand Corp., Kansas City, Mo., a corporation of Missouri

Filed Nov. 12, 1963, Ser. No. 322,875
3 Claims. (Cl. 219—222)



1. Hair curling apparatus comprising:

a housing;

an elongate upright cylindrical cavity formed in said housing and opening through the top of said housing;

a heat transfer unit, said unit including

an elongate metallic heat conducting tube removably received in said cavity,

a heat absorber mounted within said tube,

an electrically energizable heating circuit including a heating element inside said tube and in heating relationship with said heat absorber, and

a translucent hollow handle portion connected with said tube and projecting above the cavity with an indicator lamp therein, said lamp connected with said heating circuit;

detachable electric connector means comprising cooperating connector means carried respectively by the heat transfer unit and housing and operable to supply power to said circuit and lamp while said heat transfer unit is in said cavity; and

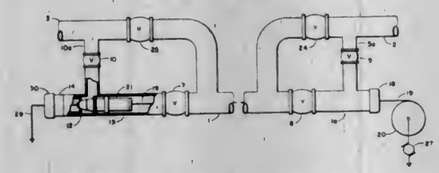
thermally actuated switch means responsive to the heat generated in said heat transfer unit connected in said heating circuit for deenergizing said circuit lamp when a predetermined temperature for the heat transfer unit has been reached.

3,283,123

PIPELINE HEATING SYSTEM AND METHOD FOR INSTALLING SAME

Daniel O. Atkinson and Harold E. Schwartz, Jr., Wichita, Kans., assignors to Mobil Oil Corporation, a corporation of New York

Filed Mar. 18, 1964, Ser. No. 352,873
6 Claims. (Cl. 219—307)



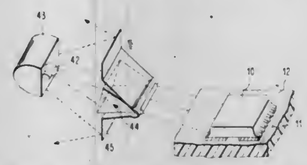
1. In a fluid distribution and heating system, a conduit for carrying fluids having an upstream end portion and a downstream end portion, a stuffing-box closure in the upstream end portion of said conduit, a first flow line interconnecting with said conduit adjacent said upstream end portion and a second flow line interconnecting with said conduit adjacent said downstream end portion, stop means located in said conduit at a position downstream of the interconnection of said second flow line and said conduit, a go-devil slidably positioned in said conduit in abutting relationship with the upstream side of said stop means, means forming a fluid-tight seal between said go-devil and said conduit, an elongated heating element slidably extending through said stuffing-box closure in a fluid-tight relationship therewith and connected to said go-devil at a position accessible from a point downstream of said fluid-tight seal, and an open valve in said conduit intermediate said go-devil and the interconneciton of said second flow line and said conduit.

3,283,124

SELECTIVE HEATING APPARATUS

Richard J. Kawecki, Endicott, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Original application July 2, 1962, Ser. No. 206,775, now Patent No. 3,230,338, dated Jan. 18, 1966. Divided and this application May 7, 1965, Ser. No. 470,335
5 Claims. (Cl. 219—347)



1. Apparatus for localized area heating of workpieces restingly contacting one another, at least one of said workpieces having a low melting metal coating at the localized area thereof, said apparatus comprising:

a source of infra-red energy, and

heat directing means including a focusing means adapted to receive the infra-red energy and provide a concentrated beam of dimensions commensurate with those of the localized area while obstructing transmission of infra-red energy outside the beam, said focusing means comprising:

a lens system formed from an integral body having a first truncated triangular cross-section portion having a base at one end thereof and two converging sides, an intermediary second rectangular cross-section portion adjacent to the truncated end of said rectangular cross-section portion of said body and having two opposing parallel sides extending from the two converging sides of said first portion, and a third portion terminating in a face having a predetermined curvilinear shape, said body being positioned with respect to said infra-red source such that the infra-red energy enters the base of the first portion of said body and passes through said first, second and third portions of said body and emanates from the face of said third portion, some of said infra-red energy passing through said body being focused by said face into a line of concentrated thermal intensity and some of said infra-red energy passing through said body being diffused by said second rectangular cross-sectional portion of said body to provide a zone of lesser thermal intensity about said concentrated line, said workpieces being positioned with respect to the face of said body so that said concentrated line of thermal intensity lies substantially on the localized area to be heated to cause the metal coating to reflow and thereby effect the bonding of said workpieces.

3,283,125

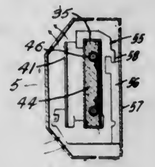
ELECTRIC BASEBOARD HEAT STORAGE MEANS

Charles D. Snelling, 2949 Greenleaf St., Allentown, Pa.

Filed Oct. 21, 1964, Ser. No. 405,489
3 Claims. (Cl. 219—365)

1. In a continuously cyclically operable convection-type baseboard heating unit wherein the heat evolved

therefrom undergoes rather abrupt changes in heat flow during off-cycles, the improved combination of a baseboard heating unit and thermal moderator comprising, an elongated housing having a back side for mounting against the base of a wall, a grill on the front side of said housing having top and bottom openings therealong for allowing free flow of air into and out of the unit by convection, a thermal moderator comprising an elongated hollow rectangularly shaped modular element supportably disposed within and along said housing in spaced relationship to said back side and said grill, said modular element having encapsulated therein a solid anhydrous chemical heat storage material characterized by a relatively high heat of transition in the solid state from one crystal form to another, a protectively sheathed primary



electric resistance heater secured to an elongated metal backing member of high thermal conductivity encased within said hollow element and surrounded by said chemical heat storage material, said resistance heater and backing member being co-extensive and extending substantially the full length of said modular element, the backing member being of such width as to extend across at least the major portion of the height of the modular element, vertical heat exchanger fins directly connected in thermal conductive relationship to and along substantially the entire length of at least the front face of said heat storage modular element behind the grill of said baseboard heater, whereby a relatively even flow of heat is convectionally maintained from the baseboard heating unit by virtue of continuous flow of heat from the modular element during off-cycles of said primary resistance heater.

3,283,126
ELECTRIC STRIP HEATER
William Edward Velvel, Claymont, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Dec. 10, 1963, Ser. No. 329,490
9 Claims. (Cl. 219—388)



1. An electrically energizable strip heater unit for heating a moving web comprising

(a) a long, narrow, thin metal conductor strip of high electrical resistivity, high elastic limit capable of thermal elongation and having depending lengthwise sides;

(b) a thermally and electrically insulating support for said strip having a recessed area or areas of small cross-section extending downwardly from the surface of the support and interfitting with a depending side or sides of the strip; the heater unit being further characterized by having

(1) the bottom surface of the strip being in engagement with the top surface of the support;

(2) the strip being connected to a source of electrical energy so that the strip will be heated by the passage of electrical current;

(3) the support and strip being disposed adjacent the path of the web;

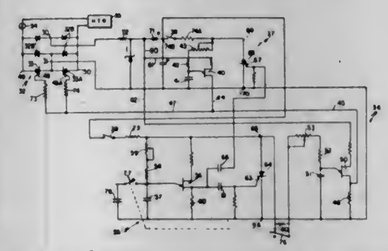
(4) the lengthwise axis of the strip extending across the path of the web and at right angles to the axis of the web travel;

(5) one end of the strip being fastened to the support;

(6) a lengthwise edge of the strip or of an adjacent surface of the support, downstream from the path of the web, serving as a straight edge for guiding a web as it passes from the unit at an angle from the surface of the support; and

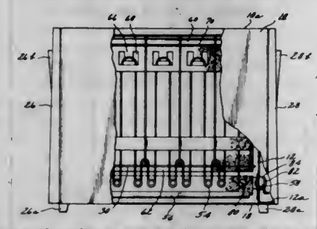
(7) the adjoining upper surfaces of the strip and the support being in substantially the same plane.

3,283,127
CONTROL CIRCUIT
William A. Robinson, McHenry, and James E. Huston, Des Plaines, Ill., assignors to Basic Products Corporation, Elk Grove, Ill., a corporation of Wisconsin
Filed Dec. 12, 1963, Ser. No. 330,178
8 Claims. (Cl. 219—486)



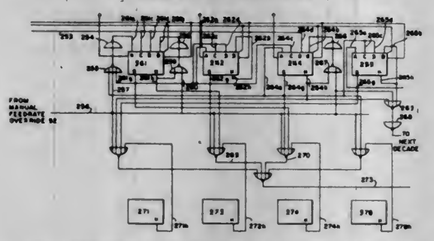
1. In a control circuit for providing in a machine a plurality of power heating levels from an A.C. power source, the combination including silicon controlled rectifier means connected between said source and electric heating load means, first switch means, first timer circuit means connected to the gating means of said silicon controlled rectifier means, said first timer means including first unijunction transistor means being energized by said first switch means operated by the machine being controlled, said first timer means gating said rectifier means for one predetermined time of a half cycle, second switch means, second timer circuit means including second unijunction transistor means connected to the gating means of said silicon controlled rectifier means gating said rectifier means for another predetermined time of a half cycle to provide another level of power to said heating load means, said second timer circuit means being activated by said second switch means actuated by the machine being controlled, and third timing circuit means including a third unijunction transistor and a shorting means connected with the circuit means for said first and second unijunction transistors for deactivating said silicon controlled rectifier means and both said first and second timer means.

3,283,128
ELECTRIC TOASTER HEATING UNIT
Paul V. Snyder, Fullerton, Pa., assignor to General Electric Company, a corporation of New York
Filed Nov. 18, 1963, Ser. No. 324,311
7 Claims. (Cl. 219—532)



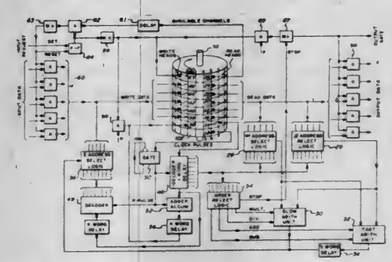
1. In an electric toaster having a toasting chamber and a heating unit positioned adjacent the toasting chamber in heat transfer relationship with the chamber, a said heating unit forming a wall of said chamber and comprising an elongated support strip of heat and electrically insulating material, a relatively stiff resistance heating wire formed into a sinuous series of loops the major portion of which loops are disposed in a plane substantially parallel to and at a fixed predetermined distance from the toasting chamber, a plurality of metallic eyelets extending through said support strip at spaced intervals to secure one end of each loop to said strip with the major portions of said loops extending away from the strip, and means supporting said loops at the opposite end thereof at a fixed predetermined distance from the toasting chamber while permitting said heater wire to expand primarily only in a plane parallel to the toasting chamber when heated.

3,283,129
PULSE RATE MULTIPLIER FOR CONTROL SYSTEM
Leroy U. C. Kelling, Waynesboro, Va., assignor to General Electric Company, a corporation of New York
Original application Sept. 5, 1961, Ser. No. 136,420, now Patent No. 3,226,649, dated Dec. 28, 1965. Divided and this application Mar. 4, 1965, Ser. No. 453,533
17 Claims. (Cl. 235—92)



1. In combination, a counter which cycles at a frequency in accordance with the frequency of a first pulse train applied thereto and in synchronism with a second pulse train applied thereto, said second pulse train having at least the frequency of said first pulse train, said counter comprising at least one decade, each decade comprising a given number of bistable stages, each of said stages having first chosen discrete weightings, a register adapted to have a numerical setting stored therein and comprising at least one decade, each of said register decades comprising said given number of bistable stages, each of said register stages having second chosen discrete weightings, a plurality of gating means equal in number to the number of decades, each of said gating means comprising a number of AND gates equal to said given number, each of said gates being individually associated with a stage of said register, means to connect one input of each AND gate to sense the static condition of the corresponding bistable stage of said register, means to connect other inputs of each AND gate to sense the static condition of at least two of said bistable stages of said counter, said gates being enabled in response to sensing coincidence of like static conditions, means to apply said second pulse train to each of said gates so as to operate the enabled gates in synchronism with said second pulse train under control of the information in said register so that each gate will provide in response to one complete cycle of the decade of the counter a train of pulses equal in number to the weighting of the corresponding stage of said register, and means for combining the outputs of all said gates to produce an output pulse train having a frequency equal to the frequency of said first pulse train multiplied by the ratio of the number of the setting in said register to the amount of pulses in said first pulse train applied to said counter during one cycle of said counter.

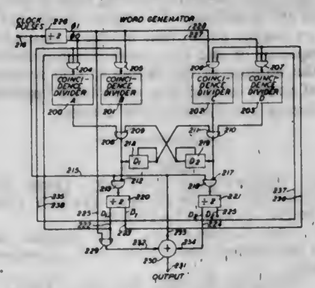
3,283,130
DIGITAL COMPUTER HAVING TIME SHARED ARITHMETIC UNITS RESPECTIVELY FOR FAST AND SLOW COMPUTATIONS
Dale M. Jahn, Garden City, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Nov. 21, 1961, Ser. No. 153,823
10 Claims. (Cl. 235—164)



6. Time shared digital computing apparatus wherein signals representing the results of distinct computations occur in the same time sequence as the data from which such results were derived regardless of the computation time for any of said computations comprising time shared digital computing apparatus comprising a memory device that cyclically presents in sequence sets of signals representing the variables in different problems to be computed, first and second arithmetic computing means coupled to said memory device to receive said signal sets, said computing means being adapted to perform different computations with different sets of said signals, said first arithmetic computing means performing only long duration computations and said second arithmetic computing means performing only short duration computations, said sequence of sets of signals being such that no short duration computations are started simultaneously with long duration computations, the computation rate of said first arithmetic computing means being greater than the cyclical rate at which said memory device cyclically presents the signals for any one of said problems, a time delay device connected to receive the output signals from said second arithmetic computing means delaying its received signals by a time period equal to the difference between the times the two arithmetic computing means takes to perform their respective computations, and means for selecting in sequence different signal represented variables from each problem and applying according to a predetermined program those signals to one or

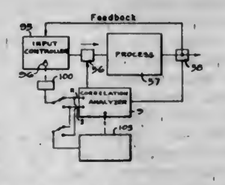
the other of said arithmetic computing means, said predetermined program being such that consecutive applications of signals to the first arithmetic computing means are separated in time by at least the time it takes said first computing means to complete one of its computations.

3,283,131
DIGITAL SIGNAL GENERATOR
Robert L. Carbrey, Madison, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 25, 1963, Ser. No. 311,529
8 Claims. (Cl. 235—164)



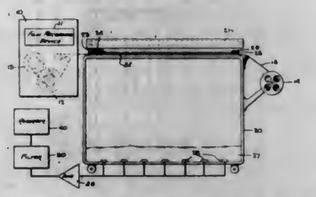
4. A binary word generator comprising a plurality of coincidence pulse dividing circuits, a phase displacement counter having a plurality of stages, a source of clock pulses, means responsive to the output of said counter for selectively applying clock pulses from said source to said coincidence pulse dividing circuits, means responsive to the outputs of said coincidence pulse dividing circuits for selectively applying clock pulses from said source to said counter, and means for selectively combining the outputs of all of the stages of said phase displacement counter.

3,283,132
CORRELATION-ANALYSIS METHODS AND APPARATUS
Kenneth W. Goff, Abington, and Charles W. Ross, Hatboro, Pa., assignors to Leeds and Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed May 3, 1962, Ser. No. 192,173
17 Claims. (Cl. 235—181)



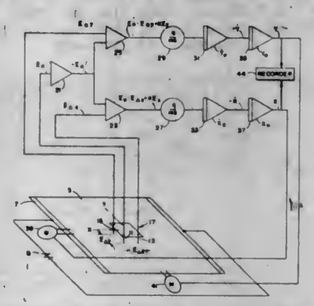
1. A method of determining a cross-correlation function of a system having an input and an output which comprises producing two periodic signals of constant fundamental frequency which are harmonically related, each consisting of symmetrical half-waves of alternately opposite sense and at least one of said signals having non-sinusoidal half-waves, applying one of said signals to effect perturbation of said input of said system, producing a third signal representative of the actual resulting changes of said output of the system, effectively multiplying said third signal by the other of said two signals, and averaging the multiplication products of said third signal and the other of said two signals.

3,283,133
METHOD AND APPARATUS FOR THE OPTICAL CROSS-CORRELATION OF TWO FUNCTIONS
Harold S. Field, Tulsa, Okla., assignor to Geophysical Research Corporation, New York, N.Y., a corporation of New Jersey
Filed Jan. 9, 1963, Ser. No. 250,309
7 Claims. (Cl. 235—181)



1. The method of optically cross-correlating two functions comprising preparing two dual track variable density film strip representations, each of said strips having a first and second track relating to a different one of said functions with the corresponding portions of the first and second tracks as defined by the function being aligned with respect to one another, each of said strips having the density of the first track in direct proportion to and the density of a second track in inverse proportion to a different one of said functions, placing said film strips in overlying relation, passing light through said overlying film strips, moving one of said film strips over the other while in said overlying relation, and recording the light transmitted through said strips during said motion, as a function of the relative displacement between said strips.

3,283,134
PARTICLE TRAJECTORY PLOTTER
Frederick T. Shaver, Huntsville, Ala., assignor to the United States of America as represented by the Secretary of the Army
Filed Jan. 28, 1963, Ser. No. 254,524
1 Claim. (Cl. 235—184)

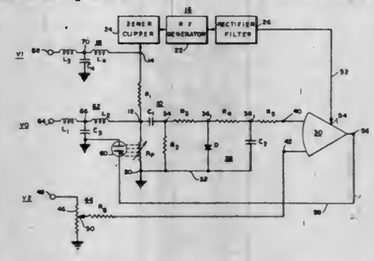


A particle trajectory plotter comprising:
(a) a conductive sheet model made of electrical resistive paper;
(b) said paper having electrodes painted in a predetermined geomertic configuration thereon;
(c) a voltage supply electrically connected to said electrodes for applying an electrical potential across said paper;
(d) a pen carriage having first, second and third electrical probes extending downwardly therefrom in a rectangular co-ordinate configuration;
(e) said first probe simulating the point of a charged particle on said paper;

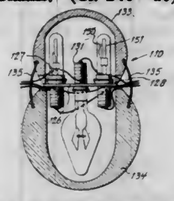
(f) said second probe being placed parallel to the abscissa of said rectangular co-ordinate configuration of said probes and close to said first probe whereby the potential gradient from said first probe to said second probe may be measured,
(g) said third probe being placed parallel to the ordinate of said rectangular co-ordinate configuration and close to said first probe whereby the potential gradient from said first probe to said second probe may be measured;
(h) an electrical inverter electrically connected to said first probe for reversing the polarity of the voltage picked up by said first probe;
(i) first and second electrical summing amplifiers each having first, second and third electrical terminals;
(j) connecting means for electrically connecting said second probe to said first terminal of said first summing amplifier and said second terminal of said first summing amplifier to the output of said inverter;
(k) connecting means for electrically connecting said third probe to said first terminal of said second summing amplifier and said second terminal of said second summing amplifier to the output of said inverter;
(l) first and second constant multipliers;
(m) connecting means for electrically connecting said first multiplier to said third terminal of said first summing amplifier and said second multiplier to said third terminal of said second summing amplifier;
(n) first, second, third and fourth integrators;
(o) connecting means for electrically connecting said first integrator to the output of said first multiplier and the output of said first integrator to the input of said second integrator;
(p) connecting means for electrically connecting said third integrator to the output of said second multiplier and the output of said third integrator to the input of said fourth integrator;
(q) motor means connected to the output of said second integrator for positioning said pen carriage in the direction of the ordinate;
(r) motor means connected to the output of said fourth integrator for positioning said pen carriage in the direction of the abscissa;
(s) means disposed in said first and second multiplier for setting the constants according to the ratio of charge to mass of said charged particle;
(t) means in said first and third integrators whereby the initial velocity of said particle may be set;
(u) means disposed in said second and third integrators whereby the initial orientation of said particle may be set; and
(v) recording means connected to the output of said second and fourth integrator for recording the path of said charged particle.

3,283,135
ANALOG MULTIPLIER USING RADIATION RESPONSIVE IMPEDANCE MEANS IN ITS FEEDBACK ARRANGEMENT
Morton Sklaroff, Philadelphia, Pa., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed June 15, 1962, Ser. No. 202,746
12 Claims. (Cl. 235—194)

1. An analog multiplier for deriving the product of a first input variable and a second input variable, comprising a voltage divider having an input terminal, an output terminal, a reference terminal, first impedance means between said input and output terminals and second impedance means between said output and reference terminals, said impedance means each including radiant energy responsive variable impedance means, radiant energy for emitting radiations located adjacent said variable impedance means, and means for energizing said radiant energy means as a function of said second input variable to thereby vary said variable impedance means as a function thereof, whereby application of said first input variable to said input terminal results in an output at said output terminal which is directly proportional to the product of said first and second input variables; wherein said radiant energy responsive variable impedance means comprise first and second photosensitive resistors in said first and second impedance means, respectively, and said radiant energy means comprise first and second light sources, respectively, said first light source being intensity modulated as an inverse function of said second input variable and said second light source being intensity modulated as a direct function of said second input variable.



3,283,136
MULTI-COLOR DISPLAY APPARATUS
Leonard R. Dinkler, Clearwater Beach, and Robert J. Bishop, Clearwater, Fla., assignors to Technical Enterprises, Inc., Largo, Fla., a corporation of Florida
Filed Dec. 5, 1963, Ser. No. 328,287
3 Claims. (Cl. 240—10)

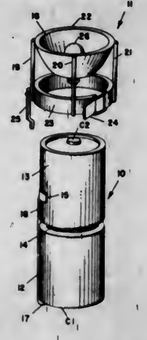


1. An illuminated decorative unit comprising a substatially flat base, at least one light socket mounted in said base and extending upwardly therefrom, at least one light socket mounted in said base and extending downwardly therefrom, a hollow substantially transparent spheroid open at one end and mounted on one side of said base, a second hollow substantially transparent spheroid open at one end and mounted on the opposite side of said base, differently colored light bulbs in said sockets extending into their respective spheroids, at least one of said bulbs being a flasher having a thermal responsive element, a plurality of spring clips bridging said base, the ends of said clips being anchored in the faces of said spheroids, the points of anchorage being adjacent to said base and at the inward curvature of said spheroids.

3,283,137
FLASHLIGHT
Gerald J. Hoesl, 221½ Ash St., Oxnard, Calif.
Filed Aug. 7, 1964, Ser. No. 388,064
2 Claims. (Cl. 240—10.61)

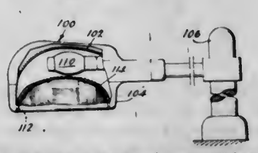
1. A flashlight comprising; a battery assembly including: electrical battery means having a first and a second

electrical contact; a conducting plate secured on a side portion of said battery means; an electrical wire connecting said plate to said first electrical contact; and a reflector assembly including: a reflector member threaded at its lower end to receive a light bulb; an annular band having clamping means for effecting radial contraction of said band; a plurality of rods securing said reflector member to said annular band; and a resilient strip riveted to said



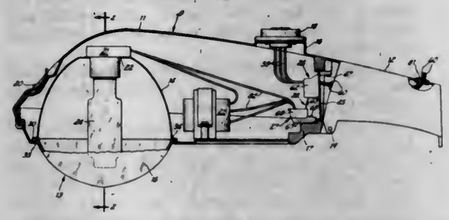
reflector assembly and having a free end extending beyond the plane of said band, whereby said band may be clamped that said free end of said strip is adjacent to said conducting plate and said lower end of said reflector member is juxtaposed said second contact so that threading of a light bulb therein effects contact between said light bulb and second contact and sliding of said resilient member into contact with said plate connects said first contact through said reflector assembly to said light bulb.

3,283,138
LIGHTING APPARATUS AND SYSTEM
Dorothy M. Huber, Jenkintown, and Charles H. Justice, Wayne, Pa., assignors to Philadelphia Electrical and Manufacturing Co., Philadelphia, Pa., a corporation of Pennsylvania
Filed May 8, 1964, Ser. No. 365,928
2 Claims. (Cl. 240—25)



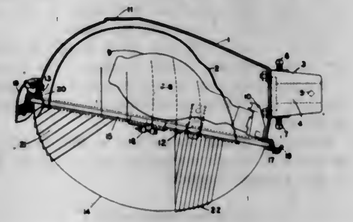
1. Highway-lighting apparatus, comprising:
a highway-lighting luminaire for providing downwardly-directed overhead lighting along a highway;
a supporting structure for said luminaire, mountable adjacent said highway to support said luminaire above the path of passenger-containing vehicles on said highway;
said luminaire comprising an open-bottomed substantially opaque enclosure, a light source entirely within said enclosure, a light reflector within said enclosure and extending above said light source, and a prismatic refractor extending across said open bottom of said enclosure for distributing light from said source along said subjacent highway;
said refractor having a lower surface which, in a vertical plane along the direction of said highway, is concave with a single direction of curvature and symmetrical about a vertical axis, said refractor including the edges thereof being substantially entirely within said enclosure.

3,283,139
LUMINAIRE
Donald W. Harling, Milwaukee, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Sept. 29, 1964, Ser. No. 400,143
14 Claims. (Cl. 240—25)



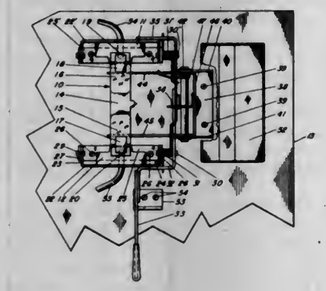
1. A luminaire comprising a housing having a bottom opening, a bottom closure member hingedly mounted on said housing, releasable latch means for securing said closure member to said housing in a closed position, an aperture formed in said bottom closure member, a bowl-shaped refractor having a peripheral edge engaging the margin of said aperture, first and second holding means operatively associated with said bottom closure member, said first holding means being releasably engageable with said refractor to hold said refractor in said aperture, an inverted dished reflector having a bottom peripheral rim co-extensive with said refractor edge, said reflector having an aperture formed therein, lamp holding means affixed to said reflector and extending through said aperture, said second holding means being releasably engageable with said reflector to hold said reflector bottom rim against said refractor edge.

3,283,140
STREET LUMINAIRE
Charles H. Rex, Marblehead, Mass., assignor to General Electric Company, a corporation of New York
Filed Oct. 24, 1955, Ser. No. 542,267
13 Claims. (Cl. 240—25)



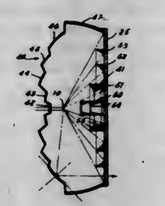
12. A luminaire comprising a light source, a light interceptor with an oval shaped mouth centered substantially under the light source which limits the escape of direct light at variable vertical angles above the nadir and in a cone with an oval section, and emits such light onto an elongated oval area on a horizontal plane below the light interceptor, an externally convex oval shaped refracting bowl below the interceptor and through which the direct light passes, the bowl having on its outer surface and toward one end thereof a system of refracting prisms which lower the direct light falling thereon and cause it to fall onto said area nearer the center thereof, said bowl having toward its other end a system of external parallel prisms located in vertical planes parallel to the length of the oval area and extending round the bottom and sides of the bowl for redirecting light downwardly and laterally.

3,283,141
LAMP-CHANGING MECHANISM
Philip M. Field, Maplewood, and Robert N. Ross, Jackson, N.J., assignors to Charles Beseler Company, East Orange, N.J., a partnership
Filed June 8, 1964, Ser. No. 373,232
4 Claims. (Cl. 240—37)



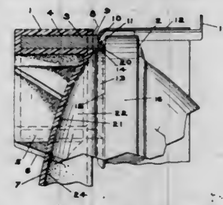
1. In combination,
(a) a double-ended lamp,
(b) a pair of movable socket members,
(c) spring means normally biasing the socket members into engagement with the ends of the lamp to support the lamp in an operating station,
(d) a pair of linkage members connected to the socket members,
(e) means connecting together the linkage members for pivotal movement about an axis normal to that of the lamp,
(f) a lamp-support member normally spaced from the lamp,
(g) means mounting the lamp-support member for engagement by one of the linkage members, and
(h) an operating lever connected to one of the linkage members, movement of said lever resulting in pivotal movement of the linkage members about said axis,
the recited arrangement being such that pivotal movement of the linkage members results in the simultaneous movement of the socket members out of engagement with the lamp and movement of the lamp-support member into engagement with the lamp.

3,283,142
LIGHT REFLECTORS
Miller L. Freeman, 1522 N. Michaltorena, Los Angeles, Calif.
Filed July 1, 1963, Ser. No. 292,034
7 Claims. (Cl. 240—41.36)



7. A reflector system for directing radiant energy from a source in a desired forward direction comprising:
(a) a source for emitting radiant energy substantially in all directions;
(b) a rear reflector partially surrounding said source in a rearward direction for directly reflecting a first portion of the radiant energy emitted by said source and for directing said first portion into said desired direction to form a beam, a second portion of the radiant energy being emitted by said source directly into said desired direction;
(c) a front reflector disposed about said source and within the path of said beam for reflecting substantially all of the remaining portion of the radiant energy emitted by said source toward said rear reflector and then into said desired direction and said front reflector including a plurality of separate portions, each forming a portion of a sphere having its center in said source and for reflecting a solid angle of radiant energy from said source onto said rear reflector, whereby substantially all of said radiant energy is directed into said desired direction; and
(d) said rear reflector having a plurality of stepped sections, each section reflecting radiant energy reflected from one of said reflecting portions through the space about one of said reflecting portions.

3,283,143
FOG LENS
Marshall L. Gosnell, 1222 Circle Drive, Baltimore, Md.
Filed Nov. 12, 1963, Ser. No. 322,855
4 Claims. (Cl. 240—46.57)

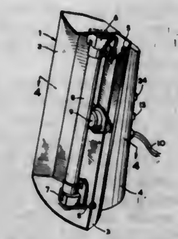


1. A fog lens accessory in combination with a headlight assembly, said assembly comprising a headlight lamp member and a retainer ring engaging the periphery thereof, magnetic means for removably attaching the lens in operative position to the headlight assembly comprising elongated arcual shaped magnets having magnetic forces moving in a direction transverse to and throughout the length of the said magnets, the magnets being fixedly engaged to the lens and having substantially arcual conforming and magnetic engagement throughout their length with the retainer ring at the area of contact between the arcual shaped magnets and the retainer ring.

3,283,144
PORTABLE LIGHT
Richard H. Rogers, Scarborough, Ontario, Canada, assignor to Consolidated Electronic Equipment Company Limited, Toronto, Ontario, Canada, a corporation of Ontario
Filed May 15, 1964, Ser. No. 367,734
2 Claims. (Cl. 240—51.11)

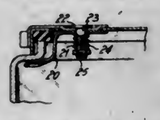
1. A portable lighting unit comprising an elongated fluorescent lamp, a metal reflector located behind the lamp and having a front surface facing the lamp for reflecting light from the lamp and a rear surface facing away from the lamp, a cover secured to the rear surface of the reflector to define an enclosure therewith, substantially the whole of the front surface of the reflector being uncovered and exposed to the ambient air for cooling thereby, an inverter circuit connected to the lamp for supplying alternating current thereto when the circuit is connected to a direct current source, the circuit including electrical components within said enclosure and a transistor mounted on the front

surface of the reflector behind the lamp and in intimate thermal contact with the reflector whereby the reflector



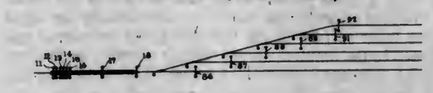
constitutes heat dissipating means for the transistor and whereby the transistor itself is exposed to the ambient air for cooling thereby.

3,283,145
LAMP FITTING
Joseph Müller and Eberhard Lenze, Neheim-Husten, Germany, assignors to Trilux-Lenze K.G., Neheim-Husten, Germany, a firm of Germany
Filed Aug. 13, 1963, Ser. No. 301,785
Claims priority, application Germany, Aug. 24, 1962, T 22,640
3 Claims. (Cl. 240—128)



1. A lamp fitting comprising a bowl having an inwardly directed annular shoulder and an outwardly directed annular rim adjacent said shoulder, a housing over said bowl including an end panel in engagement with said annular rim, at least one clamping means internally of said housing, said clamping means having a first end portion adjacent said end panel and an opposite end portion having a cam ramp progressively movable to a position in clamping engagement with said shoulder, a clamping means operating handle externally of said housing having a pivot means secured thereto which extends inwardly of said housing into engagement with said first end portion of said clamping means for rotation of said clamping means into and out of engagement with said shoulder about an axis formed by said pivot means, said first end portion of said clamping means being axially movable along said pivot means and having resilient means biasing said first end portion in the direction of said end panel, said clamping means thereby holding the bowl firmly but allowing for substantial positive and negative manufacturing tolerances in the bowl thickness at said shoulder and in the height of said rim.

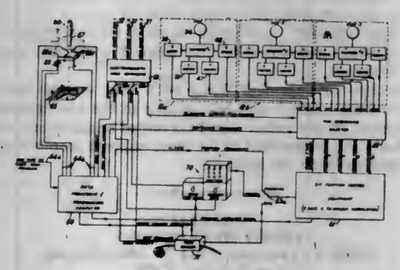
3,283,146
AUTOMATIC CONTROL MEANS FOR RETARDERS
Roland J. Berti, Omaha, Nebr., assignor to Westinghouse Air Brake Company, Swissvale, Pa., a corporation of Pennsylvania
Filed Jan. 6, 1954, Ser. No. 402,572
10 Claims. (Cl. 246—182)



1. In combination, a classification yard including a retarder having an exit leading into a track section of known track characteristics, said track section extending from the exit of said retarder to a destination in the yard at which a car is to couple at a desired velocity, means for generating control energy corresponding to the rolling characteristic of said car, means for generating control energy corresponding to the track characteristics of the track section to be transversed by said car, computing means for combining all of said control energies to produce a resultant control energy corresponding to the speed at which the car must leave the retarder to arrive at the destination at the desired velocity, said computing means including means representative of said desired coupling velocity and cooperating with said control energies to produce said resultant control energy, and means for generating a control energy representative of the braking characteristic on said car by said retarder, and means jointly responsive to said resultant control energy and to the braking characteristic control energy for controlling the retarder.

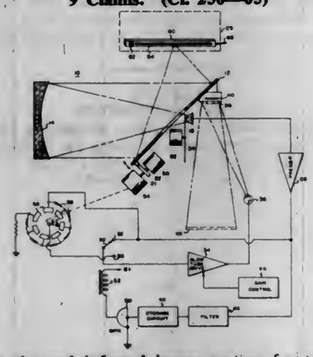
9. In a car retarder control system, the combination of, a car retarder means having a section with a fixed degree of retardation and another section with a controllable degree of retardation, speed responsive means responsive to a car moving through said fixed retardation section for detecting the effect of the retardation upon the speed of said car, and control means controlled by said speed responsive means for controlling the degree of retardation in said controllable section in accordance with the effect of said fixed retardation upon the speed of said car.

3,283,147
ENERGY-PROJECTING AND SCANNING APPARATUS
Emik A. Avakian, 92 Juana St., Crestwood, N.Y.
Filed May 9, 1962, Ser. No. 193,554
9 Claims. (Cl. 250—52)



1. Apparatus for bombarding with coherent electromagnetic wave energy any selected volume of coincidence within a larger volume of matter which partially transmits and partially adsorbs said electromagnetic energy waves comprising, a plurality of directable pencil-beam generators of coherent electromagnetic wave energy; said generators being disposed at preselected positions around said larger volume; beam directing means for said generators; a three-motion position controller; said controller being adapted sequentially to issue direction orders for each of said directing means in response to direction commands; a time sequencing selector adapted to sequentially receive said direction orders and transmit them to the respective beam directing means; and a data processor for generating direction commands from a program based upon a preselected set of coordinates assigned to said larger volume, and said generated means for issuing commands to said position controller.

3,283,148
INFRARED IMAGE SYSTEM WITH A PLURALITY OF INFRARED RADIATION EMITTING REFERENCE SOURCES POSITIONED NEAR THE OBJECT
Frank Schwarz, Stamford, and Maggio C. Banca, Old Greenwich, Conn., assignors to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware
Continuation of application Ser. No. 272,477, Apr. 11, 1963. This application Apr. 1, 1966, Ser. No. 539,583
9 Claims. (Cl. 250—65)



4. A thermal infrared image system for temperature measurement of an object or objects in its field of view comprising in combination

(a) an infrared detector,

(b) optical means for focusing a field of view on said infrared detector,

(c) scanning means for scanning said infrared detector over a predetermined field of view, thereby applying radiation from successive points in said predetermined field of view to said infrared detector, to produce signals from said infrared detector in accordance with the received radiation,

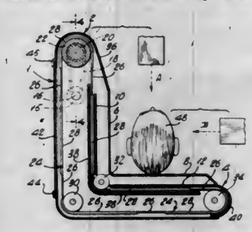
(d) means for converting the signals produced by said infrared detector into visual form thereby providing a visual display of the predetermined field of view of said infrared detector,

(e) a gray scale means positioned externally from said infrared detector, said scannning means and said optical means and in the field of view of said infrared detector near the object or objects whose temperature is to be measured by the thermal image system whereby a thermal image of said gray scale means is displayed on said visual display adjacent the thermal image of the object or objects whose temperature is to be measured,

(f) said gray scale means having a plurality of infrared radiation emitting reference sources of different known temperatures in a predetermined temperature range whereby a gray scale representing gradations of gray in accordance with infrared radiation received by said infrared detector from said infrared radiation emitting reference sources appears as a thermal image adjacent the thermal image of the object or objects on said visual display.

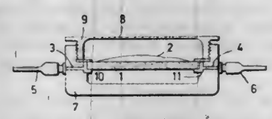
3,283,149
SYSTEM FOR CHANGING RADIOGRAPHIC PLATES
Paul Loewe, Mexico City, Mexico, assignor of five percent to Luis Jose Calleja, Mexico City, Mexico
Filed Apr. 18, 1962, Ser. No. 188,343
Claims priority, application Mexico, July 2, 1959, 55,124, Patent 68,272
9 Claims. (Cl. 250—66)

7. A radiographic device for transporting X-ray film comprising, an L-shaped housing, cylindrical means rotationally mounted at the outer end of each of the legs of said L-shaped housing, an endless belt extending between and around said cylindrical means, guide means located at the junction of said legs for guiding said endless belt about the bend in said L-shaped housing, a plurality of flexible plastic film receiving pockets attached to the outer surface of said belt, a first window in a surface of one leg of said housing for providing a passage for X-rays to individual sheets of X-ray film located within



said pockets, a second window in an adjacent surface of the other leg of said housing for providing a passage for X-rays to individual sheets of X-ray film in said pockets in a plane at substantially 90 degrees to the plane of said first window, said pockets being spaced upon said endless belt in conformity with the belt path spacing between said first and second windows, and drive means connected to said cylindrical means for selectively positioning adjacent pockets of said belt in registry with said first and second windows.

3,283,150
DOSIMETER FOR X-RAYS AND GAMMA RAYS
Raymond Georges Schayes, Forest-Brussels, Belgium, assignor to Manufacture Belge de Lampes et de Materiel Electronique, S.A., M.B.L.E., Brussels, Belgium
Filed Nov. 29, 1963, Ser. No. 326,820
Claims priority, application Belgium, Nov. 29, 1962, 500,120, Patent 625,461
10 Claims. (Cl. 250—71)



1. A dosimeter for X-rays and gamma rays comprising a support, a material on said support which upon irradiation by X-rays and gamma rays absorbs radiation energy and which upon termination of the irradiation and upon heating fluoresces, and means to heat said support and thereby heat the surface of said material by conduction through said material and said support, the path of heat conduction to the surface of said material increasing in length from the edges toward the center of the surface.

3,283,151
AUTOMATIC SAMPLE CHANGER FOR SCINTILLATION COUNTING
Floyd R. Rowan, Chicago, and Joseph E. Kus, Mount Prospect, Ill., assignors to Nuclear-Chicago Corporation, Des Plaines, Ill., a corporation of Delaware
Filed Apr. 15, 1963, Ser. No. 273,064
15 Claims. (Cl. 250—71.5)

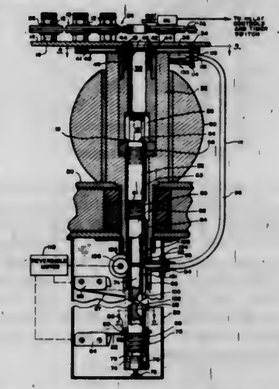
1. A liquid scintillation sample changer comprising:

(a) a conveyor bearing radioactive samples dispersed in a scintillating liquid,

(b) a light-tight chamber having a photosensitive transducer therein,

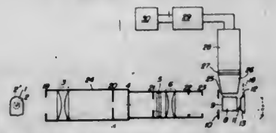
(c) a passage connecting the chamber and the conveyor,

(d) a light-tight closure selectively opening and closing the outer end of the passage.
(e) light-sealing means forming a light-tight seal in the passage inward of the closure,
(f) mechanical connection means intercoupling the closure and the sealing means for maintaining the seal at all times when the closure is at least partially open,
(g) cycled sample delivery means for first moving a sample from the conveyor through the passage to the chamber, and later moving the sample through the passage back to the conveyor,



(h) a timer having a preset time longer than the first said portion of the cycle of the sample delivery means,
(i) means responsive to the commencement of the cycle of the sample delivery means to activate the timer,
(j) means responsive to the timer upon its operation for the preset time to operate the sample delivery means in said later portion of its cycle, and
(k) means responsive to the delivery of the sample to the chamber to inactivate the timer, the timer thus commencing operation in every cycle of the changer, but affecting the cycling only of jammed samples.

3,283,152
OPTICAL SYSTEM FOR USE WITH FLUOROGLASS DOSIMETERS
Ryosuke Yokota, Yokohama, and Saburo Nakajima, Kawasaki-shi, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed Dec. 11, 1963, Ser. No. 329,690
Claims priority, application Japan, July 8, 1963, 38/35,165
2 Claims. (Cl. 250—71.5)



1. A fluoroglass dosimeter comprising a source of ultraviolet light, a first stop disposed at a focus of a lens system for condensing the light from said ultra-violet light source, a lens system for magnifying and making convergent rays by refracting the light having passed through said first stop, a block of dosimeter glass in the form of a rectangular parallelepiped disposed in an optical path of said magnifying lens system, a second stop disposed in front of said glass of rectangular parallelepiped for intercepting the incident light upon peripheral edges of a face of said rectangular parallelepiped thereby nearly parallel rays being obtained, a mirror face disposed behind said glass of rectangular parallelepiped for reflecting the light having passed through said second stop, reflective mirrors for diverting outwardly of the optical path a portion of stray light included in the light having passed through said second stop, a photomultiplier positioned out of the path of light from said last mentioned reflective mirrors for receiving fluorescence emitted in said glass of rectangular parallelepiped, and an instrument for measuring a photoelectric current output of said photomultiplier.

3,283,153
RADON DOSIMETER
Eric L. Geiger, Santa Fe, N. Mex., assignor to Eberline Instrument Corporation of Santa Fe, N. Mex.
Filed July 2, 1963, Ser. No. 292,322
7 Claims. (Cl. 250—83)

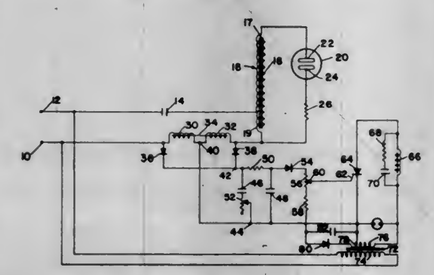


1. A dosimeter for radon and radon daughters of a size adapted to be worn on the person, comprising
a flat base having a recess in its central portion,
a multiplicity of small bores extending outwardly from the periphery of the recess in a plurality of directions to the exterior of the base, whereby circulation of air into and out of said recess is facilitated,
a light-tight window mounted above the recess, said window being opaque to visible light and sufficiently thin to permit substantially unimpeded passage of alpha particles, and
a removable cover over the window on the side opposite said recess and mounted to define a space for
a sheet of film containing an alpha-sensitive emulsion capable of producing permanent visible indications of the presence and the number of alpha particles striking the film.

3,283,154
FLAME DETECTOR SYSTEM USING AN ULTRAVIOLET DETECTOR OF THE AVALANCHE DISCHARGE TYPE
Philip Giuffrida, North Andover, and John Pratt, Braintree, Mass., assignors to Electronics Corporation of America, Cambridge, Mass., a corporation of Massachusetts
Filed Feb. 21, 1963, Ser. No. 260,126
18 Claims. (Cl. 250—83.6)

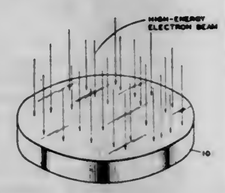
1. Condition sensing apparatus comprising a condition sensor of the avalanche discharge type having a pair of electrodes mounted in spaced relation within an envelope transparent to radiation,
a voltage step up transformer having a primary winding element and a secondary winding element inductively coupled together,
said secondary winding element being connected in series with the electrodes of said condition sensor,

a capacitive element connected in series circuit with said primary winding element to simulate a resonant circuit at line frequency,
means to connect alternating current supply means to energize said primary winding element and induce a high voltage signal in said secondary winding element for application to said electrodes to establish



a high voltage electric field between said spaced electrodes,
and means sensitive to the change of current flow in said primary winding element when the high voltage electric field between said spaced electrodes breaks down in avalanche discharge to provide a signal of such breakdown.

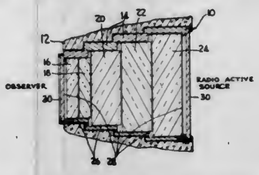
3,283,155
SHORT-DURATION LIGHT SOURCE COMPRISING AN ELECTRON IRRADIATED TRANSPARENT INSULATING BODY
Vaughn E. Culler, Pennington, N.J., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed June 5, 1963, Ser. No. 285,792
3 Claims. (Cl. 250—84)



2. A light source comprising a glass body having the normal product of its electrical resistivity and its dielectric constant equal to at least 10^{22} ohm-cm. and having under electron irradiation the product of its electrical resistivity and its dielectric constant equal to at least 3×10^{16} ohm-cm., said body having concentrated in a portion thereof an excess of negative electrical charges.

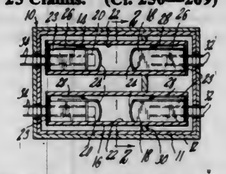
3,283,156
NUCLEAR RADIATION SHIELDING WINDOW
Joseph S. Mazza, Pittsburgh, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 12, 1963, Ser. No. 264,528
5 Claims. (Cl. 250—108)

2. A radiation shielding window comprising mounting means and a slab of glass of from 4 to about 10 inches thick, said glass having a volume resistivity of less than about 10^{11} ohm-centimeters at a temperature of 100° centigrade and containing cerium oxide in an amount sufficient to resist browning of the glass when exposed to high



energy radiation but not provide an objectionable intrinsic color to the glass.

3,283,157
PHOTOMODULATOR FOR USE WITH HIGH GAIN D.C. AMPLIFIER
David E. Blackmer, Waltham, Mass., assignor to Instrumentation Laboratory Inc., Boston, Mass., a corporation of Massachusetts
Filed May 7, 1963, Ser. No. 278,670
23 Claims. (Cl. 250—209)



1. A photomodulator for use with a high gain D.C. amplifier comprising
two similar control devices,
each device including an electrically conductive tube,
a photoconductive cell disposed within said tube,
said cell having a resistance under a light intensity of two foot candles in the order of fifty megohms,
a neon bulb having a light output in the order of one hundred foot candles disposed in optically coupled relation to said cell,
and an electrically conductive film of uniform light transmitting characteristics disposed between said cell and said bulb and electrically connected to said tube,
said bulbs being connected in parallel in an input circuit including means for applying an alternating voltage to said bulbs,
an asymmetrically conductive device connected in parallel with each bulb,
and a series resistance capacitance circuit connected in series with each bulb for augmenting the voltage applied to each bulb and controlling the conduction angle of the control device,
and said cells being connected in series with an output circuit for controlling the channeling of a D.C. signal to said amplifier.

3,283,158
LIGHT SENSING DEVICE FOR CONTROLLING ORIENTATION OF OBJECT
Alfred E. Eckermann, Jr., Hasbrouck Heights, N.J., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed May 4, 1962, Ser. No. 192,468
9 Claims. (Cl. 250—211)

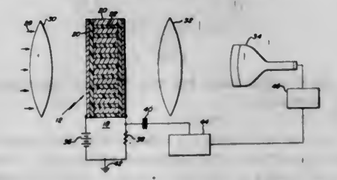
9. Means for controlling the attitude of a space vehicle from the sun, comprising a light sensitive device including light sensitive means providing electrical signals when exposed to light, said light sensitive means including a plurality of photo-voltaic cells semicylindrical in shape and having their outer surfaces coated with light sensitive material at one side of a line and rendered opaque to

light at the other side of the line, said line corresponding to the function $h=kb$, where h is the height of the semi-cylinder and b is one-half the circumference of the cylinder and k is a constant of proportionality, said cells being



physically arranged and electrically connected in pairs to provide electrical signals corresponding to the attitude of the light sensing device relative to the sum about one axis.

3,283,159
LIGHT-SCANNED TUBE AND TARGET THEREFOR
Charles D. Robbins, Stamford, Conn., assignor to Machlett Laboratories, Incorporated, Springdale, Conn., a corporation of Connecticut
Filed Dec. 12, 1961, Ser. No. 158,841
3 Claims. (Cl. 250—213)



1. A light-scanned image conversion device comprising in combination, a target comprising first and second imperforate photoconductive layers, a plurality of closely spaced parallel discrete conductive members having their respective ends contiguous with one side of the respective layers, said members being insulated from one another, the entire target between the photoconductive layers being completely opaque to incident light, first and second conductive coatings covering the other side of the respective layers, a source of potential connected between the conductive coatings, means scanning one of the photoconductive layers and means detecting an output from the scanned layer in accordance with information projected on the other photoconductive layer.

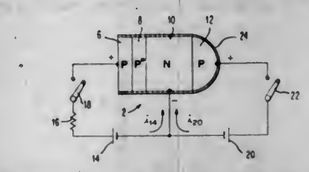
3,283,160
PHOTOELECTRONIC SEMICONDUCTOR DEVICES COMPRISING AN INJECTION LUMINESCENT DIODE AND A LIGHT SENSITIVE DIODE WITH A COMMON N-REGION
Ralph S. Levitt, Ossining, and Kurt Weiser, Millwood, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Nov. 26, 1963, Ser. No. 326,171
10 Claims. (Cl. 250—213)

3. A bistable asymmetrically conductive device comprising

a wafer on n-type GaAs having been doped with Mn as a deep level impurity to provide a high impedance region and with Zn as a shallow level impurity to provide a low impedance region,

said doping providing two diodes wherein one diode is a light-sensitive negative resistance diode having a voltage threshold for switching it from its high impedance condition to its low impedance condition consisting of a low impedance region P where the main impurity in the GaAs is Zn, a high impedance region P° where the main impurity in the GaAs is Mn and the n-type GaAs region,

and said second diode being an injection luminescent diode consisting of said n-type GaAs region and a

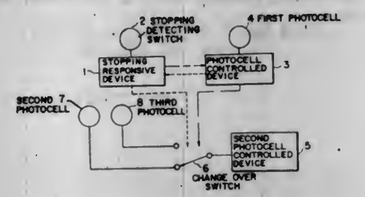


low impedance region P where the main impurity in said GaAs is Zn,

means for biasing said light sensitive diode in its forward current-conducting direction,

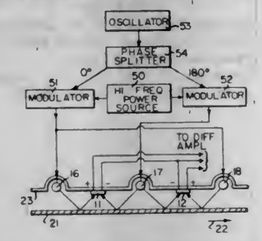
and further means for biasing said luminescent diode in its forward current-conducting direction whereby light given off by said luminescent diode will impinge upon said light-sensitive diode and lower its voltage threshold.

3,283,161
FULLY AUTOMATIC CONTROL DEVICE FOR ILLUMINATING LAMPS OF MOTOR VEHICLES
Susumu Ubukata, Chikusa-ku, Nagoya-shi, Michio Yashima, Imamura-cho, Anjo-shi, Takeo Ito, Higashi-ku, Nagoya-shi, and Eiichi Takada, Nakamura-ku, Nagoya-shi, Japan, assignors to Susumu Ubukata, Nagoya-shi, Japan
Filed Sept. 5, 1963, Ser. No. 306,916
Claims priority, application Japan, Sept. 8, 1962, 37/37,716; Sept. 24, 1962, 37/42,069; Dec. 29, 1962, 37/59,751; Mar. 16, 1963, 38/14,428
12 Claims. (Cl. 250—214)



1. A fully automatic control system for lighting lamps of a vehicle, including main and auxiliary head lamps, side lamps and tail lamps, which comprises, in combination, a first photocell-controlled device; a first photocell responsive to a predetermined nighttime illumination intensity value connected to said device; a second photocell-controlled device; a second and a third photocell connected to said second device; said second photocell responding to a predetermined twilight illumination value, and said third photocell responding to a predetermined illumination value produced by on-coming cars; a battery; electric power circuits, fed by said battery, for said devices; means for controlling said second device by said first device and, responding to a value lower than said predetermined twilight illumination intensity, lighting said side and tail lamps; responding to a value lower than said predetermined nighttime illumination intensity, continuously lighting said tail lamps; responding to a lower value than the predetermined illumination intensity of on-coming cars, lighting the main head lamps; and, responding to a higher value than the predetermined illumination intensity of on-coming cars, lighting the auxiliary head lamps.

3,283,162
PHOTOSENSITIVE APPARATUS FOR DETECTING A FLAW IN MATERIAL WITH STEADY ILLUMINATION MEANS
George F. Quittner, Cleveland Heights, Ohio, assignor, by mesne assignments, to API Instruments Company, Chesterland, Ohio, a corporation of Ohio
Filed Jan. 29, 1963, Ser. No. 254,780
10 Claims. (Cl. 250—219)



9. Illumination and optical sensing comparison apparatus for use with a relatively moving sample material, comprising:

a first source of high frequency A.C. power,

a second source of lower frequency A.C. power,

means for phase splitting power derived from said second source and for using phase split second source power to modulate power derived from said first source in two substantially differing phase relationships,

a light sensing means,

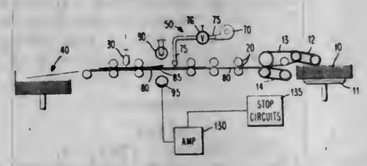
a first lamp connected to be energized from said sources in one of said two phase relationships,

a second lamp connected to be energized from said sources in the other of said two phase relationships,

a light sensing means, and

means for mounting said light sensing means and said lamps stationary with respect to the moving sample material and so that the first lamp provides illumination which by coupling with one instantaneously distinct portion of the sample material illumines the sensing means while the second lamp provides illumination which by coupling with another instantaneously distinct portion of the sample material illumines the sensing means, whereby to provide substantially steady illumination of sensing means except when the relation is disturbed by a flaw at either of said distinct sample portions.

3,283,163
PHOTOSENSITIVE OVERLAPPED DOCUMENT DETECTOR
Arthur J. Folmar, Rochester, Minn., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Nov. 6, 1963, Ser. No. 321,949
13 Claims. (Cl. 250—223)



13. In a document handling machine:

a hopper for containing documents;

means for feeding documents from the bottom of said hopper in seriatim along a predetermined document path;

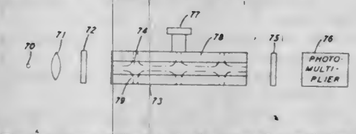
a light sensitive device positioned adjacent to one side of said document path;

a light source positioned adjacent to the other side of said document path so that light is directed onto said light sensitive element, the intensity of said light source being sufficient to render said light sensitive device in a saturated state both during the presence and absence of documents passing between said light source and said light sensitive device;

means for vertically separating overlapped documents to introduce a space therebetween as said documents pass between said light source and said light sensitive device whereby the light transmitted by said overlapped documents is attenuated and causes said light sensitive device to switch to its non-saturated state; and

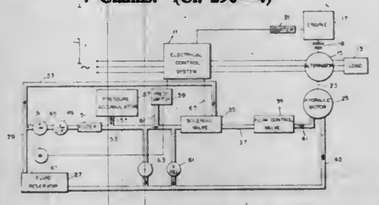
means for detecting that said light sensitive device has switched to its non-saturated state.

3,283,164
DEVICES UTILIZING LITHIUM META-GALLATE
Joseph P. Remeika, Warren Township, Somerset County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 19, 1963, Ser. No. 331,871
7 Claims. (Cl. 250—225)



7. Device comprising a single crystal consisting essentially of $LiGaO_2$, together with means for applying an alternating electrostatic field across at least a portion of the said crystal, means for irradiating a surface of the said crystal with a beam of plane polarized electromagnetic radiation, and means for detecting a transmitter beam of electromagnetic radiation.

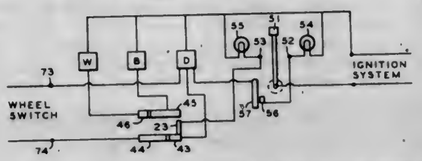
3,283,165
NO BREAK POWER SYSTEM
Alexander Bloch, Norwalk, Conn., assignor to Dynamics Corporation of America, New York, N.Y., a corporation of New York
Filed Aug. 22, 1963, Ser. No. 303,894
7 Claims. (Cl. 290—4)



1. An auxiliary power system for temporarily supplying electrical current to a load during the period between power fluctuation of the normal power supply outside of acceptable limits and the substitution of power by an emergency power generating unit comprising, a fluid reservoir, a pump connected to said reservoir, a pressure accumulator connected to the output of said pump, a hydraulic motor, normally closed valve means connected between said pressure accumulator and said hydraulic motor, a recirculating system between said hydraulic motor and said reservoir by-passing said valve means, actuating means coupled to said valve means for opening said valve means upon said power fluctuation of said normal supply, an alternator, means for electrically con-

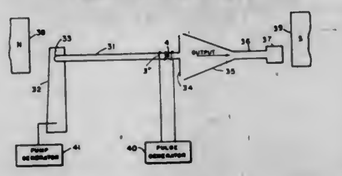
necting said alternator to said normal power supply and mechanical means coupled between said hydraulic motor and said alternator.

3,283,166
AUTOMOTIVE SAFETY UNITS
Edward Stift, 7510 S. Lindbergh Blvd., St. Louis, Mo.
Filed July 25, 1962, Ser. No. 212,234
12 Claims. (Cl. 307—10)



1. In an automotive safety unit for a system including a distributor, brake-actuating means and oil pump:
(a) an electrical circuit having switching means including a first contact operatively connected to the distributor, and having a second contact operatively connected to the brake-actuating means,
(b) a pressure-responsive means connected to the oil pump including a movable contact in the said electrical circuit,
(c) means selectively engaging said movable contact with said first contact,
(d) a manual switch interconnecting said first contact and distributor, and
(e) means selectively engaging said movable contact with said second contact to actuate said brake-actuating means when the distributor is disconnected upon opening of the manual switch.

3,283,167
PULSED FERRITE FREQUENCY CONVERTER
Tor Schaug-Pettersen, Florvaag, Norway, Brian John Elliott, Palo Alto, Calif., and Herbert John Shaw, Stamford, Conn., assignors to the United States of America as represented by the Secretary of the Army
Original application May 26, 1961, Ser. No. 123,078, now Patent No. 3,229,193, dated Jan. 11, 1966. Divided and this application Sept. 3, 1965, Ser. No. 545,172
1 Claim. (Cl. 307—88.3)



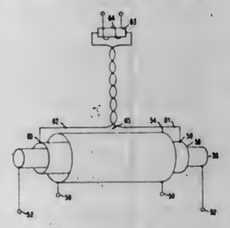
A frequency converter comprising: a waveguide having one end shorted and the other end open; a pump signal source coupled to said waveguide near said shorted end; a coupling loop positioned in said waveguide near said open end; a parallel wire transmission line connected to said loop; a dipole antenna connected to said line; a receiving horn electromagnetically coupled to said dipole for selecting the output frequency which is higher than the frequency of said pump signal source; a sphere of gyromagnetic material located between the parallel wires of said line; means magnetically coupled to said material for applying a continuous D.C. magnetic field to said material to bias said material to gyromagnetic resonance; a wire coil surrounding said material; and means coupled to said coil for applying a pulsed D.C. magnetic field to said material in the same direction as said continuous field.

ERRATA

For Class 307—88.5 see:

Patent No. 3,282,631
Patent No. 3,282,632

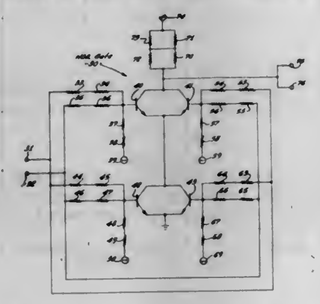
3,283,168
MULTI-LAYERED CRYOGENIC SWITCHING DEVICES
Richard L. Garwin, Scarsdale, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Sept. 15, 1958, Ser. No. 761,085
14 Claims. (Cl. 307—88.5)



2. A gating device comprising first, second, and third conductors disposed in parallel spaced relationship,
said second conductor being arranged within said first conductor,
said third conductor being arranged within said second conductor,
said conductors being fabricated of superconductor material and maintained at an operating temperature at which each is in a superconductive material in the absence of a magnetic field,
input means for said device comprising means connected to longitudinally spaced points on said third conductor for producing longitudinal current therein and thereby generating a magnetic field in the vicinity of said first conductor,
said magnetic field produced by the longitudinal current in said third conductor being less than the critical field required to drive said first conductor from a superconductive to a resistive state,
output circuit means for said device connected to longitudinally spaced points on said first conductor,
further circuit means connected to longitudinally spaced points on said second conductor for controlling the effect of said magnetic field produced by said current in said third conductor on said first conductor, wherein said further means is fabricated entirely of superconductive material maintained at a temperature at which it is a superconductive state in the absence of a magnetic field and forms with said second conductor a closed superconductive loop,
and wherein there is provided means arranged in magnetic field applying relationship to a portion only of said further circuit means for controlling the state, superconductive or normal, of said portion only and thereby controlling the transmission of signals between said first and third conductors.

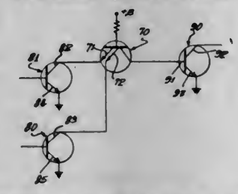
3,283,169
REDUNDANCY CIRCUIT
William H. Libaw, Los Angeles, Calif., assignor to The Magnavox Company, Los Angeles, Calif., a corporation of Delaware
Filed July 11, 1960, Ser. No. 41,848
7 Claims. (Cl. 307—88.5)

1. In combination, at least two input terminals for receiving input signals, four transistors each having a base, an emitter and a collector and having conductive and non-conductive states, a pair of resistive circuit arrangements for each of the transistors, one arrangement of each of the pairs of arrangements being connected from the base of the associated transistor to one of the two input terminals, the other arrangement of each of the pairs of arrangements being connected from the base of the associated transistor to the other one of the two input terminals, each of the arrangements including at least two serially connected resistors, biasing means coupled to the bases of each of said four transistors and including at least two serially connected resistors



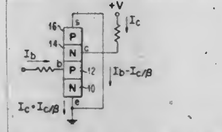
to bias the transistors in a particular one of the conductive and non-conductive states, means directly connecting the emitters of a first two of said transistors to each other and to the collectors of the other two of the four transistors, means directly interconnecting the emitters of the other two transistors, means directly interconnecting the collectors of the first two of the four transistors, biasing means connected to the collectors of the first two of said four transistors and including a series parallel arrangement of four resistors to facilitate the operation of the transistors in the conductive state, and at least one output terminal connected to the collectors of the first two of said four transistors.

3,283,170
COUPLING TRANSISTOR LOGIC AND OTHER CIRCUITS
James L. Bule, Panorama City, Calif., assignor to TRW Semiconductors, Inc., Los Angeles, Calif., a corporation of Delaware
Filed Sept. 8, 1961, Ser. No. 136,841
28 Claims. (Cl. 307—88.5)



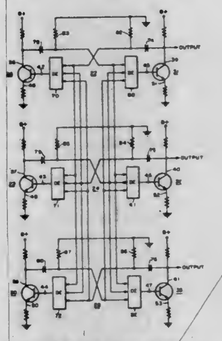
24. In a transistor circuit having at least one input transistor and at least one output transistor, each of said transistors having a base electrode, an emitter electrode and a collector electrode, said circuit including a coupling transistor having a base electrode, an emitter electrode and a collector electrode, each of said transistors being of the same type, said base electrode of said coupling transistor being coupled to a source of current, one of said electrodes other than the base electrode of said coupling transistor being coupled to one of said electrodes other than the base electrode of said input transistor and the other of said emitter and collector electrodes of said coupling transistor being coupled to the base electrode of said output transistor, the base electrode and the other electrodes of said input transistor adapted to be connected to an input circuit, and the emitter and collector electrodes of said output transistor adapted to be connected to an output circuit.

3,283,171
SEMICONDUCTOR SWITCHING DEVICE AND CIRCUIT
Robert B. Seeds, Sunnyvale, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Feb. 1, 1963, Ser. No. 255,496
8 Claims. (Cl. 307—88.5)



1. A simulated relay type transistor switching element comprising
a four layer transistor defining emitter, base, collector and base current sink regions in that order respectively, bias means for maintaining the base-collector and collector-base current sink junction reverse biased when said transistor is saturated,
said collector region being between about 2 and 5 times the width of said base region whereby minority carriers injected into said collector by said base will be swept into said base current sink region by a drift field set up by the collector-base current sink bias, and
means for selectively biasing said base region to the cut-off and saturated level.

3,283,172
REDUNDANT MULTIVIBRATOR
Charles G. Masters, Jr., Severn, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 21, 1963, Ser. No. 317,751
4 Claims. (Cl. 307—88.5)



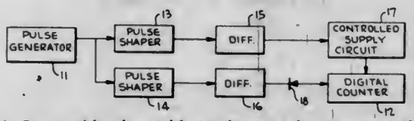
1. A redundant pulse source comprising:
a plurality of multivibrators each including a first and a second stage and being of the type wherein said first and second stages alternately conduct while the opposite one of said stages is cutoff;
an ouput element for each said stage;
a control element for each said stage;
a decision element associated with each said stage responsive to output signals appearing on a predeter-

mined number of said output elements for providing a trigger signal to an associated one of said control elements if a predetermined number of said output signals received, have a predetermined value.

3,283,173
POWER-SAVING DEVICE FOR DIGITAL CIRCUITRY

Ira R. Marcus, Wheaton, Md., assignor to the United States of America as represented by the Secretary of the Army

Filed Nov. 19, 1963, Ser. No. 324,896
8 Claims. (Cl. 307—88.5)



1. In combination with an input pulse source and a digital counter for electrical pulses, said counter having a power input terminal and an actuating-pulse terminal, said counter requiring a minimum counting voltage v_c at said power input terminal to enable said counter to count pulses applied to said actuating-pulse terminal, said counter requiring a minimum memory voltage v_m at said power input terminal to enable said counter to retain in its memory pulses that have been counted, v_m being less than v_c, an improvement for reducing the average power required for operation of said counter, said improvement comprising:

(a) a power supply having an output terminal and a control terminal, said output terminal connected to said power input terminal;

(b) said power supply applying a quiescent voltage to said power input terminal of at least v_m but less than v_c;

(c) said power supply being adapted, in response to voltage information applied to said control terminal, to increase the voltage at said power input terminal to a value at least equal to v_c for a period at least long enough to permit said counter to respond to an actuating pulse applied to said actuating pulse terminal and to thereafter reduce the voltage at said power input terminal to said quiescent value;

(d) first means connected between said input pulse source and said control terminal for supplying voltage information to said control terminal in response to an input pulse from said input pulse source; and

(e) second means connected between said input pulse source and said actuating-pulse terminal for supplying a slightly delayed actuating pulse to said actuating-pulse terminal in response to an input pulse from said input pulse source;

(f) whereby in response to an input pulse from said input pulse source the voltage at said power input terminal is raised to a value at least equal to v_c for a limited period and an actuating pulse is received at said actuating pulse terminal and counted by said counter during said limited period, the voltage at said power input terminal thereafter returning to its quiescent value.

3,283,174
PHASE COMPARISON MEANS

John Baude, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

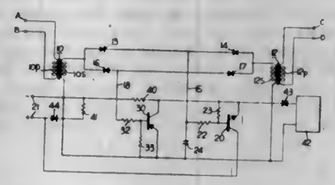
Filed Dec. 18, 1963, Ser. No. 331,550
19 Claims. (Cl. 307—88.5)

1. An electrical circuit comprising first and second sources of electrical energy of alternating polarities;

a third source of electrical energy;

a load connected to the third source; and

means connected to receive the electrical energy from the first and second sources and connected between the load and third source for controlling the flow

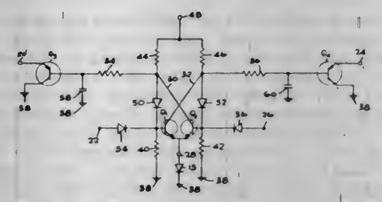


of electrical energy from the third source to the load in response to a predetermined, instantaneous polarity relationship of the first and second source.

3,283,175
A.C. LOGIC FLIP-FLOP CIRCUITS

James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Ted Winkler

Filed Jan. 8, 1964, Ser. No. 336,607
4 Claims. (Cl. 307—88.5)



1. In combination:

first, second, third, and fourth transistors each having a base, a collector and an emitter;

a first circuit means connecting the base of said first transistor with the collector of said second transistor;

a second circuit means for connecting the base of said second transistor with the collector of said first transistor;

a first delay network connecting the base of said third transistor to said first circuit means;

a second delay network connecting the base of said fourth transistor to said second circuit means;

a means for applying recurring clock pulses to the bases of said first and second transistors to vary the bias of said third and fourth transistors via corresponding ones of said delay networks; and to the emitters of said third and fourth transistors to cause conduction of one or the other thereof, as determined by the bias applied thereto from said first and second transistors.

3,283,176
STEP FUNCTION GENERATOR

Joseph Lee Gilliland and Alan Victor White, both of Houston, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed July 9, 1964, Ser. No. 381,462
9 Claims. (Cl. 307—88.5)

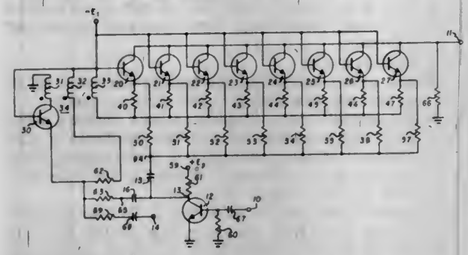
1. A step function generator comprising,

a transistor for producing a pulse by the avalanche thereof in response to a signal applied thereto,

an amplifier responsive to said pulse as a first input, and

means triggered by said pulse to provide a second input

to said amplifier, said second input continuing after the decay of said pulse,

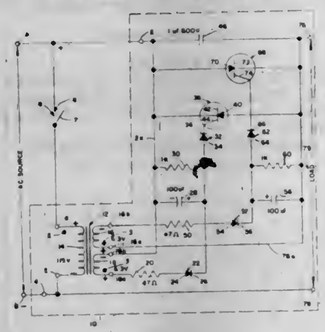


whereby the amplifier output is sustained after the decay of said pulse.

3,283,177
INTERFERENCE-FREE A.-C. SWITCH

William S. Cooper, Sacramento, Calif., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

Filed Sept. 2, 1964, Ser. No. 393,830
7 Claims. (Cl. 307—88.5)



1. A silicon-controlled gated rectifier switching system comprising:

a source of alternating current having at least a current lead, and a common lead;

a first gated silicon-controlled rectifier means connected in series with said current lead and poled so as to be conductive, only during the concidence of a first forward-biasing gating signal and the positive half-cycles of the alternating current in said source;

a second gated silicon-controlled rectifier means connected in parallel with said first gated silicon-controlled rectifier means and poled so as to be conductive only during the coincidence of second forward-biasing gating signal and the negative half-cycles of the alternating current in said source;

phase-inverting means coupled to said source for developing alternating-current signals which are opposite in phase with respect to said source;

first forward-biasing-signal generating means connected to said phase inverting means in such polarity as to produce a first positive direct-current gating potential on the half-cycle of the alternating current in said phase-inverting means corresponding to negative half-cycles of said source, said first forward-biasing signal generating means being connected to said first gated silicon-controlled rectifier;

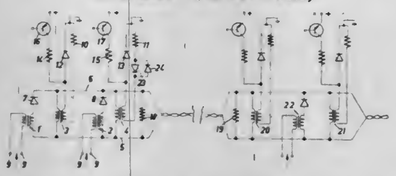
second forward-biasing-signal generating means connected to said phase-inverting means in such polarity as to produce a second positive direct-current gating potential on the half-cycle of the alternating current in said phase-inverting means corresponding to the positive half-cycle in said source, said second forward-biasing-signal generating means being connected to said second gated silicon-controlled rectifier; and,

a load device being connected between said parallel connection of said silicon-controlled rectifiers and said common lead of said alternating-current source, whereby when alternating current from said source is applied to said phase-inverting means said first gating potential is applied to said first gated silicon-controlled rectifier which does not conduct until there is coincidence of said first gating potential with a succeeding positive half cycle of said source whereupon conduction of said first silicon-controlled rectifier occurs beginning at the initiation of said succeeding positive half-cycle of said source and on succeeding positive half-cycles thereafter, and said second gating potential is applied to said second gated silicon-controlled rectifier which does not conduct until there is coincidence of said second gating potential with a next-following negative half-cycle of said alternating-current source whereupon conduction of said second silicon-controlled rectifier occurs beginning at the initiation of said next-following negative half-cycle of said alternating-current source and on negative half-cycles of said source following thereafter, so that alternating current from said source may be applied to said load, and when said alternating current from said source is removed from said phase-inverting means said first silicon-controlled rectifier will no longer conduct at the beginning of the first negative half-cycle thereafter, at which said coincidence is not present, and said second silicon-controlled rectifier will no longer conduct at the beginning of the first positive half-cycle thereafter, at which said coincidence is not present, thereby removing said alternating current from said load, said application of said alternating current thereby to said load occurring on the rise of a positive or negative half-cycle without sudden change and the removal of said alternating current from said load occurring on the fall of a half-cycle without sudden change, so as to eliminate high-frequency interference producing transients.

3,283,178
PULSE TRANSMISSION CIRCUIT

Heinz E. Voigt, Konstanz, Germany, assignor to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany

Filed Oct. 8, 1964, Ser. No. 402,555
Claims priority, application Germany, Oct. 9, 1963, T 24,856
13 Claims. (Cl. 307—88.5)



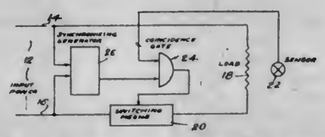
1. A pulse transmission circuit arrangement comprising, in combination: two conductors; at least one input transformer and at least two output transformers, each transformer having a primary winding and a secondary winding, the secondary winding of said input transformer being connected across said two conductors and the primary windings of said output transformers each being

connected across said two conductors; a plurality of rectifiers each connected in series-circuit with the secondary winding of a respective output transformer, each of said rectifiers and the respective secondary winding having a polarity such that a pulse to be applied to a load connected to a respective output transformer drives such rectifier toward its state of low conductivity; and a plurality of switch means each connected to a respective series-circuit at the juncture of the respective secondary winding and respective rectifier for controlling the state of conductivity of the respective rectifier, thereby to allow a pulse applied to said input transformer to be switched through to a load connected to any selected one of said output transformers and for simultaneously limiting the amplitude of the pulse which is switched through to the load.

3,283,179
APPARATUS FOR AND METHOD OF ZERO SWITCHING

Thomas E. Carlisle, Elmhurst, and Edward J. Flannery, Park Ridge, Ill., assignors to Vapor Corporation, Chicago, Ill., a corporation of Delaware

Filed Sept. 17, 1963, Ser. No. 309,519
10 Claims. (Cl. 307—133)

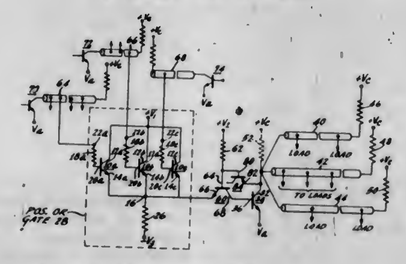


1. Apparatus of the character disclosed comprising circuit means adapted for connection with an A.C. source, switching means in said circuit means, an electrically energized load in said circuit means, means for sensing temperature changes in said load, coincidence gate means, bridge amplifier means for producing a first signal in response to a temperature change in said load and operative for transmitting it to said coincidence gate means, means for producing a second signal substantially comensurate with a half wave of the A.C., amplifier means operative, in response to said signal, for producing a spike signal at the beginning of the second signal and transmitting it to said coincidence gate means, said coincidence gate means being operative, in response to transmission of both the first signal and the spike signal simultaneously thereto, for activating said switching means.

3,283,180
LOGIC CIRCUITS UTILIZING TRANSISTOR AS LEVEL SHIFT MEANS

Abraham I. Pressman, Elkins Park, Pa., assignor to Radio Corporation of America, a corporation of Delaware

Filed Mar. 22, 1963, Ser. No. 267,103
8 Claims. (Cl. 307—88.5)

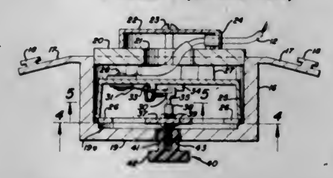


1. The combination comprising:
an output transistor of one conductivity type connected in the common emitter configuration and having a base electrode and a collector electrode;
a logic gate having a plurality of gate transistors of said one conductivity type connected as emitter followers;
a junction point;
circuit means connecting the emitter electrodes of all of said gate transistors to said junction point;
a first current device connected at said junction point;
a level shift transistor of said one conductivity type having its emitter connected to said junction point and having its collector connected to the base electrode of said output transistor;
a second current device connected at the base electrode of said level shift transistor, one of the first and second current devices being a current source and the other being a current sink;
means for selectively applying input signals at the base electrodes of said gate transistors to vary the voltage at said junction point between first and second values for forward biasing and reverse biasing respectively, the emitter-base junction of said level shift transistor; and
unidirectional conducting means connected between the base electrode of said level shift transistor and the collector electrode of said output transistor to control the voltage at said collector electrode in the "on" condition of said output transistor.

3,283,181
ELECTROMECHANICAL TRANSDUCER

Frederic R. Johanson, Columbus, Ohio, assignor to The Jaeger Machine Company, Columbus, Ohio, a corporation of Ohio

Filed Mar. 8, 1963, Ser. No. 263,959
1 Claim. (Cl. 310—8.6)



An electromechanical transducer comprising a housing, a piezoelectric crystal disposed within said housing and supported for displacement about a voltage-producing axis, said crystal having an electrical cable connected thereto which extends exteriorly of said housing through an opening formed in said housing with said opening being arranged to maintain said cable substantially normal to the axis of motion of said crystal, and a diaphragm of elongated bar form supported in a normally unflexed configuration within said housing for flexing movement in a plane parallel to the displacement axis of said crystal, said diaphragm being supported at each end and permitting the relatively free flow of fluid therearound.

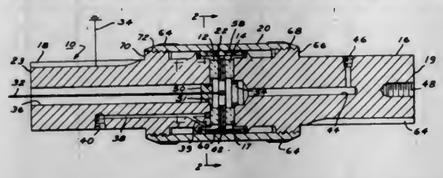
3,283,182
TRANSDUCER ASSEMBLY

James Byron Jones and Nicholas Maropis, both of West Chester, Pa., assignors to Aeroprojects Incorporated, West Chester, Pa., a corporation of Pennsylvania

Filed May 11, 1965, Ser. No. 456,900
20 Claims. (Cl. 310—8.7)

1. A transducer assembly comprising first and second metal members having parallel end faces in spaced and mutually facing relationship, a first annular ceramic transducer element between said end faces and juxtaposed to the end face of said first member, a second annular ceramic transducer element between said end faces and

juxtaposed to the end face on said second member, a spacer between said elements, a resonant sleeve encompassing the mutually facing end faces of said first and second members, adjustable means coupling said sleeve

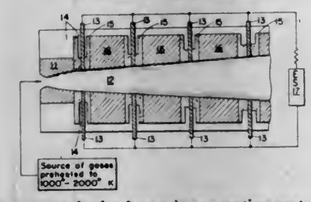


to at least one of said first and second members so that relative movement between said sleeve and one member biases said one member toward the other member to compress the transducer elements therebetween.

3,283,183
MAGNETOHYDRODYNAMIC GENERATING SYSTEM

Syukuro Yano and Tatsumi Hiramoto, Tokai-mura, Nakagun, Ibaraki-ken, Japan, assignors to Nihon Genshiryoku Kenkyu Sho

Filed Oct. 22, 1962, Ser. No. 232,042
Claims priority, application Japan, Oct. 30, 1961, 36/39,129
11 Claims. (Cl. 310—11)



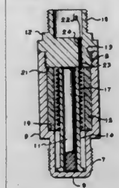
1. A magnetohydrodynamic generating system comprising a reactor, means to provide an operating gas in said reactor of a temperature between 1000° to 2000° K., and MHD generator connected to the output of said reactor, a turbo generator and a compressor with backfeed conduits of the MHD generator exhaust gases in sequence to said turbo generator, to said compressor and back to said reactor, MHD generator electric output means and means to excite the electrons only of said gas in said generator non-thermally to raise the effective temperature of the electrons and increase the conductivity of the gas without raising the temperature of the gas, said means to excite the electrons comprising means to apply an electric field to the path of the operating gas within said generator said means to apply an electric field to the path of the operating gas within said MHD generator comprising a first set of spaced pairs of electrodes symmetrically spaced outside of said path and an electric source connected to said electrodes and said MHD generator comprising a second set of pairs of output electrodes symmetrically spaced outside of said path within the space between the spaced pairs of electrodes formed by said first set of electrodes.

3,283,184
DETONATION PICKUP

Raymond R. Brown, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Nov. 4, 1963, Ser. No. 321,150
1 Claim. (Cl. 310—26)

A detonation pickup, comprising in combination:
an elongated metal casing composed of substantially nonmagnetic material, one end thereof being adapted to be secured to a cylinder of an internal combustion engine, said casing being closed at said one end by a pressure sensitive diaphragm;
a generally cylindrical bar-shaped first permanent magnet disposed axially within said casing having one end adjacent said diaphragm;
an elongated annular sleeve of magnetostrictive material positioned within said casing and surrounding said first magnet, one end of said sleeve being adjacent said diaphragm;

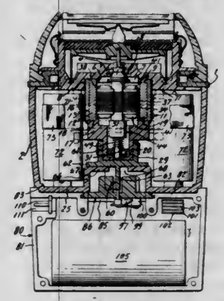


a coil of insulated wire wound on and fixedly mounted to at least a portion of the periphery of said sleeve; and
an annular second permanent magnet disposed within said casing and surrounding at least a portion of the coil-wrapped sleeve, said coil of insulated wire being disposed solely within the air gap between the outside surface of said sleeve and the inside surface of said annular second permanent magnet, said first and second permanent magnets being poled in opposite directions.

3,283,185
BATTERY OPERATED ELECTRIC SHAVER

Raymond A. Somers and Robert J. Tolmie, both of Fairfield, Conn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

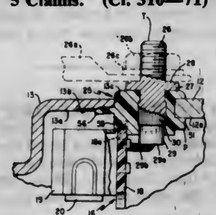
Original application Jan. 11, 1960, Ser. No. 1,546. Divided and this application June 16, 1965, Ser. No. 481,997
10 Claims. (Cl. 310—47)



1. An electric motor comprising a pair of spaced supporting members of insulating material, a stator for said motor having an inner field member comprising a cylindrical body of magnetizeable material and having inner and outer surfaces in concentric relation extending between said supporting members with opposite ends engaged therewith, a metallic sleeve member slidably engaged on said cylindrical body and of substantially equal length, extending between and engaging said supporting members, a longitudinally extending slot in said sleeve, said inner field member having magnetized pole sections of substantially equal width extending between opposite ends thereof, positioning means on said inner field member and said sleeve adapted to fix the position of said members relative to each other whereby said slot in said

sleeve is disposed at the center of one of said pole sections, an armature having a shaft extending substantially coaxially through said inner field member with opposite ends rotatably mounted in said supporting members, radially extending armature poles mounted on said shaft having a length less than said stator and pole faces on the ends of said armature poles having a width slightly less than the width of said magnetized pole sections, armature coil windings mounted on said armature poles, a commutator on said armature shaft having segments electrically connected with said coil windings, commutator brushes mounted on one of said supporting members with one end of each engaged with said commutator in operative relation, terminals on said one supporting member electrically connected to the opposite ends of said brushes for connecting said armature coils in circuit with a source of electricity to operate said motor, said armature having a greater number of poles than said stator arranged so that not more than one pole face on said armature will be opposite any of said stator poles at any time, and means securing said supporting members together for retaining said motor in assembled relation.

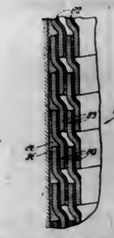
3,283,186
PLUG TYPE MOTOR BINDING POST
Donald S. Perry, Syracuse, N.Y., assignor to Eltra Corporation, Toledo, Ohio, a corporation of New York
Filed Oct. 30, 1963, Ser. No. 320,090
5 Claims. (Cl. 310—71)



1. In an outwardly-projecting terminal for a dynamoelectric machine having a tubular housing divided transversely into two cooperating sections in end to end relation, a slot in edge of at least one of the sections adapted to be closed by the other section when the housing sections are in cooperative relation, a block of resilient insulating material having cooperating pairs of flanges on at least two sides adapted to fit into the open end of the slot in one of the sections with the flanges embracing the edges of the slot, the inner flanges of said pairs of cooperating flanges being wing-like in shape extending a substantial distance in a lateral direction to contact the inner surface of the housing to be deflected thereby to resiliently urge the block in an inward direction, the block being held in fixed position in the slot by the other housing section, and terminal means for making electrical connection to the electrical circuit of the dynamo-electric machine affixed into the block of insulating material in transverse relation to extend the terminal means inwardly and outwardly of the wall of the tubular housing.

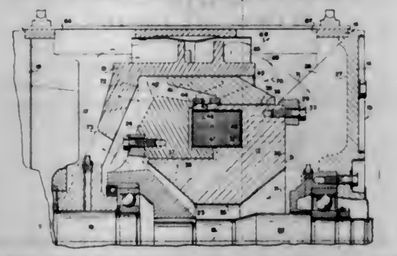
3,283,187
ELECTRIC MOTOR WITH A LAMINATED BORE LINER
Edward J. Schaefer, Bluffton, Ind., assignor to Franklin Electric Co., Inc., Bluffton, Ind., a corporation of Indiana
Filed Mar. 12, 1964, Ser. No. 351,344
21 Claims. (Cl. 310—86)

1. In an electric motor, a stator comprising a core structure having a central bore formed therethrough, a plurality of windings carried by said core structure, and a sealing liner positioned within said bore and covering the inner periphery of said core structure, said liner being



made of metal and an insulating material and having a plurality of circumferential electrical discontinuities in the axial direction and a plurality of circumferential electrical discontinuities in the radial direction.

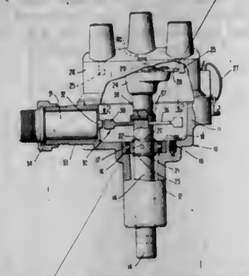
3,283,188
COIL CONSTRUCTION
John D. Edick, Wickliffe, Ohio, assignor to Reliance Electric and Engineering Company, a corporation of Ohio
Filed Feb. 8, 1963, Ser. No. 257,245
10 Claims. (Cl. 310—105)



1. A coil and core construction comprising, in combination, a magnetic core having first and second surfaces spaced apart in a first direction,
a toroidal coil wound from a metal strip conductor with the layers thereof being substantially parallel at a given circumferential position and substantially parallel to said first direction,
said core substantially surrounding paid coil,
said layers of strip conductor having edges defining a coil surface generally parallel to said core second surface,
and a beryllium oxide powder and binder mixture between said coil surface and said magnetic core second surface to establish good heat transfer characteristics in said first direction from the ends of said layers of strip conductor into said magnetic core and through said magnetic core to said core first surface for heat dissipation thereat.

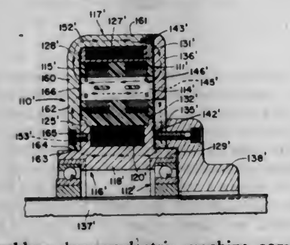
3,283,189
TIMER AND DISTRIBUTOR FOR IGNITION SYSTEMS AND THE LIKE
Richard P. McClelland, Mount Upton, N.Y., assignor to The Bendix Corporation, Sidney, N.Y., a corporation of Delaware
Filed Aug. 13, 1963, Ser. No. 301,844
6 Claims. (Cl. 310—155)

1. Apparatus of the class described comprising a rotatable shaft, a triggering wheel punched and formed from a unitary sheet metal blank, said wheel comprising a hub portion having an uninterrupted cylindrical wall of appreciable axial length for slidably receiving said shaft and a plurality of radially extending fingers, and means



for securing the hub portion to the shaft for rotation therewith.

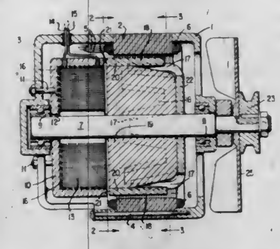
3,283,190
DYNAMOELECTRIC MACHINE
Robert B. Applegate, 4883 Grace Ave., North Olmsted, Ohio
Filed Oct. 18, 1965, Ser. No. 502,762
11 Claims. (Cl. 310—162)



1. A brushless dynamoelectric machine comprising a stator assembly having an annular series of stator pole pieces with windings therearound, a rotor assembly journaled in said stator assembly, said rotor assembly comprising a pair of inner and outer concentric rings lying in a common plane, said inner ring having a plurality of circumferentially spaced, radially outwardly extending exictation pole segments, said outer ring having a plurality of circumferentially spaced radially inwardly extending excitation pole segments disposed between said outwardly extending pole segments with spaces between said inwardly and outwardly extending pole segments, said pole segments providing alternate north and south excitation poles arranged annularly in a plane which is axially opposite and closely spaced adjacent one end of said stator pole pieces to form air gaps therebetween, magnetic means in said stator assembly for exciting said alternate north and south excitation poles, and means for completing the flux path for full flux reversals between said north and south excitation poles and said stator pole pieces.

3,283,191
INDUCTOR ALTERNATOR
Otis Carruth, 110 N. Austin St., Tulia, Tex.
Filed Nov. 7, 1962, Ser. No. 236,007
8 Claims. (Cl. 310—168)

7. In an alternator rotor, a rotor shaft of paramagnetic material, an annular member of paramagnetic material disposed about said shaft in spaced relation, nonmagnetic means connecting said annular member to said shaft, a plurality of spaced axially extending first pole shoes extending from said annular member, a plurality of opposed axially extending second pole shoes disposed in spaced intermeshing relation with said first pole shoes, and paramagnetic material means connecting said plurality of second pole shoes to said rotor shaft to provide



an open rotor flux path from said shaft, through said paramagnetic material means, through said second and first pole shoes and terminating in said annular member.

3,283,192
BATTERY OPERATED ELECTRIC SHAVER AND CHARGER
Raymond A. Somers and Robert J. Tolmie, Fairfield, Conn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Original application Jan. 11, 1960, Ser. No. 1,546. Divided and this application June 16, 1965, Ser. No. 481,996
4 Claims. (Cl. 310—269)

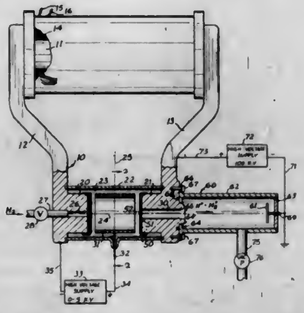


3. Insulating means for an armature body having a plurality of radially extending arms terminating in pole pieces at the outer ends thereof, said insulating means comprising a spool member of non-conductive material adapted for slidable engagement on the shaft at one end of said armature body, a plurality of radially extending insulating arms on said spool corresponding in number to and registering with the arms of the armature body for engagement with said one end of the armature body and, laterally extending flange portions on said insulating arms adapted for insertion between adjacent arms of said armature body for engagement with the side surfaces of said armature body, said insulating arms providing a support on the armature body for receiving coil windings and said flanges adapted to space and insulate the coil windings from the arms of the armature body.

3,283,193
ION SOURCE HAVING ELECTRODES OF CATALYTIC MATERIAL
Clarence H. Ellison, Atlanta, Ga., assignor to The Ellison Company, Atlanta, Ga., a corporation of Georgia
Filed May 14, 1962, Ser. No. 194,403
10 Claims. (Cl. 313—63)

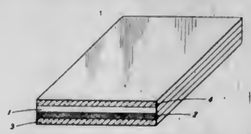
1. In an ion source of the type having a chamber, an anode member within said chamber, a cathode member within said chamber, said cathode member having an inner surface in spaced relationship to said anode member, means for establishing an electrical discharge between said anode member and said cathode member, means for evacuating said chamber, and means for introducing hydrogen gas into said chamber, the combination wherein said anode member is formed from a noble

metal selected from the group consisting of platinum, palladium and an alloy containing platinum or palladium,



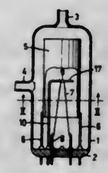
and including a plate of said noble metal covering said inner surface of said cathode member.

3,283,194
ELECTROLUMINESCENT LAMP WITH A BARIUM TITANATE LAYER
Richard M. Rulon, Wenham, Mass., assignor, by mesne assignments, to Sylvania Electric Products Inc., Wilmington, Del., a corporation of Delaware
Filed Nov. 16, 1955, Ser. No. 547,191
4 Claims. (Cl. 313—108)



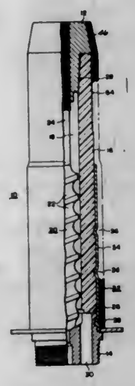
1. In an electroluminescent lamp the combination of a metal plate, a glaze of a powdered material of high dielectric constant of the order of thousands and a ceramic over at least part of said metal plate, and a coating of electroluminescent material over said glaze.

3,283,195
COLD-CATHODE GLOW-DISCHARGE TUBE
Raymond Frederick Hall, Crawley, and Brian John Stocker, Thornton Heath, England, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 4, 1963, Ser. No. 255,831
Claims priority, application Great Britain, Feb. 14, 1962, 5,666/62
3 Claims. (Cl. 313—185)



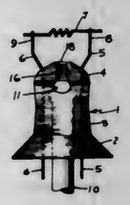
1. A glow discharge tube comprising an envelope filled with an ionizable medium and anode and cathode electrodes disposed therein, said cathode comprising a base having an activating layer thereon consisting of gold, a cesium-gold alloy, and cesium oxide.

3,283,196
EXPULSION LIGHTNING ARRESTER
Delbert R. Parker, Vienna, Ohio, and Robert A. Kurz, Sharon, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 4, 1965, Ser. No. 430,400
4 Claims. (Cl. 313—231)



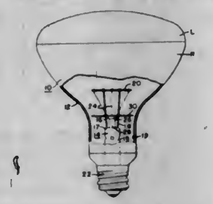
1. An expulsion lightning arrester comprising a tubular insulative member defining an arc chamber and effective to emit un-ionized gas when subjected to arc heat, a pair of electrodes disposed adjacent opposite ends of said tubular member, one of said electrodes providing a vent for said chamber, an outer casing comprising continuous glass strands encased in a resin about said tubular member, and means for retaining said electrodes against axially directed pressure, said retaining means including at least one end portion of said outer casing tapered radially inwardly to provide longitudinal support for at least one of said electrodes.

3,283,197
ELECTRIC LAMP STEM
George N. Elliott, Somerville, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Nov. 1, 1961, Ser. No. 149,391
4 Claims. (Cl. 313—266)



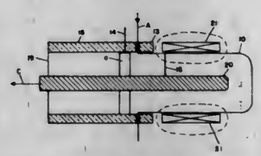
1. An electric lamp including an envelope having an opening and a stem closing said opening, said stem comprising a substantially flat press through which at least two lead-in wires extend, a filament inside said envelope and connected to said lead-in wires, an exhaust tube sealed to form a blow-hole at the side of the bottom of said press, a substantially flat groove in said press and extending from said blow-hole to the top of said press, and a lip extending outwardly over said grooves from the top of said press.

3,283,198
FILAMENT MOUNT AND HEAT SHIELD STRUCTURE FOR ELECTRIC INCANDESCENT LAMP
Emile M. Bellott, North Caldwell, and Harry H. Haft, Hanover Township, N.J., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 10, 1963, Ser. No. 329,489
8 Claims. (Cl. 313—240)



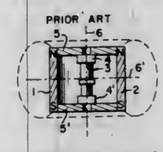
1. An electric incandescent lamp mount comprising,
a vitreous stem,
a heat shield seated on one end of said stem and substantially disposed in a plane that is transverse to the stem axis,
a pair of lead wires sealed through a portion of said stem and extending beyond the aforesaid end thereof through spaced openings in said heat shield,
a support wire anchored in said stem and extending beyond the said end thereof through another opening in said heat shield, and
a filament fastened to the upstanding terminal portions of said lead and support wires and held thereby at a location beyond said heat shield,
the portions of said heat shield which define at least two of said openings being electrically nonconductive so that said lead and support wires are insulated from each other,
the openings in said heat shield extending inwardly from the shield periphery and being so oriented relative to said lead and support wires that at least one of said wires interlockingly engages the shield and holds it in the aforesaid position on the end of said stem.

3,283,199
ELECTRIC DISCHARGE DEVICE
Kenneth J. Germeshausen, Weston, and Seymour Goldberg, Lexington, Mass., assignors to Edgerton Germeshausen & Grier, Inc., Boston, Mass., a corporation of Massachusetts
Filed Aug. 22, 1962, Ser. No. 218,596
11 Claims. (Cl. 313—306)



1. An electric discharge device comprising an elongated rod-shaped first electrode, a hollow elongated second electrode having a closed end and enclosing a portion of said first electrode and being disposed in concentric relation thereto and in spaced apart relation therefrom and having a flange portion at its open end, a hollow cylindrical insulating member secured to said flange portion of said second electrode and in concentric relation to and spaced apart from said first electrode, said second electrode and said insulating member forming the envelope wall of said discharge device, a trigger electrode mounted adjacent said flange portion of said second electrode and being disposed in the space separating said first electrode from said insulating member, means for connecting said first and second electrodes across a source of high voltage potential in such a manner that said connecting means for said first electrode being disposed at an end opposite to the end enclosed by the said second electrode and said connecting means for said second electrode being made to said flange portion thereof so that during a discharge, current flows in opposite directions through adjacent sections of said first and second electrodes creating thereby an unbalanced magnetic field therebetween acting upon said discharge to cause it to move along the surfaces of said first and second electrodes and toward said closed end thereof, and means for applying a trigger impulse to said trigger electrode.

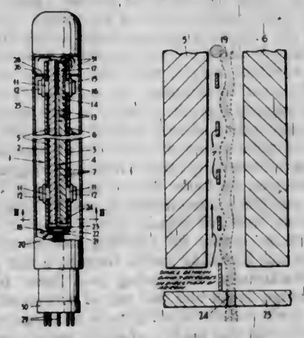
3,283,200
HIGH FREQUENCY ELECTRON DISCHARGE DEVICE HAVING IMPROVED PERMANENT MAGNETIC FOCUSING
Owen E. Pallakoff, Los Altos, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Dec. 12, 1963, Ser. No. 330,029
1 Claim. (Cl. 315—3.5)



An apparatus comprising a linear beam high frequency electron discharge device including vacuum envelope means within which electron beam forming and projecting means are disposed at the upstream end portion of said device for generating and projecting an electron beam along an elongated longitudinal axis along which means for providing an energy exchange between said electron beam and electromagnetic wave energy are disposed between the upstream and downstream end portions of said device, said apparatus including at least a pair of spatially displaced and axially polarized permanent magnets disposed at the respective opposite ends of said linear beam high frequency electron discharge device externally of said vacuum envelope means, said one of said pair of permanent magnets having inner and outer poles of opposite magnetic polarity than the polarity of the inner and outer poles of said other of said pair of permanent magnets, the axis of polarization of said pair of permanent magnets being substantially aligned with the longitudinal axis of said electron discharge device, said pair of permanent magnets providing a unidirectional magnetic field between the upstream and downstream end portions of said electron discharge device for focusing said electron beam, said apparatus including means forming a flux guide and shield substantially surrounding said linear beam electron discharge device and said pair of permanent magnets, said flux guide and shield being made of a high permeability material, said flux guide and shield being physically related to said pair of permanent magnets and said electron discharge device such that said flux guide and shield provide a low reluctance magnetic circuit between the outer axially oriented poles of said pair of permanent magnets and such that said flux guide and shield provide a magnetic shield for said electron discharge device and said permanent magnets, said flux guide and shield including a hollow axially elongated shell disposed about and transversely spaced from said high frequency electron discharge device, said flux guide and shield including a pair of transverse end walls magnetically shorted to the respective outer poles of said pair of permanent magnets,

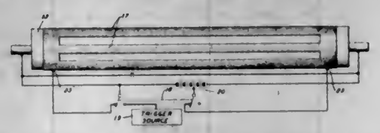
said vacuum envelope including said upstream and downstream end portions of said electron discharge device being disposed entirely internally of the transverse end walls of said flux guide and shield, the exterior transverse dimensions of said permanent magnets being smaller than the interior transverse dimensions of said hollow shell forming said flux guide and shield, the transverse opposing wall portions of said permanent magnets and said surrounding hollow shell being physically spaced from each other, said apparatus further including a pair of high permeability pole caps disposed at opposite ends of said electron discharge device externally of said vacuum envelope, said pole caps being disposed on the respective inner poles of said permanent magnets, said apparatus further including at least a pair of auxiliary permanent magnets disposed intermediate said at least one pair of permanent magnets disposed at the respective end portions of said electron discharge device, the polarization of said auxiliary magnets being opposite the polarization of said permanent magnets disposed at the respective end portions of said high frequency electron discharge device, said apparatus further including a pair of transversely spaced segmental shaped permanent magnets positioned along the longitudinal axis of said device intermediate said auxiliary permanent magnets, said segmental shaped permanent magnets being polarized in the same direction as the auxiliary magnets said apparatus further including annular hollow spacer members made of nonmagnetic material disposed exteriorly of said auxiliary permanent magnets and interiorly of said flux guide and shield and in intimate contact with both said auxiliary permanent magnets and said flux guide and shield shell member.

3,283,201
ELECTROSTATICALLY FOCUSED TRAVELLING WAVE TUBES WITH SLOW WAVE STRUCTURE BETWEEN TWO FOCUSING ELECTRODES AND APARALLEL TO ONE ELECTRODE
Michael Alan Halley, Wembley, England, assignor to The M-O Valve Company Limited, London, England
Filed Jan. 3, 1963, Ser. No. 249,260
Claims priority, application Great Britain, Jan. 11, 1962, 1,072/62
3 Claims. (Cl. 315—3.6)



1. A travelling wave tube including a delay device which is at least partly in the form of a periodic metal structure, two further metal structures respectively extending on either side of the periodic metal structure, said further metal structures being electrically insulated from each other and from the periodic metal structure, a first one of the further metal structures being disposed appreciably nearer to the periodic metal structure than the other further metal structure, an electron gun having an electron source which is electrically insulated from the periodic metal structure, the gun being disposed adjacent one end of the periodic metal structure, and a radio frequency output connection connected to that end of the periodic structure adjacent the electron gun, the electron gun being arranged to project an electron beam into the space between the periodic structure and said other further metal structure so as to travel along a channel constituted by at least part of the length of said space, the spacing between the periodic structure and said first further metal structure varying substantially monotonically along the length of said channel with the maximum value of said spacing along the channel corresponding to that end of the channel adjacent the electron gun, and the arrangement being such that, in operation, upon applying suitable potentials to the periodic structure and to the further metal structures such that the periodic structure is at a positive potential with respect to the electron source, said other further metal structure is at a negative potential with respect to the periodic structure and said first further metal structure is at a negative potential with respect to said other further metal structure, the electron beam will be focussed electrostatically, the beam travelling through said space generally in a direction parallel to the length of the periodic structure and with an undulatory motion such that it alternately approaches and recedes from the periodic structure with those peaks of the beam forming that set of alternate peaks disposed adjacent the periodic structure being respectively disposed in the vicinities of the gaps in the periodic structure.

3,283,202
GAS DISCHARGE SPECTRAL LAMP OF 5350 ANGSTROMS
Keith S. Pennington, Murray Hill, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 4, 1963, Ser. No. 270,757
1 Claim. (Cl. 315—46)

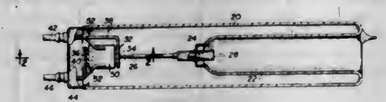


A flash lamp for efficiently radiating light at a wavelength of about 5350 angstroms comprising:
a substantially transparent envelope containing a quantity of argon;
a cathode and an anode within the envelope;
a quantity of thallous mercuric chloride within the envelope;
a plurality of substantially transparent strips of conductive film coated on the envelope;
means for passing a direct current through the film, whereby the envelope is heated to a temperature sufficient to vaporize the thallous mercuric chloride;
and means for passing a current pulse through the film of sufficient intensity to trigger a gas discharge between the cathode and anode.

3,283,203
X-RAY TUBE TEMPERATURE ENHANCED FIELD EMISSION CATHODE
Walter P. Dyke and Frank J. Grundhauser, McMinnville, Oreg., assignors to Field Emission Corporation, McMinnville, Oreg., a corporation of Oregon
Filed Dec. 19, 1961, Ser. No. 160,534
16 Claims. (Cl. 313—56)

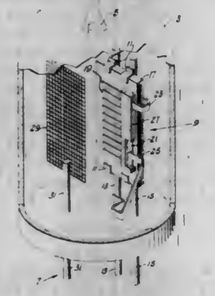
1. An X-ray tube comprising:
an evacuated envelope,
an elongated conical anode supported in said envelope,

anode connector means extending to the exterior of said envelope,
a combined field emission and thermal emission cathode structure supported in said envelope and surrounding said anode,
said cathode structure including a plurality of uncoiled filament wires positioned around said anode and



spaced from each other and substantially parallel to each other and radially spaced from said anode,
and cathode connector means including electrical connections extending from the opposite ends of said filament wires to the exterior of said envelope to provide for heating said filament wires and causing the emission of electrons from said filament wires by combined field emission and thermal emission.

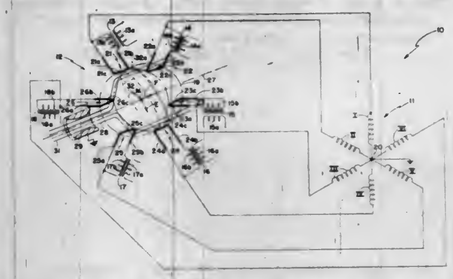
3,283,204
DISPLAY DEVICE
Evan H. Boden, Emporium, Pa., assignor to Sylvania Electric Products, Inc., a corporation of Delaware
Filed Oct. 7, 1963, Ser. No. 314,325
5 Claims. (Cl. 315—58)



1. A display device comprising:
a hermetically sealed envelope having a transparent portion and a plurality of electrical conductors sealed therein and extending therethrough, said envelope containing a gas suitable for sustaining a cathode glow,
a resistance element attached at the ends to selected conductors within said envelope,
a plurality of conductive fingers having one end thereof bonded at spaced intervals to said element, and
a transparent conductive anode attached to a conductor within said envelope and disposed intermediate said fingers and said envelope transparent portion.

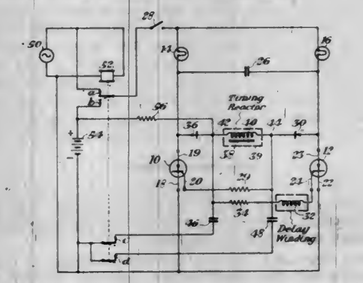
3,283,205
SHIFTING ARC PLASMA SYSTEM
Harold E. De Bolt, 79 Wildwood Road, Andover, Mass.
Filed June 1, 1961, Ser. No. 114,154
29 Claims. (Cl. 315—111)

5. An arc plasma system comprising: spaced electrode means; means for generating arcs in a predetermined sequence across at least a pair of said electrodes; means for supplying current to said electrodes for generating a moving magnetic field which interacts with said arcs and is phased to have at least a component perpendicular to



said arcs; and means for providing fluid through which said arcs flow.

3,283,206
ELECTRONIC SWITCHING SYSTEM
Orval L. Uft, Monroeville, Pa., and Richard J. Rapacchietta, Denver, Colo., assignors to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed July 20, 1961, Ser. No. 125,572
20 Claims. (Cl. 315—201)

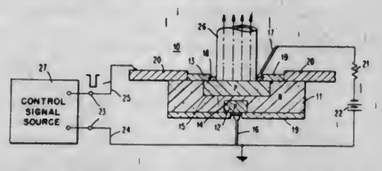


2. In combination, two unidirectional current control devices each including an anode, a cathode, and a gate, a load in series with each of said control devices, a pair of input terminals adapted to receive an operating potential connected across said series-connected loads and control devices to form two parallel branches, said input terminals energizing the anode of each control device with a positive potential, a magnetic material device having substantially rectangular hysteresis loop characteristics, a winding on said magnetic material device, asymmetric conductor means in each branch connected to the terminals of said winding and to the anodes of said control devices for isolating the anodes of said control devices from potential drops across said winding, means for cross-connecting through said asymmetric conductor means the gate of each of said control devices and the anode of the other control device, one of said cross-connecting means including a delay element effective upon initial energization of said input terminals to delay conduction of the control device having said delay element in its gate circuit whereby the other of said control devices conducts first, each of said control devices during conduction energizing the load in series association therewith and during cutoff directing a magnetizing force from said input terminals to said winding in such manner as to place said magnetic material device in a saturation condition in accordance with the magnetizing current direction, and means for stopping the conduction of each of said control devices upon the starting of conduction in the other of said control devices whereby their alternate operation is effected.

3,283,207
LIGHT-EMITTING TRANSISTOR SYSTEM

Melvin Klein, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed May 27, 1963, Ser. No. 283,414
5 Claims. (Cl. 315—326)

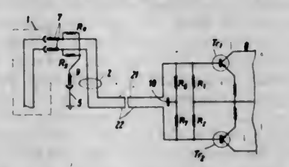


1. A light-emitting transistor system comprising:
a transistor of intermetallic semiconductor material including a base region of one conductivity type intermediate and contiguous with emitter and collector regions of the opposite conductivity type and defining PN junctions therewith, said base region having a thickness not greater than one micron which provides said transistor with a high beta; and
circuit means connecting said transistor in a common emitter configuration and including means for reversely biasing said collector region with respect to said base region and further including control means for applying to said emitter and base regions an electrical control signal having a characteristic effective to establish between said emitter and collector regions a current flow which is large with respect to that of said control signal for driving said transistor into saturation, thereby forwardly biasing said collector region with respect to said base region and developing a light output adjacent the collector-base junction.

3,283,208
ARRANGEMENT FOR ELIMINATING OR SUPPRESSING INTERFERENCES OF REMOTE CONTROLLED FLYING BODIES

Joachim Hermann, Munich, Germany, assignor to Bolkow Gesellschaft mit beschrankter Haftung, Munich, Germany

Filed Jan. 29, 1963, Ser. No. 254,723
Claims priority, application Germany, Feb. 10, 1962, B 65,887
4 Claims. (Cl. 317—2)

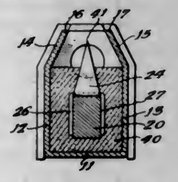


1. In a jet propelled flying body, having an ionized hot exhaust gas jet acting as an electric probe moving through the air and exchanging electrostatic charges with the air whereby the flying body is continuously highly charged, said missile being guided by signal pulses received over a metallic circuit from a guiding station having a pulse source, and carrying a signal receiver including a pair of input transistors having base resistances which form, with a two-wire metallic circuit between the receiver input and the output of the pulse source, a direct current signal transmission circuit symmetrical with the pulse source: means for dissipating accumulated electrostatic charges from the flying body, to prevent interference with the guiding signal pulses, comprising, in combination, a first pair of series-connected resistances bridging the two metallic conductors of the signal transmission circuit at the output of the guiding station; a second pair of series-connected resistances bridging the two metallic conductors of the signal transmission circuit at the input of the signal receiver; the four bridging resistances being substantially equal in ohmic value; means connecting the common junction of the resistances of said first pair to ground at the guiding station; and means connecting the common junction of the resistances of said second pair to the mass of the flying body; whereby said first and second pairs of resistances form a superimposed balanced bridging circuit for dissipating accumulated electrostatic charges from the flying body to the guiding station.

3,283,209
STATIC ELIMINATOR

Rudolph W. Schutz, Crystal Lake, Ill., assignor to Uarco, Incorporated, a corporation of Illinois

Filed Apr. 3, 1964, Ser. No. 357,107
4 Claims. (Cl. 317—2)

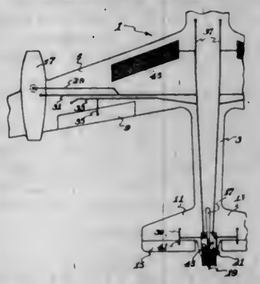


1. A static eliminator, comprising: an outer elongated channel-shaped metal casing having means for connection to ground; an electrically conductive bar extending lengthwise in the casing; a plurality of discharge points electrically connected to the bar and arranged along its length, each discharge point being formed of metal material and having a U-shaped base shaped to straddle the bar in gripping relation thereto and thus position and hold the point relative to the bar; a dielectric potting compound consisting of an epoxy resin filling said casing to a level exposing only the tips of said points and insulating said bar from said casing; and means for connecting said bar to an electrical energy source.

3,283,210
APPARATUS FOR DISCHARGING STATIC ELECTRICITY FROM VEHICLES IN FLIGHT

Martin V. Welsh, 1335 S. Indianapolis Ave., Tulsa, Okla.

Filed May 11, 1964, Ser. No. 366,451
4 Claims. (Cl. 317—2)

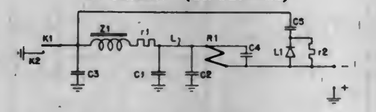


1. In a flying vehicle, a container for a body of dielectric fluent material, means electrically grounding at least one portion of the vehicle to the interior of the container, and means for progressively discharging portions of fluent material in the form of finely divided discrete particles of high total surface area from the container into the wake of the vehicle while the vehicle is in flight.

3,283,211
DEVICE FOR REDUCING EROSION IN ELECTRIC CONTACTS

Per H. E. Claesson, 4 Sportstugevagen, Danderyd, Sweden, and Karl E. Jarnbrink, 3 Grumsgatan, Farsta, Sweden

Filed Sept. 20, 1965, Ser. No. 493,609
Claims priority, application Sweden, July 3, 1959, 6,301/59
12 Claims. (Cl. 317—11)

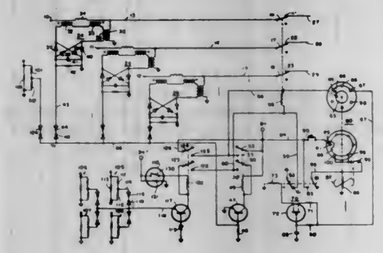


1. A device for reducing the erosion of contacts in a circuit connecting an electric direct current source with a power consuming apparatus and serving to absorb current surges upon closing and opening of contacts, comprising in combination: a protective device comprising inductive means connected in series with said contacts and said power consuming apparatus and having one terminal connected to a first one of said contacts; and a series combination of a capacitor and resistance means which presents a very low resistance to current flow in one direction and a comparatively high resistance to current flow in the other direction, said series combination having one terminal connected to said first contact and having its other terminal connected to said circuit at a point between said power consuming apparatus and a second one of said contacts, said resistance means being so poled that said comparatively high resistance is presented to current passing through said capacitor upon closure of said contacts.

3,283,212
OVERLOAD PROTECTION CIRCUIT

Cecil Glynn Davis, Garland, and Darrel Willis Martin, Dallas, Tex., assignors to the United States of America as represented by the Secretary of the Army

Filed Jan. 18, 1963, Ser. No. 252,539
4 Claims. (Cl. 317—22)

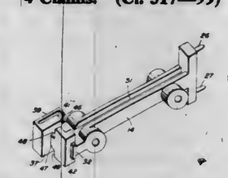


1. An overload protection circuit for automatically energizing a circuit breaker to disconnect the power from a utilization device upon the detection of an overload and for reclosing said circuit breaker after a prescribed period of time and for maintaining said circuit breaker energized after a prescribed number of cycles comprising; current sensing means coupled to said current carrying conductor for providing an output voltage upon sensing an overload in said current carrying conductor; switching means coupled to the output of said sensing means and responsive to said output voltage for energizing said circuit breaker and a timing means connected thereto, said timing means including relay means for deenergizing said circuit breaker after a prescribed time, stepping relay counting means advanceable in a step-by-step manner through a prescribed number of positions, the last of said steps disconnecting said timing means, and means responsive to said timing means for stepping said counting means through one of said steps for each energization of said timing means.

3,283,213
PRINTED CIRCUIT CARD LATCH

David E. Kosanda, Richardson, Tex., assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Apr. 7, 1965, Ser. No. 446,263
4 Claims. (Cl. 317—99)

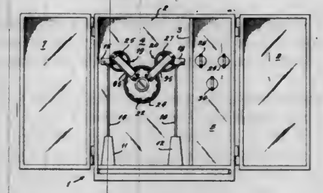


1. A latch for a guide member formed with an enlarged portion, comprising a first slot formed in the latch and slidably receivable over the enlarged portion of the guide member, a second slot formed in the guide member, and a third slot formed in the latch which in a first position of the latch is out of alignment with the second slot and which is movable to a second position wherein the second slot is aligned with the third slot and the second and third slots formed in the same direction and at right angles to the first slot.

3,283,214
SEPARABLE TYPE ELECTRIC DISCONNECT

Thomas B. Ortwig, Florissant, and Joseph L. Krawinkel, Jr., St. Louis, Mo., assignors to Kearney-National Inc., St. Louis, Mo., a corporation of Delaware

Filed Mar. 2, 1964, Ser. No. 348,713
7 Claims. (Cl. 317—114)



1. In a panel mounted assembly for an air break type of electric disconnect including a conductor with an output connection to an electric machine and terminal means with an input connection to a high voltage feeder, the improvement comprising;
(a) a plurality of fixedly mounted insulators including an insulator receptacle means,
(b) a plurality of relatively stationary contact means on said insulators respectively, said contact means being connected with said conductor and with said terminal means respectively,
(c) movable contact means including a conductor blade having a plurality of spaced contact means for releasable cooperation respectively with different ones of said stationary contact means to electrically connect said stationary contact means through said conductor blade,
said stationary contact means and said movable contact

means being arranged to separate sequentially from their respective cooperating stationary contact means upon movement of said conductor blade relative to said insulators,

(d) an arc suppressor in said receptacle means and having a conductive member permanently electrically connected with the one of said stationary contact means which is sequentially first to separate from its cooperating movable contact during opening movement of the latter,

said conductive member being mounted for limited movement relative to the stationary contact means with which it is permanently electrically connected, said limited movement being in the general direction of the opening movement of said blade, and said conductive member having means for releasably gripping one of said spaced contact means while another thereof is in contact with its cooperating stationary contact means and maintaining such gripping until after said another has broken such contact,

(e) means in said arc suppressor, responsive to further opening movement of said conductor blade, to separate said conductive member from the one of said spaced contact means gripped by it, and

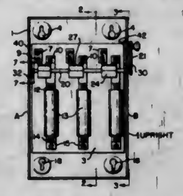
(f) insulated barrier means in said arc suppressor disposed to surround the gripped one of said spaced contact means upon release thereof by said conductive member.

3,283,215

ELECTRICAL FUSE-DISCONNECT SWITCH BOXES

Walter H. Lohmeyer, 1620 Stevens Ave., Louisville, Ky.

Filed Oct. 21, 1964, Ser. No. 405,404
2 Claims. (Cl. 317—114)



1. An electrical fuse-disconnect box comprising:

(A) a switch box having a power-receiving end, which is adapted to receive an incoming electrical power line;

(B) insulatedly-mounted means in the box for transmitting incoming electrical power

(1) from a power-receiving terminal adjacent said power-receiving end to one switch contact,

(a) which has an outer side corresponding to said power-receiving end of the box and an opposite inner side, and

(2) from another switch contact through a safety fuse to a power-delivering terminal;

(C) a switch blade assembly having

(1) a switch blade for closing and opening an electrical connection between said switch contacts, and

(2) a shaft for operating said switch blade;

(D) means for selectively mounting said box

(1) in one installation, upright upon a wall with its power-receiving end uppermost, and

(2) in another installation, upside down upon a wall with its power-receiving end lowermost; and

(E) means for removably mounting said switch blade assembly selectively upon said box for upward switch-closing and downward switch-opening movements,

(1) in one position, when the box is upright, with said operating shaft located below the inner side of said one contact, and

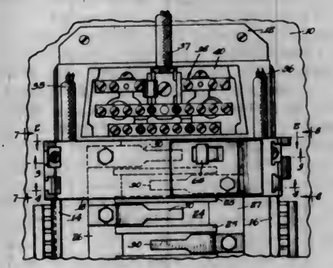
(2) in another position, when the box is upside down, with said operating shaft located below said outer side of said one contact.

3,283,216

ELECTRICAL CIRCUIT BREAKER AND PANEL-BOARD WIRING ARRANGEMENT

Robert W. Dunham, Cedar Rapids, Iowa, assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan

Filed Mar. 8, 1963, Ser. No. 263,795
12 Claims. (Cl. 317—119)



1. A multipole molded-case circuit breaker comprising

(a) an elongated case having a pair of generally parallel outer side wall portions and an inner intermediate wall portion generally parallel to said outer side wall portions, said wall portions collectively defining a pair of longitudinally side-by-side compartments in said case

(b) a pair of circuit breaker mechanisms disposed respectively in said compartments, and

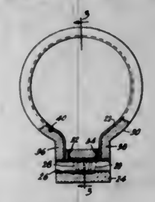
(c) a pair of openings in said case in one of said outer side wall portions defining one of said compartments for respectively receiving a pair of electrical power supply conductors adapted to be connected respectively to said circuit breaker mechanisms.

3,283,217

ELECTROMAGNETICS

William Henry Cherry, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Mar. 21, 1963, Ser. No. 267,056
8 Claims. (Cl. 317—123)



1. Superconductive solenoid apparatus comprising

(a) a cylinder member and a ring-shaped member of much larger diameter than that of said cylinder member, both said members being of non-magnetic, non-superconductive material, said members being secured to each other, and

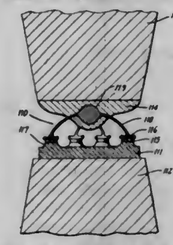
(b) means providing an endless path of superconductive material for carrying a persistent current, said path including a path portion around said ring-shaped member and a plurality of turns on said cylinder member and coaxial therewith, said turns defining a solenoidal coil.

3,283,218

HIGH FREQUENCY DIODE HAVING SEMI-CONDUCTIVE MESA

Richard L. Goldman, Chalfont, Pa., William R. Kritzler, Newton Center, Mass., and Victor C. Sirvydas, Hatboro, Pa., assignors to Philco Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Apr. 3, 1964, Ser. No. 357,087
1 Claim. (Cl. 317—234)



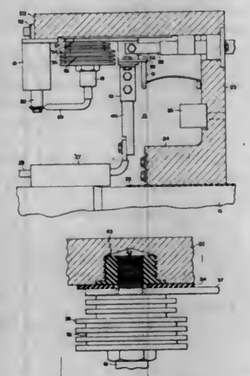
In high frequency high current diode apparatus a group of semiconductive mesas; a group of metal wires each having an end bonded to a corresponding one of said mesas; and a solid metal body, with the opposite end of each of said wires merged into the same.

3,283,219

ROTATING RECTIFIER STRUCTURE WITH COOLING SUPPORT THREADED INTO ROTATING RIM

Richard J. Keady, Monroeville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 12, 1965, Ser. No. 471,168
8 Claims. (Cl. 317—234)



1. In a rotating rectifier exciter, a rectifier wheel rim supporting a plurality of cylindrically shaped heat sinks on the interior surface thereof and electrically insulated therefrom, each of said heat sinks supporting at least one semiconducting diode in the center portion thereof, each of said heat sinks being secured to said rim by a threaded extension of the heat sink body threaded into an insulating insert located in said rim.

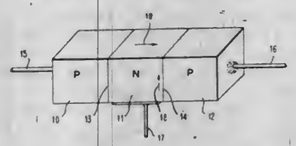
4. In combination, an annular flange having a spider frame and hub portion mounted on a rotating shaft, a plurality of heat sinks having a threaded portion threaded into but insulated from the interior surface of said flange and extending radially between said flange and hub portion, a semiconducting diode device radially mounted on each of said heat sinks intermediate said flange and hub portion, a pair of conductive connectors for each diode device circumferentially distributed within said frame, one of said connectors having one end connected to a terminal on said diode, the other of said connectors having an end secured to the heat sink and in electrical contact therewith.

3,283,220

MOBILITY ANISOTROPIC SEMICONDUCTOR DEVICE

Robert W. Keyes, White Plains, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed July 24, 1962, Ser. No. 212,014
4 Claims. (Cl. 317—235)



1. A minority carrier semiconductor connection device comprising:

a body of monocrystalline semiconductor material;

said body containing a first region of a first semiconductor material of a first conductivity type and a second region of a different semiconductor material of opposite conductivity type;

said first and second regions being joined together at a "p-n" heterojunction;

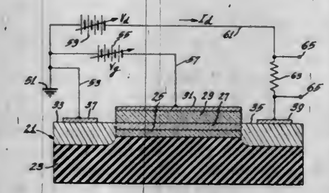
said second region of said different semiconductor material itself including means exhibiting carrier mobility anisotropy for causing injected minority carriers to have a maximum mobility in a direction perpendicular to said p-n heterojunction and opposite type majority carriers to have a lower mobility in a direction perpendicular to said junction.

3,283,221

FIELD EFFECT TRANSISTOR

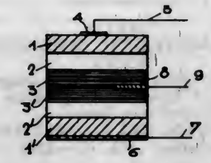
Frederic P. Heiman, Highland Park, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Oct. 15, 1962, Ser. No. 230,449
3 Claims. (Cl. 317—235)



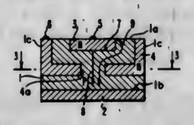
1. A semiconductor device comprising a first channel of low resistivity semiconductor material of one conductivity type, a second channel of low resistivity semiconductor material of the opposite conductivity type upon said first channel, a layer of insulator material upon said second channel, a gate electrode upon said layer of insulator material, a common source providing low resistivity contact to both of said channels, and a common drain providing low resistivity contact to both of said channels.

3,283,222
ZINC OXIDE TRANSISTOR WITH POTASSIUM HYDROXIDE TREATED PAPER COLLECTOR
Jean Henry, Rhode-St. Genese, Belgium, assignor to Societe d'Etudes, de Recherches et d'Applications Pour l'Industrie S.E.R.A.I., Brussels, Belgium
Filed July 1, 1963, Ser. No. 292,039
Claims priority, application Belgium July 10, 1962
7 Claims. (Cl. 317—235)



1. A semiconductor device comprising at least two layers (1, 2), the first layer comprising an active layer (1) consisting of a fine powder of a semiconductor dispersed in an organic electrically insulating binder, the second layer comprising a supporting layer (2) consisting of an inert cellulosic material, two contacts (4, 5), one of said contacts being connected to said first layer (1) and the other of said contacts being connected to said second layer (2), and particles of an ionizable substance acting as electron catching centers carried by said device in the vicinity of said other contact.

3,283,223
TRANSISTOR AND METHOD OF FABRICATION TO MINIMIZE SURFACE RECOMBINATION EFFECTS
David De Witt, Poughkeepsie, N.Y., and Thomas G. Stehney, Rilton, Pa., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 27, 1963, Ser. No. 333,882
6 Claims. (Cl. 317—235)



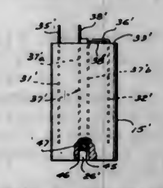
1. A transistor comprising:
(a) a semiconductor body having emitter, base and collector regions and having opposed parallel plane surfaces with a peripheral surface therebetween;
(b) individual connections to said emitter, base and collector regions;
(c) said emitter and base regions being separated by a barrier junction having a peripheral intersection with one of said plane surfaces of said body;
(d) said collector region extending inwardly of the peripheral surface and within the semiconductor body at a locality between and spaced from said plane surfaces, said region extending inwardly in opposite directions a substantial distance beyond the outer periphery of the emitter region and having a portion extending to said one of said parallel plane surfaces;
(e) said base region being thereby contoured to define a relatively short rectilinear path located remotely from any surface of said body for current flow between said base connection and an internal portion of said barrier junction remote from said intersection and a relatively long tortuous path for current flow between said base connection and the peripheral margin of said barrier junction, whereby the flow of injected minority carriers adjacent the surface of the body is minimized.

3,283,224
MOLD CAPPING SEMICONDUCTOR DEVICE
Gunduz Erkan, Torrance, Calif., assignor to TRW Semiconductors, Inc., Lawndale, Calif., a corporation of California
Filed Aug. 18, 1965, Ser. No. 480,577
2 Claims. (Cl. 317—234)



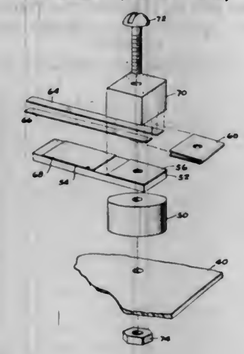
1. A semiconductor device comprising:
(a) a header member of electrical insulating heat conductive material having a uniplanar upper surface and a lower surface, the lower surface of said header member defining a broad area contact for the conduction of heat from said header body to a heat sink;
(b) a thin layer of electroconductive material established on spaced apart portions of the uniplanar upper surface of said header member to define first and second electrical contact regions;
(c) a body of semiconductor material containing at least one PN junction, said body of semiconductor material being mounted with a portion thereof in ohmic connection with said first electrical contact region and being provided with a lead wire ohmically connecting another portion thereof with said second electrical contact region;
(d) a first electroconductive lead having one of its ends secured in ohmic contact with said first electrical contact region and having its other end projecting beyond said header member;
(e) a second electroconductive ribbon lead having one of its ends secured in ohmic contact with said second electrical contact region and having its other end projecting beyond said header member;
(f) a buffer coating of elastic material disposed over said semiconductor material and surrounding the free portion of said lead wire; and
(g) a solid plastic cap molded over the upper portion of said header member to cover said buffer coating, said electrical contact regions, said semiconductor body and lead wire and the secured ends of said first and second ribbon leads to thereby expose only the free ends of said ribbon leads and the lowermost portion of said header member including said lower surface.

3,283,225
ELECTRIC CAPACITOR
Abraham G. Kalstein, New Bedford, Mass., assignor to Aerovox Corporation, New Bedford, Mass., a corporation of Massachusetts
Filed Apr. 27, 1965, Ser. No. 451,261
4 Claims. (Cl. 317—247)



1. An electric capacitor comprising a plurality of elongated strips of conducting material and dielectric material alternately disposed and wound into a roll having an axial opening each of said strips of conducting material being inwardly spaced from the free end of the strips of dielectric material at the axis of the roll, whereby when the roll is wound with the winding arbor spaced from the ends of the conducting strips by a distance several times the diameter of the arbor, a plurality of layers of dielectric material will be defined between the axial opening and the next adjacent strip of conducting material, a pair of terminal strips secured respectively to at least two of the strips of conducting material and protruding beyond the capacitor, the protruding end of one of said terminal strips defining a connecting portion and a strip of heat responsive material positioned in said axial opening, one end of said strip of heat responsive material being electrically connected to the protruding end of the other of said terminal strips and the other end of said heat responsive strip defining a second connecting portion.

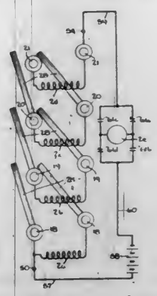
3,283,226
RESONANT REED ASSEMBLY
Kenneth F. Umpleby and Ralph M. Wright, Ann Arbor, Mich., assignors to Berry Industries, Inc., Birmingham, Mich., a corporation of Michigan
Filed Jan. 7, 1965, Ser. No. 424,094
5 Claims. (Cl. 317—249)



1. A reed assembly comprising a base, a flat insulating board mounted on said base, a flat conductor mounted on one face of said board, a spacer mounted on said board remote from said conductor, a flexible reed, and rigid means mounting said reed and said board on said base such that one end of said reed is rigidly and mechanically fixed to said board with said spacer interposed therebetween and the other end of said reed extends in a direction laterally outwardly from said fixed end and overlies said conductor in spaced relation thereto, to define an air gap therebetween which varies with flexure of the reed, said reed being electrically insulated from said conductor by said board and being formed of conductive material to provide a capacitance between said conductor and said reed whereby when said reed vibrates the capacitance between said reed and said conductor varies in accordance with the resonant vibration frequency of said reed.

3,283,227
MOTOR CONTROL SYSTEM FOR AN INDUSTRIAL TRUCK
Bronislaus I. Ulinski, Jenkintown, Pa., assignor to Eaton Yale & Towne, Inc., a corporation of Ohio
Continuation of application Ser. No. 101,705, Apr. 10, 1961. This application Feb. 12, 1965, Ser. No. 436,989
3 Claims. (Cl. 318—252)

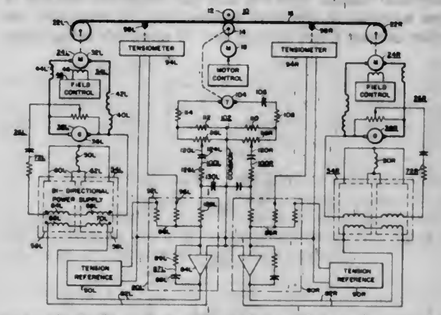
3. In combination with an industrial truck, an electric motor for said truck, said electric motor having an armature and a housing enclosing said armature, a plurality of spaced apertures extending through said motor housing, a series of pairs of spaced terminals extending through and mounted within said spaced apertures each of said terminals comprising an intermediate portion traversing said apertures within said housing and fixedly secured thereto, an inner end portion within said housing, and an outer rigid portion upstanding from said housing, a separate field winding for each of said pairs of terminals within said housing, opposed ends of one winding connected to said inner end portions of each pair of terminals, a contact finger pivotally mounted on each terminal of each pair of terminals except for an end pair of terminals of said series, one contact finger of each pair of terminals being pivotally movable into and out of a position of electrical contact with the said rigid outer end portion of one terminal of the next adjacent pair of terminals, the other contact finger of each pair of terminals being pivotally movable between positions of electrical contact with both terminals of the next adjacent pair of terminals, and means for selectively pivoting said fingers of each pair of terminals to thre different positions of electrical contact with said terminals of said other pair of terminals including a position in which both said contact fingers are in electrical contact with said one terminal of the next adjacent pair of terminals, a position in which said one contact finger is out of electrical contact with said one terminal of the next adjacent pair of terminals and the other contact finger is in contact with said one terminal of said next adjacent pair of terminals, and a position in which said one contact finger is in electrical contact with said one terminal of said next adjacent pair of terminals and said other contact finger is in electrical contact with said other terminal of said next adjacent pair of terminals, whereby to connect said field windings in the motor circuit in various combinations to vary the speed of the motor.



3,283,228
PLURAL STAND, PLURAL MOTOR TENSION REGULATING APPARATUS
Sabi J. Asseo, Buffalo, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 28, 1963, Ser. No. 291,553
3 Claims. (Cl. 318—7)

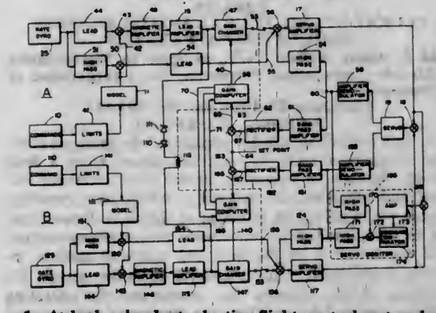
1. In a control system for apparatus operating on elongate material wherein the material passes from a feed station through an operating station to a receiving station, and wherein said operating station has operating means which drives the material so that it is drawn from the feed station and forced toward the receiving station, and wherein each of the feed and receiving stations includes controllable dynamoelectric machine means for applying tension between that station and the operating station, means for regulating the tension of the material on both sides of the operating station comprising a net-

work responsive to the drive speed imparted to the material by the operating station, means responsive to said network for deriving first and second oppositely sensed signals proportional to the rate of rate of change of said speed, first and second proportional integrator means, each having input means and output means, means including means responsive to the tension on the material between said feed station and said operating station for supplying to the input means of said first proportional integrating means a first input excitation component which is a function of the difference between actual and desired tension on the material between the feed and operating stations, means for applying said first signal to the input means of said first proportional integrating means in a sense to aid said first excitation component,



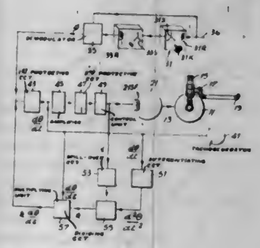
means including means responsive to the tension on the material between the operating station and the receiving station for applying to the input means of said second proportional integrating means a second input excitation component that is a function of the difference between actual and desired tension on the material between the operating and receiving stations, means for applying said second signal to the input means of said second proportional integrating means in a sense to aid said second excitation component, means for controlling said feed station dynamoelectric machine means in response to the output of said first proportional integrating means, and means for controlling said receiving station dynamoelectric machine means in response to the output of said second proportional integrating means.

3,283,229
DUAL REDUNDANT, ADAPTIVE MOTOR CONTROL WITH FAIL SAFE FEATURES
John H. Lindahl, Wayzata, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed May 24, 1962, Ser. No. 197,523
22 Claims. (Cl. 318—18)



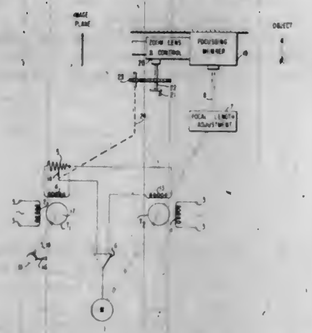
1. A dual redundant adaptive flight control system having two adaptive control channels, each channel including a variable gain control loop having a gain computer-control loop gain changer arrangement each gain computer being responsive to a limit cycle frequency of an output member of its adaptive control channel which output member is positioned by a servo and controls a flight condition, means in one channel gain computer providing a resultant output to the control loop gain changer computed from the difference between a normal output of the gain computer dependent upon the limit cycle amplitude and a quantity dependent on the normal output of said one gain computer and the normal output of the other gain computer, and means adjusting the control loop gain changer from said resultant output, to increase the reliability of servo operation in said flight control system.

3,283,230
MOMENTUM COMPENSATION IN CONTROL MEANS FOR ELECTRICAL POSITIONING MEANS
Richard Edward Davies, Antony Charles Nathan, and Edaynthumangalam Minakshisundaram Gopal, Rugby, England, assignors to Associated Electrical Industries Limited, London, England, a British company
Filed July 10, 1963, Ser. No. 294,103
Claims priority, application Great Britain, May 13, 1963, 18,882/62
13 Claims. (Cl. 318—18)



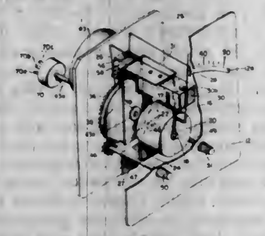
1. Control means for electrical positioning means comprising:
(a) energisation controlling means arranged to control the degree of energisation of the electrical positioning means;
(b) error measuring means sensitive to the magnitude of a positional error to be corrected by the positioning means;
(c) speed measuring means sensitive to the rate at which the positioning means are operating to correct this error;
(d) power sensitive means sensitive to the rate at which useful electrical power is being developed by the positioning means;
(e) acceleration measuring means activated by the speed measuring means and providing a measure of the instantaneous acceleration of the positioning means;
(f) inertia determining means activated by the acceleration measuring means and the power sensitive means and providing a measure of the apparent inertia of the parts being accelerated;
(g) means by which the energisation controlling means are automatically adjusted in accordance with the measured error, the speed of the positioning means, and the measured inertia to produce movement of the positioning means to eliminate the positional error with little if any overshoot.

3,283,231
SERVO-MECHANISM FOR OPTICAL SYSTEMS
Joseph H. Askew, London, England, assignor to Evershed & Vignoles Limited, London, England, a British company
Filed Sept. 9, 1963, Ser. No. 307,474
Claims priority, application Great Britain, Sept. 12, 1962, 34,855/62
3 Claims. (Cl. 318—30)



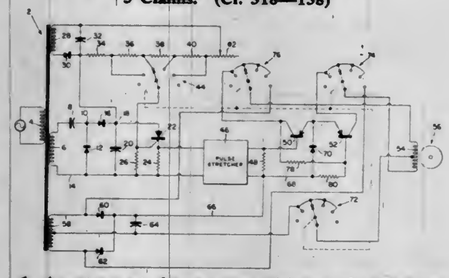
1. A focussing control system for a zoom lens comprising:
a focussing mechanism for said lens;
a servo motor operatively connected to the said focussing mechanism;
an amplifier connected to said servo motor for controlling the operation thereof;
feedback means connected to said servo motor and to said amplifier for applying negative feedback signals representative of the speed of said servo motor to the input of said amplifier;
a zoom control for said lens;
a potentiometer operatively connected to the input of said amplifier and having a slider mechanically coupled to said zoom control, said potentiometer having a square law characteristic over the greater portion of its range;
and a manually operable electric transmitter connected to said potentiometer for providing focus control.

3,283,232
CONTACT METER WITH PHOTO-ACTUATED SERVO MEANS
Richard S. Ditto, Newark, Del., assignor to Emcee Electronics, Inc., Claymont, Del., a corporation of Delaware
Filed June 21, 1963, Ser. No. 289,513
6 Claims. (Cl. 318—31)



1. Meter apparatus comprising:
(a) movable indicator means whose movement is responsive to the application of an electrical signal thereto, said indicator means including a light-obstructing portion,
(b) a movable subassembly arranged to follow said indicator means whenever the latter departs from a predetermined spatial relation thereto, said subassembly including
(i) a light source,
(ii) a light-responsive means arranged to receive light from said source, said source and said light-responsive means being positioned to be in the path of said light-obstructing portion,
(iii) switching means,
(c) a selected number of settable means arranged to be set to positions corresponding to selected possible positions of said indicator, said settable means including cam means engageable by said switching means for producing cooperatively with said switching means a change in the state of said switching means whenever said subassembly moves into a predetermined spatial relation to a selected one or ones of said settable means.

3,283,233
ELECTRONIC CONTROL SYSTEM
William D. Macgeorge, Huntingdon Valley, Pa., assignor to Honeywell Inc., a corporation of Delaware
Filed July 15, 1963, Ser. No. 295,163
3 Claims. (Cl. 318—138)

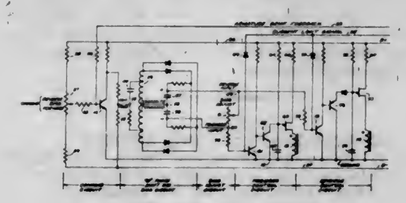


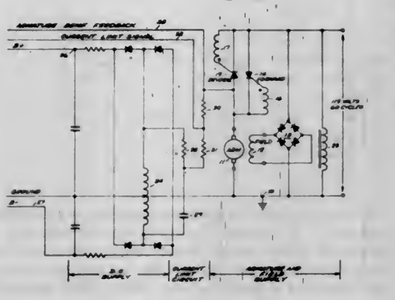
1. A motor control system comprising a pulse generator including a capacitive storage circuit means and a bias controlled gate circuit means connected to said storage circuit means for periodically discharging said storage circuit means at a repetition rate determined by the magnitude of a bias signal applied to said gate circuit means, a bias selection circuit including a resistance string for producing a plurality of bias voltage signals and a selector switch means connected between said resistance string and said gate circuit means for applying a selected one of said plurality of bias signals to said gate circuit means, a stepping motor having a field winding, said motor being responsive to a pulse having a positive and a negative peak for advancing a single increment, and control circuit means connected between said gate circuit means and said motor winding, said control circuit means being responsive to pulses from said gate circuit means to effectively apply a series of pulses having positive and negative peaks to said motor winding.

3,283,234
CONTROL FOR REVERSIBLE MOTOR WITH INSTANTANEOUS CURRENT LIMIT
Edward H. Dinger, Waynesboro, Va., assignor to General Electric Company, a corporation of New York
Filed Jan. 10, 1964, Ser. No. 337,052
8 Claims. (Cl. 318—331)

1. A control circuit comprising a source of alternating current, current control means, a load, said current control means coupling said alternating current source to said load to supply forward and reverse currents thereto in response to forward and reverse input signals respectively applied to said current control means, means for

generating a direct current command signal having a magnitude and polarity indicative of the desired portion of each half cycle of said alternating current during which said current control means supplies current to said load and the polarity of the current supplied, phase shift means coupled to said source of alternating current to shift the phase thereof, means for combining said direct current command signal with the phase shifted alternating current signal to form a composite command signal, direct current bias means biasing said composite





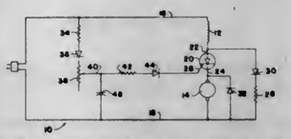
command signal both negative and positive with respect to said direct current command signal to provide forward and reverse command signals, signal control means responsive to said forward and reverse command signals to supply forward and reverse input signals to said current control means, forward input signals being supplied when said forward and reverse command signals are commanded positive and reverse input signals being supplied when said forward and reverse command signals are commanded negative.

3,283,235
CEMF RESPONSIVE SERIES MOTOR CONTROL CIRCUIT

Samuel H. Auld and Gary R. Shier, Wichita, Kans., assignors to Lear Jet Corporation, Wichita, Kans., a corporation of Delaware

Filed Feb. 4, 1964, Ser. No. 342,511
3 Claims. (Cl. 318—331)

1. A series motor speed control circuit comprising, in combination, a motor field winding and a motor armature winding connectible to a source of A.C. voltage, a silicon controlled rectifier connected between said field winding and said armature winding with said silicon controlled rectifier having the anode thereof connected to one end of said field winding and having the cathode thereof connected to one end of said armature winding, a first fixed resistance and a first diode connected in series with each other and connected in parallel to said silicon controlled rectifier and to said armature winding, a second diode connected in parallel to said armature winding and having the polarity thereof opposite to the polarity of said first diode, a gating circuit for said silicon controlled rectifier including a second fixed resistance connectible to a source of A.C. voltage and to a third diode, said gating circuit further including a variable resistance connected in series with said third diode and with a third fixed resistance and a fourth diode with said fourth diode being connected to the gate electrode of said silicon con-

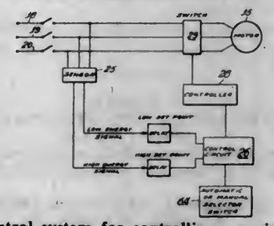


trolled rectifier, said third and fourth diode having like polarity and being connected to permit passage of energy during the same half-cycle of applied voltage as said silicon controlled rectifier passes energy, and a capacitor connected to the other end of said armature winding and to said gating circuit between said variable resistance and said third fixed resistance, said motor speed control circuit being constructed and adapted so that said gating circuit and said field and armature windings can be connected to a source of A.C. voltage and with said variable resistance being adjustable to vary the gating time of said silicon controlled rectifier and thereby regulate the amount of electrical energy provided to said armature winding.

3,283,236
CONTROL SYSTEM FOR POWER UNITS SUCH AS ELECTRIC MOTORS AND THE LIKE

Leo V. Legg, Tulsa, Okla., assignor to Borg-Warner Corporation, a corporation of Illinois

Filed Sept. 30, 1965, Ser. No. 491,677
5 Claims. (Cl. 318—447)

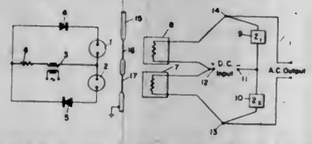


2. In a control system for controlling energization of a motor or the like from a multi-phase power source comprising in combination a main switch for coupling the source to the motor, signal producing means for sensing current flow in each phase to the motor and a circuit responsive to signals from said sensing means for controlling operation of said main switch, said circuit means including electromechanical means and a first switch for selectively coupling said means into said control circuit, said electromechanical means responsive to energization to effect operation of said switch means to connect said source to said motor, respective second and third switch means responsive to respective predetermined high and low energy level signals from said sensing means and coupled to said electromechanical means to deenergize the latter upon sensing of such respective high and low energy signals, and a pair of time delay by-pass switches, one for each of said respective high and low set-point switching means, for initially disabling the latter and operative after respective predetermined time delays to make said energy level responsive switches effective, said high set-point by-pass delay time period being shorter than said low set-point by-pass delay time period so as to permit energy flow to said motor to rise above said low set-point at starting while assuring that an initial excess of energy flow effects deenergization of said motor.

3,283,237
PHOTOELECTRIC MODULATOR WITH TRANSPARENT ELECTROSTATIC SHIELDS

Albert J. Williams, Jr., Philadelphia, and Norman E. Polster, Southampton, Pa., assignor to Leeds and Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed May 20, 1963, Ser. No. 281,616
9 Claims. (Cl. 321—34)

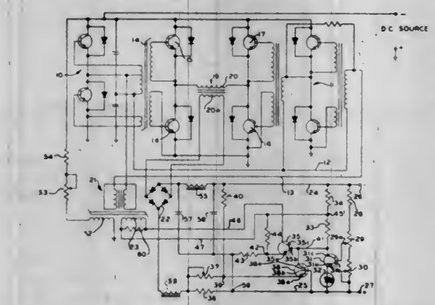


4. A photoelectric modulator comprising first and second photocells each having an envelope, a D.C. input circuit and an A.C. output circuit connected to said photocells, each of said photocells having a light transparent electrically conductive coating on a portion of said envelope, electrically conducting guard shield surrounding each of said photocells and electrically connected to said coatings, first and second gaseous discharge light sources, said light sources being respectively positioned in proximity to said coatings on the envelopes of said first and second photocells, an A.C. energizing voltage alternately connected to said light sources so that said light sources are alternately energized, electrically conducting ground shielding intervening between said light sources and said electrically conducting guard shields, portions of said ground shielding adjacent said photocells being light transparent and electrically conducting, said guard shields and said ground shielding being electrically isolated so that said photocells and said D.C. input circuit and said A.C. output circuit are all isolated from the A.C. energizing voltage for said light sources.

3,283,238
REGULATOR CIRCUITRY

Henry M. Huge, Bay Village, and Louis R. Szabo, Avon Lake, Ohio, assignors to Lorain Products Corporation, a corporation of Ohio

Filed Aug. 3, 1962, Ser. No. 214,613
10 Claims. (Cl. 323—9)

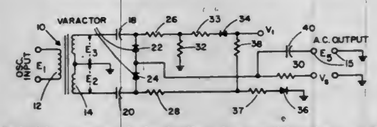


6. In a power supply of the type adapted to supply an output voltage determined by the width of pulses from a power circuit and having output terminals; the combination of pulse width changing means, controlling means operatively associated with said pulse width changing means to vary the width of pulses generated in accordance with current flow through said controlling means, variable conducting means, means for connecting said variable conducting means to said controlling means in current conducting relationship, output voltage responsive means, means for connecting said output voltage responsive means to said variable conducting means to vary the conduction thereof to thereby vary the width of pulses from the power circuit in accordance with the tendency to change of output voltage, a resistor connected serially between the power circuit and one of said output terminals, voltage dropping means having a voltage proportional to the output voltage of the power circuit, means for connecting said resistor to said variable conducting means in power conducting relationship and means for connecting said voltage dropping means between said resistor and said variable conducting means in conduction control relationship whereby an overload greater than a predetermined value causes the variable conducting means to vary in conduction thereby reducing the width of pulses from the power circuit to reduce the output voltage.

3,283,239
PRECISION SOLID STATE RATIO BRIDGE

Charles J. Swartwout, Allen E. Lepley, and Donald S. Oliver, Scottsdale, Ariz., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Filed Oct. 14, 1963, Ser. No. 316,012
2 Claims. (Cl. 323—75)



1. A bridge network including in combination: a first network forming first and second arms for said bridge, a second network coupled to said first network and including inter-connected first and second voltage-variable diode capacitors respectively forming third and fourth arms of the bridge, said voltage-variable diode capacitors exhibiting capacitance changes for changes in ambient temperature, a bias circuit connected to said first and second voltage-variable diode capacitors for establishing said diode capacitors individually at particular bias levels, a control circuit connected to said second network for introducing a direct current signal to the common junction of said inter-connected diode capacitors to increase the capacitance of one of said diode capacitors and to decrease the capacitance of the other of said diode capacitors so as to control the capacitance ratio thereof as an essentially linear function of the direct current signal, and a pair of temperature compensating diodes included in said bias circuit and respectively connected in circuit with respective ones of said voltage-variable diode capacitors and exhibiting corresponding variations in impedance for changes in ambient temperature to vary the individual biases on said voltage-variable diode capacitors for such changes in ambient temperature.

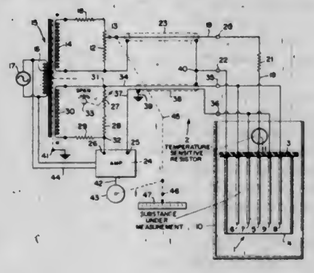
3,283,240
ELECTRICAL CONDUCTIVITY CELL AND MEASURING APPARATUS

Richard J. Spady, Feasterville, Pa., assignor to Honeywell Inc., a corporation of Delaware

Filed Oct. 22, 1962, Ser. No. 232,118
7 Claims. (Cl. 324—30)

4. Apparatus for measuring the electrical conductivity of a substance, comprising a cell having a pair of ener-

gizing electrodes and a pair of output electrodes, said electrodes being arranged to contact said substance, an amplifier having an input connected to said output electrodes and having an output, mechanically adjustable voltage varying means connected between a source of voltage and said energizing electrodes to apply to said energizing electrodes an adjustable percentage of the voltage of said source, said voltage varying means including an adjustable member the adjustment of which

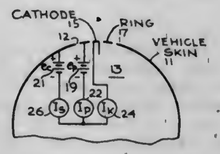


adjusts said percentage of the voltage of said source which is applied to said energizing electrodes, motor means connected to and energized from said amplifier output and coupled to adjust said member, and means mechanically coupled to and adjusted with said member to repeat the adjusted position thereof, and hence the percentage of the voltage of said source which is applied to said energizing electrodes, as a linear measure of the conductivity of said substance.

3,283,241
APPARATUS FOR FIELD STRENGTH MEASUREMENT OF A SPACE VEHICLE

Stuart G. Forbes, Palos Verdes, Robert F. Kemp, Redondo Beach, and John M. Sellen, Jr., Encino, Calif., assignors, by mesne assignments, to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Oct. 5, 1962, Ser. No. 228,569
3 Claims. (Cl. 324—32)



1. Electric field measuring apparatus for use in a space vehicle having an exterior surface which is subject to accumulation of a substantial electrostatic charge relative to its environment so that an electric field exists adjacent the exterior surface thereof, said apparatus comprising:

a component supporting body member adapted to be electrically connected to the exterior surface of said vehicle;

a thermionically emissive cathode electrode having a substantially planar electron emitting surface for emitting, into said environment, an electron space current which varies as a function of the strength of electric field adjacent said emitting surface;

an anode electrode extending peripherally around said cathode electrode and in the same plane for collecting a portion of the electrons constituting said space current;

heater means connected to said cathode electrode to heat said cathode electrode so it will emit electrons;

potential source means connected between said cathode electrode and said anode electrode in order to bias said anode electrode;

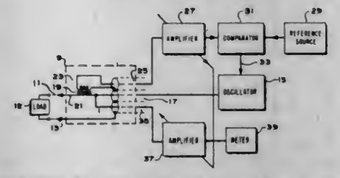
said space vehicle connected to said component supporting body with its external surface substantially planar with said surface of said cathode electrode, and

circuit means connected between said body member and one of said electrodes for producing an output signal which varies as a function of the electric field in the vicinity of said emitting surface.

3,283,242
IMPEDANCE METER HAVING SIGNAL LEVELING APPARATUS

Bernard M. Oliver, Los Altos Hills, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California

Continuation of application Ser. No. 169,865, Jan. 30, 1962. This application Dec. 8, 1965, Ser. No. 520,019
5 Claims. (Cl. 324—57)



1. Apparatus for measuring the impedance of a load, the circuit comprising:

a probe including a pair of test terminals for receiving thereacross a load to be measured;

a separate source of alternating signal having a selected frequency which is independent of load connected thereto;

signal conducting means serially connecting said source and the test terminals of said probe for applying the alternating signal from said source to the load to be measured connected to said test terminal;

means within said probe coupled to one of said test terminals for producing a first output in response only to the current flowing through a load to be measured connected to the test terminals;

means within said probe coupled to said test terminals for producing a second output in response to the voltage across said test terminals;

circuit means connected to said source and responsive to one of the first and second outputs for altering the amplitude of the alternating signal to maintain said one of the first and second outputs constant; and

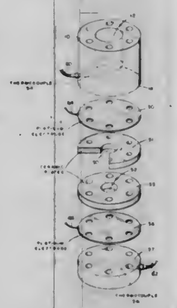
indicating means connected to receive the other of the first and second outputs for producing an indication of the magnitude thereof.

3,283,243
APPARATUS FOR INDICATING THE THERMAL E.M.F. AND A.C. CONDUCTIVITY OF A CATALYST

James T. Richardson and Stanford S. Toups, Baytown, Tex., assignors, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware

Filed Oct. 22, 1962, Ser. No. 231,885
3 Claims. (Cl. 324—62)

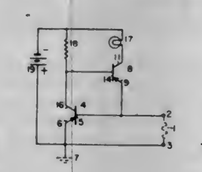
1. An apparatus for indicating an electrical property of a catalyst comprising: a cylindrical support made of nonconducting material and having a coaxial bore extending from the top thereof to a point above the bottom thereof; a thermocouple mounted in said cylindrical support and extending from a side of said cylindrical support to a point below the bottom of said bore in said cylindrical support; an upper plate electrode mounted on the bottom of the cylindrical support; a lower support member; a lower plate electrode mounted on the lower support member; a thermocouple mounted in said lower support member and extending from a side of said lower support member to approximately the center of the lower support member; means permitting movement of the lower plate electrode toward and away from the upper plate electrode whereby a catalyst pill can be pressed between the electrodes and removed, respectively; a heater within the bore in the cylindrical support for establishing a temperature gradient through the catalyst, which temperature gradient is indicated by said thermocouples; and an electrical circuit including said plate electrodes.



3,283,244
ELECTRICAL RESISTANCE TESTER

Donald R. Proctor, Santa Ana, and Donald E. Sweet, Anaheim, Calif., assignors to Electronic Engineering Company of California, Santa Ana, Calif., a corporation of California

Original application May 15, 1963, Ser. No. 280,583, now Patent No. 3,259,841, dated July 5, 1966. Divided and this application Jan. 17, 1966, Ser. No. 529,906
7 Claims. (Cl. 324—62)



1. A circuit for indicating the value of an electrical resistance comprising

(a) a first transistor having input and output electrodes, said input electrodes of said first transistor connected directly across said electrical resistance,

(b) a second transistor having input and output electrodes,

an input electrode of said second transistor connected to an output electrode of said first transistor, and

an other input electrode of said second transistor connected to said electrical resistance to form a negative feedabck loop comprised of said first transistor, said second transistor and said electrical resistance,

(c) a resistor,

(d) an incandescent lamp,

said resistor connected to the said output electrode of said first transistor, and to the output electrode of said second transistor, thereby to be included within said feedback loop,

(e) means to power said circuit connected to said electrical resistance and to said resistor to allow current to flow through both under the control of said first and second transistors, and

said lamp connected in said feedback loop with one terminal of said lamp directly connected to an electrode of said second transistor,

said circuit thus constituted to indicate the value of an electrical resistance by providing an indication by non-illumination of said lamp for values of said electrical resistance greater than the order of one ohm,

and by providing an indication by illumination of said lamp for values of said electrical resistance less than the order of one ohm,

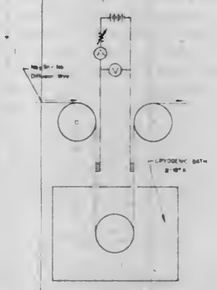
the current through said electrical resistance limited by the resistance of said lamp, and

the voltage across said electrical resistance limited by the forward voltage drop of the transistor junction of said input electrodes of said first transistor.

3,283,245
INDIRECT PROCESS FOR TESTING HARD SUPERCONDUCTOR LAYERS

Robert A. Stauffer, Weston, Mass., assignor, by mesne assignments, to National Research Corporation, a corporation of Massachusetts

Filed Jan. 28, 1963, Ser. No. 254,460
2 Claims. (Cl. 324—64)



1. A new method of quality control testing of superconductors of the type comprising a Nb_3Sn layer formed by diffusion reaction along the length of a continuous layer of niobium, such as a niobium wire, the new method comprising the steps of placing the superconductor into a cryogenic bath; holding the temperature of said bath at a temperature between 9 and 18° K.; passing an electrical current through the superconductor; varying the current; measuring the electrical current at zero voltage drop whereby the completeness of the Nb_3Sn layer is indicated; and extrapolating from said electrical current measured at zero voltage drop the actual critical current of the superconductor at standard operating temperatures below 9° K.

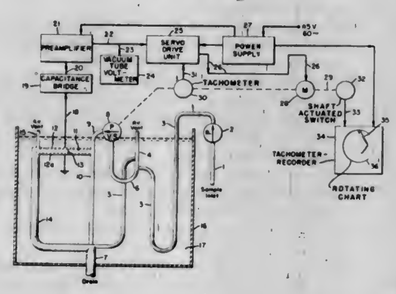
3,283,246

TACHOMETER HAVING AN OUTPUT INVERSELY PROPORTIONAL TO THE ROTATIONAL SPEED BEING MEASURED

Lloyd G. Lewis, La Grange, Ill., and Lowell Glenn Whitesell, Hammond, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

Original application Oct. 1, 1959, Ser. No. 843,772. Divided and this application June 29, 1962, Ser. No. 217,774

2 Claims. (Cl. 324—70)



1. A tachometer characterized by providing an output which is inversely proportional to the rotational speed of a shaft which comprises: capacitor means for storing a charge from a direct current voltage source; first contact means to complete an electrical circuit so that said direct current voltage source can charge said capacitor means, said first contact means being actuated by said shaft; a filter circuit comprising a resistance and capacitance connected in parallel; second contact means to complete an electrical circuit through which said capacitor means can be discharged into said filter circuit, said second contact means being actuated by said shaft, and said first contact means and said second contact means being actuated a number of times per unit of time interval depending upon the rotational speed of said shaft; means for comparing the direct current voltage across said filter circuit with a fixed direct current reference voltage to obtain a difference voltage; means responsive to said difference voltage and adapted to vary the voltage from said direct current voltage source in order to reduce said difference voltage to zero; and means for indicating the magnitude of the output voltage of said direct current voltage source which is the output signal from said tachometer and which is inversely proportional to the speed of said shaft.

3,283,247

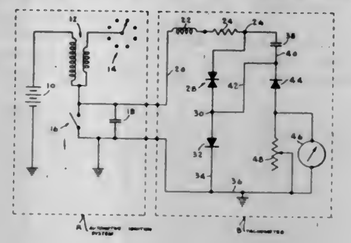
VOLTAGE AND TEMPERATURE COMPENSATED TACHOMETER CIRCUIT

Wilbert E. Beller, Park Ridge, Ill., assignor to Controls Company of America, Melrose Park, Ill., a corporation of Delaware

Filed Dec. 31, 1962, Ser. No. 248,624

1 Claim. (Cl. 324—70)

In a voltage and temperature compensated tachometer circuit comprising an input for receiving a pulsed signal of a frequency which is a function of the speed of a measured device and an output comprising a series connected diode and ammeter, a ground circuit common to said input and said output, a pulse circuit including a capacitor in series with said input and said output, and a shunt circuit including a double base Zener diode between the input side of said capacitor and said ground circuit; the improvement wherein said shunt circuit further includes a diode interposed between said double base Zener diode and said ground circuit, and circuit means connecting the junction between said diode and said double base Zener diode with the ouput side of said capacitor, said output circuit diode and said shunt circuit diode being



oppositely poled whereby one of said diodes has its base connected to said capacitor and the other of said diodes has its anode connected to said capacitor.

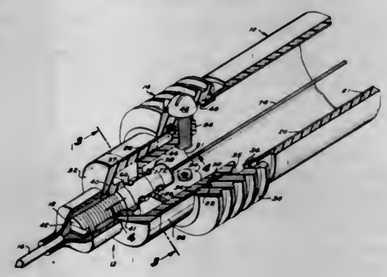
3,283,248

ELECTRICAL PROBE CONTAINING A CAPACITOR AND A SWITCH ASSEMBLY FOR SELECTIVELY SHORT CIRCUITING SUCH CAPACITOR

Robert G. White, Portland, Oreg., assignor to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon

Filed Sept. 24, 1962, Ser. No. 225,631

6 Claims. (Cl. 324—72.5)



1. An electrical probe and switch assembly, comprising;
a hollow tabular probe body including an outer conductor;
a probe tip including a first inner conductor, secured to one end of said probe body so that said first inner conductor is insulated from said outer conductor;
a cylindrical capacitor mounted on said probe tip inside said probe body and having a pair of opposite end terminals separated by a solid dielectric portion with the input terminal electrically connected to said first inner conductor;
a second inner conductor mounted in spaced insulated relationship within said outer conductor and electrically connected to the output terminal of said capacitor;
switch means including a plurality of movable contacts equidistantly spaced about the capacitor and mounted for longitudinal sliding movement on the outer surface of the dielectric portion of said capacitor into and out of engagement with at least one of the terminals of said capacitor to short circuit the terminals of said capacitor; and
knob means mounted for longitudinal sliding movement on the outer surface of said probe body and connected to said switch contacts inside said probe body for sliding said switch contacts along the surface of said capacitor between an A.C. switch position in which said capacitor is effectively connected in series with said inner conductor and a D.C. switch position in which said capacitor is short-circuited by said switch contacts.

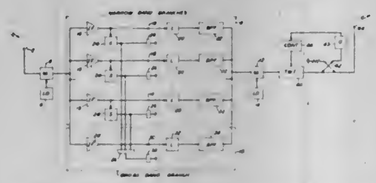
3,283,249

BROADBAND RADIO REPEATER HAVING PARALLEL CHANNELS

Doren Mitchell, Martinsville, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 23, 1963, Ser. No. 332,722

9 Claims. (Cl. 325—3)



8. A broadband radio repeater comprising an input circuit, a broadband power amplifier and a plurality of branches connected in parallel between said input circuit and said amplifier, each branch having a bandpass frequency characteristic restricting transmission therethrough to a different frequency range, control means for connecting and disconnecting the signal path through said branch, each of said control means connecting the signal path of its corresponding branch only during intervals of time in which a signal is being transmitted in the bandpass frequency range within which said branch transmits.

3,283,250

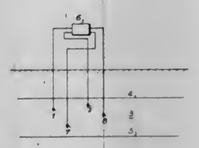
ELECTROMAGNETIC TRANSMISSION SYSTEMS OPERATING BELOW GROUND SURFACE

Julien M. Loeb, Saint-Cloud, France, assignor to Compagnie Generale de Geophysique, Paris, France, a corporation of France

Filed Mar. 20, 1963, Ser. No. 266,728

Claims priority, application France, Apr. 19, 1962, 895,011

4 Claims. (Cl. 325—28)



1. A method for improving the operation of an electromagnetic system adapted for transmitting electromagnetic waves through a layer of ground from a transmitting zone to a receiving zone, said method comprising interposing between said zones an amplifier having input and output terminals to which are respectively connected receiving and retransmitting electrodes, and positioning the receiving electrodes on a common equipotential surface of the field produced by the retransmitting electrodes when the latter are operative.

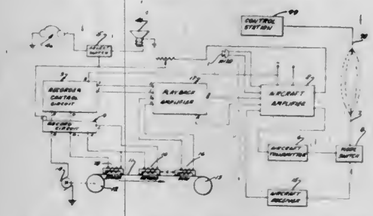
3,283,251

METHOD OF AIRCRAFT CONTROL AND AIRCRAFT RADIO COMMUNICATIONS AND APPARATUS THEREFOR

Charles F. Murphy, Vermontville, Mich., assignor to Michigan Magnetics, Inc., Vermontville, Mich., a corporation of Michigan

Filed Oct. 11, 1963, Ser. No. 315,550

2 Claims. (Cl. 325—66)



1. A method of aircraft radio communications for flight controlling an aircraft by a control station comprising the steps of providing a two-way radio transmission system between the aircraft and control station, said system having receiver and transmitter networks at said control station and receiver and transmitter networks in said aircraft, said receiver networks adapted for producing aural signals to the operators at said control station and in said aircraft; providing a recorder in said aircraft receiver and transmitter networks, said recorder being connected in said aircraft networks for recording said aural signals transmitted from said control station networks as such signals are being received by said aircraft receiver network and heard by the operator therein; transmitting aural instruction signals from said control station networks to said aircraft networks; receiving said instructions at said aircraft receiver network and simultaneously recording the same on said recorder; simultaneously with the receipt of said signal by said aircraft network playing said recorded signal only slightly time delayed and muted so as to be heard in the background by the aircraft operator thereby indicating to the aircraft operator that the signal is being recorded at said aircraft networks; and transmitting the recorded signal back to the control station networks only after the control station's instructions are complete.

3,283,252

R.F. TRANSMITTER HAVING MEANS FOR REMOVAL OF RIPPLE AND LONG TERM VARIATIONS OF OUTPUT STAGE SUPPLY

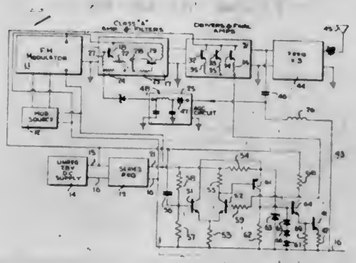
Hansel B. Mead, Jr., Eau Gallie, and Hans Scharla-Nielsen, Indialantic, Fla., assignors to Radiation Incorporated, Melbourne, Fla., a corporation of Florida

Filed Dec. 17, 1963, Ser. No. 331,245

8 Claims. (Cl. 325—186)

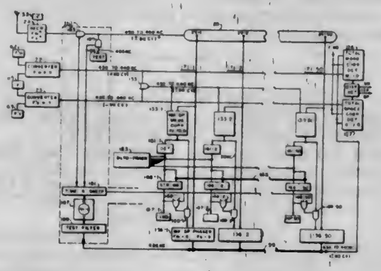
1. An R.F. transmitter for a modulated carrier comprising an unregulated D.C. power supply subject to ripple and long time variations, means for regulating the voltage deriving from said supply, a low power amplifier responsive to said carrier and energized by the voltage deriving from said regulating means, a high power amplifier cascaded with said low power amplifier and energized directly by the voltage deriving from said supply, means responsive to the signal level deriving from said high power amplifier to control the gain of said low power amplifier to maintain the combined gain of both said amplifiers substantially constant despite long time variations of the voltage deriving from said supply, and means for substantially eliminating the ripple applied to said high power amplifier, the last named means including a circuit for comparing ripple in the voltage deriving from said supply with the resulting short term fluctuations in

the supply voltage at said amplifier to derive an error voltage therefrom, voltage variable impedance means in series circuit with said power supply and said high power



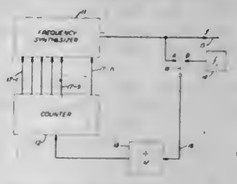
amplifier, and means for applying said error voltage to said impedance means in such sense as to vary the series impedance between said supply and said high power amplifier to cancel said short term fluctuations.

3,283,253
PROPAGATION PATH PROFILE AND TEST DISPLAY
William G. Ehrich, Media, and David Sunstein, Bala-Cynwyd, Pa., assignors to the United States of America as represented by the Secretary of the Army
Filed Dec. 24, 1963, Ser. No. 333,236
2 Claims. (Cl. 325—363)



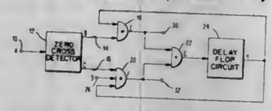
1. In a receiver for a wideband correlation communication system for transmitting digital information identified by selectively transmitted plural functions thru a communication channel subject to propagation of multipath signals delayed in several amounts according to a delay pattern which is repeated in similar form for successive digital signal periods,
having a tapped delay line for said signals with outputs connected to various tap circuits,
a source of corresponding plural receiver functions for correlation with said signals,
means to combine said plural receiver functions,
means in each tap circuit to correlate the received signal with said combined functions to produce a measuring output of sustained amplitude and phase corresponding to the prevailing long term correlation in said tap circuit as determined by prevailing path delays,
means to recombine the delay line tap output with said measuring output to provide output signals from each tap circuit of weighted amplitude and phase determined by the measuring output,
such that all tap circuit outputs are in a common phase relation to be combined on a common bus,
and means to correlate the combined output on said bus with the separate plural functions to determine which of such plural functions had been transmitted, whereby the several multipath components contribute to an output of maximum signal to noise ratio,
said digital signal periods including information and synchronizing periods, the combination with said delay line, measuring means, and recombining means, of means to exclude said received signal from said delay line during a substantial part of a synchronizing period and to apply a brief test signal to said delay line during such part,
and display means responsive to the amplitude of the successive signals on said common bus provided by propagation of said test signal along said line to said successive tap circuits, as combined with said measuring output in said recombining means, to reveal the prevailing multipath profile.

3,283,254
CONTROL SYSTEM EMPLOYING COUNTER TO GENERATE SIGNALS FOR CHANGING OUTPUT LINEARLY OR NON-LINEARLY, OF FREQUENCY SYNTHESIZER
Gerald D. Haynie, Berkeley Heights, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N. Y., a corporation of New York
Filed Dec. 6, 1963, Ser. No. 328,682
17 Claims. (Cl. 328—71)



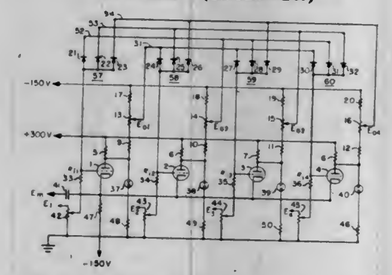
1. A signal generator comprising
a frequency synthesizer having a plurality of selectively controllable signal sources of diverse frequencies and signal output means,
an auxiliary source of signal oscillations,
switching means for selecting energizing signals from either said auxiliary source or from said output means,
first means responsive to selected energizing signals for developing pulses integrally related to the frequency of said energizing signals,
second means responsive to said developed pulses for producing electrical indications whose rate of change is proportionate to the frequency of said pulses,
and third means responsive to said electrical indications for selectively controlling said plurality of signal sources whereby a sweep frequency signal is generated at said output means.

3,283,255
PHASE MODULATION SYSTEM FOR READING PARTICULAR INFORMATION
George R. Cogar, Lancaster, Norwalk, Conn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed July 5, 1962, Ser. No. 207,510
10 Claims. (Cl. 328—99)



1. In combination with a system wherein information is converted into a series of pulse signals including equally spaced significant pulses representing information and non-significant pulses, the time between consecutive significant pulses being equal to one full signal period, a triggerable delay flop circuit for producing an inhibit signal adapted to be triggered by a pulse signal, said inhibit signal being of a duration more than one half and less than a full signal period, means for applying said series of pulse signals to said delay flop circuit, a first means for inhibiting said non-significant pulses for a predetermined time period whereby said delay flop circuit is triggered by the pulses representing said significant signals, and means for applying said inhibit signal from said flop circuit to inhibit said non-significant pulses.

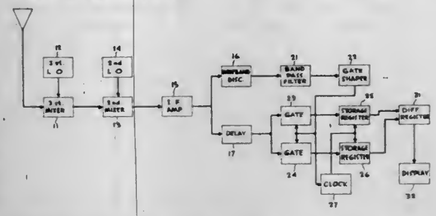
3,283,256
"N" STABLE MULTIVIBRATOR
Mark Hurowitz, Palo Alto, Calif., assignor to the United States of America as represented by the Secretary of the Army
Filed Mar. 25, 1963, Ser. No. 267,870
11 Claims. (Cl. 328—147)



1. An "N" stable multivibrator comprising: "N" electron tube stages, each stage having a triode electron tube, a diode network, input circuit means, and output circuit means; means to connect the cathodes of all said triode electron tubes to a common point; means to apply separate input signals to the input circuit of each of said triodes; and means to couple the output circuit of each said electron tube to all but one of said diode networks.

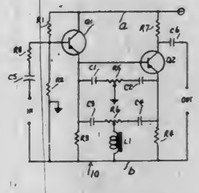
3,283,257
FM DEVIATION INDICATOR
Glenn D. Boyce, San Diego, Calif., assignor to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware
Filed Aug. 21, 1963, Ser. No. 303,523
5 Claims. (Cl. 329—111)

5. A frequency modulation peak deviation measuring device responsive to a frequency modulated signal comprising,
recovering means for recovering a modulated signal, said recovering means having gate shaper means,
first and second gate means connected to the output of said gate shaper means,
said gate shaper means in response to a substantially sinusoidal wave portion of said modulating signal being capable of alternatingly actuating said first and second gate means,



means for applying said frequency modulated signal to said gate means,
first and second storage registers connected to said first and second gate means respectively,
and a difference register connected to said first and second storage registers for obtaining the difference in count between said first and second storage registers.

3,283,258
ADJUSTABLE EQUALIZER CIRCUIT FOR AUDIO AMPLIFIERS
Nathan M. Haynes, 398 Broadway, New York, N.Y.
Filed July 8, 1964, Ser. No. 381,116
9 Claims. (Cl. 330—21)



6. A frequency control network comprising a first transistor including a first base electrode and a first emitter electrode, a second transistor including a second base electrode connected to said first emitter electrode and a second emitter electrode, a first emitter resistor connected between said first emitter electrode and a current source terminal, a second emitter resistor connected between said second emitter electrode and said current source terminal, a potentiometer including an arm connected to said current source terminal and a resistance element, and a pair of first and second capacitors connecting opposite terminals of said potentiometer resistance element to the said emitter electrodes of the respective transistors.

3,283,259
PULSE DISTRIBUTION AMPLIFIER
Arthur J. Banks, Cherry Hill, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Jan. 23, 1963, Ser. No. 253,423
4 Claims. (Cl. 330—24)

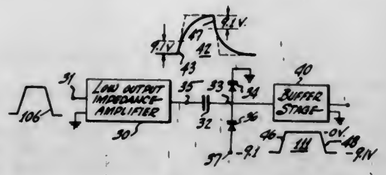
1. In apparatus for re-forming pulses in response to input pulses each having a leading edge and a trailing edge, the combination comprising:
amplifier means having a relatively low impedance output circuit and being responsive to the respective leading corners of the leading and trailing edges of said input pulses for initiating in its output circuit corresponding leading and trailing edges of output pulses having a given peak voltage value;

utilization means having a relatively high impedance input circuit for re-formed pulses;

means including a capacitor coupling the output circuit of said amplifier means to the input circuit of said utilization means;

a charging circuit for said capacitor including a first diode, one electrode of which is connected at a point between said capacitor and said utilization circuit and having a given time constant which is no longer than the time duration of one of said pulses so as to charge said capacitor to equilibrium;

a discharging circuit for said capacitor including a second diode, one electrode of which is connected at said point between said capacitor and said utilization circuit and having a time constant substantially equal to said given time constant so as to discharge said capacitor to equilibrium; and

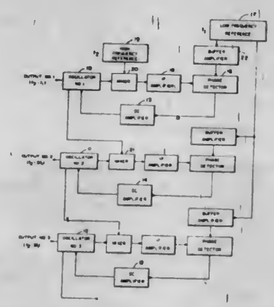


means for impressing upon said first and second diodes biasing voltages of a value less than said given peak pulse voltage value, whereby voltage values of the leading and trailing edges of said output pulses up to but not exceeding said biasing voltage value are transferred by said capacitor to said utilization circuit and voltage values of said leading and trailing edges of said output pulses greaten than said biasing voltage value respectively render said first and second diodes conducting to alternately charge and discharge said capacitors.

3,283,260
AUTOMATIC PHASE CONTROL LOOP WITHOUT FALSE LOCKS DUE TO HARMONICS

George R. Vaughan, Linthicum, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed June 30, 1965, Ser. No. 468,648
2 Claims. (Cl. 331—2)

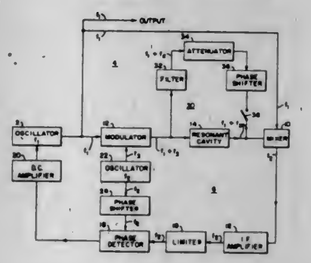


1. A phase locked spectrum generator comprising a first oscillator having a first frequency output, a second oscillator having a second frequency output, a third oscillator having a control input and a third frequency output, wherein said third frequency is the difference between said first and second frequencies, a mixer having plural inputs and an ouput and with said second and third oscillators connected to inputs of said mixer, the output of said mixer being the difference between said second and third frequencies and equal to said first frequency, said mixer output being connected to an intermediate amplifier having an output, said intermediate amplifier output and said first oscillator output being connected to a phase detector having an output, connecting means between said phase detector output and the control input of said third oscillator, a fourth oscillator having a control input and a fourth frequency output, an additional mixer means having plural inputs and an output, said third and fourth oscillators being connected to inputs of said additional mixer, the output of said mixer being the difference between said third and fourth frequencies and equal to said first frequency, said additional mixer output being connected to an additional intermediate amplifier having an output, said additional intermediate frequency amplifier output and said first oscillator output being connected to an additional phase detector having an output connected to an additional connecting means, said additional connecting means being also connected to the control input of said fourth oscillator.

3,283,261
MEANS FOR INCREASING EFFECTIVE GAIN OF A MICROWAVE CAVITY FREQUENCY DISCRIMINATOR

John R. Buck, Baltimore, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 30, 1964, Ser. No. 341,343
7 Claims. (Cl. 331—9)



1. In combination, a reference cavity providing phase information on the variance of input to the cavity from a predetermined frequency; means for bypassing a portion of said input signal around said cavity when at said predetermined frequency; and means for reinjecting the bypassed portion 180° out of phase with the cavity output signal to increase the magnitude of said phase information.

3,283,262
OPTICAL MASER OPERATING IN THE TM_{on} MODE

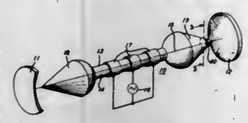
Enrique A. J. Marcatili, Fair Haven, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed May 1, 1963, Ser. No. 277,266
10 Claims. (Cl. 331—94.5)

10. A source of optical frequency electromagnetic wave energy in a TM_{on} wave mode comprising an elongated solid negative temperature medium having a central axis,

and first and second external reflecting surfaces positioned on said axis and normal thereto,

said medium being disposed between said surfaces, and a dielectric interface in the shape of a cone of

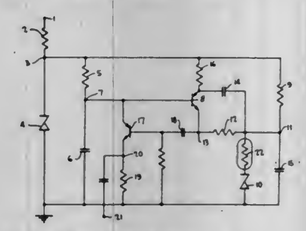


half angle $(90-\beta)$ degrees interposed between said surfaces were β is the associated Brewster angle.

3,283,263
RELAXATION OSCILLATOR HAVING HIGH IMMUNITY TO CHANGES IN SUPPLY VOLTAGE

Henry P. Kalmus, Washington, D.C., and Klaus H. Sann, Kensington, Md., assignors to the United States of America as represented by the Secretary of the Army

Filed Mar. 10, 1964, Ser. No. 350,919
10 Claims. (Cl. 331—111)



1. A relaxation oscillator comprising:

(a) a circuit ground,

(b) first and second circuit points,

(c) a current-limiting resistor and a charging capacitor connected in series between said first circuit point and ground, said resistor and capacitor being joined at a first junction,

(d) first means connected to said first circuit point for suplying direct current to said first circuit point,

(e) second means connected between said second circuit point and said first circuit point, and third means connected between said second circuit point and ground, whereby a reference voltage is derived at said second circuit point from the direct current applied to said first circuit point,

(f) fourth means for sensing the difference voltage between the voltage across said capacitor and said reference voltage and having an output terminal for providing a first pulse when said voltage attains a predetermined value, said fourth means comprising:

(1) a second resistor and a second capacitor connected in series between said first and second circuit points,

(2) a first load resistor having one end connected to said second circuit point,

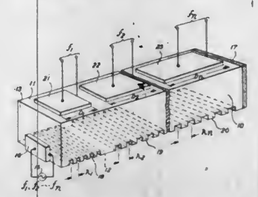
(3) a three-terminal semiconductor switch having its control terminal connected to said first junction and its other two terminals connected to discharge said second capacitor through said semiconductor switch and said first load resistor, thereby developing a voltage pulse across said first load resistor when said difference voltage attains a predetermined value, and

(g) fifth means having two output terminals connected across said charging capacitor and having an input terminal connected to said output terminal of said fourth means, said fifth means being adapted to discharge said charging capacitor in response to said first pulse.

3,283,264
FREQUENCY SELECTIVE SYSTEM

Emmanuel P. Papadakis, Allentown, Pa., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 24, 1963, Ser. No. 333,020
7 Claims. (Cl. 333—6)

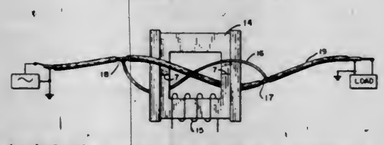


1. A frequency selective system comprising a propagation medium for ultrasonic wave energy in a given frequency band, an ultrasonic diffraction grating associated with said medium, said grating extending in a given plane for a length of at least a plurality of wavelengths of energy in said band, means for launching a predominant beam of ultrasonic wave in said medium directed parallel to said given plane and therefore at grazing incidence to said grating whereby energy in said given band is diffracted by said grating as a broad wave front moving in a given direction, and a piezoelectric transducer for converting ultrasonic wave energy into electrical signals, said transducer having the piezoelectric face thereof of length extending in a given plane for a plurality of wavelengths of said energy in said band in a direction substantially normal to said given direction.

3,283,265
APPARATUS FOR DETECTING AND APPRAISING SIGNALS ON CABLES

Otmar E. Ringelhaan, Munich, Neu-Aubing, Germany, assignor to the United States of America as represented by the Secretary of the Army

Filed Mar. 16, 1965, Ser. No. 440,333
11 Claims. (Cl. 333—6)



4. An inductive signal pick-up device comprising a coaxial transmission cable, a ferromagnetic core of loop configuration, said cable passing through said core, means coupled to said cable and said core for inducing fluxes in said core which are equal and opposite to the fluxes induced in said core by signals on the outer conductor of said coaxial cable, an output coil coupled to said core, and an output device connected to said coil.

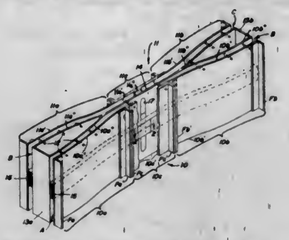
3,283,266
H-GUIDE HYBRID JUNCTION HAVING AN ELONGATED COUPLING SLOT

Leo Birenbaum, New York, and John W. E. Griemsmann, Queens Village, N.Y., assignors to Polytechnic Institute of Brooklyn, Brooklyn, N.Y., a corporation of New York

Filed Dec. 30, 1963, Ser. No. 334,127
4 Claims. (Cl. 317—249)

1. An H-guide hybrid junction comprising two sections of waveguide of the H-type arranged in parallel relation and having a common wall over a linear section at the middle thereof, each H-guide being formed of parallel conductive plates separated by a strip of dielectric ma-

terial extending throughout the length of the plates along the longitudinal center of the plates, said common wall having a coupling aperture formed therein comprising



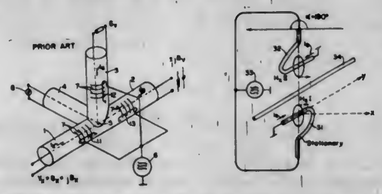
an elongated slot formed transversely of the longitudinal axis of the junction and extending beyond the edges of said dielectric strips to points near the edges of said conductive plates.

3,283,267

INDUCTIVE COUPLING DEVICE WITH A ROTATABLE AND A STATIONARY COUPLING LOOP, AND METHOD OF ITS APPLICATION

Horst Urmoneit, Kleinmachnow, Germany, assignor to VEB Halbleiterwerk, Frankfurt an der Oder, Stahnsdorf, Germany

Filed Nov. 25, 1964, Ser. No. 413,708
9 Claims. (Cl. 333—24)



1. A device for adjusting the inductive coupling of a high-frequency electromagnetic field to a stationary conductor, comprising first coupling means rigidly mounted adjacent to said conductor and having a first electromagnetic field in contact with said conductor, rotatively mounted second coupling means having a second electromagnetic field also in contact with said conductor, and means for rotating said second coupling means on an axis perpendicular to said conductor so that said second electromagnetic field will substantially cancel said first electromagnetic field at one position of rotation so that the resultant electric field coupling said conductor is substantially reduced to zero at said position.

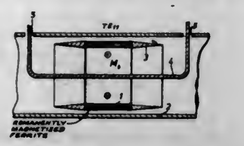
3,283,268

REMANENTLY MAGNETIZABLE FERRITE ARRANGEMENT FOR PROVIDING DIRECTIONAL ATTENUATION OF MICROWAVE TRANSMISSION LINES

Ernst Neckenbürger, Wedel, Holstein, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed July 18, 1963, Ser. No. 295,962
Claims priority, application Germany, Aug. 9, 1962, P 29,988
7 Claims. (Cl. 333—24.2)

1. A non-reciprocal microwave device comprising a hollow longitudinally extending conductive waveguide for propagating microwave energy, a hollow body of a remanently magnetized polycrystalline ferrite material of hexagonal crystal structure positioned with said waveguide, the axis of said body extending parallel to the axis of said waveguide, the individual crystallites of said material having a preferred plane of magnetization and being oriented in said body with their preferred planes



normal to the longitudinal axis of said body, said body being remanently magnetized circumferentially.

3,283,269

TAPPED DELAY LINE

Howard B. Bernstein, New York, N.Y., assignor to Bel Fuse Inc., Jersey City, N.J., a corporation of New Jersey

Filed Mar. 12, 1962, Ser. No. 178,992
5 Claims. (Cl. 333—29)



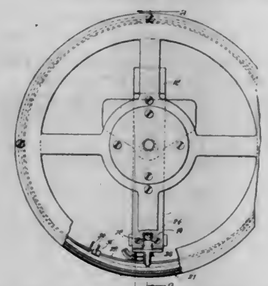
1. A delay line comprising a support structure of insulating material having a first and second end; a plurality of distinct inductive sections of electrically conductive material about said support structure; said distinct inductive sections including a first end section, a plurality of intermediate sections and a second end section; each of said sections being an integrally formed conductive winding having a first terminal at one end thereof, an intermediate portion wound about said support structure, and a second terminal at the opposite end thereof; said terminals defining the absolute extremities of their respective conductive windings; a capacitance producing conductive surface adjacent said inductive sections and about said support structure; said first terminal of said first end section located at said first end of said support structure; said second end terminal of said first end section located adjacent the first end terminal of one of said intermediate sections, with the second end terminals of each of said intermediate sections located adjacent the first end terminal of the next-adjacent intermediate section, the second end terminal of the final intermediate section located adjacent the first end terminal of said second end section, and the second end terminal of said second end section located at said second end of said support structure; means for electrically connecting the second end terminals of a predetermined number of said inductive sections to the first end terminals of the adjacent first terminals of successive inductive sections, such that said predetermined number of successive inductive sections are electrically connected to form a series connection of their individual windings which excludes the windings of the remaining unconnected inductive sections, and said remaining unconnected inductive sections are electrically isolated from the series connected inductive section; said inductive sections and the terminals thereof being aligned along said support structure to facilitate the series electrical connection of said predetermined number of inductive sections.

3,283,270

WIRE DELAY LINE COMPRISING TWO TRANSDUCERS, ONE RELATIVELY MOVEABLE WITH RESPECT TO THE OTHER

Ernest A. Keller, Wilmette, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Feb. 10, 1964, Ser. No. 343,520
4 Claims. (Cl. 333—30)



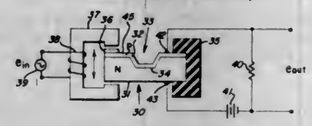
1. Delay line apparatus wherein a time delay is established between first and second electrical signals and including in combination, a hollow cylinder having a spiral groove on the inside surface thereof, said groove being substantially rectangular in cross section, a wire located within and adjacent to the bottom of said groove and forming a helix, magnetostrictive transducer means adapted to be moved along said inside surface, said transducer means including a coil about said wire, and means for removing a portion of said wire from within said groove, said magnetostrictive transducer means being responsive to the first electrical signal to develop a stress wave in said removed portion of said wire by means of the magnetostrictive effect, piezoelectric transducer means mechanically coupled to said wire and responsive to the stress wave therein to develop the second electrical signal by means of the piezoelectric effect whereby energy is transferred with a time delay from said magnetostrictive transducer means to said piezoelectric transducer means only through said wire.

3,283,271

NOTCHED SEMICONDUCTOR JUNCTION STRAIN TRANSDUCER

Sten I. Persson, Los Altos, Calif., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware

Filed Sept. 30, 1963, Ser. No. 312,742
9 Claims. (Cl. 333—71)



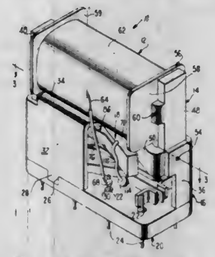
1. A device sensitive to variations in stress applied to a surface of said device including a body of semiconductor material having a rectifying junction, regions of P and N type conductivity material separated by said junction, a notch extending from a surface of said device through one of said regions of material to a point less than about 0.010" from said junction, said body having self-resonance which varies as a function of the volume of said body and the size of said notch, means for physically restricting motion of a portion of said body at one side of said notch, and electromechanical driving means for moving an unrestricted portion of said body at the opposite side of said notch to alter the size of said notch and consequently produce a strain in said junction in accordance with an input signal encompassing the known self-resonant frequency of said body.

3,283,272

ROTARY ARMATURE MINIATURE RELAY

Joseph A. Garratt, Simsbury, Conn., assignor to Hi-G, Incorporated, Windsor Locks, Conn., a corporation of Connecticut

Filed Feb. 2, 1965, Ser. No. 429,828
10 Claims. (Cl. 335—124)



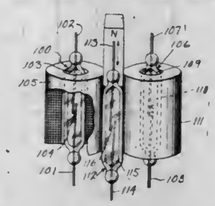
1. A low reluctance magnetic path for a simplified miniature relay having a coil with an axially extending opening formed therein; a core and pole piece assembly formed by a pair of oppositely oriented, identically formed magnetic sheet metal elements, each of said elements including a pole piece extending vertically adjacent the ends of the coil, a core section bent inwardly, at right angles to said pole piece, the respective core sections received in face abutting contact within said coil opening to provide maximum flux transfer area therebetween, pole piece extensions extending diagonally inward, exteriorly of said coil to form a relatively large air gap therebetween, a strip armature having a longitudinal dimension greater than said air gap and means for pivotably positioning said armature between said oppositely oriented, diagonal pole piece extensions whereby, upon energization of said coil, the ends of said armature contact respective pole piece extensions over a relatively large surface area to complete said low reluctance flux path.

3,283,273

RELAY BINARY USING A RECIPROCATING MAGNET

James N. Pearse, Menomonee Falls, Wis., assignor to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin

Filed Oct. 20, 1965, Ser. No. 498,529
6 Claims. (Cl. 335—152)



1. A relay binary comprising the combination of
a current source;
at least three normally open magnetically operable switches each having at least a pair of magnetic members defining a working gap between them, a first of said switches being connected to said current source, and a second and third of said switches being connected in series with said current source;

a reciprocable magnet mounted for movement in linear reciprocating strokes in the direction of its magnetic axis relative to said magnetically operable switches such that at one end of each stroke said reciprocable magnet is remote from said working gaps and at the other end of each stroke said reciprocable magnet is adjacent to said working gaps;

a first electromagnetic source having opposite polarity from said reciprocable magnet being adapted to actuate the first of said magnetically operable switches and being connected to be energized by said current source through the second and third magnetically operable switches;

a second electromagnetic source having opposite polarity from said reciprocable magnet, being adapted to actuate the second of said magnetically operable switches and being connected to be energized by said current source through said first magnetically operable switch;

a latching magnetic source having the same polarity as said reciprocable magnet, being adapted to latch said first magnetically operable switch but having insufficient magnetomotive force to actuate said first magnetically operable switch;

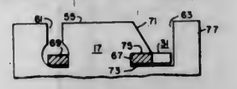
and the third magnetically operable switch adapted to be actuated by said reciprocable magnet when said reciprocable magnet is adjacent to said working gap defined by its magnetic members.

3,283,274
PUSH BUTTON REED SWITCH
Angelo De Falco, 37 Argyle Terrace, Irvington, N.J.
Filed Oct. 4, 1963, Ser. No. 313,881
14 Claims. (Cl. 335—206)



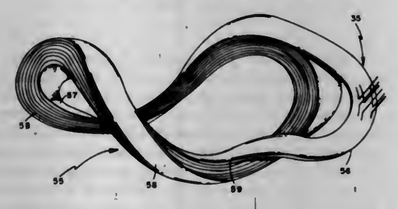
1. In a reed switch assembly for a current carrying circuit comprising:
(a) a casing,
(b) at least one reed switch including an envelope longitudinally mounted in said casing,
(c) a plurality of reed elements each having one end connected in said envelope and extending in the longitudinal line of said envelope to permit the end remote from the respective connected end to coact with each other to form a switch,
(d) said connected end of each respective reed element to extend through the envelope to connect the reed switch to the current carrying circuit,
(e) a push button assembly slidably and guidably mounted in said casing so as to be movable relative the longitudinal line of said reed switch on application of pressure thereto,
(f) a 360° permanent ring magnet means made of magnetically stable material adapted to provide a predetermined full and uniform magnetic field of a given polarity and strength,
(g) said permanent magnet means disposed about the envelope of the reed switch for longitudinal movement along the outer surface thereof to actuate the coacting ends of the reed elements,
(h) and means to operably connect said permanent magnet means for movement with the push button assembly and to position said permanent magnet means to an initial setting relative the coacting ends of the reed elements for uniform actuation of the coating ends of the reed elements,
(i) and means disposed to coact with said push button assembly to hold said assembly and permanent magnet in said initial setting and to return said push button assembly and permanent magnet means to said initial setting after movement thereof.

3,283,275
ELECTROMAGNETIC DEVICE HAVING A RESILIENT SHADING COIL
Henry A. Rider, Jr., Westminster, Calif., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 15, 1964, Ser. No. 367,784
5 Claims. (Cl. 335—245)



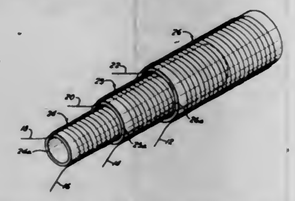
1. An electromagnet comprising two magnetic members, means operable to effect relative movement between said magnetic members to increase and decrease the distance between said members, one of said magnetic members comprising a pole face facing the other of said magnetic members, two spaced generally parallel grooves in said pole face of said one magnetic member, a shading coil comprising a generally resilient member of conducting material, said shading coil being in a supported position on said one magnetic member, each of said grooves being open to receive said shading coil, a first of said grooves forming a first ledge under said pole face and between the opening of said first groove and the opening of the second of said grooves, the second of said grooves forming a second ledge under said pole face and between the opening of said second groove and the opening of said first groove, said shading coil comprising two spaced leg portions, a first of said leg portions being disposed in said first groove generally under said first ledge, the second of said leg portions being disposed in said second groove generally under said second ledge, soid grooves being so formed that the dimension between said leg portions is greater when said coil is in the supported position than when said coil is in the unsupported position whereby said coil is maintained in said supported position in said grooves in a charged condition.

3,283,276
TWISTED SUPERCONDUCTIVE WINDING ASSEMBLY
Daniel Hritzay, Winchester, Mass., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed July 25, 1963, Ser. No. 297,649
10 Claims. (Cl. 335—216)



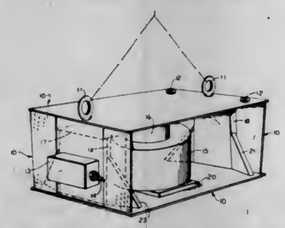
1. An electrical winding for use in forming electrical coils having a plurality of layers of a superconductive conductor comprising:
(a) a plurality of consecutive, contiguous and aligned turns of at least one superconductive conductor forming an endless belt closed on itself, said belt defining first and second major surfaces in the width direction and having a circumference greater than the total circumference of each of said plurality of layers; and
(b) a strip of low resistance and nonmagnetic material covering said first surface, said strip having a width and length substantially equal to respectively the width and circumference of said belt.

3,283,277
SUPERCONDUCTING SOLENOID FORMED FROM A NIOBIUM-BASE ALLOY OF VARYING COMPOSITION
John K. Hulm, Pittsburgh, and Henry Riemersma, Penn Hills Township, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 21, 1963, Ser. No. 325,367
8 Claims. (Cl. 335—216)



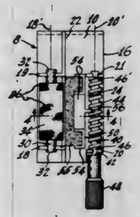
1. A solenoid for cryogenic applications comprising a generally cylindrical member composed of a material free from superconducting properties, a plurality of layers of turns of wire wound on said cylindrical member, the wire being of niobium-base alloy compositions that have superconducting properties, a first axial group of said layers of wire having a first critical field-current density super-conductivity characteristic and a second group of layers of the wire about said first group and having a higher niobium content and a higher critical current density than said first group of layers at the magnetic field of operation, each of said group of layers connected to an independent source of current.

3,283,278
ELECTROMAGNETIC LIFTING DEVICE HAVING A MULTI-MEMBER CORE
Bernhard A. Palm, Los Angeles, Calif., assignor to Buck Manufacturing Company, Los Angeles, Calif.
Filed May 11, 1964, Ser. No. 366,546
7 Claims. (Cl. 335—292)



1. An electromagnet for lifting magnetic articles or for attracting tramp magnetic material comprising a coil having connections through which an electric current is supplied thereto, a central core member positioned in said coil and one end of said member having a pole face, said core member having a diameter such that said coil fits closely thereon, an elongated outer core member having the central part thereof attached to one end of said central core member, said outer core member having the opposite ends thereof disposed on opposite sides of said coil and said opposite ends being of like magnetic polarity when said coil is energized, said outer core member having auxiliary core members on said opposite ends extending outwardly and inwardly therefrom so that the pole faces of said opposite ends and said auxiliary core members extend partially around the pole face of said central core member to form an air gap therebetween, said auxiliary core members being shaped to more uniformly spread the work producing magnetic flux in said air gap.

3,283,279
VARIABLE SATURABLE REACTOR
Melvin W. Garlotte, Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware
Filed Nov. 19, 1964, Ser. No. 412,534
8 Claims. (Cl. 336—110)



1. A variable saturable reactor comprising:
a base,
said base having two pairs of support means,
a wire coil having an axis mounted between one pair of said support means,
a magnetizable core extending through said coil,
a drive screw mounted between the other pair of said support means and parallel to said axis, and
a permanent magnet operably connected to said drive screw and being reciprocally moveable parallel to said axis upon rotation of said screw.

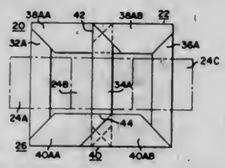
3,283,280
TRANSPOSITION FOR ELECTRICAL CONDUCTORS
Heinz G. Fischer, Muncie, Ind., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 22, 1964, Ser. No. 420,331
5 Claims. (Cl. 336—187)



1. A transposing arrangement for electrical conductors comprising:
a plurality of main electrical conductors disposed to form two sections in side-by-side relation,
each of said sections having a plurality of superposed layers of said main electrical conductors,
each of said main electrical conductors having a plurality of conductive strands,
each of said plurality of main electrical conductors of one of said sections being bent in the plane of that section towards one of the outer layers of said sections,
each of said plurality of main electrical conductors of the other section being bent in the plane of that section towards the other outer layer of said sections,

each main conductor being bent to enter the adjacent section at one of the outer layers of said sections,
each main conductor being bent in the plane of its new section to form a layer which is in 180 degree rotational symmetry with its layer position in its original section,
the first and last bends of said main conductors defining a transition zone of predetermined length,
each of said main conductors being twisted 180 degrees about its longitudinal axis in said transition zone to change the relative positions of said plurality of conducting strands.

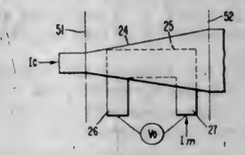
3,283,281
ELECTRICAL APPARATUS
Gerhard M. Stein, Sharon, Gerald J. Hattrup, Sharpsville, and Charles E. Burkhardt, Sharon, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 10, 1965, Ser. No. 454,615
20 Claims. (Cl. 336—217)



1. A magnetic core comprising:
a plurality of stacked layers of laminations formed from magnetic strip material having at least one preferred direction of magnetic orientation substantially parallel with the sides of said strip material;
each of said layers including first and second outer leg laminations, at least one inner leg lamination, and yoke laminations connecting the ends of said leg laminations to form a substantially rectangular core having at least two windows;
the joint between the adjoining edges of the first and second leg laminations and said yoke laminations in each layer being diagonal with respect to the sides of said laminations;
the joints between said inner leg lamination and said yoke laminations in each of said layers including two joints which are substantially perpendicular with respect to the sides of certain of said laminations;
all of the joints between the respective leg and yoke laminations in each of the layers being distributed with respect to the joints in the other layers, with at least two layers of laminations separating repeating joints in the same plane.

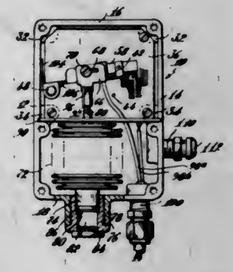
3,283,282
ELECTRICAL CIRCUIT ELEMENT
Harvey Rosenberg, Drexel Hill, Pa., and Edwin S. Lee III, Altadena, Calif., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed May 28, 1962, Ser. No. 198,329
38 Claims. (Cl. 338—32)

12. A cryogenic device comprising:
(a) a gate element having a characteristic critical magnetic field and adapted to be cooled to its superconductive state; and
(b) a control conductor having an input and an output and an active portion, a segment of which is at least as wide as an adjacent segment of said gate element;
(c) the active portion of said control conductor, having a cross-sectional area which varies from point to point along its length being placed in magnetic coupling relationship with said gate element such that portions of said control conductor having different



cross-sectional areas are adjacent to different portions of said gate element.

3,283,283
PRESSURE TRANSDUCERS
John A. Denner, West Roxbury, and Robert D. Reis, Hingham, Mass., assignors to United Electric Controls Company, Watertown, Mass., a corporation of Massachusetts
Filed Feb. 4, 1964, Ser. No. 342,446
3 Claims. (Cl. 338—194)



2. In a transducer operative to change the resistance in a circuit in proportion to a change in pressure, a rigid non-conductive panel, a bank of pairs of spaced terminals on the panel arranged in series to add to or remove resistances from the circuit, a pin fixed to the panel perpendicular to said panel, a rigid brush arm, spaced perforated ears at one end of the arm pivotally mounting the arm on the pin with one side substantially parallel to the panel, a pair of upstanding ears at said one side of the arm near its distal end, an insulator secured to the ears substantially parallel to the panel, a pair of elastically resilient brush wires secured to the insulation, said brush wires projecting from the insulation downwardly and inwardly into yielding contact with the bank of terminals for sliding movement of the brushes along the bank of terminals, a coiled spring mounted on the pin operating on the arm to bias it in one direction, a pair of spaced limit pins fixed to the face of the panel, and a lug projecting inwardly from the arm from between the ears operable, by engagement with the pins, to limit movement of the arm beyond a predetermined position in either direction of its movement along the bank of terminals.

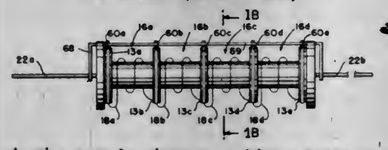
3,283,284
ELECTRICAL HEATING FILM
Paul Eisler, 57 Exeter Road, London, England
Filed Jan. 12, 1962, Ser. No. 165,736
Claims priority, application Great Britain, Jan. 20, 1961, 2,384/61
13 Claims. (Cl. 338—212)

1. An electrical heating film consisting at least of an electrically conductive foil having narrow elongated openings therein by which at least one meander pattern is defined comprising substantially parallel arms and bridges joining the ends of the arms, the foil pattern being characterised by at least one of the margins of the foil bound-



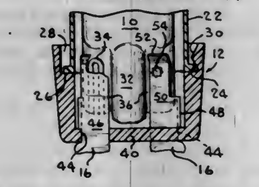
ing the long sides of the openings being folded over and right back into close contact with the foil arms.

3,283,285
PRECISION WIRE WOUND RESISTORS
John Zuk, 90—06 Springfield Blvd., Jamaica, N.Y.
Filed Mar. 27, 1963, Ser. No. 268,310
20 Claims. (Cl. 338—299)



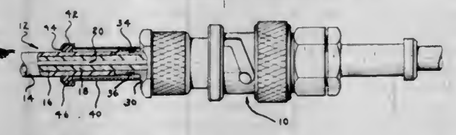
1. A wire wound resistor comprising a bobbin of insulating material having a main body portion and a number of flanges thereon, two adjacent flanges forming a winding channel therebetween for a respective resistor element on said bobbin, a main resistance wire member wound in each winding channel, an electrically conductive trimming resistance ring on each said flange, each ring being formed by separate first and second sections, and means for electrically connecting the ends of the main resistance wire in each channel to one end of the first section of a trimming ring on the flange on one side of the channel and to one end of the second section of the trimming ring on the flange on the other side of the channel.

3,283,286
TEST LAMPS
George L. Webb and Cecil A. Lambert, Fond du Lac, Wis., assignors to Wells Manufacturing Corporation, Fond du Lac, Wis., a corporation of Wisconsin
Filed Mar. 1, 1965, Ser. No. 435,812
2 Claims. (Cl. 339—59)



1. A test lamp for temporary connecting two terminals of electrical apparatus and having a socket for receiving the base portion of a slidably connectable light bulb, comprising:
a base member of insulating material and having a recess for receiving the base portion of the light bulb;
two electrically conductive resilient leg members connected to said base member and each having a jaw portion positioned in said recess and operable to resiliently grip the base portion of the light bulb to provide the socket for the light bulb, said leg members also having a leg portion extending through said base member and terminating in a contacting portion; each leg portion being substantially longer than said jaw portions; said leg portions extending divergently outwardly in respect to each other from said base portion; and said contacting portions being movable towards each other thereby bending said leg portions and thus creating an outward bias on each contacting portion, said bias being sufficient to provide electrical contact between said contacts and the terminals of the electrical apparatus as well as to support the test lamp by said leg members on the terminals.

3,283,287
CONNECTOR FERRULE WITH IMPROVED SEAL CONSTRUCTION
Frank Benjamin Stark, Wormleysburg, and Ronald Clair Laudig, Camp Hill, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Nov. 24, 1964, Ser. No. 413,569
10 Claims. (Cl. 339—177)

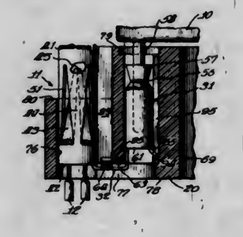


1. In a device of the type adapted to connect coaxial cable the improvement comprising a connector body including a metallic sleeve extension of a thickness to resist deformation during crimping, the said sleeve having a bore adapted to receive the dielectric sheath and center conductor of coaxial cable therein with the outer conductor of such cable over said extension, an annular groove on the outside surface of said extension, a first seal of flexible material carried in said groove having a relaxed diameter extending radially beyond the extension surface and down into said groove, a malleable ferrule of a length to cover said extension and a portion of the cable extending out of said extension and of a diameter to fit over said cable outer conductor as positioned on said extension, the said ferrule having an outwardly flared portion defining a recess, a second seal of flexible material carried in said recess and having a relaxed thickness to engage the cable outer surface and the ferrule recess inner surface, whereby upon the application of crimping forces to said ferrule said seals will be driven into substantial compression against the extension and the cable outer surfaces.

3,283,288
CONTACT
Edward A. Biba, Cicero, and Salvatore R. Novello, Mount Prospect, Ill., assignors to Malco Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed June 11, 1965, Ser. No. 478,501
4 Claims. (Cl. 339—193)

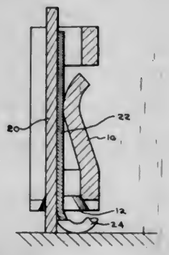
1. A contact arrangement for joining the prongs of an electrical component to conductor means, comprising: a generally cylindrical body of insulating material having an upper face and a lower face and a series of aperture means spaced around its periphery and extending between said faces, each aperture means comprising a radially inner passage and a radially outer passage and a partition separating said passages, an electrical terminal mounted

in each of said aperture means, each of said terminals including a conductor wire receptacle seated in an outer passage and a prong receiving contact seated in a corresponding inner passage, a channel in said lower face connecting said passages in each aperture means, each of said terminals further including a connecting strip joining a corresponding conductor wire receptacle and contact and extending through a corresponding channel, a rib in each outer passage extending radially out from a corresponding partition and dividing a portion of said outer passage into a pair of slots spaced circumferentially of



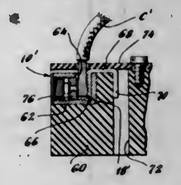
said body, said slots communicating with said upper face and a corresponding channel, shoulder means formed adjacent said lower face and overlying a portion of each of said slots, and ear means formed on each of said connecting strips for resiliently snapping behind corresponding shoulder means when said terminals are inserted in said aperture means through said channels and said lower face, said ribs forming supports for said connecting strips, said slots providing access to said ears from said upper face to facilitate resiliently forcing said ears from behind said shoulder means to permit removing each terminal.

3,283,289
TERMINAL CLIP
Robert Franklin Cobaugh, Hershey, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Original application Jan. 20, 1964, Ser. No. 338,663, now Patent No. 3,243,757, dated Mar. 29, 1966. Divided and this application Sept. 22, 1965, Ser. No. 489,357
1 Claim. (Cl. 339—256)



In an electrical connection of the type comprising a conductor and a terminal post, said post being straight and having a substantially uniform cross-section throughout its length, said post having a fixed end and a free end, a clip on said post, said clip having a web portion and having sidewalls extending from its longitudinal edges, said sidewalls extending partially around said post whereby said clip is in embracing relationship to said post, said conductor being contained between said web and one side of said post and extending axially along said post towards said fixed end, said conductor emerging from confined relationship at the one end of said clip which is proximate to the base of said post, the improvement comprising: a cantilever spring formed in said web intermediate the ends thereof, said spring being integral with said web at said one end and extending towards the other end of said clip which is proximate to said free end of said post, said spring being resiliently biased towards said conductor and maintaining said wire in electrical contact with said post, internal edge portions of said clip at said one end being chamfered to provide a guide means and strain relief for said conductor.

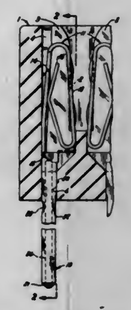
3,283,290
ELECTRICAL TERMINAL
Ernest R. Carlson, Fairfield, Conn., assignor to Harvey Hubbell, Incorporated, Bridgeport, Conn., a corporation of Connecticut
Filed Apr. 7, 1964, Ser. No. 357,879
3 Claims. (Cl. 339—272)



1. An electrical terminal comprising: a terminal body; said body having a clamping wall; an internally threaded cylindrical main opening formed in said body and extending therethrough to communicate with said wall; a lateral opening through said terminal body disposed adjacent said clamping wall and communicating with said main opening; a screw plug mounted wholly in said main opening for selective axial adjustment therein toward said clamping wall; means mounting said screw plug so as to be irremovable from said body; a central axial opening in said screw plug; a terminal plate made of thin sheet metal material and having a flat disk-like face portion and an eyelet-like hub portion; said hub portion disposed and loosely retained in said screw plug opening and including a flared portion for retaining said terminal plate on said screw plug, whereby said terminal plate is rotatably mounted relative to said screw plug so as to permit axial movement of said screw plug and terminal plate toward said clamping wall after said terminal plate contacts a conductor disposed in said terminal body between said clamping wall and said terminal plate unaccompanied by any rotational movement of said terminal plate relative to the conductor.

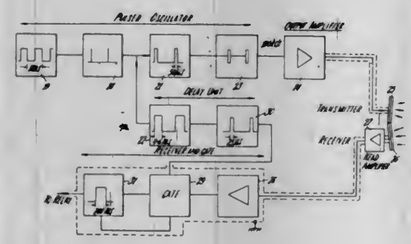
3,283,291
ELECTRICAL MEANS AND METHOD OF MAKING AT LEAST A PORTION OF THE SAME
Stanley J. Krol, Chicago, and Lester B. Johnson, Des Plaines, Ill., assignors to United-Carr Incorporated, a corporation of Delaware
Filed Apr. 8, 1964, Ser. No. 358,318
1 Claim. (Cl. 339—276)

An electrical contact having a sheet metal member, said sheet metal member having an upper spring element for engagement with a mating contact and an integral lower, substantially square, hollow tail portion having means on which conductive wire may be wrapped, said means comprising sharp outer edges, and stiffening means comprising a solid core assembled within said tail portion, said tail portion having elements in wrapped, enclosing, tight fitting engagement with substantially the entire outer surface of said core thereby to stiffen said



tail portion and maintain said core in assembled engagement within said tail portion.

3,283,292
ULTRASONIC POSITION SENSING EQUIPMENT
Leslie Kay, Kenilworth, England, assignor to Ultra Electronics Limited, a corporation of Great Britain
Filed Mar. 2, 1964, Ser. No. 348,494
Claims priority, application Great Britain, Mar. 2, 1963, 8,440/63
3 Claims. (Cl. 340—1)



1. An ultrasonic apparatus for locating the position of a target through the use of a highly directional ultrasonic signal reflected from said target comprising:

a transmitter for generating and emitting highly directional ultrasonic signals on a first signal transmission axis extending between said transmitter and said target;

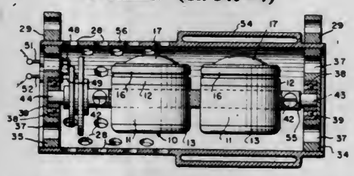
a receiver located adjacent said transmitter for detecting ultrasonic signals reflected from said target on a second signal transmission axis extending between said receiver and said target, said signals emitted by said transmitter and reflected from said target being highly directional along said second axis, said second axis intersecting said first axis at said target;

a delay circuit operatively connected to and energized by said transmitter, said delay circuit being energized simultaneously with the generation of a signal by said transmitter, said delay circuit providing an output signal substantially at the time said receiver detects a signal on said second axis;

an output means; and

a gate operatively connected to said delay circuit, said receiver, and said output means for energizing said output means upon the simultaneous reception of signals from said receiver and said delay circuit.

3,283,293
PARTICLE VELOCITY DETECTOR AND MEANS FOR CANCELING THE EFFECTS OF MOTIONAL DISTURBANCES APPLIED THERETO
George M. Pavey, Jr., Dallas, and Raymond H. Pearson, Richardson, Tex., assignors to Sonic Engineering Company, Dallas, Tex.
Original application Feb. 13, 1964, Ser. No. 344,670. Divided and this application Apr. 2, 1964, Ser. No. 356,867
6 Claims. (Cl. 340—7)



1. A noise compensating device in combination with an acoustic particle velocity detector disposed within a neutrally buoyant oil filled flexible streamer having a plurality of strain cables therein and adapted to be towed beneath the surface of the water for making underwater surveys of subaqueous geological structures, the noise compensating device and particle velocity detector each having substantially identical elements comprising

(1) an unsprung structure of high mechanical impedance including

(2) an annular permanent magnet having upper and lower pole pieces secured thereto and forming a cylindrical magnetic air gap therebetween, and

(3) a sprung structure of relatively low impedance and yieldably supported by said unsprung structure and carrying a coil winding for movement in either of two opposite directions within said air gap, said sprung structure including

(4) a thin rigid dome member yieldably supported adjacent to and in alignment with said air gap for movement by the oil at the particle velocity thereof,

(5) the noise compensating device being electrically connected to the particle velocity detector in opposition whereby identical simultaneous movements of the coil of each of the devices due to common motional disturbances simultaneously generates equal and opposing voltages,

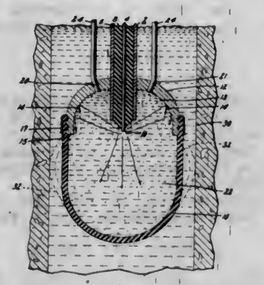
(6) a perforated casing enclosing the particle velocity detector for rendering the particle velocity detector responsive to particle velocity of the oil within which the device is submerged, and

(7) an acoustic shield encircling the noise compensating device for rendering the noise compensating device unresponsive to particle velocity of the oil.

3,283,294
APPARATUS FOR AN ELECTROHYDRAULIC SYSTEM
Edward C. Schrom, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Mar. 31, 1965, Ser. No. 444,289
4 Claims. (Cl. 340—12)

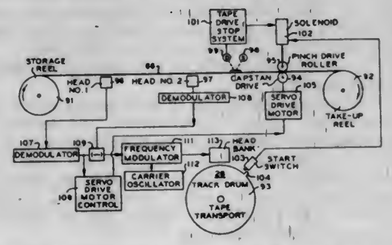
1. Apparatus for use with a shock wave emitter of an electrohydraulic system that is placed within a liquid filled hole in the ground comprising

a flexible diaphragm, adapted to contain a fluid whose properties are known, which fluid and diaphragm surround the emitter so that substantially all shock waves emitted thereby pass through the fluid and



the diaphragm to result in a more uniform emitted shock wave, and said diaphragm being adapted to expand by the application of pressure therein to seal the hole and thereby more effectively transmit the shock waves into the ground.

3,283,295
RADIO SEISMIC SYSTEM
Orin C. Montgomery, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 18, 1963, Ser. No. 317,211
12 Claims. (Cl. 340—15.5)



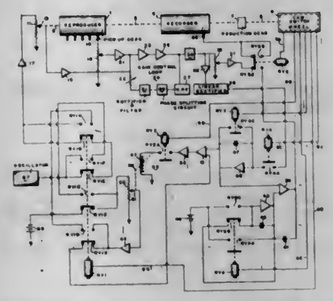
12. A seismic exploration apparatus comprising, in combination:

(1) a control unit comprising a first oscillator means for producing a first output signal having a first frequency and a second output signal having a second frequency, and means for selectively transmitting one of said first and second output signals from a first point;

(2) shot point equipment comprising means for receiving the thus transmitted signal at a second point, means for generating seismic signals at said second point, and means responsive to said means for receiving to energize said means for generating seismic signals only when said thus transmitted signal has substantially the same frequency as said second output signals; and

(3) said means to energize comprising a first flip flop circuit, means for applying said thus transmitted signal to an input of said first flip flop circuit, pulse counting means, means for applying an output of said first flip flop circuit to an input of said pulse counting means, a second flip flop circuit, a capacitor connected across the output of said pulse counting means and across an input of said second flip flop circuit to produce a voltage thereacross representative of the instantaneous average of the number of pulses counted by said pulse counting means, said second flip flop circuit being caused to change state when the input voltage thereto exceeds a predetermined value, and means for actuating said means for generating seismic signals responsive to an output of said second flip flop circuit.

3,283,296
APPARATUS FOR NORMALIZING A SEISMOGRAM DATA TRACE
Robert A. Newton, Jimmie R. Hughes, and John D. Ball, all of Houston, Tex., assignors, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed May 6, 1964, Ser. No. 365,310
4 Claims. (Cl. 340—15.5)



1. Apparatus for normalizing a reproducible data trace of a seismogram comprising:

means for reproducing the data trace through two successive reproduction cycles as an electrical signal;

means for recording an electrical signal as a data trace;

a signal channel for coupling the reproduced electrical signal from the reproducing means to the recording means for recordation thereby, including variable gain amplifier means;

means including first integrating circuit means for integrating the absolute amplitude of the output signal of the variable gain amplifier means, with the variable gain amplifier means set at a fixed gain during the first reproduction cycle of said reproducing means to produce a gain control signal;

means for setting the gain of the variable gain amplifier means during the second reproduction cycle of said reproducing means in accordance with the value of the gain control signal at the end of the first reproduction cycle;

first circuit means having first and second input circuits and an output circuit, adapted to produce an output signal in said output circuit when the differential amplitude of the input signals to said input circuits is of predetermined magnitude;

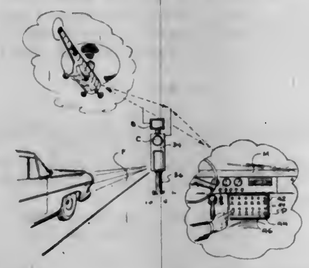
means connecting the output of said first integrating means to said first input circuit;

second integrating circuit means, said second input circuit being connected to the output of said second integrating circuit means;

a reference voltage source; and

second circuit means connected to said reproducing means and to said recording means to connect said reference voltage source to said second integrating circuit means at the end of said second reproduction cycle, and to produce an electrical pulse for recordation by said recording means, said output circuit of said first circuit means being connected to said recording means for recordation of the output pulses thereof.

3,283,297
VEHICLE HIGHWAY WEATHER WARNING SYSTEM
Victor A. Pfennighausen, 1829 Marlborough Ave., Riverside, Calif., and William D. Gladwill, 3934 Ferndale Ave., San Bernardino, Calif.
Filed Nov. 8, 1963, Ser. No. 322,453
3 Claims. (Cl. 340—22)



1. A highway patrol monitoring and traffic control system, comprising:

highway caution lights disposed on dangerous weather road sections, said sections having theerin weather sensing apparatus for automatically eenrgizing said lights;

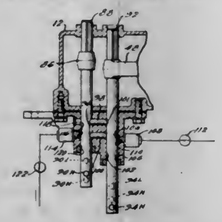
an operator controlled area patrol car or air-borne vehicle for monitoring and controlling said caution lights;

a master caution light indication and control panel located in said patrol car, said panel having signalling elements simulating position and indicating exact location of said caution lights;

means for transmitting individual caution light activation signals to said control panel; and

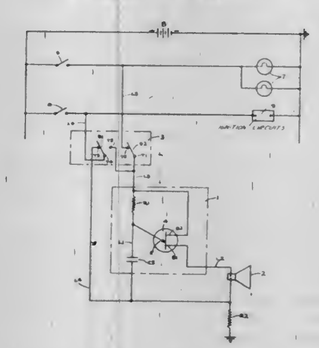
operator controlled means on said panel for activating or monitoring any of said caution lights.

3,283,298
MEANS TO INDICATE DRIVE CONDITION OF MULTI-SPEED TRANSFER CASE FOR FOUR-WHEEL-DRIVE VEHICLES
Edgar F. Kaiser, Lafayette, Calif., assignor to Kaiser Jeep Corporation, Toledo, Ohio, a corporation of Nevada
Filed Mar. 25, 1963, Ser. No. 267,528
8 Claims. (Cl. 340—52)



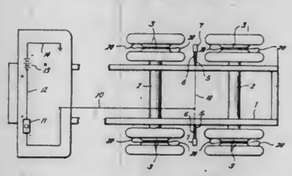
1. In an automotive vehicle having a set of front and a set of rear wheels drivable from a source of power, the combination comprising: a transfer case for selectively coupling the sets of front and rear wheels to the source of power, said transfer case including first coupling means for transmitting power to the set of rear wheels, second coupling means for transmitting power to the set of front wheels, first means being selectively actuable into a first condition for connecting said first coupling means to the source of power and being selectively actuable into a second condition for disconnecting said first coupling means from the source of power said first means including a first movable shift rod, second means being selectively actuable into one condition for connecting said second coupling means to the source of power independent of said first coupling means and being selectively actuable into another condition for disconnecting said second coupling means from the source of power, said second means including a second movable shift rod, first indication means responsive to the positional location of said first shift rod for energizing a light responsively to actuation of said first means into one of said first and said second conditions, and second indicating means responsive to the positional location of said second shift rod for energizing a light responsively to actuation of said second means into one of said one and said another conditions.

3,283,299
MOTOR VEHICLE SIGNAL DEVICE
Henry C. Savino, 521 W. Anderson St., Hackensack, N.J.
Filed June 4, 1964, Ser. No. 372,527
3 Claims. (Cl. 340—52)



1. A signalling system for a motor vehicle provided with an ignition switch and a light switch comprising, a source of electric power, an oscillator circuit connected to the vehicle light switch, an electromagnetic speaker connected to the output of said oscillator circuit whereby said speaker emits an audible warning signal when said oscillator circuit is energized by the closure of said light switch, and a circuit connection between the oscillator circuit and the vehicle ignition switch to render said oscillator circuit inoperative when said ignition switch is in the closed position.

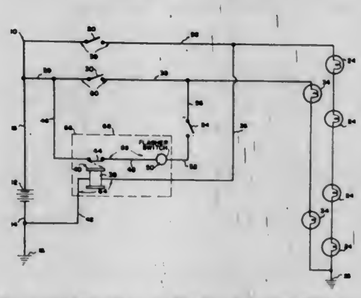
3,283,300
FLAT TIRE WARNING DEVICE
Helmut P. Hartmann, 4112 Old Spanish Trail, Houston, Tex.
Filed Nov. 26, 1963, Ser. No. 325,881
4 Claims. (Cl. 340—58)



1. In a tire warning device, an anvil member mounted on and extending laterally from the framework of a motor vehicle, a striker mounted on a wheel of the vehicle, said striker having one end secured to said wheel and the other end maintained in position between the tire and rim of said wheel by the pressure of the tire against the

rim while said tire is inflated, a signal light in said vehicle, an electrical current circuit through said anvil, said signal light and said striker, said circuit being completed by release of said striker from said tire and rim and the contact of said striker with said anvil.

3,283,301
VEHICLE SPEED ALTERATION INDICATOR
Jack O. Beasley, 7838 Terri Drive, Garden City, Mich.
Filed Apr. 10, 1964, Ser. No. 358,832
4 Claims. (Cl. 340—66)

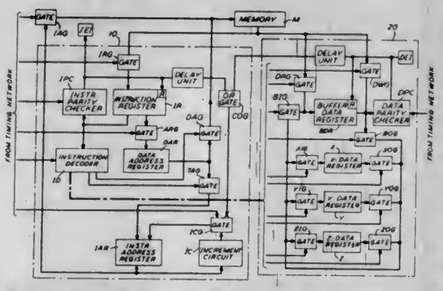


1. A speed-alteration indicator for installation in an automobile having an engipe fuel control member, a brake-applying member and a source of electrical energy, said indicator comprising

an automobile back-up light circuit electrically connected to said electrical energy source and including an electrically-energized back-up signal light and a normally-open back-up light control switch which is closed in response to reversing of forward direction of vehicle travel;

and a vehicle speed alteration signal circuit connected in bridging relationship around said back-up light control switch and including a flasher switch and a normally-open accelerator switch which is closed in response to release of the engine fuel control member.

3,283,302
DETECTION OF DATA PROCESSING ERRORS
Robert L. Brass, Colts Neck, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 29, 1963, Ser. No. 269,106
6 Claims. (Cl. 340—146.1)



1. Apparatus for detecting errors in the processing of data and instruction signals which comprises

a memory for storing the instruction signals encoded for a first kind of parity and the data signals encoded for a second kind of parity,

means connected to said memory for selectively extracting the coded information and data signals therefrom,

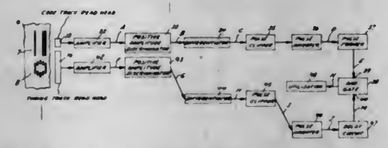
a first register connected to said memory for the extracted instruction signals,

a second register connected to said memory for the extracted data signals,

first means connected to said first register for checking the signals therein for said first kind of parity,

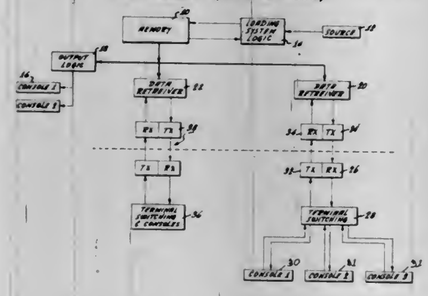
and second means connected to said second register for checking the signals therein for said second kind of parity.

3,283,303
SYNCHRONIZED AND CODED CHARACTER RECOGNITION SYSTEM
Gustave D. Cerf, Norwalk, Conn., assignor to Sperry-Rand Corporation, Wilmington, Del., a corporation of Delaware
Filed July 17, 1959, Ser. No. 827,892
8 Claims. (Cl. 340—146.3)



4. Apparatus for reproducing recorded information comprising an information record capable of being visually identified and machine read consisting of a support having thereon a plurality of parallel spaced information units of equal width disposed in a substantially linear array, each of said information units comprising first and second portions, each of said portions comprising a chosen number of equal longitudinal zones, corresponding zones in said first and second portions being in registration, one or more of the zones in the first portion having therein a discrete magnetic mark whereby the combination of marks in said first portion defines the code representation for a given character, said second portion having therein a plurality of discrete magnetic marks, said second portion defining the visually identifiable outline of said given character, each of the zones of said second portion having at least one discrete magnetic mark therein whereby the sensing of the first portion by a magnetic sensing device provides a unique first electric signal for each character and whereby the sensing of the second portion by said device provides a second electric signal for timing said first electric signal, a first magnetic sensing device adapted to sequentially read the first portion of each of said information units, a second magnetic sensing device adapted to sequentially read the second portion of each of said information units in synchronization with the reading of the first portion of said information units, whereby zones in said second portion in registration with the zones in the code track are read simultaneously therewith, and coincidence detection means having a first and a second input terminal, first means coupling said first sensing device tc said first input terminal, and second means coupling said second sensing device to said second input terminal, said means coupling said first magnetic sensing device to the first input terminal of said coincidence detection means comprises first amplifying means connected to said first sensing device for amplifying the output therefrom, a first amplitude discriminator connected to said first amplifying means for permitting the passage of only that positive portion of said amplified signals within selected amplitude limits, first differentiating means connected to said discriminator for differentiating the output of said first amplitude discriminator, first pulse clipping means connected to said first differentiating means for passing only positive going differentiated signals, means connected to said pulse clipping means for inverting the outputs therefrom and pulse forming means connected to said inverting means responsive to an output pulse from said inverting means to generate a pulse having a duration equal to the period of the output of said second magnetic sensing device and wherein said means coupling said second sensing device to the second input terminal of said coincidence detection means comprises second amplifying means connected to said second reading means for amplifying the output therefrom, a second amplitude discriminator connected to said second amplifying means for permitting the passage of only that positive portion of said amplified signals within selected amplitude limits, second differentiating means connected to said second discriminator for differentiating the output of said second amplitude discriminator, second pulse clipping means connected to said second differentiating means, for passing only positive going differentiated signals, means connected to said second pulse clipping means for inverting the outputs therefrom, and a delay circuit coupling the output of said second pulse clipping means to said second input terminal of said coincidence detection means, said delay circuit having a delay substantially equal to one half the period of the output from said second magnetic sensing device whereby said peaked input to said second input terminal of said coincidence detection means gate is applied substantially at the middle of the signal applied to said first input terminal thereof said first sensing device applying a signal to said first input terminal upon reading each of said marks in the zones of the first portions of said information units and said second sensing device applying a signal to said second input terminal upon reading each of said marks in the zones of the second portions of said information units, said coincidence means producing an output only upon the coincident application of signals at said first and second input terminals.

3,283,304
DATA RETRIEVAL SYSTEM
Robert S. Sinn, Philadelphia, Pa., and George W. Hernan, Haddonfield, N.J., assignors to Ultronic Systems Corp., Pennsauken, N.J., a corporation of Delaware
Continuation of application Ser. No. 113,689, May 31, 1961. This application Aug. 20, 1965, Ser. No. 484,784
16 Claims. (Cl. 340—152)



1. A data retrieval system which comprises

(a) a cyclic memory for storing data,

(b) display units each including means for producing request signals, means for receiving replies thereto and means for displaying said replies,

(c) terminal means having a plurality of said display units connected thereto,

(d) data retrieving means,

(e) communication means connecting said data retrieving means and said terminal means for transmission in both directions therebetween,

(f) said terminal means including means for receiving request signals from said display units and means for transmitting corresponding request messages to said data retrieving means,

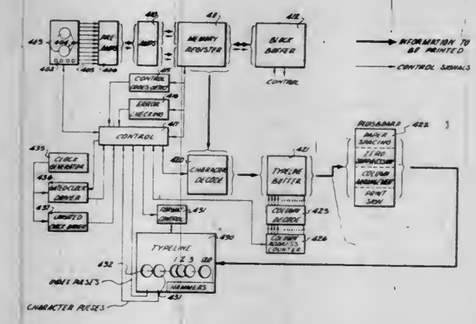
(g) said data retrieving means including means responsive to a request message for obtaining the requested data from said memory and means for transmitting a corresponding reply message to said terminal means,

(h) means at said terminal means for supplying reply data in said reply message to the requesting display unit,

(i) and sequencing means for establishing successive intervals for the transmission of requests of respective display units and the supplying of replies thereto in a predetermined sequence,

(j) said intervals being at least as long as the time required for the transmission of a request of the respective display unit and the supplying of a reply thereto.

3,283,305
MULTIPLE FONT HIGH SPEED PRINTER CONTROL SYSTEM
Matthew F. Hans and Byron F. Burch, Jr., Phoenix, Ariz., assignors to General Electric Company, a corporation of New York
Filed June 22, 1962, Ser. No. 204,309
51 Claims. (Cl. 340—172.5)

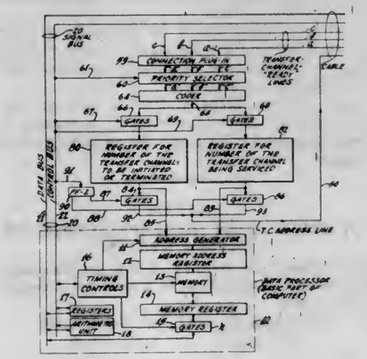


1. A printer control system comprising, storage means for receiving and storing signals representing characters to be printed and signals representing control codes, decoding means connected to said storage means for receiving signals representative of a selected one of said control codes for providing a print signal indicating a particular one of a plurality of different fonts in which characters are to be printed, at least one of said fonts being primarily humanly recognizable and another of said fonts being primarily machine recognizable, printing means connected to said storage means and said decoding means for receiving signals representative of said stored control codes and for receiving said print signal, said printing means being actuated by said stored control codes for printing characters corresponding to the representations of said characters stored in said storage means in a particular font identifiable by said print signal.

3,283,306
INFORMATION HANDLING APPARATUS INCLUDING TIME SHARING OF PLURAL ADDRESSABLE PERIPHERAL DEVICE TRANSFER CHANNELS

Bernard E. Patrusky, Philadelphia, Pa., assignor to Radio Corporation of America, a corporation of Delaware

Filed Nov. 26, 1962, Ser. No. 239,920
12 Claims. (Cl. 340—172.5)



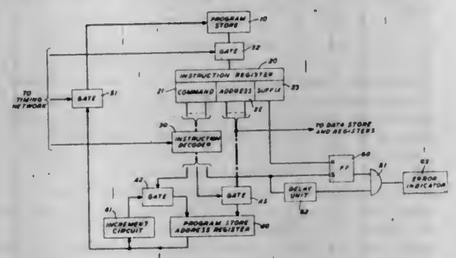
1. The combination of
a data processor,
a plurality of peripheral device transfer channels each coupled over a common multi-conductor signal bus to said data processor,
a transfer channel priority selector and coder means associated with said data processor,
operational readiness indicating means in each transfer channel coupled over respective "ready" lines to respective inputs of said priority selector and coder means, whereby the output of the priority selector and coder means is a coded number signal corresponding to the highest priority one of the transfer channels providing an input to the selector and coder means,
an individual transfer channel number signal decoder circuit in each transfer channel,
means to couple said coded number signal from said selector and coder means over an address line to the number signal decoder circuits in all transfer channels, and
gate means in each transfer channel responsive to the decoder circuit therein to condition the addressed transfer channel for communication over the signal bus with the data processor.

3,283,307
DETECTION OF ERRONEOUS DATA PROCESSING TRANSFERS

Frank S. Vigliante, Piscataway Township, Middlesex County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Jan. 3, 1963, Ser. No. 249,150
9 Claims. (Cl. 340—172.5)

1. Apparatus comprising,
a memory with a plurality of storage locations for a set of program instructions, some of which are instructions for transferring to other, transferee, instructions,
means for indicating that a transfer instruction has been extracted from said memory,
means for indicating that a transferee instruction has been extracted from said memory,
and means for comparing the indications to verify that

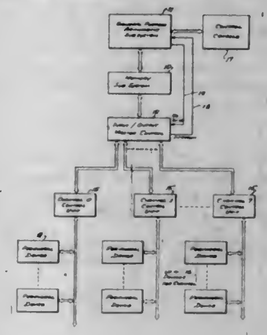


they have occurred in response to successive program instructions,
thereby to verify the correctness of a transfer.

3,283,308
DATA PROCESSING SYSTEM WITH AUTONOMOUS INPUT-OUTPUT CONTROL

Walter Klein, Santa Ana, and Robert J. Grady, Garden Grove, Calif., assignors to Beckman Instruments, Inc., a corporation of California

Filed June 10, 1963, Ser. No. 286,677
16 Claims. (Cl. 340—172.5)

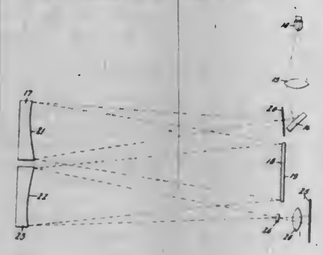


1. A data processing system comprising
a plurality of peripheral data transmitting and receiving devices,
a plurality of channel control units each having respective ones of said peripheral devices coupled thereto,
a memory subsystem having a unique cell reserved for each of said channel control units, said cell containing the indirect address of a memory buffer area,
a general purpose arithmetic subsystem for performing computation upon binary coded data and for receiving both arithmetic and input-output commands from said memory usbsystem,
said arithmetic subsystem including means for distinguishing an input-output command and initiating a data exchange between a selected peripheral device and the memory buffer area associated with its channel control unit,
means responsive to a predetermined command word for providing an operational mode providing a continuous data exchange between a selected peripheral device and memory buffer area independent of said arithmetic subsystem.

3,283,309
INFORMATION THERMOPLASTIC RECORDING

Joseph Gaynor, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Aug. 20, 1962, Ser. No. 218,083
10 Claims. (Cl. 340—173)

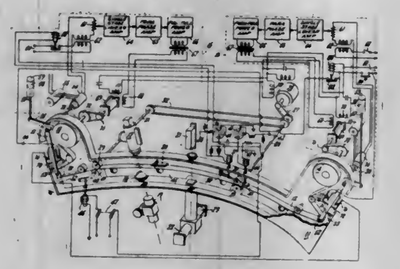


1. An information storage member for recording information in the form of light-modifying deformations on the recording surface of the member which comprises a supported layer of a dielectric thermoplastically deformable organic material containing as a dispersion therein a sufficient quantity of optically reflective particulate solids of particle size below the desired resolution of recording to reflect a beam of light projected onto the surface of the supported layer.

3,283,310
THERMOPLASTIC FILM TAPE RECORDER

William C. Hughes, Scotia, John E. Wolfe, Schenectady, and Richard J. Rieke, Ithaca, N.Y., assignors to General Electric Company, a corporation of New York

Original application Aug. 21, 1959, Ser. No. 835,210. Divided and this application Nov. 23, 1964, Ser. No. 413,103
8 Claims. (Cl. 340—173)

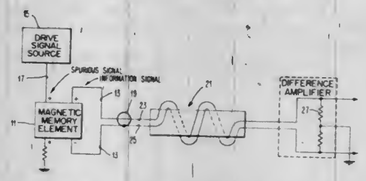


1. A data storage device including in combination a tape of solid impressionable thermoplastic film recording medium, an electron beam writing apparatus for impressing electrons on said tape in desired intelligence conveying patterns comprising a series of spaced apart marks extending along the tape transverse to the longitudinal axis of the tape, said electron beam writing apparatus including modulating means for laterally modulating the sides of the transversely extending series of spaced apart marks to thereby record the data to be stored, tape drive means for moving said tape in the direction of its longitudinal axis past said electron beam writing apparatus and for accurately positioning any desired point along the tape with respect to said electron beam writing apparatus, and servo control means for accurately controlling the operation of said tape drive means.

3,283,311
MAGNETIC ELEMENT READ-OUT UTILIZING TRANSMISSION LINE SENSING CIRCUIT

George H. Guttroff, Norristown, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 1, 1961, Ser. No. 149,275
6 Claims. (Cl. 340—174)

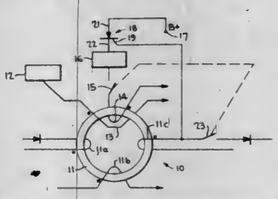


1. A magnetic memory element read-out system comprising: a magnetic memory element capable of generating information signals in accordance with information stored therein and in response to drive signals applied thereto; at least one drive-signal means coupled to said memory element; a transmission line having input signal means coupled to said memory element to act as a sensing line therewith, said transmission line having a portion thereof formed in a coil configuration thereby providing a relatively large impedance to attenuate the spurious signals generated by the capacitance and inductance coupling between said drive-signal means and the input signal means of said transmission line, said coil formed portion of said transmission line not presenting a high impedance to said information signals; and load means coupled across said transmission line to accept said information signals and said attenuated spurious signals.

3,283,312
READ-OUT CIRCUIT FOR STATIC MAGNETIC CORE DEVICES

Ira R. Marcus, Silver Spring, and Osvaldo T. Dellasanta, Rockville, Md., assignors to the United States of America as represented by the Secretary of the Army

Filed Nov. 5, 1962, Ser. No. 235,585
2 Claims. (Cl. 340—17.4)



1. A circuit for sensing the state of a static magnetic memory core device comprising:
(a) bi-stable switch means, indicator means, interrogator means, and reset means,
(b) means connected to an output of said static bi-stable memory device to conduct a trigger pulse from said output to said bi-stable switch means to trigger said bi-stable switch means to a closed position when said static bi-stable memory means is switched from a first predetermined condition to a second predetermined condition,
(c) said interrogator means connected to said core to switch said core from said first predetermined condition, to a second predetermined condition,
(d) said bi-stable switch means in said closed position connecting said indicator means and said reset means to power supply means, said power supply means activating said indicator means and said power supply

means activating said reset means to reset said core to said first predetermined condition,

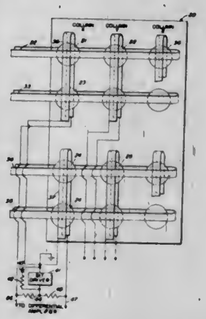
(e) means to switch said bi-stable switch means to said open position.

3,283,313

THIN FILM MAGNETIC REGISTER

James C. Hathaway, Corona del Mar, Calif., assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed May 3, 1963, Ser. No. 277,747
13 Claims. (Cl. 340—174)



1. Memory access means for reading information from a first address of a memory matrix comprised of vertical columns and horizontal rows of magnetic elements and for writing back into said first address and a selected second address, comprising:

a plurality of address selecting conductors, one individual to each row of magnetic elements and constructed, in response to a current therethrough, to cause an alteration of the magnetization of the magnetic elements in a selected row of magnetic elements,

a plurality of bit conductors, one individual to each column of magnetic elements and constructed to respond to the alterations in the magnetization of individual magnetic elements of the selected row to have produced therein sensing current pulses representative of the information stored in said selected row of elements,

said plurality of bit conductors further constructed, in response to a current therethrough, to magnetize the addressed magnetic elements of a selected column of magnetic elements in a polarity determined by the polarity of the current therethrough,

first row selecting means for passing a current through a first one of said address selecting conductors to cause read-out of the information stored therein,

second row selecting means including means for passing a pulse through a second one of said address selecting conductors a predetermined time interval after energization of said first address selecting conductor,

a plurality of detecting means, one individual to each column of magnetic cores and comprising sensing means and storage means constructed to repsond only to that sensed current of the associated bit conductor derived from energization of an address selecting conductor by said first row selecting means and to store the information represented by the sensed current, said detecting means further constructed to produce an output signal from said storage means after energization of the address selecting conductor of said second row selecting means,

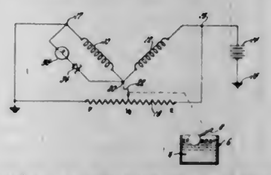
and a plurality of bit current pulse generators, one individual to each column of magnetic elements and responsive to the output of said storage means to produce a driving signal through the bit conductor of the associated column of magnetic elements to magnetize said magnetic elements of the first and second selected rows in accordance with the original state of magnetization of said first row of magnetic elements.

3,283,314

LOW FUEL WARNING SYSTEM

John A. Stewart, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 18, 1963, Ser. No. 331,483
7 Claims. (Cl. 340—181)



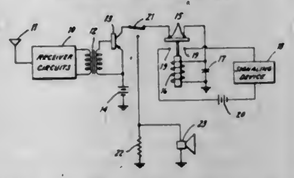
1. In combination: an indicating device comprising an electromagnetic coil for producing a magnetic field of predetermined direction, means for supplying a voltage across the coil which varies in accordance with variations in a condition being monitored, displaceable means responsive to the magnetic field to assume a position related to the magnitude of the field, asymmetrically conductive means connected across the electromagnetic coil in a direction to be normally non-conductive, but responsive to a critical level of the voltage across the coil to become conductive, and current-sensitive warning means connected in circuit with the asymmetrically conductive means for producing an indication when the asymmetrically conductive means becomes conductive.

3,283,315

SIGNAL RECEIVING AND INDICATING SYSTEM HAVING RECEIVER CONTROLLED INDICATOR OPERATED INTERMITTENTLY DURING SIGNAL RECEPTION TO PREVENT REGENERATION

William Frear, Jenkintown, Pa., assignor, by mesne assignments, to Philco Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Apr. 7, 1961, Ser. No. 101,480
6 Claims. (Cl. 340—286)



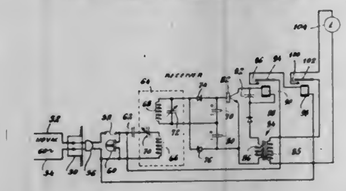
1. In a signal receiving system, a receiver for receiving signals from a remote source, a signalling indicator located proximate said receiver for generating a perceptible indication and also generating concurrently with said perceptible indication an interference signal receivable by said receiver, a first circuit, first means connected to said first circuit and said receiver for energizing said first circuit in response to the reception by said receiver of said signal from said remote source and deenergizing said circuit in the absence of an input signal to said receiver, said first circuit including a relay having a winding and normally closed contacts serially included in said first circuit to effect intermittent operation of said relay during the reception of said signal from said remote source, said relay also having normally open contacts which are closed by the actuation of said relay, and an energizing circuit for said indicator including said normally open contacts whereby said normally open contacts effect only intermittent energization of the indicator during the reception of said received signal from said remote source to thereby prevent the generation of continuous interference signals by said indicator and continuous energization of said first circuit by said first means.

3,283,316

POWER LINE SIGNAL SYSTEM HAVING A RELAY CONTROLLED INDICATOR AT THE RECEIVER

Donald E. Beardmore, Woodbridge, and Raphael J. Costanzo, Bridgeport, Conn., assignors to Harvey Hubbell, Incorporated, Bridgeport, Conn., a corporation of Connecticut

Filed Oct. 31, 1962, Ser. No. 234,368
2 Claims. (Cl. 340—310)



1. A receiver for utilizing high frequency signals received over a normally low frequency wiring system which comprises: connecting means adapted to connect said receiver to said wiring system; a primary winding in electrical series relationship with said connecting means to be energized therefrom; a blocking capacitor in electrical series relationship with both of said connecting means and said primary winding to pass said high frequency signals and block passage of low frequency current; a secondary winding in flux-linking relationship with said primary winding; a voltage doubling circuit energized by said secondary winding and adapted to provide a rectified output voltage exceeding the effective voltage from said secondary winding; an amplifier in amplifying relationship to said rectified output voltage to produce an amplified voltage therefrom; a first relay coil in energizable relationship from said amplified voltage; first relay contacts adapted to close upon energization of said first relay coil; a second relay coil in series with said first contacts and adapted to be energized from said low frequency wiring system; second relay contacts adapted to close upon energization of said second relay coil; and indicating means in series with said second contacts and adapted to be energized from said low frequency wiring system.

3,283,317

SYMBOL GENERATORS

Harry M. Courter, East Norwich, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed June 14, 1963, Ser. No. 287,929
13 Claims. (Cl. 340—324)

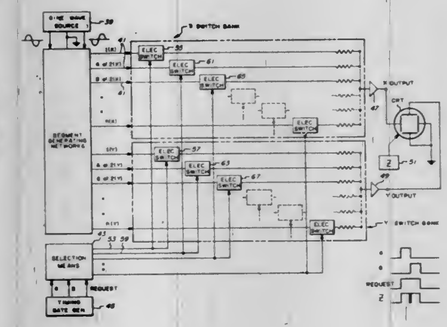
1. Apparatus for producing a desired symbol on a cathode ray tube during a READ interval comprising:

(1) a center-tapped source of sine waves,

(2) first and second outside terminals on said source for providing oppositely-phased sine waves,

(3) A and B segment generating networks for producing first and second segments of the desired symbol respectively, each of said segment generating networks being connected to receive the sine waves from said outside terminals,

(4) displacement responsive means in each of said A and B segment generating networks arranged to pass only those portions of the sine waves exceeding thresholds predetermined for each of the symbol segments,



(5) means in each of said A and B segment generating networks to establish a D.C. level for the output of that network,

(6) selective switching means for coupling the entire output signal of each segment generating network directly to the deflection plates of the cathode ray tube, and

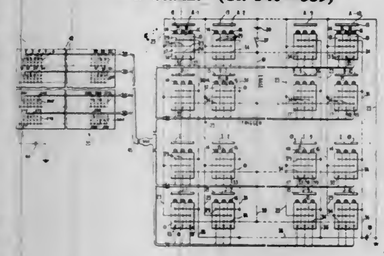
(7) means to actuate the selective switching means so as to couple the outputs of the A and B segment generating networks alternately to the cathode ray tube.

3,283,318

MULTICOLOR GRAPHIC ILLUMINATION DATA DISPLAY SYSTEM

John C. Bramer, Jr., Pittsburgh, Pa., assignor to Datagraphics Inc., Pittsburgh, Pa., a corporation of Pennsylvania

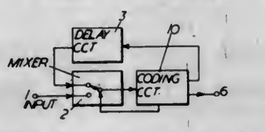
Filed Mar. 1, 1965, Ser. No. 436,143
1 Claim. (Cl. 340—339)



A multicolor illumination display panel comprising, light transmitting panel means divided into a plurality of panel sections disposed in rows and columns, a plurality of groups of bistable multivibrator circuits, each of said bistable multivibrator circuits being normally conducting and having a first and a second stable state and normally disposed in the second stable state, a light connected with each of said bistable multivibrator circuits for illumination when said multvibrator circuit is switched to

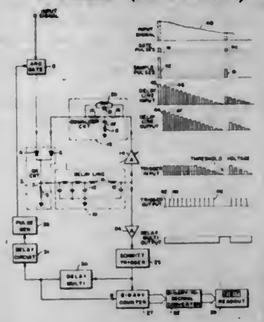
said first stable state, each of said bistable multivibrator circuits including a pair of semiconductor means normally disposed in opposite stable states with said light connected with the semiconductor means which is normally disposed in a nonconductive state, the lights of each group of bistable multivibrator circuits of said plurality of groups being of the three primary colors and connected in corresponding groups behind individual panel sections of said light transmitting panel, a source of potential, a body portion of insulation material having a plurality of relatively deep recesses therein disposed in rows and columns, a plurality of light sensitive resistor means disposed in said plurality of recesses and connected between said source of potential and the individual bistable multivibrator circuits, as illumination source positioned opposite said plurality of light sensitive resistor means, a punched card having information apertures therein adapted for placement between said illumination source and said light sensitive resistor means to illuminate selected of said light sensitive resistor means whereby selected bistable multivibrator circuits of said groups corresponding to the illuminated light sensitive resistor means are switched to the first stable state to illuminate selected primary colored lights in the groups to thus illuminate selected individual panel sections on the display panel in selected multiple colors of the spectrum of primary colored lights according to the aperture information on said punched card, and said body portion between adjacent recesses forming light shielding ribs between adjacent light sensitive resistor means and supported said punched card in overlying relation.

3,283,319
CODE CONVERTER
Hisashi Kaneko, Tokyo, Japan, assignor to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Aug. 11, 1961, Ser. No. 130,894
Claims priority, application Japan, Aug. 25, 1960, 35/36,168
7 Claims. (Cl. 340—347)



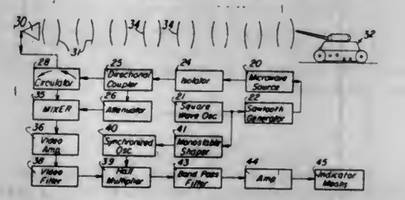
1. A code converter for converting an analogue signal supplied from an input source into a digital signal, comprising:
(A) an input terminal connected to said input source;
(B) a digital output terminal;
(C) a selector circuit connected to said input terminal;
(D) a coding network connected between said selector circuit and said output terminal which includes:
(1) discriminator means for producing a discriminator output signal that is indicative of whether the signal supplied from said selector circuit exceeds a preset value,
(2) coding means connected to receive said discriminator output signal, and connected to said output terminal, for generating a digital signal indicative of whether said discriminator output signal exceeds said preset value,
(3) means in said discriminator means for successively varying said preset value after each digit of said digital signal is generated.
(4) switching means controlled by said coding means for switching among the discriminator output signal and said supplied selector signal;
(E) a feedback loop, including delay means, connected between said switch means and said selector circuit for feeding back the output from said switching means to said selector circuit, said selector circuit, selecting one of said feedback signal and said input analogue signal to be supplied as the input to said coding network, whereby said code converter will generate the digital signals on a time division basis.

3,283,320
ANALOG-TO-DIGITAL TRANSLATOR
Leon F. Blachowicz and Harry D. Shearer, St. Petersburg, Fla., assignors to Electronic Communications, Inc., St. Petersburg, Fla., a corporation of New Jersey
Filed Aug. 15, 1963, Ser. No. 302,333
8 Claims. (Cl. 340—347)



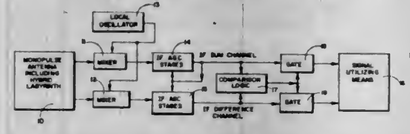
1. A translator circuit for providing a digital indication of the amplitude of an incoming pulse, comprising:
a closed loop circuit connected to receive the incoming pulse and continuously and unidirectionally recycle the same,
said circuit being operative to modify the amplitude of the pulse in the same manner once during each cycle thereof;
means connected to said circuit to count the number of cycles required for the pulse amplitude to reach a predetermined level to thereby provide a digital indication of the incoming pulse amplitude.

3,283,321
FM-CW DOPPLER RADAR
Raymond W. Ward, Northbrook, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Jan. 6, 1964, Ser. No. 335,717
3 Claims. (Cl. 343—14)



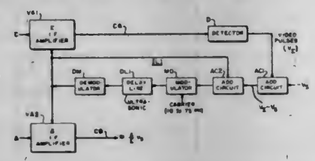
1. A continuous wave radar system including in combination, first means for generating a continuous wave radar signal having a frequency which varies as a periodic function of time, antenna means coupled to said first generating means for radiating said radar signal and receiving and translating reflected signals of the same, mixer means coupled to said antenna means and said first generating means for mixing said reflected signal and a portion of said generated signal to produce a difference signal having a frequency equal to the frequency difference between said mixed signals, second means coupled to said first generating means for generating a local signal having a period equal to the period of said periodic function, Hall multiplier means coupled to said mixer means and said second means, said Hall multiplier means being responsive to said difference signal and said local signal to produce output signals having frequencies equal to the sum and difference of said difference signal and said local signal, and band pass filter means coupled to said Hall multiplier means, said filter means being responsive to said output signals to reject frequencies thereof outside a predetermined pass band.

3,283,322
MONOPULSE RECEIVER APPARATUS
Robert E. Hovda, Yorba Linda, and Sam H. Wong, Los Angeles, Calif., assignors to North American Aviation, Inc.
Filed Feb. 13, 1963, Ser. No. 258,183
5 Claims. (Cl. 343—16)



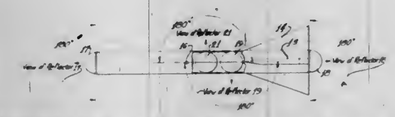
1. In a monopulse receiver providing the sum and difference of two received signals, means for gating said sum and difference signals as a function of the relative amplitude of one to the other of said sum and difference signals, comprising a receiving array of a first and second mutually adjacent receiving aperture for providing a first and second received signal respectively, each said aperture having a gabled field distribution characteristic thereacross along the direction of said array.

3,283,323
AUTOMATIC GAIN CONTROL RATIO CIRCUIT
George M. Kirkpatrick, North Syracuse, N.Y., assignor to the United States of America as represented by the Secretary of the Army
Filed Oct. 1, 1957, Ser. No. 688,806
8 Claims. (Cl. 343—16)



1. In combination with a scanning radar of the monopulse type including an antenna system for periodically radiating electromagnetic pulse energy in the form of a directional beam at a given pulse repetition rate and for picking up pulse echoes reflected from targets within said beam on which the radiated pulse energy impinges, and associated means for deriving reference sum and error difference intermediate frequency signals from each echo pulse received during each pulse repetition period: an automatic gain control ratio circuit for obtaining in response to each received echo pulse an electrical correction signal which is accurately proportional to the ratio of the difference to the sum intermediate frequncy signals derived from that pulse and provides a measure of the position, including both range and angle with respect to the center axis of the radiated beam, of the target producing that echo pulse, with respect to the antenna system, said ratio circuit comprising two transmission channels each including a substantially identical variable gain amplifier, for respectively amplifying each set of derived sum and difference intermediate frequency signals; means for rectifying the amplified voltage output of the sum intermerdate frequency amplifier channel; a source of negative reference voltage of predetermined constant value; a signal addition circuit for adding the rectified voltage output of the sum amplifier channel to the reference voltage from said source to produce an automatic gain control voltage of amplitude proportional to the sum of the added voltages; an integrating loop circuit for applying each produced automatic gain control voltage degeneratively to the amplifiers in both said channels to adjust their gains in accordance with the amplitude of the applied voltage, said loop circuit including means for improving the accuracy of the ratio error signal appearing in the output of said difference amplifier channel, comprising a delay line in the path of the feedback automatic gain control voltage, having a total delay time equal to the length of a pulse repetition period.

3,283,324
MEANS FOR CHANGING THE RADAR SIGNATURE OF AERIAL VEHICLES
Robert I. Norman, Jr., Birmingham, Ala., assignor to Hayes International Corporation, a corporation of Delaware
Filed June 29, 1964, Ser. No. 378,719
2 Claims. (Cl. 343—18)

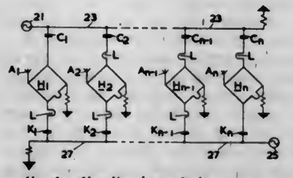


1. Means to change the radar signature of an aerial vehicle having radar reflective body parts from its normal characteristics to a radar signature substantially identical to that of a desired aerial target comprising a plurality of Luneberg lens radar reflectors located in positions on said vehicle relative to each other and relative to the radar reflective parts of the vehicle to augment the radar signature thereof when viewed from corresponding aspects and to attenuate the radar signature thereof when viewed from other corresponding aspects, thereby to configure the radar signature of the vehicle in those areas where the normal reflectivity thereof varies from said substantially identical signature, whereby the radar reflector equipped vehicle may be physically substantially smaller and of different overall shape from the desired target and yet produce said substantially identical radar signature.

3,283,325
DIRECTIVE TRANSMITTER SYSTEM FOR AIRCRAFT RUNWAY APPROACH
Spencer Selth Dunlam Jones, Farnborough, England, assignor to the Minister of Aviation in Her Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, London, England
Filed June 10, 1963, Ser. No. 286,848
Claims priority, application Great Britain, June 13, 1962, 22,673/62
24 Claims. (Cl. 343—107)

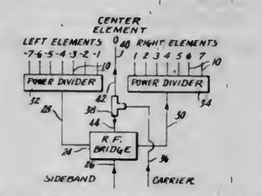
1. An aircraft approach system comprising a transmitter aerial array having radiator elements spaced transversely of an aircraft runway center-line, signal means generating two differently modulated signals, and signal distribution means operatively connecting said signal means to said radiator elements for distributing the said signals to said radiator elements so that the amplitude distribution of one of said signals to said radiator elements is asymmetrical in one sense about the center-line of said array and so that the amplitude distribution of

the other of said signals to said radiator elements is asymmetrical in the opposite sense about said center-line, the



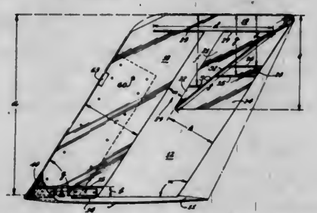
two said amplitude distributions being symmetrical with respect to one another about said center-line.

3,283,326
ANTENNA ARRAY AND METHOD FOR INSTRUMENT LANDING SYSTEMS
Chester B. Watts, Jr., Annandale, Va., assignor to Scanwell Laboratories, Inc., Springfield, Va., a corporation of Virginia
Filed Dec. 9, 1963, Ser. No. 328,853
4 Claims. (Cl. 343—107)



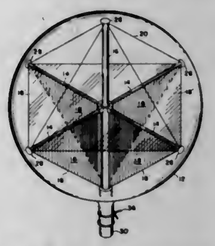
2. A localizer transmitting antenna array comprising a symmetrical rectilinear arrangement of an odd number of radiating elements, including a center element, means for feeding a sideband signal in a predetermined amplitude distribution pattern to all the elements on one side of said center element in one polarity, and also to all the elements on the other side of said center element but in opposite polarity, means for feeding a carrier signal to said center element and also to the elements on the respective sides thereof in said same predetermined amplitude distribution pattern, but in the same polarity in each half.

3,283,327
SHEET TYPE FIN ANTENNA HAVING LOOP FED EXCITATION
Clarence W. Stuckey, Jr., Tarzana, and Robert A. Meyers, Torrance, Calif., assignors to Stoddart Aircraft Radio, Inc., Los Angeles, Calif., a corporation of California
Filed Aug. 26, 1963, Ser. No. 304,367
10 Claims. (Cl. 343—705)



1. An aircraft communications antenna comprising
a base plate,
a first flat etched circuit board fixedly attached to said base plate, the broad surfaces of said etched circuit board lying in planes substantially normal to the broad surfaces of said base plate, said etched circuit board having a driven element and a plurality of parasitic matching elements etched thereon, said parasitic elements being coupled to said driven element,
a second flat etched circuit board fixedly attached to said first board, a strip transmission line being etched on said second board, said strip transmission line being connected to said driven element, said transmission line including a thin strip forming an open loop etched on one side of said second board and a broad strip etched on the other side of said second board, and
connector means for coupling radio signals to and from said strip transmission line.

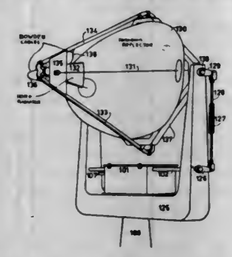
3,283,328
SOUNDING BALLOON AND TARGET ASSEMBLY
Louvan E. Wood, Glenarm, Md., assignor to The Bendix Corporation, Baltimore, Md., a corporation of Delaware
Filed Nov. 13, 1963, Ser. No. 323,528
3 Claims. (Cl. 343—706)



1. A sounding balloon and microwave reflector combination comprising
an expansible balloon composed of material transparent to microwaves, and including a neck portion for inflation,
a corner reflector of microwaves collapsible for insertion in said balloon, said reflector including a rigid central mast, a plurality of rigid arms hinged to said mast to permit folding said arms parallel to said mast and a plurality of gussets of flexible, microwave reflective material suspended from said arms and said mast so as to form a plurality of intersecting plane surfaces upon extension of said arms from said mast,
means for extending said arms from said mast to maintain the planes of said gussets in a fixed configuration, and
means securing said reflector central mast to the neck of said balloon.

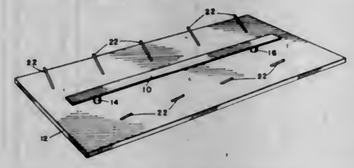
3,283,329
RADAR AERIALS FOR HELICAL SCANNING
Maximiliaan H. Bodmer, Hengelo, Overijssel, Netherlands, assignor to N.V. Hollandse Signaalapparaten, Hengelo, Overijssel, Netherlands
Filed May 3, 1963, Ser. No. 277,917
11 Claims. (Cl. 343—759)

1. A helical scanning aerial system comprising a directional aerial, means for rotating said directional aerial about a first axis, means for reciprocating said directional aerial between first and second positions about a second axis normal to said first axis in synchronism with said rotating means, whereby said directional aerial rotates about said first axis a predetermined number of times for each cycle of motion about said second axis, and means for varying the beam angle of said directional aerial about an axis normal to said second axis in synchronism with said reciprocating means, whereby said beam angle increases as said directional aerial moves about said second axis from said first position to said second position and



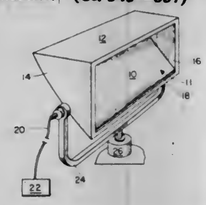
said beam angle decreases as said directional aerial moves about said second axis from said second position to said first position.

3,283,330
OMNIPOLARIZATION MICROSTRIP ANTENNA
Maurice G. Chatelain, San Diego, Calif., assignor to The Ryan Aeronautical Co., San Diego, Calif.
Filed May 28, 1962, Ser. No. 198,323
5 Claims. (Cl. 343—785)



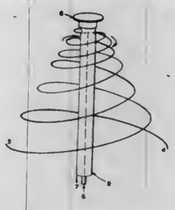
1. An omnipolarization microstrip antenna, comprising:
an elongated, conductive microstrip;
a conductive ground plane;
said microstrip being fixedly supported in spaced relation from and substantially parallel to said ground plane;
a linear array of longitudinally spaced radiating elements extending from said ground plane on each side of and substantially parallel to said microstrip;
said linear arrays of radiating elements being inclined in opposite directions relative to said microstrip.

3,283,331
COMBINED PLANAR AND PARABOLIC DOUBLE REFLECTOR
Kenneth S. Kelleher, 1115 Marine Drive, Alexandria, Va.
Filed Sept. 24, 1965, Ser. No. 489,952
4 Claims. (Cl. 343—837)



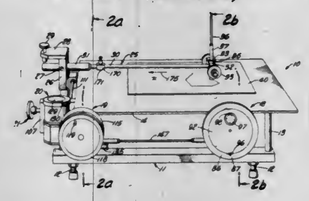
1. A microwave antenna assembly for radiating microwaves in an intended direction comprising
a first reflector of planar configuration defining a straight line in cross-section,
a radiation feed source disposed for radiating waves toward said first reflector; and
a second reflector adjacent said first reflector and defining a parabolic arc in cross-section whose focus is disposed exteriorly of said assembly;
said reflectors together defining a radiation aperture which is in a plane disposed at right angles to the intended radiation direction,
said straight line being the perpendicular bisector of the line connecting said focus and said feed point,
said reflectors being arranged so that waves from said source directed toward said first reflector are reflected toward said second reflector along lines coincident with imaginary lines between the focus and said second reflector,
whereby all waves reflected from said second reflector will be directed in a direction at right angles to the plane of said radiation aperture.

3,283,332
"NULL" CONICAL HELIX
Milton Nussbaum, Philadelphia, Pa., assignor to the United States of America as represented by the Secretary of the Army
Filed Aug. 24, 1964, Ser. No. 392,373
2 Claims. (Cl. 343—895)



1. A null conical helix antenna comprising: a first conical helix wound in one direction; a second conical helix wound in a direction opposite the winding direction of said first conical helix, said first and second conical helices being coaxial; a coax cable having a center conductor and an outer shield, said cable being so positioned that its longitudinal axis coincides with the axis of said conical helices; means to connect said first and second conical helices to said center conductor; and a loading disc located at the apex of said conical helices and connected to said shield.

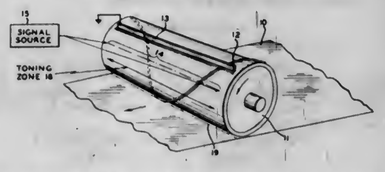
3,283,333
PRECISION MAPPING MACHINE
Orlando Torigiani, 301 Truxton Ave., Bakersfield, Calif.
Filed May 4, 1964, Ser. No. 364,555
16 Claims. (Cl. 346—8)



1. A mapping machine for making a scale map of a plot of ground using survey data, said machine having a rigid main frame provided with wide-area supporting means for paper and the like, cooperating paper feeding and gripping means arranged to grip and move a sheet of paper in any direction in the plane thereof and located partially on either side of said supporting means, stylus means bearing against one side of said sheet paper, manually operable means for driving said paper feeding and

gripping means and effective to rotate said sheet paper in the plane thereof about the point of contact of said stylus in any angular amount and for thereafter advancing said sheet a measured distance in a straight line past said stylus, and means normally occupying one of two alternate stable positons for use in selectively locking said paper against one of said modes of movement while permitting movement only in the other of said modes.

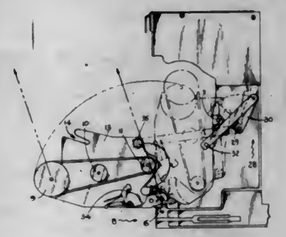
3,283,334
ELECTROGRAPHIC RECORDING APPARATUS
Martin J. Kutik, New York, N.Y., assignor to Litton Systems, Inc., Beverly Hills, Calif.
Filed Dec. 19, 1962, Ser. No. 245,769
9 Claims. (Cl. 346—74)



1. In electrographic recording apparatus, in combination,
means for supporting an image-receiving surface,
an elongated linear charge-retaining element of insulating material,
means for moving said element into juxtaposition with said image-receiving surface,
means for scanning said charge-retaining element from end to end and forming a latent image thereon in the form of charged areas corresponding to areas of the image to be recorded on said image-receiving surface,
means for supplying toner or developer to the charged areas on said linear charge-retaining element for transfer to the image-receiving surface, and means for causing a scanning toner transfer function in successive lines across the width of the image receiving surface.

3,283,335
INSTRUMENT
Harold G. Sachleben, Bellmanor, N.J., assignor to Honeywell Inc., Minnesota, Minn., a corporation of Delaware
Filed May 27, 1964, Ser. No. 370,408
1 Claim. (Cl. 346—145)

A recorder comprising a pen, a chassis, a first pair of spaced apart pivot shafts protruding from opposite sides of the chassis, a module comprising a chart and a chart carriage having a pair of spaced substantially parallel side plates, a wall forming an open sloping slot in opposing end portions of the side plates and each being constructed to slidably engage a different one of the first pair of pivots, an other end of one of the side plates being mounted for pivotal movement on a third pivot shaft, a lever pivotally mounted at one end on the third pivot shaft for rotatable arcuate movement about a fourth pivot shaft that is mounted on the chassis, the lever being mounted at its other end on a fifth pivot shaft for pivotable movement with one of the side plates about a fourth pivot shaft, a pin protruding from the side of the lever, a manually operated spring biased latch member pivoted on the lever for engagement with the pin when the module is in a recording position, the other side plate of the carriage being pivoted at its other end portion on one end of the third pivot shaft, a sixth pivot shaft mounted on

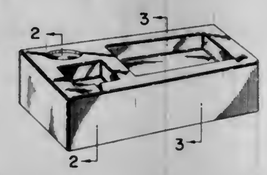


the chassis and spaced from the third pivot shaft, a link pivotally connecting the other end of the third pivot shaft to the sixth pivot shaft, said pivot shafts being operable to initially directly move the chart and remaining portion of the module out of a recording position with the pen and into a non-recording position that is in parallel relation with its recording position when the spring bias latch member is manually moved to an unlatched position with its associated pin when the lever is moved to rotate the slotted wall portions of the side plates and the remaining portion of the module out of engagement with the first pair of pivots, and said pivot shafts being further operable to thereafter enable the side plates, chart and the remaining parts of the module to be rotated to a third position that is normal to said last mentioned non-recording position, and a manually depressable latch connected to the lever and link to rapidly remove the entire module from the fourth and sixth shafts and from the chassis when the module is in its third position.

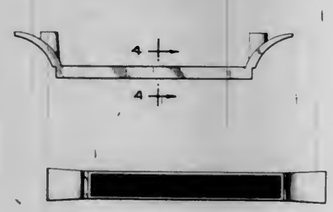
DESIGNS

NOVEMBER 1, 1966

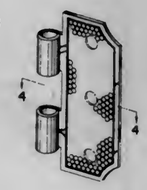
206,113
COMBINATION PAPER ROLL COVER AND UTILITY RECEPTACLE
Marjorie R. Basinais, 2692 11th St., Cuyahoga Falls, Ohio
Original design application Jan. 7, 1965, Ser. No. 83,328. Divided and this application Aug. 26, 1965, Ser. No. 86,727
Term of patent 14 years
(Cl. D4—3)



206,114
PULL
John R. Morgan, Wheeling, Ill., assignor to Amerock Corporation, Rockford, Ill., a corporation of Illinois
Filed Oct. 24, 1965, Ser. No. 87,889
Term of patent 14 years
(Cl. D10—8)



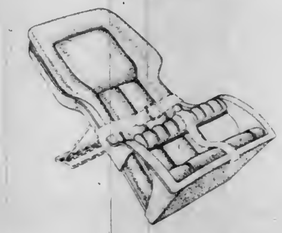
206,115
HINGE LEAF
Joseph Yaskulka, Alliance, Ohio, assignor to Lake Park Tool and Die, Inc., Youngstown, Ohio, a corporation of Ohio
Filed May 6, 1965, Ser. No. 85,143
Term of patent 14 years
(Cl. D10—9)



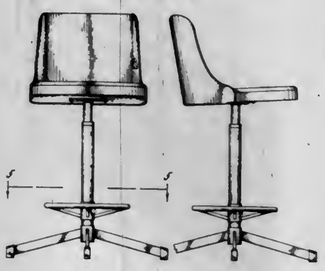
206,116
COMBINED LUGGAGE AND CHILD CART FOR TRANSPORTATION TERMINALS
James R. Hughes, Sedalia, Colo., assignor to J. R. H. Corporation, Sedalia, Colo., a corporation of Colorado
Filed Oct. 20, 1965, Ser. No. 87,630
Term of patent 14 years
(Cl. D14—3)



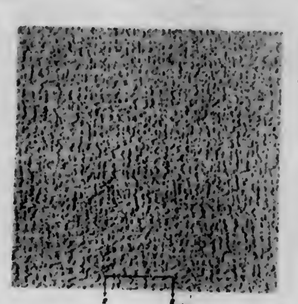
206,117
INFANT'S SEAT
Edward D. Levy, Spring Valley, N.Y., assignor to Union Carbide Corporation, a corporation of New York
Filed Aug. 10, 1965, Ser. No. 86,526
Term of patent 14 years
(Cl. D15—1)



206,118
STOOL
Donald L. Bates, Columbus, Ind., assignor to Hamilton Cosco, Inc., Columbus, Ind., a corporation of Indiana
Filed Sept. 3, 1965, Ser. No. 86,831
Term of patent 14 years
(Cl. D15—8)



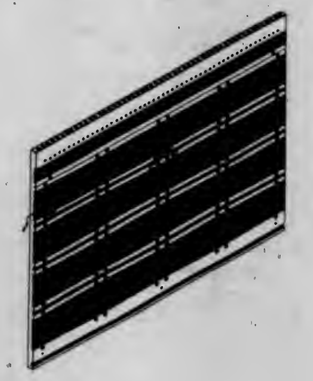
206,119
PANEL
Donald F. Claussen, Lancaster, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Mar. 16, 1965, Ser. No. 84,285
Term of patent 14 years
(Cl. D18—2)



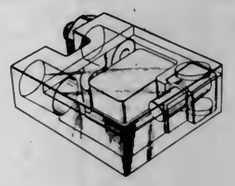
206,120
BREAKWATER
Ted A. Johnson, Holdrege, Nebr., assignor to The Central Nebraska Public Power and Irrigation District, Holdrege, Nebr.
Filed Aug. 2, 1965, Ser. No. 86,406
Term of patent 14 years
(Cl. D18—2)



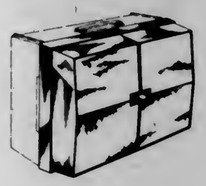
206,121
MOTHERBOARD FOR SUPPORTING AND INTEGRATING A PLURALITY OF ELECTRONIC COMPONENTS OR SIMILAR ARTICLE
Irving W. Christensen and Winston E. Bergsman, Phoenix, Ariz., assignors to General Electric Company, a corporation of New York
Filed Mar. 12, 1965, Ser. No. 84,229
Term of patent 14 years
(Cl. D26—10)



206,122
ILLUMINABLE PRESSURE SWITCH
Farel Bradbury, Hampton, and Marcus Sewell, Twickenham, England
Filed Apr. 9, 1965, Ser. No. 84,691
Claims priority, application Great Britain Oct. 12, 1964
Term of patent 14 years
(Cl. D26—13)



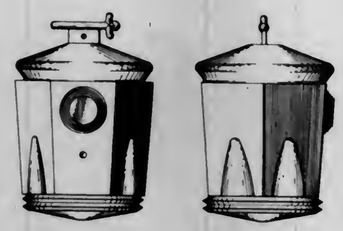
206,123
TWO PIECE COVER FOR A STEREO TAPE RECORDER OR SIMILAR ARTICLE
Harry K. Matsuda, Chicago, Ill., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed June 23, 1965, Ser. No. 85,873
Term of patent 14 years
(Cl. D26—14)



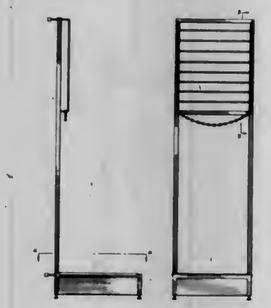
206,124
CHRISTMAS ORNAMENT OR SIMILAR ARTICLE
Jack Burnbaum, 451 D St., Newton, Mass.
Filed June 11, 1965, Ser. No. 85,676
Term of patent 14 years
(Cl. D29—1)



206,125
BIRD HOUSE
Victor Lang, 58 High Point Drive, Springfield, N.J.
Filed Apr. 22, 1965, Ser. No. 84,929
Term of patent 14 years
(Cl. D31—2)



206,126
COMBINED BOOT AND SKI RACK OR SIMILAR ARTICLE
Arden D. Wetterau, 1736 S. Welch Circle, Denver, Colo.
Filed July 15, 1965, Ser. No. 86,163
Term of patent 14 years
(Cl. D33—3)



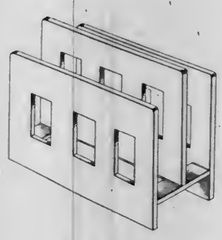
206,127
VELOCIPEDE
Carl E. Cordrey, 4710 N. Libby, Oklahoma City, Okla.
Filed Oct. 20, 1965, Ser. No. 87,635
Term of patent 14 years
(Cl. D34—15)



206,128
VELOCIPEDE
Carl E. Cordrey, 4710 N. Libby, Oklahoma City, Okla.
Filed Oct. 20, 1965, Ser. No. 87,636
Term of patent 14 years
(Cl. D34—15)



206,129
SPONGE RACK
Emory L. Groff, 4211 NE. 23rd Terrace, Pompano Beach, Fla.
Filed Nov. 16, 1964, Ser. No. 82,629
Term of patent 14 years
(Cl. D44—29)



206,130
THERMOMETER OR SIMILAR ARTICLE
Edwin C. Williams, Jr., Southboro, Mass., assignor to American Science and Engineering, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Apr. 12, 1965, Ser. No. 84,734
Term of patent 14 years
(Cl. D52—7)



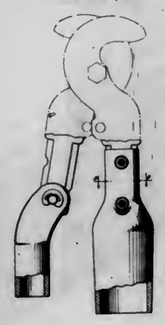
206,131
PANEL STRIP FOR GATES
Jene F. Ford, Goshen, Ind., assignor to Star Tank and Boat Company, Goshen, Ind., a corporation of Indiana
Filed May 12, 1965, Ser. No. 85,239
Term of patent 14 years
(Cl. D54—2)



206,132
CUTTING TOOL
Emmerich Schmitt, 3665 Shasta Drive, Brookfield, Wis.
Filed June 11, 1965, Ser. No. 85,674
Term of patent 14 years
(Cl. D54—4)



206,133
HEAD FOR A CABLE CUTTER OR THE LIKE
Harry Russell Bethune, Scotch Plains, N.J., assignor to The Thomas & Betts Co., Elizabeth, N.J., a corporation of New Jersey
Filed June 11, 1965, Ser. No. 85,679
Term of patent 14 years
(Cl. D54—13)



206,134
CYMBAL JINGLE STICK
William Gussak, 31 Parker Ave., Deal, N.J., and Bill Mather, 315 W. 47th Ave., New York, N.Y.
Filed June 15, 1965, Ser. No. 85,739
Term of patent 7 years
(Cl. D56—1)



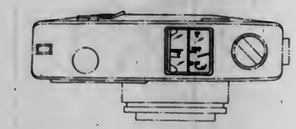
206,135
COMBINED BRUSH AND CONTAINER THEREFOR
Robert A. O'Neil, Pittsburgh, Pa., assignor to Fesco, Inc., New York, N.Y., a corporation of Delaware
Filed July 8, 1965, Ser. No. 86,086
Term of patent 14 years
(Cl. D58—17)



206,136
POLISH CONTAINER
Carl F. Schmid, Park Ridge, Ill., assignor to Turtle Wax, Inc., Chicago, Ill., a corporation of Illinois
Filed July 28, 1965, Ser. No. 86,335
Term of patent 14 years
(Cl. D58—17)

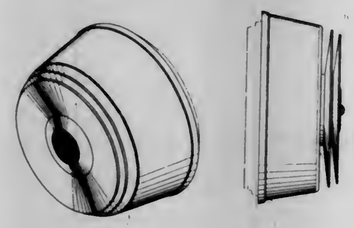


206,137
CAMERA
Sho Shiramatsu, Osaka, and Eisuke Terada, Toyonaka, Japan, assignors to Minolta Camera Kabushiki Kaisha, Osaka, Japan, a corporation of Japan
Filed Oct. 28, 1964, Ser. No. 82,350
Term of patent 14 years
(Cl. D61—1)

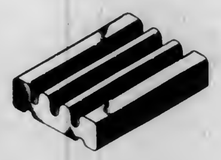


206,138
PIROGUE
Walter J. Chauvin, Sr., Star Rte. A, Box 70-A, Franklin, La.
Filed Mar. 30, 1965, Ser. No. 84,508
Term of patent 14 years
(Cl. D71—1)

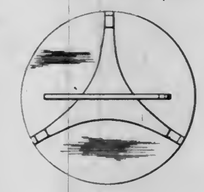
206,139
SMOKE ALARM HOUSING
Randolph J. Smith, Anaheim, Calif., assignor to Interstate Engineering Corporation, Anaheim, Calif., a corporation of California
Filed Oct. 21, 1965, Ser. No. 87,690
Term of patent 14 years
(Cl. D72—1)

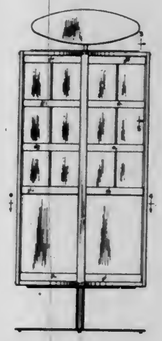


206,140
BAR OF SOAP
Phillip Dowe Meeker, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Mar. 12, 1965, Ser. No. 84,233
Term of patent 14 years
(Cl. D73—1)



206,141
DISPLAY STAND
David E. Smith, Cincinnati, Ohio, assignor to Storrs Schaefer, Inc., Cincinnati, Ohio, a corporation of Ohio
Filed Oct. 19, 1965, Ser. No. 87,600
Term of patent 14 years
(Cl. D80—9)

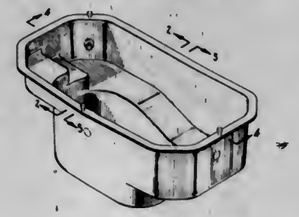




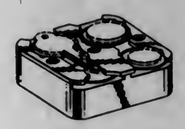
206,142
COMBINED CABANA AND SOLARIUM THEREFOR
Mike Tecton, 5101 45th St. NW., Washington, D.C.
Filed Sept. 3, 1965, Ser. No. 86,823
Term of patent 14 years
(Cl. D83—1)



206,143
HYDROTHERAPY TUB
Candido Jacuzzi, Lafayette, Calif., assignor to Jacuzzi Bros., Inc., Richmond, Calif., a corporation of California
Filed Sept. 30, 1965, Ser. No. 87,225
Term of patent 14 years
(Cl. D83—1)



206,144
HOLDER FOR COINS AND KEYS
Jerome Lippman, 275 N. Portage Path, Akron, Ohio
Filed May 17, 1965, Ser. No. 85,322
Term of patent 14 years
(Cl. D87—3)



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Dayton Steel Foundry Co., The: *See*—
Dotto, Gianni A. Re. 26,106.

Dotto, Gianni A., to The Dayton Steel Foundry Co. Automatic brake adjusting mechanisms. Re. 26,106, 11–1–66, Cl. 188—152.

Glauberman, Marvin H., and R. C. Kelner, to Laboratory for Electronics, Inc. Data processing apparatus for identifying an unknown signal by comparison. Re. 26,104, 11–1–66, Cl. 340—146.2.

Guillon, Jacques S., and C. W. Sorensen, to Massey-Ferguson Industries Ltd. Furniture assembling device. Re. 26,105, 11–1–66, Cl. 312—255.

Johnson, Ronald V.: *See*—
Rasmussen, Walter H., and Johnson. Re. 26,107.

Kelner, Robert C.: *See*—
Glauberman, Marvin H., and Kelner. Re. 26,104.

Laboratory for Electronics, Inc.: *See*—
Glauberman, Marvin H., and Kelner. Re. 26,104.

Massey-Ferguson Industries Ltd.: *See*—
Guillon, Jacques S., and Sorensen. Re. 26,105.

Moore, David P. Solid explosive composition and method of preparation employing vulcanized rubber and a solid inorganic oxidizing salt. Re. 26,108, 11–1–66, Cl. 149—19.

Rasmussen, Walter H., and R. V. Johnson, to Waldorf Paper Products Co. Easy opening container. Re. 26,107, 11–1–66, Cl. 229—51.

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Guillon, Jacques S., and Sorensen. Re. 26,105.

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Rasmussen, Walter H., and Johnson. Re. 26,107.

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Moore, Ralph S. Rose plant. 2,683, 11–1–66, Cl. 8.

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Basinais, Marjorie R. Combination paper roll cover and utility receptacle. 206,113, 11–1–66, Cl. D4—3.

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Bradbury, Farel, and M. Sewell. Illuminable pressure switch. 206,122, 11–1–66, Cl. D26—13.

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Claussen, Donald F., to Armstrong Cork Co. Panel. 206,119, 11–1–66, Cl. D18—2.

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Cordrey, Carl E. Velocipede. 206,128, 11–1–66, Cl. D34—15.

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General Electric Co.: *See*—
Christensen, Irving W., and Bergsman. 206,121.

Groff, Emory L. Sponge rack. 206,129, 11–1–66, Cl. D44—29.

Gussak, William, and B. Mather. Cymbal jingle stick. 206,134, 11–1–66, Cl. D56—1.

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Bates, Donald L. 206,118.

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Acree, Elick H.: *See*—
Case, Forrest N., and Acree. 3,282,655.
Adams, John W.: *See*—
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Adams, Phillip, B. R. Juliano, and H. Feilich, to Millmaster Onyx Corp. Process for preparing 1-ethyl-2-methyl pentanoyl urea. 3,282,998, 11–1–66, Cl. 260—553.
Adickes, Edward J. Locking means for sliding doors. 3,282,618, 11–1–66, Cl. 292—258.
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Hers, Hermann, and Albrecht. 3,282,234.
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Alexander, Laurence R., N. Charyssyn, and L. J. Rzewinski, to Leesona Corp. Process of operating a fuel cell utilizing inert gas to maintain pressure differential. 3,282,733, 11–1–66, Cl. 136—86.
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Amann, Charles A., J. S. Collman, and J. W. Scheel, to General Motors Corp. Dirigible air bearing transport device. 3,282,360, 11–1–66, Cl. 180—7.
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Andresen, John H., Jr., to Astek Instrument Corp. Dial instrument. 3,282,111, 11–1–66, Cl. 73—410.
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Allcorn, Luther H., Jr. 3,282,575.
King, James F., Jr. 3,281,886.
King, James F., Jr., and Bahnson. 3,282,032.
Bailey, Charles H., to Shell Oil Co. Method of reclaiming used lubricants by subjecting to electrical field in presence of non-ash polymeric dispersants. 3,282,813, 11–1–66, Cl. 204—184.
Bair, Edwin K., and R. F. Hodgson, to Commercial Shearing & Stamping Co. High pressure filter having a relief valve in the base. 3,283,098, 11–1–66, Cl. 210—133.
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Morton, David C. 3,282,399.
Baker, Richard W., W. A. Stover, and P. L. Veltman, to W. R. Grace & Co. Process for preparing catalysts for use in the production of nitriles. 3,282,859, 11–1–66, Cl. 252—432.
Baker, Robert M., to Westinghouse Electric Corp. Fine wire calorimeter. 3,282,100, 11–1–66, Cl. 73—190.
Baker, Robert S., to American Concrete Crosstie Corp. Pallet for making prestressed concrete. 3,281,911, 11–1–66, Cl. 25—118.
Baker, Walter S., to United States of America, Army. Method of making combustible cartridge cases. 3,282,146, 11–1–66, Cl. 86—10.
Balda-Kamerawerk Rudolf Gruter, Kommanditgesellschaft: *See*—
Lange, Karl H. 3,282,181.
Balducci, Agostino, and M. De Malde, to S.N.A.M. S.p.A. Acetylenic alcohols from ketones and acetylene using aqueous alkaline hydroxide catalyst. 3,283,014, 11–1–66, Cl. 260—638.
Baldwin, John L. E.: *See*—
Urry, Denis E., and Baldwin. 3,283,068.
Baldwin-Lima-Hamilton Corp.: *See*—
Tidball, Robert A. 3,282,798.
Willi, Richard B. 3,282,563.
Zhookoff, Walter. 3,282,075.
Ball, John D.: *See*—
Newton, Robert A., Hughes, and Ball. 3,283,296.
Baltes, Josef, F. Weghorst, and Z. Makus, to Harburger Fettchemie Brinckman & Mergell G.m.b.H. Polyaddition products from polyamides of polybasic araliphatic carboxylic acids. 3,282,872, 11–1–66, Cl. 260—18.
Bamford, William P., K. E. Golding, and J. G. Morgan, to Libbey-Owens-Ford Glass Co. Automotive windows. 3,282,014, 11–1–66, Cl. 52—627.
Banca, Maggio C.: *See*—
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Banks, Arthur J., to Radio Corp. of America. Pulse distribution amplifier. 3,283,259, 11–1–66, Cl. 330—24.
Banks, William B., to Automation Products, Inc. Apparatus for determining physical properties of materials. 3,282,084, 11–1–66, Cl. 73—32.
Bannigan, John T., to North American Philips Co., Inc. Ion indicating device. 3,282,650, 11–1–66, Cl. 23—253.
Barger, Lloyd D. Means for exiting a fluid from a compartment. 3,282,293, 11–1–66, Cl. 137—614.19.
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Savage, Harry A. 3,282,513.
Barnas, Eugene F., to Velsicol Chemical Corp. 2-methoxy-3,6-dichlorothiobenzoic acid esters. 3,282,977, 11–1–66, Cl. 260—455.
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Barnes, Robert B. 3,282,106.
Schwarz, Frank, and Banca. 3,283,148.
Barnes, Robert B., to Barnes Engineering Co. Method of measuring body temperature. 3,282,106, 11–1–66, Cl. 73—355.
Barnett, Ernest E., to Myers Industries, Inc. Tire patch. 3,282,319, 11–1–66, Cl. 152—367.
Barnett, Richard D., and W. J. Rea, to Western Electric Co., Inc. Apparatus for detecting a substantially depleted or missing binder thread condition. 3,282,037, 11–1–66, Cl. 57—18.
Barretta, Pasquale, to Montecatini Societa Generale per l'Industria Mineraria e Chimica. Apparatus for pyrolysis of dichloroethane. 3,282,652, 11–1–66, Cl. 23—262.
Barth, Robert E. Vehicular frame and method of construction. 3,282,603, 11–1–66, Cl. 280—106.
Bartholomew, Earl, to Ethyl Corp. Gasoline engines. 3,282,261, 11–1–66, Cl. 123—119.
Barton, Benjamin D. Spray gun for fire apparatus and the like. 3,282,511, 11–1–66, Cl. 239—459.
Baruch, Hans, and D. Travaglio, to Warner-Lambert Pharmaceutical Co. Sample conveying and conditioning unit. 3,282,431, 11–1–66, Cl. 210—241.
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Robinson, William A., and Huston. 3,283,127.
Basin Recovery Corp.: *See*—
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Bassett, Jacques P. L., R. L. Bizollier, and P. A. Camus, to International Standard Electric Corp. Selection systems. 3,283 081, 11–1–66, Cl. 179—18.
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Baude, John, to Allis-Chalmers Mfg. Co. Phase comparison means. 3,283,174. 11–1–66, Cl. 307—88 5.
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Bauer, Peter, to Sperry Rand Corp. Fluid channel divider. 3,282,207, 11–1–66, Cl. 138—39.
Bauer, Peter, to Sperry Rand Corp. Fluid escapement mechanism. 3,282,562, 11–1–66, Cl. 253—101.

Bauers, Arthur A., to Hoover Ball and Bearing Co. Metering pump. 3,282,218, 11–1–66, Cl. 103—38.

Baverstock, Richard, to Imperial Machine Products Co. Fuel mixer. 3,282,664, 11–1–66, Cl. 48—184.

Bayer, Rudolf, to International Standard Electric Corp. Circuit arrangement for loudspeaking intercommunication systems. 3,283,077, 11–1–66, Cl. 179—1.4.

Bazin, Lucas J., R. A. Dischert, and D. M. Taylor, to Radio Corp. of America. Signal processing apparatus for color systems utilizing separate luminance signal pickup. 3,283,-067, 11–1–66, Cl. 178—5.4.

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Beals, Raymond S.: *See*—
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Bean, Claude T., Jr., and D. H. Thorpe, to Hooker Chemical Corp. Unsaturated polyesters prepared by the sequential reaction of a phenol-aldehyde with a mono-oxinane or other hydroxyether forming compound, and a polycarboxylic acid. 3,283,030, 11–1–66, Cl. 260—842.

Beard, Ralph L., and J. F. Hester, to Hanes Corp. Garment construction. 3,281,863, 11–1–66, Cl. 2—113.

Beardmore, Donald E., and R. J. Costanzo, to Harvey Hubbell Inc. Power line signal system having a relay controlled indicator at the receiver. 3,283,316, 11–1–66, Cl. 340—310.

Beasley, Jack O. Vehicle speed alteration indicator. 3,283,-301, 11–1–66, Cl. 340—66.

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Becker, Leonard H., and R. H. Kenny, to Commercial Cam & Machine Co. Overload clutch. 3,282,387, 11–1–66, Cl. 192—150.

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Beermann, Erich: *See*—
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Beesley, Robert L., and R. H. Matthias, to The Dow Chemical Co. Tote case for bottles and the like. 3,282,461, 11–1–66, Cl. 220—21.

Bel Fuse Inc.: *See*—
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Bell & Howell Co.: *See*—
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Bell Telephone Laboratories, Inc.: *See*—
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Brass, Robert L. 3,283,302.
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Vigilante, Frank S. 3,283,307.
Wirsching, Robert E. 3,283,111.

Bell, William P., W. B. Blair, and R. M. Shapiro, to Schlumberger Well Surveying Corp. Wire carriers for oil well perforators. 3,282,213, 11–1–66, Cl. 102—20.

Beller, Wilbert E., to Controls Co. of America. Voltage and temperature compensated tachometer circuit. 3,283,247, 11–1–66, Cl. 324—70.

Bellott, Emile M., and H. H. Haft, to Westinghouse Electric Corp. Filament mount and heat shield structure for electric incandescent lamp. 3,283,198, 11–1–66, Cl. 313—240.

Beloit Eastern Corp.: *See*—
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Birdwell, Benjamin F. 3,282,005.

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Bendix Corp., The: *See*—
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Ritz, Joseph W. 3,281,931.
Shaw, Richard, Jr., and Di Tosto. 3,282,119.
Vick, Ralph L. 3,282,289.
Wermlinger, Oscar R. 3,282,069.
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Bennett, Edward J., to E. I. du Pont de Nemours and Co. Azeotropic composition and process for attenuating magnetic ink characters. 3,282,853, 11–1–66, Cl 252—172.

Benson, James M., and G. F. Quittner, to Hastings-Raydist, Inc. Fluid operated filament diameter measuring device. 3,282,085, 11–1–66, Cl. 73—37.7.

Benton, Robert C., to Chemcut Corp. Digital hydraulic positioning device. 3,282,049. 11–1–66, Cl. 60—52.

Benzing, Erhard P., to Monsanto Co. α,α'-azoalkanes. 3,282,-912, 11–1–66, Cl. 260—158.

Berchtold, Ludwig, and A. Schuster. Coupling device for ski binding cable. 3,282,597, 11–1–66, Cl. 280—11.35.

Berdan, Betty L.: *See*—
Cerness, Joseph F., Selker, and Berdan. 3,282,809.

Berenschot, Donald J.: *See*—
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Berger, Leo, A. J. Corraz, and J. Lee, to Hoffmann-La Roche Inc. Substituted lower fatty acid amides and processes. 3,282,949, 11–1–66, Cl. 260—295.

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Berghaus, Bernhard, to Bernhard Berghaus Elektropysikalische Anstalt. Method and device for carrying out gas discharge processes. 3,282,814, 11–1–66, Cl. 204—192.

Berghaus, Bernhard, Elektropysikalische Anstalt: *See*—
Berghaus, Bernhard. 3,282,814.

Bergstrom, Eric V., and J. G. Mitchell, to Socony Mobil Oil Co. Thermal conversion process and apparatus therefor. 3,283,028, 11–1–66, Cl. 260—683.

Bergstrom, Paul M.: *See*—
Danko, Joseph C., and Bergstrom. 3,281,921.

Berlin, Norton H., to Esso Research and Engineering Co. Synthetic molecular sieves. 3,282,028, 11–1–66, Cl. 55—66.

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Bernard, Richard A.: *See*—
Bernard, Arthur A. and R. A. 3,283,121.

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Field, Philip M., and Ross. 3,283,141.

Best, Howard S., and N. M. Edelson, to Corning Glass Works. Method of attaching leads to thin films. 3,281,923, 11–1–66, Cl. 29—155.5.

Bethlehem Steel Co.: *See*—
Brazill, Jack E., Lintner, and Kirkpatrick. 3,282,580.
Mayer, Edward H., Rahn, and Oliver. 3,282,685.

Beyerle, Rudi: *See*—
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Biba, Edward A., and S. R. Novello, to Malco Mfg. Co. Contact. 3,283,288, 11–1–66, Cl. 339—193.

Bicicchi, Vincent A., to Henry Pratt Co. Blast valve. 3,282,-553, 11–1–66, Cl. 251—62.

Bieschke, Hillard J., to Knox Mfg. Co. Handle actuated tripod structure. 3,282,545, 11–1–66, Cl. 248—171.

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Biggley, William H., deceased (B. A. Biggley, administrator), and R. G. Culshaw, to Atomic Energy of Canada Ltd. Remote control manipulators. 3,282,442, 11–1–66, Cl. 214—1.

Birdwell, Benjamin F., to Benco, Inc. Structural elements. 3,282,005, 11–1–66, Cl. 52—364.

Birenbaum, Leo, and J. W. E. Griemsmann, to Polytechnic Institute of Brooklyn. H-guide hybrid junction having an elongated coupling slot. 3,283,266, 11–1–66, Cl. 333—10.

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Hoeksema, Herman, Birkenmeyer, and Magerlein. 3,282,-918.
Magerlein, Barney J., and Birkenmeyer. 3,282 957.

Bishop, Harold P., deceased; by M. G. Bishop, executrix. Plastic inlet valve for central vacuum cleaning system. 3,283,093, 11–1–66, Cl. 200—61.1.

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Bishop, Harold P. and M. G. 3,283,093.

Bishop, Robert J.: *See*—
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Bittner, Donald L. Determination of oxidizing and reducing substances. 3,282,649, 11–1–66, Cl. 23—230.

Bixley, Frederick V. G., to Newnham Industries Pty. Ltd. Apparatus for applying adhesive tape to cartons. 3,282,018, 11–1–66, Cl. 53—137.

Bizollier, Rene L.: *See*—
Basset, Jacques P. L., Bizollier, and Camus. 3,283,081.

Blachowicz, Leon F., and H. D. Shearer, to Electronic Communications, Inc. Analog-to-digital translator. 3,283,320, 11–1–66, Cl. 340—347.

Blackmer, David E., to Instrumentation Laboratory Inc. Photomodulator for use with high gain D.C. amplifier. 3,283,-157. 11–1–66, Cl. 250—209.

Blackwell, Wayne V., and L. R. Stark. Double-acting solenoid pump. 3,282,219, 11–1–66, Cl. 103—53.

Blair, Winton B.: *See*—
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Blankenbecler, Leonard C. Expendable casting device. 3,281,-983, 11–1–66, Cl. 43—43.12.

Blase, Ernest F.: *See*—
Palmer, Richard C., Poirier, and Blase. 3,282,853.

Blaser, Bruno: *See*—
Bruno, Gunter, Blaser, and Schirp. 3,282,974.

Bloch, Alexander, to Dynamics Corp. of America. No break power system. 3,283,165, 11–1–66, Cl. 290—4.

Bloudoff, Peter S., to Armco Steel Corp. Circulating and bleed valve structure for downwell pumps. 3,282,291, 11–1–66, Cl. 137—608.

Bluhm, Elmer, and F. T. Vaas, Jr., to General Motors Corp. Unit fuel injector with fluid injection valve spring. 3,282,-512, 11–1–66, Cl. 239—533.

Boase, Elmer E., to Eastman Kodak Co. Web aligning device. 3,282,487, 11–1–66, Cl. 226—190.

Bo-Buck Mills, Inc.: *See*—
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Bock, Willy, and E. Mutschler, to SWF Spezialfabrik fuer Autozubehor Gustav Rau G.m.b.H. Membrane or piston pump. 3,282,224, 11–1–66, Cl. 103—152.

Boden, Evan H., to Sylvania Electric Products, Inc. Display device. 3,283,204, 11–1–66, Cl. 315—58.

Bodmer, Maximiliaan H., to Hollandse Signaalapparaten, N. V. Radar aerials for helical scanning. 3,283,329. 11–1–66, Cl. 343—759.

Boehringer Ingelheim G.m.b.H.: *See*—
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Boeing Co., The: *See*—
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Boekhorst, Antonius, to North American Philips Co. Inc. Reproduction device for color television systems. 3,283,-065, 11–1–66, Cl. 178—5.4.

Boggs, Le Roy R., to Universal Moulded Fiber Glass Corp. Method and apparatus for making continuous lengths of threaded fiber reinforced resin articles. 3,283,050, 11–1–66, Cl. 264—137.

Bohn, Francis L.: *See*—
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Bolcey, James H., to Libbey-Owens-Ford Glass Co. Window mounting. 3,282,013, 11–1–66, Cl. 52—624.

Bolen, Herbert L.: *See*—
Cobbs, James H., Bolen, and Gonzalez. 3,282,349.

Bolkow Gesellschaft mit beschrankter Haftung: *See*—
Hermann, Joachim. 3,283,208.

Bolling, Pehr O. Wire connector unit. 3,283,061, 11–1–66, Cl. 174—87.

Bolton, Brian A., to Morane Plastic Co. Ltd. Apparatus for producing a stream of partly lapping sheets. 3,282,587, 11–1–66, Cl. 271—50.

Bonfield, John H., and F. L. Bohn, to Allied Chemical Corp. Production of sulfur dioxide. 3,282,646, 11–1–66, Cl. 23—177.

Bonner, Francis J., and N. V. Messina, to Mobil Oil Co., Inc. Lubricating oil compositions. 3,282,842, 11–1–66, Cl. 252—51.5.

Bonuchi, James A., J. L. Hathorn, and R. S. Zebarth, to Johnson, Gordon Co. Separation of poultry shanks from drumsticks. 3,281,890, 11–1–66, Cl. 17—45.

Boor, John, Jr., to Shell Oil Co. Polymerization catalyst and process. 3,282,906, 11–1–66, Cl. 260—93.7.

Borchardt, Hans J., to E. I. du Pont de Nemours and Co. Luminescent compositions containing europium and the oxyanion-yielding ingredient aluminum, gallium or germanium. 3,282,856. 11–1–66, Cl. 252—301.4.

Borchert, Alfred E., and A. M. Karrash, to The Atlantic Refining Co. Mineral lubricating oil compositions containing poly(10-pinanylmethyl methacrylate). 3,282,844, 11–1–66. Cl. 252—57.

Bordeaux, Jean, and D. R. Scott, to Robertshaw Controls Co. Temperature sensor. 3,282,108, 11–1–66. Cl. 73—362.3.

Borg-Warner Corp.: *See*—
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Burrell, George G. and B. D. 3,282,380.

Bosch, Berthold: *See*—
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Boskovich, Boris, and C. L. Seacord, to Honeywell Inc. Gyroscope testing system. 3,282,081, 11–1–66, Cl. 73—1.

Bost, Howard W., and J. E. Mahan, to Phillips Petroleum Co. Di(sulfonyl azides) as crosslinking agents for hydrocarbon polymers. 3 282,864, 11–1–66. Cl. 260—2.5.

Boswell, George A., Jr., to E I. du Pont de Nemours and Co. 7,7 gem difluoro steroids of the androstane and pregnane series. 3,282,969, 11–1–66, Cl. 260—397.3.

Bottani, Angelo, to Societa Internazionale Fonovisione S.p.a. Projection apparatus. 3,282,151, 11–1–66, Cl. 88—24.

Bottazzi, Andrea: *See*—
Garzia, Aldo, and Bottazzi. 3,282,935.

Bowles Engineering Corp.: *See*—
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Bown, Delos E., N. P. Neureiter, and I. J. Satterfield, to Humble Oil & Refining Co. Polypropylene stabilized with a combination of glycerol and phenols. 3,282,891. 11–1–66. Cl. 260—45.95

Box, Theodor M. Plastic carrying case. 3,282,462, 11–1–66. Cl. 220—29

Boyce Glenn D., to General Dynamics Corp. FM deviation indicator. 3,283,257. 11–1–66. Cl. 329—111.

Boyum, Asmund, H. H. Stotler, and P. C. Keith, to Hydrocarbon Research, Inc. Solvent extraction of aromatics with an alkanol amine solvent. 3,282,830. 11–1–66, Cl. 208—323

Boznango, John P., to The Red Barn System, Inc. Apparatus for preparing fried chicken. 3,282,460. 11–1–66. Cl. 220—19.

Bradley, Charles J., and K. E Meade, to United States of America, Army. Method of making a silver oxide electrode. 3,282,732. 11–1–66. Cl. 136—20.

Brain Edward G., and J. H. C. Nayler, to Beecham Group Ltd. α-carboxy-3-thienylmethylpenicillin. 3,282,926. 11–1–66. Cl. 260—239 1.

Brake, Loren D., to E. I. du Pont de Nemours and Co. Process for preparing bis cyclohexylamine compounds. 3,283,-002. 11–1–66, Cl. 260—563.

Bramer, John C., Jr., to Datagraphics Inc. Multicolor graphic illumination data display system. 3,283,318, 11–1–66, Cl. 340—339.

Brandell, John R. Ball marker. 3,282,200, 11–1–66, Cl. 101—4.

Brass, Robert L., to Bell Telephone Laboratories, Inc. Detection of data processing errors. 3,283,302, 11–1–66, Cl. 340—146.1.

Brattberg, Nils A. J., to AB Lyckeaborge Bruk. Tight lead-through inlet frame device for electrical lines. 3,282,544, 11–1–66, Cl. 248—56.

Braunberger, Ray R. Tilt-locking fifth wheels. 3,282,608, 11–1–66. Cl. 280—438.

Brazill, Jack E., R. W. Lintner, and M. Kirkpatrick, to Bethlehem Steel Co. Refractory bottom for open hearth furnace. 3,282,580, 11–1–66, Cl. 263—46.

Bredtschneider, Kurt B., to Crane Co. Torque plate for valves. 3,282,559, 11–1–66, Cl. 251—327.

Breimer, Hendrick: *See*—
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Ancet, Victor M. J. and Fayolle. 3,282,303.

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Bright, Robert G. 3,282,657.

Bright, Robert G., to Bright Mfg. Co. Ltd. Clip for straddling and gripping a supporting flange and blank therefore. 3,282,657. 11–1–66. Cl. 29—183.5.

Brillaud, Michel L. L., and P. A. Tardy, to Compagnie Francaise de Raffinage. Hydraulic fluids. 3,283,029, 11–1–66, Cl. 260—683.9.

Briscoe, Madison H. Projectile. 3,282,214, 11–1–66, Cl. 102—38.

Bristol-Myers Co.: *See*—
Fiscella, Anthony J. 3,282,792.
Montzka, Thomas A. 3,282,927.

Brixite Mfg. Co., Inc.: *See*—
Chalmers, Alexander A. 3,282,009.

Broadhurst, Peter W. T. Method for brewing and dispensing beverages. 3,282,703, 11–1–66. Cl. 99—71.

Broderick, Edward, and J. L. Villa, to Thiokol Chemical Corp. Propylene monothiocarbonate and processes for making and using the same. 3,282,960, 11–1–66, Cl. 260—327.

Broome, Thorne K.: *See*—
Rodman, Clarence J., and Broome. 3,282,769.

Brounn, Morrison J., to Otis Elevator Co. Reversible car panels. 3 282,004, 11–1–66, Cl. 52—269.

Brower, David F., and E. A. Day, to General Dynamics Corp. Forming device. 3,282,077, 11–1–66, Cl. 72—56.

Brown, Arthur E., and R. J. Fischer, to United States of America, Army. Method of firing ceramics. 3,283,044, 11–1–66. Cl. 264—58.

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Brown, Graydon L., D. W. Fair, L. E. Jarrett, Jr., and L. H. Berryman, to Continental Oil Co. Direct drive method and apparatus for generating seismic vibratory signals. 3,282,-372. 11–1–66, Cl. 181—5.

Brown, Henry, and E. A. Romanowski, to The Udylite Corp. Electrodeposition of chromium. 3,282,812, 11–1–66, Cl. 204—51

Brown, Jerry H., and D. G. Conning, to American Machine & Foundry Co. Electrodialysis process and apparatus using a helically formed membrane. 3,282,825, 11–1–66, Cl. 204—301.

Brown, Raymond R., to Phillips Petroleum Co. Detonation pickup. 3,283,184, 11–1–66. Cl. 310—26.

Brown, Robert L., and J. A. Snyder, to E. I. du Pont de Nemours and Co. I-aminoadamantane and process for purifying same. 3,283,001. 11–1–66, Cl. 260—563.

Brown, Vada L., Jr., and T. E. Stanin, to Eastman Kodak Co. Enamine derivatives of 3-azabicyclo-[3.2.2] nonane. 3,282-925, 11–1–66, Cl. 260—239.

Brown, William B., to Western Electric Co., Inc. Method of detecting discontinuities in cable conductors. 3,282,805, 11–1–66. Cl. 204—1.

Bruckert, Walter, and D. I-J. Wang, to Union Carbide Corp. Apparatus for improved liquid-vapor contact. 3,282,576. 11–1–66, Cl. 261—114.

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Pohlemann, Heinz, Hasse, Reinbold, and Bruening. 3,282,866.

Bruno, Gunter, B. Blaser, and H. Schirp, to Henkel & Cie. G.m.b.H. Preparation of aluminum trialkyl compounds. 3,282,974. 11–1–66, Cl. 260—448.

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Buck, John R., to Westinghouse Electric Corp. Means for increasing effective gain of a microwave cavity frequency discriminator. 3,283,261. 11–1–66, Cl. 331—9.

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Buckley, Arthur H.: *See*—
Steimen, Lawrence E., Buckley, and Kekopoulos. 3,282,-023.

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Bull Nederland (Administratie-en Statistiekmachine MIJ., N.V.): *See*—
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Bullard, Frank E.: *See*—
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Bullard, John K., O. I. Gilbertson, and W. E. Strube, to Western Electric Co., Inc. Apparatus for testing relays. 3,282,096, 11-1-66, Cl. 73—161.
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Ranney, Neil J., and Callaghan. 3,281,957.
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Campbell, Richard H., Jr., to The Seeburg Corp. Keyboard oscillator circuit. 3,283,057, 11-1-66, Cl. 84—1.01.
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Basset, Jacques P. L., Bizollier, and Camus. 3,283,081.
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Carlisle, Thomas E., and E. J. Flannery, to Vapor Corp. Apparatus for and method of zero switching. 3,283,179, 11-1-66, Cl. 307—133.
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Ceriotti, John J., to A. Peru. Anti-bacterial chemical process. 3,282,777, 11-1-66, Cl. 167—43.
Cerness, Joseph F., M. L. Selker, and B. L. Berdan, to Clevite Corp. Iron coating for refractory metal. 3,282,809, 11-1-66, Cl. 204—37.
Chadha, Rajendra N., and T. E. Ferington, to W. R. Grace & Co. Two stage polymerization process involving non-gaseous vinyl monomers with aluminum alkyls and α,α'-azobisisobutyronitrile. 3,282,900, 11-1-66, Cl. 260—78.5.
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Renckhoff, Gustav, and Rudolph. 3,282,989.
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Chen, Richard J., and P. B. Mason, to Polaroid Corp. Document copying apparatus. 3,282,153, 11-1-66, Cl. 88—24.
Chen, Richard J., and P. B. Mason, to Polaroid Corp. Photographic apparatus with drying device. 3,282,184, 11-1-66, Cl. 95—14.
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Cogar, George R., to Sperry Rand Corp. Print control means for high speed printer with traveling print bar. 3,282,205, 11-1-66, Cl. 101—93.
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Cooper, William S., to Aerojet-General Corp. Interference-free A.-C. switch. 3,283,177, 11-1-66, Cl. 307—88.5.
Copeland, John W. Time, speed and distance computer. 3,282,501, 11-1-66, Cl. 235—78.
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Corella, Arthur P., and W. S. Schneider, to W. V. Rodgers. Valved mixing container or package. 3,282,412, 11-1-66, Cl. 206—47.
Corley, Quentin D., Jr. Foldable load lifting apparatus. 3,282,451, 11-1-66, Cl. 214—77.

Cornelissen, Bernardus H. J., and H. Breimer, to North American Philips Co., Inc. Circuit arrangement for use in a color television receiver. 3,283,064, 11-1-66, Cl. 178—5.4.

Cornell Mfg. Co.: *See*—
Repp, Fred J. 3,282,226.

Cornell, Richard D.: *See*—
Pendleton, Wesley W., Cornell, and Saums. 3,282,660.

Cornicello, John P., to R. Iezzi. Self-recycling time delay valve. 3,282,294, 11-1-66, Cl. 137—624.14.

Corning Glass Works: *See*—
Best, Howard S., and Edelson. 3,281,923.
Culler, Vaughn E. 3,283,155.
Riseman, John H., Ross, and Wall. 3,282,817.
Schweigaard-Olsen, Bertrand, and Wacenske. 3,281,860.
Stookey, Stanley D., and Sawchuk. 3,282,770.

Corran, John A.: *See*—
Campbell, Ian, and Corran. 3,282,946.

Corraz, Alfred J.: *See*—
Berger, Leo, Corraz, and Lee. 3,282,949.

Corwith, James, W. H. Clendenin, and M. L. Hoch, to International Harvester Co. Feed apron construction. 3,282,404, 11-1-66, Cl. 198—167.

Cory Corp.: *See*—
Karlen, Harvey R. 3,282,468.

Costanzo, Raphael J.: *See*—
Beardmore, Donald E., and Costanzo. 3,283,316.

Cote, Raymond A., to Riegel Paper Corp. Carton. 3,282,410, 11-1-66, Cl. 206—45.14.

Cottle, John E., to Phillips Petroleum Co. Fluidized bed for drying carbon black. 3,282,577, 11-1-66, Cl. 263—21.

Courter, Harry M., to Sperry Rand Corp. Symbol generators. 3,283,317, 11-1-66, Cl. 340—324.

Couzens, Reginald, and M. M. Young. Automatic winding machine. 3,282,524, 11-1-66, Cl. 242—56.

Cowans, Kenneth W., and J. B. Glode, to Hughes Aircraft Co. Refrigerant regeneration and purification as applied to cryogenic closed-cycle systems. 3,282,064, 11-1-66, Cl. 62—45.

Cox, Joe D.: *See*—
Jones, Dick. 3,282,379.

Cox, Norman R., P. C. Johnson, and D. R. Mosher, to Union Carbide Corp. Oxidation of butane. 3,282,994, 11-1-66, Cl. 260—533.

Cox, William L., to Universal Oil Products Co. Preparation of nitrophenols. 3,283,011, 11-1-66, Cl. 260—622.

Cozzoli, Joseph M., and H. F. Scribner, to Cozzoli Machine Co. Apparatus for applying stoppers to bottles. 3,282,026, 11-1-66, Cl. 53—306.

Cozzoli Machine Co.: *See*—
Cozzoli, Joseph M., and Scribner. 3,282,026.

Craig, Paul N., and C. L. Zirkle, to Smith Kline & French Laboratories. Hydroxyalkylenepiperazine derivatives and analogs thereof. 3,282,930, 11-1-66, Cl. 260—240.

Cramer, Howard A.: *See*—
Johnston, William R., and Cramer. 3,282,730.

Cramp, David L. Motor vehicle having fractionally-driven tractor wheel. 3,282,364, 11-1-66, Cl. 180—26.

Crankshaft Machine Co.: *See*—
Estry, Arthur L., and Worthington. 3,281,919.

Crass, Rosa A.: *See*—
Koenig, Nathan H., and Crass. 3,282,640.

Crawford, Allan H. Tufting apparatus having fabric shifting means. 3,282,235, 11-1-66, Cl. 112—79.

Crawford, Frank C., to Monarch Tool & Machinery Co. Rear vision truck mirror assembly. 3,282,549, 11-1-66, Cl. 248—276.

Creese, Earl D., to Federal-Mogul-Bower Bearing, Inc. Dual sided plating rack. 3,282,824, 11-1-66, Cl. 204—297.

Crompton & Knowles Corp.: *See*—
Bauer, Fritz E., and Beall. 3,282,488.

Crone, John W., Jr., and C. O. Pike, to Shuford Mills, Inc. Pressure-sensitive adhesive tapes with improved release coatings. 3,282,727, 11-1-66, Cl. 117—68.5.

Crotty, Richard H., to Production Feeder Corp. Work feeding apparatus. 3,282,395, 11-1-66, Cl. 198—33.

Crowley, Richard P.: *See*—
Skarstrom, Charles W., Crowley, and Hellman. 3,282,647.

Crown Zellerbch Corp.: *See*—
Rehr, Henry W. 3,282 525.

Csicsatka, Antal, to General Electric Co. Voice-controlled communication system. 3,283,074, 11-1-66, Cl. 179—1.

Cuklanz, Harlan D., to Norton Co. Saw blade. 3,281,906, 11-1-66, Cl. 51—204.

Culler, Vaughn E., to Corning Glass Works. Short-duration light source comprising an electron irradiated transparent insulating body. 3,283,155, 11-1-66, Cl. 250—84.

Culligan, Inc.: *See*—
Entringer, James S. 3,282,426.

Culmone, Louis W., to Lustro Watch Inc. Dictation teaching aid. 3,281,968, 11-1-66, Cl. 35—35.

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Biggley, William H., and Culshaw. 3,282,442.

Cumberland Chemical Corp.: *See*—
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Cunningham, William J.: *See*—
Murphy, Kevin P., Orfeo, and Cunningham. 3,282,048.

Curley, James B.: *See*—
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Curra, Richard S., Jr., to Hussey Mfg. Co., Inc. Tractor means for extending and retracting bleacher stand sections. 3,282,363, 11-1-66, Cl. 180—9.22.

Curran, William V., and R. B. Angier, to American Cyanamid Co. Process for preparing orotidine. 3,282,919, 11-1-66, Cl. 260—211.5.

Cushman, Walton W. Process for moisturizing stale baked dough products and package utilized therefor. 3,822,708, 11-1-66, Cl. 99—172.

Cutler-Hammer, Inc.: *See*—
Caputi, William J., Jr. 3,283,080.

Cymballsty, Lubomyr M. O., 30% to Cities Service Athabasca Inc., 30% to Imperial Oil Ltd., 30% to Atlantic Richfield Co., and 10% to Royalite Oil Co. Ltd. Timer actuated shaft sealing device. 3,282,592, 11-1-66, Cl. 277—3.

Czyl, Joseph L.: *See*—
McInerney, Michael J., Czyl, and Lauridsen. 3,282,257.

Dacco, Ernesto. Injection molding apparatus with plural reciprocating screws. 3,281,899, 11-1-66, Cl. 18—30.

Dahmus, Theodore J. Bird house. 3,282,251, 11-1-66, Cl. 119—23.

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Daimler-Benz Aktiengesellschaft: *See*—
Conrad, Ulrich, Dinger, and Deutschmann. 3,282,260.
Willingshofer, Walter, and Muller. 3,282,602.

Daly, David A., to Beloit Eastern Corp. Drum winder for paper and the like. 3,282,526, 11-1-66, Cl. 242—66.

Daniels, Edward G., and J. W. Hinman, to The Upjohn Co. Extracts of mammalian kidney. 3,282,788, 11-1-66, Cl. 167—74.6.

Daniels, John F. Jr.: *See*—
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Danko, Joseph C., and P. M. Bergstrom, to Westinghouse Electric Corp. Swaging process for forming a flattened composite thermoelectric member. 3,281,921, 11-1-66, Cl. 29—155.5.

Dannelly, Clarence C., and J. R. Caldwell, to Eastman Kodak Co. Process for solution polymerization of acrylonitrile using a sulfur containing oxidizing agent and a salt of either lanthanum or gadolinium. 3,282,880, 11-1-66, Cl. 260—30.4.

Darby, Vene L., and E. E. Hatter, to North American Aviation, Inc. Welded structure and method of making same. 3,282,615, 11-1-66, Cl. 287—189.36.

Darling & Co.: *See*—
Buford, Charles Y. 3,282,449.

D'Ascoli, Ralph G., to Anaconda Wire and Cable Co. Method of bonding a sleeve to a cable. 3,282,758, 11-1-66, Cl. 156—86.

Datagraphics Inc.: *See*—
Bramer, John C., Jr. 3,283,318.

Davidowich, George, and M. W. Leeds, to Cumberland Chemical Corp. Corrosion inhibition with dipropargyl butylamine. 3,282,850, 11-1-66, Cl. 252—148.

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Davies, Richard E., A. C. Nathan, and E. M. Gopal, to Associated Electrical Industries Ltd. Momentum compensation in control means for electrical positioning means. 3,283,230, 11-1-66, Cl. 318—18.

Davis, Cecil G., and D. W. Martin, to United States of America, Army. Overload protection circuit. 3,283,212, 11-1-66, Cl. 317—22.

Davis, Curtis W., Sr., to Libbey-Owens-Ford Glass Co. Laminated glass. 3,282,772, 11-1-66, Cl. 161—165.

Davis, Darwin D., to E. I. du Pont de Nemours and Co. Activated addition of hydrogen cyanide to olefins. 3,282,981, 11-1-66, Cl. 260—465.3.

Davis, Francis A., Jr., and J. F. Flannery, to Paramount Packaging Corp. Thermoplastic bag manufacturing apparatus. 3,282,173, 11-1-66, Cl. 93—8.

Davis, Harold G., and T. R. Brunson, to Rocky Mountain Dental Products Co. Model former for dental arches. 3,281,901, 11-1-66, Cl. 18—34.1.

Davis, Herman E., to Eastman Kodak Co. Bis(cyclic 2,2-dimethyltrimethylene)1,4-cyclohexane-dimethylene phosphite. 3,283,037, 11-1-66, Cl. 260—927.

Davis, William M. Elongated article ejection box. 3,282,465, 11-1-66, Cl. 221—64.

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Mushro, Victor G., and Dawson. 3,282,328.

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Thompson, Tom H. 3,282,170.

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Deakin, Alfred. Balance correcting unit for rotating shafts, etc. 3,282,127, 11-1-66, Cl. 74—573.

De Bolt, Harold E. Shifting arc plasma system. 3,283,205, 11-1-66, Cl. 315—111.

De Columna, Lubomyr: *See*—
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De Crease, William M., and J. H. Shafer, to Lord Corp. Adhesive composition. 3,282,883, 11-1-66, Cl. 260—41.

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De Falco, Angelo. Push button reed switch. 3,283,274, 11-1-66, Cl. 335—206.

De Haan, Jan, and E. W. Tietjens, to North American Philips Co., Inc. Flip-top head for dry shaver. 3,281,936, 11-1-66, Cl. 30—41.6.

DeHaller, Pierre, to Sulzer Bros. Ltd. Heat transfer tube. 3,282,335, 11-1-66, Cl. 165—183.

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Strauss, Wennemar, and Kirstahler. 3,282,811.

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Delgrosso, Eugene J., and J. J. Kaminsky, to United Aircraft Corp. Alloy. 3,282,690, 11-1-66, Cl. 75—174.

Dellavanta, Osvaldo: *See*—
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Demarais, Willard H. Raising and lowering mechanism for car roof carrier. 3,282,455, 11-1-66, Cl. 214—450.

De Moss, Dean L., to Minnesota Mining and Mfg. Co. Differential capstan for multiple tape sizes. 3,282,486, 11-1-66, Cl. 226—181.

Denner, John A., and R. D. Reis, to United Electric Controls Co. Pressure transducers. 3,283,283, 11-1-66, Cl. 338—194.

Dennery, Jacques, to Dennery, Societe Anonyme des Etablissements. Upright elements for constructing convertible, extensible, juxtaposable, quick-assembly and disassembly rack-type and the like structures or units. 3,282,016, 11-1-66, Cl. 52—732.

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D'Entremont, Franklin R., to General Electric Co. Terminal enclosure. 3,283,062, 11-1-66, Cl. 174—138.

De Pas, Laddie A., to Whirlpool Corp. Humidifier. 3,282,574, 11-1-66, Cl. 261—29.

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De Ros, Angelo: *See*—
Fagioli, Oliviero, and De Ros. 3,282,082.

De Saint-Gobain, Compagnie: *See*—
Mabru, Marcel. 3,282,668.

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Nelson, Jerome W., and DeSaw. 3,283,115.

Dethloff, Phillip A., and B. L. Thomas, to Armour and Co. Hide-pulling means and method. 3,281,891, 11-1-66, Cl. 17—45.

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Deutschmann, Herbert: *See*—
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Devine, John, and J. F. Davies, to Lever Bros. Co. Synthesis of carboxylic acids. 3,282,973, 11-1-66, Cl. 260—413.

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Dewey, Ronald D., to Joerns Bros. Furniture Co. Hospital bed. 3,281,872, 11-1-66, Cl. 5—63.

DeWitt, David, and T. G. Stehney, to International Business Machines Corp. Transistor and method of fabrication to minimize surface recombination effects. 3,283,223, 11-1-66, Cl. 317—235.

De Witt, Earl G., and F. T. Tulley, to Ethyl Corp. Method for forming hollow articles. 3,283,046, 11-1-66, Cl. 264—92.

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Diamond International Corp.: *See*—
Rudd, Gerald A. 3,282,458.
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Dickinson, Ben W. O., III. Apparatus for generating ultrasonic waves. 3,282,087, 11-1-66, Cl. 73—71.5.

Dickinson, Leonard P., and C. J. Ratke, to The Valeron Corp. Boring tool with flexible adjustment. 3,282,133, 11-1-66, Cl. 77—58.

Diebold Inc.: *See*—
Raber, Chauncey C., and Smith. 3,282,269.

Diehn, Hans G., D. J. Berenschot, and J. M. Willhoite, to Armour and Co. Germicidal cleansing composition. 3,282,849, 11-1-66, Cl. 252—106.

Dieter, Julian A., to R. A. Jones and Co., Inc. Sheet feeding mechanism for cartoning machines. 3,282,585, 11-1-66, Cl. 271—3.

Dilliard, Allen E., to United States of America, Army. Timing device. 3,282,582, 11-1-66, Cl. 267—1.

Dimitracopoulos, Panayotis C., and C. D. Pezaris. Audiovisual projection system. 3,282,154, 11-1-66, Cl. 88—28.

Dimitri, Mitchell S., to West Virginia Pulp and Paper Co. Lignin reinforced rubber using combination of high and low melting lignins. 3,282,871, 11-1-66, Cl. 260—17.5.

D'Incerti, Lodovico, to Societa per Azioni Ferrania. Magazine for photographic films. 3,282,527, 11-1-66, Cl. 242—71.1.

Dinger, Edward H., to General Electric Co. Control for reversible motor with instantaneous current limit. 3,283,234, 11-1-66, Cl. 318—331.

Dinger, Hans: *See*—
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Dinkler, Leonard R., and R. J. Bishop, to Technical Enterprises, Inc. Multi-color display apparatus. 3,283,136, 11-1-66. Cl. 240—10.

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Bazin, Lucas J., Dischert, and Taylor. 3,283,067.

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Hey, Donald H., and Cadogan. 3,282,832.

Di Tosto, Bruno: *See*—
Shaw, Richard, Jr., and Di Tosto. 3,282,119.

Ditto, Richard S., to Emcee Electronics, Inc. Contact meter with photo-actuated servo means. 3,283,232, 11-1-66, Cl. 318—31.

Dixon, Charles E., to Collins Radio Co. Phase control network for a stereophonic system. 3,283,079, 11-1-66, Cl. 179—15.

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Martin, Richard J., Dobinson, and Stark. 3,283,032.

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Koeppel, Merle R., and Dobrovolny. 3,283,097.

Doerfling, Ralph G., to Detroit Gasket and Mfg. Co. Visor construction. 3,282,624, 11-1-66, Cl. 296—97.

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Dolch, Wilbur A., to Dolch Enterprises, Inc. Bow stringer. 3,281,928, 11-1-66, Cl. 29—235.

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Donelson, Harlan J., Jr. Material spreader. 3,282,591, 11-1-66, Cl. 275—15.

Dore, James E., to Olin Mathieson Chemical Corp. Process of degassing copper alloys. 3,282,680, 11-1-66, Cl. 75—76.

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Dreksler, Moshe Y., to Frick Co. Sealing means for conveyor ports of a material treatment chamber. 3,282,067, 11-1-66, Cl. 62—266.

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Drugan, Wayne A., and N. M. Clark, to Drugan-Severson Inc. Display holder for shopping cart. 3,281,978, 11-1-66, Cl. 40—308.

Dulaney, Clarence L., R. J. Evans, and M. L. Owens, Jr., to Monsanto Co. Hydrocarbon conversion. 3,283,024, 11-1-66, Cl. 260—673.5.

Dully, Floyd I., to General Motors Corp. Vehicle control pedals. 3,282,125, 11-1-66, Cl. 74—560.

Dunbar, Joseph E., to The Dow Chemical Co. α,α'-bis(substituted sulfonylthio)xylenes. 3,282,976, 11-1-66, Cl. 260—453.

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Du Pradal, Roger V. Corrugated multilayer roofing elements. 3,282,012, 11-1-66, Cl. 52—618.

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Jack, David, Spickett, and Durant. 3,283,003.

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Dyke, Walter P., and F. J. Grundhauser, to Field Emission Corp. X-ray tube temperature enhanced field emission cathode. 3,283,203, 11-1-66, Cl. 313—56.

Dykhouse, William J. Line, hook and batt holder attachment. 3,281,981, 11-1-66, Cl. 43—25.2.

Dykinga, Richard J., and R. K. Pflieger, to International Register Co. Motor driven time switch. 3,282,126, 11-1-66, Cl. 74—568.

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Ehrhardt, Gerry H., and R. R. Wissinger, to Pacific Industries, Inc. Pressure indicia transfer sheeting and method of producing same. 3,282,709, 11-1-66, Cl. 106—27.

Ehrich, William G., and D. Sunstein, to United States of America, Army. Propagation path profile and test display. 3,283,253, 11-1-66, Cl. 325—363.

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Eisler, Paul. Electrical heating film. 3,283,284, 11-1-66, Cl. 338—212.

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Eriksson, Stig L., to Fagersta Bruke Aktiebolag. Metal cutting tool with an adjustable unit serving as chip breaker and clamp. 3,281,920, 11-1-66, Cl. 29—96.

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Fayolle, Marius: *See*—
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Floyd, Frederick. Edge sealing means for filter rollers. 3,282,034. 11-1-66 Cl. 55—354.

Foerster, George S., to The Dow Chemical Co. High strength fabrications of aluminum base alloys containing copper. 3,282,745, 11-1-66, Cl. 148—12.7.

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Greenleaf, John W., Jr., to Greenleaf Enterprises, Inc. Multiple unit backwashing filter. 3,282,432, 11-1-66, Cl. 210—264.

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Griehl, Wolfgang, and S. Schaaf, to Inventa A.-G. fur Forschung und Patentverwertung Luzern. Polyamides containing a phosphate, an alkali iodide and an iron compound as stabilizers. 3,282,892, 11-1-66, Cl. 260—45.75.

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Hardy, John F., M. E. Jordan, and A. I. Medalia, to Cabot Corp. Solar evaporation with floating polymeric-carbonaceous material. 3,282,327, 11–1–66, Cl. 159—47.

Harikae, Tsuneo. Valve for a liquefied gas fuel lighter. 3,282,307, 11–1–66, Cl. 141—295.

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Harrigan, Matthew J. Bow sight and method of sighting same. 3,281,940. 11–1–66, Cl. 33—46.

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Harris, James P., to Marathon Oil Co. Method for the preparation of acetophenone and benzoic acid. 3,282,992, 11–1–66, Cl. 260—524.

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Havourd, Richard S., and W. S. Winton, to Emhart Corp. Shotgun shell reloading press. 3,282,147, 11–1–66, Cl. 86—25.

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Haynie, Gerald D., to Bell Telephone Laboratories, Inc. Control system employing counter to generate signals for changing output, linearly or non-linearly, of frequency synthesizer. 3,283,254, 11–1–66, Cl. 328—71.

Hays, George E., to Phillips Petroleum Co. Separation of natural gases. 3,282,060, 11–1–66, Cl. 62—24.

Hecker, Erich, to Schering Aktiengesellschaft. 3-azo-estrane-compounds. 3,282,914, 11–1–66, Cl. 260—192.

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Hemstreet, Russell A., to Air Reduction Co., Inc. Trioxygen difluoride in liquid oxygen. 3,282,750. 11–1–66, Cl. 149—1.

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Hendrickson, Luther G.: *See*—
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Herz, Hermann, and E. Albrecht, to G.M. Pfaff A.G. Sewing machine including work folding means. 3,282,234, 11–1–66, Cl. 112—51.

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Lincoln, Lewis L., and Heseltine. 3,282,932.

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Hesston Mfg. Co., Inc.: *See*—
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Hewes, Donald E., to United States of America, National Aeronautics and Space Administration. Rotating space station simulator. 3,281,964. 11–1–66, Cl. 35—12.

Hewlett-Packard Co.: *See*—
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Hicks, John W., Jr., to Mosaic Fabrications, Inc. Optical image transfer device. 3,282,191, 11–1–66, Cl. 95—73.

Hidding, Walter E. Quick releasable thermometer sheath. 3,282,409. 11–1–66, Cl. 206—16.5.

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Hill, Donald C., to McQuay-Norris Mfg. Co. Piston ring assembly of flexible circumferentially compressible spring expander-spacer and piston rings. 3,282,595, 11–1–66, Cl. 277—139.

Hill, Lester M., and A. J. Schmitt, to Beloit Corp. Trailing blade coater with blade loading mechanism. 3,282,244, 11–1–66, Cl. 118—126.

Himelreich, Louis E., to H. J. Scheirich Co. Hollow-wall drawer. 3,282,635, 11–1–66, Cl. 312—214.

Hinden, Edwin R., to Houston Society for Paint Technology. Instrument and method for testing coatings. 3,282,094, 11–1–66, Cl. 73—150.

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Hintermann, Hans E., and M. W. Reed, Jr., to The Electric Storage Battery Co. Electrodes and electrode material. 3,282,737, 11–1–66, Cl. 136—120.

Hirsch, Felix, to General Cable Corp. Method of making cable and cable valley filler. 3,282,040. 11–1–66, Cl. 57—165.

Hirsch, Harold H., to General Electric Co. Process for producing electrical resistance heaters. 3,281,924, 11–1–66, Cl. 29—155.62.

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Holden, Robert E., and J. E. Morrow, to Tektronix, Inc. Apparatus for cutting and expanding plastic members. 3,281,895, 11–1–66, Cl. 18—4.

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Hulm, John K., and H. Riemersma, to Westinghouse Electric Corp. Superconducting solenoid formed from a niobium-base alloy of varying composition. 3,283,277, 11–1–66, Cl. 335—216.

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Hunter, Edwin J., and G. H. Starrett, to Products Engineering Co. Method and apparatus for assembling venetian blinds. 3,281,914, 11–1–66, Cl. 29—24.5.

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Boyum, Asmand, Stotler, and Keith. 3,282,830.

I.R.C. Ltd.: *See*—
Fehling, Hans R., Harvey, Street, and Pateman. 3,281,933.

Iannelli, Frank M. Float controlled magnetically operated switch with a rod for rotating a magnet including a pair of opposed connected helices. 3,283,095, 11–1–66, Cl. 200—84.

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Imperial Machine Products Co.: *See*—
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Imperial Oil Ltd.: *See*—
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Irwin, Kirk S., to United States of America, National Aeronautics and Space Administration. Controlled visibility device for an aircraft. 3,281,965, 11–1–66, Cl. 35—12.

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Jamrog, Aloysius R., to United States of America, Atomic Energy Commission. Apparatus for controlling the atmosphere over a nuclear reactor. 3,282,792, 11–1–66, Cl. 176—27.

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Johnson, Gordon, Co.: *See*—
Bonuchi, James A., Hathorn, and Zebarth. 3,281,890.

Johnson, Harold I., to United States of America, National Aeronautics and Space Administration. Training vehicle for controlling attitude. 3,281,963, 11–1–66, Cl. 35—12.

Johnson, John H., to Monsanto Co. Crosslinked olefin-olefinic dicarboxylic acid compound interpolymers and process of preparation thereof. 3,283,033, 11–1–66, Cl. 260—878.

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Johnson, Karl E., and F. E. Mertz, to J. F. Pritchard & Co. Pressure differential control apparatus and a method for adsorption. 3,282,027, 11–1–66, Cl. 55—21.

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Jones, Giffin D., and R. E. Friedrich, to The Dow Chemical Co. Color reversible electrochemical light filter utilizing electrolytic solution. 3,282,158, 11–1–66, Cl. 88—107.

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Jones, Spencer S. D., to The Minister of Aviation in Her Majesty's Government of the United Kingdom. Directive transmitter system for aircraft runway approach. 3,283,325, 11–1–66, Cl. 343—107.

Jones, Wallace, to Nuclear Materials and Equipment Corp. Apparatus for determining the dimensions, weight and density of objects. 3,282,116, 11–1–66, Cl. 73—433.

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Justi, Eduard, and A. Winsel, to Varta Aktiengesellschaft, and Siemens-Schuckert-Werke Aktiengesellschaft. Process for reversible electrodialysis. 3,282,834, 11–1–66, Cl. 204—180.

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Kalbach, John F., and W. G. Paige, to Burroughs Corp. Magnetically operated print hammers in high speed printers. 3,282,203, 11–1–66, Cl. 101—93.

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Kay, Leslie, to Ultra Electronics Ltd. Ultrasonic position sensing equipment. 3,283,292, 11–1–66, Cl. 340—1.

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Szarvasi, Etienne, and Neuvy. 3,282,965.

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Loewe, Paul, 5% to L. J. Calleja. System for changing radiographic plates. 3,283,149, 11-1-66, Cl. 250—66.

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Long, Jack L., and R. D. Schweikhardt, to United States of America, Atomic Energy Commission. Electrorefining of plutonium. 3,282,806, 11-1-66, Cl. 204—1.5.

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Lung, Kenneth R., to The Taft Mfg. Co. Flow control valve and switch. 3,283,094, 11-1-66, Cl. 200—81.9.

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Marcus, Ira R., and O. Dellasanta, to United States of America, Army. Read-out circuit for static magnetic core devices. 3,283,312, 11-1-66, Cl. 340—174.

Marcus, Maurice. Article of furniture having a draw-leaf platform. 3,282,634, 11-1-66, Cl. 312—199.

Mark, John T., to United States of America, Atomic Energy Commission. High vacuum valves. 3,282,276, 11-1-66, Cl. 137—1.

Marks, Ronald H., and L. R. Goodman, to American Can Co. Fabric. 3,282,071, 11-1-66, Cl. 66—169.

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Martin, Richard J., B. Dobinson, and B. P. Stark, to Ciba Ltd. Method of crosslinking unsaturated polyesters by diels-alder reaction with a monomer containing two pairs of conjugated ethylenic linkages. 3,283,032, 11-1-66, Cl. 260—867.

Marty, Bernard A., and L. B. Lathrop, to Neisler Laboratories, Inc. Stable liquid colloidal tannate compositions. 3,282,789, 11-1-66, Cl. 167—82.

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Matsui, Masanao, and H. Meguro, to Sumitomo Chemical Co., Ltd. Method for producing dextro-trans-pyrethric acid. 3,282,985, 11-1-66, Cl. 260—468.

Matsui, Masanao, and K. Yoshioka, to Sumitomo Chemical Co., Ltd. Racemization of optically active transchrysanthemic acid. 3,282,984, 11-1-66, Cl. 260—468.

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McBrayer, Robert L., to Wyandotte Chemicals Corp. Metal reduction process. 3,282,581, 11-1-66, Cl. 266—24.

McCain, George H., D. E. Hudgin, and I. Rosen, to Diamond Alkali Co. Chemical process for copolymerizing chloral and dichloroacetaldehyde. 3,282,899, 11-1-66, Cl. 260—67.

McClellan, Richard P., to The Bendix Corp. Timer and distributor for ignition systems and the like. 3,283,189, 11-1-66, Cl. 310—155.

McConnell, William M., to Taylor-Wilson Mfg. Co. Apparatus for handling elongated articles. 3,282,444, 11-1-66, Cl. 214—1.

McCorkindale, Lawrence W., and J. F. McNulty, to Automation Industries, Inc. Ultrasonic pulse testing apparatus. 3,282,086, 11-1-66, Cl. 73—67.8.

McDaniel, Edgar L., and H. S. Young, to Eastman Kodak Co. Catalyst and process for preparing the same. 3,282,860, 11-1-66, Cl. 252—451.

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McDowell, William B. Constant bubble indicator. 3,281,947, 11-1-66, Cl. 33—212.

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McInerney, Michael J., J. L. Czyl, and W. H. Lauridsen, to Vapor Corp. Fluid heating apparatus. 3,282,257, 11-1-66, Cl. 122—250.

McKenzie, William G., to Walker Mfg. Co. Reciprocating fluid motor. 3,282,167, 11-1-66, Cl. 91—306.

McMaster, Harold A., to Permaglass, Inc. Conveying apparatus. 3,282,447, 11-1-66, Cl. 214—21.

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Mendelsohn, Harold, to American Cyanamid Co. Neutral sulfate salts of tetracyclines. 3,283,000, 11-1-66, Cl. 260—559.

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Metro, Stephen J., E. M. Hoffman, and A. H. Matuszak, to Esso Research and Engineering Co. Fatty acid esters of polyhydric alcohols. 3,282,971, 11-1-66, Cl. 260—410.6.

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Miller, Eldon D., Jr., and R. S. Beals, to Harbison-Walker Refractories Co. Refractory lining. 3,282,579, 11-1-66, Cl. 263—46.

Miller, James R., and H. M. Lurton, to Shell Oil Co. Corrosion resistant liquid hydrocarbons containing mixture of alkyl succinic acid and polyamine salt thereof. 3,282,836, 11-1-66, Cl. 252—34.7.

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Mitchell, Doren, to Bell Telephone Laboratories, Inc. Broadband radio repeater having parallel channels. 3,283,249, 11-1-66, Cl. 325—3.

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Parker, Alva D. Slush pump piston. 3,282,172, 11–1–66, Cl. 92—128.

Parker, Delbert R., and R. A. Kurz, to Westinghouse Electric Corp. Expulsion lightning arrester. 3,283,196, 11–1–66. Cl. 313—231.

Parker, Henry M., and F. H. Field, to Magna American Corp. Multi-purpose power tool. 3,282,309, 11–1–66, Cl. 144—1.

Parker, Norman F., to North American Aviation, Inc. Alternate drive system of reversing gyroscopes on a stable platform. 3,282,118, 11–1–66, Cl. 74—5.34.

Parker, Wesley H., to Inspiration Consolidated Copper Co. Up-grading cement copper. 3,282,675, 11–1–66, Cl. 75—.5.

Paro, Fern T. Extensible sun visor. 3,282,623, 11–1–66, Cl. 296—97.

Parsen, Edward M. Hydraulic interlock mechanism on back hoe. 3,282,452, 11–1–66, Cl. 214—138.

Parsons, Raymond E., to E. I. du Pont de Nemours and Co. Process for the production of perfluoroethyliodide. 3,283,020, 11–1–66, Cl. 260—653.

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Patrusky, Bernard E., to Radio Corp. of America. Information handling apparatus including time sharing of plural addressable peripheral device transfer channels. 3,283,306, 11–1–66, Cl. 340—172.5.

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Entrikin, Raymond A. 3,282,614.

Patterson, John A.: *See*—
Chafetz, Harry, and Patterson. 3,282,993.

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Paulson, Bernard S. and B. H., to Pixall Corp. Mechanical bean picker. 3,282,036, 11–1–66. Cl. 56—19.

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Paulson, Loree A. D., and J. W. Adams, to Ingersoll-Rand Co. Drilling device. 3,282,356, 11–1–66, Cl. 175—103.

Pavey, George M., Jr., and R. H. Pearson, to Sonic Engineering Co. Particle velocity detector and means for canceling the effects of motional disturbances applied thereto. 3,283,293, 11-1-66, Cl. 340—7.

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Pearlstein, Fred, to United States of America, Army. Radioactive silver and cadmium bath composition and barrel plater therefor. 3,282,854, 11-1-66, Cl. 252—301.1.

Pearlstine, Morton. Beach umbrella. 3,282,275, 11-1-66, Cl. 135—20.

Pearse, James N., to Allen-Bradley Co. Relay binary using a reciprocating magnet. 3,283,273, 11-1-66, Cl. 200—87.

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Pendleton, Wesley W., R. D. Cornell, and H. L. Saums, to Anaconda Wire and Cable Co. High-temperature electrical conductor and method of making. 3,282,660, 11-1-66, Cl. 29—193.

Penetred Corp.: *See*—
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Penksa, Stanley. Hermetically sealed packaged prophylactic. 3,282,414, 11-1-66, Cl. 206—63.2.

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Pfenninghausen, Victor A., and W. D. Gladwill. Vehicle highway weather warning system. 3,283,297, 11-1-66, Cl. 340—22.

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Pieraszuoli, Mario, to Pirelli Societa per Azioni. Coupling device. 3,282,611, 11-1-66, Cl. 285—45.

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Prosser, Joe C., and R. H. Singleton, to General Motors Corp. Reaction motor exhaust nozzle incorporating a fusible coolant. 3,282,421, 11-1-66, Cl. 239—127.3.

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Radziwill, Maciej, and C. A. Broel-Plater. Sealing means for a power driven machine with a rotary piston. 3,282,496, 11-1-66, Cl. 230—145.

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Renckhoff, Gustav, and W. A. S. Rudolph, to Chemische Werke Witten G.m.b.H. Process for preparing half ester acyl chlorides of aromatic dicarboxylic acids. 3,282,989, 11-1-66, Cl. 260—475.

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Richards, John A., to Swimquip, Inc. Electrolysis cell for production of chlorine. 3,282,823, 11-1-66, Cl. 204—272.

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Richter, Edwin T. Incinerator door. 3,282,233, 11-1-66, Cl. 110—175.

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Riedel, Herbert. Transparency frames and means for loading transparencies into such frames. 3,281,976, 11-1-66, Cl. 40—152.

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Riggs, Olen L., Jr., to Continental Oil Co. Process of reacting equimolar amounts of a mono-unsaturated diol, a polyalkylene polyamine, and a monocarboxylic acid and product. 3,282,970, 11-1-66, Cl. 260—404.5.

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Riseman, John H., J. W. Rose, and R. A. Wall, to Corning Glass Works. Glass electrode and method of making the same. 3,282,817, 11-1-66, Cl. 204—195.

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Roberts, Carleton W., and D. H. Haigh, to The Dow Chemical Co. 2-[p-halogenated-bicyclo-[2.2.1]-hept-5-en-2-yl)-benzyl]-2-thiopseudourea compounds. 3,283,004, 11-1-66, Cl. 260—564.

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Robinson, William A., and J. E. Huston, to Basic Products Corp. Control circuit. 3,283,127, 11-1-66, Cl. 219—486.

Robota, Stephen, to Hooker Chemical Corp. Apparatus for three stage controlled cooling and solidification of phosphorous pentasulfide. 3,282,653, 11-1-66, Cl. 23—273.

Rocha, John G., to United States of America, Army. Link guide mechanism for externally powered automatic guns. 3,282,163, 11-1-66, Cl. 89—33.

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Renckhoff, Gustav, and Rudolph. 3,282,989.

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CLASSIFICATION OF PATENTS

ISSUED NOVEMBER 1, 1966

NOTE.—First number, class; second number, subclass; third number, patent number

2—113	3,281,863	29—237	3,281,929	52—704	3,282,015	73—161	3,282,096	91—420	3,282,168	106—269	3,282,718
4—161	3,281,864	470.1	3,281,930	732	3,282,016	170	3,282,097	92—24	3,282,169	307	3,282,719
206	3,281,865	473.1	3,281,931	741	3,282,017	178	3,282,098	84	3,282,170	108—28	3,282,230
211	3,281,866	495	3,281,932	53—137	3,282,018	189	3,282,099	99	3,282,171	110—99	3,282,231
252	3,281,867	520	3,281,933	160	3,282,019	190	3,282,100	128	3,282,172	128	3,282,232
263	3,281,868	568	3,281,934	180	3,282,020	194	3,282,101	93—8	3,282,173	175	3,282,233
288	3,281,869		3,281,935	201	3,282,021	210	3,282,103		3,282,174	112—51	3,282,234
5—13	3,281,870	30—41.6	3,281,936	210	3,282,022	228	3,282,102	58.1	3,282,175	79	3,282,235
	3,281,871	43.6	3,281,937	237	3,282,023	304	3,282,104	95—1.1	3,282,176	152	3,282,236
63	3,281,872	365	3,281,938	247	3,282,024	339	3,282,105	1.7	3,282,177	236	3,282,237
68	3,281,873	33—3	3,281,939	304	3,282,025	355	3,282,106	10	3,282,178	114—52	3,282,238
8—41	3,282,638	46	3,281,940	306	3,282,026		3,282,107		3,282,179	125	3,282,239
127.6	3,282,639	53	3,281,941	55—21	3,282,027	362.3	3,282,108	11	3,282,180	115—41	3,282,240
128	3,282,640	98	3,281,942	66	3,282,028	379	3,282,109		3,282,181	116—67	3,282,241
9—1	3,281,874	138	3,281,943	141	3,282,029	398	3,282,110	11.5	3,282,182	114	3,282,242
26	3,281,875	163	3,281,944	170	3,282,030	410	3,282,111	12	3,282,183	117—1	3,282,720
12—146	3,281,876	170	3,281,945	203	3,282,031	418	3,282,112	14	3,282,184	7	3,282,721
13—6	3,283,055	184.5	3,281,946	226	3,282,032	422	3,282,113	31	3,282,185	16	3,282,722
15—21	3,281,877	212	3,281,947	234	3,282,033	425	3,282,114	38	3,282,186	47	3,282,723
22	3,281,878	34—3	3,281,948	354	3,282,034	432	3,282,115	53	3,282,187	62.2	3,282,724
84	3,281,879	5	3,281,949	400	3,282,035	433	3,282,116	64	3,282,188	64	3,282,725
93	3,281,880		3,281,950	56—19	3,282,036	517	3,282,117		3,282,189	68	3,282,726
167	3,281,881	12	3,281,951	57—18	3,282,037	74—5.34	3,282,118	73	3,282,190	68.5	3,282,727
179	3,281,882	41	3,281,952	155	3,282,038		3,282,119		3,282,191	100	3,282,728
210	3,281,883	45	3,281,953	164	3,282,039	75	3,282,120	89	3,282,192	138.8	3,282,729
244	3,281,884	92	3,281,954	165	3,282,040	245	3,282,121	96—35	3,282,691	212	3,282,730
393	3,281,885		3,281,956	58—22.7	3,282,041	473	3,282,122		3,282,692	118—49	3,282,243
420	3,281,886	99	3,281,955	23	3,282,042	479	3,282,123	49	3,282,693	126	3,282,244
569	3,281,887	156	3,281,957	24	3,282,043	494	3,282,124	61	3,282,694	263	3,282,245
16—97	3,281,888	222	3,281,958	59—78.1	3,282,044	560	3,282,125		3,282,695	264	3,282,246
17—2	3,281,889	35—6	3,281,959	93	3,282,045	568	3,282,126	67	3,282,696	323	3,282,247
45	3,281,890	9	3,281,960	60—29	3,282,046	573	3,282,127	82	3,282,697	612	3,282,248
	3,281,891		3,281,961	30	3,282,047	593	3,282,128	83	3,282,643	620	3,282,249
18—2	3,281,892	12	3,281,962	36	3,282,048	677	3,282,129		3,282,698	119—14.04	3,282,250
2.5	3,281,893		3,281,963	52	3,282,049	757	3,282,130	84	3,282,699	23	3,282,251
4	3,281,894		3,281,964		3,282,050	758	3,282,131	108	3,282,700	51.11	3,282,252
	3,281,895		3,281,965	230	3,282,051	75—.5	3,282,675	98—36	3,282,193	120—1	3,282,253
14	3,281,896	21	3,281,966	262	3,282,052	12	3,282,676	59	3,282,194	42.1	3,282,254
	3,281,897	24	3,281,967	263	3,282,053	34	3,282,677	99—1	3,282,701	42.4	3,282,255
30	3,281,898	35	3,281,968	61—35	3,282,054	41	3,282,678	54	3,282,702	122—149	3,282,256
	3,281,899	46	3,281,969	36	3,282,055	52	3,282,679	71	3,282,703	250	3,282,257
	3,281,900	53	3,281,970	39	3,282,056	76	3,282,680	100	3,282,704	123—11	3,282,258
34.1	3,281,901	36—2.5	3,281,971	72.1	3,282,057	84.1	3,282,681	118	3,282,705	41	3,282,259
19—106	3,281,902	37—141	3,281,972	62—6	3,282,058	117	3,282,682	141	3,282,706	55	3,282,260
22—57.3	3,281,903	40—33	3,281,973	12	3,282,059		3,282,683	142	3,282,707	119	3,282,261
85	3,281,904	103	3,281,974	24	3,282,060	125	3,282,684	172	3,282,708	124—5	3,282,262
23—88	3,282,641	120	3,281,975	37	3,282,061		3,282,685	254	3,282,195	125—15	3,282,263
91	3,282,642	152	3,281,976	39	3,282,062		3,282,686	310	3,282,196	128—78	3,282,264
153	3,282,644	158	3,281,977	45	3,282,063	128	3,282,687	403	3,282,198	91	3,282,265
176	3,282,645	308	3,281,978		3,282,064	138	3,282,688	405	3,282,197	209	3,282,266
177	3,282,646	42—25	3,281,979	140	3,282,065	170	3,282,689	100—90	3,282,199	399	3,282,267
199	3,282,647	43—9	3,281,980	266	3,282,067	174	3,282,690	101—4	3,282,200	129—15	3,282,268
203	3,282,648	25.2	3,281,981	457	3,282,068	77—55	3,282,132	9	3,282,201	16	3,282,269
230	3,282,649	42.5	3,281,982	64—27	3,282,069	88	3,282,133	37	3,282,202	131—84	3,282,270
253	3,282,650	43.12	3,281,983	65—4	3,282,666	79—5	3,282,134	93	3,282,203	198	3,282,271
	3,282,651	44—69	3,282,662	8	3,282,667	81—53	3,282,135		3,282,204	133—1	3,282,272
262	3,282,652	80	3,282,663	12	3,282,668	77	3,282,136		3,282,205	134—41	3,282,731
273	3,282,653	46—95	3,281,984	59	3,282,669	302	3,282,137		3,282,206	102	3,282,273
	3,282,654	202	3,281,985		3,282,670	82—14	3,282,138	114	3,282,207	135—3	3,282,274
324	3,282,655	47—9	3,281,986	142	3,282,066	25	3,282,139	149.2	3,282,208	20	3,282,275
344	3,282,656		3,281,987	319	3,282,671	83—7	3,282,140	373	3,282,209	136—20	3,282,732
24—33	3,281,905	33	3,281,988	66—147	3,282,070	527	3,282,141	426	3,282,210	86	3,282,733
	3,281,906	48—184	3,282,664	169	3,282,071	659	3,282,142	102—7.4	3,282,211		3,282,734
73	3,281,907	49—57	3,281,989	68—12	3,282,072	680	3,282,143	8	3,282,212		3,282,735
86	3,281,908	306	3,281,990	18	3,282,073	84—1.01	3,283,056	20	3,282,213		3,282,736
198	3,281,909	352	3,281,991	71—2.3	3,282,672		3,283,057	38	3,282,214	120	3,282,737
25—36	3,281,910	396	3,281,992	2.6	3,282,673	375	3,282,144		3,282,215		3,282,738
118	3,281,911	425	3,281,993	64	3,282,674	85—45	3,282,145	66	3,282,714	132	3,282,739
26—28	3,281,912	51—92	3,281,994	72—13	3,282,079	86—10	3,282,146	92.5	3,282,216	170	3,282,740
28—21	3,281,913	165	3,281,995	21	3,282,074	25	3,282,147	103—11	3,282,217	211	3,282,741
29—24.5	3,281,914	204	3,281,996		3,282,075	88—14	3,282,148	38	3,282,218	137—1	3,282,276
25.3	3,281,915	304	3,282,665	35	3,282,076		3,282,149	53	3,282,219	3	3,282,277
33	3,281,916	52—57	3,281,997	56	3,282,077	24	3,282,150		3,282,220	26	3,282,278
	3,281,917	66	3,281,998	82	3,282,078		3,282,151	111	3,282,221	81.5	3,282,279
	3,281,918	82	3,281,999	206	3,282,080		3,282,152	118	3,282,222		3,282,280
90	3,281,919	101	3,282,000	73—1	3,282,081		3,282,153	148	3,282,223		3,282,281
96	3,281,920	111	3,282,001	15	3,282,082	28	3,282,154	152	3,282,224		3,282,282
155.5	3,281,921	162	3,282,002	32	3,282,084		3,282,155	162	3,282,225	83	3,282,283
	3,281,922	220	3,282,003	37.7	3,282,085	91	3,282,156	232	3,282,226	110	3,282,284
	3,281,923	269	3,282,004	67.8	3,282,086	107	3,282,157	271	3,282,227	116.5	3,282,285
155.62	3,281,924	364	3,282,005	71.5	3,282,087		3,282,158	105—358	3,282,228	119	3,282,286
159.2	3,281,925	475	3,282,006	71.6	3,282,088		3,282,159	369	3,282,229	246.13	3,282,287
183.5	3,282,657		3,282,007	78	3,282,089		3,282,160	106—27	3,282,709	315	3,282,288
	3,282,658	516	3,282,008	80	3,282,090	89—1.818	3,282,161	38.5	3,282,710	375	3,282,289
	3,282,659	531	3,282,009	99	3,282,091	33	3,282,162	39	3,282,711	565	3,282,290
193	3,282,660	573	3,282,011	119	3,282,092		3,282,163		3,282,712	608	3,282,291
196	3,282,661	582	3,282,010	147	3,282,093	40	3,282,164	59	3,282,713	614.15	3,282,292
203	3,281,926	618	3,282,012	150	3,282,094	1190	3,282,165	72	3,282,715	614.19	3,282,293
235	3,281,927	624	3,282,013	151	3,282,095	191	3,282,166	186	3,282,716	624.14	3,282,294
	3,281,928	627	3,282,014	161	3,282,083	91—306	3,282,167	205	3,282,717	625.17	3,282,295

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3,283,187	3,282,604	3,283,112	3,282,750	3,282,424	3,282,667
3,283,279	3,282,642	3,283,114	3,282,760	3,282,434	3,282,671
3,283,280	3,282,720	3,283,116	3,282,765	3,282,435	3,282,676
14 : 3,282,105	3,282,726	3,283,226	3,282,775	3,282,462	3,282,684
3,282,293	3,282,817	3,283,251	3,282,779	3,282,467	3,282,686
3,282,316	3,282,876	3,283,301	3,282,792	3,282,474	3,282,744
3,282,404	3,282,913	3,283,314	3,282,799	3,282,487	3,282,757
3,282,591	3,283,023	22 : Re.26,107	3,282,844	3,282,493	3,282,769
3,282,621	3,283,140	3,281,978	3,282,850	3,282,505	3,282,772
3,282,709	3,283,154	3,281,992	3,282,862	3,282,519	3,282,809
3,283,079	3,283,157	3,281,994	3,282,863	3,282,537	3,282,819
3,283,216	3,283,194	3,282,081	3,282,881	3,282,552	3,282,835
15 : 3,281,890	3,283,197	3,282,104	3,282,884	3,282,607	3,282,849
3,282,006	3,283,199	3,282,233	3,282,893	3,282,631	3,282,899
3,282,027	3,283,205	3,282,273	3,282,904	3,282,637	3,282,955
3,282,031	3,283,225	3,282,417	3,282,909	3,282,643	3,282,982
3,282,292	3,283,245	3,282,479	3,282,911	3,282,645	3,283,005
3,282,301	3,283,276	3,282,623	3,282,916	3,282,646	3,283,031
3,282,408	3,283,283	3,282,630	3,282,934	3,282,651	3,283,034
3,282,470	21 : 3,281,908	3,282,678	3,282,949	3,282,653	3,283,055
3,282,501	3,281,919	3,282,692	3,282,958	3,282,683	3,283,093
3,282,567	3,281,944	3,282,701	3,282,971	3,282,693	3,283,099
3,282,730	3,281,951	3,282,704	3,282,986	3,282,694	3,283,115
3,283,123	3,281,952	3,282,756	3,282,991	3,282,699	3,283,162
3,283,235	3,281,981	3,282,887	3,282,997	3,282,700	3,283,181
16 : 3,282,298	3,282,007	3,283,163	3,282,998	3,282,702	3,283,188
3,282,469	3,282,008	3,283,229	3,283,010	3,282,713	3,283,190
3,282,583	3,282,057	23 : 3,281,997	3,283,013	3,282,718	3,283,196
3,282,626	3,282,072	24 : 3,281,975	3,283,016	3,282,736	3,283,238
3,282,635	3,282,080	3,282,021	3,283,044	3,282,749	Re.26,106
3,282,734	3,282,102	3,282,142	3,283,067	3,282,758	3,281,882
3,283,215	3,282,121	3,282,473	3,283,082	3,282,770	3,281,906
17 : 3,281,866	3,282,124	3,282,480	3,283,084	3,282,778	3,281,907
3,281,896	3,282,125	3,282,595	3,283,095	3,282,784	3,281,926
3,281,928	3,282,129	3,282,836	3,283,131	3,282,821	3,281,957
3,282,243	3,282,133	3,282,895	3,283,141	3,282,830	3,281,967
3,282,348	3,282,157	3,282,912	3,283,155	3,282,837	3,281,989
3,283,019	3,282,158	3,282,924	3,283,158	3,282,838	3,282,013
3,283,035	3,282,159	3,282,931	3,283,164	3,282,888	3,282,014
3,283,046	3,282,160	3,283,006	3,283,198	3,282,908	3,282,035
18 : 3,282,363	3,282,241	3,283,033	3,283,202	3,282,919	3,282,066
19 : 3,282,100	3,282,261	3,283,166	3,283,217	3,282,927	3,282,073
3,282,103	3,282,264	3,283,214	3,283,221	3,282,928	3,282,078
3,282,178	3,282,274	26 : 3,281,942	3,283,249	3,282,929	3,282,079
3,282,187	3,282,288	3,282,037	3,283,254	3,282,932	3,282,139
3,282,194	3,282,290	3,282,209	3,283,259	3,282,939	3,282,143
3,282,248	3,282,328	3,282,218	3,283,262	3,282,951	3,282,177
3,282,279	3,282,360	3,282,287	3,283,274	3,282,975	3,282,199
3,282,280	3,282,361	3,283,104	3,283,302	3,282,983	3,282,207
3,282,282	3,282,376	3,283,146	3,283,335	3,282,990	3,282,240
3,282,297	3,282,382	27 : 3,282,173	30 : 3,282,418	3,282,993	3,282,245
3,282,562	3,282,384	3,282,822	3,282,625	3,283,000	3,282,269
3,282,589	3,282,385	28 : Re.26,108	3,283,153	3,283,017	3,282,286
3,282,596	3,282,391	3,282,302	31 : 3,281,869	3,283,030	3,282,295
3,282,632	3,282,393	3,283,057	3,281,884	3,283,040	3,282,309
3,282,659	3,282,405	3,283,062	3,281,888	3,283,058	3,282,311
3,282,710	3,282,427	29 : 3,281,870	3,281,898	3,283,060	3,282,329
3,282,714	3,282,428	3,281,871	3,281,924	3,283,074	3,282,350
3,282,739	3,282,429	3,281,885	3,281,932	3,283,075	3,282,383
3,282,755	3,282,439	3,281,894	3,281,938	3,283,076	3,282,395
3,282,805	3,282,455	3,281,902	3,281,940	3,283,078	3,282,441
3,282,857	3,282,461	3,281,916	3,281,960	3,283,080	3,282,447

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U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

November 1, 1966 Volume 832 Number 1

TRADEMARKS

NOTICES

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 74,530 (FORD), Ford Motor Company, Automobiles and their parts; **Reg. No. 643,185**, same, Passenger cars and trucks; **Reg. No. 688,483**, same, Automobile and truck leasing service, **filed** Aug. 17, 1966, D.C., N. Mex. (Albuquerque), Doc. 6779, *Ford Motor Company* v. *Ford Leasing Company et al.*

Reg. No. 79,845 (MERCK), Merck & Co., Certain chemicals; **Reg. No. 108,566**, same, Certain named chemicals, medicines, and pharmaceutical preparations; **Reg. No. 651,404** (MSD AND DESIGN), Merck & Co., Inc., Preparations containing hormonal compound and antibiotic; **Reg. No. 656,016**, same, Human and veterinary medicinal, pharmaceutical, and biological products for internal and topical use; **Reg. No. 660,963** (DIURIL), same, Diuretic; **Reg. No. 676,884**, same, Drug—namely, chlorothiazide; **Reg. No. 687,813** (HYDRODIURIL), same, Medicinal compound for use as a diuretic and as an agent in the treatment of hypertension; **Reg. No. 692,711** (HYDROPRESS), same, Medicinal preparation for use in the treatment of hypertension, **filed** Sept. 3, 1965, D.C., E.D.N.Y. (Brooklyn), Doc. 65C–924, *Merck & Co., Inc.* v. *Henry Schein, Inc.* Stipulation of dismissal Aug. 5, 1966.

Reg. No. 108,566. (See Reg. No. 79,845.)

Reg. No. 151,508(a) (HOMELITE), Home Electric Lighting Company, Electric generating plants; **Reg. No. 424,967(a)**, same, Homelite Corporation, Gasoline-engine driven blower units for supplying and exhausting air and gases and for general ventilating purposes, etc.; **Reg. No. 546,629(a)**, same, Water pumps, portable chain saws, and paving breakers; **Reg. No. 770,727(a)**, same, Textron, Inc., Outboard engines, **filed** Aug. 16, 1966, D.C.N.J. (Newark), Doc. 825–66, *Textron, Inc.* v. *American Homelight Corporation et al.*

Reg. No. 151,508(b); **Reg. No. 424,967(b)**; **Reg. No. 546,629(b)**; **Reg. No. 663,733** (HOMELITE), Textron, Inc., Portable flood lights; **Reg. No. 770,727(b)**, **filed** Aug. 17, 1966, D.C., E.D. Pa. (Philadelphia), Doc. 40979, *Textron, Inc.* v. *American Homelight of Phila. et al.* **Same, filed** Aug. 19, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c1530, *Textron, Inc.* v. *American Homelight Corporation of Illinois, Inc.*

CONDITION OF TRADEMARK APPLICATIONS AS OF SEPTEMBER 30, 1966

Total number of applications awaiting action [excluding renewals and Sec. 12(c)] 28,584
Date of oldest new application ..... August 4, 1965
Date of oldest amended application (filing date) ..... November 26, 1963

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. BETTENDORF, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	8-4-65	4-30-64
(II) F. H. WETHERBEE, Classes 1, 3, 6, 7, 9, 10, 18, 22, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	12-3-65	11-23-63
Renewals (All Classes)	8-17-66	
Sec. 12(c) Publications (All Classes)	8-23-66	

Applications filed during the month of September—2,089

Registrations Issued ..... 475—No. 817,598 to No. 818,072
Renewals Issued 60

For the quarter July 1, 1966, through September 30, 1966

Applications filed 6,535
Registrations issued 5,302
Renewals issued 939
Cancellations under Section 8 1,478

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

Reg. No. 375,118 (EIMAC in script), Eitel-McCullough, Inc., Vacuum tubes; **Reg. No. 420,697**, same, Vacuum condensers wherein electrodes are mounted within an evacuated envelope for use as an electrical capacitor; **Reg. No. 601,596**, same, Electronic equipment and parts—namely, electron tube devices, vacuum tubes, vacuum condensers, vacuum switches, gas tubes, etc.; **Reg. No. 618,577** (EIMAC), same; **Reg. No. 693,775** (EIMAC (in script) AND DESIGN), same, **filed** Aug. 5, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c1446, *Varian Associates* v. *Imac Corp.*

Reg. No. 378,576 (BRE-A-COL), Frederick Stearns & Company, Medicinal preparation used in the treatment of coughs, **filed** Aug. 15, 1963, D.C., Puerto Rico (San Juan), Doc. 320–63, *Sterling Drug Inc. et al.* v. *The Granchel Medicine, Inc.* Action dismissed without prejudice Aug. 5, 1966.

Reg. No. 420,697. (See Reg. No. 375,118.)

Reg. No. 424,967. (See Reg. No. 151,508.)

Reg. No. 428,563 (PAL), James Heddon's Sons, Fishing rods; **Reg. No. 613,544** (OLD PAL AND DESIGN), Jacob M. Goldstein, doing business as Penn Metal Ware Co., Fishing equipment—namely, minnow buckets, bait boxes, fly and leader boxes, minnow traps, and wade cans; **Reg. No. 796,497** (OLD PAL), Old Pal, Inc., Fishing equipment—namely, minnow buckets, bait boxes, fly and leader boxes, minnow traps, wade cans, fishing rods and reels therefor; **Reg. No. 798,498** (OLD PAL AND DESIGN), same, **filed** Aug. 10, 1966, D.C., S.D.N.Y., Doc. 66/2495, *Old Pal, Inc.* v. *James Heddon's Sons.*

Reg. No. 546,629. (See Reg. No. 151,508.)

Reg. No. 601,596. (See Reg. No. 375,118.)

Reg. No. 613,544. (See Reg. No. 428,563.)

Reg. No. 618,577. (See Reg. No. 375,118.)

Reg. No. 643,185. (See Reg. No. 74,530.)

Reg. No. 651,464. (See Reg. No. 79,845.)

Reg. No. 656,016. (See Reg. No. 79,845.)

Reg. No. 660,963. (See Reg. No. 79,845.)

Reg. No. 663,733. (See Reg. No. 151,508(b).)

Reg. No. 676,884. (See Reg. No. 79,845.)

Reg. No. 687,813. (See Reg. No. 79,845.)

Reg. No. 688,483. (See Reg. No. 74,530.)

Reg. No. 692,711. (See Reg. No. 79,845.)

Reg. No. 693,775. (See Reg. No. 375,118.)

Reg. No. 716,838 (CHATHAM CREATED RUBIES), Carroll F. Chatham, doing business as Chatham Research Laboratories, Unmounted gems—namely, ruby crystals grown according to a special process; **Reg. No. 716,839** (CHATHAM CREATED EMERALDS), same, Unmounted gems—namely, emerald crystals grown according to a special process, **filed** Aug. 3, 1966, D.C., N.D. Calif. (San Francisco), Doc. 45,493, *Chatham Research Laboratories* v. *Union Carbide Corporation.*

Reg. No. 716,839. (See Reg. No. 716,838.)

Reg. No. 743,328 (KENSINGTON), Terra International Company, Ltd., Radio receiving sets, **filed** Aug. 17, 1966, D.C., S.D.N.Y., Doc. 66/2599, *Terra International Co., Ltd.* v. *F. J. Strauss Co., Inc.*

Reg. No. 743,572 (MCDONALD'S), McDonald's Corporation, assignee of McDonald's Self-Service System, Drive-In restaurant services; **Reg. No. 750,692**, same; **Reg. No. 764,837** (REPRESENTATION OF A BUILDING), same, **filed** Aug. 5, 1966, D.C., W.D. Ky. (Owensboro), Doc. 2139, *McDonald's Corporation* v. *N. J. McDonald, Incorporated et al.*

Reg. No. 750,692. (See Reg. No. 743,572.)

Reg. No. 750,911 (FUTURE), The United States Junior Chamber of Commerce (Missouri incorporated association), Magazine, **filed** Aug. 3, 1966, D.C., District of Columbia, Doc. 2061–66, *The United States Jaycees (Missouri corporation)* v. *L. Brent Bozell.*

Reg. No. 761,657 (WORLD BOOK), Field Enterprises Educational Corporation, Books; **Reg. No. 794,812**, same, Books and publications such as booklets, globes, and programmed learning aids including printed material for use therewith, **filed** Aug. 5, 1966, D.C., E.D.N.Y. (Brooklyn), Doc. 66C–742, *Field Enterprises Educ. Corp.* v. *Bobley Publishing Corp.*

Reg. No. 764,837. (See Reg. No. 743,572.)

Reg. No. 770,727. (See Reg. No. 151,508.)

Reg. No. 794,812. (See Reg. No. 761,657.)

Reg. No. 796,497. (See Reg. No. 428,563.)

Reg. No. 798,498. (See Reg. No. 428,563.)

Reg. No. 807,899 (DESIGN OF A BOTTLE REPRESENTING A HUMAN FIGURE), Foremost Sales Promotions, Inc., Retail liquor store services, **filed** Aug. 2, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c1423, *Foremost Sales Promotions, Inc.* v. *L. P. Liquors, Inc. et al.*

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[**NOTE:** For publication of marks presented in applications for registration in one class, see section 2.]

SN 198,361. Kiefer-Stewart Company, Inc., Indianapolis, Ind. Filed July 22, 1964.



Class 100—Miscellaneous

For Consultation and Advice in Adapting Data Processing and Office Equipment in the Various Operations of Business; and Leasing of Data Processing Equipment.

Class 101—Advertising and Business

For Layout and Planning of Commercial and Industrial Flow Operations for Efficient Organization; and Computer Programming of Commercial and Industrial Operations.

Class 107—Education and Entertainment

For Courses of Instruction in Programming and Operation of Data Processing Equipment.

First use June 30, 1964.

SN 206,312. Thermo-Electron Engineering Corporation, Waltham, Mass. Filed Nov. 16, 1964.



The shading in the drawing is for contrast and does not reflect a claim for color.

Class 21—Electrical Apparatus, Machines, and Supplies

For Solar Heated Thermionic Diodes, Isotope Fueled Electric Power Converters, Magneto Hydrodynamic Generators, Thermo-Electron Engines Utilizing the "Edison Effect," Isotope Fueled Thermionic Converters, Gas-Fired Thermionic Generators and Solar Thermionic Generators.

Class 26—Measuring and Scientific Appliances

For Cesium Thermionic Converters for Testing and Evaluating the Efficiency and Amount of Electrical Energy Obtained From the Conversion of Thermal Energy to Electrical Energy, and Magneto Hydrodynamic Generators.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Gas-Fired Thermionic Converters Utilizing High Temperature Gases To Produce Auxiliary Electric Power.

First use Mar. 14, 1960.

SN 209,334. Chandor SA, Baar, Zoug, Switzerland. Filed Jan. 5, 1965.

CHANDOR

Owner of Swiss Reg. No. 201,096, dated Nov. 21, 1963.

Class 51—Cosmetics and Toilet Preparations

For Hair Spray, Hair Setting Lotion, Hair Cream, Permanent-Wave-Lotions, Hair Tonic, Eaux de Toilettes, Eaux de Colognes, Perfumes, Foam Baths, Personal Deodorants, Nail-Varnish Removers, Nail-Skin Removers, Nail Varnishes, Lipsticks, Eye Make Up and Preparations, Skin Creams, Talcum-Powder, Preparations for Sunray Protection.

Class 52—Detergents and Soaps

For Hair Shampoos and Toilet Soap.

SN 211,627. Christian Dierig Aktiengesellschaft, Augsburg, Germany. Filed Feb. 9, 1965.

TREFF 66

Owner of German Reg. No. 795,593, dated Aug. 12, 1964.

Class 39—Clothing

For Sweaters, Shirts, Caps, Hosiery, Suits, and Underwear.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Table and Bed Linen, Particularly Table-Cloths, Napkins, Towels and Drying-Cloths, Bed-Covers, Pillow-Cases and Sheets, Curtains, Bedspreads, Casement-Curtains, Woven and Knitted Fabrics, Felt, Furniture Fabrics, Covering Fabrics, Textile Wall Covering Materials, Curtain Materials, Casement-Cloth, Tickings, Sateens, Poplins and Fashion Prints, Drapery Materials, Underwear Materials, Table and Bed Linen Materials; Afore-Said Fabrics Coated, Impregnated or Treated With Plastic, Foam Material or Foam Foils, i.e., Woven and Knitted Materials, Furniture Fabrics, Covering Fabrics, Textile Wall Covering Material, Sateens, Poplins and Fashion Prints, Draperies, Blankets.

SN 211,628. Christian Dierig Aktiengesellschaft, Augsburg, Germany. Filed Feb. 9, 1965.

TREFFER

Owner of German Reg. No. 795,594, dated Aug. 12, 1964.

Class 39—Clothing

For Sweaters, Shirts, Caps, Hosiery, Suits, and Underwear.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Table and Bed Linen, Particularly Table-Cloths, Napkins, Towels and Drying-Cloths, Bed-Covers, Pillow-Cases and Sheets, Curtains, Bedspreads, Casement-Curtains, Woven and Knitted Fabrics, Felt, Furniture Fabrics, Covering Fabrics, Textile Wall Covering Materials, Curtain Materials, Casement-Cloth, Tickings, Sateens, Poplins and Fashion Prints, Drapery Materials, Underwear Materials, Table and Bed Linen Materials; Afore-Said Fabrics Coated, Impregnated or Treated With Plastic, Foam Material or Foam Foils, i.e., Woven and Knitted Materials, Furniture Fabrics, Covering Fabrics, Textile Wall Covering Material, Sateens, Poplins and Fashion Prints, Draperies, Blankets.

SN 225,912. Alberto-Culver Company, Melrose Park, Ill. Filed Aug. 18, 1965.

VO5

Owner of Reg. Nos. 335,421, 771,267, and others.

Class 51—Cosmetics and Toilet Preparations

For Preparations for the Hair, Including Permanent Wave Lotion, Hair Spray, Setting Lotion, Creme Rinse, Dressing and Conditioner, Hair Brightener, and Conditioner for Colored Hair.
First use Mar. 1, 1955.

Class 52—Detergents and Soaps

For Hair Shampoo, and Shampoo Concentrate.
First use Apr. 19, 1963.

SN 226,175. Stanley Home Products, Inc., Westfield, Mass. Filed Aug. 20, 1965.

CHAIRMAN

Owner of Reg. No. 577,332.

Class 51—Cosmetics and Toilet Preparations

For Men's Cologne in Liquid and Solid Form, After Shave Lotion, After Shave Talc, Personal Deodorant, Hair Dressing, Skin Lotion, and Shaving Cream.
First use Oct. 2, 1951.

Class 52—Detergents and Soaps

For Hair Shampoo.
First use Apr. 7, 1961.

SN 226,597. Cyclops Corporation, Bridgeville, Pa. Filed Aug. 27, 1965.

CYCLOPS

The drawing is lined for the color orange.

Class 2—Receptacles

For Galvanized Fabricated Ware or Products—Namely, Tubs, Pails, Buckets, Cans, and Hods.
First use May 1965.

Class 12—Construction Materials

For Steel Roofing, Siding and Decking, Steel Concrete Forms, Roof Drainage Products—Namely, Gutters, Pipes, Miters, End Caps, Slip Connectors, Spouts, and Related Accessories.
First use May 1965.

Class 13—Hardware and Plumbing and Steam Fitting Supplies

For Sprinklers, Pipe and Pipe Accessories—Namely, Elbows, Angles, and T-Joints.
First use May 1965.

Class 14—Metals and Metal Castings and Forgings

For Steels, Alloys, Refractory Metals and Other Metals and Metal Products in the Form of Ingots, Blooms, Bars, Billets, Rods, Wire, Plates, Sheets, Strip, Strapping, Forgings, Castings and Metal Articles Wrought Therefrom, Said Steels Including Carbon Steels, Silicon Steels, Stainless Steels, Tool Steels, Alloy Steels and Galvanized Steels.
First use May 3, 1965.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Shovels and Strapping Tools and Strapping Tool Accessories—Namely, Staples, Corner Protectors, Anchor Plates, Reel Stands, Snubber Plates, and Skid Retarders.
First use May 1965.

SN 227,936. Duron Paint Manufacturing Company, Inc., Beltsville, Md. Filed Sept. 16, 1965.

DURACREST

Class 20—Linoleum and Oiled Cloth

For Vinyl Wall Covering.

Class 37—Paper and Stationery

For Wallpaper.
First use Sept. 7, 1965.

SN 233,547. Young Electric Sign Company, Salt Lake City, Utah. Filed Nov. 29, 1965.

YESCO

The drawing is lined for blue but no claim is made to color.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Signs.

Class 50—Merchandise Not Otherwise Classified

For Non-Electrical Signs.
First use Aug. 15, 1937.

SN 234,518. Bix Manufacturing Company, West Point, Iowa. Filed Dec. 13, 1965.

BIX

Class 16—Protective and Decorative Coatings

For Clear Liquid Wood Finish, Liquid Wood Stain and Wood Antiquing and Glazing Liquids.
First use Jan. 1, 1960.

Class 52—Detergents and Soaps

For Paint, Varnish, and Wood Stain Remover.
First use April 1953.

SN 238,689. Hollister Incorporated, Chicago, Ill. Filed Feb. 14, 1966.

HOLLISTER

Owner of Reg. No. 548,113.

Class 37—Paper and Stationery

For Partially Printed Birth Certificate Forms, Congratulatory Birth Folders for Parents, Instruction Cards for Hospital Patients, Newborn Identification Forms, Reminder Cards for Bed, Room, Desk, and Cage Signs, and Identification Insert Cards.
First use July 1925.

Class 44—Dental, Medical, and Surgical Appliances

For Umbilical Cord Clamps, Surgical Devices in the Nature of Apparatus for Performing Circumcisions, Collectors of Specimens for Laboratory Tests, Laboratory Testing Devices for Bacteria, and Ostomy Products—Namely, Stoma Bags, Drainable Stoma Bags, Stoma Irrigator Drains, Irrigator Bags With Tube Clamp and Seal, Karaya Gum Sealing Rings, Ostomy Belts, Stoma Lubricants, Elastic Dilator Gloves, and Security Pouches for Irrigation.
First use at least as early as September 1959.

Class 50—Merchandise Not Otherwise Classified

For Bands or Bracelets of Flexible Material as Plastic Tubing, Bearing Identification Indicia and Designed To Encircle a Portion of the Body of a Human or an Animal or an Inanimate Object To Identify the Same, Bed Room, Desk, and Cage Signs, Footprinters and Fingerprinters.
First use July 1950.

SN 239,100. Super Valu Stores, Inc., Hopkins, Minn. Filed Feb. 18, 1966.

SUPER VALU

Owner of Reg. Nos. 631,486, 808,532, and others.

Class 6—Chemicals and Chemical Compositions

For Household Bleach Containing a Disinfectant and Deodorant.

Class 46—Foods and Ingredients of Foods

For Graham Crackers, Saltine Crackers, Canned Kidney Beans, Pork and Beans, Preserves, Jams, Jellies, Marmalade, Apple Butter, Canned Evaporated Milk, and Cake Mixes.
First use Jan. 10, 1966.

SN 239,954. Fleet-Wing Corporation, d.b.a. Wm. Penn Laboratories, Cleveland, Ohio. Filed Mar. 2, 1966.

WM. PENN

The drawing is lined for the colors red and blue, but no claim is made to these colors. The mark does not identify a particular living individual. Owner of Reg. Nos. 251,668, 251,669, and 271,188.

Class 1—Raw or Partly Prepared Materials

For Charcoal in Briquet Form and Charcoal Lighter Fluid.
First use at least as early as Apr. 29, 1964.

Class 6—Chemicals and Chemical Compositions

For Lighter Fluid for Cigar and Cigarette Lighters; Insecticides in Aerosol Form; Car Window Ice Removing Composition in Aerosol Form; Starting Fluid in Aerosol Form for Internal Combustion Engines; Hydraulic Brake Fluid; Antifreeze for Internal Combustion Engine Fuel System; Antifreeze for Internal Combustion Engine Cooling System; Radiator Rust Inhibitor and Water Pump Lubricant for Cooling Systems of Internal Combustion Engines; Radiator Solder Composition for Cooling Systems of Internal Combustion Engines.
First use at least as early as May 29, 1964.

Class 15—Oils and Greases

For Paraffin Wax; Oil for General Household Use; Lubricant for Internal Combustion Engine Valves; Lubricant for Two-Cycle Gasoline Engines.
First use Jan. 13, 1964.

Class 52—Detergents and Soaps

For Radiator Cleaning Composition for Cooling Systems of Internal Combustion Engines; and Solvent for Oil and Grease; and Varnish, Gum and Sludge Formed in an Internal Combustion Engine; Washing Composition for Automotive Windshields; Washing Composition for Automotive Bodies.
First use at least as early as Mar. 4, 1964.

SN 239,955. Fleet-Wing Corporation, d.b.a. Wm. Penn Laboratories, Cleveland, Ohio. Filed Mar. 2, 1966.

WM. PENN

The mark does not identify a particular living individual. Owner of Reg. Nos. 251,668, 251,669, and 271,188.

Class 1—Raw or Partly Prepared Materials

For Charcoal in Briquet Form and Charcoal Lighter Fluid.
First use at least as early as Apr. 29, 1964.

Class 6—Chemicals and Chemical Compositions

For Lighter Fluid for Cigar and Cigarette Lighters; Insecticides in Aerosol Form; Car Window Ice Removing Composition in Aerosol Form; Starting Fluid in Aerosol Form for Internal Combustion Engines; Hydraulic Brake Fluid; Antifreeze for Internal Combustion Engine Fuel System; Antifreeze for Internal Combustion Engine Cooling System; Radiator Rust Inhibitor and Water Pump Lubricant for Cooling Systems of Internal Combustion Engines; Radiator Solder Composition for Cooling Systems of Internal Combustion Engines.
First use at least as early as May 29, 1964.

Class 15—Oils and Greases

For Paraffin Wax; Oil for General Household Use; Lubricant for Internal Combustion Engine Valves; Lubricant for Two-Cycle Gasoline Engines.
First use Jan. 13, 1964.

Class 52—Detergents and Soaps

For Radiator Cleaning Composition for Cooling Systems of Internal Combustion Engines; and Solvent for Oil and Grease; and Varnish, Gum and Sludge Formed in an Internal Combustion Engine; Washing Composition for Automotive Windshields; Washing Composition for Automotive Bodies.
First use at least as early as Mar. 4, 1964.

SN 240,231. Morton International, Inc., Chicago, Ill. Filed Mar. 7, 1966.



Class 4—Abrasives and Polishing Materials

For Preparation Used to Clean, Preserve, Polish and Beautify Finished Surfaces, Furniture Polishes and Waxes, Floor Polishes and Waxes, Automobile Polishes and Waxes, Combination Cleaners and Polishes, and Cleaner-Wax and Cleaner-Polish Combinations for Household, Automotive, Institutional, and Industrial Use.

Class 6—Chemicals and Chemical Compositions

For Laundry Starch.

Class 16—Protective and Decorative Coatings

For Preparations for Providing a Protective and Preservative Coating or Film on Automobile Bodies and Accessories, and on Painted, Lacquered, Enameled, Varnished or Porcelain Surfaces, and on Metals, Floors, Furniture, Cabinets, Woodwork and the Like.

Class 29—Brooms, Brushes, and Dusters

For Sponges.

Class 52—Detergents and Soaps

For Metal and Glass Cleaning Preparations, Drain Cleaners, Polish and Wax Removers, Cleaning Preparations for Automobile, Industrial, Institutional and General Household Use.

First use on or about Dec. 21, 1965.

SN 240,399. Bata Shoe Company, Inc., Belcamp, Md. Filed Mar. 8, 1966.

MILIPOL

Class 1—Raw or Partly Prepared Materials

For Synthetic Rubber, and Synthetic Rubber Sold in Sheet Form for Use in the Manufacture of Shoe Sole Plates, Shoe Soles and Heels.

Class 39—Clothing

For Shoe Sole Plates, Shoe Soles and Heels Made Therefrom.

First use Feb. 2, 1966.

SN 241,722. S. A. Armstrong Limited, Toronto, Ontario, Canada. Filed Mar. 24, 1966.



Applicant disclaims the right to the exclusive use of all the reading matter apart from the trademark. Owner of Canadian Reg. No. 130,667, dated Apr. 19, 1963.

Class 13—Hardware and Plumbing and Steam Fitting Supplies

For Fittings for Circulating Pumps, Commercial Pumps, Vacuum Pumps, Water System Pumps, Air Compressors, Pressure Booster Systems, Water Heaters and Hot Water Building Heating Systems.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Circulating Pumps, Commercial Pumps, Air Compressors, Vacuum Pumps, Water System Pumps, Pressure Booster Systems and Parts and Controls for Such Pumps, Compressors and Systems; Materials Handling Equipment Including Lift Trucks, Lifter Jack Systems, Portable Elevators and Dumbwaiters.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Water Heaters, Hot Water Building Heating Systems, Parts and Controls for Such Heaters and Systems, Heat Exchangers for Heating and Cooling, Refrigerating Vessels, Including Evaporators, Condensers and Receivers, and Coolers—Namely, Air Aftercoolers, Quench Oil Coolers, Gas Coolers, and Packaged Cooling Units.

SN 246,012. Nutress Laboratories, Inc., North Hollywood, Calif. Filed May 23, 1966.

NUTRESS

Class 51—Cosmetics and Toilet Preparations

For Hair Conditioners, Hair Styling Lotion, and Permanent Waves.
First use Feb. 6, 1953.

Class 52—Detergents and Soaps

For Hair Shampoo.
First use Feb. 3, 1954.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 230,530. Fusecolor Corporation, Middlesex, N.J. Filed Oct. 19, 1965.

FUSECHIP

For Plastic Compounds and Material in the Form of Beads, Granules, Flakes, Chips and Other Shapes Used for Protective and Decorative Purposes on Floor, Wall, and Like Surfaces.
First use Mar. 26, 1965.

SN 237,431. Dairyland Seed Company, Inc., Campbellsport, Wis. Filed Jan. 27, 1966.

SWEET-DAN

For Farm Seeds.
First use on or about Oct. 11, 1965.

SN 237,436. Dairyland Seed Company, Inc., Campbellsport, Wis. Filed Jan. 27, 1966.

DAIRYLAND SEED

The word "Seed" is disclaimed apart from the mark as shown.
For Farm Seeds.
First use on or about Mar. 14, 1960.

SN 241,020. Geo. J. Ball, Inc., d.b.a. Jiffy-Pot Company of America, West Chicago, Ill. Filed Mar. 15, 1966.

JIFFY·MIX

For Growing Medium for Plants for Use as a Potting Soil.
First use on or before Feb. 16, 1965.

SN 241,188. Sigma Leather, Inc., New York, N.Y. Filed Mar. 16, 1966.

SIGMA

For Raw and Partly Finished Hides and Skins, and Tanned Leather.
First use Dec. 15, 1943.

SN 241,598. Moultrie Manufacturing Company, Moultrie, Ga. Filed Mar. 22, 1966.

CITY GARDENS

For Planting Kit Consisting of Potting Soil, a Plastic Pot Therefor, a Seed Capsule, and Planting Instruction Sheet.
First use September 1963.

SN 242,229. FMC Corporation, Philadelphia, Pa. Filed Mar. 30, 1966.

AVISCO

Owner of Reg. No. 631,527.
For Sheets and Films of Plastic Material.
First use Sept. 16, 1965.

SN 243,725. Spaulding Fibre Company, Inc., Tonawanda, N.Y. Filed Apr. 18, 1966.

MICROCLAD

For Vulcanized Fibre, Plastic Films, Paper and Laminated Material Furnished in Sheet, Tube, Block, Strip, Roll, and Board Form Which Is Provided With a Metal Outer Surface.
First use on or about July 23, 1963.

SN 243,727. Spaulding Fibre Company, Inc., Tonawanda, N.Y. Filed Apr. 18, 1966.

SPAULDITE

For Laminates Comprising Webs of Paper, Cotton, Fiberglass, Asbestos, Synthetic Yarns and the Like Impregnated With Natural or Synthetic Resins and Plastics.
First use on or about Mar. 20, 1931.

Class 2—Receptacles

SN 207,145. P-G Products Mfg. Co., Inc., Bronx, N.Y. Filed Nov. 30, 1964.

CERALON

For Vinyl Molding Compound Incorporated in Vases, Planters, and Urns.
First use Oct. 1, 1964.

SN 226,532. James Gray, d.b.a. Tube Sales and Services, Toronto, Ontario, Canada. Filed Aug. 26, 1965.

TUPAK

For Containers, Cylinders, and Tubes for Packaging, Storing, and Mailing.
First use May 25, 1965; in commerce June 15, 1965.

SN 233,017. Union Carbide Corporation, New York, N.Y. Filed Nov. 19, 1965.

PERFLEX

For Plastic Bags.
First use on or about June 18, 1965.

SN 233,825. Rexall Drug and Chemical Company, d.b.a. Tupperware Company, Los Angeles, Calif. Filed Dec. 2, 1965.

FRESH-N-FANCY

For Plastic Household Containers and Covers Therefor.
First use Nov. 12, 1965.

SN 234,060. Oneida Ltd., Oneida, N.Y. Filed Dec. 6, 1965.



Owner of Reg. Nos. 133,012, 790,671, and others.
For Plastic Dishes and Dinnerware.
First use Nov. 29, 1965.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 238,992. Antosek & Sons, Salisbury, N.C. Filed Feb. 17, 1966.

SONIC FLYTE

For Luggage—Namely, Men's and Women's Suitcases, Week-End Cases, Overnight Cases, Pullman Cases, Train Cases, Companion Cases, and Attaché Cases.
First use Jan. 18, 1966.

Class 4—Abrasives and Polishing Materials

SN 230,309. Turtle Wax, Inc., Chicago, Ill. Filed Oct. 15, 1965.

PENNY SHINE

The word "Shine" is disclaimed apart from the mark as shown. Owner of Reg. No. 707,357.
For Combined Cleaning and Polishing Preparation for Leather, Plastics, and the Like.
First use Sept. 22, 1965.

Class 5—Adhesives

SN 231,112. The Glidden Company, Cleveland, Ohio. Filed Oct. 22, 1965.



Owner of Reg. Nos. 628,501, 758,262, and others.
For Adhesives, Particularly for Panels and the Like.
First use Jan. 26, 1965.

SN 231,138. Phil Johnson, d.b.a. Red Cap Adhesives, Kansas City, Mo. Filed Oct. 22, 1965.

RED CAP



For Glue.
First use Oct. 6, 1965.

Class 6—Chemicals and Chemical Compositions

SN 174,653. The Dow Chemical Company, Midland, Mich. Filed Aug. 8, 1963.

DOWANOL

Owner of Reg. Nos. 140,588, 650,743, and others.
For Industrial Chemical Polyoxyalkylene Compositions Useful: as Chemical Intermediates; as Ingredients of Lacquers, Paints, Varnishes, and Leather Dyeing Formulations; as Solvents in Dyes, Wood Stains, Textile Printing Pastes and Dyes, Nail Polish, Lacquers, and Inks; as Both Solvents and Coupling Agents in Textile Lubricants, in Metal Working Lubricants, and in Agricultural Chemical Products; in Rust Removers, Internal Combustion Engine Cleaners, Metal Parts Cleaners, Dry Cleaning Soaps, and Spotting Fluids; as Cellophane Adhesive Solvents, Agricultural Chemical Solvents, and Rosin Soldering Flux Solvents; as Solvents for Drug and Antibiotic Manufacture, Safety Glass Manufacture, and for Mineral Oil Dewaxing; in Low Temperature Antifreezes, Hydraulic Brake Fluid Formulations, Whitewall Tire Cleaners, Crank Case Decontaminants, and Sizes for Fibers; and as Perfume Fixatives, Aerosol Vapor Pressure Modifiers, Lubricating Oil Additives, and Cleaning Fluids for Enameled Surfaces.
First use May 1, 1946.

SN 208,114. S.I.P.A.L. Arexons Societa Italiana Prodotti Auto e Locomozione S.p.A., Milan, Italy. Filed Dec. 14, 1964.

ROLIN

Owner of Italian Reg. No. 166,771, dated June 16, 1964.
For Antifreeze, Antioxidizers, Rust Inhibitors, Solvents, and Non-Hydrocarbonaceous Hydraulic Fluids.

SN 211,973. Aktiebolaget Ferrosan, Malmo, Sweden. Filed Feb. 12, 1965.

DICUSAT

Owner of Swedish Reg. No. 70,100, dated June 1, 1951.
For Rat Poison.

SN 239,173. Phillips Petroleum Company, Bartlesville, Okla. Filed Feb. 18, 1966.

PHILGUARD

For Non-Paint Like Rust Proofing Compound.
First use Jan. 3, 1966.

SN 239,983. Emerson & Cuming, Inc., Canton, Mass. Filed Mar. 2, 1966.

ECCOSLIP

Owner of Reg. Nos. 677,139 and 684,605.
For Low Friction Casting Compound.
First use Sept. 3, 1965.

SN 240,116. Renuzit Home Products Co., Philadelphia, Pa. Filed Mar. 3, 1966.

EMPTY-ALL

For Spray Starch Sold in Containers Having a Special Valve Release.
First use Nov. 22, 1965.

SN 243,555. Geigy Chemical Corporation, Ardsley, N.Y. Filed Apr. 15, 1966.

AMETRYNE

Owner of Reg. Nos. 734,769 and 735,149.
For Herbicide.
First use Feb. 26, 1965.

SN 243,556. General Machine Products Company, Inc., Trevose, Pa. Filed Apr. 15, 1966.



Owner of Reg. No. 709,914.
For Pressure Testing Solutions and Sealing Compounds.
First use Oct. 19, 1963.

SN 243,606. United States Rubber Company, New York, N.Y. Filed Apr. 15, 1966.

NAUGARD

For Anti-Oxidant.
First use Jan. 13, 1966.

SN 243,778. FMC Corporation, New York, N.Y. Filed Apr. 19, 1966.

KRONIFLEX

For Plasticizer.
First use June 30, 1965.

SN 243,832. Basic Incorporated, Cleveland, Ohio. Filed Apr. 20, 1966.

GRANUMAG

For Magnesia in Granular or Powdered Form.
First use Mar. 21, 1966.

SN 243,859. Geigy Chemical Corporation, Ardsley, N.Y. Filed Apr. 21, 1966.

NEMARID

For Chemical Ingredient Used in the Manufacture of Insecticides.
First use Apr. 4, 1966.

SN 243,878. Jaymass, Inc., Manchester, Conn. Filed Apr. 20, 1966.

B-SHUR

For Toilet Seat Disinfectant in Spray and Towelette Forms.
First use Mar. 23, 1966.

SN 243,942. American Cyanamid Company, Wayne, N.J. Filed Apr. 21, 1966.

CYMEL

Owner of Reg. Nos. 640,869 and 741,478.
For Crosslinking Agent.
First use Feb. 4, 1966.

SN 243,978. Geigy Chemical Corporation, Ardsley, N.Y. Filed Apr. 21, 1966.

NEMASOL

For Chemical Ingredient Used in the Manufacture of Insecticides.
First use Apr. 4, 1966.

SN 243,981. Geigy Chemical Corporation, Ardsley, N.Y. Filed Apr. 21, 1966.

KIK

Owner of Reg. No. 692,247.
For Insect Repellent.
First use June 22, 1965.

SN 244,066. American Cyanamid Company, Wayne, N.J. Filed Apr. 22, 1966.

CYREZ

Owner of Reg. No. 794,244.
For Curing Agent.
First use Feb. 9, 1966.

SN 244,151. Swift & Company, Chicago, Ill. Filed Apr. 22, 1966.

VIGORO

Owner of Reg. No. 186,125.
For Pesticides and Weedicides.
First use on or about July 1, 1962.

SN 244,211. Foote Mineral Co., Exton, Pa. Filed Apr. 25, 1966.

LITHASORB

Owner of Reg. Nos. 502,190, 505,282, and 579,350.
For Lithium Hydroxide, Anhydrous for Analytical Absorption of Carbon Dioxide.
First use Mar. 22, 1966.

SN 244,359. Ronco Laboratories, Inc., Pittsburgh, Pa. Filed Apr. 26, 1966.

VADEN-100

For Volatile Corrosion Inhibitor Concentrate.
First use July 1961.

SN 244,524. B. G. Pratt Company, Paterson, N.J. Filed Apr. 28, 1966.

NOCULATE

For Insecticides.
First use Feb. 15, 1966.

SN 244,648. American Cyanamid Company, Wayne, N.J. Filed May 2, 1966.

CY-GUARD

Owner of Reg. No. 731,353 and others.
For Scale Inhibitor.
First use Feb. 17, 1966.

SN 244,666. Bristol-Myers Company, New York, N.Y. Filed May 2, 1966.

OMNIFORMS

For Desiccant.
First use Oct. 7, 1965.

SN 244,738. Private Brands, Inc., Kansas City, Kans. Filed May 2, 1966.



For Insecticides, Herbicides, Rodenticides, Fungicides, Surfactants, and Combination Insecticide-Fungicides.
First use Feb. 18, 1966.

SN 245,374. Allied Chemical Corporation, New York, N.Y. Filed May 11, 1966.

ACLATE

For Intermediate for Production of Detergents.
First use Jan. 25, 1965.

SN 247,746. Wolfe & Manning, Inc., Park Ridge, Ill. Filed June 9, 1966.

GO BIRDS GO

For Bird Repellent.
First use on or about at least as early as Feb. 28, 1966.

Class 7—Cordage

SN 240,564. Wire Rope Corporation of America, Incorporated, St. Joseph, Mo. Filed Mar. 9, 1966.



The mark consists of the letters "WR."
For Wire Rope.
First use Jan. 15, 1966.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 210,317. Robert C. Kain, Newfane, Vt. Filed Jan. 21, 1965.

AMERICAN 50

For Hand Worked Rifles and Shotguns Sold as Collectors' Items.
First use Dec. 4, 1964.

SN 230,057. Li & Fung, Ltd., Hong Kong. Filed Oct. 13, 1965.

MONKEYS BRAND

Applicant disclaims the word "Brand" apart from the mark shown.
For Firecrackers.
First use Dec. 15, 1926; in commerce Dec. 15, 1926.

SN 230,058. Li & Fung, Ltd., Hong Kong. Filed Oct. 13, 1965.



The word "Brand" is disclaimed apart from the mark shown.
For Firecrackers and Fireworks.
First use June 1931; in commerce June 1931.

SN 235,743. Universal Match Corporation, St. Louis, Mo. Filed Jan. 3, 1966.

CAMEO

For Match Books.
First use May 12, 1965.

SN 235,744. Universal Match Corporation, St. Louis, Mo. Filed Jan. 3, 1966.

SIGNET

For Match Books.
First use Apr. 17, 1964.

SN 236,079. Chan Lan Fong, d.b.a. Kwong Man Lung Firecracker Factory, Hong Kong. Filed Jan. 10, 1966.

BLACK HAWK



For Firecrackers.
First use Oct. 24, 1965; in commerce Oct. 24, 1965.

Class 11 — Inks and Inking Materials

SN 223,086. Weber Marking Systems, Inc., Mount Prospect, Ill. Filed Aug. 5, 1965.

MINI-GRAPH

For Inks for Stencil Printing Devices.
First use on or about July 8, 1965.

SN 252,785. Keystone Printing Ink Co., Philadelphia, Pa. Filed Aug. 22, 1966.

SYN-DRY

For Printing Ink.
First use Jan. 1, 1964.

Class 12 — Construction Materials

SN 226,137. Frederic Brick & Tile Co., St. Louis, Mo. Filed Aug. 20, 1965.

BRICVNEER

Without prejudice to common law rights applicant disclaims any exclusive right in the words "Brick Veneer" as properly used to describe the type of construction so known. Owner of Reg. No. 703,382.
For Brick Facing.
First use May 6, 1958.

SN 229,849. Mighty Andy Corporation, Palo Alto, Calif. Filed Oct. 11, 1965.

URESEAL

For Expansion Joint Material of Impregnated Expansible Polyurethene Foam, or the Like.
First use Apr. 21, 1964.

SN 233,488. General Aluminum Corporation, Dallas, Tex. Filed Nov. 29, 1965.

M.P.G.

For Metal Doors and Windows With Thermal Insulation.
First use Oct. 5, 1965.

SN 235,386. Byron C. Butler, Phoenix, Ariz. Filed Dec. 28, 1965.

SNOW BRIDGE

For Prefabricated Snow Guard Construction in the Form of a Slatted Canopy for the Protection of Roofs of Buildings.
First use Sept. 9, 1965.

SN 235,712. Polycell Products Limited, Welwyn Garden City, England. Filed Jan. 3, 1966.

POLYFIX

Owner of British Reg. No. 822,131, dated June 21, 1961.
For Tile Cement.

SN 237,211. Evode Ltd., Stafford, England. Filed Jan. 25, 1966.

EVOSTRIP

Owner of British Reg. Nos. 804,282 and 804,283, dated Apr. 7, 1960, and 867,688, dated Aug. 5, 1964.
For Preformed Mastic Sealing Strips for Compression Type Joints.

SN 237,212. Evomastics Ltd., Stafford, England. Filed Jan. 25, 1966.

PLUMBER'S MAIT

Owner of British Reg. Nos. B827,265, dated Nov. 9, 1961, and B867,686, dated Aug. 5, 1964.
For Elastic Joint Sealing Compound.

SN 237,331. General Refractories Company, Philadelphia, Pa. Filed Jan. 26, 1966.

CARTER

For Refractory Brick.
First use January 1914.

SN 237,627. Evode Ltd., Stafford, England. Filed Jan. 17, 1966.

FLASHBAND

Priority claimed under Sec. 44(d) on British Reg. No. 884,488, dated Sept. 21, 1965. Owner of British Reg. No. 876,491, dated Mar. 4, 1965.
For Aluminum Faced Waterproof Glazing and Sealing Strip for Sealing Cracks and Joints in Asphalt, Concrete, Roof Gutters, and for Flashings, Damp Proof Coursing and the Like.

SN 240,344. Refractory & Insulation Corporation, Port Kennedy, Pa. Filed Mar. 7, 1966.

PYROSCAT

For Fireproofing Cement.
First use August 1955.

SN 240,415. Frederick J. Dando Company, Irondale, Ohio. Filed Mar. 8, 1966.

MYLOC

For Refractory Furnace Brick.
First use July 29, 1965.

SN 240,428. General Refractories Company, Philadelphia, Pa. Filed Mar. 8, 1966.

CEMAG

For Refractory Brick.
First use Dec. 15, 1965.

SN 240,486. United States Plywood Corporation, New York, N.Y. Filed Mar. 8, 1966.

FLEXWELD

Owner of Reg. Nos. 203,931, 687,057, and others.
For Cement Asbestos Boards Used in the Building and Construction Industries Principally for Walls, Fixed and Movable Partitions, Window Inserts, Canopies, Fascia Components, Soffits, Wainscots, Ceilings (Perforated or Plain), Sliding Doors, Railing Panels, Balcony Facings, Walk-In Freezer Panels, Dinette Tops, and Signs.
First use June 1, 1964.

SN 247,100. United States Steel Corporation, Pittsburgh, Pa. Filed June 2, 1966.

MULTIGRIP

For Steel Floor Plates.
First use Apr. 28, 1966.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 228,956. Unipak, Inc., Dorchester, Mass. Filed Sept. 29, 1965.

UNIPAK

For Hardware and Plumbing Supplies—Namely, Washing Machine Accessories; Pipe Fittings and Accessories; Faucets and Accessories; Bathroom and Shower Accessories; Copper Tubing and Accessories; Closet Tank Accessories; Clean-Out Wires; Shut-Off and Radiator Valves; Heating Specialties; Traps; Stove and Refrigerator Connectors; Door Stops; Caster Cups, and Furniture Tips.
First use Sept. 6, 1962.

SN 239,949. Vail Manufacturing Company, d.b.a. E. H. Hotchkiss Company, Chicago, Ill. Filed Mar. 1, 1966.

HOTCHKISS

For Staples for Desk-Type Stapling Machines; and Staples for Stapling Pliers and Tackers.
First use at least as early as 1953.

SN 240,201. Republic Steel Corporation, Cleveland, Ohio. Filed Mar. 4, 1966.

X-TRUBE

Owner of Reg. No. 726,888.
For Plastic Coated Coiled Steel Tubing.
First use Apr. 2, 1963.

SN 241,551. Vail Manufacturing Company, Chicago, Ill. Filed Mar. 21, 1966.



Owner of Reg. No. 678,733.
For Staples and Pins.
First use at least as early as 1953.

SN 244,470. Wilbur Curtis Co., Inc., Los Angeles, Calif. Filed Apr. 28, 1966.

CURTIS

For Coffee Urns and Accessories Therefor, Coffee Brewers and Accessories Therefor, Cold Beverage Dispensers; and Stoves for Beverage Making and Warming.
First use 1943.

SN 244,625. Solex, Inc., Detroit, Mich. Filed Apr. 29, 1966.
For Soda Maker.

SOLEX SYPHOLUX

First use October 1964.

SN 248,473. Industrial Sanitation, Inc., Ironton, Ohio. Filed June 22, 1966.



For Portable Chemical Toilets.
First use Aug. 1, 1957.

Class 14 — Metals and Metal Castings and Forgings

SN 191,747. Crucible Steel Company of America, Pittsburgh, Pa. Filed Apr. 22, 1964.

TRULOAD TESTED

For Steel Springs, Including Railway Truck Springs.
First use October 1963.

SN 235,173. Electronic Specialty Company, Los Angeles, Calif. Filed Dec. 23, 1965.

KO1

For Aluminum Casting Alloys.
First use on or before Nov. 10, 1965.

SN 235,219. Olin Mathieson Chemical Corporation, East Alton, Ill. Filed Dec. 23, 1965.

POSIT-BOND

For Composite Metal.
First use Dec. 3, 1965.

SN 251,100. Victor King Laboratory, Los Altos, Calif. Filed July 27, 1966.

WETALLOY-232

For Mercury Indium-Thallium Wetting Alloy, Liquid at Room Temperature, for Making Contact With Metallic and Non-Metallic Surfaces.
First use Apr. 29, 1966.

Class 15 — Oils and Greases

SN 239,057. Lubrication Engineers, Inc., Fort Worth, Tex. Filed Feb. 17, 1966.

MONOLEC

For Oil Lubricants Including Engine Oil, Hydraulic Oil, Air Compressor Oil, Turbine Oil, and Air Tool Lubricant.
First use July 15, 1963.

SN 239,371. Bluegate Candle Company, Montara, Calif. Filed Feb. 23, 1966.

CANDESCENT

For Candles.
First use in or about January 1966.

Class 16 — Protective and Decorative Coatings

SN 209,021. Master Bronze Powder Company, Inc., Chicago Heights, Ill. Filed Dec. 29, 1964.

LITTLE JOB

For Multi-Purpose Aerosol Spray Enamel for Home Use.
First use Dec. 8, 1964.

SN 231,063. Cusick Products, Tunnelton, W. Va. Filed Oct. 22, 1965.

DRI-WIPE

For Pigmented Finish Coating for Use in Antiquing and Decorating Ceramic Ware.
First use May 1960.

SN 237,735. P.G.H. Industries Limited, Waverton, New South Wales, Australia. Filed Feb. 1, 1966.

DIAMONISE

Owner of Australian Reg. No. 188,154, dated June 8, 1964.
For Paints, Enamels, and Varnishes.

SN 240,230. Texas Instruments Incorporated, Dallas, Tex. Filed Feb. 23, 1966.



The mark consists of an outline map of Texas on which are superimposed the letters "T" and "I." Owner of Reg. Nos. 575,975, 743,261, and others.
For Protective Refractory Coatings—Namely, Silicon Carbide Coatings for Machined Articles of Manufacture Such as Papermaking Machine Suction Box Covers.
First use May 9, 1962.

SN 242,682. The Tapecoat Company, Inc., Evanston, Ill. Filed Apr. 4, 1966.

TC

Owner of Reg. No. 672,397.
For Protective Coatings—Namely, a Liquid Coating for Use in Covering and Protecting Fittings, Pipe, Ducts, Tanks, and the Like, Against Corrosion; and Surface Primers for Priming Surfaces Prior to the Application of Protective Coatings.
First use June 13, 1956.

SN 246,425. Textron Industries, Inc., Orange, N.J. Filed May 24, 1966.

BPS METAL-MAGIC

Owner of Reg. Nos. 27,640, 778,062, and others.
For High Gloss Paint and Pigmented Anti-Corrosive Rust Inhibitive Primer for Interior and Exterior Metal Surfaces.
First use during August 1965; 1891 as to "BPS."

Class 18 — Medicines and Pharmaceutical Preparations

SN 204,537. Aktiebolaget Cernelle, Vegeholm, Sweden. Filed Oct. 22, 1964.

CERNELLE

Owner of Swedish Reg. No. 111,449, dated Nov. 20, 1964.
For Medicine and Pharmaceutical Preparations Containing an Extract of Pollen, a Dietary Supplement Containing a Natural Source of Vitamin B_{12}; Pollen; Multiple Vitamins for Use as a Dietary Supplement.
First use Nov. 12, 1953; in commerce October 1958.

SN 209,097. Lloyd Brothers, Inc., Cincinnati, Ohio. Filed Dec. 30, 1964.

FESTALAN

For Medicines and Pharmaceutical Preparations—Namely, an Anti-Spasmodic Digestive Enzyme Preparation.
First use at least as early as Nov. 30, 1964.

SN 227,205. Janssen Pharmaceutica NV, Beerse, Belgium. Filed Aug. 30, 1965.

PERNOX

Owner of Belgian Reg. No. 1,844, dated Dec. 5, 1961.
For Hypertensive Drugs for Veterinary Use.

SN 227,332. Richardson-Merrell Inc., New York, N.Y. Filed Sept. 7, 1965.

NITE and DAY

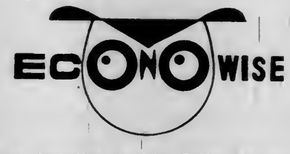
For Cough Syrup.
First use July 26, 1965.

SN 228,890. The Dietene Company, Minneapolis, Minn. Filed Sept. 29, 1965.

MERITONIC

Owner of Reg. Nos. 501,569 and 723,931.
For Prescription Drug Utilized To Relieve Mood Depression, Functional Fatigue and Physical Discomfort.
First use Sept. 13, 1965.

SN 236,195. Northern Drug Company, Inc., Duluth, Minn. Filed Jan. 11, 1966.



For Drugs Including Aspirin, Iodine Ration, Dicalcium Phosphate, and Vitamins.
First use on or about Sept. 1, 1965.

SN 239,391. Guy J. Delbert, d.b.a. R.B.G. Products Co., Zanesville, Ohio. Filed Feb. 23, 1966.

KLEAR-FOOT

For Medicinal Preparation for the Relief of Itching Toes and Athlete's Foot.
First use July 26, 1964.

SN 241,325. Dr. August Wolff Chemische-Pharmazeutische Fabrik Kommanditgesellschaft, Bielefeld, Germany. Filed Mar. 18, 1966.

ALPICORT

Owner of German Reg. No. 751,822, dated July 30, 1959.
For Preparations for the Treatment of Loss of Hair Caused by Seborrhea.

SN 241,326. Dr. August Wolff Chemische-Pharmazeutische Fabrik Kommanditgesellschaft, Bielefeld, Germany. Filed Mar. 18, 1966.

LINOLA

Owner of German Reg. No. 517,610, dated June 17, 1939.
For Medicated Cream for After-Treatment of Dermatitis, Eczema, and Skin Injuries.

SN 241,834. Wonderful Dream Salve Corporation, Croswell, Mich. Filed Mar. 24, 1966.

WONDERFUL DREAM

Owner of Reg. No. 50,955.
For Topically Applied Salve.
First use 1850.

SN 242,255. Johnson & Johnson, New Brunswick, N.J. Filed Mar. 30, 1966.

POWEROL

For Mouthwash and Gargle Preparations.
First use Mar. 3, 1966.

SN 242,259. Johnson & Johnson, New Brunswick, N.J. Filed Mar. 30, 1966.

ASSET

For Mouthwash and Gargle Preparations.
First use Mar. 3, 1966.

SN 243,576. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Apr. 15, 1966.

VIBRAMYCIN

For Antibiotic Preparation.
First use Apr. 4, 1966.

SN 243,979. Geigy Chemical Corporation, Ardsley, N.Y. Filed Apr. 21, 1966.

YESEXTAN

For Anti-Inflammatory Preparation.
First use Apr. 4, 1966.

SN 244,027. Rabin-Winters Corporation, d.b.a. Bruco, El Segundo, Calif. Filed Apr. 21, 1966.

BRUCO

For Isopropyl Alcohol Rubbing Compound for Use in Hospitals or Sick Rooms as a Rub-Down, and for General Massage Purposes.
First use Feb. 26, 1966.

SN 244,125. Dr. Madaus & Co., Cologne, Merheim, Germany. Filed Apr. 22, 1966.

MADAUS

Owner of German Reg. No. 766,653, dated Dec. 5, 1961.
For Pharmaceutical Products.

SN 244,126. Menley & James Laboratories, Ltd., Philadelphia, Pa. Filed Apr. 22, 1966.

A.F.C.

For Analgesic.
First use Apr. 1, 1966.

SN 245,048. Warner-Lambert Pharmaceutical Company, Morris Plains, N.J. Filed May 6, 1966.

MR. CORN HUSKERS

For Medicated Hand Lotion.
First use Jan. 4, 1966; Feb. 11, 1919, as to "Corn Huskers."

SN 246,418. Youngs Drug Products Corporation, New York, N.Y. Filed May 23, 1966.

Youngs

Owner of Reg. No. 797,070.
For Sterile Pads Impregnated With an Antiseptic Solution for Cleansing and Preparing the Skin Area Prior to Injecting; Medicinal Preparation To Control Foot Odor and To Help Prevent the Recurrence of Athlete's Foot; and Medicinal Preparation To Treat and Prevent Athlete's Foot.
First use Nov. 20, 1964.

SN 246,831. Barnes-Hind Laboratories, Sunnyvale, Calif. Filed May 2, 1966.

JEL-CORT

For Lotion for Topical Treatment of Allergic Dermatological Disorders.
First use Dec. 6, 1965.

SN 246,862. Betan Company, Inc., Knoxville, Tenn. Filed May 31, 1966.

ALBA-NATAL

For Pre-Natal Dietary Supplements.
First use January 1949.

SN 246,941. Rabin-Winters Corporation, El Segundo, Calif. Filed May 31, 1966.

NO-AX

For Preparation Designed for the Softening of Ear Waxes.
First use Jan. 9, 1964.

SN 250,894. The Dow Chemical Company, Midland, Mich. Filed July 25, 1966.

RUELEX

Owner of Reg. Nos. 700,336 and 708,655.
For Livestock Remedy—Namely, Preparation for the Control and Destruction of Parasites in and on Animals.
First use May 20, 1966.

Class 19—Vehides

SN 228,507. Budge Manufacturing Co., Inc., Philadelphia, Pa. Filed Sept. 24, 1965.

ROLLIT

For Automobile Station Wagon and Truck Seat Protectors, Covers, Pillows, Pads and Cushions; Plastic Rain Covers, Bonnets, Weather Shields and Snow Shields for Vehicular Components, Especially for Front and Rear Automobile Windows, Convertible Tops and Windshield Wipers, and Plastic Portable Garage Housings for Vehicles Including Automobiles, Boats, Motorcycles, and Bicycles.
First use on or about July 12, 1948.

SN 232,620. Ultra, Inc., Hutchinson, Kans. Filed Nov. 12, 1965.

ULTRA VAN

The word "Van" is disclaimed apart from the mark as shown.
For Self-Propelled Motor Homes.
First use during January 1961.

SN 233,012. Raleigh Industries, Ltd., Nottingham, England. Filed Nov. 19, 1965.



The line on the drawing is for contrast only and does not indicate color. Owner of Reg. No. 785,902.
For Bicycles and Parts Therefor.
First use Mar. 26, 1964; in commerce Mar. 26, 1964.

SN 237,652. Bilt-Rite Baby Carriage Co. Inc., Brooklyn, N.Y. Filed Feb. 1, 1966.

PARK AVE.

For Baby Carriages.
First use Apr. 24, 1964.

SN 237,709. Karpak Company, Minneapolis, Minn. Filed Feb. 1, 1966.

SILVER KING

For Ski Carriers for Attachment to Car Tops, etc.
First use Oct. 21, 1964.

SN 237,762. Travel Equipment Corporation, Elkhart, Ind. Filed Feb. 1, 1966.

CARGOMATE

For Cargo Towing Trailers.
First use Oct. 5, 1965.

SN 245,047. James Mannix, d.b.a. Specialty Trailer Design & Mfg. Co., Indianapolis, Ind. Filed May 6, 1966.

TRANS CART

Applicant disclaims the word "Cart" apart from the mark as shown.
For Wheeled Vehicle or Cart for Use in Moving Heavy Articles Such as Transformers, Safes, and the Like.
First use July 1, 1965.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 220,249. Zayre Corp., Natick, Mass. Filed June 2, 1965.

Montvale

For Radios and Radio and Electric Phonograph Combinations.
First use July 15, 1963.

SN 220,818. American Components Incorporated, Conshohocken, Pa. Filed June 10, 1965.

NOBLE-MET

For Electrical Components—Namely, Electrical Resistors.
First use on or about Mar. 15, 1961.

SN 226,277. Packard-Bell Electronics Corporation, Los Angeles, Calif. Filed Aug. 23, 1965.

ASTRO

For Television Receivers, Stereo Reproducers, and Radio Receivers Employing Phonographs.
First use July 27, 1965.

SN 226,285. Realtone Electronics Corporation, Jersey City, N.J. Filed Aug. 23, 1965.

JADE

For Radios and Walkie Talkies.
First use Jan. 19, 1965.

SN 229,108. Metalux Corporation, Americus, Ga. Filed Oct. 1, 1965.

M METALUX

For Fluorescent and Incandescent Lighting Equipment and Fixtures.
First use on or about Jan. 29, 1965.

SN 229,609. United States Rubber Company, New York, N.Y. Filed Oct. 7, 1965.



Owner of Reg. Nos. 98,502, 518,612, and others.
For Automotive Ignition Tune-Up Kit, Comprising Points, Rotor, Condenser, and Related Accessories.
First use Sept. 17, 1965.

SN 229,850. Milwaukee Resistor Company, Milwaukee, Wis. Filed Oct. 11, 1965.



The representation of the Accepted Symbol for Resistors Is Disclaimed Apart From the Mark as a Whole.
For Electrical Resistors.
First use Aug. 9, 1965.

SN 231,593. Rama Corporation, San Jacinto, Calif. Filed Oct. 24, 1965.

RAMA

For Electric Resistance Heating Elements for Industrial Use.
First use September 1963.

SN 232,369. Ve Ped Traffic Controls, Inc., Oklahoma City, Okla. Filed Nov. 8, 1965.

TIME-A-SIGN

For Electrically Operated Traffic Controls for Both Vehicular and Pedestrian Traffic.
First use Dec. 3, 1964.

SN 232,528. Clark Industries, Inc., Nashville, Tenn. Filed Nov. 12, 1965.



The drawing is lined for red, black, and silver, but the colors are not claimed as an integral portion of the mark.
For Electrical Broilers and Food Warmers.
First use Feb. 1, 1957.

SN 233,289. Vapor Corporation, Chicago, Ill. Filed Nov. 24, 1965.



Owner of Reg. Nos. 647,802, 665,368, and 668,282.
For Electronic Speed Indicator, Control and Recorder for Locomotives, and Various Transit and Railroad Cars.
First use Sept. 20, 1963.

SN 234,959. Tyrco Industries, Emeryville, Calif. Filed Dec. 20, 1965.

TYRCO

Owner of Reg. No. 696,075.
For Electric Storage Batteries.
First use Jan. 2, 1961.

SN 240,589. Degree Corporation, Kansas City, Kans. Filed Mar. 10, 1966.

degree°

For Storage Batteries, Generators, Alternators, and Electrical Starters for Automotive Engines.
First use June 1961.

SN 244,677. Casman & Weiss Distributing Co., Los Angeles, Calif. Filed May 2, 1966.

VERSITATIC

For Household Blenders and Mixers, and Parts Thereof.
First use on or about Apr. 1, 1966.

SN 246,548. Ferro Corporation, Cleveland, Ohio. Filed May 25, 1966.

TUTTLE & KIFT

For Electrical Heating Elements for Industrial and Home Appliance Applications, and Controls for Use in Conjunction Therewith.
First use on or about Mar. 4, 1964.

Class 22 — Games, Toys, and Sporting Goods

SN 216,014. S.p.A. Vibram, Milan, Italy. Filed Apr. 7, 1965.

VIBRAM

For Ski and Mountain Climbing Boot Parts—Namely, Soles, Heels, Heel Guards, Heel Guard Plates, Mats and Intersoles; and Ski Straps and Stringers.
First use May 14, 1934; in commerce Apr. 21, 1938.

SN 222,678. Florenzo Didonato, d.b.a. Gemini Associates, Arlington, Mass. Filed July 6, 1965.



No claim of exclusive right is made to the pictorial representation of the playing cards.
For Equipment for Playing a Card Game.
First use Apr. 7, 1965.

SN 222,846. Wilbur R. Jenks, d.b.a. W. R. Jenks, White Bear Lake, Minn. Filed July 7, 1965.



For Toy Ski-Type Snow Sled.
First use Nov. 1, 1964.

SN 224,421. Hollywood Amusement Company, Skokie, Ill. Filed July 28, 1965.

HOLLYWOOD

For Cards and Slides for an Amusement Game Played in the Manner of Bingo.
First use July 1, 1935.

SN 225,727. Chartered Enterprises, d.b.a. Superior Sports Specialties, San Fernando, Calif. Filed Aug. 16, 1965.

GLAD-GLO

For Ski Tow Rope.
First use Feb. 24, 1965.

SN 225,998. SW Industries, Inc., Newton, Mass. Filed Aug. 18, 1965.

GYRO-BALANCED

For Bowling Balls.
First use July 27, 1965.

SN 228,466. Lavoy Winton, Mount Dora, Fla. Filed Sept. 23, 1965.

HY-ROLL

For Amusement Park or Carnival Type Ride.
First use on or about Apr. 3, 1965.

SN 233,855. Alexander Doll Company, Inc., d.b.a. Madame Alexander, New York, N.Y. Filed Dec. 3, 1965.

"BABY ELOISE"

No claim of exclusive right is made to the word "Baby" apart from the mark as shown.
For Dolls.
First use Oct. 14, 1965.

SN 247,658. Mattel, Inc., Hawthorne, Calif. Filed June 9, 1966.

HOT-SHOT

For Toy Guns.
First use May 16, 1966.

SN 250,211. Buddy L Corporation, East Moline, Ill. Filed July 14, 1966.

FILL-R-UP

For Replica, in Reduced Size, of a Gasoline Pump Used as a Toy.
First use May 5, 1966.

SN 250,909. Mattel, Inc., Hawthorne, Calif. Filed July 25, 1966.

BABYSTEP

For Dolls, Doll Clothing, and Doll Accessories.
First use May 6, 1966.

SN 250,910. Mattel, Inc., Hawthorne, Calif. Filed July 25, 1966.

BEAT-A-DIDDLE

For Dolls, Doll Clothing, and Doll Accessories.
First use May 6, 1966.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 223,168. Shurly-Dietrich-Atkins Company Limited, Galt, Ontario, Canada. Filed July 12, 1965.



Applicant disclaims the right to the exclusive use of all the reading matter other than the words "Maple Leaf" apart from the mark as shown. Owner of U.S. Reg. No. 40,078.
For Metal and Wood Cutting Band Saw Blades for Use in Band Saw Machines, Power Hack Saw Blades for Use in Power Hack Saw Machines, Jig Saw Blades for Use in Jig Saw Machines, Circular Saw Blades for Use in Circular Saw Machines, Circular Slitter Blades for Use in Slitter Machines, Circular Shear Blades for Use in Shearing Machines, and Machine Knives for Use in Chipper, Hog, Planer, etc. Machines.
First use September 1935; in commerce Apr. 6, 1964.

SN 226,620. Cleveland Hone & Manufacturing Co., Cleveland, Ohio. Filed Aug. 27, 1965.

ROTOWELD

For Crankshafts, Camshafts, Connecting Rods, and Other Pieces and Machine Parts.
First use Feb. 23, 1965.

SN 226,621. Cleveland Hone & Manufacturing Co., Cleveland, Ohio. Filed Aug. 27, 1965.

ROTOBUILT

For Crankshafts, Camshafts, Connecting Rods, and Other Pieces and Machine Parts.
First use Feb. 24, 1965.

SN 227,013. Damascus Steel Products Corporation, Rockford, Ill. Filed Sept. 2, 1965.

TARGETHEAD

Owner of Reg. No. 808,445.
For Cutlery and Tools—Namely, Cutting Nippers, Tile Nippers, Paring Nippers, Wire Nippers, Carpenters' Pincers, Moulding Tools, Cotter-Pin Tools, Wrecking Bars, Ripping Bars, Claw Bars, Lining Bars, Paring Knives, Steak Knives, Pocket-Knives, Cold Chisels, Cape Chisels, Round-Nose Cape Chisels, Diamond-Point Chisels, Steel Wood Chisels, Ripping Chisels, Masons' Chisels, Tooth Chisels, Plugging Chisels, Concrete Chisels, Floor Chisels, Soil Pipe Chisels, Tuck Point Rakes, Round-Point Solid Punches, Pin Punches, Drift Punches, Square-Point Punches, Prick Punches, Center Punches, Sheet Metal Punches, Machine Punches, Mower Section Punches, Flat-Face Punches, Punch Sets, Gouges, Nail Sets, Rivet Sets, Brick Sets, Rivet Busters, Star Drills, Sled Run Jointers, Tapered Jointers, Pitching Tools, Calking Irons, Yarning Irons, Screw Drivers, Screw-Driver Bits, Counter-Sinks; Hammers—Namely, Brick Hammers, Tile Hammers; and Staple Pullers, Snips, Shears; and Farriers' Tools—Namely, Hoof Hammers, Hoof Parers, Hoof Nippers, Cutting Nippers, Hoof Rasps and Hoof Knives.
First use September 1956.

SN 229,037. Universal Match Corporation, St. Louis, Mo. Filed Sept. 30, 1965.

SIGNA-WRITER

For Autographic Device—Namely, a Device for Use in Autographing or Transfer-Writing on Wedge-Shaped Articles, Such as Match Books and the Like.
First use Sept. 20, 1965.

SN 232,370. Union Tank Car Company, Chicago, Ill. Filed Nov. 8, 1965.

DUPLIFLO

For Apparatus for Controlling Sewage Pumping Equipment.
First use June 1965.

SN 232,701. B. J. Lance, Inc., d.b.a. Lance Manufacturing Company, Paramount, Calif. Filed Nov. 15, 1965.



For Tube Benders.
First use Apr. 2, 1963.

SN 233,615. Meiki Co., Ltd., Mizuho-ku, Nagoya City, Japan. Filed Nov. 30, 1965.

MEIKI

For Injection Molding Machines.
First use Mar. 1, 1961; in commerce May 5, 1964.

SN 233,740. Raise, Incorporated, Rye, N.Y. Filed Dec. 1, 1965.

RAISE

For Motor Operated System Consisting of Platform and Cage Operating on Guide Rails Equipped With Rollers and Tubes for Supplying Air and Water for Use in Transporting and Maintaining Personnel and Equipment in Vertical or Inclined Shafts While Drilling, Cleaning, Blasting, etc.
First use May 1959.

SN 234,886. Dresser Industries, Inc., Dallas, Tex. Filed Dec. 20, 1965.

POD

Owner of Reg. Nos. 765,421 and 765,447.
For Centrifugal Equipment for Contacting and Separating Fluids.
First use on or before Oct. 29, 1965.

SN 237,613. William & H. H. James Limited, Willenhall, Stafford, England. Filed Jan. 28, 1966.



Owner of British Reg. No. B865,867, dated June 20, 1964.
For Hand Tools and Hand Implements, All for Agricultural and Horticultural Use.

SN 238,883. Morehouse-Cowles, Inc., Los Angeles, Calif. Filed Feb. 15, 1966.

M-C

For Apparatus of the Mechanical Type for Dispersing Pigments in Liquid Vehicles, and Parts Thereof.
First use Feb. 2, 1966.

SN 239,876. Brother International Corporation, New York, N.Y. Filed Mar. 1, 1966.

PENVELOPE

For Electric Pencil Sharpeners and Attached Letter Openers.
First use Apr. 15, 1965.

SN 239,950. Vail Manufacturing Company, d.b.a. E. H. Hotchkiss Company, Chicago, Ill. Filed Mar. 1, 1966.

HOTCHKISS

For Desk-Type Stapling Machines; Stapling Pliers and Tackers.
First use at least as early as 1953.

SN 239,999. R. H. Hood Company, Philadelphia, Pa. Filed Mar. 2, 1966.

TAW

For Parts for Textile Machinery.
First use Feb. 25, 1966.

SN 242,304. White Consolidated Industries, Inc., Cleveland, Ohio. Filed Mar. 30, 1966.



Applicant claims no exclusive rights in the term "Sewing Machines" apart from the mark as shown. Owner of Reg. Nos. 22,957, 669,234, and others.
For Sewing Machines, Parts and Accessories Thereof.
First use at least as early as January 1960.

SN 244,543. Universal Oil Products Company, Des Plaines, Ill. Filed Apr. 28, 1966.

UNISIR

For Apparatus in the Nature of a Plant, for the Oxidation of Alkylaromatic Compounds.
First use Sept. 8, 1960.

SN 248,433. Crown Cork & Seal Company, Inc., Philadelphia, Pa. Filed June 20, 1966.

CROWN

Owner of Reg. No. 771,113 and others.
For Machinery, Including Packaging Machinery, Metal Converting Machinery, Package Producing Machinery, Food and Beverage Processing Machinery, and Conveying Machines, and Apparatus Associated Therewith.
First use 1914.

SN 248,434. Crown Cork & Seal Company, Inc., Philadelphia, Pa. Filed June 20, 1966.

SURE-CARB

For Free-Standing Saturator for Impregnating Liquids, Such as Water or Other Beverages, With a Gas, Such as Carbon Dioxide Gas.
First use March 1966.

SN 248,919. Carl O. Lassy, d.b.a. Lassy Tool Co., Plainville, Conn. Filed June 24, 1966.



Owner of Reg. No. 422,515.
For Vises and Bases Therefor; C-Clamps; Fixture Locks; Work Holders for Use in Drilling, Boring, Tapping, Milling, Planing, and Grinding Operations on Metal; Tappers, Tap and Die Guides, Adapters, Angle Plates, and Sine Bars.
First use 1956; on or about Nov. 18, 1943, in a different form.

SN 249,009. The Hartford Special Machinery Company, Simsbury, Conn. Filed June 27, 1966.

HARTFORD

Owner of Reg. Nos. 596,682 and 758,065.
For Pinch Pointers.
First use on or about May 16, 1966.

SN 252,713. The Henry G. Thompson Company, New Haven, Conn. Filed Aug. 19, 1966.

BI-BAND

For Band Saw Blades.
First use May 23, 1966.

Class 24—Laundry Appliances and Machines

SN 223,276. Automatic Steam Products Corp., New York, N.Y. Filed July 14, 1965.

SUSSMAN

For Pressing and Steam Equipment—Namely, Steam Irons, Water Filter Units for Feeding Water to Steam Irons, Steam Generators, Water Demineralizing Units for Feeding Water to Steam Irons, Steam Cabinets for Treatment of Clothing, Hand Steamers, Steam Pressing Units, Steam Systems, Belt Loop Pressers, Automobile Steamers, Pressboards, and Curing Ovens.
First use during January 1951.

Class 26—Measuring and Scientific Appliances

SN 206,837. Edon Industrial Products, Royal Oak, Mich. Filed Nov. 24, 1964.

EDON

For Position Monitoring Devices and Components Thereof and Therefor, for Use With Monitoring Conveyors; Receiving, Storing and Shipping Machinery; and Industrial Machinery in Manufacturing, Production, Treatment, and Assembly Operations.
First use Sept. 15, 1953.

SN 220,462. Compugraphic Corporation, Reading, Mass. Filed June 7, 1965.

LINASEC

For Typesetting Computers for Control of Typesetting, Line Casting and Printing, and for the Processing of Data Storage Tape, and Components Therefor.
First use Apr. 20, 1963.

SN 228,607. Chester E. Beard, d.b.a. The Beard Company, Hickory Flat, Miss. Filed Sept. 27, 1965.

STERI-KIT

For Soaking Case for Contact Lenses.
First use Sept. 9, 1965.

SN 234,357. Minox Corporation, New York, N.Y. Filed Dec. 10, 1965.



Owner of Reg. No. 721,951.
For Photographic and Optical Apparatus and Accessories, Such as Cameras, Photographic Flash Units, Reflectors for Flash Units, Flash Adapter Shoes, Photographic Film, Camera Tripods, Tripod Clamps, Binocular Attachments, Film Viewers, Transparency Cutters, Transparency Mounts, Developing Tanks, Light Meters, Enlargers, Carrying Cases, and Parts and Accessories for the Foregoing.
First use December 1949.

SN 234,887. Dresser Industries, Inc., Dallas, Tex. Filed Dec. 20, 1965.

POD

Owner of Reg. Nos. 765,421 and 765,447.
For Distillation and Analytical Apparatus—Namely, High and Low Temperature Laboratory Fractional Distillation Apparatus, Gas Chromatographic Apparatus, and Packaged Distillation Plants for Pilot and Small Scale Process Application.
First use on or before Oct. 19, 1965.

SN 235,156. Bailey Meter Company, Wickliffe, Ohio. Filed Dec. 23, 1965.

Bailey

Owner of Reg. Nos. 516,791, 615,349, and others.
For Measuring, Controlling, and Regulating Instruments, Systems, and Apparatus—Namely, Data Loggers, Analog and Digital Computers, Recorders, Indicators, Integrators, Regulators and Controllers of Combustion, of Processes and of Fluid Flow and Conditions Pertinent to Fluids Such as Rate of Flow, Level, Temperature, and Pressure: Remote Recording, Indicating, Integrating, Controlling and Telemetering Instruments, Adjustable Orifices and Other Apparatus Appurtenant to Such Instruments; Gas Analyzers, Instrument and Control Panel Boards, Time Cycle Instruments and Controllers, Electric and Fluid Pressure Selector Switches; Pressure, Temperature, Level and Fluid Flow Responsive Control Valves; and Charts Peculiar to the Operation of Said Instruments and Apparatus.
First use Nov. 12, 1965; January 1912 in a different form.

SN 235,481. Ametek, Inc., Sellersville, Pa. Filed Dec. 29, 1965.

PERMATON

For Pressure Gauges and Movements Therefor.
First use Oct. 14, 1965.

SN 235,922. Muirhead & Co. Limited, Beckenham, Kent, England. Filed Jan. 6, 1966.

MULTRA

Owner of British Reg. No. 830,522, dated Feb. 7, 1962.
For Mechanically Operated Stabilizing Apparatus for Watercraft and Aircraft.

SN 247,468. Mimik, Ltd., Galt, Ontario, Canada. Filed June 7, 1966.

MIMIK

For Instruments for the Automatic Control of Machines and Machine Tools To Cause Them To Operate in Accordance With Predetermined Work Programs.
First use August 1953; in commerce July 1954.

SN 250,801. Paul Halter, Bottmingen, Baselland, Switzerland. Filed July 22, 1966.

SWIFTA

Owner of Swiss Reg. No. 190,750, dated Feb. 26, 1962.
For Data Processing Unit Containing Index Cards, Punch Pliers, Tabs, Index Boards, Alphabetic Guides, and Reading Desks.

Class 27 — Horological Instruments

SN 229,275. Nivarox S.A., Saint-Imier, Bern, Switzerland. Filed Oct. 4, 1965.

NIVAROX

Priority claimed under Sec. 44(d) on Swiss Reg. No. 209,652, dated Apr. 14, 1965.
For Watches and Clocks, and Parts Thereof.

SN 234,745. General Time Corporation, New York, N.Y. Filed Dec. 16, 1965.

For Clocks and Watches.
First use June 21, 1965.

Class 28 — Jewelry and Precious-Metal Ware

SN 223,333. Norcross, Inc., New York, N.Y. Filed July 14, 1965.

N NORCROSS

Owner of Reg. Nos. 727,026, 809,553, and others.
For Ladies' Jewelry, Including Pins and Brooches.
First use May 10, 1965.

SN 227,226. Anson Incorporated, Providence, R.I. Filed Sept. 7, 1965.

TWIN-LOCK

For Men's Jewelry—Namely, a Key Retainer Fabricated From Precious or Semiprecious Metal.
First use Sept. 15, 1958.

SN 234,203. Albert Journeay, Jr., d.b.a. Sea Maid, Venice, Fla. Filed Dec. 8, 1965.

SEA MAID!

For Do It Yourself Costume Jewelry Kits With Accompanying Instruction Sheets.
First use July 15, 1965.

SN 235,324. McGrath-Hamin, Inc., Providence, R.I. Filed Dec. 27, 1965.

KING OF MY HEART

For Finger Rings.
First use on or about Dec. 14, 1965.

Class 29 — Brooms, Brushes, and Dusters

SN 250,891. Ideal Brushes, Inc., North Hollywood, Calif. Filed July 12, 1966.

ideal

For Paint Brushes and Rollers.
First use April 1947.

Class 31 — Filters and Refrigerators

SN 225,374. Taylor-Burch Refrigeration Products, Inc., Jackson, Mich. Filed Aug. 9, 1965.

KOLD PACK

For Refrigeration Units, Including Evaporator and Condenser Units, for Installation in Enclosed Spaces To Be Refrigerated.
First use Sept. 8, 1964.

SN 244,508. Millipore Filter Corporation, Bedford, Mass. Filed Apr. 28, 1966.

MITEX

For Plastic Filters.
First use Apr. 1, 1966.

Class 32 — Furniture and Upholstery

SN 251,774. Star Industries, Santa Fe Springs, Calif. Filed Aug. 5, 1966.

SI STAR INDUSTRIES

For Chairs; Chair Desks; Study Top Desks; Adjustable Single-Pupil Desks; Lift Lid Desks; Adjustable Two-Pupil Desks; Typing or Bookeeping Tables; and Adjustable Tables.
First use June 17, 1966.

Class 33 — Glassware

SN 231,200. John Oster Manufacturing Co., Milwaukee, Wis. Filed Oct. 22, 1965.

MINI-BLEND

For Glass Containers.
First use Oct. 1, 1965.

SN 244,469. Wilbur Curtis Co., Inc., Los Angeles, Calif. Filed Apr. 28, 1966.

CURTIS

For Beverage Decanters.
First use 1943.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 226,194. United States Register Company, d.b.a. United States Register Co., Battle Creek, Mich. Filed Aug. 19, 1965.

GOVERNAIR

For Registers Used on the Outlet of Air Ductwork.
First use 1932.

SN 234,386. Chittom Equipment Company, Tulsa, Okla. Filed Dec. 13, 1965.

CHECO

For Industrial Cooling Tower Equipment—Namely, Fans, Shutters or Louvers, Pneumatic Controllers, Electro-Pneumatic Transducers, and Sequence Controllers.
First use Nov. 1, 1963.

SN 235,682. Lennox Industries Inc., Marshalltown, Iowa. Filed Jan. 3, 1966.

LIVING AIR

Applicant disclaims the word "Air" apart from the mark as shown.
For Year Round Heating and Air Conditioning Apparatus for Personal Comfort.
First use Dec. 13, 1965.

SN 236,845. Rolec, Inc., Cleveland, Ohio. Filed Jan. 19, 1966.

RoLeC

For Annealing Furnaces, Convector Plates for Annealing Furnaces, and Parts Therefor.
First use Oct. 1, 1958.

SN 239,965. Cen-Trific-Air Products, Inc., New Haven, Conn. Filed Mar. 2, 1966.

CEN-TRIFIC-AIR

For Air Treating Apparatus Utilizing a Liquid as an Air Washing or Exchange Medium.
First use Nov. 18, 1964.

SN 240,401. All-State Welding Alloys Co., Inc., White Plains, N.Y. Filed Mar. 8, 1966.

DYNAGRIP

For Soldering Kits, Comprising Solder and Flux.
First use Mar. 13, 1963.

SN 240,590. Degree Corporation, Kansas City, Kans. Filed Mar. 10, 1966.

degree°

For Industrial Fans and Heat Exchangers.
First use September 1954.

SN 240,592. Degree Corporation, Kansas City, Kans. Filed Mar. 10, 1966.



For Industrial Fans and Heat Exchangers.
First use September 1954.

SN 240,738. Hill's Sheet Metal, Juneau, Alaska. Filed Mar. 11, 1966.

DRAFTDODGER

For Chimney Caps.
First use Nov. 16, 1965.

SN 241,010. Air Reduction Company, Incorporated, New York, N.Y. Filed Mar. 10, 1966.

YELLOW JACKET

Owner of Reg. No. 358,262.
For Electric Arc Welding Machines.
First use on or about Nov. 19, 1937.

SN 241,730. Aqua-Chem, Inc., Waukesha, Wis. Filed Mar. 24, 1966.

SPRAY-FILM

For Evaporators.
First use Jan. 28, 1966.

SN 241,917. Mid-States Welder Manufacturing Company, Chicago, Ill. Filed Mar. 25, 1966.

SIL-A-TRAN

For Electric Welders.
First use 1960.

SN 248,088. The Shivell-Hall Company, New York, N.Y. Filed June 15, 1966.

MAGNATHERM

For Oil Burners, and Parts Thereof.
First use May 19, 1966.

SN 252,037. Sun-Ray Burner Manufacturing Corp., Jamaica, N.Y. Filed Aug. 9, 1966.



For Oil Burners.
First use 1961.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 228,873. Barwood Manufacturing Corp., Everett, Mass. Filed Sept. 29, 1965.

BARWOOD

For Sealing Washers.
First use 1900.

SN 240,997. J. C. Whitlam Manufacturing Co., Inc., Wadsworth, Ohio. Filed Mar. 14, 1966.

PACK-UNYTE

Owner of Reg. Nos. 587,137 and 759,498.
For Leak-Proof Packing, Sealant and Anti-Galling Agent for Liquids and Gases on Flange Joints, Threaded Connections, Valve and Faucet Stems, Reciprocating and Rotating Rods and Shafts, and Between Mating Surfaces.
First use in or about January 1965.

Class 36 — Musical Instruments and Supplies

SN 224,253. Standard Radio Corporation, Sagamihara-shi, Kanagawa, Japan. Filed July 26, 1965.

TINY PAL

For Tape Recorders.
First use Mar. 10, 1965; in commerce Mar. 10, 1965.

Class 37 — Paper and Stationery

SN 217,132. All-Rite Pen Company, Inc., Hackensack, N.J., assignee of Northern Industrial Products, Hackensack, N.J. Filed Apr. 22, 1965.

North-Rite

For Writing Instruments, and Parts Therefor.
First use Jan. 15, 1955.

SN 225,658. The Mead Corporation, Dayton, Ohio. Filed Aug. 13, 1965.

MOISTRITE

Owner of Reg. No. 617,482.
For Paper—Namely, Coated Offset Papers With a Dull Finish.
First use May 22, 1965.

SN 229,872. Regent Standard Forms, Inc., Philadelphia, Pa. Filed Oct. 11, 1965.

RAPIDFORMS

For Carbon Interleaved Message Forms.
First use Sept. 28, 1965.

SN 234,056. National Packaging Products Corporation, Rockingham, N.C. Filed Dec. 6, 1965.

NAPAC

For Cellulose Wadding Made of Paper for Use as a Packaging Material.
First use Sept. 4, 1964.

SN 234,139. National Packaging Products Corporation, Rockingham, N.C. Filed Dec. 7, 1965.



For Cellulose Wadding Made of Paper for Use as a Packaging Material.
First use Sept. 4, 1964.

SN 237,871. The Procter & Gamble Company, Cincinnati, Ohio. Filed Feb. 2, 1966.

PUFKINS

Owner of Reg. Nos. 333,291 and 697,836.
For Facial Tissue, Paper Towels, and Paper Napkins.
First use Oct. 21, 1965.

SN 238,537. Justrite Envelope Manufacturing Co., Atlanta, Ga. Filed Feb. 10, 1966.



The word "Envelopes" is hereby disclaimed.
For Envelopes.
First use Sept. 1, 1962; 1918 as to "Justrite."

SN 241,135. Flambeau Paper Company, Park Falls, Wis. Filed Mar. 16, 1966.



FLAMBEAU BOND

No claim is made to the word "Bond" apart from the mark.
For Paper—Namely, Printing, Writing, and Fine.
First use Feb. 9, 1966.

SN 242,630. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Apr. 4, 1966.



Applicant claims no registration rights in the word "Statements" as a name for the goods.
For Partially Printed Business Statements.
First use Sept. 6, 1963.

Class 38 — Prints and Publications

SN 225,927. Cliff's Notes, Incorporated, Lincoln, Nebr. Filed Aug. 18, 1965.



The use of the Shakespeare bust other than in connection with the stripe design is disclaimed. The drawing is lined for yellow.
For Non-Periodical Series of Booklets Containing Works of Shakespeare and Notes Thereto.
First use Sept. 24, 1964.

SN 226,553. Munsell Color Company, Inc., Baltimore, Md. Filed Aug. 26, 1965.

MUNSELL

Owner of Reg. No. 418,649.
For Color Cards; Individual and Wall Size Color Charts; Charts and Files and Other Collections of Color Standards, and Books Containing Color Charts, and Color Standards and Related Text Material All for Use in Connection With Color Comparison in Various Fields, Such as Plant Tissues; Soil; Skin, Eye and Hair; Plastic Insulated Wire and Cable; Food Color Grading; Testing Bacteria Content of Food; Testing of Vision; Marking Safety Hazards; and the Like.
First use Nov. 13, 1921.

SN 226,885. American Medical Political Action Committee, d.b.a. AMPAC, Chicago, Ill. Filed Sept. 1, 1965.



The lines inside the shield design are red; the remaining lining represents the color blue. Owner of Reg. Nos. 800,511 and 800,529.

For Periodical Newsletter Devoted Chiefly to Political News and Directed to the Medical Profession.

First use July 1965.

SN 226,886. American Medical Political Action Committee, d.b.a. AMPAC, Chicago, Ill. Filed Sept. 1, 1965.



The lines inside the shield design are red; the remaining lining represents the color blue. Owner of Reg. Nos. 800,511 and 800,529.

For Periodical Newsletter Devoted Chiefly to Political News and Directed to the Medical Profession.

First use July 1965.

SN 227,822. Brown & Haley, Tacoma, Wash. Filed Sept. 15, 1965.

SMART CARD

The word "Card" is disclaimed apart from the mark as a whole.

For Cards Distributed With Merchandise, Such as in Candy Package, Bearing Information Unrelated to Such Merchandise.

First use Sept. 1, 1965.

SN 229,001. Enrol Publishing Company, Inc., Los Angeles, Calif. Filed Sept. 30, 1965.

MAIDENS

For Calendars.

First use Aug. 1, 1964.

SN 229,467. The Tribune Company, Chicago, Ill. Filed Oct. 6, 1965.

FEMINIQUE

For Fashion Section of a Newspaper.

First use June 14, 1965.

SN 230,263. Leanin' Tree Publishing Co., Inc., Boulder, Colo. Filed Oct. 15, 1965.



For Greeting Cards.

First use June 15, 1965.

SN 232,451. Continental Oil Company, Ponca City, Okla. Filed Nov. 10, 1965.

BLENDMASTER

For Charts Distributed for Use in Visually Presenting Data.

First use March 1965.

SN 233,241. AMP Incorporated, Harrisburg, Pa. Filed Nov. 24, 1965.

TERMINATOR

For Internal House Organ.

First use July 1952.

SN 233,920. Larry Harmon Pictures Corporation, Los Angeles, Calif. Filed Dec. 3, 1965.

Larry Harmon's
LAUREL and HARDY

For Comic Books.

First use July 1962.

SN 236,740. Financial Executives Institute, New York, N.Y. Filed Jan. 18, 1966.

FINANCIAL EXECUTIVE

For Periodical Magazine Containing Articles Written for Persons Involved in Financial Matters.

First use Jan. 2, 1963.

SN 241,447. David P. Fidler, Des Moines, Iowa. Filed Mar. 21, 1966.

Sports Memories

For Newspaper Column Which Carries Incidental Advertising of Others.

First use September 1955.

SN 245,629. Lewis H. Strauss, Potomac, Md. Filed May 13, 1966.

HERDWATCHER

For Printed System of Record Keeping for Breeders of Beef Cattle.

First use Oct. 7, 1965.

Class 39 — Clothing

SN 187,633. United States Rubber Company, New York, N.Y. Filed Feb. 27, 1964.

GRASSHOPPER

For Canvas and Rubber Shoes.

First use 1957.

SN 203,816. Puritan Fashions Corporation, New York, N.Y. Filed Oct. 12, 1964.

PATIO-LOUNGER

For Men's and Ladies' Lounging Pajamas and Sleeping Pajamas.

First use Aug. 17, 1964.

SN 204,338. Wellco Ro-Search Industries, Inc., Waynesville, N.C. Filed Oct. 19, 1964.

MARCH MELLOWS

For Shoes, Slippers, and Sandals for Men, Women' Boys, Girls, and Youths.

First use Oct. 15, 1964.

SN 208,377. Mitchell Bros. Incorporated, Bridgeport, Conn. Filed Dec. 17, 1964.

MITCHELL

For Pajamas, Dusters, and Nightgowns.

First use Dec. 2, 1964.

SN 210,617. Flora I. Talluto, d.b.a. Youngsters Shoe Manufacturers, Rochester, N.Y. Filed Jan. 25, 1965.



The representation of a portion of a child is not the portrait of any particular living individual. Applicant disclaims the representation of the shoe apart from the mark as shown.

For Shoes for Children.

First use in or before September 1962; at least as early as 1943 as to the word "Youngsters."

SN 213,475. Charles Pindyck, Inc., New York, N.Y. Filed Mar. 5, 1965.

Pindyck

For Sleeping Garments; Underwear and Buntings for Infants and Young Children; Vests With and Without Diaper Tape; Shirts With and Without Diaper Tape; Gowns; Kimonos; Pants; Sacques; Panties; Coats—Namely, Jackets in the Nature of Cardigans; Suits; Overalls; Aprons; Dresses; Rompers; Hats; Undershirts; Terry Hooded Wrap Arounds; Knitted Binders; Bibs; Pajamas; Training Pants; Bathrobes; Knit Gowns; Knit Kimonos; and Booties.

First use Dec. 3, 1963; May 14, 1944, as to "Pindyck."

SN 226,561. Phillips-Van Heusen Corporation, New York, N.Y. Filed Aug. 26, 1965.

OXFORDIAN

Owner of Reg. No. 542,737.

For Men's and Boys' Shirts.

First use June 5, 1940.

SN 227,967. David H. Smith, Inc., Lynn, Mass. Filed Sept. 16, 1965.

CRUISE MATES

For Women's and Misses' Dresses.

First use Aug. 30, 1965.

SN 229,908. The H. Zussman & Son Company, Cincinnati, Ohio. Filed Oct. 11, 1965.

Pantastucks

For Ladies' Jamaica Shorts, Capri Pants, Skirts, and Blouses.

First use on or about Apr. 28, 1965, on Jamaica shorts.

SN 230,371. Exquisite Form Industries, Inc., New York, N.Y. Filed Oct. 18, 1965.

SOFT TREAT

For Brassieres.

First use Oct. 4, 1965.

SN 230,466. Weldon, Inc., New York, N.Y. Filed Oct. 18, 1965.

WAKKIES

For Sleepwear, Shorts, Shirts, Sarongs, Hats, and Robes.

First use July 1965.

SN 230,467. Weldon, Inc., New York, N.Y. Filed Oct. 18, 1965.

WACKY

For Sleepwear, Shorts, Shirts, Sarongs, Hats, and Robes.

First use August 1965.

SN 230,560. Helen M. Peterson, Boise, Idaho. Filed Oct. 19, 1965.

HELON

For Crocheted Wearing Apparel—Namely, Sweaters, Shells, Cloaks, Infants' Bootees, Dresses, Skirts, Ponchos, and Caps.
First use July 13, 1965.

SN 232,828. Ford Lingerie, Inc., Chelsea, Mass. Filed Nov. 17, 1965.

Couture Internationale

For Pegnoir Sets, Petticoats, Half-Slips, Pajama Sets, Nightgowns, Robes, Bras, Girdles, Petti-Pants, and Panties.
First use on or about Aug. 2, 1965.

SN 233,384. Perfectform Corporation, New York, N.Y. Filed Nov. 26, 1965.

Perfectform

Owner of Reg. No. 500,444.
For Ladies' Slips and Panties, Pajamas, Nightgowns, and Bed Jackets.
First use June 21, 1944.

SN 233,473. William James Donovan, d.b.a. Buddha Originals, North Providence, R.I. Filed Nov. 29, 1965.

BUDDHA ORIGINALS

Applicant disclaims the word "Originals" separate and apart from the mark as shown.
For Swim Suits and Surfer Jackets.
First use Aug. 5, 1965.

SN 235,083. Bayard Shirt Corp., New York, N.Y. Filed Dec. 22, 1965.

KeyLargo

Owner of Reg. No. 731,212.
For Ladies' and Girls' Dresses, Shifts, and Shirt Dresses.
First use Apr. 3, 1961.

SN 235,201. Laguna Sportswear Co., Inc., Los Angeles, Calif. Filed Dec. 23, 1965.

SURF-JAMMERS

For Men's and Boys' Swimwear.
First use Oct. 1, 1965.

SN 236,317. Cyn Les Sportswear, Inc., New York, N.Y. Filed Jan. 10, 1966.

CYN LES

For Women's Sweaters.
First use Aug. 1, 1965.

SN 236,581. Edward S. Fabry, d.b.a. Fabry Glove & Mitten Company, Green Bay, Wis. Filed Jan. 17, 1966.

Golden Grip

For Sports Gloves.
First use Jan. 1, 1965.

SN 236,923. Russ Togs, Inc., New York, N.Y. Filed Jan. 20, 1966.

CANDI'S CORNER

For Children's, Teens', and Ladies' Wearing Apparel—Namely, Slacks, Pants, Shorts, Skirts, Blouses, and Sweaters, or Any Combination Thereof.
First use Dec. 24, 1965.

SN 236,957. Boepple Sportswear Mills, Inc., New York, N.Y. Filed Jan. 21, 1966.

BOEPPLE

For Ladies' Outerwear—Namely, Sweaters, Skirts, and Dresses.
First use at least as early as 1931.

SN 238,779. Phil Rose of California, Inc., Los Angeles, Calif. Filed Feb. 14, 1966.

Juniorbaloo

For Junior Women's Sportswear—Namely, Pants, Skirts, Jackets, Shirts, Blouses, Shifts, Sweaters, and Dresses.
First use Dec. 1, 1965.

SN 239,052. F. Jacobson & Sons, Inc., New York, N.Y. Filed Feb. 17, 1966.

NOW

For Men's Dress Shirts, Sport Shirts, Knit Shirts, and Pajamas.
First use Feb. 9, 1966.

SN 239,053. F. Jacobson & Sons, Inc., New York, N.Y. Filed Feb. 17, 1966.

FOUR ON THE FLOOR

For Men's Dress Shirts, Sport Shirts, Knit Shirts, and Sweaters.
First use Jan. 17, 1966.

SN 239,226. Chadbourn Gotham, Inc., Charlotte, N.C. Filed Feb. 21, 1966.

STAND/AID

For Ladies' Girdles.
First use Dec. 6, 1965.

SN 239,227. Chadbourn Gotham, Inc., Charlotte, N.C. Filed Feb. 21, 1966.

Atmosheer

For Ladies' Hosiery.
First use May 15, 1954.

SN 239,228. Chadbourn Gotham, Inc., Charlotte, N.C. Filed Feb. 21, 1966.



Owner of Reg. No. 209,103.
For Uniforms Comprising Work Shirts and Pants.
First use January 1925.

SN 239,329. Shoecraft, Inc., New York, N.Y. Filed Feb. 21, 1966.

SHORT GALS!

Owner of Reg. No. 420,530.
For Women's Shoes.
First use Oct. 15, 1944.

SN 239,373. Brockton Footwear, Inc., Brockton, Mass. Filed Feb. 23, 1966.



For Men's Footwear.
First use May 1, 1963.

SN 239,537. Pannill Knitting Company, Inc., Martinsville, Va. Filed Feb. 24, 1966.

FOREST PARK

For Underwear and Sportswear—Namely, Sweatshirts, Jackets, and Sweaters.
First use at least as early as 1939.

SN 239,693. Bernard Albert, d.b.a. Barney Albert Company, New York, N.Y. Filed Feb. 28, 1966.

TREBLA

For Hosiery.
First use Feb. 15, 1966.

SN 242,524. Sanford L. Worth, d.b.a. The Persimmon Shop, Menlo Park, Calif. Filed Apr. 1, 1966.

THE PERSIMMON SHOP

For Women's Clothing—Namely, Dresses, Coats, Rainwear, Skirts, Slacks, Blouses, Shirts, Swimwear, Sweaters, Shorts, Footwear, Hats, and Belts.
First use Mar. 15, 1962.

SN 243,679. Landesman Bros. Inc., New York, N.Y. Filed Apr. 18, 1966.



Applicant disclaims the number "110," the letters "VKL," and the word "Germany" as used as components of the mark "Pisa" and tower design.
For Shoe Findings, Components, Toplifts, and Parts.
First use Apr. 6, 1966.

SN 246,238. Penn Leather Company, Philadelphia, Pa. Filed May 23, 1966.



No claim is made to the word "Brand" and "1840" apart from the mark as shown; applicant waives none of its common law rights in said mark or any feature thereof.
For Leather Soles for Shoes.
First use Jan. 24, 1923.

SN 252,993. Johnson & Johnson, New Brunswick, N.J. Filed Aug. 24, 1966.

KID GLOVES

For Diapers.
First use May 8, 1966.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 215,660. Stevens Linen Associates, Inc., Dudley, Mass. Filed Apr. 2, 1965.

TEMPO

For All Linen Decorative Towels.
First use Feb. 17, 1965.

SN 230,736. Deutsche Bobinet-Industrie AG., Trier, Germany. Filed Oct. 20, 1965.

TRIAS

Priority claimed under Sec. 44(d) on German application filed Jan. 15, 1965; Reg. No. 806,583, dated July 8, 1965.
For Curtains, Drapes, Floor Coverings, Table and Bed Linen; Covers—Namely, Tablecloths and Bedclothes, Felt, and Fabrics Made From Cotton and/or Synthetic Fibers.

SN 237,626. Swift Manufacturing Company, Columbus, Ga. Filed Jan. 19, 1966.

SWIFT

For Piece Goods, Including Denim, of Cotton and Synthetic Fibers; and Upholstery, Seat Cover, Garment, and Industrial Fabrics.
First use on or about Nov. 15, 1919.

SN 238,125. J. P. Stevens & Co., Inc., New York, N.Y. Filed Feb. 4, 1966.

OMEGA

Owner of Reg. No. 415,085.
For Piece Goods of One or More Natural Fibers, Including Wool and Cotton, or of Synthetic Fibers, or of Blends of the Foregoing.
First use Jan. 10, 1944.

SN 242,660. Prodesco, Inc., Perkasie, Pa. Filed Apr. 4, 1966.

PROTHERM

For Fabrics With High Thermal and Electrical Properties for Aerospace, Military, Industrial, and Commercial Use.
First use Dec. 10, 1965.

SN 243,309. Collins & Aikman Corporation, New York, N.Y. Filed Apr. 13, 1966.

TRICOPRESS

For Men's Tricot Shirting Fabric.
First use Aug. 19, 1965.

SN 243,414. Deering Milliken, Inc., New York, N.Y. Filed Apr. 14, 1966.

AQUETTE

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers and Combinations Thereof.
First use on or about Apr. 7, 1966.

SN 243,415. Deering Milliken, Inc., New York, N.Y. Filed Apr. 14, 1966.

AQUA VIVRA

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers and Combinations Thereof.
First use on or about Apr. 7, 1966.

SN 243,502. United Merchants and Manufacturers, Inc., New York, N.Y. Filed Apr. 14, 1966.

HOMESTEAD

Owner of Reg. No. 212,269.
For Draperies.
First use on or about Nov. 10, 1925.

Class 43—Thread and Yarn

SN 235,648. Filatures Prouvost & Cie, La Lainiere de Roubaix, Roubaix, Nord, France. Filed Jan. 3, 1966.

HEURE JOYEUSE

Owner of French Reg. No. 9,941, dated Apr. 21, 1965 (Roubaix); Natl. Inst. No. 248,779.
For Tricot Threads.

SN 238,945. Filatures Prouvost & Cie, La Lainiere de Roubaix, Roubaix, Nord, France. Filed Feb. 16, 1966.

ORAGE

Owner of French Reg. No. 10,138, dated July 3, 1965 (Nord); Natl. Inst. No. 257,306. The mark "Orage" is a French word meaning "storm" or "tempest" in English.
For Yarns and Threads.

SN 238,947. Filatures Prouvost & Cie, La Lainiere de Roubaix, Roubaix, Nord, France. Filed Feb. 16, 1966.

PERCE NEIGE

Owner of French Reg. No. 8,969, dated Jan. 11, 1962 (Nord); Natl. Inst. No. 180,304. The mark "Perce Neige" means in English "snowdrop."
For Yarns and Threads.

SN 242,838. Patons & Baldwins Limited, Darlington, Durham, England. Filed Apr. 6, 1966.



Owner of Reg. No. 25,669.
For Knitting Yarns.
First use January 1966; in commerce January 1966.

Class 45—Soft Drinks and Carbonated Waters

SN 200,289. The Seven-Up Company, St. Louis, Mo. Filed Aug. 20, 1964.

"FRESH UP" WITH 7 UP

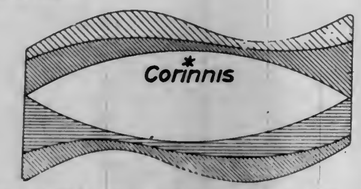
Owner of Reg. Nos. 252,350, 754,309, and others.
For Soft Drink.
First use at least as early as April 1935; 1928 as to "7 Up" and "Seven-Up."

SN 233,228. Watkins Products, Inc., Winona, Minn. Filed Nov. 22, 1965.

FOUR SEASON

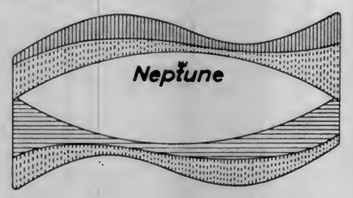
For Mix for Preparing Soft Drinks.
First use Oct. 16, 1965.

SN 237,813. Hinckley & Schmitt, Inc., Chicago, Ill. Filed Feb. 3, 1966.



The drawing is lined for the colors blue and green. Owner of Reg. No. 63,533.
For Drinking Water.
First use Oct. 6, 1958; June 1898 as to "Corinnis."

SN 238,030. Hinckley & Schmitt, Inc., Chicago, Ill. Filed Feb. 3, 1966.



The drawing is lined for the colors pink, blue, and purple. Owner of Reg. No. 734,269.
For Distilled Water.
First use Oct. 6, 1958; April 1894 as to "Neptune."

Class 46—Foods and Ingredients of Foods

SN 145,563. Frank E. Jakutis, d.b.a. Mrs. J's Food Products Company, Seattle, Wash. Filed May 28, 1962.

MRS. J'S

For Prepared Food Products—Namely, Dips for Potato Chips, Seafood and the Like, Seafood Sauce, Salad Dressings, Salads Containing Vegetables and/or Fruit, Cheese, Refrigerated Pizza and Prepared Puddings.
First use Aug. 1, 1956.

SN 167,579. Schafer Bakeries Inc., Detroit, Mich. Filed Apr. 25, 1963.

Schafer's
Old Heidelberg

For Bread.
First use on or about Sept. 1, 1953.

SN 178,007. Klein Chocolate Company, Elizabethtown, Pa. Filed Sept. 30, 1963.

KLEIN'S MILK CHOCOLATE treats

The words "Milk Chocolate" are disclaimed apart from the mark as shown.
For Pieces of Milk Chocolate in Wafer Form Containing a Pulverized Bakery Product.
First use Aug. 14, 1963.

SN 183,207. Estee Candy Co., Inc., New York, N.Y. Filed Dec. 18, 1963.

DUTCHIES

For Dietetic Cookies.
First use Nov. 29, 1963.

SN 191,643. World's Finest Chocolate, Inc., Chicago, Ill. Filed Apr. 20, 1964.



For Candy.
First use on or about Jan. 27, 1964.

SN 193,084. Allied Mills, Inc., Chicago, Ill. Filed May 11, 1964.

WAYNE FRYERS

No claim is made to the exclusive use of the word "Fryers" alone. Owner of Reg. Nos. 241,385, 740,127, and others.
For Table Dressed Frying Chickens.
First use Apr. 4, 1964.

SN 206,110. Yumy, Inc., South Bend, Ind. Filed Nov. 12 1964.

YUMY

For Food Products, Consisting of Hamburgers, Cheeseburgers, Grilled Cheese, Fish Sandwiches, and Coffee.
First use in the spring of 1961.

SN 206,111. Yumy, Inc., South Bend, Ind. Filed Nov. 12, 1964.



For Food Products, Consisting of Hamburgers, Cheeseburgers, Grilled Cheese, Fish Sandwiches, Milk Shakes, Coffee, and Hot Chocolate.
First use spring of 1961.

SN 211,010. A & W Root Beer Co., Santa Monica, Calif. Filed Feb. 1, 1965.

CHUBBY CHICKEN

The word "Chicken" is disclaimed apart from the mark as shown.
For Fried Chicken.
First use Dec. 15, 1964.

SN 213,019. Jackson Produce Company, El Centro, Calif. Filed Mar. 1, 1965.



For Fresh Lettuce.
First use Dec. 18, 1964.

SN 214,083. Patrick Cudahy Inc., Cudahy, Wis. Filed Mar. 15, 1965.

ROSSO

The Italian word "Rosso" has an English meaning of "red."
For Dry Sausage—Namely, Pepperoni.
First use in or about September 1941.

SN 217,367. Loblaw Inc., Buffalo, N.Y. Filed Apr. 26, 1965.

LINDEN FARMS

For Fresh, Frozen, and Smoked Meats, and Fresh Dressed and Frozen Poultry.
First use July 15, 1955.

SN 221,638. Salada Foods Ltd., Don Mills, Ontario, Canada. Filed June 21, 1965.

POMPADOUR

For Ice Cream Cones, Biscuits, and Wafers.
First use Mar. 13, 1961; in commerce Mar. 13, 1961.

SN 224,360. Abba-Fyrtornet AB, Stockholm, Sweden. Filed July 28, 1965.

ABBA

Owner of U.S. Reg. No. 571,178.
For Canned Fish.
First use Jan. 10, 1929; in commerce Jan. 10, 1929.

SN 224,361. Abba-Frytornet AB, Stockholm, Sweden. Filed July 28, 1965.



The word "Fyrtornet" is the Swedish equivalent for the English word "lighthouse." Owner of U.S. Reg. Nos. 314,202 and 571,178.
For Canned Fish.
First use January 1963; in commerce January 1964.

SN 224,368. Agway Inc., Syracuse, N.Y. Filed July 28, 1965.

AGWAY

For Dry Beans, Cooked Beans, Bread, Pastry and Pancake Flour, Cake Mixes, Frozen and Canned Vegetables, Frozen and Canned Fruits and Fruit Juices, Molasses, Bran Cereal, Cereal Grain, Fresh, Frozen and Powdered Eggs, Cooked Eggs Packed in Tubes, Dog and Cat Foods, Dairy Feeds, Salt Cake, Salt Pellets and Silage Preservatives.
First use Mar. 5, 1964.

SN 229,605. Thelma Lu's, Inc., Albuquerque, N. Mex. Filed Oct. 7, 1965.



No claim is made to the word "Kisses," apart from the mark as shown, without waiving any common law rights in and to said word.
For Candy Kisses.
First use May 14, 1965.

SN 230,316. Vitamin Products Company, d.b.a. Standard Process Laboratories, Milwaukee, Wis. Filed Oct. 15, 1965.

CARDIOTROPHIN

For Beef Extract in Tablet or Capsule Form.
First use July 21, 1952.

SN 230,317. Vitamin Products Company, d.b.a. Standard Process Laboratories, Milwaukee, Wis. Filed Oct. 15, 1965.

OSTOGEN

For Protein Concentrate To Be Used as a Dietary Supplement.
First use July 22, 1955.

SN 230,318. Vitamin Products Company, d.b.a. Standard Process Laboratories, Milwaukee, Wis. Filed Oct. 15, 1965.

ZYMEX

For Enzyme Preparation To Be Used for Dietary Purposes.
First use July 9, 1952.

SN 230,323. Vitamin Products Company, d.b.a. Standard Process Laboratories, Milwaukee, Wis. Filed Oct. 15, 1965.

PNEUMOTROPHIN

For Beef Extract in Tablet or Capsule Form.
First use July 20, 1951.

SN 230,325. Vitamin Products Company, d.b.a. Standard Process Laboratories, Milwaukee, Wis. Filed Oct. 15, 1965.

NUTRIMERE

For Protein Food Concentrate To Be Used as a Dietary Supplement.
First use June 18, 1964.

SN 230,972. Vitamin Products Company, d.b.a. Therapeutic Foods Company, Milwaukee, Wis. Filed Oct. 21, 1965.

CYRO-YEAST

The word "Yeast" is disclaimed apart from the mark as shown.
For Food Concentrate To Be Used as a Dietary Supplement.
First use Dec. 21, 1943.

SN 230,975. Vitamin Products Company, d.b.a. Therapeutic Foods Company, Milwaukee, Wis. Filed Oct. 21, 1965.

CYRUTA

For Food Concentrate Composed Basically of Dehydrated Extract of Buckwheat Seed and Greenleaf.
First use Aug. 15, 1947.

SN 230,976. Vitamin Products Company, d.b.a. Therapeutic Foods Company, Milwaukee, Wis. Filed Oct. 21, 1965.

FERROFOOD

For Extract of Beef Combined With Iron To Be Used for Dietary Purposes.
First use Dec. 21, 1943.

SN 230,977. Vitamin Products Company, d.b.a. Therapeutic Foods Company, Milwaukee, Wis. Filed Oct. 21, 1965.

CYROFOOD

For Food Concentrate To Be Used as a Dietary Supplement.
First use Jan. 18, 1944.

SN 230,978. Vitamin Products Company, d.b.a. Therapeutic Foods Company, Milwaukee, Wis. Filed Oct. 21, 1965.

PROTEFOOD

For Protein Concentrate in Capsule or Tablet Form.
First use Dec. 31, 1946.

SN 230,979. Vitamin Products Company, d.b.a. Therapeutic Foods Company, Milwaukee, Wis. Filed Oct. 21, 1965.

CALCIFOOD

For Food Concentrate To Be Used as a Dietary Supplement.
First use Aug. 16, 1947.

SN 231,041. J. Warren Bowman, Inc., St. Petersburg, Fla. Filed Oct. 22, 1965.

ONION-TINI

For Crackers and Pickled Cocktail Relish Sticks.
First use Oct. 7, 1965.

SN 231,042. J. Warren Bowman, Inc., St. Petersburg, Fla. Filed Oct. 22, 1965.

TIME 4

Owner of Reg. No. 662,904.
For Crackers and Pickled Cocktail Relish Sticks.
First use Oct. 7, 1965.

SN 231,068. Di Giorgio Corporation, d.b.a. Di Giorgio Fruit Corporation, San Francisco, Calif. Filed Oct. 22, 1965.

SVR

For Fresh Grapes.
First use in or about July 1960.

SN 231,382. Brown & Haley, Tacoma, Wash. Filed Oct. 23, 1965.



The representation of the candy is disclaimed apart from the mark as shown. Owner of Reg. No. 705,030.
For Candy.
First use Nov. 8, 1957.

SN 231,650. Purity Stores, Inc., Burlingame, Calif. Filed Oct. 26, 1965.



No claim is made to the word "Fresh" and the representation of the vegetables, apart from the mark as shown.
For Fresh Vegetables.
First use Oct. 12, 1965.

SN 231,815. Driscoll Strawberry Associates, Inc., Salinas, Calif. Filed Oct. 29, 1965.

DRISCOLL

For Fresh Strawberries.
First use Apr. 25, 1953.

SN 234,607. Little Crow Milling Company, Inc., Warsaw, Ind. Filed Dec. 13, 1965.

TEN PENNY

For Biscuit Mix, Corn Muffin Mix, and Pancake Mix.
First use Aug. 19, 1965.

SN 235,323. Muriel Investment Company, Oklahoma City, Okla. Filed Dec. 27, 1965.

TOUCH OF EUROPE

For Salad Dressings.
First use June 2, 1964.

SN 235,502. Freund Baking Company, St. Louis, Mo. Filed Dec. 29, 1965.

PARTY TYME

For Fresh Bread.
First use Dec. 20, 1965.

SN 236,362. Foremost Dairies, Inc., San Francisco, Calif. Filed Jan. 13, 1966.

DIALAC

For Dried Demineralized Whey Product.
First use Feb. 11, 1965.

SN 238,231. Ernie Johnson & Son, Phoenix, Ariz. Filed Feb. 7, 1966.

EMERALD

For Fresh Vegetables.
First use Oct. 19, 1965.

SN 241,387. Super Food Services, Inc., Chicago, Ill. Filed Mar. 18, 1966.

SUPER MAID

For Edible Shortenings of Vegetable and Meat Origin.
First use December 1963.

SN 243,886. The National Sugar Refining Company, New York, N.Y. Filed Apr. 20, 1966.

TEMPLE GOLD

For Orange Juice Drink, and Concentrate for Making Same.
First use Jan. 27, 1966.

SN 246,241. Leopoldo Tarantini, d.b.a. Pizza King Tarantini, Camden, N.J. Filed May 23, 1966.

Panzarotti

For Tarts Having Envelopes of Dough Filled With Tomato Paste, Cheese and Spices, and Deep Fried in Oil.
First use on or about June 20, 1962.

SN 246,838. J. H. Meidl, d.b.a. J. H. Meidl Company, Brawley, Calif. Filed May 31, 1966.

JUMBO GREEN

No claim is made to the word "Green" apart from the mark as shown.
For Fresh Vegetables.
First use Oct. 1, 1958.

SN 247,551. Central Market, Inc., Omaha, Nebr. Filed June 8, 1966.

Central Market DELUXE

Applicant disclaims the word "Deluxe" apart from the mark as shown.
For Fresh Cuts of Meat—Namely, Beef Shanks, Beef Rounds, Beef Loins, Beef Ribs, Beef Briskets, Beef Navels, Lamb Legs, Lamb Loins, and Lamb Rack Shoulders.
First use May 2, 1966; prior to 1896 as to "Central Market."

SN 250,897. General Mills, Inc., Minneapolis, Minn. Filed July 25, 1966.

GOBBLES

For Cereal Derived Ready To Eat Snacks.
First use Apr. 25, 1966.

SN 250,898. General Mills, Inc., Minneapolis, Minn. Filed July 25, 1966.

TOKENS

For Cereal Derived Ready To Eat Snacks.
First use Apr. 25, 1966.

SN 250,899. General Mills, Inc., Minneapolis, Minn. Filed July 25, 1966.

BADGES

For Cereal Derived Ready To Eat Snacks.
First use Apr. 25, 1966.

SN 250,900. General Mills, Inc., Minneapolis, Minn. Filed July 25, 1966.

CLOCKS

For Cereal Derived Ready To Eat Snacks.
First use Apr. 25, 1966.

SN 250,901. General Mills, Inc., Minneapolis, Minn. Filed July 25, 1966.

CASTLES

For Cereal Derived Ready To Eat Snacks.
First use Apr. 25, 1966.

SN 250,902. General Mills, Inc., Minneapolis, Minn. Filed July 25, 1966.

FLUTTERBYS

For Cereal Derived Ready To Eat Snacks.
First use Apr. 25, 1966.

SN 250,903. General Mills, Inc., Minneapolis, Minn. Filed July 25, 1966.

BEANIES

For Cereal Derived Ready To Eat Snacks.
First use Apr. 25, 1966.

SN 250,904. General Mills, Inc., Minneapolis, Minn. Filed July 25, 1966.

PENNIES

For Cereal Derived Ready To Eat Snacks.
First use Apr. 25, 1966.

Class 47 — Wines

SN 234,949. The Stellenbosch Farmers' Winery Limited, Stellenbosch, Cape Province, Republic of South Africa. Filed Dec. 20, 1965.

Chateau Libertas

Owner of South African Reg. No. 63/3583, dated Oct. 25, 1963; and U.S. Reg. Nos. 789,132 and 790,814.
For Wines.

SN 235,210. Monarch Wine Co., Inc., Brooklyn, N.Y. Filed Dec. 23, 1965.

TEMPLAR

For Wines.
First use Sept. 1, 1965.

SN 236,013. Schenley Distillers, Inc., d.b.a. Weston Winery, New York, N.Y. Filed Jan. 7, 1966.

DACHEVI

For Wines.
First use Nov. 22, 1965.

Class 48 — Malt Beverages and Liquors

SN 194,449. Wurzburger Hofbrau Aktiengesellschaft, Wurzburg, Germany. Filed May 27, 1964.

Würzburger

Owner of Reg. Nos. 308,999, 694,650, and 690,651.
For Beer.
First use May 1961; in commerce May 1961.

SN 236,600. G. Heileman Brewing Company, Inc., La Crosse, Wis. Filed Jan. 17, 1966.

STITE by Gluek

Owner of Reg. No. 405,634.
For Malt Liquor.
First use Jan. 8, 1965.

Class 49 — Distilled Alcoholic Liquors

SN 221,159. Ditta Pace-Gipsa-Giacomo Pace Societa in Accomandita Semplice, Rome, Italy. Filed June 15, 1965.



Applicant, without waiving its common law rights, disclaims the words "Sambuca Romana" apart from the mark as a whole.
For Liqueurs.
First use May 7, 1962; in commerce Dec. 19, 1963.

SN 233,062. Jules Berman & Associates, Inc., Beverly Hills, Calif. Filed Nov. 22, 1965.

AMER-BASQUE

For Liqueur.
First use Oct. 26, 1965.

SN 233,950. Joseph E. Seagram & Sons, Inc., New York, N.Y. Filed Dec. 3, 1965.

MARIACHI

"Mariachi" means "an ensemble of Mexican folk musicians."
For Tequila.
First use on or about Oct. 13, 1965.

SN 234,047. Medley Distilling Company, d.b.a. Solid Gold Distilling Company, Owensboro, Ky. Filed Dec. 6, 1965.

SOLID GOLD

For Bourbon Whiskey.
First use July 8, 1965.

SN 234,808. Bernard A. David, d.b.a. Liqueur Specialties Co., South San Francisco, Calif. Filed Dec. 17, 1965.

BRALATTA

For Liqueur.
First use Oct. 27, 1965.

SN 237,938. Continental Distilling Corporation, d.b.a. Inver House Distillers, Philadelphia, Pa. Filed Feb. 3, 1966.

GROSVENOR

For Scotch Whisky.
First use Jan. 18, 1966.

SN 238,637. Hiram Walker & Sons (Scotland) Limited, Dumbarton, England. Filed Feb. 11, 1966.

DELMONICO

For Whisky.
First use January 1966; in commerce January 1966.

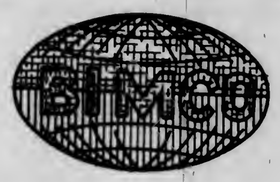
Class 50—Merchandise Not Otherwise Classified

SN 184,423. Big Dutchman, Inc., Zeeland, Mich., by change of name from Automatic Poultry Feeder Company, Zeeland, Mich. Filed Jan. 13, 1964.

RIBBON

For Animal Feeders.
First use Dec. 15, 1963.

SN 208,988. S. Berger Import & Mfg. Corp., New York, N.Y. Filed Dec. 29, 1964.



The drawing is lined for red and gold.
For Artificial Flowers.
First use January 1960.

SN 211,931. Riegel Textile Corporation, New York, N.Y. Filed Feb. 12, 1965.

Welcome Stranger
by Riegel

Owner of Reg. Nos. 588,564, 588,952, and 792,620.
For Baby Layette Kits Composed of Diapers, Bibs, Wash Cloths, Safety Pins, and the Like.
First use Jan. 18, 1962.

SN 219,453. Owens-Illinois, Inc., Toledo, Ohio. Filed May 21, 1965.

HANDY

For Closure Caps.
First use Feb. 17, 1965.

SN 226,552. Munsell Color Company, Inc., Baltimore, Md. Filed Aug. 26, 1965.

MUNSELL

Owner of Reg. No. 418,649.
For Plastic Display Fixtures in Tree-Like Form for Demonstrating Colors; Color Disks or Standards; Test Sets Comprising Color Reference Disks for Determining Color Vision Anomalies and Color Aptitude; and Color Fans.
First use Nov. 13, 1921.

SN 231,562. General Numismatics Corporation, Yeadon, Pa. Filed Oct. 24, 1965.



The mark consists of a fanciful design by the letters "F" and "M."
For Metal and Alloy Coins, Tokens, Medals, Medallions, and Souvenir, Novelty, and Commemorative Coins.
First use on or about Apr. 28, 1965.

SN 232,398. E. H. & A. C. Friedrichs Co., New York, N.Y. Filed Nov. 9, 1965.

FREDRIX

Owner of Reg. Nos. 188,623 and 258,845.
For Artists' Canvas.
First use at least May 1925.

SN 234,410. E. H. & A. C. Friedrichs Co., New York, N.Y. Filed Dec. 13, 1965.



For Artists' Canvas.
First use 1958.

SN 234,411. E. H. & A. C. Friedrichs Co., New York, N.Y. Filed Dec. 13, 1965.

RED LION

For Artists' Canvas.
First use at least 1928.

SN 243,625. Donald Austerman and John Burgoyne (joint owners), New York, N.Y. Filed Apr. 18, 1966.

DADDY'S POCKETS

For Child's Crib and/or Play Pen Attachable Accessory for Storing Baby Articles and the Like.
First use Jan. 15, 1966.

SN 243,920. Socony Mobil Oil Company, Inc., New York, N.Y. Filed Apr. 20, 1966.

FLAMEGARD

For Plastic Liners for Containers.
First use Apr. 16, 1963.

SN 244,004. Magna Visual, Inc., St. Louis, Mo. Filed Apr. 21, 1966.

ALLMAG

For Magnetic Sign Blanks.
First use Apr. 6, 1966.

SN 247,204. Dimensional Concepts, Inc., Chicago, Ill. Filed June 3, 1966.

STRUCTION

For Exhibit Display Device for Use at Trade Shows and the Like.
First use Feb. 9, 1965.

Class 51—Cosmetics and Toilet Preparations

SN 158,933. Dorothy Perkins Cosmetics, Inc., St. Louis, Mo. Filed Dec. 11, 1962.

AURA

For Cologne.
First use Nov. 16, 1962.

SN 193,809. Odol Chemical Corporation, Plainfield, N.J. Filed May 19, 1964.



Owner of Reg. Nos. 30,942, 584,968, and others.
For Mouthwashes.
First use Feb. 2, 1893.

SN 199,885. Clairol Incorporated, New York, N.Y. Filed Aug. 14, 1964.

HATE THAT GRAY? WASH IT AWAY!

For Hair Color Lotion.
First use Aug. 29, 1960.

SN 209,872. Dr. John Claude McCoy, Sr., d.b.a. Dr. Claude McCoy's Mink Oil Products Co., Hendersonville, N.C. Filed Jan. 13, 1965.

Lady Mink

The word "Mink" is disclaimed apart from the mark as shown.
For Cosmetics—Namely, Skin Conditioner, All-Purpose Lotion, Night Cream, Bath Oil, and Cleanser.
First use Feb. 1, 1960.

SN 220,519. Lifetime Products, Incorporated, Scottsdale, Ariz. Filed June 7, 1965.

WESTERN LEATHER

For Shave Lotion, Cologne, Deodorant Cologne, Perfumed Hair Dressing, and Men's Skin Lotion.
First use Mar. 25, 1965.

SN 223,781. Anton A. Coreth, d.b.a. Anton Von Coreth, Larchmont, N.Y. Filed July 20, 1965.

Coredo



For Men's Colognes, Lotions, and After Shave Lotions.
First use May 1965.

SN 224,325. The Noxzema Chemical Company, Baltimore, Md. Filed July 27, 1965.



For Cosmetics—Namely, Face Powder and Makeup.
First use Jan. 2, 1961.

SN 231,877. Alberto-Culver Company, Melrose Park, Ill. Filed Nov. 1, 1965.

NATURAL GLORY

Owner of Reg. No. 782,184.
For Hair Conditioning and Hair Coloring Preparation.
First use Oct. 4, 1965.

SN 232,526. Cecilia Products Ltd., New York, N.Y. Filed Nov. 12, 1965.

subtle
Touch

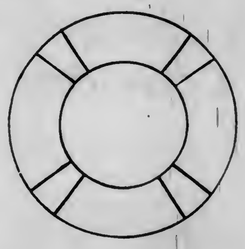
For Face Powder Make-Up and Applicator.
First use May 1, 1965.

SN 236,176. Manuel Buendia, d.b.a. Busser Hair Tint Company, New York, N.Y. Filed Jan. 11, 1966.

BUSSER

For Hair Dye.
First use Dec. 1, 1965.

SN 237,500. John R. Virus, d.b.a. Brandy Harvest, Woodside, N.Y. Filed Jan. 27, 1966.



The mark consists of the representation of a life preserver.
For Colognes.
First use Apr. 25, 1963.

SN 240,299. Hi-Fashion, Inc., Atlanta, Ga. Filed Mar. 7, 1966.

STUDD

For Men's Cosmetics and Toilet Preparations—Namely, Cologne for Men.
First use on or about Jan. 8, 1966.

SN 240,655. Redken Laboratories, Inc., Van Nuys, Calif. Filed Mar. 10, 1966.

EPC

For Hair Conditioner.
First use June 6, 1965.

SN 240,725. Freeman Industries, Inc., Tuckahoe, N.Y. Filed Mar. 11, 1966.

TYCON

For Mouthwash Concentrate.
First use on or about Nov. 29, 1965.

SN 241,109. Wilco Company, Los Angeles, Calif. Filed Mar. 15, 1966.

BEAUTY QUICK

Owner of Reg. Nos. 729,588, 749,613, and 743,627.
For Bath Oil.
First use Dec. 28, 1965.

SN 241,750. Carter-Wallace, Inc., New York, N.Y. Filed Mar. 24, 1966.

MORNING 'TIL NIGHT

For Personal Deodorant.
First use Nov. 29, 1965.

SN 248,576. The Andrew Jergens Company, Cincinnati, Ohio. Filed June 21, 1966.

LOTIONS OF LOVE
by
JERGENS

Applicant disclaims the word "Lotions" apart from the mark as shown. Owner of Reg. Nos. 85,132, 657,258, and others.
For Skin Lotion.
First use Apr. 29, 1966; 1890 as to "Jergens."

SN 250,722. Lanvin-Charles of the Ritz, Inc., New York, N.Y. Filed July 21, 1966.

RITUAL

Owner of Reg. No. 423,853.
For Skin Cream.
First use on or about Apr. 27, 1966.

Class 52 — Detergents and Soaps

SN 199,054. Colonial Chemical Corporation, d.b.a. Kent Chemicals, Dalton, Ga. Filed Aug. 11, 1964.



The drawing is lined for gold.
For Soaps and Detergents for Industrial Use.
First use at least as early as Aug. 1, 1963.

SN 210,194. Consolidated Stamp Manufacturing Company, Spring Valley, N.Y. Filed Jan. 19, 1965.

Skidoo

For Chemical Preparation for Removing Inked Prices From Merchandise in the Form of an Applicator.
First use Feb. 11, 1964.

SN 213,072. The Hewitt Soap Company, Inc., Dayton, Ohio. Filed Mar. 12, 1965.

OUR DELUXE

For Toilet Soap.
First use October 1952.

SN 233,591. Geigy Chemical Corporation, Ardsley, N.Y. Filed Nov. 30, 1965.

BIB

For Window Cleaner.
First use Nov. 12, 1965.

SN 239,007. Bristol-Myers Company, New York, N.Y. Filed Feb. 17, 1966.

BRIGHT NOTE

For Hair Shampoo.
First use Feb. 2, 1966.

SN 239,711. Big Kernel Pet Foods, Inc., Chicago, Ill. Filed Feb. 28, 1966.

K

Owner of Reg. No. 798,687.
For Dog Baths and Dog Soaps.
First use May 24, 1965.

SN 239,916. Madison Chemical Corporation, Maywood, Ill. Filed Mar. 1, 1966.

CHEMSOURCE

For General-Purpose Detergent Cleaners.
First use Jan. 12, 1966.

SN 239,917. Madison Chemical Corporation, Maywood, Ill. Filed Mar. 1, 1966.

CHEMSOURCE JELTERGENT

For General-Purpose Detergent Cleaners.
First use Jan. 12, 1966.

SN 241,406. Aerosol Corporation of America, Clifton, N.J. Filed Mar. 21, 1966.

DOWN THE DRAIN

Applicant disclaims the use of the word "Drain" apart from the mark as shown.
For Drain Cleaner.
First use Mar. 11, 1966.

SN 242,446. Samuel J. Foosaner, d.b.a. Better Products Co., Montclair, N.J. Filed Apr. 1, 1966.



The word feature shown as part of the mark is "Shamp-Pet."
For Shampoo Products for Animals.
First use Feb. 28, 1966.

SN 250,230. Lever Brothers Company, New York, N.Y. Filed July 14, 1966.

GLITTO

For Window Cleaner.
First use Mar. 18, 1966.

SERVICE MARKS

Class 100 — Miscellaneous

SN 169,027. Farmer's Daughter, Inc., Evansville, Ind. Filed May 10, 1963.

FARMER'S DAUGHTER

For Catering Services.
First use 1940.

SN 169,028. Farmer's Daughter, Inc., Evansville, Ind. Filed May 16, 1963.



For Catering Services.
First use during Apr. 1962.

SN 180,756. Perceptive Management Associates, Inc., Cleveland, Ohio. Filed Nov. 8, 1963.

PERCEPTIVE

For Management Consulting Services.
First use Sept. 15, 1963.

SN 194,938–I. Weyerhaeuser Company, Tacoma, Wash. Filed June 4, 1964.

WEYERHAEUSER

Owner of Reg. No. 614,708.
For Advisory Services in Connection With Interior and Exterior Color Co-Ordination of Houses.
First use January 1963.

SN 211,576. Ramada Inns, Inc., Phoenix, Ariz. Filed Feb. 8, 1965.

Chez Bon

For Restaurant and Catering Services.
First use on or about Jan. 14, 1965.

SN 222,097. Allstate Enterprises, Inc., Skokie, Ill. Filed June 28, 1965.



For Informational and Educational Services—Namely, Safety and Travel Advice, Rendered to Members of Applicant's Motor Club by Means of Correspondence, Envelope Stuffers, and Articles in Publications.
First use on or about Mar. 15, 1965.

SN 228,574. Stop & Shop, Inc., Boston, Mass. Filed Sept. 24, 1965.

MINI-PRICING

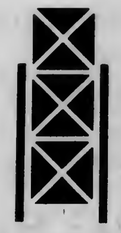
For Supermarket Services.
First use Aug. 25, 1965.

SN 229,993. Motel -6- of California (joint venture), Santa Barbara, Calif. Filed Oct. 12, 1965.



For Motel Services.
First use July 1, 1961.

SN 232,311. Harsco Corporation, Harrisburg, Pa. Filed Nov. 8, 1965.



For Engineering Services in the Field of Building Construction; Leasing Scaffolding and Shoring Equipment.
First use June 1965.

SN 240,042. Western Wood Products Association, Portland, Oreg. Filed Mar. 2, 1966.



For Association Services—Namely, Forestry Services, Technical Services, Lumber Grading Services, Traffic Services, Field Services, Advertising Services, Product Publicity Services, Public Relations Services, Safety Services, and Economic Services, All Relating to the Western Lumber and Wood Products Industry.
First use May 22, 1964.

SN 241,142. Golden Eagle Motor Inn, Inc., Charlotte, N.C. Filed Mar. 16, 1966.



GOLDEN EAGLE

For Motel Services.
First use Oct. 26, 1964.

Class 101—Advertising and Business

SN 203,992. Palmer Bedding Company, Denver, Colo. Filed Oct. 14, 1964.

DREAM MAKER SHOP

For Retail Bedding Store Services.
First use on or about June 18, 1964.

SN 204,208. The Thorson Company, Los Angeles, Calif. Filed Oct. 16, 1964.

THE THORSON COMPANY

For Manufacturer's Representative of Engineering Equipment in the Aircraft, Missile, Space, and Data Processing Industries.
First use 1959.

SN 204,209. The Thorson Company, Los Angeles, Calif. Filed Oct. 16, 1964.



For Manufacturer's Representative of Engineering Equipment in the Aircraft, Missile, Space, and Data Processing Industries.
First use 1959.

SN 213,699. Park Grant Company, Watertown, S. Dak. Filed Mar. 9, 1965.

PRAIRIE MARKET

Without relinquishing or waiving any of its common law rights, applicant disclaims the word "Market" apart from the mark as shown.
For Discount Self-Service Grocery Store Services.
First use Oct. 13, 1961.

SN 215,468. White Collar Girls of America, Incorporated, Chicago, Ill. Filed Mar. 31, 1965.

WHITE COLLAR GIRLS OF AMERICA, INCORPORATED

For Labor Contracting Services—Namely, the Furnishing of Personnel for Stenographic, Clerical, Bookkeeping, Typewriting, Calculating, and Other Office Services to Clients.
First use on or about Feb. 1, 1963.

SN 215,487. Convenient Food Mart, Inc., Chicago, Ill. Filed Apr. 1, 1965.

CONVENIENT FOOD MART

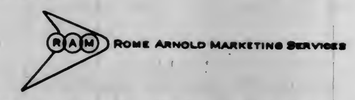
The words "Food Mart" are disclaimed apart from the mark as a whole.
For Organization and Operation of Retail Grocery and Supermarket Stores.
First use Sept. 1, 1958.

SN 226,449. United Leasing, Inc., Denver, Colo., by change of name from Jeffco Leasing Corp., Denver, Colo. Filed Aug. 25, 1965.



For Leasing of Automobiles and/or Trucks.
First use Apr. 1, 1965.

SN 226,998. Rome Arnold & Company, Chicago, Ill. Filed Sept. 2, 1965.



The words "Marketing Services" are disclaimed apart from the mark as shown.
For Market and Product Research, Design, Analysis, and Reporting; Marketing and Management Consulting; and Market Research Data Collection and Processing.
First use on or before Mar. 1, 1965.

SN 246,089. Eric Marden Associates, Inc., New York, N.Y. Filed May 19, 1966.



For Advertising Research and Marketing Research.
First use Mar. 18, 1966.

Class 102—Insurance and Financial

SN 183,546. American Republic Insurance Company, Des Moines, Iowa. Filed Dec. 26, 1963.

LifeGuarded

For Underwriting of Hospital, Surgical, and Medical Insurance.
First use Dec. 10, 1963.

SN 198,317. William Bass & Associates, Inc., Chicago, Ill. Filed July 22, 1964.

HOME OWNERS SECURITY TRUST

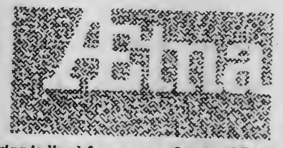
Applicant disclaims all rights to the wording "Home Owners" apart from the mark as shown.
For Insurance Agency Services.
First use May 19, 1964.

SN 227,800. First Federal Savings & Loan Association of Gainesville, Gainesville, Ga. Filed Sept. 9, 1965.



For Home Loan Services.
First use December 1962.

SN 232,049. Aetna Life Insurance Company, Hartford, Conn. Filed Nov. 3, 1965.



The drawing is lined for orange. Owner of Reg. No. 514,283.
For Insurance Underwriting Services.
First use on or before Aug. 23, 1965.

SN 235,291. General Finance Corporation, Evanston, Ill. Filed Dec. 27, 1965.



For Small Personal Loan Services.
First use on or about Sept. 1, 1954.

Class 103 — Construction and Repair

SN 222,773. Smith Oil Corporation, Rockford, Ill. Filed July 6, 1965.



No registration rights are claimed in the word "Oil" apart from the mark as shown.

For Automobile and Truck Servicing and Maintenance Services, and Maintenance and Repair of Home Oil Heating Systems, Including the Delivery of Fuel Oil to the Same.

First use at least as early as October 1962.

SN 232,098. Union Oil Company of California, Los Angeles, Calif. Filed Nov. 3, 1965.



Applicant disclaims the words "Certified Burner Efficiency" apart from the mark as shown. The drawing is lined for red, blue, and gold.

For Maintenance, Repair, and Periodic Servicing of Oil Burner Furnaces and Parts Thereof.

First use on or about Aug. 15, 1965.

SN 234,794. Winscott Corporation, Kansas City, Mo. Filed Dec. 16, 1965.

DAPPER DAN

For Dry Cleaning Services.

First use Nov. 15, 1965.

Class 104 — Communication

SN 217,499. Romper Room, Inc., Baltimore, Md. Filed Apr. 27, 1965.



For Television Entertainment Program Services—Namely, a Program Designed for Children.

First use February 1963.

Class 105 — Transportation and Storage

SN 227,699. Miller Tours, Inc., Indianapolis, Ind. Filed Sept. 13, 1965.

MILLER TOURS

For Arranging for Transportation in Interstate Commerce of Passengers and Their Baggage, and in Sight-Seeing or Pleasure Tours, and the Like.

First use 1925.

SN 228,326. California Western Railroad, Fort Bragg, Calif. Filed Sept. 22, 1965.

SUPER SKUNK

Owner of Reg. No. 780,053.

For Steam Powered Rail Transportation of Persons and Property.

First use July 1965.

SN 228,327. California Western Railroad, Fort Bragg, Calif. Filed Sept. 22, 1965.



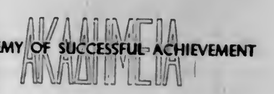
Owner of Reg. No. 780,053.

For Steam Powered Rail Transportation of Persons and Property.

First use July 1965.

Class 107 — Education and Entertainment

SN 223,866. Sidney N. Bremer, d.b.a. Academy of Successful Achievement, Columbia, S.C. Filed July 21, 1965.



The background word in the mark is the Greek word meaning "academy."

For Educational Services—Namely, Correspondence Courses in Personal Success Philosophies of Personal Achievement.

First use Apr. 19, 1965.

SN 231,962. Richard D. Young, Aberdeen, S. Dak. Filed Nov. 1, 1965.

VICOUNTS

For Providing Music and Entertainment for Dances and Like Occasions.

First use Oct. 24, 1964.

COLLECTIVE MEMBERSHIP MARKS

Class 200

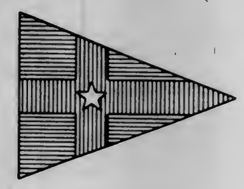
SN 149,377. Electronic Representatives Association, Chicago, Ill. Filed July 19, 1962.

ERA

For Indicating Membership of the Applicant According to Standards Determined by the Applicant.

First use Nov. 14, 1958.

SN 198,205. New York Yacht Club, New York, N.Y. Filed July 20, 1964.



The drawing is lined for the colors red and blue.

For Indicating Membership in Applicant.

First use on or about June 3, 1845.

SN 233,293. The Packaging Institute, Inc., New York, N.Y. Filed Nov. 2, 1965.



Applicant disclaims the outline map of the United States apart from the mark as shown. Owner of Reg. No. 690,015.

For Indicating Membership in the Applicant Institute.

First use Nov. 15, 1964.

SN 234,880. Choristers Guild, Dallas, Tex. Filed Dec. 20, 1965.



Without waiving any of its common law rights, applicant hereby disclaims the term "Choristers Guild" apart from the mark as shown.

For Indicating Membership in Applicant Guild.

First use Apr. 20, 1965.

CERTIFICATION MARKS

Class A — Goods

SN 214,765. International Copper Research Association, Inc., New York, N.Y. Filed Mar. 23, 1965.

INCRAMET

The mark certifies that the goods comply with certain requirements and specifications of quality and manufacture, as established by applicant.

For Copper Base Alloys Used for Making Glass Molds and Other Articles for High Temperature Services.

First use July 1964.

SN 223,971. Clay Products Association of the Southwest, Inc., Austin, Tex. Filed July 22, 1965.

GOLD BRICK HOME

The mark certifies that the homes to which the mark is applied are constructed of brick manufactured by members of the Clay Products Association of the Southwest or other manufacturers in the States of Texas and Arkansas and meets minimum specifications established by the applicant as to material, mode of manufacture, and quality. The word "Home" is disclaimed apart from the mark as shown.

For Brick Homes.

First use June 5, 1964.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

817,598. TREE IN A TRIANGLE (DESIGN). Weyerhaeuser Company. SN 194,939–A. Pub. 8–16–66. Filed 6–4–64.

817,599. DYLITE. Sinclair-Koppers Company. SN 218,490. Pub. 8–16–66. Filed 5–10–65.

817,600. CARDIPOL. The Western Petrochemical Corporation. SN 222,439. Pub. 8–16–66. Filed 6–30–65.

817,601. GREEN GOLIATH. Lowe Seed Company. SN 226,543. Pub. 8–16–66. Filed 8–26–65.

817,602. PURILON. FMC Corporation. SN 228,026. Pub. 5–17–66. Filed 9–17–65.

817,603. LEDBETTER. George Ledbetter, d.b.a. Ledbetter Seed Company. SN 231,147. Pub. 8–16–66. Filed 10–22–65.

817,604. PUSSYKAT. Fields Plastics & Chemicals, Inc. SN 236,250. Pub. 8–16–66. Filed 1–12–66.

817,605. MONTREK. The Dow Chemical Company. SN 236,359. Pub. 8–16–66. Filed 1–13–66.

Class 2 — Receptacles

817,606. ENKO AND DESIGN. Enko Box Company Inc. SN 218,186. Pub. 8–16–66. Filed 5–6–65.

817,607. GR AND DESIGN. Gordon River Corporation. SN 221,820. Pub. 8–16–66. Filed 6–23–65.

817,608. TARGETWARE. Columbus Plastic Products, Inc. SN 229,763. Pub. 8–16–66. Filed 10–11–65.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

817,609. STEVENS. Chas. A. Stevens & Co. MULTIPLE CLASS (Classes 3 and 39). SN 220,722. Pub. 5–3–66. Filed 6–9–65.

817,610. "NO KIDDING." Coronet Handbags Mfg. Corporation. SN 223,644. Pub. 8–16–66. Filed 7–19–65.

Class 4 — Abrasives and Polishing Materials

817,611. CMC. Comet Manufacturing Corporation. SN 199,539. Pub. 8–16–66. Filed 8–10–64.

817,612. GRILL KING. Victoria Products Corp. SN 202,877. Pub. 8–16–66. Filed 9–28–64.

817,613. M MICHIGAN ABRASIVE COMPANY. Michigan Abrasive Company. SN 219,038. Pub. 8–16–66. Filed 5–17–65.

817,614. THE WAX MAN. Lever Brothers Company. SN 237,459. Pub. 8–16–66, Filed 1–27–66.

817,615. CHERISH. Lever Brothers Company. SN 243,461. Pub. 8–16–66. Filed 4–14–66.

Class 5 — Adhesives

817,616. SU–400. Congoleum-Nairn Inc. SN 224,722. Pub. 8–16–66. Filed 8–2–65.

Class 6 — Chemicals and Chemical Compositions

817,617. DR. SCHUPP. Dr. Schupp K.G. MULTIPLE CLASS (Classes 6 and 51). SN 143,809. Pub. 8–16–66. Filed 4–1–63.

817,618. FIREBAN. Tex-Chem Company, Inc. SN 205,623. Pub. 8–16–66. Filed 11–5–64.

817,619. WITARIX. Chemische Werke Witten. SN 211,033. Pub. 8–16–66. Filed 2–1–65.

817,620. CIRCLE AND TRAPEZOID (DESIGN). General Time Corporation. SN 221,169. Pub. 8–16–66. Filed 6–15–65.

817,621. SUNKEM. Sun Chemical Corporation. SN 223,744. Pub. 8–16–66. Filed 7–19–65.

817,622. DUO-CURE. U.S. Oil Company. SN 223,851. Pub. 8–16–66. Filed 7–20–65.

817,623. DENAPON. Chempar Chemical Co., Inc. SN 224,932. Pub. 8–16–66. Filed 8–4–65.

817,624. EVANS. The Hilsinger Corporation. SN 225,767. Pub. 8–16–66. Filed 8–16–65.

817,625. UNI-BITE. Philip A. Hunt Chemical Corporation. SN 229,007. Pub. 8–16–66. Filed 9–30–65.

817,626. DEXTRID. National Lead Company. SN 232,010. Pub. 8–16–66. Filed 11–2–65.

817,627. WALLOP. Monsanto Company. SN 233,117. Pub. 8–16–66. Filed 11–22–65.

817,628. XYLENE. Sandoz, Inc. SN 238,302. Pub. 8–16–66. Filed 2–7–66.

817,629. COPIATONER. Copia Manufacturing Corporation. SN 244,550. Pub. 8–16–66. Filed 4–29–66.

Class 8 — Smokers' Articles, Not Including Tobacco Products

817,630. SEBRING STUDIOS AND DESIGN. Holiday Designs, Inc. MULTIPLE CLASS (Classes 8, 30, and 50). SN 210,786. Pub. 8–16–66. Filed 1–27–65.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

817,631. MISCELLANEOUS DESIGN. Pachmayr Gun Works, Inc. SN 155,635. Pub. 8–16–66. Filed 10–22–62.

Class 10 — Fertilizers

817,632. WEYERHAEUSER. Weyerhaeuser Company. SN 240,994. Pub. 8–16–66. Filed 3–14–66.

Class 11 — Inks and Inking Materials

817,633. ADPRO. American Newspaper Publishers Association Research Institute, Inc. SN 228,314. Pub. 8–16–66. Filed 9–22–65.

Class 12 — Construction Materials

817,634. DOW AND DESIGN. The Dow Chemical Company. SN 205,493. Pub. 8–16–66. Filed 11–4–64.

817,635. PONBAKE. Blaw-Knox Company. SN 209,904. Pub. 8–16–66. Filed 1–14–65.

817,636. FORMEX. Formex Corporation. MULTIPLE CLASS (Classes 12, 19, and 22). SN 210,292. Pub. 8–16–66. Filed 1–21–65.

817,637. SIGNODE AND DESIGN. Signode Corporation. SN 211,200. Pub. 8–16–66. Filed 2–2–65.

817,638. LKF. The Upjohn Company. SN 217,157. Pub. 8–16–66. Filed 4–22–65.

817,639. PINE CREST AND DESIGN. Nudor of Indiana, Inc. SN 219,721. Pub. 1–18–66. Filed 5–25–65.

817,640. PIONEER LOG CABIN CO. Pioneer Log Cabin Company. SN 220,144. Pub. 8–16–66. Filed 6–1–65.

817,641. MAINSTAY. United States Steel Corporation (Delaware corporation), by merger and change of name from United States Steel Corporation (New Jersey corporation). SN 223,925. Pub. 8–16–66. Filed 7–21–65.

817,642. MISCELLANEOUS DESIGN. National Rollex Corporation. SN 228,927. Pub. 8–16–66. Filed 9–29–65.

817,643. TXI AND DESIGN. Texas Industries, Inc. SN 235,137. Pub. 8–16–66. Filed 12–22–65.

817,644. ROUGHTEX. United States Plywood Corporation. SN 235,242. Pub. 8–16–66. Filed 12–23–65.

817,645. TRUSSCORE. Interoceanic Commodities Corporation. SN 235,309. Pub. 8–16–66. Filed 12–27–65.

817,646. FULTON XC15. Fulton Asphalt Company. SN 235,503. Pub. 8–16–66. Filed 12–29–65.

817,647. GRAND CREST. Doughboy Industries, Inc. MULTIPLE CLASS (Classes 12 and 22). SN 239,568. Pub. 8–16–66. Filed 2–25–66.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

817,648. SPIR-L-OK. B. C. Ventilating Ltd. SN 151,544. Pub. 8–6–63. Filed 8–20–62.

817,649. AS AND DESIGN. Aluminum Specialty Company. SN 201,998. Pub. 8–16–66. Filed 9–16–64.

817,650. SIGNODE AND DESIGN. Signode Corporation. SN 211,201. Pub. 8–16–66. Filed 2–2–65.

817,651. SHUR-TEMP. Hays Manufacturing Company. SN 220,500. Pub. 5–31–66. Filed 6–7–65.

817,652. AIRE-I-FRESH. Dr. Nathaniel W. Price. SN 222,412. Pub. 8–16–66. Filed 6–30–65.

817,653. 6-ARM CROSS (DESIGN). The Timms Spring Company. SN 227,627. Pub. 8–16–66. Filed 9–10–65.

817,654. EZ-FLARE. L & L Manufacturing Company. SN 228,374. Pub. 8–16–66. Filed 9–22–65.

817,655. PERMA-TORQUE. Federal Screw Works. SN 230,042. Pub. 8–16–66. Filed 10–13–65.

817,656. SELFIX. Selfix, Inc. SN 231,495. Pub. 8–16–66. Filed 10–23–65.

817,657. ST AND DESIGN. Superior Tube Company. SN 232,032. Pub. 8–16–66. Filed 11–2–65.

817,658. ESPANA ROYALE. Ajax Hardware Corporation. SN 232,806. Pub. 8–16–66. Filed 11–17–65.

817,659. RS ROCSCIENCE. Rocscience Company. SN 234,850. Pub. 8–16–66. Filed 12–17–65.

817,660. RUB-R-LOCK. McWane Cast Iron Pipe Co. SN 234,917. Pub. 8–16–66. Filed 12–20–65.

817,661. "YOU ALWAYS MAKE THE RIGHT MOVE WITH SHAKEPROOF." Illinois Tool Works Inc. SN 235,001. Pub. 8–16–66. Filed 12–21–65.

817,662. CRYSTAL-LITE. Reed-Cromex Corporation. SN 235,230. Pub. 8–16–66. Filed 12–23–65.

817,663. DRAGON (DESIGN). Dragon Valves Inc. SN 235,286. Pub. 8–16–66. Filed 12–27–65.

817,664. DRAGON. Dragon Valves Inc. SN 235,287. Pub. 8–16–66. Filed 12–27–65.

817,665. SAFETYMIX'ETTE'. Symmons Engineering Company. SN 235,356. Pub. 8–16–66. Filed 12–27–65.

817,666. POSI-TROL. Bender Machine Works, Inc. SN 235,486. Pub. 8–16–66. Filed 12–29–65.

Class 15 — Oils and Greases

817,667. KANTSTIK. Specialty Products Company. SN 217,797. Pub. 12–7–65. Filed 4–30–65.

Class 16 — Protective and Decorative Coatings

817,668. DUROGAN. Hansawerke Lurman, Schutte & Co. SN 200,250. Pub. 8–16–66. Filed 8–20–64.

817,669. BLOX. General Research, Inc. SN 203,083. Pub. 8–16–66. Filed 10–1–64.

817,670. BEAUTY PREP. Thomas G. Sink, d.b.a. Beauty Prep. SN 205,965. Pub. 8–16–66. Filed 11–10–64.

817,671. PLASTIROUTE AND DESIGN. Moses Bollag. SN 209,579. Pub. 8–16–66. Filed 1–8–65.

Class 17 — Tobacco Products

817,672. CONWOOD. Taylor Brothers, Inc. SN 235,019. Pub. 8–16–66. Filed 12–21–65.

Class 18 — Medicines and Pharmaceutical Preparations

817,673. COMPLEX-D. Chesebrough-Pond's Inc. SN 188,958. Pub. 12–21–65. Filed 3–18–64.

817,674. ANTI-NEEM. Peter Hand Brewery Company. SN 216,867. Pub. 8–16–66. Filed 4–19–65.

817,675. FW. Peter Hand Brewery Company. SN 216,868. Pub. 8–16–66. Filed 4–19–65.

817,676. PARKE-DAVIS AND DESIGN. Parke, Davis & Company. SN 220,542. Pub. 8–16–66. Filed 6–7–65.

817,677. MULTIFAC. Peter Hand Brewery Company. SN 222,741. Pub. 8–16–66. Filed 7–6–65.

817,678. NORAID. The Norwich Pharmacal Company. SN 225,660. Pub. 8–16–66. Filed 8–13–65.

817,679. NUCLEATED CELL (DESIGN). The Norwich Pharmacal Company. SN 225,661. Pub. 8–16–66. Filed 8–13–65.

817,680. ICE 'N COOL. Sterimed, Incorporated. SN 225,827. Pub. 8–16–66. Filed 8–16–65.

817,681. RAPIDERM. Merck & Co., Inc. SN 225,979. Pub. 8–16–66. Filed 8–18–65.

817,682. MINIKOTE. Sandoz, Inc. SN 226,081. Pub. 8–16–66. Filed 8–19–65.

817,683. SENOGRANN. The Purdue Frederick Company. SN 226,377. Pub. 8–16–66. Filed 8–24–65.

817,684. PROVASIN. Sophie R. Gordon, d.b.a. Gordon Pharmaceuticals. SN 227,734. Pub. 8–16–66. Filed 9–8–65.

817,685. AURCOSCAN. Abbott Laboratories. SN 228,592. Pub. 8–16–66. Filed 9–27–65.

817,686. LIP MAGIK. The Reese Chemical Company. SN 230,700. Pub. 8–16–66. Filed 10–20–65.

817,687. STYE MAGIK. The Reese Chemical Company. SN 230,701. Pub. 8–16–66. Filed 10–20–65.

817,688. TRI-IMMUNOL. American Cyanamid Company. SN 236,700. Pub. 8–16–66. Filed 1–18–66.

817,689. NIAVANE. Chas. Pfizer & Co., Inc. SN 245,450. Pub. 8–16–66. Filed 5–12–66.

817,690. PETUP'N GO. American Home Products Corporation. SN 245,455. Pub. 8–16–66. Filed 5–12–66.

Class 19—Vehicles

817,636. (See Class 12 for this trademark.)

817,691. ANCHOR (DESIGN). Molded Fiber Glass Body Company. SN 216,854. Pub. 8–16–66. Filed 4–19–65.

817,692. "TWISTER." Lull Engineering Company, Inc. SN 220,392. Pub. 8–16–66. Filed 6–4–65.

817,693. COMFORTILT. Rockwell-Standard Corporation. SN 222,203. Pub. 8–16–66. Filed 6–28–65.

817,694. VINADIENE. Ace Rubber Products Incorporated. SN 225,247. Pub. 8–16–66. Filed 8–9–65.

817,695. STYLIZED M (DESIGN). Modine Manufacturing Company. MULTIPLE CLASS (Classes 19, 23, and 34). SN 230,274. Pub. 8–16–66. Filed 10–15–65.

Class 20—Linoleum and Oiled Cloth

817,696. NATURALON. United Merchants and Manufacturers, Inc. SN 234,314. Pub. 8–16–66. Filed 12–9–65.

Class 21—Electrical Apparatus, Machines, and Supplies

817,697. YOU CAN LOOK UP TO PREFORMED. Preformed Line Products Company. SN 131,992. Pub. 8–16–66. Filed 11–14–61.

817,698. SCRIPT CHARACTERS D AND L (DESIGN). Design Line, Incorporated. MULTIPLE CLASS (Classes 21 and 42). SN 165,994. Pub. 8–16–66. Filed 4–3–63.

817,699. DESIGN LINE. Design Line, Incorporated. MULTIPLE CLASS (Classes 21 and 42). SN 165,996. Pub. 8–16–66. Filed 4–3–63.

817,700. MAIHAK AND DESIGN. H. Maihak A.G. MULTIPLE CLASS (Classes 21, 26, and 36). SN 191,551. Pub. 8–16–66. Filed 4–20–64.

817,701. MISCELLANEOUS DESIGN. Slater Electric Inc. SN 209,811. Pub. 8–16–66. Filed 1–12–65.

817,702. PRIVATE-EYE. HC Industries, Inc. SN 209,854. Pub. 3–29–66. Filed 1–13–65.

817,703. CIRCUIT-TRON. Electronic Instruments Corp. SN 212,660. Pub. 5–3–66. Filed 2–24–65.

817,704. SALES ON THE CEILING NO CEILING ON SALES. Lighting Corporation of America, by change of name from Progress Manufacturing Company, Inc. SN 218,315. Pub. 8–16–66. Filed 5–7–65.

817,705. K (DESIGN). Kistler Instrument Corporation. MULTIPLE CLASS (Classes 21 and 26). SN 220,001. Pub. 8–16–66. Filed 5–28–65.

817,706. CORDAWAY. National Union Electric Corporation. SN 221,624. Pub. 8–16–66. Filed 6–21–65.

817,707. DM AND DESIGN. Whiting Brothers Oil Company. SN 228,233. Pub. 8–16–66. Filed 9–20–65.

817,708. ROTO-NETIC. Heinemann Electric Company. SN 228,682. Pub. 8–16–66. Filed 9–27–65.

817,709. ESCOLITE. Fidelitone, Inc., d.b.a. Electronic Specialties Co. SN 236,076. Pub. 8–16–66. Filed 1–10–66.

Class 22—Games, Toys, and Sporting Goods

817,636. (See Class 12 for this trademark.)

817,647. (See Class 12 for this trademark.)

817,710. "DU-DAD." The Du-Dad Lure Co. SN 142,289. Pub. 12–4–62. Filed 4–16–62.

817,711. COVER-UP. Crisloid Plastics Inc. SN 205,678. Pub. 8–16–66. Filed 11–6–64.

817,712. EXERBELT AND DESIGN. Harry Hadaway, d.b.a. Exerbelt. SN 212,308. Pub. 8–16–66. Filed 2–18–65.

817,713. THUM CASTER. The Henson Corporation. SN 214,266. Pub. 8–16–66. Filed 3–16–65.

817,714. ROD-SUPER. Roddy Recreation Products, Inc. SN 220,235. Pub. 8–16–66. Filed 6–2–65.

817,715. DIRTY POOL AND DESIGN. Mountain Amusement Corp. SN 220,536. Pub. 8–16–66. Filed 6–7–65.

817,716. FIGURE SHARP. Clyde A. Robertson. SN 227,874. Pub. 8–16–66. Filed 9–15–65.

817,717. CASE O'FUN. Mattel, Inc. SN 228,719. Pub. 8–16–66. Filed 9–27–65.

817,718. DANDY. Edward L. Mobley, Jr., d.b.a. The Edward Mobley Co. SN 228,924. Pub. 8–16–66. Filed 9–29–65.

817,719. R'ESLIN. Robert Carter, d.b.a. Carter's Riverside Tackle Co. SN 229,497. Pub. 8–16–66. Filed 10–7–65.

817,720. CREST. Wilson Sporting Goods Co. SN 232,103. Pub. 8–16–66. Filed 11–3–65.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

817,695. (See Class 19 for this trademark.)

817,721. GALLUS. Ferdinand Rüesch, d.b.a. Ferd. Ruesch Maschinenfabrik. SN 211,100. Pub. 8–16–66. Filed 2–1–65.

817,722. NORTHERN SEA. Washington Forge, Incorporated. SN 211,780. Pub. 8–16–66. Filed 2–10–65.

817,723. CHARLESTON. Washington Forge, Incorporated. SN 211,781. Pub. 8–16–66. Filed 2–10–65.

817,724. CAVALIER. Royal Typewriter Company, Inc., assignee of Royal McBee Corporation. SN 212,702. Pub. 8–16–66. Filed 2–24–65.

817,725. WELDMORE. The Pandjiris Weldment Co. SN 214,365. Pub. 8–16–66. Filed 3–17–65.

817,726. STIK-CLAM AND DESIGN. Harnischfeger Corporation. SN 216,077. Pub. 8–16–66. Filed 4–8–65.

817,727. TUF-GO. Corona Forge Company. SN 217,307. Pub. 8–16–66. Filed 4–26–65.

817,728. TWIST-IT. John Cary. SN 217,528. Pub. 8–16–66. Filed 4–28–65.

817,729. BAHNSON. The Bahnson Company. SN 217,590. Pub. 8–16–66. Filed 4–29–65.

817,730. SERCO. Service Steel & Engineering Limited. SN 218,224. Pub. 8–16–66. Filed 5–6–65.

817,731. NORSE KING. Empire-La Vive Corporation. SN 218,410. Pub. 8–16–66. Filed 5–10–65.

817,732. TI (DESIGN). Thomson Industries, Inc. SN 219,163. Pub. 8–16–66. Filed 5–6–65.

817,733. TILITA. Frederick Tilden Edridge. SN 221,588. Pub. 8–16–66. Filed 6–21–65.

817,734. CP AND DESIGN. American Machine & Foundry Company, assignee of Commodity Packaging Co., Inc. SN 222,256. Pub. 4–19–66. Filed 6–29–65.

817,735. POWER CONTROL. Power Control Products, Inc. SN 226,077. Pub. 3–1–66. Filed 8–19–65.

817,736. HUSHED-POWER. Chicago Pneumatic Tool Company. SN 227,122. Pub. 8–16–66. Filed 9–3–65.

817,737. TELEVATOR. Fritz Pfeffer. SN 231,485. Pub. 6–14–66. Filed 10–23–65.

817,738. ELASTA-LOK. Lincoln Park Engineering, Inc. SN 234,759. Pub. 8–16–66. Filed 12–16–65.

817,739. POWER-PACKER. Applied Power Industries, Inc. SN 234,869. Pub. 8–16–66. Filed 12–20–65.

817,740. GULFCO. Gulf States Paper Corporation. SN 234,898. Pub. 8–16–66. Filed 12–20–65.

817,741. E-Z LOAD. Gulf States Paper Corporation. SN 234,899. Pub. 8–16–66. Filed 12–20–65.

817,742. THE LINESMAN AND DESIGN. Mobile Aerial Towers, Inc. SN 234,924. Pub. 8–16–66. Filed 12–20–65.

817,743. FISH-N-FILLET. Nordic Enterprises, Inc. SN 234,925. Pub. 8–16–66. Filed 12–20–65.

817,744. KRONA COMFORT EDGE AND DESIGN. Eversharp, Inc. SN 235,094. Pub. 8–16–66. Filed 12–22–65.

817,745. UNIWRAP. Lamb-Grays Harbor Co., Inc. SN 235,202. Pub. 8–16–66. Filed 12–23–65.

817,746. BLUE OX. Big Bear, Inc. SN 235,262. Pub. 8–16–66. Filed 12–27–65.

817,747. UNI-GIRTH. Sandrock Corporation. SN 235,340. Pub. 8–16–66. Filed 12–27–65.

817,748. TOUCHE. Vaneiba Corporation. SN 235,745. Pub. 8–16–66. Filed 1–3–66.

817,749. MULTI-COOLER. National Engineering Company. SN 235,850. Pub. 8–16–66. Filed 1–5–66.

817,750. ITW AND DESIGN. Illinois Tool Works Inc. SN 235,985. Pub. 8–16–66. Filed 1–7–66.

Class 26—Measuring and Scientific Appliances

817,700. (See Class 21 for this trademark.)

817,705. (See Class 21 for this trademark.)

817,751. TECHNI-RITE AND DESIGN. Techni-Rite Electronics, Inc. SN 129,057. Pub. 5–22–62. Filed 10–2–61.

817,752. MITSUBISHI. Mitsubishi Electric Corporation. SN 188,996. Pub. 8–16–66. Filed 3–18–64.

817,753. DIADUR AND DESIGN. Firma Dr. Johannes Heidenhain. SN 206,450. Pub. 8–16–66. Filed 11–18–64.

817,754. ROL-LABETTE. The Welch Scientific Company. SN 206,584. Pub. 8–16–66. Filed 11–19–64.

817,755. CHATTY CATHY. Mattel, Inc. SN 207,629. Pub. 8–16–66. Filed 12–7–64.

817,756. PROMASTER. Photographic Research Organization, Inc. SN 215,773. Pub. 8–16–66. Filed 4–5–65.

817,757. RADEN C AUTO-STEP. Raden C. Auto Step Co., Inc. SN 217,212. Pub. 8–16–66. Filed 4–23–65.

817,758. BAHNSON. The Bahnson Company. SN 217,591. Pub. 8–16–66. Filed 4–29–65.

817,759. MINITOR. Elcometer Instruments Limited. SN 229,418. Pub. 8–16–66. Filed 10–6–65.

817,760. AVALON. Sea & Ski Corporation, d.b.a. Avalon Optical Company. SN 229,881. Pub. 8–16–66. Filed 10–11–65.

817,761. PYROTECTOR. Pyrotector, Incorporated. SN 230,075. Pub. 8–16–66. Filed 10–13–65.

817,762. POSI-TONE. Minnesota Mining and Manufacturing Company. SN 237,370. Pub. 8–16–66. Filed 1–26–66.

817,763. TWI-POD. Birns & Sawyer Cine Equipment Co., Inc. SN 240,246. Pub. 8–16–66. Filed 3–7–66.

817,764. BODY-POD. Birns & Sawyer Cine Equipment Co., Inc. SN 240,247. Pub. 8–16–66. Filed 3–7–66.

817,765. OMNILAB. Omni-Lab Incorporated. SN 240,772. Pub. 8–16–66. Filed 3–11–66.

817,766. MARLBORO. TI-Sales, Inc., d.b.a. Tighe & Associates. SN 241,391. Pub. 8–16–66. Filed 3–18–66.

Class 27—Horological Instruments

817,767. CIRCLES (DESIGN). A. Schild, S.A. SN 228,559. Pub. 8–16–66. Filed 9–24–65.

817,768. AS AND DESIGN. A. Schild, S.A. SN 228,571. Pub. 8–16–66. Filed 9–24–65.

Class 28—Jewelry and Precious-Metal Ware

817,769. ZIP. Art Craft Wholesale Jewelry and Specialties, Inc. SN 231,369. Pub. 8–16–66. Filed 10–23–65.

Class 29—Brooms, Brushes, and Dusters

817,770. SQUNGEE ETC. AND DESIGN. Chicago Metal Covering Co. SN 224,151. Pub. 8–16–66. Filed 7–26–65.

817,771. KENT EST. 1777 ENGLAND AND DESIGN. G. B. Kent & Sons, Limited. SN 225,655. Pub. 8–16–66. Filed 8–13–65.

817,772. SANI CLOTHS AND DESIGN. Ethel L. Dreyer, d.b.a. Dreyer Enterprises. SN 228,999. Pub. 8–16–66. Filed 9–30–65.

Class 30—Crockery, Earthenware, and Porcelain

817,630. (See Class 8 for this trademark.)

817,773. CASUAL CERAM. Lipper & Mann, Inc. SN 173,016. Pub. 8–16–66. Filed 7–15–63.

817,774. MARQUISE FINE CHINA AND DESIGN. Harold Simmons. SN 228,199. Pub. 8–16–66. Filed 9–20–65.

817,775. TABLE-RITE. The Walker China Company. SN 231,324. Pub. 8–16–66. Filed 10–22–65.

Class 31—Filters and Refrigerators

817,776. WATERCARE. Granger Sofwater Supply & Mfg. Corp., d.b.a. International Watercare Corporation. SN 158,618. Pub. 8–16–66. Filed 12–6–62.

817,777. BAHNSON. The Bahnson Company. SN 217,592. Pub. 8–16–66. Filed 4–29–65.

817,778. HASTINGS, ETC. AND DESIGN. Hastings Manufacturing Company. SN 220,499. Pub. 8–16–66. Filed 6–7–65.

817,779. CARLINE. Walker Manufacturing Company. SN 221,228. Pub. 4–19–66. Filed 6–15–65.

817,780. HILLMATIC. Emhart Corporation. SN 229,081. Pub. 8–16–66. Filed 10–1–65.

Class 32—Furniture and Upholstery

817,781. CONTEMPO. Bayuk Cigars Incorporated. SN 219,312. Pub. 8–16–66. Filed 5–20–65.

817,782. BERKLINE AND DESIGN. The Berkline Corporation. SN 226,612. Pub. 8–16–66. Filed 8–27–65.

817,783. BYRD AND DESIGN. Byrd Furniture Company, Incorporated. SN 231,978. Pub. 8–16–66. Filed 11–2–65.

817,784. HOLLYWOOD ROLL-ABOUT. Inland Bed Co. SN 233,803. Pub. 8–16–66. Filed 12–2–65.

817,785. BONUS. Bankers Box Company. SN 234,327. Pub. 8–16–66. Filed 12–10–65.

817,786. CURVAIRE. Modecraft Company, Inc. SN 234,453. Pub. 8–16–66. Filed 12–13–65.

817,787. SWING-N-VUE. Carr Engineering Corporation. SN 234,509. Pub. 8–16–66. Filed 12–13–65.

817,788. PILLOPALS. Augustine John Kiefer, d.b.a. Pillopals. SN 234,757. Pub. 8–16–66. Filed 12–16–65.

Class 34 — Heating, Lighting, and Ventilating Apparatus

817,695. (See Class 19 for this trademark.)

817,789. QUIK-AIR. Clements Mfg. Co. SN 216,802. Pub. 8–16–66. Filed 4–19–65.

817,790. US AND DESIGN. United States Register Company, d.b.a. United States Register Co. SN 221,122. Pub. 8–16–66. Filed 6–14–65.

817,791. HI/RE/LI. Westinghouse Electric Corporation. SN 223,190. Pub. 8–16–66. Filed 7–12–65.

817,792. DUCTURN. Allied Thermal Corporation. SN 223,204. Pub. 8–16–66. Filed 7–13–65.

817,793. HY-LO. Doubleco Incorporated. SN 228,667. Pub. 8–16–66. Filed 9–27–65.

817,794. GULF SOLAR HEAT ECONOJET AND DESIGN. Gulf Oil Corporation. SN 230,386. Pub. 8–16–66. Filed 10–18–65.

817,795. TUNG ARC. WDL, Inc. SN 231,866. Pub. 8–16–66. Filed 10–29–65.

817,796. SPARTAN AND DESIGN. Frick Company. SN 231,907. Pub. 6–21–66. Filed 11–1–65.

817,797. GLASS-FLEX. Pittsburgh Plate Glass Company. SN 234,142. Pub. 8–16–66. Filed 12–7–65.

817,798. SHUR-VENT. Shur-Line Manufacturing Co., Inc. SN 234,939. Pub. 8–16–66. Filed 12–20–65.

817,799. UNITITE. Eclipse Fuel Engineering Co. SN 235,092. Pub. 8–16–66. Filed 12–22–65.

817,800. EGC AND DESIGN. Integrated Development and Manufacturing Co. SN 235,610. Pub. 8–16–66. Filed 12–29–65.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

817,801. DOUBLE EAGLE AND DESIGN. The Goodyear Tire & Rubber Company. SN 225,147. Pub. 8–16–66. Filed 8–6–65.

817,802. CERTIMILE. Associated Oil & Gas Co., d.b.a. Long Mile Rubber Company. SN 229,535. Pub. 8–16–66. Filed 10–7–65.

817,803. REVO-LOK. Oliver Tire & Rubber Company. SN 242,145. Pub. 8–16–66. Filed 3–29–66.

Class 36 — Musical Instruments and Supplies

817,700. (See Class 21 for this trademark.)

817,804. MICRONETIC. Astronic Corporation. SN 227,471. Pub. 8–16–66. Filed 9–9–65.

Class 37 — Paper and Stationery

817,805. DAINTY TINT. The Crystal Tissue Company. SN 225,408. Pub. 8–16–66. Filed 8–10–65.

817,806. CONSO-GLOSS W.O. Consolidated Papers, Inc. SN 231,810. Pub. 8–16–66. Filed 10–29–65.

817,807. CONSO-DULL W.O. Consolidated Papers, Inc. SN 231,811. Pub. 8–16–66. Filed 10–29–65.

817,808. BIG SIG. Sanford Ink Company. SN 236,519. Pub. 8–16–66. Filed 1–14–66.

817,809. TYPO-PAKE. Xerox Corporation. SN 237,775. Pub. 8–16–66. Filed 2–1–66.

817,810. PAPER MAN (DESIGN). Fort Howard Paper Company. SN 240,168. Pub. 8–16–66. Filed 3–4–66.

817,811. PAPER IS OUR MIDDLE NAME. Fort Howard Paper Company. SN 240,169. Pub. 8–16–66. Filed 3–4–66.

Class 38 — Prints and Publications

817,812. SPELL-N-WIN. Spot-O-Gold Corporation, assignee of Leonard Edge. SN 213,543. Pub. 2–1–66. Filed 3–8–65.

817,813. STONE MAGAZINE. Davis Publications Inc. SN 227,656. Pub. 8–16–66. Filed 9–13–65.

817,814. CRESTWICK. Crestwick-Hummelwerk Sales, Inc. SN 230,137. Pub. 8–16–66. Filed 10–14–65.

Class 39 — Clothing

817,609. (See Class 3 for this trademark.)

817,815. SHALIMAR PETITES AND DESIGN. Shalimar Vanity Gloves, Inc. SN 170,768. Pub. 8–16–66. Filed 6–11–63.

817,816. PENN DALE'S. Penn-Dale Knitting Mills, Inc. SN 179,556. Pub. 8–16–66. Filed 10–22–63.

817,817. ANDARIA. Asahi Kasei Kogyo Kabushiki Kaisha. MULTIPLE CLASS (Classes 39, 42, and 43). SN 194,114. Pub. 8–16–66. Filed 5–25–64.

817,818. FRATSORITY AND DESIGN. David J. Stinson, d.b.a. Fratsority Products. SN 195,736. Pub. 8–16–66. Filed 6–15–64.

817,819. NICCOLINI AND DESIGN. Sample Dress Mfg. Corp. SN 205,644. Pub. 8–16–66. Filed 7–29–64.

817,820. WOMAN (DESIGN). Glen Raven Mills, Inc. SN 210,437. Pub. 8–16–66. Filed 1–22–65.

817,821. GM AND DESIGN. Gold Medal Hosiery Co., Inc. SN 211,163. Pub. 8–16–66. Filed 2–2–65.

817,822. HAYMAKER. Haymaker Sports, Inc. SN 213,674. Pub. 8–16–66. Filed 3–9–65.

817,823. WEYENBERG WOODSMAN. Weyenberg Shoe Manufacturing Company. SN 213,923. Pub. 8–16–66. Filed 3–11–65.

817,824. REPRESENTATION OF GIRL'S FACE (DESIGN). Fun Togs, Inc. SN 214,434. Pub. 8–16–66. Filed 3–18–65.

817,825. DOUBLE SIX AND DESIGN. Manufacture Picarde de Chemises Ets. Seminel Freres. SN 219,893. Pub. 8–16–66. Filed 5–27–65.

817,826. EMI FORS AND DESIGN. Sutton Creations, Inc. SN 222,310. Pub. 8–16–66. Filed 6–29–65.

817,827. FLUTTERBYE. Huntington Mfg. Co., Inc. SN 222,705. Pub. 8–16–66. Filed 7–6–65.

817,828. JOHN FREDERICS. Kayser-Roth Corporation. MULTIPLE CLASS (Classes 39 and 40). SN 222,945. Pub. 8–16–66. Filed 7–8–65.

817,829. JUDI LESLI. Judi Lesli, South Miami, Inc. SN 223,690. Pub. 8–16–66. Filed 7–19–65.

817,830. TEEN CLUB. Popular Merchandise Co., Inc. SN 223,820. Pub. 8–16–66. Filed 7–20–65.

817,831. UNDER WONDER. Crown Foundations, Inc., d.b.a. The Crown Corset Company. SN 224,300. Pub. 8–16–66. Filed 7–27–65.

817,832. STED-SET. Stedman Manufacturing Company. SN 224,348. Pub. 8–16–66. Filed 7–27–65.

817,833. MAGIC HANDS. Meco, Inc. SN 226,365. Pub. 8–16–66. Filed 8–24–65.

817,834. LESLIE JUNIORS. Leslie Fay, Inc. SN 228,249. Pub. 8–16–66. Filed 9–21–65.

817,835. LIVE AIR. Holland-Racine Shoes, Inc. SN 229,093. Pub. 8–16–66. Filed 10–1–65.

817,836. MORLANO. Harry Fischer Corporation. SN 230,630. Pub. 8–16–66. Filed 10–20–65.

817,837. MONARCH. Dwight S. Williams Co. Inc. SN 230,733. Pub. 8–16–66. Filed 10–20–65.

817,838. LISA SMOCK. Lisanne, Inc. SN 231,152. Pub. 8–16–66. Filed 10–22–65.

817,839. JEWEL CASE. Yvonne Rich. SN 231,230. Pub. 8–16–66. Filed 10–22–65.

817,840. INTERNATIONAL SPORTS CLUB. Jantzen Inc. SN 231,686. Pub. 8–16–66. Filed 10–27–65.

817,841. BUTTERFLIRT. Maidenform, Inc. SN 231,833. Pub. 8–16–66. Filed 10–29–65.

817,842. HISTORICALS. Wembley, Inc. SN 231,957. Pub. 8–16–66. Filed 11–1–65.

817,843. RAIN 'N' SPAIN. Wynn Enterprises, Inc. SN 231,961. Pub. 8–16–66. Filed 11–1–65.

817,844. DRAGSTERS. Chadbourn Gotham, Inc. SN 231,980. Pub. 8–16–66. Filed 11–2–65.

817,845. THE GIRL FROM C.H.I.C. The Williamson-Dickie Manufacturing Company. SN 232,101. Pub. 8–16–66. Filed 11–3–65.

817,846. CHERIE. Fitts Cotton Goods Company. SN 232,397. Pub. 8–16–66. Filed 11–9–65.

817,847. LACE-IN-ONE. Maidenform, Inc. SN 232,408. Pub. 8–16–66. Filed 11–9–65.

817,848. DURA-TRED. Dura-Tred Hosiery Mills Company, Inc. SN 232,822. Pub. 8–16–66. Filed 11–17–65.

817,849. SIMPLEX CO-ED FLEX-EZE AND DESIGN. Simplex Shoe Manufacturing Company, Inc. SN 234,675. Pub. 8–16–66. Filed 12–15–65.

817,850. J-R-RANCH. J. R. Ranch Western Outfitters. SN 235,986. Pub. 8–16–66. Filed 1–7–66.

817,851. LONDON 400. La Salle Neckwear Company. SN 235,996. Pub. 8–16–66. Filed 1–7–66.

817,852. EXER-SHOE. Exer-Shoe Corporation. SN 236,247. Pub. 8–16–66. Filed 1–12–66.

817,853. CLOUD MIST. Cosmopolitan Juniors Inc. SN 244,061. Pub. 8–16–66. Filed 4–22–66.

Class 40 — Fancy Goods, Furnishings, and Notions

817,630. (See Class 8 for this trademark.)

817,828. (See Class 39 for this trademark.)

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

817,698. (See Class 21 for this trademark.)

817,699. (See Class 21 for this trademark.)

817,817. (See Class 39 for this trademark.)

817,854. DAN RIVER. Dan River Mills, Incorporated. SN 218,619. Pub. 8–16–66. Filed 5–12–65.

817,855. HEIRLOOM. Lawtex Corporation. SN 225,168. Pub. 8–16–66. Filed 8–6–65.

817,856. KORATRON AND DESIGN. Koratron Company, Inc. SN 233,109. Pub. 8–16–66. Filed 11–22–65.

817,857. TWISTAWAY. Dan River Mills, Incorporated. SN 234,731. Pub. 8–16–66. Filed 12–16–65.

817,858. DANCOMB. Dan River Mills, Incorporated. SN 234,732. Pub. 8–16–66. Filed 12–16–65.

817,859. DANCLOUD. Dan River Mills, Incorporated. SN 234,733. Pub. 8–16–66. Filed 12–16–65.

817,860. SCULPTRON. United Merchants and Manufacturers, Inc. SN 234,786. Pub. 8–16–66. Filed 12–16–65.

817,861. DUKE. Dukane Textiles, Inc. SN 234,810. Pub. 8–16–66. Filed 12–17–65.

817,862. ARCHITECTURAL. Shulman Sunshine, Inc. SN 234,852. Pub. 8–16–66. Filed 12–17–65.

817,863. ART BY THE YARD. Loomskill, Inc. SN 244,948. Pub. 8–16–66. Filed 5–5–66.

Class 43 — Thread and Yarn

817,817. (See Class 39 for this trademark.)

817,864. THERMOTEX. Brunner Bros. Co. SN 209,582. Pub. 3–15–66. Filed 1–8–65.

817,865. SUSY. Norville Supply Company, d.b.a. Textile Supply Company. SN 234,926. Pub. 8–16–66. Filed 12–20–65.

Class 44 — Dental, Medical, and Surgical Appliances

817,866. KATHETER ETC. AND DESIGN. Willy Rusch. SN 203,827. Pub. 8–16–66. Filed 10–12–64.

817,867. WHITE CROSS (DESIGN). The American White Cross Laboratories, Inc. SN 218,836. Pub. 8–16–66. Filed 5–14–65.

817,868. DRIP-GUARD. Ruth Hall. SN 221,173. Pub. 8–16–66. Filed 6–15–65.

817,869. MULTI-MATE. Simmons Company. SN 234,308. Pub. 8–16–66. Filed 12–9–65.

817,870. DUO-SEAL. Scott Aviation Corporation. SN 234,471. Pub. 8–16–66. Filed 12–13–65.

817,871. LEDERJECT. American Cyanamid Company. SN 234,524. Pub. 8–16–66. Filed 12–14–65.

817,872. SILAMAT. Etablissement Dentaire Ivoclar. SN 234,551. Pub. 8–16–66. Filed 12–14–65.

817,873. MINISCOPE. Westinghouse Electric Corporation. SN 234,793. Pub. 8–16–66. Filed 12–16–65.

817,874. KIDDY-KOOL. Kiddie Products, Inc. SN 234,909. Pub. 8–16–66. Filed 12–20–65.

817,875. BRISTOJECT. Bristol-Myers Company. SN 235,270. Pub. 8–16–66. Filed 12–27–65.

817,876. FRANTELLE. Frantelle, Inc. SN 235,560. Pub. 8–16–66. Filed 12–30–65.

817,877. HEMOCAPS. Drummond Scientific Company. SN 242,576. Pub. 8–16–66. Filed 4–4–66.

Class 45 — Soft Drinks and Carbonated Waters

817,878. CARVEL ICE AND DESIGN. Thomas Carvel. MULTIPLE CLASS (Classes 45 and 46). SN 218,246. Pub. 8–16–66. Filed 5–7–65.

Class 46 — Foods and Ingredients of Foods

817,878. (See Class 45 for this trademark.)

817,879. LIFT LEAVITT LOW INVENTORY, FAST TURNOVER. John W. Leavitt Company. SN 177,897. Pub. 8–24–65. Filed 9–27–63.

817,880. LINDA LOU. Bradley's Frozen Foods, Inc., d.b.a. Linda Lou Frozen Dessert Pie Co. SN 179,993. CONCURRENT USE. Pub. 3–23–65. Filed 10–29–63.

817,881. SURE GOOD. Beatrice Foods Co. SN 180,998. Pub. 8–16–66. Filed 11–13–63.

817,882. LINDY LOU. Regan Bakeries, Inc. SN 182,737. CONCURRENT USE. Pub. 3–23–65. Filed 12–10–63.

817,883. SUN-UPS. General Foods Corporation. SN 186,071. Pub. 11–17–64. Filed 2–5–64.

817,884. AMIEL'S JUMBO SUBMARINE SANDWICHES. Amiel's Jumbo Submarine Sandwiches, Inc. SN 191,901. Pub. 8–16–66. Filed 4–24–64.

817,885. HOLLYWOOD. National Bakers Services, Inc. SN 197,415. Pub. 5–10–66. Filed 7–8–64.

817,886. HESMER'S HICKORY PIT AND DESIGN. Hesmer Foods, Inc. SN 198,477. Pub. 8–16–66. Filed 7–24–64.

817,887. MINTINIS. Stouffer Foods Corporation. SN 198,782. Pub. 11–23–65. Filed 7–29–64.

817,888. SUN-LITE AND DESIGN. Mead's Frozen Foods Inc. SN 208,758. Pub. 5–10–65. Filed 12–23–64.

817,889. PAR-T-GRA. Filler Products, Inc. SN 209,431. Pub. 7–6–65. Filed 1–6–65.

817,890. DIAMOND HEAD BRAND AND DESIGN. Diamond Head Food Co. SN 210,103. Pub. 8–16–66. Filed 1–18–65.

817,891. FIGURE OF A MAN (DESIGN). Thomas J. Trotter & Sons, Inc. SN 211,117. Pub. 8–16–66. Filed 2–1–65.

817,892. SCHUBERT'S INSTANT PICKLE MIX AND DESIGN. Robert F. Schubert. SN 212,451. Pub. 8–16–66. Filed 2–19–65.

817,893. BIG X. Export Pacific, Inc. SN 214,099. Pub. 8–16–66. Filed 3–15–65.

817,894. CHATS. National Biscuit Company. SN 215,105. Pub. 8–16–66. Filed 3–26–65.

817,895. BORDEN'S A-LA-CARTE AND DESIGN. The Borden Company. SN 216,656. Pub. 8–16–66. Filed 4–16–65.

817,896. SHAKEY'S. Shakey's, Inc. SN 219,621. Pub. 8–16–66. Filed 5–24–65.

817,897. B & K. Berns & Koppstein, Inc. SN 220,195. Pub. 8–16–66. Filed 6–2–65.

817,898. OUR BEST AND DESIGN. The Glidden Company, assignee of Allied Foods. SN 221,554. Pub. 8–16–66. Filed 6–21–65.

817,899. LANCHEE. Lance, Inc. SN 223,799. Pub. 8–16–66. Filed 7–20–65.

817,900. ALPHA-BANANA BITS. General Foods Corporation. SN 224,528. Pub. 8–16–66. Filed 7–29–65.

817,901. BLACK ANGUS. East India Spice Co., Ltd. SN 225,865. Pub. 8–16–66. Filed 8–17–65.

817,902. DAVY JONES. Samuel E. Brenner. SN 225,923. Pub. 8–16–66. Filed 8–18–65.

817,903. LOV-E-LEE. Big Drum, Inc. SN 226,034. Pub. 8–16–66. Filed 8–19–65.

817,904. DELMARK FARMS. The Dietene Company. SN 226,346. Pub. 8–16–66. Filed 8–24–65.

817,905. MARY C. TAYLOR'S MAYACAMAS ETC. AND DESIGN. Lawrence S. Kaufman, d.b.a. Pomona Sales Company. SN 226,647. Pub. 8–16–66. Filed 8–27–65.

817,906. CRAB POT. The Crab Pot, Inc. SN 227,124. Pub. 8–16–66. Filed 9–3–65.

817,907. SWIRL STICK. Sternco Industries, Inc. SN 227,187. Pub. 8–16–66. Filed 9–3–65.

817,908. ANCONA ETC. AND DESIGN. Ancona Brothers Wholesale Grocery Company. SN 227,225. Pub. 8–16–66. Filed 9–7–65.

817,909. MAGNAPHOSCAL. Guano-Werke Aktiengesellschaft. SN 227,757. Pub. 8–16–66. Filed 9–14–65.

817,910. A GO GO. Sunshine Biscuits, Inc. SN 228,278. Pub. 8–16–66. Filed 9–21–65.

817,911. JUNEX. Allied Packers Co., Ltd. SN 229,174. Pub. 8–16–66. Filed 10–4–65.

817,912. HAPPY DAYS. National Biscuit Company. SN 229,271. Pub. 8–16–66. Filed 10–4–65.

817,913. FUN DAYS. National Biscuit Company. SN 229,273. Pub. 8–16–66. Filed 10–4–65.

817,914. TOY TRAIN (DESIGN). McKee Baking Company, d.b.a. Mighty Mike Bakery. SN 229,985. Pub. 8–16–66. Filed 10–12–65.

817,915. COTT. Cott Corporation. SN 231,058. Pub. 8–16–66. Filed 10–22–65.

817,916. DIAMOND D. Sheridan Flouring Mills, Inc. SN 231,246. Pub. 8–16–66. Filed 10–22–65.

817,917. APPLE JACKS. Kellogg Company. SN 233,602. Pub. 8–16–66. Filed 11–30–65.

817,918. STARBURST. Mars, Incorporated, d.b.a. M & M's Candies. SN 242,265. Pub. 8–16–66. Filed 3–30–66.

Class 47 — Wines

817,919. ROODEBERG. Ko-Operatieve Wijnbouwers Vereniging Van Zuid-Afrika Beperkt. SN 228,702. Pub. 8–16–66. Filed 9–27–65.

817,920. LADY ANNE. Ko-Operatieve Wijnbouwers Vereniging Van Zuid-Afrika Beperkt. SN 228,703. Pub. 8–16–66. Filed 9–27–65.

817,921. GOLDEN ACRE. Ko-Operatieve Wijnbouwers Vereniging Van Zuid-Afrika Beperkt. SN 228,704. Pub. 8–16–66. Filed 9–27–65.

817,922. MYMERING. Ko-Operatieve Wijnbouwers Vereniging Van Zuid-Afrika Beperkt. SN 228,709. Pub. 8–16–66. Filed 9–27–65.

817,923. HOUSE (DESIGN). Ko-Operatieve Wijnbouwers Vereniging Van Zuid-Afrika Beperkt. SN 228,710. Pub. 8–16–66. Filed 9–27–65.

817,924. TOMASELLO T AND DESIGN. Tomasello Winery. SN 229,695. Pub. 8–16–66. Filed 10–8–65.

Class 48 — Malt Beverages and Liquors

817,925. HOST. Brewmaster California Corporation. SN 213,651. Pub. 8–16–66. Filed 3–9–65.

Class 50 — Merchandise Not Otherwise Classified

817,926. PROVIDENT. The Mennonite Publishing House, Inc., d.b.a. Provident Bookstore. MULTIPLE CLASS (Classes 50 and 101). SN 200,581. Pub. 8–16–66. Filed 8–25–64.

817,927. POLYMOLD. Polymold Plastics, Inc. SN 212,041. Pub. 8–16–66. Filed 2–15–65.

817,928. MEMORYLINE. W. S. Shamban & Co. SN 220,564. Pub. 8–16–66. Filed 6–7–65.

817,929. TRAVART. Chris Mueller, Jr. SN 225,592. Pub. 8–16–66. Filed 8–12–65.

817,930. CORNING. Corning Glass Works. SN 229,951. Pub. 8–16–66. Filed 10–12–65.

817,931. DAPIM. Industrial Decorators, Inc. SN 238,228. Pub. 8–16–66. Filed 2–7–66.

817,932. WEYERHAEUSER. Weyerhaeuser Company. SN 240,996. Pub. 8–16–66. Filed 3–14–66.

Class 51 — Cosmetics and Toilet Preparations

817,617. (See Class 6 for this trademark.)

817,933. MR. K. Mary Kay, Inc. SN 204,265. Pub. 8–16–66. Filed 10–19–64.

817,934. 400. Pharmaceutical Laboratories, Inc. SN 214,916. Pub. 8–16–66. Filed 3–24–65.

817,935. PROVIGOR. Provigor, Ltd. SN 215,778. Pub. 8–16–66. Filed 4–5–65.

817,936. WALGREEN. Walgreen Co., assignee of Walgreen Laboratories, Inc. SN 216,988. Pub. 8–16–66. Filed 4–20–65.

817,937. AVON LEATHER. Avon Products, Inc. SN 217,438. Pub. 8–16–66. Filed 4–27–65.

817,938. MONEY. Lenard Herrin. SN 218,191. Pub. 8–16–66. Filed 5–6–65.

817,939. MONEY AND DESIGN. Lenard Herrin. SN 218,192. Pub. 8–16–66. Filed 5–6–65.

817,940. ELECTRA MIST. Electra-Mist Corporation. SN 222,918. Pub. 8–16–66. Filed 7–8–65.

817,941. MILDRED MILLER AND DESIGN. Mildred Miller. SN 225,659. Pub. 8–16–66. Filed 8–13–65.

817,942. ONDINE. Suzanne Thierry Parfums, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 227,537. Pub. 8–16–66. Filed 9–10–65.

817,943. PRIVATE LABEL. Beauty Counselors, Inc. SN 228,118. Pub. 8–16–66. Filed 9–20–65.

817,944. HOLD & COMB. The Procter & Gamble Company. SN 230,286. Pub. 8–16–66. Filed 10–15–65.

817,945. STEEL. Countess Mara, Incorporated. SN 230,792. Pub. 8–16–66. Filed 10–21–65.

817,946. COPPER. Countess Mara, Incorporated. SN 230,793. Pub. 8–16–66. Filed 10–21–65.

817,947. BEACHCOMBER. Robert J. Wendt, d.b.a. Calmar Laboratories. SN 230,980. Pub. 8–16–66. Filed 10–21–65.

817,948. OBLIGE. Bristol-Myers Company. SN 231,667. Pub. 8–16–66. Filed 10–27–65.

817,949. FORUM. De Beaufort, Ltd. SN 235,895. Pub. 8–16–66. Filed 1–6–66.

817,950. ESPRIT. De Beaufort, Ltd. SN 235,897. Pub. 8–16–66. Filed 1–6–66.

817,951. BRANDED. De Beaufort, Ltd. SN 235,899. Pub. 8–16–66. Filed 1–6–66.

817,952. POND'S V ETC. AND DESIGN. Chesebrough-Pond's Inc. SN 236,178. Pub. 8–16–66. Filed 1–11–66.

817,953. MR. Studio Girl-Hollywood, Inc., d.b.a. Studio Girl. SN 236,425. Pub. 8–16–66. Filed 1–13–66.

817,954. LOP. Geigy Chemical Corporation. SN 237,955. Pub. 8–16–66. Filed 2–3–66.

817,955. LIFT OFF. The Mennen Company. SN 238,760. Pub. 8–16–66. Filed 2–14–66.

817,956. TOP ELIMINATOR. The Mennen Company. SN 238,761. Pub. 8–16–66. Filed 2–14–66.

817,957. FUEL. The Mennen Company. SN 238,762. Pub. 8–16–66. Filed 2–14–66.

Class 52 — Detergents and Soaps

817,942. (See Class 51 for this trademark.)

817,958. FANTASTIC. Texize Chemicals, Inc., assignee of Fantastic Products, Inc. SN 184,906. Pub. 8–16–66. Filed 1–20–64.

817,959. PACKY PENGUIN. Chas. Pfizer & Co., Inc. SN 214,911. Pub. 8–16–66. Filed 3–24–65.

817,960. FERRODAIZE. Gateway Enterprises, Inc. SN 222,689. Pub. 8–16–66. Filed 7–6–65.

817,961. EZAWAY. W. R. Grace & Co. SN 223,991. Pub. 8–16–66. Filed 7–22–65.

817,962. CHAMPALOO. Joseph M. Gidding, d.b.a. J. Gidding Co. SN 224,606. Pub. 8–16–66. Filed 7–30–65.

817,963. CHEM-I-SAN. Com-Pak Chemical Corporation. SN 226,339. Pub. 8–16–66. Filed 8–24–65.

817,964. VLC. Van Straaten Chemical Company. SN 227,365. Pub. 8–16–66. Filed 9–7–65.

817,965. FOODLAND. Foodland, Inc. SN 229,781. Pub. 8–16–66. Filed 10–11–65.

817,966. UDS. United Distributors Service, Inc. SN 234,973. Pub. 8–16–66. Filed 12–20–65.

817,967. FANTASTIK. Texize Chemicals, Inc. SN 239,677. Pub. 8–16–66. Filed 2–25–66.

Service Marks

Class 100 — Miscellaneous

817,968. THE BIG A SYSTEM AND DESIGN. The Big A System, Inc., assignee of Samuel J. Temperato, d.b.a. The Big A System. SN 156,186. Pub. 2–9–65. Filed 10–29–62.

817,969. GREENTOWN AND DESIGN. W. R. Grace & Co. MULTIPLE CLASS (Classes 100 and 103). SN 197,704. Pub. 8–16–66. Filed 7–13–64.

817,970. GLOMAR. Global Marine Inc., assignee of Global Marine Exploration Company. SN 204,161. Pub. 8–16–66. Filed 10–16–64.

817,971. CORPLAN ASSOCIATES. Transition Incorporated. SN 214,484. Pub. 8–16–66. Filed 3–18–65.

817,972. L AND DESIGN. Carson Pirie Scott & Company. SN 223,868. Pub. 8–16–66. Filed 7–21–65.

817,973. DOUGHNUTS WERE NEVER IN SUCH GREAT SHAPE BEFORE! Mister Donut of America, Inc. SN 224,542. Pub. 8–16–66. Filed 7–29–65.

817,974. PPD AND DESIGN. Harvey Franklin Doren, d.b.a. Product Promotions & Development. SN 229,775. Pub. 8–16–66. Filed 10–11–65.

817,975. ROLL CALL. The Assembly Corporation. SN 229,937. Pub. 8–16–66. Filed 10–12–65.

817,976. CONTRACT ICE. Contract Ice Inc. MULTIPLE CLASS (Classes 100 and 103). SN 229,949. Pub. 8–16–66. Filed 10–12–65.

Class 101 — Advertising and Business

817,926. (See Class 50 for this trademark.)

817,977. COLUMBIA COFFEE SERVICE. Coffee Clubs, Inc., of America. SN 197,474. Pub. 8–16–66. Filed 7–9–64.

817,978. INVENTORS' LEAGUE INC. ILI AND DESIGN. Inventors' League, Inc. SN 198,422. Pub. 8–16–66. Filed 7–23–64.

817,979. VACATION BINGO. Vacation Bingo, Inc. SN 203,903. Pub. 8–16–66. Filed 10–13–64.

817,980. FAST FOODS MART. Fast Foods, Inc. SN 204,646. Pub. 8–16–66. Filed 10–23–64.

817,981. LITTLE GIRL CARICATURE (DESIGN). Homestead Valve Manufacturing Company. SN 213,975. Pub. 8–16–66. Filed 3–12–65.

817,982. NSSEA NATIONAL SCHOOL SUPPLY & EQUIPMENT ASSOCIATION AND DESIGN. National School Supply & Equipment Association. SN 219,253. Pub. 8–16–66. Filed 5–19–65.

817,983. RED SCISSORS GIFT COUPONS AND DESIGN. Red Scissors, Incorporated. SN 220,879. Pub. 8–16–66. Filed 6–10–65.

817,984. M MCDERMOTT INC. AND DESIGN. J. Ray McDermott & Co., Inc. SN 221,390. Pub. 8–16–66. Filed 6–17–65.

817,985. PROFIT FOR YOU AND DESIGN. Profit for You, Inc. SN 224,787. Pub. 8–16–66. Filed 8–2–65.

817,986. MCDERMOTT. J. Ray McDermott & Co., Inc. SN 225,174. Pub. 8–16–66. Filed 8–6–65.

817,987. MCI AND DESIGN. Frank H. Magee, d.b.a. Frank H. Magee Associates. SN 230,671. Pub. 8–16–66. Filed 10–20–65.

817,988. WINGATE. The Wingate Corporation. SN 231,328. Pub. 8–16–66. Filed 10–22–65.

817,989. RADIO RING-O. Alan J. Richards. SN 232,421. Pub. 8–16–66. Filed 11–9–65.

Class 102 — Insurance and Financial

817,990. MISCELLANEOUS DESIGN. Industrial Valley Bank and Trust Company. SN 220,508. Pub. 8–16–66. Filed 6–7–65.

817,991. BENEFICIAL BIG INSURANCE GROUP. Beneficial Standard Life Insurance Company. SN 221,453. Pub. 8–16–66. Filed 6–18–65.

817,992. SIGN & TRAVEL. American Express Company. SN 223,616. Pub. 8–16–66. Filed 7–19–65.

817,993. DINE & SIGN. American Express Company. SN 223,617. Pub. 8–16–66. Filed 7–19–65.

Class 103 — Construction and Repair

817,969. (See Class 100 for this trademark.)

817,976. (See Class 100 for this trademark.)

817,994. SHOE-MATE AND DESIGN. Monte H. Greenawalt, d.b.a. Shoe-Mate Orthopedic Arch Co. SN 199,056. Pub. 8–16–66. Filed 8–3–64.

817,995. GROVE. Grove Manufacturing Co. SN 205,554. Pub. 8–16–66. Filed 11–4–64.

817,996. CONTROLOCK. The Lock-Tronic Corporation. SN 212,427. Pub. 8–16–66. Filed 2–19–65.

817,997. BUTTON-ON. Medafab Corporation. SN 220,119. Pub. 8–16–66. Filed 6–1–65.

817,998. GATEWAY. Gateway Erectors, Inc. SN 222,570. Pub. 8–16–66. Filed 7–2–65.

817,999. COTTMAN. Cottman Automatic Transmissions, Inc. SN 224,397. Pub. 8–16–66. Filed 7–28–65.

818,000. UPOUR AND DESIGN. R. T. Montag, assignee of Upour Concrete Company. SN 226,871. Pub. 8–16–66. Filed 8–31–65.

Class 105 — Transportation and Storage

818,001. IT AND DESIGN. Intercontinental Transport. SN 199,206. Pub. 8–16–66. Filed 8–4–64.

818,002. TREASURY OF TRAVEL. Richard E. S. Maxson. SN 224,539. Pub. 8–16–66. Filed 7–29–65.

Class 106 — Material Treatment

818,003. REPRESENTATION OF DOLPHIN. Ocean City Research Corporation. SN 202,040. Pub. 8–16–66. Filed 9–16–64.

818,004. WEATHER-MATE. John Boyle and Company, Incorporated. SN 224,383. Pub. 8–16–66. Filed 7–28–65.

818,005. CERTIMILE. Associated Oil & Gas Co., d.b.a. Long Mile Rubber Company. SN 229,536. Pub. 8–16–66. Filed 10–7–65.

Class 107 — Education and Entertainment

818,006. M.O.A. Stanton F. Matlock. SN 199,379. Pub. 8–16–66. Filed 8–6–64.

818,007. THE BEST SAFETY DEVICE IN ANY AIRCRAFT IS A WELL-TRAINED PILOT. Flight Safety Inc. SN 210,429. Pub. 8–16–66. Filed 1–22–65.

818,008. FLORENCE UTT SWITCHBOARD TRAINING SYSTEM AND DESIGN. Florence Utt Switchboard Training Systems, Inc. SN 211,138. Pub. 8–16–66. Filed 1–12–65.

818,009. SRC SCHOLASTIC RESEARCH CENTER AND DESIGN. Scholastic Magazines, Inc. SN 218,803. Pub. 8–16–66. Filed 5–13–65.

818,010. SUNDAY GIG. B.F.C., Inc. SN 222,103. Pub. 8–16–66. Filed 6–28–65.

818,011. THE PO' BOYS. Bill Anderson. SN 232,053. Pub. 8–16–66. Filed 11–3–65.

Collective Membership Mark

Class 200

818,012. CHILD EVANGELISM FELLOWSHIP AND DESIGN. National Child Evangelism Fellowship of the U.S.A. SN 189,796. Pub. 8–16–66. Filed 3–27–64.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

SECTION 1

(Combined Certificates)

818,027. Warner Electric Company, Inc., Chicago, Ill. SN 213,393. Filed P.R. 3–5–65; Am. S.R. 8–29–66.

818,028. A. F. Dormeyer Manufacturing Company, Chicago, Ill. SN 227,212. Filed P.R. 9–7–65; Am. S.R. 8–29–66.

PROGRAMMED LEARNING

Class 21—Electrical Apparatus, Machines, and Supplies

For Electroplating Equipment for Metallising Various Objects.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Hand-Operated Plastic Laminating Machines.

Class 38—Prints and Publications

For Textbooks.
First use Jan. 4, 1965.

MAID-RITE

Class 21—Electrical Apparatus, Machines, and Supplies

For Electric Shoe Polishers, and Electric Furniture Polishers.
First use September 1964.

Class 29—Brooms, Brushes, and Dusters

For Electric Hair Brushes.
First use July 1964.

Class 44—Dental, Medical, and Surgical Appliances

For Massagers.
First use September 1963.

SECTION 2

Class 2 — Receptacles

818,013. The Greif Bros. Cooperage Corporation, Delaware, Ohio. SN 195,224. Filed P.R. 6–9–64; Am. S.R. 8–25–66.

MET-L-LINED

For Fibre Drums.
First use on or about June 26, 1963.

Class 6 — Chemicals and Chemical Compositions

818,014. Geigy Chemical Corporation, Ardsley, N.Y. SN 236,372. Filed 1–13–66.

DIPHENYL

For Dyestuffs.
First use 1903.

Class 12 — Construction Materials

818,015. Herbert Daunt Jessop, d.b.a. Amenity Products Company, Glendora, Calif. SN 176,536. Filed P.R. 9–9–63; Am. S.R. 8–31–66.

THE NICER THINGS OF LIVING

For Built-In Wall or Counter Receptacle Used for Domestic Purposes.
First use March 1963.

818,016. Republic Steel Corporation, Cleveland, Ohio. SN 236,514. Filed P.R. 1–14–66; Am. S.R. 9–2–66.

RIGID·RIB

For Ribbed Galvanized Sheets for Roofing and Building Panels.
First use July 6, 1964.

Class 14 — Metals and Metal Castings and Forgings

818,017. Reynolds Metals Company, Richmond, Va. SN 228,492. Filed P.R. 9–23–65; Am. S.R. 8–24–66.

FIREFOIL

For Aluminum Foil.
First use at least as early as January 1965.

818,018. Reynolds Metals Company, Richmond, Va. SN 228,568. Filed P.R. 9–24–65; Am. S.R. 8–18–66.



For Aluminum Foil.
First use July 29, 1965.

Class 16 — Protective and Decorative Coatings

818,019. Limbacher Paint & Color Works, Inc., Mount Vernon, N.Y. SN 239,528. Filed P.R. 2–24–66; Am. S.R. 8–5–66.

ACRYLIZER

For Acrylic Additive for Use in Synthetic Enamels.
First use Mar. 25, 1965.

Class 17 — Tobacco Products

818,020. Philip Morris Incorporated, New York, N.Y. SN 207,412. Filed P.R. 12–3–64; Am. S.R. 8–25–66.



An English translation of the Latin words "Veni-Vidi-Vici" is "I came—I saw—I conquered." The lines in the drawing represent integral parts of the design and do not designate any particular colors.
For Cigars and Cigarettes.
First use February 1963.

Class 18 — Medicines and Pharmaceutical Preparations

818,021. Pharmaceutical Laboratories, Inc., Plainfield, N.J. SN 204,703. Filed P.R. 10–23–64; Am. S.R. 6–9–66.

CARSON

For Analgesics, Antiseptics, Rubbing Alcohol, and Multi-Vitamin Preparations.
First use on or about Sept. 15, 1964.

818,022. The Pfeiffer Co., St. Louis, Mo. SN 242,644. Filed 4–4–66.

PLESENT

For Medicinal Preparation for the Treatment of Stomach Ailments.
First use July 16, 1964.

Class 19—Vehicles

818,023. Universal Oil Products Company, Des Plaines, Ill. SN 211,122. Filed P.R. 2-1-65; Am. S.R. 9-8-66.

AERO-LOUNGE

For Seats for Airplanes and Other Passenger Carriers.
First use Dec. 17, 1964.

818,024. Universal Oil Products Company, Des Plaines, Ill. SN 211,123. Filed P.R. 2-1-65; Am. S.R. 9-8-66.

AERO-STRETCHER

For Portable Bed for Installation in a Passenger Carrier.
First use Oct. 23, 1964.

Class 21—Electrical Apparatus, Machines, and Supplies

818,027. See Section 1 (Combined Certificate).

818,028. See Section 1 (Combined Certificate).

818,025. General Electric Company, Schenectady, N.Y. SN 177,169. Filed P.R. 9-17-63; Am. S.R. 9-8-66.

POWR/BRACKET

No claim is made to the term "Bracket" apart from the mark as shown.
For Luminaire.
First use May 2, 1963.

818,026. Ebert Electronics Corp., Floral Park, N.Y. SN 210,864. Filed P.R. 1-28-65; Am. S.R. 8-29-66.

Hi-power

For Mercury Relay.
First use Nov. 10, 1964.

Class 22—Games, Toys, and Sporting Goods

818,029. Hans Martin, Zurich, Switzerland. SN 224,538. Filed P.R. 7-29-65; Am. S.R. 8-22-66.

MARTIN

Priority claimed under Sec. 44(d) on Swiss Reg. No. 209,151, dated Mar. 16, 1965.
For Sporting Goods, Particularly Ski Boots, Ski Boot Fasteners, and Clamping Devices.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

818,027. See Section 1 (Combined Certificate).

818,030. Rockwell-Standard Corporation, Pittsburgh, Pa. SN 207,154. Filed P.R. 11-30-64; Am. S.R. 9-1-66.

ROLL JOINT

For Variable Length Drive Shaft Assemblies Particularly for Connection to Universal Joints.
First use about Nov. 10, 1964.

818,031. The Bendix Corporation, Detroit, Mich. SN 214,502. Filed P.R. 3-19-65; Am. S.R. 9-6-66.

NO-LASH

For Universal Joints and Parts Therefor.
First use Feb. 5, 1965.

818,032. Essick Manufacturing Company, Los Angeles, Calif. SN 233,556. Filed P.R. 11-26-65; Am. S.R. 8-22-66.

E-Z-SPRAY

For Machinery for Applying Plaster and Paint Texture to Walls, Ceilings and Building Exteriors.
First use February 1965.

818,033. Essick Manufacturing Company, Los Angeles, Calif. SN 233,557. Filed P.R. 11-26-65; Am. S.R. 8-22-66.

E-Z COATER

For Machinery for Applying Plaster and Paint Texture to Walls, Ceilings and Building Exteriors.
First use February 1965.

Class 26—Measuring and Scientific Appliances

818,034. Cognitronics Corporation, Briarcliff Manor, N.Y. SN 225,471. Filed P.R. 8-11-65; Am. S.R. 8-24-66.

SPEECHMAKER

For Automatic Speech Generation Equipment for Communications and Other Data Output Applications, Including Verbal Audio Information Storage and Response Equipment.
First use July 30, 1965.

818,035. Kenneth A. Casavant, d.b.a. Buckscale Co., Roslindale, Mass. SN 231,538. Filed P.R. 10-24-65; Am. S.R. 8-19-66.

BUCK-SCALE

For Measuring Tape for Estimating the Weight of Deer.
First use Aug. 17, 1965.

818,036. Rochester Optical Manufacturing Company, Inc., Rochester, N.Y. SN 235,797. Filed 1-4-66.

GLARE PRUF

For Goggles.
First use Sept. 15, 1934.

Class 29—Brooms, Brushes, and Dusters

818,028. See Section 1 (Combined Certificate).

Class 32—Furniture and Upholstery

818,037. American Furniture Company, Incorporated, North Wilkesboro, N.C. SN 209,982. Filed P.R. 1-15-65; Am. S.R. 9-6-66.

StyleMark

For Bedroom and Dining Room Furniture.
First use at least as early as Dec. 4, 1964.

818,038. Lloyd Engineering Company, Belleville, N.J. SN 217,123. Filed P.R. 4-22-65; Am. S.R. 8-29-66.

TOP DRAWER

For Warehousing and Selling Tables, Benches, Desks, Stools, Shelving, Drawers, Chairs, Storage Cabinets, Lockers and Storage Racks.
First use Apr. 15, 1965.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

818,039. The Goodyear Tire & Rubber Company, Akron, Ohio. SN 222,367. Filed P.R. 6-30-65; Am. S.R. 8-25-66.

LIMBER LITE

For Hose.
First use Oct. 12, 1964.

818,040. The Goodyear Tire & Rubber Company, Akron, Ohio. SN 225,144. Filed P.R. 8-6-65; Am. S.R. 9-9-66.

SAFETY BELT

For Tires.
First use June 10, 1965.

818,041. The Goodyear Tire & Rubber Company, Akron, Ohio. SN 229,976. Filed 10-12-65.

SUPER-SINGLE

For Tires.
First use May 18, 1961.

Class 38—Prints and Publications

818,027. See Section 1 (Combined Certificate).

818,042. V. C. Rasmussen, d.b.a. Apartment Index-Guide, Atlanta, Ga. SN 198,876. Filed P.R. 7-30-64; Am. S.R. 6-20-66.

apartment HUNTER'S guide

For Periodical Directory.
First use on or about June 14, 1964.

818,043. Standard & Poor's Corporation, New York, N.Y. SN 208,016. Filed P.R. 12-7-64; Am. S.R. 8-24-66.

O-T-C AND REGIONAL EXCHANGE STOCK REPORTS

For Periodical Reports Relating to Securities.
First use Mar. 15, 1963.

818,044. Civic Education Service, Inc., Washington, D.C. SN 232,666. Filed P.R. 11-15-65; Am. S.R. 8-15-66.

HEADLINE-FOCUS WALL MAP

For Maps for Educational Use.
First use Sept. 1, 1963.

Class 39—Clothing

818,045. Fur and Sport, Inc., New York, N.Y. SN 179,218. Filed P.R. 10-17-63; Am. S.R. 9-7-66.

FUR AND SPORT

For Fur Coats, Fur Jackets, Fur Stoles, Fur Hoods, and Fur Trimmings—Namely, Fur Collars, Fur Cuffs, and Fur Boas.
First use May 1963.

818,046. Kelly-Green Hosiery Co., Inc., New York, N.Y. SN 221,935. Filed P.R. 6-24-65; Am. S.R. 9-9-66.

Kelly

For Hosiery.
First use June 10, 1965.

818,047. Wembley, Inc., New Orleans, La. SN 224,896. Filed P.R. 8-3-65; Am. S.R. 8-24-66.

Broughton

For Men's Neckwear.
First use May 18, 1965.

818,048. Chase Department Stores, Inc., Newark, N.J. SN 225,541. Filed P.R. 8-12-65; Am. S.R. 8-26-66.

MISS CHASE

For Clothing—Namely, Ladies' Dresses, Coats, Suits, Hats, Jackets, and Slacks.
First use Oct. 15, 1964.

818,049. The Lovable Company, Atlanta, Ga. SN 225,878. Filed P.R. 8-17-65; Am. S.R. 9-1-66.

LOVE-THAT-STRETCH!

For Women's Foundation Garments.
First use Feb. 4, 1964.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

818,050. Dan River Mills, Incorporated, Danville, Va. SN 218,616. Filed P.R. 5-12-65; Am. S.R. 9-1-66.

FIRST IN AMERICAN FASHION

For Sheets, Sheeting, and Pillowcases.
First use Apr. 2, 1965.

Class 43—Thread and Yarn

818,051. Coats & Clark, Inc., New York, N.Y. SN 211,612. Filed P.R. 2-8-65; Am. S.R. 8-25-66.

BEST CORD

For Thread.
First use on or about Sept. 3, 1964.

Class 44—Dental, Medical, and Surgical Appliances

818,028. See Section 1 (Combined Certificate).

818,052. Minnesota Mining and Manufacturing Company, St. Paul, Minn. SN 237,578. Filed P.R. 1-28-66; Am. S.R. 8-29-66.

PEOPLE-
IDEAS-PRODUCTS . . .
SERVING MEDICINE

For Self-Adhering Foam Pad Useful for the Treatment and Prevention of Decubitus Ulcers.
First use Aug. 28, 1964.

Class 45—Soft Drinks and Carbonated Waters

818,053. Raul Diaz, Miami, Fla. SN 224,400. Filed P.R. 7-28-65; Am. S.R. 8-23-66.

RICA

The primary meaning of the Spanish word "Rica" is "rich."
For Soft Drink.
First use June 2, 1965.

818,054. Raul Diaz, Miami, Fla. SN 224,401. Filed P.R. 7-28-65; Am. S.R. 8-23-66.

RICA

The primary meaning of the Spanish word "Rica" is "rich." The drawing is lined for the color "blue," but no claim is made to color.
For Soft Drink.
First use June 2, 1965.

Class 46—Foods and Ingredients of Foods

818,055. Ralston Purina Company, St. Louis, Mo. SN 186,892. Filed P.R. 2-17-64; Am. S.R. 1-7-65.

BUILT-IN-ROUGHAGE

For Roughage Incorporated as an Ingredient in Cattle Feeds.
First use Mar. 1, 1962.

818,056. The Borden Company, New York, N.Y. SN 201,178. Filed P.R. 9-3-64; Am. S.R. 8-16-66.

ENSALADA

The Spanish noun "Ensalada" is defined as "salad," "hodge podge" or "medley."
For Prepared Mushrooms.
First use Nov. 1, 1963.

818,057. Cain's Coffee Co., Oklahoma City, Okla., assignee of William R. Piper Coffee Co., Kansas City, Mo. SN 219,603. Filed P.R. 5-24-65; Am. S.R. 8-22-66.

PIPER-CARDINAL

For Coffee.
First use May 18, 1965.

818,058. John R. White Company, Inc., Birmingham, Ala. SN 220,810. Filed P.R. 6-9-65; Am. S.R. 8-17-66.

SUG-O-LAC

For Edible Grade of Lactose.
First use Nov. 10, 1958.

818,059. Eugene Centrone, d.b.a. E. Centrone, Corona, N.Y. SN 224,159. Filed P.R. 7-26-65; Am. S.R. 8-22-66.

Centrone's

For Frozen Desserts—Namely, Italian Ices.
First use March 1950.

818,060. Bunte Candies, Inc., Oklahoma City, Okla. SN 226,409. Filed P.R. 8-25-65; Am. S.R. 8-25-66.

NOTHING NIBBLES NICER

For Candy of All Kinds.
First use May 5, 1965.

818,061. Hales & Hunter Co., Chicago, Ill. SN 228,908. Filed P.R. 9-29-65; Am. S.R. 8-18-66.

ROASTERETTE

For Poultry Feed.
First use Jan. 12, 1961.

818,062. Oasis Gardens, Indio, Calif. SN 235,928. Filed P.R. 1-6-66; Am. S.R. 8-12-66.

COACHELLA DESERT

For Fresh Citrus Fruits.
First use Mar. 4, 1932.

818,063. Oasis Gardens, Indio, Calif. SN 235,929. Filed P.R. 1-6-66; Am. S.R. 8-12-66.

Coachella Pink

For Fresh Citrus Fruits.
First use Dec. 20, 1944.

Class 48—Malt Beverages and Liquors

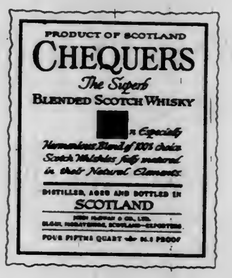
818,064. O'Keefe Brewing Company Limited, Toronto, Ontario, Canada. SN 207,898. Filed P.R. 12-10-64; Am. S.R. 8-22-66.



The right to the exclusive use of all the wording on the drawing except "OK" and "O'Keefe" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 314,354, 778,292, and others.
For Ale.
First use January 1962; in commerce February 1962.

Class 49—Distilled Alcoholic Liquors

818,065. John McEwan & Co. Ltd., Leith, Edinburgh, Scotland. SN 251,586. Filed 8-3-66.



Owner of Reg. No. 728,945.
For Scotch Whisky.
First use at least as early as August 1962; in commerce at least as early as August 1962.

Class 50—Merchandise Not Otherwise Classified

818,066. The Holes-Webway Co., St. Cloud, Minn. SN 220,298. Filed P.R. 6-3-65; Am. S.R. 8-8-66.

STICK-QUICK

For Signmaker Kit Composed of Cut-Out Letters and Numbers for Signs, Displays, Bulletin Boards, etc.
First use Feb. 10, 1965.

Class 51 — Cosmetics and Toilet Preparations

818,067. Maradel Products, Inc., Farmingdale, N.Y. SN 226,368. Filed P.R. 8–24–65; Am. S.R. 8–26–66.

BEIGE TAFFY

For Conditioning Hair Color Rinse.
First use Dec. 2, 1963.

Class 52 — Detergents and Soaps

818,068. Colgate-Palmolive Company, New York, N.Y. SN 223,532. Filed P.R. 7–16–65; Am. S.R. 8–24–66.

WITE-N

For Toilet Bowl Cleaner and Disinfectant.
First use Jan. 31, 1964.

818,069. Bonnie Home Products, Inc., Great Neck, N.Y. SN 226,035. Filed P.R. 8–19–65; Am. S.R. 8–22–66.

WASH BY HAND

For Detergent for Home Laundry Use.
First use June 25, 1965.

818,070. Danske Oliemoller og Saebefabrikker Aktieselskab, Copenhagen, Denmark. SN 227,654. Filed P.R. 9–13–65; Am. S.R. 8–24–66.



The Chinese characters mean "yellow" and "means" but are fanciful as applied to applicant's goods. The drawing is lined for red and gold. The trademark "Gen Sing" is defined as a Chinese herb. Owner of Danish Reg. No. 2,838, dated Aug. 29, 1964.
For Toilet Soap.

Service Marks

Class 102 — Insurance and Financial

818,071. Continental Casualty Company, Chicago, Ill. SN 234,180. Filed P.R. 12–8–65; Am. S.R. 8–18–66.

HOSPITAL MONEY PLAN

For Underwriting Hospital Insurance.
First use June 1964.

Class 103 — Construction and Repair

818,072. Eldon K. Myers, d.b.a. Drum Turning Service Co., Sacramento, Calif. SN 226,658. Filed P.R. 8–27–65; Am. S.R. 8–22–66.

MOBILE BRAKE

For Brake Drum Repair Services.
First use Aug. 9, 1965.

TRADEMARK REGISTRATIONS RENEWED

50,194. CORTICELLI AND DESIGN. Cl. 43. 3–6–06.
52,105. MCCRAY. Cl. 31. 5–1–06.
53,359. ORALINE. Cl. 51. 5–29–06.
53,460. DUNHAM'S. Cl. 46. 6–5–06.
53,565. PERFECTION. Cl. 44. 6–5–06.
53,566. VULCARBO. Cl. 44. 6–5–06.
56,820. MEADOW GOLD. Cl. 46. 10–23–06.
57,519. DR. PIERCE'S PLEASANT PELLETS. Cl. 18. 11–13–06.
57,789. L & CO. AND DESIGN. Cl. 8. 11–27–06.
59,311. JEFFERSON AND DESIGN. Cl. 7. 1–8–07.
59,907. IDEAL MILK. Cl. 46. 1–22–07.
60,205. TELEPHONY. Cl. 38. 1–29–07.
60,469. BLUE BAND (DESIGN). Cl. 37. 2–12–07.
60,486. MILKMAID BRAND. Cl. 46. 2–12–07.
207,699. PRINTOGRAPH. Cl. 38. 1–5–26.
213,573. PETER PIPER. Cl. 8. 6–1–26.
215,126. BON-TON. Cl. 4. 7–13–26.
217,266. MARVELUBE. Cl. 15. 8–31–26.
217,327. NEW ERA. Cl. 4. 8–31–26.
217,659. TELECORD. Cl. 21. 9–7–26.
217,880. DICTADYNE. Cl. 21. 9–14–26.
218,057. WORSTED-TEX AND DESIGN. Cl. 39. 9–21–26.
218,073. POINSETTIA. Cl. 46. 9–21–26.
218,547. KEROTEST AND DESIGN. Cl. 13. 9–28–26.
219,365. ISO-VIS. Cl. 15. 10–19–26.
220,694. TYPOLIT. Cl. 11. 11–16–26.
221,149. MECO. Cl. 34. 11–23–26.
221,202. BUSTER BROWN. Cl. 39. 11–23–26.
221,448. AVALON. Cl. 46. 11–30–26.
222,068. FILMO. Cl. 15. 12–21–26.
223,700. SNOW CAP. Cl. 46. 2–8–27.
421,048. HARRIS PARK. Cl. 46. 5–14–46.
422,151. ARCHIMEDES. Cl. 23. 7–9–46.
422,767. PAWNEE BILL. Cl. 39. 8–13–46.
423,437. LUBRO-VAN. Cl. 23. 9–3–46.
423,504. EI INC. AND DESIGN. Cl. 21. 9–3–46.
423,574. A & S. Cl. 42. 9–3–46.
424,166. SYROCOWOOD. Cl. 40. 9–24–46.
424,193. DESPACILINA. Cl. 18. 9–24–46.
424,278. AUTOGRAPH. Cl. 37. 10–1–46.
424,306. FUT-SURE. Cl. 4. 10–1–46.
424,307. LIONBLAST. Cl. 4. 10–1–46.
424,308. LITHOLITE. Cl. 4. 10–1–46.
425,333. DIPLOMA. Cl. 37. 11–12–46.
425,550. SYROCOWOOD. Cl. 8. 11–26–46.
425,562. VISA-BALM. Cl. 6. 11–26–46.
425,741. SYROCOWOOD. Cl. 32. 12–3–46.
425,997. SAPPHIRE. Cl. 40. 12–10–46.
426,012. PANTEX. Cl. 24. 12–10–46.
426,014. PANTEX AND DESIGN. Cl. 24. 12–10–46.
426,195. RED FLASH. Cl. 44. 12–17–46.
426,383. FLASHCAST. Cl. 21. 12–24–46.
426,384. ADCAST. Cl. 21. 12–24–46.
426,532. SYROCO. Cl. 50. 12–31–46.

426,689. ANHYDROPRENE. Cl. 21. 1–7–47.
426,904. DIXIE FLYER. Cl. 49. 1–21–47.
427,147. WILLIAM TELL. Cl. 39. 1–28–47.
427,461. AERO-MOTIVE. Cl. 23. 2–11–47.
427,571. REST EASY. Cl. 3. 2–11–47.
427,810. EXECUTONE AND DESIGN. Cl. 21. 2–25–47.

TRADEMARK REGISTRATIONS CANCELED

Section 8

696,873. TRULY YOURS. Cl. 51. 4–26–60.

The following registrations issued Sept. 13, 1960

704,116. POLYROLL. Cl. 1.
704,123. PERF-A-BAG. Cl. 2.
704,124. KUTOL. Cl. 2.
704,125. POR-O-POR ETC. AND DESIGN. Cl. 2.
704,129. APPELACE. Cl. 3.
704,136. HS AND DESIGN. Cl. 6.
704,138. DEORANT. Cl. 6.
704,153. P. BERETTA AND DESIGN. Cl. 9.
704,155. GRAN-PHOSPHATE AND DESIGN. Cl. 10.
704,157. RIDGEROCK. Cl. 12.
704,159. PARQU-INLAY. Cl. 12.
704,161. CLIPAK. Cl. 12.
704,162. DIAMONTEX. Cl. 12.
704,180. GLIDE-LOK. Cl. 13.
704,182. D (DESIGN). Cl. 13.
704,188. LAV LUB. Cl. 15.
704,190. PENIT. Cl. 15.
704,193. VI-RON-ITE. Cl. 18.
704,195. WATKINS ETC. Cl. 18.
704,196. IONAL. Cl. 18.
704,198. PROPACIN. Cl. 18.
704,208. TRIDAR. Cl. 21.
704,211. ARDWIN. Cl. 21.
704,213. RESLEC. Cl. 21.
704,215. ARPEGGIO AND DESIGN. Cl. 21.
704,216. TUBE-JUMPER. Cl. 21.
704,218. SYNCHRO-SEAL. Cl. 21.
704,220. DYNACEL. Cl. 21.
704,238. MERMAID. Cl. 22.
704,240. RING-A-TAC-TOE. Cl. 22.
704,242. ROTOCYCLE. Cl. 22.
704,245. FAN-E-BILT. Cl. 22.
704,247. WINGO. Cl. 22.
704,248. HALOTOY. Cl. 22.
704,251. COUNT DOWN. Cl. 22.
704,258. REWI-DYNINTER. Cl. 23.
704,264. USE AND DESIGN. Cl. 23.
704,274. AUTCO. Cl. 23.
704,275. RAFFIA. Cl. 23.
704,280. FLASH MATIC. Cl. 26.
704,281. TERRAFIX. Cl. 26.
704,284. VISITUTOR. Cl. 26.
704,287. SHADOW THIN. Cl. 27.
704,288. HEUROPLAN. Cl. 27.
704,290. AT AND DESIGN. Cl. 28.
704,292. STAR DROP. Cl. 28.
704,301. ABSORPO-VAC. Cl. 31.
704,304. FORESIGHT! Cl. 32.
704,307. WET ROCKER. Cl. 32.
704,316. CARBO-KWIK. Cl. 35.
704,319. VIM AND DESIGN. Cl. 36.
704,320. TOPPA ETC. AND DESIGN. Cl. 36.
704,323. LANGUAGE-GRAM. Cl. 38.
704,322. LET'S TEE OFF. Cl. 38.
704,324. AGRICULTURAL EQUIPMENT DEALER. Cl. 38.
704,330. HALO. Cl. 39.
704,334. WYLEDON. Cl. 39.
704,336. V. Cl. 42.
704,342. TRILYBEL. Cl. 42.
704,345. TEETH-A-RATTLE. Cl. 44.
704,351. VELYNE. Cl. 44.
704,352. WARWEC AND DESIGN. Cl. 44.
704,353. ABRASI-GEL. Cl. 44.
704,354. DENTA-MIST. Cl. 44.
704,367. MERRY MILLER. Cl. 46.
704,370. FORMIDABLE. Cl. 46.
704,373. TURNPIKE. Cl. 46.
704,383. TROP-I-CURL. Cl. 51.
704,386. SCAP. Cl. 51.
704,394. VACATION-LAND AND DESIGN. Cl. 105.
704,391. FIGURETTE. Cl. 100.
704,395. HOLIDAY BOWL AND DESIGN. Cl. 107.
704,396. STORYBOOK HOUSE. Cl. 107.
704,400. I.T.E.W. UNION LABEL AND DESIGN. Cl. A.
704,406. UNIT. Cl. 19.
704,407. SEA SPEED. Cl. 26.
704,408. AUDIOSWEEP. Cl. 26.
704,411. COLLEGIATE SPORTSWEAR. Cl. 39.
704,412. SOAP 'N WATER. Cl. 39.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

216,829. MARCELLE. Cl. 51. 8–24–26. C. W. Beggs, Sons & Co. The Borden Company, New York, N.Y. Amended to appear:

MARCELLE

328,192. SIGNAL DOUBLE CHECKED AND DESIGN. Cl. 38. 9–17–35. Signal Oil & Gas Co. of California. Standard Oil Company of California, Los Angeles, Calif. Amended to appear:



555,928. ALEXANA. Cl. 51. 3–11–52. Alexandra de Markoff Sales Corporation, New York, N.Y. Amended: In the statement, column 2, lines 3 to 5, the disclaimer is deleted, and the drawing is amended to appear:

ALEXANA

655,722. GOOD GULF AND DESIGN. Cl. 15. 12–17–57. Gulf Oil Corporation, Pittsburgh, Pa. Amended to appear:



718,631. BAKE-LINE. Cl. 46. 7–18–61. Bake-Line Products, Inc., Chicago, Ill. Corrected: In the statement, column 1, line 1, after "Products", *Inc.* should be inserted.

794,417. OIL IR. Cl. 23. 8–17–65. Ingersoll-Rand Company, New York, N.Y. Corrected: In the statement, column 1, line 1, "New York" should be deleted and *New Jersey* should be inserted.

808,201. MIR-A-KLOR-X. Cl. 52. 5–10–66, W. R. Grace & Co., New York, N.Y. Corrected: In the statement, column 2, line 1, after "compound" *for industrial, institutional and commercial uses* should be inserted.

810,339. JETKORE. Cl. 7. 6–28–66. American Manufacturing Company, Inc., Brooklyn, N.Y. Corrected: In the statement, column 1, line 1, "Co." should be deleted and *Company* should be inserted and "New York" should be deleted and *Delaware* should be inserted.

814,324. VIBRIN. Cl. 18. 9–6–66. Norden Laboratories, Inc., Lincoln, Nebr. Corrected: In the statement, column 1, line 1, "Nordon" should be deleted and *Norden* should be inserted.

REGISTRATIONS PUBLISHED UNDER SEC. 12(c)

The following marks registered under the act of 1905, or the act of 1881, are published under the provisions of section 12(c) of the Trademark Act of 1946. These registrations are not subject to opposition but are subject to cancellation under section 14 of the act of 1946.

Class 2 — Receptacles

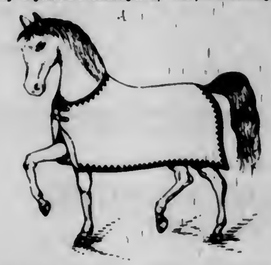
427,031. Jan. 21, 1947. Southern Advance Bag & Paper Co. Inc., Bangor, Maine, and Boston, Mass. Pub. by Continental Can Company, Inc., New York, N.Y.

OSAGE

For Paper Bags.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

56,597. Oct. 9, 1906. William Ayres & Sons, Philadelphia, Pa. Pub. by Ayres-Philadelphia, Inc., Philadelphia, Pa.



For Horse-Blankets.

Class 16 — Protective and Decorative Coatings

55,908. Aug. 21, 1906. Rahtjen's American Composition Company, New York, N.Y. Pub. by Red Hand Compositions Company Inc., New York, N.Y.



For Anticorrosive and Antifouling Paint.

Class 21 — Electrical Apparatus, Machines, and Supplies

151,508. Feb. 7, 1922. Home Electric Lighting Company, East Orange, N.J. Pub. by Textron Inc., Providence, R.I.

HOMELITE

For Electric Generating Plants.

216,125. Aug. 3, 1926. The Clark Controller Company, Cleveland, Ohio. Pub. by A. O. Smith Corporation, Milwaukee, Wis.



For Electric Controllers, Magnetic Brakes, etc.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

58,502. Dec. 18, 1906. Russell & Erwin Manufacturing Company, New Britain, Conn. Pub. by Emhart Corporation, Hartford, Conn.

RUSSWIN

For Wrenches.

219,936. Oct. 26, 1926. Robinson Fire Apparatus Manufacturing Company, St. Louis, Mo. Pub. by M. L. Snyder & Son, Inc., Philadelphia, Pa.

STEMPEL

For Fire Extinguisher Apparatus, Including Portable Hand Extinguishers and Wheeled Extinguishers.

Class 31 — Filters and Refrigerators

424,951. Oct. 29, 1946. The Cellulo Company, Sandusky, Ohio. Pub. by registrant.

WHITE ★ STAR

For Filtermass.

Class 34 — Heating, Lighting, and Ventilating Apparatus

424,967. Oct. 29, 1946. Homelite Corporation, East Port Chester, Conn. Pub. by Textron Inc., Providence, R.I.

HOMELITE

For Gasoline-Engine Driven Blower Units for Supplying and Exhausting Air and Gases and for General Ventilating Purposes, Including Manholes, Gas Containers, etc., and Manhole Heaters Utilizing Liquid Fuel.

Class 39 — Clothing

217,728. Sept. 7, 1926. Dixon-Bartlett Company, Baltimore, Md. Pub. by Dixon-Bartlett, Inc., Baltimore, Md.

HILL AND DALE

For Leather Shoes.

425,734. Dec. 3, 1946. Reeves Brothers, Inc., New York, N.Y. Pub. by registrant.

OSAGE by REEVES

For Men's Sport Jackets, Swim Trunks, Slacks, Work Pants, etc.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

422,638. Aug. 6, 1946. Riverside & Dan River Cotton Mills, Inc., Danville, Va. Pub. by Dan River Mills, Incorporated, Danville, Va.

Riviera

For Sheets, Sheeting, and Pillow Cases.

422,640. Aug. 6, 1946. Riverside & Dan River Cotton Mills, Inc., Danville, Va. Pub. by Dan River Mills, Incorporated, Danville, Va.

Unity

For Sheets, Sheeting, and Pillow Cases.

424,989. Oct. 29, 1946. Riverside & Dan River Cotton Mills, Inc., Danville, Va. Pub. by Dan River Mills, Incorporated, Danville, Va.

SOMBRERO

For Piece Goods of Cotton, Rayon, Wool, etc.

Class 44 — Dental, Medical, and Surgical Appliances

424,957. Oct. 29, 1946. Becton, Dickinson and Company, East Rutherford, N.J. Pub. by registrant.

VACUTAINER

For Device Used for the Collection of Blood Specimens.

Class 46—Foods and Ingredients of Foods

216,063. Aug. 3, 1926. L. Kohn & Sons Meat and Grocery Company, d.b.a. The Kohn Stores, St. Louis, Mo. Pub. by The Kroger Co., Cincinnati, Ohio.

TOP-O-TH MORNIN

For Coffee.

425,349. Nov. 12, 1946. Samuel L. Blumert, d.b.a. Blumert Packing Company, Chicago, Ill. Pub. by registrant.

REDI-SAM



For Smoked Fish.

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Fort Howard Paper Co., Green Bay, Wis. 817,810, pub. 8–16–66. Cl. 37.
Fort Howard Paper Co., Green Bay, Wis. 817,811, pub. 8–16–66. Cl. 37.
Frantelle, Inc., Towaco, N.J. 817,876, pub. 8–16–66. Cl. 44.
Freilich, Sidney, d.b.a. Seal-Tite Bag Co., Philadelphia, Pa. 704,123, canc. Cl. 2.
Frick Co., Waynesboro, Pa. 817,796, pub. 8–16–66. Cl. 34.
Fricke, J. E., Co., The, Philadelphia, Pa. 59,311, ren. 11–1–66. Cl. 7.
Fromex Corp., Elkhart, Ind. 817,636, pub. 8–16–66. Multiple Class (Classes 12, 19, and 22).
Fulton Asphalt Co., Chicago, Ill. 817,646, pub. 8–16–66. Cl. 12.
Fun Togs, Inc., New York, N.Y. 817,824, pub. 8–16–66. Cl. 39.
Fur and Sport, Inc., New York, N.Y. 818,045. Cl. 39.
Gateway Enterprises, Inc., St. Louis, Mo. 817,960, pub. 8–16–66. Cl. 52.
Gateway Erectors, Inc., Chicago, Ill. 817,998, pub. 8–16–66. Cl. 105.
Geigy Chemical Corp., Ardsley, N.Y. 817,954, pub. 8–16–66. Cl. 51.
Geigy Chemical Corp., Ardsley, N.Y. 818,014. Cl. 6.
General Abrasive Co., Inc., Niagara Falls, N.Y. 424,306, ren. 11–1–66. Cl. 4.
General Abrasive Co., Inc., Niagara Falls, N.Y. 424,307, ren. 11–1–66. Cl. 4.
General Abrasive Co., Inc., Niagara Falls, N.Y. 424,308, ren. 11–1–66. Cl. 4.
General Aniline & Film Corp.: *See*—
Ansco Photoproducts, Inc.
General Electric Co., Schenectady, N.Y. 818,025. Cl. 21.
General Foods Corp., White Plains, N.Y. 817,883, pub. 11–17–64. Cl. 46.
General Foods Corp., White Plains, N.Y. 817,900, pub. 8–16–66. Cl. 46.
General Mills, Inc., Minneapolis, Minn. 777,121, canc. Cl. 46.
General Mills, Inc., Minneapolis, Minn. 777,122, canc. Cl. 46.
General Mills, Inc., Minneapolis, Minn. 777,124, canc. Cl. 46.
General Mills, Inc., Minneapolis, Minn. 777,125, canc. Cl. 46.
General Research, Inc., Grand Rapids, Mich. 817,669, pub. 8–16–66. Cl. 16.
General Time Corp., New York, N.Y. 704,218, canc. Cl. 21.
General Time Corp., New York, N.Y. 704,287, canc. Cl. 27.
General Time Corp., New York, N.Y. 817,620, pub. 8–16–66. Cl. 6.
Gidding, Joseph M., d.b.a. Gidding Co., New York, N.Y. 817,962, pub. 8–16–66. Cl. 52.
Gidding Co.: *See*—
Gidding, Joseph M.
Gilkison, G. C., Mansfield, Ohio. 704,188, canc. Cl. 15.
Gladiola Biscuit Co., Dallas, Tex. 704,367, canc. Cl. 46.
Glen Raven Mills, Inc., New York, N.Y. 817,820, pub. 8–16–66. Cl. 39.
Glidden Co., The: *See*—
Dunham Mfg. Co.
Glidden Co., The, Cleveland, Ohio., from Allied Foods, City of Industry, Calif. 817,898, pub. 8–16–66. Cl. 46.
Global Marine Exploration Co.: *See*—
Global Marine Inc.
Global Marine Inc., from Global Marine Exploration Co., Los Angeles, Calif. 817,970, pub. 8–16–66. Cl. 100.
Gold Medal Hosiery Co., Inc., New York, N.Y. 817,821, pub. 8–16–66. Cl. 39.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 817,801, pub. 8–16–66. Cl. 35.
Goodyear Tire & Rubber Co., Akron, Ohio. 818,039. Cl. 35.
Goodyear Tire & Rubber Co., Akron, Ohio. 818,040. Cl. 35.
Goodyear Tire & Rubber Co., Akron, Ohio. 818,041. Cl. 35.
Gordon River Corp., South Naples, Fla. 817,607, pub. 8–16–66. Cl. 2.
Gordon, Sophie R., New York, N.Y. 817,684, pub. 8–16–66. Cl. 18.
Gotham, Chadbourn, Inc., Charlotte, N.C. 817,844, pub. 8–16–66. Cl. 39.
Grace, W. R., & Co., New York, N.Y. 808,201, cor. Cl. 52.
Grace, W. R., & Co., New York, N.Y. 817,961, pub. 8–16–66. Cl. 52.
Grace, W. R., & Co., New York, N.Y. 817,969, pub. 8–16–66. Multiple Class (Classes 100 and 103).
Grandoe Glove Corp., from Alexett Bacmo Corp., Gloversville, N.Y. 704,412, canc. Cl. 39.
Granger Sofwater Supply & Mfg. Corp., d.b.a. International Watercare Corp., Manitowoc, Wis. 817,776, pub. 8–16–66. Cl. 31.
Greater St. Petersburg Chamber of Commerce, St. Petersburg, Fla. 704,395, canc. Cl. 107.
Greenawalt, Monte H., d.b.a. Shoe-Mate, Dubuque, Iowa. 817,994, pub. 8–16–66. Cl. 103.
Greif Bros. Cooperage Corp., The, Delaware, Ohio. 818,013. Cl. 2.
Grove Mfg. Co., Shady Grove, Pa. 817,995, pub. 8–16–66. Cl. 103.
Guano-Werke Aktiengesellschaft, Hamburg, Germany. 817,909, pub. 8–16–66. Cl. 46.
Gulf Oil Corp., Pittsburgh, Pa. 655,722. Am. 7(d). Cl. 15.
Gulf Oil Corp., Pittsburgh, Pa. 817,794, pub. 8–16–66. Cl. 34.
Gulf States Paper Corp., Tuscaloosa, Ala. 817,740, pub. 8–16–66. Cl. 23.
Gulf States Paper Corp., Tuscaloosa, Ala. 817,741, pub. 8–16–66. Cl. 23.
HC Industries, Inc., Chicago, Ill. 817,702, pub. 3–29–66. Cl. 21.
Hadaway, Harry, d.b.a. Exerbelt, Park Ridge, Ill. 817,712, pub. 8–16–66. Cl. 22.
Hales & Hunter Co., Chicago, Ill. 818,061. Cl. 46.
Hall, Ruth, Lake Worth, Fla. 817,868, pub. 8–16–66. Cl. 44.
Halo Mfg. Co., San Francisco, Calif. 704,248, canc. Cl. 22.
Hamilton Research Associates, Inc., New Hartford, N.Y. 704,284, canc. Cl. 26.
Hand Kraft: *See*—
Karp, David, Co., Inc.
Hand, Peter, Brewery Co., Chicago, Ill. 817,674, pub. 8–16–66. Cl. 18.
Hand, Peter, Brewery Co., Chicago, Ill. 817,675, pub. 8–16–66. Cl. 18.
Hand, Peter, Brewery Co., Chicago, Ill. 817,677, pub. 8–16–66. Cl. 18.
Hansawerke Lurman, Bremen, Germany. 817,668, pub. 8–16–66. Cl. 16.
Harnischfeger Corp., West Milwaukee, Wis. 817,726, pub. 8–16–66. Cl. 23.
Hastings Mfg. Co., Hastings, Mich. 817,778, pub. 8–16–66. Cl. 31.
Haymaker Sports, Inc., New York, N.Y. 817,822, pub. 8–16–66. Cl. 39.
Hays Mfg. Co., Erie, Pa. 817,651, pub. 5–31–66. Cl. 13.
Heinemann Electric Co., Trenton, N.J. 817,708, pub. 8–16–66. Cl. 21.
Henson Corp., The, Colorado Springs, Colo. 817,713, pub. 8–16–66. Cl. 22.
Herco Sales Co.: *See*—
Adamek, Ben F.
Herrin, Lenard, Wyncote, Pa. 817,938, pub. 8–16–66. Cl. 51.
Herrin, Lenard, Wyncote, Pa. 817,939, pub. 8–16–66. Cl. 51.
Herscott Corp., The: *See*—
American Brake Shoe Co.
Hesmer Foods, Inc., Evansville, Ind. 817,886, pub. 8–16–66. Cl. 46.
Hilsinger Corp., The, Plainville, Mass. 817,624, pub. 8–16–66. Cl. 6.
Holea-Webway Co., The, St. Cloud, Minn. 818,066. Cl. 50.
Holiday Designs, Inc., Sebring, Ohio. 817,630, pub. 8–16–66. Multiple Class (Classes 8, 30, and 50).
Holland-Racine Shoes, Inc., Holland, Mich. 817,835, pub. 8–16–66. Cl. 39.
Home Electric Lighting Co., East Orange, N.J., by Textron Inc., Providence, R.I. 151,508, 12(c) pub. 11–1–66. Cl. 21.

Homelite Corp., by Textron Inc., Providence, R.I. 424,967, 12(c) pub. 11–1–66. Cl. 34.
Homstead Valve Mfg. Co., Coraopolis, Pa. 817,981, pub. 8–16–66. Cl. 101.
House of Worsted-Tex, Inc.: *See*— Cohen, Goldman & Co., Inc.
Humble Oil & Refining Co.: *See*— Imperial Oil Ltd.
Humble Oil & Refining Co. (New Jersey): *See*— Standard Oil Co.
Hunt, Philip A., Chemical Corp., Palisades Park, N.J. 817,623, pub. 8–16–66. Cl. 6.
Huntington Mfg. Co., Inc., Chicago, Ill. 817,827, pub. 8–16–66. Cl. 39.
Ideal Toy Corp., Hollis, N.Y. 704,251, canc. Cl. 22.
Illinois Tool Works, Inc., Chicago, Ill. 817,661, pub. 8–16–66. Cl. 13.
Illinois Tool Works, Inc., Chicago, Ill. 817,750, pub. 8–16–66. Cl. 22.
Imperial Oil Ltd., Toronto, Canada, to Humble Oil & Refining Co., Houston, Tex. 217,266, ren. 11–1–66. Cl. 15.
Independent Tension Envelope Workers Union, UnInc. Union, Kansas City, Mo. 704,400, canc. Cl. A.
Industrial Decorators, Inc., Whittier, Calif. 817,931, pub. 8–16–66. Cl. 50.
Industrial Valley Bank and Trust Co., Jenkintown, Pa. 817,990, pub. 8–16–66. Cl. 102.
Ingersoll-Rand Co., New York, N.Y. 794,417, cor. Cl. 23.
Inland Bed Co., Chicago, Ill. 817,784, pub. 8–16–66. Cl. 32.
Integrated Development and Mfg. Co., Chagrin Falls, Ohio. 817,800, pub. 8–16–66. Cl. 34.
Intercontinental Transport, Redondo Beach, Calif. 818,001, pub. 8–16–66. Cl. 105.
Interoceanic Commodities Corp., Elkhart, Ind. 817,645, pub. 8–16–66. Cl. 12.
Inventor's League, Inc., Bala Cynwyd, Pa. 817,978, pub. 8–16–66. Cl. 101.
Jantzen Inc., Portland, Oreg. 817,840, pub. 8–16–66. Cl. 39.
Jerome Co., to Continental Distilling Corp., Philadelphia, Pa., and Chicago, Ill., to Continental Distilling Corp., Philadelphia, Pa. 426,904, ren. 11–1–66. Cl. 49.
Jessop, Herbert D., d.b.a. Amenity Products Co., Glendora, Calif. 818,015. Cl. 12.
John, B. P., Furniture Corp., Portland, Oreg. 704,304, canc. Cl. 32.
Kalamazoo Aero-Motive Mfg. Co.: *See*— Becker, Rodger F.
Karp, David, Co., Inc., d.b.a. Hand Kraft, New York, N.Y. 704,292, canc. Cl. 28.
Kauffman, Lawrence S., d.b.a. Pomona Sales Co., Suffern, N.Y. 817,905, pub. 8–16–66. Cl. 46.
Kay, Mary, Inc., Dallas, Tex. 817,933, pub. 8–16–66. Cl. 51.
Kayser-Roth Corp., New York, N.Y. 817,828, pub. 8–16–66. Multiple Class (Classes 39 and 40).
Kellogg Co., Battle Creek, Mich. 817,917, pub. 8–16–66. Cl. 46.
Kelly-Green Hosiery Co., Inc., New York, N.Y. 818,046. Cl. 39.
Kent, Elizabeth: *See*— Kent, Elizabeth, Cosmetics, Inc.
Kent, Elizabeth, Cosmetics, Inc., d.b.a. Elizabeth Kent, New York, N.Y. 696,873, canc. Cl. 51.
Kent, G. B., & Sons, Ltd., London, England. 817,771, pub. 8–16–66. Cl. 29.
Kerotest Mfg. Co., to Miller Printing Machinery Co., Philadelphia, Pa. 218,547, ren. 11–1–66. Cl. 13.
Kiddie Products, Inc., Squantum, Mass. 817,874, pub. 8–16–66. Cl. 44.
Kiefer, Augustine J., d.b.a. Pillopals, Pittsburgh, Pa. 817,788, pub. 8–16–66. Cl. 32.
Kirkconnell, James, d.b.a. James Kirkconnell Productions, Philadelphia, Pa. 704,396, canc. Cl. 107.
Kirkconnell, James, Products: *See*— Kirkconnell, James.
Kistler Instrument Corp., Clarence, N.Y. 817,705, pub. 8–16–66. Multiple Class (Classes 21 and 26).
Koeller, Terry, Associates, Inc., Chicago, Ill. 704,324, canc. Cl. 38.
Kohn, L., & Sons Meat and Grocery Co., d.b.a. The Kohn Stores, St. Louis, Mo., by The Kroker Co., Cincinnati, Ohio. 216,063, 12(c) pub. 11–1–66. Cl. 46.
Kohn Stores, The: *See*— Kohn, L., & Sons Meat and Grocery Co.
Ko-Operatieve Wijnbouwers Vereniging Van Zuid-Afrika Beperkt, Ltd., Cape Providence, Republic of South Africa. 817,919, pub. 8–16–66. Cl. 47.
Ko-Operatieve Wijnbouwers Vereniging Van Zuid-Afrika Beperkt, Ltd., Cape Providence, Republic of South Africa. 817,920, pub. 8–16–66. Cl. 47.
Ko-Operatieve Wijnbouwers Vereniging Van Zuid-Afrika Beperkt, Ltd., Cape Providence, Republic of South Africa. 817,921, pub. 8–16–66. Cl. 47.
Ko-Operatieve Wijnbouwers Vereniging Van Zuid-Afrika Beperkt, Ltd., Cape Providence, Republic of South Africa. 817,922, pub. 8–16–66. Cl. 47.
Ko-Operatieve Wijnbouwers Vereniging Van Zuid-Afrika Beperkt, Ltd., Cape Providence, Republic of South Africa. 817,923, pub. 8–16–66. Cl. 47.
Koratron Co., Inc., San Francisco, Calif. 817,856, pub. 8–16–66. Cl. 42.
Koury, W., Co., Inc., Greensboro, N.C. 427,147, ren. 11–1–66. Cl. 39.
Kroger Co., The: *See*— Kohn, L., & Sons Meat and Grocery Co.
Kutol Products Co., Inc., Cincinnati, Ohio. 704,124, canc. Cl. 2.
L & L Mfg. Co., St. Clair Shores, Mich. 817,654, pub. 8–16–66. Cl. 13.
La Jefatura Nacional de la Obra Sindical de Artesania de la Delagacion Nacional de Sindicatos, Madrid, Spain. 704,290, canc. Cl. 28.
Lamb-Grays Harbor Co., Inc., Hoquiam, Wash. 817,745, pub. 8–16–66. Cl. 23.
Lance, Inc., Charlotte, N.C. 817,899, pub. 8–16–66. Cl. 46.
La Salle Neckwear Co., Philadelphia, Pa. 817,851, pub. 8–16–66. Cl. 39.
Lawtex Corp., Dalton, Ga. 817,855, pub. 8–16–66. Cl. 42.
Leavitt, John W., Co., Everett, Mass. 817,879, pub. 8–24–66. Cl. 46.
Ledbetter, George, d.b.a. Ledbetter Seed Co., Ralls, Tex. 817,603, pub. 8–16–66. Cl. 1.
Ledbetter Seed Co.: *See*— Ledbetter, George.
Lehrman, Louis, & Son, to Louis Lehrman & Son, Inc., Harrisburg, Pa. 421,048, ren. 11–1–66. Cl. 46.
Lehrman, Louis, & Son, Inc.: *See*— Lehrman, Louis, & Son.
Leighton, Henry B., Escondido, Calif. 704,323, canc. Cl. 38.
Le Porte-Echappement Universel S.A. (The Universal Escapement Ltd.), La Chaux-de-Fonds, Switzerland. 747,257, canc. Cl. 27.
Lesli, Judi, South Miami, Inc., South Miami, Fla. 817,820, pub. 8–16–66. Cl. 39.
Lever Bros. Co., New York, N.Y. 817,614, pub. 8–16–66. Cl. 4.
Lever Bros. Co., New York, N.Y. 817,615, pub. 8–16–66. Cl. 4.
Liberty & Co., Ltd., London, England. 704,342, canc. Cl. 42.
Lighting Corp. of America, from Progress Mfg. Co., Inc., Philadelphia, Pa. 817,704, pub. 8–16–66. Cl. 21.
Limbacher Paint & Color Works, Inc., Mount Vernon, N.Y. 818,019. Cl. 16.
Lincoln Engineering Co., St. Louis, Mo., to McNeil Corp., Akron, Ohio. 423,437, ren. 11–1–66. Cl. 23.
Lincoln Park Engineering, Inc., Romulus, Mich. 817,738, pub. 8–16–66. Cl. 23.
Linda Lou Frozen Dessert Pie Co.: *See*— Bradley's Frozen Foods, Inc.
Lipper & Mann, Inc., New York, N.Y. 817,773, pub. 8–16–66. Cl. 30.
Lisanne, Inc., Brooklyn, N.Y. 817,838, pub. 8–16–66. Cl. 39.
Lloyd Engineering Co., Belleville, N.J. 818,038. Cl. 32.
Lock-Tronic Corp., The, Columbus, Ohio. 817,996, pub. 8–16–66. Cl. 103.
Loewe & Co., to Loewe & Co., Ltd., London, England. 57,789, ren. 11–1–66. Cl. 8.
Loewe & Co., Ltd.: *See*— Loewe & Co.
Long Mile Rubber Co.: *See*— Associated Oil & Gas Co.
Loomskill, Inc., New York, N.Y. 817,863, pub. 8–16–66. Cl. 42.
Lovable Co., The, Atlanta, Ga. 818,049. Cl. 39.
Lowe Seed Co., Kankakee, Ill. 817,601, pub. 8–16–66. Cl. 1.
Lull Engineering Co., Inc., St. Paul, Minn. 817,692, pub. 8–16–66. Cl. 19.
Lyntone Co., The, to The Lyntone Co., Oklahoma City, Okla. 422,767, ren. 11–1–66. Cl. 39.
M & M's Candies: *See*— Mars, Inc.
Maff, John: *See*— Maffenbeier, John.
Maff, John, Inc.: *See*— Maffenbeier, John.
Maffenbeier, John, d.b.a. John Maff, to John Maff, Inc., Newark, N.J. 220,694, ren. 11–1–66. Cl. 11.
Magee, Frank H., d.b.a. Frank H. Magee Associates, Glenside, Pa. 817,987, pub. 8–16–66. Cl. 101.
Magee, Frank H., Associates: *See*— Magee, Frank H.
Maidenform, Inc., New York, N.Y. 817,841, pub. 8–16–66. Cl. 39.
Maidenform, Inc., New York, N.Y. 817,847, pub. 8–16–66. Cl. 39.
Maihak, H., A.G., Hamburg, Germany. 817,700, pub. 8–16–66. Multiple Class (Classes 21, 26, and 36).
Manufacture Picarde de Chemises Ets. Seminel Freres, Amiens, France. 817,825, pub. 8–16–66. Cl. 39.
Maradel Products, Inc., Farmingdale, N.Y. 818,067. Cl. 51.
Marechal, Ruchon & Co., Ltd., London, England. 213,573, ren. 11–1–66. Cl. 8.
Mars, Inc., d.b.a. M & M's Candies, Wilmington, Del. 817,918, pub. 8–16–66. Cl. 46.
Martin, Hans, Zurich, Switzerland. 818,029. Cl. 22.
Matlock, Stanton F., Cincinnati, Ohio. 818,006, pub. 8–16–66. Cl. 107.
Mattel, Inc., Hawthorne, Calif. 817,717, pub. 8–16–66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 817,755, pub. 8–16–66. Cl. 26.
Maxson, Richard E. S., Amherst, Mass. 818,002, pub. 8–16–66. Cl. 105.
McCray Refrigerator Co., to McCray Refrigerator Co., Inc., Kendallville, Ind. 52,105, ren. 11–1–66. Cl. 31.
McCray Refrigerator Co., Inc.: *See*— McCray Refrigerator Co.
McDermott, J. Ray, & Co., Inc., New Orleans, La. 817,984, pub. 8–16–66. Cl. 101.
McDermott, J. Ray, & Co., Inc., New Orleans, La. 817,986, pub. 8–16–66. Cl. 101.
McEwan, John, & Co., Ltd., Leith Edinburgh, Scotland. 818,065. Cl. 49.
McGraw-Edison Co., West Orange, N.J. 704,220, canc. Cl. 21.
McKee Baking Co., Collegedale, Tenn. 817,914, pub. 8–16–66. Cl. 46.
McKinley, Fannie I., d.b.a. Fan-E-Bilt Mfg. Co., Rich Hill, Mo. 704,245, canc. Cl. 22.

McNeil Corp.: *See*— Lincoln Engineering Co.
McWane Cast Iron Pipe Co., Birmingham, Ala. 817,660, pub. 8–16–66. Cl. 13.
Mead's Frozen Foods Inc., Amarillo, Tex. 817,888, pub. 5–10–66. Cl. 46.
Meco, Inc., Wichita, Kans. 817,833, pub. 8–16–66. Cl. 39.
Medafab Corp., Manitowoc, Wis. 817,997, pub. 8–16–66. Cl. 103.
Mennen Co., The, Morristown, N.J. 817,955, pub. 8–16–66. Cl. 51.
Mennen Co., The, Morristown, N.J. 817,956, pub. 8–16–66. Cl. 51.
Mennen Co., The, Morristown, N.J. 817,957, pub. 8–16–66. Cl. 51.
Mennonite Publishing House, Inc., The, d.b.a. Providence Bookstore, Scottdale, Pa. 817,926, pub. 8–16–66. Multiple Class (Classes 50 and 101).
Merck & Co., Inc., Rahway, N.J. 817,681, pub. 8–16–66. Cl. 18.
Michigan Abrasive Co., Detroit, Mich. 817,613, pub. 8–16–66. Cl. 4.
Microlab, Ardwin, Inc., Stoneham, Mass. 704,211, canc. Cl. 21.
Miller, Mildred, Worster, Ohio. 817,941, pub. 8–16–66. Cl. 51.
Miller Printing Machinery Co.: *See*— Kerotest Mfg. Co.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 817,762, pub. 8–16–66. Cl. 26.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 818,052. Cl. 44.
Mister Donut of America, Inc., Westwood, Mass. 817,973, pub. 8–16–66. Cl. 100.
Mitsubishi Electric Corp., Tokyo, Japan. 817,752, pub. 8–16–66. Cl. 26.
Mobile Aerial Towers, Inc., Fort Wayne, Ind. 817,742, pub. 8–16–66. Cl. 23.
Mobley, Edward, Co., The: *See*— Mobley, Edward L., Jr.
Mobley, Edward L., Jr., d.b.a. The Edward Mobley Co., Wadsworth, Ohio. 817,718, pub. 8–16–66. Cl. 22.
Modecraft Co., Inc., Brooklyn, N.Y. 817,786, pub. 8–16–66. Cl. 32.
Modern Engineering Co., to Modern Engineering Co., Inc., St. Louis, Mo. 221,149, ren. 11–1–66. Cl. 34.
Modern Engineering Co., Inc.: *See*— Modern Engineering Co.
Modine Mfg. Co., Racine, Wis. 817,695, pub. 8–16–66. Multiple Class (Classes 19, 23, and 34).
Molded Fiber Glass Body Co., Union City, Pa. 817,691, pub. 8–16–66. Cl. 19.
Monsanto Co., St. Louis, Mo. 817,627, pub. 8–16–66. Cl. 6.
Montag, R. T., from Upour Concrete Co., Portland, Oreg. 818,000, pub. 8–16–66. Cl. 103.
Morrell, John, & Co., Ottumwa, Iowa. 223,700, ren. 11–1–66. Cl. 46.
Morrill, John L., d.b.a. John L. Morrill Enterprises, San Mateo, Calif. 704,322, canc. Cl. 38.
Morrill, John L., Enterprises: *See*— Morrill, John L.
Morris, George J., d.b.a. Toppa Records, Covina, Calif. 704,320, canc. Cl. 36.
Morris, Philip, Inc., New York, N.Y. 818,020. Cl. 17.
Mountain Amusement Corp., Denver, Colo. 817,715, pub. 8–16–66. Cl. 22.
Mueller, Chris, Jr., Burbank, Calif. 817,929, pub. 8–16–66. Cl. 50.
Myers, Eldon K., d.b.a. Drum Turning Service Co., Sacramento, Calif. 818,072. Cl. 103.
National Bakers Services, Inc., Hollywood, Fla. 817,885, pub. 5–10–66. Cl. 46.
National Biscuit Co., New York, N.Y. 817,894, pub. 8–16–66. Cl. 46.
National Biscuit Co., New York, N.Y. 817,912, pub. 8–16–66. Cl. 46.
National Biscuit Co., New York, N.Y. 817,913, pub. 8–16–66. Cl. 46.
National Child Evangelism Fellowship of The U.S.A., Grand Rapids, Mich. 818,012, pub. 8–16–66. Cl. 200.
National Engineering Co., Chicago, Ill. 817,749, pub. 8–16–66. Cl. 23.
National Lead Co., New York, N.Y. 817,626, pub. 8–16–66. Cl. 6.
National Rollex Corp., Elk Grove Village, Ill. 817,642, pub. 8–16–66. Cl. 12.
National School Supply & Equipment Association, Chicago, Ill. 817,982, pub. 8–16–66. Cl. 101.
National Union Electric Corp., Bloomington, Ill. 817,706, pub. 8–16–66. Cl. 21.
Neon Products Consolidated, Salt Lake City, Utah. 704,216, canc. Cl. 21.
Nestle & Anglo-Swiss Condensed Milk Co., Cham, Switzerland, to The Nestle Co., Inc., White Plains, N.Y. 59,907, ren. 11–1–66. Cl. 46.
Nestle & Anglo-Swiss Condensed Milk Co., Cham, Switzerland, to The Nestle Co., Inc., White Plains, N.Y. 60,486, ren. 11–1–66. Cl. 46.
Nestle Co., Inc., The: *See*— Nestle & Anglo-Swiss Condensed Milk Co.
Nonotuck Silk Co., The, Boston, Mass., to Belding Heminway Co., Inc., New York, N.Y. 50,194, ren. 11–1–66. Cl. 43.
Norden Laboratories, Inc., Lincoln, Nebr. 814,324, cor. Cl. 18.
Nordic Enterprises, Inc., Minneapolis, Minn. 817,743, pub. 8–16–66. Cl. 23.
Norville Supply Co., d.b.a. Textile Supply Co., Dalton, Ga. 817,865, pub. 8–16–66. Cl. 43.
Norwich Pharmacal Co., The, Norwich, N.Y. 817,678, pub. 8–16–66. Cl. 18.
Norwich Pharmacal Co., The, Norwich, N.Y. 817,679, pub. 8–16–66. Cl. 18.
Nudor of Indiana, Inc., Geneva, Ind. 817,639, pub. 1–18–66. Cl. 12.
Oasis Gardens, Indio, Calif. 818,062. Cl. 46.
Oasis Gardens, Indio, Calif. 818,063. Cl. 46.
Ocean City Research Corp., Ocean City, N.J. 818,003, pub. 8–16–66. Cl. 106.
O'Keefe Brewing Co. Ltd., Toronto, Ontario, Canada. 818,064. Cl. 48.
Oliver Tire & Rubber Co., Oakland, Calif. 817,803, pub. 8–16–66. Cl. 35.
Omni-Lab Inc., Chicago, Ill. 817,765, pub. 8–16–66. Cl. 26.
Pachmayr Gun Works, Inc., Los Angeles, Calif. 817,631, pub. 8–16–66. Cl. 9.
Pandjiris Weldment Co., The, St. Louis, Mo. 817,725, pub. 8–16–66. Cl. 23.
Pantex Mfg. Corp., Pawtucket, R.I., to Ametek, Inc., New York, N.Y. 426,012, ren. 11–1–66. Cl. 24.
Pantex Mfg. Corp., Pawtucket, R.I., to Ametek, Inc., New York, N.Y. 426,014, ren. 11–1–66. Cl. 24.
Thierry, Suzanne, Parfums, Inc., Miami, Fla. 817,942, pub. 8–16–66. Multiple Class (Classes 51 and 52).
Parke, Davis & Co., Detroit, Mich. 817,676, pub. 8–16–66. Cl. 18.
Penn-Dale Knitting Mills, Inc., Sinking Spring, Pa. 817,816, pub. 8–16–66. Cl. 39.
Peyron, Antoine F., Paris, France. 704,138, canc. Cl. 6.
Pfeffer, Fritz, Vienna, Austria. 817,737, pub. 6–14–66. Cl. 23.
Pfeiffer Co., The, St. Louis, Mo. 818,022. Cl. 18.
Pfizer, Chas., & Co., Inc., New York, N.Y. 817,689, pub. 8–16–66. Cl. 18.
Pfizer, Chas., & Co., Inc., New York, N.Y. 817,959, pub. 8–16–66. Cl. 52.
Pharmaceutical Laboratories, Inc., Plainfield, N.J. 817,934, pub. 8–16–66. Cl. 51.
Pharmaceutical Laboratories, Inc., Plainfield, N.J. 818,021. Cl. 18.
Philips Electronics and Pharmaceutical Industries Corp.: *See*— Electrical Industries, Inc.
Photographic Research Organization, Inc., New York, N.Y. 817,756, pub. 8–16–66. Cl. 26.
Pierce, Ray V., Buffalo, to Pierce's Proprietaries, Inc., New York, N.Y. 57,519, ren. 11–1–66. Cl. 18.
Pierce's Proprietaries, Inc.: *See*— Pierce, Ray V.
Pillopals: *See*— Kiefer, Augustine J.
Pioneer Log Cabin Co., Roscommon, Mich. 817,640, pub. 8–16–66. Cl. 12.
Piper, William R., Coffee Co.: *See*— Cain's Coffee Co.
Pittsburgh Plate Glass Co., Pittsburgh, Pa. 817,787, pub. 8–16–66. Cl. 34.
Polymold Plastics, Inc., Chicago, Ill. 817,927, pub. 8–16–66. Cl. 50.
Pomona Sales Co.: *See*— Kauffman, Lawrence S.
Popular Merchandise Co., Inc., Passaic, N.J. 817,830, pub. 8–16–66. Cl. 39.
Por-O-Por Co. of Florida, Mount Dora, Fla. 704,125, canc. Cl. 2.
Power Control Products, Inc., Chicago, Ill. 817,735, pub. 8–16–66. Cl. 23.
Preformed Line Products Co., Cleveland, Ohio. 817,697, pub. 8–16–66. Cl. 21.
Price, Dr. Nathaniel W., White Plains, N.Y. 817,652, pub. 8–16–66. Cl. 13.
Procter & Gamble Co., The, Cincinnati, Ohio. 817,944, pub. 8–16–66. Cl. 51.
Product Promotions & Development: *See*— Doren, Harvey F.
Profit For You, Inc., Orange, Calif. 817,985, pub. 8–16–66. Cl. 101.
Progress Mfg. Co., Inc.: *See*— Lighting Corp. of America.
Progressive Products, Inc., La Mesa, Calif. 704,345, canc. Cl. 44.
Providence Bookstore: *See*— Mennonite Publishing House, Inc., The.
Provigor, Ltd., New York, N.Y. 817,935, pub. 8–16–66. Cl. 51.
Purdue Frederick Co., The, Yonkers, N.Y. 817,683, pub. 8–16–66. Cl. 18.
Pyrotector, Inc., Hingham, Mass. 817,761, pub. 8–16–66. Cl. 26.
Raden, C., Auto Step Co., Inc., Kansas City, Mo. 817,757, pub. 8–16–66. Cl. 26.
Rahjen's American Composition Co., by Red Hand Compositions Co., Inc., New York, N.Y. 55,908, 12(c) pub. 11–1–66. Cl. 16.
Ralston Purina Co., St. Louis, Co. 818,055. Cl. 46.
Ranch, J. R., Western Outfitters, Rhinebeck, N.Y. 817,850, 8–16–66. Cl. 39.
Rasmussen, V. C., d.b.a. Apartment Index-Guide, Atlanta, Ga. 818,042. Cl. 38.
Ready-To-Bake Foods Inc., Los Angeles, Calif. 549,593, canc. Cl. 46.
Realistic Co., The, Cincinnati, Ohio. 704,386, canc. Cl. 51.
Red Hand Compositions Co., Inc.: *See*— Rahtjen's American Composition Co.
Red Scissors, Inc., Newark, N.J. 817,983, pub. 8–16–66. Cl. 101.
Reed-Cromex Corp., Cleveland, Ohio. 817,662, pub. 8–16–66. Cl. 13.
Reese Chemical Co., The, Cleveland, Ohio. 817,686, pub. 8–16–66. Cl. 18.
Reese Chemical Co., The, Cleveland, Ohio. 817,687, pub. 8–16–66. Cl. 18.

Reeves Brothers, Inc., New York, N.Y. 425,784, 12(c) pub. 11–1–66. Cl. 39.
Regan Bakeries, Inc., Minneapolis, Minn. 817,882, pub. 3–28–65. Cl. 46.
Reiterer, Ferdinand, and Louis Windisch, Rueil-Malmaison, (Sune et Oise), France. 704,268, canc. Cl. 23.
Republic Steel Corp., Cleveland, Ohio. 818,016. Cl. 12.
Revere Camera Co., Chicago, Ill. 704,280, canc. Cl. 26.
Rexall Drug and Chemical Co.: *See*—
Syracuse Ornamental Co.
Reynolds Metals Co., Richmond, Va. 818,017. Cl. 14.
Reynolds Metals Co., Richmond, Va. 818,018. Cl. 14.
Rich, Yvonne, Altadena, Calif. 817,839, pub. 8–16–66. Cl. 39.
Richards, Alan J., Annapolis, Md. 817,989, pub. 8–16–66. Cl. 101.
Ridgerock of America, Inc., Cleveland, Ohio. 704,157, canc. Cl. 12.
Riverside & Dan River Cotton Mills, Inc., by Dan River Mills, Inc., Danville, Va. 422,638, 12(c) pub. 11–1–66. Cl. 42.
Riverside & Dan River Cotton Mills, Inc., by Dan River Mills, Inc., Danville, Va. 422,640, 12(c) pub. 11–1–66. Cl. 42.
Riverside & Dan River Cotton Mills, Inc., by Dan River Mills, Inc., Danville, Va. 424,989, 12(c) pub. 11–1–66. Cl. 42.
Roberts, Jules, Carpets, Inc., New York, N.Y. 704,159, canc. Cl. 12.
Robertson, Clyde A., Swanton, Ohio. 817,716, pub. 8–16–66. Cl. 22.
Robinson Fire Apparatus Mfg. Co., by M. L. Snyder & Son, Inc., Philadelphia, Pa. 219,936, 12(c) pub. 11–1–66. Cl. 23.
Rochester Optical Mfg. Co., Inc., Rochester, N.Y. 818,036. Cl. 26.
Rockwell-Standard Corp., Pittsburgh, Pa. 817,693, pub. 8–16–66. Cl. 19.
Rockwell-Standard Corp., Pittsburgh, Pa. 818,030. Cl. 23.
Rosecience Co., Anahelm, Calif. 817,659, pub. 8–16–66. Cl. 13.
Roddy Recreation Products, Inc., Gardena, Calif. 817,714, pub. 8–16–66. Cl. 22.
Royal Typewriter Co., Inc., from Royal McBee Corp., New York, N.Y. 817,724, pub. 8–16–66. Cl. 23.
Royal McBee Corp.: *See*—
Royal Typewriter Co., Inc.
Ruesch, Ferdinand, d.b.a. Ferd. Ruesch Maschinenfabrik, Spitalgasse, Switzerland. 817,721, pub. 8–16–66. Cl. 23.
Ruesch, Ferd., Maschinenfabrik: *See*—
Ruesch, Ferdinand.
Rusch, Willy, Rommelshausen, Germany. 817,866, pub. 8–16–66. Cl. 44.
Russell & Erwin Mfg. Co., New Britain, Conn., by Emhart Corp., Hartford, Conn. 58,502, 12(c) pub. 11–1–66. Cl. 23.
Sample Dress Mfg. Corp., Quebec, Canada. 817,819, pub. 8–16–66. Cl. 39.
Sandos, Inc., Hanover, N.J. 817,628, pub. 8–16–66. Cl. 6.
Sandox, Inc., Hanover, N.J. 817,682, pub. 8–16–66. Cl. 18.
Sandrock Corp., Rocky River, Ohio. 817,747, pub. 8–16–66. Cl. 23.
Sanford Ink Co., Bellwood, Ill. 817,808, pub. 8–16–66. Cl. 37.
Schild, A., S.A., Solothurn, Switzerland. 817,767, pub. 8–16–66. Cl. 27.
Schild, A., S.A., Solothurn, Switzerland. 817,768, pub. 8–16–66. Cl. 27.
Scholastic Magazines, Inc., New York, N.Y. 818,009, pub. 8–16–66. Cl. 107.
Schubert, Robert F., Staten Island, N.Y. 817,892, pub. 8–16–66. Cl. 46.
Scott Aviation Corp., Lancaster, N.Y. 817,870, pub. 8–16–66. Cl. 44.
Sea & Ski Corp., Millbrae, Calif. 817,760, pub. 8–16–66. Cl. 26.
Seal-Tite Bag Co.: *See*—
Sidney, Freilich.
Seiberling Rubber Co., Barberton, Ohio. 704,316, canc. Cl. 35.
Selfix, Inc., Chicago, Ill. 817,656, pub. 8–16–66. Cl. 13.
Sentinel Chemicals, Inc., Houston, Tex. 704,190, canc. Cl. 15.
Service Steel & Engineering Ltd., Hamilton, Ontario, Canada. 817,730, pub. 8–16–66. Cl. 23.
Shakey's Inc., Burlingame, Calif. 817,896, pub. 8–16–66. Cl. 46.
Shalimar Vanity Gloves, Inc., New York, N.Y. 817,815, pub. 8–16–66. Cl. 39.
Shamban, W. S., & Co., Culver City, Calif. 817,928, pub. 8–16–66. Cl. 50.
Shaw, Floyd J., d.b.a. A. Flaire Products, Gulfport, Fla. 704,383, canc. Cl. 51.
Sheridan Flouring Mills, Inc., Sheridan, Wyo. 817,916, pub. 8–16–66. Cl. 46.
Shulman Sunshine, Inc., Paterson, N.J. 817,862, pub. 8–16–66. Cl. 42.
Shur-Line Mfg. Co., Inc., Lancaster, N.Y. 817,798, pub. 8–16–66. Cl. 34.
Signal Oil & Gas Co. of Calif. Standard Oil Co. of Calif., Los Angeles, Calif. 328,192. Am. 7(d). Cl. 38.
Signode Corp., Chicago, Ill. 817,657, pub. 8–16–66. Cl. 12.
Signode Corp., Chicago, Ill. 817,650, pub. 8–16–66. Cl. 13.
Simplex Shoe Mfg. Co., Inc., Milwaukee, Wis. 817,849, pub. 8–16–66. Cl. 39.
Simmons Co., New York, N.Y. 817,869, pub. 8–16–66. Cl. 44.
Simmons, Harold, Agawam, Mass. 817,774, pub. 8–16–66. Cl. 30.
Simplex Wire & Cable Co., Cambridge, Mass. 426,689, ren. 11–1–66. Cl. 21.
Sinclair-Koppers Co., Pittsburgh, Pa. 817,599, pub. 8–16–66. Cl. 1.
Sink, Thomas, d.b.a. Beauty Prep., Decatur, Ga. 817,670, pub. 8–16–66. Cl. 16.
Slater Electric Inc., Glen Cove, N.Y. 817,701, pub. 8–16–66. Cl. 21.
Slendercycle Corp., Long Island City, N.Y. 704,242, canc. Cl. 22.
Smith, A. O., Corp.: *See*—
Clark Controller Co., The.
Snyder, M. L., & Son, Inc.: *See*—
Robinson Fire Apparatus Mfg. Co.
Southern Advance Bag & Paper Co. Inc., by Continental Can Co., Inc., New York, N.Y. 427,031, 12(c) pub. 11–1–66. Cl. 2.
Specialty Products Co., Jersey City, N.J. 817,667, pub. 12–7–65. Cl. 15.
Spot-o-Gold Corp., from L. Edge, Philadelphia, Pa. 817,812, pub. 8–16–66. Cl. 38.
Squibb, E. R., & Sons, Inc.: *See*—
Squibb, E. R., & Sons.
Squibb, E. R., & Sons, to E. R. Squibb & Sons, Inc., New York, N.Y. 424,193, ren. 11–1–66. Cl. 18.
Standard Oil Co. of Calif.: *See*—
Signal Oil & Gas Co. of Calif.
Standard Oil Co. (New Jersey), Bayonne, N.J., to Humble Oil & Refining Co., Houston, Tex. 222,068, ren. 11–1–66. Cl. 15.
Standard Oil Co., Whiting, Ind., to The American Oil Co., Chicago, Ill. 219,365, ren. 11–1–66. Cl. 15.
Standard & Poor's Corp., New York, N.Y. 818,043. Cl. 38.
Star-Kist Foods, Inc.: *See*—
Van Landingham Co., The.
Starling Overseas Corp., New York, N.Y. 704,215, canc. Cl. 21.
Stedman Mfg. Co., Asheboro, N.C. 817,832, pub. 8–16–66. Cl. 39.
Stemen Laboratories, Inc., Oklahoma City, Okla. 704,408, canc. Cl. 26.
Sterimed, Inc., Brooklyn, N.Y. 817,680, pub. 8–16–66. Cl. 18.
Sternco Industries, Inc., Allendale, N.J. 817,907, pub. 8–16–66. Cl. 46.
Stevens, Chas. A., & Co., Chicago, Ill. 817,609, pub. 8–16–66. Multiple Class (Classes 3 and 39).
Stinson, David J., d.b.a. Fratsority Products, Los Angeles, Calif. 817,818, pub. 8–16–66. Cl. 39.
Stouffer Foods Corp., Cleveland, Ohio. 817,887, pub. 11–23–65. Cl. 46.
Straaten, Van, Chemical Co., Chicago, Ill. 817,964, pub. 8–16–66. Cl. 52.
Strasenburgh, R. J., Co., Rochester, N.Y. 704,196, canc. Cl. 18.
Studio Girl: *See*—
Studio Girl-Hollywood, Inc.
Studio Girl-Hollywood, Inc., d.b.a. Studio Girl, North Hollywood, Calif. 817,953, pub. 8–16–66. Cl. 51.
Sun Chemical Corp., New York, N.Y. 817,621, pub. 8–16–66. Cl. 6.
Sunset Line & Twine Co., Petaluma, Calif. 704,238, canc. Cl. 22.
Sunshine Biscuits, Inc., Long Island City, N.Y. 817,910, pub. 8–16–66. Cl. 46.
Superior Tube Co., Norristown, Pa. 817,657, pub. 8–16–66. Cl. 13.
Sutton Creation, Inc., New York, N.Y. 817,826, pub. 8–16–66. Cl. 39.
Switzer Brothers, to Switzer Brothers, Inc., Cleveland, Ohio. 425,562, ren. 11–1–66. Cl. 6.
Switzer Brothers, Inc.: *See*—
Switzer Brothers.
Symmons Engineering Co., Boston, Mass. 817,665, pub. 8–16–66. Cl. 13.
Syracuse Ornamental Co., New York, N.Y., to Rexall Drug and Chemical Co., d.b.a. Syroco, Los Angeles, Calif. 424,166, ren. 11–1–66. Cl. 40.
Syracuse Ornamental Co., New York, N.Y., to Rexall Drug and Chemical Co., d.b.a. Syroco, Los Angeles, Calif. 425,560, ren. 11–1–66. Cl. 8.
Syracuse Ornamental Co., New York, N.Y., to Rexall Drug and Chemical Co., d.b.a. Syroco, Los Angeles, Calif. 425,741, ren. 11–1–66. Cl. 32.
Syracuse Ornamental Co., New York, N.Y., to Rexall Drug and Chemical Co., d.b.a. Syroco, Los Angeles, Calif. 426,532, ren. 11–1–66. Cl. 50.
Syroco: *See*—
Syracuse Ornamental Co.
Taylor Brothers, Inc., Winston-Salem, N.C. 817,672, pub. 8–16–66. Cl. 17.
Techni-Rite Electronics, Inc., Warwick, R.I. 817,751, pub. 5–22–62. Cl. 26.
Telephony Publishing Co., The, to Telephony Publishing Corp., Chicago, Ill. 60,205, ren. 11–1–66. Cl. 38.
Telephony Publishing Corp.: *See*—
Telephony Publishing Co., The.
Tellurometer (Proprietary) Ltd., Union of South Africa Co., Cape Province, Union of South Africa. 704,281, canc. Cl. 26.
Temperato, Samuel J.: *See*—
Big A System, Inc., The.
Texas Industries, Inc., Arlington, Tex. 817,643, pub. 8–16–66. Cl. 12.
Tex-Chem Co., Inc., Fairlawn, N.J. 817,618, pub. 8–16–66. Cl. 6.
Texize Chemicals, Inc., Greenville, S.C., from Fantastic Products, Inc., Tulsa, Okla. 817,958, pub. 8–16–66. Cl. 52.
Texize Chemicals, Inc., Greenville, S.C. 817,967, pub. 8–16–66. Cl. 52.
Textron Inc.: *See*—
Home Electric Lighting Co.
Homelite Corp.
Thomson Industries, Inc., Manhasset, N.Y. 817,732, pub. 8–16–66. Cl. 23.

Tighe & Associates: *See*—
Ti-Sales, Inc.
Timms Spring Co., The, Elyria, Ohio. 817,653, pub. 8–16–66. Cl. 13.
Ti-Sales, Inc., d.b.a. Tighe & Associates, Sudbury, Mass. 817,766, pub. 8–16–66. Cl. 26.
Topps Records: *See*—
Morris, George J.
Transition Inc., Chicago, Ill. 817,971, pub. 8–16–66. Cl. 100.
Trans-Lux News-Sign Corp., New York, N.Y. 426,383, ren. 11–1–66. Cl. 21.
Trans-Lux News-Sign Corp., New York, N.Y. 426,384, ren. 11–1–66. Cl. 21.
Trotter, Thomas J., & Sons, Inc., Hatfield, Pa. 817,891, pub. 8–16–66. Cl. 46.
Union Pin Co., The, Winsted, Conn. 425,997, ren. 11–1–66. Cl. 40.
Unit Service Exchange Co., Atlanta, Ga. 704,264, canc. Cl. 23.
United Distributors Service, Inc., Roanoke, Va. 817,966, pub. 8–16–66. Cl. 52.
United Hosiery Mills Corp., Chattanooga, Tenn., to Buster Brown Textiles, Inc., Wilmington, Del. 221,202, ren. 11–1–66. Cl. 39.
United Merchants and Mfg., Inc., New York, N.Y. 817,696, pub. 8–16–66. Cl. 20.
United Merchants and Mfg., Inc., New York, N.Y. 817,860, pub. 8–16–66. Cl. 42.
U.S. Oil Co., Phillipsdale, R.I. 817,622, pub. 8–16–66. Cl. 6.
United States Plywood Corp., New York, N.Y. 817,644, pub. 8–16–66. Cl. 12.
United States Register Co., d.b.a. United States Register Co., Battle Creek, Mich. 817,790, pub. 8–16–66. Cl. 34.
United States Steel Corp., from United States Steel Corp., Pittsburgh, Pa. 817,641, pub. 8–16–66. Cl. 12.
Universal Oil Products Co., Des Plaines, Ill. 818,023. Cl. 19.
Universal Oil Products Co., Des Plaines, Ill. 818,024. Cl. 19.
Upjohn Co., The, Kalamazoo, Mich. 704,198, canc. Cl. 18.
Upjohn Co., The, Kalamazoo, Mich. 817,638, pub. 8–16–66. Cl. 12.
Upour Concrete Co.: *See*—
Montag, R. T.
Utt, Florence, Switchboard Training Systems, Inc., Anahelm, Calif. 818,008, pub. 8–16–66. Cl. 107.
Vacation Bingo, Inc., New York, N.Y. 817,979, pub. 8–16–66. Cl. 101.
Vacation-Land Trailers, Inc., Salem, Oreg. 704,394, canc. Cl. 105.
Vanelba Corp., Charlottesville, Va. 817,748, pub. 8–16–66. Cl. 23.
Van Landingham Co., The, Los Angeles, Calif., to Star-Kist Foods, Inc., Terminal Island, Calif. 221,448, ren. 11–1–66. Cl. 46.
Velveray Corp., Clifton, N.J. 704,336, canc. Cl. 42.
Venus Pen & Pencil Corp.: *See*—
American Lead Pencil Co.
Victoria Products, Corp., New York, N.Y. 817,612, pub. 8–16–66. Cl. 4.
WDL, Inc., Los Angeles, Calif. 817,795, pub. 8–16–66. Cl. 34.
Walgreen Co., from Walgreen Laboratories, Inc., Chicago, Ill. 817,936, pub. 8–16–66. Cl. 51.
Walgreen Laboratories, Inc.: *See*—
Walgreen Co.
Walker China Co., The, Bedford, Ohio. 817,775, pub. 8–16–66. Cl. 30.
Walker Mfg. Co., Racine, Wis. 817,779, pub. 4–19–66. Cl. 31.
Warner Electric Co., Inc., Chicago, Ill. 818,027. Multiple Class (Classes 21, 23, and 38).
Warwec Co., The: *See*—
Erdman, W. Wade.
Washington Forge, Inc., Englishtown, N.J. 817,722, pub. 8–16–66. Cl. 23.
Washington Forge, Inc., Englishtown, N.J. 817,723, pub. 8–16–66. Cl. 23.
Watkins, J. R., Co., The, Winona, Minn. 704,195, canc. Cl. 18.
Weill, Charles, Inc., New York, N.Y. 704,334, canc. Cl. 39.
Welch Scientific Co., The, Skokie, Ill. 817,754, pub. 8–16–66. Cl. 26.
Wembley, Inc., New Orleans, La. 817,842, pub. 8–16–66. Cl. 39.
Wembley, Inc., New Orleans, La. 818,047. Cl. 39.
Wendt, Robert J., d.b.a. Calmar Laboratories, Lakewood, Colo. 817,947, pub. 8–16–66. Cl. 51.
Western Petrochemical Corp., The, Chanute, Kans. 817,600, pub. 8–16–66. Cl. 1.
Westinghouse Electric Corp., Staunton, Va. 817,791, pub. 8–16–66. Cl. 34.
Westinghouse Electric Corp., Baltimore, Md. 817,873, pub. 8–16–66. Cl. 44.
Weyenberg Shoe Mfg. Co., Milwaukee, Wis. 817,823, pub. 8–16–66. Cl. 39.
Weyerhaeuser Co., Tacoma, Wash. 817,598, pub. 8–16–66. Cl. 1.
Weyerhaeuser Co., Tacoma, Wash. 817,632, pub. 8–16–66. Cl. 10.
Weyerhaeuser Co., Tacoma, Wash. 817,932, pub. 8–16–66. Cl. 50.
White, John R., Co., Inc., Birmingham, Ala. 818,058. Cl. 40.
White, S. S., Dental Mfg. Co., The, to S. S. White Co., Philadelphia, Pa. 53,359, ren. 11–1–66. Cl. 51.
White, S. S., Dental Mfg. Co., The, to S. S. White Co., Philadelphia, Pa. 53,565, ren. 11–1–66. Cl. 44.
White, S. S., Dental Mfg. Co., The, to S. S. White Co., Philadelphia, Pa. 53,566, ren. 11–1–66. Cl. 44.
Whiting Brothers Oil Co., Holbrook, Ariz. 817,707, pub. 8–16–66. Cl. 21.
Whittemore Bros. Corp., Cambridge, Mass. 215,126, ren. 11–1–66. Cl. 4.
Whittemore Bros. Corp., Cambridge, Mass., to Whittemore Bros. Corp., Memphis, Tenn. 217,327, ren. 11–1–66. Cl. 4.
Williams, Dwight S., Co., Inc., New York, N.Y. 817,837, pub. 8–16–66. Cl. 39.
Williamson-Dickie Mfg. Co., The, Fort Worth, Tex. 817,845, pub. 8–16–66. Cl. 39.
Wilson Sporting Goods Co., River Grove, Ill. 817,720, pub. 8–16–66. Cl. 22.
Winery, Tomasello, Hammonton, N.J. 817,924, pub. 8–16–66. Cl. 47.
Wingate Corp., The, Providence, R.I. 817,988, pub. 8–16–66. Cl. 101.
Winters, Charles C., Butler, Pa. 704,247, canc. Cl. 22.
Wynn Enterprises, Inc., New York, N.Y. 817,843, pub. 8–16–66. Cl. 39.
Xerox Corp., Rochester, N.Y. 817,809, pub. 8–16–66. Cl. 37.

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NOTICES

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TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

Chapter I—Patent Office, Department of Commerce

PART 1—RULES OF PRACTICE IN PATENT CASES

Miscellaneous Amendments

The following amended sections are adopted to take effect January 1, 1967. All applications submitted after that date must comply with the sections as amended. With respect to amended § 1.72(b), every application which has not received a first office action of any kind from the Examiner prior to November 1, 1966, must be amended to contain an abstract in accordance with this section.

The general substance of these sections and other proposed sections was published in the Federal Register of March 15, 1966, 31 F.R. 4412–3, and the OFFICIAL GAZETTE of April 5, 1966, 823 O.G. 2. All persons who desired, were invited both to submit their written views, objections, recommendations, or suggestions and their oral comments at a hearing held on April 26, 1966. Both the oral and written comments were carefully considered. It was decided on the basis of the comments received and other considerations that the substance of certain of the proposed sections would be incorporated merely as suggestions in a guide to drafting a model patent application; and that the substance of certain other of the proposed sections would be adopted as herein indicated.

The principal purposes of the amendments are to facilitate examination of applications by the Patent Office and review of issued patents by the public. Suggested guidelines for complying with the amendment requiring an abstract of disclosure (Section 1.72(b)) and the amendment adding paragraph (e) to § 1.75 will be published separately by the Patent Office in a guide to drafting a model patent application.

Sections 1.72, 1.75, 1.77, 1.78, 1.83, and 1.84(g) have been amended to read as follows:

§ 1.72 *Title and abstract.*

(a) The title of the invention, which should be as short and specific as possible, should appear as a heading on the first page of the specification, if it does not otherwise appear at the beginning of the application.

(b) A brief abstract of the technical disclosure in the specification must be set forth immediately following the title and preceding the disclosure in a separate paragraph under the heading "Abstract of the Disclosure." The purpose of the abstract is to enable the Patent Office and the public generally to determine quickly from a cursory inspection the nature and gist of the technical disclosure, and the abstract shall not be used for interpreting the scope of the claims.

§ 1.75 *Claim(s).*

(a) The specification must conclude with a claim particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention or discovery.

(b) More than one claim may be presented provided they differ substantially from each other and are not unduly multiplied.

(c) When more than one claim is presented, they may be placed in dependent form in which a claim may refer back to and further restrict a single preceding claim. Claims in dependent form shall be construed to include all the limitations of the claim incorporated by reference into the dependent claim.

(d) (1) The claim or claims must conform to the invention as set forth in the remainder of the specification and the terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description.

(2) See §§ 1.141 to 1.147 as to claiming different inventions in one application.

(e) Where the nature of the case admits, as in the case of an improvement, any independent claim should contain in the following order, (1) a preamble comprising a general description of all the elements or steps of the claimed combination which are conventional or known, (2) a phrase such as "wherein the improvement comprises," and (3) those elements, steps and/or relationships which constitute that portion of the claimed combination which the applicant considers as the new or improved portion.

§ 1.77 *Arrangement of application.*

The following order of arrangement should be observed in framing the application:

(a) Title of the invention; or an introductory portion stating the name, citizenship, and residence of the applicant, and the title of the invention may be used.

(b) Abstract of the disclosure.

(c) Cross-references to related applications, if any.

(d) Brief summary of the invention.

(e) Brief description of the several views of the drawing, if there are drawings.

(f) Detailed description.

New Applications Received During September 1966

Patents	6,948
Designs	446
Plant Patents	19
Reissues	16
Total	7,429

Issue—November 8, 1966

Patents	1469	No. 3,283,336 to No.	3,284,804, incl.
Designs	72	No. 206,145 to No.	206,216, incl.
Plant Patents	2	No. 2,684 to No.	2,685, incl.
Reissues	5	No. 26,109 to No.	26,113, incl.
Total	1548		

(g) Claim or claims.
(h) Signature. (See § 1.76.)

§ 1.78 *Cross-references to other applications.*

(a) When an applicant files an application claiming an invention disclosed in a prior filed copending application of the same applicant, the second application must contain or be amended to contain in the first sentence of the specification following the title and abstract a reference to the prior application, identifying it by serial number and filing date and indicating the relationship of the applications, if the benefit of the filing date of the prior application is to be claimed. Cross-references to other related applications may be made when appropriate. (See § 1.14 (b).)

(b) Where two or more applications filed by the same applicant, or owned by the same party, contain conflicting claims, elimination of such claims from all but one application may be required in the absence of good and sufficient reason for their retention during pendency in more than one application.

§ 1.83 *Content of drawing.*

(a) The drawing must show every feature of the invention specified in the claims. However, conventional features disclosed in the description and claims ,where their detailed illustration is not essential for a proper understanding of the invention, should be illustrated in the drawing in the form of a graphical drawing symbol or a labeled representation (e.g. a labeled rectangular box).

(b) When the invention consists of an improvement on an old machine the drawing must when possible exhibit, in one or more views, the improved portion itself, disconnected from the old structure, and also in another view, so much only of the old structure as will suffice to show the connection of the invention therewith.

§ 1.84 *Standards for drawings.*

• • • • •

(g) *Symbols, legends.* Graphical drawing symbols and other labeled representations may be used for conventional elements when appropriate, subject to approval by the Office. The elements for which such symbols and labeled representations are used must be adequately identified in the specification. While descriptive matter on drawings is not permitted, suitable legends may be used, or may be required, in proper cases, as in diagrammatic views and flowsheets or to show materials or where labeled representations are employed to illustrate conventional elements. Arrows may be required, in proper cases, to show direction of movement. The lettering should be as large as, or larger than, the reference characters.

• • • • •

(Sec. 1, 66 Stat. 793, 35 U.S.C. 6, 112, 113)

EDWARD J. BRENNER,
Commissioner of Patents.

Approved: September 29, 1966.

J. HERBERT HOLLOMAN,
Assistant Secretary for Science and Technology.

[F.R. Doc. 66-10803; Filed, Oct. 3, 1966; 8:47 a.m.]

Published in 31 F.R. 12922, Oct. 4, 1966

Examination Requirements and Procedure in Relation to Abstracts of the Disclosure

The newly adopted amendment to Rule 72 which requires the submission of an *Abstract of the Disclosure* is being applied to patent applications which receive a first Office action of any kind from the Examiner on or after November 1, 1966; however, on cases filed before January 1, 1967, abstracts will not be required where the application is passed to issue on the first action.

The Examiner in the first office action on and after November 1, 1966, should require the submission of a brief abstract of the technical disclosure in the specification, the abstract to appear immediately after the title of the invention and preceding the disclosure in a separate paragraph under the heading "Abstract of the Disclosure." The following form paragraph may be used to make the requirement:

"An abstract is required, see new Rule 72(b)."

Responses to such actions should be treated under Rule 111(b) practice like any other formal matter.

Upon passing the case to issue, the Examiner should see that the abstract is an adequate and clear statement of the contents of the disclosure and generally in line with the guidelines in the following paragraphs; the abstract shall be changed by Examiner's Amendment in those instances where deemed necessary.

1. The purpose of the abstract is to provide a non-legal technical statement of the contents of the disclosure. The abstract should be an objective condensation (rather than a description) of the disclosure, in clear and concise language. Statements as to the relative merits or value, or speculative applications of the invention should be omitted.

2. The abstract should be especially designed to serve as a searching-scanning tool for the scientist, engineer or researcher in the particular art, and therefore should serve to indicate whether there is a need for consulting the full specification for details.

3. The abstract should be as brief as the subject permits. A single paragraph of 50–100 words should be sufficient.

4. Especially in the chemical field, the abstract should include a statement of the utility of the subject matter of the disclosure, particularly that which is related to the invention.

5. The abstract should be separate and independent of the "Summary of the Invention." One of the purposes of the abstract is to determine quickly the nature and gist of the technical disclosure.

RICHARD A. WAHL,
Oct. 7, 1966. *Assistant Commissioner.*

Patents Available for Licensing or Sale

D. 192,568. PORTABLE BAR CABINET. Jeff Anderson, 8715½ S. McKinley St., Los Angeles, Calif.

3,067,310. MICROFILM ELECTRIC HEATERS. Frank C. Wals et al. Correspondence to: Anderson, Spangler & Wymore, Suite 2114, 1700 Broadway, Denver, Colo., 80202.

3,215,917. ELECTRICALLY-DRIVEN TIMING DEVICE. Willard E. Buck. Correspondence to: Anderson, Spangler & Wymore, Suite 2114, 1700 Broadway, Denver, Colo., 80202.

3,218,104. PERSONNEL RESTRAINT DEVICE. James A. Putman, 10953 Nestle Ave., Northridge, Calif., 91324.

3,248,835. BEVEL SIDING. Wesstop Company, % Paul J. Jolma, secy., P.O. Box 186, Clatskanie, Oreg., 97016.

3,255,317. STEREO MICROPHONE. Motoyoshi Nakanishi, 1511, 5-chome, Honcho, Funabashi-shi, Chiba-Prefecture, Japan.

3,259,427. LEVERAGE SEAT LIFTS. Ray S. Wiest, Binghamton, N.Y. Correspondence to: James C. Wray, 1204 Munsey Bldg., Washington, D.C., 20004.

3,266,182. IRONING COVER FOR SEWING MACHINE LID. Sandra L. Cournoyer, 2457 Fernandez Drive, Sacramento, Calif.

3,269,283. SURFACE FINISHING TOOL. Richard Grueb, Wuerttemberg, Germany. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,270,694. COMBINATION ASH AND BEVERAGE TRAY FOR CARD TABLES. Hampton K. and Adel B. Wallace, 6473 S. Land Park Drive, Sacramento, Calif.

3,273,264. AIR CONDITIONED SHOE. Anthony S. Farinello, Jr., 2007 Ebbtide Lane, Dallas, Tex., 75224.

3,277,249. ROTARY CAM OPERATED SWITCH TERMINAL STRUCT. Theodore J. Lyell, 32 Chimney Ridge Drive, Convent, N.J.

The following two patents are offered by: L. Wainwright, 795 Balour Drive, Encinitas, Calif., 92024.

3,112,652. DRIVE MECHANISM FOR RECIPROCATING ELEMENTS AND FOR A MOWER HAVING AN OSCILLATORY DRIVE.

3,058,361. RECIPROCATORY APPARATUS AND ENERGY EXCHANGERS THEREFOR.

General Electric Company is prepared to grant non-exclusive licenses under the following 28 patents upon reasonable terms to domestic manufacturers.

Applications for license under the following patent may be addressed to: Patent Counsel, Metallurgical Products Department, General Electric Company, Box 237 GPO, Detroit, Mich., 48232.

3,127,224. BEARING.

Applications for license under the following 3 patents may be addressed to: Patent Counsel, Specialty Control Department, General Electric Company, Waynesboro, Va.

3,241,063. INTERVAL MEASURING SYSTEM USING RESETTABLE, FREE-RUNNING DIGITAL TIME MEASURING DEVICES.

3,240,945. SHUTTER DRIVE FOR PHOTOSENSITIVE PINHOLE DETECTORS.

3,248,639. VOLTAGE REGULATED POWER CONVERSION SYSTEM.

Applications for license under the following 5 patents may be addressed to: Patent Counsel, Major Appliance & Hotpoint Division, General Electric Company, Appliance Park, Louisville, Ky., 40225.

3,128,363. BROIL UNIT FOR TOP VIEWING OVEN.

3,258,579. OVEN CONTROL CIRCUIT.

3,258,580. HOLD-DOWN MEANS FOR CONVOLUTED SHEATHED HEATER.

3,263,403. AIR FILTER CONDITION INDICATOR.

3,263,674. OVEN DOOR WITH SELF-CONTAINED COUNTER-BALANCING MEANS.

Applications for license under the following 7 patents may be addressed to: Patent Counsel, Construction Industries Division, General Electric Company, 1285 Boston Ave., Bldg. 1–B, Bridgeport, Conn., 06602.

3,250,957. CIRCUIT BREAKER PANELBOARD.

3,258,652. PANELBOARD INCLUDING ROTATABLE LOCKING BAR PASSING THROUGH SLOT IN CIRCUIT BREAKER ASSEMBLIES FOR PREVENTING UNAUTHORIZED REMOVAL OF ASSEMBLIES FROM PANELBOARD.

3,263,045. CIRCUIT BREAKER WITH HIGH AND LOW OVER-CURRENT MEANS FOR DISENGAGING THE LATCH.

3,263,046. MULTIPOLE CIRCUIT BREAKER.

3,263,131. ELECTRIC POWER BUSWAY WITH PLUG-IN BRANCH CIRCUIT TAKEOFF.

3,265,832. ELECTRICAL CONTROL DEVICE WITH ADJUSTABLE CALIBRATION LOCKING MEANS.

3,272,549. MATERIALS HANDLING DEVICE.

Applications for license under the following 12 patents may be addressed to: General Electric Company, Component Products Division, 1635 Broadway, Fort Wayne, Ind., 46804. Attn: Patent Counsel.

3,268,986. METHOD OF MANUFACTURING DYNAMOELECTRIC MACHINES.

3,244,965. PHASE CONTROLLED ALTERNATING CURRENT CIRCUITS.

3,249,799. SYSTEMS AND APPARATUS FOR OPERATING ELECTRIC DISCHARGE DEVICES.

3,250,952. BALLAST APPARATUS FOR STARTING AND OPERATING A PAIR OF FLUORESCENT LAMPS.

3,250,956. BALLASTS WITH INTEGRALLY INSULATED BASE.

3,261,061. CASTING EQUIPMENT FOR USE IN THE FABRICATION OF ROTOR SECONDARY WINDINGS.

3,262,000. DYNAMOELECTRIC MACHINE ROTOR.

3,263,122. CURRENT LIMITING INVERTER CIRCUITS AND APPARATUS FOR OPERATING ELECTRIC DISCHARGE LAMPS AND OTHER LOADS.

3,270,221. MOTOR VIBRATION SUPPRESSION MOUNTING.

3,270,222. VIBRATION AND NOISE ISOLATION SUPPORT AND DRIVE.

3,271,602. CENTRIFUGAL SWITCHING MECHANISMS FOR DYNAMOELETRIC MACHINES.

3,264,045. LUBRICATION SYSTEM FOR DYNAMOELECTRIC MACHINES.

Adjudicated Patents

(C.A. Iowa) Piel Patent No. 2,794,422 (119—157), for APPLICATOR FOR ANIMAL USAGE. Claims 1 to 9 *Held* invalid. *Piel Mfg. Co.* v. *George A. Rolfes Co.*, 363 F.2d 57; 150 USPQ 330.

(C.A. Iowa) Piel Patent No. 2,813,510 (119—157), for ANIMAL ACTUATED LIQUID APPLICATOR FOR HIDE. Claims 1 to 5 and 12 *Held* invalid. *Id.*

(C.A. Ill.) Musschoot Patent No. 2,984,339 (198—232), for TUNABLE VIBRATORY APPARATUS, *Held* valid and infringed. *Rex Chainbelt, Inc.* v. *General Kinematics Corp.*, 363 F.2d 336; 150 USPQ 319.

GUIDELINES FOR DRAFTING A MODEL PATENT APPLICATION UNDER THE REVISED RULES

The following guidelines illustrate the preferred lay-out and content for patent applications. They have been prepared to supplement the amendments to the rules which are effective January 1, 1967. These guidelines are suggested for the applicant's use.

Arrangement and Contents of the Specification

The following order of arrangement is preferable in framing the specification and, except for the title of the invention, each of the lettered items should be preceded by the headings indicated.

(*a*) Title of the Invention.
(*b*) Abstract of the Disclosure.
(*c*) Cross-References to Related Applications (if any).
(*d*) Background of the Invention.
1. Field of the Invention.
2. Description of the Prior Art.
(*e*) Summary of the Invention.
(*f*) Brief Description of the Drawing.
(*g*) Description of the Preferred Embodiment(s).
(*h*) Claim(s).

(*a*) *Title of the Invention:* (See Rule 72(a).) The title of the invention should be placed at the top of the first page of the specification. It should be brief but technically accurate and descriptive.

(*b*) *Abstract of the Disclosure:* (See Rule 72(b), MPEP 608.01(a), and 831 O.G. 1328, October 25, 1966.)

(*c*) *Cross-References to Related Applications:* (See Rule 78 and MPEP 201.11.)

(*d*) *Background of the Invention:* The specification should set forth the Background of the Invention in two parts:

(1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions. The statement should be directed to the subject matter of the claimed invention.

(2) Description of the Prior Art: A paragraph(s) describing to the extent practical the state of the prior art known to the applicant, including references to specific prior art where appropriate. Where applicable, the problems involved in the prior art, which are solved by the applicant's invention, should be indicated.

(*e*) *Summary:* A brief summary or general statement of the invention as set forth in Rule 73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.

(*f*) *Brief Description of the Drawing:* A reference to and brief description of the drawing(s) as set forth in Rule 74.

(*g*) *Description of the Preferred Embodiment(s):* A description of the preferred embodiment(s) of the invention as required in Rule 71. The description should be as short and specific as is necessary to adequately and accurately describe the invention.

Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field to which the invention pertains, form a part of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.

(*h*) *Claim(s):* (See Rule 75.) A claim may be typed with the various elements subdivided in paragraph form. There may be plural indentations to further segregate subcombinations or related steps.

Reference characters corresponding to elements recited in the detailed description and the drawings may be used in conjunction with the recitation of the same element or group of elements in the claims. The reference characters, however, should be enclosed within parentheses so as to avoid confusion with other numbers or characters which may appear in the claims. The use of reference characters is to be considered as having no effect on the scope of the claims.

Claims should preferably be arranged in order of scope so that the first claim presented is the broadest. Where separate species are claimed, the claims of like species should be grouped together where possible and physically separated by drawing a line between claims or groups of claims. (Both of these provisions may not be practical or possible where several species claims depend from the same generic claim.) Similarly, product and process claims should be separately grouped. Such arrangements are for the purpose of facilitating classification and examination.

The form of claim required in Rule 75(e) is particularly adapted for the description of improvement type inventions. It is to be considered a combination claim and should be drafted with this thought in mind.

In drafting claims in accordance with Rule 75(e), the preamble is to be considered to positively and clearly include all the elements or steps recited therein as a part of the claimed combination.

Oath

(See Rule 65.) Where one or more previously filed foreign applications are cited or mentioned in the oath, complete identifying data, including the application or serial number as well as the country and date of filing, should be provided.

EDWARD J. BRENNER,
Date: Oct. 12, 1966. *Commissioner of Patents.*

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF SEPTEMBER 26, 1966

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	7-3-63	10-2-61
GENERAL ORGANIC CHEMISTRY, GROUP 120—G. D. MITCHELL, Manager. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	6-4-63	8-31-61
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING, GROUP 140—M. STERMAN, Manager. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.	8-1-63	8-21-61
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	2-5-63	1-31-62
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	7-1-63	10-23-61
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—M. L. LEVY, Manager. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	7-15-63	12-15-61
SECURITY, GROUP 220—S. BOYD, Manager. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	1-16-62	9-9-63
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—E. J. SAX, Manager. Communications; Multiplexing Techniques; Facsimile; Date Processing, Computation and Conversion; Storage Devices and Related Arts.	1-7-63	6-6-61
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—F. M. STRADER, Manager. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	4-12-63	7-31-61
PHYSICS, GROUP 280—R. L. EVANS, Manager. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	1-13-64	10-25-62
DESIGNS, GROUP 290—S. BOYD, Manager. Industrial Arts; Household, Personal and Fine Arts.	6-15-65	1-5-65

Total number of pending applications (excluding Designs)	195, 258
Total number of Design applications pending	Not available
Total number of applications awaiting action (excluding Designs)	143, 338
Total number of Design applications awaiting action	Not available
Date of oldest new application awaiting action	Jan. 16, 1962
Date of oldest amended application awaiting action	June 6, 1961

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during November 1966, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1953*.

Patents	Numbers 2,486,373 to 2,490,010, inclusive
Plant Patents	Numbers 888 to 903, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager..... Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid, Flexible and Special Receptacles and Packages.	6-26-64	5-16-63
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager..... Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks; Fasteners.	5-19-64	3-19-62
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager..... Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, Etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	2-13-64	3-19-62
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager..... Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	12-4-64	10-15-63
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager..... Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	7-8-64	8-20-62
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager..... Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	10-17-63	7-25-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE BLANCHARD IMPORTING & DISTRIBUTING CO., INC.

No. 7669. Decided May 19, 1966

[53 CCPA —; 360 F.2d 254; 149 USPQ 699]

1. TRADEMARK—DISCLAIMER—MARK CONSIDERED AS A WHOLE.
"Where the mark so to be registered has a portion thereof disclaimed, 'those words cannot be ignored in determining the question of confusing similarity.' * * * The marks must be considered in their entireties."

2. SAME—CONFUSING SIMILARITY—"CANADIAN CHAMP" AND "CHAMPION" FOR WHISKEY.
"It is apparent that the only similarity between the above marks ['CANADIAN CHAMP' AND 'CHAMPION' for whiskey] resides in a comparison of 'CHAMPION' and 'CHAMP.' The latter is recognized as a slang term for the former which connotes quality or superiority over like things. 'CHAMPION' is, as the Board admits, a self-laudatory term as applied to goods. Considering appellant's composite mark, it may well be that 'CANADIAN,' standing alone, is descriptive when applied to the goods, Canadian whiskey; and that 'CHAMP,' like 'CHAMPION,' is self-laudatory of the goods. However, considering the composite mark as a whole against the registered mark we do not find a likelihood of confusion between the marks. We think the Board erred in placing too much emphasis on 'CHAMP' and too little emphasis on the composite mark as a whole."

APPEAL from the Patent Office. Serial No. 123,404.

REVERSED.

Harold E. Cole for appellant.

J. Schimmel (*Jere W. Sears* of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, JR., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

SMITH, *J.*, delivered the opinion of the court.

The issue here is whether appellant's mark so resembles the previously registered mark of another, "as to be likely, when applied to the goods of * * * [appellant] to cause confusion, or to cause mistake, or to deceive." Trademark Act of 1946, section 2(d) (15 U.S.C. 1052(d)).

Appellant's mark [1] is "CANADIAN CHAMP" for "Blended Whis-Key." Exclusive right to use "CANADIAN" has been disclaimed. The previously registered mark [2] of another is "CHAMPION" for "whiskey, brandy, gin, rum, and alcoholic cordials." The respective goods are conceded to be similar.

The Trademark Trial and Appeal Board, in affirming the Examiner's refusal to register appellant's mark, stated as follows:

> * * * the word "CHAMP," which constitutes the sole feature of applicant's mark capable of identifying its goods as to source, is a recognized abbreviation for and hence the legal equivalent of the word "CHAMPION" * * * [citing Webster's Third New International Dictionary, 372 (1961)] which constitutes the entire mark of the reference registration. In view thereof, we are clearly of the opinion that the contemporaneous use of these marks for the specified goods would be likely to cause confusion or mistake or to deceive; and this notwithstanding the inherent laudatory connotation of the word "champion."

[1] Serial No. 123,404, filed July 5, 1961.
[2] Registration No. 315,653, registered August 7, 1934, and renewed.

The Solicitor in his brief adopts the reasoning of the Board and adds:

As recognized by appellant, its use of "CANADIAN" is merely descriptive of Canadian whiskey * * *. This leaves "CHAMP" as the dominant and suggestive portion of the mark. There is also agreement that "CHAMP" is a slang abbreviation of "CHAMPION" * * *. Such identification, of course, would spontaneously occur to sports "fans," many of whom drink whiskey. Such a purchaser might well mistakenly assume that "CANADIAN CHAMP" was merely a Canadian whiskey marketed by the "CHAMPION" people.

The theory of appellant's case is that the Board has placed undue emphasis on the term "CHAMP" and has failed to decide the issue of likelihood of confusion considering the respective marks as a whole. Further, appellant argues "CHAMPION" is a weak trademark (citing *National Biscuit Co.* v. *Princeton Mining Co.*, 137 USPQ 250, 253 (TTAB 1963)),[3] self-laudatory in nature, and entitled to but a very limited scope of protection which should not bar appellant's mark from registration.

[1] Where the mark so to be registered has a portion thereof disclaimed, "those words cannot be ignored in determining the question of confusing similarity." *May Dep't Stores Co.* v. *Schloss Bros. & Co.*, 43 CCPA 980, 234 F.2d 879, 110 USPQ 282, 283, citing cases. The marks must be considered in their entireties. *Murray Corp. of America* v. *Red Spot Paint & Varnish Co.*, 47 CCPA 1152, 280 F.2d 158, 126 USPQ 390, 392. The issue of likelihood of confusion must be resolved by comparing "CANADIAN CHAMP" to "CHAMPION."[4]

[2] It is apparent that the only similarity between the above marks resides in a comparison of "CHAMPION" and "CHAMP." The latter is recognized as a slang term for the former which connotes quality or superiority over like things. "CHAMPION" is, as the Board admits, a self-laudatory term as applied to goods. Considering appellant's composite mark, it may well be that "CANADIAN," standing alone, is descriptive when applied to the goods, Canadian whiskey; and that "CHAMP," like "CHAMPION," is self-laudatory of the goods. However, considering the composite mark as a whole against the registered mark we do not find a likelihood of confusion between the marks. We think the Board erred in placing too much emhpasis on "CHAMP" and too little emphasis on the composite mark as a whole.

For the above reasons, the decision of the Board is reversed.

REVERSED.

KIRKPATRICK, *J.*, dissents.

ALMOND, *J.*, dissenting.

For the reasons stated by the tribunal below, I would affirm its decision finding likelihood of confusion between the subject marks within the meaning of section 2(d) of the Trademark Act of 1946 (15 U.S.C. 1052(d)).

[3] Aff'd, 52 CCPA 844, 338 F.2d 1022, 143 USPQ 422.

[4] In *American Brewing Co.* v. *Delatour Beverage Corp.*, 26 CCPA 778, 100 F.2d 253, 40 USPQ 173, 176, it is stated:

* * * [I]t can not be that an applicant, by combining a technical trade-mark and descriptive words, neither of which alone would be registrable to him, can produce a composite mark which is registrable.

The above statement appears to be somewhat broad in light of the facts of that case. Therein registration was sought for a mark consisting of a representation of the Statue of Liberty and certain words, "no claim being made to the printed words." USPQ at 173. Cancellation was sought on the basis of a mark consisting of a representation of the Statue of Liberty and certain words. The court, in finding that "concurrent use of the marks would be likely to deceive purchasers," expressly considered that the disclaimed words were part of the applicant's mark. USPQ at 175. The above statement by the court appears to be directed to a particular fact situation not present here and the marks must be looked at as a whole in determining the likelihood of confusion. See Vandenburgh, Trademark Law and Procedure 131, 228 (1959).

U.S. Court of Customs and Patent Appeals

IN RE PREFORMED LINE PRODUCTS COMPANY

No. 7540. Decided May 12, 1966

[53 CCPA —; 359 F.2d 907; 149 USPQ 569]

1. TRADEMARK—DESCRIPTIVENESS—*In re Preformed Line Products Co.* DISTINGUISHED—"YOU CAN LOOK UP TO PREFORMED" FOR POLE LINE HARDWARE.

"Although we agreed with the Board's ruling in the first 'Preformed' appeal, we are unable to agree that it is controlling here in view of different facts. There 'Preformed' stood alone; here, however, it has become a part of the slogan 'You can *look up* to Preformed.' We do not think incorporating 'Preformed' into the instant slogan, granted its prominence, makes the entire slogan 'merely descriptive.' In our view the slogan, viewed in its entirety, as it must be, performs its intended function of identifying appellant's goods and distinguishing them from those of others."

APPEAL from the Patent Office. Serial No. 131,992.

REVERSED.

Henry L. Brinks, *Dean A. Olds* for appellant.

Clarence W. Moore (*George C. Roeming* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

WORLEY, *Chief Judge*, delivered the opinion of the court.

This appeal is from the decision[1] of the Trademark Trial and Appeal Board refusing registration on the Principal Register of the trademark

You can look up to Preformed

which Preformed Line Products Co. alleges has been used on goods known in the electrical trade as pole line hardware[2] since July 25, 1961.

In denying registration, the Board said:

* * * the subject mark of the application is "dominated" by the term "PREFORMED," which has heretofore been held to be merely descriptive and hence incapable of identifying applicant's goods and distinguishing them from like goods of others.[3]

[1] Although we agreed with the Board's ruling in the first "Preformed" appeal, we are unable to agree that it is controlling here in view of different facts. There "Preformed" stood alone; here, however, it has become a part of the slogan "You can *look up* to Preformed." We do not think incorporating "Preformed" into the instant slogan, granted its prominence, makes the entire slogan "merely descriptive." In our view the slogan, viewed in its entirety, as it must be, performs its intended function of identifying appellant's goods and distingushing them from those of others.

REVERSED.

[1] 142 USPQ 517.

[2] Appellant's application Serial No. 131,992, filed November 14, 1961, describes the goods as "Accessories for Electrical Ropes, Cables, Strands, Wires, and Pole Line Hardware, Armor Rods and Wires, Splices, Line Guards, Patch Rods, Tap Armor, Line Splices, Dead Ends, Telephone Splints, Splint and Tie Assemblies, Lashing Rods, Conductor Suspension Systems, Electrical Splice Shunts, Spacers for Parallel Conductors, Tangent Supports, Drop Wire Hangers" which are used in conjunction with overhead electrical transmission lines.

[3] The Board was referring to this court's decision in *In re Preformed Line Products Co.*, 51 CCPA 775, 323 F.2d 1007, 139 USPQ 271, where we found the word "Preformed" to be "merely descriptive" when applied to the identical goods recited here.

U.S. Court of Customs and Patent Appeals

THE WILLIAMSON-DICKIE MANUFACTURING COMPANY
v.
MANN OVERALL COMPANY, INC.
No. 7528. Decided May 5, 1966

[53 CCPA —; 359 F.2d 450; 149 USPQ 518]

1. TRADEMARK—CANCELLATION—FEE DUE WHEN CANCELLATION REQUESTED.
"The fee must be paid when cancellation is requested in an answer to an opposition just as in an original petition to cancel."

2. SAME—SAME—FILING FEES AND STATUTES OF LIMITATION—SECTION 14.
"It has also been held that the payment of the fee is a jurisdictional requirement without which a petition has not been filed in compliance with the statute, section 14. In *Sunicay* the counterclaim for cancellation was stricken for want of the fee and the petition to reinstate it was denied. See also *The Kroger Co.* v. *Country Club Ice Cream Co.*, 130 USPQ 34 (Comm'r. 1961). In similar cases involving filing fees and statutes of limitation other courts have held that payment of the fee within the time limited is necessary to give the court jurisdiction. The court in *Turkett* v. *United States*, 76 F. Supp. 769 (D.C., N.D.N.Y.), granted a motion to dismiss a complaint under the Federal Tort Claims Act requiring the action to be begun within one year because the filing fee was not paid to the court clerk within that year. In *Anno* v. *United States*, 113 F. Supp. 673, the United States Court of Claims granted a motion to dismiss a petition filed before the end of a six-year limitation period because no filing fee was received within the period, following *Turkett*. It held that the claim was not 'filed' until the fee was paid."

3. SAME—SAME—FILING FEE—SECTION 14.
"Appellee argues that appellant has no standing to complain about how and when the Patent Office collects its fees. We disagree. Appellant is entitled to show that no fee was paid within five years as required by section 14 and that for that reason the request to cancel came too late."

4. SAME—SAME—NOTICE OF OPPOSITION TOLLS STATUTE OF LIMITATION FOR CANCELLATION—SECTION 14.
In connection with a counterclaim by the appellee in an opposition proceeding requesting cancellation of appellant-opposer's prior registration, and with reference to the appellee's assertion that the five year statutory period for petitioning to cancel specified in section 14 "should not be applied against it for the reason that the bringing of the opposition, in which the registration of the mark sought to be cancelled was relied on, tolled the statute of limitations, the notice of opposition having been filed within the five-year period," *Held* that "We will * * * regard the counterclaim as properly before the Board on the ground the notice of opposition tolled the statute."

5. SAME—DISCLAIMER—EFFECT OF DISCLAIMING PART OF TRADEMARK.
Held, with respect to the registered mark "HORSESHOE" COLLAR, "* * * we do not agree that since the word COLLAR was disclaimed 'separate and part from the mark' it is tantamount to a registration of HORSESHOE, in the sense of giving appellant any rights in HORSESHOE alone as a mark * * *."

6. SAME—CANCELLATION—CONFUSING SIMILARITY—"HORSE SHOE" AND OUTLINE IN STITCHING OF A HORSESHOE FOR ARTICLES OF CLOTHING.
Upon considering appellee's request for cancellation of appellant's registered mark "HORSE SHOE," based on the appellee's registered mark of an outline in stitching of a horseshoe, both marks being for articles of clothing, *Held* that "* * * we do not believe that in 1960, when cancellation was asked for by appellee, about five years after the registration of HORSE SHOE by appellant, there was sufficient likelihood of confusion from the concurrent use of the two quite different marks to justify the Board's decision to cancel."

7. SAME—CONFUSING SIMILARITY—"HORSE SHOE" AND "GOLDEN HORSESHOE" FOR ARTICLES OF CLOTHING.
"* * * just as we feel that confusion will not be likely as between the stitched horseshoe mark and HORSE SHOE, so do we likewise feel that contemporaneous use of the latter and GOLDEN HORSESHOE will not be likely to confuse, deceive, or cause mistake."

APPEAL from the Patent Office. Opposition No. 39,765.

MODIFIED.

William E. Schuyler, Jr., Francis C. Browne, Andrew B. Beveridge, Joseph A. DeGrandi for appellant.

Shanley and O'Neil (*Robert J. Patch, James J. Shanley* of counsel) for appellee.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, JR., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

RICH, *Acting Chief Judge*, delivered the opinion of the court.

This appeal is from the decision of the Trademark Trial and Appeal Board, 141 USPQ 934, adhered to on rehearing, dismissing appellant's opposition (No. 39,765) to registration of GOLDEN HORSESHOE and granting appellee's counterclaim to cancel appellant's registration of HORSE SHOE, one of two registrations relied on by appellant in the opposition.

The following are the four salient facts involved, stated in chronological order:

1. The trademark "HORSESHOE" COLLAR (in rectangular box) was registered, No. 349,826, Sept. 7, 1937, to a predecessor in title of appellant for "men's, boys' and children's outer garments, consisting of coats, vests, pants and trousers and overcoats."

2. Appellee commenced using in 1947 a trademark for "overalls and western style pants" consisting of the outline in stitching of a horseshoe, open end up and centered under two closely spaced lines of straight stitching along the top edge of a substantially rectangular pocket, Reg. No. 509,324, May 3, 1949. We shall refer to this mark as "stitched horseshoe."

3. Appellant registered the trademark HORSE SHOE for "dungarees for the use of men, women, and children," Reg. No. 607,061, June 7, 1955.

4. Appellee applied for registration of GOLDEN HORSESHOE Ser. No. 55,490, filed July 17, 1958, as a trademark for "overalls, dungarees, trousers and denim jackets," claiming first use February 10, 1958.

This proceeding started by appellant's filing of a notice of opposition to the last-mentioned application, item 4, relying on its prior registrations, items 1 and 3.

Appellee, as a part of its answer to the notice of opposition, asked "affirmative relief by way of cancellation of Registration No. 607,061, of HORSE SHOE, item 3, based on its prior use of "a horseshoe trademark," attaching a copy of its Registration No. 509,324, the stitched horseshoe, item 2.

Appellant moved to dismiss the counterclaim for affirmative relief on the ground it could not be entertained, as a petition to cancel under section 14 of the Trademark Act of 1946 (15 U.S.C. 1064), because appellee had not paid the fee required by section 14 ($25 under section 31) upon the filing of a petition to cancel, noting in its motion to dismiss that more than 5 years had then elapsed from the issuance of the registration sought to be cancelled and that "an application to cancel a registration may be entertained only if said application for cancellation is filed with the prescribed fee witnin five years of the date of registration of the mark sought to be cancelled." That registration issued June 7, 1955, and it was then July 15, 1960. The answer in which the affirmative defense was set up, without payment of fee however, was filed within the five year period, on May 31, 1960.

The Board denied the motion to dismiss on the authority of *Sunbeam Corp.* v. *Duro Metal Products Co.*, 106 USPQ 385 (Comm'r.), saying that the filing of the notice of opposition, in which the regis-

tration sought to be cancelled was relied on, tolls the statute of limitations during the pendency of the action. Appellant challenges this ruling and the correctness of the *Sunbeam* decision, as it did in requesting rehearing by the Board.

The first question for decision is whether the Board erred in cancelling appellant's registration of HORSE SHOE, item 3, thereby depriving appellant of the right to rely on it as a ground of opposition.[1] We believe that it did.

The relevant parts of the statute permitting cancellation of registrations, sec. 14, read as follows (emphasis ours):

> A verified petition to cancel a registration of a mark, stating the grounds relied upon, may, *upon payment of the prescribed fee*, be filed by any person who believes that he is or will be damaged by the registration of a mark on the Principal Register established by this act, or under the Act of March 3, 1881, or the Act of February 20, 1905—
>
> (*a*) within *five years from the date of the registration* of the mark under this act • • •.

Trademark Rule 2.111 contains the same five-year limitation. Five years from the date of Reg. No. 607,061, which was on the Principal Register under "this act," expired on June 7, 1960. It is not disputed that no fee in support of the request to cancel was paid on or before that date. [1] The fee must be paid when cancellation is requested in an answer to an opposition just as in an original petition to cancel. Trademark Rule 2.106(b) so provides. *Sunway Fruit Products, Inc.* v. *Productos Caseros, S.A.*, 130 USPQ 33 (Comm'r., 1960), so held, saying (at p. 34):

> Applicant contends • • • that the requirement for a fee in section 14 applies only to original petitions to initiate or provoke a cancellation proceeding and not to answers to notices of opposition which request cancellation of a registration under the provisions of Rule 2.106(b). However, section 14 makes "payment of the prescribed fee" a prerequisite to the right to apply to cancel a registration and sets forth no exceptions. • • • A party making such a request • • • is subject to the statutory requirement for a fee.

[2] It has also been held that the payment of the fee is a jurisdictional requirement without which a petition has not been filed in compliance with the statute, section 14. In *Sunway* the counterclaim for cancellation was stricken for want of the fee and the petition to reinstate it was denied. See also *The Kroger Co.* v. *Country Club Ice Cream Co.*, 130 USPQ 34 (Comm'r. 1961). In similar cases involving filing fees and statutes of limitation other courts have held that payment of the fee within the time limited is necessary to give the court jurisdiction. The court in *Turkett* v. *United States*, 76 F. Supp. 769 (D.C., N.D.N.Y.), granted a motion to dismiss a complaint under the Federal Tort Claims Act requiring the action to be begun within one year because the filing fee was not paid to the court clerk within that year. In *Anno* v. *United States*, 113 F. Supp. 673, the United States Court of Claims granted a motion to dismiss a petition filed before the end of a six-year limitation period because no filing fee was received within the period, following *Turkett*. It held that the claim was not "filed" until the fee was paid.

[3] Appellee argues that appellant has no standing to complain about how and when the Patent Office collects its fees. We disagree.

[1] Of interest, but not directly involved here, is the fact that appellee Mann filed a separate cancellation proceeding to cancel appellant's other registration of "HORSESHOE" COLLAR, Cancellation No. 7,645, and attempted to have that proceeding consolidated with this one. Appellee withdrew that petition, however, without consent of appellant here, and the proceeding was dismissed with prejudice at which time (July 10, 1963) appellee was put under an order to show cause herein why judgment should not be rendered against it and its counterclaim dismissed. Thereafter appellee responded, appellant replied, the Patent Office found this proceeding to involve different marks and issues, and proceedings herein were resumed.

Appellant is entitled to show that no fee was paid within five years as required by section 14 and that for that reason the request to cancel came too late. Appellee contends that the cases cited above, which are relied on by appellant, do not establish the principle for which they are cited. We do not agree.

The next assertion of appellee is that the five-year period specified in section 14 should not be applied against it for the reason that the bringing of the opposition, in which the registration of the mark sought to be cancelled was relied on, tolled the statute of limitations, the notice of opposition having been filed within the five-year period. The authority relied on for this proposition is the decision of the Assistant Commissioner in *Sunbeam*, supra. Following that case in its interlocutory decision, the Board herein held the statute of limitations was tolled.[2] Appellant contends that *Sunbeam* incorrectly interpreted the precedents relied on, that the decision was wrong and that therefore the Board erred in following it.

In the opinion in *Sunbeam* a dozen authorities were referred to and the decision was based on what the Commissioner deemed to be the "weight of authority," recognizing that "There is some authority to support a contrary holding." Appellant here relies on three cases in the District of Columbia courts which are not included among those cited in *Sunbeam* and are alleged to be contrary to the decision therein. Appellee says they "have no relation to the present situation." We think the views of both parties are too extreme.

Sunbeam dealt with a situation substantially like that before us, the filing of an opposition just before the expiration of the five-year limitation on a petition to cancel, the mark sought to be cancelled being relied on as a basis for opposing registration, and an answer containing a counterclaim for cancellation filed after the end of the period. An extensive review of authority resulted in a reasoned opinion the conclusion of which was stated as follows:

> In the present case, applicant's position seems to be that since opposer relied upon its registration and asserted rights in its mark as evidence by its registration before expiration of the five-year period, applicant should not be precluded from challenging those rights, irrespective of expiration of the five-year period during the pendency of the action. The weight of authority supports its position. • • • it is held that the filing of the pleading in which the registration is relied upon tolls, during the pendency of the action, the time within which an affirmative defensive action may be filed.

This type of proceeding, including as it does opposition to registration predicated, at least in part, on rights flowing from other registrations, with statutory provisions for registration as well as for opposition and cancellation, is sui generis and not strictly comparable to cases of contract, set-off, or recoupment involving claims for libel, slander, assumpsit on promissory notes and the like. The situation is one not likely to arise often nor does it seem to be of vital importance to the law of trademarks. We suppose that the owner of a registration nearing the five-year mark would appreciate that by

[2] Following the filing of the answer to the notice of opposition in which the request to cancel was contained, appellant moved to dismiss the request for cancellation as not timely with respect to the payment of the required fee. The Board denied the motion, with opinion. Request for reconsideration was filed. On both occasions the Board relied on *Sunbeam* and stated its view that filing the notice of opposition tolled the statute of limitations during the pendency of the action. Opposer then filed a reply to the counterclaim raising the question of its timeliness. The Board's first opinion on the merits made no mention of this point. A request for reconsideration noted the failure to mention this defense to the counterclaim with the request that the Board make its position clear. In a second opinion the Board said:

> In this regard, opposer is advised that any interlocutory decision of this Board is subject to review on appeal from a final decision on the merits of a case.

This explanation of how this question comes before us will serve to explain why there is no reference to it in the published opinion of the Board and no reference to the *Sunbeam* case.

waiting a few days or months until the period had run he could avoid subjecting his registration to a counterclaim for cancellation under the *Sunbeam* rule. Appellant's cases, which we have carefully considered, are *Durant* v. *Murdock*, 3 App. D.C. 114 (1894), a suit for slander with a counterclaim for libel and a one-year statute of limitations held not tolled by bringing the action. The court referred to the possible assertion of "any and all claims that the defendant might have against the plaintiff" but we are here dealing with no such all-inclusive category. The counterclaim here attacks the basis of the opposer's opposition. *Walker* v. *Pilkerton*, 82 F. Supp. 321, was a slander suit with a counterclaim for libel and followed *Durant*. *McGovern* v. *Martz*, 182 F. Supp. 343, involved a suit by a Congressman for libel against a Washington writer and publisher who counterclaimed for libel. While the "same basic matter" was said to be involved on both sides, the counterclaim was held barred by the statute of limitations. It was held not a recoupment because based on "a different transaction" and not a set-off because the claims were unliquidated. We do not find in these decisions sufficient reason to overrule *Sunbeam*, as we are asked to do. [4] We will therefore regard the counterclaim as properly before the Board on the ground the notice of opposition tolled the statute.

This brings us to the merits of the Board's action in cancelling opposer's Reg. No. 607,061, for HORSE SHOE. Cancellation appears to have been based on appellee's admitted prior use and registration of the stitched horseshoe mark, item 2 supra. There is nothing else of record to support it. Some facts were stipulated in this case but no testimony was taken. The stitched horseshoe trademark is something more than just a horseshoe. It is a stitched outline of the horseshoe shape, open end up, it is centered on and occupies most of the space on a nearly rectangular pocket on "overalls and western style pants," the outline of the pocket being included as part of the mark so that placement thereon is part of the mark, and across the top edge of the pocket is a horizontal stripe consisting of two parallel lines of stitching. The making of the mark by sewing-machine stitches is part of it. The Board deemed this mark to be "the legal equivalent" of the word-mark HORSE SHOE and lumped them both in the category of "these horseshoe symbols." The Board opinion also speaks in terms of opposer's lack of right *to use* the mark HORSE SHOE, a matter with which neither the Patent Office nor this court is jurisdictionally concerned. The Board also cited *Pink Lady Corp.* v. *L. N. Renault & Sons, Inc.*, 46 CCPA 865, 265 F.2d 951, 121 USPQ 465, which, as a decision, we find distinguishable because there word-marks were involved on both sides. It was cited, however, only for a broad statement in the opinion that *words* and the *symbols* identified thereby will be given the same significance in determining likelihood of confusion. We think that statement, which was dictum in that case, must be read in the light of the facts in each case. We have more here than a bare horseshoe symbol.

One fact in this case is appellant's admitted ownership of the registration of "HORSESHOE" COLLAR and its prior use on clothing. [5] While we do not agree that since the word COLLAR was disclaimed "separate and apart from the mark" it is tantamount to a registration of HORSESHOE, in the sense of giving appellant any rights in HORSESHOE alone as a mark, it does show that appellee was not first in the clothing field with a "horseshoe" mark. We also

note the case of *The Williamson-Dickie Manufacturing Co.* v. *Carl-Morris Mfg. Inc.*, 114 USPQ 257, referred to on various occasions by appellee, an opposition to the registration of BLUE HORSESHOE BRAND on an application filed August 16, 1951, for overalls and dungarees, in which the present appellant was unable to prevent the registration. That decision was in July, 1957. The mark appellant there relied on was its "HORSESHOE" COLLAR mark.

[6] Under all the circumstances we do not believe that in 1960, when cancellation was asked for by appellee, about five years after the registration of HORSE SHOE by appellant, there was sufficient likelihood of confusion from the concurrent use of the two quite different marks to justify the Board's decision to cancel.

We finally come, therefore, to the question of appellant's opposition to the registration of appellee's GOLDEN HORSESHOE, assuming opposer-appellant to be the owner of both the "HORSESHOE" COLLAR and HORSE SHOE registrations for the goods above named.

The Board dismissed the opposition on the assumption appellant could rely only on "HORSESHOE" COLLAR and held that it and GOLDEN HORSESHOE do not look alike, differ substantially in sound and connotation, and are not reasonably likely, if in contemporaneous use, to cause confusion or to deceive. We agree.

[7] Under the circumstances of this case, just as we feel that confusion will not be likely as between the stitched horseshoe mark and HORSE SHOE, so do we likewise feel that contemporaneous use of the latter and GOLDEN HORSESHOE will not be likely to confuse, deceive, or cause mistake.

One reason for our feeling in this matter is that the references cited by the Examiner in the examination of the GOLDEN HORSESHOE application were "HORSESHOE" COLLAR, HORSE SHOE, and also BLUE HORSESHOE BRAND, Reg. No. 659,371. Appellee then cited the decision in the BLUE HORSESHOE BRAND case and argued for the registrability of its mark notwithstanding the references. It there pointed out that its own stitched horseshoe mark, earlier than all except the first cited registration, was produced by stitching with a golden colored thread. The Patent Office passed the application to publication, indicating its approval of the concurrent registration of all of these marks for substantially the same goods.

The decision of the Trademark Trial and Appeal Board is affirmed insofar as it dismissed the opposition and reversed with respect to its sustaining the counterclaim for cancellation.

MODIFIED.

SMITH, *J.*, concurs in the result.

U.S. Court of Customs and Patent Appeals

CUMMINS ENGINE COMPANY, INC. *v.* CONTINENTAL MOTORS CORPORATION

No. 6961. Decided May 12, 1966

[53 CCPA —; 359 F.2d 892; 149 USPQ 559]

1. TRADEMARK—DESCRIPTIVENESS—"TURBODIESEL" FOR INTERNAL COMBUSTION ENGINES AND PARTS.

"We rely primarily upon the 1935 Funk & Wagnalls New Standard Dictionary definitions of 'turbine,' its combining form 'turbo,' and of 'diesel,' and a March 1953 'Flight' magazine article, all of which are reproduced in

the Board's decision as reported, 132 USPQ at 557. In our view, the definitions alone indicate that 'turbodiesel' is a word which by its nature will convey a specific and correct meaning which is such that it cannot become a trademark as a result even of origination and first use. • • • The term 'turbodiesel,' as we see it, is a natural composite form for a class of engines into which appellant's engines fall. We recognize that the engines to which the term has been applied by appellant are not turbines plus diesels, but diesel engines *having exhaust driven turbine superchargers*. However, it is not required that the name precisely describe and define the goods in order to be incapable of registration under section 23. We think 'turbodiesel,' to be naturally and adequately nominative of engines having exhaust driven turbine superchargers."

2. SAME—CANCELLATION—RIGHT TO PETITION FOR CANCELLATION—SECTION 24.

"Appellant • • • questions the right of appellee to petition for cancellation of this mark because appellee was not using the term as a trademark nor did it contemplate doing so, and alleging that under these circumstances appellee had not been damaged. We think the statute provides appellee's standing in this cancellation proceeding. • • • Appellee as a competitor of appellant clearly has reason to believe it will be damaged to the extent required by statute."

APPEAL from the Patent Office. Cancellation No. 7,118.

AFFIRMED.

George N. Hibben, Francis D. Thomas, Jr. for appellant.

Nims, Halliday, Whitman, Howes & Collison (*Walter J. Halliday, William H. Buchanan, Robert C. Hauke* of counsel) for appellee.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, *Jr., Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

MARTIN, *J.*, delivered the opinion of the court.

This is an appeal from decisions of the Trademark Trial and Appeal Board[1] granting a petition to cancel Reg. No. 629,304 for "TURBODIESEL," issued June 19, 1956 on the Supplemental Register for internal combustion engines and parts thereof.[2] Cummins Engine Co. (Cummins) owns the mark.

The parties are competitors in the manufacture and sale of internal combustion engines of the compression ignition type, namely, diesel engines, and particularly diesel engines having an exhaust driven turbine supercharger. Continental petition for cancellation of Cummins' registration on the grounds, inter alia, that the word "turbodiesel," composed from individually generic words "turbine" (in its combining form "turbo") and "diesel," is "incapable of properly denoting origin of manufacture, and is therefore without trademark significance." Continental (petitioner-appellee) also alleges that "turbodiesel" has been used as "generically descriptive" of such type of engines prior to December 20, 1954, the date of first use alleged by respondent-appellant Cummins in the trademark registration.

While the main issue here is whether "turbodiesel" is incapable of distinguishing appellant's goods and thereby barred from registration under section 23 of the 1946 Lanham Trademark Act, 15 U.S.C. 1091, we are presented with a preliminary issue of which of appellee's 351 documentary exhibits properly can be considered by us in resolution of the main issue.

Appellant Cummins' initial application of February 17, 1955 sought registration on the Principal Register. Registration was refused by the Examiner on the ground that the mark was merely descriptive.

[1] 132 USPQ 557 (TT & AB 1962), on reconsideration 144 USPQ 775 (TT & AB 1964).
[2] Cancellation Proceedings No. 7,118.

Following final refusal and just prior to expiration of the time in which to appeal, appellant sought to amend the application to convert to registration on the Supplemental Register, pursuant to then Rule 13.5. The paper seeking to amend, signed only by the attorney, was filed December 22, 1955, but being apparently delayed within the Patent Office, was given a date of May 17, 1956. A conversion amendment signed by applicant (appellant) was also submitted on January 5, 1956. The prosecution proceeded in due course with issuance of the registration followed by the cancellation proceeding and a Board decision (fully reported at 132 USPQ 557), that was timely appealed to this court. The Board, upon consideration of evidence up to May 17, 1956, held, inter alia, that "as the common descriptive name for a particular kind or class of engines, 'TURBODIESEL' falls within the category of words, symbols and devices which are not subject to exclusive appropriation as trademarks" and it, therefore, granted the petition for cancellation.

Subsequently there was much prosecution history concerning which conversion date appellant is to be accorded.[3] Appellant has dropped all attempts to be accorded the date of February 17, 1955, to which it would have been entitled had the original application conformed to then Rule 13.5 as sufficient for registration on the register to which converted. The argument is over whether the December 22, 1955 or January 5, 1956 date is the conversion date, and consequently whether we are to consider an additional two exhibits having dates falling between December 22 and January 5. Appellant urges December 22, 1955 as the proper date, stating:

• • • Despite a ruling to the contrary by the Commissioner of Patents (Supp. Tr. 25), appellant believes that the effective filing date of its registration should be December 22, 1955, which would remove these two exhibits [advertisements by Waukesha Motor Co. employing the term "TURBODIESEL"] from consideration under section 24 of the Trademark Act of 1946 [15 U.S.C. 1092].

We find it unnecessary to decide that issue since we assume arguendo the correct date to be December 22, 1955, yet find in the remaining 32 prior exhibits in the record abundant evidence indicating the mark in issue is incapable of distinguishing appellant's goods, pursuant to section 24.

[1] We rely primarily upon the 1935 Funk & Wagnalls New Standard Dictionary definitions of "turbine," its combining form "turbo," and of "diesel," and a March 1953 "Flight" magazine article, all of which are reproduced in the Board's decision as reported, 132 USPQ at 557. In our view, the definitions alone indicate that "turbodiesel" is a word which by its nature will convey a specific and correct meaning which is such that it cannot become a trademark as a result even of origination and first use. See *Scholler Bros.* v. *Hans C. Bick, Inc.*, 110 USPQ 431 (Com'r Pats. 1956). The term "turbodiesel," as we see it, is a natural composite form for a class of engines into which appellant's engines fall. We recognize that the engines to which the term has been applied by appellant are not turbines plus diesels, but diesel engines *having exhaust driven turbine superchargers*. However, it is not required that the name precisely describe and define the goods in order to be incapable of registration under section 23. We think "turbodiesel," to be naturally and adequately nominative of engines having exhaust driven turbine superchargers.

[3] This includes a second Board decision, 144 USPQ 775, that, pursuant to a decision, and reconsideration, of the Commissioner on remand from this court, came to the same result as that in 132 USPQ 557 as based on evidence available up to January 5, 1956.

In March 1953, the "Flight" magazine referred specifically to the names "turbo-C.I." and "turbo-diesel" and raised the question as to which name would be applied to a "Nomad compounded engine," as follows:

> No class name has yet been given to the Nomad compounded engine—in time such names as turbo-C.I. (which is used in our leading article) or turbo-diesel, may find approval.

The Nomad engine pictured and discussed in "Flight" magazine is a diesel engine with a gas turbine. Its performance is compared with a turbojet, a turboprop and a piston engine, and comparative statistics are given. We view that use of the term "turbodiesel" as exemplary of the view we have expressed above, that such term would be recognized as a natural composite term for designating such engines.

We consider the following cases, among others, to support our view herein: *In re Bailey Meter Co.*, 26 CCPA 1136, 102 F.2d 843, 41 USPQ 275; *Ex parte Bailey Meter Co.*, 93 USPQ 179 (Com'r Pats. 1952); *Ex parte Bailey Meter Co.*, 93 USPQ 385 (Com'r Pats. 1952); *Bailey Meter Co.* v. *Watson*, 122 F. Supp. 627, 101 USPQ 278 (D.C. D.C. 1954); *Ex parte Le Blond*, 98 USPQ 416 (Com'r Pats. 1953); *Ex parte The Texas Co.*, 12 USPQ 58 (Com'r Pats. 1932), and *Scholler Bros.*, supra. We do not find the term here to be such a deviation from a natural usage or an unusual unitary combination as to permit registration, in contrast to the terms in *In re Ada Milling Co.*, 40 CCPA 1076, 205 F.2d 315, 98 USPQ 267, and *Alumatone Corp.* v. *Vita-Var Corp.*, 183 F.2d 612, 86 USPQ 359.

[2] Appellant also questions the right of appellee to petition for cancellation of this mark because appellee was not using the term as a trademark nor did it contemplate doing so, and alleging that under these circumstances appellee had not been damaged. We think the statute provides appellee's standing in this cancellation proceeding. Section 24 states, in pertinent part:

> SEC. 24 (15 U.S.C. 1092). Supplemental Register—Marks not published for opposition—Cancelation
>
> • • • Whenever any person believes that he is or will be damaged by the registration of a mark on this register he may at any time, upon payment of the prescribed fee and the filing of a verified petition stating the ground therefor, apply to the Commissioner to cancel such registration. • • • If it is found after a hearing before the Board that the registrant was not entitled to register the mark at the time of his application for registration thereof, or that the mark is not used by the registrant or has been abandoned, the registration shall be canceled by the Commissioner. • • •

Appellee as a competitor of appellant clearly has reason to believe it will be damaged to the extent required by statute.

Appellant also complains that it has made extensive use of this term, has spent large sums of money in promoting its goods and that it uses this term in connection with its promotion and advertising. Appellant further states it estimates that it has spent approximately $400,000 in promoting "TURBODIESEL" engines in trade advertising. With reference to this matter, we agree with the Board wherein it stated, 132 USPQ at 560:

> • • • And while respondent has made extensive use of this term and has expended a large sum in promoting its goods in connection with which this term has been used, the court in *Weiss Noodle Company* v. *Golden Cracknel and Specialty Company*, • • • [48 CCPA 1004, 290 F.2d 845, 129 USPQ 411]; when presented with a similar argument, aptly stated "While it is always distressing to contemplate a situation in which money has been invested in a promotion in the mistaken belief that trademark rights of value are being created, merchants act at their peril in attempting, by advertising, to convert common descriptive names, which belong to the public, to their own exclusive use."

For the above reasons we affirm the decisions of the Board.

AFFIRMED.

SMITH, *J.*, dissenting.

The issue here litigated is whether on the present record the mark "turbodiesel" was incapable of distinguishing appellant's goods. Trademark Act of 1946, sections 23, 24 (15 U.S.C. 1091, 92).

The composite mark "turbodiesel" is derived from the terms "turbine," its combining form "turbo," and of "diesel" and was registered on the Supplemental Register for "internal combustion engines and parts thereof." The mark has been applied to diesel engines having exhaust gas driven turbine type superchargers as an accessory supercharger to increase the effectiveness of the basic diesel engine.

Considering the dictionary definitions of "turbine," "turbo," and "diesel," alone, appellee clearly must fail in its burden of proof that the registered composite term is incapable of distinguishing appellant's goods. The composite mark, coined as it is from the above terms, is not the common name for either the goods for which it is registered or the goods upon which the mark is used. "Turbodiesel," considering the definitions relied on by the majority, conveys the meaning of a turbine combined with a diesel. There is not even a hint in this combined term that a supercharger element is involved.

As I view the matter, and the majority agrees, appellee's case stands or falls on the evidence bearing upon the meaning of the mark. In my opinion, contrary to the majority's conclusion, it falls short of establishing that the mark "turbodiesel" was the common name for diesel engines having exhaust gas driven turbine type superchargers. The evidence produced by appellee falls far short of discharging what seems to me to be appellee's burden of proof in this proceeding. The evidence relied on by the appellee establishes that the term was used as a trademark and in a trademark sense in nearly all instances. The majority opinion I believe errs in treating the use of the term in this manner as the common name of the product. Manifestly, when the mark is capitalized and identifies appellant's goods, an accurate technical description of the goods need not be coupled with each use of the mark.

I am unable to see how the majority is supported in its result by the authorities cited. The *Bailey Meter* cases, supra, decided that "Boiler Meter" for boiler meters was the name of the device and therefore not registrable. In *Scholler Bros.*, supra, it was held that "Nylonized" for the treatment of fabrics with an emulsion of nylon lacked trademark significance. These cases do not seem to be germane on the issue here.

I therefore dissent from the majority decision.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,354,219, Newton and Heftler, SPRING SUSPENSIONS, **filed** Aug. 1, 1966, D.C., Dist. of Col., Doc. 2035–66, *Mary P. Heron* v. *International Harvester Company*. Cause dismissed Sept. 29, 1966.

2,393,581, F. E. Wentworth, SWITCH BOXES AND THE LIKE AND CONNECTING NIPPLES THEREFOR, **filed** Aug. 3, 1966, D.C. Oreg. (Portland), Doc. 66–393, *Duro Fittings Company* v. *Associated Manufacturers and Distributors Corp. et al.*

2,706,236, M. D. Stepath et al., CUTTING AND GOUGING ELECTRODE HOLDER AND METHOD, **filed** Aug. 5, 1966, D.C., S.D. Calif (Los Angeles), Doc. 66–1271–EC, *Arcair Company* v. *J & S Products, Inc.*

2,742,462, G. Gever, NEW N-(5-NITRO-2-FURFURYLIDENE)-3-AMINO-2-OXAZOLIDONES, **filed** Aug. 22, 1966,

D.C., W.D.N.Y. (Buffalo), Doc. 1966–71, *The Norwich Pharmacal Company* v. *Patrick D. Ryan, doing business as Rycam Limited et al.* Same, filed Oct. 5, 1966, D.C., W.D.N.Y. (Buffalo), Doc. 1966–124, *The Norwich Pharmacal Company* v. *Rycam Limited.*

2,797,010, A. P. Neer, SAMPLE CHART AND METHOD OF FABRICATING THE SAME, filed Aug. 12, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1394, *Matherson-Selig Co.* v. *Carl Gorr Color Gard, Inc.* Cause dismissed Aug. 1, 1966.

2,797,241, Brown and Poole, DIETHYL-GLYCINEXYLIDIDE AND PROCESS; Reg. No. 534,222 (XYLOCAINE), Aktiebolaget Astra Apotekarnes Kemiska Fabriker, Local anesthetic primarily used in dental surgery; Reg. No. 602,703, same, Astra Pharmaceutical Products, Inc., Anesthetic used in medicine, surgery, and dentistry to induce local anesthesia, including topical anesthesia, and which may be prepared in different forms—namely, as solutions for injection, infusion, and spray, etc., filed Apr. 27, 1966, D.C., S.D.N.Y., Doc. 66/1199, *Astra Pharmaceutical Products, Inc.* v. *R.S.A. Corp.* Consent judgment; patent and trademark registrations held valid and infringed July 14, 1966.

2,804,554, C. Ippolito, EMERGENCY STAND-BY ELECTRIC SERVICE APPARATUS; **2,864,005**, same, STANDBY ELECTRICAL SYSTEM, filed Nov. 4, 1959, D.C., S.D.N.Y., Doc. 152–233, *Dual-Lite Company, Inc.* v. *Lightalarms, Inc. et al.* Consent judgment; defendants enjoined Aug. 3, 1966.

2,822,850, F. L. McLaughlin, METHOD OF FORMING WELDING PROJECTIONS ON A STANDARD NUT BLANK AND ARTICLE SO FORMED, filed Nov. 28, 1962, D.C., E.D. Mich. (Detroit), Doc. 23278, *Earl E. Howe et al.* v. *Mt. Clemens Industries, Inc.* Stipulation and judgment; complaint dismissed Aug. 18, 1966.

2,836,437, A. J. Wayman, ECCENTRIC COUPLER FOR ATTACHING SERVICE ENTRANCE MASTS FOR METERS, filed July 29, 1960, D.C., N.D. Ohio (Cleveland), Doc. 36,296, *M & W Electric Manufacturing Company* v. *Gatto Electric Supply Company et al.* Judgment holding claims 3 and 4 of Patent No. 2,836,437 valid and infringed (notice Aug. 17, 1966).

2,847,003, Helmer and Easton, PROTECTIVE MOUTHPIECE, filed Aug. 22, 1966, D.C., S.D. Calif. (Los Angeles), Doc. 66–1347–WPG, *Norman D. Helmer* v. *Leon Richmond.*

2,864,005. (See 2,804,554.)

2,868,525, N. G. Hovlid, AQUARIUM AERATING DEVICE, filed Aug. 23, 1966, D.C., S.D. Fla. (Miami), Doc. 66–981–CF, *T.F.H. Publications, Inc.* v. *Robert Fish Farm, Inc.*

2,878,514, Nichols and Carshells, APPARATUS FOR CURLING PLASTIC YARN, filed Aug. 18, 1966, D.C., E.D.N.Y., Doc. 66C–797, *David & David, Inc.* v. *Uneeda Doll Co.*

2,884,333, M. B. Karr et al., BINDER FOR FOUNDRY SAND MOLDS AND PROCESS OF FORMING, filed Aug. 24, 1966, D.C., S.D. Ohio (Columbus), Doc. 7950, *Ohio Karr Corp.* v. *The Hill and Griffith Co.*

2,893,286, G. Sajeck, GAS DEMAND EQUIPMENT, filed Mar. 20, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c532, *George Sajeck* v. *Dacor Corporation.* Order of dismissal without prejudice Aug. 12, 1966.

2,903,373, K. H. Sandmeyer, FUSED CAST ZIRCONIA-ALUMINA ARTICLES, filed Nov. 22, 1965, D.C., W.D. Ky. (Louisville), Doc. 5194, *Harbison Carborundum Corporation* v. *Corhart Refractories Company, Inc.* Action dismissed with prejudice Aug. 18, 1966.

2,916,007, E. C. Kiekhaefer, RESILIENT MOUNTING FOR AN OUTBOARD MOTOR; **2,953,335**, same, OUTBOARD PROPULSION UNITS FOR BOATS; **3,003,724**, same, DAMPING AND LIFT DEVICE FOR OUTBOARD MOTORS; **3,136,285**, same, STEERING ARRANGEMENT FOR OUTBOARD PROPULSION UNIT; **3,136,287**, I. W. North, INBOARD-OUTBOARD DRIVE FOR WATERCRAFT, filed Aug. 25, 1966, D.C., E.D. Wis. (Milwaukee), Doc. 66–C–226, *Kiekhaefer Corporation* v. *Chrysler Corporation et al.*

2,917,590, W. O. Stanton, MAGNETIC PHONOGRAPH PICKUP, filed Aug. 3, 1966, D.C., S.D.N.Y., Doc. 66/2393, *Pickering & Company, Inc.* v. *The Runyon Sales Co. of New York, Inc. et ano.* Consent judgment; defendants enjoined Aug. 18, 1966.

2,923,605, Jaffe and Turobinski, METHOD OF GROWING QUARTZ SINGLE CRYSTALS, filed Aug. 26, 1966, D.C. Del. (Wilmington), Doc. 3252, *Clevite Corporation et al.* v. *Howard Aiken Industries, Inc.*

2,953,335. (See 2,916,007.)

2,962,322, J. K. Seitz, CARD-CARRYING CASE OR POCKET SECRETARY, filed Aug. 17, 1966, D.C., S.D. Calif. (Los Angeles), Doc. 66–1326–JWC, *Bri-Son Company, Inc.* v. *Apex Products Corp. et al.*

2,992,835, J. C. Vittone, SPRING-BAR ASSEMBLY FOR SWING-AXLE AUTOMOBILES; **3,254,902**, same, AUTOMOTIVE ANTI-SWAY BAR, filed Aug. 24, 1966, D.C., S.D. Calif. (Los Angeles), Doc. 66–1352–EC, *European Motor Products, Inc.* v. *Continental Motor Parts.*

2,995,999, M. L. Holt, BALING PRESS, filed Aug. 24, 1966, D.C., E.D. Tenn (Knoxville), Doc. 5735, *Galland-Henning Manufacturing Co. et al.* v. *Dempster Brothers, Inc.*

3,003,724. (See 2,916,007.)

3,136,285. (See 2,916,007.)

3,136,287. (See 2,916,007.)

3,254,902. (See 2,992,835.)

Erratum

In the OFFICIAL GAZETTE, vol. 829, Aug. 30, 1966, page 1767, under "Patent Suits," column 2, lines 40 and 41, delete "3,199,266, Quester and Grubb, ACETYLENE PURIFICATION" and insert *3,199,226, D. L. Joslow, TEACHING MACHINE.*

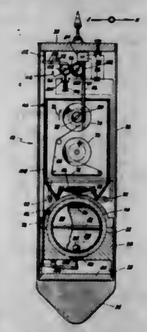
REISSUES

NOVEMBER 8, 1966

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,109
MAGNETIC DIRECTION AND INCLINATION INDICATING DEVICE

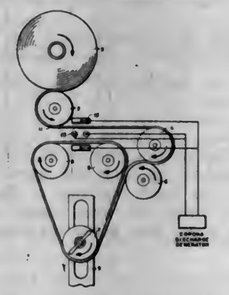
Clifford K. Brown, Rte. 6, Box 241, Duluth, Minn.
Original No. 3,100,350, dated Aug. 13, 1963, Ser. No. 43,482, July 18, 1960. Application for reissue Feb. 14, 1964, Ser. No. 358,677
21 Claims. (Cl. 33—205.5)



21. A magnetic indicating device comprising a spherical body, a bar-type magnet fixedly disposed within said spherical body and extending diametrically therethrough, means for buoyingly supporting said body in a liquid medium comprising immiscible liquids of different specific gravities so that the body can orient itself to the field to which said magnet is subjected, and means for indicating the orientation of said spherical body including a circumferential groove thereon extending completely therearound and also including a spring clip retained in a portion of said groove, said groove residing in the north-south plane with respect to said magnet.

26,110
PROCESS FOR PREPARING A LAMINATED HEAT SHRINKABLE ENDLESS BAND

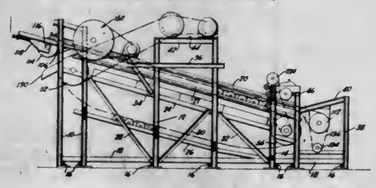
John W. Harrison and Robert D. Lowry, Winchester, Mass., by W. R. Grace and Co., assignee, Duncan, S.C., a corporation of Connecticut
Original No. 3,159,520, dated Dec. 1, 1964, Ser. No. 78,649, Dec. 27, 1960. Application for reissue Mar. 16, 1966, Ser. No. 538,892
3 Claims. (Cl. 156—184)



1. A process for preparing a laminated *heat shrinkable endless* band comprising [orienting] *irradiating* polyethylene film [, irradiating said oriented film] to an extent of 2 to 100 megarads, *orienting said irradiated film,* subjecting both film surfaces to corona discharge sufficient to effect adherence of the surfaces to each other in the absence of significant heat and pressure, and forming a continuous band from said treated film by wrapping a plurality of layers of film about a form.

26,111
FRUIT ORIENTING AND CUTTING SYSTEM

Joseph A. Amori, 1596 Davis St., San Jose, Calif.
Original No. 2,929,424, dated Mar. 22, 1960, Ser. No. 697,889, Nov. 21, 1957, which is a division of Ser. No. 508,457, May 16, 1955, now Patent No. 2,827,089, dated Mar. 18, 1958, which in turn is a division of Ser. No. 271,134, Feb. 12, 1952, now Patent No. 2,713,934, dated July 26, 1955. Application for reissue Apr. 19, 1966, Ser. No. 548,022
1 Claim. (Cl. 146—224)



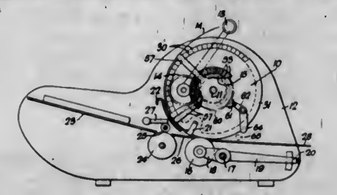
A method of pitting tri-diametral ovaloid fruit comprising bodily moving the fruit singly in spaced relation in an upwardly inclined direction while applying unequal rotational forces to the underside of the peripheral surface of said fruit at a plurality of spaced apart points only thereon, said forces acting within spaced apart vertical planes disposed parallel to said direction of movement, thereby rolling said fruit at a predetermined rate of rotation in the direction in which they are being bodily moved and orienting said fruit to constrain the suture lines thereof to remain in a vertical plane, and then cutting the fruit peripherally around the suture lines while maintaining said fruit rolling in the direction in which they are being bodily moved.

26,112
HECTOGRAPHIC DUPLICATING MACHINES

Francois Rodolphe Bonsch, Paris, France, assignor to Block & Anderson Limited, London, England, a British company
Original No. 2,980,014, dated Apr. 18, 1961, Ser. No. 703,973, Dec. 19, 1957. Application for reissue Oct. 9, 1961, Ser. No. 144,288
Claims priority, application Great Britain Dec. 28, 1956
15 Claims. (Cl. 101—91)

15. In a printing machine, in combination, printing roller means having an axis of rotation and including means for holding a printing form having sections for columns or lines of characters extending parallel to said axis and disposed around the periphery of said printing roller means; counter pressure roller means having an axis of rotation parallel to said axis of rotation of said printing roller means and defining with said printing roller means a printing plane passing through said axes of said roller means; a plurality of printing members having a number corresponding to the greatest number of sections to be printed, being elongated in axial direction, disposed

about the periphery, and mounted on one of said roller means adjacent each other, said printing members having smooth pressure faces having areas matching corresponding sections of the printing form, each printing member being movable in radial direction between a retracted inoperative position and an advanced printing position defining a printing line with the peripheral surface of the other of said roller means when passing through said printing plane whereby copy sheets supplied to the bight



between a printing form on said printing roller means and said counter pressure roller means and passing through said printing line are imprinted only by sections of said printing form located between the respective corresponding pressure faces of said printing members in said printing position and the peripheral surface of said other roller means; and control means for selectively moving each of said printing members to and from said printing position thereof for selecting desired sections of said printing form for printing.

26,113
INTERLOCKING OPERATING MECHANISM
Uriel F. Carter, Wauwatosa, and Arthur F. Kolb, Mequon, Wis., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Original No. 3,196,227, dated July 20, 1965, Ser. No. 195,571, May 17, 1962. Application for reissue Mar. 3, 1966, Ser. No. 534,285
12 Claims. (Cl. 200—50)

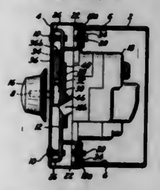
7. In an operating mechanism for a first mechanical device having a first operating means extending therefrom and a second mechanical device having a second operating means extending therefrom;

(a) drive means to extend between and operably engage said first and second operating means;

(b) a crank member rotatably journaled at a position between said first and second mechanical devices;

(c) means on said crank member serving to transmit force to said drive means between the portions of said drive means which engage said first and second operating means;

(d) said means on said crank member being disposed to move, consequent to rotation of said crank member in a first direction, from an intermediate position between said first and second operating means toward a first end of said drive [member] *means* to a first actuating position and move with a component of motion transverse with respect to a line between said first and second operating means to actuate said first end of said drive means while the second end of said [crank] *drive* means remains substantially at rest, and said means on said crank member being disposed to move, consequent to rotation of said crank member in a second direction, from said first actuating position to said intermediate position to reverse the movement of said drive means and return said drive means to its original position;



(e) said means on said crank [means] *member* further being movable, consequent to rotation of said crank member in a second direction, from said position intermediate said first and second operating means toward a second end of said drive means to a second actuating position and move with a component of movement transverse with respect to a line between said operating [member] *means* to actuate said second end of said drive means while said first end of said drive means remains substantially at rest, and said means on said crank member being disposed to move, consequent to rotation of said crank member in a first direction from said second actuating position to said intermediate position, to reverse the movement of said drive means and return said drive means to its original position;

(f) whereby said first mechanical device and said second mechanical device are alternately operated.

PLANT PATENTS

GRANTED NOVEMBER 8, 1966

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,684
PYRACANTHA PLANT
Francis C. Tomlinson, 524 N. Painter, Whittier, Calif.
Filed Dec. 30, 1964, Ser. No. 422,475
1 Claim. (Cl. Plt.—54)

The new and distinct variety of Pyracantha plant substantially as shown and described herein, characterized especially by its very dwarfed compact, substantially upright and spreading growth habit, its small leaves, its slow growing habit, and by the small number of thorns.

2,685
THUJA PLANT
Ralph S. Moore, Visalia, Calif., assignor to Monrovia Nursery Co., Azusa, Calif., a corporation of California
Filed Mar. 11, 1965, Ser. No. 439,113
1 Claim. (Cl. Plt.—50)

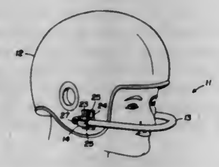
A new and distinct variety of Thuja plant substantially as shown and described, characterized by its dwarf size, its slow hardy growth habit, its many upwardly extending branches that start from the base with the absence of any central leader or trunk and forming a tightly compact bush that is broadly conical having a somewhat pointed tip, its shorter and more tightly branched twigs and shoots, and its foliage comprising leaf scales that are sharply pointed, tightly compact and closely spaced on the twigs and branches and feel stiff and hard to the touch, the color of the leaves being a golden green during the warm portion of the year and turning to a bluish green during the winter months.

PATENTS

GRANTED NOVEMBER 8, 1966

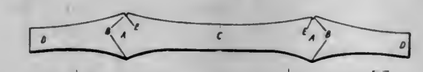
GENERAL AND MECHANICAL

3,283,336
SAFETY DEVICE IN COMBINATION WITH A FOOTBALL HELMET
Russell F. Critser, 640 Fleming Blvd., Rensselaer, Ind.
Filed May 6, 1964, Ser. No. 365,247
12 Claims. (Cl. 2—9)



1. A safety device in combination with a helmet having opposite depending side portions and a frontal opening exposing the face of the wearer, said safety device comprising: a face protection member having a pair of end portions; a pair of mounting members each of which is attached to a different one of said depending side portions of said helmet, each said mounting member having a forwardly opening hollow portion forming a socket therein the cross section of which is of substantially the same configuration but slightly larger than that of the end portions of said face protection member so that said end portions may be received in said sockets; and means releasably retaining said end portions in said sockets but permitting said face protection member to be readily detached from said mounting members whenever at least a predetermined force is exerted on said face protection member in a substantially forwardly direction, said means including projection means mounted in one of said members and an indentation in the other of said members, said projecting means registering with said indentation at a point within said sockets when said end portions are substantially fully inserted into said sockets.

3,283,337
COLLARS AND THEIR MANUFACTURE
Stanley Vivian Dawes, Croesyceiliog, Cwmbran, and William Frank Taylor, Llan-yr-Avon, Cwmbran, England, assignors to British Nylon Spinners Limited, Pontpool, England
Filed July 6, 1964, Ser. No. 380,309
Claims priority, application Great Britain, July 18, 1963, 28,427/63
3 Claims. (Cl. 2—143)



1. A method of manufacturing a collar top of a two-piece collar comprising the steps of

(a) cutting out a fabric blank in the form of an elongated strip of fabric having a middle portion and two end portions of slightly lesser width than the middle portion, said blank being shaped such that, on being folded along two spaced lines across its width and on its ends being joined, a collar-shaped entity is produced with the lines of the folds constituting the front edges of the entity,

(b) folding said fabric blank along said two spaced lines across its width, to bring its end into close proximity, and to superimpose one edge of the end portions on one edge of the middle portion while spacing the other edge of the end portions from the other edge of the middle portion,

(c) joining the said ends by a row of stitches,

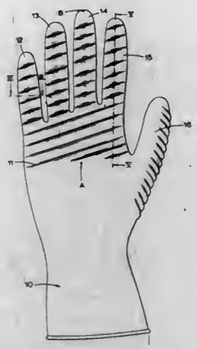
(d) joining said superimposed edges of the superimposed plies of the thus-joined strip along the length direction of the strip thereby forming a seam,

(e) turning the assembly inside-out,

(f) superimposing said other edge of the end portions on said other edge of the middle portion thereby displacing the junction line formed by said seam in a direction in which it will be out of sight on the inner face of the collar top, and

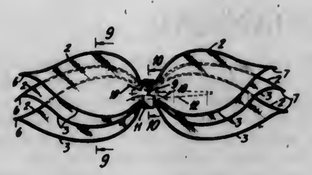
(g) joining said last-named superimposed edges.

3,283,338
GLOVE CONSTRUCTION FOR PROVIDING COMFORT TO THE WEARER
Lucian Landau, 3 Shakespeare Gardens, London, England
Filed Sept. 9, 1965, Ser. No. 486,013
6 Claims. (Cl. 2—161)



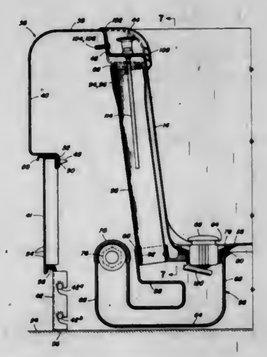
1. A glove having a knuckle side, a palm side, a wrist, four finger stalls, and one thumb stall, said stalls being formed with tips, said glove having, on the inside surface of the palm side, inwardly extending projections located in lines running from the wrist in the direction of the finger stall tips and arranged to contact the hand of the wearer and hold the inside surface of the glove away from the hand, said projections forming continuous air passages running from the wrist in the direction of the finger stall tips, a zone on the knuckle side of the glove being formed with corrugations extending across the glove at an angle greater than 30° with respect to the axis of said finger stalls, said corrugations enabling said zone to increase in effective area during bending of the glove.

3,283,339
ORNAMENTAL BOW
Myron Helfetz, % Flower Style Originals, Inc., 15 E. 31st St., Jackson Heights, N.Y.
Filed Oct. 13, 1964, Ser. No. 403,481
5 Claims. (Cl. 2—244)



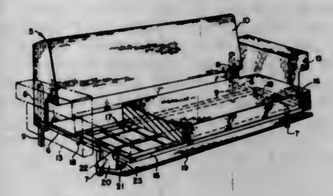
1. A head and garment ornament comprising a piece of cotton organdy cut on the bias and having a spirally rolled peripheral, curved edge all around said piece, said curved edge being rolled toward the front surface of said ornament and said ornament being of longitudinal and transverse curved configuration inside said rolled edge, and said rolled edge constituting a resilient flexible stiffening frame for said piece to aid in holding its normal shape and to return said piece to its normal shape after flexing said piece, said rolled edge being normally retained in a rolled condition and capable of keeping its rolled condition by itself.

3,283,340
BATHTUB AND BATHTUB DRAIN STRUCTURE
Gilbert McMurtrie and Robert William Nagel, Louisville, Ky., and Edward Walter Forth, New Canaan, Conn., assignors to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed July 22, 1963, Ser. No. 296,570
1 Claim. (Cl. 4—173)



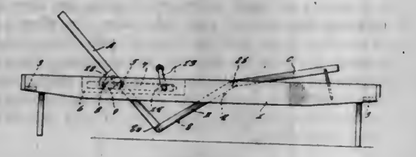
A bathtub structure comprising an elongated tub body portion including a bottom wall, end and side walls, a drain opening in the bottom wall of the tub close to the outer side wall thereof and substantially at the longitudinal center of the tub, a drain fitting and trap disposed beneath the bottom wall and outer side wall of the tub and having a first vertical leg directly connected to said drain opening, a horizontal outwardly extending trap portion and a second vertical leg outwardly of the outer tub side wall and rising above said horizontal portion and having its top near the elevation of the tub bottom wall, a T-fitting on the top of the second vertical leg adapted for connection at either end thereof to a drain pipe extending longitudinally of the tub outwardly of the outer side wall and near the bottom wall of the tub, a plug element for one end of the T-fitting facilitating cleaning out said drain fitting and trap, a top wide horizontal flange on said tub projecting a substantial distance outwardly of the outer tub side wall and including an outer depending portion, floor-engaging support panel means connected with said depending portion and supporting the outer side of the tub whereby the tub bottom wall, said drain fitting and trap, and drain pipe may all be spaced bodily above the floor, an overflow drain formed in said top horizontal flange, a generally vertical overflow tube connected with the overflow drain and extending close to the outer side wall of the tub externally thereof, a fitting on the first vertical leg of said drain fitting and trap and extending between the first and second legs thereof and directly connected to the lower end of the overflow drain tube and communicating with the first vertical leg immediately below the tub drain opening, a stopper for the tub drain opening, and a manually operable linkage connected with said stopper including parts extending inside of the drain tube and said fitting and trap and having an operating knob disposed within a recess of said top horizontal flange.

3,283,341
BED-FORMING SEATING DEVICE
Julio C. Cerchi, 1846 Adams St., Hollywood, Fla.
Filed July 27, 1965, Ser. No. 475,191
3 Claims. (Cl. 5—17)



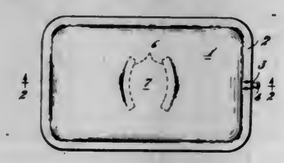
1. A bed forming seating device comprising a pair of metallic end frames each having a horizontal rail and floor legs at each end of the rail, the floor legs at the rear end of the rail being extended upwardly and jointly carrying an upholstered back rest and upholstered arm rests, the back rest being extended forwardly to form an overhang area, a rectangular bed frame having springs for the support of a mattress, the bed frame having parallel side rails and parallel end rails, the mattress supporting frame being slidably supported upon the rails of the end frames, means for supporting the mattress frame against displacement from the rails of the end frames, an upholstered front board, plates to which the front board is rigidly attached, said plates being pivotally attached to the front legs and pivotally connected to the end rails of the mattress frame, the front board adapted to swing in a vertical plane to both lift and slide the mattress frame forwardly or rearwardly, the mattress frame and its supported mattress when shifted rearwardly having its rear end inserted under the overhang of the back rest and, when shifted forwardly, to expose the full area of the mattress as a sleeping surface and free from contact with the back rest, the rear legs of the end frames being extended upwardly to engage within the back rest and bolts extending through arm rests and the back rest for fixedly supporting the back rest of the arm rests against movement.

3,283,342
RELAXATION COUCH
Jean Pankert, Eupen, Belgium, assignor to Etablissements Jean Pankert S.A., Eupen, Belgium
Filed Sept. 24, 1964, Ser. No. 398,887
Claims priority, application Belgium, Nov. 6, 1963, 639,637
3 Claims. (Cl. 5—66)



1. In a relaxation couch, in combination, a couch frame, an articulated support convertible by the weight of the user and pivoted in said frame, slider means in said frame for pivoting said support, said slider means comprising a guard plate spacedly secured to said frame, said guard plate having a longitudinal groove therein and a pair of guide lugs, a connecting rod displaceable between said guard plate and said frame, said rod being guided in a rectilinear path on said guide lugs, a slider secured to one end of said rod and projecting through said longitudinal groove, a slotted member having an arcuate slot, secured to said support, said slotted member being displaceable in an arcuate path about said slider, pivot means in said frame for pivoting said articulated support to said couch frame and friction brake means for locking said support in a desired position relative to said frame.

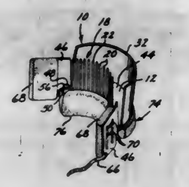
3,283,343
DISPOSABLE PILLOW
Gurdon S. Worcester, High St., Gloucester, Mass.
Filed Nov. 16, 1964, Ser. No. 411,493
4 Claims. (Cl. 5—337)



1. A disposable pillow comprising walls of sheet material forming a pillow shaped compartment, and said sheet material comprising an exterior layer of non-woven fibrous material having a texturally soft exterior surface with substantial water absorbency, and an inner layer joined to the outer layer, said inner layer being of air tight, elastic material having substantially greater wet strength and bursting strength than said outer layer, and said outer layer having a substantial water absorbent volume between said inner layer and the exterior.

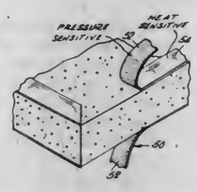
3,283,344
HEADREST
Floyd W. Blanchard, 2334 Loma Vista Place, Los Angeles, Calif.
Filed Feb. 12, 1964, Ser. No. 344,332
9 Claims. (Cl. 5—338)

5. A headrest device adapted to preserve a coiffure of a wearer of the device, comprising:
comb means adapted to penetrate the hair of said wearer and contact the wearer's head; and
support means for supporting said comb means in spaced relation with a surface upon which said wearer reclines, whereby said head is supported without substantial force acting on said coiffure, said



support means including an arcuate frame supporting said comb means in an arc about the back of said head, said frame being encased in a pad engageable with the neck of said wearer to carry part of the weight of said head.

3,283,345
UPHOLSTERY CUSHION CONSTRUCTION
Joseph Berck, Great Neck, N.Y., assignor to Duracraft Products Inc., Long Island, N.Y., a corporation of New York
Filed Jan. 30, 1964, Ser. No. 341,340
3 Claims. (Cl. 5—345)

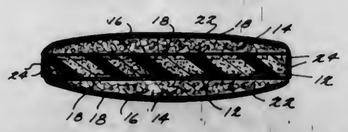


1. An upholstery construction comprising a resilient foam cushion having a top face, a bottom face and four side faces, a preformed upholstery material cover having corresponding top, bottom and side walls joined together to form an enclosed upholstery envelope, said cover having an access opening for the insertion of said cushion therein and being sized to closely conform to the shape of said cushion and to receive said cushion therein, and a cover-retaining adhesive strip, said retaining strip having a first adhesive surface on one side thereof and a second adhesive surface on the opposite side thereof having a heat-sensitive adhesive thereon, said strip being adhesively secured to said cushion by said first adhesive surface along the edges of at least one of said faces and being adhesively secured by said second adhesive surface to the inside corresponding walls of said cover, said adhesive strip retaining said cover in position on said cushion.

3,283,346
CUSHION AND METHOD OF MANUFACTURE
John A. Marsh and George W. Armfield, High Point, N.C., assignors to Marsh-Armfield, High Point, N.C., a corporation of North Carolina
Filed Mar. 19, 1964, Ser. No. 353,222
7 Claims. (Cl. 5—361)

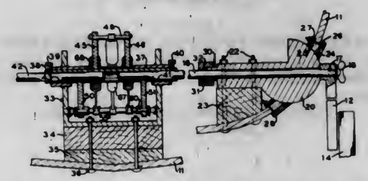
1. A cushion comprising: a cover and a filler, said filler including a slab-like backbone member of resilient but somewhat stiff material and at least one batt of loosely-matted fibers overlying at least one side of said member, said cover being formed in two parts disposed

in overlying relation with the opposite sides of said filler and having marginal edge portions folded in overlapping relation against the peripheral edges of said filler; and an adhesive bonding said marginal edge portions to each



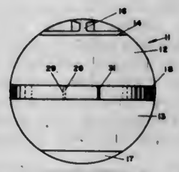
other, bonding the marginal edge portions of at least one of said cover parts to the peripheral edges of said filler, and bonding together portions of the backbone member and the batt.

3,283,347
TRAILER ATTACHMENT FOR BOATS
Paul A. Martin, 2013 Yucca Drive, Decatur, Ga.
Filed June 4, 1965, Ser. No. 467,807
10 Claims. (Cl. 9—1)



1. In a device of the character described, the combination with a boat, of a pair of axles, means to coaxially support said axles each projecting through one side of said boat, a pair of wheel support arms each detachably secured to one of said axles exteriorly of said boat, and means for resiliently securing said axles for limited rotation including a shock absorber and a sleeve member securing said axles for fixed rotation therewith, and means for limiting rotation of said sleeve member.

3,283,348
HIGH STRENGTH PRESTRESSED SPHERICAL SONOBUOY
Everett W. Farmer, Reeds Ferry, and Richard D. J. Proctor, Nashua, N.H., assignors to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed Mar. 26, 1964, Ser. No. 354,946
6 Claims. (Cl. 9—8)



6. An air launched circumferentially prestressed spherical sonobuoy capable of withstanding high water impact forces comprised of:

(A) a pair of substantially hemispherical shells having a mating junction and having fastening means to hold said hemispheres together to form a sphere shaped sonobuoy,

(B) each of said hemispheres having a circumferential groove parallel to a plane containing said mating junction,

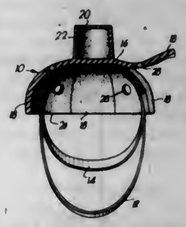
(C) said fastening means having the form of a pair of cylindrical rims mounted one within the other,

(D) the inner rim of said pair of cylindrical rims having inwardly projecting retaining lips in mating connection with each of said hemispherical shell's circumferential grooves,

(E) said inner rim having a split therein to allow for the insertion of said inner rim's retaining lips into said circumferential grooves,

(F) said cylindrical rim which surrounds said inner rim having an inner diameter which is less than the external diameter of said split inner rim when said inner rim is in position around said hemisphere's mating junction to thereby compressively prestress said hemispherical mating, whereby said mating junction upon water impact has any expansion distortion to the mating junction controlled by said cylindrical rim's prestressing.

3,283,349
SAFETY SIGNAL SKI CAP
William W. White, Kansas City, Mo.
(1100 S. Ocean Blvd., Pompano Beach, Fla.)
Filed Oct. 26, 1964, Ser. No. 406,343
11 Claims. (Cl. 9—346)

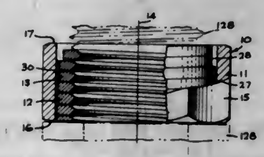


1. A water safety cap comprising:

a crown having a plurality of flexible, head-protecting sections, and a central, top portion intercoupling said sections and permitting independent flexing of respective sections upon impact, the margins of said sections remote from said portion defining the edge of said crown; and

means attached to said crown at said portion for holding the latter on the head of a wearer whereby to permit free movement of said edge away from the head to absorb the shock of said impact and thereby prevent dislodging of the cap from the head.

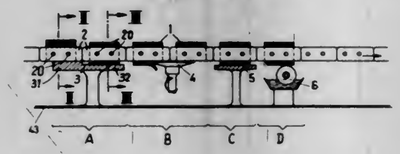
3,283,350
METHOD OF FORMING A LOCK NUT HAVING A HELICALLY COILED THREAD ELEMENT
Mark Hattan, Pasadena, Calif., assignor of sixteen percent to William P. Green, San Marino, Calif.
Filed Dec. 13, 1963, Ser. No. 330,445
10 Claims. (Cl. 10—86)



1. The method of forming a lock nut that includes providing an essentially helically coiled elongated resilient element forming a thread at its inner side threadedly engageable with a mating screw, said element having a first portion of more than one turn shaped to essentially fit

the screw and having an effective internal diameter which is uniform for a plurality of turns, said element having a second portion which is distorted sufficiently to have an interference fit with the screw and thereby attain a self locking action therewith, bonding successive turns of said first portion together to retain them against expansion for load bearing engagement with the screw, holding said first portion during said bonding in a condition in which the diameter thereof decreases very slightly in an axial direction, to be retained in that condition by the bonding, and leaving said second portion free of such bonded attachment of one turn to an adjacent turn and free for resilient deformation by the screw for interfering engagement therewith.

3,283,351
APPARATUS AND METHOD FOR THREADLESS BINDING OF BOOKS, BOOKLETS, PAMPHLETS AND THE LIKE
Hans Müller, Buschgutweg 4, Zofingen, Switzerland
Filed Feb. 16, 1965, Ser. No. 433,026
Claims priority, application Switzerland, Feb. 21, 1964, 2,236/64
13 Claims. (Cl. 11—1)



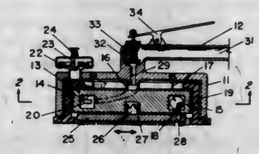
1. In apparatus for threadless binding of books, booklets pamphlets and the like having printed sheets and folded end sheets parallel to said parrallel to said printed sheets and on both sildes thereof, all of said sheets having front and back edges,

clamping means clamping said printed sheets and said folded end sheets in a compact pile with the back edges of said sheets positioned at a first determined height relative to a reference plane;

control means for releasing said clamping means to enable dropping of said printed sheets of said pile so that the back edges of said printed sheets are positioned at a second determined height which relative to said reference plane is lower than said first determined height by a predetermined distance while simultaneously maintaining the folded end sheets of said pile substantially parallel to said printed sheets with the folded edges of said end sheets remaining positioned at said first determined height and subsequently reclamping said pile of printed sheets and folded end sheets while maintaining the back edges of said printed sheets at said second determined height and folded back edges of said end sheets at said first determined height so that a portion of said printed sheets projects beyond said back edges of said end sheets; and cutting means for cutting off the projecting portion of said printed sheets while maintaining intact said folded back edges of said folded end sheets.

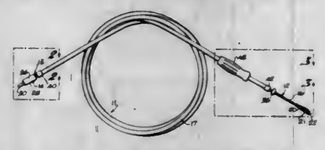
3,283,352
WATER POWERED CLEANING DEVICE
Yow-Jiun Hu, Alexandria, Va., assignor of one-half to Jacob Frank, Alexandria, Va.
Filed June 28, 1965, Ser. No. 467,586
12 Claims. (Cl. 15—22)

1. A water powered cleaning device comprising a handle, a housing, means for attaching the housing to said handle, a cleaning element fixedly attached to said housing, a circular raceway located in said housing, a ball adapted to roll in said circular raceway, an inlet opening into said raceway, means for supplying water through said inlet into the raceway to drive the ball about the raceway,



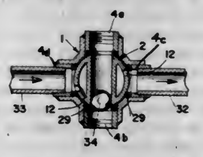
and outlet means for discharging the water from the raceway in said housing which water is to be employed with the cleaning element for cleaning purposes.

3,283,353
PLUMBER'S SNAKE UNIT
Bruce A. Kirk, 6181 SW. 102nd St., Miami, Fla.
Filed Oct. 30, 1964, Ser. No. 407,844
1 Claim. (Cl. 15—104.3)



A snake unit for use in combination with a portable hand drill chuck or the like comprising a flexible hose of a plastic material; a flexible snake member rotatably received in said hose and having end portions projecting beyond adjacent ends of said hose, said hose and snake member being axially displaceably mounted with respect to each other, said snake member comprising a tempered, flexible, helically coiled spring wire and including at one end portion auger head means; and an adapter secured to the other end portion of said snake member, said adapter terminating in a reduced portion for removable securement in the hand drill chuck, said flexible hose including cups of a synthetic material at the respective ends thereof for reducing wear at the ends of the hose from which said snake member end portions project and when said snake member is rotated within said hose.

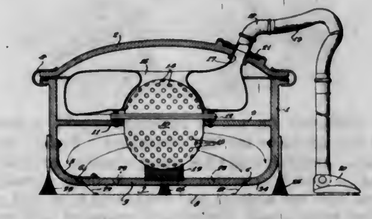
3,283,354
PLUG VALVE FOR FLOW LINES
Cincinnattias P. Simmons, Seminole, Tex., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed Apr. 28, 1965, Ser. No. 451,497
3 Claims. (Cl. 15—104.06)



1. A rotatable plug valve for flow lines comprising an outer hollow body of generally cylindrical configuration having two sets of paired diametrically-opposite apertures extending through its cylindrical wall, the center lines of all of said apertures lying substantially in a common plane; an inner substantially cylindrical hollow plug body mounted for rotation within said outer body, an imperforate pipe extending entirely through said inner body in a direction perpendicular to the longitudinal axis of

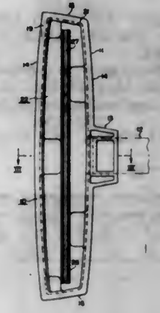
the cylinder and sealed through the cylindrical wall thereof, the bore of said pipe providing through said inner body a continuous, uninterrupted passage whose center line lies substantially in said plane when said valve is assembled; and means for rotating said inner body with respect to said outer body to various angular positions, in a first of which said passage is aligned with one set of diametrically-opposite apertures in said outer body and in a second of which said passage is aligned with the other set of diametrically-opposite apertures in said outer body; the cylindrical wall of said inner body having therein a pair of diametrically-opposite apertures so located that when said inner body is in said first angular position, the two apertures in said inner body communicate respectively with the two apertures in said other set of outer body apertures.

3,283,355
GAS SUPPORTED DEVICES
Ivar Jepson, South Duxbury, Mass., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Continuation of application Ser. No. 858,620, Dec. 10, 1959. This application May 7, 1965, Ser. No. 456,896
1 Claim. (Cl. 15—327)



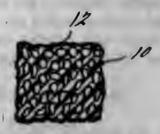
In a vacuum cleaner, a closed shallow casing, said casing having a flat horizontally disposed bottom, an open top, a removable cover for said open top, and vertically disposed side walls extending between said bottom and cover, a motor driven fan unit in said casing, a housing for said fan unit, said housing being disposed centrally of said casing, air inlet and outlet openings formed in the top and bottom respectively of said housing, and means for supporting said housing inside said casing and sealing said inlet and outlet openings from direct communication with each other, said means comprising an inwardly extending annular support flange formed on said side walls, a central aperture formed in said flange, an outwardly extending annular support flange formed on said housing, said housing being disposed in said aperture and said housing flange overhanging said casing flange, a sealing gasket disposed between said flanges, and means for clamping said flanges together against said gasket, said flanges and gasket together dividing said casing into upper and lower isolated compartments whereby said air inlet and outlet openings are in direct communication solely with said upper and lower compartments respectively, an air intake opening formed in said upper compartment which is adapted to have a vacuum cleaning tool connected thereto, an air permeable dust collecting vacuum cleaner bag disposed in said upper compartment, said bag being connected to said air intake opening and surrounding said air inlet openings, and means for supporting said vacuum cleaner on a cushion of air, said last mentioned means comprising a continuous narrow annular opening formed in the bottom of said casing adjacent the circumference thereof, said annular opening having a jet nozzle shape which is adapted to expel air exhausted by said fan unit into said lower compartment downwardly and inwardly of said bottom in the form of a high velocity jet curtain of air, said jet curtain of air by impingement on a support surface underlying said bottom being converted into an above atmospheric pressure air cushion beneath said bottom, said jet curtain of air surrounding and confining said air cushion to beneath said bottom, and means for replenishing air leakage from said air cushion, said replenishing means comprising auxiliary openings formed in said bottom above said air cushion.

3,283,356
VACUUM CLEANER NOZZLE
Charles T. Fromknecht, Anderson, S.C., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 31, 1964, Ser. No. 422,808
2 Claims. (Cl. 15—400)



1. In a nozzle for a vacuum cleaner having a suction device, in combination, a flexible body portion having a generally elongated open face portion and provided interiorly with a vacuum chamber and having a peripheral groove in the walls thereof in the area of said chamber, an orifice plate insertable in the peripheral groove, a brush support extending longitudinally of said orifice slate and secured thereto, said orifice plate being provided with peripheral notches in the longitudinal edges thereof, said notches cooperating with the walls of said flexible body portion to provide an air inlets to said vacuum chamber, said notches being staggered with respect to the longitudinal axis of said orifice plate whereby suction is distributed across the entire surface of the nozzle and a brush in said support.

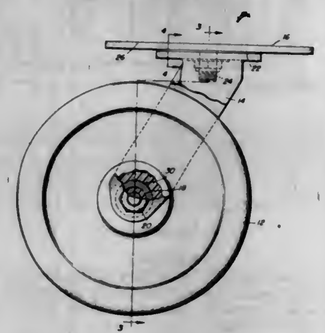
3,283,357
DISINFECTING CLEANSING PAD
John W. Decker, Southfield, and Charles G. Koella, Rochester, Mich., assignors to Michigan Tool Company, Detroit, Mich., a corporation of Delaware
Filed Oct. 6, 1964, Ser. No. 401,877
4 Claims. (Cl. 15—506)



1. A disinfecting cleansing pad comprising a pliable pad of a substantially closed cellular foam of a compatible material, a coating of a water-soluble germicidal cleaning agent on at least a portion of the exterior surfaces of said pad and consisting essentially of a germicidal quaternary ammonium compound and a detergent present in an amount of from about 4 parts to about 25 parts per part

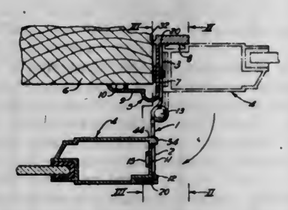
said quaternary ammonium compound, said detergent consisting essentially of an amphoteric detergent selected from the group consisting of n-fatty beta-aminopropionic acid, n-fatty beta iminodipropionic acid, as well as salts and mixtures thereof.

3,283,358
HEAVY DUTY CASTER
Richard S. Merriam, 606 Olesmont Road, Baltimore, Md.
Filed Sept. 16, 1964, Ser. No. 396,954
1 Claim. (Cl. 16—20)



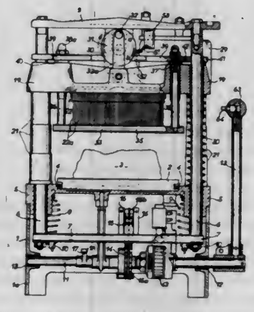
A caster comprising a swivel plate coated with nylon, a nylon coated swivel fork member mounted to said swivel plate and having a wheel journalled therefrom, and a bearing member consisting of a disc having a tetrafluoroethylene polymer coating thereon positioned between said swivel plate and said swivel fork member.

3,283,359
SELF-ALIGNING DETACHABLE HINGE
Harold E. Eskridge, 3196 Wadsworth Road, Barberton, Ohio
Filed Mar. 23, 1964, Ser. No. 353,923
12 Claims. (Cl. 16—149)



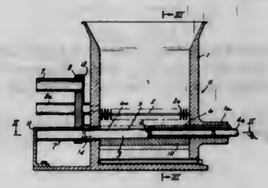
1. A detachable, self-aligning hinge assembly comprising a door member, a jamb member, and a hinge having a pair of pivoted leaf members, an aligning abutment on each leaf member, a complementary aligning abutment on each of the door and jamb members, tongue means on some of said members and complementary slot means on the mating other members, the tongue means of one member being slidably insertable in the slot means of a mating member upon relative movement of said members in a direction generally parallel to their abutments for detachably mounting one hinge leaf member on the door member and the other leaf member on the jamb member, the tongue means having a side edge that engages a side edge of the complementary slot means when the tongue means is inserted in the slot means and said side edge of at least one of said means being disposed at an angle to the abutment on that member for laterally displacing the hinge leaf relative to the member on which it is mounted when the tongue means are inserted in and slidably engaged with the slot means, thereby wedging the abutments on the hinge leaf into tight aligning engagement with the complementary abutments on the door and jamb members.

3,283,360
TENDERIZING MEAT MACHINES
Jean Pierre Tamain, Gentilly, Seine, France, assignor, by mesne assignments, to Jaccard Corporation, Buffalo, N.Y.
Filed June 16, 1964, Ser. No. 375,528
Claims priority, application France, June 21, 1963, 939,023
5 Claims. (Cl. 17—25)



1. A meat-tenderizing machine comprising, in combination, a support constructed for carrying a piece of meat to be tenderized, an assembly of closely-spaced thin parallel metal blades disposed opposite the support and constructed for reciprocating movement toward and away from the support from an initial fully-withdrawn position away from the support to a fully-extended position in which the blades will be in engagement with a piece of meat carried by the support, an electric motor drivingly connected with said assembly of blades for imparting thereto a reciprocating stroke with respect to said support for first engaging said blades in the piece of meat to be tenderized and then withdrawing the same therefrom, releasable brake means engageable with said motor for stopping said motor and the movement of the assembly of blades, said brake means being normally urged into braking engagement with said motor, electrically-actuated means for releasing said brake means upon energization of the motor, said brake re-engaging upon deenergization of said motor, an electric circuit for energizing said electric motor and said electrically-actuated releasing means, two switch means in parallel in said circuit, one a manually operated normally open switch means for initiating current flow to said electric circuit, the second a switch means associated with the position of said motor and assembly open only when said assembly is essentially in a fully withdrawn position, whereby when the manually operated switch is closed momentarily the resulting energization of said motor and release of said brake causes reciprocating movement of said assembly of blades, closing the second switch means and maintaining current to said motor until the reciprocating movement has returned said assembly of blades to the initial fully-withdrawn position and opened the second switch means, whereupon deenergization causes said brake means to engage said motor, halting same with said assembly back in the fully-withdrawn position.

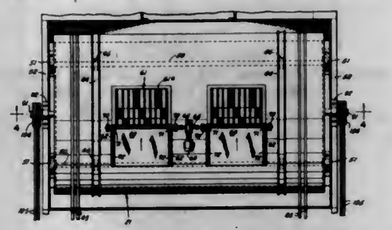
3,283,361
SAUSAGE STUFFING MACHINE
Hans Sommer, Mutterstadterstr. 34, Mannheim, Rheinau, Germany
Filed Nov. 17, 1964, Ser. No. 411,791
Claims priority, application Germany, Nov. 20, 1963, S 88,345
5 Claims. (Cl. 17—38)



1. A machine for stuffing comminuted material into tubular casings to form sausages or the like, comprising, a receptacle arranged to accommodate a supply of comminuted material; a stuffing chamber communicating with said receptacle and having an open end; stuffing means movable in said stuffing chamber to stuff comminuted material through said open end of said stuffing chamber; closing means arranged spaced outside of and opposite to said open end of said stuffing chamber; expelling means arranged transversely spaced from said stuffing chamber; at least two tubular spouts having opposite open ends; intermittently operable carrier means carrying said two tubular spouts movable between a first position in which one of said spouts is located with one open end thereof in registry with said open end of said stuffing chamber and with the other open end thereof closed by said closing means and the other of said spouts is located with one open end thereof in registry with said expelling means and the other open end thereof uncovered by said closing means, and a second position, in which the location of said first and second tubular spouts is reversed; and means for operating said stuffing means and said expelling means when said spouts are in said first and second positions thereof, whereby during each of said operations that spout which is in register with said stuffing chamber is filled with comminuted material by said stuffing means while said comminuted material is retained therein by said closing means and from the other spout which is in register with said expelling means, comminuted material is expelled by said expelling means through the open uncovered end thereof so as to be introduced into a sausage casing.

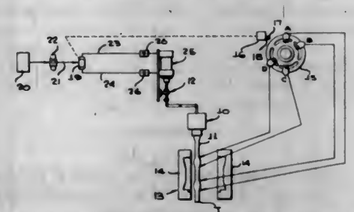
3,283,362
APPARATUS FOR PROCESSING MATERIALS
Richard E. Ryder, Jr., 901 Pinecrest Lane, Richardson, Tex., and Richard E. Ryder, 6670 Yosemite Lane, Dallas, Tex.
Filed Feb. 4, 1966, Ser. No. 525,243
7 Claims. (Cl. 18—1)

1. Material processing apparatus for processing a combination of fibrous and powdered materials to produce a product including a plurality of pellets of said fibrous materials impregnated and coated by said powdered materials and comprising: a drum rotatable about its longitudinal axis; a plurality of longitudinally spaced drum vanes extending inwardly from the inside wall of said drum; a longitudinal rotor rotatably positioned within said drum, said rotor having a shaft extending substantially along the longitudinal axis of said drum encompassed by said drum vanes, said rotor including a plurality of radial rotor vanes around said shaft, said rotor vanes being longitudinally spaced along said rotor and aligned between adjacent drum vanes whereby said rotor and drum vanes mesh upon relative rotation of said rotor and said drum; said drum and rotor vanes having planar side surfaces substantially parallel to and spaced apart from each other and substantially greater in width than the thickness of said vanes measured along said longitudinal axis, whereby the adjacent planar surfaces of the



sets of vanes provide means for rolling the materials in the drum into pellets, less than all of said rotor vanes meshing with said drum vanes simultaneously; said drum being provided with opening means for feeding materials into and discharging said materials from said drum.

3,283,363
VARIABLE EXTRUSION APPARATUS
Howard M. Turner, Oak Forest, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Aug. 13, 1962, Ser. No. 216,536
6 Claims. (Cl. 18—5)

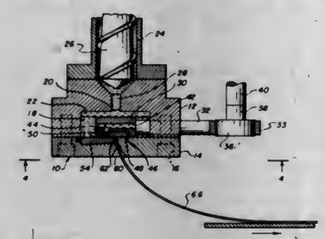


1. In combination with a continuously operating molding machine having a plurality of molds adapted to sequentially grip and remove portions of an extruded tube, a variable extrusion apparatus for continuously extruding a tube having a controlled varied cross-section, said extrusion apparatus comprising an extrusion head including a die shell and a die core combining to define an extrusion orifice, said die core being shiftable relative to said shell and having a varied cross-section whereby the cross-section of said orifice may be varied to vary the cross-section of an extruded tube, means for holding said die core in an adjusted position, means for shifting said holding means in timed relation to the operation and demands of the molding machine to selectively vary the cross-section of the extruded tube, and means for adjusting the operation of said shifting means for adjustably controlling both the minimum wall thickness and the maximum wall thickness of the extruded tube.

3,283,364
EXTRUSION APPARATUS AND METHOD
Allan D. Martin, Sanford, and Irving S. Houvener, Houghton Lake, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Continuation of application Ser. No. 141,162, Sept. 27, 1961. This application Oct. 26, 1964, Ser. No. 406,274
2 Claims. (Cl. 18—12)

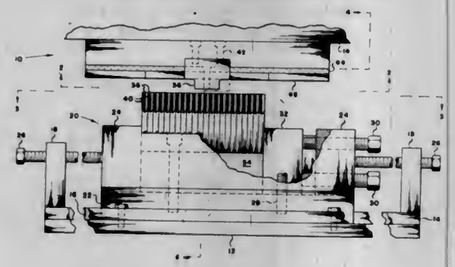
1. Apparatus for fabricating flat webbing consisting of means to extrude material in fluid form, a body with a cavity therein and formed with a slot in one of its walls,

said cavity communicating with said extrusion means, nozzle means slidably arranged along a plane within said cavity, said nozzle means being formed to provide an irregular shaped groove and means for causing reciprocal



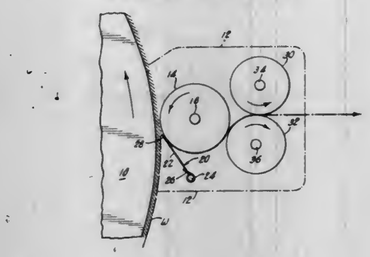
movement of said nozzle means along said plane to cause movement of said groove past said slot whereby ribbons of plastic material will be extruded through every point of intersection between the groove and the slot to form a flat webbing.

3,283,365
MOLD PRESS APPARATUS
Bruce W. Smith, Pacoima, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Apr. 6, 1964, Ser. No. 357,463
5 Claims. (Cl. 18—16)



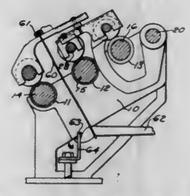
1. A molding apparatus for use in compacting powdered metal which comprises:
(a) a mold having a bottom, parallel sides and ends;
(b) a plurality of compacting members located so as to extend into the interior of said mold, said compacting members extending parallel to said sides and said ends of said mold, said compacting members fitting closely against one another and the interior of said mold;
(c) means for causing motion so as to move any one of said compacting members into the interior of said mold; and
(d) means for preventing the other of said compacting members from being forced away from the interior of said mold by pressure of material within said mold as said one of said compacting members is moved into the interior of said mold;
(e) said means for causing motion so as to move any one of said compacting members includes;
(f) a plunger member;
(g) means for causing relative motion of said plunger member with respect to said mold;
(h) and means for moving said mold laterally with respect to said plunger member so that different of said compacting members are engaged by said plunger.

3,283,366
APPARATUS FOR REMOVING A FIBROUS WEB FROM A ROTATABLE SURFACE
Frank Kalwaites, Somerville, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Filed Aug. 2, 1965, Ser. No. 478,027
6 Claims. (Cl. 19—106)



1. Apparatus for removing a fibrous web from a rotatable surface carrying the same which comprises:
a rotatable surface capable of carrying a fibrous web;
a rotatable roll capable of carrying a fibrous web and located immediately adjacent said first-mentioned rotatable surface whereby a V-shaped throat is formed between the rotatable surface and the rotatable roll; and
a stationary flexible nip blade in tangential contact with said rotatable roll and immediately extending away from said rotatable roll on both sides of the point of tangency therewith, one free end of said nip blade extending into the throat formed by the rotatable surface and the rotatable roll, whereby the fibrous web carried by the first rotatable surface is removed therefrom, carried around the free end of said nip blade into contact with the rotatable roll to be pressed thereagainst by the nip blade at the point of tangency and carried forwardly by the rotatable roll.

3,283,367
SUSPENSION AND WEIGHTING MEANS OF TOP ROLLS OF A DRAFTING MACHINE
Vito L. Pierannunzi, Greensboro, and Henry A. Hurt, Albemarle, N.C., assignors to Dixie Machine & Tool Company, a corporation of North Carolina
Filed Oct. 25, 1963, Ser. No. 318,854
1 Claim. (Cl. 19—278)

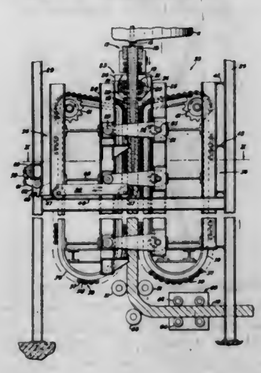


In a drafting mechanism for textiles, a frame having a back bar, a plurality of driven bottom rolls including intermediate and back bottom rolls supported in said frame, a plurality of pairs of top rolls including a pair of back top rolls each in an assembly comprising an arbor with spaced cots thereon, suspension means for said back top rolls pivoted on said back bar and extending from the back bar beneath said back bottom roll and between the back and intermediate bottom rolls and engaging said assembly of back top rolls between said cots, saddle means independent of said suspension means engaging said top back rolls and means to weight said saddle means and in turn said top rolls.

3,283,368
ROLLER APRON CONVEYOR CONTINUOUS CASTING MACHINE

Paul J. Homan, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware

Filed Mar. 26, 1964, Ser. No. 354,965
9 Claims. (Cl. 22—57.2)

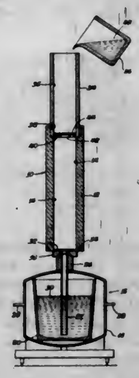


9. An apparatus for casting an elongated metal strand comprising means for continuously pouring molten metal into a casting mold so as to form a metal strand, means for reciprocating said mold to free said strand from said mold, means for controlling the rate of descent of said strand from said mold, means for supporting opposite faces of said strand downstream of said mold with a plurality of rollers which travel with said strand and means for cooling said rollers so as to present a fresh cooled surface to each line of contract with said strand.

3,283,369
APPARATUS FOR AND METHOD OF FORMING CLAD METAL

Edmund Q. Sylvester, Shaker Heights, Ohio (% Sylvester Enterprises, Inc., 850 Hanna Bldg., Cleveland, Ohio)

Filed May 25, 1964, Ser. No. 369,883
8 Claims. (Cl. 22—58)



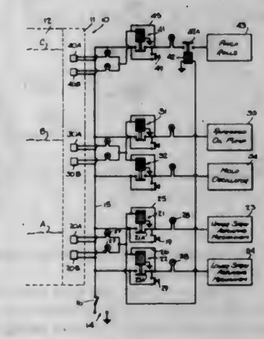
1. A method of cladding metal in conjunction with a mold comprising pouring a quantity of cladding metal into the mold and retaining it therein until a first portion thereof freezes, while another portion remains molten, pouring a core metal into the mold and entirely sealing an end of the cladding metal, and displacing the molten metal from the mold and filling the void left thereby with the core metal, whereby to eliminate atmosphere from between the core metal and the cladding metal, and sensing the leading end of the body of core metal poured into the mold as that leading end reaches the far end of the mold, and producing a control signal thereby for automatically effecting shutting off of the mold whereby to prevent flow of the core metal through the mold and mixing with the withdrawn molten portion of the cladding metal.

6. Apparatus for casting clad metal comprising a mold, means for pouring a cladding metal into the mold from the bottom thereof, means for releasably supporting radioactive material at the top of the mold whereby a core metal upon being poured into the mold carries the radioactive material at its leading end as it progresses through the mold, shut-off means for shutting off the mold at the bottom thereof, and means at the bottom of the mold for detecting signals produced by the radioactive material when the latter reaches the bottom of the mold and operative for amplifying such signal and thereby effecting the shutting off of the shut-off means.

3,283,370
CONTROL SYSTEM FOR AUTOMATICALLY STARTING A CONTINUOUS CASTING APPARATUS

Leo E. Jendraszkiewicz, Chicago, and Robert J. Keene, Chicago Heights, Ill., assignors to United States Steel Corporation, a corporation of Delaware

Filed Apr. 15, 1964, Ser. No. 359,856
8 Claims. (Cl. 22—57.2)



1. In a continuous casting apparatus having a casting mold, pinch rolls to withdraw a casting from said mold and a spray unit for cooling said casting; a control system for automatically starting the operation of said casting apparatus comprising:

first control circuit means, including a first temperature-responsive relay in the wall of said mold near the bottom of said mold, to control power to said spray unit,

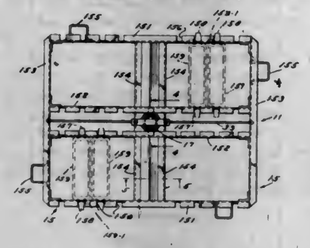
second control circuit means, including a second temperature-responsive relay in said mold wall near the top of said mold, to control power to said pinch rolls, and

time delay means actuated by said first control circuit means and coupled to said second control circuit means to disenable the connection between said second control circuit means and said pinch rolls until a pre-determined time after the actuation of said spray unit.

3,283,371
ROTARY PIGGING MACHINE

John J. Arval, Jr., Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Dec. 9, 1963, Ser. No. 329,031
3 Claims. (Cl. 22—63)

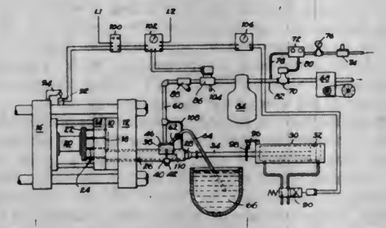


1. In a casting device, the combination of a central support member, a mold carrying rectangular frame rotatable upon and supported at its center by said central support member, said mold carrying frame being divided into rectangular substantially parallel, longitudinally extending mold carrying sections situated on opposite sides of said central support member, each of said mold carrying sections comprising a pair of substantially parallel, longitudinally extending mold support members arranged as an inboard member and an outboard member in relation to said central support member, each of said mold support members providing a plurality of spaced apart bearing means opposingly aligned with the bearing means of its companion mold support member, and a plurality of mold means bearing stop means constructed and arranged to rest upon and rotate within said bearing means, such rotation being limited to not more than about 180° by contact of said stop means with one of said mold support members.

3,283,372
VACUUM DIE CASTING APPARATUS

John H. Moorman, Western Springs, and Warren Y. Dickert, Jr., Elmhurst, Ill., assignors to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 28, 1964, Ser. No. 348,060
5 Claims. (Cl. 22—69)



1. In a die casting apparatus including an atmospherically vented cavitied die, a horizontally disposed cylindrical cold chamber in open communication therewith, a power-operated injecting plunger reciprocal within said cold chamber to charge flowable liquid casting material delivered thereto directly into said cavitied die, and a charging aperture through an upper wall surface of the cold chamber adjacent and in advance of the injecting plunger in its retracted position within the cold chamber remote to said cavitied die, the improvement comprising:

(a) a housing carried by said cold chamber providing an upwardly and outwardly directed sealed chamber in open communication through said charging aperture with the cold chamber and vented cavitied die,

(b) an imperforate wall open ended flowable liquid casting material delivery conduit extending axially coextensively downwardly through and from above an upper wall of said housing and having its open discharge end terminating therewithin isolated from interior walls of the cold chamber and in substantially axially tangential disposition in respect to an interior wall of said cold chamber closely adjacent said charging aperture,

(c) said conduit being curvilinearly downwardly axially contiguously directed to locate its opposite open end below an atmospherically exposed surface of a source of flowable casting material located below the cold chamber,

(d) means for inducing a low level vacuum within said cold chamber in advance of the injecting plunger in its retracted position remote to said cavitied die,

(e) electrically energizable operating circuitry incorporating a pair of electrically responsively timed valves sequentially controlling initiation and duration of the induced vacuum and activation of a source of power initiating the injection stroke of the injecting plunger within the cold chamber in consecutively time-delayed sequence,

(f) energization of one of said valves being timed to expire and cut-off the induced vacuum and a metered quantity of flowable liquid casting material responding to the induced vacuum delivered to said cold chamber through said flowable liquid casting material delivery conduit, and

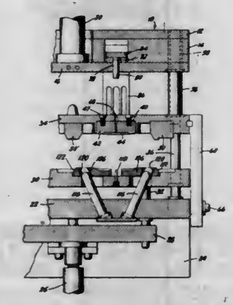
(g) energization of the other of said valves for initiating the injection stroke of said injecting plunger being set to initiate the injecting plunger charging stroke in selective timed delay following expiration of the induced vacuum controlling valve,

whereby flowable liquid casting material within the delivery conduit is directionally oppositely drained into the cold chamber and source of flowable liquid casting material from opposite open ends of the delivery conduit before initiation of the charging stroke of the injecting plunger.

3,283,373
MULTIPLE WHEEL WEIGHT CASTING DIE

John H. Kiefer, Madison Heights, and George A. Loosvelt, Grosse Pointe Farms, Mich., assignors to Anchor Bay Manufacturing Company, Inc., Anchorville, Mich., a corporation of Michigan

Filed May 27, 1963, Ser. No. 283,216
9 Claims. (Cl. 22—92)



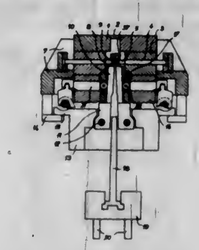
1. Apparatus for simultaneously casting a plurality of wheel weights comprising, in combination, a first support plate having first and second sides, a second support plate having first and second sides, means mounting said support plates for relative movement toward and away from

each other, said first sides of said plates being in opposed relation and adapted to be adjacently disposed during casting, a movably mounted die-operating plate disposed adjacent said second side of said first support plate, a backing plate disposed adjacent said second side of said second support plate, means connected to said first support plate adapted to move said first support plate and die-operating plate away from said second support plate, a plurality of die parts movably mounted on said first side of said first support plate, cavities and wheel weight clip-retaining means defined in said die parts whereby a pair of said die parts define a first wheel weight cavity upon the die parts of a pair being disposed adjacent each other, positioning means interconnecting said die parts and said die-operating plate whereby separation of said first support plate and said die-operating plate separates the die parts defining a common first cavity and releases the wheel weight and clip assembly retained therein, actuating means adapted to selectively separate said die-operating plate and said first support plate, a plurality of second wheel weight cavities defined in said first side of said second support plate in opposition to and aligned with said first wheel weight cavities whereby upon said support plates being contiguously disposed during casting and first and second wheel weight cavities define a complete wheel weight cavity, a plurality of injection passages defined in said second support plate, a passage communicating with each second wheel weight cavity, a primary passage recess defined in said backing plate adjacent said second side of said second support plate communicating with said injection passages, a primary injection port defined on said second support plate communicating with said primary passage recess, and sprue-ejecting means extending through said backing plate adapted to engage a sprue within said backing plate primary passage, and operating means connected to said sprue-ejecting means.

3,283,374
SEMI-AUTOMATIC MACHINES FOR CHILL CASTING HOLLOW PARTS SUCH AS PISTONS

Lucien Péras, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France, a French works

Filed Mar. 30, 1964, Ser. No. 355,729
Claims priority, application France, Apr. 5, 1963, 930,654
8 Claims. (Cl. 22—93)

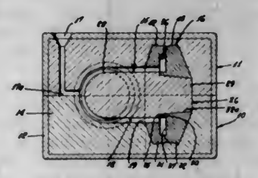


1. A semi-automatic machine for chill casting parts comprising a cavity which has a narrowed portion requiring the use of a core formed of a plurality of movable core elements severally extended by an actuating heel and maintained spaced from one another during casting and close to one another during stripping, an extendable retractable key adapted to translate longitudinally of itself between an operatively engaged position between the mutually spaced core elements during the casting operation and an inoperative position of retraction therefrom during the stripping operation being mounted on a slidable key support through the agency of which the movable part of reciprocating translational motion engendering drive means is adapted to push said key from its retracted position to its engaged position, said machine being characterized in that spreader means are provided for biasing during machine operation said core elements towards their mutually spaced position and in that in respect to each of said elements there is provided a bell-crank lever fulcrumed intermediate its ends on the machine in such manner that one of its arms exerts pressure against said actuating heel of the corresponding core element in the sense of moving the same towards the other core elements when on reaching the end of the retracting stroke said key support exerts a force on the other bell-crank arm through the medium of a draw-link common to all the bell-crank levers.

3,283,375
METHOD AND APPARATUS FOR CASTING TUBULAR MEMBERS EMBODYING FLAT PLANE SURFACED FLANGES, AND PRODUCT

Bert M. Campbell, Lynwood, George B. Miller, Bellflower, and Earle W. Deeble, Fullerton, Calif., assignors to Frank E. Dayton, doing business as Dayton Foundry, South Gate, Calif.

Filed May 14, 1965, Ser. No. 455,920
7 Claims. (Cl. 22—131)



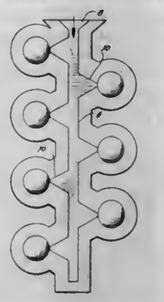
1. Apparatus for casting tubular members with flanges thereon having as removed from the mold substantially flat plane front faces, said apparatus comprising a core body assembly embodying a peripherally drafted flange forming mold unit having a flange forming cavity therein with a substantially flat plane wall to define the front face of the flange, and a primary casting receptacle with a cavity therein conforming to the external size and shape of the flange forming mold unit and otherwise defining the outside surface of the tubular member to be cast which is not provided by said unit, the flange forming mold unit comprising complementary sections separately formed and when united having a parting line on a plane normal to the axis of the flange forming cavity.

6. A method of casting a tubular flanged member in which at least the front face of the flange is without any draft, comprising the steps of: forming a major cavity in a primary mold with a first part of the cavity defining the exterior surface of the tubular member excluding the flange, and a second part of the cavity wherein the flange is to be cast made substantially larger than the exterior of such flange and with a draft, forming a destructible core assembly with a first part to define the interior of the tubular portion and excluding the flange of the member to be cast, and a second part to provide a complete secondary cavity for the flange, shaping the exterior of the second part with a draft and of shape and size to snugly repose in the second part of the cavity in the primary mold, uniting the two parts, placing the core assembly made up of the united parts in the major cavity, and introducing molten metal into the major cavity as restricted by the core assembly and into the secondary cavity.

3,283,376
METHOD OF INVESTMENT CASTING OF BALL BEARINGS

John Hockin, 4305 S. Maple Ave., Brookfield, Ill.

Filed Feb. 23, 1962, Ser. No. 175,178
3 Claims. (Cl. 22—200)



1. In a method of casting high temperature wear and corrosion resistant alloy ball bearings, the steps of:

providing an investment mold having a pin point gate leading to a spherical cavity, the gate narrowing in the direction of the cavity until the gate at the cavity is substantially less than one third of the diameter of the spherical cavity, but of sufficient diameter to permit the flow of molten metal therethrough,

heating a high temperature wear and corrosion resistant allow to a temperature above the melting point of the alloy,

pouring the molten wear and corrosion-resistant alloy into the investment mold, where the alloy flows through the pin point gate into the spherical cavity,

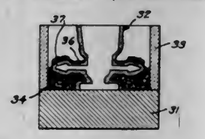
the temperature of the mold at the time of beginning the pouring being substantially lower than 1300 degrees F., the minimum temperature required to burn out the pattern material used to form the mold, but not lower than room temperature,

whereby the high temperature of the molten alloy passing through the pin point gate heats the gate to a temperature so much higher than that to which the mold surrounding the cavity is raised that the molten alloy in the mold cavity solidifies before the molten alloy within the gate.

3,283,377
TURBINE WHEEL MANUFACTURING METHOD

George D. Chandley, Alliance, Ohio, assignor to TRW Inc., a corporation of Ohio

Filed June 29, 1964, Ser. No. 378,643
4 Claims. (Cl. 22—212)

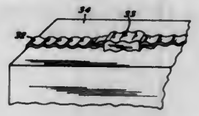


1. The method of making a turbine wheel which comprises positioning a ceramic shell mold on a heat abstracting surface in a furnace enclosure, said mold having communicating molding cavities defining a hub section, a wheel portion extending annularly about said hub section, and vanes extending radially outwardly from said wheel portion, radiating thermal energy at said mold, shielding a substantial portion of the cavity defining said hub section from the radiation, continuing the heating until the portions of the mold in which the thickness dimensions of the cavities is the smallest achieve temperatures on the order of the pouring temperature of the alloy to be cast, casting a molten alloy into said mold at a temperature not more than 200° F. above its liquidus temperature, and cooling the resulting casting in said mold to produce a cast turbine wheel having a hub section with a relatively large grain size, vanes with a relatively fine grain size, and a wheel portion with a grain size intermediate that of said hub section and said vanes.

3,283,378
CRIMPED BINDING STRAP AND METHOD OF MAKING SAME

Frank R. Cramton, Burlington, Vt., assignor to E. B. & A. C. Whiting Company

Filed Aug. 7, 1964, Ser. No. 388,179
14 Claims. (Cl. 24—16)

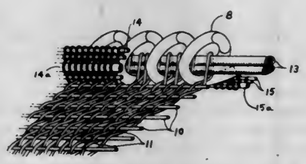


1. A flexible binding strap comprising a longitudinally stretch oriented thermoplastic polymer, said strap having a substantially longitudinal sinusoidal resiliently deformable configuration.

3,283,379
INTEGRALLY WOVEN ZIPPER STRINGER

John E. Burbank, Middlebury, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut

Filed Mar. 29, 1965, Ser. No. 443,265
3 Claims. (Cl. 24—205.1)



1. An integrally woven zipper stringer having a flat tape consisting of a filler thread interwoven with a plurality of warp threads, a fastener coil along one edge of the tape and held to the tape by portions of said filler thread engaged between successive coil convolutions, auxiliary warps disposed against said coil, and a separate weft thread for tieing said auxiliary warps to said coil.

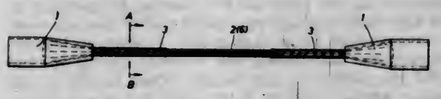
3,283,380
GUY ROPE OF GLASS-FIBER REINFORCED PLASTIC RODS

Hans-Jürgen Gassner, Mannheim-Lindenhof, Germany, assignor to Brown, Boveri & Cie Aktiengesellschaft, Mannheim-Kafertal, Germany, a corporation of Germany

Filed Mar. 19, 1965, Ser. No. 441,268
Claims priority, application Germany, Mar. 20, 1964, B 76,009
7 Claims. (Cl. 24—122.6)

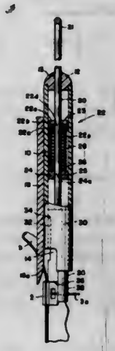
1. A guy rope comprising a group of parallel rod members of glass-fiber reinforced plastic, helical windings of steel wire tightly seated on an elongated end portion

at each end of each of said rods, two terminal shoes at the respective rope ends, each of said shoes having a conically tapering inner space with an opening at the narrow axial



end, said rod end with said wire windings being bunched together, said windings extending through said opening into said conical shoe space, and an embedding mass anchoring said wire windings in said terminal shoe.

3,283,381
ZIPPER PULL
Tim Hurst, Philadelphia, Pa., assignor of one-half to Royal E. Christiansen and Rosalie L. Christiansen, jointly
Filed Aug. 10, 1965, Ser. No. 478,562
6 Claims. (Cl. 24—205.15)



1. A zipper pull for closing and opening zippers located in areas of clothing inaccessible to the wearer when put on, said device comprising

a generally cylindrical housing,

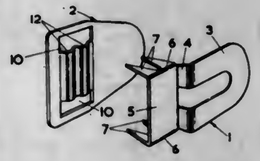
a plunger mounted for limited axial movement mostly within but partially out of the housing, said plunger having zipper engaging means located at one end and a push rod connected to the other end within the housing, said rod extending out of the housing at the distal end and having connected thereto accessible hand gripping means,

said zipper engaging means comprising a slot located adjacent to the end of the plunger, said slot being of a size suitable to receive the zipper tab therethrough when the plunger is extended from the housing,

a cut-away portion formed in the end of the plunger adjacent to the slot of such size to receive the zipper body therein when the zipper tab is located within the plunger slot, and

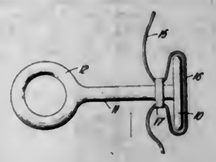
plunger spring and limit means mounted within the housing to continually urge the plunger into the housing toward the push rod end whereby the plunger is extended from the housing against spring tension by pressing the push rod inwardly to allow the plunger to engage the zipper, said zipper tab being held within the plunger slot against the housing by the spring means when pressure on the rod is discontinued, the rod hand gripping means then being pulled to advance the zipper in the desired direction.

3,283,382
HOOK FASTENING DEVICES FOR GARMENT MATERIAL
Herbert Howard Wood and Clarence Martin Wilson, both of Birmingham, England, assignors to Thomas Walker Limited, Birmingham, England, a company of Great Britain
Filed May 28, 1965, Ser. No. 459,600
Claims priority, application Great Britain, June 24, 1964, 26,034/64
2 Claims. (Cl. 24—227)



1. A hook fastening device for attachment to a fabric material, said device consisting of a hook member and a separate back-plate member, said hook member comprising a cantilever hook tongue, a base part which is shorter than said hook tongue, a cranked portion integrally interconnecting said hook tongue and said base part for maintaining said hook tongue offset relatively to said base part, and a pair of pointed attachment prongs integral with said base part and located along a common transverse axis at opposed side edges of said base part, said prongs being foldable about axes extending substantially perpendicularly to said transverse axis, said base part having a longitudinal portion located opposite said hook tongue and in use lying against the fabric material to prevent excessive lifting of said hook tongue; said back plate member comprising a plate having spaced recesses for alignment with said prongs and a raised portion adjacent said recesses for accommodating the folded prongs and for providing a seating surface to which said base part and the interposed fabric material are clamped by the folded prongs.

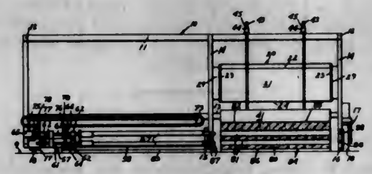
3,283,383
SECURING DEVICE
Robert John Heath, Flintways, White Hill, Marlow, England
Filed Apr. 19, 1965, Ser. No. 449,263
Claims priority, application Great Britain, Apr. 20, 1964, 16,218/64
7 Claims. (Cl. 24—245)



1. Securing device for securing resilient sheeting comprising a member having a smooth surfaced circular disc, and a shank, one end of said shank being located centrally on one of the flat sides of said disc, said disc having a cross-sectional area at least five times that of the shank, in combination with a resilient band, said resilient band being disposed over said shank when the sheeting is in

position to retain on said disc a mouth formed in the sheeting, the dimensions and elasticity of the band being such that when the sheet is pulled the band allows the mouth to expand without the sheet tearing or the said mouth passing over the disc.

3,283,384
APPARATUS FOR FORMING BUILDING BLOCKS
Warren L. Harter, P.O. Box 5166, Spokane, Wash.
Filed Aug. 31, 1964, Ser. No. 393,302
3 Claims. (Cl. 25—41)



1. An apparatus for forming building blocks of compactable cementitious material, comprising:

a support framework movably mounted on a plane horizontal supporting surface for movement relative to said surface;

a rectangular form having parallel upright longitudinal sides and perpendicular end panels fixed to the end edges thereof, the sides and end panels of the form including co-planar lower edges, said form being carried on said framework for vertical movement relative to said framework between a first position wherein the lower edges of said form rest on the horizontal supporting surface for the framework and an elevated position vertically above said first position;

longitudinal core forming means movably mounted on said framework for reciprocable motion relative to said framework along the length of said form when said form is located at its first position relative to said framework;

said core means comprising:

a pair of longitudinal shafts, each shaft being rotatably mounted at one end thereof about axes parallel to one another on a platform movably carried on said framework for reciprocating movement of said platform relative to said framework in directions parallel to the shaft axes, the remaining ends of said shafts being receivable, after insertion through said form, within bearings located on the framework and aligned coaxially with the respective shaft axes;

a longitudinal eccentric surface formed integrally on each of said shafts intermediate the ends thereof;

and power means on said framework operatively connected to said shafts to selectively rotate said shafts about their respective axes;

and power means on said framework operatively connected to said shafts to selectively rotate said shafts about their respective axes;

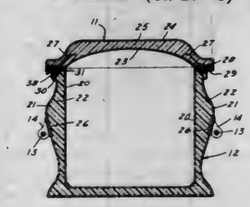
and a weighted block mounted on said frame in vertical alignment with said form, the exterior cross sectional configuration of said block in a horizontal plane being complementary to the interior cross sectional configuration of said form in a parallel horizontal plane, said block being aligned on said framework relative to said form concentrically with said form for sliding motion therethrough.

3,283,385
APPARATUS FOR MAKING PRESTRESSED CONCRETE
Richard Ralph Oakden, Ashbourne, England, assignor to Richard Lees Limited, Derby, Mugginton, England, a British company
Filed Aug. 17, 1964, Ser. No. 390,088
Claims priority, application Great Britain, Aug. 21,1963, 33,046/63
12 Claims. (Cl. 25—118)



1. Apparatus for making prestressed concrete comprising a stress bed on to which unhardened concrete is adapted to be fed, means for continuously feeding stressing wire over said bed so as to be surrounded by said concrete and embedded therein when the concrete has hardened, means for continuously applying a wire-tensioning load to said wire whereby the wire is maintained in a tensioned condition, and a fixed stress-compensating device included in said load-applying means and through which the wire is fed before passing to a movable member having a constant load applied thereto, said member be slidable relative to said stress-compensating device under the influence of said load to maintain constantly the wire under a given tension so that the reaction induced by the tension in the prestressing wire is transferred by the stress-compensating device to act in an opposite direction on the hardened concrete.

3,283,386
CASKET FORMED FROM COMPOSITE PLASTIC LAYERS
Louis F. Cenegy, Downey, Calif., assignor to Hitco, a corporation of California
Filed Mar. 9, 1962, Ser. No. 178,617
4 Claims. (Cl. 27—3)

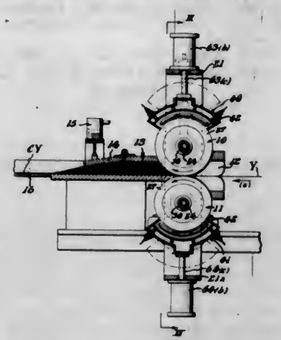


1. A casket comprising a tub and a matching lid releasably disposed on the upper periphery of the tub, each of the tub and the lid comprising a pair of spaced apart polystyrene shells having coextensive lip surfaces extending about the periphery of the shells and sealed together, the tub and the lid also including interposed expanded polyurethane foam substantially completely filling the space between the shells and bonded to each of the surfaces of the shells facing the foam, such that a smooth surfaced, light weight, rigid casket structure is provided for each of the tub and the lid.

3,283,387
APPARATUS AND METHOD FOR CRIMPING FILAMENTARY TEXTILE MATERIAL
Nathan Rosenstein, West Hartford, Conn., assignor to Spunize Company of America, Inc., a corporation of Connecticut
Filed Oct. 30, 1964, Ser. No. 407,841
16 Claims. (Cl. 28—1)

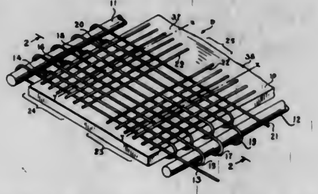
7. In an apparatus for crimping textile filaments, including a pair of rolls forming a nip arranged to force

a plurality of filaments into a compression space, and wherein such nip tends toward non-linearity, means for correcting said tendency, which means comprises exter-



nal heat transfer means arranged in heat transfer relation to at least one of said rolls, and control means for controlling such heat transfer means to combat said tendency toward non-linearity.

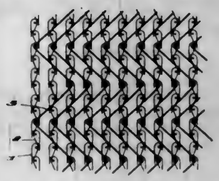
3,283,388
METHOD AND MEANS FOR MAKING A PAPERMAKER'S FELT ENDLESS
Robert R. Kelleher, Latham, and William H. Dutt, Defreestville, N.Y., assignors to Fabric Research Laboratories, Inc., Dedham, Mass., a corporation of Massachusetts, as trustee
Filed Jan. 8, 1965, Ser. No. 424,326
10 Claims. (Cl. 28—72)



1. A method for making a papermaker's felt endless including the steps of weaving an endless fabric with alternate fill yarns displaced longitudinally to provide first and second transverse cylinders at respective ends having first and second axes, cutting the fabric transversely in a zone adjacent each of the cylinders to provide first and second seam members, joining said first and second seam members to respective ends of the felt, interplacing the longitudinally disposed fill yarns to make coincident said first and second axes and passing a connecting cable through the first and second cylinders along the single coincident axis thereof.

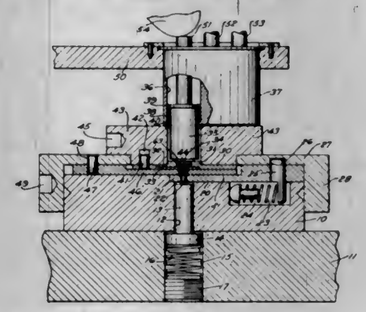
3,283,389
METHOD OF MAKING MULTI-BREAK FABRIC
John L. Nisbet and Hubert C. Woodall, Jr., Winston-Salem, N.C., assignors to Carolina Insulating Yarn Company, Winston-Salem, N.C., a corporation of North Carolina
Original application Aug. 3, 1961, Ser. No. 129,081. Divided and this application July 8, 1965, Ser. No. 482,006
3 Claims. (Cl. 28—74)

2. The method of forming a stretchable tape having glass fiber yarns therein as reinforcement comprising the steps of forming a fabric having a first system of glass fiber yarns extending in a generally zig-zag pattern in the fabric, said glass fiber yarns providing a non-elastic fiber reinforcement, the fabric being formed with a second system of knitted fibers, impregnating the fabric with an elas-



tic material, disrupting the second system of knitted fibers, permitting the first system of glass fiber yarns and elastic impregnant to elongate with the glass fiber yarns extending in a substantially straight line.

3,283,390
MACHINE FOR MAKING BALL POINT WRITING INSTRUMENT
Donald H. Young, East Greenwich, R.I., assignor to A. T. Cross Company, a corporation of Rhode Island
Original application Jan. 4, 1963, Ser. No. 249,368, now Patent No. 3,162,941, dated Dec. 29, 1964. Divided and this application June 16, 1964, Ser. No. 375,614
4 Claims. (Cl. 29—34)

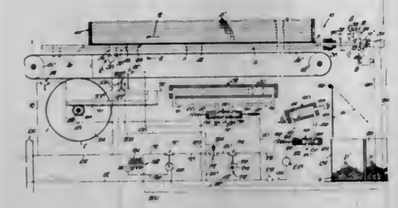


1. In a mechanism for forming a ball point writing instrument, an axially movable positioning plunger having a pin to enter the bore of tubular work and a shoulder to engage its end, a spring urging said plunger axially in one direction, a second plunger positionable to move along the axis of the first plunger and having a pin to enter the bore of tubular work at its other end and a shoulder to engage said other end to locate the same, means to axially move the second plunger to move the first plunger against the action of said spring and by said shoulder of the second plunger axially locate the work, two sets of spaced clutch jaws movable radially of the axis of said plungers to engage the work tube at the area of said pins, a plurality of forming tools movable radially inwardly between said sets of clutch jaws to force the work inwardly and provide axially extending ribs on the work and to provide support for further operations.

3,283,391
APPARATUS FOR MASS-PRODUCING PRECISION PARTS FROM LONGITUDINAL SUPPLY STOCK
Norman F. Thompson, 3rd, Colebrook, and Edward B. Cybulski, Bristol, Conn., assignors to The Ingraham Company, Bristol, Conn., a corporation of Connecticut
Filed Dec. 7, 1964, Ser. No. 416,538
20 Claims. (Cl. 29—37)

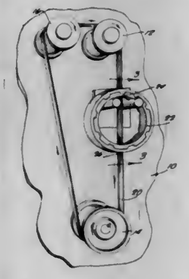
1. In parts-producing apparatus, the combination with tool means at an operating station cyclically performing

on longitudinal stock to grip the same and form and cut-off parts therefrom, a stop adapted to be engaged by the stock to gauge the length of each part to-be-formed, and power means outside said station operative intermediate operating cycles of said tool means to feed the stock



against said stop, of a device operable to eject a cut-off part from said station in a certain direction; and control means actuated on each except the first engagement of the stock with said stop for operating said device on the next operating cycle of said tool means.

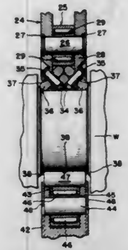
3,283,392
METHOD AND APPARATUS OF ROPE POLISHING CIRCULAR COMPRESSION DIES
Charles E. Nixon, 110 W. Howard St., Waveland, Ind.
Filed Sept. 16, 1964, Ser. No. 396,852
4 Claims. (Cl. 29—90)



1. Apparatus for polishing at least one of a plurality of closely spaced bore holes comprising a plurality of looped cords adapted to pass through said holes, a pair of spaced pulleys forming a common support for the opposed portions of said looped cords, means for hooking the ends of the cords to each other to provide a short coupling length between the ends thereof, and means for driving the pulleys to pass said cords through said holes.

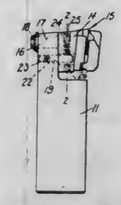
3,283,393
APPARATUS FOR BURNISHING STRAIGHT CYLINDRICAL SURFACES AND FOR ROLLING CRANKSHAFT FILLETS
Oda L. Cory, 1168 Indian Creek Road, and Dale E. Bowman, 142 S. Traub Ave., both of Indianapolis, Ind.
Filed Apr. 30, 1965, Ser. No. 452,092
9 Claims. (Cl. 29—90)

1. An apparatus for simultaneously burnishing straight cylindrical surfaces and circular fillets at the ends thereof, comprising a frame, an upper roller cage and a lower roller cage in said frame, said upper roller cage including a pair of angularly disposed free-floating fillet rollers, and a pair of back-up rolls for the fillet rollers, said lower cage including a burnishing roller and a pair of back-up rollers, said burnishing roller being positioned



substantially diametrically opposite the fillet rollers, and means to adjust said lower roller cage to vary the spacing between the fillet rollers and the burnishing roller.

3,283,394
METAL CUTTING TOOLS
James Hargreaves, Finham, Coventry, England, assignor to Wickman Wimet Limited, Coventry, England
Filed July 16, 1964, Ser. No. 383,100
Claims priority, application Great Britain, Aug. 1, 1963, 30,507/63
2 Claims. (Cl. 29—96)



1. A metal cutting tool comprising in combination a shank adapted for connection to a tool holder, a bit support, means mounting said bit support on said shank for angular movement between an operative position and an inoperative position, a first bore formed in one of the parts constituted by the shank and the bit support, said first bore extending parallel to the axis about which the bit support moves angularly, a second bore extending through said one part and intersecting said first bore, a pin extending from the other of said parts into said first bore, a member closing one end of the second bore, and a spring acting between said member and said pin to urge said bit support to its inoperative position, the arrangement being such, that in use, when a bit is held in the bit support, and advanced relative to the work, the pressure between the work and the bit will hold the bit support in its operative position against the action of said spring, but as soon as contact of the bit relative to the work ceases, the spring will move said bit support to its inoperative position in which the bit is out of contact with the work.

3,283,395
ROLLER WITH HANDLE AND ANTI-STICK PLASTIC COATING
Robert M. Rownd, Nashville, Tenn., assignor to Aladdin Industries, Incorporated, Chicago, Ill., a corporation of Illinois
Filed Nov. 29, 1963, Ser. No. 326,767
5 Claims. (Cl. 29—110.5)

1. In a heat sealing device
the combination comprising a roller made of sheet metal and having a disc portion formed with a generally cylindrical peripheral flange,

an elongated handle having a flat inner end portion,
pivot means rotatably connecting said disc portion to said flat end portion,
said handle having a grip portion at the outer end thereof,
said handle having a shank portion extending between said grip portion and said flat end portion,



a heat-resistant plastic coating covering the grip portion of said handle end part of said shank portion,
and an anti-stick plastic coating covering the outside of said flange on said roller to prevent said roller when heated from sticking to the material to be heat sealed.

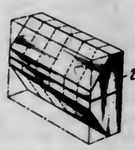
3,283,396

MAGNETIC TRANSDUCER ASSEMBLY AND MANUFACTURE

Robert F. Pfost, Mountain View, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California

Original application Apr. 17, 1961, Ser. No. 103,424. Divided and this application May 12, 1964, Ser. No. 377,445

3 Claims. (Cl. 29—155.5)



1. The method of forming magnetic transducer assemblies comprising the steps of: depositing spacer strips of material having a relatively high melting point longitudinally on a surface of a lapped and polished ferrite slab having a predetermined configuration; depositing a thin layer of glass on a corresponding surface of another polished ferrite slab, said slabs having substantially the same configuration and physical characteristics; cutting the slabs in a direction transverse to the longitudinal strips of spacer material to form blocks having desired dimensions; joining each of the blocks containing spacer material with each of the glass coated blocks in an atmosphere having a temperature of about 550–900° centigrade under high pressure to form a nonmagnetic gap layer between said formed blocks; cutting the joined assembly along the longitudinal strips of spacer material perpendicular to the joined surfaces to remove said spacer material and provide transducer size units and define sides of said units; forming an aperture along a portion of the gap layer in each of said transducer units to define front and rear gaps; and winding an electrical coil through said aperture.

3,283,397

FLATTENING AND REVERSIBLY BENDING METHOD OF MAKING A THERMOCOUPLE

Paul Beckman, 944 Henrietta Ave., Huntington Valley, Pa.

Continuation of application Ser. No. 110,676, Apr. 7, 1961. This application May 26, 1965, Ser. No. 462,471

1 Claim. (Cl. 29—155.5)

The method of making a miniature thermocouple which comprises serially joining two thermocouple wires of different compositions end to end to produce a thermocouple junction intermediate the ends of the joined wire, coating the joined thermocouple wires with electrical insulation material, inserting the coated thermocouple wires into an elongated tubular metallic member having an internal diameter in excess of the external diameter of the coated thermocouple wires, flattening a relatively small portion of the tubular member intermediate its ends at the site of the thermocouple junction to rigidly engage the coated wires at that site, and reversibly bending the tubular member on itself at the site of the flattened portion and thereby bringing the two end portions of the tubular member into parallel adjoining relationship with one another while curving the flattened portion inside and outside to provide an open space inside of the flattened portion.

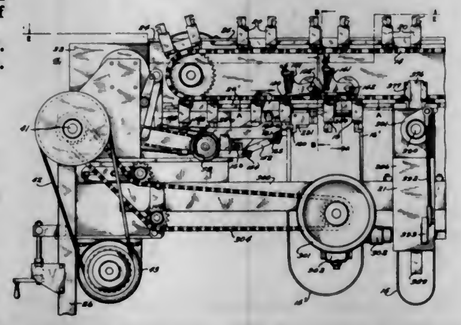
3,283,398

ART OF PRODUCING ELECTRICAL CONDUCTORS FROM CORD WIRE

Karl H. Andren, West Allis, Wis., assignor to Artos Engineering Company, Milwaukee, Wis., a corporation of Wisconsin

Filed Apr. 26, 1962, Ser. No. 190,402

9 Claims. (Cl. 29—155.55)



1. The method of producing successive lengths of electrical conductors from continuous insulated wire stock, which comprises, advancing the wire longitudinally predetermined distances beyond a severing zone to provide a succession of wire lengths, reversing one end of each successive wire length to loop the same and bring the opposite ends thereof into predetermined laterally-spaced juxta-position with said ends pointed in a common direction, firmly gripping each successive length of looped wire inwardly of each end thereof at said predetermined positions to maintain the protruding ends in laterally-spaced juxta-position and substantially parallel relation with the loop freely suspended, intermittently moving the lengths of looped wire successively away from the severing zone in a rectilinear path and along a common plane extending transversely of the wire axes at the gripped portions thereof, applying a terminal to at least one juxta-positioned end of each successive looped wire length while at rest to complete the conductors, and continuing the movement of the completed conductors successively along the same plane and in the same rectilinear path away from the terminal attaching zone to a discharge station remote from said severing zone.

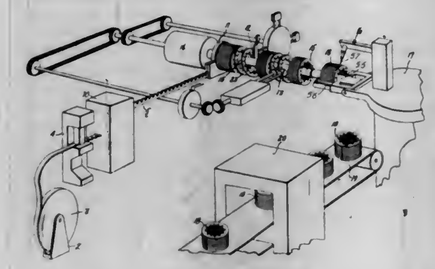
3,283,399

METHOD OF FORMING ELECTRO-MAGNETIC CORES

Benjamin F. Hart, Ballston Lake, and Roland P. Carlson, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

Filed Mar. 11, 1964, Ser. No. 352,422

6 Claims. (Cl. 29—155.57)



1. In a method of forming a helically wound laminated structure the steps which include: helically winding a strip edgewise about a first axis into a number of successive helical turns each formed with a generally rectangular cross section at any given location across the turn and with a notched edge and an uninterrupted edge whereby the uninterrupted edge substantially defines a helix which circumscribes the helix substantially defined by the notched edge, guiding and advancing the individual turns onto a rotating arbor having an axis substantially coaxial with the first axis, piercing holes in the individual turns at spaced intervals as the turns rotate with the arbor, and severing a single turn of the rotating turns after a predetermined number of turns have been pierced to form a laminated stack.

3. In a method of forming a helically wound laminated core from a strip of magnetic material having a succession of openings therein, the steps which comprise: successively engaging the walls of the strip defining the openings and driving the strip edgewise through a confined arcuate path, compressing the strip axially as it passes through the confined arcuate path to maintain the thickness of the strip substantially uniform and forming successive helical turns, advancing the turns from the confined arcuate path onto a rotating arbor, moving a punching tool adjacent a predetermined point on the respective sides of an individual turn as it is rotatably driven through a curved path by the arbor, passing the punching tool and the individual turn concurrently through said curved path at the same speed and in the same direction while punching the turn at the predetermined point by operation of the tool during such concurrent travel, and moving the tool away from the predetermined point after the turn has been punched.

3,283,400

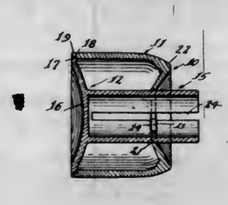
METHOD OF PRODUCING A HEAVY DUTY DOOR KNOB ASSEMBLY

William B. Wilson, La Habra, Calif., assignor to Robert H. Miller and F. Louis Behrends, Peoria, Ill., joint tenants, with right of survivorship

Filed Oct. 28, 1963, Ser. No. 319,253

9 Claims. (Cl. 29—161)

1. The method of forming a heavy duty knob of two parts one of which consists of a cup-shaped, one-piece knob part having an opening at its outer end, a cylindrical body and a reduced opening at its inner end, the other part consisting of an end cap providing a closure for the open outer end of said knob part and an integral inwardly extending tubular part projecting through said knob part, comprising the steps of forming each part by high energy impact on a heavy duty press between a female die and a male die and an ejector telescopically arranged in said male die, said dies for forming said knob part when separated receiving a slug of metal therebetween, high energy impacting the metal and extruding the metal between said dies to form a cup-shaped knob part having an enlarged open end, a cylindrical body with a



reduced closed end, high energy impacting another slug of metal between a female die and a male die and an ejector telescopically arranged and extruding the metal between said dies to form an end cap for the knob and an integral tubular extension, providing an opening in the reduced closed end of the cup-shaped knob part, and assembling the two parts with the end ca pproviding a closure for the opening in the outer end of the knob part and the tubular extension projecting through the opening formed in the reduced closed end.

3,283,401

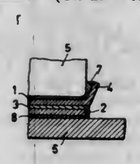
METHOD OF CONNECTING OBJECTS MADE OF MATERIALS HAVING DIFFERENT THERMAL COEFFICIENTS OF EXPANSION BY MEANS OF A THERMOSETTING GLUE WITH THE USE OF AN AUXILIARY PIECE

Hermanus Stephanus Josephus Pijls, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Nov. 13, 1963, Ser. No. 323,317

Claims priority, application Netherlands, Nov. 22, 1962, 285,841

4 Claims. (Cl. 29—470)

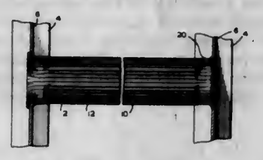


1. In the method of joining together objects of different coefficients of expansion with a thermosetting glue the improvement which comprises interposing between each two of said objects an auxiliary member shaped to fit the abutting contours of the adjacent objects, said member comprising a thin inner sheet of a metal capable of starting to creep when subjected to the forces generated by the cooling of the thermosetting glue and two thin outer metal sheets, of a metal other than that of the inner sheet, in contact with said inner sheet, the outer surfaces of said outer sheets being in contact with the glue.

3,283,402
METHODS FOR FABRICATING LIGHTWEIGHT METAL LADDERS

Clayton E. Larson, Weston, Conn., assignor to White Metal Rolling & Stamping Corporation, Brooklyn, N.Y., a corporation of New York

Filed Aug. 23, 1963, Ser. No. 304,196
3 Claims. (Cl. 29—512)



1. The method of making a lightweight metal ladder comprising the steps of:

(A) providing a hollow corrugated ladder rung by:
- (a) extruding a metal tube through a corrugated annular die;
- (b) necking the ends of said tube to form shoulders between the tubular portion and the necked portions thereof, and tapering the neck portions outwardly to provide frusto conical plugs of decreasing diameter outward of said shoulders;

(B) providing ladder side rails by:
- (a) forming thin metal channels having flat web portions thereto;
- (b) puncturing the web of said rails to form apertures at equally spaced intervals therealong;
- (c) simultaneously cupping the periphery of said apertures to form normally extending flanges substantially equal in inner diameter to the average diameter of said plugs;
- (d) simultaneously forming rung-serration matching serrations on the inner surface of said flanges; and

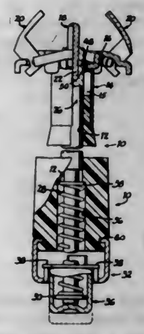
(C) assembling said ladder by:
- (a) forcing the plugs of said rung into the flanged sides of the apertures on said side rails until said shoulders bottom against the ends of said flanges to elastically deform said flanges and said plugs and thereby forming tight interference fits therebetween; and
- (b) expanding the outer ends of said plugs to conform to the surfaces of said flange and said web portion to fix said rungs and said side rails firmly together.

3,283,403
SAFETY RAZOR

Arthur E. Chambers, 21370 Knudsen, Grosse Ile, Mich.

Filed Apr. 21, 1964, Ser. No. 361,414
4 Claims. (Cl. 30—60.5)

1. In a safety razor having an elongate handle, a blade supporting guard fixedly secured to one end of said handle, a spider cooperatively associated with said guard and supported for movement longitudinally of said handle, blade caps carried by said spider and engageable with said guard for movement between a closed blade clamping relationship with said guard, a partially opened blade cleaning position and a fully opened blade changing position in accordance with the longitudinal position of said spider relative to said handle, and actuating means for positioning said spider in any of three distinct longitudinal positions relative to said handle respectively corresponding to the three positions of said blade caps; the improvement wherein said actuating means comprises means defining a longitudinal bore extending through said handle, a hollow end cap mounted upon and projecting from the end of said handle remote from said guard, said end cap having a bottom wall thereon in spaced opposed relationship to said remote end of said handle and having a circular opening therethrough coaxial with said bore, a button rotatably and slidably received within said circular opening in said bottom wall and projecting outwardly beyond said bottom wall, said button having opposed ears thereon projecting radially outwardly into overlying relationship with the interior of said bottom wall to retain said button in said end cap, an elongate actuating rod slidably received within said bore, said rod having one end fixedly secured to said spider and having its other end seated against said button, spring means in said handle resiliently biasing said rod against said button, a first pair of diametrically



opposed abutments in said end cap at the sides of said circular opening, a second pair of diametrically opposed abutments at opposite sides of said circular openings, said second abutments extending longitudinally from said bottom wall toward said remote end of said handle by a distance greater than the corresponding longitudinal extent of said first abutments and being angularly offset therefrom, said bottom wall, said first abutments and said second abutments being selectively engageable with the ears of said button to establish three longitudinally spaced positions of said button and said rod relative to said handle corresponding respectively to the clamping, cleaning and blade positions of said blade caps.

3,283,404
WIRE STRIPPER AND CUTTER WITH GEAR-FORM WHEEL ELEMENT TO VARY CLOSING POSITIONS AND TO IMMOBILIZE JAWS

Walter A. Hickman, Hamden, Conn., assignor to General Hardware Mfg. Co., Inc., New York, N.Y., a corporation of New York

Filed Sept. 23, 1965, Ser. No. 489,676
4 Claims. (Cl. 30—91.2)



1. In a tool for stripping the insulation off wires and for cutting wires, comprising two pivotally connected parts, each having a shear blade at one end and a handle at the other end; said blades and handles being at corresponding ends of said parts; each blade having a notch in its cutting edge; said blades cooperating as a sheer; said

notches forming a hole upon movement of said handles towards each other, and a spring biasing said parts to move said handles and shear blades apart whereby said notches are apart, the improvement consisting of a wheel element of gear-form, frictionally rotatably mounted on one of said parts on an axis parallel to the axis of said pivotal connection, and a stop pin extending from the other of said parts, positioned to intercept the periphery of said gear-form and selectively fit into the peripheral radial notches of said gear-form, between the teeth of said gear-form upon movement of said handles towards each other; one of the teeth of said gear-form having a notch in one side edge thereof as an extension of the radial notch in said gear-form at said side edge whereby said one tooth is a hook-shape; said pin being adapted to fit into said notch extension and to enter same from said radial notch it is an extension of, and when in said extension notch, to maintain said parts against relative movement; the radial distances to the bottoms of the radial notches being respectively different; the radial distance to the bottom of the radial notch having said extension notch being one of the shortest of said distances; said handles being normally apart so that said wheel can be turned to position any chosen of its radial notches to be entered into by said pin upon movement of the handles towards each other.

3,283,405
INSIDE PIPE CUTTING TOOL

Samuel P. Braswell, P.O. Box 146, Harvey, La.

Filed Feb. 5, 1964, Ser. No. 342,614
3 Claims. (Cl. 30—103)

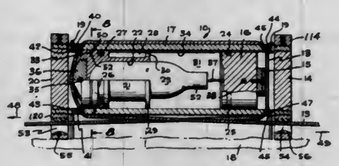


1. A cutter member adapted to be used in an inside pipe cutter having a mandrel, cutter members carried on said mandrel and extending partially circumferentially thereof and disposed for movement in a plane substantially perpendicular to the axis of said mandrel, pivot means extending substantially parallel to the axis of the mandrel for pivotally connecting said cutter members to said mandrel, expander means for pivoting said cutter members laterally outwardly relative to said mandrel into engagement with the inner periphery of the pipe for cutting the pipe upon axial rotation of said mandrel, and means for positioning said cutter members at the desired elevation in the pipe, comprising:
- (a) an elongate body having an arcuate convex external surface and having a pivot opening at one end thereof,
- (b) said body having longitudinally extending upper and lower edges on said convex surface,
- (c) a plurality of cutter elements secured in a plurality of diagonally spaced rows on said arcuate convex surface,
- (d) said rows extending between said upper and lower edges and at an angle relative to the longitudinal axis of said body,
- (e) said cutter elements projecting laterally outwardly from said arcuate convex surface for cutting engagement with the inside of a pipe, and
- (f) said cutter elements in each row being disposed substantially adjacent to each other to define channels between each row for the flow of drilling mud or cuttings cut by the cutter elements.

3,283,406
TIME-CONTROLLED TRIGGERING APPARATUS RESPONSIVE TO THE TAUTENING OF A FLEXIBLE MEMBER

Maurice C. Varin, 4120½ W. 161st St., Lawndale, Calif., and Harry E. Elliott, 1963 Rosemary, Costa Mesa, Calif.

Filed July 27, 1964, Ser. No. 385,324
6 Claims. (Cl. 30—180)



1. In a time-controlled parachute releasing device, a combination including: a cylinder; a first piston axially movable within said cylinder from a rest position to a discharging position and having (*a*) an axial cavity therein extending inwardly from one end of the piston for nesting the butt end of a gas cartridge having a sealed neck, and (*b*) an annular peripheral recess for nesting a sealing O-ring; a second piston axially movable within said cylinder and having (*a*) a pin extending axially therefrom toward said first piston, and (*b*) an annular peripheral recess around its periphery for nesting a sealing O-ring; O-rings nesting in said peripheral recesses and engaging the inner walls of said cylinder; said cylinder having a pair of substantially diametrically opposed openings therein located on opposite sides of said first piston between the piston's two ends as they are disposed when said first piston is in said rest position, one of said openings permitting a cord to enter the cylinder therethrough and to extend around the closed end of the first piston and thence through the other opening whereby tension on the cord will exert a force on said end of said first piston to move it from said rest position to said discharging position in which the sealed neck of such cartridge as may be nesting in said first piston will be pierced by said pin, thereby releasing the gas from said cartridge into the region between said O-rings, the pressure of the gas in said region acting to move said second piston.

3,283,407
RECIPROCATING KNIFE

Donald V. Bacon, 6017 Gateway Green, Madison, Wis.

Filed Nov. 16, 1964, Ser. No. 411,270
6 Claims. (Cl. 30—272)

1. A reciprocating knife comprising:

an elongated blade having a sharpened cutting edge and a shaped central opening adjacent the rear end of said blade;

blade guide means surrounding said blade rear end and providing a track for reciprocating movement of said blade;

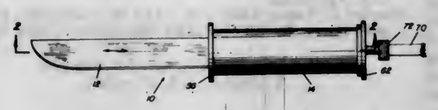
said blade guide means having aperture means therein with said aperture means being juxtaposed in alignment to said blade opening;

a blade drive means including an elongated drive shaft having a central axis and a cam plate surrounding said shaft and being disposed at an angle to said central axis;

means rotatably mounting said blade drive means adjacent said blade guide means with said cam plate projecting through said aperture means and into said blade opening; and

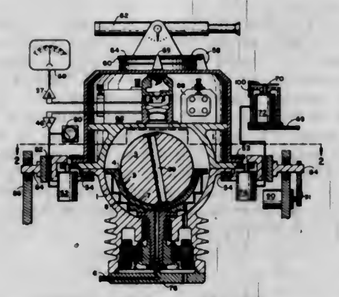
handle casing means surrounding said blade guide means and said blade drive means to provide a gripping surface permitting an operator to hold said knife;

said handle casing means having a casing opening adjacent one end thereof;



said drive shaft extending at least partially into said casing opening and being adapted for connection with a flexible driving cable coupled to a suitable power source remote from said casing means whereby operation of said power source imparts a rotational movement to said driving cable and in turn to said drive shaft, with said drive shaft rotational movement being converted to an alternating translational movement of said blade by means of the cooperative connection formed by said cam plate and said blade opening.

3,283,408
MERIDIAN AND LATITUDE INDICATOR
Heinrich Carl Rothe, Fritz Kurt Mueller, Wilhelm Ernst Rothe, and Aaron George Loughead, all of Huntsville, Ala., assignors to Astro-Space Laboratories, Inc., Huntsville, Ala.
Filed Feb. 13, 1962, Ser. No. 172,949
19 Claims. (Cl. 33—72)



1. A direction-indicating gyroscopic instrument comprising:

a support;

a rotary frame on said support, rotatably mounted about a vertical axis, and having passage means for conducting pressurized gas to one of its surfaces and a direction-indicating datum means;

means for maintaining the rotary axis of said frame in a vertical position and preventing jostling of the frame when said support is shaken comprising a pair of orthogonally arranged horizontal-axis bearings, providing for pivoting of the frame on said support about perpendicular axes, a motor at each of said bearings, gearing drivably connecting said motor to the frame for turning it on one of said bearings, and level-sensitive means for controlling said motors;

a cupshaped rotary element, having an upper concave surface, mounted on said frame for rotation about said vertical axis, having a plurality of balancedly spaced holes debouching on said concave surfaces and means for conducting pressurized gas from said passage means to said holes, whereby a gaseous bearing film is provided on the concave surface;

a motor balancedly mounted on said frame below said concave surface;

power-transmission means between said motor and rotary element:

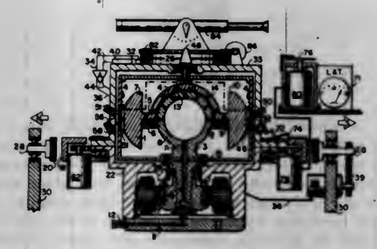
a single, balanced, substantially spherical, gyroscopic rotor freely mounted on said gaseous film and concave surface, rotated by said film at the speed of said motor after it has run a while, having an axis that continually lags relatively to said vertical axis and forms an angle with this axis in the east-west, vertical plane that changes with changing latitude and in all locations other than one of the earth's poles is proportional to the latitude of the instrument;

radiant energy reflecting means on said rotor;

means on said frame for directing a beam of radiant energy to said reflecting means and receiving from it reflected energy;

motive means, controlled by said reflected energy, connected to said support and to said frame, for rotating the frame about said vertical axis and thus returning said datum means to its direction-indicating position when said support and frame have been rotated relatively to the east-west vertical plane.

3,283,409
GYROSCOPIC INDICATING DEVICE
Heinrich Carl Rothe, Fritz Kurt Mueller, Wilhelm Ernst Rothe, and Robert Cherry Martin, Huntsville, Ala., and Alvin Edward Moore, Waveland, Miss., assignors to Astro-Space Laboratories, Inc., Huntsville, Ala.
Filed Sept. 12, 1962, Ser. No. 223,050
17 Claims. (Cl. 33—72)



16. An instrument comprising:

a support;

a frame, rotatably mounted on said support, and having a north-south datum line;

a gyroscope, supported by said frame, comprising: a rotary element, having a vertical axis of rotation and an external, convex, spherical surface; a rotor having an internal, concave, spherical surface; and means providing a gaseous-film bearing between said spherical surfaces; said rotor having a spin axis that is inclined to the vertical in the east-west plane forming a latitude-indicating lag angle that is free to change in size with changing latitude;

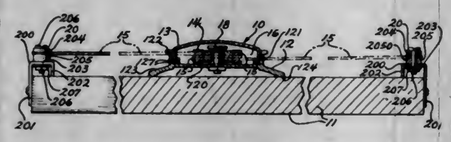
position-sensing means, connected to said frame, for sensing and supplying a signal of any azimuthal rotation of said frame relative to said east-west plane;

means for rotating said frame until said signal is zero, when said north-south datum line is properly oriented; and

a theodolite, supported by said frame, comprising: a sighting device; means for rotating said sighting device for obtaining a line of sight on an object; and means for indicating the bearing of said line of sight, comprising two parts, one of said parts being attached to said frame, and the other being connected to and rotatable with said sighting device.

17. A gyroscopic instrument comprising: a housing; a driving element, rotating on an axis that is fixed relative to said housing; a gyroscopic rotor, having a bearing on said driving element that permits tilting motion between said rotor and housing; and means to indicate said tilting motion, comprising means to provide light within said housing, a peripheral rim on said rotor providing an endless series of connected plane surfaces comprising material for reflecting said light; and means permitting exit from said housing of light reflected from said material.

3,283,410
STRAIGHT EDGES FOR DRAFTING BOARDS AND THE LIKE
John A. Truhon, 16514 Blackstone, Detroit, Mich.
Filed Jan. 27, 1965, Ser. No. 428,415
1 Claim. (Cl. 33—80)



A straight edge for drafting boards useable with conventional guide cord means anchored at the corners of the drafting board and extending along said straight edge and in engagement with pulley means located adjacent each end thereof providing parallel movement of said straight edge on said drafting board comprising

an extruded and anodized aluminum U-shaped main straight edge element including a base and a pair of upwardly disposed hand grip elements extending the sides of said base,

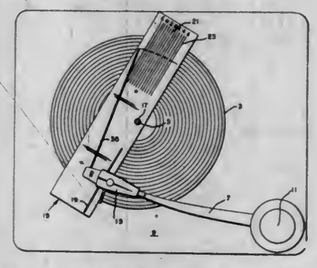
the base of said main straight edge element including downwardly and outwardly disposed runners therealong extending from said base and terminating in narrow lower continuous shoes,

a formed arched cover member consisting of a flat arch and downwardly and slightly outwardly disposed abutments sprung into releasable frictional engagement with the inner surface of said hand grip rails forming a tunnel along the top of said straight edge,

a pair of vertically disposed ribs along the top of said base of said straight edge element spaced laterally inwardly from said hand grip rails a distance substantially equal to the thickness of said cover abutments releasably holding the lower portion of said abutments firmly against said hand grip rails whereto to cause said main straight edge element and said cover member to function as a unitary whole in resisting torsional and flexural stresses when handling said straight edge, and

pulleys within said tunnel journaled on vertically disposed shafts extending upwardly from said base adjacent the ends thereof engaged by said guide cord means and directing the same freely through said tunnel.

3,283,411
TRACKING ERROR MEASURING DEVICE
Alan A. Steward, Somerset, Calif.
Filed Aug. 27, 1964, Ser. No. 392,523
1 Claim. (Cl. 33—180)



A device for measuring tracking error and locating optimum pivot point placement of a phonograph tone arm comprising in combination:

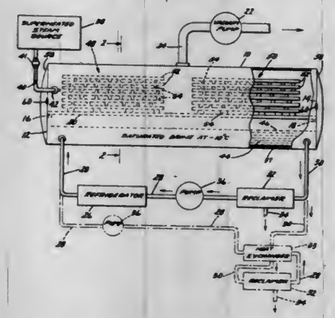
(a) a scale member having a hole therein adapted to be placed over the spindle of a phonograph;

(b) a groove in one end of said member, said groove being in alignment with said hole;

(c) indicia at the opposite end of said member; and,

(d) a member attached to the tone arm of the phonograph, said member having a downwardly extending pin adapted to slide in the groove of the first member and an outwardly extending pointer, said pointer being adapted to move over the indicia of the first member.

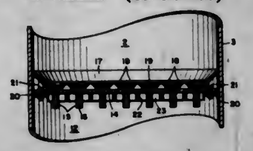
3,283,412
PROCESS AND APPARATUS FOR DRYING AND TREATING LUMBER
Philo T. Farnsworth, Fort Wayne, Ind., assignor of one-half interest to Frederick R. Furth, Cornwall Bridge, Conn.
Filed Sept. 9, 1964, Ser. No. 395,250
15 Claims. (Cl. 34—5)



1. Apparatus for drying lumber comprising a sealed chamber, water-vapor absorber in said chamber, a support mounted in said chamber for supporting and bearing the weight of a stack of lumber to be dried, means connected to said chamber for reducing the gas pressure therein to a predetermined value, means for cooling said absorber and for maintaining the same at a temperature below the temperature of lumber placed in said chamber, means for removing water from said absorber so as to maintain the concentration thereof relatively constant, said pressure-reducing means having a capacity and said absorber being maintained at a temperature that moisture in green lumber is vaporized at a rate sufficient

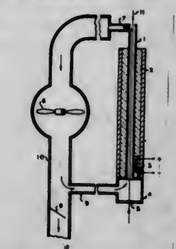
to lower the temperature at the surface of the lumber to a point at which ice crystals are formed, means for heating the lumber surface and subliming the ice crystals, said heating means being related to said pressure-reducing means and the temperature of said absorber that said lumber is never cooled throughout the mass thereof to the temperature of said absorber and that only the lumber surface is cooled enough to form ice crystals.

3,283,413
REACTION VESSEL WITH A GRID
Francis Xavier Mayer, Baton Rouge, La., and Ivan Mayer, Summit, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed July 22, 1963, Ser. No. 296,529
6 Claims. (Cl. 34—57)



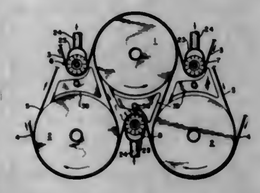
1. In a reaction vessel having a grid mounted across an enclosing wall, the wall defining a passageway for a high velocity ascending gas which passes through the grid and into contact with a finely divided solids material to form a fluidized solids bed, said grid being constituted of a flat plate having evenly spaced orifice openings and, attached to the bottom of said plate at the orifice openings, jet nozzles each having a cylindrical bore therethrough, the bore of each jet nozzle communicating with an orifice opening and each being provided with a straight run portion the length of which ranges from about 10 to about 40 times the inside diameter of said cylindrical bore, the improvement comprising an assembly of ridges integral with said flat grid plate, each being inclined to the horizontal of an opening at from about 30° to about 80° and forming around each of said orifice openings inverted pyramidal shaped areas each sloping downwardly into an orifice opening.

3,283,414
THERMAL TREATMENT OF SYNTHETIC TEXTILES
Henri Crouzet, Loire, France, assignor to Moulinage et Retorderie de Chavanoz, Chavanoz, France, a French body corporate
Filed Mar. 4, 1964, Ser. No. 349,370
4 Claims. (Cl. 34—77)



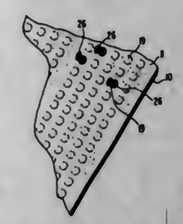
1. Apparatus for recovering the vapors evolved in the high temperature treatment of textile filaments containing volatile oils comprising a heating tube through which said filaments pass having means for heating said filaments to a temperature to vaporize at least a portion of the oil carried thereby, a pressure chamber disposed at the inlet end of said tube and adapted to carry air under pressure to cause circulation thereof through said tube to the discharge end thereof, a condenser means connected to the discharge end of said heating tube, means causing circulation of air from said pressure chamber through said heating tube and through said condenser means for removing and condensing the vapors from said heating tube, and means recirculating a portion of the air from said condenser means to said pressure chamber.

3,283,415
PAPER DRYING APPARATUS
Auxilius P. Schnyder, 146 Cherry Lane, Teaneck, N.J.
Filed Apr. 14, 1964, Ser. No. 359,682
2 Claims. (Cl. 34—111)



1. In paper drying apparatus having a multiplicity of cylinder units consisting of one upper cylinder, two lower cylinders in a triangular spaced relation with the upper cylinder and with means for passing paper over the cylinders and drying felt over the paper on the cylinders, two open grillage felt drying rollers one on each side of the upper cylinder and an open grillage felt drying roller between the two lower cylinders, the improvement which comprises a hood extending lengthwise of each open grillage roller provided with means to force hot air through the open grillage roller and the overlying felt, an exhaust conduit supported in the space between the two lower cylinders and the upper cylinder and extending lengthwise thereof, said conduit having an opening extending lengthwise for the transverse entry of moisture laden air from the drying felt and moisture laden air from between the adjacent runs of paper web passing adjacent the exhaust conduit, said openings being of a size to prevent shreds of paper being sucked into the conduit, a removable doctor blade bearing on the upper cylinder for scraping off lint and fibers which are removed by the exhaust conduit, and means to operate the exhaust conduit under reduced pressure.

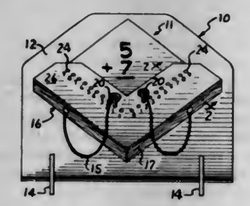
3,283,416
SELF-CORRECTING EXAMINATION SHEET
Thomas P. Taylor, R.D., Knoxville, Pa., and Laurence H. Snively, Mansfield, Pa.
Filed Sept. 9, 1964, Ser. No. 395,123
2 Claims. (Cl. 35—9)



1. A self-correcting examination device comprising in combination,
a relatively thin paper answer selection sheet member,
opaque answer selection areas on said answer selection sheet, said opaque answer selection areas being arrayed in vertical columns and horizontal rows,

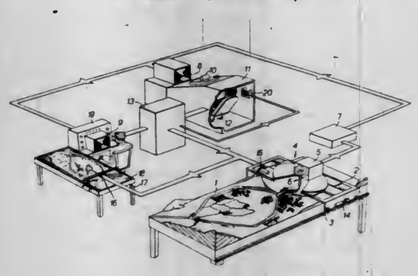
an answer code sheet member having arrayed thereon a plurality of answer tab areas corresponding in number and position to the number and position of the answer selection areas on said answer selection sheet and normally non-visible instructional indicia at said answer areas,
said answer code sheet being of heavier stock material than said answer selection sheet,
means adhesively laminating said thin answer selection sheet to the surface of said answer code sheet with the answer tab areas on said answer code sheet behind and in registry with the opaque answer selection areas on said answer selection sheet,
said answer tab areas on said answer code sheet being defined by a plurality of slits separated by at least one rupturable segment and by at least one non-rupturable segment,
said segments being integral with said answer code sheet,
said non-rupturable segment forming a hinge for said answer selection area of said second sheet,
whereby said answer tab areas on said answer code sheet swing on an arc about said hinges during the rupturing of the answer selection areas overlying same when a punch device punctures the answer selection area overlying same and the indicia at the answer tab area underlying the punctured answer selection area is viewable through the punctured answer selection area to a user of the device on removal of said punch device,
and said rupturable segments after rupturing are capable of frictionally retaining said answer tab area in the plane of said answer code sheet.

3,283,417
SELF-CORRECTING FACT CARD DEVICE
Donald Lohmar, Galesburg, Ill., assignor to Knox Educational Aids, Inc.
Filed Nov. 4, 1965, Ser. No. 506,318
2 Claims. (Cl. 35—9)



1. A teaching device comprising in combination a stack of generally square cards of uniform size and shape having indicia on the faces thereof representing questions to be answered, a support means having a support surface for receiving said stack of cards, means attached to said support surface for engaging at least a pair of adjacent marginal edges of said cards but less than all of said edges to permit each of said cards to be slidably removed from said support means in a common direction parallel to said support surface, said engaging means having means for overlying and concealing said adjacent marginal edge portions on the face of the uppermost card in said stack, said overlying means having at least one series of holes therein and indicia associated with each hole representing a choice of answers to the questions on each of the cards in said stack, each of said cards having at least one series of holes formed in one of said marginal edge portions thereof, said pair of adjacent marginal edges of said cards cooperating with said engaging means so that the holes in said cards are aligned with the holes in said overlying means when said stack of cards is initially inserted in said support means, at least one of said holes in each of said series in each of said cards having a slot joining said aligned hole representing the correct answer to the question on said card, said slot extending from said hole to the adjacent edge of said card and parallel to the common direction of sliding of said cards, and pin means for insertion into said aligned holes for selecting answers and permitting removal of a card from said stack after insertion of said pin means, only when said pin means is inserted in a hole in said series of holes having a slot associated therewith.

3,283,418
VEHICLE TRAINERS
Thomas Howard Brewer, Findon, Worthing, Sussex, and William Hilton, Ascot, England, assignors to Miles Electronics Limited, Sussex, England, a company of Great Britain
Filed Mar. 23, 1964, Ser. No. 353,981
9 Claims. (Cl. 35—11)



1. A vehicle simulator for training personnel in the use of an actual vehicle over a training ground comprising a scale model of the training ground; a television camera; an optical system coupled to said camera to guide thereto images of said model corresponding to the view a trainee would have from an actual vehicle travelling over ground represented by said model; means mounting said optical system and camera over said model; a vehicle driving compartment; vehicle steering and speed control members mounted in said driving compartment; transducer means providing electrical output signals in response to movement of said control members to represent direction and speed; a computer operable to produce positional and velocity signals derived from the electrical output signals produced by said transducer means; means to position said mounting means relative to said model under control of the positional and velocity signals; means for sensing the contours of said model over the path steered by said optical system; means coupled to said sensing means to provide electrical signals representing the model contours; means coupling said last mentioned means to said computer to modify the velocity signals therefrom in accordance with the model contours, and means coupled to said camera to present the images as seen by said optical system to a trainee driver seated in said driving compartment.

3,283,419
PAINTING PANEL FOR A PAINT-BY-NUMBER KIT
Herbert A. Tytel, Jericho, N.Y., assignor to The Art Award Co., Inc.
Filed Apr. 13, 1964, Ser. No. 359,232
6 Claims. (Cl. 35—26)

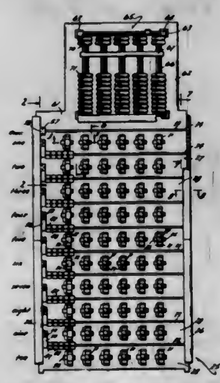
1. A painting panel for a paint-by-the-number kit, comprising a sheet of material having a soft, velvety surface, said velvety surface having a compressed debossed

area in the outline of the picture to be painted thereon, a smooth, liquid-impervious film disposed on said de-



bossed area, and painting guide lines and numbers printed on said film.

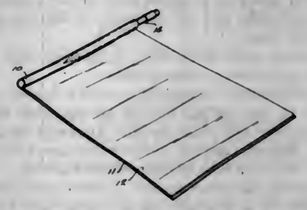
3,283,420
CALCULATOR
Andrew F. Schott, Rte. 1, Green Lake, Wis.
Filed Nov. 14, 1962, Ser. No. 237,593
13 Claims. (Cl. 35—31)



1. A calculator matrix for successively recording arithmetic notations in the course of calculating in a given system of numbers to the same base and comprising:
(a) a base,
(b) a plurality of indexable elements arranged on said base in a fixed pattern of columns and rows and in which the indexable elements in successive rows are related spatially to the elements in preceding rows to simulate written arithmetic notation as elements of successive rows are successively indexed in the course of calculating in said system of numbers,
(c) each of the indexable elements in the pattern having inscribed thereon identical sets of number notations in said given system of numbers to the same base,
(d) and means for mounting each such element on said base and on which each such element is individually indexable to dispose a selected number notation of said system in a sensible position in the position which said element occupies in said fixed pattern.

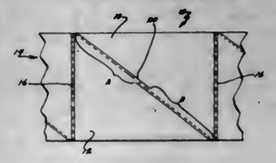
3,283,421
EDUCATIONAL WORKSHEET
Andrew F. Schott, Rte. 1, Green Lake, Wis.
Continuation of application Ser. No. 292,852, July 5, 1963. This application Oct. 30, 1964, Ser. No. 407,923
5 Claims. (Cl. 35—61)

1. In an educational worksheet for use with a text sheet, a one-piece legibly inscribable and erasable worksheet comprising a single sheet of plastic having an intermediate bend in the form of a pencil receiving tube, the plastic sheet portion at one side of the bend constituting a backboard for the text sheet and the plastic sheet portion at the other side of the bend constituting a transparent scribing top sheet overlying said text sheet, the backboard,



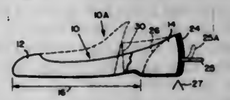
and scribing top sheet being substantially coextensive in area and being disposed in juxtaposed parallel planes, said tube being tensioned to frictionally engage the top sheet against the text sheet and backboard.

3,283,422
DISPOSABLE OVERSHOE
Meri K. Nygard, 2455 California Ave., Muskegon, Mich.
Filed May 21, 1964, Ser. No. 369,245
4 Claims. (Cl. 36—1)



1. A package of separably attached disposable overshoes, comprising: a generally oblate tubular length of sheet material; transverse seams extending across said length of material substantially perpendicular to the sides thereof and dividing the same into a plurality of discrete rectangularly shaped portions; an obliquely excrusive seam extending generally diagonally across each of said portions dividing the same into a pair of generally right triangular hollow envelopes; each of said envelopes having a pair of substantially perpendicular edges formed by a side of said tubular length and one of said transverse seams and providing the bottom and rear of an overshoe and each triangular envelope also having a hypotenuse edge formed by said excrusive seam and providing the instep of said overshoe; and an opening formed in the said instep portion of each of said envelopes, for receiving the foot of a wearer.

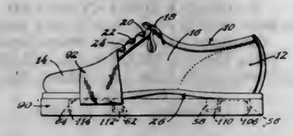
3,283,423
OVERSHOE
John R. Schovee, Pittsford, N.Y., assignor of fifteen percent to Paul J. Miller
Filed Mar. 18, 1964, Ser. No. 352,749
14 Claims. (Cl. 36—7.3)



1. In an overshoe:
(a) a heel portion being movable from a normally closed position to an open heel receiving position and being of sufficient rigidity to receive the heel of a corresponding shoe when said overshoe is actuated to a said open position by the hereinafter claimed actuating means; and

(b) actuating means extending outside said overshoe and adapted for actuation outside said overshoe and being coactive with said heel portion for actuation of said overshoe to said open position adapted to receive or remove the heel of said shoe when the toe of said shoe is received in said overshoe.

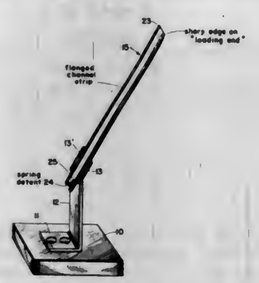
3,283,424
BASEBALL SPIKE GUARD
Bernard J. Struntz, 1002 Woodbridge Ave., St. Paul, Minn.
Filed Feb. 13, 1964, Ser. No. 344,643
3 Claims. (Cl. 36—7.5)



1. A baseball shoe spike guard in combination with a baseball shoe having spikes comprising:
(a) a flexible spike guard sole member having substantially parallel upper and lower surfaces and an outer peripheral edge adapted to generally correspond to the outer peripheral edge of the baseball shoe to which it is adapted to be secured,
(b) said sole member being compressible and being comprised of compressible, resilient material adapted to flex and compress substantially in relation to the weight and foot movements of the weight and foot movements of the wearer of the baseball shoe,
(c) said baseball shoe having a shoe sole,
(d) spike plates having spikes extending therefrom secured to said shoe sole,
(e) said spike guard sole member having preformed spike plate recesses and spike wells in its upper face corresponding in shape to the shape of said spike plate and spikes and registrable therewith, the outline of said spike plate recesses fitting snugly about the edges of their corresponding spike plates,
(f) said spike plate recesses being of a depth substantially equal to the thickness of said spike plates,
(g) said spike wells being of a depth substantially greater than the length of said spikes,
(h) whereby when a player wearing said spike guard places his weight on one foot, said compressible spike guard sole material is compressed to a point where the ends of said spikes terminate short of the ends of said spike wells, and
(i) whereby when said player's weight is shifted from said one foot to the player's other foot, said resilient compressible sole member urges said ends of said spike wells away from said spike ends, and thereby creates a partial vacuum in said spike plate recesses and spike wells to hold said spike guard sole member in position on said shoe sole, and
(j) strap means secured in overlying relation to said spike guard sole member adapted to overlie the upper portion of said baseball shoe.

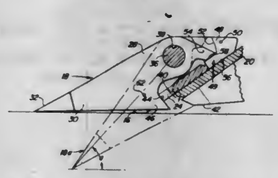
3,283,425
DEVICE FOR COLLECTING, HOLDING AND DISPENSING FLANGED PRIMERS
Charles J. Boyd, Rte. 2, Box 336, Santa Fe, N. Mex. 87501
Filed Feb. 23, 1965, Ser. No. 434,389
3 Claims. (Cl. 86—45)

1. A device for collecting, holding and dispensing flanged primers for shotgun shells, which device comprises,
(a) a base provided with a holder for a flanged channel strip,
(b) a flanged channel strip removably held by said holder,
(c) the strip flanges on said channel strip being spaced from the back thereof by a distance greater than the thickness of the primer flanges, but not great enough to permit a primer to fall out of the flanged channel strip,
(d) the free edges of the strip flanges being spaced from each other a distance greater than the diameter of the primers, but not great enough to permit a primer to fall out of the channel strip,
(e) a movable detent adjacent the lower edge of the channel strip for holding the primers in the flanged



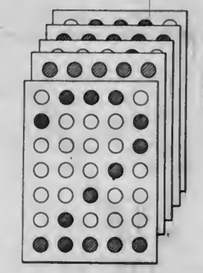
channel strip and permitting one primer to be removed at a time, and
(f) thin flange edges at the upper end of the channel strip to permit said strip to slide freely over a row of primer flanges for picking primers out of a container thereof, said detent being a spring operating in a slot at the lower end of the channel strip, which slot is aligned with a slot in the holder, said spring being held by a protuberance on the bottom of the channel strip which protuberance limits the movement of the strip on the holder, and the slot in the holder providing for the adjustment of pressure exerted by edges of the holder against edges of the channel strip.

3,283,426
RIPPING TOOTH FOR EARTH-SCRAPING BLADES
Morris R. Payne, Rte. 1, Box 424, Warrenton, Oreg.
Filed Nov. 19, 1964, Ser. No. 412,488
11 Claims. (Cl. 37—145)



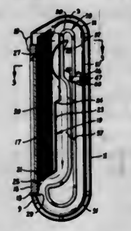
1. In an earth-moving apparatus having an earth-scraping blade structure with a lower blade portion having a leading lower cutting edge,
a ripping tooth pivoted to the forwardly facing surface of said lower blade portion and having a leading end extending in a forward direction from the pivotal axis of said tooth,
said tooth being freely pivotable from a raised position wherein said leading end is at least at substantially the same level as said cutting edge to a lowered limit position wherein said leading end is disposed below said cutting edge and forwardly of said pivotal axis.

3,283,427
METHOD AND APPARATUS FOR CONSTRUCTION OF AN ELECTROMAGNETICALLY OPERATED SIGN
Donald Winrow, Downsview, Ontario, Canada, assignor to Ferranti-Packard Electric Limited, Toronto, Ontario, Canada
Filed Oct. 29, 1964, Ser. No. 407,427
Claims priority, application Canada, Nov. 13, 1963, 888,894
8 Claims. (Cl. 40—28)



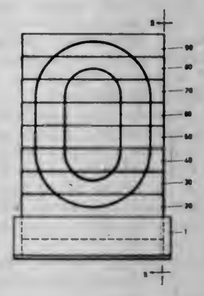
1. In the construction of a sign made up of an array of individual, reversible, indicia-forming elements, contrastingly coloured on reverse sides, each controllable by the poles of an electromagnet, a plurality of wires for energization of said electromagnets, each wire corresponding to a desired pattern for the array, the method, of providing for the selective energization by each wire of said electromagnets comprising; providing a bight in each wire, whereby in the two strands of said wire on either side of said bight current travelling therein would be travelling in opposed directions, locating said bights in approximate alignment, selecting a given electromagnet for controlling a predetermined element in an array, selectively but concurrently displacing one strand of each of said wires in one direction, and the other strand of each of said wires in the other direction, said selection being chosen in the case of each wire to provide the desired polarity for each electromagnet to produce the pattern corresponding to the wire, gathering the strands of wires oriented in one of said directions and locating them on one side of at least one extent of said electromagnet and locating the other set of wires on the opposite side of said at least one extent.

3,283,428
MULTIPOSTER
Lafayette Chace Grover, 582 Market St., San Francisco, Calif.
Filed Aug. 17, 1964, Ser. No. 389,861
2 Claims. (Cl. 40—36)



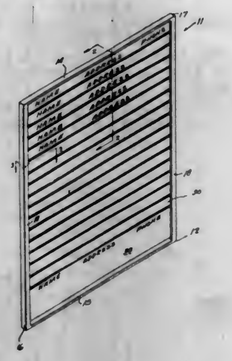
1. An advertising display device comprising in combination:
(a) a holder for a plurality of individual display cards;
(b) a transparent window whereby the foremost card of a plurality of cards in said holder is visible;
(c) an endless, oval track located in back of said holder;
(d) means for driving a shaft over said track;
(e) said shaft having a non-skid surface thereon, whereby said shaft will propel a card when brought into contact with said card; and,
(f) means whereby said shaft will engage the foremost card from a plurality of cards in the holder and will transfer said card from the front to the back of said plurality of cards.

3,283,429
VARIABLE DISPLAY BOARD
Theo Stutz, Zollikerberg, Switzerland, assignor to Contraves AG, Zurich, Switzerland
Filed May 18, 1964, Ser. No. 368,180
Claims priority, application Switzerland, May 16, 1963, 6,159/63
14 Claims. (Cl. 40—65)



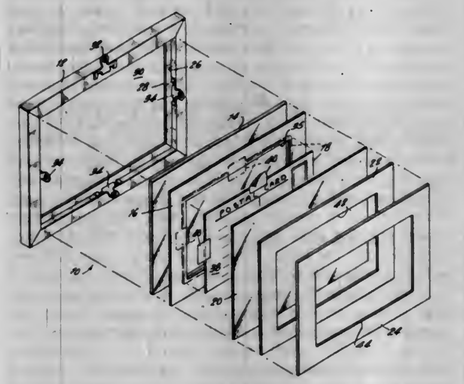
1. A variable display board for selectively displaying different units of information, comprising, in combination, frame means having a principal plane and a front side and a rear side relative thereto; information storing means movably mounted in said frame and including for each unit of information to be stored a series of a predetermined number of elongated display plate elements extending parallel with each other and substantially parallel with said plane and partly overlapping one another, respectively, in transverse direction, the forwardly facing exposed parallel surface portions of said series of plate elements being adapted to carry respectively consecutive parallel strip elements of such unit of information so that the composite entire forwardly facing exposed surface area of said series of plate elements carries a complete unit of information, a plurality of such series of plate elements being arranged in said frame relative to each other in such a manner that of all said series of plate elements those elements which have the same sequential order position within the respective series are in normal position superimposed over each other so as to form a stack whereby only said forwardly exposed surface portions of the foremost series of plate elements in said stack and a unit of information carried thereon is visible, said different series of plate elements being shiftable from said normal position thereof to a transversely displaced position in which only the forwardly exposed surface portions of one selected one of said series of plate elements and a unit of information carried thereon is visible; and actuating means in said frame for shifting at least any selected one of said series of plate elements and all the series of plate elements located behind said selected one from said normal position thereof to said transversely displaced position.

3,283,430
STRIP HOLDER FOR INDEX BOARD
Raymond G. Hentig, 2061 Coit NE., Grand Rapids, Mich.
Filed Jan. 8, 1965, Ser. No. 424,296
5 Claims. (Cl. 40—124)



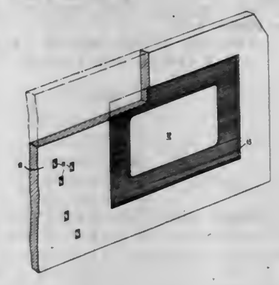
1. A visible record device comprising a rigid board having a bottom flange, side walls, and opposing inturned flange elements on said side walls, and a plurality of horizontally extending strip carriers engaged against said board, each strip carrier comprising a horizontally elongated plate-like main body having its ends received behind said inturned flange elements, each strip carrier being integrally formed with a thickened lower portion having a surface diverging upwardly relative to its plate-like main body and engaged against the board, whereby to hold the plate-like main body in an upwardly and forwardly inclined position, the strip carriers being mounted on the board in horizontally overlapping relationship with each thickened lower portion received between the board and the plate-like main body of the subjacent strip carrier and being adapted to receive record strips therebetween with the upper marginal portions of said record strips exposed.

3,283,431
PICTURE FRAME ASSEMBLY
Benjamin J. Pearlman, 705 E. 80th St., Brooklyn, N.Y.
Filed Oct. 7, 1964, Ser. No. 402,076
1 Claim. (Cl. 40—152)



A picture frame assembly comprising a picture frame parent panel mounted in said recess to close said openings, a first mat mounted in said recess, the front surface of said mat being in abutment with the rear surface of said first panel, a flat article secured to the rear surface of said mat so that the front surface of said article is visible through said first panel, a second transparent panel mounted in said recess in abutment with the rear surface of said article, a second mat mounted in said recess in abutment with the rear surface of said second panel, a plurality of retainer devices mounted by said frame and in abutment with the rear surface of said second mat, and a sheet material member secured to the rear surface of said frame and the rear surface of said second mat, said sheet material member having a cut-out through which the rear surface of said article is visible through said second panel.

3,283,432
FILM RECORD CARDS AND METHOD FOR MAKING SAME
Ernest P. Kollar, Vestal, and Donald W. Chandler, Binghamton, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 23, 1964, Ser. No. 377,211
9 Claims. (Cl. 40—158)

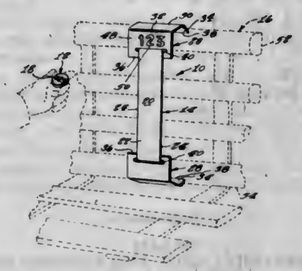


1. A record card for use in film record card systems comprising:
a card having a predetermined area which is to be apertured out;
a trench formed in one face of the card and surrounding said predetermined area;
a series of interrupted elongated slits disposed around the bottom of said trench; and
a polymer substance filling said trench and elongated slits to provide a T-shaped recessed frame to which a film insert may be bonded after aperturing out said predetermined area.

3,283,433
SEAT RESERVATION MARKER DEVICE
Nicholas A. Navarino, 345 Adolphus Ave., Cliffside, N.J.
Filed June 3, 1964, Ser. No. 372,337
4 Claims. (Cl. 40—320)

1. In a seat reservation marker device, the combination of a conveniently transportable purse or pocket element carrying an identifying number, said transportable element comprising a disc having flat opposite sides bounded by a circular peripheral edge, one of said sides carrying said identifying number, and separately a seat element attachable to a bleacher seat, said seat element including a stretchable central part bounded on each of two opposite ends by clamping means for attachment across said bleacher seat, said clamping means comprising a clamp formed from flat material having a pair of parallel bends to form a hook at one end, the end opposite said hook end having a slot adjacent thereto for

attachment therein of said stretchable central part, and said seat element carrying an identifying number which



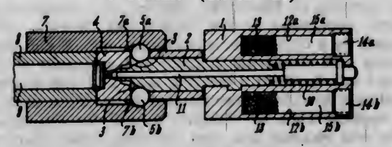
corresponds to the said number on said transportable element associated therewith.

3,283,434
METHOD AND APPARATUS FOR MOUNTING PHOTOGRAPHIC TRANSPARENCIES
Lawrence R. Gurin, 21 St. Marks Place, Mount Kisco, N.Y., and Theodore Adler, 280 Mamaroneck Ave., White Plains, N.Y.
Filed Jan. 2, 1964, Ser. No. 335,008
2 Claims. (Cl. 40—158)



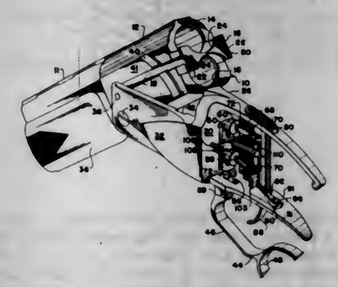
1. Apparatus particularly adapted to mount photographic transparencies for purposes of visual observation, said apparatus comprising, in combination, a base comprising, in turn, a layer of transparent material, and another layer comprising a plurality of strips having a plurality of shallow recesses positioned generally longitudinally thereof; proposed shallow recesses presenting apertures corresponding generally to one-half the quantity of said recesses, enabling photographic transparencies, corresponding in number to the said apertures, to be disposed in visual operative association therewith; and a cover comprising, in turn, a layer of transparent material; said base and said cover being particularly adapted to be disposed in a juxtaposed face-to-face relationship with respect to one another, enabling the complete protection of said plurality of photographic transparencies from fingerprints, during the mounting thereof and subsequent thereto, abrasions, the atmosphere, and the like.

3,283,435
BREECH CLOSURE
Theodor Koch, Oberndorf, Germany, assignor to Heckler & Koch G.m.b.H., Oberndorf, Germany
Filed Oct. 27, 1964, Ser. No. 406,717
Claims priority, application Germany, Oct. 30, 1963, H 50,687
5 Claims. (Cl. 42—16)



1. Automatic firearm comprising a breech provided with a supplementary mass, characterized in that said supplementary mass is formed by a number of individual parts in mutual frictional contact, said parts being movable relative to one another.

3,283,436
DOUBLE BARREL FIREARM WITH A SINGLE TRIGGER
Ocie Dale Bills, 1605 Burns, Franklyn E. Edwards, 1841 Burns, and Otis G. Sledge, 1629 S. Market, all of Wichita, Kans.
Filed Mar. 8, 1965, Ser. No. 437,718
7 Claims. (Cl. 42—42)



6. A firearm comprising, two barrels, a barrel support holding said barrels in parallel over and under relationship, a shell extractor on said barrel support, a receiver comprising, a stock, a breech block, and a bifurcated portion, mean pivotally joining said barrel support to said bifurcated portion, a cam means for actuating said shell extractor when said firearm is broken, thrust blocks for maintaining the barrels and receiver in immovable firing position comprising, outwardly projecting arcuate shaped lugs on said barrel support and complementary arcuate shaped grooves on the inside facing surfaces of said bifurcated portion receiving said lugs, a cocking lever, means pivotally mounting said cocking lever on said receiver, barrel locking means actuated by said cocking lever for locking said barrel support in firing position, a firing mechanism comprising, a movable cocking means having camming means thereon, means connecting said cocking means for said lever for actuation thereof, two firing pins movably mounted in said breech block, said firing pins having a cam follower means in engagement with said cocking means, a catch means, and a camming projection, a sear block receiving portions of said firing pins, means within said sear block to engage said catch means on said firing pins, safety means comprising, a movable pressure element having abutment means adapted to apply pressure on said firing pins to hook same in said sear block, means to actuate said pressure element and thereby apply pressure with said abutment means, a triggering means comprising, a trigger, means mounting said trigger on said receiver, a tripping element means movably mounting said trigger having a camming surface, a means to move said tripping element means, tripping links operatively engaged with the upper firing pin and the lower firing pin having a cam follower surface in the end portion, said cam follower surface on said links adapted to engage and be actuated by said camming surface on said tripping element means, means for changing the position of said tripping element means, comprising, a movable shaft means, a cam follower means associating with said shaft means engaging said cocking means for moving said shaft means, an actuator element mounted in said receiver to receive the camming projections of said firing pins, means biasing said actuator element into actuating engagement with said shaft means,

means connecting said actuator element to said tripping element means for actuation, said firearm adapted in use to be broken and the firing pins cocked when said cocking lever is actuated, the barrels of the firearm discharged successively with the actuator element enabling the trigger to release a firing pin.

3,283,437
FISHING ROD HOLDER
Edward J. Galarneau, 1825 8th Ave. S., Great Falls, Mont.
Filed June 18, 1964, Ser. No. 376,161
1 Claim. (Cl. 43—17)



A fishing rod holder of the character described comprising in combination, a tubular member having a pointed lower end and an enlarged upper end in the form of a cup, a C-shaped frame having a lower horizontal leg adjustably attached to said tubular member and an upper horizontal leg projecting above the upper end of said tubular member, said upper leg terminating in a resilient clip, a fishing rod having its butt section inserted into said cup and being engaged intermediate its ends by said clip; an electric signal means mounted on said C-shaped frame, said signal means including a pivotally mounted, rigid wire-type switch member which includes a concave portion engaging a fishing line provided on said fishing rod, said switch member normally being in an electrically open position and being adapted to be moved to an electrically closed position by a force applied to said line.

3,283,438
APPARATUS FOR DETECTING FISH-BITE
Burton E. Wagner, 350 W. Crocker St., Fostoria, Ohio
Filed Feb. 4, 1965, Ser. No. 430,390
5 Claims. (Cl. 43—17)

1. A signal device for attachment to a conventional fishing pole having a reel with a line extending therefrom through a guide loop, comprising:

(A) a housing having a mounting arm extending therefrom;

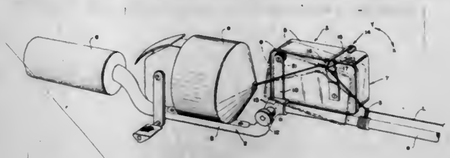
(B) means on said arm spaced from said housing for attaching said housing to said pole in angularly adjustable position intermediate said loop and said reel and in a vertical plane off-set to one side of said line,

(C) a movable contact member extending transversely from said housing into the vertical plane of said line;

(D) a fixed contact member extending from said housing to a point normally spaced from said movable contact member;

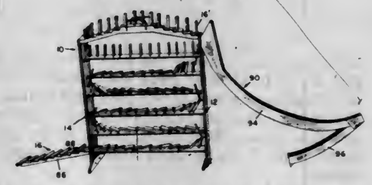
(E) means adjacent the free end of said movable contact member adapted to engage said line and to vertically displace same when said housing is angularly adjusted about said attaching means; and

(F) electrical signal producing means within said housing connected in series with said movable and fixed



contact members, whereby tension applied to said line displaces said movable contact member from its normal spaced apart position into engagement with said fixed contact and to close the circuit of said electrical signal producing means.

3,283,439
AMUSEMENT DEVICE WITH TOPPLING PLAYING PIECES
Leonard B. Rosen, R.D. 2, Jamestown, Pa.
Filed Aug. 25, 1964, Ser. No. 392,375
3 Claims. (Cl. 46—1)



1. An amusement device in which a plurality of discrete playing pieces can be aligned and successively toppled, said device comprising:

a game board having an upstanding frame including spaced, substantially vertical side walls;

a plurality of paths extending substantially perpendicularly between said side walls and thus being disposed in superposed relationship to one another;

a pivotal gate means extending between each path and its next adjacent path;

each gate means including an elongated rod being pivotally mounted on an axis coplanar with one of said paths and thus being pivotable toward and away from said side walls;

said elongated rods being mounted adjacent the ends of said playing paths;

a plurality of playing pieces, said device having means adapted to have said playing pieces disposed in spaced upstanding alignment along said paths whereby, when one playing piece is digitally toppled, it initiates a successive toppling action along one path to strike and pivot said elongated rod to initiate toppling on the next adjacent path and to thus continue successive toppling until all playing pieces have been serially toppled.

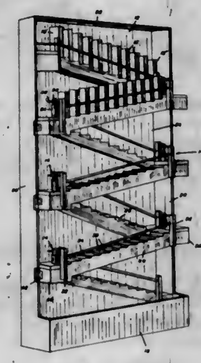
3,283,440
AMUSEMENT DEVICE WITH TOPPLING PLAYING PIECES
Leonard B. Rosen, R.D. 2, Jamestown, Pa.
Filed May 4, 1964, Ser. No. 364,591
13 Claims. (Cl. 46—1)

13. An amusement device comprising:

a game board having a plurality of playing paths thereon;

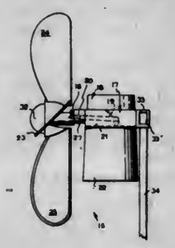
a pivotal gate means between each of said playing paths; and,

a plurality of normally upstanding playing pieces, each of said playing pieces having means adapted to be disposed in spaced alignment along said playing paths whereby said playing pieces can be disposed in upstanding alignment along said paths, and whereby,



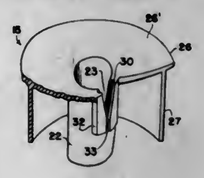
when a playing piece in one path is toppled, it topples the next adjacent piece and initiates a successive toppling of pieces in that path until the last piece in said first named path strikes said pivotal gate means and thus causes the playing pieces in the next adjacent path to topple away from said pivotal gate means.

3,283,441
WIND-DRIVEN NOISE-MAKING DEVICES
Albert Gould, 14 Shady Brook Road, Great Neck, N.Y.
Filed Sept. 5, 1963, Ser. No. 306,855
6 Claims. (Cl. 46—58)



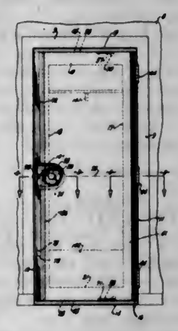
1. In a wind-driven, noise-making device of the character described, the combination of a sound box with a swingably mounted elongated trip hammer biased so that its pounding end normally rests against a wall of said sound box, a rotatably wind-moved propeller presenting spaced blades around its hub; each of said blades extending radially from the hub and slanted with respect to the axis of the hub; each of said blades being resiliently swingable on said hub; the other end of said hammer extending into the path of said blades whereby on rotation of said propeller said blades will successively momentarily intercept and swing the hammer a predetermined distance from its normal rest position whereupon the hammer is freed from said blades respectively and automatically returns to said normal rest position, striking the wall of said sound box; the sound box serving to magnify the sound produced by the pounding of said hammer against said wall of the sound box.

3,283,442
SPINNING TOY LAUNCHER
Albert Gould, 14 Shady Brook Road, Great Neck, N.Y.
Filed June 12, 1964, Ser. No. 374,716
7 Claims. (Cl. 46—72)



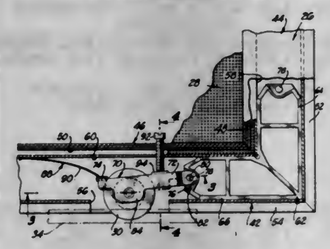
1. For a spinning toy having a central downward shank for a free cord to be tightly wound on and then rapidly pulled off to impart rotary motion to said toy, a launcher comprising an upright plastic tubular member having a downwardly extending upright V-shaped notch in the top end of its wall and a V-shaped metal piece on and along the surface of said notch, securely held on said member; said tubular member being adapted to receive the laden shank.

3,283,443
COMPARTMENTED DOOR
Marron Kendrick, Atherton, and Ralph E. Neary, San Francisco, Calif., assignors to Schlage Lock Company, a corporation
Filed May 14, 1964, Ser. No. 367,481
5 Claims. (Cl. 49—62)



1. A compartmented door for use in a door frame comprising a panel frame having a compartment opening therein and having a pair of upright edges, means for hinging said panel frame to said door frame adjacent one of said edges, an inner housing overlying said compartment opening and extending substantially to the other one of said edges, means for hinging said inner housing to said panel frame adjacent said one edge, a pair of locking lugs on said panel frame adjacent the top and bottom thereof, an upright locking bar on said inner housing adjacent said other edge vertically movable into and out of locking engagement with said lugs, and means extending between said panel frame and said inner housing in closed position thereof for isolating said locking bar from said compartment opening.

3,283,444
SLIDING DOOR CORNER AND ROLLER ASSEMBLY
Edward J. Andres, Goshen, Ind., assignor to Aluminite Manufacturing Co., Guadalupe, Calif., a corporation of California
Filed Dec. 11, 1964, Ser. No. 417,725
4 Claims. (Cl. 49—420)



1. In a corner and roller assembly for a sliding door, or the like, the combination of:

(a) a tubular stile and a tubular rail arranged in perpendicular relation to form a corner;

(b) a generally L-shaped corner connector having arms respectivly pressed into said stile and said rail to hold same in assembled relation;

(c) a roller carrier within said rail and having a resilient bifurcated end;

(d) pivot means mounting said bifurcated end of said roller carrier on said connector for pivotal movement of said roller carrier, between an inner, retracted position relative to said rail and an outer, extended position relative thereto, about a pivot axis perpendicular to the plane of said corner;

(e) said pivot means including aligned pivot pins on said connector, and the arms of said bifurcated end of said roller carrier having aligned receptacles respectively receiving said pivot pins;

(f) said pivot pins having beveled ends for springing said arms of said bifurcated end of said roller carrier into engagement with said pivot pins upon movement of said roller carrier toward said connector;

(g) a roller rotatably mounted on said roller carrier for rotation about an axis parallel to and spaced from said pivot axis;

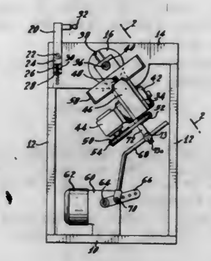
(h) said rail having an outer edge provided with an opening through which said roller projects outwardly;

(i) adjustable stop means for defining said retracted position of said roller carrier; and

(j) spring means for biasing said roller carrier toward said extended position.

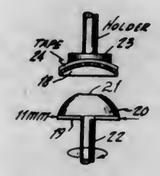
3,283,445
METHODS AND APPARATUS FOR SURFACING SPHERICAL OBJECTS
Morton S. Lipkins, 3 Nemeth St., Malverne, N.Y.
Filed Jan. 2, 1964, Ser. No. 335,315
11 Claims. (Cl. 51—73)

11. Apparatus for surface-treating an object having a spherical surface with a complemental spherical surfacing tool, where said object and said tool are spherical members held in mutual contact one above the other and moved relative to each other about a common spherical center, said apparatus including a spindle having at the upper end thereof a support for the lower one of said members, means locating the upper member above the lower member while allowing free seating of the upper



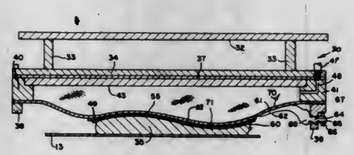
member on said lower member, means for rotating one of said members and thereby inducing rotation of the other of said members, and means for oscillating said spindle about a substantially inclined mean position.

3,283,446
CORNEAL CONTACT LENS TOOL
William Feinbloom, 138 E. 36th St., New York, N.Y.
Filed Oct. 5, 1965, Ser. No. 493,133
7 Claims. (Cl. 51—98)



7. In combination, a holder for a contact lens, and a grinding tool comprising an ellipsoidal grinding surface having such major and minor axes as to impart an inner surface to the lens closely approximating the human cornea and means for mounting said holder and tool for relative coaxial rotation.

3,283,447
PLATEN FOR CONTOUR SANDING, GRINDING AND POLISHING
Hiram W. Cretsinger, 1401 S. 1st St., Redfield, S. Dak.
Filed Mar. 19, 1964, Ser. No. 353,138
20 Claims. (Cl. 51—141)

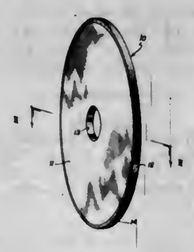


1. A platen for holding an abrading member in engagement with a curved work piece movable relative to the abrading member, said platen comprising:

a frame,

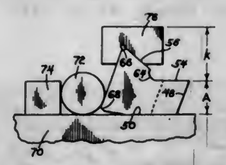
a base plate,
means to mount said base plate on said frame,
an inflatable member mounted on said base plate and positioned to exert pressure on the surface of said abrading member opposite said work piece,
lateral support means on the sides of said inflatable member to reduce the width of said member in certain portions and increase the heighth thereof in the same portions, and
means to permit gas under pressure to be introduced in said inflatable member.

3,283,448
ORGANIC BONDED ABRASIVE ARTICLE
John R. Thompson, Westboro, Mass., assignor to Bay State Abrasive Products Company, Westboro, Mass., a corporation of Massachusetts
Filed Aug. 14, 1964, Ser. No. 389,575
7 Claims. (Cl. 51—206)



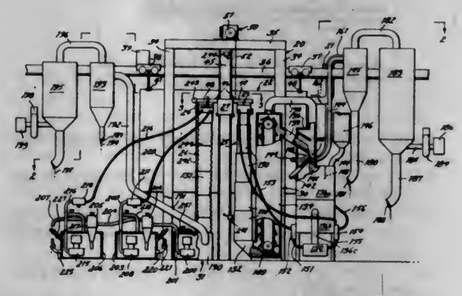
1. An abrasive article, comprising:
(a) a core consisting of a powder of a substance having a thermal conductivity of 0.500 cal./cm.²/cm./sec./° C. at 68° F. or greater in an amount in the range from 80% to 95% by weight and the remainder resin, and
(b) a rim attached to the core consisting of 70% to 85% by weight of the said powder, 8% to 16% by weight of resin, and the remainder a material selected from the group consisting of diamond and aluminum oxide.

3,283,449
PROCESS OF SHARPENING INSERT BLADE FOR ROTARY CUTTER
Henry J. Pinkowski, Chicago, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Mar. 12, 1964, Ser. No. 351,451
5 Claims. (Cl. 51—288)



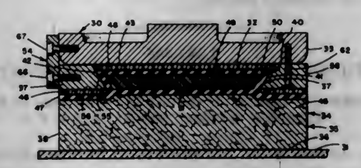
1. A method of sharpening a polygonal in cross section cutter insert blade providing a form cutting edge and having a base surface and a generally opposed top surface, a grinding reference surface intermediate said base and top surfaces and a face surface generally opposed to said reference surface, said cutter insert blade further having a cutter reference surface adjacent said face surface and on the side opposite to said grinding reference surface comprising the steps of disposing said cutter insert blade on the grinding reference surface thereof, relatively moving a grinding wheel to the face surface of said cutter insert blade to sharpen same and relatively moving the cutter reference surface to the grinding wheel to remove the same depth of material from the cutter reference surface whereby reorientation of said cutter insert blade on a cutter by location on said cutter reference surface will present an identical form for cutting a workpiece.

3,283,450
METHOD FOR SURFACE-FINISHING METALWORK
Elmer H. Greenberg, 2500 Belmont Ave., Philadelphia, Pa., and William B. Greenberg, 1510 Brinton Park Drive, Wynnewood, Pa.
Filed Oct. 8, 1963, Ser. No. 314,725
15 Claims. (Cl. 51—319)



1. In the method of surface-finishing metalwork, the steps which comprise: projecting a first slurry of liquid and finishing material transversely toward the work for impingement thereon, gravitationally collecting the first slurry, separately projecting a second slurry of liquid and a finishing material different from said first-mentioned finishing material transversely toward the work for impingement thereon, gravitationally collecting said second slurry with said first-mentioned slurry, separating the collected first and second finishing materials from each other, and separately returning said first and second finishing materials for repeated projection with liquid.

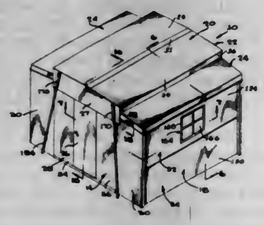
3,283,451
POLISHING FELT
William E. Becker, Norton, Mass., assignor to Bacon Felt Company, Taunton, Mass., a corporation of Massachusetts
Filed May 13, 1964, Ser. No. 366,955
16 Claims. (Cl. 51—380)



1. In combination with a polishing block having an outer, felt-supporting, face;

a unitary polishing felt of substantial thickness having an outer working portion of felt, an inner anchoring and cushioning portion of resilient material with a side wall and a block-engaging inner face;
said felt having laterally directed recess means extending inwardly from the side wall of said resilient anchoring and cushioning portion to receive anchoring elements, and
anchoring means secured on the outer, felt supporting face on said block, said means having laterally directed elements in the plane of said side wall extending into said recess means for anchoring said felt to said block, at least one said element being laterally detachable relative to said block.

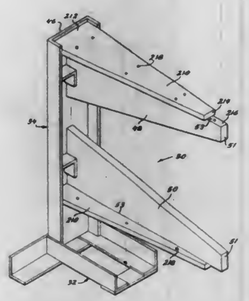
3,283,452
PORTABLE ENCLOSURE STRUCTURE
Lawrence G. Hayes, P.O. Box 72, 100 Main St., Wellsburg, N.Y.
Filed Feb. 8, 1963, Ser. No. 257,313
8 Claims. (Cl. 52—29)



1. A foldable enclosure comprising a roof including a main part, depending side edge portions and opposite end edge depending portions, a pair of roof extension panels, means carried by said roof main part movably supporting the said roof extension panels between said end depending portions for movement outwardly away from one another to a position wherein the roof extension panels extend laterally outwardly of said side edge portions of said roof main part, side wall portions each having an upper horizontal edge, means pivotally connecting the upper edges of the side wall portions to the outer side portions of said roof extension panels, end wall portions each having the upper edge thereof pivotally interconencted to and along an edge of one of said depending end edge portions of said roof main part, each of said end wall portions including opposite side edges extending downwardly from said upper edge thereof, and a pair of end wall extension panels pivotally interconnected with opposite side edges of each of said end wall portions whereby the enclosure is adapted to be folded into a position wherein the side wall portions and the end wall portions as well as the end wall extension panels are disposed in superposed relation substantially parallel with one another and with said roof main portion.

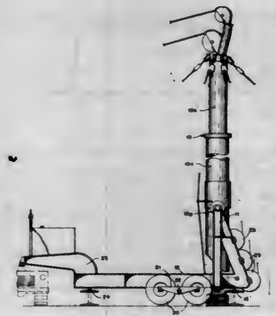
3,283,453
COMBINED FLOOR SUPPORTED AND WALL CONTAINED PEDESTAL STRUCTURE AND CANTILEVER PARTITION ASSEMBLY
Nathan Schooler, % Flush-Metal Partition Corp., 46—10 11th St., Beechhurst, Long Island, N.Y.
Filed Feb. 25, 1964, Ser. No. 350,629
18 Claims. (Cl. 52—73)

18. A pedestal structure for installation in a floor and wall prior to forming the finish floor and finish wall to support a cantilever partition comprising:
(a) a horizontal base,
(b) a column having a vertical wall with its lower end seated on the rear end of said base and secured thereto,
(c) at least one bracing flange on said wall extending forwardly therefrom with its lower end seated on said base and secured thereto,



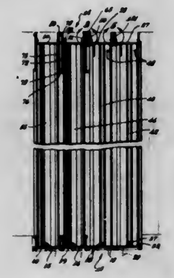
(d) a horizontal stabilizing leg extending laterally from each side of said horizontal base in transverse alignment with said column wall and flange, and
(e) bracket means on which said cantilever partition is mounted secured to said column wall and projecting forwardly therefrom.

3,283,454
TURNING SPUD
Maurice J. McIntyre, Sedro Woolley, Wash., assignor to The Humboldt Company, Seattle, Wash., a corporation of Washington
Filed June 15, 1964, Ser. No. 375,122
6 Claims. (Cl. 52—114)



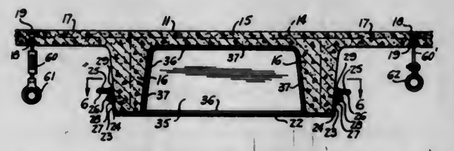
2. The combination with a wheeled carrier vehicle having a frame structure serving as a mounting base on which a guyed logging tower is erected for use; lifting jacks applied to the frame structure and operable for leveling it and for lifting it and the erected tower to clear the vehicle wheels from the supporting surface, and a turning spud applied to said frame in the axial line of the tower for sustaining the weight of the lifted frame and tower upon retraction of the lifting jacks thus to provide for pivotally swinging the vehicle frame thereon about the axial line of the tower to a new setting.

3,283,455
FRAME CONSTRUCTION FOR MULTIPLE PANELS
Harry M. Riegelman, Rolling Hills, Calif., assignor to Ador Corporation, Fullerton, Calif., a corporation of California
Filed July 6, 1964, Ser. No. 380,384
6 Claims. (Cl. 52—204)



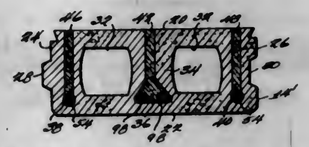
1. In a frame construction, a frame member, comprising:
a plurality of separate, individually formed subassembly units in side by side relation, each of said subassembly units providing structure for accommodating a specific panel member, each of said sub-assembly units having a pair of connection flanges, each connection flange having integral structure for direct physical interlocking in mating engagement with integral structure of one of the connection flanges of any other sub-assembly unit.

3,283,456
BUILDING STRUCTURE
John R. Carlton, 1618 Altamont Ave., Richmond, Va.
Filed Jan. 25, 1963, Ser. No. 253,857
3 Claims. (Cl. 52—223)



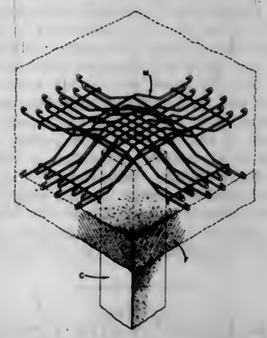
2. In a building construction, the combination comprising a plurality of precast, pre-stressed, generally rectangular joined slabs, each of said slabs including a top, integral downwardly extending spaced parallel flanges and integral marginal extensions along two edges thereof adjacent said flanges, said top and parallel flanges defining an elongated channel, said marginal extensions each having a transverse dimension equal to one-half the transverse dimension of said top, the marginal extensions and adjacent flanges of adjacent joined slabs each defining a channel of equal dimension to the dimension of the channel defined by said top and integral spaced parallel flange of each slab, means extending between said adjacent flanges and removably secured thereto to enclose said channels, said last-mentioned means including bottom plates having upturned flanges along their edges, said flanges having outwardly and thence inwardly extending top portions with reverted reinforcing strips depending from the inwardly extending portions, pins extending through said reinforcing strips and upturned flanges engaged in the concrete of the adjacent parallel flange of the slab,
and end closure means including a flanged end plate extending transversely across a channel and mastic sealing beads interposed between the adjacent concrete flanges and the underside of the adjacent slab and the flange of the end plate.

3,283,457
PRESTRESSED CONCRETE PLANK CONSTRUCTION
Wayne C. Hart, Hyde, Md., assignor to Baltimore Concrete Plank Corp., Baltimore, Md., a corporation of Maryland
Filed Jan. 22, 1964, Ser. No. 339,506
40 Claims. (Cl. 52—229)



31. A pre-stressed concrete plank comprising in combination in the absence of external load: a plurality of concrete blocks aligned in end to end abutting relationship under longitudinal compression having a longitudinally extending transversely centered passage therethrough and at least one longitudinally extending lateral passage therethrough transversely spaced from said transversely centered passage; a tensioned cable means within said transversely centered passage; a substantially untensioned rod means within each said lateral passage; and stress transmitting bonding means within each of said longitudinally extending passages bonding said substantially untensioned rod means and said tensioned cable means to said blocks.

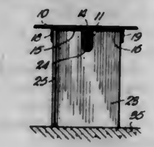
3,283,458
SHEAR REINFORCEMENT IN REINFORCED CONCRETE FLOOR SYSTEMS
Benjamin Gersovitz, 5173 Mayfair Ave., Montreal, Quebec, Canada
Filed May 10, 1963, Ser. No. 279,388
Claims priority, application Canada, Feb. 25, 1958, 746,260
1 Claim. (Cl. 52—260)



A reinforced concrete structure comprising a flat plate floor having an upper and lower surface, at least one supporting column, and shear reinforcement embodied in said concrete adjacent said column, said reinforcement comprising a shear head having a first set of reinforcing members consisting of a first series of bars arranged substantially parallel in equally spaced side-by-side relationship and a second series of similarly arranged bars at right angles thereto, the bars in each series having an

upper horizontal central portion substantially parallel to and adjacent the upper surface of said floor and opposed horizontal anchoring portions interconnected to said central portion by a pair of downwardly, outwardly inclined portions said inclined portions of each series lying in a plane angularly disposed to the axis of the respective series to present a first plane of reinforcement and a second set of similarly arranged reinforcing members consisting of a first and second series of bars interspersed symmetrically with the respective series of said first set and having similarly inclined portions to present a second plane of reinforcement, said planes of reinforcement being located symmetrical with respect to said column, said second set of bars having an upper horizontal central portion of greater length than that of the first set whereby said second plane of reinforcement is located more remote from said column than said first set thereby to provide reinforcement respectively to intersect secondary and primary shear stresses in said floor adjacent said supporting column.

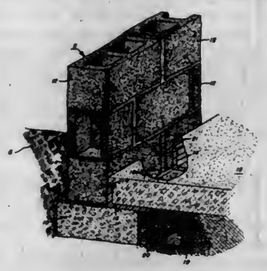
3,283,459
PERFORATED GRAIN BIN FLOOR
Emil L. Beranek, Lincoln, Nebr., and Ronald J. Wilson, Independence, Mo., assignors to Butler Manufacturing Company, a corporation of Missouri
Continuation of application Ser. No. 188,071, Apr. 17, 1962. This application Apr. 15, 1965, Ser. No. 451,678
3 Claims. (Cl. 52—263)



1. A floor supporting joint construction comprising a pair of elongate flat metal sheets,
each said sheet tapering from a greater width outwardly to a lesser width inwardly thereof,
each said sheet having at least one down turned elongate side edge thereon extending substantially normal thereto,
an elongate trough member T-shaped in transverse cross section receiving therewithin, in substantial parallel, side face, flat abutting relationship, the down turned elongate side edges of said pair of sheets along the substantial length of the abutting down turned edges thereof,
and a plurality of floor panel supporting column members spaced at intervals along and under said panel side edge joint,
said column members being V-shaped in horizontal section, the members having aligned grooves in the upper surface each receiving the lower outer surface portion of said trough member in engaging position fixing fashion therewithin.

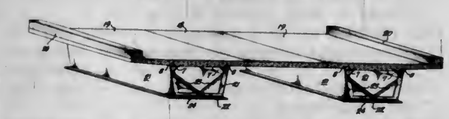
3,283,460
L-SHAPED MEANS FOR DAMPPROOFING BASEMENTS FORMING PASSAGEWAYS BETWEEN FOUNDATION FLOOR AND WALL
William A. Patrick, 947 Dunham Ave., Westfield, N.J.
Filed July 3, 1963, Ser. No. 292,699
1 Claim. (Cl. 52—274)

In a building structure having a footing, a wall supported on the footing and a concrete floor having an end supported on the footing; the improvement comprising a unitary L-shaped drainage member having a vertically-disposed portion positioned between the wall and the floor and a horizontally-disposed portion positioned between the footing and the overlying portion of the floor, the upper edge of said drainage member terminating in a plane below the upper surface of the floor; means including said drainage member forming water passageways between the wall and the edge of



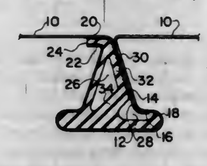
the footing lying below the floor, said water passageways extending to the said upper edge of the drainage member; and means closing the upper ends of said water passageways, said means being disposed between the wall and the floor and extending downwardly over the said upper edge of the drainage member.

3,283,461
INTEGRATED CONCRETE SLAB AND SUPPORTING PLATE BOX STRUCTURE
Homer M. Hadley, 807 SW. 207th, Seattle, Wash.
Filed Feb. 17, 1964, Ser. No. 345,177
10 Claims. (Cl. 52—334)



1. A composite concrete slab and supporting plate box structure comprising a bottom plate, two upright side plates having their lower deges bonded to said bottom plate in spaced relationship, a brace plate inclined relative to the upper portion of each side plate, having its lower edge secured to the side of its side plate nearer the other side plate and forming with the upper portion of its side plate a V-shaped trough, and a concrete slab spanning between said brace plates and having portions extending downward into such troughs.

3,283,462
SEALING EXTRUSION FOR PANEL JOINT
Resta S. Gregoire, Dillsburg, Pa., assignor to Gregoire Engineering and Development Company
Filed Nov. 8, 1962, Ser. No. 236,369
3 Claims. (Cl. 52—394)



1. A joint between two sheet panel strips and sealing means therefor, comprising
two sheet panel strips having complementary interlocked edge formations, and substantially coextensive panels across the joint,

the edge formation of one of said panel strips being a substantially triangularly formed groove having inner and outer side walls connected by a bottom wall and extending back of said panels, said inner side wall extending from the panel edge of said one panel strip, said bottom wall forming the base of the triangle and being extended outwardly from both ends of said base to form lobes, with return portions of said lobes extending in spaced relation substantially parallel to said bottom wall meeting and engaging the lower ends of the respectively side walls, said side walls converging toward said panels to define an open apex in the plane of said panels, the terminal end of said outer side wall having a ledge turned outwardly substantially in the plane of said panels,

the edge formation of the other panel strip being an angularly extending tongue having a base end at the panel and an outer end with a reversely turned lip at its extremity,

said angular tongue being seated within said triangularly formed groove providing a double sealed interlocking joint with a double line resilient pressure contact therein,

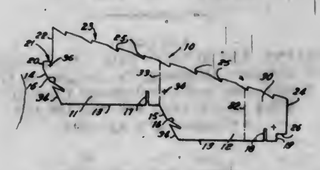
one of said line contacts being along the edge of said reversely turned lip resiliently pressed against the underside of the return portion of said internal lobe, the other line contact being along the outer edge of said outwardly turned ledge at the terminal end of said outer side wall of said triangularly formed groove resiliently pressed against the inside of the panel near the base end of the tongue, and

an extrusion of resilient material having a substantially triangular cross-sectional shape conforming snugly to the substantially closed triangular space bounded by the tongue, the bottom of the triangularly formed groove, the outer side wall and the lobes,

said extrusion having a sealing lip extending into the pressure joint between the edge of said outwardly turned ledge at the terminal end of the outer side wall and the back of said other panel near the base end of said tongue,

said extrusion having hollow relief spaces internally thereof and in its surface about the outer end of said tongue to facilitate insertion and withdrawal of said tongue from said triangular formation.

3,283,463
DOUBLE-LOCK COMPOSITION SHINGLE
Ennis Powell, 1043 Ferncliff Trail, Dallas, Tex.
Filed May 6, 1964, Ser. No. 365,447
3 Claims. (Cl. 52—525)



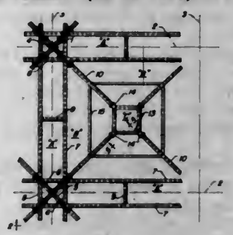
3. In a strip shingle of pliable material having an irregular angular outline, one longitudinal edge of said strip having a plurality of straight portions in offset parallel planes, the said offset being defined by an obtuse angular portion in a plane intersecting said offset parallel planes, one end of said strip having an obtuse angular portion in a plane parallel to that of said offset portion, each of said straight portions and said obtuse angular portions defining the lower and lateral edges of a shingle tab, each of said tabs having a slot near one end of and perpendicular to its lower edge, and having a downwardly and inwardly inclined slot in its angular lateral edge whereby the slots in said lateral edges are capable of interlocking engagement with the perpendicular slots in the lower edges of said tabs, the opposite longitudinal edge of said strip being oblique to the planes of the lower edges of said tabs and having a series of spaced serrations therealong.

3,283,464
HONEYCOMB GIRDERS AND METHOD FOR MAKING SAME
Franz Litzka, Haus-Nr 29, Marktredwitz, Bavaria, Germany
Original application May 10, 1960, Ser. No. 28,054, now Patent No. 3,197,610, dated July 27, 1965. Divided and this application Oct. 19, 1964, Ser. No. 409,345
Claims priority, application Germany, May 13, 1959 L 33,217
8 Claims. (Cl. 52—636)



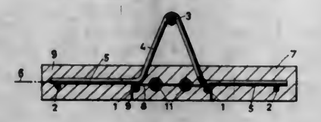
1. A honeycomb girder comprising a pair of girder sections each having an undulating web portion of generally toothed configuration with respective longitudinally offset projections extending in the direction of the other girder section, said web portions being coplanar and spaced apart, at least along a portion of the lengths of said sections with some of the juxtaposed projections being separated from one another by a distance greater than that between others of said projections, and individual spacer plates of progressively varying width disposed between and welded to respective pairs of spaced juxtaposed projections, one of said sections diverging from said other of said sections only along a limited portion of the length of said section and only at an extremity of the honeycombed girder.

3,283,465
BUILDING FRAMING SYSTEM
David B. Cheskin, 407 S. Dearborn, Chicago, Ill.
Filed Mar. 16, 1964, Ser. No. 352,223
3 Claims. (Cl. 52—648)



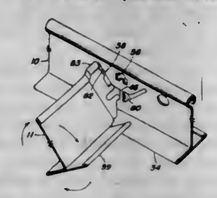
1. A framing system for buildings that provides thrust to counteract bending moments in portions of the system, which comprises in combination, spaced columns in two-way rows, a cantilever shear-head section from each of the columns having at least four diagonally positioned beams projecting therefrom, longitudinal beam members paralleling and straddling the two-way rows of columns and defining elongated panel sections extending between shear-head sections along the rows of the columns and bounding internal center bay sections, a rectangular form elevated center panel section in each of said center bay sections that is positioned above the level of said shear-head sections and said elongated panel sections, and diagonally positioned sloping beam members in each internal bay section connecting between the corners of the elevated center panel section and the corners of said elongated panel sections and said shear-head sections, with each of the diagonally positioned beam members having end connecting means therefrom primarily below the neutral axis thereof at the respective connections with said panel sections whereby the thrusts from such beam members oppose bending moments in the longitudinal beam members of said elongated panel sections.

3,283,466
RIGID LATTICE GIRDER FOR FLOORS
Fritz Grebner, Annabergstr. 70, Mainz (Rhine), Germany; Wilhelm Kolsch, Robert-Koch-Str. 6, Wiesbaden, Germany; and Gerhard Spindler, Brunhildenstr. 14, Wiesbaden, Germany
Filed Apr. 13, 1964, Ser. No. 359,269
Claims priority, application Germany, May 7, 1963, R 35,108
5 Claims. (Cl. 52—652)



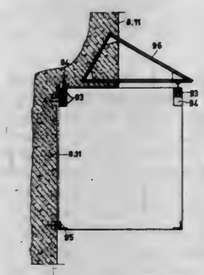
1. A rigid lattice girder for floors, comprising an elongated concrete slab, a lower girder chord means embedded in the concrete slab and extending in the direction of elongation of the slab, an upper girder chord spaced from the lower chord means and generally parallel thereto, the upper chord being arranged centrally of the lower chord means in the direction of elongation of the slab and strut means connecting the lower chord means and the upper chord, the strut means consisting of a plurality of yokes extending transversely of the girder chord means and being diagonally inclined in relation thereto, each yoke having an asymmetrical transverse extension adjacent the lower chord means, and alternating ones of said yokes being so arranged in the direction of elongation of the slab that the yoke extensions are on alternating sides of the upper chord in a transverse direction.

3,283,467
ACOUSTICAL CEILING SUSPENSION FASTENING SYSTEM
Henry Znamirowski, Ellicott City, Md., assignor to Eastern Products Corporation, Baltimore, Md., a corporation of Maryland
Filed Sept. 1, 1964, Ser. No. 393,557
9 Claims. (Cl. 52—663)



6. In a suspended ceiling grid structure having a plurality of spaced parallel main runners and a plurality of cross-T's connecting the main runners, both main runners and cross-T's having an axially extending upstanding web and a pair of axially extending flanges projecting horizontally from the web, the improvement in the means for connecting the cross-T's to the main runners comprising a latch projecting forwardly from a cross-T web and arranged to enter an adjacent main runner web first aperture when aligned by rotating the cross-T to an inclined position in a plane at right angles to the main runner web, said aperture being adapted so that said latch may be rotated from said inclined position to an upright position; and a nose projecting forwardly from said cross-T web and adapted to enter a main runner second aperture when said cross-T is in said upright position, whereby said cross-T is locked in said upright position.

3,283,468
METHOD FOR LIFTING AND GUIDING FLOORS DURING THE ERECTING OF BUILDINGS
Eric G. V. Herolf, 10 Bankgatan, Sundsvall, Sweden
Filed Apr. 9, 1965, Ser. No. 446,997
Claims priority, application Sweden, May 7, 1960, 4,552/60
1 Claim. (Cl. 52—745)

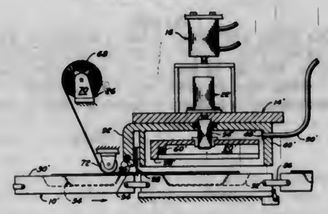


In a method for lifting floors during the erection of a building wherein the building has at least one vertically aligned shaft opening passing through all of the floors, and wherein the floors are successively lifted to, and secured in, their final position starting with the lowermost floor and ending with the uppermost floor, the steps of forming a basement floor as a foundation, forming at least one additional floor on said basement floor with portions thereof defining only a part of each shaft opening, positioning a guiding structure at the location of each shaft opening, said guiding structure including vertically extending guide pillars at spaced locations around the periphery of the shaft opening, said portions of said one additional floor extending from one pillar over only a part of the distance to a second pillar spaced therefrom, interposing a first guiding means between said guiding structures and each of the floors to be lifted, said pillars each including substantially closed guide sections, portions of each guide section defining a vertically extending interior guide wall, said guiding means including a guide wheel rotatably carried by a yoke secured to its associated floor, said yoke extending through said slot and said guide wheel rollably engaging said interior guide wall to guide the floor during the moving operation, providing the floor to be lifted with an auxiliary mounting device attached to and projecting outwardly from said floor to said second guide pillar, interposing a second guiding means comprising a guide wheel rotatably carried by a yoke secured to said auxiliary mounting device and rollably engaging said interior guide wall of said second guide pillar remote from said floor, lifting said additional floor to a position above its final level in the building with both of said guiding means guiding the movement of the same, interposing a plurality of vertically extending supporting means, and lowering said additional floor into engagement with said supporting means, said first guiding means movably connecting the floor and the guiding structure at said first guide pillar, and said second guiding means movably connecting the auxiliary mounting device and guiding structure at said second guide pillar, and removing said auxiliary mounting device after the floor is supported in its final position.

3,283,469
METHOD AND APPARATUS FOR PRODUCING EVACUATED PACKAGES

William J. McBrady, Chicago, and Howard G. Reichel, Western Springs, Ill., assignors to Swift & Company, Chicago, Ill., a corporation of Illinois

Filed Mar. 19, 1963, Ser. No. 266,379
9 Claims. (Cl. 53—22)

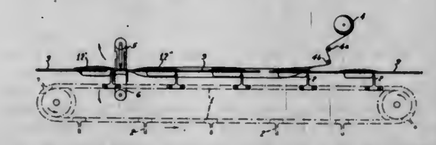


2. An improved method for closing and sealing tray type packages comprising: depositing pre-formed open topped trays sequentially into an endless series of aligned anvil means, said anvil means conforming to the shape of said trays and being longer than said trays in the direction of alignment; moving said trays and said anvil means stepwise in a given direction in line with said alignment; filling product in each of said open trays upon each tray moving past a given point; drawing a film of top closure material across the product and a first tray and said anvil means in said given direction so as to overlap the forwardmost edge of said tray; sealing said film to the forwardmost edge of said first tray; severing the film just forward of said forwardmost edge from the preceding portion thereof simultaneously with said sealing; moving said anvil means containing the tray and film sealed thereto in said given direction while retarding the forward movement of said tray and film until the rear of said anvil means pushes said tray and film sealed thereto in said given direction, whereby said film is drawn across the remainder of said first tray and the forwardmost edge of the next tray; thereafter finally sealing the film to the rearmost and remaining edge of said first tray and simultaneously sealing the forwardmost edge of the next tray and severing the film between said trays; and moving said anvil means and trays further in said given direction.

3,283,470
METHOD OF AND APPARATUS FOR WRAPPING GOODS IN A FILM WRAPPER

Heinz Oelze, Wiesbaden-Biebrich, and Franz Hartleib, Furstenau, Kreis Bersenbruck, Germany, assignors to Kalle Aktiengesellschaft, Wiesbaden-Biebrich, Germany

Filed Apr. 26, 1963, Ser. No. 276,699
Claims priority, application Germany, Apr. 28, 1962, K 46,603
15 Claims. (Cl. 53—33)

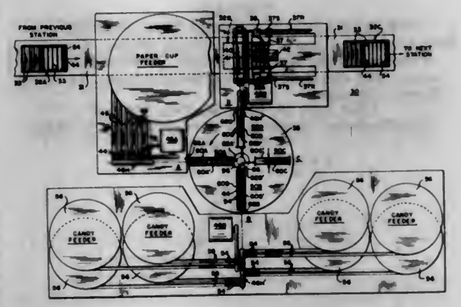


1. A process for wrapping goods in a weldable film wrapper which comprises continuously moving the goods through a wrapping zone, wrapping the goods in a weldable film web so as to form an incompletely longitudinally closed tube around the goods, cutting and welding the web in front of the goods, and cutting and welding the web behind the goods.

3,283,471
AUTOMATIC PACKING APPARATUS

Franklin J. Thurston, Bethesda, and Robert V. Sanwald, Burtonsville, Md., assignors, by mesne assignments, to GBL Corporation, Washington, D.C., a corporation of Maryland

Filed Dec. 14, 1962, Ser. No. 244,639
15 Claims. (Cl. 53—55)



9. Apparatus for filling containers with rows of comestible articles or the like wherein adjacent rows of packed articles are separated with flexible spacers, said apparatus comprising

a row-loading station including conveyor means for supporting and delivering in sequence individual containers from a supply source to said station,

electrically operable stop means mounted adjacent said conveyor for stopping the travel of a container box thereon, said means being adapted when electrically energized to release said container for advance travel,

container sensor means mounted adjacent said row-loading station for producing a control signal in response to the arrival of a container to be loaded,

a staging station for delivering an assembled row of pre-oriented comestible articles to a point adjacent said loading station,

means for transferring said assembled row of articles from said assembly station to said container, said means including plural pneumatically actuated pick-up heads, one for each article, and a support arm for said heads with drive means for transporting said arm and said heads between said assembly station and a stopped container on the conveyor,

first transfer arm sensor means provided to produce an arm-delivery output signal when a row of articles has been delivered to said box,

second transfer arm sensor means provided to produce an arm-return output signal when said arm has returned from said container to the start position,

spreader means mounted above a stopped container on said conveyor for spreading the flexible spacers defining a row space in said container, said means including a pair of spaced fingers mounted for up and down movement on a support elevator, with cam means provided to close and then open said fingers during the downward movement of the elevator, reversible drive means for driving said elevator to either the up position or the down position,

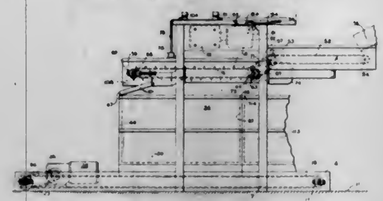
first control means responsive to the signal from said container sensor for energizing said elevator drive in the down direction and responsive to the signal from the arm delivery sensor for energizing said elevator drive in the up direction,

and second control means responsive to said arm-return signal provided to energize said stop means and thereby release said container.

3,283,472
BULK BIN FILLER

Charles P. Hostetler, Redlands, Calif., assignor to The Regents of The University of California, Berkeley, Calif.

Filed June 18, 1963, Ser. No. 288,704
12 Claims. (Cl. 53—64)

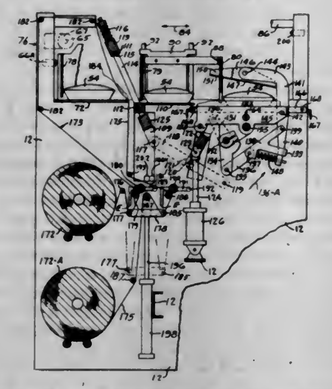


6. A bulk bin filler for use with a bin comprising a frame, a bin conveyor on said frame for advancing a bin thereon, first means on said frame for driving said bin conveyor, a fruit conveyor framework, means for mounting said fruit conveyor framework for movement into and out of a bin on said bin conveyor, second means on said frame for driving said fruit conveyor framework, and means responsive to the position of fruit in said bin for operating said first driving means and said second driving means concurrently.

3,283,473
PACKAGING DEVICE

Henry B. Cohen, % Standard Wire Co., 2430 N. Hancock St., Philadelphia, Pa.

Filed May 9, 1963, Ser. No. 279,345
17 Claims. (Cl. 53—76)



1. A machine for wrapping and sealing a succession of objects in heat fusible sheet material, said machine including

a first sealing station,

a first heat-sealing element at said first station and disposed transversely of the path of movement of an object toward said first station,

a second sealing station,

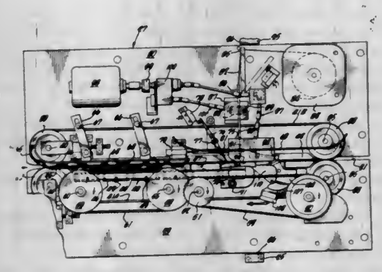
a pair of spaced heat-sealing elements disposed parallel to the path of movement of an object approaching said second sealing station,

means for operating all of said sealing elements to fuse the sheet material along the transverse and longitudinal margins of each object, and means controlled by the width of the object for varying the distance between said spaced sealers at said second station accordingly.

3,283,474
BAG TYING MACHINE

Gerald C. Bower, Santa Ana, Calif., assignor to Royal Industries, Inc., Pasadena, Calif., a corporation of California

Filed June 13, 1963, Ser. No. 287,646
5 Claims. (Cl. 53—135)

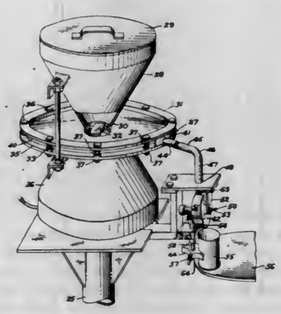


1. In a bag tying machine including means to transport a bag to be tied along a predetermined path through the machine, means for closing the neck of a bag to be tied transported along said path, means for placing a tie strip around the closed neck of the bag to be tied, means for tying the tie strip around the closed neck of the bag, said closing including means mounted adjacent the tying means for actuating the latter and for urging the bag to be tied into a tighter wrap and holding the bag closed while the tying means is operative, said latter means adjacent said tying means comprising a first closing arm movable in response to the engagement with closed bag moving towards said tying means, and a second closing arm arranged out of the predetermined path and movable in response to engagement with said first closing arm in an overtaking relationship to the closed bag neck whereby the bag neck is compacted between the first and second arms.

3,283,475
TABLET DISPENSER

Peter J. Pinto, Union City, Calif., assignor to Leslie Salt Co., San Francisco, Calif., a corporation of Delaware

Filed Jan. 18, 1965, Ser. No. 426,071
15 Claims. (Cl. 53—250)



1. A tablet dispenser for placing one tablet in each of a series of rapidly conveyed open-mouthed containers; including in combination,

a main frame,

a hopper supported by said frame at a level substantially higher than the tops of the containers, and having an outlet,

means for eliminating undersize tablets and tablet fragments from said hopper before they reach said outlet,

conduit means leading from said outlet and providing a substantially vertical bottom portion with an exhaust therefrom,

a rotatably mounted metering disc having a series of tablet receiving pockets around the circumference thereof and disposed vertically for rotation about a horizontal axis and below said exhaust for receiving a tablet from said exhaust and moving it around approximately 180°, then dropping it out,

cover means positioned to cover said disc sufficiently to retain said tablets in said pockets during their approximately 180° path,

conveyor means for supporting and moving the containers,

a star wheel for guiding the containers into a position beneath said disc one at a time for reception of tablets from said disc, and

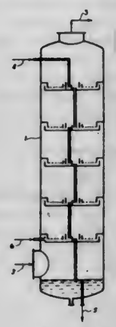
means for synchronizing said metering disc with said star wheel to dispense one tablet in each container.

3,283,476

METHOD OF DRYING GASEOUS CHLORINE

Christiaan Gerard Frederik Honigh, Delden, Netherlands, assignor to N.V. Koninklijke Nederlandsche Zoutindustrie, Hengelo, Netherlands, a corporation of the Netherlands

Filed June 2, 1964, Ser. No. 372,040
3 Claims. (Cl. 55—30)



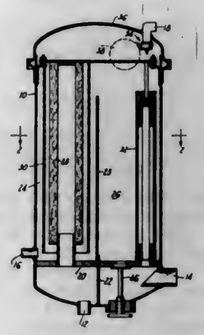
1. A method of drying gaseous chlorine which comprises contacting a stream of wet gaseous chlorine with a stream of sulfuric acid in a first drying step while maintaining a temperature in said step lower than the temperature at which chlorine hydrate is formed from chlorine and pure water under the pressure prevailing in said step, separately discharging gaseous chlorine and sulfuric acid from said first drying step, contacting said discharged gaseous chlorine with concentrated sulfuric acid in a subsequent drying step while maintaining a temperature in said subsequent step higher than the temperature at which solid sulfuric acid hydrate is capable of separating from concentrated sulfuric acid, and separately discharging gaseous chlorine and sulfuric acid from said subsequent step, at least part of the sulfuric acid discharged from said subsequent drying step being passed to said first drying step for serving therein as the said stream of sulfuric acid with which said stream of wet gaseous chlorine is contacted.

3,283,477

FUELER UNIT

Walter Kasten, Madison Heights, Mich., assignor to The Bendix Corporation, Madison Heights, Mich., a corporation of Delaware

Filed Sept. 28, 1964, Ser. No. 399,620
2 Claims. (Cl. 55—170)



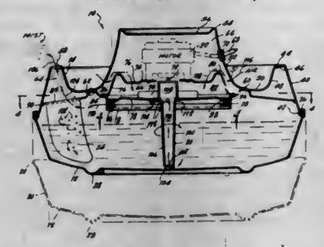
1. A fueler unit comprising a housing having a fuel inlet port, a fuel outlet port, a water drain port, and an air eliminator port, a horizontal division plate located in said housing for dividing said housing into a lower portion having said fuel inlet and outlet ports and an upper portion having said water drain and eliminator ports, a vertical division plate located below said horizontal division plate for preventing direct communication between said fuel inlet port and said fuel outlet port, a vertical partition member extending above said horizontal division plate for separating said housing into a first chamber located upstream of said air eliminator port and a second chamber located downstream of said air eliminator port, said first chamber communicating with said fuel inlet and water drain ports and said second chamber communicating with said fuel outlet port, a plurality of coalescer elements of the inside-out flow type located in said first chamber for trapping solid contaminants present in the fuel flowing therethrough from said inlet port to said second chamber and for coalescing any water contained in the fuel into relatively large droplets, a plurality of filter separator elements located in said first chamber and telescoped over and downstream of said coalescer elements for trapping any additional solid contaminants present in the fuel flowing from said coalescer elements and for separating said water droplets from said fuel so that said droplets can gravitate between said coalescer and separator elements towards said horizontal division plate and flow through said drain port, a plurality of porous contamination sensitive shut-off fuses located in said second chamber for monitoring the cleanliness of the fuel flowing therethrough and for separating air bubbles therefrom, said fuses being sufficiently sensitive to predetermined levels of both solid and water contaminants to cause closure of the pores therein when said predetermined levels are reached to thereby prevent fuel flow through said outlet port, and a float-operated valve located in the upper part of said first and second chambers and operatively connected to said air eliminator port for permitting expulsion of air and fuel vapors from said housing, said float valve being adapted to shut-off flow through said air eliminator port when the fuel in said first and second chambers reaches a predetermined level to thereby prevent flow of fuel through said air eliminator port.

3,283,478

HUMIDIFIER

Lawrence Katzman, New York, Edward Briggin, Brooklyn, Edward M. Stolarz, New York, and Anthony N. D'Elia, Riverdale, N.Y.; said Briggin, Stolarz, and D'Elia assignors to Kaz Manufacturing Co., Inc., New York, N.Y., a corporation of New York

Filed June 24, 1964, Ser. No. 377,731
2 Claims. (Cl. 55—230)



1. A humidifier comprising a container, a top detachably connected to said container and having a raised central portion and a raised ring-shaped portion of substantially inverted U-shape in cross section and a recessed portion interconnecting said central portion and said ring-shaped portion, a mounting plate entirely above said container, said mounting plate being secured to said top and abutting said recessed portion about an entire circular area of contact and extending both outwardly and inwardly from said circular area of contact so as to separate the space between said mounting plate and said raised central portion into a chamber, and to separate the space between said mounting plate and said ring-shaped portion into a wind tunnel entirely spaced above and separated from said container with said mounting plate forming the bottom of said wind tunnel, said wind tunnel being isolated from said chamber by said circular area of contact, said raised ring-shaped portion having an outlet opening in the uppermost portion thereof communicating with said wind tunnel, said central portion having inlet openings therein for permitting entry of air into said chamber, said inlet openings being positioned below said outlet opening said mounting plate having apertures therein communicating said chamber with said container, said mounting plate having openings therein communicating said wind tunnel with said container, a drive means in said chamber on said mounting plate and having a hollow impeller driven thereby and depending therefrom, a slotted cylindrical baffle secured to and depending from said mounting plate and closely surrounding said impeller, said impeller being disposed below said mounting plate and extending into said container for drawing fluid in said container upwardly and then directing said fluid against said baffle so that mist and fluid droplets will be formed, and vane means depending from said mounting plate and vent means in said mounting plate for diverting said droplets into said container while said mist passes through said wind tunnel and thence through said outlet opening.

3,283,479

COMBINATION TRAP PUMP

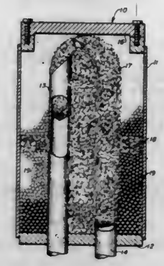
Thomas H. Batzer and Robert H. McFarland, Livermore, Calif., assignors to The United States of America as represented by the United States Atomic Energy Commission

Filed July 9, 1964, Ser. No. 381,603
13 Claims. (Cl. 55—316)

1. A combination trap-pump for producing vacuums comprising;

(a) a gas tight outer casing having inlet and outlet means spatially intercommunicated by the volume within said casing for passage of gas therebetween,

(b) means providing a large gas sorptive capacity disposed in said volume for contacting gas passing therethrough, and



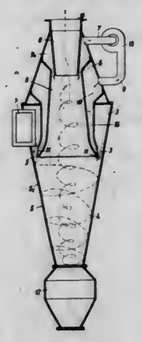
(c) previous oil molecule sorptive metal surface means disposed in said casing to competely transect the gas passage volume therein in at least the oulet means region thereof for interception of oil molecules entering from said outlet means and being in gas passage intercommunication with said gas sorptive means of paragraph (b).

3,283,480

DUST COLLECTOR

Laszlo Lazarus Szego, South Woodford, London, England, assignor to John Robert Berend, London, England

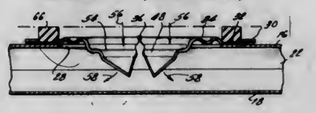
Filed Jan. 27, 1964, Ser. No. 340,859
Claims priority, application Germany, Jan. 26, 1963, S 83,442
7 Claims. (Cl. 55—340)



7. A dust separator comprising a conical downwardly tapering lower housing section and also comprising an upper housing section mounted on said lower housing section, funnel-shaped passage means extending from said upper housing section into said lower housing section and having its lower end slightly spaced from the adjacent wall portion of said lower housing section so as to confine therewith a first annular slot-like passage, inlet passage means tangentially leading into the upper portion of said lower housing section for introducing thereinto a dust laden fluid to be freed from dust, said funnel-shaped passage means having that end thereof which is remote from said first annular slot-like passage provided with a second annular slot-like passage, discharge means having one end in flow communication with said funnel-shaped passage means for discharging fluid from which dust has been withdrawn, chamber means surrounding said funnel-shaped passage means and having an annular

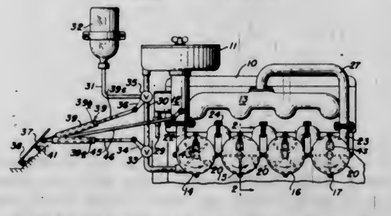
slot-shaped mouth adjacent said first annular slot-like passage, and conduit means establishing communication between said second slot-like passage and said chamber means.

3,283,481
FILTER BAG FOR VACUUM CLEANERS AND COLLAR THEREFOR
Lester J. Studley and Martin Cordell, Far Rockaway, N.Y., assignors to Studley Paper Company, Inc., Far Rockaway, N.Y., a corporation of New York
Filed Dec. 18, 1964, Ser. No. 419,321
2 Claims. (Cl. 55—367)



1. A vacuum cleaner filter bag comprising a bag body formed of filter sheet matefial, said body having an opening defined in a wall thereof, a unitary valve collar mounted on an exterior surface of the bag and overlying said opening, the diameter of said collar being greater than the diameter of said opening, said collar having a securing portion which encompasses said opening and is secured to said exterior surface, and a gasket overlying said securing portion and secured thereto, said collar being formed of a flexible material and having a plurality of slits extending radially outwardly from the center of the collar to define slitted portions which are deflectable from the plane of said collar into said bag opening in response to air pressure to define a valve opening in communication with the interior of said bag, said slitted portions being returnable to said planar disposition thereof in the absence of air pressure to close said valve opening, said collar valve being a plastic member provided with concentric corrugations, and each of said radial slits cutting through at least two of said corrugations.

3,283,482
FUEL CONDITIONING SYSTEM FOR INTERNAL COMBUSTION ENGINES
James E. Trafford, Traveler's Hotel, and Leroy Kreeger, 1273 N. Main St., both of Salinas, Calif.
Filed Mar. 15, 1965, Ser. No. 439,873
2 Claims. (Cl. 55—385)



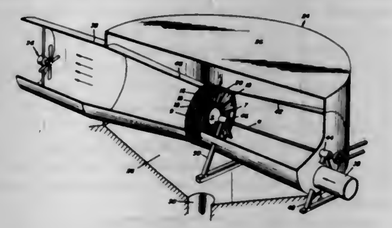
1. In a fuel conditioning system for internal combustion engines of the type having a fuel intake manifold, an air filter and a carburetor, a plurality of fuel vaporizing units mounted adjacent the engine, the said units being connected one to another in series to allow a fuel mixture to flow successively through the units, each of the units having a housing enclosing a rotor, such rotor having a hub journaled in the housing and a plurality of radial screen-like vanes, each housing having a tangentially arranged fuel inlet and an outlet, the outlet of the housing of one vaporizing unit being connected to the inlet of the housing of an adjacent unit, the outlet of the housing of the vaporizing unit which is last in the series being connected to the engine's fuel intake manifold, an air line connecting the air filter and a tangentially arranged air intake means to the housing of the vaporizing unit which is first in the series, a water containing vessel having a water line connecting with the air line to supply water to the air line, a control valve in the air line, a control valve in the water line, a foot pedal pivotally mounted for operation by the driver of a vehicle driven by the engine, means connecting the foot pedal and the valves in the air and water lines to control the air and water admitted to the housing of the vaporizing unit which is first in the series, and a conduit connecting the carburetor and the housing of the last mentioned vaporizing unit.

3,283,483
PACKED COLUMNS FOR CHROMATOGRAPHY
Istvan Halasz, Frankfurt am Main, Germany, and Erwin Heine, Riverside, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed Mar. 11, 1965, Ser. No. 439,008
Claims priority, application Germany, May 4, 1962, H 45,689; Mar. 19, 1964, H 52,097
9 Claims. (Cl. 55—386)



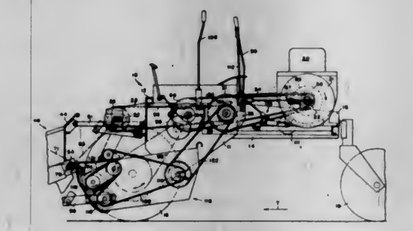
1. A chromatographic column for the separation of the components of a mixture of gases, liquids or vapors flowing therethrough comprising:
a tubular chromatographic column, and
a packing of granular partitioning material within the interior volume of said column, said individual grains of said partitioning material supporting each other across the cross-section of said column and having sufficient size to create in a packing thereof a resultant inter-particle void space of at least 45 percent of the total packed volume of said column.

3,283,484
MECHANICAL GASEOUS CENTRIFUGE
Louis N. Nomar, 1706 5th Ave., Charleston, W. Va.
Filed Apr. 14, 1964, Ser. No. 359,725
6 Claims. (Cl. 55—408)



1. A mechanical gaseous centrifuge comprising hub means having a longitudinal axis, a plurality of scoop wing means extending substantially radially from and disposed around the periphery of said hub means, each said scoop wing means comprising a forward wing, a trailing wing and at least one central wing said forward, trailing and central wings lying in planes generally perpendicular to said hub axis, first scoop members connecting said forward and central wings and second scoop members connecting said central and trailing wings, each said first and second scoop members having a concave arcuate forward face, dome means mounted on said hub means for changing the direction and velocity of gas that comes into contact with said dome means, said forward, central and trailing wing means being arranged in a stair step fashion and each of said plurality of wing means being angularly spaced from the next succeeding wing means, and a plurality of slots being defined between respective contiguous forward, central and trailing wings.

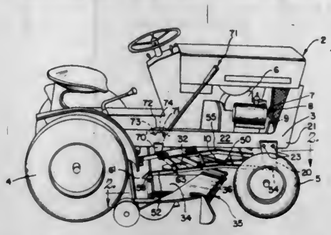
3,283,485
DRIVE SYSTEM FOR AGRICULTURAL MACHINE
Earl E. Koch, Mohnton, and Daniel C. Heitshu, Shippensburg, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed May 25, 1964, Ser. No. 369,912
14 Claims. (Cl. 56—23)



1. A windrower machine comprising, in combination, a frame, a pair of laterally spaced ground wheels supporting a forward end of said frame and a caster wheel supporting a rearward end in a location generally in trailing relation to one of said pair of wheels, a header mounted on said frame forward end and extending laterally relative thereto, a transversely reciprocable sickle and a reel carried on said header and extending from one side to the other of the header, an engine mounted on said frame between said forward and rearward ends and along the side of the frame toward said one ground wheel, said engine having an output drive shaft extending across a longitudinal central vertical plane substantially midway between said pair of ground wheels, said drive shaft extending parallel to the axes of said wheels, a main drive wheel supported on said frame forward end for rotation on an axis parallel to said shaft and in a vertical plane along said central plane, a drive train along said central plane connecting said engine shaft and said drive wheel, a pair of output elements projecting respectively from opposite sides of said drive wheel, a first drive connection between the output element at one side of said drive wheel to one side of said header, and a second drive connection between the output element at the other side of said drive wheel to the other side of the header.

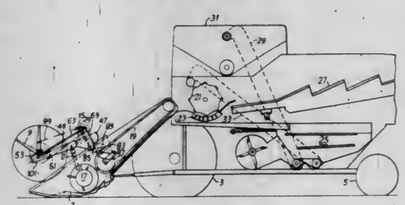
3,283,486
IMPLEMENT SUPPORTING AND LIFT LINKAGE
Donald C. Marek, Oak Lawn, Ill., and Herbert C. Glesmann, Papillion, Nebr., assignors to International Harvester Company, a corporation of Delaware
Filed May 1, 1964, Ser. No. 364,160
8 Claims. (Cl. 56—25.4)

1. In a support for a mower beneath a tractor having a longitudinal body, draft link means pivotally supported from said body on a substantially horizontal axis for vertical swinging movement adjacent the front end of said body and extending rearwardly therefrom, a mower beneath the body, means pivotally connecting the rear end of the mower from said draft link means, link means supporting the front end of the mower from said draft link means intermediate the ends thereof, means on the tractor disposed in lifting relation to said draft link means for swinging said draft link means and thereby the mower substantially vertically, and means for moving said link means connecting the front end of the mower with the



draft link means substantially commensurate with the movement of the rear ends of said draft link means whereby said mower is maintained substantially horizontally in all positions thereof.

3,283,487
GRAIN HARVESTING MACHINES
John S. Jarvis, Orwell Works, Ipswich, Suffolk, England, assignor to Ransomes, Sims & Jefferies Limited, Ipswich, Suffolk, England, a British company
Filed July 8, 1964, Ser. No. 381,087
Claims priority, application Great Britain, July 10, 1963, 27,314/63
7 Claims. (Cl. 56—222)

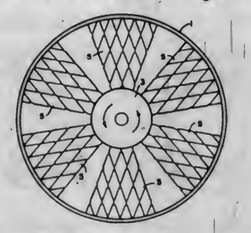


1. Mechanism for effecting movement of the reel of a grain harvesting machine in a direction fore and aft of the machine including a reel supporting arm, a reel supporting bearing carried on and movable longitudinally with respect to the reel supporting arm, a lever pivotally mounted for rotation about an axis parallel with and rearwardly disposed with respect to the reel axis, a link connected with the lever at a point thereof spaced from the pivotal axis of the lever and with the reel supporting bearing, means for effecting pivotal movement of the lever, and, for the purpose of cooperating with reel driving endless band means, first wheel means rotatably mounted relative to the pivotal axis of the lever, second wheel means carried on the lever and rotatable about an axis spaced from the pivotal axis of the lever and third wheel means adapted to be secured to the reel.

3,283,488
ROTARY SAFETY BLADE
Alpheus A. Franklin, Dallas, Tex., assignor to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed May 1, 1963, Ser. No. 277,368
3 Claims. (Cl. 56—295)

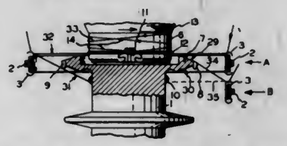
1. An improved cutter for rotary mowers adapted to rotate in a substantially horizontal plane about a vertically-disposed shaft comprising a hub portion adapted for attachment to said vertically-disposed shaft, a peripheral flat metal ring surrounding and spaced from said hub

portion, said ring having an unbroken outer circular noncutting edge forming the outer circumference of said cutter, a plurality of spoke-type support elements connecting said hub portion to said ring, a plurality of cutting elements consisting of normally flexible wires drawn taut between said hub portion and said ring to form substan-



tially straight cutting edges parallel to the radii of said cutter, said cutting elements being spaced about said cutter and being separated by a distance sufficient to permit grass to enter the space between said cutting elements, and said hub and ring and cutting elements forming a generally flat disc-shaped cutter.

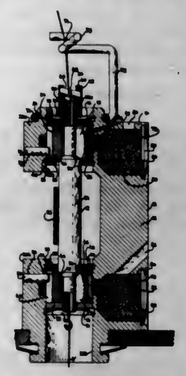
3,283,489
DEVICE AND METHOD FOR PRODUCING A YARN PACKAGE
Willem Bakker, Velp, Gelderland, Netherlands, assignor to American Enka Corporation, Enka, N.C., a corporation of Delaware
Filed Nov. 27, 1963, Ser. No. 326,520
Claims priority, application Netherlands, Dec. 21, 1962, 287,162; Apr. 17, 1963, 291,641
26 Claims. (Cl. 57—34)



1. A fixation device, for use in combination with a bobbin upon which a yarn package is to be wound, having on one face thereof a raised region approximately defining a T and being adapted to be fixedly attached to a bobbin mounted on a yarn twisting spindle so that said face thereof provided with said raised T-shaped region faces away from the surface of said bobbin with the vertical leg of said T substantially parallel to the axis of said bobbin and the two horizontal legs of said T extend substantially transverse to the axis of said bobbin, the ends of said horizontal legs of said T extending beyond the surface of said device to provide free spaces in the form of slots between the undersides of said horizontal legs and the yarn-contacting surface of said bobbin and the surfaces of said two horizontal legs of said T in the regions adjacent said vertical leg of said T being substantially more raised than the surface of said vertical leg to define thread clamping surfaces on the upper sides thereof which extend approximately transverse to the axis of said bobbin.

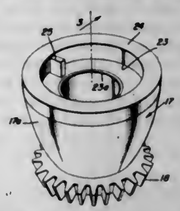
3,283,490
FALSE TWIST SPINDLE
William V. Goodhue, North Kingstown, R.I., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Feb. 2, 1965, Ser. No. 429,824
6 Claims. (Cl. 57—77.33)

1. A false twist spindle for twisting and untwisting yarns comprising, a rotatable member having an axial bore therethrough for the passage of yarns, means for mounting said member for rotation, a yarn engaging element connected with said member and arranged to engage the yarn passing through said axial bore to rotate



the yarn, and a helical groove formed in the surface of said element for receiving said yarn whereby to define a helical path for said yarn as the yarn engages said element.

3,283,491
BOBBIN WHIRL GEARS FOR ROVING FRAMES
William Franklin Lee, 201 Howard Aden Apts., Spartanburg, S.C.
Filed Feb. 14, 1964, Ser. No. 345,020
8 Claims. (Cl. 57—102)



5. A bobbin whirl gear for roving frame bolsters and comprising a tubular body portion for rotation on a bolster, an annular drive gear functionally integral with one end of said body portion, the other end of said body portion providing a seat for a bobbin base, an element of a bobbin drive connection provided by said seat, and an endless functionally integral flange surrounding said seat to sustainingly engage the side of a bobbin base in snug relation from said seat to substantially the outer end of the flange and maintain the related bobbin firmly concentric with said body portion and gear.

3,283,492
DEAD END
Jess C. Little, Cleveland Heights, Ohio, assignor to The Fanner Manufacturing Company, a division of Textron Inc., Cleveland, Ohio, a corporation of Rhode Island
Filed Feb. 12, 1965, Ser. No. 432,364
9 Claims. (Cl. 57—145)



1. In combination with a line folded back upon itself to form a bight which is connected to a support, said bight comprising a loop and said folded back portion

being a tail portion extending in proximity to the main line portion, means for holding a short part of said tail portion in contact with the main line and against movement in opposite direction to the movement of the main line, comprising a preformed resilient helical element the convolutions of which are of an open pitch and the pitch length being such that said element when applied to the line is not permanently deformed, the inner diameter of the element being less than the line, said element having one end portion wrapped around the portion of

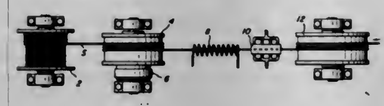


the bight on the tail side thereof and having a mid-portion of less than one pitch length wrapped around the combined tail and main line portions whereby the tail portion is held in contact with the line, said last wrapping causing a distortion of the element at the points where it surrounds the line to increase the inner diameter and reduce the pitch length, for resiliently holding said line parts in contact with each other, and the other portion of said element being wrapped around the main line.

3,283,493
PROCESS OF PRODUCING A SPUN YARN
James B. Arthur and Malcolm R. Livingston, both of Charlotte, N.C., assignors to Celanese Corporation of America, New York, N.Y., a corporation of Delaware
No Drawing. Original application Dec. 12, 1960, Ser. No. 75,133, now Patent No. 3,153,315, dated Oct. 20, 1964. Divided and this application May 11, 1964, Ser. No. 370,144
11 Claims. (Cl. 57—157)

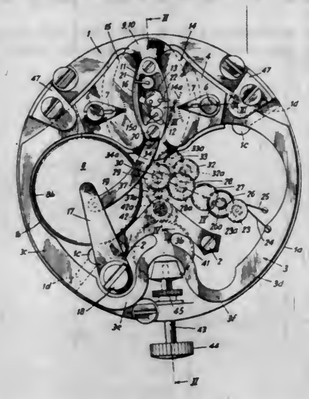
1. The process of producing a draftable continuous filament structure, comprising bulking continuous filament yarn initially having a tenacity in excess of about 1 gram per denier until the tenacity thereof is less than about 0.5 gram per denier.

3,283,494
METHOD OF MAKING STRANDS
Wilbert A. Lucht, Orange, and Richard T. Woodbury, Hamden, Conn., assignors to United States Steel Corporation, a corporation of New Jersey
Original application Apr. 10, 1962, Ser. No. 186,439. Divided and this application Sept. 24, 1965, Ser. No. 489,961
4 Claims. (Cl. 57—156)



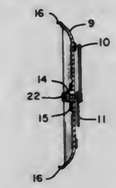
2. The method of making a straight multi-wire strand which comprises stranding steel wires together with the wires in the strand being of different lengths, heating the strand to a temperature of between 600 and 950° F. and subjecting the strand while so heated continuously to tension above the elastic limit to elongate at least one of the wires and to make all the wires substantially the same length.

3,283,495
ELECTRONIC WATCH
Max Hetzel, Bienne, and Rémy Seigneur, Tavannes, Switzerland, assignors to Centre Electronique Horloger S.A., Neuchatel, Switzerland
Filed Feb. 16, 1965, Ser. No. 433,033
Claims priority, application Switzerland, Feb. 18, 1964, 1,966/64; Jan. 6, 1965, 125/65
6 Claims. (Cl. 58—23)



1. An electronic watch having a hand-setting stem in the plane of the clockwork movement and an audio frequency mechanical resonator serving both as a time-basis and as a driving member, said resonator following through the major portion of its length the periphery of the clockwork movement, the oscillating part of said resonator being an approximately omega-configuration with a narrow elastic neck at its central portion, said resonator comprising two arms fixed to each other and symmetrical with respect to a plane passing through the axis of said hand-setting stem and having an indentation leaving a free space between said resonator and the periphery of the clockwork movement, said space being adapted to house said hand-setting stem, said hand-setting stem being located at least approximately in the plane of said resonator.

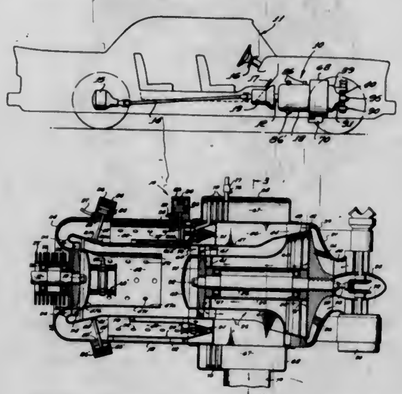
3,283,496
WRIST WATCH WITH ADJUSTABLE DIAL
Harold L. Hohenthaner, 146 College Ave., St. Paul, Minn.
Filed Aug. 19, 1964, Ser. No. 390,708
7 Claims. (Cl. 58—57)



1. In a wrist watch having a case, a readily detachable closure member for said case and a driving shaft centrally thereof, a stem projecting from one side of said case, a dial rotatable about the axis of said shaft through an angle of approximately 180° in said case, minute and hour hands concentrically operative in said case for indicating time by reference to said dial, and means for retaining said dial selectively in at least two positions differing by

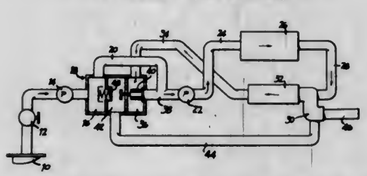
an angle of approximately 180° one from the other relative to said case and stem, in each of said positions the center of said dial being substantially on the axis of said shaft.

3,283,497
BURNER FOR GAS TURBINE ENGINE
Leo I. Kaplan, Los Angeles, Calif., assignor to Poly Industries, Inc., Pacoima, Calif., a corporation of California
Original application July 9, 1963, Ser. No. 293,603. Divided and this application Apr. 5, 1965, Ser. No. 445,573
7 Claims. (Cl. 60—39.74)

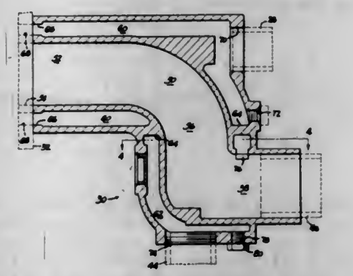


4. A combined fuel distributor and flame holder for use in the combustion chamber of a gas turbine engine comprising, a thin-walled tubular body of high temperature material having flanges at the opposite ends thereof projecting laterally in opposite directions from the end portions thereof, high temperature fibrous wicking mounted against the inner and outer surfaces of said tubular body and extending substantially from end-to-end thereof, means holding said wicking in assembled position against said tubular body, and means for distributing fuel to said wicking circumferential and between the opposite ends of said tubular body.

3,283,498
EXHAUST ELBOW
Calvin C. Connell, Bloomfield Hills, Mich., assignor to Crusader Marine Corporation, Warren, Mich., a corporation of Michigan
Filed Jan. 14, 1965, Ser. No. 425,554
4 Claims. (Cl. 60—30)

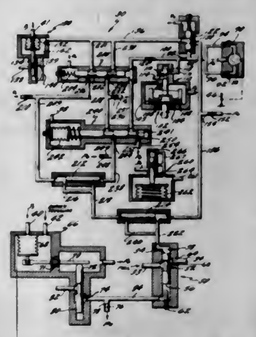


1. A cooling system for a marine engine having coolant conducting passages therein and an exhaust pipe for said engine for conducting exhaust gases away from said engine and for discharging coolant water from said coolant system, said coolant system including in combination a recirculatory liquid flow circuit including the coolant conducting passages, a raw water liquid flow passage connected to said recirculatory circuit for supplying makeup water thereto and connected to said exhaust pipe for discharging coolant water, a fitting coupling said exhaust pipe to said engine comprising a housing having first and second chambers therein, means defining an internal passage extending through said chambers from one end of said housing to the other for connection at one end to said engine and at the other end to said exhaust pipe, said first chamber surrounding a portion of said internal passage



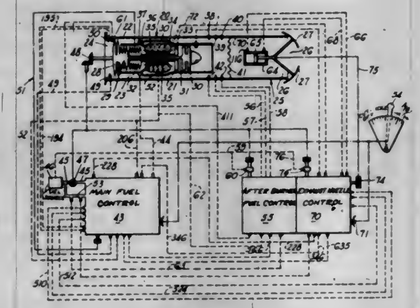
near said one end and said second chamber surrounding another portion of said internal passage near said other end, means for connecting said first chamber in said recirculatory liquid flow circuit to pass recirculated water through said first chamber and through said coolant conducting passages and means for connecting said second chamber in said raw water liquid flow passage to pass raw water through said second chamber and said exhaust pipe to discharge the same.

3,283,499
CLOSED LOOP FUEL CONTROL SYSTEM
Frederick E. Scheidler, West Hartford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Oct. 24, 1963, Ser. No. 318,671
5 Claims. (Cl. 60—39.28)



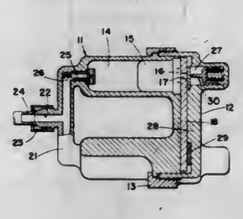
1. A fuel control for controlling a gas turbine power plant having a burner, a turbine receiving the products of combustion discharging from said burner and a compressor driven by said turbine, said control having a hydraulic computing system including first valve means movable in response to compressor discharge pressure for generating a first hydraulic pressure signal, second valve means having connecting means communicating with said first valve means for receiving said first hydraulic pressure signal and being movable in response to corrected compressor speed for generating a second hydraulic pressure signal, third valve mean having connecting means communicating with said second valve means for receiving said second hydraulic pressure signal and being movable in response to compressor inlet temperature for generating a third hydraulic pressure signal, said control also having a fuel metering system including fuel regulating means having actuating means for injecting fuel to said burner, means for applying said third hydraulic pressure signal to said actuating means, means responsive to the pressure drop across said burner for developing a fourth hydraulic pressure signal, and means for applying said fourth hydraulic pressure signal to said actuating means, whereby the said actuating means will position said fuel regulating means in response to the difference between said third hydraulic pressure signal and said fourth hydraulic pressure signal.

3,283,500
FUEL FEED AND POWER CONTROL APPARATUS FOR COMBUSTION ENGINES
Francis R. Rogers, Howard L. McCombs, Jr., and Mike Snider, all of South Bend, Ind., assignors to The Bendix Corporation, a corporation of Delaware
Original application Sept. 13, 1963, Ser. No. 308,799, now Patent No. 3,232,053, dated Feb. 1, 1966. Divided and this application Oct. 22, 1965, Ser. No. 501,941
5 Claims. (Cl. 60—39.28)



1. Fuel flow control apparatus for a gas turbine engine provided with an air compressor, an afterburner, a plurality of afterburner fuel manifolds connected to discharge fuel into said afterburner and a control lever for controlling the operation of the engine, said fuel flow control apparatus comprising:
a source of pressurized fuel;
a separate conduit connected to supply fuel from said source to each of the fuel manifolds;
first valve means in each of said conduits for controlling the effective flow area thereof and thus fuel flow therethrough;
second valve means in each of said conduits responsive to the fuel pressure drop across said first valve means for controlling said fuel pressure drop;
a fuel shut-off valve in each of said fuel conduits for blocking fuel flow therethrough to the associated manifold;
separate means operatively connected to each of said first valve means for controlling the operation thereof;
first means responsive to a variable condition of engine operation related to engine power ouput operatively connected to said separate means for actuating the same;
second means responsive to a variable condition of engine operation related to engine power ouput operatively connected to said separate means for actuating the same;
third means responsive to the position of the control lever operatively connected to said separate means for actuating the same;
means responsive to the position of the control lever operatively connected to said fuel shut-off valves for actuating the same; and
control means operatively connected to said last named means for controlling movement thereof in a series of steps to cause said fuel shut-off valves to open in sequence.

3,283,501
GAS GENERATING APPARATUS AND METHOD
William R. Peterson, Levittown, Pa., assignor to the United States of America as represented by the Secretary of the Army
Filed Nov. 16, 1964, Ser. No. 411,650
5 Claims. (Cl. 60—39.47)

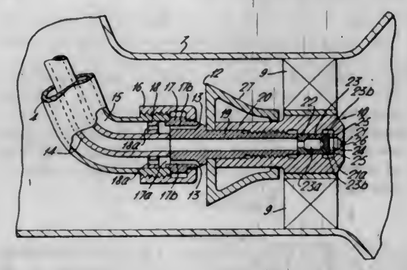


1. A multiple firing initiator for use in gas generator apparatus and the like, comprising
a housing containing a plurality of combustion chambers each having at a rearmost location therein a loaded cartridge and primer therefor,
means communicatively connected with each of said chambers for collecting gas generated therein,
a plurality of firing pins correspondingly aligned with said cartridge primers, a spring forwardly biasing each of said pins,
an indexing plate rotatable about a longitudinal axis and normally restraining the force of said pin springs, said indexing plate having a plurality of angularly spaced openings therethrough each radially aligned with and angularly offset from a corresponding firing pin,
a retainer plate between said indexing plate and said primer and having a plurality of apertures each longitudinally aligned with corresponding pairs of said pins and primers, and
means for selectively advancing ones of said openings into registration with its corresponding firing pin,
so constructed and arranged that a selected one of varying amounts of gas pressure may be developed.

3,283,502
FUEL INJECTION SYSTEM FOR GAS TURBINE ENGINES
Arthur H. Lefebvre, 4, The Drive, Wharley End, Cranfield, near Bedford, England
Filed Feb. 24, 1965, Ser. No. 434,885
Claims priority, application Great Britain, Feb. 26, 1964, 7,918/64; Apr. 18, 1964, 16,169/64
12 Claims. (Cl. 60—39.74)

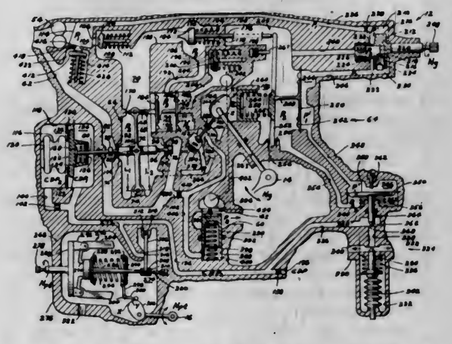
7. A liquid fuel burner comprising a combustion chamber, an air duct opening into the chamber for supplying primary combustion air to the combustion space thereof,

an air-blast atomiser in said air duct, said atomiser including a fuel supply element in the form of a flooded edge projecting into the air stream and located upstream



with respect to the combustion space, a spray nozzle opening into said chamber, and separate fuel lines to said atomiser and said spray nozzle.

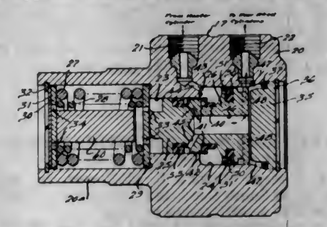
3,283,503
GAS TURBINE FUEL CONTROL
Warren H. Cowles, Birmingham, Mich., assignor to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed Mar. 30, 1964, Ser. No. 355,540
9 Claims. (Cl. 60—39.28)



1. A gas turbine engine fuel control, comprising a fuel inlet port, a fuel outlet port, a fuel passageway communicating therebetween, an acceleration fuel system, means in said passageway operatively connected to said acceleration fuel system for maintaining a fuel flow therethrough having a linear relationship with the pressure drop across said means, and a governor system having means in contact with said first mentioned means for at times causing said first mentioned means to serve as a governor valve.

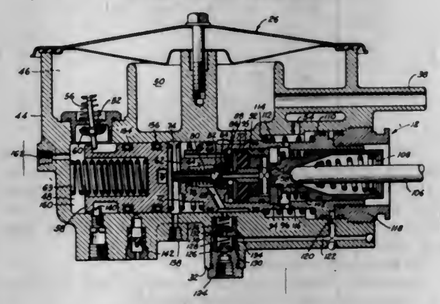
3,283,504
PROPORTIONING VALVE
William Stelzer, Bloomfield Hills, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed July 31, 1964, Ser. No. 386,697
7 Claims. (Cl. 60—54.5)

1. In a hydraulic brake system comprising a master cylinder, front and rear wheel brake cylinders, and means hydraulically connecting said master cylinder to said wheel cylinders, that improvement which comprises a proportioning valve device in the hydraulic connection between said master cylinder and rear wheel cylinders for maintaining differential pressures in the front and rear wheel cylinders during a portion of the braking operation, said device comprising a casing having an inlet connection with said master cylinder and an outlet connection with said rear wheel cylinders, said casing being formed with two cylinders of different diameter bores, a stepped piston having a small head and a larger head fitting said cylinders and slidably mounted for axial movement therein, a space in said casing intermediate said heads connected to said inlet, a chamber at the end of said larger diameter cylinder opposite said space connected to said outlet, pas-



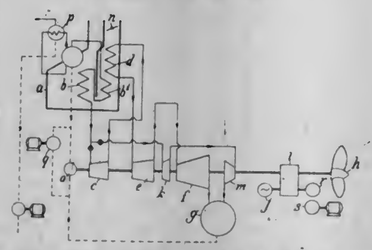
sage means connecting said inlet and space to said chamber and outlet, a valve seal member secured to said piston intermediate said heads adapted to engage the bore of said smaller cylinder upon movement of said piston in one direction to close said passage means, the end of said small head being exposed to atmospheric pressure, and spring means normally biasing said piston into position wherein said valve seal member is disengaged from said smaller bore to open said passage means between said inlet and outlet.

3,283,505
POWER BRAKE CONTROL MEANS
Thomas M. Julow, Charlie N. French, and Richard H. Rosback, South Bend, Ind., assignors to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Sept. 15, 1964, Ser. No. 396,531
3 Claims. (Cl. 60—54.5)



3. In a braking system for a vehicle having a fluid pressurizing system, a combined master cylinder and power control valve comprising:
- a housing having a bore therein with a fluid inlet port, a pressure delivery port and a reservoir port;
- a first piston operatively arranged in said bore to be biased by a spring to the rear of said bore;
- a second piston operatively mounted in said bore in front of said first piston which second piston is operatively connected to said first piston;
- a control valve operatively connected to said second piston to control passage of fluid through passages in said second piston and out to said fluid pressure delivery port; and
- check valve means operatively arranged in said inlet to isolate the fluid pressurizing system from the combined master cylinder and power control valve as well as isolating a variable volume chamber behind said first piston from the control valve.

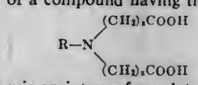
3,283,506
SHIP'S PROPULSION PLANT
Thomas Baird Hutchison, London, and Norman J. H. D'Arcy, Wallsend, England, assignors to Pametrada, Wallsend, England, and Esso Research and Engineering Co., Elizabeth, N.J.
Filed May 7, 1964, Ser. No. 365,603
Claims priority, application Great Britain, Sept. 26, 1963, 38,013/63
10 Claims. (Cl. 60—102)



1. A marine steam turbine propulsion installation comprising a high pressure turbine stage, an intermediate pressure turbine stage, a low pressure turbine stage, at least one reverse drive turbine stage, a boiler including a reheater section, a condenser, conduits to supply steam from the boiler selectively through an ahead flow path or an astern flow path to the condenser, the ahead flow path including the high pressure turbine stage, the reheater section, the intermediate pressure turbine stage and the low pressure turbine stage, the astern flow path including the or each reverse drive turbine stage the said turbine stages being mechanically connected together, a propeller shaft, a boiler feed pump and an electric generator being mechanically connected to the said turbine stages.

3,283,507
STABILIZED FUEL COMPOSITION COMPRISING A HYDRAZINE AND CERTAIN AMINES
John Farrar, Sepulveda, and Robert W. Sprague, Santa Ana, Calif., assignors to North American Aviation, Inc.
No Drawing. Filed Jan. 31, 1962, Ser. No. 170,857
3 Claims. (Cl. 60—215)

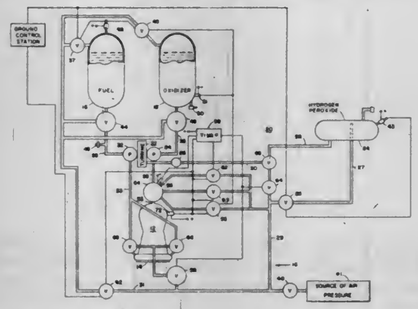
1. A composition of matter comprising:
a hydrazine and from about
0.1 to 15 percent by weight based on the total composition of a compound having the general formula:



wherein x is an integer from 1 to 2 and
R is selected from the class consisting of hydrogen and a univalent organic radical wherein when R is a univalent radical it has from 1 to 9 carbon atoms and is selected from the class consisting of substituted and unsubstituted alkyl, aryl, aralkyl, cycloalkyl groups wherein the substituted groups are radicals selected from the class consisting of phosphonic acid, sulfo, amino, imidazole, indyl, pyrrolidine, hydroxy, carboxy and keto groups.

3. In a conventional method of operating a liquid fuel rocket engine comprising storing a liquid oxidizer and fuel, feeding said oxidizer and fuel to a rocket engine injector, injecting said fuel and oxidizer into an engine combustion chamber igniting as the fuel therefore the composition of claim 1.

3,283,508
MISSILE CONTROL SYSTEM
William A. Schulze, Huntsville, Ala., assignor to the United States of America as represented by the Secretary of the Army
Filed Oct. 6, 1965, Ser. No. 505,088
1 Claim. (Cl. 60—223)

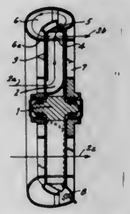


A control system for a rocket having a propulsion unit including a pair of tanks respectively disposed for containing fuel and oxidizing liquids therein and a combustion chamber for ignition of said liquids to provide thrust for the rocket, said control system comprising:
- (a) a conduit disposed in communication with said fuel tank and said combustion chamber;
- (b) a second conduit disposed in communication with said oxidizer tank and said combustion chamber;
- (c) valve means disposed in each of said conduits in proximity of said fuel and oxidizer tanks to control the flow of said liquids therefrom;
- (d) a turbine secured to said conduits intermediate said tanks and said combustion chamber;
- (e) a pair of pumps respectively mounted in each of said fuel and oxidizer conduits and disposed adjacent said turbine to carry said liquids to said combustion chamber;
- (f) a tank containing hydrogen peroxide, said tank disposed in communication with said turbine for operation thereof responsive to decomposition of said hydrogen peroxide;
- (g) valve means mounted in said second conduit intermediate said pumps and said combustion chamber to control flow of said liquid oxygen from said pump to said combustion chamber;
- (h) means secured in said combustion chamber for generation of an electric signal responsive to a pressure lower than a predetermined valve in said combustion chamber, means responsive to said signal for actuation of respective ones of said valve means in predetermined sequential order for shut down of said propulsion unit.

3,283,509
LIFTING ENGINE FOR VTOL AIRCRAFT
Harri Nitsch, Munich, Germany, assignor to Junkers Flugzeug- und Motorenwerke Aktiengesellschaft, Munich, Germany
Filed Feb. 20, 1964, Ser. No. 346,199
Claims priority, application Germany, Feb. 21, 1963, J 23,218
1 Claim. (Cl. 60—226)

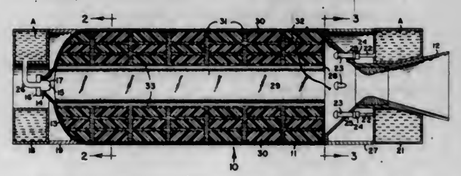
A lifting engine for VTOL aircraft, comprising a lift reactor fan including a hub and a plurality of hollow rotor blades extending substantially radially of said hub, each of said rotor blades having an inlet opening adjacent to said hub and an open tip so that said rotor blades draw streams of air through said inlet openings when the fan rotates and such streams undergo compres-

sion on their way toward and through said open tips; and a power plant for rotating said fan, said power plant comprising a ring of inclined hollow turbine blades each connected to and communicating with the open tip of one of said rotor blades, a fixed annular combustion chamber adjacent to the open tips of said rotor blades, said combustion chamber being arranged to receive com-



pressed air from said turbine blades and having annularly arranged orifice means adjacent to said turbine blades, and means for admitting fuel into said combustion chamber so that such fuel mixes with compressed air to form a combustible mixture which, on ignition thereof, yields products of combustion issuing from said exit orifice means to rotate said blades and to produce a lifting thrust.

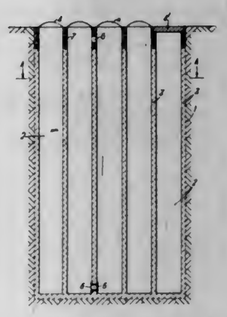
3,283,510
THROTTLABLE SOLID PROPELLANT ROCKET MOTOR
Grafton F. Mangum and Roy T. Willis, Jr., Huntsville, Ala., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Aug. 3, 1964, Ser. No. 387,069
5 Claims. (Cl. 60—250)



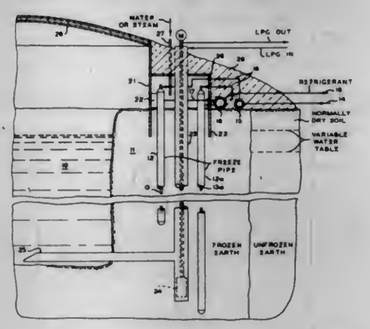
1. In a rocket motor comprising a casing defining a combustion chamber and having an exhaust cone communicating therewith, a solid propellant charge loaded into said chamber; said charge comprising a plurality of formations consisting of blocks of preformed solid propellant separated by layers of inhibiting materials, a coating of inhibiting material covering the surface of each of said formations, means for introducing into said chamber an igniting material that reacts hypergolically with said layers and said coatings to burn said layers and said coatings and ignite said blocks of solid propellant.

3,283,511
GROUND RESERVOIR FOR THE STORAGE OF LIQUEFIED GASES AT A LOW TEMPERATURE
Maurice Nachshen, London, England, assignor to Conch International Methane Limited, Nassau, The Bahamas, a company of The Bahamas
Filed Dec. 14, 1962, Ser. No. 246,295
Claims priority, application Great Britain, Feb. 12, 1962, 5,325/62
7 Claims. (Cl. 61—.5)

1. A ground reservoir for the storage of liquefied gases at low temperature which comprises a group of substantially vertical shafts extending from the surface of the earth through the earth formation in close proximity to each other, a frozen liquid contained in the earth formation surrounding said group of shafts and between the individual shafts, said liquid solidifying at low temperatures and remaining solid when the reservoir is charged with the liquefied gas to be stored, said shafts being sufficiently close to each other so that the solidified liquid completely occupies the space between adjacent shafts, means for filling and discharging liquid from the shafts, means for venting gas from the shafts, and at least one thermally insulated roof covering said shafts.

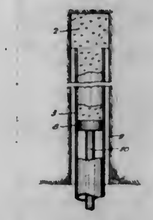


3,283,512
EARTHEN STORAGE FOR VOLATILE LIQUIDS AND METHOD OF CONSTRUCTING THE SAME
Donald E. Hull, Bountiful, Utah, assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 19, 1963, Ser. No. 302,885
4 Claims. (Cl. 61—.5)



4. An earthen storage system for normally gaseous liquid comprising an open-topped earthen reservoir in frozen earth; freeze pipes vertically positioned in the earth around the periphery of said reservoir to maintain the walls of the reservoir frozen; a first and second vapor-impermeable steel wall partially sunk into the frozen earth around the periphery of said reservoir on each side of, and adjacent, said freeze pipes; a vapor-impermeable cover sealed to and connecting the tops of said walls to prevent sublimation of ice from the frozen earth between said walls; a vapor-impermeable roof covering said reservoir, supported by and sealed to said walls; and means to introduce water to the earth between said walls.

3,283,513
PROCESS OF MOUNTING ELONGATED MEMBERS IN DRILL HOLES
Thomas W. Kierans, P.O. Box 1089, Sudbury, Ontario, Canada, and William L. Heard, Milton, Ontario, Canada
Filed Dec. 23, 1964, Ser. No. 424,878
2 Claims. (Cl. 61—35)



1. Process of mounting an elongated member in a rock drill bore hole which comprises forming a hardening body of material consisting essentially of a resin selected from the group consisting of epoxy and polyester resins, a hardener for said resin, and a finely divided solid filler, mixing said body to a plastic, inherently form-retaining consistency, said body retaining said consistency for a limited period of time prior to hardening thereof, during said period of time placing said body in said bore hole by

(a) inserting said body into an open-ended tube of less diameter than that of said bore hole,

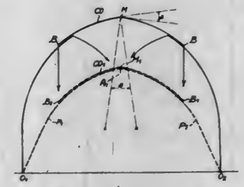
(b) inserting said body-containing tube into said bore hole and with an open end of said tube in contact with the bottom wall of said hole,

(c) withdrawing said tube from said hole while applying pressure to said body to extrude it out of said tube and initially into contact with the bottom wall of said hole, and then progressively and continuously into contact with the side wall of said hole beginning with its line of juncture with said bottom wall while gradually withdrawing said tube from said hole, and

(d) completely removing said tube from said hole when said body has been extruded therefrom, said body forming a column thereof in said hole in adherent, fixed relation with respect to the walls of said hole, inserting an elongated member into said column while still in said period of time in said hole to partially displace said column and place it in contact with the entire side and end surfaces of the portion of said elongated member disposed in said column, and thereafter permitting said body to harden and thereby anchor said elongated member in said hole.

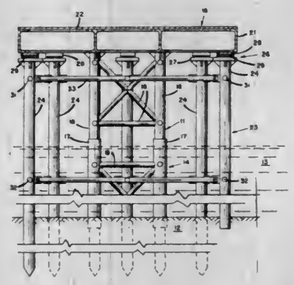
3,283,514
SLIDING BEARER-SETS FOR MINE GALLERIES
Jean Joseph Launay, Monaco, Monaco, assignor to Applications Scientifiques, Techniques, Industrielles et Commerciales A.S.T.I.C. (Societe Anonyme Monegasque), Monte Carlo, Principality of Monaco
Filed Sept. 27, 1963, Ser. No. 312,025
Claims priority, application France, Sept. 29, 1962, PU 910,815
3 Claims. (Cl. 61—45)

1. A bearer set for mine galleries comprising, two uprights of substantially the same configuration secured at their lower end to spaced points adjacent or on the ground and swingable thereabout, said uprights being symmetrically disposed about an axis normal to the ground, each upright including a curved upper terminal portion, a head-piece including a pair of members rigidly secured to one another in an end-to-end and symmetrical relationship, each of said members including an arched arm slidably secured to said terminal portion of said uprights and adapted to overlap therewith, said head-piece adapted to move in a substantially linear, vertical path between a highest position and a lowest position as said uprights swing towards each other, said upper terminal portions having a radius of curvature identical to that of said arched arms adapted to overlap with said upper terminal



portions, the origins of the radius of curvature of said arched arms being spaced from one another, the angle between two imaginary lines drawn tangentially to adjacent end points on each said arched arm being less than 180° and being equal to the angle formed by two imaginary lines drawn tangentially to adjacent end points on each said terminal portion when said head-piece is in its lowest position.

3,283,515
MARINE STRUCTURE
Newell Pottorf, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Apr. 15, 1964, Ser. No. 360,039
6 Claims. (Cl. 61—46)



1. A marine structure comprising

a vertical inner support member having its lower end affixed to a formation underlying a body of water and an upper end extending above the level of said water;

a horizontal deck member positioned above the level of said water and affixedly attached to said inner member adjacent the upper end thereof;

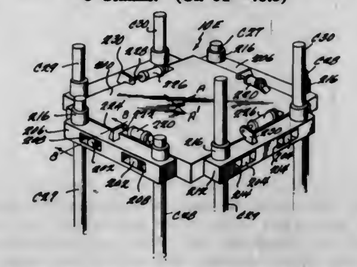
a vertical outer protective means encircling said inner support member, the lower end of said protective means being affixed to said formation and the upper end thereof extending above the level of said water;

vertical load transfer connecting means movably connecting said deck member to said outer protective means to provide vertical support for said deck member while permitting lateral movement of said outer protective means relative to said deck member.

3,283,516
WALKING WORK BARGE

Leon B. De Long, Seattle, Wash., Carl B. Finkelson, Staten Island, N.Y., and George E. Suderow, deceased, late of Staten Island, N.Y., by Ethel D. Suderow, executrix, Richmond County, N.Y., assignors to De Long Corporation, New York, N.Y., a corporation of Delaware

Original application Nov. 19, 1962, Ser. No. 238,803, now Patent No. 3,230,721, dated Jan. 25, 1966. Divided and this application Apr. 14, 1965, Ser. No. 449,388
6 Claims. (Cl. 61—46.5)



1. A marine walking barge comprising: first platform means having first and second pairs of opposed side portions

a pair of second platform means, each of said second platform means being disposed adjacent a different one of said first side portions, and means joining said first and second platform means for relative linear horizontal movement in a direction along said first side portions;

a pair of third platform means, each of said third platform means being disposed adjacent a different one of said second side portions, and means joining said first and third platform means for relative linear horizontal movement in a direction along said second side portions one of said platform means including a deck surface over its major area to accommodate workmen and equipment and said first, second and third platform means constituting a buoyant unitary structure;

a first set of legs carried by said second platform means, and a second set of legs carried by said third platform means, the legs of each set being horizontally spaced and arranged on both members of each pair so as to be capable of stably supporting said structure on a marine ground independently of the legs of the other set and so as to permit said relative horizontal movement without interference between said sets of legs;

stop means carried by said platform means effective to limit said horizontal movement so that at the maximum extent of said horizontal movement either of said leg sets can stably support said structure;

jacking means associated with each leg set and with the corresponding platform means to selectively effect or restrain vertical movement of the legs of each set in either direction relative to the corresponding platform means in order to raise or lower said structure on a leg set when the latter is engaged with the marine ground and raise or lower a leg set when said structure is afloat or supported on the other leg set whereby said structure may be selectively supported by either of said leg sets;

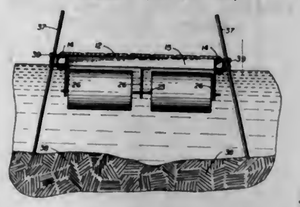
means engageable with said first and second platform means for moving the same relative to each other horizontally in a direction along said first sides;

and means engageable with said first and third platform means for moving the same relative to each other horizontally in a direction along said second sides.

3,283,517
FLOATING MOVEABLE DOCK

Lloyd H. Phillips, 1212 S. Garry Road, Liberty Lake, Wash.

Filed Sept. 20, 1963, Ser. No. 310,289
1 Claim. (Cl. 61—48)

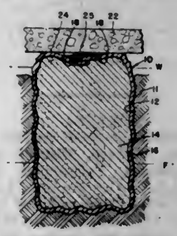


A movable floating dock of the nature aforesaid, comprising, in combination, a rigid, planar, rectangular frame having peripheral beams and intermediate cross members, said members having internal enclosed buoyant chambers to aid said member in flotation; elongate decking positioned on the upper side thereof so as to present an upper planar surface being supported by said frame but not completely coextensive therewith, said planking being fastened thereto in a rigid fashion; means at the shore end of said dock to anchor said end to the shore upon which it rests; enclosed cylindrical float means having an elongate pipe axle, of a length substantially equal to the shorter dimension of said dock, nonrotatably carrying thereon two spaced axially aligned cylindrical floats having sealed interior chambers to provide flotation, said axle being mounted rotatably in a plurality of downwardly extending brackets upon the underside of said dock frame, perpendicular to its longer dimension to support said floating end upon a body of water and act as wheels to aid in movement thereof over land; structurally attached paired brackets near each of the lateral floating end portions of said dock having recesses to receive and releasably hold ladder rungs; and ladders releasably pivotably carried on each side of said dock by said brackets, extending downward from the floating end of said dock to the bottom therebelow.

3,283,518
SOIL FOOTING

Norman R. Toffolon, 8 Woodside Lane, Plainville, Conn.

Filed Apr. 15, 1965, Ser. No. 448,517
14 Claims. (Cl. 61—53)

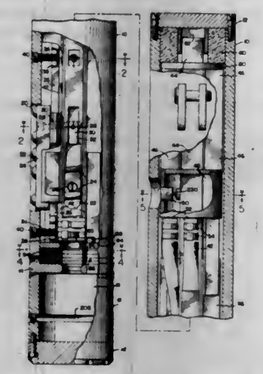


1. A footing for supporting a building or other structure and comprising a body formed of substantially dry soil and which is disposed in and at least approximately fills a ground cavity extending below frost level, the soil in said body comprising discrete and nonadherent granular particles compacted to a density higher than that of the surrounding soil and so that it will bear its applied load without settling, and said body serving to supply substantially all of the vertical support provided by the footing for the building or structure, and a waterproof flexible shell disposed about the sides and bottom of the body and serving to prevent the entry of subsurface water into the body, said shell serving also at an upper portion to prevent the entry of surface water into the body.

3,283,519
PILE DRIVING MANDREL

Fredric Rusche, Southfield, Mich. (8125 Medina St., Detroit, Mich.)

Filed Nov. 15, 1963, Ser. No. 323,943
20 Claims. (Cl. 61—53.72)



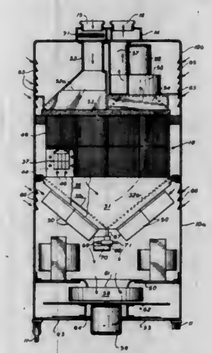
1. A mandrel for driving spirally corrugated pile shells into the earth comprising in combination an elongated tube, a head plate secured to one end of the tube for transmitting force of a driving hammer to the tube, a coupling sleeve secured to the other end of the tube for receiving a device for coupling a second tube to the first mentioned tube, a foot plate secured to the other end of the first mentioned tube for transmitting driving force to the sleeve, a plurality of shell-driving plugs distributed along the length of the tube which are expressible from the tube to engage the spiral corrugations of a surrounding pile shell, means for retracting the plugs within the outer surface of the tube, means disposed along the length of the tube for expressing the plugs, a torsionally flexible floating support for the expressing means including a group of elongated bars extending substantially the length of the tube between the plates, a transverse plate secured to each end of the group of bars, said support and expressing means being contained within the tube between the head and foot plates, an axial principal stack of perforated elastomeric driving pads preloaded in compression axially of the tube disposed between the head plate and the transverse plate on the adjacent end of the support, said stack comprising alternate relatively thick and relatively thin pads of textile fabric, each pad being impregnated and bonded with elastomer, some of the thin pads having on one surface a corrugated layer of impregnated fabric forming a plurality of parallel springs, the directions of the corrugations of alternate corrugated pads being disposed transverse to one another and such alternate corrugated pads being separated by flat, noncorrugated pads.

3,283,520
THERMOELECTRIC COOLER FOR OXYGEN TENTS

Walter A. Donohue, Scotch Plains, and Norman A. Martin, Kearny, N.J., assignors to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware

Filed Mar. 30, 1965, Ser. No. 443,785
12 Claims. (Cl. 62—3)

1. A thermoelectric cooler for an oxygen tent comprising a cabinet having inlet and outlet ports, a cooling air duct in said cabinet between said ports, a hot air duct in said cabinet thermally insulated from said cooling air duct, a plurality of thermoelectric modules each comprising at least one thermoelectric element and heat exchangers in close thermal association with the hot and cold junctions of said element, said heat exchanger at the cold junction being thermally associated with said cooling air duct and said heat exchanger at the hot junction being thermally associated with said hot air duct, said heat exchangers including fins extending through said hot and cool air ducts, a blower for circulating air from said oxygen tent through said cool air duct, a separate blower for circulating room air through said hot air duct, the thermoelectric elements of each of said thermoelectric modules being cylindrically shaped and in spaced parallel arrangement having opposite end faces in respective parallel planes, conductor straps electrically connecting the end faces of



successive pairs of said elements in a series arrangement with the elements of each such pair being of opposite polarity so that all hot junctions lie in one of said planes and all cold junctions in the other of said planes, the straps in each plane having the edges in close contiguous relationship to form a substantially complete module surface, a base plate forming a wall portion of said cooling air duct and applied to the module surface at said cold junctions via an interface film of electrically insulating and heat conducting material, a spacing block having one face applied to the module surface at said hot junctions via an interface film which is electrically insulating and heat conducting, a base plate applied to a face of said spacing block opposite said one face and forming a wall portion of said hot air duct, said base plate having surface areas substantially larger than said module surfaces, and a foam insulation between said base plates in the space around said spacing blocks.

3,283,521
SEPARATION OF A GASEOUS MIXTURE CONTAINING A SOLIDIFIABLE CONTAMINANT

Alexander Harmens, Purley, Surrey, England, assignor to Conch International Methane Limited, Nassau, Bahamas, a Bahamian company

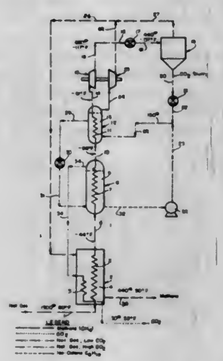
Filed Apr. 9, 1964, Ser. No. 358,420
Claims priority, application Great Britain, June 7, 1963, 22,778/63
11 Claims. (Cl. 62—12)

1. A method of separating a contaminant from a gaseous feedstream to obtain gaseous product lean in the contaminant and separated gaseous contaminant, said method comprising:

(a) cooling the gaseous feedstream in a first evaporative heat exchanger;

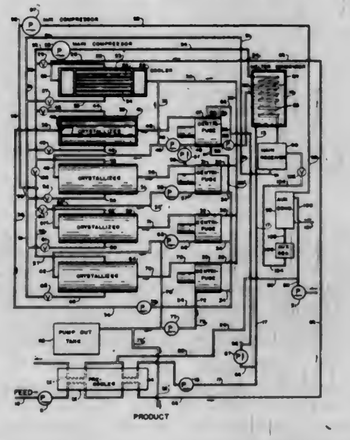
(b) further cooling the gaseous feedstream in a second evaporative heat exchanger;

(c) reducing the pressure of the gaseous feedstream subsequent to step (b) to obtain at a reduced temperature gaseous products and a slurry of solidified contaminant in liquefied gas;
(d) passing into the second heat exchanger a mixture of said slurry and a liquid carrier medium, at a pressure reduced below the initial pressure of the slurry, to provide said further cooling of step (b);



(e) evaporating out in said second heat exchanger gaseous product which is lean in contaminant and at a further reduced pressure, leaving a second slurry of solidified contaminant in the liquid carrier medium;
(f) passing said second slurry at a reduced pressure into the first evaporative heat exchanger to effect the cooling of step (a) and obtain thereby separated gaseous contaminant and liquid carrier medium.

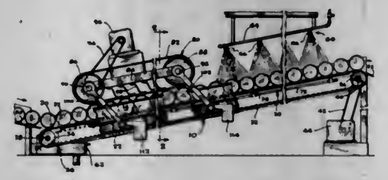
3,283,522
FREEZE CONCENTRATION
Neophytos Ganiaris, New York, N.Y., assignor to Struthers Scientific and International Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 4, 1963, Ser. No. 321,020
9 Claims. (Cl. 62—58)



1. In a process of concentrating an aqueous solution by crystallization of ice, separating the ice from the solution, and recovering the solution retained on the ice by washing, the steps which comprise

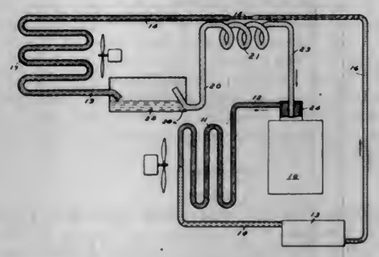
(a) cooling an aqueous solution in a plurality of crystallization steps to slurries containing ice crystals and concentrated aqueous solutions, the concentration of the aqueous solutions increasing in each succeeding crystallization step,
(b) separating, in a plurality of ice separating steps, the ice from the slurry of each crystallization step,
(c) passing each concentrated solution to a succeeding crystallization step,
(d) passing back all of the ice from all succeeding ice separation steps to the first crystallization step producing a less concentrated solution, and
(e) recovering, by washing, the solution from the ice separated from the first crystallization step.

3,283,523
METHOD AND APPARATUS FOR PROCESSING FILLED CONTAINERS
Marshall Long, Overland Park, Kans., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois
Filed Dec. 30, 1963, Ser. No. 334,205
10 Claims. (Cl. 62—63)



1. An improved method for flushing circular objects, said method comprising: urging said objects along a path in an upwardly inclined direction by applying a directional movement to the lowermost portions of said objects along said path with said objects abutting one another; engaging upwardly exposed portions of a plurality of said objects throughout movement only along the lower increment of said path; applying a directional movement to the uppermost portions of said objects where so engaged whereby both the rate of rotation of said objects and the upward rate of movement along said path may be adjusted to desired values; and flushing said objects with fluid along said path.

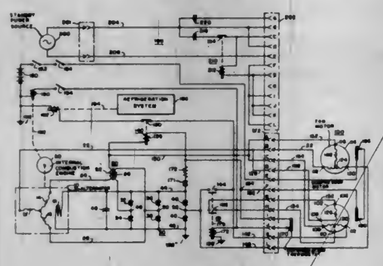
3,283,524
REFRIGERATION SYSTEM
John Thomson Byron, 28 Tutela Heights Road, Brantford, Ontario, Canada
Filed Mar. 17, 1964, Ser. No. 352,526
5 Claims. (Cl. 62—115)



1. The method of improving the thermodynamic efficiency of refrigeration systems of the restrictive device type and utilizing a continuous type evaporator and accumulator which comprises

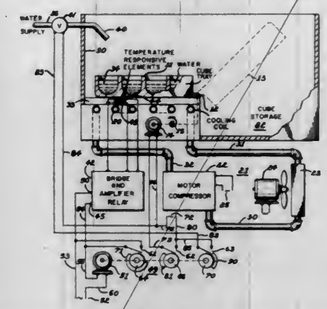
charging the system with at least twice the normal amount of refrigerant used with such a system of the same refrigerating capacity,
continuously circulating said abnormal volume through the system,
decreasing the restrictive effect of the restrictive device to at least one half that of the standard type for an evaporator of the same capacity such that the refrigerant passes in a continuous and uninterrupted liquid mass through the restrictive device and thereafter is converted by expansion to a highly saturated, relatively wet vapor and remains as a relatively wet vapor in passing through the evaporator and accumulator to the compressor whereby substantially all the internal surfaces of the evaporator are backed with liquid refrigerant,
moving said refrigerant through the system in a condition such that a rapid transfer of heat occurs through the evaporator walls and the surface temperature of the evaporator is maintained relatively near the temperature of the area being refrigerated so that a relatively high humidity is provided in the area being refrigerated,
insuring a continuous supply of liquid refrigerant on the high side by the use of a receiver positioned below the condenser,
and continuously accumulating and trapping liquid flowing from the evaporator toward the compressor.

3,283,525
ELECTRICAL CONTROL FOR A REFRIGERATION SYSTEM
Roger F. Fricke, American Township, and Walter E. Wier, Lima, Ohio, assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 9, 1964, Ser. No. 358,430
15 Claims. (Cl. 62—134)



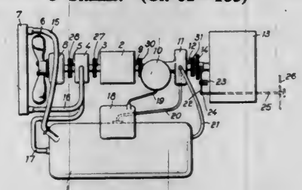
1. A vehicle refrigeration system comprising an alternating current generator having a direct current field winding and output terminals; driving means driving said alternating current generator that may vary in driving speed; refrigeration means, including a compressor and thermostat; an alternating current load, including an alternating current motor driving said compressor; said alternating current load being connected in circuit relation with the output terminals of said alternating current generator; means connected in circuit relation with said field winding providing an excitation current proportional to said alternating current load, which produces an electrical output at the output terminals of said alternating current generator having a constant ratio of voltage to frequency; means connected in circuit relation with said thermostat and operably connected with said driving means, increasing the speed of said driving means to a predetermined minimum when said thermostat indicates cooling is required and the driving speed is below said predetermined minimum.

3,283,526
ICE MAKER CONTROL APPARATUS
Charles E. Le Boeuf, Dayton, Ohio, assignor to Honeywell, Inc., Minneapolis, Minn., a corporation of Delaware
Filed Oct. 20, 1964, Ser. No. 405,105
5 Claims. (Cl. 62—135)



1. In a control system for controlling ice cube making apparatus having a refrigeration apparatus with a heat exchanger for removing heat from a cube forming tray, bridge circuit means having a first and second adjacent legs and having an output and an input circuit, circuit means adapted to connect said output circuit to said refrigeration apparatus, first and second temperature responsive impedance means, electrical means connecting said first and second means to said input circuit to be in said adjacent legs in opposition, said first and second means being adapted to be mounted between said tray and said heat exchanger to respond to a differential temperature indicative of heat flow between said tray and the heat exchanger whereby upon a decrease in the temperature differential to a predetermined value said output terminates the operation of the refrigeration apparatus.

3,283,527
APPARATUS FOR DRIVING THE AUXILIARY DRIVEN DEVICES OF AN INTERNAL COMBUSTION ENGINE, PARTICULARLY FOR AN AUTOMOBILE
André Cauvin, Port-Marly, France, assignor to Société Anonyme Simca Automobiles, Paris, France
Filed Feb. 1, 1965, Ser. No. 429,258
Claims priority, application France, Jan. 30, 1964, 962,033
5 Claims. (Cl. 62—183)

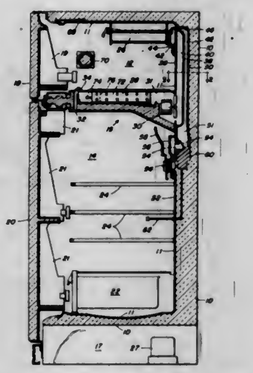


1. In a vehicle having an internal combustion engine and a plurality of auxiliary devices including an air conditioner and a radiator fan, the improvement comprising an electric motor mounted on said vehicle to operate independently of said engine, a shaft driven by said electric motor, a first clutch means for operatively connecting said shaft to said radiator fan, a thermostatic device for actuting said clutch means in response to a predetermined radiator temperature and a second clutch means for operatively connecting said shaft and said air conditioner.

3,283,528
AIR DISTRIBUTION SYSTEM FOR COMBINATION FREEZER-REFRIGERATOR

Wentworth E. Palm, Norway, and Norman W. Jenewein, Cedar Rapids, Iowa, assignors, by mesne assignments, to Amana Refrigeration, Inc., Middle Amana, Iowa, a corporation of Delaware

Filed Feb. 12, 1965, Ser. No. 432,271
2 Claims. (Cl. 62—187)



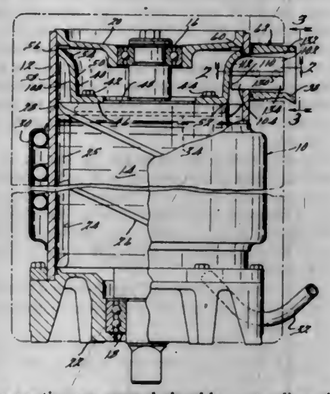
1. An air distribution system for a combination freezer-refrigerator unit having a refrigerator section located below and separated by a partition from a freezer section to each of which sections air cooled to below freezing temperature by a refrigeration system is circulated by a fan located in said partition, said air distribution system comprising an inner duct extending upwardly along the rear wall of said freezer section from the discharge side of said fan and terminating in a discharge opening in the top rear wall of said freezer section, an outer duct formed integrally on the rear wall of said inner duct extending downwardly between said inner duct and the outer rear wall of said unit and terminating at a discharge opening near the top rear wall of said refrigerator section, the upper end of said outer duct communicating with the upper end of said inner duct through a port of fixed size in the common wall between said ducts and restricting the flow of air from said inner duct to said outer duct, a variable position damper in the lower end of said outer duct controlling the flow of air from said outer duct through the discharge opening into said refrigerator section, first temperature responsive means in said refrigerator section controlling the position of said damper, and second temperature responsive means for said freezer section controlling the operation of the refrigeration system and said fan, the restriction of said port reducing the volume of air admitted to said outer duct when said damper is in its fully open position to less than twenty percent of the total volume of air delivered through said inner duct by said fan.

3,283,529
AUGER ICE MAKING APPARATUS

Marcus L. Nelson, Albert Lea, Minn., assignor to King-Seeley Thermos Co., Ann Arbor, Mich., a corporation of Michigan

Continuation of abandoned application Ser. No. 303,994, Aug. 23, 1963. Divided and this application Feb. 10, 1966, Ser. No. 533,115
21 Claims. (Cl. 62—320)

1. An ice making device comprising an ice forming chamber, rotatable auger means mounted in said ice forming chamber to deliver ice formed therein toward one end thereof, a discharge opening adjacent said one end of ice forming chamber providing a discharge path for ice extending substantially transversely to the axis of rotation of said auger means, an ice compacting chamber located adjacent said discharge opening, an end wall member axially spaced from said auger means, the inner surface of said ice compacting chamber being formed by said end wall member and being outwardly curved

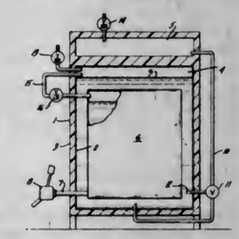


to form a continuous curved shoulder extending circumferentially relative to the auger means and radially outwardly to said discharge opening to define the compacting chamber, and rigid blade means fixedly mounted relative to said ice forming chamber to engage ice in said compacting chamber and direct the ice outwardly through said discharge opening.

3,283,530
BEVERAGE DISPENSING AND COOLING APPARATUS

Peter D. Bayne and James J. Solomon, Milwaukee, Wis., assignors to Jos. Schlitz Brewing Company, Milwaukee, Wis., a corporation of Wisconsin

Filed Sept. 13, 1965, Ser. No. 486,769
9 Claims. (Cl. 62—389)



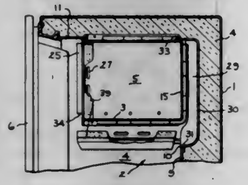
1. A device for dispensing and refrigerating a beverage, comprising means defining a cooling chamber and containing a liquid heat transfer material, a container located in heat transfer relation to the heat transfer material, a first reservoir connected to the upper end of the chamber, a second reservoir to contain a liquefied gas under pressure, conduit means connecting the second reservoir to the lower portion of the cooling chamber, means operably associated with said conduit means for expanding the liquefied gas into contact with the heat transfer material to thereby chill the heat transfer material and cool the beverage contained within the container, said liquefied gas being expanded to the gaseous state and the gas passing upwardly through the heat transfer material and being collected in the first reservoir, pressure relief valve means connected to the first reservoir for maintaining the

gas at a given pressure, second conduit means connecting the first reservoir with the upper end of the container for supplying gas to the container, check valve means located in said second conduit means for permitting the flow of gas from said first reservoir to the container and for preventing the flow of fluid in the opposite direction, and dispensing means for dispensing a beverage from said container.

3,283,531
FULL VOLUME REFRIGERATOR

Julius B. Horvay and Ralph E. King, Louisville, Ky., assignors to General Electric Company, a corporation of New York

Filed Sept. 10, 1965, Ser. No. 486,333
3 Claims. (Cl. 62—441)



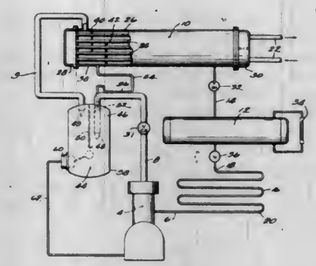
1. A refrigerator cabinet comprising:
an outer shell,
a liner and a C-shaped metal evaporator within and spaced from said shell and cooperating to define a storage volume including a lower fresh food storage compartment and an upper freezer compartment,
means for securing the side edges of said C-shaped evaporator directly to said liner top portion and to said liner side walls rearwardly from the front edges of said liner side walls to form the top, rear and bottom walls of said freezer,
said liner including side walls forming the side walls of both of said compartments and a rear wall forming the rear wall of said fresh food compartment,
said liner side walls each having a plurality of spaced vertically extending rows of slots between the upper and lower front edges of said evaporator and horizontally extending rows of slots immediately below the side edges of the bottom wall of said evaporator to form thermal breaks between the portions of said side walls forming part of said freezer compartment and the portions thereof exposed to the temperatures in said fresh food compartment,
a sheet of plastic material spaced rearwardly from said evaporator rear wall and having its edge portions joined to the adjacent edges of said liner side and rear walls and to the rear top edge of said evaporator to form a duct extending from said fresh food compartment upwardly along the rear wall of said evaporator,
said evaporator rear wall including an opening therein communicating with said duct to permit relatively warm air to circulate through said freezer compartment and return to said fresh food compartment through said opening and said duct.

3,283,532
REFRIGERATING APPARATUS WITH OIL SEPARATING MEANS

Erich J. Kocher, Milwaukee, Wis., assignor to Vilter Manufacturing Corporation, Milwaukee, Wis., a corporation of Wisconsin

Filed Sept. 23, 1965, Ser. No. 489,610
7 Claims. (Cl. 62—473)

1. In a refrigerating system having an oil lubricated compressor providing high pressure gas to a discharge line communicating with a condenser for distribution in the system, an oil separator interposed in the high pressure discharge line in open communication therewith for initially separating entrained oil from the high pressure gas, said separator communicating with the compressor for returning separated oil thereto, and means down-

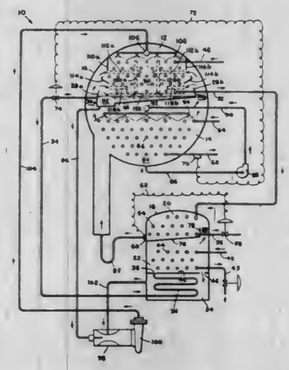


stream of said separator and associated with the inlet to the condenser for separating residue oil from the gas, said residue oil separating means communicating with said initial oil separator through the high pressure discharge line to induce the residue oil to return thereto.

3,283,533
MIST ELIMINATOR MEANS FOR AN ABSORPTION REFRIGERATION SYSTEM

David Aronson, Upper Montclair, N.J., assignor to Worthington Corporation, Harrison, N.J., a corporation of Delaware

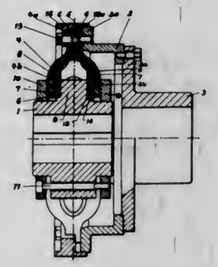
Filed Sept. 15, 1965, Ser. No. 487,375
6 Claims. (Cl. 62—494)



1. An absorber for an absorption refrigeration system having a condenser, an evaporator which passes refrigerant vapor to the absorber, the absorber and a generator, the absorber comprisng:
(a) a casing,
(b) a tube bundle means disposed in the casing,
(c) a spray header means disposed in the casing for discharge of brine solution which passes over the tube bundle means and into which the refrigerant vapor is absorbed,

(d) baffle means disposed outwardly of the tube bundle means to prevent the sprayed brine solution from leaving the absorber and to permit the refrigerant vapor to enter the absorber for penetration into the tube bundle means whereby the refrigerant vapor will be absorbed into the sprayed solution,
(e) the tube bundle means including oppositely disposed sides and a bottom remote from the spray header means,
(f) a plurality of passage means formed within the tube bundle means,
(g) at least one passage means extending from the bottom of the tube bundle means in the direction of the spray header means,
(h) at least one passage means extending from one of the sides of the tube bundle means in the direction of the other of the sides, and
(i) the passage means extending from the bottom of the tube bundle means to permit distributed penetration of the refrigerant vapor into all of the said passage means.

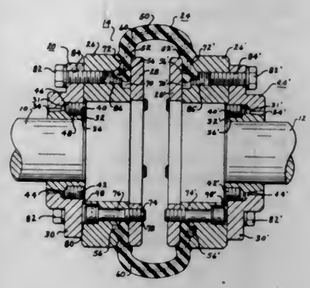
3,283,534
COUPLING DEVICE
Herwarth Reich, Marthastr. 15, Bochum, Germany
Filed Aug. 20, 1964, Ser. No. 390,976
Claims priority, application Germany, Aug. 23, 1963, R 35,966
8 Claims. (Cl. 64—11)



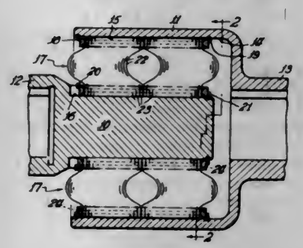
1. An elastic coupling comprising a hub-shaped half, a drum-shaped half, and intermediate members of highly elastic material for joining said halves and being connected to the halves in a symmetrical radial plane, each intermediate member being of Y-shaped cross-section in an axial plane thus providing a fork-shaped portion and a straight shank portion, means for connecting the fork-shaped portion to the hub-shaped half, and further means for connecting the straight shank to the drum-shaped half.

3,283,535
SHAFT COUPLING
Robert R. Grundtner, South Bend, Ind., assignor to Dodge Manufacturing Corporation, Mishawaka, Ind., a corporation of Indiana
Filed Aug. 24, 1964, Ser. No. 391,675
9 Claims. (Cl. 64—11)

1. A flexible coupling for connecting two shafts in end-to-end relation with the ends thereof spaced a substantial distance apart, comprising flanges for said shafts, each of said flanges having an annular shoulder on its internal face, means for securing said flanges to said shafts, an intermediate ring for each of said flanges seating on said annular shoulder and having an annular groove on its inner surface, a flexible element of arcuate cross section and with inwardly extending side walls seating in said grooves, an inner ring on each of said intermediate rings adjacent the grooves therein, screws extending through said intermediate and inner rings for clamping said side walls in said grooves, and screws extending through said flanges for securing said intermediate rings to the respective flange.

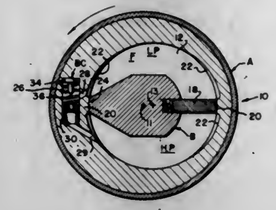


3,283,536
FLEXIBLE MECHANICAL COUPLING
Walter Fisher, Mount Prospect, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Oct. 6, 1964, Ser. No. 401,928
6 Claims. (Cl. 64—15)



1. In a flexible mechanical coupling comprising:
(a) an annular shell having first splines in its inner periphery,
(b) a shaft within said annular shell in concentric alignment therewith and provided with second splines in its outer periphery complimenting the said first splines,
(c) a unitary spring pack comprising a multiplicity of bowed leaf spring elements having a hub provided with an opening therethrough and having third splines in the inner periphery of said hub matching the said second splines and fourth splines on the outer periphery of said unitary spring pack matching the said first splines, the said unitary spring pack being assembled over the said shaft by means of an opening through said hub within the inner periphery of said annular shell, the said third splines engaging the said second splines and the said fourth splines engaging the said first splines, and
(d) means for retaining the outer periphery of said unitary spring pack and the said hub against axial movement.

3,283,537
IMPULSE TOOL WITH BYPASS MEANS
Robert P. Gillis, Somerville, N.J., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 22, 1965, Ser. No. 441,706
9 Claims. (Cl. 64—26)



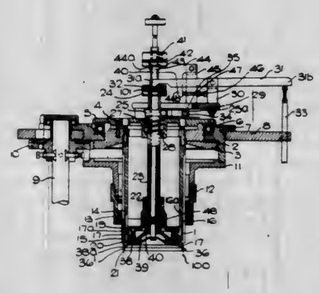
1. For an impulse tool for applying a torque to an object, said impulse tool having housing means provided with a cavity for sealingly containing a fluid, spindle means in said housing means and in said fluid, drive means operatively associated with one of said housing means and said spindle means for causing relative rotary movement between said housing means and said spindle means, the other of said housing means and said spindle means being adapted to engage said object, sealing means on one of said housing means and said spindle means, a first sealing portion on said housing means, a second sealing portion on said spindle means, said first sealing portion and said second sealing portion being in sealing relation during a relatively small portion of each revolution of said relative rotative movement, said first sealing portion and said second sealing portion and said sealing means being operable during said relative small portion of each revolution of said relative rotary movement to dynamically seal off said cavity into a high pressure portion and a low pressure portion to produce a primary pressure pulse in said high pressure portion and on said other of said housing means and said spindle means thereby causing said other to rotate with respect to said one of said housing means and said spindle means and to apply a torque to said object; a bypass control device in one of said housing means and said spindle means, said bypass control device comprising:
(a) said one being provided with cavity means in communication with said high pressure portion and said low pressure portion,
(b) piston means in said cavity means and provided with orifice means,
(c) stop means in said cavity means and aligned with said orifice means,
(d) biasing means in said cavity means between said piston means and said stop means for normally maintaining said piston means and said stop means in spaced relation,
(e) said piston means being operative as the pressure increases in said high pressure portion, as the flow rate increases through said orifice means and as the pressure differential produced across said orifice means overcomes said biasing means to move said orifice means into engagement with said stop means thereby shutting off flow of fluid between said high pressure portion and said low pressure portion,
(f) said piston means being operative after impulse and when said biasing means overcomes said pressure differential to move away from said stop means thereby permitting flow of fluid from said high pressure portion to said low pressure portion at a rate insufficient to move said piston means and said orifice means into engagement with said stop means with attendant substantial elimination of stall time.

3,283,538
SHOCK ABSORBING COUPLING
Thomas F. Trefny, Hicksville, N.Y., assignor to Kollsman Instrument Corporation, Elmhurst, Queens, N.Y., a corporation of New York
Filed Jan. 25, 1965, Ser. No. 427,827
4 Claims. (Cl. 64—27)



1. A shock absorbing coupling comprising a first rotatable member, a second rotatable member, a first circular spring having first and second opposing ends, a second circular spring having first and second opposing ends; said first and second ends of said first and second springs having respective connection means; said first and second members having opposing surface portions extending therefrom; said first and second members being coaxial; said first and second circular springs being coaxial with one another and with said first and second members; said portion of said first member surface having first and second connection means connected to said connection means of each of said first ends of said first and second springs respectively; said surface portion of said second member having single connection means connected to each of said connection means of said second ends of said first and second circular springs.

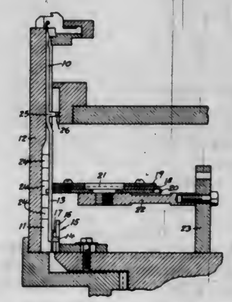
3,283,539
CIRCULAR KNITTING MACHINES
Roland Peberdy, Leicester, England, assignor to The Bentley Engineering Company Limited, Leicester, England
Filed Sept. 10, 1963, Ser. No. 307,843
Claims priority, application Great Britain, Sept. 18, 1962, 35,493/62
3 Claims. (Cl. 66—14)



1. In a circular knitting machine of the type having two coaxially opposed needle cylinders, comprising a plain cylinder and a rib cylinder, double-ended needles operable in either cylinder to produce rib or plain needle loops and capable of transfer between the two cylinders to knit

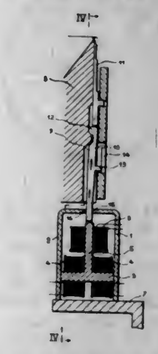
plain or rib fabric and to change the rib pattern, a sinker bed, radially-movable-web-holding sinkers in said bed associated with the plain cylinder, said sinkers having web-holding nibs and draw edges over which needles in the plain cylinder draw their loops, at a loop drawing zone, means for moving said sinkers serially inwards to and outwards from a knock-over position, and loop forming verge bits associated with the rib cylinder and having draw edges over which needles in the rib cylinder draw their loops; the combination of a bed having the verge bits aforesaid mounted therein for individual movement lengthwise of the rib cylinder towards and away from the draw edges of the sinkers, cam means for advancing said verge bits axially of the rib cylinder and serially towards said sinker draw edges to occupy, at the loop drawing zone, a projected loop drawing position in which needles in the rib cylinder draw their loops over the draw edges of the bits, means for retracting the bits serially from said projected position as related sinkers move in for the knockover and means for moving said cam means to adjust the bits en masse axially of the rib cylinder.

3,283,540
NEEDLE SELECTING DEVICES
Nathan Levin, 722 Edgewood Ave., Trenton, N.J.
Filed Mar. 14, 1963, Ser. No. 265,224
8 Claims. (Cl. 66—36)



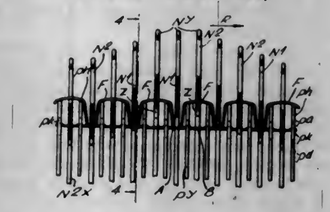
3. In a needle selecting device for a circular knitting machine having a slotted needle cylinder and vertically movable needles therein, needle raising members in said slots and selectively movable radially thereof from an outer normal position to a first intermediate and to a second fully inward position, said members having raise butts thereon, circumferentially extending cam raise means movable relative to said cylinder and acting on a common edge of said raise butts to raise members in said first intermediate position to a first lower level and to raise members in said outer normal position to a second higher level above and from a common level while permitting members in said second fully inward position to remain at said common level, and selecting means movable relative to said cylinder to move a first selection of said members to said first intermediate position and to move a second selection thereof to said second fully inward position while permitting other members to remain in said outer normal position, the said selections being made at the same place relative to said cam raise means, said cam raise means retaining said selected members in said first intermediate and second fully inward positions while members in said first intermediate and in said outer normal positions are being raised thereby.

3,283,541
METHOD AND DEVICE FOR THE INDIVIDUAL CONTROL OF SELECTING MEMBERS
Aymon de Cerjat, Couvet, Neuchatel, Switzerland, assignor to Edouard Dubied et Cie (Société Anonyme), Couvet, Neuchatel, Switzerland
Filed Feb. 13, 1964, Ser. No. 344,754
Claims priority, application Switzerland, Feb. 14, 1963, 1,883/63
11 Claims. (Cl. 66—50)



1. A device for the individual operation of the needles of a knitting machine by controlling the jacks: a magnet providing a steady magnetic field, said magnet having a pair of pole faces separated by an air gap in which the two opposite pole faces of said magnet form a constricted passage of the path of travel of said jacks along said portion of the air gap; an electromagnet that can be polarized by electric pulses in accordance with a predetermined program, said electromagnet being located adjacent a portion of said jack and with respect to said air gap that polarization of the electromagnet causes a disequilibrium of the magnetic forces acting on a jack while it passes along a portion of the air gap, whereby a jack passing through said portion of the air gap when the electromagnet is polarized is attracted to a pole face of said magnet and is held to the face by magnetic attraction.

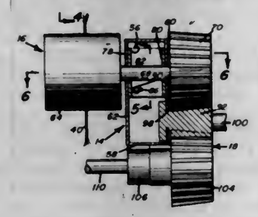
3,283,542
METHOD AND APPARATUS FOR KNITTING RUN RESISTANT FABRIC
Max B. Nebel and Erhard M. Nebel, Wiesbaden, Germany, assignors to Hanes Corporation, a corporation of North Carolina
Filed Apr. 10, 1963, Ser. No. 272,159
Claims priority, application Germany, Apr. 10, 1962, N 21,435; June 6, 1962, N 21,669
6 Claims. (Cl. 66—108)



1. The method of producing knitted fabric on a circular, latch needle knitting machine, which comprises forming stitches by all needles to provide a course of stitches; raising predetermined needles to clear the stitches last formed thereby from the needle latches onto the stems of said needles and raising the remaining needles to tuck

level; then, with the last formed course in front of sinker hooks, pulling the thread to loops on all needles on a loop-sinking point on or behind the sinker hooks, thereby forming stitches by and casting off stitches from the said predetermined needles while the remaining needles retain the previously formed stitches in their hooks and below the sinker hook and form the thread to tuck loops; then raising all needles with the said tuck loops each lying across one needle and over two sinkers, one on either side of the needle, while so displacing the sinkers relative to the needle circle that the said retained stitches are brought below the needle latches and onto the needle stems while the tuck loops remain on the needle latches, and knitting the tuck loops with stitches formed in the next course.

3,283,543
THREAD FEEDING AND TENSIONING APPARATUS FOR KNITTING MACHINE
Lawrence King, New York, N.Y., assignor to Rosfor Mills Corporation, New York, N.Y., a corporation of New York
Filed Apr. 16, 1964, Ser. No. 360,211
3 Claims. (Cl. 66—132)



1. In a knitting machine having a plurality of circularly arranged needles, a plurality of thread supply rolls providing elastic thread for the needles and a knitting machine drive mechanism, the improvement which comprises

apparatus for feeding the elastic thread to the needles under a selectively variable, constant and uniform tension,

said apparatus including a mounting member in the form of a fixed ring juxtaposed above the needles in the knitting machine,

said ring including an inner vertically extending wall and a juxtaposed generally parallel, outer wall defining a space therebetween,

a plurality of pairs of thread tensioning rollers carried by said mounting member with said rollers positioned on the outside of said outer wall of said ring,

each of said pairs of thread tensioning rollers including coacting, smooth surfaced, rollers having cylindrical portions between which the thread passes,

each of said rollers including a stub shaft rotatably supported by said ring,

said stub shaft of one of said rollers of each of said pairs extending through said outer and inner walls of said ring and carrying a roller gear on the inside of said ring,

a common tensioning roller drive means operatively associated with all of said roller gears,

resilient means carried within said space and operatively engaging said stub shaft of the other roller of each of said pairs to urge said other roller toward said driven one roller of said pair to thereby drive said other roller by frictional contact,

said common tensioning roller drive means including a ring gear slidingly mounted in a groove in said inner wall of said ring and rotatable relative to said ring,

a variable speed control means operatively interconnected with the knitting machine drive mechanism and being operable independently of the knitting machine drive mechanism,

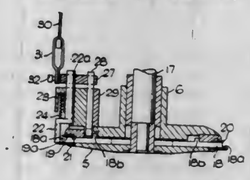
said ring gear being provided with two separate sets of teeth,

a drive gear operatively interconnected with said variable speed control means and interengaging with one of said sets of teeth of said ring gear,

the other of said sets of teeth of said ring gear interengaging with all of said roller gears,

operation of the knitting machine causing a synchronized and simultaneous driving of said thread tensioning rollers to feed thread to the needles, and adjustment of said variable speed control means effecting a simultaneous and uniform modification of the tension on the elastic thread being fed to all of the needles of the knitting machine.

3,283,544
CIRCULAR KNITTING MACHINES
Alfred W. Kent, Rothley, England, assignor to The Bentley Engineering Company Limited, Leicester, England
Filed Apr. 10, 1964, Ser. No. 358,869
Claims priority, application Great Britain, Apr. 17, 1963, 15,092/63
4 Claims. (Cl. 66—140)



1. In a circular knitting machine, the combination comprising a welt dial, welt hooks carried by said dial by which an inturned welt can be produced, a cutting device consisting of a circular cutter, means mounting said circular cutter on said welt dial adjacent to and within the needle circle, a cutter blade, means mounting said cutter blade for co-operating with said circular cutter, and means for causing relative rotation to take place between said circular cutter and said cutter blade about the axis of the needle cylinder during the operation of the circular knitting machine for causing a yarn extending inwardly from the needle circle to be engaged between said circular cutter and said cutter blade for being severed by said cutting device and a second cutting device for trimming yarn ends at the change from the welt to the leg of a hose, said second cutting device consisting of a second circular cutter, a second cutter blade positioned for co-operating with said second circular cutter, and means positioning said second circular cutter and said second cutter blade at a level above said welt dial with said second circular cutter mounted concentric with and on said welt dial.

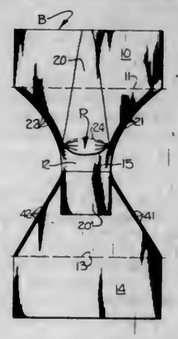
3,283,545
MEN'S BRIEF-TYPE UNDERGARMENT
Edouard Simon, Troyes, Aube, France, assignor to Etablissements Simon S.A., Troyes, Aube, France, a French company
Filed Sept. 21, 1964, Ser. No. 397,773
Claims priority, application France, July 22, 1961, 868,878; July 5, 1962, 903,035; Feb. 6, 1964, 962,904
5 Claims. (Cl. 66—177)

1. A brief-type undergarment for men and boys formed of an elongate full-fashioned knit blank having opposite selvage edges and comprising

(a) a front body panel,

(b) a rear body panel having opposite selvage edges connected to the corresponding selvage edges of said front body panel, said front and rear body panels being devoid of seams except at said selvage edges,

(c) a fashioned crotch portion joined at one end to said front panel and at the other end to said rear panel, at least the medial portion of said crotch portion being of less width than said front and rear panels, and the selvages of said crotch portion defining leg openings in the undergarment, and



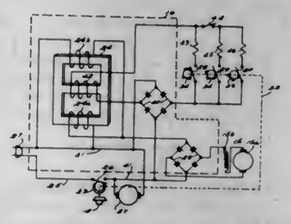
(d) a fashioned body bulge receiving pocket formed integrally with and during the knitting of said crotch portion, said pocket being positioned inwardly equal distances from opposite selvage edges of said crotch portion and somewhat closer to said front panel than to said rear panel, said pocket being adapted to receive and comfortably support the male organs of the wearer.

3,283,546
CANDLE IMPREGNATED WITH FLAME-COLOURING AGENTS
Goichi Matsui, 1089–1 Nagasawa, Reiho Village, Suzuka County, Mie Prefecture, Japan
Filed Sept. 21, 1964, Ser. No. 397,897
5 Claims. (Cl. 67—22.5)



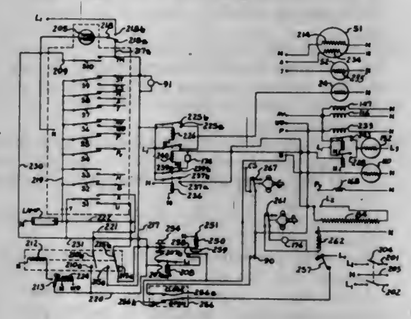
1. A candle comprising: a wick defining a candle axis; a first wax body surrounding said wick; a second wax body surrounding said first wax body in substantially coaxial relationship therewith; and a plurality of bodies of colouring substance disposed between said first and second wax bodies and substantially surrounding said first wax body, said bodies of colouring substance being of different hues and said bodies of colouring substance being disposed in longitudinally spaced sequence along said candle axis, whereby to prevent merging of the different hues and whereby to produce a superposed colour effect on the candle upon its use.

3,283,547
SPEED CONTROL FOR A LAUNDRY MACHINE
Glen R. Severance, Benton Harbor, Mich., assignor to Whirlpool Corporation, Benton Harbor, Mich., a corporation of Delaware
Filed Mar. 2, 1964, Ser. No. 348,459
3 Claims. (Cl. 68—12)



1. A laundry machine comprising: a machine housing and a clothes receptacle mounted for rotation within the housing, a D.-C. motor directly connected for rotating said receptacle and for having a constant speed ratio therewith, a saturable core reactor having a control winding and an output winding, an output circuit including said output winding having a first terminal for being connected to a power source and a second terminal connected to said D.-C. motor, a timing motor and a plurality of resistors each having a series connected switch operated by said timing motor, an input circuit including said control winding having a first terminal for being connected to a power source and a second terminal connected to one terminal of each of said resistors, each of said series connected switches being closed sequentially by said timing motor to complete said input circuit with said associated resistor, and said timing motor operating said switches to incorporate one of said resistors to accommodate the differing requirements of washing and spinning cycles of the clothes receptacle.

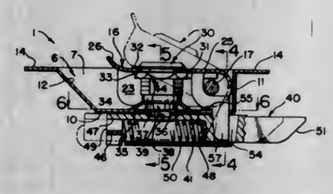
3,283,548
DRY CLEANING MACHINE
Clifford F. Czech, Ripon, Wis., assignor to McGraw-Edison Company, Ripon, Wis., a corporation of Delaware
Original application July 31, 1963, Ser. No. 298,899. Divided and this application June 30, 1965, Ser. No. 482,001
2 Claims. (Cl. 68—12)



1. In a clothes cleaning machine for use with volatile cleaning solvents and having timer means for operating said machine through a cycle of cleaning operations, the

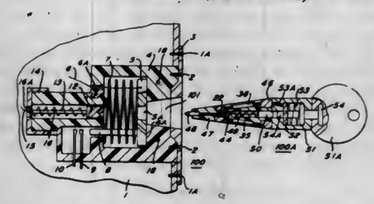
combination comprising a framework, a clothes treating chamber having a loading opening, a front panel on said framework having a door closing said opening, a latch on said door having a hook resiliently biased to engage said panel and hold said door in closed position, an electrical solenoid having an armature alined to strike and disengage said hook upon energization of said solenoid, a power relay means having a first switch means for initiating operation of said machine and having a second switch, an energizing circuit for said solenoid including in series a manually operated door opening switch, a timer operated cam switch and said second relay switch, said cam switch being closed prior to and during the initial portion of said cycle, said second relay switch being closed prior to commencement of said cycle to permit energization of said solenoid upon closing of said manual switch and being opened concurrently with initiation of said cycle to prevent energization of said solenoid after commencement of said cycle, means for actuating said power relay means for closing said second relay switch during the latter portion of said cycle and after termination thereof, said cam switch being open during said latter portion of said cycle to prevent energization of said solenoid and being closed at the end thereof to permit energization of said unlatching solenoid after completion of said cycle upon closing said manual switch.

3,283,549
FLUSH LOCK
Donald A. Mees, Cleveland Heights, Ohio, assignor to H. K. Porter Company, Inc., Cleveland, Ohio, a corporation of Delaware
Filed Aug. 14, 1964, Ser. No. 389,647
1 Claim. (Cl. 70—146)



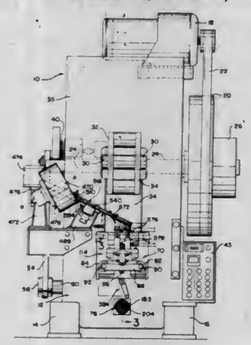
An improved flush lock comprising a case having an outwardly opening cavity, and a base portion having a deformed area therein which projects inwardly into said cavity, a handle pivotally mounted between opposite sides of said cavity for actuation of a bolt with the major portion of said handle normally within the confines of said cavity, a keylock extending through said handle and beyond said deformed area of said base portion of said cavity between said opposite sides, said deformed area of said base portion of said cavity projecting inwardly into said cavity, a locking member disposed inwardly of the remaining portion of said base in engagement with said deformed area of said base portion on the side of said base portion opposite said cavity, a bolt mounted on said case for reciprocal movement, an opening in said bolt for receiving a portion of said locking member which extends beyond said deformed area of said base portion and said remaining portion of said base when said locking member is in locking engagement with said deformed area of said base portion, said opening being dimensioned to permit the portion of said locking member which extends beyond said remaining portion of said base to be removed from said opening during pivoting of said handle, and means mechanically engaging said bolt and said handle for positive movement of one in response to movement of the other.

3,283,550
ELECTRICAL LOCKING ARRANGEMENT
Joseph Bradway, 99 Vine St., Bridgeton, N.J.
Filed May 25, 1964, Ser. No. 369,887
3 Claims. (Cl. 70—282)



1. In an electrical locking device comprising, a key, a keyhole and a control circuit, said control circuit connected to said keyhole and including a bridge-type network, said bridge-type network including arms thereof which are supplied by said key when inserted into said keyhole, said key having an elongated housing of generally cylindrical configuration with at least one tapered end, the smaller end of said tapered end incorporating a first contact, said housing incorporating a second contact, a third contact incorporated into the intermediate portion of said housing and between said first and second contacts, each of said first, second and third contacts being insulated from each other, a first precision resistor connected to said first and second contacts, a second precision resistor connected to said third and second contacts, said first and second precision resistors comprising the arms which are supplied to said bridge-type network.

3,283,551
AUTOMATIC FEED MECHANISM FOR A PRESS
Derald Henry Kraft, Hastings, and Ronald Herman David Armbruster, Battle Creek, Mich., assignors to E. W. Bliss Company, Hastings, Mich., a corporation of Michigan
Filed Nov. 29, 1963, Ser. No. 326,874
13 Claims. (Cl. 72—4)

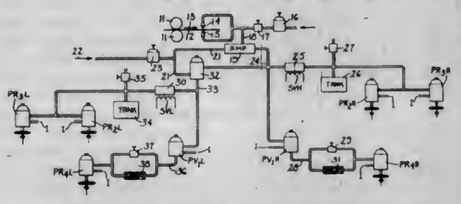


1. An improved feed mechanism for a press having first and second coaxially aligned dies and a prime mover for imparting reciprocal coaxial movement to the first die relative to the second die in repeating press cycles with each cycle including die working and die retracted positions of said first die, said feed mechanism comprising a slide finger mechanism adapted to be slidably mounted on said press for reciprocal movement along a path transversely of and including the axis defined by said coaxially aligned dies, and power takeoff means connecting said prime mover and said slide finger mechanism in such a relationship for imparting reciprocal movement to said slide finger mechanism along said transverse path

between extended and retracted positions respectively corresponding with the retracted and working positions of said first die, said slide finger mechanism including workpiece receiving and dispensing means for receiving a workpiece when in said retracted position and dispensing said workpiece on said second die when in said extended position, the improvement comprising:

workpiece sensing means for sensing whether a workpiece is received by said receiving and dispensing means and operative to develop output signals in accordance therewith, and press control circuit means responsive to said output signals for stopping press operation upon the absence of a said workpiece in said receiving and dispensing means.

3,283,552
PNEUMATIC CONTROL
Allen R. Hollister, East Hartford, Conn., assignor to Pratt and Whitney Inc., a corporation of Delaware
Filed Aug. 30, 1963, Ser. No. 305,613
12 Claims. (Cl. 72—16)



1. A pneumatic circuit for controlling the operation of an electric circuit, comprising:

(a) pneumatic sensing means for developing a pressure signal,

(b) a first branch line controlled by said sensing means,

(c) a second branch line controlled by said sensing means,

(1) said first and second branch lines being in parallel one with another,

(d) an electrically-operated, normally open valve in said first branch line,

(e) a bleed valve in said first branch line in series with said normally open valve,

(f) a first switch-controlling pneumatic relay in said first branch line,

(g) a second switch-controlling pneumatic relay in said first branch line,

(1) said first and second pneumatic relays being in parallel with said bleed valve,

(h) a third pressure relay in said second branch line,

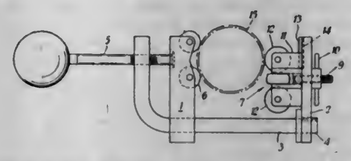
(i) a valve in said second branch line, and

(j) a fourth switch-controlling pneumatic relay in said second branch line,

(1) said third pneumatic relay, said fourth pneumatic relay and said valve being arranged in series, said valve being disposed between said pneumatic relays.

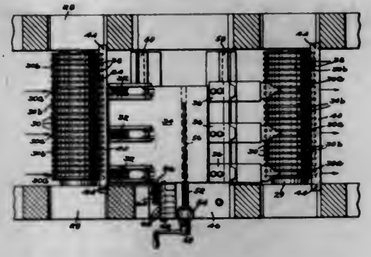
3,283,553
MULTI-PURPOSE TOOLS
George O. Taylor, Guilford, England, assignor to The British Aluminium Company Limited, London, England, a company of Great Britain
Filed July 21, 1964, Ser. No. 384,159
Claims priority, application Great Britain, July 31, 1963, 30,372/63
13 Claims. (Cl. 72—116)

1. A multipurpose tool comprising a plurality of rotatable wheels each capable of separately performing an operation on a hollow tube, a turret carrying said wheels at intervals about an axis about which the turret is angularly adjustable to bring a selected one of the wheels to an operating location, the axes of the wheels being each contained in a plane normal to the turret axis and at least two idling rollers mounted with their axes substantially parallel to



and spaced from the wheel axes to define, with that wheel at the operating location, a space in which is intended to be received and located a hollow tube with its axis parallel to the wheel axes.

3,283,554
ROLLING MILL GUIDE IN A MULTISTRAND ROLLING MILL
Robert J. Hermes, West Boylston, Mass., and Joseph W. Rodnick, Putnam, Conn., assignors to Morgan Construction Co., Worcester, Mass., a corporation of Massachusetts
Filed June 11, 1964, Ser. No. 374,474
9 Claims. (Cl. 72—227)



1. For use in a rolling mill, apparatus for guiding stock along a predetermined path from one roll housing to the next succeeding roll housing, each said housings containing grooved work rolls journalled for rotation between adjustable roll chocks to form a plurality of laterally adjacent passes, said apparatus comprising: stripper means fixed to said chocks for movement therewith during subsequent adjustment of said rolls, said stripper means operable to prevent adherence of stock to the surfaces of said rolls following its passage therebetween; guide means for guiding stock to the next succeeding roll housing, said guide means positioned adjacent said stripper means for movement relative thereto in a direction transverse to the pass line; and indexing means for aligning said guide means with the particular roll grooves being utilized in the rolling operation.

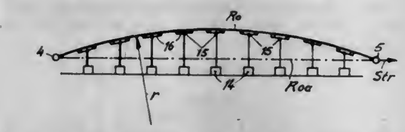
3,283,555
STRETCHING MACHINES FOR STRETCHING AND STRAIGHTENING MATERIAL
Paul Truninger, Langendorfstrasse 19, Solothurn, Switzerland
Filed Mar. 26, 1964, Ser. No. 354,881
4 Claims. (Cl. 72—297)

1. A stretching machine for stretching and straightening material, more particularly hollow steel section members, said machine comprising:

(a) vices for gripping the two ends of the material to be treated;

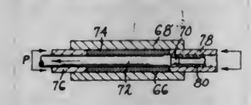
(b) a carriage mounting one of said vices for movement thereof towards and away from the other of said vices;

(c) props provided at short intervals between said vices; and



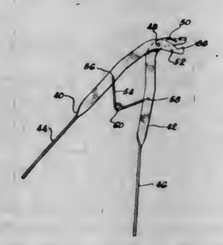
(d) a common control element for raising the props into respective operative positions to constrain the material into arcuate form while it is being stretched by said vices and thus to prevent lateral distortion in the straightened material due to the physical properties of the material.

3,283,556
APPARATUS FOR FORMING ARTICLES
Anthony M. Putetti, Waterbury, and John C. McMurray, Hamden, Conn., assignors to Textron, Inc., Providence, R.I., a corporation of Rhode Island
Original application Mar. 24, 1961, Ser. No. 98,065, now Patent No. 3,213,664, dated Oct. 26, 1965. Divided and this application Aug. 19, 1965, Ser. No. 481,026
9 Claims. (Cl. 72—343)



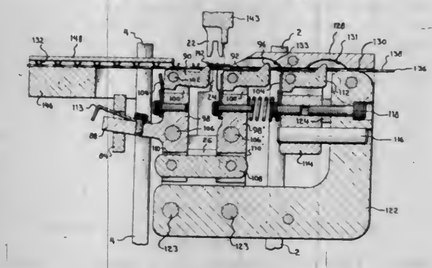
1. Apparatus for progressively coldworking a metal blank comprising, a first sleeve adapted to receive a hollow blank therein, a second sleeve slidably mounted in said first sleeve to engage an end of the blank, a third sleeve slidably mounted in said first sleeve to engage the other end of the blank, a member slidably supported by said second sleeve and extending into said hollow blank and having a reduced end portion nearest said third sleeve, and said second sleeve being adapted to apply force to said blank to upset the blank in the area between said reduced end portion and said third sleeve.

3,283,557
CLIP REMOVER
Ernest C. Wood, 2461 Ivanhoe Drive, Los Angeles, Calif.
Filed June 24, 1964, Ser. No. 377,760
8 Claims. (Cl. 72—386)



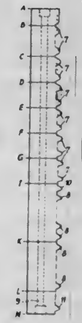
1. A device for the removal of clips formed of a bail portion, a spaced pair of elongate arms extending forwardly from the bail portion and spicules extending inwardly from the forward end portions of the arms and wherein the arms are displayed inwardly in the direction towards each other at their forward end in position of use, said clip remover comprising a pair of elongate arms pivoted intermediate their ends to provide handle portions on one side of the pivot and jaw members on the other side of the pivot movable in the direction toward and away from each other responsive to movement of the handle portions about the pivot, one of said jaw members having a portion extending laterally and upwardly to provide a recessed portion dimensioned to have a length less than the bail portion of the clip, the other of said jaw members having a lip extending in the direction toward the recessed portion and in alignment therewith for movement into and out of said recessed portion during movement of the jaw members in the direction toward and away from each other, said lip being normally spaced from the recessed portion by an amount greater than the width of the bail portion of the clip to enable the bail portion of the clip to be received in the recessed portion for engagement on opposite sides of said bail portion to spread the arms responsive to movement of the jaw members in the direction toward each other.

3,283,558
STRIP FEED MECHANISM
Werner Otto Peter Henkel, New Cumberland, and William Roderick Over, Harrisburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Feb. 26, 1964, Ser. No. 347,404
4 Claims. (Cl. 72—416)



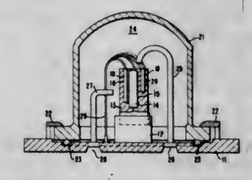
1. A crimping press having a strip feeding mechanism for feeding terminals in ladder strip form, said press comprising a fixed crimping die and a movable crimping die, said fixed crimping die having a supporting surface for supporting the leading terminal of said strip, first and second levers pivotally mounted intermediate their ends on parallel spaced-apart axes, said axes being disposed on each side of said fixed crimping die and extending transversely of the direction of movement of said movable die, the ends of said levers which are adjacent to said terminal supporting surface having strip engaging means thereon on each side of said surface for engagement with said ladder strip, and the ends of said levers which are remote from said surface being pivotally linked together whereby said levers are oscillable in unison about their pivotal axis, movable die actuating means for moving said movable die relatively towards and away from said fixed die, and feed actuating means acting between said movable die actuating means and said levers for swinging said levers in a first direction to retract said strip engaging means relative to said strip during movement of said movable die towards said fixed die, and for swinging said levers in a second direction to advance said strip after said leading terminal has been crimped onto a wire, said strip engaging means on said first and second levers functioning to push and pull said strip during feeding and thereby maintain the alignment of said strip relatively to said fixed die and prevent buckling of said strip during feeding.

3,283,559
MANUFACTURE OF INVOLUTE TOOTHED GEAR WHEELS
Robert Cecil Clerk, Richmond, England, assignor to Formroll Limited, Reading, England
Filed Mar. 12, 1962, Ser. No. 179,126
Claims priority, application Great Britain, Mar. 13, 1961, 9,182/61
6 Claims. (Cl. 72—469)



1. A rack for finishing a part finished or badly finished gear wheel blank, by rolling the blank between a pair of such racks oppositely directed and oppositely moved, the teeth of which are formed to a pressure angle appreciably greater than the pressure angle of the partially formed teeth of the blank being worked, the increase in pitch between the teeth of the forming rack and the teeth of the blank being worked being substantially inversely proportional to the cosines of the pressure angles of the tooth of the gear being worked and the rack teeth.

3,283,560
DIFFERENTIAL THERMAL ANALYSIS APPARATUS
John C. Harden, Wilmington, Del., Donald A. Vassallo, Orange, Tex., and Jen Chiu, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Dec. 24, 1962, Ser. No. 246,692
10 Claims. (Cl. 73—15)



9. An analyzer cell assembly for use in a differential thermal analysis apparatus comprising

(1) a sample block containing therein an electrical heater and at least three wells, two of said wells being symmetrically arranged in reference to a plane of symmetry through the axis of said heater, each of said wells containing a closely fitting tube closed off at the end facing the base of the well, the volume of said tube in said symmetrically arranged wells being in a range of from 0.01–1.25 ml.; a temperature sensing means within each tube, each temperature sensing means being coupled in bucking series with a reference temperature sensing means,

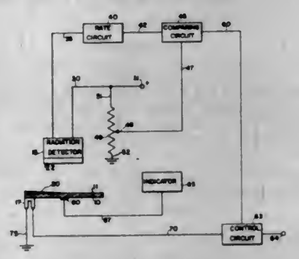
(2) a cell base for supporting said sample block,

(3) an open-ended cell closure which can be brought into airtight engagement with said cell base defining an enclosed space surrounding said sample block,

(4) conduit means in communication with said enclosed space through which the atmosphere within said enclosed space may be controlled,

(5) conduit means in communication with said enclosed space through which coolant may be supplied to cool said sample block.

3,283,561
CONTROL APPARATUS
Martin P. Fricke, Fridley, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Dec. 23, 1963, Ser. No. 332,770
8 Claims. (Cl. 73—17)



1. Humidity responsive apparatus comprising, in combination:

an element having a radioactivity emitting surface exposed to an environment the humidity of which is to be determined;

temperature controlling means connected to said element to establish a temperature gradient on the surface such that condensate forms on a limited area of the surface to change the radioactivity emitted therefrom;

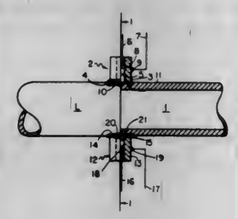
radioactivity detecting means mounted to receive radiation emitted from the surface and to produce an output indicative of the area of condensate thereon;

means connecting said radioactivity detecting means to said temperature controlling means, the output from said radioactivity detecting means regulating said temperature controlling means to maintain a predetermined limited area of condensate on the surface;

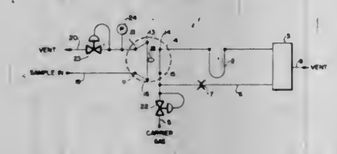
and temperature sensing means connected to said element to produce an output representative of the temperature of the surface at the limit of the area as an indication of the humidity of the environment.

3,283,562
FLUID TESTING BY ACOUSTIC WAVE ENERGY
Charles G. Helsig, Brighton, and Richard L. Mitchell, Rochester, N.Y., assignors to Taylor Instrument Companies, Rochester, N.Y., a corporation of New York
Filed July 16, 1963, Ser. No. 295,496
9 Claims. (Cl. 73—19)

1. Apparatus for testing liquid, said apparatus comprising, a member having a cavity for enclosing said liquid; a first transducer having an active surface responsive to an input signal applied to said first transducer to create acoustical wave energy in matter contacting said active surface; a second transducer having an active surface responsive in acoustical wave energy in matter contacting the last said active surface to cause said second transducer to produce an output signal representative of the last said acoustical wave energy; said first transducer being mounted with its said active surface in contact with said member, such contact being confined to a substantially zero-area, substantially rectilinear region of said member outside of said cavity; said second transducer being mounted with its said active surface in contact with said member; means for supplying said first transducer with said input signal at a frequency such as to create acoustical wave energy in said member, thereby to create acoustical wave energy in the fluid in said cavity; means responsive to output signal from said second transducer to demodulate said output signal and produce a modulation signal representative of the modulation of said output signal; and means for utilizing said modulation signal as an index of a characteristic offered in said cavity.



3,283,563
GAS CHROMATOGRAPHIC SYSTEM HAVING BAROMETRIC PRESSURE COMPENSATION
George S. Turner, Fullerton, Robert D. Lorenz, La Habra, and Alexander von der Launitz, Anaheim, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed July 17, 1963, Ser. No. 295,645
5 Claims. (Cl. 73—23.1)



1. A gas chromatograph system comprising:

a chromatograph column;

a source of carrier fluid including a delivery conduit connected to said chromatograph column;

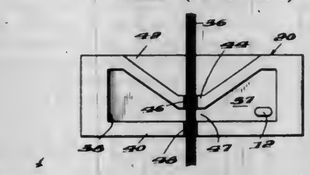
a detector connected to receive elutent from said chromatograph column;

pressure regulating means referenced to atmospheric pressure in said delivery conduit for regulating pressure of said carrier fluid flowing through said column and said detector;

a sample injection means having a sample vent to atmosphere for injecting a fluid sample into said delivery conduit to said chromatograph column, said sample injection means including a sample volume normally connected to said vent and means for switching said sample volume into said delivery conduit for sweeping said sample into said column: and

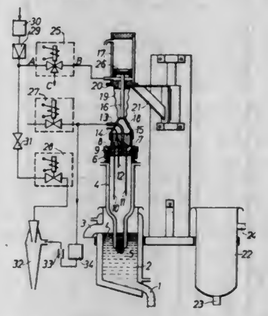
a back pressure regulating means in said vent referenced to atmospheric pressure set at a pressure above barometric such that the output of said detector for a given sample component will remain constant regardless of variations in barometric pressure.

3,283,564
PNEUMATIC DENIERING APPARATUS
Elmer Marc Biddison, Jr., Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Dec. 28, 1964, Ser. No. 421,242
5 Claims. (Cl. 73—37.7)



5. A deniering apparatus comprising a monitoring head having an interior chamber defined by a substantially cylindrical side wall and a pair of end walls, one end wall being dish-shaped with a central flat segment, the other end wall having a plane inner surface in proximal parallelism with said segment, said end walls having aligned apertures adapted for the advance of yarn through said head, said dish-shaped wall being convergent on said plane inner surface, said flat segment defining a shallow space between it and said plane inner surface, said shallow space having a height substantially less than the height of said side wall, said chamber being adapted for connection to a source of pressurized fluid.

3,283,565
INDUSTRIAL CAPILLARY VISCOMETER
Rudolf Müller, Gruenwald, Munich, Werner Lessnig, Cologne-Flittard, and Stephan Platz and Günther Koepke, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
Filed May 20, 1963, Ser. No. 281,415
Claims priority, application Germany, May 26, 1962, F 36,911
4 Claims. (Cl. 73—55)

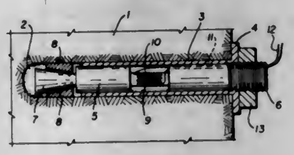


1. An apparatus for measuring the viscosity of electrically conductive liquids, which comprises an evacuable sampling vessel for receiving a quantity of electrically conductive liquid from an underlying source thereof, said sampling vessel being disposed for movement relative to such liquid source along a vertical path and between an upper position and a lower position thereon, a capillary member supported by said sampling vessel for movement therewith and disposed therethrough for extension into said liquid source when the vessel is in said lower position to accommodate the introduction of a predetermined sample quantity of the liquid into said vessel when same is evacuated to a reduced pressure, and to permit the efflux of said liquid sample from the vessel under the influence of gravity when said vessel

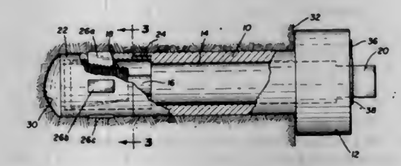
is in said upper position and relieved of said evacuation, three electrodes extending downwardly into said vessel from the upper portion thereof and disposed for electrically conductive contact with the liquid therein to sense the level of such liquid and changes in level thereof, the first of said electrodes extending to a lowermost position in said vessel, the second of said electrodes extending to a lower position in said vessel but above that of the first electrode and corresponding to a predetermined lower liquid level in the vessel, and the third of said electrodes extending to a position in said vessel above those of the first and second electrodes and corresponding to a predetermined upper liquid level in the vessel, said first and third electrodes being disposed to establish a first electrically conductive path therebetween through the liquid in the vessel when said liquid is at a level at least equal to said predetermined upper liquid level, and said first and second electrodes being disposed to establish a second electrically conductive path therebetween through the liquid in the vessel when said liquid is at a level at least equal to said predetermined lower liquid level, time measuring means operatively connected to each of said three electrodes for measuring the time interval between the breaking of said first electrically conductive path and the breaking of said second electrically conductive path, motor means operatively connected to said sampling vessel for selectively moving same relative to the liquid source and into said upper and lower positions, said motor means being operatively connected to said first and third electrodes and responsive to the establishment of said first electrically conductive path therebetween to raise said vessel from its lower position to its upper position when the liquid in said vessel rises to at least said predetermined upper liquid level, and valve means disposed for communication with said vessel and for communication with a vacuum source for selectively evacuating said vessel when same is in its lower position to draw liquid from said liquid source into said vessel, and for venting said vessel to relieve the evacuation thereof when said vessel is in its upper position to permit efflux of liquid therein through said capillary member under the influence of gravity, said valve means being operatively connected to said first and third electrodes and responsive to the existence of said first electrically conductive path therebetween to vent said vessel when same is raised by motor means, whereby the viscosity of the conductive liquid can be determined by moving the sampling vessel to its lower position by the motor means and operating said valve means to evacuate the vessel and thereby draw liquid from the source thereof into said vessel until the liquid level therein rises to said predetermined upper level and establishes said first conductive path whereupon in response thereto, the motor means raises said vessel to its upper position and the valve means vents said vessel to permit efflux of the liquid therefrom by gravity through the capillary member, thereby discharging a quantity of liquid corresponding to the difference between said predetermined upper and lower liquid levels during the time interval between the breaking of said first and second conductive paths in sequence, with said time interval as measured by the time measuring means corresponding to the viscosity of the liquid.

3,283,566
MATERIAL HARDNESS TESTER
Dale H. Fletz, 510 Franklin St., Denver, Colo.
Filed Jan. 29, 1964, Ser. No. 340,934
4 Claims. (Cl. 73—81)

1. A testing device for use in determining the hardness of a material internally of the material using a small bore hole therein comprising a guide tube having flange means adjacent one end arranged to seat on the outer surface of the material and limit penetration of said guide tube in a bore hole; a support body reciprocably telescoped in said guide tube and terminating adjacent said flange in a portion extending beyond said flange on the side opposite said guide tube; laterally extendable penetrating means movable outward from said guide tube in opposed relation therefrom for contacting the wall of bore in the material; motion translating means depending from said support body and connected with said laterally extendable penetrating means for moving said penetrating means into the wall of the material on outward movement of the support body; means mounted on the outer end of said support body for drawing said support body outwardly toward the bore opening to exert an initial force on said motion translating means to form an initial indentation by each said penetrating means; said means arranged for increasing the force exerted on said motion translating means to form a final indentation by each said penetrating means; first detecting means for measuring the outward movement of said support body from said initial indentation position to said final indentation position and second detecting means for measuring the difference between said initial and final forces.

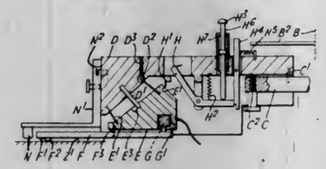


3,283,567
INTERNAL HARDNESS TESTER
Dale H. Fletz, 510 Franklin St., Denver, Colo.
Filed Dec. 9, 1965, Ser. No. 512,664
6 Claims. (Cl. 73—84)



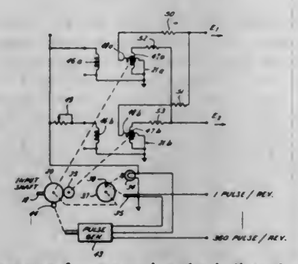
1. A device for use in determining hardness in a material internally thereof using a bore hole in the material, comprising a guide tube arranged to extend into a bore hole; a support body telescoped in said guide tube, and said support body terminating in a threaded conical portion at one end and an opposite end; there being a plurality of openings in said guide tube juxtaposed around said conical portion; a pressure pad having an outer surface arranged to bear against the surface of the bore hole and a threaded inner surface mating with said threaded conical portion mounted in each said opening and arranged for limited reciprocable movement in said openings; means for preventing turning of said guide tube means; means on said support body for rotating the same so as to reciprocably move the pressure pads inwardly and outwardly in relation to said guide tube means; and means for measuring the rotation of said support means; whereby rotation of said support means indicates the relative hardness of the material being tested.

3,283,568
SURFACE TESTING APPARATUS
Richard Edmund Reason, Market Harborough, England, assignor to Rank Precision Industries Limited, trading as The Rank Organisation Rank Taylor Hobson Division, Leicester, England, a British company
Filed Mar. 27, 1964, Ser. No. 355,341
Claims priority, application Great Britain, Apr. 1, 1963, 12,802/63
21 Claims. (Cl. 73—105)



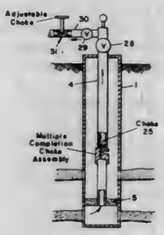
1. Apparatus for measuring or indicating the roughness or undulations of a surface, comprising two tracers constituted by a stylus and a rounded skid adjacently mounted in fixed relationship on a common supporting arm, a pickup body carrying a pivotal mounting for the supporting arm, means for biasing said arm about such pivotal mounting to urge the tracers towards the surface under test, changeover means operatively connected to said supporting arm for effecting a predetermined relative displacement between the pivotal mounting and the test surface so that either the stylus only or the skid only is caused to engage the test surface, means for driving the pickup body to cause the operative tracer to traverse the test surface, whereby by operation of the changeover means the two tracers may be caused successively to traverse the test surface respectively during successive traversing drives, detecting means responsive to pivotal movement of the supporting arm during traversing due to the working movements of the stylus or skid in a direction generally normal to the test surface, and means for comparing the output of the detecting means during traversing of the stylus with the output of such detecting means during traversing of the skid, including a device for temporarily storing at least one of such outputs, to provide a signal for operating a measuring or indicating instrument.

3,283,569
METHOD AND APPARATUS FOR INDICATING PERFORMANCE CHARACTERISTICS OF RECIPROCATING PISTON MACHINES
James D. King and Carl E. Edlund, San Antonio, Tex., assignors, by mesne assignments, to Southern Gas Association, Dallas, Tex.
Filed Dec. 21, 1964, Ser. No. 423,630
21 Claims. (Cl. 73—116)



1. Apparatus for measuring the indicated power of a piston reciprocating in a cylinder, comprising means for producing a first electrical signal proportional to the product of the fundamental of the piston motion and the speed of the piston and a second electrical signal proportional to the product of the second harmonic of the piston motion and the speed of the piston; means for summing said first and second signals to produce a third electrical signal proportional to the first derivative of the instantaneous volume of the cylinder; means for producing a fourth electrical signal proportional to the instantaneous pressure in the cylinder; means for multiplying the third signal by the fourth signal to produce a fifth signal; and means for integrating the fifth signal to produce a sixth electrical signal proportional to the indicated power of the piston.

3,283,570
PRODUCTION MEASUREMENT IN MULTIPLE COMPLETION WELLS
James W. Hodges, Beaumont, Tex., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed June 26, 1963, Ser. No. 290,750
15 Claims. (Cl. 73—155)



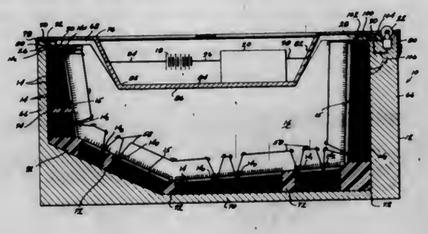
1. In a method of determining the rates of flow from two subsurface hydrocarbon-producing formations, the steps of:
(a) flowing fluid from only one formation through an orifice and thence through a conduit to the surface,
(b) varying the surface pressure in said conduit and measuring the corresponding rate of flow in said conduit and also the corresponding downhole pressure at a point within said conduit immediately downstream from said orifice,
(c) plotting the interrelated rate of flow and downhole pressure measurements to define a production-pressure curve having a point of inflection,
(d) flowing fluid from both formations through separate orifices and thence commingled through a common conduit to the surface,
(e) measuring the combined rate of flow from both formations when so commingled, and
(f) measuring the downhole pressure under commingled flow conditions at a point within said conduit immediately downstream from the orifices; whereby after a comparison of the last-mentioned pressure with the value of pressure at the point of inflection of said curve, the respective rates of flow from the two formations, under commingled flow conditions, may be determined.

3,283,571
VERIFYING MACHINE
Harry C. Powell, 16132 Hamlin St., Van Nuys, Calif.
Filed Apr. 6, 1964, Ser. No. 357,399
5 Claims. (Cl. 73—156)

1. In a verifying machine having pre-programmed information-carrying card means and signal-emitting means, said card means including an anchoring edge and a plurality of other edges, the combination comprising:
programming means mounted in said machine in a bank

about each of said other edges with the major axis of said programming means lying at right angles to the major axis of said card means;

actuating means connected to said programming means to bring said programming means into engagement with said other edges in accordance with a predetermined program; and

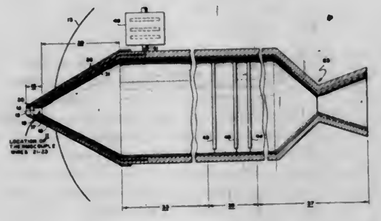


means connecting said programming means to said signal-emitting means when said predetermined program coincides with said pre-programmed information.

3,283,572
SPACE VEHICLE NAVIGATION SYSTEM

Alexander F. Wormser, Nahant, Mass., assignor to General Electric Company, a corporation of New York

Filed Dec. 31, 1962, Ser. No. 248,365
15 Claims. (Cl. 73—178)



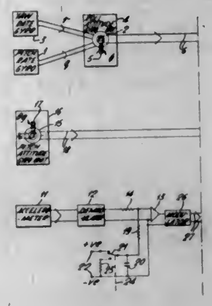
1. The method of determining a vehicle's speed comprising the steps of: taking a sample of the air stream surrounding the vehicle; cooling the sample of said air stream with a fluid coolant; ascertaining the fluid coolant's temperature and mass flow rate prior to cooling said air; decreasing the velocity of said air; and sensing said air's temperature and mass flow rate after it has been cooled and decelerated.

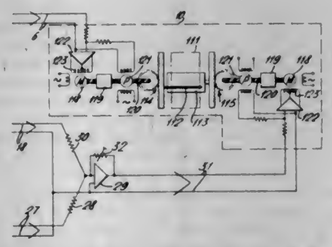
3,283,573
AIRCRAFT INSTRUMENTS

Roger Ivan Bishop and Eric Raymond Kendall, Cheltenham, England, and Russell Arthur Palmer, deceased, late of Cheltenham, England, by Daphne Palmer, executrix, Felixstowe, Suffolk, England, assignors to S. Smith & Sons (England) Limited, London, England, a British company

Filed May 14, 1964, Ser. No. 367,595
10 Claims. (Cl. 73—178)

1. An aircraft instrument comprising first means for providing a signal dependent upon forward acceleration of the aircraft, second means for providing a signal dependent upon rate of change of pitch attitude of the aircraft, and third means responsive to both signals to provide an indication dependent upon difference between said rate of change of pitch attitude and a function dependent upon said acceleration, said third means including two movable indices and means for positioning the



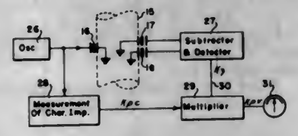


two indices in accordance with the two signals respectively such that the relative position of the two indices provides said indication.

3,283,574
ULTRASONIC FLOWMETER

Wilfred Roth, West Hartford, Conn. (% Roth Laboratory for Physical Research, 1240 Main St., Hartford, Conn.)

Original application Jan. 14, 1958, Ser. No. 708,827, now Patent No. 3,188,862, dated June 15, 1965. Divided and this application Sept. 21, 1964, Ser. No. 413,387
3 Claims. (Cl. 73—194)

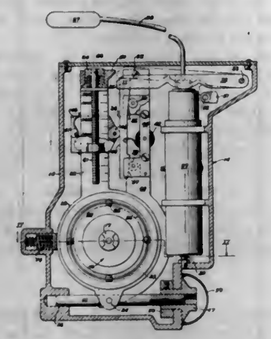


1. In a flowmeter for measuring flow of a fluid stream, the combination which comprises a transmitting transducer for transmitting a beam of sonic energy across said stream, receiving transducer means positioned to receive said sonic beam after traversal thereof across said stream, said receiving transducer means including at least two receiving transducers spaced in the direction of fluid flow whereby the relative outputs thereof vary with beam displacement, means connected to receive the outputs of said two receiving transducers and produce a first response proportional to the difference between said outputs, means connected to said receiving transducer means for obtaining a second response proportional to the received beam intensity and substantially independent of beam displacement, and means for dividing said first response by said second response to obtain an output varying with fluid flow but not substantially varying with beam attenuation.

3,283,575
TEMPERATURE COMPENSATING COUPLING FOR METERS

Albert J. Granberg, Oakland, Calif., assignor to Cal-Meter Co., Emeryville, Calif., a corporation of California

Filed Aug. 26, 1963, Ser. No. 304,337
9 Claims. (Cl. 73—233)

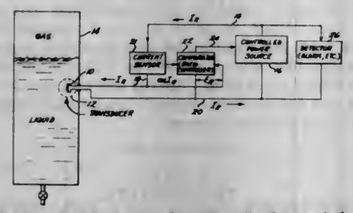


1. In a temperature compensating coupling for use between a liquid meter and a counter driven thereby, said coupling including a variable transmission with a movable element controlling the ratio of drive therethrough, a pivoted lever having a part embracing said movable element, an anti-friction member carried by the lever and adjustable to and away from the lever pivot, a gib supported for sliding movement substantially parallel to the lever and having an edge engaging the anti-friction member, said gib having cam means at its opposite edge to effect movement of the lever when the gib slides, and temperature sensitive expansible means for imparting sliding movement to the gib.

3,283,576
MEANS FOR DETECTING CHANGE OF HEAT TRANSFER RATE

Lawrence Wayne Halpin, Seattle, and Eugene B. Seeley, Bellevue, Wash., assignors to United Control Corporation, Redmond, Wash., a corporation of Washington

Filed Oct. 7, 1963, Ser. No. 314,220
10 Claims. (Cl. 73—295)

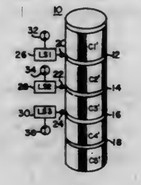


10. Means for detecting change of liquid level through a given point, comprising a temperature sensitive element mounted at said point, a differential amplifier having an output and two opposing inputs, one such input being connected across the element and the other input having a first resistance therein, amplifier means having an output connected to the element for controlling heating current therein and having an input to which the differential amplifier output is connected, a second resistance connected in the load circuit of said amplifier means to develop a voltage proportional to such heating current, and additional amplifier means having an input connected to said second resistance to be subject to said voltage and having a load circuit including said first resistance to produce a voltage drop in the latter proportional to said voltage.

3,283,577
DIVIDED CAPACITANCE PROBE LEVEL GAUGE

Jack W. Schuck, Hopkins, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed June 29, 1964, Ser. No. 378,830
10 Claims. (Cl. 73—304)



10. Compensated condition sensing apparatus comprising, in combination:

signal supplying means for simultaneously supplying first and second signals of first and second phases;

a plurality of sensing means, each individual sensing means of said plurality of sensing means requiring compensation for changes in the environment other than a condition being sensed;

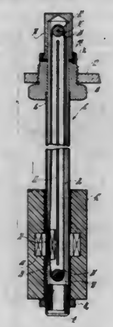
switching means connected to said plurality of sensing means and to said first and second signal supplying means for supplying a first signal to a first sensing means of said plurality and said second signal to another sensing means to be used as a compensating element; and

output means connected to said sensing means for providing an output indicative of the condition being sensed.

3,283,578
LIQUID LEVEL INDICATOR

Edward H. Moore, Avon, Conn., assignor to The Gems Company, Inc., Farmington, Conn., a corporation of Delaware

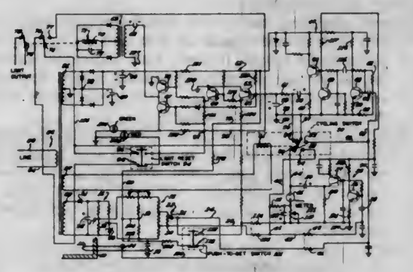
Filed Sept. 28, 1964, Ser. No. 399,710
3 Claims. (Cl. 73—321)



1. In a liquid level indicator the combination comprising an elongated tubular housing adapted to provide a liquid-tight enclosure, said housing being adapted for vertical support in a liquid storage tank, reference means on said housing, a float slidably mounted on said tubular housing for rectilinear movement parallel to the longitudinal axis thereof, a permanent magnet secured to and movable with said float, and a subassembly comprising an

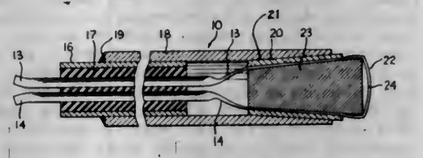
elongated structural member and a pair of tape wheels journalled at opposite end portions thereof, said subassembly also comprising a follower magnet and an endless tape having indicia of liquid measurement therealong, said tape extending between and around said tape wheels for movement thereon and said follower magnet being secured to said tape so as to move the same relative to said reference means, said subassembly being adapted to enter said housing with said structural member slidably engaging the interior surface of the housing and with said follower magnet magnetically coupled to said permanent magnet for movement therewith and for corresponding movement of the tape.

3,283,579
THERMOCOUPLE APPARATUS
Harold C. Josephs, Plymouth, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed June 6, 1963, Ser. No. 285,938
8 Claims. (Cl. 73—359)



6. A thermocouple temperature indication and high limit temperature sensing apparatus, comprising;
a thermocouple having a reference junction and a sensing junction, said sensing junction being adapted to be subjected to a variable temperature condition, said thermocouple having an output which is a voltage rise when said sensing junction is at a temperature above the temperature of said reference junction,
a bridge circuit including a source of D.C. voltage having a first output which is a voltage rise of a fixed magnitude, and having a second output which is a voltage drop of a variable magnitude, said variable magnitude being indicative of the high limit temperature to be sensed,
cyclically operable switch means,
temperature indication amplifier means having an input and output,
means connecting said switch means to the input and output of said temperature indication amplifier means,
means connecting said thermocouple in series with the first output of said bridge circuit to the input of said temperature indication amplifier means,
temperature indication means,
means connecting said temperature indication means to the output of said temperature indication amplifier means,
high limit amplifier means having an input and an output,
means connecting said switch means to the input and output of said high limit amplifier means,
means connecting said thermocouple in series with the second output of said bridge circuit to the input of said limit amplifier means to cause the output thereof to consist of cyclic voltage drop signals when the temperature of said sensing junction is below the high limit and to consist of cyclic voltage rise signals when the temperature of said sensing junction is above the high limit,
monostable trigger means having an input and an output and constructed and arranged to have a stable condition of operation and to be sensitive only to a voltage drop input signal to switch to an unstable condition of operation,
means connecting the input of said trigger means to the output of said high limit amplifier means,
and means connected to the output of said trigger means and constructed and arranged to be responsive only to cycling of said trigger means between said stable and said unstable conditions of operation.

3,283,580
FAST RESPONSE RIGHT ANGLE THERMOCOUPLE
Jacob Nanigian and Edward J. Nichols, Indian Head, Md., assignors to Nanmac Corporation, Needham Heights, Mass.
Filed Sept. 24, 1963, Ser. No. 316,482
2 Claims. (Cl. 73—359)

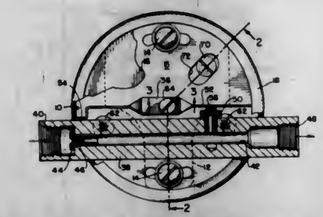


1. A thermocouple for measuring the temperature within an enclosure comprising, in combination, a cylindrical tube, a tubular sheath fixedly mounted in one end of said tube, a pair of unitary wires extending into said sheath and out of the other end of said tube, separate electrically insulating material mounted in said sheath and in said other tube end and holding said wires in non-conducting relation with respect to each other and to said sheath and said other tube end, the ends of said wires extending out of said other tube end being flattened into integral ribbons and bent toward each other at substantially right angles to the longitudinal axis of said tube and welded to form a bowed thermal junction spaced from the end face of said insulating material in said other tube end, said ribbons forming said junction being bowed so as to flex toward said end face to absorb shock and for ultimate support thereby under high pressures and mechanical stresses.

3,283,581
TRANSMITTER
Robert C. Du Bois, Fairfield, and Randall Goff, Weston, Conn., assignors, by mesne assignments, to Dresser Industries, Inc., Dallas, Tex.
Filed Nov. 1, 1963, Ser. No. 324,596
13 Claims. (Cl. 73—363.9)

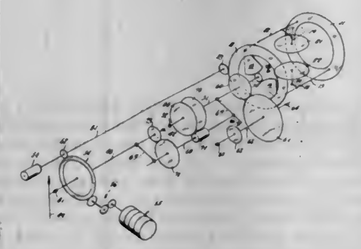
1. A pneumatic temperature responsive transmitter comprising a casing, a flapper and air nozzle system within said casing, a hollow stem projecting from said casing, temperature-responsive spring means within said stem including a bimetal element for directly sensing a variable temperature condition, one end of the spring means being directly connected to said flapper to impose a torque thereon in opposition to the force of the air

stream from said nozzle, the other end of said spring means being attached to said step, and means transmitting the air pressure in the nozzle system as a measurement of the temperature sensed by the spring means, the overall spring rate of said spring means being that it has an unrestrained temperature induced deflection which is very



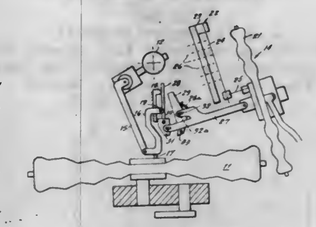
large as compared to the angular deflection of the flapper over a predetermined full scale temperature range and produces an actual torque on the flapper across said range which is the same as the change in torque on the flapper by the air stream throughout the system air pressure range.

3,283,582
MECHANICALLY COMPENSATED ALTIMETER
Herman Hezel, Port Washington, N.Y., assignor to Kollsman Instrument Corporation, Elmhurst, N.Y., a corporation of New York
Filed Oct. 23, 1963, Ser. No. 318,239
4 Claims. (Cl. 73—384)



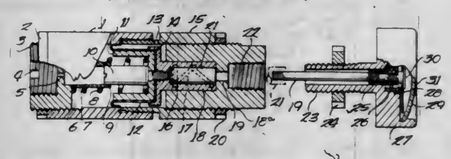
1. A pressure indicating mechanism including a pressure transducer means, a mechanical linkage means and an indicating means; said mechanical linkage means being connected between said transducer means and said indicator means whereby said indicator means is moved to a position dependent upon the pressure applied to said transducer means; said mechanical linkage means including a first rotatable shaft connected to said pressure transducer means, a second rotatable shaft connected to said indicator means and a third rotatable shaft; third rotatable shaft having one end thereof pivotally connected to said first shaft and another end thereof pivotally connected to said second shaft; said first, second and third shafts having respective first, second and third gear means thereon; said first gear means engaging said second gear means; said second gear means engaging said third gear means; a correction cam means; said correction cam means being rotatably mounted with respect to said third shaft and bearing a cam surface operatively connected to said third shaft whereby rotation of said cam means rotates said third shaft with respect to said first and second shafts; and auxiliary mechanical means operatively connected between said pressure transducer means and said cam means for rotating said cam means to a position dependent upon the pressure applied to said transducer means.

3,283,583
COMPENSATING MECHANISM FOR AIRCRAFT ALTIMETER
Walter Angst, Douglaston, N.Y., assignor to Kollsman Instrument Corporation, Elmhurst, N.Y., a corporation of New York
Filed Mar. 15, 1966, Ser. No. 534,472
3 Claims. (Cl. 73—386)



1. A static pressure arm correcting mechanism for an altimeter; said altimeter including a pressure sensitive capsule having a flexible output link, a rocking shaft, an indicator means and an altitude link connected at one end thereof to said flexible rocking shaft; said correcting mechanism including a compensating link, first and second pivotally supported compensating levers, a differential diaphragm expandible in accordance with Mach number, and connection link means connected to said first and second compensating levers and adapted to rotate said first and second compensating levers about their pivotal supports and in opposing directions; one end of said compensating link pivotally connected to the other end of said altitude link; a portion of said compensating link connected to said flexible output link with said flexible output link serving as a fulcrum for rotation of said compensating link; the other end of said compensating link abutting one side of said first compensating lever whereby expansion of said differential diaphragm causes rotation of said first compensating lever and subsequent rotation of said compensating link about its said connection to said flexible output link, thereby to move said altitude link to an adjusted position related to Mach number.

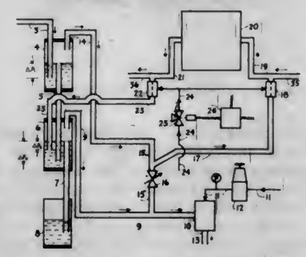
3,283,584
ADJUSTABLE PRESSURE ADAPTOR AND SENSING DEVICE
James R. Coffing, R.R. 2, Box 224, Covington, Ind.
Filed Oct. 28, 1963, Ser. No. 319,137
6 Claims. (Cl. 73—419)



1. An adjustable pressure sensing device comprising in combination, a cylindrical tubular housing a cylindrical piston receiving portion, cylindrical sleeve engaging the cylindrical tubular housing, an annular shoulder depending from the cylindrical piston receiving portion of the housing proportioned to abut the end of the cylindrical sleeve, a piston constrained for reciprocating movement within the housing, a piston cap, a diaphragm member secured at its central portion to the piston head by the

piston cap and secured to the housing at its edges by the pinching action between the sleeve and annular shoulder, shaft means extending longitudinally from the piston, a rotatable actuating rod, helical means coupling the shaft means to the actuating rod whereby the piston reciprocating longitudinal motion responsive to pressure differentials on opposite sides of the diaphragm is translated into rotary motion, and longitudinally adjustable end caps on each end of the device acting on opposite ends of the helical means whereby the rotatable actuating rod and any associated read out means may be calibrated from either end of the device.

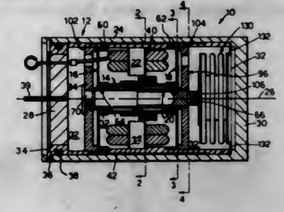
3,283,585
GAS SAMPLING SYSTEM
Charles P. Haynes, Hammond, Ind., assignor to Mobil Oil Corporation, a corporation of New York
Filed July 15, 1964, Ser. No. 382,755
8 Claims. (Cl. 73—421.5)



1. In a gas sampling system
a gas sample probe communicating with
a single means for creating a controlled vacuum to aspirate a gas sample,
a first adjustable pressure differential means to create a pressure differential between said sample probe and the aspirator means,
a second adjustable pressure differential means located between said sample probe and said first pressure differential means to create a region of intermediate pressure,
a sample analyzing loop, including a selected analyzer, said loop leading from the region of intermediate pressure to a pressure region in communication with said aspirator means, and
means for imposing an adjustable back pressure upon said sample analyzing loop.

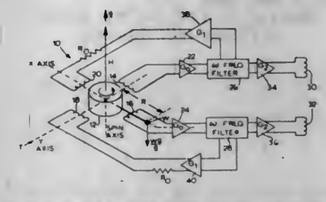
3,283,586
ACCELEROMETER DAMPING CONTROL
James W. Davies, Wayne, Walter M. Carow, West Caldwell, and Constant J. De Cotiis, Cranford, N.J., assignors to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed June 24, 1964, Ser. No. 377,733
8 Claims. (Cl. 73—497)

1. An accelerometer comprising:
a housing containing damping fluid;
a cylinder disposed in said housing forming a major portion of the accelerometer seismic mass;
spring means disposed in said housing and supporting the cylinder from said housing for axial displacement of the cylinder relative to the housing;
a piston disposed in the cylinder and connecting to the housing;
said piston and cylinder having axially-spaced, radially-projecting peripheral wall portions with confronting surfaces separated by gaps causing viscous shear damping and forming two chambers varying oppositely in volume providing fluid pressure damping;
said piston having a passage interconnecting said chambers;
temperature-sensitive valve means disposed in said piston passage providing uniform damping under varying temperatures; and



said piston having two annular peripheral wall portions forming an annular groove therebetween, and said cylinder having an annular wall portion received in said annular groove forming said two chambers.

3,283,587
ACCELERATION MEASURING GYROSCOPE
Jay Hoffman, Livingston, N.J., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Dec. 19, 1963, Ser. No. 331,846
10 Claims. (Cl. 73—504)

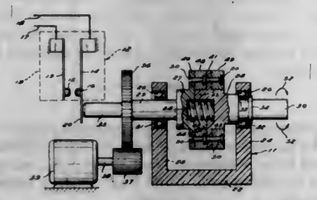


1. An acceleration measuring gyro comprising a case rotated gyro having its case rotated about the spin axis of the fly wheel positioned within the case, a predetermined mass unbalance rotatable with the case and displaced a predetermined distance radially from said spin axis, pick-off means for detecting precession of said fly wheel, and frequency filter means connected to said pick-off means for filtering out a cyclical signal having the same frequency as the frequency of rotation of said case and directly related to acceleration along said spin axis.

3,283,588
ROTATIONAL SPEED SENSOR CONTROL UNIT
Charles W. Merchant, Lake County, Ohio, assignor to Euclid Electric & Manufacturing Co., Madison, Ohio, a corporation of Ohio
Filed Dec. 16, 1963, Ser. No. 330,848
8 Claims. (Cl. 73—507)

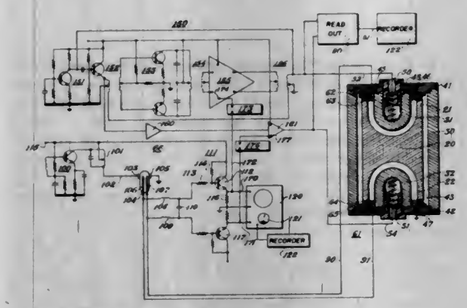
1. A control device comprising:
(a) a frame;
(b) a pair of magnets rotatably carried by said frame and arranged in face-to-face relation, said magnets being relatively rotatable from a mutually attractive position to a mutually repulsive position;
(c) at least one of said magnets being axially movable in said frame along the axis of rotation and being axially movable from an adjacent position when said magnets are in their mutually attractive position to an away position when said magnets are in their mutually repulsive position;
(d) rotation governing means connected to one of said magnets and selectively controlling the rotation of it;

(e) control means having an actuator operatively connected to said axially movable magnet, said actuator operating said control means from one operative position to another operative position when said axially movable magnet moves from its said adjacent position to said away position; and



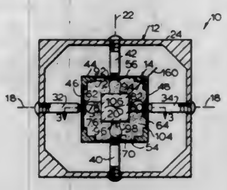
(f) drive means operatively connected to the other of said magnets so as to rotate it whereby a difference in the relative rotational speeds of said magnets as induced in said other magnet by said drive means and controlled in said one magnet by said rotation governing means causes said one magnet to move axially from its adjacent position to its away position thereby actuating said actuator.

3,283,589
FORCE RESTRAINED ACCELEROMETER
Donald Luther Ensley, Hurst, Tex., assignor, by direct and mesne assignments, to Harvest Queen Mill & Elevator Company, Dallas, Tex., a corporation of Texas
Filed July 29, 1963, Ser. No. 298,147
8 Claims. (Cl. 73—516)



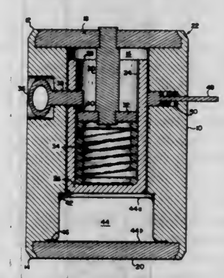
1. An accelerometer which comprises:
(a) an inertial reference element of cylindrical form having concave ends,
(b) a flotation chamber unit for encasing said element and filled with a flotation liquid having a specific gravity contrasting with the specific gravity of said element,
(c) a pair of acoustic transducers extending from opposite ends of said chamber unit into juxtaposition with the concave ends of said element for generation, upon excitation thereof, of opposed radially divergent ultrasonic fields resiliently to restrain said element at a reference position in said chamber unit in response to second order pressure fields produced by reaction of the fields with said concave ends, and
(d) capacitance means at the ends of said element and said unit for sensing variations in the position of said unit with reference to said element along an axis to which said concave ends are symmetrical.

3,283,590
TELEMETRIC ACCELEROMETER
David C. T. Shang, Owego, N.Y., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed June 17, 1964, Ser. No. 375,730
12 Claims. (Cl. 73—517)



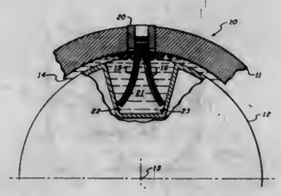
1. A telemetric tri-axial accelerometer, comprising:
a frame structure;
a hollow body of cubic configuration disposed within said frame structure;
three pairs of elongate support members extending inwardly from said structure, the members of each pair being coaxially aligned to define one of three orthogonally related axes, the inner ends of said members making substantially point contact with the center of a respective face of said cubic body;
three pairs of transducers mounted on said body with pressure-sensitive portions respectively forming the center portion of the faces of said body; and
telemetric transmitter means contained within said body electrically connected to said transducers whereby said body, said transducers and said transmitter means form the seismic mass of the accelerometer and said transducers generate signals proportional to the coaxial vector components of each acceleration force acting on said seismic mass.

3,283,591
MECHANICAL TIMER
Norman F. Green, Minneapolis, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Mar. 18, 1965, Ser. No. 440,793
5 Claims. (Cl. 74—3.5)



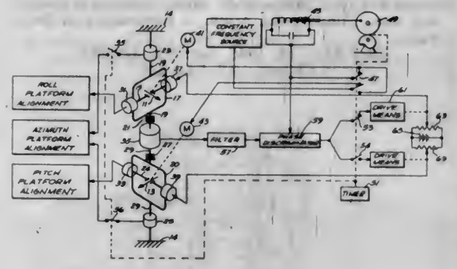
5. A timing device, comprising:
(a) an air-filled sack formed from a permeable material and sealed so that air movement into and out of said sack is controlled by the permeability of the walls of said sack;
(b) means for applying mechanical pressure to said sack to thereby deflate said sack at a rate determined by the applied pressure and by the restrictive effect of the flow of air through said permeable material; and
(c) means for indicating when said sack is deflated.

3,283,592
GYROSCOPIC CAGING APPARATUS
Sherman Adler, Jamaica, and Saul Fenster, Great Neck, N.Y., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Aug. 4, 1961, Ser. No. 129,341
4 Claims. (Cl. 74—5.1)



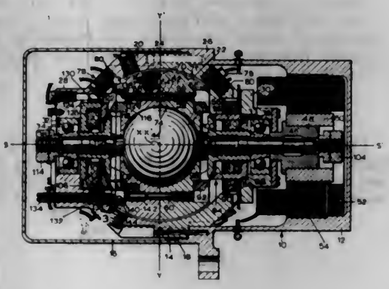
1. Apparatus for caging a gyroscopic instrument comprising a hollow gyroscope housing, a sensitive element positionably disposed within said housing and operative within a predetermined temperature range, an opening in said sensitive element, and deformable temperature responsive means having one portion attached to said housing and another portion exposed to the operating temperature of said instrument and cooperative with said opening, said deformable means and said opening being so constructed and arranged that within said predetermined temperature range relative movement between said sensitive element and said housing is permitted and below said predetermined temperature range relative movement therebetween is prevented.

3,283,593
AUTOMATIC GYRO DRIFT COMPENSATION
Eduard M. Fischel, Wayne, N.J., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Jan. 26, 1962, Ser. No. 168,987
2 Claims. (Cl. 74—5.37)



1. A system comprising a platform, a first gyro including a motor to rotate the gyro, means of pivotally mounting said first gyro on said platform, a second gyro including a motor to rotate the gyro, means of pivotally mounting said second gyro on said platform, cycler means operatively connected to the motors of said first and second gyros to periodically cyclically vary in magnitude the angular momentum of said first gyro and then cyclically vary in magnitude the angular momentum of said second gyro, means to detect the cyclical variations in the pivoting of said first gyro with respect to said second gyro at the frequency of the cyclical variation of angular momentum, a first torquer mounted to apply a torque to said first gyro to compensate for drift, a second torquer mounted to apply a torque to said second gyro to compensate for drift, and means responsive to the cyclical variation detected by said detecting means when the magnitude of the angular momentum of said first gyro is being cyclically varied to change the torque applied to said first gyro by said first torquer in a direction to reduce the cyclical variation detected by said detecting means and responsive to the cyclical variation detected by said detecting means when the magnitude of the angular momentum of said second gyro is being cyclically varied to change the torque applied to said second gyro by said second torquer in a direction to reduce the cyclical variation detected by said detecting means.

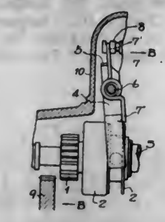
3,283,594
TWO-AXIS VISCOUS DRIVE GYRO
Bernard Parker, Teaneck, and John C. Stiles, Morristown, N.J., and Leon Weisbord, New York, N.Y., assignors to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Dec. 27, 1963, Ser. No. 334,970
12 Claims. (Cl. 74—5.46)



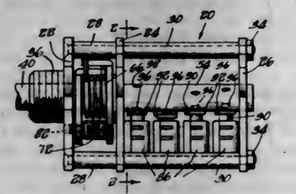
1. A gyroscope for sensing angular displacement about two mutually orthogonal axes, said gyroscope comprising: a rotor having inner and outer spherical surfaces mutually concentric with the rotor spin axis, a casing positioned about said rotor, a spherical bearing member rotatably supported on said casing for rotation about an axis perpendicular to the orthogonal sensing axes, said bearing member being concentric with and spaced slightly from the inner spherical surface of said rotor to define a gas bearing gap, means for containing gas in said gap, drive means coupled to said bearing member for rotating said bearing member and said rotor under the influence of the viscous gas drag between said bearing member and said rotor, a torquer to orient the spin axis of said rotor, pick-off means on the mutually orthogonal sensing axes for sensing angular displacement of said casing about the orthogonal sensing axes, and restraint compensating means to balance restraints to angular displacement due to gas turbulence and viscosity.

3,283,595
ENGINE STARTER
Masanori Inagaki, Nishio-shi, Japan, assignor to Nippon Denso Kabushiki Kaisha, Kariya-shi, Japan
Filed Oct. 29, 1964, Ser. No. 407,474
Claims priority, application Japan, Aug. 11, 1964, 39/63,664
2 Claims. (Cl. 74—7)

1. An engine starter comprising a starter housing, a driven shaft, an overrunning clutch rotatably mounted on said shaft, a pinion carried by said clutch, a coupling sleeve carried by said clutch, a lever pivotally connected to said housing, said lever having one end engaging said coupling sleeve and a stop at its opposite end, a moveable plunger, and a spring pivotally connected to said housing, bearing at one end against said lever and having its opposite end connected to said plunger and capable of engaging said lever stop at times for pivoting said lever.



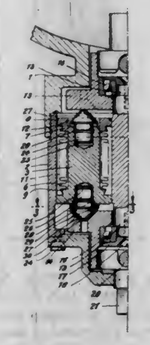
3,283,596
SNAP ACTION SWITCH MECHANISM
John O. Roeser, Park Ridge, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Aug. 21, 1964, Ser. No. 391,088
6 Claims. (Cl. 74—54)



1. A snap action switch unit comprising base means, a plurality of push button type switches mounted on said base means in side by side linear array, a shaft, means rotatably supporting said shaft from said base means extending past all of said switches, a plurality of levers pivotally carried by said base means and each having a portion engaging a push button of a respective switch and having another part adjacent said shaft, a plurality of cam means axially spaced on said shaft and each engaging one of said levers, said cam means acting through said levers to determine the respective open and closed position of said switches, a rotary member rotatably carried from said base means and rotatable with said shaft, said rotary member having a plurality of face-type teeth of uniform height thereon, and a detent member spring pressed against said teeth axially of said rotary member and cammed axially away from said rotary member by said teeth in succession, said detent member resisting rotation of said rotary member, and imparting a snap action thereto upon passing of a tooth crest.

3,283,597
STRUCTURE FOR TRANSMITTING ROTARY MOTION THROUGH A HERMETICALLY SEALED SPACE
Franz Xavier Doll, Montreux-Territet, Switzerland, assignor to Industrie-Werke Karlsruhe, Karlsruhe, Germany
Filed July 9, 1964, Ser. No. 381,396
14 Claims. (Cl. 74—63)

2. Rotation transmitting structure comprising, in combination, fluid-impermeable body means having opposed inner and outer ends and formed with at least three parallel bores passing therethrough between said ends, parallel to, equidistant from and distributed about a predetermined axis passing through said body between said ends thereof; mounting means at the region of said inner end of said body means for fixedly mounting the latter at a predetermined location; at least three plunger means respectively situated in and extending through said bores and each having a pair of opposed substantially pointed ends; at least three guide means respectively guiding said plunger means for axial movement in said bores; a driving ring supported by said body means at the region of said outer end thereof for rotation about said predetermined axis and having an annular surface directed toward said plunger means and formed with substantially more than three recesses each situated at the same distance from said predetermined axis as said bores and said recesses having configurations substantially matching the substantially pointed end portions directed toward said driving ring; a driven ring supported by said body means at the region of said inner end thereof for rotation about said predetermined axis and having an annular surface directed toward said plurality of plunger means and formed with substantially more than three recesses each situated at the same distance from said predetermined

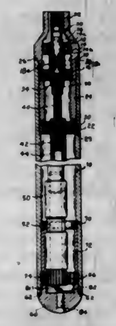


axis as said bores and having configurations substantially matching the substantially pointed end portions directed toward said driven ring, the distance between said annular surface of said driving ring at the parts thereof between said recesses of said driving ring and the innermost parts of said recesses of said driven ring, on the one hand, and the distance between said annular surface of said driven ring at the parts thereof between said recesses of said driven ring and the innermost parts of said recesses of said driving ring, on the other hand, being at least as great as the total length of each of said plunger means; and at least three flexible, fluid-impermeable tubular means capable of contracting and expanding longitudinally and respectively situated in said bores surrounding said plunger means with one of the ends of said tubular means respectively fixed fluid-tightly to said plunger means and the other of the ends of said tubular means respectively fixed fluid-tightly to said body means, so that the space occupied thereby is hermetically sealed.

3,283,598
VIBRATOR
Ralph Glenn Barnes, 4361 Wallington Drive, Dayton, Ohio
Filed Aug. 26, 1963, Ser. No. 304,604
7 Claims. (Cl. 74—87)

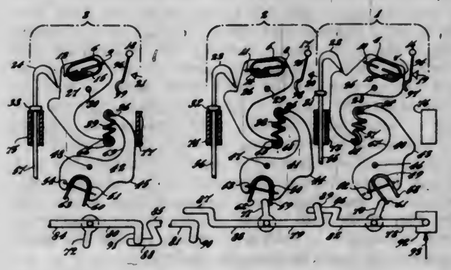
1. A vibrator for use in vibrating concrete, said vibrator including a housing having an axially extending cylindrical cavity, a bearing mounted in the upper end of the cylindrical cavity, a cylindrical roller mounted in the housing towards the lower end of the cylindrical cavity and spaced from the bearing, a ring gear mounted in the lower end of the cylindrical cavity, a pinion mounted on the

lower end of said roller, said pinion and said ring gear having meshing teeth, means to hold the pinion in mesh with the ring gear, said roller having an annular groove near the middle thereof, a cylindrical ring fixedly attached to the housing and registering with the annular groove for engagement therewith, and driving means jour-



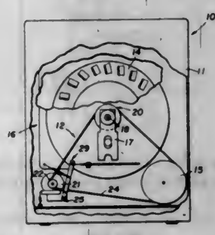
nalled in said bearing for rotating the cylindrical pendulum, said ring gear cooperating with said pinion to rotate the roller eccentrically with respect to the housing whereby rotation of said roller produces a centrifugal force transmitted to said housing through said cylindrical ring.

3,283,599
TOGGLE SWITCH INDICATIVE OF ROTATIONAL DIRECTION OF ROTOR
James A. Potter, 12 Green House Blvd., West Hartford, Conn.
Original application Feb. 24, 1964, Ser. No. 346,630, now Patent No. 3,224,518, dated Dec. 21, 1965. Divided and this application May 3, 1965, Ser. No. 465,224
3 Claims. (Cl. 74—97)



1. In a bistable switch actuable by a rotor, the combination of: a support structure; a spring; a pair of pivoted members mounted in said support and normally urged by the spring toward one of the stable positions but yieldingly shiftable to the other of the stable positions by limited angular movement of the pivoted members; yielding means operatively connected to one of said members adapted to engage the rotor during its first passage adjacent said one pivoted members for shifting the bistable switch to a position indicative of the direction of rotation of the rotor and thereafter permitting continued rotation of the rotor in said direction; and switch means actuated by the position of at least one of the pivoted members.

3,283,600
DRYERS
Leo V. Buck, Effingham, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Oct. 19, 1964, Ser. No. 404,701
4 Claims. (Cl. 74—230.17)

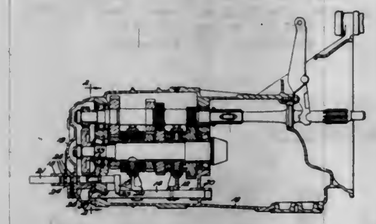


1. In a dryer including means for controlling the speed of a rotating element, the combination comprising a supporting frame, a shaft rotatably supported on said frame and connected to said rotating element, a driven pulley carried on said shaft for transmitting rotation to the latter, a motor pivotally supported on said frame to one side of the center-of-gravity thereof, a pulley driven by said motor, means adjustably supporting said motor for movement between a first and a second position, respectively, a belt trained about said respective pulleys, one of said pulleys being expansible in response to increase in the tension of said belt, actuatable means carried by said frame and coupled to said motor for swinging the latter between said first and second positions respectively and utilizing the weight of said motor to apply a downward force on said drive pulley and facilitate swinging movement of said motor to adjust belt tension, said motor drive pulley in said first position maintaining a first tension on said belt so that said expansible pulley is in a non-expanded condition having a first effective diameter for driving said rotating element at a first speed and said motor drive pulley in said second position maintaining a second increased tension on said belt so as to expand said expansible pulley to a second effective diameter smaller than said first effective diameter for driving said rotating element at a second speed.

3,283,601
CHANGE-SPEED GEAR MECHANISMS
Adrian William West and John Lewis, Coventry, England, assignors to Humber Limited, Coventry, England, a British company
Filed Apr. 24, 1964, Ser. No. 362,333
10 Claims. (Cl. 74—335)

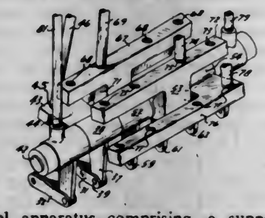
1. In a change-speed gear mechanism of the kind having at least two parallel gear selector rods mounted for sliding movement, means on the rods to effect engagement of selected gear ratios, on each rod a socket which is aligned transversely of the rods with the sockets of the other rods when the rods are in a neutral position, a selector shaft parallel to the rods and a gear selector arm mounted on the selector shaft, the shaft being mounted for rotation about its axis to engage the arm with any one of the sockets when they are aligned, and for axial sliding movement to effect gear ratio engaging and disengaging sliding movement, through the engagement of the rod and socket, of the selected rod; a locking device for the rods consisting of a set of notches, one on each selector rod, providing pairs of abutment faces which notches are also transversely aligned when the selector rods are in the neutral position aforesaid, a locking member having an edge portion arranged to engage in the notches other than the notch of the rod which, for the time being, is engaged by the arm and selected for movement, means to rotate the locking member with the selector shaft to change the

notch it engages in synchronism with movement of the arm to change the socket engaged thereby and means to hold the locking member against sliding movement with



the shaft whereby each rod, other than that selected, is locked against sliding movement by engagement of the abutment faces with the locking member.

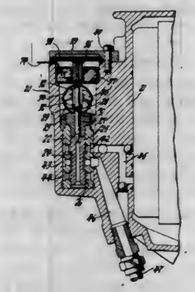
3,283,602
CONTROL APPARATUS
John F. Lindell, Newton, Iowa, assignor to Koehring Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Jan. 12, 1965, Ser. No. 424,973
10 Claims. (Cl. 74—469)



1. Control apparatus comprising, a support; a first group of individually adjustable control elements movably mounted on said support; a second group of individually adjustable control elements operatively associated, respectively, in motion transmitting relation with said control elements of said first group; and a bank of control devices mounted on said support and including a third group of individually adjustable control elements operatively associated, respectively, in motion transmitting relation with said control elements of said first group; each control element of said first group presenting a predetermined number of relatively spaced fastening means thereon, and each control element of one of said second and third groups presenting a complementary fastening element selectively engaged in cooperative relation with a selected one said fastening means presented by the associated control element of said first group.

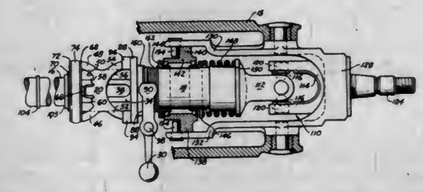
3,283,603
ACCESSORY OVERDRIVE CONTROL
Dan B. Kulper, Grand Rapids, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 2, 1964, Ser. No. 356,727
10 Claims. (Cl. 74—472)

1. In a variable ratio drive system of the type having a first variable diameter pulley driven by an engine and a second variable diameter pulley driven by said first pulley and having a fluid pressure responsive servo operatively associated with said first pulley adapted to receive fluid under pressure to vary the drive ratio of said system, a fluid pressure source, a governor connected to said source and to said servo for controlling the pressure of fluid delivered to said servo, said governor including speed responsive means driven by one of said pulleys and a valve controlled by said speed responsive means, said governor valve being normally movable throughout a predetermined range of motion in response to changes in speed of rotation of said speed responsive means to vary the pressure delivered to said servo, and valve control means for controlling the posi-



tion of said governor valve independently of said speed responsive means, said valve control means including a manually actuated member movable throughout a range of motion from a first to a final position, said last-mentioned valve control means being effective upon movement of said manually actuated member to a position intermediate said first and final position to move said governor valve to one end of its range of movement independently of the action of said speed responsive means, said last-mentioned valve control being effective in said first and final positions of said manually actuated member to permit control of said governor valve by said speed responsive means.

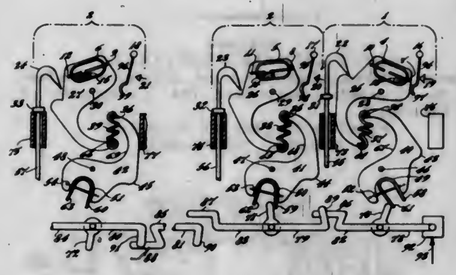
3,283,604
ADJUSTABLE STEERING COLUMN
Robert E. Meyers, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Nov. 13, 1963, Ser. No. 323,527
8 Claims. (Cl. 74—493)



1. An adjustable steering column comprising a first shaft having a plurality of axially spaced slots and an axially extending groove therein, a second shaft telescoped over said first shaft and movable axially with respect thereto, said second shaft having opening means therein for permitting access to said slots and groove in

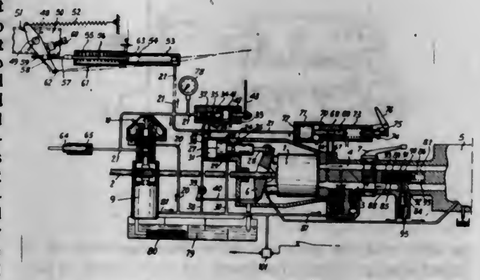
said first shaft, a third shaft operatively connected to said second shaft for causing rotation thereof, said operative connection including universal joint means for permitting said third shaft to be angularly positioned with respect to said second shaft, drive spring means operatively connected to said first and second shafts for transmitting rotary motion from said second shaft to said first shaft, said last mentioned operative connection including means formed on said drive spring means for gripping the surface of said second shaft and key means formed thereon for engaging the axially extending groove of said first shaft through the opening means of said second shaft to thereby prevent relative rotary motion between said first and second shafts, latch means operatively connected to said second shaft and engaging one of said axially spaced slots of said first shaft through the opening means of said second shaft for preventing axial movement between said first and second shafts, tilt support means fixedly connected to and movable with said third shaft, locking means located on said second shaft and movable with respect thereto for engaging said tilt support member and preventing a change in the angular position of said third shaft with respect to said second shaft, and manually operated actuating means capable of being moved in one direction for simultaneously causing said key means and latch means to become disengaged from said axially extending groove and said one of said axially spaced slots to thereby permit axial movement of said second shaft with respect to said first shaft or in another direction for causing movement of said locking means to a position whereby said tilt support means can be disengaged from said locking means and can be locked in another position by angularly moving said third shaft with respect to said second shaft.

3,283,605
SERVOMOTOR DRIVEN BALANCING SYSTEM WITH BACKLASH BETWEEN COMPONENTS
James A. Potter, 12 Green House Blvd., West Hartford, Conn.
Original application Feb. 24, 1964, Ser. No. 346,630, now Patent No. 3,224,518, dated Dec. 21, 1965. Divided and this application May 3, 1965, Ser. No. 465,223
2 Claims. (Cl. 74—469)



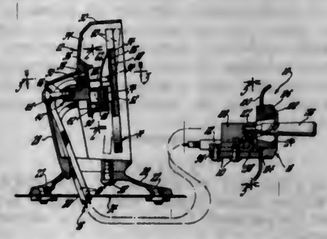
1. In a measuring system in which the quantity to be measured is translated into a signal actuating a servomotor actuating a plurality of balancing components until a satisfactory combination of balancing units is selected the improvement which consists of the combination of: a series of rotors, each rotor being adapted to actuate its associated balancing component; and backlash drive connections between each of the sequentially actuated rotors in the series, whereby simultaneous actuation of the balancing components is prevented and least next actuation of the balancing components is assured.

3,283,606
AUTOMATIC REGULATORS FOR HYDROSTATIC TRANSMISSIONS OF AUTOMOBILE VEHICLES
Antoine Brueder, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France, a French corporation
Filed Mar. 25, 1963, Ser. No. 267,553
Claims priority, application France, June 29, 1962, 902,524, Patent 1,336,732
11 Claims. (Cl. 74—472)



1. Automatic regulation device for hydrostatic transmission of an automobile vehicle having a thermal engine, a fuel feed circuit therefor and an acceleration pedal, said transmission comprising a hydraulic pump having inlet and outlet ports and driven from said thermal engine, at least one hydraulic motor actuated by said pump, a disc adapted to be set in different angular positions for controlling the variation in the output of said pump, a hydraulic circuit connecting said pump and motor, a valve for short-circuiting said inlet and outlet ports of said hydraulic pump, a feed pump driven by said thermal engine connected to said hydraulic circuit, a centrifugal device associated with said feed pump for controlling the delivery of fluid from said feed pump to said hydraulic circuit at a pressure of a value proportional to the velocity of rotation of said thermal engine, means controlled by said feed pump for controlling the delivery of fuel to said thermal engine feed circuit, said means being responsive in a unidirectional manner to said accelerator pedal, hydraulic cylinder means adapted to modify the inclination of said pump disc and a second valve controlled by said feed pump controlling said hydraulic cylinder means.

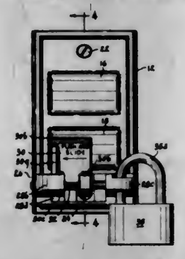
3,283,607
REMOTE CONTROL MIRROR
Andrew J. Van Noord, Grand Rapids, Mich., assignor to Kent Engineering Consultants, Grand Rapids, Mich., a partnership of Michigan
Filed Apr. 22, 1963, Ser. No. 275,192
9 Claims. (Cl. 74—501)



6. A remote control for a rear view mirror, comprising:
a mirror support
a universal joint connection provided on said support and having a mirror member engaged thereto,

said universal joint connection including means providing first and second pivotal axes for oscillation of said mirror member relative to said support,
the first and second pivotal axes being transversely disposed and in a common plane of reference,
a pair of control cables received through said support and having one thereof connected to said mirror member at a position offset from said first pivotal axis on said second pivotal axis and the other thereof operatively connected to said mirror member and offset from both said pivotal axes,
said universal joint connection having the means providing said first pivotal axis connected to said mirror member and pivotal about said second pivotal axis,
and said other control cable being connected to said first axis providing means and operatively connected to said mirror member thereby.

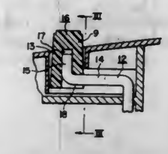
3,283,608
PUSHBUTTON LATCHING AND LOCKING ATTACHMENT
Charles C. Davis and Raymond L. Erickson, Brookfield, Wis., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Aug. 4, 1964, Ser. No. 387,346
4 Claims. (Cl. 74—527)



1. In a latching device for removable attachment to a pushbutton station or the like, a member comprising a base portion having a surface formed to seat against the outer surface of a station through which a pushbutton projects, an opening therethrough to accommodate means to fasten said member in place on such station and second and third spaced apart portions projecting in substantial parallel alinement away from said base portion surface, said second portion having a notch opening toward said third portion, and said second and third portions having alined openings therein, a pin longitudinally slidable and rotatable in said alined openings, a latch member secured on said pin and having a portion which when rotated toward a pushbutton is engageable with the outer end to depress the latter, said latch member when holding said pushbutton in depressed position being movable into engagement with said second portion of said base in said notch as a result of sliding movement of said pin to latch the depressed pushbutton.

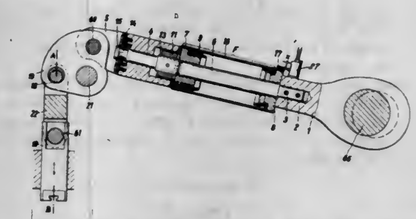
3,283,609
KNOB
Robert S. Waters, Lexington, Ohio, assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 16, 1964, Ser. No. 383,034
2 Claims. (Cl. 74—545)

1. For use with an offset lever having a pair of integral segments disposed at substantially a right angle, one segment being provided with a free end, a knob, said knob comprising: a body member including an elongated substantially cylindrical hole therein extending from one surface of said body member, a slot in said one surface delineated by a pair of resilient spaced apart walls, said slot extending in a direction substantially perpendicular to said elongated hole, said hole being adapted to receive the free end of said one of said segments and said resilient



walls being movable in opposite directions by the other of said segments upon insertion thereof into said slot and further being adapted to retain said other of said segments in said slot.

3,283,610
OVERLOAD STAMPING DEVICE FOR PULL OR PUSH DRIVES, PARTICULARLY IN STAMPING PRESSES
Walter Bredow, Vormasch 2, Alfeld (Leine), Germany
Filed May 11, 1964, Ser. No. 366,447
Claims priority, application Germany, May 11, 1963, B 71,869
5 Claims. (Cl. 74—582)



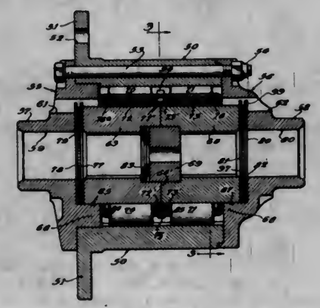
1. An overload safety device for push or pull drives for stamping machines operably related to means serving for the transmission of a driving force to a slide, comprising a sheath having opposite ends, a supporting disc secured to one end of the sheath, a second supporting disc adjacent the opposite end of the sheath, spring means pretensioned to a maximum compressive power located between and adapted to hold said discs apart at a predetermined distance, with the distance between such discs diminishing when the force applied to the safety device further compresses the spring means, a stop for said sheath and a limit switch fixedly carried by a part of the safety device adapted to be moved relatively to the sheath cooperable with said stop.

3,283,611
POSITIVE DRIVE DIFFERENTIAL
Albert A. Weismann, 1054 Rose St., and Peter H. Weismann, 769 Lee St., both of Des Plaines, Ill.
Filed Jan. 29, 1964, Ser. No. 340,992
19 Claims. (Cl. 74—650)

1. In a differential having a pair of coaxial driven members, a driving member coaxial with said driven members, two series of wedging elements, each series being adapted to be wedged between said driving and one driven member to effect a driving connection to transmit torque in either direction, the improvement comprising:
separate cage means for retaining the elements of each series in a definite spaced relation;
resilient means engaging each respective cage means and its driven member tending to rotate the cage means with its driven member;

resilient connecting means between said cage means permitting circumferential motion between said cage means and urging the same to a central position relative to each other within the range of said lost motion;

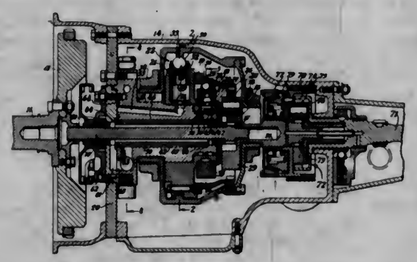
said wedging elements having a range of movement in engagement between said driving and driven members, said connecting means between said cage



means automatically limiting circumferential motion between said cage means to the amount of said range of movement when said wedging elements are so engaged;

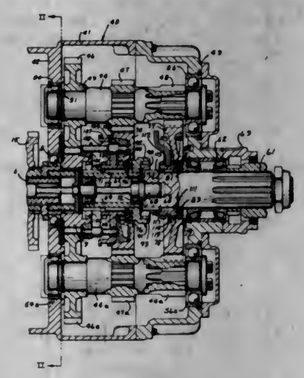
and frictional damping means connecting said driving and driven members preventing free oscillation of said wedging elements between a driving connection in one direction and a driving connection in the opposite direction.

3,283,612
POWER TRANSMISSION SYSTEMS
John R. Densham, Leamington Spa, England, assignor to Automotive Products Company Limited, Leamington Spa, England
Filed July 2, 1963, Ser. No. 292,356
Claims priority, application Great Britain, July 4, 1962, 25,581/62
8 Claims. (Cl. 74—687)



1. A power transmission system comprising an input shaft, an output shaft, a planetary gear train including a sun wheel directly coupled to said input shaft, a gear annulus and planet gears, a liquid pressure pump and motor providing a variable speed ratio said liquid pressure pump comprising a body element and an impeller driving element, one of said elements being directly coupled to the input shaft and the other of said elements being directly coupled to the gear annulus, said gear annulus being coupled to said input shaft by said pump and motor, said planet gears being disposed to mesh with said sun wheel and annulus, and a planet carrier upon which said planet gears are mounted, said carrier being directly coupled to said output shaft.

3,283,613
AUTOMOTIVE DEVICE
Charles M. Perkins, Oshtemo Township, Kalamazoo County, Mich., assignor to Eaton Yale & Towne Inc., a corporation of Ohio
Filed Apr. 20, 1964, Ser. No. 361,049
10 Claims. (Cl. 74—745)



1. A three-speed change gear unit, comprising:

an input shaft having an input gear thereon, said input gear having clutch teeth thereon;

a plurality of countershafts each having a first gear thereon in continuous mesh with said input gear, said first gears being substantially identical so that said countershafts are driven from said input gear at equal speeds;

an intermediate shaft coaxial with and spaced axially from said input shaft, said intermediate shaft having external splines thereon;

an intermediate gear surrounding said intermediate shaft and mounted for radial, but held against substantial axial, movement with respect thereto, said intermediate drive gear having clutch teeth thereon;

substantially identical second gears secured to said countershafts and being in continuous meshing engagement with said intermediate gear so that said intermediate gear is supported by said second gears for radial movement with respect to said intermediate shaft;

a clutch sleeve splined on said intermediate shaft for axial movement therealong, said clutch sleeve having sets of clutch teeth which are selectably and alternatively engageable with said clutch teeth on said input gear and said intermediate gear whereby said intermediate shaft can be driven either directly from said input shaft or indirectly from said input shaft, said countershafts, said second gears and said intermediate gear;

a clutch part mounted on said intermediate shaft for rotation therewith at the end thereof opposite said input shaft, said clutch part having clutch teeth thereon;

an output shaft coaxial with and spaced axially from said intermediate shaft on the opposite side thereof from said input shaft, said output shaft having a splined portion adjacent the end thereof next to said intermediate shaft;

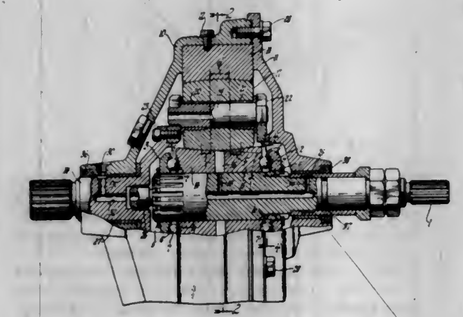
an output shaft gear surrounding said output shaft and mounted for radial movement, but held against substantial axial movement, with respect thereto, said output shaft gear having clutch teeth thereon;

substantially identical third gears secured to said countershafts and being in continuous meshing engagement with said output shaft gear so that said output shaft gear is supported by said third gears on said countershafts for radial movement with respect to said output shaft;

a second clutch sleeve splined on said splined portion of said output shaft for axial movement therealong, said second clutch sleeve having sets of clutch teeth which are selectably and alternatively engageable with the clutch teeth on said clutch part and on said output shaft gear;

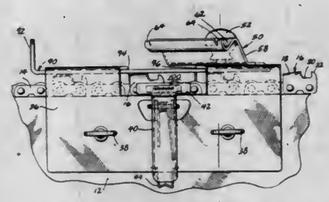
whereby said output shaft can be driven either from said intermediate shaft or from said countershafts through said third gears and said output shaft gear.

3,283,614
FRICTION DRIVE MECHANISM
Lubomyr O. Hewko, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 10, 1963, Ser. No. 272,157
2 Claims. (Cl. 74—798)



1. A friction drive planetary unit comprising a first member having an annular contact surface, a pair of relatively axially movable second members each having an annular contact surface, a carrier, a planet having an annular contact surface, means supporting said planet on said carrier for rotation about the planet's axis and for radial movement relative to said carrier, a portion of the contact surface of said planet contacting a portion of the annular contact surface of said first member to provide only one rolling track between said planet and said first member whose axial width is a function of planet and first member load, a portion of the annular contact surface of said planet also contacting a portion of the annular contact surface of each of said second members to provide only one rolling track between said planet and each of said second members whose axial width is a function of planet and second member load, means operatively connected to said second members operable to urge relative axial movement between said second members to apply a load to said contacting surfaces and all of said rolling tracks sufficiently axially spaced relative to each other to prevent any rolling track overlap under load so that each said rolling track is never subjected to more than one stress cycle per planet revolution.

3,283,615
METHOD AND MEANS FOR SHARPENING A CHAIN SAW DEVICE
Charles B. Kephart, Jr., 1620 18th St., West Des Moines, Iowa
Filed Jan. 29, 1965, Ser. No. 428,965
14 Claims. (Cl. 76—36)



1. Method of sharpening chain saw teeth characterized by placing an elongated flat member of predetermined thickness on the chain of a chain saw, placing an inverted U-shaped chain saw sharpening device having a top portion and two downwardly extending side walls with a flat straight bearing surface formed on the underside of the top portion and including a file member, over the elongated flat member so that the bearing surface engages the elongated flat member, securing the sharpening device to the bar of the chain saw, removing the elongated flat member from between the chain and the bearing surface of the sharpening device and filing the teeth with the file member.

3,283,616
METHOD OF MAKING SPINNERETTES
Edward G. Balcenik, Bernardsville, and Fred E. Roth, Florham Park, N.J., assignors to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware
Filed May 4, 1964, Ser. No. 364,519
5 Claims. (Cl. 76—107)



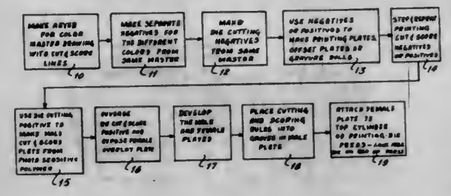
1. The method of making a spinnerette comprising positioning a face of a first metal plate in mating engagement adjacent a face of a second metal plate, mechanically securing the plates in contiguous relationship, forming a perpendicular counterbore having a conical terminal into the first plate with the terminal extending into and scoring the surface of the second plate, separating the plates and forming a perpendicular cylindrical capillary bore through the second plate with its axis passing through the score, plating a thin film of an oxidation-resistant metal on the mating surface of at least one substrate metal plate, re-assembling the plates with the plated face therebetween and the capillary bore in co-axial alignment with the counterbore, securing the plates in combined contiguous relationship and heating the combined plates until the oxidation-resistant metal is substantially completely diffused into the plates by solid diffusion.

3,283,617
PROCESS OF MAKING DIE CUTTING PLATES
Wallace J. Kletzker, St. Louis County, Mo. (7 Laymont Court, St. Louis, Mo.)
Filed June 1, 1964, Ser. No. 371,296
12 Claims. (Cl. 76—107)

1. A method of making die cutting plates including the steps of

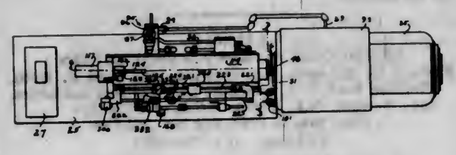
(A) making a photographic reproduction of the cut and score lines of a container blank,

(B) forming said reproduction on a substrate,
(C) grooving said substrate in the outline of said cut and score lines of the container blank, and



(D) fixing cutting and scoring rules in the grooves to form a male die.

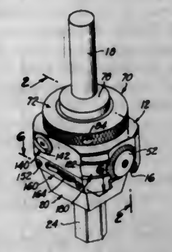
3,283,618
TORQUE CONTROLLED MACHINE TOOL
Edward W. Schatzman, South Fort Mitchell, Ky., assignor to The Avey Division of the Motch and Merryweather Machinery Co., Covington, Ky., a corporation of Ohio
Filed Aug. 26, 1964, Ser. No. 392,115
10 Claims. (Cl. 77—32.7)



6. In a mechanism of the class described the combination of a fixed support, a spindle carrier carrying a tool on said support for axial movement relative thereto, a spindle driving sleeve on the spindle, a prime mover, means connecting the prime mover and spindle driving sleeve for rotating the spindle, a yieldable coupling in said spindle rotating means yieldable to torque on said spindle and its tool with said coupling including a plate encircling the spindle driving sleeve and movable axially of the spindle, displaceable means on said spindle driving sleeve in operative connection with the plate, fluid pressure maintaining operative connection between the plate and displaceable means and establishing a given pressure on said displaceable means and determining the torque deliverable by the spindle and its tool, means establishing the normal pressure on said displaceable means, and means associated with the fixed support and movable spindle carrier for varying the said effective torque load on the spindle and its tool.

3,283,619
FACING HEAD
Carlos Marchis, Santa Monica, Calif., assignor of ten percent to Thomas P. Mahoney, Los Angeles, Calif., and five percent to Roberto Marchis, Santa Monica, Calif.
Filed Aug. 13, 1964, Ser. No. 389,427
10 Claims. (Cl. 77—58)

1. In a facing head, the combination of: a body having an elongated guideway therein; a tool mount supported in said guideway for longitudinal movement in respect to said body; adjustment means operatively connecting said tool mount to said body for moving said tool mount longitudinally in said guideway; a first actuator connected to said adjusting means for initially adjusting said tool mount in said guideway; and a second actuator connected



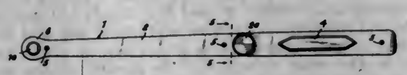
by said first actuator to said adjustment means for intermittently energizing said adjustment means to cause movement of said tool mount during a facing operation.

3,283,620
TORQUE WRENCH
Jay R. Bailey, Woodland Hills, Calif., assignor to McCulloch Corporation, Los Angeles, Calif., a corporation of Wisconsin
Filed Oct. 23, 1965, Ser. No. 503,927
6 Claims. (Cl. 81—52.4)



1. In a torque wrench:
(A) a handle;
(B) a laterally extending loop having a pair of arms spaced apart laterally relative to each other, one of said arms having one end connected to the handle and having its other end connected to the adjacent end of the other arm by a resilient portion;
(C) and a screw-engaging part extending from the end of the other arm opposite the part connecting the arms together and normal to the plane of the loop, there being a free end portion of the screw-engaging part adapted to operably engage a screw.

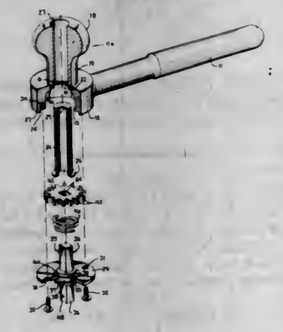
3,283,621
SOCKET WRENCHES
William J. Faso, 230 N. Deferal Highway, Deerfield Beach, Fla.
Filed Aug. 12, 1965, Ser. No. 479,250
1 Claim. (Cl. 81—54)



A digitally operable socket wrench comprising an elongated hollow casing constituting a body for said wrench, one end of said casing being slightly offset from the rest of said casing, said offset end of said casing having an opening therein; a socket holder, said socket holder having a stud portion at one end and a socket receiving portion at the other end, said stud portion being operatively received in the opening in the offset end of said casing, said socket holder being freely rotative when said stud portion is in position within the offset end of said casing; a first pulley, said pulley being carried by said stud portion and contained wholly within said casing;

shaft means intermediate the ends of said casing, said shaft having a knob at one end thereof, said knob being located on the outside of said casing; a second pulley riding on said shaft means, said second pulley being wholly contained within said casing; endless cable means interconnecting said first and second pulleys, such that digital rotative movement applied to the knob will cause the shaft means, second pulley and first pulley to rotate in response thereto; and, a hand grip portion on said casing at the opposite extremity to said offset portion, the said knob being located at the inner end of said hand grip portion such that the socket wrench can be held and operated by the same hand.

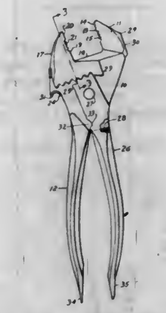
3,283,622
REVERSIBLE WRENCH
Henry A. Wilson, 1000 Eldorado Ave., Clearwater Beach, Fla.
Filed May 3, 1965, Ser. No. 452,531
7 Claims. (Cl. 81—58.3)



1. In a non-ratcheting reversible socket wrench operating tool having an operating handle and a rigid head fixed with respect thereto, a relatively rotatable driving member journaled axially in said head and fixed against relative axial movement, a clutch element rotatable with said driving member and slidably mounted thereon, and manually operable means carried by said head and engaging said clutch element to slidably move same on said driving member into and out of engagement with said head, whereby to continuously rotate said driving member in either forward or reverse directions by said handle without relative axial movement of said handle and driving member.

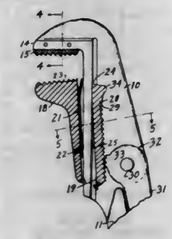
3,283,623
PLIERS WITH SLIDING JAW ACTUATION BY CLAW LEVER MEANS
Ted Neff, 12975 Shamrock Ave., San Bernardino, Calif.
Filed Jan. 15, 1965, Ser. No. 425,872
2 Claims. (Cl. 81—360)

1. A tool substantially as described consisting of three major parts and one minor part, said first of the three major parts comprising a first handle having a top end thereof formed into a flat intermediate area and a first fixed jaw; a T-shaped rail means extending integrally from the inner end of the first jaw and positioned substantially at right angles thereto; the second of the three major parts consisting of a movable jaw with its lower section bifurcated by a T-shaped channel therethrough, said movable jaw being slidably mounted on the T-shaped rail by means of said channel, a pair of gear racks along the bottom edges of the bifurcated sections, elongated portions formed at the inner ends of the gear racks to provide dual stop means cooperating with other stop means to prevent the second jaw from sliding off the rail; the third of the three major parts consisting of a second pivoting handle having a head portion that is bifurcated to form extending arms straddling said flat area on said first handle, a pair of gear racks on the upper ends of the arms that are normally in mesh with the other mentioned gear racks on the second jaw; the mentioned minor part comprising a hinge pin hinging the two handles together in such a position that when the second handle is pivoted outwardly, the dual stop means on the second jaw, in cooperation with the other mentioned stop means, prevent the second jaw from becoming disengaged from the first handle, said other stop



means comprising a stop crotch between the arms of the second handle which comes into contact against an edge of the flat area on the first handle and limits the pivoting travel of the second handle at a predetermined point where the aforementioned dual stop means on the second jaw engage the rear edges of the head portion on the second handle and effectively block the second jaw from further outward movement but at the same time permits its free inward movement along the rail to any chosen position where the gears are then reengaged by an inward pivoting of the second handle.

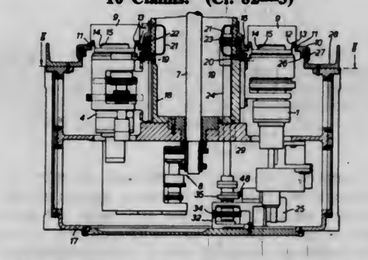
3,283,624
SLIDING JAW WRENCH WITH STEP-BY-STEP ACTUATION BY CLAW LEVER MEANS
Ted Neff, 20975 Shamrock Ave., San Bernardino, Calif.
Filed Jan. 22, 1965, Ser. No. 427,414
6 Claims. (Cl. 81—360)



1. A hand tool comprising a first jaw with a handle extending below it but having an intermediate space with a rail means integral therewith, a second jaw configurated to ride along the rail means, the second jaw having a rack along an edge thereof, a handle-like lever having a head pivoted to the said intermediate space and provided with a plurality of teeth for engaging the rack, when the handle-like lever is spread away from the said handle a material distance, the teeth on the head are disengaged with the rack so that the rack is free to be shifted along the rail means to any desired position, stop means on the tool to prevent the second jaw leaving said rail means,

spring means provided between the second jaw and the rail means which constantly urges a top portion of the second jaw away from the rail means and at the same time constantly urges the bottom portion toward the rail means and the gear racks into engagement with each other, the teeth on the rack having unequal sides, each tooth thereof having its upper side slanted at a relatively flatter angle than its bottom side so that the teeth on the head can slip downwardly along the rack so as to provide a jacking action, the rail means having a substantially T-shaped cross section and the second jaw having a channel configuration to envelope the rail means.

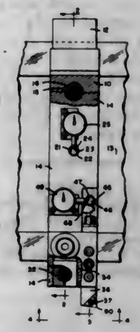
3,283,625
MULTI-SPINDLE AUTOMATIC LATHES
Donald Raymond Smith, Coventry, England, assignor to Alfred Herbert Limited, Coventry, England
Filed Jan. 25, 1965, Ser. No. 427,652
Claims priority, application Great Britain, Jan. 23, 1964, 2,915/64
10 Claims. (Cl. 82—3)



1. A multi-spindle automatic lathe including a plurality of rotatable spindles; a fixed bearing for each spindle, whereby the spindles are arranged with their axes of rotation parallel with each other and spaced apart circumferentially about a common axis parallel with the axes of the spindles; the same number of chucks as there are spindles, the chucks being arranged with their axes parallel with said common axis and spaced apart circumferentially therearound at the same radial distances therefrom and at the same circumferential spacing as the spindles; means for engaging each chuck with a corresponding spindle for driving rotation thereby, the said means being disengageable when the chucks are to be separated from the respective spindles; an annular chuck carrier coaxial with the said common axis and engageable with the chucks; means for moving the chuck carrier axially into and out of a position in which each chuck is so engaged with a corresponding spindle as to be rotated thereby, and means for moving the chuck carrier circumferentially, when the chucks have been separated from the respective spindles by the chuck carrier, thereby to effect a rotary indexing of the chuck carrier and the chucks with respect to the spindles.

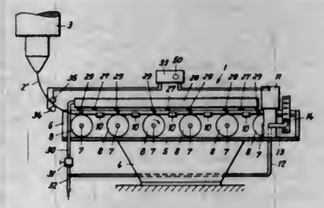
3,283,626
TOOL BLOCK
Leroy E. Alvey, Bridgeport, and Jesse W. Mendenhall, Fairfield, Conn., assignors to The Bullard Company, Bridgeport, Conn., a corporation of Connecticut
Filed Apr. 14, 1964, Ser. No. 359,735
9 Claims. (Cl. 82—36)

1. In a tool block, a base; a tool support; a tool mounted in said tool support; a screw extending from said base through a hole in said support at its one end and including an eccentric portion that cooperates with said tool support to move said support longitudinally relative to said base when said screw is turned in either direction; another screw extending from said base, at the end thereof opposite said first mentioned screw, and through an enlarged hole within said support; an eccentric portion on said other screw; a longitudinal slide element in said tool support adapted to cooperate



with the eccentric portion on said other screw, the construction being such that turning said other screw in both directions adjusts said tool support transversely of said base.

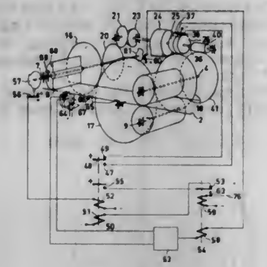
3,283,627
METHOD AND APPARATUS FOR CUTTING PIECES OFF A LENGTH OF MATERIAL
Rudolf Diener, Zurich, Switzerland, assignor to Eldima A.G., Zurich, Switzerland
Filed Nov. 3, 1964, Ser. No. 408,561
Claims priority, application Switzerland, Nov. 4, 1963, 13,489
21 Claims. (Cl. 83—42)



1. A method of cutting pieces off a length of material, which method comprises the steps of: advancing the length towards a stop through the path of a cutter rotating in a plane transverse to the direction of advance of the length so that the cutter acts to cut off said piece when the end of the length abuts against the stop, the cutter being rotated under the action of a jet of fluid so that the intensity of said jet controls the speed of rotation of the cutter, and controlling the intensity of said jet by the repetition rate at which said length end abuts against said stop.

10. Apparatus of the class described, comprising a stop, means for advancing a length of material towards said stop, a cutter, a vaned wheel carrying said cutter so that the cutter is rotatable in a plane transverse to the direction of advance of the length to cut off a piece of material when the free end of said strip abuts against the stop, means for directing a first jet of fluid on to the vanes of said wheel to rotate the same, jet intensity-varying means for varying the intensity with which said jet is directed on to said vanes in response to variations in the repetition rate at which said free end abuts against said stop.

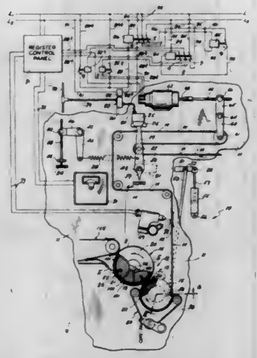
3,283,628
DEVICE FOR FEEDING BAND MATERIAL
Sven A. Axlid, Jakobsberg, Rudolf F. Greiner, Alvsjo, and Gunnar Winkler, Bromma, Sweden, assignors to Arenco Aktiebolag, Stockholm-Vallingby, Sweden
Filed May 10, 1965, Ser. No. 454,310
Claims priority, application Sweden, May 14, 1964, 3,889/64
3 Claims. (Cl. 83—74)



1. A device for advancing a strip to be clipped into sheets of equal size comprising a knife mounted on a rotatable shaft adapted to be driven by a motor, driving means for advancing the strip relative to the speed of said knife clipping the strip into sheets, whereby the sheet size and size accuracy is determined by the speed at which said driving means is operated, said driving means including at least one feeding roll, a differential connected to the shaft of said feeding roll, first transmission means adapted to transfer a continuous driving force from said motor to said differential, second transmission means comprising a variator and a coupling, which are connected in series, electromagnetic control means for said coupling; said second transmission means connected in parallel with said first transmission means between said motor and said differential whereby the driving speed to said feeding roll is composed of the driving speeds of said first and second transmission means, the device also comprising a control arrangement provided with a sensing arrangement sensitive to indicating means on the strip and cam operated contacts and a switch controlled in time with the rotation of said knife; said control arrangement adapted, when signals of said sensing arrangement and said switch, respectively, are coincident, to supply current to said electromagnetic control means for uncoupling said coupling upon operation of said cam operated contacts controlled by the rotation of said knife, and after a predetermined period determined by said cam operated contacts to recouple said coupling.

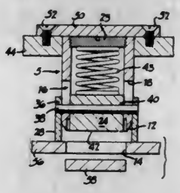
3,283,629
WEB PROCESSING MACHINES WITH COORDINATED WEB REGISTER AND TENSION CONTROLS
William F. Huck, 81 Greenway Terrace, Forest Hills, N.Y.
Filed Dec. 14, 1964, Ser. No. 418,249
13 Claims. (Cl. 83—75)

1. In a machine for processing a web having repetitive patterns thereon;
a rotary cylinder peripherally engaging the web to continuously propel the web and carrying web processing elements to act periodically upon the web,
register control means operative upon sensing of deviations from a registered condition of said repetitive patterns with respect to said processing elements to effect variation of web tension in a run of the web leading to said cylinder in the sense for restoring said registered condition,
tension control means operative to maintain a predetermined constant tension in said web, and



means for preventing displacement of said web run by said tension control means upon operation of said register control means until the web tension variation introduced by such operation has been effective to compensate substantially for the sensed deviation from the registered condition.

3,283,630
SELF-CLEANING CUTTING DIE WITH STRIPPER ELEMENT
Frank S. Domka, 26814 Kean St., Inkster, Mich.
Filed Oct. 6, 1964, Ser. No. 401,880
2 Claims. (Cl. 83—124)

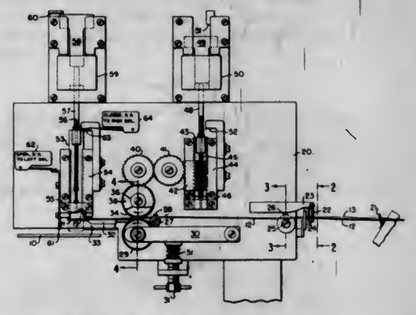


1. In a substantially horizontally disposed self-cleaning cutting die, a platen, a tubular body having a wall and a cutting edge at one end thereof secured to the platen, diametrically opposed elongated slots in said wall and extending lengthwise of said body and terminating in spaced relation from said cutting edge, an ejector positioned in slidable relation within said tubular body and having a passage extending therethrough in alignment with said slots, a stripper positioned in slidable relation over the outside of said tubular body and having diametrically opposed apertures in alignment with said passage and slots, a pin extending through said apertures, passage and slots, and spring means interposed between the ejector and the platen to induce relative movement between the cutting edge of the tubular body and the ejector after the cutting edge has been moved to clear the upper surface of the material being cut, said stripper having a partial ring on its stripper outer surface.

3,283,631
MACHINE FOR FEEDING AND CUTTING ADHESIVE TAPE

Kenneth G. Strom, Saugus, Mass., assignor to Prime Manufacturing Company, Lynn, Mass., a corporation of Massachusetts

Filed Apr. 28, 1965, Ser. No. 451,425
6 Claims. (Cl. 83—211)

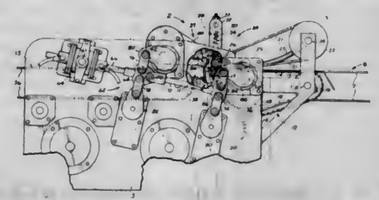


1. A machine for feeding and cutting patches from a tubular adhesive-coated tape, comprising an upright plate having a vertically reciprocable rack and a knife slide mounted side by side in spaced relation thereon, means for guiding tape in a path below said rack and slide, a switch-controlled solenoid for operating the knife slide, a separate solenoid for operating the rack, tape feeding means actuated by said rack, and a switch in circuit with the rack-operating solenoid and arranged to be tripped by the knife slide on its return to initial position after making a tape cutting stroke whereby the unsevered end of the tape is advanced to cutting-off position when the machine comes to rest.

3,283,632
CONTINUOUSLY-FED VENEER CLIPPER

Wesley W. Nightingale, Rte. 2, Box 163, Creswell, Oreg.

Filed Jan. 11, 1965, Ser. No. 424,487
5 Claims. (Cl. 83—262)

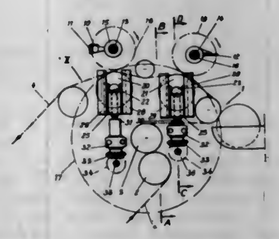


1. A clipper for cutting sheets of veneer and like workpieces comprising
- a frame having a work path extending longitudinally therethrough,
- a pair of rockable opposing cutting devices journaled to said frame, one of said devices being above the work path, the other being below the path,
- each of said cutting devices extending transversely of the work path and comprising an elongated rocker mounted for rocking movement about its longitudinal axis,
- said one cutting device including an anvil having a shoulder on the feed side of said knife which supports a face of the workpiece during cutting of the workpiece,
- said other cutting device including a knife,
- a common motor mounted on said frame adjacent one side thereof, operable on actuation to produce a cutting stroke in each of said cutting devices, and
- toggle means adjacent said one side of said frame linking said cutting devices with said motor whereby said knife and said anvil are moved in their cutting strokes simultaneously on acutation of the motor.

3,283,633
APPARATUS FOR PRODUCING TRANSVERSE OFFSET PERFORATIONS ON WEB FABRIC

Arno Finke and Walter Vietmeier, Lengerich, Westphalia, Germany, assignors to Windmoller & Holscher, a corporation of Germany

Filed Sept. 14, 1964, Ser. No. 396,000
Claims priority, application Germany, Sept. 25, 1963, W 35,315
4 Claims. (Cl. 83—303)



1. An apparatus for producing transverse offset perforations on a web material in particular for bag-making machines comprising a plurality of perforating knives, for those portions of the perforated lines offset in relation to each other in the longitudinal direction of the web, mounted on knife holders mounted on at least two separate parallel rotating knife shafts, said knife shafts being fixedly mounted spaced from each other in the direction of the web feed, each said knife shaft and the material web being angularly adjustable in relation to each other in a plane perpendicular to the transport direction of the moving web which includes the axis of rotation of said knife shaft so that the plurality of perforating knives can be adjusted to compensate for any oblique positioning with respect to themselves and each other.

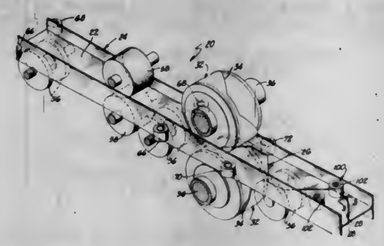
3,283,634
APPARATUS FOR MAKING CASTELLATED BEAMS

Carl L. Lodjic, Long Beach, Calif., assignor to Stanray Corporation, Chicago, Ill., a corporation of Delaware

Filed Dec. 30, 1963, Ser. No. 334,384
7 Claims. (Cl. 83—333)

1. In an apparatus for longitudinally shearing a member into two complementary parts along a longitudinal line having a cyclic lateral variation, the combination of:
- (a) a frame;
- (b) two parallel shearing rolls on said frame;
- (c) said shearing rolls having complementary, registering, circumferentially-extending shearing edges on their peripheral surfaces;
- (d) each of said shearing edges comprising at least one whole cycle of said cyclic lateral variation;
- (e) the radius of each of said shearing edges being less than one-half the distance between the axes of said shearing rolls so that said shearing edges are spaced apart at their closest approach to each other;

- (f) means for guiding the member between said shearing rolls with the member perpendicular to the plane of the axes of said shearing rolls;
- (g) means for rotating said shearing rolls in synchronism to shear the member into two parts along said longitudinal line having said cyclic lateral variation; and

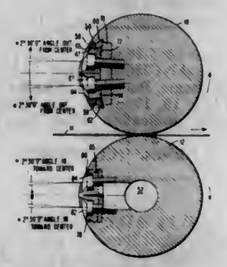


- (h) said spacing of said shearing edges at their closest approach to each other resulting in a relative displacement of the two parts of the member less than the thickness of the member so as to provide the two parts of the member with interfitted edges which coincide with said longitudinal line having said cyclic lateral variation and which tend to remain frictionally interengaged to frictionally lock the two parts of the member together.

3,283,635
ROTARY PUNCHING APPARATUS

Oliver D. Johnson, Vestal, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 21, 1964, Ser. No. 419,875
9 Claims. (Cl. 83—345)

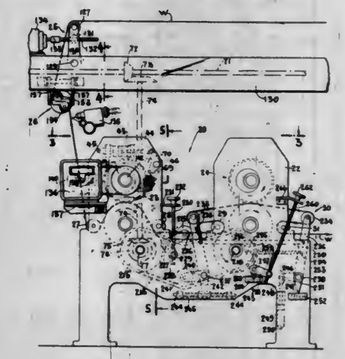


1. A rotary tool device comprising,
- a pair of rolls disposed on opposite sides of a web of material,
- means for connecting the rolls and driving them in opposite directions;
- complementary punch and die members mounted one in each of said rolls;
- at least one of said members projecting to provide overlapping portions thereof for punching the web,
- said punch and die members each having opposite edge portions, those of the punch members being inclined relative to each other in one sense and those of the die member being inclined relative to each other in the opposite peripheral sense in a common plane passing through a centerline between the rolls so as to provide oppositely inclined punch and die portions to eliminate toe and heel interference between the punch and die members.

3,283,636
ROTARY PERFORATING MACHINE WITH MEANS TO CONTROL WEB MOVEMENT

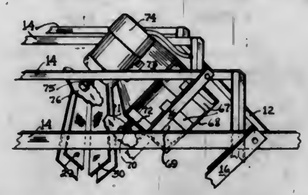
William F. Huck, 81 Greenway Terrace, Forest Hills, Long Island, N.Y.

Original application July 19, 1960, Ser. No. 43,839. Divided and this application Oct. 15, 1965, Ser. No. 496,488
1 Claim. (Cl. 83—365)



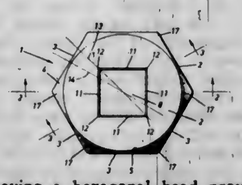
A rotary perforating device for forming holes in a printed web having repetitive printed patterns thereon and transverse and longitudinal register marks in predetermined positional relationship to the printed patterns; said device comprising a set of rotated male and female die cylinders having perforating pins and die holes, respectively, cooperating to form perforations in the printed web as the latter passes between said rotated cylinders; a longitudinal register control mechanism including a roller contacting the printed web before said cylinders and being movable to advance and retard the web with respect to said cylinders, and motor means operative to effect the web advancing and retarding movements of said roller; a transverse register control mechanism including roller means contacting the printed web before said cylinders and being movable axially and in a tilting sense to transversely displace the web with respect to said cylinders, and motor means operative to effect the movements of said roller means for transversely displacing the web; first photoelectric web scanning means actuated by the longitudinal register marks of the web to emit register signals representing the longitudinal position of the web as a function of time; selector switch means driven in synchronism with said cylinders and emitting uniformly intermittent signals representing the rotational positions of said cylinders as a function of time and which occur simultaneously with said register signals upon correct longitudinal registration of the printed patterns of the web with respect to the perforations formed in the web by said cylinders; control means operating said motor means of the longitudinal register control mechanism in response to any deviation between the occurrence of said register signals and the corresponding signals from said selector switch means to move said roller in the direction for restoring said correct longitudinal registration; second photoelectric web scanning means actuated by the transverse register mark of the web to emit a signal having an amplitude corresponding to the transverse position of the web relative to said cylinders; and control means operating said motor means of the transverse register control mechanism in response to the deviation of the amplitude of the signal from said second web scanning means from a predetermined value corresponding to correct transverse registration of said printed pattern with respect to said perforations, thereby to restore said correct transverse registration.

3,283,637
SALVAGE SAW APPARATUS
Ewald Brenner, Chicago, Ill. (614 S. Park Drive, Lombard, Ill.), and Edward Erhart, 10025 Charles, Chicago, Ill.
Filed Dec. 23, 1964, Ser. No. 420,599
2 Claims. (Cl. 83—432)



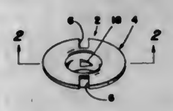
1. A salvage saw apparatus comprising
(a) a supporting frame,
(b) a pair of elongated rails carried horizontally by said frame with the rails disposed at right angles with respect to each other and angularly with respect to the vertical axis of said frame, with the vortex of the angle open,
(c) conveyor belts carried by said rails for moving an article from one end of said frame to the opposite end thereof,
(d) motor means at one end of said rails for rotating said belts over said rails,
(e) means carried by said frame intermediate its ends for supporting a pair of power saws above and to one side of said belts,
(f) said power saws each including coplanar, horizontally offset, circular cutting blades extending parallel to one of said belts and perpendicularly to the other of said belts, with one of said cutting blades disposed to one side of and partially beneath said other of said belts,
(g) said blades cooperating to successively cut through a portion of an article conveyed over said frame by said conveyor belts to sever a part therefrom so that it may freely fall from said conveyor belts while the remainder is carried by said belts to said opposite end of said frame.

3,283,638
SOCKET HEAD SCREW
Carl H. Ansingh, Milton, Ontario, Canada, assignor to P. L. Robertson Mfg. Co. Limited, Milton, Ontario, Canada
Filed May 4, 1964, Ser. No. 364,392
1 Claim. (Cl. 85—9)



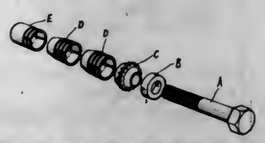
A screw having a hexagonal head provided with a square socket, said head being bevelled at the top and bottom to provide six flat sides meeting at six apices around the head, said sides being generally arcuately bounded at the top and bottom and of increasing axial depth from a minimum at the said apices to a maximum at their mid points, one pair of the sides of the square of the socket being substantially bisected by a line joining one opposing pair of said apices and the other pair of sides of the square of the socket being substantially parallel to a pair of sides of the hexagon of the head mid way between said last mentioned pair of opposing apices, each corner of said square socket being displaced 15° from the next adjacent right bisector of opposing pairs of sides of said hexagonal head.

3,283,639
SELF-THREADING FASTENER
Robert J. Holton, Cleveland, Ohio, assignor to Tinnerman Products, Inc., Cleveland, Ohio., a corporation of Ohio
Filed June 4, 1964, Ser. No. 372,478
10 Claims. (Cl. 85—32)



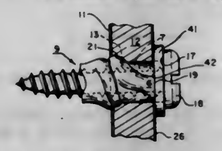
1. A self-threading fastening device for mounting on a stud and/or within an opening of a support member comprising, a resilient web having a stud-receiving opening disposed concentrically relative to the rotational axis of said device, a generally tubular hub extending outwardly from said web and coaxially relative to the rotational axis of said device, said hub including a peripherally-continuous side wall defining a stud-receiving passageway disposed concentrically relative to the opening in said web, at least one pair of oppositely disposed thread-cutting projections disposed in circumferentially spaced relation on said side wall and extending angularly relative to the general plane of said web, said projections being sheared from the material of said side wall, each of said projections including a leading end portion extending angularly toward a trailing end portion, said projections each having a progressively increasing radial height from said leading end portion to said trailing end portion, and having a progressively increasing axial width from said leading end portion toward said trailing end portion for cutting uniform, generally helical threads.

3,283,640
ANCHOR BOLT
Teizo Ono, 32, 4-chome, Itachibori, Nishiku, Osaka, Japan
Filed Feb. 10, 1965, Ser. No. 431,674
Claims priority, application Japan, June 20, 1964, 39/35,064
2 Claims. (Cl. 85—69)



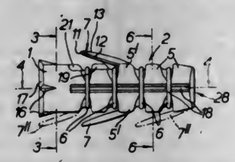
1. An anchor adapted for being secured in a hole and engage a bolt, said anchor comprising a front ring, a stop ring, at least one expansible ring and a nut ring in that order in an axial arrangement, said front ring having a bore which at the end remote from the stop ring is cylindrical and at the end adjacent the stop ring is conical, said front ring having axial slits at the end adjacent the stop ring, said stop ring having an outer peripheral surface with oppositely tapering conical surfaces one of which matches the conical bore of the front ring to enter the same, and a radially enlarged intermediate portion with radially extending teeth, said expansible ring having a bore which at the end adjacent the stop ring is tapered and matches the other of the conical surfaces of the stop ring to receive the same, said expansible ring including an externally tapered portion at an end adjacent the nut ring and external protrusions extending towards the other end, said expansible ring being provided with slits extending axially from the end adjacent the stop ring towards the other end, said nut ring having an inner bore with a portion remote from the expansible ring which is threaded for engaging a bolt and a portion adjacent the expansible ring which is tapered to match the tapered portion of the expansible ring to receive the same, said nut ring having slits extending axially from the end adjacent the expansible ring towards its other end.

3,283,641
SOFT SCREW ANCHOR
John B. Wagner, 40 Parkland Drive, Walnut Creek, Calif.
Filed June 4, 1964, Ser. No. 372,471
4 Claims. (Cl. 85—70)



1. A screw anchoring device for anchoring in a passage in a wall comprising:
an elongated tubular member of soft elastic material with a substantially smooth uninterrupted cylindrical exterior surface and having a hardness ranging between 43–52 Shore D formed with a bore and a plurality of internal radially projecting slots extending from said bore and having a lead portion dimensioned to extend beyond a rear face of said wall,
said member being adapted for axial receipt of a headed screw threadably engaging the walls of said bore whereby said member is expanded into frictional engagement with a wall of said passage to prevent rotation of said member,
and said material and form of said member functioning to foreshorten and twist in said lead portion upon rotation of said screw when said head is in engagement with an end distant from said lead portion for deforming said lead portion into locking engagement with said rear face of said wall.

3,283,642
EXPANSIBLE PLUG
Walter Ott, Toronto, Ontario, Canada
(102 Pintail Crescent, Don Mills, Ontario, Canada)
Filed May 4, 1964, Ser. No. 364,679
5 Claims. (Cl. 85—83)



1. An expansion plug for a screw threaded member comprising, an elongated cylindrical member having a shank and a ribbed portion and being formed of a resilient deformable substance, ribs on said ribbed portion defining part of the outer surface of said plug, and reliefs between said ribs, reinforcing bands integrally formed on said ribbed portion passing through said reliefs and defining the outer surface of said portion in regions circumferentially remote from said ribs, said plug defining a bore therein, and slots in said ribbed portion each extending longitudinally along part of the length of said ribbed portion and passing from the outer surface of said portion into said bore, said slots extending longitudinally between adjacent bands, leaf spring members formed on said plug and projecting beyond said outer surface of said plug, said spring members being of angle cross section and comprising, a flange portion extending in a direction radially and outwardly of said plug, and a plate portion extending transversely to said flange portion in the direction of rotation of said screw threaded member, said flange providing engaging means on said plug for engagement of material defining a hole for receiving said plug before said plug is expanded by member insertion into said bore, said flange being tapered in a radially outward direction for forming a sharp incising part, said entire angle cross section intersecting said surface of said plug and each said spring member being stiffened by virtue of said angle cross section for applying rigid holding pressure against said material by said flange when deflected by said material.

3,283,643
DECAPPING AND RESIZING TOOL
Glen L. Mittelsteadt, Waseca, Minn., assignor to Herter's Inc., Waseca, Minn., a corporation of Minnesota
Filed June 19, 1964, Ser. No. 376,503
4 Claims. (Cl. 86—36)



1. A tool for resizing and decapping spent ammunition comprising
an elongate normally vertically oriented body member having a substantially cylindrical bore extending axially therethrough and having means thereon to permit mounting thereof on a manually operable reloading tool press,
an elongate hollow cartridge case receiving member having a substantially cylindrically shaped exterior surface and being positioned within the bore of said body member, and being capable of slight radial displacement relative to the axis of said body member, the interior of said receiving member having one end portion thereof shaped and contoured to receive a cartridge case in snug fitting relation therein,
means on the lower end of said case receiving member and engaging the adjacent end of said body member,
an elongate decapping and expanding unit projecting through said receiving member and having means thereon adjacent one end thereof releasably engaging cooperating attachment means on the adjacent upper end of said case receiving member,
and adjustable locking means on said unit engaging said body member and cooperating with said means

on the lower end of said receiving member for clamping said unit and receiving member within said body member.

ERRATUM

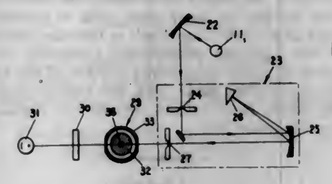
For Class 86—45 see:
Patent No. 3,283,425

3,283,644
APPARATUS FOR DETERMINING THE CONCENTRATION OF DISPERSED PARTICULATE SOLIDS IN LIQUIDS
Robert S. Saltzman, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Nov. 27, 1962, Ser. No. 240,254
1 Claim. (Cl. 88—14)

An apparatus for determining the low solids concentration of dispersed particulate solids in liquids comprising, in combination and in optical train, in the order recited, a radiation source provided with a plane polarizer delivering radiation within the range of about 210 mμ to about 1200 mμ to obtain an analytical radiation which is forward-scattered by dispersed particulate solids in the liquid of a sample, a radiation-transmitting sample cell, a beam splitter dividing said analytical radiation into a first separate beam and a second separate beam, a polarizer disposed athwart said first separate beam polarizing radiation in said first separate beam in a plane substantially 90° crossed with that of said plane polarizer, radiation preadjustment means disposed athwart said separate beam equalizing the intensity of radiation transmitted in said second separate beam with the intensity of radiation transmitted through said polarizer in said first separate beam for said liquid in the absence of particulate solids, individual radiation detectors disposed in said first separate beam and said second separate beam, respectively, and a dual logarithmic amplifier provided with a linear indicator responsive thereto in electrical circuit with said individual radiation detectors determining the low solids concentration of particles dispersed in the liquid of a sample placed in said sample cell as a function of the ratio of the intensity of radiation transmitted in said first separate beam to the intensity of radiation transmitted in said second separate beam.

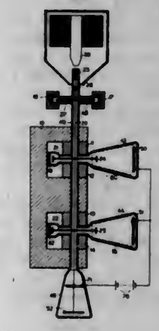
3,283,645
LAMINAR FLOW DICHROISM POLARIMETER
Akiyoshi Wada, 66 Shinsaka-cho, Akasaka, Minato-ku, Tokyo, Japan
Filed Apr. 19, 1963, Ser. No. 274,286
Claims priority, application Japan, Apr. 26, 1962, 37/17,092
5 Claims. (Cl. 88—14)

1. A flow dichroism polarimeter comprising a light source at one end of a single optical path, photoelectric light receiving means at the opposite end of said optical path to convert light into electrical signals, a transparent sample cell in said optical path which is provided with means for producing a laminar flow of a liquid sam-



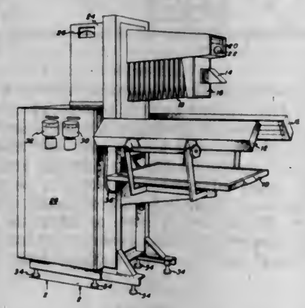
ple, and polarized light-analyzing means also in said optical path between said sample cell and said photoelectric light receiving means.

3,283,646
PHOTOCATHODE LIGHT SIGNAL MEASURING DEVICE
Vítězslav Havlíček and Alois Marek, Prague, Czechoslovakia, assignors to Vyzkumny Ustav Matematickych Stroju, Prague, Czechoslovakia
Filed Aug. 30, 1965, Ser. No. 483,641
Claims priority, application Czechoslovakia, Sept. 3, 1964, 4,928/64
4 Claims. (Cl. 88—23)



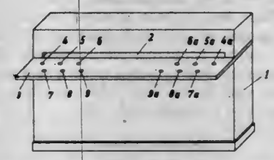
1. In a measuring apparatus, in combination:
(a) a support;
(b) an evacuated casing fixedly mounted on said support;
(c) a shaft having a vertically extending axis mounted in said casing for rotation about said axis;
(d) a disc having a central portion mounted on said shaft in said casing adjacent said axis, said disc and said shaft being of electrically conductive material, and said disc having a rim portion remote from said axis;
(e) a source of magnetic flux axially passing through a portion of said disc intermediate said rim portion and said central portion;
(f) first electrode means on said rim portion;
(g) second electrode means fixedly mounted in said casing;
(h) a source of voltage;
(i) circuit means connecting said source to said shaft and to said second electrode for applying a voltage to said first and second electrode means, one of said electrode means being responsive to the applied voltage and to a signal to be measured for passing a stream of charged particles between said electrode means, and, passing the charge of said particles through said disc, said shaft, said circuit means, and said source of current, whereby said charge passes through said magnetic flux and a torque is applied to said disc and said shaft; and
(j) means for indicating the angular position of said shaft relative to said support.

3,283,647
PROJECTION OFFSET SYSTEM
Henry N. Fairbanks and Daniel H. Robbins, Rochester, N.Y., assignors, by mesne assignments, to Itek Corporation, Lexington, Mass., a corporation of Delaware
Filed Oct. 4, 1963, Ser. No. 314,023
2 Claims. (Cl. 88—24)



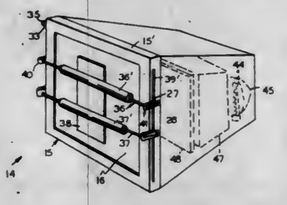
1. A data processing system for producing offset masters from copy comprising in combination:
an easel for supporting the copy having a flat, horizontally disposed work surface mounted for relative movement in a given vertical plane;
lighting means fixed to at least two sides of the easel for movement therewith;
means coupled to the easel for raising and lowering the easel in the vertical plane;
a projection system disposed above the easel in the vertical plane and mounted for relative movement in the plane parallel to the work surface;
a roll of offset master material having a portion thereof disposed in the focal plane of the projection system;
means exposing the portion of offset master material in the focal plane to the copy supported on the easel;
means advancing the exposed portion of offset master material to bring an unexposed portion from the roll into the focal plane;
means severing the exposed portion of offset master material from the roll;
transport means automatically conveying the exposed portion of the offset master material successively through a plurality of processing solutions to produce an offset master of the copy;
means transferring the exposed offset master material to a pair of squeegee rollers to remove excess liquid;
a two position valve;
one position of the valve deflecting the exposed offset master material to a wet storage position; and
the other position of the valve directing the offset master material to a drying means and a dry storage position.

3,283,648
SWITCHING MECHANISM FOR MICROFILM FLOW TYPE CAMERAS
Herbert Froese, Berlin, Germany, assignor, by mesne assignments, to Agfa-Gevaert A.G., Leverkusen, Germany, a corporation of Germany
Filed Oct. 9, 1963, Ser. No. 315,433
Claims priority, application Germany, Mar. 30, 1960, P 24,706
7 Claims. (Cl. 88—24)



1. In a microfilm camera adapted to photographically reproduce drawings, blueprints, documents and the like on belt type emulsion carriers of different width, a switching arrangement, comprising in combination, an impulse transmitter, a plurality of pairs of bordermarkings mounted on the housing of said camera, said plurality of pairs of bordermarkings being electrically connected to said impulse transmitter, each pair when energized, indicating the minimum width which will be photographically reproduced on said belt type emulsion carrier, movable supporting means operatively supported in said camera, a plurality of lenses corresponding in number to said plurality of pairs of bordermarkings mounted on said movable supporting means, electro-mechanical means electrically connected to said impulse transmitter and operatively connected to said movable supporting means for operatively positioning the same means, at least one belt drive cylinder rotatably mounted in said camera, a plurality of clutch means corresponding in number to said plurality of lenses operatively connected to said belt drive cylinder and electrically connected to said impulse transmitter; whereby when said impulse transmitter is manually adjusted a pre-selected pair of said plurality of pairs of bordermarkings is energized, a corresponding lens of said plurality of lenses is moved into an operative position by said movable supporting means, and a corresponding clutch of said plurality of clutch means is moved into an operative position with respect to said belt drive cylinder.

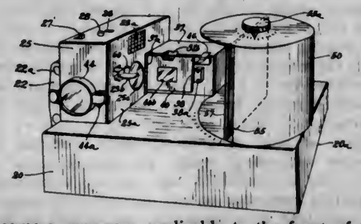
3,283,649
SHUTTER DEVICES FOR VIEWERS AND PROJECTORS
Elias Gordon, 131 E. 93rd St., New York, N.Y.
Filed Jan. 14, 1964, Ser. No. 337,674
15 Claims. (Cl. 88—24)



1. In a shutter device of the character described, the combination of a frame holding a transparent pane, two parallel rollers rotatably mounted in spaced relation on said frame behind said pane, two pliable opaque shades, one carried by each of said rollers respectively, to unwind and wind up thereon; the lead edges of said shades being between said shade rollers, stiff members mounted one along the lead edge of each of said shades, means

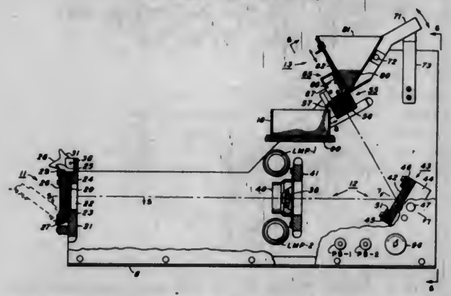
supporting said stiff members so that the unwound portions of the shades shield said pane; the ends of said lead members having lateral extensions extending forwardly of said pane, a pair of rotatable rollers positioned across the front of said pane in parallel relation to said shade rollers, in pressing contact with the front surface of said pane and provided with means so that they yield to afford admission of a film to lie with its rear surface against the front surface of said pane whereby said pressing rollers will be in pressing contact with the front surface of such film; one of these front rollers being on the extensions from one of said lead members and the other of said front rollers being on the extensions from the other of said lead members, means to turn said shade rollers to wind up said shades and means to shift said stiff members relatively towards each other to unwind said shades.

3,283,650
PICTURE-SLIDE CONVERSION APPARATUS
Robert L. Shoemaker, 1017 Elm St., Winnetka, Ill.
Filed Apr. 29, 1964, Ser. No. 363,393
11 Claims. (Cl. 88—24)



1. A camera accessory applicable to the front of the camera, a gate carried by the accessory and adapted to receive a picture slide, the gate foldable from a position for viewing the slide to one opposite the accessory for photographing slide by the camera, a manual actuator carried by the accessory for operating the camera, and a control normally locking the actuator and movable to actuator-releasing position when the gate is folded on the accessory.

3,283,651
INFORMATION ENCODING DEVICE
Paul F. King and Ryland F. Rogers, West Webster, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed May 15, 1964, Ser. No. 367,618
8 Claims. (Cl. 88—24)



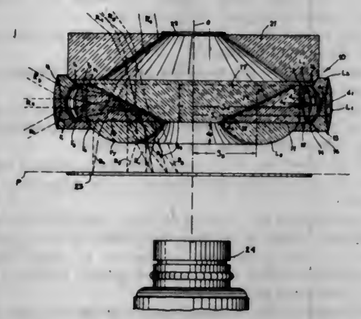
1. An image encodifying unit for encoding an optical transmission of a graphic image original comprising:
(a) a plurality of contiguously aligned fiber optic members at least some of which extend in a predetermined angular displacement from an optical axis of image transmission;
(b) a binder material surrounding said fibers adapted to maintain the fibers in permanent alignment relative to each other;
(c) a light sensitive layer contiguous to the emitting ends of said fiber optics adapted to form a developable latent image in response to radiation emission through said fiber optic members and,
(d) means effective concomitantly with radiation emission from said fibers to affect said light sensitive layer in areas corresponding to said binder material similarly as affected by radiation in the areas of said fibers.

3,283,652
MODULAR MULTIPLE SCREEN FILM PROJECTION SYSTEMS
Edwin Busch, 1815 Seminole, Saginaw, Mich.
Filed Feb. 15, 1965, Ser. No. 432,505
14 Claims. (Cl. 88—24)



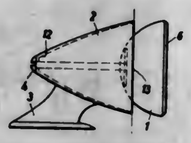
1. In a film projection system; a partition wall comprising modular cabinet units in end-to-end abutting relation, at least one unit having translucent screens on opposite sides thereof, and an adjacent unit having projector support means therein; the adjacent ends of said units being open to admit the projector beam to the unit having the screens; and reflector means, within said unit having the screens, operable to reflect the beam to the interior surface of either screen and thereby to portray the image on the exterior surface of the screen.

3,283,653
PANORAMIC OPTICAL SYSTEM HAVING AN ANNULAR AFOCAL LENS SYSTEM
Albert R. Tokarzewski, 175 W. 48th St., Bayonne, N.J.
Filed Feb. 20, 1963, Ser. No. 259,893
10 Claims. (Cl. 88—57)



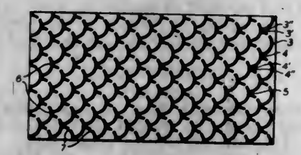
1. A panoramic optical objective comprising an annular afocal lens system, an axially symmetrical reflecting element aligned with said lens system and having at least one substantially conical reflecting surface so inclined with reference to the axis of said element as to reflect in a generally axial direction all incident rays arriving from said annular lens system, and a lens member for focusing rays reflected from said surface onto an image plane, said annular lens system including at least one annular component of negative refractivity in all planes containing said axis and bounded by two air spaces and spacedly surrounding said element, and a further annular component of positive refractivity between said annular component of negative refractivity and said element, said components forming an afocal system.

3,283,654
STREAMLINED OUTSIDE REAR VIEW MIRROR FOR MOTOR VEHICLES
Yorck Joachim Talbot, 7 Ballenstedterstrasse, Berlin-Wilmersdorf, Germany
Filed Dec. 7, 1964, Ser. No. 416,565
Claims priority, application Germany, Dec. 10, 1963, T 25,229
2 Claims. (Cl. 88—98)



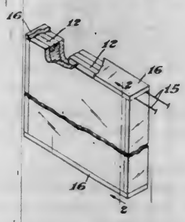
1. A rear view mirror for automotive vehicles, comprising mounting means for mounting the mirror on the body of a vehicle; a hollow housing of at least partially resilient and deformable material having an end provided with an opening bounded by an internal surface; a mirror head having a dome-shaped curved convex rear portion of non-spherical shape, said rear portion extending through said opening into said housing; and draw-in means for drawing said mirror head into said opening to thereby effect resilient deformation of said housing in the region of said opening into conformity with the outline of said rear portion so that said internal surface tightly engages corresponding surface portions of said mirror head and establishes a seal therewith.

3,283,655
LIGHT WEIGHT OPTICAL MIRROR WITH SPACED PLATES CONNECTED BY TROUGH-LIKE ELEMENTS
Kartheinz Rau, Hanau am Main, Germany, assignor to Heraeus Quarzschmelze G.m.b.H., Hanau am Main, Germany, a corporation of Germany
Filed May 1, 1962, Ser. No. 191,475
Claims priority, application Germany, Sept. 16, 1961, H 43,665
3 Claims. (Cl. 88—105)



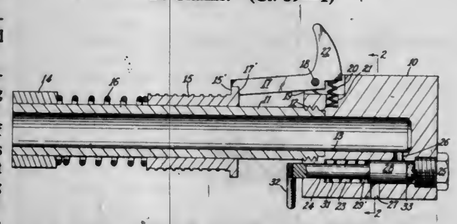
1. An optical mirror comprising:
(a) two plates disposed in spaced, confronting relation, the outwardly disposed surface of one of said plates being a reflecting surface,
(b) supporting means disposed between and interconnecting said plates and supporting the plate having a reflecting surface on the other of said plates,
(c) said supporting means comprising a plurality of elongated, trough-like elements each having two sides having free axially extending edges defining a front thereof, and a connecting member interconnecting said sides,
(d) said trough-like elements being disposed with the axes thereof transverse to the planes of said plates and with the fronts thereof facing in the same direction, and in a plurality of rows each including a plurality of the trough-like elements,
(e) the trough-like elements in each row being in offset relation in respect to the trough-like elements of the next adjacent row in front thereof and having the free edges thereof fused to connecting members of the trough-like elements of the row in front thereof with each connecting member having two free edges fused thereto one from each of two next adjacent trough-like elements, the two free edges fused to each connecting member being spaced apart, the inner angle between each trough-like element side and the connecting member to which it is secured being at least a right angle.

3,283,656
COLOR REVERSIBLE ELECTROCHEMICAL LIGHT FILTER UTILIZING ELECTROLYTIC SOLUTION
Giffin D. Jones and Ralph E. Friedrich, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Jan. 7, 1963, Ser. No. 249,860
6 Claims. (Cl. 88—107)



1. In an electrochemical light filter having a transparent gross electrode, a minor electrode in spaced relationship to the gross electrode and which is spaced and positioned to allow the passage of light, a light transmitting electrolyte occupying the space between said electrodes, an electrical power source and means for reversibly applying such power to the electrodes, the improvement which comprises providing as said electrolyte a coloring amount of an aqueous solution of an oxyacid anion selected from the group consisting of vanadate, tungstate and molybdate having a pH of less than about 6.1 whereby the color of the aqueous solution is altered by sequentially applying pulses of electrical power of opposite polarity.

3,283,657
METHOD FOR DIRECT PERCUSSIVE IGNITION OF STABLE EXPLOSIVES, AND APPARATUS THEREFOR
Robert C. Kvavle, Hillsboro, Oreg., assignor, by mesne assignments, to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed May 29, 1964, Ser. No. 371,242
14 Claims. (Cl. 89—1)



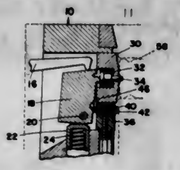
1. A method of operating an explosively actuated device comprising confining a solid caseless charge consisting of relatively stable low explosive and entrapped air in a substantially closed chamber, initially venting said

chamber so as to release pressure of the air about the charge in said chamber, rapidly engaging and crushing by impact at least part of said charge after the chamber is substantially closed to thereby explosively deflagrate at least a portion of said charge with consequent evolution of gases, and causing the gases evolved from continued deflagration throughout said charge to impart energy to an element.

3,283,658
BREECHBLOCK HAVING A TIMING CIRCUIT SWITCH

Frank E. Knight, Philadelphia, Howard M. Wilde, Feasterville, and Joseph W. Heaney, Philadelphia, Pa., assignors to the United States of America as represented by the Secretary of the Army

Filed May 24, 1965, Ser. No. 458,521
3 Claims. (Cl. 89—17)



1. A breechblock for use with ammunition test firing apparatus including an electrical timing circuit, comprising

a body having a bore formed therein;

a slidable firing pin in the forward portion of said body;

a hammer unit movable within said bore and adapted to be moved rearwardly relative to said body to assume a cocked position, said hammer unit being a part of the electrical timing circuit and constituting a conductor therein;

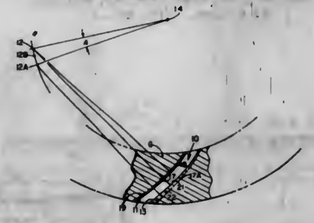
power means within said bore for propelling said hammer unit in a forwardly direction from said cocked position to strike said firing pin and impart a forwardly directed movement thereto; and

other conducting means carried by said body in the forward portion thereof at a point spaced from said hammer unit in its cocked position and engageable by a portion of said hammer unit after said unit has imparted a prescribed forward movement to said firing pin whereby said electrical circuit is closed.

3,283,659
CUTTER AND METHOD FOR CUTTING NON-GENERATED SPIRAL BEVEL AND HYPOID GEARS

Edward Stark, Rochester, N.Y., assignor to The Gleason Works, Rochester, N.Y., a corporation of New York

Filed June 1, 1965, Ser. No. 460,169
15 Claims. (Cl. 90—5)

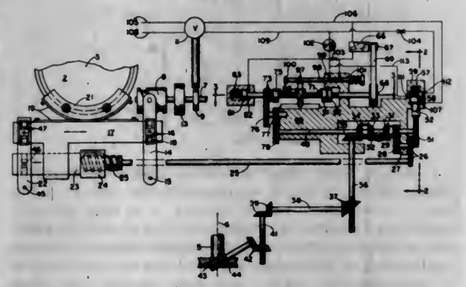


1. The method of producing a non-generated spiral bevel or hypoid gear with tooth slots of tapering width which comprises forming the slots so that the opposite sides of each are surfaces of revolution about a first axis and then finish cutting by first cutting one side of the slot as a surface of revolution about an axis which, relative to the gear, is displaced relative to the first axis to affect taper of the slot in width, and then cutting the other side of the slot as a surface revolution about said first axis.

3,283,660
GEAR GENERATING MACHINE AND INDEX MECHANISM THEREFOR

Ernst J. Hunkeler, Fairport, N.Y., assignor to The Gleason Works, Rochester, N.Y., a corporation of New York

Filed June 8, 1964, Ser. No. 373,395
8 Claims. (Cl. 90—6)



1. A gear generating machine comprising a rotatable work spindle, a movable tool carrier and a reversing rotary generating train connecting the spindle and carrier, said train including reduction gearing through which the train drives the spindle and also including a differential gear set in the train between the carrier and said reduction gearing for intermittently adding rotation to the train for indexing the spindle, an index plate for determining the magnitude of such added motion and being connected to the drive train by said differential gear set, said plate having a plurality of index formations equally spaced therearound, a locating pawl engageable with said formations to fine index and hold the plate against rotation, reversing drive means arranged to rotate the plate in one direction and to have return motion free of the plate, said drive means including means for adjusting the magnitude of each such motion of the index plate through a range of a fraction of one turn to a plurality of turns, and actuating means for said pawl coordinated with said drive means to cause the pawl to engage the plate at the conclusion of each period of rotation of the plate and to disengage the plate prior to each such period of rotation.

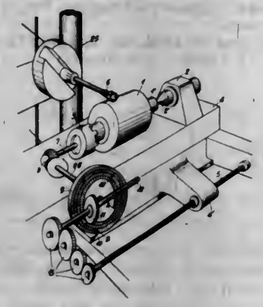
3,283,661
APPARATUS FOR MACHINING VARIABLE PITCH HELICOID GROOVES IN ROLLING MILL ROLLS

Luigi Danieli, Buttrio, Udine, Italy

Filed July 14, 1965, Ser. No. 471,872
Claims priority, application Italy, Apr. 22, 1965, 8,814/65
3 Claims. (Cl. 90—11.5)

1. An apparatus for providing variable pitch helicoid grooves on rolling mill rolls, including in combination: a movable table of any whatever machine tool provided with a milling cutter, on which the apparatus is mounted; two supporting members carried on said table and apt to support respectively, by means of a spindle and a tailstock, the roll to be grooved, so that it will rotate at a variable speed under the milling cutter; a disc carrying on one face, in its central zone, a spiral rack and peripherically a flat cylindrical gear, merging with the rack, said disc being apt to transmit to the spindle, and therefore to the roll, a variable speed rotational motion through two shafts coupled through a bevel gear pair; a sprocket, keyed on a splined shaft, transmitting the movement to the disc

by meshing with the rack spiral and with the flat-cylindrical gear; transmission and driving means apt to respectively transmit the rotational movement to the sprocket

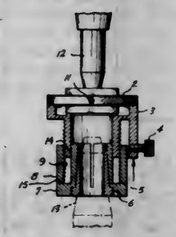


and to generate the travelling motion of the table carrying said supports in the same direction of the axis of the roll to be machined.

3,283,662
ELECTRODE DRESSING TOOL

Walter Weglin, Seattle, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware

Filed Oct. 26, 1964, Ser. No. 406,372
8 Claims. (Cl. 90—12)



1. A dressing tool for welding electrodes comprising in combination:

(a) a tapered sleeve assembly adapted to be locked on one electrode and adapted to provide a supporting base having a plane perpendicular to the longitudinal axis of the electrode,

(b) a cutter guide provided with height adjustment means and guiding means,

(c) a cutting member slideably positioned in said guiding means, and

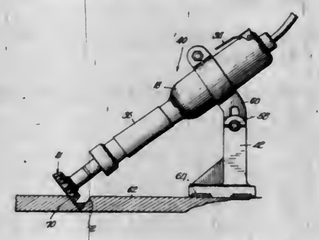
(d) said adjustment means resting with its plane on said perpendicular plane of said supporting base and adapted to position said cutter guide with its slideably positioned cutting member, so that said cutting member can be lowered and raised in a plane perpendicular to, and on, said axis of the electrode.

3,283,663
HIGH SPEED MILLING APPARATUS

Charles E. Davis, 1430 N. Lake Shore Drive, Chicago, Ill.

Filed Oct. 29, 1964, Ser. No. 407,400
1 Claim. (Cl. 90—12)

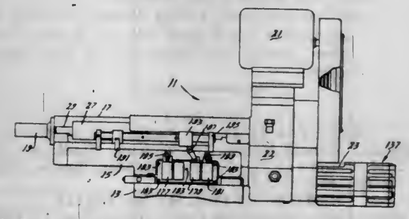
A milling apparatus for milling a region of a workpiece which is recessed below the principal surface of said workpiece comprising: a unitary tungsten carbide wheel adapted for rotation about a central axis of rotation; a lightweight motor to which said wheel is axially secured, said motor and said wheel being adapted for rotation of said wheel under load at rotational speeds providing a surface cutting speed for said wheel in excess of 2500 feet per minute, said wheel having opposing inner and outer radial surfaces and a peripheral surface with respect to said axis of rotation, said outer radial surface and said peripheral surface forming an included angle therebetween and having integrally formed cutting teeth thereon; and support fixture means adapted to hold said motor and wheel in a fixed vertical and angular position with respect to said principal surface, said fixture means being movable parallel to said principal surface and said fixture means having means for vertically and angularly adjusting said fixed position of said motor and wheel with respect to said principal surface, said outer radial surface and said peripheral surface of said wheel being angularly formed with respect to said axis of rotation so that said recessed portion of said workpiece may be ground thereby with said motor spaced substantially above said principal surface.



3,283,664
FEED AND DRIVE UNIT FOR A MACHINE TOOL

Ralph E. Cross, Grosse Pointe Shores, Kurt O. Tech, Grosse Pointe Woods, and Guy Donald Pierce, Franklin, Mich., assignors to The Cross Company, Fraser, Mich., a corporation of Michigan

Filed Mar. 9, 1965, Ser. No. 438,277
4 Claims. (Cl. 90—14)



1. In a machine tool,

a stationary bed,

a tool carriage
supported upon said bed for longitudinal movement therealong,

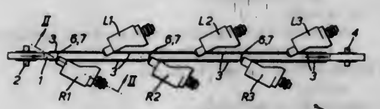
a tool spindle
mounted for rotation in said carriage and movable longitudinally therewith,

a housing fixed to said bed and
having
a removable cover plate
at one end thereof,

a drive mechanism
for said carriage and said spindle,
said drive mechanism
including
a speed reducing unit
having
a relatively high-speed input shaft
rotatably and removably supported at one end thereof by said cover plate and

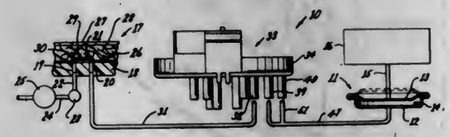
a relatively low-speed output shaft
rotatably supported by said housing,
said input and output shafts being disposed in alignment with each other and operatively connected by differential gear means mounted in and contained by cage means rotatably supported within said housing and characterized by a driving connection between said cage means and said output shaft through said differential gear means,
means
operatively connecting said output shaft to said tool carriage,
means
mounting said cage means for rotation around said input shaft,
said cage means
having
a first driven member
mutually rotatable therewith,
a reversible first rotary drive means
carried by and supported within said cover plate and
having
an output shaft
extending within said housing and drivingly connected to said driven member,
a second driven member
having
an intermediate portion
rotatably supported within said housing and operatively connected to said input shaft,
said second driven member
having
one end
drivingly engaging said tool spindle,
a second rotary drive means
mounted upon said housing and spaced from said cover plate and
having
a driving connection
with said second driven member,
said last-mentioned driving connection being disengageable whereupon removal of said cover plate permits free access to said drive mechanism.

3,283,665
MANUFACTURE OF RAZOR BLADES
Maynard Richard Hobbs, Twickenham, Middlesex, England, assignor to The Gillette Company, Boston, Mass., a corporation of Delaware
Filed Nov. 10, 1964, Ser. No. 410,123
Claims priority, application Great Britain, Nov. 12, 1963, 44,596/63
7 Claims. (Cl. 90—24)



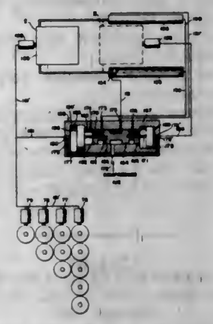
1. A method of making razor blades from a strip of metal, including the steps of moving the strip longitudinally past and between a pair of cutting edges each disposed transversely to the said strip to pare material from opposite surfaces of the strip adjacent one longitudinal margin thereof, thereby reducing the thickness of the edge, producing a sharpened edge along the said margin of the strip, and subsequently severing the strip transversely of its length to form a plurality of individual blades.

3,283,666
PNEUMATIC SYSTEMS AND PARTS AND METHOD
Robert L. Golden, Greensburg, Pa., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed June 16, 1964, Ser. No. 375,572
9 Claims. (Cl. 91—37)



1. In combination, a pneumatic actuator having a normal position and an actuated position and having a chamber for receiving a pneumatic signal, a pneumatic source, first means interconnecting said source with said chamber, said first means having a selector means between said source and said actuator for selectively interconnecting said source with said chamber to move said actuator from its normal position to its actuated position, and second means continuously interconnecting said chamber to the atmosphere so that said actuator can return to its normal position at a controlled rate when said selector means disconnects said source from said chamber, said second means not effectiing movement of said actuator from its normal position to its actuated position by said selector means, said second means including a tape member having aperture means passing therethrough and cooperating with a reading head having a port means interconnected to said chamber of said actuator, one of said tape member and said reading head having means interconnecting said aperture means with said port means.

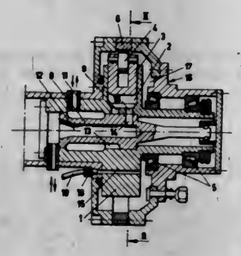
3,283,667
COMBINATION FLUID ACTUATED MEANS AND CONTROL VALVE
John Moritz Andersen, Bergen, Norway, assignor to A/S Hansa Bryggeri, Bergen, Norway
Original application May 22, 1959, Ser. No. 815,022, now Patent No. 3,130,528, dated Apr. 28, 1964. Divided and this application Apr. 27, 1964, Ser. No. 362,882
7 Claims. (Cl. 91—39)



1. A system for controlling the operating cycle of an automatically operated machine, comprising fluid actuated means, supply means for supplying a fluid medium under pressure, and connecting means operatively connecting said supply means with said fluid actuated means including control valve means selectively controlling the supply of said fluid medium to said fluid actuated means, said control valve means, having two end positions and

being provided with a pressure chamber at least at one end thereof, normally open impulse control valve means operatively connected in parallel with said pressure chamber and supplied with said fluid medium under pressure from said supply means to cause an over-pressure in said pressure chamber only whenever said impulse control valve means is in its closed position, and said impulse control valve means including a plurality of impulse control valve members interconnected in such a way that said over-pressure may build up in said pressure chamber only upon closure of all of said impulse control valve members.

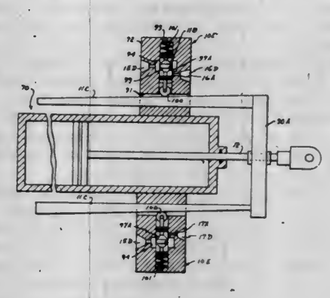
3,283,668
HYDRAULIC MOTOR WITH PISTON HOLDING MEANS
Aaro Ilmari Louhio, Helsinki, Finland, assignor to Oy Suomen Autoteollisuus AB, Helsinki, Finland
Filed Mar. 1, 1965, Ser. No. 436,016
10 Claims. (Cl. 91—44)



1. A hydraulic motor for the use in vehicles and the like comprising a stationary frame having a plurality of radially arranged cylinders, a piston reciprocally positioned in and cooperating with each of said cylinders, a cam-ring rotatably mounted to said frame and positioned around said plurality of cylinders, each said piston having contact means at its outer end for engaging the inner surface of said cam-ring, a regulating valve having pressure channels connected between said cylinders and a first source of hydraulic pressure for selectively forcing each said piston outwardly and enabling each said piston to move inwardly in a time sequence corresponding to the relative radial and angular positions between said contact means and said cam-ring, respectively, a liquid-tight housing mounted to said frame and defining a chamber about said cylinders, and means for selectively increasing fluid pressure in said chamber relative to the pressure in said cylinders so that said chamber pressure is great enough to force said pistons inwardly.

3,283,669
HYDRAULIC POSITIONING SERVO SYSTEM
Frederic Lissau, 24—15 27th St., Long Island City, N.Y.
Filed Sept. 14, 1965, Ser. No. 487,281
4 Claims. (Cl. 91—388)

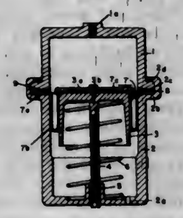
1. A hydraulically positioned servo system which includes a power cylinder and a hydristor as a position feed back element and input valve, said power cylinder provided with a piston, said hydristor comprising a valve that is provided with a metering element mounted therein, said metering element provided with two opposed surfaces to divide said valve into two movable oppositely slanted surfaces, said metering element movable in either direction to change the ratio produced by said oppositely slanted surfaces in relation to its position, said valve provided with two inlet ports, said inlet ports connected to orifices that are directed toward said opposed slanted surfaces of said valve, an outlet port open to both orifices, said opposed slanted surfaces movable toward or away from said orifices to produce two complementary fluid flows, said hydristor provided with a metering cam fitted to said piston of said power cylinder and parallel thereto, said metering cam provided with a slanted surface to bear against the end of said metering element of said hydristor, said metering element resiliently retained in contact with said metering cam, said servo system divided into a power stage and a feed back control stage, said power stage comprising said power cylinder and piston, a main pressure source and a four way valve, said four way valve connected by fluid lines to said power cylinder, said feed back control stage comprising said hydristor, an auxiliary pressure source, a ratio flow divider serving as a signal input valve to provide two complementary fluid flows and two complementary resistances, a differential pressure sensing device which is mechanically connected to said four way valve and connected by fluid lines to said ratio flow divider and to said hydristor, said four way valve connected to said main pressure source and comprising a valve body with a central axially movable piston having fluid flow controlling lands thereon to separate and guide said fluid flow to either side of said power cylinder, said hydristor having its metering element mechanically connected to the moving piston of said power cylinder as a feedback element, said ratio flow divider comprising a closed casing



with a fluid inlet port at its center and two fluid outlet ports one at each end of said casing, a piston and rod mounted loosely and centrally within said closed casing to produce two complementary fluid flows similar to the two complementary flows produced in said hydristor, said rod providing the means for a mechanically produced input signal, said piston rod extending through said cylinder, said piston providing a metering effect to generate said two complementary hydraulic resistances and to effect said two complementary flows, said differential pressure sensing device comprising a closed cylinder with two fluid inlet ports and two fluid outlet ports and a piston, one inlet and one outlet port connected to each end of said closed cylinder to allow a fluid flow therethrough, and a resilient element positioned on each side of said piston to normally retain said piston centered when said fluid pressure on each side of said piston is equal, said piston of said differential pressure sensing device connected to said piston of said four way valve to control its pressure and in turn control the fluid flow to said power cylinder, said differential pressure sensing device which includes said resilient element also responding to pressure changes to move said four way valve to correct an error signal when a pressure differential exists in said differential sensing device by moving said four way valve in the direction indicated by the error signal and in turn

move said piston of said power cylinder and said metering element of said hydristor to reduce said error signal to zero.

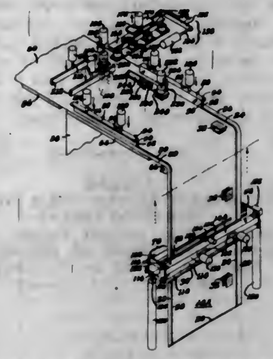
3,283,670
ROLLING DIAPHRAGM DEVICES HAVING CENTERED ROLLING DIAPHRAGM
John F. Taplin, 15 Sewall St., West Newton, Mass.
Filed Jan. 25, 1965, Ser. No. 427,847
3 Claims. (Cl. 92—99)



1. A rolling diaphragm device comprising in combination:
(a) a cylinder body having an internal cylindrical wall;
(b) a reciprocating piston arranged inside of said cylinder body and defining a gap between the lateral wall thereof and said cylindrical wall of said cylinder body;
(c) a rolling diaphragm of a fiber reinforced elastomer including a radially outer flange secured to said cylinder body and having a radially outer edge, said diaphragm further including a radially inner flange secured to said piston and a rolling wall intermediate said radially outer flange and said radially inner flange arranged inside of said gap;
(d) means on said cylinder body defining a cylindrical centering surface for said rolling diaphragm coaxial to said cylindrical wall of said cylinder body and having a predetermined inner diameter larger than the inner diameter of said cylindrical wall; and
(e) an annular stiffening member laminated to and integral with said radially outer flange of said rolling diaphragm, said stiffening member including a stiff radially outer centering edge flush with said radially outer edge of said radially outer flange of said diaphragm centered relative to said rolling wall of said diaphragm and having the same diameter as said inner diameter of said centering surface, said centering edge engaging and closely fitting said centering surface.

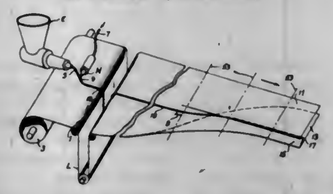
3,283,671
BAG MAKING MACHINE
Claude N. Campbell, Jr., "Deepwell," Warren St., Edgewater Park, N.J.
Filed Dec. 16, 1963, Ser. No. 330,904
6 Claims. (Cl. 93—8)

1. In a bag making machine, the combination comprising means for arranging two continuous webs of sheet material with a section of one web overlying a section of the other web, a web grasping mechanism consisting of a single reciprocable means operable for intermittently grasping said webs and pulling them lengthwise to progressively advance the same, laterally spaced means on the upstream side of said web advancing means operable for progressively joining together longitudinally extending areas respectively of said webs by heat sealing, means mounted for movement with said web advancing means and operable for joining together transversely extending areas respectively of said webs by heat sealing, and for severing from said webs the sections thereof disposed on the downstream side thereof, and means for actuating



said web advancing means and said heat sealing and severing means in predetermined timed relation in repeating cycles.

3,283,672
BAG
Robert C. Mueller, Affton, Mo., assignor to Bemis Company, Inc., a corporation of Missouri
Original application June 9, 1961, Ser. No. 115,964, now Patent No. 3,226,009, dated Dec. 28, 1965. Divided and this application July 2, 1965, Ser. No. 478,512
14 Claims. (Cl. 93—35)

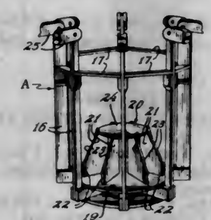


1. The method of making bags comprising forming a continuous web of bag material having two superposed walls joined along one edge of the web with a continuous length of tear strip material adhered to the web on the outside thereof and extending longitudinally of the web, segmenting the web with the strip thereon on transverse lines at bag width intervals, and side-seaming the segments, thereby to provide bags each of which has a tear strip extending from one side thereof to the other on the outside of the bag, wherein the tear strip is formed by extruding molten plastic as a continuous bead, and wherein portions of said bead spaced at intervals along the length of the bead are cooled prior to application of the bead to the web, whereby said cooled portions remain substantially free of the web and portions of the bead between said cooled portions adhere to the web.

3,283,673
APPARATUS FOR FORMING BULK PACKAGES
Gilbert C. Gettelman, Milwaukee, Wis., assignor to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota
Filed Mar. 26, 1964, Ser. No. 354,986
12 Claims. (Cl. 93—36)

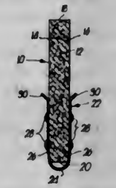
1. An apparatus for use in assembing a multi-walled container having a series of similar wall panels connected in tubular relation, the panels having substantially rectangular outer reinforcing flaps secured to an end thereof, and inner reinforcing flaps secured to said outer reinforcing flaps along fold lines parallel to those securing the outer reinforcing flaps to said wall panels, the apparatus including

a base of a size greater than the cross-sectional area of the tubular container,
means on said base engageable with the container for positioning the walls of the same in predetermined relation to said base,
supporting means supported above said base a distance substantially equal to the height of the container resting on said base,



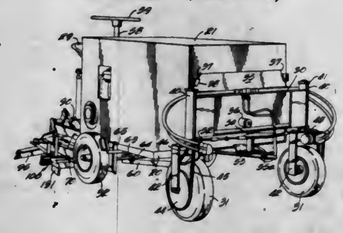
a series of toggle links pivotally supported by said supporting means,
said links being equal in number to the number of panels in said container and swingable toward and away from the container walls of a container on said base,
said links being adapted to hold said reinforcing flaps against the container walls in folded relation with the inner reinforcing flaps between the outer reinforcing flaps and said container walls when swung toward said walls,
said links, when engaging said flaps, forming a means of support for a banding strap extending around said flaps.

3,283,674
CONCRETE JOINT INSERT
Emeran E. Hahn, Overland Park, Kans., assignor, by mesne assignments, to Clipper Manufacturing Company, Inc., Grandview, Mo., a corporation of Massachusetts
Filed Mar. 24, 1964, Ser. No. 354,262
3 Claims. (Cl. 94—18)



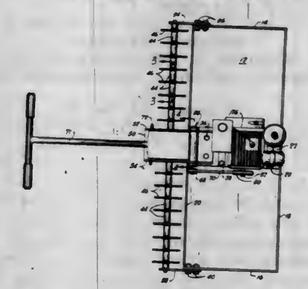
1. In a concrete joint, an insert for placement into green concrete, said insert comprising:
an elongated, relatively flexible strip of fragmentatious, fibrous material including an impregnation binding the fibers together for dry fragmentation when sawed, said strip having a pair of spaced, upright side surfaces; and a relatively rigid, transversely U-shaped clip extending the length of said strip and including a lowermost arcuate bight section and a pair of opposed, upwardly extending legs integral with the bight section, said strip being frictionally clamped between said legs with each leg in engagement with a corresponding surface of said strip and the clip looped over the lowermost marginal edge of said strip, each leg terminating below the upper edge of said strip in lips extending upwardly and outwardly at an angle from the corresponding surface of the strip, said clip being provided with longitudinal extending rib means coextensive with the length of the clip to prevent bending of said insert.

3,283,675
PAVEMENT SURFACE-SEALER APPLYING MACHINE
Clayton E. Gifford, Marion, and William E. Linkous and Donald T. Linkous, Columbus, Ohio, assignors to Asphalt Sealer Products Company, Inc., Columbus, Ohio, a corporation of Ohio
Filed Dec. 14, 1964, Ser. No. 417,965
20 Claims. (Cl. 94—39)



1. A machine for applying a viscous treating substance to a surface over which it is adapted to move comprising a frame carried by wheels for movement along the surface to be treated, means on the frame for depositing the treating substance on said surface, brush means for working said deposited substance on the surface, means for mounting said brush means on the frame behind said depositing means for reciprocation transversely of the frame and relative to the normal path of movement thereof, and means for reciprocating said brush means and including cam means actuated by the rotation of at least one of said wheels, said cam means comprising a cam rotatable with the wheel, a cam follower engaging said cam and an operative connection between said follower and said brush means.

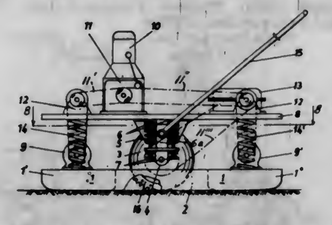
3,283,676
CEMENT FINISHING MACHINE
Russell G. Sumter, Tulsa, Okla., assignor, by direct and mesne assignments, to O. R. Carpenter, Tulsa, Okla.
Filed Dec. 23, 1963, Ser. No. 332,367
11 Claims. (Cl. 94—48)



1. In a concrete finishing machine:
a base member having a substantially smooth lower surface;
a plurality of spaced discs rotatably positioned along one edge of said base member and extending below the lower surface thereof; and,

vibrator means operably connected with said base member and adapted to impart vibrations to said base member and discs.

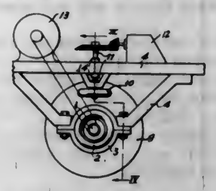
3,283,677
MANUALLY GUIDED MOTOR DRIVEN TAMPING DEVICE FOR EARTH, CONCRETE AND OTHER MATERIALS
Philipp Uebel, Munich, Germany, assignor to Hermann Wacker and Peter Wacker, Munich, Germany
Filed Sept. 1, 1964, Ser. No. 393,605
8 Claims. (Cl. 94—48)



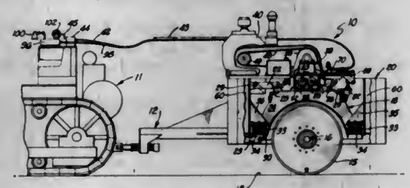
1. Manually guided and self-propelled motor driven tamping device comprising, in combination as a unit, vibrating plate means, an upper plate, power drive means and a roller; said vibrating plate means having two vibrating plate members securely connected with each other to define a centrally disposed open area, said roller being disposed in said open area; eccentric means, one mounted on each of said two plate members; said upper plate being mounted above said vibrating plate members; bearing block means mounted below said upper plate and supporting said roller; guiding means for said bearing block means mounted below said upper plate; first resilient elements disposed intermediate said bearing block means and said upper plate and biasing said roller against said upper plate; said power drive means comprising a motor mounted on said upper plate, power transmission means operatively connecting said motor to said eccentric means and to said roller; and second resilient means extending intermediate opposite ends of said upper plate and each of said two vibrating plate members proximate said eccentrics, where said upper plate constitutes the load on said second resilient means and on said vibrating plate members.

3,283,678
METHOD FOR PREVENTING THE TRANSMISSION OF VIBRATIONS IN THE DIFFERENT COMPONENTS OF A MACHINE
Costante Domenighetti, Via Nosetto 6, Bellinzona, Switzerland
Filed Sept. 10, 1958, Ser. No. 760,102
Claims priority, application Switzerland, Sept. 13, 1957, 50,517
4 Claims. (Cl. 94—50)

1. A device for connecting a vibrating member and an associated member, said device comprising a toroidal pneumatic ring having inner and outer peripheries and adapted for housing a pressure medium, a first rigid element engaging the inner periphery of said ring and including two disc portions in face to face relation, a second rigid element engaging the outer periphery of said ring and including two semi-circular sections cooperatively encircling said ring, said rigid elements being concentric and sandwiching said ring therebetween, means connecting said semi-circular sections to adjust the relationship of the same in accordance with the pressure of said medium in said ring, one of said elements being supported on the vibrating member and the other element being supported on said associated member, a second pneumatic ring, means supporting said second ring on said associated member for displacement along and rotation around an axis perpendicular to the axis of the first said ring, said second ring engaging said vibratory member and resisting displacement of the same in an axial direction relative to said first ring, and a motor coupled to and driving said second ring.



3,283,679
VIBRATORY EARTH COMPACTING APPARATUS AND METHOD
Cecil W. Rafferty, North Hollywood, Calif., assignor to Pettibone Mulliken Corporation, Chicago, Ill., a corporation of Delaware
Filed Mar. 5, 1964, Ser. No. 349,718
15 Claims. (Cl. 94—50)

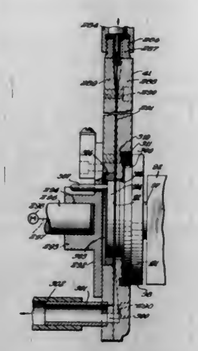


1. Vibratory soil compaction apparatus for maximum vibratory compaction of soils of different or unknown density while advancing therealong, said apparatus including in combination:
a main frame;
a roller frame resiliently mounted for vertical movement relative to said main frame;
an earth-engaging roll journalled in said roller frame supporting it and said main frame;
means for vibrating said roller frame and its roll through a vertical locus of motion to compact the soil beneath said roll as it advances along the soil in a path, said vibrating means including an engine mounted on said main frame;
means responsive to the amplitude of vertical movement of said roll during its advancement along said path, said amplitude responsive means including means responsive to incremental small changes in amplitude from a maximum amplitude; and
means for changing the speed of said engine to maximize said amplitude.

3,283,680
MICROXEROGRAPHIC REPRODUCTION APPARATUS
Louis A. Smitzer, Chicago, Adolph J. Gawin, Skokie, Maynard C. Gross, Chicago, Andrew Balint, Park Ridge, and William E. Bixby, Deerfield, Ill., assignors to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Mar. 26, 1964, Ser. No. 354,976
41 Claims. (Cl. 95—1.7)

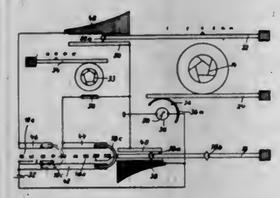
1. The method of electrostatographic reproduction which includes the steps of
holding a flat photoconductive surface stationary during the exposing step to produce a latent electrostatic image on the surface,

and rotatably moving the exposed photoconductive surface on an axis of rotation intersecting the surface, and simultaneously developing the image by flowing across said exposed photoconductive surface



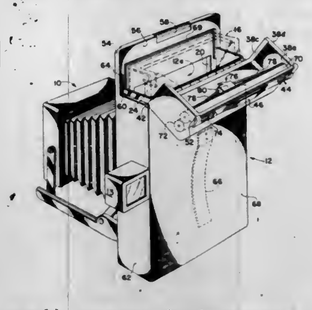
a stream of carrier fluid and particulate material with its boundary at said photoconductive surface and in a direction generally normal to said axis of rotation,
thereby avoiding tearing and streaking of the image.

3,283,681
PHOTOGRAPHIC CAMERA
Franz Singer, Munich, and Paul Fahlenberg, Baierbrunn, Germany, assignors to Compur-Werk Gesellschaft mit beschrankter Haftung & Company, Munich, Germany, a company of Germany
Filed Feb. 17, 1964, Ser. No. 345,203
Claims priority, application Germany, Feb. 22, 1963, C 29,227
11 Claims. (Cl. 95—10)



1. In a photographic camera, a distance setting member; an exposure time setting member; a diaphragm setting member; an exposure meter having a movable element which is deflected in accordance with the brightness of the object to be photographed, the circuit of said exposure meter including a constant electrical source and a photo-resistance; first variable resistance means in the circuit having an electrical resistance value in accordance with the setting of said exposure time setting member; second variable resistance means having an electrical resistance value in accordance with the setting of said distance setting members; means for switching said first variable resistance and said photo-resistance out of said circuit and for switching said second variable resistance into said circuit for flashlight photographs, and vice versa for daylight photographs; and means positionable in accordance with the deflection of said movable element of said exposure meter and operatively coupled with said diaphragm setting member for the purpose of setting thereof in accordance with the deflected position of said movable element.

3,283,682
CAMERA APPARATUS
Christopher R. Rice, Wakefield, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed July 22, 1964, Ser. No. 384,310
7 Claims. (Cl. 95—13)

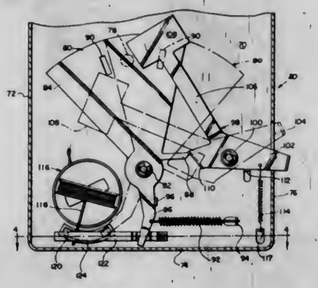


1. Photographic apparatus for incorporation with a camera for, respectively, supplying, mounting for photographic exposure, and processing a plurality of film assemblies of a film pack, which film assemblies embody self-contained liquid-processing means, said apparatus comprising means forming a rectangular chamber adapted to mount said film pack therewithin including an exposure aperture formed in a forward wall thereof and having a substantially complete opening at one end, cover means movably attached to said chamber means adjacent to said end for permitting introduction and withdrawal of said film pack relative to said chamber means when at open position and for rendering said chamber means light-tight and adapted to exposure and processing of said film assemblies when at closed position, and means for processing said film assemblies including a first pair of predetermined spaced compression-applying members mounted within said cover means for bearing upon and activating said liquid-processing means to process said film assemblies, a pair of cooperating slot-like aperture means formed in part in said cover means for selectively advancing portions of said film assemblies, for drawing said film assemblies between said compression-applying members, and for withdrawing said film assemblies from said camera apparatus, and a second pair of compression-applying members adapted to bear against longitudinal marginal areas of each of said film assemblies immediately prior to its advancement between said first pair of compression-applying members, said second pair of compression-applying members comprising resilient margin-engaging elements which are laterally spaced apart by a distance slightly less than the width of each film assembly and are adapted to be flexed, through tensioning of said film assembly during its advancement, so as to lie in a plane substantially parallel with and at least adjacent to the plane of a film assembly passing between said first pair of compression-applying members.

3,283,683
SELF-DEVELOPING CAMERA
Edwin H. Land, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Aug. 24, 1964, Ser. No. 391,705
7 Claims. (Cl. 95—13)

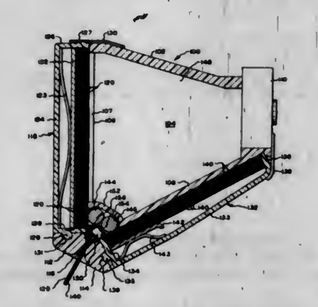
1. A camera for exposing and processing photosensitive sheet material to produce photographic prints comprising, in combination:
a housing for holding said photosensitive sheet material during exposure and processing;

means for introducing a container of processing liquid into said housing;
means for dispensing said processing liquid from said container and distributing said liquid in contact with an exposed area of said photosensitive sheet material;
exposure means including a substantially constant aperture for exposing successive areas of said photosensitive sheet material to light from a subject for a substantially fixed time interval;



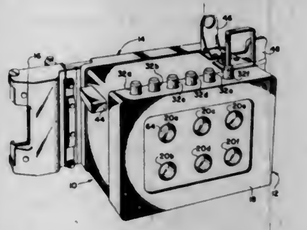
light-sensitive means for measuring the light from said subject incident upon said light-sensitive means; and
visible indicator means coupled with said light-sensitive means and movable in response thereto for indicating the container of processing liquid appropriate for the luminance conditions of said subject, said exposure means including means coupled with said indicator means for engaging and retaining said indicator means against movement substantially at the moment of exposure.

3,283,684
PHOTOGRAPHIC APPARATUS
Edwin H. Land, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Continuation of application Ser. No. 322,485, Nov. 8, 1963, which is a division of application Ser. No. 116,641, May 19, 1961, which is in turn a division of application Ser. No. 624,787, Nov. 28, 1956. This application Oct. 8, 1965, Ser. No. 494,118
13 Claims. (Cl. 95—13)



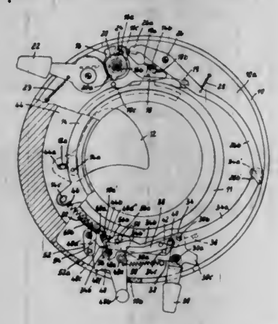
1. Photographic apparatus for exposing and treating with a liquid a succession of unconnected photosensitive image-recording sheets comprising, in combination:
a housing for enclosing the components of said apparatus;
exposure means mounted on said housing for photoexposing said image-recording sheets within said housing;
means within said housing for holding a plurality of said image-recording sheets in a first stack with an end sheet of said first stack located in position for exposure;
means within said housing for holding an equal number of second sheets in a second stack disposed apart from said first stack with end portions of said stacks located adjacent one another;
advancement means including a first member for frictionally engaging said end image-recording sheet, a second member for frictionally engaging an end second sheet of said second stack and means for moving said first and second members in engagement with said end sheets to move said end sheets edge foremost simultaneously and at substantially the same speed from said stacks;
a pair of juxtaposed pressure members for applying compressive pressure to said sheets during movement thereof;
guide means for guiding said sheets during movement thereof from said stacks along convergent paths into superposed relation and in superposition between said pressure members; and
means adjacent said pressure members between the latter and said stacks for applying a liquid to the facing surface of at least one of said sheets.

3,283,685
MULTIPLE-IMAGE PORTRAIT CAMERA
James B. Cummins, Silver Spring, Md., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed June 2, 1964, Ser. No. 371,977
4 Claims. (Cl. 95—18)



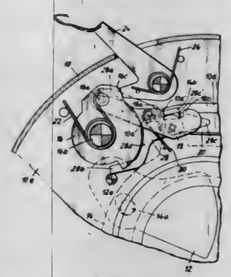
1. An easily-operated, multiple-image portrait camera capable of producing, substantially simultaneously and immediately following the last of a plurality of photographic exposures, a complete set of proofs for presentation to the photographic subject and a complete set of negatives for use in making finished prints therefrom, said camera comprising finder means, a generally rectangular camera back including adapter means for holding a liquid-containing film assembly of a self-processing category which includes a single photosensitive area of a given format, and retaining means for slidably mounting said adapter means to effect its attachment and removal relative to said camera, a generally rectangular camera front substantially integral with said retaining means of said camera back and mounting in parallel planes therewithin a plurality of identical lenses, a like plurality of identical diaphragm and a similar plurality of identical shutter mechanisms, compartmentation means providing a like plurality of compartments associated with said lenses, diaphragms and shutter mechanisms for defining a similar plurality of exposable areas within said photosensitive area, each of said compartments having an open rear-end adjacent to a focal plane established by said lenses, a plurality of shutter-mechanism actuating buttons disposed in a line across the upper surface of said camera front for performing through superimposed slidably-mounted pairs of elongated bars connecting with said shutter mechanisms a sequence of photographic exposures, and shutter-mechanism resetting means for manually re-cocking all of said shutter mechanisms simultaneously, the adjacent buttons of each pair of said shutter-actuating buttons, when operated sequentially, actuating independently given superimposed pairs of said bars so as to provide operation of a vertically disposed pair of shutter mechanisms cooperating therewith, the independent actuation of said bars being permitted by a sideway displacement of alternate overturned extremities of said bars to which said buttons are attached.

3,283,686
PHOTOGRAPHIC SHUTTER
Franz Singer and Herbert Benninger, Munich, Germany, assignors to Compur-Werk G.m.b.H. & Co., Munich, Germany, a company of Germany
Filed Apr. 7, 1964, Ser. No. 357,896
Claims priority, application Germany, Apr. 26, 1963, C 29,776
7 Claims. (Cl. 95—63)



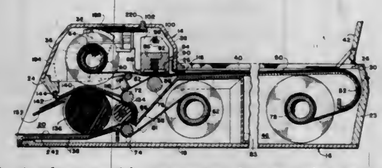
1. A photographic shutter comprising a plurality of pivotally mounted shutter blades, means including a tensionable main driving member for moving said shutter blades to the open and closed positions to make an exposure, means operatively connected to said blade moving means for releasing said main driving member from its tensioned position into running down movement to actuate said blade moving means during an exposure, said releasing means including a disengageable transfer lever whereby disengagement of said transfer lever disconnects said releasing means from said blade moving means, opening means operatively connected to said shutter blades for opening and closing said shutter blades for an interim inspection, a releasable catch engaging said opening means when said opening means are in the open position to lock said shutter blades in the open position, said releasable catch being engageable by said transfer lever when said transfer lever is in the disengaged position, and a pivotally mounted control member operatively connected to said opening means and disengaging said transfer lever when said opening means is in the open position whereby actuation of said releasing means will move said disengaged transfer lever to release said catch to return said opening means to the closed position without releasing said main driving member from its tensioned position.

3,283,687
PHOTOGRAPHIC SHUTTER WITH MEANS FOR PREVENTING REBOUND OF THE BLADES
Franz Singer and Karl Härtl, Munich, Germany, assignors to Compur-Werk Gesellschaft mit beschrankter Haftung & Co.
Filed Nov. 30, 1964, Ser. No. 414,656
Claims priority, application Germany, Dec. 4, 1963, C 31,582
2 Claims. (Cl. 95—63)



1. In a photographic shutter of the class described, a housing, shutter blades pivotally mounted in said housing, a driving ring operatively connected to said shutter blades so as to be reciprocable to open and close the shutter blades, an arm on said driving ring, a main driving member rotatable in said housing, a crank connecting the main driving member and the arm on said ring whereby upon rotation of the driving member the driving ring is reciprocated to open and close the shutter blades, a mirror controlling shaft rotatable with respect to said housing, a locking lever pivotally mounted in said housing, a locking shoulder on said lever engageable with the arm on said ring, said locking lever having a pair of arms, one of said arms being engageable with said main driving member, the other of said arms being engageable with the operating shaft, a shutter trip lever pivoted in said housing and having one end portion engageable with the operating shaft and the other end portion engageable with the main driving member, and a transmission lever pivoted in said housing, said transmission lever having one end portion engageable with said operating shaft and the other end portion engageable with said crank whereby said locking lever engages said arm on the main driving ring after the shutter hash been opened and closed by the main driving member to prevent rebounding movement of the driving ring, and the locking lever and crank may be disengaged from said arm on the driving ring to permit the shutter to be opened for interim inspection.

3,283,688
PHOTOGRAPHIC APPARATUS
Nicholas Gold, Arlington, Mass., and Arthur J. Sable, Saratoga, Calif., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed June 3, 1964, Ser. No. 372,149
10 Claims. (Cl. 95—75)



1. A photographic apparatus for exposing successive areas of a photographic image-recording sheet and treating said areas with a processing liquid distributed between

said areas and areas of a second sheet superposed therewith, in combination:

first and second pressure-applying members;

means mounting said first pressure-applying member in juxtaposition with said second pressure-applying member and for movement toward and away from said second pressure-applying member, said pressure-applying members cooperating for superposing said sheets and distributing said liquid therebetween during movement of said sheets between said members;

take-up means for moving said sheets through said apparatus between said members;

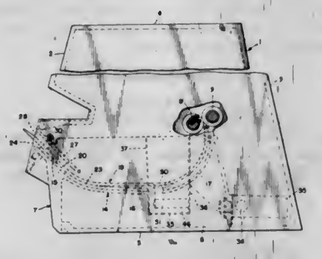
drive means for moving said first pressure-applying member toward and away from said second pressure-applying member;

first sensing means mounted on said first pressure-applying member and responsive to engagement with a portion of one of said sheets at a location intermediate said pressure-applying members to discontinue the operation of said take-up means and thereby arrest the movement of said sheets through said apparatus;

second sensing means mounted on said first pressure-applying member in advance of said pressure-applying members adjacent the path of movement of said one of said sheets between said members for engaging said portion of said one sheet prior to engagement of said portion by said first sensing means, said second sensing means being responsive to engagement with said portion for actuating said drive means to diplace said first pressure-applying member apart from said second pressure-applying member during the terminal portion of movement of said sheets between said members;

said first sensing means being responsive to engagement with said portion of said one sheet for causing said drive means to move said first pressure-applying member toward said second pressure-applying member.

3,283,689
PHOTOCOPY MACHINE
John W. Carlson, Chicago, Ill., assignor to Speed-O-Print Business Machines Corporation, Chicago, Ill., a corporation of Illinois
Filed Jan. 24, 1964, Ser. No. 339,969
5 Claims. (Cl. 95—89)



1. In a photocopy machine for carrying out the diffusion-transfer process, and which includes a pair of wringer rollers for pressing an exposed negative sheet and a positive sheet together for transferring an image from such a negative sheet to such a positive sheet,

of a developer fluid and having

(a) a trough assembly adapted to contain a quantity

(1) an entrance side remote from said rollers, and

(2) an exit side adjacent to said rollers,

(b) said trough assembly including

(1) a main body portion, and

(2) a removable bottom member,

(c) said main body portion having a bottom wall,

(1) extending downwardly and inwardly from said entrance side and

(2) upwardly and outwardly to said exit side,

(d) means for supporting said removable bottom member within said main body portion in upwardly spaced relation to said bottom wall, in position to provide a passageway therebetween extending from said entrance side to said exit side, for feeding such a positive sheet from said entrance side into operative position between said rollers,

(e) said supporting means comprising

(1) recesses in said body member, and

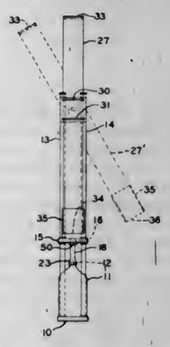
(2) offset portions on said removable bottom member and disposed in respective ones of said recesses,

(f) said removable bottom member being adapted to hold the entire said quantity of developer fluid therein, whereby said passageway is disposed below all of the developer fluid in said trough and will keep the positive sheet dry as it passes therethrough,

(g) an opening at the entrance side of said trough through which said positive sheet may be fed into said passageway,

(h) a second opening at the said entrance side of said trough through which such an exposed negative sheet may be fed from said entrance side through the developing fluid therein on top of the said bottom member into operative engagement with said positive sheet between said rollers to thereby transfer such an image from said negative sheet to said positive sheet.

3,283,690
PRINT DEVELOPING APPARATUS
Gustav Gegauff, 286 N. Broad St., Elizabeth, N.J.
Filed June 10, 1964, Ser. No. 374,134
2 Claims. (Cl. 95—89)



1. A print developing apparatus of the type described, comprising,

a flat base and an upright support connected thereto, said base being designed to hold a container having an open neck,

a horizontal platform mounted on said support and having an opening disposed above a neck of a container which may be placed on said base,

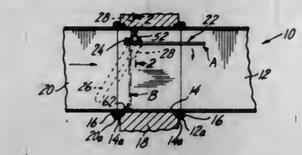
a tube designed to connect, at its lower end, in substantially sealing relation, to a neck of a container disposable on said base, and having its upper end held in said platform opening,

a swivel mounting attached to the upper end of said upright support, and having a horizontal swivel,

a cylinder, closed on top, and mounted on said swivel a short distance above said platform opening, in a manner such that it may be swung in a vertical plane clear of said platform,

a tight-fitting sleeve disposed in slideable relation over the open end of said cylinder in a manner such as to provide a substantial vapor seal when its lower edge is slid into contact with said platform.

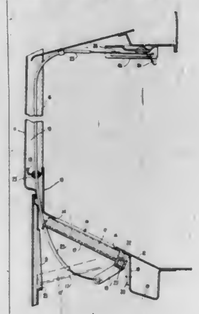
3,283,691
VENTILATING DUCT DAMPER
William Reiter, 2530 Holland Ave., Bronx, N.Y.
Filed Sept. 8, 1964, Ser. No. 394,768
6 Claims. (Cl. 98—1)



1. A damper assembly in combination with a ventilating duct for controlling the air flow in said duct and for automatically closing said duct in the event of a fire comprising a damper blade mounted in said duct for movement between an opened position and a closed position, means biasing said damper blade toward said closed position, a control and actuating element, operating means for selectively moving said damper blade, said control and actuating element operatively interconnected between said damper blade and said operating means for transmitting movement from said operating means to said damper blade, said control and actuating element including at least two separate mutually movable members and a low melting point material normally rigidly interconnecting said members, one of said members being connected to said damper blade and the other of said members being connected to said operating means, said control and actuating element being ineffective to transmit movement from said operating means to said damper blade at an elevated ambient temperature in excess of the melting point of said low melting point material, and ratchet means interconnecting said two members permitting movement therebetween in the direction of closing said damper blade and preventing movement therebetween in the direction of opening said damper blade.

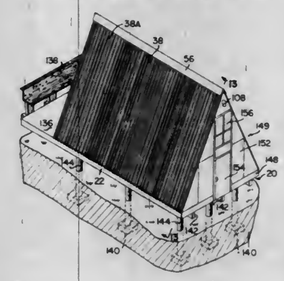
3,283,692
VENTILATING ARRANGEMENT FOR VEHICLES
Hans Froltzheim, Sindelfingen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Sept. 8, 1964, Ser. No. 394,675
Claims priority, application Germany, Sept. 11, 1963, D 42,453
10 Claims. (Cl. 98—2)

4. A ventilating arrangement for motor vehicles, especially commercial vehicles having the driver's compartment over the front axle, including a pedal board arranged transversely of the driver's compartment for accommodating the operating pedals of the vehicle, comprising a plurality of openings in said pedal board in a substantially rectangular pattern encompassing at least one of said operating pedals, a fresh air flap pivotally secured below said pedal board and communicating in the closed position with all of said openings to provide an air-tight seal thereof, operating means for remotely selectively adjusting said flap between said air-tight sealed position and a fully open position, and grid means disposed within



said openings so as to maintain an effectively uninterrupted surface in said pedal board without hindering the flow of air through said openings.

3,283,693
BUILDING CONSTRUCTION
Raymond P. Howell, Richmond, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed July 19, 1963, Ser. No. 296,237
20 Claims. (Cl. 98—31)

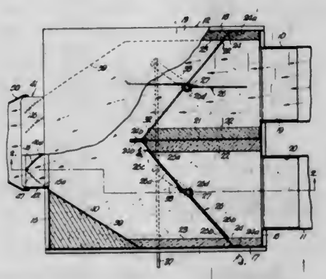


1. In combination: a main supporting structure with substantially parallel main side support means; a plurality of upwardly slantingly converging purlins with their lower ends secured to said main supporting structure adjacent said main side support means and with their upper ends connected to form a horizontal ridge-like structure; horizontal inner wall supporting strips secured to said purlins; vertically corrugated sheets over said purlins and inner wall supporting strips, said corrugated sheets having vertically slanting and outwardly directed ridges over the upper parts of said purlins, and having vertically slanting and outwardly directed valleys secured to said inner wall supporting strips; inner wall sheets secured to said inner wall supporting strips; and a ridge covering construction secured over said horizontal ridge-like structure.

3,283,694
AIR MIXING AND SOUND ATTENUATING UNIT
Frank J. Dean, Jr., Kansas City, Mo., assignor to Tempmaster Corporation, a corporation of Missouri
Filed Mar. 4, 1964, Ser. No. 349,385
9 Claims. (Cl. 98—38)

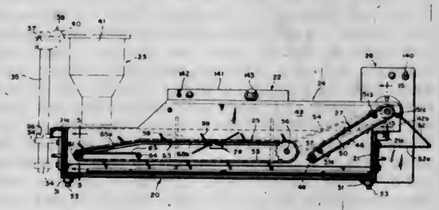
1. In a mixing and sound attenuation unit for air conditioning systems of the type having two sources of conditioned air, the combination of a hollow casing having top, bottom and opposite side walls and front and rear

end walls, said rear end wall provided with a pair of inlet openings spaced from one another and on opposite sides of the fore and aft centerline through the casing, said front wall provided with a centrally located discharge outlet, an upright internal divider partition extending on said centerline forwardly from said rear end wall and terminating in a front end edge in the central portion of the casing, a pair of upright plate members each having front edge portions which are connected with said partition near said front end edge thereof, said plate members extending symmetrically rearwardly and outwardly from



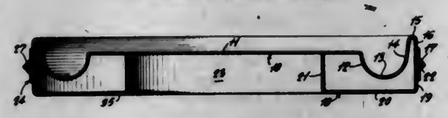
said partition toward said side walls and forming a barrier between the respective inlets and said outlet, each plate member having an opening therethrough, a pair of pivotal damper elements, one for each opening, said damper elements mounted to cooperate with each of said openings for opening and closing same to air flow therethrough, means for pivoting said damper elements between open and closed positions therefor with respect to the respective openings, and mixing means in said outlet having flow guiding surfaces adapted to divert portions of the air stream discharged therethrough in opposite sidewise directions with respect to said centerline.

3,283,695
DOUGHNUT FRYING MACHINE
Thomas E. Belshaw, Wilbur D. Wilke, and Glendon H. Scott, Seattle, Wash., assignors to Belshaw Brothers Incorporated, Seattle, Wash., a corporation of Washington
Filed Aug. 19, 1963, Ser. No. 302,894
17 Claims. (Cl. 99—354)



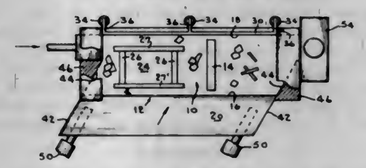
1. In combination with a tank with liquid therein, endless flight conveyor means in said tank having a lower course beneath the surface of said liquid and an upper course for moving bodies floating in said liquid along a given travel path in said tank the improvement which comprises, turner means between said courses for turning said bodies end for end comprising rotatable arms adapted to be alternately rotated by contact with advancing flights of said upper course upwardly through said upper course and downwardly through said lower course and momentarily halted by contact with advancing flights of said lower course, said rotatable arms having sufficient length to extend through said lower course and contact advancing flights of said lower course, and drain conveyor means sloping upwardly from said surface for moving said bodies out of said tank.

3,283,696
COOKING UTENSIL
William B. Randolph, R.F.D. 1, Box 350c, Oakton, Va.
Filed Feb. 3, 1964, Ser. No. 341,975
9 Claims. (Cl. 99—425)



7. A cooking utensil for frying food products, said utensil comprising a circular one-piece body portion having a central circular flat cooking surface, said body portion being formed to provide a circular drip trough surrounding said cooking surface, the outer wall of said trough terminating in a return bend, an outer body wall extending downwardly from said return bend, a circular one-piece ring-shaped support portion having an outer vertical wall, a horizontal bottom wall and a vertical inner wall, said last named outer wall abutting said outer body wall, said bottom wall being disposed below said trough in spaced relation thereto, said vertical inner wall extending upwardly from said bottom wall to provide a downwardly opening circular recess below the major portion of said cooking surface, the space within said support portion serving to partially insulate said trough and prevent overheating of drippings therein, means to secure said support portion to said body portion, a handle and means to secure said handle on said utensil.

3,283,697
APPARATUS FOR CRUSHING AND PROCESSING SCRAP METAL AND SIMILAR SCRAP MATERIALS
George Allan Findlay, Mequon, Wis., assignor to Logemann Brothers Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Jan. 6, 1965, Ser. No. 423,714
2 Claims. (Cl. 100—95)

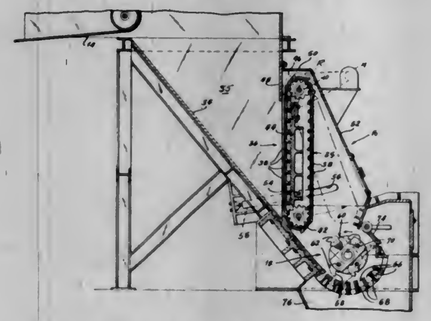


1. An apparatus for compressing scrap metal comprising:

a squeeze box having a base platform, a stationary platen forming one side of the squeeze box and a movable platen forming the other side of the squeeze box, said movable platen being movable between a distant position in respect to said stationary platen and a close position in respect thereto so that uncrushed scrap material can be positioned on said base platform when said movable platen is in said distant position and crushed upon movement of said movable platen towards said close position;

motor and guide means cooperating to move said movable platen in a path having a component of movement towards said stationary platen and another component of movement towards one end of said squeeze box to thereby impart a compressive as well as a twisting force on the un-crushed scrap material and thus cause any column like members of the scrap material to be generally axially aligned between the ends of the squeeze box when the movable platen has been moved to said close position.

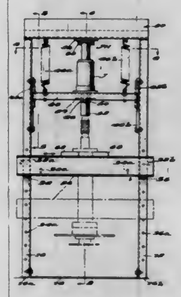
3,283,698
REFINING APPARATUS
Robert M. Williams, Ladue, Mo., assignor to Williams Patent Crusher & Pulverizer Co., Inc., St. Louis, Mo., a corporation of Missouri
Continuation of application Ser. No. 153,625, Nov. 20, 1961. This application July 19, 1965, Ser. No. 477,078
6 Claims. (Cl. 100—97)



1. In a material refining system including means for shredding unrefined material to produce a mass of individual pieces therefrom, and means for separating the more ferrous from the less ferrous bearing pieces, the improvement comprising means for densifying the individual ferrous bearing pieces while maintaining the individuality of the pieces and the fluency of the mass, said last named means including a housing having a rotatable hammer unit positioned therein, said hammer unit having at least one relatively blunt ended hammer mounted thereon for movement along a hammer circle in said housing, and a plurality of spaced individual grate bars positioned adjacent to the hammer circle under the hammer unit, each of said grate bars having a work engaging surface facing the hammer circle and set at an angle relatively to the hammer circle to present a continuously narrowing space to the hammer as the hammer moves past whereby said hammer produces a plurality of succeeding wedging and rolling up actions on individual pieces positioned on the grate bars each time the hammer moves past the grate bars, said wedging and rolling up actions increasing the density and reducing the sizes of the pieces until the pieces are small enough to pass between adjacent spaced grate bars.

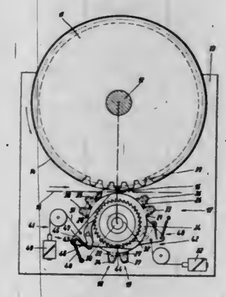
3,283,699
PRESSES
Wallace Hampton Hawkins, Panama City, Fla., assignor to Red Arrow Products, Inc., Leon, Fla., a corporation of Florida
Filed Feb. 17, 1965, Ser. No. 433,295
7 Claims. (Cl. 100—214)

1. A press of the character described comprising, in combination: a pair of spaced-apart upright members, a top cross beam extending between and rigidly affixed to the upper ends of said uprights, a workpiece supporting bed extending transversely of said upright members and being supported thereby at an elevation intermediate the length thereof, a vertically movable carriage extending transversely between said uprights at an elevation intermediate that of the top beam and the supporting bed, said carriage having length substantially equal to the spacing between the facing sides of the uprights whereby to be operable in the plane of said uprights, coacting guide means on the ends of said carriage and on said facing sides of the uprights and being disposed symmetrically with respect to the vertical center plane passing through said carriage and uprights for guiding said carriage throughout its vertical movement, spring means biasing said carriage to a normal raised position, power



means interposed between the carriage and top beam and reactive against the latter for forcefully actuating said carriage in downward direction, chuck means affixed to and depending from said carriage, and a punch removably secured in said chuck means and projecting downwardly therefrom towards said support bed for engagement with a workpiece supported on said bed, said power means, said chuck means and punch being vertically aligned and being disposed on the vertical center line of the press.

3,283,700
SELECTIVE PRINTING MACHINE
Harry Tatham, Welham Green, near Hatfield, England, assignor to Ormig Organisations-Mittel G.m.b.H., Berlin-Tempelhof, Germany
Filed Aug. 14, 1964, Ser. No. 389,586
Claims priority, application Great Britain, Aug. 20, 1963, 32,967/63; Feb. 17, 1964, 6,572/64
17 Claims. (Cl. 101—91)



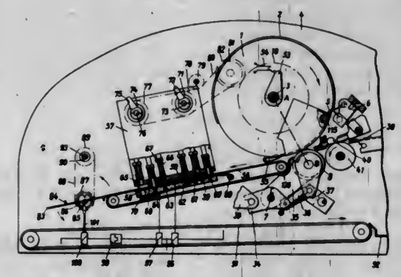
1. A printing machine comprising, in combination, driven first printing means having a circular peripheral pressure surface and being rotatable about a first axis; a second printing means including a plurality of counterpressure means mounted for independent movement, each of said counterpressure means including at least one pressure member having a substantially rectangular axially elongated pressure face, each pressure member and counterpressure means being movable between a normal position in which said pressure face is spaced

from a printing plane, an intermediate position, and a printing position in which said pressure face is located in said plane and forms a printing line with said pressure surface; a plurality of coupling means for coupling said counterpressure means, respectively, with said first printing means for rotation, each coupling means having a normal disengaged position and an engaged coupling position in which said first printing means rotates the respective counterpressure means, each of said counterpressure means being connected with the respective coupling means for placing the same in said coupling position when moving from said normal position to said intermediate position; and control means for moving said counterpressure means selectively from said normal position to said intermediate position so that said driven first printing means turns the respective pressure member from said intermediate position to said printing position and beyond the same whereby a copy sheet between said pressure face and said pressure surface is imprinted with a text section of a printing form on said pressure surface.

3,283,701
PRINTING AND PUNCHING MACHINE

Gerhard Ritzerfeld, Franzensbader Strasse 21, Berlin-Grunewald, Germany

Filed Nov. 30, 1964, Ser. No. 414,910
Claims priority, application Germany, Nov. 29, 1963, R 36,677
20 Claims. (Cl. 101—91)

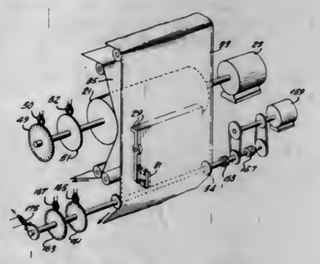


1. A printing and recording machine comprising, in combination, printing means including a rotary printing member having holding means for detachably holding printing form means including a first printing part with printable characters representing information and a second part with symbols representing the same information, said printing member being operable to move said printing form means to a position in which said first part is adapted to engage a copy sheet for producing legible imprints thereon, said printing means including counterpressure means and having a printing position in which said copy sheet is pressed in a printing line into printing contact with said printing member at a printing station, and an inoperative position; control means operating in synchronism with said printing member for moving said printing means to said printing position when at least one selected section of the printing form means moves through said printing line; sensing means including a part in the region of said second part of said printing form means and adapted to sense said symbols on said second part, said sensing means producing command impulses when sensing said symbols; and recording means receiving said copy sheet from said printing means after passage through said printing line and being operatively connected with said sensing means and controlled by said impulses to record on said copy sheet recordings representing the same information as said legible imprints.

3,283,702
HIGH SPEED PRINTING AND GRAPH PLOTTING MACHINE

Leonard J. Higgins, Smithtown, and Harold S. Schwartz, White Plains, N.Y., and Edward R. Richardson, Philadelphia, Pa., assignors, by direct and mesne assignments, to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York

Filed Apr. 20, 1964, Ser. No. 361,303
35 Claims. (Cl. 101—93)

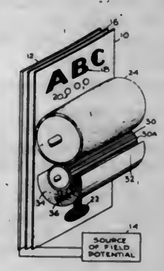


1. A curve plotting apparatus comprising:
means defining a plurality of characters, each of said characters having a character field in which a character mark adapted to be printed is positioned, each of said character fields being of the same size and shape, the character mark of each of said characters having the same shape but being located in a different position in its character field,
means to select one of said characters, and
means to print the character mark of the selected character in a predetermined area on a medium, said predetermined area having the same size and shape as said character fields and the character mark of said selected character being printed in the same position in said predetermined area that the character mark is positioned in the field of the selected character.

3,283,703
ELECTROSTATIC PRINTING BRUSH POWDER FEED SYSTEM

Clyde O. Childress, Palo Alto, and Harold W. Bonner, Berkeley, Calif., assignors, by mesne assignments, to Crocker-Citizens National Bank, as trustee

Filed Aug. 3, 1964, Ser. No. 387,017
4 Claims. (Cl. 101—114)



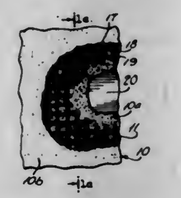
1. In an electrostatic printing system of the type wherein electroscopic powder is applied from a reservoir to a brush which is rotatably moved over the surface of an image forming screen electrode to transfer powder particles therethrough into an electric field, the improvement comprising a first roller having its surface made of a plastic material and having triboelectric properties,

means for supporting said first roller rotatably with one portion of its periphery in frictional engagement with the periphery of said brush to be rotatable therewith, means for applying powder from said reservoir to another portion of said first roller periphery, and means for redistributing excess powder over the surface of said brush comprising a second roller having its surface made of plastic material and having triboelectric properties, and means for supporting said second roller rotatably with its periphery in frictional engagement with another portion of the periphery of said brush.

3,283,704
ELECTROSENSITIVE FACSIMILE STENCIL-FORMING BLANKS

Harold R. Dalton, Jenkintown, Pa., assignor to Timefax Corporation, New York, N.Y., a corporation of New York

Filed Feb. 18, 1964, Ser. No. 345,762
1 Claim. (Cl. 101—128.2)

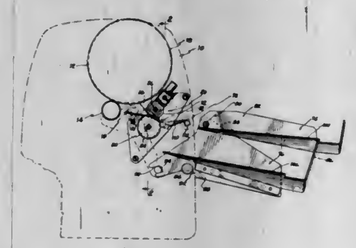


An electrosensitive blank for producing a record of electric voltages applied thereto, comprising a sheet of a continuous, self-sustaining, non-conductive, organic plastic, said sheet having a continuous plastic finish on its opposite surfaces, a non-conductive, foraminous member of 100 to 400 mesh incorporated in said sheet, said foraminous member having openings of uniform dimension, said sheet having powdered conductive particles distributed throughout the body thereof to render the blank as a whole responsive to said voltages to make a permanent perforated record thereof.

3,283,705
DUPLICATING MACHINE WITH DUAL RECEIVING TRAYS

George P. Niesen, Niles, and Anthony J. Mazzio, Chicago, Ill., assignors to A. B. Dick Company, Niles, Ill., a corporation of Illinois

Original application Aug. 13, 1962, Ser. No. 216,612, now Patent No. 3,234,832, dated Feb. 15, 1966. Divided and this application Sept. 2, 1965, Ser. No. 484,685
9 Claims. (Cl. 101—132)

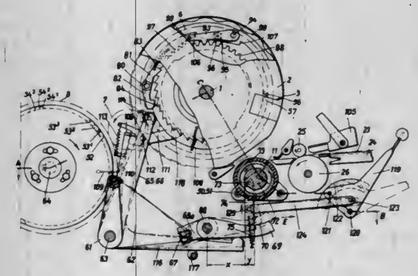


5. In a printing machine,
the combination comprising printing means for printing successive copy sheets,
upper and lower receiving trays for selectively receiving the copy sheets from said printing means,
a deflector movable between a first position for directing the copy sheets into said upper receiving tray and a second position for directing the copy sheets into said lower receiving tray,
a counter mechanism for moving said deflector between said first and second positions after a predetermined number of copy sheets have been directed into said upper receiving tray,
means operable by said printing means for actuating said counter mechanism,
said counter mechanism including selectively operable means for adjusting said control mechanism to change the number of copy sheets to be directed into said upper receiving tray,
and selectively operable means for resetting said counter mechanism to its initial condition.

3,283,706
MULTIPLE CONTROL ARRANGEMENT FOR SELECTIVE PRINTING MACHINES

Gerhard Ritzerfeld, Franzensbader Str. 21, Berlin-Grunewald, Germany

Filed Dec. 14, 1964, Ser. No. 418,238
Claims priority, application Germany, Dec. 17, 1963, R 36,826
11 Claims. (Cl. 101—132.5)

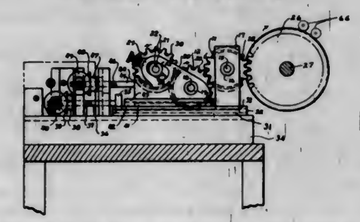


1. In a rotary printing machine, in combination, a printing roller rotatable about a first axis; a counterpressure roller movable between an inoperative position, and a printing position cooperating with said printing roller; operating means for moving said counterpressure roller between said positions and including an operating member; first control cam means connected with said printing roller for synchronous rotation about said first axis; first connecting means including cam follower means and first actuating means cooperating with said operating member, said first connecting means operatively connecting said first control cam means with said operating means for actuating the latter; second control cam means mounted for rotation about a second axis and connected with said printing roller for synchronous rotation; and second connecting means including cam follower means and second actuating means cooperating with said operating member, said second connecting means operatively connecting said second control cam means with said operating means for actuating the latter, each of said first and second connecting means, respectively, being arranged and constructed to permit movement of said operating member when the same is actuated by the actuating means of the respective other connecting means whereby said counterpressure roller is moved between said inoperative and printing positions under the control of said first and second control means.

3,283,707
APPARATUS FOR APPLYING FOUNTAIN SOLUTION IN PLANOGRAPHIC PRINTING

Paul W. Greubel, Short Hills, and James K. Ely, Paramus, N.J., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio

Filed Mar. 25, 1964, Ser. No. 354,592
9 Claims. (Cl. 101—148)



1. In a lithographic press having a plate cylinder and means for applying ink to said plate cylinder, apparatus for applying fountain solution to the surface of said plate cylinder comprising a reservoir for retaining fountain solution, a nonabsorbent fountain roller partially immersed in said fountain solution, a resilient nonabsorbent dampener roller intermediate and normally in peripheral contact with both the plate cylinder and the fountain roller, means for rotating said plate cylinder, fountain roller and dampener roller at the same peripheral speed, the ends of said dampener roller being rotatably mounted in a first pair of slidably mounted bearings so that the dampener roller is substantially parallel to the axis of the plate cylinder, said bearings being slidable in paths perpendicular to the axis of the plate cylinder, means for moving said bearings individually or jointly along said slidable paths to move said ends of the roller towards or away from peripheral contact with said plate cylinder while the roller is rotating within said bearings, a nonabsorbent fountain roller partially immersed in said fountain solution, the ends of said fountain roller being rotatably mounted in a second pair of slidably mounted bearings so that the fountain roller is positioned substantially parallel to the dampener roller, said second pair of bearings being slidable in paths perpendicular to the axis of the plate cylinder and means for moving said second pair of bearings individually or jointly along said slidable paths to move said fountain roller ends towards or away from peripheral contact with said dampener roller while the dampener roller is rotating within said bearings, the means for moving said first pair of bearings and the means for moving said second pair of bearings being operable simultaneously.

3,283,708
THERMOGRAPHICALLY PRODUCED LITHOGRAPHIC PRINTING PLATES

Edward C. Yackel, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Mar. 10, 1961, Ser. No. 94,925
11 Claims. (Cl. 101—149.2)

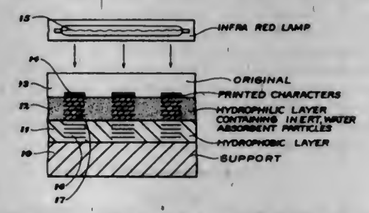
1. A heat-sensitive copying material adapted for the preparation of a lithographic printing plate comprising

(A) a support having coated thereon,

(B) a substantially homogenous layer having a thickness of from 0.00005 to 0.025 inch and comprising a hydrophobic ink-receptive material which melts at a temperature in the range from 40–120° C., and coated over said substantially homogeneous layer,

(C) a hydrophilic layer having a thickness of from 0.00005 to 0.005 inch and comprising (*a*) a hydrophilic ink-repellent material having uniformly dispersed therethrough (*b*) inert, water-absorbent particles,

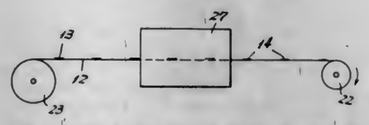
the ratio of said hydrophilic material to said particles being in the range from about 1:2 to about 1:5, said hydrophilic layer melting only above the melting temperature of said hydrophobic material and being permeable by said hydrophobic material in its melted state.



3,283,709
HECTOGRAPH DUPLICATION

Melvin Sharkey, 1614 Hereford Road, Hewlett, N.Y.

Filed Aug. 27, 1965, Ser. No. 483,173
5 Claims. (Cl. 101—149.5)



1. The process of duplicating master images onto copy sheets which comprises the steps of

(a) applying to a master sheet frangible images based upon a wax binder material and containing undissolved hectograph dyestuff;

(b) superposing the imaged master sheet with its images in surface contact with a succession of dry copy sheets;

(c) applying sufficient pressure to the master sheet and each copy sheet to transfer a portion of the frangible images to each copy sheet;

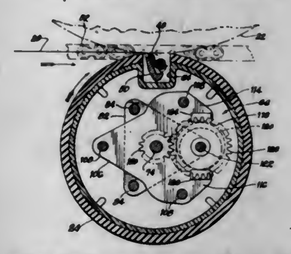
(d) separating each image copy sheet from the master sheet; and

(e) treating each imaged copy sheet with a volatile organic solvent for the undissolved hectograph dyestuff to dissolve the same and form intensely-colored smudge-resistant images thereon.

3,283,710
PERIODIC REGISTRATION MECHANISM FOR DUPLICATORS

George J. Zahradnik, North Riverside, and Fred S. Golden, Chicago, Ill., assignors to A. B. Dick Company, Niles, Ill., a corporation of Illinois

Filed May 25, 1964, Ser. No. 370,028
12 Claims. (Cl. 101—248)

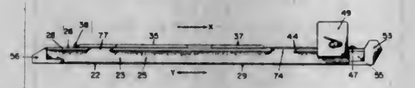


5. In a registration mechanism for a printing press, the combination comprising a rotatable press member, a rotatable driving member adjacent and coaxial with said press member, first and second driving elements on said driving and press members and forming a driving connection therebetween, and means for moving one of said elements relative to the other element between a position in which said elements are fully engaged with minimum play therebetween and another position in which said one element is receded from the other element to afford substantial play therebetween.

3,283,711
PRINTING ROLLER VERTICAL POSITION CONTROL DEVICE

Dong W. Lew, Ossining, N.Y., assignor to Farrington Business Machines Corporation, Springfield, Va., a corporation of Massachusetts

Filed May 25, 1964, Ser. No. 369,793
5 Claims. (Cl. 101—269)



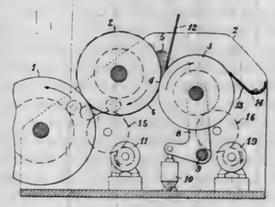
1. Apparatus for printing documents wherein an impression is to be made upon a document disposed over printing means having type characters thereon comprising a base member the top of which forms a plane defining a printing bed and adapted to support printing means to enable an imprint to be made therefrom, a pair of parallel tracks one at each side of said base member and forming top and bottom surfaces which define a pair of spaced planes each being parallel to the plane of the printing bed, said tracks being interrupted near each end of the printing bed by a pair of slots each having a similar inclined parallelepiped configuration, a printing head to overlie said printing bed, a platen rotatably mounted in the printing head, side ear portions of said printing head extending downwardly, adjacent and beneath a level of the bottom surface of the tracks at each side thereof, anti-friction C shaped guide means in each of said downwardly protruding side ear portions and receiving the adjacent track therein, an interference member resiliently mounted on the printing head at each of the side ear portions to be within said C shaped guide means and bear against one of the track surfaces, the interference member when not biased assuming a position disposed at an incline substantially parallel to the inclined sides of the slots, said C shaped guide means and interference members to slidably engage opposite yet alternate ones of the two planer surfaces formed by the tracks depending upon the direction of travel of the printing head for vertically shifting the platen into and out of printing position relative to the printing bed.

3,283,712
WIPER ROLL INKING DEVICE FOR PRINTING MACHINES USING FATTY INKS

Louis Jean Chambon, Paris, France, assignor to Societe d'Etudes de Machines Speciales, Paris, France

Filed Jan. 3, 1966, Ser. No. 518,045
Claims priority, application France, Sept. 21, 1962, 910,165, Patent 1,341,700; Dec. 10, 1962, 918,075, Patent 1,341,700
1 Claim. (Cl. 101—350)

A device for distributing a thin regular film of a high-viscosity liquid on the surface of a roller of flexible material, which is applicable notably to the inking of a fatty-ink printing machine and comprises a distributor and wiper roller of relatively hard material tangent to said roller of flexible material along a contact line, an ink fountain overlying said contact line, means for rotatably supporting said roller of flexible material and said distributor and wiper roller at their ends, means for rotatably driving said roller of flexible material and conveying a liquid film directly from said contact line, without using any intermediate equalizer roller engaging said roller of flexible material, means for rotatably driving said distributor and wiper roller in the same direction as said roller of flexible material, a doctor disposed with its operative edge engaging the peripheral surface of said distributor and wiper roller above said contact line and in the vicinity of said ink fountain, said roller of flexible material and said distributor and wiper roller exerting on each other a pressure

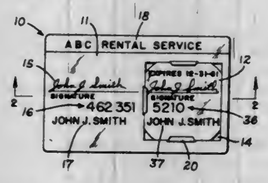


adapted to form on the surface of said roller of flexible material, throughout its length, a liquid film of constant thickness independently of the variation in the local contact pressure between said distributor and wiper roller and said roller of flexible material along their contact line, and means for varying the velocity of rotation of said distributor and wiper roller in relation to that of said roller of flexible material in order to control the thickness of the liquid film coating said roller of flexible material.

3,283,713
CREDIT CARD

Earl V. Wooster, 310 Schenck Ave., Dayton, Ohio

Filed Feb. 9, 1966, Ser. No. 526,295
7 Claims. (Cl. 101—369)



4. A two-piece safety credit card comprising, a rectangular base card of relatively thin material having the name of the holder and first indicia embossed therein so as to project above the front surface of said base card, means defining a polygonal aperture in said base, a polygonal shaped token complementary to said polygonal aperture and adapted to be received in said aperture, said token being of relatively thin material and having second indicia therein correlated with said first indicia for comparison when said token is secured to said base card, and connector means for releasably securing said token to said base card.

3,283,714
ROLLERS CARRYING SURFACE DESIGNS FOR USE IN PRINTING, EMBOSSING AND THE LIKE

Albert S. Carpenter, Sutton Coldfield, and Walter W. G. Norris, Downend, Bristol, England, assignors to Courtaulds Limited, London, England, a British company

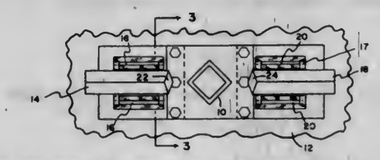
No Drawing. Filed May 21, 1963, Ser. No. 282,122
Claims priority, application Great Britain, May 23, 1962, 19,799/62; Sept. 5, 1962, 33,979/62
7 Claims. (Cl. 101—401.1)

1. A process for the production of a cylindrical forme for use in relief or intaglio printing which comprises forming a hollow axially rotatable cylinder having a raised or indented design on its internal surface, casting a first charge of a liquid material capable of polymerization within said cylinder while rotating said cylinder,

polymerizing said first charge in situ in contact with said design while rotating said cylinder, and subsequently casting additional liquid polymerizable material and polymerizing said additional material while rotating said cylinder.

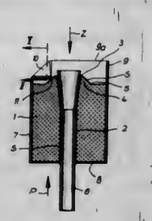
7. A process for the production of a cylindrical forme for use in relief or intaglio printing which comprises forming a first hollow axially rotatable cylinder having a raised or indented design on its internal surface, positioning a second hollow rotatable cylinder having a lesser diameter than said first cylinder coaxially within said first cylinder to form an annular space between said cylinders, casting a first charge of a liquid material capable of polymerization within said annular space while rotating said cylinders, polymerizing said first charge in situ in contact with said design while rotating said cylinders and subsequently casting additional liquid polymerizable material in said annular space and polymerizing said additional material while rotating said cylinders.

3,283,715
BLAST DEFLECTOR
Shepherd Levmore, Morris Plains, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Mar. 4, 1964, Ser. No. 349,504
3 Claims. (Cl. 102—22)



1. Apparatus for preventing sympathetic explosion of a charge of explosive material in response to explosion of another nearby charge comprising a first charge and a second charge, shock wave deflecting means between said charges, shock minimizing means comprising a tapered end on one of said charges to cause a blast wave-front emanating therefrom to be minimized in destructive tendency as the charge explodes, and shock-wave splitting means on the other of said charges to split an incoming blast wave-front.

3,283,716
ELECTRIC DETONATOR
Horst A. G. Pasternack, Essen, Germany, assignor to Wasag-Chemie Aktiengesellschaft, Essen, Germany
Filed Dec. 6, 1963, Ser. No. 328,689
Claims priority, application Germany, Dec. 12, 1962, W 33,502
2 Claims. (Cl. 102—28)



1. An electric igniting element for use in a detonator, which includes: an insulating body having two end faces and having a bore therethrough extending from one end face to the other end face of said insulating body, one of said end faces having a conical portion surrounding said bore, a metallic layer on the wall of said bore and on said conical portion, an inner electrode firmly located in said bore and in contact with said metallic layer, and an outer tubular electrode firmly surrounding and engaging said insulating body and having its wall protruding longitudinally from said insulating body beyond said conical face portion, said protruding portion of said wall being depressed inwardly and longitudinally at one point to form a depressed portion V-shape in cross section having the line of the apex extending inwardly from the wall of said tubular electrode to a point in contact with said conical portion, the walls of said V-shape portion extending from said line of the apex outwardly and longitudinally to the tubular wall and the inward ends of said walls joining the point in contact with the end of said wall of said tubular electrode beyond said conical face portion.

3,283,717
EMERGENCY SURVIVAL CAPSULE
Duane C. Balch, 923 Erica St., Escondido, Calif.
Filed June 11, 1965, Ser. No. 463,264
1 Claim. (Cl. 102—37.8)

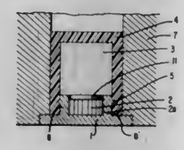


An emergency survival pyrotechnic capsule comprising in combination,
an integral water tight and shock proof tube being closed at one end and being open at the other end,
the outer surface of the other end having projections therefrom adjacent said open end,
an integral cap having bayonet type connection slot for coacting with said outer projections of said tube,
O ring sealing means adjacent the internal surface of said cap for providing a resilient biasing of said bayonet type connection and for water sealing said connection,
said cap having integral therewith an eyelet for receiving a supporting lanyard,
said eyelet projecting outwardly along the longitudinal axis of said tube and having an outer dimension substantially equal to the diameter of said cap,
and a survival pyrotechnic device having an outside dimension substantially equal to the inside dimensions of said joined tube and cap for fitting inside said capsule.

3,283,718
CARTRIDGE
Hans Stadler, Nuernberg, and Heinz Gawlick, Furth, Bavaria, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany
Filed Sept. 10, 1964, Ser. No. 395,468
Claims priority, application Germany, Sept. 10, 1963, D 42,441
19 Claims. (Cl. 102—39)

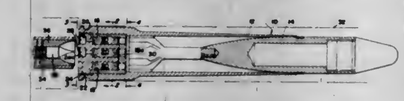
1. A cartridge for driving shells, securing bolts, tools, and the like, comprising:
a metallic headpiece made of a material having good thermal conductivity,
a heat-sensitive primer composition within said headpiece,

and a generally tubular casing means having an open end and a closed end, said casing containing a propellent means and said open end secured to said headpiece, said casing means being made of a material having poor thermal conductivity,



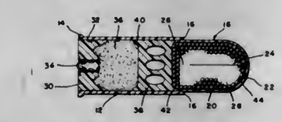
said headpiece being provided with a groove-shaped recess, said casing means open end being inserted into said recess and being secured to said headpiece by an indentation in said headpiece.

3,283,719
MULTIPLE PURPOSE AMMUNITION
Andrew J. Grandy, North Hills, Pa., assignor to the United States of America as represented by the Secretary of the Army
Filed June 3, 1965, Ser. No. 461,209
4 Claims. (Cl. 102—40)



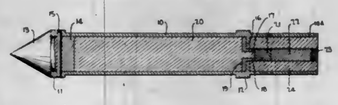
1. A round of ammunition having multiple range capability including
a cartridge case having forward and rearward ends;
a single projectile in the forward end of said cartridge case and forming a forward end closure therefor;
a propellant chamber in the rearward end of said cartridge case, said propellant chamber having a plurality of laterally spaced longitudinally extending compartments, each of said compartments having a forward end and a rearward end;
a propellant charge in each of said compartments; and
a primer in each of said compartment rearward ends.

3,283,720
MOLDED PLASTIC SHOTSHELL
Donald S. Foote, Greens Farms, and Justin H. Whipple, Milford, Conn., assignors to Remington Arms Company, Inc., Bridgeport, Conn., a corporation of Delaware
Filed June 15, 1965, Ser. No. 464,014
6 Claims. (Cl. 102—42)



1. A shotgun cartridge comprising a plastic tubular casing having an open-ended main body portion and a shot container-closure portion integrally formed in one piece with the front end of said body portion, said container-closure portion having a smaller diameter than said body portion, abutment means integrally formed at the front end of said body portion and projecting inwardly to be integrally formed with the rear end of said container-closure, head means attached to the rear end of said body portion, priming means in said head means, propellant means positioned in said main body portion in communication with said priming means, cushion means adjacent to and forwardly of said propellant means, the forward end of said cushion means being in abutting relationship with said abutment means, a plurality of shot pellets located forwardly of said cushion means and arranged to be positioned substantially outside of the main body portion and within said container-closure portion, said priming means upon being fired being adapted to ignite said propellant means to explosively force said cushion means against said abutment means to cut off the container-closure portion with the shot enclosed therein and explosively project the shot and the protective container-closure portion through the associated gun barrel whereupon after being projected out of the barrel, the container-closure opens up to permit the shot pellets to escape therefrom without having their trajectories affected.

3,283,721
REACTION TYPE MISSILE
George Ralph Kruzell, 4301 Hotchkiss, Bay City, Mich.
Filed Nov. 9, 1964, Ser. No. 409,894
1 Claim. (Cl. 102—49)

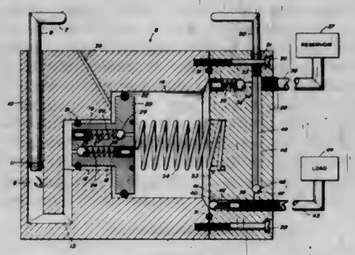


A reaction-type missile comprising a cylindrical hollow body open at its forward and rearward ends and having an annular internal flange located therein rearwardly of said forward end, a warhead abutting against said forward end and having a reduced diameter connecting portion received and secured within the forward end portion of said body, a jet nozzle of sleeve-like cylindrical configuration projecting rearwardly through and substantially beyond said annular internal flange and having a radial flange abutting against said internal flange within the body forwardly of said flange, a propelling charge of solid fuel within the body, and a cylindrical booster charge located rearwardly of said internal flange and bonded to the rearwardly-projecting portion of said nozzle in axial alignment therewith, said radial flange of the nozzle being proportioned for freely sliding peripheral engagement with the inner surface of the hollow body for guiding said nozzle rearwardly for reception in and passage through said internal annular flange incident to assembly of the nozzle and body by insertion of the nozzle through the open forward end of said body.

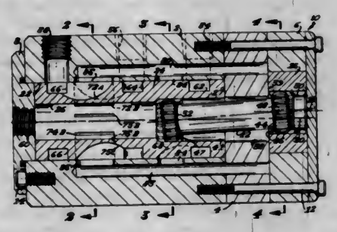
3,283,722
DUAL SPEED PUMP
Donald E. Helms, R.R. 1, Box 131, Brookville, Ind.
Filed July 13, 1964, Ser. No. 382,192
12 Claims. (Cl. 103—37)

1. A multi-speed fluid pump comprising: a pump body having at least first and second chambers, said first chamber being smaller in cross section than said second chamber and said first chamber having at least first and second communicating portions; a first piston having at least first and second portions received in one portion of said first chamber and in said second chamber, respectively; a second piston received in the other portion of said first chamber; first valve equipped fluid inlet conduit means communicating with said first chamber between said first and second pistons; second valve equipped fluid inlet conduit means communicating with said second chamber at the side of said first piston opposite that of said second piston; valve equipped fluid outlet conduit

means communicating with said second chamber at the same side of said second piston as is said second inlet conduit means, said outlet conduit means being adapted to be connected to a load; valve equipped fluid by-pass conduit means communicating with said first chamber between said first and second pistons and being connected so as to permit conduction of fluid from said first chamber to said fluid outlet conduit means when a load attached to said output conduit means exceeds a predetermined pressure; and actuating means operatively connected to said second piston for actuation thereof, actuation of said second piston actuating said first piston except when said predetermined load pressure is exceeded whereby said pump speed is automatically determined by the load pressure encountered.

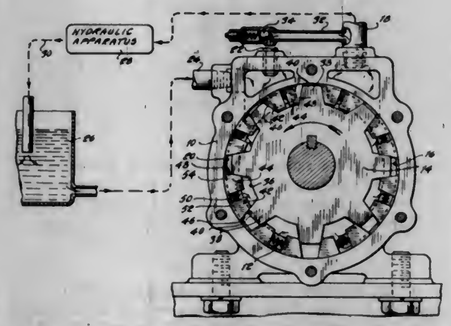


3,283,723
ROTARY FLUID PRESSURE DEVICES
Lynn L. Charlson, Minneapolis, Minn., assignor to Germane Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed July 9, 1965, Ser. No. 470,746
11 Claims. (Cl. 103—130)



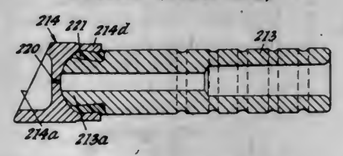
1. In a fluid pressure device, a casing having a fluid inlet port and at least two fluid outlet ports, an internally toothed ring member defining the outer wall of a chamber, a cooperating externally toothed star member having fewer teeth than said ring member disposed eccentrically in said chamber, one of said members having orbital movement about the axis of the other of said members and one of said members having rotational movement about its own axis, the teeth of said members intermeshing to form expanding cells on one side of the line of eccentricity and contracting cells on the other side of said line during relative movement between said members, valve means having a moveable valve part operatively associated with one of said members for movement in synchronism with one of said movements of one of said members, said valve means having fluid supply passage means for admitting fluid from said fluid inlet port to said expanding cells and fluid exhaust passage means for simultaneously and separately exhausting fluid from at least two different contracting cells to at least two different ones of said fluid outlet ports.

3,283,724
DOUBLE SLIPPER FLUID PUMP
Herbert C. Lazarus, Plymouth, Mich., assignor to The Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed June 9, 1965, Ser. No. 462,566
6 Claims. (Cl. 103—136)



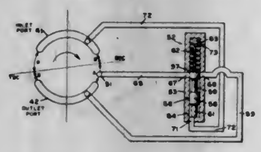
1. A positive displacement pump comprising a pump body, a pumping chamber formed in said pump body, a rotor rotatably disposed in said chamber, the axis of rotation of said rotor being displaced from the geometric center of said chamber, a plurality of recesses formed in the periphery of said rotor, said recesses having tangentially spaced sides that diverge radially outwardly with respect to each other, a pair of pumping elements movably mounted in each recess whereby said pumping elements diverge as they move radially outward, said pumping elements sealingly engaging the peripheral wall of said pumping chamber and adjacent sides of each recess, a pressure port communicating with said chamber and with each recess throughout a substantial arcuate extent with respect to the geometric center of said chamber, and a fluid supply port communicating with said chamber and with said recesses at a location spaced arcuately from the location of said pressure port.

3,283,725
HYDRAULIC MACHINES
George William Pearson Scott, Bowbridge, Stroud, and George Alan Montgomerie, Leamington, England, assignors to Serck R & D Limited, Birmingham, England
Filed Dec. 2, 1964, Ser. No. 415,278
Claims priority, application Great Britain, Dec. 10, 1963, 48,666/63
3 Claims. (Cl. 103—162)



1. An hydraulic machine comprising the combination of a rigid housing, a shaft rotatable within the housing, a rigid cam block rigidly secured within the housing and providing a cam face extending in a plane inclined to the shaft axis, a rotor enclosed within the housing and drivingly coupled to the shaft, said rotor being formed with a plurality of passages, a pair of ports in one end of the housing arranged so that during rotation of the rotor the passages therein are brought successively into communication with the ports, a plurality of pistons slidable respectively in the passages and projecting from one end of the rotor towards the cam face, a plurality of cup-shaped slippers mounted respectively on the pistons where these project from the rotor, each slipper including a skirt portion encircling the piston, a cupped end face remote from the skirt portion and inclined to the axis of the skirt portion at an angle equal to the inclination of the cam face to the shaft axis and a portion engaged directly against the end of the associated piston, and a plurality of elastomeric rings coupling the respective slippers to the pistons, each ring being sealingly bonded to the interior of the associated skirt portion and to the piston and each piston/slipper combination having a restricted bore connecting the interior of the associated passage to the interior of the slipper to form between each slipper and the cam face, a hydrostatic bearing.

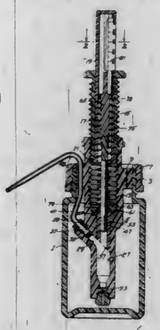
3,283,726
CONSTRUCTION FOR PUMP/MOTOR DEVICES
Herbert H. Kouns, Camarillo, Calif., assignor to American Brake Shoe Company, New York, N.Y., a corporation of Delaware
Filed Dec. 14, 1964, Ser. No. 418,095
3 Claims. (Cl. 103—162)



1. In a pump/motor device of the axial piston type having a body including means presenting a valve surface, an inlet port and an outlet port spaced therefrom entering on said valve surface, and a rotatable barrel engaging said valve surface and containing reciprocable pistons in cylinders, said cylinders communicating sequentially with said inlet port and said outlet port at the end of said barrel as said barrel is rotated; a precompression port entering on said valve surface and communicating with said cylinders sequentially at a position spaced between said inlet port and outlet port, a valve, a fluid passage in said body between said precompression port and said outlet port including said valve, and pressure responsive means opening said valve when pressure at said inlet port exceeds pressure at said outlet port, said precompression port entering on said valve surface at a position approximately half-way between the angular position of maximum cylinder fluid volume and said outlet port, said precompression port being spaced from said outlet port by a distance greater than the dimension of said cylinder at the end of said barrel.

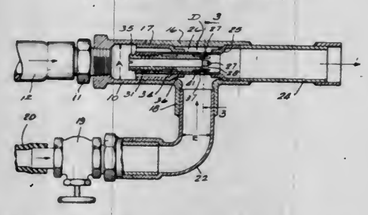
3,283,727
LIQUID DISPENSER WITH AUTOMATIC AIR PURGE
John J. Rodrigues, Jr., Orinda, Calif., assignor to Microchemical Specialties Co., Berkeley, Calif., a corporation of California
Filed Nov. 2, 1964, Ser. No. 408,153
6 Claims. (Cl. 103—203)

1. A dispenser comprising
a barrel having a main piston passageway therein and a branch pasageway leading therefrom and terminating at a point above the junction of said branch passageway and said main passageway,
a free piston in said barrel, said free piston having a diameter less than the diameter of said main passageway and being out of contact with said main passageway throughout the functioning length of said piston,
means normally supporting said free piston in a retracted position in said main passageway,
and a purging seal lining that portion of the main passageway normally occupied by said free piston and slidably fitting said piston,



said purging seal terminating at its lower end at an angle, with its shortest longitudinal dimension at the junction of said two passageways.

3,283,728
EJECTOR
Wilhelm B. Notzke 2227a N. 47th St., Milwaukee, Wis.
Filed June 12, 1964, Ser. No. 374,687
6 Claims. (Cl. 103—263)

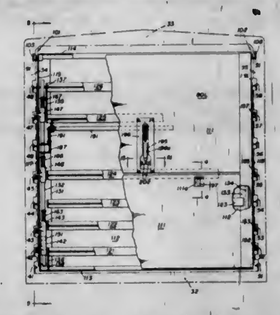


1. An ejector comprising an inlet tube, an outlet tube, an intermediate tube joining said inlet and outlet tubes and having a side opening, partitions across said inlet and outlet tubes at adjacent ends thereof, a tubular connector mounted in and having lateral openings between said partitions, and a nozzle mounted in said connector for directing a jet of pressure fluid therethrough and aspirating ejection fluid through said outlet tube, said nozzle being adjustable axially of said connector for positioning the discharge end of said nozzle substantially in the plane of the ends of said connector openings nearest to said inlet tube.

3,283,729
LADING SEPARATING BULKHEADS FOR RAILWAY BOXCARS
Richard M. Lamport, Lake Forest, and Robert L. Hassenauer, Chicago Heights, Ill., assignors to General American Transportation Corporation, Chicago, Ill., a corporation of New York
Filed Mar. 10, 1964, Ser. No. 350,886
10 Claims. (Cl. 105—376)

1. In a railway boxcar including a pair of upstanding longitudinally extending side walls disposed in substantially parallel laterally spaced-apart relation, and a pair of longitudinally extending tracks respectively carried by said side walls and disposed in substantially parallel laterally spaced-apart and aligned relation; the combination comprising a generally block-like hollow bulkhead arranged in said boxcar, said bulkhead including substantially rectangular front and rear walls arranged in substan-

tially parallel longitudinally spaced-apart relation and a substantially rectangular boundary wall surrounding and joining the perimeters of said front and rear walls, hanger structure carried by said bulkhead and engaging said tracks for supporting said bulkhead in upstanding position in said boxcar extending laterally substantially between said side walls and for mounting said bulkhead for movements along said tracks into desired longitudinally spaced-apart positions in said boxcar, whereby opposite first and second sides of said boundary wall are respectively disposed adjacent to first and second of said side walls, a plurality of first locking elements mounted within said bulkhead in vertically spaced-apart relation and projecting laterally outwardly therefrom through a corresponding plurality of openings provided in said first side of said boundary wall and into cooperating relation with said first side wall, each of said first locking elements being mounted for selective vertical movements relative to said bulkhead and between lock and unlock positions with respect to said first side wall, a plurality of second locking elements mounted within said bulkhead in vertically spaced-apart relation and projecting laterally outwardly therefrom through a corresponding plurality of openings provided in said second side of said boundary wall and into cooperating relation with said second side wall, each of said second locking elements being mounted for selective vertical movements relative to said bulkhead and between lock and unlock positions with respect to said second side wall, whereby said locking elements in their lock positions lock the sides of said bulkhead to said side walls to preserve the corresponding longitudinal position of said bulkhead in said boxcar, and whereby said locking elements in their unlock positions unlock the sides of said bulkhead from said side walls to accommodate the longitudinal movements of said bulkhead in said boxcar, first and second upstanding locking bars arranged within said bulkhead respectively adjacent to and laterally inwardly of said first and second sides of said boundary wall, each of said locking bars being mounted for vertical movement relative to said bulkhead and between lock and unlock positions, said first locking bar being commonly operatively connected to said first locking elements, whereby vertical movement of said first locking bar into its lock position moves vertically all of said first locking elements into their lock positions and vertical movement of said first locking bar into its unlock position moves vertically all of said first locking elements into their unlock positions, said second locking bar being commonly operatively connected to said second locking elements, whereby vertical movement of said second locking bar into its lock position moves vertically all of said second locking elements into their lock positions and vertical movement of said second locking bar into its unlock position moves vertically all of said second locking elements into their unlock positions, a manually operable handle pivotally mounted within said bulkhead and accessible from the opposite faces thereof through aligned holes respectively formed in said front and rear walls, said handle having a lock position disposed longitudinally between said front and rear walls and a first unlock position projecting longitudinally forwardly through the adjacent hole formed in said front wall and a second unlock position projecting longitudinally rearwardly through the adjacent hole formed in said rear wall, and mechanism responsive to pivotal movement of said handle into its lock position for moving vertically both of said locking bars into their lock positions and responsive to pivotal movement of said handle into either one of its unlock positions for moving vertically both of said locking bars into their unlock positions.

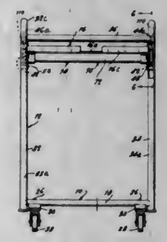


3,283,730
ICE CREAM MOLD
Roland W. Mohler, R.R. 3, Litchfield, Minn.
Filed Oct. 2, 1964, Ser. No. 401,038
2 Claims. (Cl. 107—19)



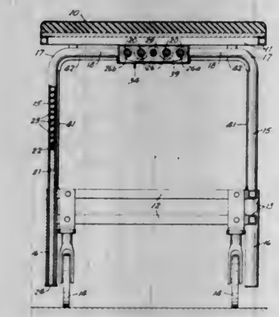
1. A frozen confection form comprising a pair of opposed elongated handles, said handles being generally channel-shaped and including lapped side flanges having registering openings in one end portion, a pin in the openings pivotally connecting the handles, a spring on the pin having its end portions engaged with the handles for yieldingly urging same apart, a flat base plate on the free end of one of the handles in the plane of the bight portion thereof, a cylindrical ring on the free end of the other handle cooperable with the plate and, in conjunction therewith, providing a mold for the reception of a mix, and a stack of sheets in the mold and removable one at a time with the mix thereon when the mold is open, said sheets being mounted on the plate and held thereon by the ring when said mold is closed.

3,283,731
SELF-LEVELING DEVICE
Louis Maslow, Dallas, Pa., assignor to American Machine & Foundry Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 30, 1965, Ser. No. 443,916
12 Claims. (Cl. 108—136)



1. A self-leveling device comprising a carrier assembly including a platform for supporting a plurality of articles in stacked relation means for supporting said carrier assembly for vertical movement, said means comprising a pair of suspension bands and reel means for each of said bands about which portions of said bands are wound as said carrier moves, said reel means each comprising a pair of spaced apart flange members provided with means which define a variable diameter hub about which the band is wound.

3,283,732
LIFTING AND CONTROL MEANS
Carl W. Oja, 2186 Marshall Ave., St. Paul, Minn., and Richard L. Scheuerman, Inver Grove, Minn.; said Scheuerman assignor to said Oja
Continuation of application Ser. No. 379,789, July 2, 1964. This application Oct. 24, 1965, Ser. No. 511,559
12 Claims. (Cl. 108—147)



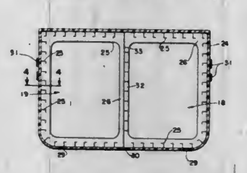
1. A smooth-operating rotatable-ball-containing control device for adjusting the position of an object with respect to a base, said control device having at least one assembly of elements comprising (A) a tubular first member open at both ends with at least one curved portion located intermediate a straight vertically-oriented leg section at one end thereof and a straight horizontally-oriented plunger-receiving section at the other end thereof, (B) a straight vertically-oriented second member having a shell-like configuration into the open end of which said straight leg section of said first member is telescopically engaged, one of said first and second members being mounted on said object and the other of said first and second members being mounted on said base, (C) a stem within said second member and having a solid end received telescopically within the open end of the straight leg section of said first member, (D) a plunger with a solid end telescoping slidably within the straight plunger-receiving section of said first member, (E) a plurality of discrete solid balls in direct abutting pressure-contact and in lineal alignment within said tubular first member between the solid end of said telescoping plunger and the solid end of said telescoping stem, said balls being of a diameter just sufficiently less than the internal diameter of said tubular first member to be received within said tubular first member, said balls further being rotatable with respect to each other within said tubular first member as relative movement takes place between the internal surface of said tubular first member and said lineal alignment of said balls, (F) means for incrementally and slidably advancing and retracting said plunger telescopically within the straight plunger-receiving section of said first member, whereby adjusting the position of said object with respect to said base is effected, and (G) means to maintain said object unified with said base even during adjustment of the position of said object with respect to said base.

3,283,733
PORTABLE AND COLLAPSIBLE SPORTSMAN'S SEAT
John C. Boerma, Grand Haven, Mich., assignor of fifty percent to Donald J. Boerma, Comstock Park, Mich.
Filed July 19, 1965, Ser. No. 472,800
3 Claims. (Cl. 108—159)



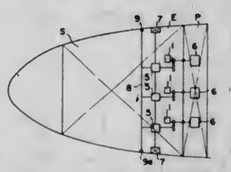
1. A collapsible, portable seating means for sportsmen and the like, comprising in combination: a generally flat seat platform; means forming a generally cylindrical bearing recess in one of the underside of said seat platform or in the top of said upright support member; a single upright support member; the other one of said seat platform or upright support member having a generally cylindrical protrusion; said protrusion being receivable within said bearing recess to rotatably and removably mount said seat upon said support; said upright support member having a lower extremity formed to penetrate into the earth to retain the support in a desired placement thereupon; shoulder means attached to said support a predetermined distance above said pointed extremity to abuttingly contact the earth and limit the penetration of said support thereinto; an elongated flexible member secured to said seat platform and said upright support member for coupling them together even when detached at said bearing recess thereby facilitating the carrying thereof on the shoulder of a person by slinging said elongated flexible member thereover.

3,283,734
EXTERNALLY INSULATED HULL STRUCTURE
Paul T. Gorman, Chatham, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Dec. 28, 1964, Ser. No. 421,545
9 Claims. (Cl. 114—74)



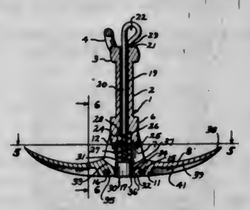
4. A tanker whose hull is comprised of forward, after portions and intermediate cargo-carrying portions
(a) thermal insulation means applied externally of the portion of said hull formed by said intermediate cargo carrying portions,
(b) said forward and after hull portions comprising mild steel plate,
(c) said intermediate cargo-carrying portions of said hull comprising metal plate having low temperature thermal and strength properties characteristic of nine percent nickel steel.

3,283,735
SIDEWISE PROPULSION SYSTEM FOR SHIPS
Koichi Sugino, Kobe-shi, Japan, assignor to Kawasaki Jukogyo Kabushiki Kaisha, Kobe-shi, Japan, a joint-stock company of Japan
Filed Nov. 24, 1964, Ser. No. 413,582
Claims priority, application Japan, Nov. 29, 1963, 38/89,549
1 Claim. (Cl. 114—151)



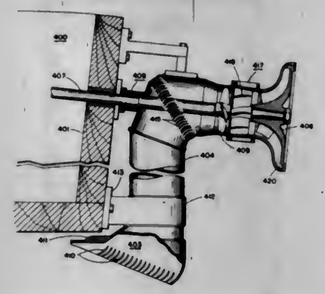
In a cargo-handling vessel, in combination, a cargo oil system having fluid-conveying ducts for handling liquid oil cargo in the vessel and comprising a first pump, a prime mover for driving said first pump, a fluid propulsion system for propelling said vessel sidewise comprising a second pump for pumping water in said propulsion system for propulsion and maneuvering of said vessel, said second pump having a large delivery and low total head the combination of which is so selected that the power required to drive said second pump is not in excess of the power required to drive said first pump, means to selectively and alternately connect said prime mover to said first pump to handle said liquid oil cargo and to said second pump to propel and maneuver said vessel, said vessel comprising a hull having an intake and a discharge port on both sides of said hull, conduit means providing communication between said second pump and the ports to take in water from one side of the hull and discharge it at an opposite side of the hull to propel the vessel sidewise, said cargo oil system and said propulsion system being free of interconnections and thereby independent of each other.

3,283,736
COLLAPSIBLE ANCHOR
Homer Glenn Williams, Independence, Mo., assignor of one-half to Louis A. Gauert, Kansas, City, Mo.
Filed Dec. 7, 1964, Ser. No. 416,354
7 Claims. (Cl. 114—208)



1. A collapsible anchor comprising,
(a) an elongate shank having a longitudinally extending bore,
(b) a plurality of flukes pivotally mounted on said shank near the lower end thereof and swingable from an extended radial position to a collapsed position in which they extend downwardly generally parallel to the shank,
(c) said flukes each having a nose point at its inner end with angularly related faces extending therefrom,
(d) and a locking member movable longitudinally of said shank from a position between inner end portions of the flukes where it is engaged by the fluke nose points to a release position above said fluke inner ends,
(e) said flukes presenting one of said angularly related faces to the locking member when the flukes are in extended position wherein said one face cooperates with said locking member to retain said flukes in radial extended position,
(f) said locking member having an annular bead thereon positioned under the nose edges when the flukes are in extended position for resisting upward releasing movement of said locking member.

3,283,737
JET PROPULSION DEVICE FOR WATER VEHICLE
Calvin A. Gongwer, Glendora, Calif., assignor, by mesne assignments, to Aerojet-General Corporation, El Monte, Calif., a corporation of Ohio
Filed May 3, 1963, Ser. No. 280,188
2 Claims. (Cl. 115—16)

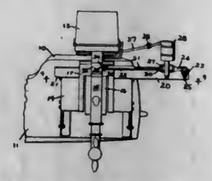


1. A propulsive device for a water vehicle comprising impeller means positioned at the stern and above the waterline of said vehicle, rotary power means in said vehicle connected by shaft means to said impeller means, conduit means extending from said impeller means to substantially the waterline, said conduit means receiving said shaft means and angled near the point of reception to form a direct flow path therefrom to said impeller means, inducer means attached to said shaft means intermediate said impeller means and said point of reception, vane means positioned intermediate said inducer means and said impeller means for straightening flow into the impeller means, turning vane means positioned across the angled portion of said conduit means for directing flow toward said inducer means, intake means connected to said conduit means and having an inlet positioned below the surface of the water, said intake means including a plurality of vane means extending across the inlet to intercept debris and direct water into said conduit means, said intake means having flange means spaced from the bottom of said vehicle to bypass air and debris, and said impeller means having restricted outlet means adjacent the outer periphery thereof.

3,283,738
STEERING ATTACHMENT FOR BOAT MOTORS
Ernest A. Nelsen, Bollinger Hotel, Lewiston, Idaho
Filed Apr. 7, 1965, Ser. No. 446,241
4 Claims. (Cl. 115—18)

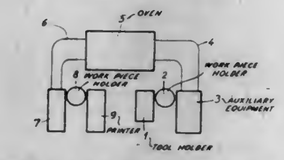
1. A steering attachment for an outboard motor mounted on an upright boat transom, the motor including a motor frame pivotally mounted relative to the transom for motion about an upright axis for steering purposes, comprising:
a rigid support fixed to the transom, one end of said support protruding outwardly to one side of the motor frame;

a longitudinally extensible member pivotally connected at one end to the motor frame about a pivotal axis parallel to and spaced radially outward from the upright axis of the motor, said extensible member comprising first and second coaxial longitudinal sections threadably engaged by one another along a longitudinal axis perpendicular to the pivotal axis by which said member is connected to said motor frame, the sections being threadably engaged in such fashion as to vary the effective length of said member along said longitudinal axis responsive to rotation of one section relative to the other;
a bracket mounted on said support adjacent the outer end thereof including a first element rotatably carry-



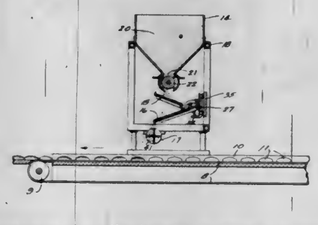
ing the remaining end of said extensible member for movement about the longitudinal axis thereof, and a second element, said second element being pivotally connected to said first element about a first bracket axis perpendicular to the longitudinal axis of said extensible member, said second element also being pivotally mounted on said support about a second bracket axis perepndicular to both said first bracket axis and the longitudinal axis of said extensible member;
and power means on said first bracket element operatively connected to one of said sections of said extensible member to selectively rotate said one section of said extensible member relative to the remaining section about the longitudinal axis thereof.

3,283,739
AUTOMATIC CAN COATING APPARATUS
Kurt G. Hinterkopf, Scharnhorststrasse 21, Eislingen (Fils), Germany
Filed Sept. 10, 1962, Ser. No. 222,395
Claims priority, application Germany, Sept. 13, 1961, H 43,652
19 Claims. (Cl. 118—1)



1. Processing apparatus for the non-cutting processing of work-pieces in continuous flow, comprising a working unit including in combination; at least one processing station for the transfer of a fluent material to the peripheral surface of the work-piece to be processed; a tool at said processing station; a tool holder carrying said tool and drive means for moving said tool holder in forward and reverse direction; a work-piece holding head having holders thereon adapted to carry simultaneously several work-pieces distributed on its periphery, said work-piece holding head being movable in discrete change-over steps to bring said work-pieces on its periphery one after the other into the processing position and there present them to said tool on said tool-holder for performing the respective processing operation; a drive motor for said work-piece holding head connected therewith; coupling means between the drives of said work-piece holding head and said tool-holder, means for uncoupling said coupling means for interrupting the power connection between said drive motor and said tool-holder at a predetermined time while maintaining a connection between said drive motor and said head; a control device for detecting the correct working position of the work pieces on the work-piece holding head; a feeler member within said control device for performing said control operation, means connecting said coupling and uncoupling means to said feeler member of said control device to couple or uncouple said tool-holder from said holding head in response to impulses generated by said control device in dependence upon whether the holder approaching the processing station contains a work-piece and whether this work-piece has taken up in its holder the correct working position.

3,283,740
DISTRIBUTING APPARATUS FOR GRANULAR MATERIALS
Arthur F. Fredricksen, Wauwatosa, Wis., assignor of one-half to Stuart P. Kessler, Mukwonago, Wis.
Filed May 20, 1963, Ser. No. 281,445
6 Claims. (Cl. 118—24)



1. Apparatus for distributing granular material to a succession of articles, comprising, a conveyor for advancing the articles in succession along a rectilinear path, a granular material supply hopper located above said conveyor, means for feeding granular material from said hopper, at least one downwardly inclined distributing deck interposed between said hopper and said conveyor for receiving granular material from said hopper and distributing the same to articles advancing along said conveyor, means pivotally supporting said deck adjacent one edge thereof, means for adjusting the position of said deck about its pivotal support to vary the angle of inclination thereof, means operable through said pivotal supporting means for reciprocating said deck in a plane transverse to its direction of inclination to agitate and cause the granular material to gravitate from the lower edge of said deck, and means forming a series of laterally spaced upwardly exposed dams on said deck extending transversely of the plane of reciprocation thereof for restricting shifting movement of the granular material along said deck.

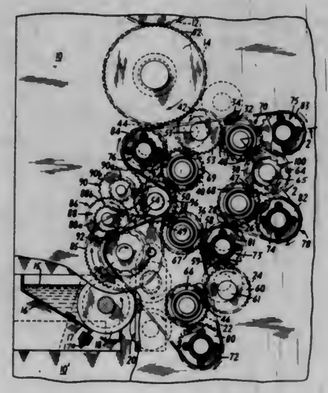
ERRATUM

For Class 118—224 see:
Patent No. 3,284,570

3,283,741
COATING APPARATUS
George R. Brodie, Narberth, Pa., assignor to John C. Motter Printing Press Co., York, Pa., a corporation of Delaware
Filed May 1, 1964, Ser. No. 364,137
3 Claims. (Cl. 118—262)

1. A liquid distributing system, comprising a reservoir for the liquid, a rotatable roll partially immersed in and arranged to pick up a coating of the liquid, a plurality

of first rotatable distribution rolls disposed parallel to and spaced-apart from each other, a plurality of second distribution rolls disposed parallel to said first rolls and in rolling contact with at least one of said first rolls, means for transferring the liquid coating from said rotatable pickup roll to at least one of said first and second distribution rolls, said first and second distribution rolls arranged to transfer and spread the liquid thereon along at least one path including alternate adjacent first rolls and second rolls, a drive gear train at one side of the apparatus for imparting rotation to said first rotatable distribution rolls, said drive gear train including



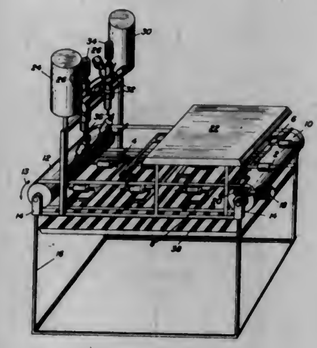
a gear carried at the same end of each of said first distribution rolls, a first cam member rotatably mounted on and longitudinally affixed to each of said first distribution rolls at the same end of the first distribution roll as the said gear, a plurality of second cam members, one of said second cam members being rotatably mounted and longitudinally fixed adjacent each of said first cam members and cooperative with said first cam member to impart axial reciprocation of predetermined amplitude to each of said first distribution rolls, means for rotating one of said cam members, and gear means to impart rotation from said one cam member to the other cam member.

3,283,742
APPARATUS FOR THE IMPREGNATION OF ELECTRIC WINDINGS

Heinz Fuchs, Riehen, Switzerland, and Heinz Baer and Paul Kolaczek, Weingarten, Germany, assignors to Josef Baer Maschinenfabrik, Weingarten, Germany, a firm of Germany

Filed Jan. 9, 1963, Ser. No. 250,366
Claims priority, application Switzerland, Jan. 15, 1962, 500/62
1 Claim. (Cl. 118—322)

In a machine for impregnating electric windings with a resin/hardener mixture, the combination of an intermittently advanceable supporting structure for the electric windings, at least two impregnating units each consisting of a metering pump for the resin, a metering pump for the hardener, a mixing device to which said pumps are connected, and an outlet nozzle on said mixing device, and positioned over the path of the supporting structure at positions spaced from each other transversely of the direction of said supporting structure for pouring the resin/hardener mixture at a constant output velocity through the outlet nozzles, a plurality of winding support members on said supporting structure which are advanced simultaneously, said winding support members being at positions on said supporting structure such that a member of said support members corresponding to the number of impregnating units are advanced to the impregnating position at each intermittent advance of said supporting structure, the outlet nozzle of each impregnating unit being positioned above an associated winding support member when the latter is in the impregnating position so that, in use, all

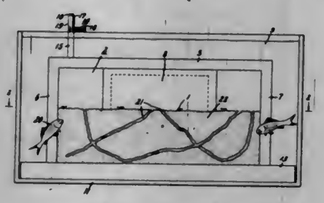


windings simultaneously advanced to the impregnating position are each simultaneously impregnated by their associated impregnating unit with resin/hardener mixture poured at a constant rate, and support member rotating and tilting means on the supporting structure and coupled to each winding support member for rotating the windings about their longitudinal axes, and simultaneously inclining the longitudinal axes of the windings relative to the horizontal at least during impregnation.

3,283,743
ENVIRONMENTAL CONTROL CHAMBER

Norman R. Dibelius, Ballston Spa, N.Y., assignor to General Electric Company, a corporation of New York

Filed Apr. 29, 1965, Ser. No. 451,922
6 Claims. (Cl. 119—1)



1. An artificial habitat apparatus for the study of burrowing insects comprising an oxygen containing body of liquid,

a sealed liquid-tight container adapted to contain burrowing insects and placed within said body of liquid and

a liquid imperforate membrane covering a section of said container comprising means for providing the passage of gases between the liquid and said container to maintain proper atmospheric conditions in said container.

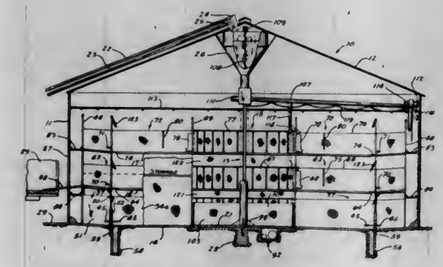
3,283,744
MULTIPLE FLOOR LIVESTOCK FEEDING AND FARROWING BUILDING

William J. Conover, Rhodes, Iowa, assignor to Black, Sivalls & Bryson, Inc. (BS&B), Kansas City, Mo., a corporation of Delaware

Filed Mar. 12, 1965, Ser. No. 439,215
8 Claims. (Cl. 119—16)

6. A farm animal feeding building comprising in combination:

a circular upstanding wall;



a roof mounted on said wall;

an upright post mounted centrally of said wall and engaged with said roof for the only support therefor within said wall;

a plurality of vertically spaced floors for supporting livestock supported within said wall;

said floors all having a common central access area formed radially about said post; and

elevator means including a telescoping hydraulic cylinder unit slidably connected to said post and carrying a horizontally disposed platform adapted to extend across said central access area, said unit operable to move said platform up and down said post to a level with each floor: said platform being substantially circular in plan view and surrounding said post, which post comprises the entire support therefor.

3,283,745
ROCKABLE SLAT LIVESTOCK FLOORING

Francis Vittetoe, Rte. 3, Keota, Iowa

Filed Jan. 8, 1965, Ser. No. 424,385
6 Claims. (Cl. 119—28)

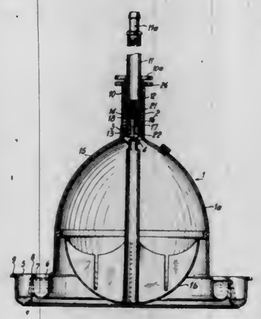


2. Livestock flooring comprising a pair of sills spaced apart, said sills having a plurality of notches therein, and a plurality of slats extending between said sills and being lodged in said notches, said slats having a greater thickness than the depth of said notches and having substantially less width than said notches, whereby the slats rock in their respective notches.

3,283,746
POULTRY WATERING TROUGH WITH A FREELY SUSPENDED DRINKING VESSEL AND AN AUTOMATIC FILLING VALVE

Hans Rüter, Breitendyk 109, Krefeld, Germany

Filed May 5, 1965, Ser. No. 453,291
Claims priority, application Germany, May 23, 1964, R 28,479
4 Claims. (Cl. 119—81)



1. In a poultry watering device of the type having a freely suspended drinking vessel, a vertically disposed tubular member, the upper end of which is adapted to be secured to a water supply, a valve housing secured in the lower end of said tubular member, said housing having a passage channel extending axially of said tubular member and a circular flange extending outwardly of the lower end of said tubular member, a bush slidably mounted on said tubular member, a bell-shaped drinking vessel formed with an upwardly extending sleeve and having an open portion in threaded engagement with said bush, the lower portion of said sleeve being laterally spaced from said tubular member, a spring in said space for biasing said bush away from said flange, said sleeve having a closed bottom and a side outlet adapted to communicate with said channel, a cage mounted on the top of said valve housing, a valve element having a stem displaceable vertically in said passage channel and in contact with said closed sleeve bottom and a disc head, for closing said channel, the diameter of said stem being smaller than that of said passage channel and a spring in said cage for biasing said disc head against said passage channel, said drinking vessel having a bottom edge portion formed as trough means.

3,283,747
LIVESTOCK OILER

Jerry P. Malec, 2930 N. 84th St., Omaha, Nebr.

Filed Sept. 22, 1964, Ser. No. 398,190
3 Claims. (Cl. 119—157)

1. A livestock oiler, comprising,

a ground engaging frame,

an upstanding frame secured to said ground engaging frame,

a rubbing assembly extending between the outer end of said ground engaging frame and the upper end of said upstanding frame,

said rubbing assembly including an elongated member rotatable about an axis extending between the outer end of said ground engaging frame and the upper end of said upstanding frame,

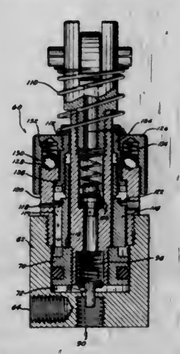
liquid absorbent means embracing said elongated member along its length,

a fluid supply,

a passageway communicating between said fluid supply and said absorbent means,

a valve in said passageway and having a cylinder, a piston movable in said cylinder, the inner end of said piston and said cylinder forming a chamber, an inlet in communication with said chamber and connected by a conduit to said passageway in communication with said absorbent means, and a closure means in said inlet responsive to the movement of said piston, said closure means opening upon said piston moving away from said inlet and thereby enlarging said chamber and said closure means closing said passageway upon said piston moving towards said inlet,

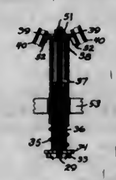
closure means in said passageway, a spring means for



yieldingly holding said closure means in a closed position, said piston upon moving towards said inlet increasing the pressure in said passageway against said closure means to overcome the pressure of said spring means and open said closure means for fluid to move out said outlet, and

means responsive to the rotation of said elongated member to actuate said valve for dispensing fluid from said outlet, said valve having one end in the upper end of said elongated member and said means responsive to rotation of said member being a conduit portion in said passageway.

3,283,748
CATTLE OILER
Robert D. Petersen, Tilden, Nebr.
Filed Nov. 20, 1964, Ser. No. 412,740
1 Claim. (Cl. 119—157)

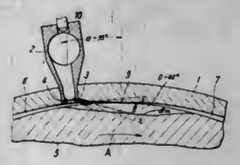


A cattle oiler comprising a base, a vertically positioned pipe attached to said base centrally thereof and adapted to contain an oil therein, an upper structure including a pair of downwardly diverging tubes, a hydraulic cylinder positioned toward the bottom of said vertically positioned pipe and including a pair of valves therein, a piston rod member attached to said upper structure, a piston received in said hydraulic cylinder, tubular means attached between said hydraulic cylinder and said upper structure for passing oil forced by said piston to pass into said upper structure, absorbent members attached at the lower ends of said diverging tubes and being attached to said base whereby rubbing movement of animals against said absorbent members will force said piston rod member and said piston downwardly, said valves permitting ejection and inlet of oil from said vertically positioned tube from and to said hydraulic cylinder, said base including substantially lengthened members at right angles to each other, vertically positioned pipe sections attached at the terminals of said substantially lengthened members, stake members having upper portions, and having sharpened portions adapted to be driven through said pipe sections and into the ground, said upper structure having a substantially cylindrical further tube attached thereto, a helical spring bearing against the lower end of said further tube, a further framework attached to the upper end of said vertically positioned pipe and against which said spring bears, a still further tube received in said further tube and received within said helical spring, said upper structure including an elbow member communicating with said downwardly diverging tubes, flexible tubes attached to said elbow member and to said tubular means, said further framework being positioned substantially at right angles to said upper structure, said helical spring being adapted to force said upper structure upwardly, after downward movement of said piston rod member.

3,283,749
METHOD OF STARTING INTERNAL COMBUSTION ENGINE FOR PRODUCTION OF SYNTHETIC GASES
Kosai Hiratsuka, Hiroshi Tsuji, and Toshiharu Ota, Kudamatsu, Japan, assignors to Hitachi Limited, Tokyo, Japan, a corporation of Japan
No Drawing. Filed Oct. 27, 1964, Ser. No. 406,892
1 Claim. (Cl. 123—1)

A method of starting internal combustion engines for the production of synthetic raw material gases by incomplete combustion of hydrocarbons with oxygen, which comprises starting the engine by the use of a mixture of hydrocarbons and air, bringing the engine to operation with the rated output, and changing-over thereafter to operation by the use of a mixture of hydrocarbons and oxygen by gradually increasing flow rates of hydrocarbons and oxygen while reducing the flow rate of air to maintain substantially constant calorific value per unit volume and substantially constant rate of suction gas supply.

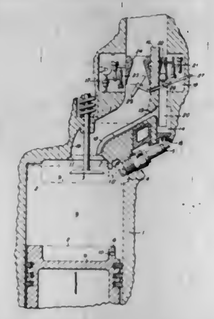
3,283,750
ROTARY PISTON DIESEL ENGINE
Kurt E. Löhner, Braunschweig, Germany, assignor to Beteiligungs- und Patentverwaltungsgesellschaft mit beschränkter Haftung, Essen, Germany
Filed Aug. 16, 1963, Ser. No. 302,650
Claims priority, application Germany, Aug. 25, 1962, B 68,565
7 Claims. (Cl. 123—8)



1. In a rotary piston diesel engine: a housing having an inner contour surface and having a rotor rotatably arranged within said inner contour surface of said housing and in one position relative to said housing confining with the latter a minimum space for compression to thereby effect a maximum compression of an air fuel mixture in said space, said rotor having a peripheral recess forming with portions of the inner contour surface of said housing a combustion chamber, and conduit means leading from said antechamber to the interior of said housing through

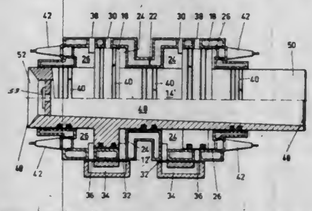
the inner contour surface thereof, the mouth of said conduit means being located opposite a portion of said peripheral recess when said rotor occupies said one position, the maximum angle confined by the axis of said conduit means and the tangent to said inner contour surface within the range of said mouth being 40°, said peripheral recess having a bottom portion which is so inclined that when said piston is in said one position the extension of said bottom portion intersects a tangent to the housing inner contour surface within the range of the mouth of said conduit means at a point located behind said mouth when looking in the direction of rotation of said rotor, whereby in said one position of said piston at least the major portion of the length of said bottom portion is impacted upon by an air fuel mixture jet leaving said antechamber.

3,283,751
INTERNAL COMBUSTION ENGINE WITH JET IGNITION OF A NON-UNIFORMLY DISTRIBUTED WORKING MIXTURE FROM A PRECOMBUSTION CHAMBER CUT-OFF BY THE PISTON
David Abramovich Goossak and Lev Abramovich Goossak, Moscow, U.S.S.R., assignors to Institute Khimicheskoi Fysiki
Filed June 28, 1963, Ser. No. 291,453
22 Claims. (Cl. 123—32)



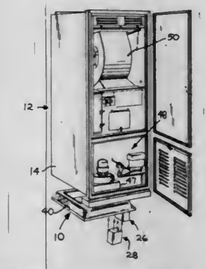
1. An internal combustion engine provided with precombustion chamber jet ignition comprising wall means defining a cylinder and a head therefor, a piston mounted within said cylinder for reciprocation therein and provided with a main combustion chamber, said wall means defining said cylinder being provided with a precombustion chamber space above and laterally of the longitudinal center line of the cylinder, a sparkplug located in said precombustion chamber space, a projection on the wall means providing the head of the cylinder, said piston having a head, a projection on the piston head, the projections on said cylinder head and piston head being located laterally of the longitudinal center line of the cylinder and adapted to overlap when the piston approaches the top dead center thus providing a labyrinth lock between the precombustion chamber space and the main combustion chamber which, during the combustion process, cuts off the precombustion chamber space from the main combustion chamber thus providing a precombustion chamber space of relatively small volume, and means provided for one of said projections for effecting communication between the precombustion chamber space and the main combustion chamber with said last-named means being defined by a passage having inlet and outlet ends respectively communicating with the precombustion chamber space and the main combustion chamber with such passage having a sharply defined configuration at the inlet and outlet ends, a constant and relatively small area and a short length.

3,283,752
FREE PISTON MACHINE
Frank Stelzer, Elbestrasse 59, Raunheim, near Frankfurt, Germany
Filed May 5, 1964, Ser. No. 365,211
Claims priority, application Germany, May 6, 1963, H 49,061; Oct. 7, 1963, St 22,364
2 Claims. (Cl. 123—46)



1. A two cycle free piston machine comprising, in combination, a cylinder means having wall means forming two cylinder spaces having the same diameter, said wall means including a transverse wall separating said two cylinder spaces and having an opening connecting said cylinder spaces, said cylinder means including two cylinder portions at the ends thereof coaxial with said cylinder spaces; a piston means including two pistons having the same diameter and being respectively located in said cylinder spaces, two cylindrical end portions slidable in said cylinder portions of said cylinder means, and a connecting portion having a smaller diameter than said pistons and passing through said opening in said transverse wall, each piston forming in the correlated cylinder space a compression chamber and a combustion chamber, said chambers contracting and expanding during reciprocation of said piston means; inner conical cavity means extending from one of said cylindrical end portions to the other of said cylindrical end portions and being wider at one end than at the other end thereof whereby during reciprocation of said piston means a fluid can be compressed in or pumped through said cavity means; means for supplying fuel into said compression chambers; means for exhausting gases from said combustion chambers; and passage means for connecting each compression chamber with the correlated combustion chamber.

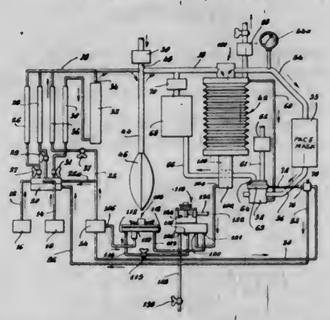
3,283,753
SUBBASE FOR HOT AIR FURNACE
Peter C. Bodett and Paul W. Fair, Sturgis, Mich., assignors to Motor Wheel Corporation, Lansing, Mich., a corporation of Ohio
Filed Dec. 6, 1965, Ser. No. 511,819
10 Claims. (Cl. 126—110)



1. A subbase for supporting a hot air furnace on the floor of a structure to be heated wherein hot air is distributed via a subfloor duct and combustion air and makeup air are obtainable from an exterior source beneath the floor, said subbase comprising a base adapted

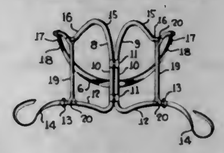
to receive the furnace thereon and having a marginal flange adapted to rest on said floor around the periphery of an opening in said floor over said subfloor duct, said base having a horizontal top panel disposed above said flange and connected thereto by an upright wall, said panel having an opening therein, collar means supported by said top panel and extending vertically downwardly therefrom through said panel opening for connection with an opening in the subfloor duct, said collar being located for registry with the hot air outlet of said furnace for conducting heated air from the furnace downwardly through said base into the subfloor duct, said panel having an aperture located for vertical alignment beneath the burner of the furnace, a combustion air duct for supplying combustion air to the burner via said panel aperture comprising an imperforate trough open at the top thereof, closed at one end and open at an axially opposite end and being secured to said panel beneath said aperture and extending therealong, baffle means secured to the open end of said trough and defining with said trough, panel and wall a chamber communicating with the open end of said trough, combustion air tube means secured to said base at the bottom of said chamber and having an air tube communicating with said chamber and adapted to extend downwardly therefrom through said floor opening to a source of fresh air exterior to said structure, and a fresh air tube dependent from said base adapted to extend downwardly through said floor opening to a source of fresh air exterior to said structure, said fresh air tube communicating at its upper end with the region defined beneath said panel, interiorly of said wall and exteriorly of said collar means and said combustion air duct, said wall having port means for discharging fresh air from said region into the space adjacent the upright walls of the furnace.

3,283,754
APPARATUS FOR ADMINISTERING CONTROLLED VOLUMES OF GAS
Monroe Harry Goodner, deceased, late of Little Silver, N.J., by Helen L. Goodner, executrix, Little Silver, N.J., assignor to Stephenson Corporation, Red Bank, N.J., a corporation of New Jersey
Filed July 12, 1963, Ser. No. 294,767
8 Claims. (Cl. 128—29)



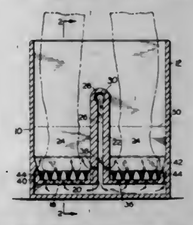
1. Apparatus for intermittently administering controlled volumes of gas which comprises, a bellows, a cylinder, one or more sources of gas under pressure, first conduit means leading from one or more sources of gas to the bellows, second conduit means leading from the bellows to supply gas to the patient, third conduit means leading from a source of gas under pressure to said cylinder, means movable in said cylinder in response to pressure of gas in said cylinder, means for communicating movement of said means within the cylinder to the bellows to intermittently collapse the bellows and deliver to the second conduit means equal volumes of gas within equal periods of time, and means responsive to back pressure in the cylinder to pass additional gas from said source to the cylinder in proportion to the amount of said back pressure.

3,283,755
REDUCING CHIN SUPPORT
Vondel L. Harden, Mount Vernon Terrace, Apt. 69, Waynesboro, Pa.
Filed Apr. 8, 1964, Ser. No. 358,202
3 Claims. (Cl. 128—63)



1. A device for supporting and reducing the flesh beneath the chin, comprising two vertical hinged standards, horizontal yoke members extending forwardly laterally from the lower ends of the standards, means to tie the free ends of the yoke members together, horizontal arms extending forwardly from the upper ends of the standards, a vertical brace between each yoke member and the corresponding arm, and an adjustable resilient strap removably attached to the free ends of the arms.

3,283,756
FOOT TREATING DEVICE
Woodrow W. Turley, 1831 Kincaid, Eugene, Oreg.
Filed Nov. 1, 1963, Ser. No. 320,800
5 Claims. (Cl. 128—66)



4. A foot treating device comprising a container having defining walls and adapted to hold a liquid and to receive the feet, a longitudinal partition in said container forming a separate compartment for each foot, means defining air inlet passages in at least one of said container walls adjacent the lower end of said container for receiving pressurized air adapted to agitate the liquid around the feet, means defining a passageway in said partition communicating with said air inlet passages, and means communicating with said passageway for connecting a source of air.

3,283,757
SURGICAL APPLIANCE FOR USE IN OSTOMY CASES
Elhart F. Nelson, R–5 Linden Lane, Green Bay, Wis.
Filed June 3, 1965, Ser. No. 480,215
5 Claims. (Cl. 128—283)

1. In an ostomy device, a smooth disc member adapted to be placed against a patient's body, said disc member having a central opening adapted to register with an ostomy opening, a slightly outwardly flared annular flange upstanding from said disc member, inwardly from the periphery thereof and constituting a snap ring flange, a substantially rigid annular snap ring adapted to snap over said flange, an ostomy bag having a mouth adapted to

pass through and around said snap ring to be held in place thereby, said disc member being slightly concavo convex with the concave portion enclosed by said flange member, the convex portion fitting against the patient's



body and a planar portion extending radially from the annular flange, said snap ring being V-shaped with one leg of the V lying substantially parallel to said planar portion.

3,283,758
BABY PACIFIER AND SOUNDING TOY
Joan E. Killebrew, 1908 Bayou Homes Drive, Galveston, Tex.
Filed June 5, 1963, Ser. No. 286,139
7 Claims. (Cl. 128—359)



1. A toy comprising,
a generally elongate tubular piece of elasticized material;
a sponge disposed within said tubular material;
noise-makers connected to the ends of said tubular material;
and, means for securing said tubular material around the child's hand.

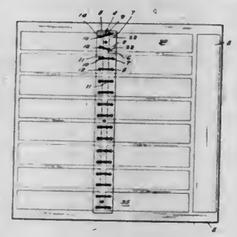
3,283,759
STRETCH PANTY GIRDLE
Samuel L. Welsch, East Orange, and Irving Belkin, Irvington, N.J., assignors to Lewella Foundations, New York, N.Y.
Filed June 29, 1964, Ser. No. 378,777
3 Claims. (Cl. 128—528)

1. A stretch panty girdle garment fabricated of stretch material and including an upper main body portion and leg encircling portions integral therewith and forming the front and side portions thereof, rear garment panels secured to said main body portion along seam lines starting at the upper back portion of the garment and extending in a zig-zag generally vertical line along the sides of the garment and having lower edges thereon extending diagonally and downwardly across the buttocks covering portion of the garment and into the crotch of said garment, and rear leg encircling panels each having an upper edge thereon and secured along said upper edges to said lower edges of said rear garment panels, said upper edges and said lower edges having dissimilar contours which are conformed to each other during the securement of said



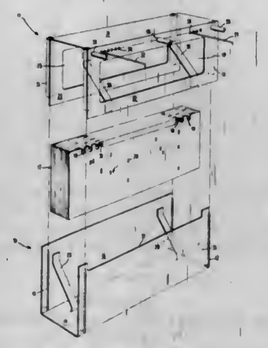
rear leg encircling panels to said rear garment panels, whereby the stretch material adjacent and along said line of securement is under tension and exerts supporting and body restricting forces on a wearer of the garment.

3,283,760
WORK SLIP HOLDER FOR TEACHER'S USE IN CLASSROOMS
Ella E. Yeager, 4425 N. 19th St., Phoenix, Ariz.
Continuation of application Ser. No. 14,651, Mar. 14, 1960. This application Mar. 3, 1964, Ser. No. 351,271
2 Claims. (Cl. 129—8)



1. A school work plan apparatus for use by teachers in laying out subject areas to be covered on a daily basis for each subject taught comprising, in combination, a classroom subject slip holder and a multiple series of separate classroom subject slips, said subject slip holder including a generally rectangular flat baseboard, a clip base positioned on said baseboard dividing same into left and right portions, said clip base extending in longitudinal alignment with the long axis of said baseboard, and a plurality of pairs of clip means carried by said clip base at longitudinally spaced intervals thereon along its longitudinal axis, each of said pair of clips being operated independently of the remaining pairs of clips, said series of classroom subject slips mounted in detachable relationship on each pair of clips in right angled relationship to the long axis of the baseboard, each slip of a series containing at least a portion of intelligence for chronological day to day instruction pertaining to the particular subject matter making up a series, said subject matter slips of each series being movable individually from one side of the board to the other independent of any other series upon the completion of the instruction for the subject matter appearing on the slip, and a rectangular area extending along one side of the baseboard in parallel relationship to the clip base, said rectangular area receiving a series of intelligence material spaced longitudinally therealong, each intelligence material correlated with a specific subject matter and identifying the particular subject matter being taught.

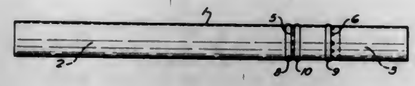
3,283,761
CARD STORAGE AND SELECTION DEVICE
Richmond B. Clover, Jr., and Ernest P. Kollar, Vestal, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Nov. 29, 1963, Ser. No. 326,746
3 Claims. (Cl. 129—16.1)



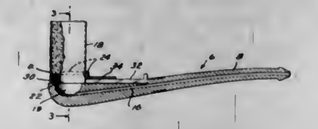
1. A card storage and selection device comprising:
a pair of frame units assembled together in vertical telescoping fashion and adapted to be vertically separated;
a deck of cards supported in an upright position within said units, said cards having coded edge perforations for classification;
a row of sorting needles horizontally disposed on one of said units and adapted to be moved horizontally through said assembled units and into engagement with the edge perforations of the cards in said card deck;
selector means for moving selected ones of said sorting needles into engagement with the edge perforations of selected cards in said card deck, said sorting needles being effective to lift and separate the selected card from said card deck upon vertical separation of said units;
compressing means in said one unit having the sorting needles and means on said other unit for holding said compressing means disengaged from said card deck when said units are assembled, said compressing means being effective upon vertical separation of the units to move the selected cards horizontally in one direction to compress same against the frame of that unit; and
compressing means in said other unit and means on said one unit for holding said last named compressing means disengaged from said card deck when said units are assembled, said last named compressing means being effective upon vertical separation of the units to move the unselected cards horizontally in a direction opposite to the direction of horizontal movement of said selected cards to compress the unselected cards against the frame of said other unit.

3,283,762
AERATABLE CIGARETTE
Michael S. Kissel, 5628 5th Ave., Pittsburgh, Pa.
Filed May 14, 1964, Ser. No. 367,433
3 Claims. (Cl. 131—10.3)

1. A cigarette comprising a paper tube having a rear end, a column of tobacco filling the major portion of the tube but spaced from said rear end, and a filter in the rear end of the tube, the filter and tobacco column being spaced apart to form an empty chamber between them, and the portion of the tube forming the wall of said chamber being provided near each end with a ring of perforations, the spacing of said rings being such that the lips of the smoker can selectively cover both rings simultaneously or engage the tube only between the rings.

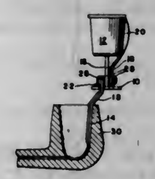


3,283,763
SMOKING ARTICLE
Bertram Cholet, 252 Harrison Ave., Hasbrouck Heights, N.J.
Filed Apr. 24, 1964, Ser. No. 362,224
3 Claims. (Cl. 131—182)



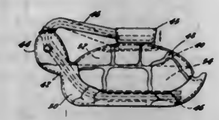
1. A smoking article comprising a hollow stem, a holder in communication with said stem, said holder having an annular rim, a central cavity below said rim and a flange extending upwardly from said rim and having a frontal opening, and said holder being adapted to receive a tobacco filled container through said frontal opening in a direction transversely of the longitudinal axis of said container.

3,283,764
APPLIANCE FOR PIPE SMOKERS
William Laufer, 692 N. Pearl St., Albany, N.Y.
Filed July 28, 1964, Ser. No. 385,624
3 Claims. (Cl. 131—243)



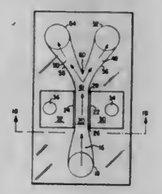
1. A tobacco pipe implement comprising a finger-engaging member, a tamping disk rigidly affixed to said member in spaced relation thereto, said disk being provided with at least one slot, said implement having hinge means located between said finger-engaging member and said disk and being further provided with at least one elongated pipe cleaning means, pivotally attached by said hinge means to said implement, said pipe cleaning means being adapted to enter said slot when pivoted into operative position, said finger-engaging member being uppermost, and said disk being lowermost, when said implement is held in usual operative position.

3,283,765
DEVICE FOR EXTINGUISHING CIGARETTES
Kai Ropche Farrelli, 5450 Russell Ave., Apt. 1, Hollywood, Calif.
Filed Oct. 7, 1964, Ser. No. 402,141
6 Claims. (Cl. 131—256)



1. In a device for extinguishing a cigarette or the like, the combination of:
a resiliently deformable closed container having a wall of elastomeric material to contain a lower body of liquid and an upward body of air;
an extinguishing cup open to the atmosphere and mounted on the exterior of the container at the uppermost portion thereof;
a flexible tube extending laterally from the cup, downwardly and then into the lower portion of the interior of the container whereby inserting the lighted end of a cigarette into the cup and exerting finger pressure to deform the container displaces liquid from the body of liquid upward through the flexible tube to the cup to extinguish the cigarette.

3,283,766
SEPARABLE FLUID CONTROL SYSTEM
Harold B. Horton, New Canaan, Conn., assignor to Sperry-Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 22, 1963, Ser. No. 274,666
4 Claims. (Cl. 137—81.5)



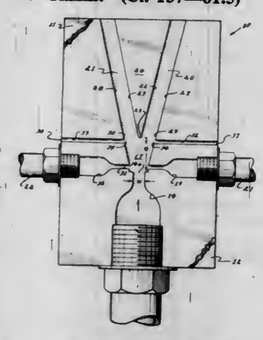
1. A fluid device which comprises:
(a) a fluid stream input channel having at least two opposed inner wall surfaces each capable of being selectively deformed concave and convex with respect to the interior of said input channel between fixedly secured upstream and downstream ends thereof, with said inner wall surface downstream ends defining an outlet from said input channel;
(b) a plurality of fluid stream output channels for collecting said fluid stream as it issues from said outlet having inlets fixedly secured downstream from said outlet and separated therefrom and from each other by a free space region through which the fluid stream flows; and
(c) selectively operable means concurrently deforming one of said inner wall surfaces concavely and deforming the other inner wall surface convexly so that said inner wall surfaces simultaneously cooperate to form a curved channel to enable directing of the fluid stream into one of said output channels.

3,283,767
JET FLUID AMPLIFIER
Christopher P. Wright, Endwell, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed May 31, 1963, Ser. No. 284,717
4 Claims. (Cl. 137—81.5)



1. In fluid control apparatus:
(a) a main nozzle connected to a source of fluid under pressure for producing a fluid power stream,
(b) a divergent wall disposed on at least one side of the power stream,
(c) an outlet port disposed adjacent said wall for receiving a portion of said stream,
(d) a control jet disposed on the other side of the stream for directing a transverse control stream to control said power stream, and
(e) means including a plurality of random surface protrusions on an inner wall of the nozzle adjacent the end thereof for inducing turbulence in the outer portions of the stream to insure turbulent reattachment and provide for control of the main stream by the control stream at lower supply pressures.

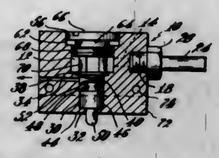
3,283,768
VENTED PURE FLUID ANALOG AMPLIFIER
Francis M. Manion, Rockville, Md., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland
Filed Nov. 20, 1963, Ser. No. 325,028
9 Claims. (Cl. 137—81.5)



6. A pure fluid amplifier of the combined stream interaction and boundary layer type comprising an interaction region, at least one output channel, a divider defining a wall of said output channel, a power nozzle for issuing a stream of fluid through said interaction region and toward said outlet passage such that at least a portion of said power stream when undeflected enters said outlet passage, a sidewall defining a lateral boundary of said interaction region and one wall of said output channel, said sidewall diverging outwardly from a point adjacent said power nozzle being located sufficiently close to said power stream to have boundary layer effects established between said power stream and said sidewall, means for issuing a stream of fluid for deflecting said power stream towards said sidewall, a vent passage extending through said sidewall to provide communication between said interaction region and a generally predetermined pressure,

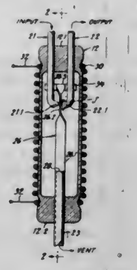
said vent passage entering said region at a location downstream of and immediately adjacent to the extreme upstream location of the points of attachment of the power stream to said sidewall.

3,283,769
PNEUMATIC VALVES
Nicholas L. De Meo, Medford, and John A. Denner, West Roxbury, Mass., assignors to United Electric Controls Company, Watertown, Mass., a corporation of Massachusetts
Filed Nov. 6, 1963, Ser. No. 321,831
1 Claim. (Cl. 137—82)



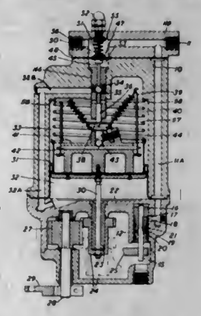
A valve comprising a valve body containing a hole through it having portions of different diameter, a first hole of predetermined diameter, a second hole of smaller diameter separated from the first hole by a first annular shoulder, a third hole of still smaller diameter separated from the second hole by a second shoulder, and a fourth hole of still smaller diameter separated from the third hole by a third shoulder, said second hole containing inlet and outlet ports, an escape passage in communication with the third hole, an orifice plate mounted on the second shoulder, a closure cap threaded into the first hole against a gasket mounted on the first shoulder, a stem on the cap extending into the second hole into engagement with the orifice plate and holding the latter against the second shoulder, a rod disposed in the third and fourth holes with one end adjacent the orifice plate and the other end projecting from the fourth hole, said rod having a bearing part slidably engaged within the third hole, and a spring mounted in the third hole, about the rod, with its ends engaged, respectively, with the orifice plate and the bearing part on the rod.

3,283,770
PNEUMATIC REED RELAY
Michael S. Shebanow, Medfield, Mass., and Edwin R. Phillips, Westport, Conn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 12, 1963, Ser. No. 308,509
6 Claims. (Cl. 137—83)



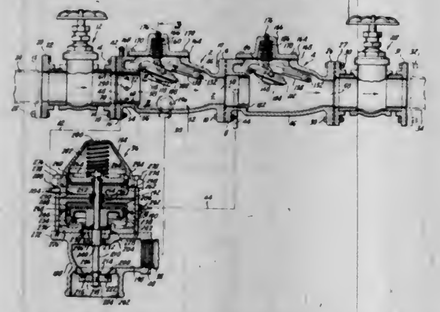
1. A fluid relay comprising:
(a) a tubular housing;
(b) at least two fluid conduits at least partly fabricated of ferromagnetic material mounted on one end of the housing and extending generally axially into the interior thereof;
(c) a vent at least partly fabricated of ferromagnetic material mounted on the other end of the housing and extending generally axially into the interior thereof;
(d) a reed at least partly fabricated of ferromagnetic material, one end of which is secured to the vent and the other end of which extends freely toward the conduits and is flexible for movement relative thereto, the reed cooperating with the conduits and the vent to form a generally axial low reluctance magnetic flux path;
(e) an electrical coil circumferentially wound about the housing whereby to generate an axial flux;
(f) one of the conduits being arranged to deliver a jet of fluid and the other arranged to receive the jet when the reed is in a selected position;
(g) and means on the conduits at least partly fabricated of ferromagnetic material defining a pole normally spaced from the reed to leave a high reluctance gap in the flux path, whereby the reed is moved toward the pole to alter the fluid jet reception conditions in response to axial flux.

3,283,771
FLUID METERING DEVICES
Harold E. Jackson, Plympton St. Mary, Devon England, assignor to Petrol Injection Limited, Devon, England, a British company
Filed Dec. 16, 1963, Ser. No. 330,965
Claims priority, application Great Britain, Dec. 21, 1962, 48,480/62
7 Claims. (Cl. 137—85)



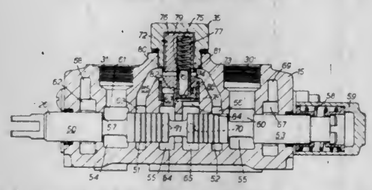
1. A fluid metering device having a housing, first and second chambers in said housing, inlet and outlet ports defined in said housing, a metering valve member mounted for rotataion to control fluid flow from the inlet to the outlet port, a cam member mounted for both rotary and linear movements, said cam member having a three dimensional cam surface, a cam follower secured to said valve member and engaging said cam surface to rotate said valve member in response to rotary and/or linear movements of said cam member, a first resilient diaphragm extending across said first chamber, a first fluid inlet in said housing communicating with said first chamber on one side of said first diaphragm for exposure thereof to said first fluid pressure to flex said first diaphragm in response to changes in the first fluid pressure, a second resilient diaphragm dividing said second chamber into first and second regions, a second pressurised fluid inlet in said housing communicating with said first region and a vent aperture in said second region, means including an orifice interconnecting said first and second regions, a control valve member mounted for movement relative to said orifice to adjust the effective area thereof thereby to control the restriction provided by said orifice to fluid flow from said second pressurised fluid inlet to said vent aperture, means coupling said first diaphragm to said control valve member such that flexural movement of said first diaphragm causes movement of said control valve member to change the rate of fluid flow through said orifice, means directly coupling said second diaphragm to said cam member to move the latter linearly in response to flexure of said second diaphragm, a movement amplifying resilient linkage located in said second region of the second chamber operatively connecting said second diaphragm and said control valve, the arrangement being such that said control valve member is so positioned that in equilibrium the rate of said fluid flow through said orifice causes balanced forces to be exerted on either side of said second diaphragm, changes in position of said control valve member due to flexure of said first diaphragm altering the said rate of fluid flow through said orifice and the fluid pressure in said first region of said second chamber together with movement of said resilient linkage to cause magnified flexure of said second diaphragm and corresponding linear movement of said cam member and readjustment of the position of said control valve member to restore balanced force conditions across said second diaphragm, and means coupling said cam member to operating means for effecting rotary movement of said cam member.

3,283,772
BACKFLOW PREVENTION DEVICE WITH IMPROVED PRESSURE SENSING MEANS
Harold W. Ensign, Fullerton, Calif., assignor to Donald G. Griswold, Newport Beach, Calif.
Filed Feb. 4, 1964, Ser. No. 342,439
20 Claims. (Cl. 137—107)



1. A backflow prevention unit adapted to be connected between a water supply main and a service pipe, comprising: a first check valve and a second check valve, said check valves being arranged in series, said first check valve having an inlet to be subjected to the pressure in said supply main and also having a sensing port in communication with said inlet, and said second check valve having an outlet to be subjected to the pressure in said service pipe; a flow control element in said first check valve arranged to prevent reverse flow through the inlet of said first check valve; a relief valve having pressure differential responsive means controlling flow therethrough, said relief valve having an inlet communicating with a zone between the outlet of the first check valve and the inlet of the second check valve for effecting draining of said zone when a predetermined pressure differential is effective upon said pressure responsive means of said relief valve; means connecting said pressure responsive means of said relief valve with said sensing port and with said zone, respectively, for applying the pressure at said sensing port and said zone to said means; and means in the inlet of said first check valve for diverting and entrapping a portion of the incoming water to assure rapid transmission of the pressure of said incoming water to said pressure responsive means.

3,283,773
CONTROL VALVES FOR FLUID-PRESSURE-OPERATED MECHANISMS
Frank B. Lowman, Cheltenham, England, assignor to Dowty Hydraulic Units Limited, Cheltenham, England, a British company
Filed July 13, 1964, Ser. No. 381,978
Claims priority, application Great Britain, July 19, 1963, 28,747/63
3 Claims. (Cl. 137—117)

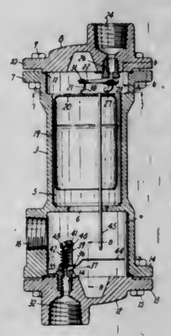


1. A control valve which is designed to control fluid-pressure-operated mechanisms, which control valve comprises in combination:
(a) a valve body,
(b) a plurality of maneuvering elements, each housed within the valve body, and each capable of displacement therein for the direction of pressure fluid, supplied to the valve, into one or other of two respective passageways adapted to be connected to a respective fluid-pressure-operated service,
(c) an open-center passage which when the maneuvering elements are all in their neutral positions places a single pressure fluid inlet connection to the body in communication with a single reservoir connection from the body, movement of any one maneuvering element away from its neutral position closing the open-center passage, and,
(d) a plurality of flow-rate-sensitive valve elements, one such valve element being associated with each maneuvering element, being positioned with a single entry thereto in the flow path between the source of pressure fluid and the respective maneuvering element, and being effective upon the flow of fluid passing to either the one or the other of the said respective passageways in dependence upon the positioning of the respective maneuvering element, automatically to control the rate of fluid flow to the respective service within predetermined limits, but at no time having any influence upon the flow of fluid through the open-center passage, or vice versa,
(e) each of said flow-rate-sensitive valve elements comprising a hollow member housed so as to be displacable against resilient means and positioned so that the flow of fluid can pass through it, the member having an orifice formed in it and also being cooperable with spill ports formed in the member in which it is housed.

3,283,774
STEAM TRAP
Walter C. Johnson and Nils A. Judsen, Three Rivers, Mich., assignors to Armstrong Machine Works, Three Rivers, Mich.
Filed Feb. 10, 1964, Ser. No. 343,575
12 Claims. (Cl. 137—185)

1. An apparatus of the class described comprising a body member having an inlet chamber and a cylindrical float chamber disposed above said inlet chamber, said

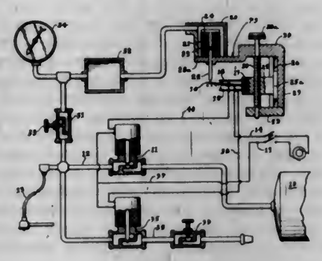
chambers being connected by an opening disposed centrally relative to the float chamber, said float chamber having a bottom portion surrounding said opening, a top member detachably mounted on said body member and provided with a float chamber discharge passage having an inwardly facing valve seat at its inner end, a bottom member detachably mounted on said body member and provided with a discharge passage for said inlet chamber having an inwardly facing valve seat at its inner end, a cylindrical float disposed in said float chamber and having an upwardly projecting centrally disposed arm on its upper end provided with spaced lugs, said float being open at its lower end and having a restricted air outlet in its top, a valve coacting with said valve seat of said float chamber discharge passage provided with an elongated tiltably mounted arm-like support having an opening there-



in through which said arm on said float is disposed and with which said lugs thereon coact, said lugs being spaced so that substantial movement of said float is permitted with said float chamber outlet valve in closed position but acting to open said valve when said float is in its retracted support engagement with said bottom portion of said float chamber, a spring seated discharge valve coacting with said valve seat of said discharge passage of said inlet chamber and having a laterally projecting arm, and an actuating rod for said inlet chamber discharge valve mounted on said float in alignment with but in nonactuating engageemnt with said inlet chamber discharge valve when said float is in actuated position but acting to open said inlet chamber discharge valve and hold it open when said float is in its retracted supportedly engaged position with said float chamber bottom portion.

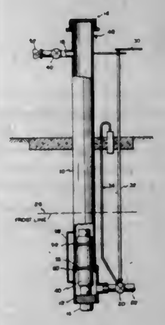
3,283,775
INFLATING APPARATUS
Donald L. Spender, Cheshire, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Mar. 15, 1963, Ser. No. 265,557
3 Claims. (Cl. 137—224.5)

1. In an inflating apparatus the combination of
(a) an air delivery conduit adapted for connection to a tire or the like;
(b) a solenoid inlet valve connecting said conduit to a source of compressed air, and which is open when energized and closed when deenergized;
(c) a pressure switch connected in circuit with the solenoid valve and constructed and arranged such that current flows directly from the switch to said solenoid valve;
(d) a connecting line between said pressure switch and said delivery conduit so that the pressure switch will respond to pressure changes in said conduit;
(e) means for adjusting said switch whereby a predetermined maximum delivery pressure is maintained in said connecting line; and
(f) means including said switch to automatically cycle the operation of said valve, said last named means controlling the cycling of said inlet valve by retarding the opening action of said pressure switch upon a surge of air into said delivery conduit at a pressure substantially higher than said predetermined delivery pressure, and also for retarding the reclosing



action of said switch on a reduction of pressure in said delivery line, which means consists solely of a flow restrictor in said connecting line (d) and reservoir means of predetermined capacity between said flow restrictor and said pressure switch;
whereby repeated charges of air may be supplied to said delivery conduit by the controlled cycling of said solenoid inlet valve until said predetermined maximum delivery pressure remains substantially constant in said delivery conduit.

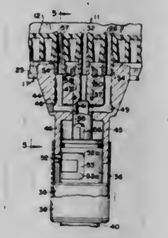
3,283,776
FROST PROOF SANITARY WATER HYDRANT
Samuel V. Flanagan, 745 Norway Ave., and Ira D. Brown, 1040 20th St., both of Huntington, W. Va.
Filed Feb. 17, 1964, Ser. No. 345,183
5 Claims. (Cl. 137—301)



1. A frost proof hydrant comprising a hydrant main body having an inlet near the bottom thereof and an outlet near the top thereof, said main body being generally cylindrically disposed and having a weighted piston slidably and sealingly mounted therein and being displaceable from near the bottom by the pressure of water applied to the inlet for directing the weighted piston along the

main body until water may freely discharge from the outlet, a three-way valve having one passage thereof coupled to said inlet, a drain line extending from another passage of said three-way valve to a point above the earth's surface, a third passage of said three-way valve being adapted to connect a water supply thereto, said three-way valve having means extending upwardly to the earth's surface to control the passage of water from said supply to said inlet in one position and alternately from said inlet to said drain line in a second position, said weighted piston being capable of driving the water in the main body through said inlet and out said drain line when the pressure of water applied to the inlet is cut off by the valve being moved to said second position.

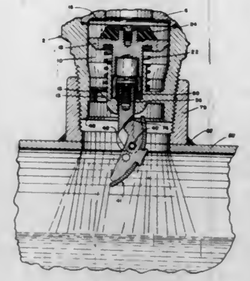
3,283,777
FLUID CONDUCTOR AND TAKE-OFF APPARATUS
John L. Meyer, Robinson Township, Ottawa County, and William Workman, Jr., Norton Township, Muskegon County, Mich., assignors to Gardner-Denver Company, a corporation of Delaware
Filed Apr. 16, 1964, Ser. No. 360,331
16 Claims. (Cl. 137—322)



1. A plug-in take-off device for a fluid conductor comprising:
a first body having a probe for insertion into a conductor;
a second body having at least one additional probe for insertion into a conductor; said probe having fluid passage means therein;
means mounting said bodies for limited movement relative to each other; fluid actuated means defined by said bodies for effecting said relative movement in one direction;
and means communicating said fluid actuated means with said probe of said first body whereby, when the probe is inserted into a fluid conductor, fluid from the conductor is directed to said fluid actuated means to move said second body to insert its associated probe into the conductor; and outlet means from said probes.

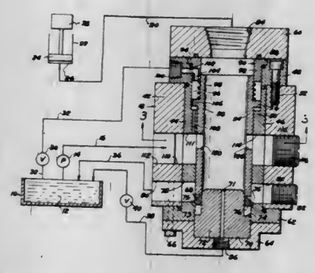
3,283,778
DOUBLE CHECK VALVE
Eino W. Linna, Lombard, Ill., assignor to The Bastian-Blessing Company, Chicago, Ill., a corporation of Illinois
Filed May 22, 1964, Ser. No. 369,574
11 Claims. (Cl. 137—512.3)

1. A check valve comprising a body having a flow conduit therethrough,
a valve seat adjacent one end of the conduit, valve means disposed concentrically to the valve seat in closed position,
spider means in said conduit spaced from the valve seat,
a valve stem reciprocably mounted in said spider means,
pivot means interconnecting said valve means and said valve stem eccentrically to the axis of the valve seat, said valve means moving away from said valve seat to



a position edgewise to the flow of fluid through the valve seat.

3,283,779
CARTRIDGE VALVES
Nils O. Rosaen, Bloomfield Hills, Mich. (1776 E. Nine Mile Road, Hazel Park, Mich.)
Filed Aug. 19, 1964, Ser. No. 390,510
14 Claims. (Cl. 137—596.14)

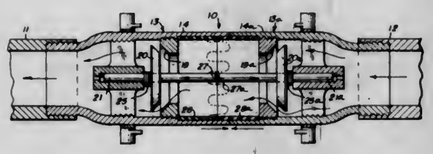


1. In a valve,
(a) a housing provided with an inlet, an outlet, and a fluid port,
(b) said housing being provided with an axially extending bore,
(c) a piston axially slidably carried in said bore,
(d) a spring carried in said housing urging said piston in one axial direction,
(e) a control outlet provided in said housing and passages connecting said control outlet with said inlet,
(f) said control outlet being adapted to for connection with a pilot valve operable to selectively vary the flow through said control outlet,
(g) at least one of said passages being restricted whereby to create a pressure differential which varies depending upon the amount of flow allowed through said control outlet,
(h) means to transmit such pressure differential to said piston and to urge axial movement of said piston in opposition to said spring upon an increase in said pressure differential,
(i) said piston being provided with a first valve means opening communication between said inlet and said port at one operating position thereof and closing communication between said inlet and said port and opening communication between said port and said outlet at another operating position thereof, and

(j) a second valve means carried in said housing and being selectively operable independently of said first valve means to close communication between said port and said outlet at either operating position of said piston,

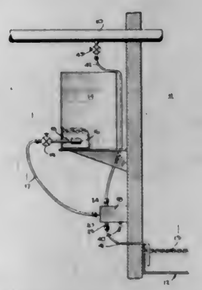
(k) said second valve means comprising a movable piston disposed within said bore at one end of said first mentioned piston, means for providing fluid pressure to one side of said second mentioned piston to urge same toward a position closing fluid flow from said port through said outlet and means for selectively exhausting said fluid pressure to move said last mentioned piston to a position closing fluid flow from said port through said outlet.

3,283,780
PIPE COUPLING
Robert W. Sutton, Falls Church, Va., assignor to The Hydrand Corporation, Dover, Del., a corporation of Delaware
Filed Aug. 20, 1963, Ser. No. 303,338
2 Claims. (Cl. 137—614.04)



1. A conduit coupling consisting of two identical units, each comprising a cylindrical housing terminating at its forward end in alternate fingers and recesses forming a continuous sinuous line, which lies in a plane perpendicular to the longitudinal center line of the housing, the sinuous lines of the forward ends of respective housings being complementary so that the fingers of one housing interfit with the recesses of the other, the inner and outer peripheries of respective housings, in the vicinity of said fingers and recesses, being uninterrupted and uniformly cylindrical, providing, when the units are in interfitting relation, a continuous unbroken cylinder, a cylindrical gasket of resilient, compressible material freely disposed within the forward end of each housing, valve seats spaced inwardly from the forward end of each housing, defining the limit of rearward movement of respective gaskets therein, the forward edges of respective gaskets normally projecting within the areas bounded by said fingers and recesses and terminating in slightly rearwardly spaced relation to the forward extremities of the respective fingers, said gaskets lying in surface contact with the inner faces of said fingers, internally seating valves coacting with said valve seats, means normally closing respective valves, said valves being supported on concentric valve stems reciprocably mounted in respective housings, forward projections on respective valve stems, terminating adjacent the forward extremities of respective housings, and each aligned for abutting engagement with the valve stem projection of the opposite valve, whereby, when said housings are joined, the engagement of the projection of one valve stem with the projection of the other, acts to open the latter valve, clamping means independent of said fingers and recesses for forcing the fingers and recesses of respective housings longitudinally into engagement and causing the simultaneous edgewise compression of said gaskets, and each of said gaskets being provided intermediate its ends with an annular, normally inward bulge, whereby, when said units are joined and the opposed edges of respective gaskets are in abutment, internal pressure within the joined housings radially deforms the bulges of respective gaskets to effect sealing engagement between their abutting edges and peripheral sealing engagement within the area of the mating edges of said housings.

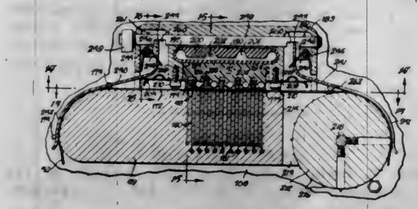
3,283,781
FEED VALVE DEVICE HAVING VALVE FLUSHING MEANS
Leonard Philip Boyer, Cartaret, N.J., assignor to Alken-Murray Corporation, New York, N.Y., a corporation of New York
Filed Feb. 16, 1962, Ser. No. 173,649
4 Claims. (Cl. 137—624.17)



1. A feed valve device adapted for delivering at least a first fluid to a receiving area comprising structure forming a plurality of inlet passages and an outlet passage, at least one of said inlet passages being adapted to receive a flow of the first fluid, at least one other of said inlet passages being adapted to receive a flow of a second fluid for flushing said valve, said outlet passages being adapted to deliver the flow from said plurality of inlet passages to the receiving area, and means for selectively connecting a different one of said plurality of inlet passages to said outlet passage to direct the flow of one of the first fluid and the second fluid from at least one of said inlet passages to said outlet passage, means for actuating said connecting means, a plurality of cams positioned adjacent to one another, means for driving each of said plurality of cams at a different predetermined speed so that said plurality of cams move relative to one another, a follower having a common surface portion disposed adjacent the operating portion of said plurality of cams and adapted for movement in response to the movement of said plurality of cams, and means for activating said actuating means in response to the movement of said follower with respect to said plurality of cams, whereby said plurality of cams control the selective connecting of said plurality of inlet passages to said outlet passage in predetermined time cycles.

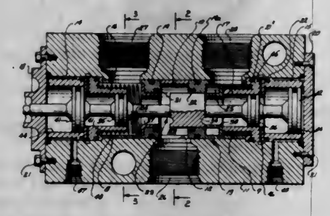
3,283,782
POSITIONER
Robert Z. Hague, Oradell, Howard H. Laucks, Oakland, and Conrad C. Treff, New Milford, N.J., assignors to Moog Inc., a corporation of New York
Original application Jan. 7, 1963, Ser. No. 249,842, now Patent No. 3,198,084, dated Aug. 3, 1965. Divided and this application Sept. 23, 1964, Ser. No. 405,639
10 Claims. (Cl. 137—624.18)

1. In positioning apparatus, the combination comprising means providing transducer chambers, and tape reader means including first and second bodies having opposing flat surfaces between which a perforated command tape may be arranged and said bodies being relatively movable solely in a direction perpendicular to said surfaces, said first body having reader chambers operatively associated with said transducer chambers and terminating in the said surface of said first body as a predetermined array of first ports, said second body having vent passages terminating in the said surface of said second body as a similar array



of second ports severally opposing and aligned with said first ports, and fluid operated means for moving said bodies toward each other to clamp any tape therebetween.

3,283,783
MULTI-WAY VALVE
Preben Kent, Altadena, Calif., assignor to Clary Corporation, San Gabriel, Calif., a corporation of California
Filed Oct. 25, 1963, Ser. No. 318,881
1 Claim. (Cl. 137—625.42)



A valve comprising

a valve body having a central chamber and two end chambers,

said chambers being in alignment with each other,

fluid ports in said body opening into respective ones of said chambers,

a first bore communicating said central chamber and a first one of said end chambers.

a second bore aligned with said first bore and communicating said central chamber and a second one of said end chambers,

annular grooves in said bores,

resilient annular sealing members in said grooves,

sleeves slideable in respective ones of said bores and into and out of sliding engagement with said sealing members,

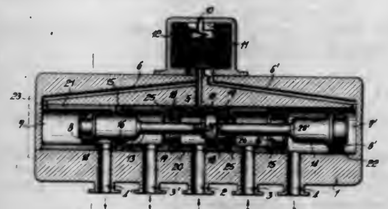
a valve member having a cylindrical section of substantially the same diameter as the outer diameters of said sleeves,

said cylindrical section being located intermediate said sleeves,

compression springs in said end chambers, said springs being compressed between said sleeves and portions of respective ones of said end chambers for urging said sleeves into sliding engagement with respective ones of said sealing members,

and means for actuating said valve member in one direction to cause said cylindrical section to move into sliding engagement with a said sealing member in one of said grooves whereby to seal a respective one of said end chambers from communication with said central chamber and to cause said cylindrical section to recede from the other of said sealing members whereby to establish flow connections between the other of said end chambers and said central chamber.

3,283,784
CONTROL VALVE FOR HYDRAULIC MACHINERY
Erich Ruchser, Rommelshausen, Germany, assignor to Erich Herion, Stuttgart-Fravenkopf, Germany
Filed Oct. 16, 1964, Ser. No. 404,387
Claims priority, application Germany, Feb. 18, 1964, H 51,728
8 Claims. (Cl. 137—625.64)



1. A control valve comprising, in combination:

(a) a valve casing defining a cavity therein, said casing being formed with an inlet communicating with a first portion of said cavity, a first and a second outlet respectively communicating with a second and a third portion of said cavity, and with a first and a second return opening respectively communicating with a fourth and a fifth portion of said cavity;

(b) supporting means movable in said cavity between a first and a second position;

(c) first and second annular sealing lip members respectively interposed in said cavity between said second and fourth and between said third and fifth portions thereof, said sealing lip members sealingly engaging said valve casing;

(d) first and second plunger means connected to said supporting means for movement therewith in said casing, said first plunger means being sealingly received in said first sealing lip member and said second plunger means being spaced from said second sealing lip member, when said supporting means is in said first position thereof, said second punger means being sealingly received in said second sealing lip member and said first plunger means being spaced from said first sealing lip member when said supporting means is in said second position thereof;

(e) disk valve means connected to said supporting means for movement therewith for connecting said first portion of said cavity to said second portion thereof, and for simultaneously sealing said third portion from said first portion when said supporting means is in said first position thereof, and for connecting said first and third portions of said cavity while sealing said second portion from said first portion when said supporting means is in said second position thereof;

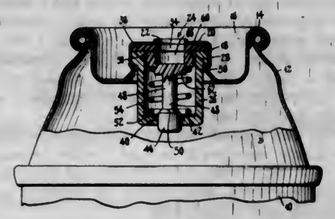
(f) two annular gasket members of resilient material sealingly engaging said casing, said gasket members being interposed between said first cavity portion and said second and third cavity portions respectively for respective sealing engagement with said disk valve means in said second and first positions of said supporting means, each of said gasket members having two annular faces, one of said faces being opposite said disk valve means and engageable therewith by movement of said supporting means, and the other face facing away from said disk valve means;

(g) two rigid tubular spacer members in said casing, each spacer member having a flange portion inwardly projecting from said casing, said portion abuttingly engaging said other face of a respective gasket member and defining an opening.

(1) said disk valve means including two contact faces respectively engageable with said opposite faces of said gasket members and aligned with the openings of said flange portions respectively in the direction of movement of said supporting means, the cross section of each contact face transversely of said direction being greater than the cross section of the aligned flange opening; and

(h) moving means for moving said supporting means between said positions thereof.

3,283,785
VALVE CONSTRUCTION OF PRESSURIZED DISPENSERS
Steven Beres, Bridgeport, William R. O'Donnell, Trumbull, and Wolf Stelman, Fairfield, Conn., assignors to Valve Corporation of America, Bridgeport, Conn., a corporation of Delaware
Filed June 28, 1963, Ser. No. 291,516
4 Claims. (Cl. 137—628)



1. In a pressurized container for dispensing viscous and lumpy substances, a valve construction comprising, in combination:

(a) a valve housing having a passage through which the dispensed substance passes,

(b) a pair of valve means controlling the flow of substance through said passage at separated inner and outer points, said valve means including movable members, and

(c) common actuator means connecting the movable members of the valve means for simultaneous movement,

(d) said valve means being open at the same time for one position of the actuator means and being closed at the same time for another position of the actuator means,

(e) said housing being of resilient plastic material,

(f) the inner valve means comprising:

(1) a bottom opening in the housing, said opening having a sharp stepped edge,

(2) a cylindrical resilient plastic valve head on the actuator means, receivable and closely sealingly fitting in the said stepped opening of the housing,

(g) the outer valve means comprising:

(1) a resilient valve washer clamped against the outer end of the valve housing,

(2) an annulus carried by the said common actuator means,

(h) a transverse end wall on the actuator means, spanning and closing the bore of the valve annulus,

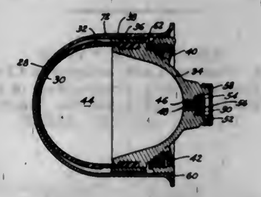
(i) a rigid valve washer in the housing at the said bottom opening thereof and engaged with the housing bottom, said washer having a sharp inner edge,

(j) said cylindrical valve head being receivable in and closely sealingly fitting the opening of the rigid washer,

(k) said rigid washer and the stepped edge of the bottom opening forming between them an annular sealing space for trapping and holding substance from the container,

(l) said plastic valve head, when sealingly engaging the rigid washer and the stepped edge of the bottom housing opening, effecting a closure of said annular sealing space and preventing egress of trapped substance therefrom.

3,283,786
ACCUMULATOR
Francis E. Irwin, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed June 8, 1964, Ser. No. 373,344
8 Claims. (Cl. 138—30)



1. A pressure accumulator comprising:

an outer shell open at one end;

a bladder of resilient deformable material, said bladder having a mouth;

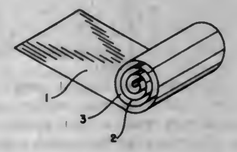
an end structure affixed in the mouth of said bladder by a clamp that surrounds said bladder and holds said bladder to said end structure, said end structure having first, second and third openings therein with said first and third openings leading to peripheral outlets in said end structure and said second opening leading to the interior of said bladder;

a valve means adapted to allow flow in one direction only through said first opening in said end structure;

a plug positioned in said second opening of said end structure; and

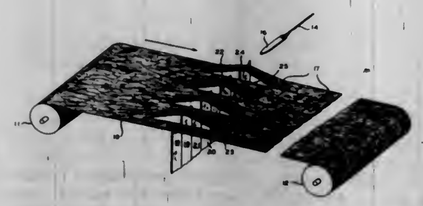
means to join said end structure to said outer shell such that a space is provided between said outer shell and said bladder for the receipt of fluid through said first opening which space is in flow communication with said third opening in said end structure.

3,283,787
FLUID TRANSMISSION
William J. Davis, 1059 Terrace Ave., Wyomissing, Pa.
Filed Aug. 24, 1964, Ser. No. 391,710
10 Claims. (Cl. 138—148)



1. A capillary device for the transmission of liquids comprised of a sheet of material convolved about itself with capillary spaces provided between adjacent convolutions.

3,283,788
PRODUCTION OF WOVEN THERMOPLASTIC FABRICS
Anthony Bottomley, Maplewood, N.J., and David C. Bottomley, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Apr. 7, 1964, Ser. No. 357,998
2 Claims. (Cl. 139—28)



1. Process for weaving a fabric from a web of orientable thermoplastic material comprising:

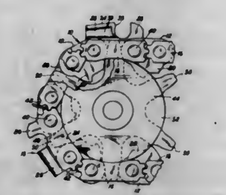
highly orienting said web in one direction;

incompletely fibrillating said oriented web whereby a coherent web of inter-connected fibers is formed;

forming a shed in said incompletely fibrillated web by raising out of the plane of the incompletely fibrillated web along a line normal to the direction of orientation alternating sections of said web whereby said incompletely fibrillated web is split along the lines of orientation;

passing a weft strand through said shed; and closing said shed.

3,283,789
SAW CHAIN
Kay Silvon, Portland, Oreg., assignor to Omark Industries, Inc., Portland, Oreg., a corporation of Oregon
Filed Sept. 23, 1963, Ser. No. 310,773
9 Claims. (Cl. 143—32)



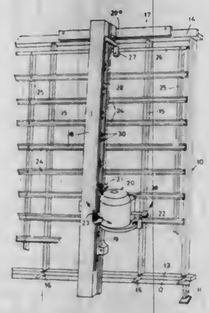
1. A saw chain comprising:

center drive links and side links including cutter links pivotally connected to the forward and rearward portions of the center links about longitudinally spaced pivot axes,

each of the side links having a forward and a rearward end with both ends provided with integral gear teeth, the gear teeth at each end of a side link forming a gear segment concentric with the adjacent pivot axis of the same side link,

the gear segment on the forward end of each side link meshing with the gear segment on the rearward end of the forwardly adjacent side link and the meshing gear segments having substantially equal pitch radii so as to provide equal pivotal movement of longitudinally adjacent side links in opposite directions with respect to the center link connected between said longitudinal adjacent side links.

3,283,790
SAWING JIGS FOR CUTTING BUILDING PANELS
Ludwig Striebig, % Schreinerei-Maschinen, Grossmatte 26, Littau, Lucerne, Switzerland
Filed Nov. 16, 1964, Ser. No. 411,210
Claims priority, application Switzerland, Apr. 23, 1964, 5,303/64
4 Claims. (Cl. 143—47)

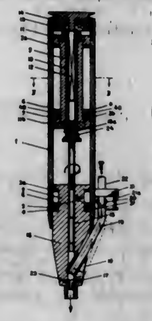


1. A sawing jig for cutting building panels of major size to shape and for cutting rectangular openings into the same, comprising an upright frame consisting of a horizontal frame member at the bottom provided with forwardly projecting carriers for supporting the panel that is to be cut, a roller carriage guided along a horizontal frame member at the top, said carriage carrying a guide beam extending vertically downwards and permitting the same to be horizontally traversed, a slide on said guide beam provided with locating means and carrying a deflectably mounted motor-driven circular saw in such a manner that the saw can be tilted from a position for making a vertical cut into a position for making a horizontal cut, and support means on the front face of the frame for supporting a panel resting on the carriers, characterised in that said support means is in the form of an elevationally movable trellis comprising horizontal battens, said trellis being positively raisable in the plane of the trellis by motion transmitting means operable by the inward deflection of the motor-driven circular saw for making a horizontal cut, whenever the blade of the circular saw happens to be in elevational alignment with a batten of the trellis and could damage the same when making the intended horizontal cut.

3,283,791
AUTOMATIC SCREWING DEVICE
Karl Weber, 51 Ulrichstrasse, 8021 Icking, Germany
Filed Dec. 23, 1964, Ser. No. 420,625
10 Claims. (Cl. 144—32)

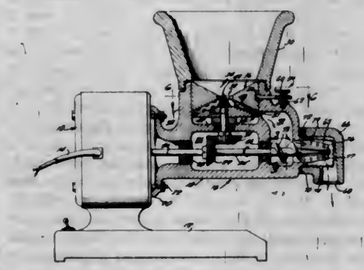
5. In an automatic screw driving device: cylinder means, first fluid operable piston means reciprocable in said cylinder means, second fluid operable piston means arranged in substantially axial alignment with said first piston means and reciprocable in said cylinder means, said second piston means having an axial bore, sleeve means coaxially and rotatably arranged in said first piston means and axially movable therewith in either direction of movement of said first piston means, driving shaft means drivingly connected to said sleeve means for rotating the same, said sleeve means being axially displaceable relative to said driving shaft means, screw driver means connected to said sleeve means for rotation therewith, said screw driver means slidably extending into said axial bore of said second piston means and being movable from a rest position in a working stroke performing

direction and to return to said rest position, screw receiving and holding means arranged within said second piston means below and in spaced relationship to the free end of said screw driver means, and means associated



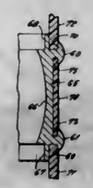
with said cylinder means and operable to feed one screw at a time into said bore above said screw receiving and holding means for engagement by said screw driver means during the movement of the latter in its working stroke performing direction.

3,283,792
PORTABLE MILL
Matthew J. Thomas, P.O. Box 26121, Los Angeles, Calif.
Filed Dec. 16, 1963, Ser. No. 336,094
2 Claims. (Cl. 146—192)



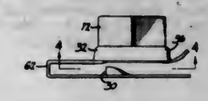
1. A mill for nut meats and the like comprising a housing, a milling chamber within said housing, a stationary milling disc and a rotatable milling disc positioned within said milling chamber in facing relation to each other to define a milling space therebetween, said stationary disc having an opening therein through which the material to be ground may be fed into the milling space between said discs, a feeding and preliminary grinding means mounted for rotation in said opening of said stationary disc, said feeding and preliminary grinding means being mounted on a common shaft with said rotatable milling disc, means for rotating said common shaft, a whipping chamber, a rotatable whipping member disposed in said whipping chamber, means for delivering ground material from said milling space to said whipping chamber, means for rotating said whipping member, and means for discharging material from said whipping chamber, each of said milling discs including a plurality of concentric rings of grinding pins which are so positioned on the respective discs as to be in intermeshed relation to the rings of the other disc, and means for adjusting the spacing between the facing surfaces of the two milling discs, said whipper member including a plurality of circumferentially spaced radially extending blades having perforations therein.

3,283,793
GOLF BAG CUFF
Michael Kish, Jr., Hightstown, N.J., assignor to Atlantic Products Corporation, Trenton, N.J., a corporation of New Jersey
Filed Mar. 31, 1965, Ser. No. 444,168
8 Claims. (Cl. 150—1.5)



1. In a golf bag cuff; said bag cuff comprising a tubular body portion and axially shaped first and second outer periphery covering sheath portions; a reinforcing member; said reinforcing member extending around the periphery of said tubular body portion and being interposed between said first and second sheath portions; said reinforcing member having first and second parallel spaced extending bead portions extending radially beyond said first and second sheath portion; said extending bead portions being conected to a securing means receiving portion disposed beneath at least one of said first and second sheath portions.

3,283,794
CLIP NUT
Jerry H. Steward, Bloomfield Hills, and Frank W. Kring, Detroit, Mich., assignors to Multifastener Corporation, Detroit, Mich., a corporation of Michigan
Filed Oct. 29, 1964, Ser. No. 407,318
10 Claims. (Cl. 151—41.75)



5. In a clip nut assembly having a sheet metal clip with parallel opposite side edges; means defining a rectangular embossment on said clip having opposed first sides extending in adjacent parallel relationship to the opposed side edges of said clip, said embossment having a flat crown offset from the general plane of said clip and having a hexagonal opening extending centrally through said crown with two opposite side edges of said opening extending in adjacent inwardly spaced parallel relationship to said first sides of said embossment, a nut having a hexagonal body and an integral hexagonal pilot portion projecting axially from one end of said body, the sides of said pilot portion extending substantially to and between the midpoints of the sides of the body and being adapted to be received within said opening, said nut body being seated on the outer side surface of said crown with said pilot portion projecting through said hexagonal opening beyond the inner side of said crown, the projecting portion of said pilot being staked to the inner side of said crown.

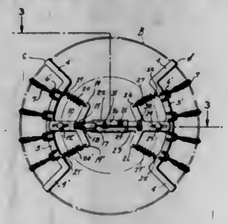
3,283,795
TREAD FOR RECAPPING TIRES
Wilhelm Scheikmann, Crengeldanzstrasse 85a, Witten (Ruhr), Germany
Filed Oct. 20, 1964, Ser. No. 405,045
21 Claims. (Cl. 152—187)

1. A tread section for recapping a tire of a given radius, said tread section having an inner continuously curved concave surface adapted to engage the outer surface of the tire to be recapped, said inner concave surface being curved in the direction of the circumference of the tire



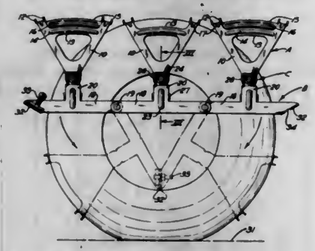
prior to its engagement with the latter along a radius of curvature greater than that of said tire.

3,283,796
ANTI-SKID DEVICE
John F. White, 23 Stratford Lane, Brentwood, Mo., and Robert A. White, 3127 Rauschenback, St. Louis, Mo.
Filed May 24, 1965, Ser. No. 458,320
11 Claims. (Cl. 152—218)



1. An anti-skid device for a wheel tire having side walls and a tread surface comprising first and second cooperable components, each component having a tire-segment receiving frame and a locking arm, each of said locking arms being mounted for slideable movement toward and away from the related tire-segment receiving frame, means for interengaging the locking arms of said components, and resilient means interengaging each locking arm and its associated tire-segment receiving frame for urging said locking arms toward the related tire-segment receiving frame whereby said frames are brought into snug relationship upon said tire upon interengagement of said locking arms.

3,283,797
TIRE TRACTION DEVICE
Marvin L. Morton, Jr., 1205 Mill St., Pittsburgh, Pa.
Filed Mar. 25, 1965, Ser. No. 442,753
10 Claims. (Cl. 152—228)



1. In a traction device for mounting on a pneumatic tire of a vehicle wheel while the tire remains in contact with the ground, the improvement which comprises:

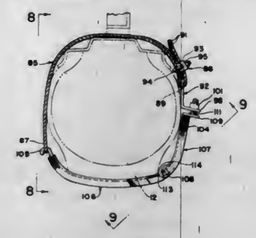
a mounting member consisting of only three locking links of equal length hinged together and provided with means for clamping the free ends of the two outer links together to form an equilateral triangle;

the mounting member being adapted to be placed on the outside only of the wheel,

a wrist member mounted in the middle of each locking link, and

a traction claw attached to each wrist member, the traction claws being adapted to be clamped over the periphery of the tire.

3,283,798
TRACTION DEVICE
Angelo A. Mandato, 7557 Walton Road, Bedford, Ohio
Filed Aug. 17, 1965, Ser. No. 480,401
4 Claims. (Cl. 152—237)

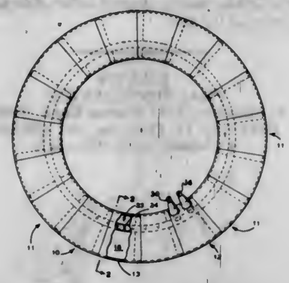


1. A traction device securable about a tire juxtaposed the tread and overlying the full tread width along a circumferential segment of the tire comprising flexibly joined U-shaped gripping members, said gripping members each having a flat inner surface for congruent conformity with the tread of said tire, wall encompassing arms extending from the extreme outer ends of the U-shaped gripping members, said wall encompassing arms overlying opposite wall portions of the tire while the gripping member overlies the tread, a hook formed at a terminal end of one of said wall encompassing arms and the other wall portion terminating in a threaded bolt-like member, a two-piece adjustable length attaching member, a first piece thereof being non-flexible and having an arcuate shape for congruent association with a wall of the tire and the wheel rim, and terminating in a flanged portion having an aperture therethrough for receipt of said bolt-like terminating member, a self-supporting cable having a bight at one end for engagement with the hooked end of the other tire wall encompassing arm, the other end of said cable being adjustably secured to the other end of said first piece of said two-piece attaching member, so that the length of said cable may be varied in accordance with the size of the wheel and tire to which the traction device is to be mounted.

3,283,799
INFLATABLE ARTICLES
Edmund C. Barbera, 55 Hillandale Road, Portchester, N.Y.
Filed May 5, 1965, Ser. No. 453,437
5 Claims. (Cl. 152—338)

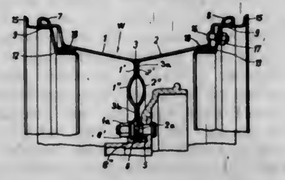
1. An inflatable article comprising a plurality of flexible, walled chambers in adjacent relation to each other, means for independently inflating each chamber comprising first flexible conduit means passing through opposed wall portions of each chamber and sealed thereto and second flexible conduit means disposed within said first conduit means, said first conduit means being formed with longitudinally spaced perforations to establish communication between said first conduit means and the interior of each of said chambers, valved air inlet means on said first conduit means for admitting air under pressure between said conduits for passage into each of said chambers via the perforations in said first conduit means and valved air inlet means independent of said first mentioned valved air inlet means on said second conduit means for admitting air under pressure into said second conduit means

for inflating said second conduit means into sealing contact with the inner surface of said first conduit means thereby sealing the perforations thereof and maintaining



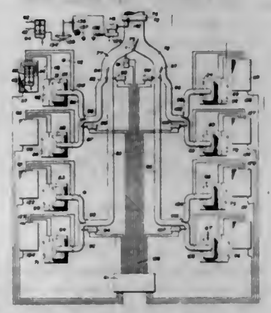
the inflated pressure of each of said chambers, whereby puncture of the wall of any of said chambers will leave the remaining chambers in an inflated condition.

3,283,800
WHEEL FOR PNEUMATIC TIRES
Franz Ischinger, Katharinenberg, Georg Behrmann, Katzwang, and Karl Linzenkirchner, Ingolstadt, Germany, assignors to Zweirad-Union AG, Nurnberg, Germany, a corporation of Germany
Filed Feb. 23, 1965, Ser. No. 434,419
Claims priority, application Germany, Feb. 29, 1964, Z 10,677
4 Claims. (Cl. 152—397)



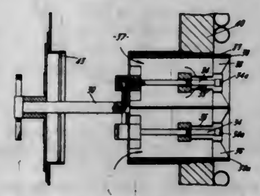
1. A vehicle-wheel assembly, comprising:
a pair of generally frustoconical pot-shaped base portions rigidly interconnected to form an annular drop-center wheel base surrounding an axis and a support disk for said base extending perpendicularly to said axis while provided with means for securing said wheel base to the hub of a vehicle, said drop-center wheel base being provided with a pair of outwardly extending annular ledges along axially spaced rims of said base, respective first generally cylindrical surfaces inwardly of said ledges and coaxial therewith, respective first transverse wall portions extending generally transverse to said axis inwardly of said first cylindrical surfaces, and respective frustoconical wall portions diverging from said disk toward said first transverse surfaces and merging therewith;
a reduced-pressure, wide-tread pneumatic tire having a pair of annular beads with respective inner faces each in engagement with an axially outer face of a respective ledge;
a pair of clamping rings substantially coaxial with said wheel base and each having a respective outwardly extending annular flange engageable with a corresponding outer face of a respective bead for resiliently holding it in all-around engagement with a corresponding ledge, said rings each having a respective second generally cylindrical surface coaxial with the respective one of said flanges and received within the corresponding first cylindrical surface of said wheel base while being slidably engageable therewith for centering said rings on said base, and a respective second transverse wall portion extending inwardly from the corresponding second cylindrical surface generally parallel to the corresponding transverse wall portion of said wheel base; and
means spanning the corresponding first and second transverse wall portions of said wheel base and said rings, respectively, for removably securing said clamping rings to said wheel base.

3,283,801
STEAM GENERATING UNIT
Norman S. Blodgett, Westboro, Max H. Kuhner, Oakham, and Earle C. Miller, Worcester, Mass., assignors to Riley Stoker Corporation, Worcester, Mass., a corporation of Massachusetts
Filed Feb. 25, 1964, Ser. No. 347,189
5 Claims. (Cl. 158—1)



1. A steam generating unit, comprising
(a) a vertically-elongated combustion chamber,
(b) a plurality of burners located at the lower end of the chamber,
(c) means supplying fuel to each burner,
(d) means supplying air to each burner,
(e) means supplying first signals respectively indicative of the flow of fuel to each burner,
(f) means supplying second signals respectively indicative of the flow of air to each burner, and
(g) control means receiving all of the said first and second signals, the control means correlating the signals to maintain the fuel-air ratio at each burner at a predetermined value.

3,283,802
MULTI-STAGE BURNER UNIT
Rex Couvelas Farnham, Cookham Dean, England, assignor to Fuel Firing Limited, Reading, England, a British company
Filed June 11, 1964, Ser. No. 374,380
8 Claims. (Cl. 158—1.5)



1. A multi-stage burner unit comprising a housing means slidingly retractable from a furnace wall and positioned in its retracted position to cut off supply of air to the unit, a plurality of individual burner stages arranged

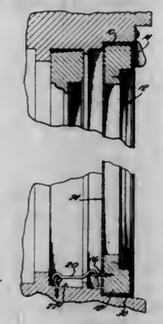
in a cluster in said housing, each said stage including an air duct for combustion air, a pressure source of combustion air common to all said stages and connected to each said air duct, a burner within and surrounded by each air duct, a sprayer for fuel associated with each said burner, a source of fuel common to all said stages and connected to each said sprayer, and means in each said duct and about each said burner for effecting turbulence of combustion air in such wise that air from one duct is rotated in a direction opposite to that imparted to air from an adjacent duct.

3,283,803
SEPARATION OF SLURRIES
Victor D. Phillips, Jr., and Martin M. McLane, Texas City, Tex., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Jan. 7, 1963, Ser. No. 249,703
5 Claims. (Cl. 159—47)

1. A method for separating granular solid adsorbent from a slurry containing said solid adsorbent and from 10 to 95% of an organic solvent in a single operation in a pressure vessel having a filter screen dividing said pressure vessel into low and high pressure zones and recovering said granular solid absorbent in a form for ready conveying containing less than 1% by weight of said solvent, said method comprising, in sequence, introducing said slurry into said pressure vessel into contact with a filter screen, filtering said slurry to remove a major portion of said organic solvent from said solid adsorbent, contacting the resultant solid adsorbent on said filter screen with an inert displacing fluid supplied to the high pressure side of said filter screen to remove the remaining organic solvent from said solid adsorbent, and introducing an inert gas into said pressure vessel on the low pressure side of said filter screen to remove the resulting solid adsorbent from said filter screen and transport the same from said pressure vessel in a finely divided form suspended in said inert gas.

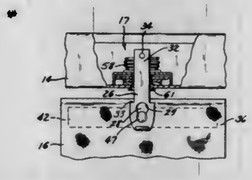
2. The process of claim 1 wherein the solid adsorbent is alumina and the organic solvent is acrylonitrile.

3,283,804
SNAP ON STORM WINDOWS
William H. Yancey, 170 W. Main Ave., Gastonia, N.C.
Filed Mar. 20, 1964, Ser. No. 353,351
6 Claims. (Cl. 160—106)



1. In combination, a window structure, comprising a window frame, a window screen having a frame engaged in the window frame, said window frame having a shoulder, said screen frame having opposed members normally bearing against said shoulder, said screen frame having outer edges, first means retaining the screen frame in place, a substantially imperforate panel of substantially the same outside dimensions as the screen frame and engaged with one side thereof, and resilient snap-on hook means on edges of said panel and securably engaged over outer edges of screen frame members and positioned between the screen frame and the window frame, and between the window frame and said shoulder.

3,283,805
VERTICAL BLIND APPARATUS
Clarence M. Kirtley, 5000 Woodland, and Richard J. Eldredge, Jr., 920 28th St., both of Des Moines, Iowa
Filed Oct. 4, 1963, Ser. No. 313,996
1 Claim. (Cl. 160—178)

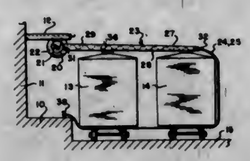


A vertical blind apparatus comprising in combination:
a vertical slat of a flexible material;
an insert secured in one end of said slat and spaced inwardly from said one end with a portion of said flexible material disposed between said insert and said slat one end;
a protrusion formed on said insert and having a stem portion and a head portion formed on the end of said stem, said head portion being of a diameter larger than the diameter of said stem portion, said protrusion spaced inwardly from said one end;
a support mechanism for rotatably supporting said slat in a normally taut condition;
an antifriction bearing element rotatably mounted in said support mechanism and having a flange exposed laterally of said support mechanism;
a connecting link supported by said support mechanism for reciprocal movement through said bearing element;
means operatively connected to said support mechanism for biasing said link away from said slat;
said link having a key hole opening formed in an exposed end thereof extending beyond said support mechanism, and through which said head portion is insertable with said stem portion engaging said link in the smaller part of said key hole opening in response to the bias of said link away from said slat, with said slat one end positioned substantially flush with said support mechanism to completely cover said exposed end on one side thereof; and
said link exposed end being enlarged relative to the remainder of said link, forming thereby a pair of shoulders engageable with said bearing element flange, eliminating thereby movement of said link away from said slat, said link and said slat being separable only by relative longitudinal movement thereof.

3,283,806
INFLATABLE CANOPY
Otway G. Harris, Richmond, Va., assignor to The American Tobacco Company, New York, N.Y., a corporation of New Jersey
Filed May 28, 1964, Ser. No. 370,894
1 Claim. (Cl. 160—264)

An inflatable and retractable canopy assembly for a loading dock adapted to extend over a vehicle being loaded at the dock comprising:
(a) a rotatable mandrel,
(b) means for rotating the mandrel,

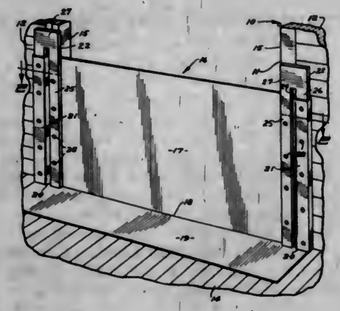
(c) an inflatable canopy cover having a wedge-shaped cross sectional section when inflated, said canopy being fabricated from a pliant sheet material capable of retaining air within the canopy when the canopy is inflated and comprising a top panel, a bottom panel, two wedge-shaped side panels, a base end panel, a forward edge panel, a tube-like stiffening number at the forward edge panel extending substantially the length of the forward edge panel, and means connected to the top and bottom panels for preventing the top and bottom panels from ballooning apart when the canopy is inflated, the base end of the canopy being secured to the rotatable mandrel,



(d) a source of low pressure air for inflating the inflatable canopy, and

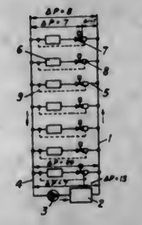
(e) at least two tie-down straps secured to the forward edge of the inflatable canopy, one of said tie-down straps comprising a flat tube-like structure of pliant, substantially air-tight sheet material one end of which communicates with the interior of the canopy at the forward edge thereof and the other end of which is connected to said source of low pressure air.

3,283,807
DISPOSABLE DOOR FOR GRAIN CARS
Lawrence L. Helwig, 233 N. 4th St., Custer, S. Dak.
Filed Sept. 3, 1964, Ser. No. 394,246
4 Claims. (Cl. 160—348)



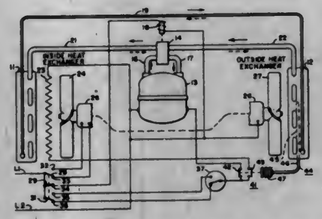
1. A door for a freight car having horizontally spaced upright anchor posts defining a doorway above the car floor surface which comprises a sheet of heavy cardboard material disposed in vertical position inside of the doorway and having side edge portions disposed one along the inner side of each doorpost, a pair of elongated retainer boards of wood material each having a slot extending longitudinally from one end thereof dividing the board into inner and outer sections for receiving one of said edge portions in the slot with the portion lying outside of the inner section and inside of the outer section, and a plurality of fasteners driven through the edge portion and each section into the adjacent doorpost.

3,283,808
AIR CONDITIONING SYSTEM
Werner Hochstrasser, Geroldswil, Switzerland, assignor to Luwa AG, Zurich, Switzerland, a corporation of Switzerland
Filed July 11, 1963, Ser. No. 294,307
Claims priority, application Austria, July 13, 1962, A 5,676
8 Claims. (Cl. 165—22)



1. Air conditioning system comprising at least one central heat exchanger, a conduit network including infeed and return feed conduit means and parallel branch connections therebetween for a fluid working medium, a plurality of spatially separated air conditioning units each operatively connected with one of said parallel branch connections between said infeed and return feed conduit means, throttle means communicating with each of said air conditioning units, a pump provided in said conduit network for circulating said working medium under pressure, a pressure regulator provided for each parallel branch connection, each pressure regulator including a measuring unit connected at one side with the inlet of the associated throttle means and at the other side with the outlet of the associated air conditioning unit for maintaining the pressure drop through such throttle means and its associated air conditioning unit constant independent of the setting of such throttle means and the operating conditions of the system.

3,283,809
AIR CONDITIONING APPARATUS
Arthur H. Eberhart, Hilliard, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 18, 1964, Ser. No. 368,019
2 Claims. (Cl. 165—29)



1. Apparatus for conditioning the air of an enclosure, comprising:

a refrigerating system having

an outside heat exchanger,

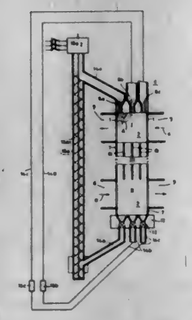
an inside heat exchanger and

a compressor for circulating heat transfer fluid through said heat exchangers to absorb heat at said outside heat exchanger and dissipate heat at said inside heat exchanger,

temperature sensing means disposed within the confines of said outside heat exchanger through which outside air passes so that said sensing means is blocked from passage of said outside air thereover in accordance with blocking of said outside heat exchanger when frost accumulates on said outside heat exchanger, whereby under a condition of increasing frost accumulation on said heat exchanger said sensing means is increasingly subject to said transfer fluid temperature in said outside heat exchanger and decreasingly subject to said outside air temperature,

control means responsive to said temperature sensing means effective to initiate operation of said compressor at an upper predetermined temperature and effective to terminate operation of said compressor at another predetermined lower temperature in a range of about 15° F. to 25° F., said lower temperature permitting continued operation of said apparatus as a heat pump with said outside heat exchanger accumulating frost until sufficient blocking of said outside heat exchanger materially reduces the effect of the outside air temperature upon said sensing means and said sensing means closely reflects said transfer fluid temperatures.

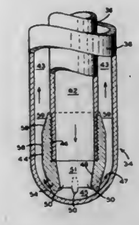
3,283,810
HEAT EXCHANGER OPERATING WITH SOLID MASS PARTICLES AS HEAT CARRIER
Hans Sonnenschein and Rudolf Friedrich, Mulheim an der Ruhr, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin, Germany, a corporation of Germany
Filed Nov. 14, 1963, Ser. No. 323,781
11 Claims. (Cl. 165—96)



1. A heat exchanger comprising a duct structure to be traversed by a flow of heat-storing particles, said structure forming two heat-exchange zones spaced from each other along the particle-flow direction, two pairs of gas conduits for passing two currents of gas through said respective zones, said duct structure extending between the two conduits of each pair and having respective gas-permeable wall portions through which the two conduits of each pair communicate with each other through one of said zones, circulatory particle-mass distributing means communicating with said duct structure for circulating therethrough a particle flow of substantially uniform layer distribution in the particle-flow direction whereby the flow layers assume respectively graduated temperatures due to temperature difference of the respective gases passing through said two pair of conduits, and means for maintaining substantially the same temperature distribution in the layers of particle flow from one to the other of said heat-exchange zones, said conduit pairs having a gas-flow direction transverse to the particle-flow direction of said duct structure and in heat-exchanging counterflow relation to each other.

3,283,811
SPUR TUBE HEAT EXCHANGER
John F. Harvey, Akron,, Ohio, assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Sept. 8, 1964, Ser. No. 394,803
7 Claims. (Cl. 165—142)

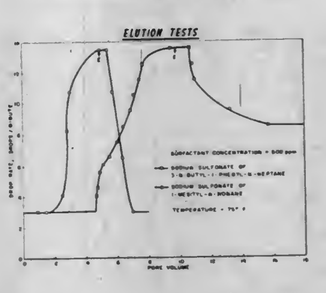
1. A heat transfer element including inner and outer concentric elongated tubes which are open and closed, respectively, at one end of said element, a tubular fitting on said one end of the inner tube and defining therewith a first passageway which converges within said fitting in a first direction toward the closed end of said outer tube, there being a second passageway of annular cross section between said inner and outer tubes, said fitting including a plurality of projections, each extending into engagement with the closed end portion of said outer tube, and defining therewith a restricted third passageway which connects said first and second passageways and has substantially less flow area than said first and second passageways.



ERRATUM

For Class 166—2 see:
Patent No. 3,284,281

3,283,812
SURFACTANT FOR PETROLEUM RECOVERY
George P. Ahearn, Tulsa, Okla., and Albin F. Turbak, New Providence, N.J., assignors, by mesne assignments, to Esso Production Research Company, a corporation of Delaware
Filed May 20, 1963, Ser. No. 281,556
11 Claims. (Cl. 166—9)



1. A method for the recovery of oil from a subterranean reservoir penetrated by an injection well and a production well laterally spaced therefrom, which comprises introducing water and a surfactant into said reservoir through said injection well and producing displaced reservoir oil from said production well, wherein said

surfactant comprises a compound having a polar functional group attached to an aryl radical having a nonpolar substituent in a position ortho to said functional group.

3,283,813
SALINE WATER CONVERSION BY SUBSURFACE PROCESSES

Eugene R. Brownscombe and Henry F. Dunlap, Dallas, Loyd R. Kern, Irving, and Thomas K. Perkins, Dallas, Tex., assignors to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Sept. 22, 1965, Ser. No. 489,129
9 Claims. (Cl. 166—9)

1. A method for producing water having a reduced salt content by a subsurface process of reverse osmosis comprising

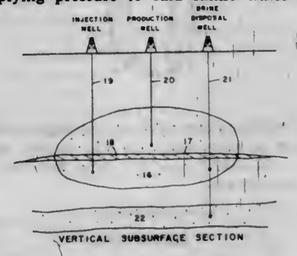
(a) drilling a plurality of boreholes to a permeable subsurface formation,

(b) fracturing said formation to produce at least one fracture,

(c) depositing osmotic material within each said fracture as a continuous layer,

(d) injecting saline water into said formation through a first borehole,

(e) applying pressure to said saline water in excess



of its osmotic pressure to convert said saline water into water of reduced salt content and concentrated brine portions,

(f) withdrawing said water of reduced salt content to the surface through a second borehole, and

(g) removing said concentrated brine from said formation through a third borehole.

3,283,814
PROCESS FOR DERIVING VALUES FROM COAL DEPOSITS

Günther Schlicht, deceased, late of Hamburg-Othmarschen, Germany, by Erika Marie Schlicht, administrator, Hamburg-Othmarschen, Germany, and Hans Lange, Wietze, Kreis Celle, Germany, assignors to Deutsche Erdol-Aktiengesellschaft, Hamburg, Germany, a corporation of Germany

Filed Aug. 7, 1962, Ser. No. 216,271
Claims priority, application Germany, Aug. 8, 1961, Sch 30,106
12 Claims. (Cl. 166—11)

1. A process for recovery of values from coal deposits wherein a portion of the deposit is communicated with the surface by a bore for supplying material to the deposit and by at least one bore spaced from the supply bore and for removal of material from the deposit, said process comprising:

(a) passing a heating medium through the supply bore, heating the heating medium by passing the heating medium in indirect heat exchange relation with a nuclear reactor positioned in the supply bore, introducing the heated heating medium into the deposit from the supply bore, maintaining the heating medium under sufficient pressure so that it permeates the said portion of the deposit, whereby degasification, fissuring, and heating of the said portion is effected,

(b) following working of the said portion as aforesaid, exploding a charge in the supply bore to effect further fissuring of the coal within the worked portion, and thereafter,

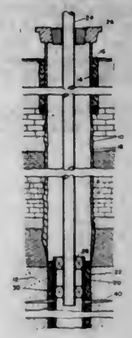
(c) passing a material for supporting combustion of the coal through the supply bore for introduction into the deposit and reaction with coal of the worked portion in the path between the supply bore and said one removal bore to gasify and degasify the coal and provide a fuel gas,

(d) and withdrawing said gas from the deposit through said removal bore.

3,283,815
WELL COMPLETIONS

Thomas O. Allen and John E. Ortloff, Tulsa, Okla., assignors, by mesne assignments, to Esso Production Research Company, a corporation of Delaware

Filed Mar. 1, 1963, Ser. No. 262,056
7 Claims. (Cl. 166—27)



1. A method of completing a productive formation in a well having competent uncased, walls above said formation comprising the steps of positioning in said well and opposite said formation a section of casing long enough to span the exposed thickness of said formation to the exclusion of at least a portion of the competent walls above said formation,

cementing said casing in said position spanning said formation, and

thereafter completing said well to establish productive fluid communication from said formation to said well through said cement and said casing.

3,283,816
ACIDIZING WELLS

Bryant W. Bradley, Pasadena, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 13, 1964, Ser. No. 359,480
1 Claim. (Cl. 166—42)

A method of treating a silicate-bearing formation to increase the permeability in the vicinity of a well penetrating said formation and wherein contaminating alkaline earth metal ions and alkali metal ions in said formation are reduced below a value which would be deleterious to said treating method and the permeability of said formation, said method comprising the steps of

injecting through said well and into said formation a carbonate solution to convert any calcium sulfate present in the formation to calcium carbonate,

injecting through said well and into said formation a quantity of hydrochloric acid sufficient to react with the portions of the formation containing alkaline earth metal ions,

displacing said spent hydrochloric acid and said alkaline earth metal ions radially away from said well by injecting into said formation in back of said hydrochloric acid a quantity of a non-acidizing spacer fluid at least the last portion thereof being free of alkali metal ions, said spacer fluid injection being carried out for a time and with a volume of fluid sufficient to sweep compound containing contaminating alkali metal ions into the formation and away from the vicinity of the well,

injecting into the formation in back of said spacer fluid a quantity of hydrofluoric acid, and

allowing said hydrofluoric acid to remain in contact with the formation adjacent the well for a time sufficient to dissolve silicate from said portion of said formation.

3,283,817
METHOD AND COMPOSITION FOR TREATING FORMATIONS PENETRATED BY WELLS

William G. Roberts, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Jan. 3, 1964, Ser. No. 335,681
20 Claims. (Cl. 166—42)

1. A method of fracturing a formation penetrated by a well bore, which method comprises introducing into said well bore under sufficient pressure to fracture said formation a fracturing liquid composition having suspended therein finely divided crush-resistant particles of a combination propping and alkaline earth metal ion scavenging agent which can be regenerated in place in said formation.

13. A composition of matter, useful in the fracture treatment of a formation penetrated by a well bore, comprising a liquid carrier medium having suspended therein finely divided crush-resistant particles of a combination propping and alkaline earth metal ion scavenging agent comprising an alkali metal salt of a sulfonated copolymer of a monovinyl-substituted aromatic hydrocarbon with a divinyl-substituted aromatic hydrocarbon comonomer wherein said comonomer is incorporated in said copolymer in an amount of up to 20 weight percent of said copolymer.

3,283,818
REMOVAL OF WATER BLOCKS FROM OIL AND GAS WELLS

Melcon Santourian, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Dec. 31, 1963, Ser. No. 334,936
5 Claims. (Cl. 166—42)

1. A process for removing a water block adjacent a production well within a hydrocarbon-bearing stratum which develops during production of hydrocarbons from said well comprising the steps of:

(1) terminating production of hydrocarbons from said well;

(2) injecting directly into said stratum thru said well, gas which is at least partially soluble in stratum water to build up a high pressure thereof but below a fracturing pressure and cause said gas to go into solution in said water;

(3) shutting the well in for a period in the range of an hour to several days to allow said gas to go into solution;

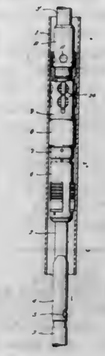
(4) thereafter, suddenly opening said well to release said pressure, thereby effecting production of water in said water block thru said well; and

(5) thereafter, producing hydrocarbons thru said well.

3,283,819
WELL PACKER

Gilbert H. Tausch, Houston, Tex., assignor to Camco, Incorporated, Houston, Tex., a corporation of Texas

Filed Jan. 2, 1964, Ser. No. 335,171
3 Claims. (Cl. 166—120)



1. In a well packing assembly, a packer collar, a force applying tubular member projecting the packing collar and having a packing collar by-pass internally thereof, a packing collar abutting tubular member including casing engageable slip means and having an upper end portion sleeved on and telescopically receiving the lower end portion of the first mentioned tubular member, a by-pass communicating annular chamber within the second mentioned tubular member, a slide ring seal mounted in said chamber, means transmitting telescoping movement of the first mentioned tubular member to shift said slide ring seal downwardly in the chamber from an upper position to a lower position, said second mentioned tubular member having a side wall port located below the upper position of said slide ring seal and above the lower position of said slide ring seal, a dependent spring detent carried by the slide ring seal and bearing outwardly on the second mentioned tubular member and said second mentioned tubular member having a pair of axially spaced apart detent receiving internal keeper grooves to locate the slide ring seal in its respective upper and lower positions.

3,283,820
FLUID-ACTUATED WELL PACKER

Gilbert H. Tausch, Houston, Tex., assignor to Camco, Incorporated, Houston, Tex., a corporation of Texas

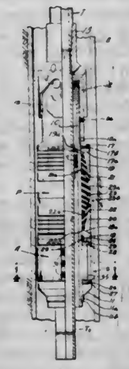
Filed Feb. 13, 1964, Ser. No. 344,678
5 Claims. (Cl. 166—120)



1. In a well packer assembly, a deformable packing collar, an inner tubular mandrel extending through the collar and providing locating coaction with one end of the deformable collar, an outer tubular cylinder slidably

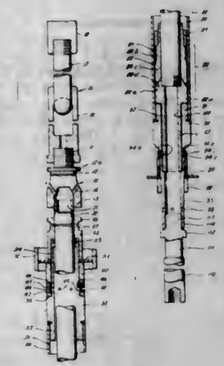
surrounding the inner mandrel and having force transmitting coaction with the other end of the deformable collar, said tubular cylinder having a portion radially spaced from the mandrel for cooperation therewith, in providing an annular piston receiving chamber exteriorly closed at both ends, an annular piston fixedly projected laterally from the mandrel and enclosed within the chamber with a slide sealing fit thereto, pressure fluid transfer passages communicating the bore of the mandrel with the chamber above and below the piston, a tool receivable within said bore and provided with a pair of axially spaced apart annular seals for location above and below one of said transfer passages, a depression chamber within the tool having an initially closed side port in the region between said seals and means operable to open said port upon alinement with said one transfer passage for evacuating the chamber on the side of the piston with which said one transfer passage communicates.

3,283,821
SCREW-SET PACKER
Cicero C. Brown, 8490 Katy Road, Houston, Tex.
Filed Dec. 5, 1963, Ser. No. 328,282
5 Claims. (Cl. 166—134)



1. A releasable well packer assembly adapted to be lowered on a tubing string and set in a well bore, comprising
a tubular support having an external abutment near its lower end,
a sleeve surrounding and threadedly engaging the upper end of said tubular support so that relative rotation between said sleeve and said tubular support moves said sleeve longitudinally on said tubular support,
means mounted on said tubular support and engaging the wall of the well bore to restrain said tubular support against rotation,
a sealing and anchoring assembly mounted around said tubular support between said abutment and said sleeve,
said assembly including a resilient expander wedge having upper and lower conical surfaces which diverge outward toward each other, resilient sealing means associated with said wedge so that both said wedge and said sealing means are simultaneously deformed radially outward in engagement with the wall of the well bore upon the application of an endwise force thereto and on release of said force to return to their undeformed position, and upper and lower slip members associated with said sealing means and movable outward therewith into pipe-gripping position with the wall of the well bore when said sealing means is deformed outward,
said restraining means holding said tubular support stationary so that said sleeve may be rotated relative to said tubular support,
such relative rotation in one direction moving said sleeve downward on said tubular support to apply an endwise force against said sealing and anchoring assembly to set the same, and such relative rotation in the opposite direction moving said sleeve upward on said tubular support to remove the endwise force against said sealing and anchoring assembly to release the same.

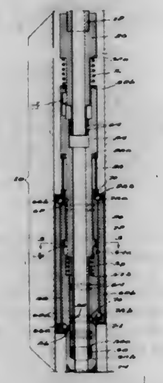
3,283,822
APPLICATOR TOOL
Henry C. Haynie, 8164 Glenview, Houston, Tex.
Filed May 4, 1965, Ser. No. 453,096
12 Claims. (Cl. 166—169)



1. An applicator tool comprising
a barrel,
a piston in said barrel
a piston rod reciprocable in said barrel,
said rod extending out the upper end of the barrel,
means adjacent the lower end of said rod for sealingly supporting said piston on said rod, said piston having a sliding fit on said rod,
means sealing between the barrel and the rod adjacent the upper end of the barrel,
releasable means for holding the rod disposed with the piston supporting means at the lower end of the barrel,
nozzle means at the upper end of the barrel communicating between the interior of the barrel and the space exterior thereto, and
means at the upper end of the rod adapted to be engaged by means for raising and lowering the applicator tool.

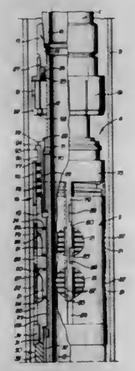
3,283,823
WELL CLOSE-OFF MEANS
Elbert E. Warrington, 9862 Meadowdale St., Baton Rouge, La.
Filed Sept. 5, 1963, Ser. No. 306,799
15 Claims. (Cl. 166—182)

5. Off-bottom well close-off means comprising a tubular packer assembly connected into the drilling string above the bottom hole assembly mounting the drill bit, said packer assembly including external packer means for sealing off the annulus between said packer assembly and the hole wall and full opening internal bore closing-off means which normally provides a length portion of the bore through the packer means and having a normally unobstructed bore of diameter substantially equal to the packer bore for closing off said packer bore, and means responsive to lowering of the drill string with respect to



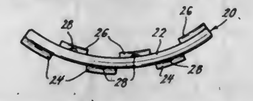
the bottom hole assembly for effecting setting of said external packer means and for actuating said bore closing-off means to its bore closing-off position.

3,283,824
HYDRAULICALLY SET WELL ANCHORS
Jack Hoffman, Jackson, Miss., and Denzal W. Van Winkle, La Mirada, Calif., assignors to Baker Oil Tools, Inc., Los Angeles, Calif., a corporation of California
Filed Oct. 14, 1963, Ser. No. 315,909
20 Claims. (Cl. 166—212)



1. In apparatus adapted to be anchored in a well casing disposed in a well bore: a body having a plurality of bores therein opening to the interior of said body; gripping members in said bores expandable outwardly against the well casing in response to fluid pressure within said body and bores; retaining means engaging said gripping members for holding said gripping members in retracted position in said bores, said retaining means being movable longitudinally of said body from holding engagement with said gripping members; and means for shifting said retaining means in a direction longitudinally of said body from holding relation to said gripping members to permit their outward expansion.

3,283,825
TOE CALK FOR NON-METALLIC HORSESHOES
Clayton E. Ward, 9714 Ambro Lane, Woodson Terrace, St. Louis, Mo.
Filed Oct. 23, 1965, Ser. No. 503,297
8 Claims. (Cl. 168—29)



7. A toe insert for a horseshoe which comprises:
(a) an arcuate wall portion,
(b) a plurality of flanges that are directed inwardly of the concave face of said arcuate wall portion, and
(c) a plurality of flanges that are directed outwardly of the convex face of said arcuate wall portion,
(d) said inwardly-directed flanges being integral with one edge of said arcuate wall portion,
(e) said outwardly-directed flanges being integral with said one edge of said arcuate wall portion,
(f) said inwardly-directed flanges being inclined to said arcuate wall portion,
(g) said outwardly-directed flanges being inclined to said arcuate wall portion,
(h) said flanges providing only small shear forces for said horseshoe,
(i) said horseshoe embedding said flanges and said one edge of said arcuate wall portion.

3,283,826
FIRE EXTINGUISHING APPARATUS
Ralph M. Padelford, Nevada, Iowa, assignor to Iowa State University Research Foundation, Inc., Ames, Iowa, a corporation of Iowa
Filed Aug. 20, 1963, Ser. No. 303,242
2 Claims. (Cl. 169—1)

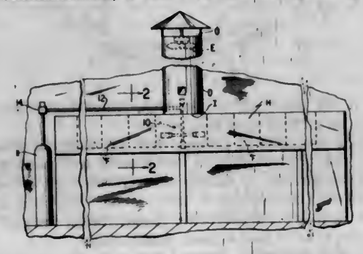


1. A fire extinguishing apparatus comprising a cup constructed of woven asbestos material and having an open mouth adapted to be face downwardly in extinguishing a fire, a reinforcing ring mounted in said cup generally parallel to and spaced from said mouth, a conduit-providing tubular handle coupled at one end thereof to said cup and communicating with the cup interior and extending laterally away from said cup, said handle being equipped with a cartridge holding device, said device being adapted to confine a cartridge and deliver inert gas therefrom to said handle conduit, said handle being closed at the other end thereof whereby inert gas from said cartridge is directed into said cup.

3,283,827
HOOD AND DUCT FIRE EXTINGUISHING SYSTEM
Donald A. Diehl, Arlington, N.J., assignor to Specialties Development Corporation, Belleville, N.J., a corporation of New Jersey
Filed Dec. 8, 1964, Ser. No. 416,827
5 Claims. (Cl. 169—2)

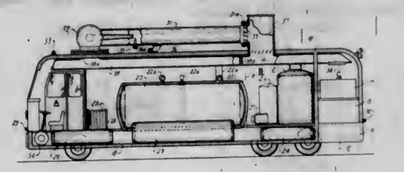
1. In a fire extinguishing system for a kitchen hood and ventilating duct arrangement wherein the inlet of the duct is spaced between the ends of the hood and the hood has lengthwise extending filter sections therein, the combination of a first nozzle having its outlet positioned for discharge of fire extinguishing medium upwardly directly into the duct inlet, the second and third nozzles below

said first nozzle each having its outlet positioned for discharge of fire extinguishing medium in an opposite horizontal direction within the hood towards one end wall of the hood and across the filter sections, conduit means interconnecting the inlets of all of said nozzles for fluid flow communication, a source of fire extinguishing me-



dium under pressure, a pipe connecting said source to said conduit means in fluid flow communication, and means for controlling the discharge of the fire extinguishing medium from said source to said conduit means, whereby a considerable amount of fire extinguishing medium is distributed between the ends of the hood before entering the ventilating duct.

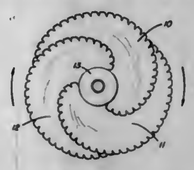
3,283,828
STEAM JET FIRE EXTINGUISHING SYSTEM
David E. Wehner, 4424 Middle Road, Allison Park, Pa.
Filed May 25, 1965, Ser. No. 459,534
14 Claims. (Cl. 169—25)



1. Fire-control apparatus for extinguishing fires in a sub-zero ambient temperature environment comprising, in combination: a self-propelled wheeled vehicle; a fireless steam boiler mounted on said vehicle; a steam generator mounted on said vehicle and connected in cooperative communication with said boiler; a steam turret revolvable on the initial axis thereof and positioned above said generator and said boiler, a steam blast pipe extending from said turret; hose means connectable to said blast pipe for conducting a steam flow from said vehicle to the site of a fire; and reel means for containable storing said hose and dispensing said hose as desired from said vehicle.

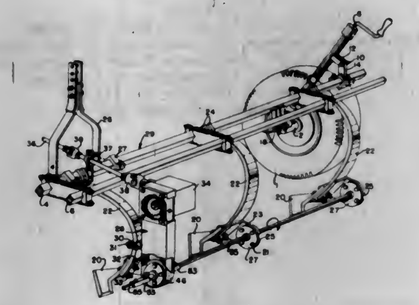
3,283,829
PROPELLER
Jaques Aumarechal, 5 Rue Carnot, Boulogne-Billancourt, France
Filed Sept. 4, 1964, Ser. No. 394,573
Claims priority, application France, Sept. 12, 1963, 947,384
2 Claims. (Cl. 170—159)

1. A propeller comprising at least two blades attached to a central hub, in which the outer edge of each blade is serrated with saw-like teeth having a substantially trapezoidal profile including in each serration an elongated arched outer cutting edge, an inwardly cut leading edge and an inwardly cut trailing edge; in which the angle formed between the trailing edge and the outer cutting edge is about 90° and the angle formed between the outer cutting edge and the leading edge is about 135°; in which said trailing edges and said leading edges are bevelled through the thickness of the blades, the surfaces of said bevelled edges being substantially parallel to each other, the slope of the bevelled surfaces being inclined from the



rear face to the front face of the blades in the direction of the propeller's revolution; in which said angles provide for a substantial clearance between two successive teeth and form an ample channel for the flow of the fluid during rotation of the propeller; in which said outer cutting edge of the teeth is bevelled to reduce the thickness of the teeth at their outer edge and to form a sharp cutting edge.

3,283,830
ROD WEEDER WITH ENCLOSED, DUST-TIGHT CHAIN DRIVE
J W Hamby, 2900 W. 5th St., Plainview, Tex.
Filed Aug. 28, 1964, Ser. No. 392,759
1 Claim. (Cl. 172—44)

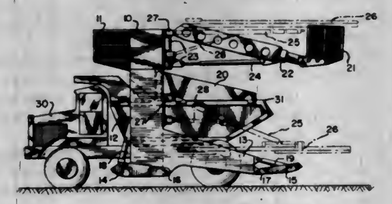


A rod weeder for attachment to a tractor, having a power lift and a power take-off, which rod weeder comprises;

(a) a transversely elongated frame,
(b) means detachably connecting said rod weeder frame to the power lift mechanism of the tractor,
(c) a bevel gear unit mounted on said transversely elongated frame,
(d) a housing for said bevel gear unit,
(e) a drive shaft connecting said bevel gear unit and the power take-off of the tractor in driving relation,
(f) a shaft extending laterally outward from said housing of said bevel gear unit,
(g) a dust-tight housing secured to the side of said bevel gear unit housing from which said lateral shaft extends,
(h) a sprocket mounted on and secured to said lateral shaft and being positioned within said dust-tight housing,
  (1) said dust tight housing extending downwardly from said bevel gear unit housing,
(i) a shaft journaled in said dust-tight housing near the lower end thereof and extending outward on each side of said housing in parallel relation to said transversely elongated frame,

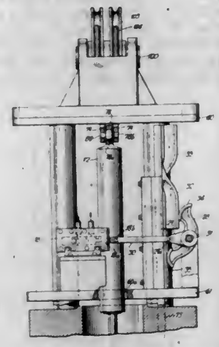
(j) a sprocket mounted on and secured to said shaft journaled in said dust-tight housing near the lower end thereof,
(k) a drive chain surrounding said sprockets in driving relation,
(l) plow beams mounted on said transversely elongated frame, at spaced intervals therealong and extending downwardly therefrom,
  (1) each said plow beam being adapted to open a furrow,
(m) a polygonal, elongated rod extending axially outward from each end of said transverse shaft in the lower end of said dust-tight housing,
(n) a rearwardly extending bracket secured to each said plow beam so at least a portion of each bracket is below the normal surface of the terrain,
  (1) a bearing mounted on each said bracket of each plow beam below the normal surface of the terrain to journal said polygonal rods for rotary movement,
  (2) each rearwardly extending bracket having a bifurcated opening formed therein through which each said opening said polygonal rod may be moved transversely, without the removal of the shaft from the bearings,
  (3) each said bracket having holes formed therein, which holes are spaced around the bifurcated opening thereof,
(o) an apertured plate mounted on each said bracket on the respective plow beams, so the respective apertures in said plates will register with the holes in each said bracket,
  (1) each bearing on each plow beam being mounted on each said apertured plate thereof,
  (2) bolt means detachably connecting each said plate to each said bracket, and
(p) detachable connecting means connecting said transverse shaft, journaled in said dust-tight housing near the lower end thereof, with said polygonal rods.

3,283,831
GANTRY TYPE DRILLING MACHINES
Herbert Bronder, Sandvika, Norway, assignor to Ingersoll-Rand World Trade Limited, Hamilton, Bermuda, a corporation of Bermuda
Filed July 28, 1964, Ser. No. 385,646
7 Claims. (Cl. 173—43)



1. A drilling machine comprising:
(a) a frame having a horizontal member, and a pair of spaced legs connected to the ends of the horizontal member and depending therefrom to support the horizontal member in spaced vertical relationship above a supporting surface and to define a vehicular passageway through the frame;
(b) each of the legs having a forwardly extending foot portion adapted to engage a supporting surface and to stabilize the frame from tipping;
(c) a plurality of booms of variable length disposed in spaced relationship with one another each being pivotally connected at one end to the front of the frame and having a drilling mechanism mounted at its other end;
(d) each of the booms having motor means for pivoting the booms relative to the frame for positioning the drilling mechanisms;
(e) a platform for supporting an operator for the drilling machine;
(f) a central boom of variable length pivotally connected at one end to the front of the horizontal member spaced from its ends, and at the other end to the platform; and
(g) the central boom having motor means for pivoting such boom relative to the frame for positioning the platform.

3,283,832
HYDRAULIC HAMMER
Ernst W. Spannhake, Smoke Rise, and George J. Gendron, Oradell, N.J., assignors to Raymond International Inc., New York, N.Y., a corporation of New Jersey
Original application Dec. 10, 1962, Ser. No. 243,435, now Patent No. 3,237,406, dated Mar. 1, 1966. Divided and this application July 21, 1965, Ser. No. 473,670
4 Claims. (Cl. 173—126)



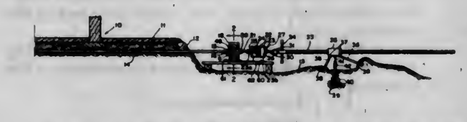
2. In a hydraulic hammer in combination: a supporting structure having an upper supporting member, a hydraulic cylinder pivotally suspended from said member by a universal joint coupling means permitting pivotal deflection of said cylinder in all radial directions, means disposed about the base of said cylinder for restricting the extent of said pivotal, radial deflection; a piston displaceable within said cylinder having a piston rod integral therewith and projecting from the cylinder base and having a knob-like terminus, a ram secured coaxially to said terminus by means including a ring member surrounding the upper portion of said knob terminus and of an aperture providing a slight clearance between said ring member and knob to permit pivotal displacement thereof, and a plate disposed beneath said terminus having a cavity conforming substantially to the lower surface of said terminus for seating and centering the same during driving impact.

3,283,833
SONIC CONDUIT DRIVING SYSTEM
Albert G. Bodine, Jr., Los Angeles, Calif. (7877 Woodley Ave., Van Nuys, Calif.)
Filed Apr. 20, 1965, Ser. No. 449,395
19 Claims. (Cl. 175—56)

1. A system for driving a conduit of elastic material generally horizontally into the earth that comprises:
a vibration generator including means for acoustic coupling to said conduit when said conduit is substantially horizontally oriented and directed into endwise engagement with the earth, said generator having a vibration frequency range including a resonant frequency of said conduit;

a vibration isolation means coupled to transmit force to said conduit;

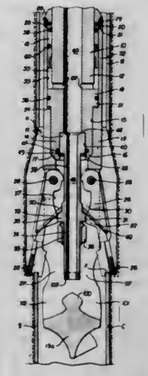
a unidirectional-force-exerting means coupled to said vibration isolation means and including means for exerting a unidirectional force through said isola-



tion means for transmission to said conduit in the direction of desired penetration; and

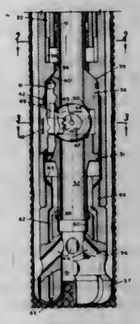
reaction-receiving means connected to said unidirectional-force-exerting means, said reaction-receiving means including means for reaction engagement with the earth.

3,283,834
ROTARY EXPANSIBLE DRILL BITS
Archer W. Kammerer, Fullerton, Calif., assignor of one-fifth to Archer W. Kammerer, Jr., Houston, Tex., and one-fifth to Jean K. Lamphere, Fullerton, Calif.
Filed Feb. 10, 1964, Ser. No. 343,640
10 Claims. (Cl. 175—267)



1. In rotary drill bit apparatus to be lowered in a bore hole on a tubular drill string: a body having an opening through its exterior, said body at the lower portion of said opening having a deflector surface inclined downwardly and laterally outwardly; expandible cutter means on said body; the lower end of said cutter means being located substantially above said deflector surface to provide a substantial unobstructed longitudinal space through the lower portion of said opening between said lower end of said cutter means and said deflector surface; a mandrel movable longitudinally in said body and having a passage adapted to receive fluid from the drill string, the lower end of said passage terminating above said deflector surface, whereby fluid discharged from said lower end strikes said deflector surface and is deflected thereby laterally outwardly through said unobstructed longitudinal space of said opening against the wall of the bore hole; said deflector surface being angled to a degree causing the fluid discharged thereagainst to strike the wall of the bore hole at substantially 90 degrees thereto without directly striking said cutter means; and coengageable means on said mandrel and cutter means for expanding said cutter means in response to relative longitudinal movement between said body and mandrel.

3,283,835
CONTINUOUS CORING SYSTEM
Jackson M. Kellner, Tulsa, Okla., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed May 19, 1964, Ser. No. 368,536
9 Claims. (Cl. 175—317)



1. Apparatus for drilling boreholes in the earth comprising:

(a) a tubular upper housing provided with means for connecting said housing to the outer conduit of a string of multiple channel pipe;

(b) a tubular lower housing slidably connected to said upper housing and rotatable therewith;

(c) a bit connected to the lower end of said lower housing, said bit containing a port near the longitudinal axis thereof and an outlet laterally displaced from said port;

(d) a tubular inner member connected to said upper housing and extending downwardly in said upper housing, said lower housing and said bit to form an inner passageway communicating with said port and an outer passageway communicating with said outlet, said inner member including means for connecting said member to an inner conduit of a string of multiple channel pipe;

(e) an expansible packer mounted on the outer surface of said upper housing and rotatable with respect thereto;

(f) means for maintaining said packer in an expanded position while drilling and in a retracted position during trips into and out of the borehole;

(g) valve means connected to said inner member near the lower end thereof for closing off said inner passageway in response to relative axial movement of said inner member with respect to said lower housing and bit; and

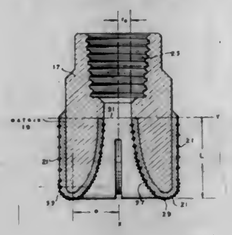
(h) valve means in said lower housing for closing off said outer passageway in response to relative axial movement of said inner member with respect to said lower housing and bit.

3,283,836
DIAMOND-TYPE DRILL BIT
Daniel A. North and James C. Posgate, Jr., Laredo, Tex., assignors, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Aug. 17, 1964, Ser. No. 390,101
1 Claim. (Cl. 175—330)

A drill bit comprising a bit body having a central cutting portion and a gauge cutting portion, said central cutting portion extending inwardly and upwardly into said bit body from the lower end thereof to form a non-converging throat, and terminating therein at a predetermined distance from said lower end, said throat having a

radius r_o at said predetermined distance from said lower end, the cross-sectional profile of said central cutting portion being formed substantially according to the equation

$$y = r_o + \frac{1}{K_o}\left(\cos^{-1} e^{-K_o L} - \cos^{-1} e^{K_o(x-L)}\right)$$



where

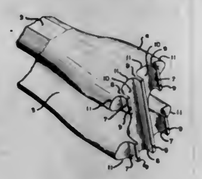
r_o is the radius of the core

$e^{-K_o L}$ is a constant having a value between .65 and .01

x is measured along the longitudinal axis of the bit from the upper end toward the lower end of the central cutting portion

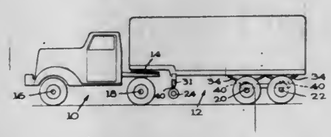
y is measured from the longitudinal axis of the bit.

3,283,837
DRILL BIT
Walter P. McKain, Parkersburg, W. Va., assignor to Acme Fishing Tool Company, Parkersburg, W. Va., a corporation of West Virginia
Continuation of application Ser. No. 202,607, June 14, 1962. This application Feb. 1, 1965, Ser. No. 429,534
1 Claim. (Cl. 175—414)



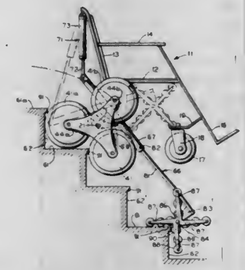
A drill bit having channels at opposite sides extending longitudinally of the drill bit and having a plurality of substantially parallel cutting teeth facing endwise of the drill bit, each of the cutting teeth having a base and terminating in a flat cutting face, the cutting faces of the teeth being disposed in a plane normal to the length of the drill bit, each of the teeth for a substantial distance from the cutting face toward the base thereof being defined at its sides by parallel faces so that the area of each of the flat cutting faces of the teeth remains constant despite substantial wearing away of the teeth at the cutting faces thereof, the teeth including a central tooth extending uninterruptedly diametrically completely across the bit and at each side of the central tooth shorter teeth in longitudinal alignment with each other whose outer ends terminate in the periphery of the drill bit spaced from the central tooth to form transverse channels and with their adjacent ends spaced apart to provide for communication between the longitudinal channel at that side and the transverse channels between the central tooth and the shorter teeth, the bottoms of the transverse channels being substantially flat and all lying in a plane perpendicular to the length of the drill bit, the width of the transverse channels remaining constant despite substantial wearing away of the teeth, the bottoms of the transverse channels intersecting the periphery of the drill bit to form reaming edges which at their mid points are substantially normal to the length of the drill bit.

3,283,838
APPARATUS AND METHOD FOR COMPUTING EQUIVALENT WEIGHT OF TRACTOR TRAILER VEHICLE
David S. Fetterman, 1370 Bell Lane, Maple Glen, Pa., and Jerold B. Muskin, 615 Oak Shade Ave., Elkins Park, Pa.
Filed Aug. 17, 1964, Ser. No. 389,929
23 Claims. (Cl. 177—1)



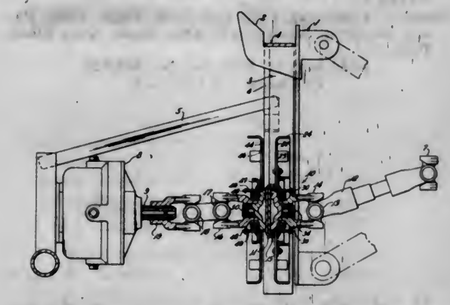
18. The method of weighing a loaded trailer of a tractor-trailer combination which comprises the steps of weighing the loaded trailer while it is unhooked from the tractor to obtain an indication representative of the weight measurement, and electrically multiplying said indication by a weight transfer formula to obtain the equivalent weight measurement of the hooked-up tractor-trailer.

3,283,839
STAIR-CLIMBING WHEEL CHAIR
Ronald K. Brown, 643 Buckeye St., Apt. 3, Redwood City, Calif., and James G. Beneke, 835 14th Ave., Menlo Park, Calif.
Filed Mar. 2, 1965, Ser. No. 436,478
17 Claims. (Cl. 180—8)



1. In a device for ascending or descending stair-like obstructions to level progress, a frame, an axle rotatably mounted in said frame adjacent one end, a planetary drive comprising a sun fixed on said axle, at least one planet meshing with said sun and an outer ring gear meshing with said planet, means for turning said ring gear, mounting means rotatable relative to said axle, at least three ground engaging wheels rotatably and equiangularly mounted in said mounting means, and drive means for rotating each of said wheels from said axle, at least one said wheel being positioned to rest on the ground when said device is traveling on level ground, said mounting means and said axle being free to rotate about the axis of said one wheel as a center when said one wheel encounters an obstruction to level progress.

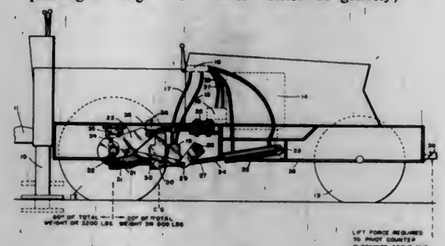
3,283,840
AUTOMATICALLY ENGAGEABLE POWER TAKE-OFF COUPLING
John L. Lane, Warren, Ohio, assignor of fifty percent to Guy E. Lane, Youngstown, Ohio, and fifty percent to Weather-Seal, Inc., N. Barberton, Ohio, a corporation of Ohio
Filed June 18, 1963, Ser. No. 288,720
5 Claims. (Cl. 180—14)



1. In a power coupling for use with a vehicle having a hitch member attached thereto,
a power supply member on the vehicle,
an implement having a hitch member thereon,
a driving member carried by said vehicle hitch member and engageable with said power supply member,
a driven member carried by said implement hitch member, and
interengaging plate-type coupling means operatively carried by said driving member and by said driven member for power transmission therebetween and for engagement by relative axial movement therebetween,
said hitch members being engageable upon relative movement therebetween to connect the tractor and implement together, while action also brings said driving and driven members into aligned positions for engagement of said coupling means, the combination of:
a support for each of said coupling means individually attached to said hitch member,
each said support having a pair of vertically aligned lug means thereon,
a positioning means for each of said coupling means journalling a said coupling means therein and being resiliently secured to a said support,
each of said positioning means engaging a said pair of said lug means.

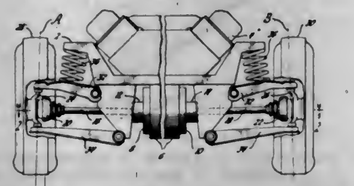
3,283,841
HEAVY SELF-PROPELLED WORK PERFORMING VEHICLE
Charles J. Davis, 22 Colonial, Wichita, Kans., and Alfred B. Mayfield, Halstead, Kans.; said Mayfield assignor to said Davis
Filed Nov. 27, 1964, Ser. No. 414,258
6 Claims. (Cl. 180—14)

1. A self-propelled vehicle comprising:
a rigid elongated frame which supports a power unit;
at least one transporting wheel mounted near the front end of said frame;
a transverse rear axle housing having axle ends projecting from the opposite ends thereof;
a pair of rear transport wheels, one mounted on each axle end;
laterally spaced crank arms disposed radially and oriented identically with respect to said rear axle housing, each crank arm having an end rigidly secured to said axle housing;
means pivotally securing the respective opposite ends of said crank arms to said frame on a common transverse axis to afford fore and aft swinging movement of the axle housing and its wheels about the crank arm axis, the transverse crank arm axis lying in a plane immediately adjacent a vertical transverse plane passing through the vehicle center of gravity;



controllable power means carried by the vehicle and connected to swing the axle housing and its transport wheels to selected positions about the crank arm axis to vary the fore and aft distance between the rear wheel axis and the vertical transverse plane which passes through the vehicle center of gravity, and consequently to vary the lift force required to raise and pivot the front end of the vehicle about the transverse rear wheel axis.

3,283,842
FRONT WHEEL DRIVE TORQUE STEER COMPENSATOR
Andrew K. Watt, Lansing, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 8, 1964, Ser. No. 416,820
3 Claims. (Cl. 180—48)

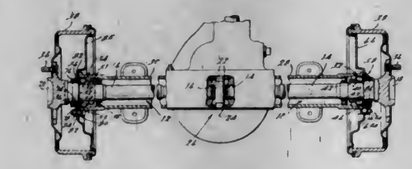


1. A front wheel drive arrangement for a motor vehicle having a frame, comprising a wheel supported by said frame for steering movement about a substantially vertical axis, a drive mechanism connected to said frame, a half axle for driving said wheel, a universal joint mechanism including a helical spline coupling means connecting the inboard end of said axle with said drive mechanism, and a universal joint connecting the outboard end of said axle with said wheel at a point offset from said axis so that when said wheel is turned and driving torque is applied thereto a force automatically acts against the wheel to effectively decrease the turning radius.

3,283,843
AXLE CONSTRUCTION
Doward L. Runyan, Berkley, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Michigan
Filed July 27, 1964, Ser. No. 385,352
6 Claims. (Cl. 180—88)

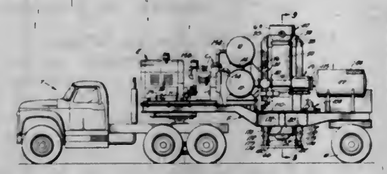
1. A motor vehicle axle assembly comprising:
(A) elongated, axially aligned left and right axle housings;

(B) left and right axles each having a shaft portion received within a respective housing and extending at its outer end beyond that housing and disposed at its inner end in juxtaposition to the inner end of the shaft portion of the other axle;
(C) a spacer block disposed between said inner ends;
(D) a tapered roller bearing mounted in each of said axle housings and rotatably receiving the respective axle adjacent the said outer end of its shaft portion;
(E) means restraining the inner race of each of said bearings against inward axial movement along the related shaft portion;
(F) means restraining the outer race of one of said



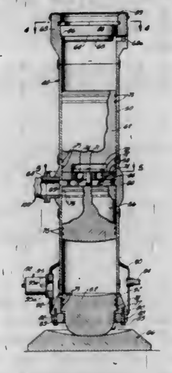
bearings against axially outward movement relative to the related axle housing;
(G) means defining a screw thread at the outer end of the axle housing receiving the other bearing; and
(H) an annular threaded adjustor member threadably engaging said screw thread on said axle housing and presenting an annular face engaging the axially outer face of the outer race of said other bearing, whereby said adjustor member may be selectively rotated to threadably advance it relative to said axle housing and thereby take up the play in said other bearing, and through bodily axial movement of said shaft portions and said spacer block, take up the play in said one bearing.

3,283,844
SEISMIC PROSPECTING SYSTEM
Raymond A. Peterson, Altadena, Calif., assignor, by mesne assignments, to United Geophysical Corporation, Pasadena, Calif., a corporation of Delaware
Filed Sept. 5, 1963, Ser. No. 306,795
21 Claims. Cl. 181—.5)



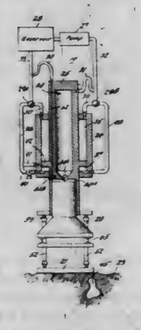
4. In combination in an impacting structure:
a vehicle having ground-engaging transport means;
an impactor mounted upon said vehicle;
a base member separately disposed below;
said vehicle in position underlying said impactor for receiving an impact from said impactor and supported only from the ground to apply seismic impact to the ground surface, said base member being free of any rigid connection with the vehicle when supported on the ground surface to apply such seismic impact;
means for operating said impactor to apply an impulse to said base member; and
means carried by said vehicle for supporting said base member separately from said impactor above the ground for transport.

3,283,845
SEISMIC PROSPECTING SYSTEM
James T. Kenney, Arcadia, Calif., assignor, by mesne assignments, to United Geophysical Corporation, Pasadena, Calif., a corporation of Delaware
Filed Sept. 25, 1963, Ser. No. 311,486
31 Claims. (Cl. 181—.5)



1. An impactor comprising:
an elongated impactor cylinder mountable in a vertical attitude;
a ported diaphragm spanning a middle portion of said cylinder;
a floating impacting piston disposed below said diaphragm;
a floating recoil balancing piston disposed above said diaphragm;
means for applying pneumatic impacting pressure between said pistons; and
anvil means movable in the lower portion of said cylinder to receive the impact of said impacting piston for transmitting such impact to an underlying object.

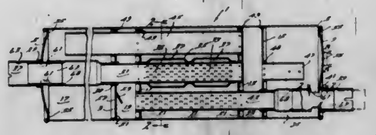
3,283,846
IMPULSE SEISMIC DEVICE
Fred H. Lindall and William Harry Mayne, San Antonio, Tex., assignors to Olive S. Petty, San Antonio, Tex.
Filed Oct. 2, 1963, Ser. No. 314,583
7 Claims. (Cl. 181—.5)



7. An impulse seismic device comprising in combination, a mobile carrier, an impact hammer assembly including a movable hammer, a baseplate positioned to receive impact blows from said hammer, hydraulic jacking means coupled to relatively position the baseplate and the hammer, a hydraulic system driving the hammer in said

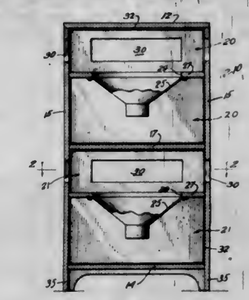
assembly against said plate, and means selectively coupling a constant hydraulic pressure to the hydraulic jacking means when said hammer is driven into said plate with said hydraulic system.

3,283,847
CERAMIC COATED MUFFLER
Karl K. Kerns and Ervin C. Lentz, Jackson, Mich., assignors to Walker Manufacturing Company, a corporation of Delaware
Filed Jan. 11, 1961, Ser. No. 82,030
20 Claims. (Cl. 181—61)



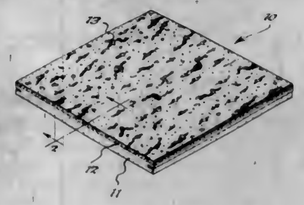
1. A metallic muffler comprising a shell having spaced transversely extending end wall portions, a silencing structure inside the shell, an internal conduit extending through one end wall portion of the shell, said conduit having an opening in a side wall thereof located inside and adjacent the one end portion of the shell, said opening being large enough to permit the free flow of liquid from the interior of the shell through the side wall of the conduit to enable the muffler structure on the inside of the shell to be coated, a portion of said conduit outwardly of said opening being no smaller in diameter than that portion containing said opening whereby a sleeve means may be inserted into said conduit to cover said opening, a ceramic coating on the interior of said muffler applied in part through said opening, and sleeve means mounted in said conduit and covering said opening.

3,283,848
SOUND REPRODUCTION SYSTEM
Thomas Allan Patti, Rte. 1, Highway 167, Hartford, Wis.
Filed Oct. 21, 1965, Ser. No. 499,435
1 Claim. (Cl. 181—31)



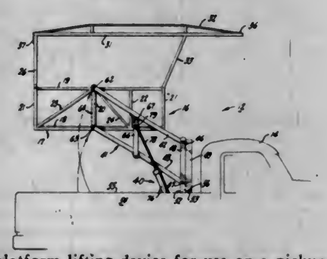
A sound reproduction system adapted for use in reproducing voice or instrumental presentation comprising, a cabinet, a regular polygonal-shaped cover member for said cabinet, a regular polygonal bottom member closing the bottom of said cabinet, said polygonal members having the same number of sides, rectangular side members joining said cover and bottom members to form the speaker cabinet, each of said side members having apertures therein adjacent the tops thereof for the exit of sound, a speaker mounting ring carried within said cabinet side members and below said apertures, a speaker including a speaker cone carried by said mounting ring, said mounting ring providing substantially a free passage of air between the speaker and the side panels.

3,283,849
ACOUSTIC TILE LAMINATE
Robert J. Schirick, Tonawanda, N.Y., Richard D. Bunker, Alexandria, Ind., and Arthur C. Austin, Kenmore, N.Y., assignors to National Gypsum Company, Buffalo, N.Y., a corporation of Delaware
Filed Aug. 3, 1964, Ser. No. 386,864
12 Claims. (Cl. 181—33)



3. An acoustic tile laminate comprising a backing layer consisting essentially of felted mineral wool in a starch binder; and a facing layer consisting essentially of cast mineral wool, a starch binder, and a thickening agent for said starch binder; said facing layer being bonded to said backing layer by the fusion of said first and second starch binders with each other; said starch binders being within about 3% of the same percentage by weight of the total weight of the layers with which they are associated to thereby minimize the tendency for warping of said laminate as a result of variations of atmospheric humidity; said thickening agent in said facing layer being present in an amout sufficient to thicken the body of the facing layer sufficiently to permit said facing layer to assume a travertine stone-like facial appearance when subjected to a mechanical screeding process.

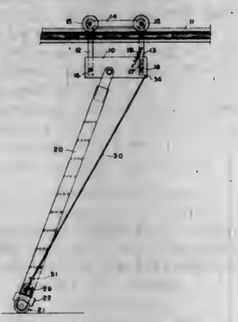
3,283,850
PLATFORM LIFT
Homer C. Jones and Donald R. Roth, Sacramento, Calif., assignors of thirty-five percent to said Jones, twenty-five percent to said Roth, twenty percent to Carl C. Markwood, ten percent to Ronald L. Muenter and ten percent to Robert D. Hemenway, all of Sacramento, Calif.
Filed Apr. 9, 1965, Ser. No. 447,043
3 Claims. (Cl. 182—2)



1. A platform lifting device for use on a pickup truck, said device comprising:
(a) a vertical fixed frame upstanding from the truck bed adjacent the cab;
(b) parallel linkage lifting arms pivotally mounted at their forward ends on said vertical fixed frame for vertical swinging movement between a first lower position and a second elevated position;

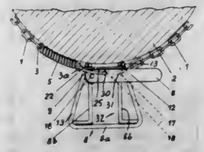
(c) a horizontal platform framework pivotally mounted on the after ends of said parallel lifting arms, said platform framework being movable with said arms between said lower position and said elevated position, said horizontal platform being supported by the truck bed in said lower position and being vertically spaced therefrom in said elevated position, said platform being constrained by said parallel linkage arms to maintain a horizontal attitude between said positions;
(d) a horizontal rack mounted on and located above said platform in spaced parallel relation thereto, said rack including a first horizontal rack portion overlying said horizontal platform framework and a second horizontal rack portion extending forwardly from said rack portion and overlying the truck cab as said horizontal platform framework moves between said first position and said second position; and
(e) means connected to said vertical frame and to said arms for moving said arms, said platform and said rack between said positions.

3,283,851
WHEEL BRAKE
Allan G. Smith, Pointe Claire, Quebec, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada
Filed Sept. 3, 1964, Ser. No. 394,196
7 Claims. (Cl. 182—15)



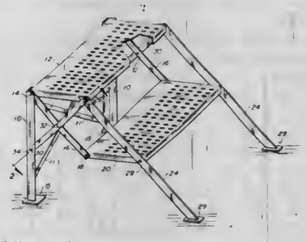
1. A rolling ladder of the trolley type comprising an overhead track, a wheel supported carriage movably mounted on said track, a member pivotally attached at one end to the carriage, spring means yieldably connecting the other end of the member to the carriage, a ladder attached to the member intermediate the ends thereof, at least one wheel assembly attached to the other end of the ladder, said wheel assembly comprising a wheel, a frame secured to the ladder for rotatably supporting the wheel, the frame having a portion overlying and spaced from a portion of the periphery of the wheel, a block in the form of a wedge having one portion of larger dimension than the space between the wheel and the overlying portion of the frame and having another portion of smaller dimension than said space, said block being normally disposed with said other portion of smaller dimension in said space, means interconnecting the block and the member for holding the block out of engagement with the wheel when the member is in a first position in the absence of a weight on the ladder, said interconnecting means being connected to the member on the opposite side of the ladder from the pivotal attachment of the member with the carriage such that the distance between the connections of said interconnecting means with the member and the block decreases upon movement of the member to a second position under control of the spring means when weight is applied to the ladder whereby said block drops into engagement with the wheel so that rotation of the wheel draws one portion of the block of said greater dimension into said space to wedge the block between said overlying portion of the frame and the wheel to prevent rotation of the wheel.

3,283,852
CLIMBING DEVICE FOR POLES AND THE LIKE
Richard Carlo Merz, 30 Burgstockstrasse, and Karl Jans, 13 Molitorstrasse, both of Bad Waldsee, Wurttemberg, Germany
Filed June 10, 1965, Ser. No. 469,027
9 Claims. (Cl. 182—92)



1. A component of a sectional ladder for poles and the like, comprising
(a) elongated pliable strap means to be laid around a pole and the like, including resilient means, said strap means having two ends,
(b) a mechanism to tighten said strap means and to lock same in the tightened condition, said mechanism including
(1) a lever member,
(2) arm means connected to one of said ends, and
(3) an arresting member connected at least indirectly to the other of said ends, said arresting member having said lever member pivotally connected thereto, said lever member being adapted to be swung from an operative or a strap means tightening and locking position into an inoperative or a strap means unlocking and releasing position, and vice versa, said arresting member having holding means for releasably holding said arm means in said operative position, and
(c) rung means fixedly connected to said arresting member, said rung means having a step part, said step part, with the ladder component in operative condition, being disposed so as to be below said strap tightening mechanism.

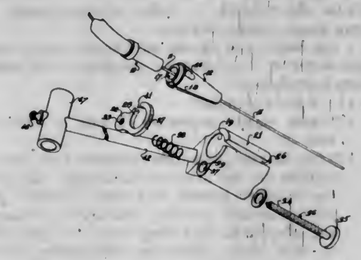
3,283,853
FOLDING STAIRS
Carl R. Brophy, P.O. Box 122, Clackamas, Oreg.
Filed Feb. 18, 1965, Ser. No. 433,704
5 Claims. (Cl. 182—152)



1. In a folding stairs,
a top tread,
a bottom tread,
a pair of rear legs having connecting portions intermediate the ends thereof and pivotally connected to

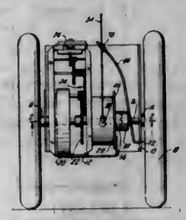
the portions of the ends of the top tread adjacent the rear edges of the top tread,
a pair of front legs pivotally connected to the portions of the ends of the treads adjacent the front edges thereof,
a pair of braces each pivotally connected at one end to one of the portions of the ends of the top tread adjacent the front edge of the top tread,
strap means connecting portions of the bottom tread adjacent the rear edge thereof to the rear legs for pivotal movement relative thereto,
quick-detachable means connecting the other end of each brace to one of the connecting portions,
and quick-detachable means for connecting the central portions of the braces to the central portions of the strap means.

3,283,854
CABLE LUBRICATING TOOL
Douglas R. Self, Birmingham, Ala., assignor to Fred S. Himebauch, Birmingham, Ala.
Filed Apr. 2, 1964, Ser. No. 356,804
4 Claims. (Cl. 184—105)



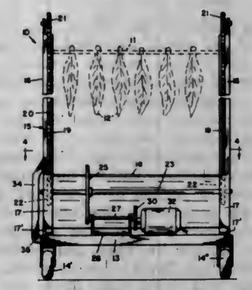
1. In a tool for lubricating a cable which telescopes into an end of a tube-like housing with a portion of the cable projecting outwardly of the housing:
(a) a resilient member having an outer surface which tapers toward one end thereof,
(b) there being an axially extending opening through said resilient member of a size adjacent the smaller end thereof to receive said cable with a snug fit and of a size adjacent the larger end thereof to receive the adjacent end of said tube-like housing to define a lubricant receiving chamber intermediate said smaller end of said resilient member and said adjacent end of the tube-like housing,
(c) there being a longitudinally extending slit in one side of said resilient member communicating with said axially extending opening for receiving said cable,
(d) a rigid housing having a tapered recess therein corresponding to and of a size to receive the outer tapered surface of said resilient member,
(e) there being a longitudinally extending slot in said rigid housing in communication with said tapered recess and of a size to receive said cable,
(f) there being lubricant passageways through said rigid housing and said resilient member disposed to move into alignment with each other and communicate with said lubricant receiving chamber,
(g) means to hold said resilient member inwardly of said tapered recess,
(h) means to introduce lubricant through said lubricant passageways whereby the lubricant passes through said lubricant receiving chamber into said tube-like housing, and
(i) a detent carried by said resilient member in position to engage said slot in the rigid housing whereby the lubricant passageway in said resilient member is aligned with the lubricant passageway in said rigid housing.

3,283,855
STRING-WOUND SPRING MOTOR
Ruth Kaplan, New York, N.Y.
(230—41 131st Ave., Laurelton, N.Y.)
Filed June 24, 1965, Ser. No. 466,564
7 Claims. (Cl. 185—39)



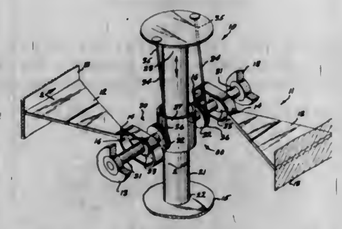
1. In a string-wound spring motor, including a frame, a winding shaft supported on said frame and a main motor spring connected to said shaft, a string-winding drum, means supported said drum for rotation independently of said shaft, a string wound on said drum, resilient means tensioning said drum against rotation in string-unwinding direction, a first clutch member connected to said drum and rotatable therewith a second clutch member supported for movement into and out of engagement with said first clutch member and operably connected with said shaft for rotation therewith, and means supported on said frame and engaged by said string and actuated thereby, when tensioned to unwind from said drum, to engage said second clutch member to move it into engagement with said first clutch member.

3,283,856
TOBACCO LIFTING MACHINES
David C. Stewart, Sr., P.O. Box 193, Ellerbe, N.C.
Filed Oct. 23, 1965, Ser. No. 502,960
6 Claims. (Cl. 187—9)



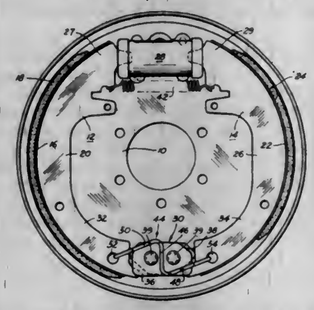
1. A portable lift for tobacco sticks, comprising in combination, a wheeled base, an upstanding framework provided on said base, an endless conveyor supported by said framework, means for driving said conveyor, and means hingedly connecting said framework to said base for swinging movement of the framework between an upstanding operative position and a substantially horizontally extending traveling position at one side of said base, said framework including a pair of transversely spaced uprights, enlarged frames provided at the lower ends of said uprights, and transversely extending means connecting said frames together, said means hingedly connecting said framework to said base comprising an arm pivotally attached at one end thereof to said base and secured at its other end to one of said uprights, said enlarged frames resting on said base when the framework is in its operative position.

3,283,857
BEAM ENERGY ABSORBING DEVICE
David L. Platus, Covina, Frank A. Marovich, Hacienda Heights, and Patrick J. Cunningham, Fullerton, Calif., assignors to Ara, Inc. (Aerospace Research Associates, Inc.), West Covina, Calif., a corporation of California
Filed July 16, 1963, Ser. No. 295,317
5 Claims. (Cl. 188—1)



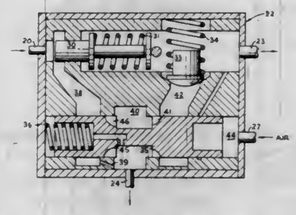
1. An energy absorbing device comprising: a body of material capable of being deformed by bending and thereby absorbing energy; a movable member; means guiding said movable member along a predetermined path relative to said body of bendable material; motion transmitting means connected to said movable member and said body of bendable material and arranged to effect cyclic and repeated bending of said body, in opposite directions, in response to movement of said member along said path in one direction.

3,283,858
BRAKE
Joseph L. Mossey and Richard T. Burnett, South Bend, Ind., assignors to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Jan. 7, 1965, Ser. No. 423,904
4 Claims. (Cl. 188—78)



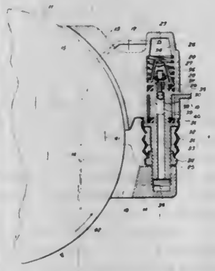
1. In a drum brake assembly comprising: a drum rotatable about a central axis, a support member, a pair of brake shoes slidably mounted on said support member in end-to-end relationship, actuating means disposed between one pair of adjacent shoe ends, stationary anchoring means fixedly secured to said support member and disposed between the other pair of adjacent shoe ends, an integral one-piece spring having a central portion axially spaced from said anchoring means and a pair of legs at each end thereof extending laterally away therefrom in opposite directions and at an incline to the plane of said central portion with the free ends of each leg being operatively connected to a respective one of said other pair of adjacent shoe ends for urging said shoe ends into engagement with said anchoring means, said legs and central portion being so arranged relative to each other that said central portion is in torsion.

3,283,859
RETARDER CONTROL SYSTEM
August H. Bertram, Decatur, Joachim Horsch, Pekin, and Gerald D. Rohweder, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Sept. 17, 1964, Ser. No. 397,149
5 Claims. (Cl. 188—90)



1. A retarder control system for directing oil under pressure from a source of supply to a closed retarder circuit comprising a normally closed valve between the supply and the retarder circuit, said valve including a spool reciprocable in a ported cylinder, a spring chamber and spring at one end of the cylinder urging the valve toward a closed position, means to apply a regulated force to the opposite end of the cylinder to open the valve, first passageway means to permit fluid to by-pass said valve and be admitted to the retarder circuit, and second passageway means to communicate the retarder circuit pressure to the spring chamber to oppose said force and attain a balanced state.

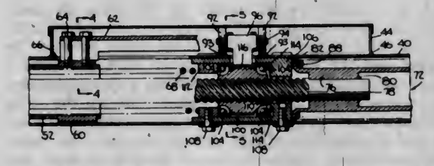
3,283,860
SERVO ACTUATED DISC BRAKING SYSTEM
Mamoru Watanabe, 16, 6-chome, Takinogawa, Kita-ku, Tokyo, Japan
Filed Dec. 3, 1964, Ser. No. 415,763
Claims priority, application Japan, Dec. 7, 1963 38/65,685
7 Claims. (Cl. 188—152)



1. A braking system for a rotating body comprising a stationary brake means adapted for frictionally engaging the rotating body to apply braking force thereto, a floating brake means adapted for frictionally engaging said body concurrently with said stationary brake means to also apply braking force to the rotating body, the floating brake means undergoing movement relative to the stationary brake means as a result of the friction between the floating brake means and the rotating body, piston

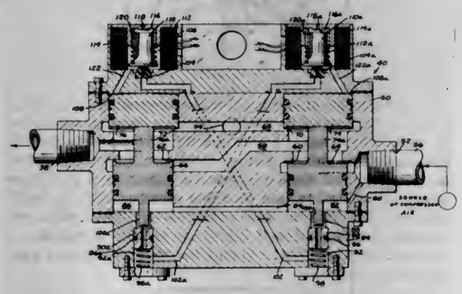
means coupled to the floating brake means for undergoing movement therewith, said stationary and floating brake means including respective hydraulic actuator means, means defining first and second fluid paths from a supply of pressure fluid respectively to the hydraulic actuator means of the floating and stationary brake means, valve means supported with said stationary brake means for controlling the passage of pressure fluid in said fluid path which supplies the stationary brake means, said piston means being mounted for movement within the stationary brake means for engaging the valve means to close the same when floating brake means has undergone a prescribed degree of movement and close the fluid path to the actuator means of the stationary brake means such that further movement of the piston means causes increase of pressure of the pressure fluid in the closed fluid path whereby the stationary brake means exerts increased force on the rotating body.

3,283,861
SLACK ADJUSTER
Everard C. Mersereau, Westfield, N.J., assignor, by mesne assignments, to Robert M. Holloway and Robert L. Ludington, both of Michigan City, Ind.
Filed Sept. 22, 1964, Ser. No. 398,216
3 Claims. (Cl. 188—196)



1. A slack adjusting device comprising a housing having first and second ends; a pull rod assembly having a threaded portion, a coupling portion, and a pull rod portion, said portions being fixedly interconnected one with respect to the other and said threaded portion and said coupling portion being disposed within said housing and the pull rod portion extending from said first end of the housing; spring means disposed within the housing and acting between the housing and the coupling portion of said pull rod assembly for urging the threaded portion away from said first end of the housing; an adjusting nut threadably mounted on the threaded portion of said pull rod and being provided with teeth on the circumference thereof; means mounting said adjusting nut within said housing for rotation, means for limiting the axial travel of said adjusting nut with respect to the housing, a load pawl and a holding pawl mounted in said housing adjacent said teeth and engageable respectively with opposite sides of the teeth for respectively preventing movement of said pull rod assembly in opposite directions; means engaging said pawls for moving said pawls into engagement with said teeth; a cam bar longitudinally movably mounted within said housing; an activating arm extending outwardly through a slot in the bottom of the housing and being adapted for longitudinal movement with respect to said housing, an actuator slidably mounted within the housing, means fixedly interconnecting said activating arm to said actuator, said actuator being provided with a collar portion for engaging an abutment disposed within said housing for preventing excessive movement in a direction away from said first end of the housing, said actuator further comprising a hub-like portion, said cam bar being fixedly connected to said hub-like portion, said cam bar being U-shaped and the ends of the arms being cam surfaces respectively, said cam surfaces being engageable with said pawl cam engaging portions respectively for disengaging the teeth engaging portions of said pawls from said teeth, said cam surfaces and said cam engaging portions being disposed with respect to said pawls so that in a first longitudinal position of the cam bar the load pawl is out of engagement with the teeth and the holding pawl is in engagement with one of said teeth, in a second longitudinal position of said cam bar the load pawl is in engagement with one of said teeth and the holding pawl is out of engagement with said teeth, and in a further longitudinal position of the cam bar, all of the pawls are out of engagement with said teeth; and spring means within the housing acting between the adjusting nut mounting means and said collar portion for urging the cam bar away from said first end of the housing.

3,283,862
SECONDARY PILOT CONTROL VALVE
Howard Warnock, Minster, Ohio, assignor to The Minster Machine Company, Minster, Ohio, a corporation of Ohio
Filed Apr. 10, 1964, Ser. No. 358,814
13 Claims. (Cl. 192—18)

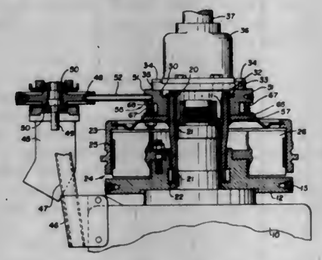


1. A control valve arrangement comprising body means having a pressure inlet port, a pressure outlet port, and an exhaust port and also having passage means interconnecting said ports; first and second valve means in said body means each having a first position in which it establishes an effective connection from said outlet port to said exhaust port and each having a second position to which both must be moved to establish an effective connection from said inlet port to said outlet port, first fluid operable means for each valve means responsive to pressure for urging the respective valve means toward said first position, second fluid operable means for each valve means responsive to fluid pressure to urge the respective valve means toward said second position, means for supplying fluid to said first and second fluid operable means, and means operatively positioned in said body means and responsive to the failure of either of said first and second valve means to move to its said first position for preventing the supply of pressure fluid to said second fluid operable means of the other valve means.

3,283,863
POWER TRANSMISSION SYSTEMS FOR ROTARY WING AIRCRAFT
Wilbur J. Scheutzow, Berea, Ohio, assignor to Scheutzow Helicopter Corporation
Filed Sept. 8, 1964, Ser. No. 394,707
8 Claims. (Cl. 192—46)

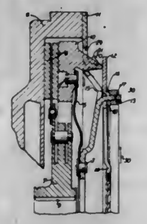
1. In a helicopter or the like, the combination comprising:
(a) a rotary drive shaft,
(b) a rotary driven shaft,
(c) a plurality of spaced wedges carried around one of said shafts for rotation therewith, each of said wedges including a sloping surface terminating at a shoulder,

(d) a unitary, flat, thin transmission member mounted around the other of said shafts for movement toward and away from said wedges, said transmission member having opposed, parallel, closely spaced planer faces transverse to said other shaft and including circumferentially spaced, rigid arms which project radially from said other shaft and lie between the planes established by said opposed faces, said member and said other shaft being formed with cooperating surfaces so that the said member and said other shaft are rotatable together,
(e) spring means resiliently urging said unitary member toward said wedges so that said shoulders and the



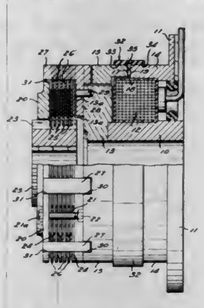
sides of said arms are in cooperative abutting engagement to transmit rotary motion between said shafts, said shoulder having a height at least equal to the thickness of said member and extending between the planes established by said opposed faces,
(f) said spring means permitting said member to move away from said wedges so that said member can ride over said sloping surfaces when said driven shaft overruns said drive shaft,
(g) an engine operatively connected to said drive shaft, and
(h) structure adapted to connect said driven shaft to a rotor of a helicopter.

3,283,864
DISK-CLUTCH PARTICULARLY FOR MOTOR VEHICLES
Alfons Motsch, Cologne-Nippes, Germany, assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Aug. 14, 1964, Ser. No. 389,543
Claims priority, application Germany, Aug. 16, 1963, F 40,509
7 Claims. (Cl. 192—68)



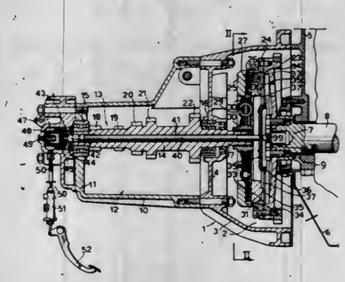
1. A clutch assembly having a pressure plate, a cover plate and means connecting said plates constructed for axial movement of said pressure plate with respect to said cover plate while maintaining said plates in coaxial relationship, said means comprising a one-piece annular member having its inner and outer edges connected to said cover and pressure plates and having a series of radially spaced apart circumferential corrugations.

3,283,865
ELECTROMAGNETIC TORQUE-SUSTAINING COUPLING WITH AIR GAP SEAL
James A. Mason, Shaker Heights, Ohio, assignor to Fawick Corporation, a corporation of Michigan
Filed Oct. 19, 1964, Ser. No. 404,772
3 Claims. (Cl. 192—84)



1. On an electromagnetic torque-sustaining coupling having an operating air gap, a flexible permanent magnet sealing strip overlying said air gap and magnetically adhering to the coupling on opposite sides of the air gap, said sealing strip being manually removable from said coupling to permit measurement of said air gap.

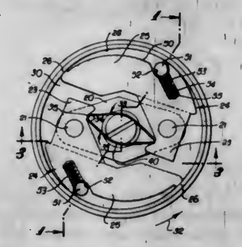
3,283,866
FRICTION CLUTCH CONTROL DEVICE FOR MOTOR VEHICLES
Dante Giacosa, Agnelli, Turin, Italy, assignor to Fiat Società per Azioni, Turin, Italy
Filed Oct. 12, 1964, Ser. No. 403,079
Claims priority, application Italy, Oct. 15, 1963, 21,602/63
1 Claim. (Cl. 192—96)



Control device for a friction clutch for motor vehicles equipped with a gearbox of the type having a primary shaft adapted to be coupled with an engine shaft through the said friction clutch, the friction clutch comprising a flywheel keyed to the engine shaft, provided with a cover secured to the said flywheel, a friction plate mounted for axial displacement on the primary shaft, juxtaposed to the cover, a clutch pressure plate juxtaposed to the friction plate, capable of axial displacement in the cover, a disc spring interposed between the flywheel and clutch pressure plate to press the latter against the friction plate and control means for de-clutching the friction plate comprising a rod mounted for axial displacement in an axial bore in the primary shaft and abutting by one end against the disc spring, the axial displacements of the rod being controlled by hydraulic cylinder means arranged externally of the primary shaft and acting on the other rod end against the disc spring, spring

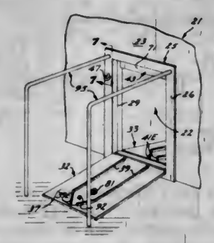
means being provided between the cover and clutch pressure plate and acting against the disc spring for removing the clutch pressure plate from the friction plate simultaneously with the displacement of the rod against the disc spring.

3,283,867
CENTRIFUGAL ONE-WAY CLUTCH
Henry T. M. Rice, San Gabriel, Calif., assignor to Ohlsson & Rice, Inc., Los Angeles, Calif., a corporation of California
Filed Oct. 19, 1964, Ser. No. 404,875
14 Claims. (Cl. 192—105)



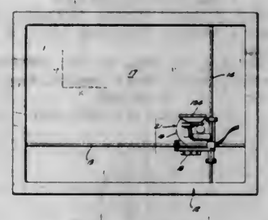
1. In a clutch: a driving member; a driven member having a clutching surface; a clutch member rotatable by said driving member and movable by centrifugal force into engagement with said clutching surface of said driven member; and one-way clutch means acting between said clutch member and said clutching surface of said driven member for transmitting rotation in one direction from said driven member through said clutch member to said driving member.

3,283,868
VALUE-DISPENSING APPARATUS OPERABLE IN RESPONSE TO MOVEMENT OF A VEHICLE A MINIMUM DISTANCE ALONG A PREDETERMINED PATH
Stanley E. Kuhns and Adelia B. Kuhns, both of 21425 S. Wardham, Artesia, Calif.
Filed Feb. 23, 1965, Ser. No. 434,199
5 Claims. (Cl. 194—4)



1. A value dispensing apparatus operable in response to movement of a vehicle a minimum distance along a predetermined path, comprising: entryway-defining framework means adapted to be mounted in an aperture in an enclosure-defining wall between an exterior side and an interior side thereof and to define an entryway opening therethrough; valuable object storing means adapted to store a plurality of valuable objects, each comprising a flat disc-shaped coin-simulating token means, in vertically stacked relationship and provided with controllably operable dispensing means cooperable with said valuable object storing means and adapted, in response to each individual operation thereof, to dispense a desired number, comprising at least one, of said token means from the bottom end of the vertically stacked plurality thereof, said controllably operable dispensing means being provided with dispenser operating means for initiating operation of said dispensing means in response to movement of a cart type of wheeled vehicle a minimum distance along a predetermined path through said entryway opening from the exterior side to the interior side of said enclosure-defining wall means, said dispenser operating means comprising at least a pair of vehicle-passage-sensing means each differently positioned along said predetermined minimum distance path of movement of said vehicle after it has been passed through said entryway opening from the exterior side of said enclosure-defining wall means to the interior side thereof and, in response to such sensing of said vehicle by both of said vehicle-passage-sensing means at said two different positions, acting in two different successively cooperative ways to conjointly initiate operation of said dispensing means whereby to cause one complete dispensing operation thereof; said dispensing means including a downwardly and outwardly angularly inclined dispensing chute means having an outwardly open and accessible cup means at the bottom end thereof carried by the outer portion of said entryway-defining framework means and having an upper inner portion positioned in receiving relationship relative to said storing means and there being provided with a pair of vertically adjacent relatively movable apertured dispensing plates, each one of which is effectively first movable into a first dispensing position in manner such as to place a top aperture directly over a bottom aperture for downward transfer of a token from said top aperture to said bottom aperture, and the bottom one of which is then slidably movable into a second dispensing position in a manner such as to place said bottom aperture directly above the upper end of said dispensing chute means, in response to the activation of the corresponding ones of said two vehicle-passage-sensing means, respectively.

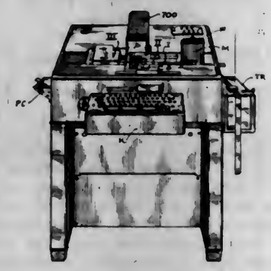
3,283,869
STRIKING LETTER AUTOMATIC WHEEL PRINTER FOR USE ON FLAT SURFACES
Richard E. Hiss, Orcus Island, Wash., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Oct. 26, 1964, Ser. No. 406,373
5 Claims. (Cl. 197—2)



1. In a device for use to print on a surface of an X–Y axes coordinate plotter,
- movable support bars carried by the plotter in determined relation to the X–Y coordinates,
- a carriage supported by the bars for movement therewith,
- said device being supported by the carriage and comprising a mounting plate,
- a shaft located in a central area of the plate and projecting downwardly therethrough,
- a print wheel carried by the shaft adjacent the lower terminal thereof and immediately above the surface, a plurality of movable type units carried annularly around the wheel and movable toward and away from the surface,

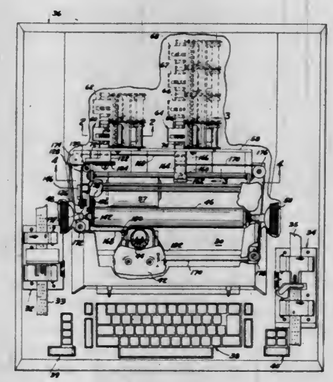
- said wheel being rotatable about the axis of said shaft,
- a plurality of locating elements adjacent each type unit,
- each element being in determined relation to a specific unit,
- power means carried by the plate and operatively connected to the print wheel to provide primary controllable and rotatable indexing of the latter,
- movable index control means carried by the plate and operative to selectively engage the respective locating elements to secondarily accurately position the related type unit in a print position,
- movable hammer means carried by the plate to impact engage the type unit in print position to induce rapid movement of the latter to print engage the surface,
- means to induce sequential movement of the index control means and the hammer means to first position the index control means and then induce movement of the hammer means to impact engage the related type unit,
- said last-mentioned means comprising a power source and a continuously driven flywheel,
- a first normally stationary shaft,
- clutch means to selectively interconnect the flywheel and the first shaft to induce rotation of said first shaft,
- a second normally stationary shaft,
- means operatively interconnecting the second shaft and the index control means,
- and a driving connection between said first shaft and said second shaft to induce reciprocating rotatable movement of the second shaft in response to rotational movement of the first shaft.

3,283,870
MATRIX POSITIONING MEANS FOR EMBOSSING MACHINES
Walter T. Gollwitzer, Euclid, Ohio, assignor to Addressograph-Multigraph Corporation, a corporation of Delaware
Original application July 29, 1963, Ser. No. 301,693. Divided and this application Sept. 23, 1965, Ser. No. 489,696
18 Claims. (Cl. 197—6.2)



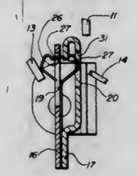
1. In an embossing machine, a punch and die operating and selection mechanism comprising:
- a series of punches and a series of complemental dies arranged in alignment with each other in accordance with a predetermined two coordinate system;
- ram means occupying an index position relative to which the punches and dies are movable in unison within the extremes of a preselected coordinate field so as to present to the ram means a punch and die pair selected to form an embossure;
- coordinate selector means for each coordinate, each settable in accordance with a predetermined code to identify a given coordinate position and thereby identify a particular punch and die pair selected for operation;
- and means to translate a code position set in the selector means into direct movement of the punches and dies bodily from any prior coordinate position directly along an unbroken substantially linear path, corresponding to the vector sum of the settings of said coordinate selector means, to said given coordinate position to move said particular punch and die pair to said index position.

3,283,871
WRITING SYSTEM HAVING ORDINATE AND ABSCISSA READER MEANS
Paul E. Becking, Lake Orion, James D. Bungard, East Detroit, and Roy E. Sherman, Warren, Mich., assignors to Dura Corporation, Oak Park, Mich., a corporation of Michigan
Filed Dec. 18, 1963, Ser. No. 331,486
28 Claims. (Cl. 197—20)



1. A programming device for a typewriter or the like comprising: means for providing information representative of a printing location including ordinate reader means, abscissa reader means, and digital coordinating means synchronously connecting each of said reader means to said typewriter; and additional means for providing intelligence to the typewriter or the like to cause the typewriter or the like to record or utilize said intelligence.

3,283,872
TABULAR STOP ASSEMBLY
Kenneth R. Frechette, Bristol, Conn., assignor, by mesne assignments, to Royal Typewriter Company, Inc., New York, N.Y., a corporation of Delaware
Filed June 3, 1964, Ser. No. 372,258
2 Claims. (Cl. 197—70)



1. A tabular stop assembly comprising first and second elongated plates each having a plurality of rectangular openings spaced along its length,

an elongated strip having a plurality of spaced flexible teeth the free ends of which are bent upon themselves to form stop elements,

means for securely sandwiching said elongated strip between said elongated plates with said stop elements within said openings, said stop elements protruding from the plane of said first plate when in a set position and from the plane of said second plate when in a reset position,

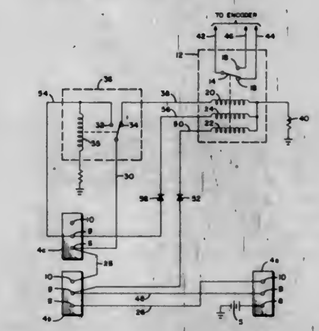
and means within the openings in one of said plates cooperable with said stop elements to detentably hold said stop elements in set and reset positions.

3,283,873

ELECTRONIC SHIFT AND SHIFT LOCK DEVICE

William K. Robinson, St. Paul, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed May 7, 1965, Ser. No. 453,990
3 Claims. (Cl. 197—71)



1. A keyboard electronic shift and shift lock circuit comprising:

(a) first and second shift keys and a shift lock key each movable between first and second positions,

(b) a signal generator for producing a first electrical code representing lower case characters and a second electrical code representing upper case characters,

(c) an electrical switching circuit coupled to said first and second shift keys for producing a first signal only when both of said keys are in said first position and a second signal only when either of said keys is in said second position,

(d) a relay having an energizing coil, a first pair of normally open contacts which close to form a relay holding circuit when said relay is energized and a second pair of normally closed contacts which open when said relay is energized,

(e) means coupling said first signal to said signal generator through said normally closed pair of contacts for causing said signal generator to produce said first code,

(f) means coupling said second signal to said signal generator for causing said signal generator to produce said second code,

(g) a normally open electrical switch operatively associated with said shift lock key, said switch being closed when said shift lock key is in said second position,

(h) means coupling said first signal to said relay energizing coil through said switch whereby said first signal energizes said relay whenever said shift lock key is in said second position,

(i) means coupling said first signal to said energizing coil of said relay through said normally open contacts to form a locking circuit whenever said relay is energized, said locking circuit holding said relay energized until either of said shift keys is momentarily placed in said second position to interrupt said first signal, and

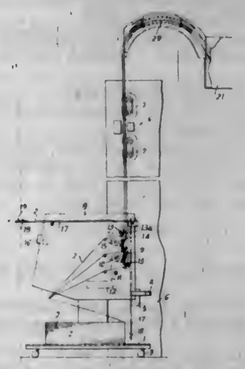
(j) means coupling the energizing coil of said relay to said signal generator for causing said signal generator to produce said second code as long as said relay is energized.

3,283,874

CONTINUOUS STATIONERY FEEDING DEVICES

Peter Ernest Goreham, Hillborough, Herne Bay, England, assignor to Moore Business Forms, Inc., Niagara Falls, N.Y., a corporation of Delaware

Filed Apr. 26, 1965, Ser. No. 450,779
Claims priority, application Great Britain, Apr. 28, 1964, 17,560/64
3 Claims. (Cl. 197—126)



1. A web supply dolly for interchangeable temporary coupling to a form handling or treating machine to feed continuous business forms thereto, said dolly comprising a platform for the support of packs of at least two continuous record webs, means on said dolly for supporting a supply of transfer material comprising at least one web of such material, said record webs having feed holes along at least one margin for registry with the pin feed means in said machine, means on said dolly for preliminary gauging and temporarily securing the webs in registering interleaved relationship while carried on the supply dolly prior to threading the combined webs into the pin feed means of the said machine, said gauging and securing means comprising a member having a pin extending therefrom for passage through registering feed holes in the several webs, and means for moving said member to and from an inoperative or idle position.

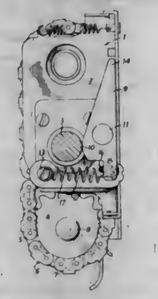
3,283,875

FORM FEEDING DEVICES

Roy Dennis Davies, Hillborough, Herne Bay, Kent, England, assignor to Moore Business Forms, Inc., Niagara Falls, N.Y., a corporation of Delaware

Filed May 18, 1965, Ser. No. 456,636
Claims priority, application Great Britain, May 21, 1964, 20,981/64
1 Claim. (Cl. 197—133)

In a form feeding machine, a cross shaft extending transversely of said machine; a chain pin-feed tractor device movable along said transverse shaft for adjustment to accord with different widths of forms to be fed; a normally operable cam lever pivoted on said device and swingable to and from locking frictional contact with said shaft; a coil tension spring having one end attached to said device and the other end operatively connected with said cam lever to continually urge it toward locking position, manual actuation being necessary to release the pin-feed device for adjustment along the shaft; and manually operable detent means for holding said cam lever in release position to free the operator's hands for other adjustment operations, said detent means comprising a second lever also pivoted at one of its ends to the pin-feed device, substantially at the first named point of connection of said spring, which point is spaced from the pivot of said cam lever and from the general axis thereof; and said



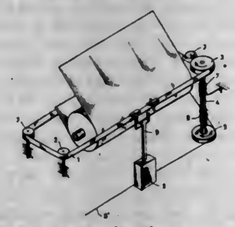
second lever having a releasable interlocking connection with a portion of said cam lever; said interlocking connection comprising an L-shaped slot in the opposite end portion of said second lever, a pin extending from said cam lever into said slot; said second lever extending transversely of said cam lever and in virtual alignment with the direction of pull of said tension spring, a portion of the L-shaped slot extending substantially longitudinally of said cam lever and generally transversely of said second lever, and the other portion of the L-shaped slot extending transversely of the cam lever and generally longitudinally of said second lever, whereby when said pin occupies the first named portion of said L-shaped slot the pull of the tension spring is blocked and the second lever retained in inoperative position.

3,283,876

ENDLESS INK RIBBON ARRANGEMENT FOR TYPEWRITERS

Hans Kern, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin and Munich, Germany, a corporation of Germany

Filed May 13, 1963, Ser. No. 280,503
Claims priority, application Germany, May 14, 1962, S 79,431; May 18, 1962, S 79,494
3 Claims. (Cl. 197—168)



1. An ink ribbon mechanism for a typewriter having a frame, a carriage mounted on said frame and movable relative to said frame along a typing line in a line-typing direction and a return direction and means for supporting an ink-receiving medium, comprising

an endless ink ribbon having a portion thereof disposed at a typing position;

ribbon inking and driving means including a drive roller for said ribbon means mounted on said carriage for supporting said ribbon in the typing position;

means operatively connected with said drive roller for effecting rotation thereof and movement of said ribbon with movement of said ribbon supporting means with respect to said medium supporting means during movement of said carriage in the return direction; and

means operatively connected with said drive roller for preventing rotation thereof and preventing movement of said ribbon relative to said medium supporting means during movement of said carriage in the typing direction,

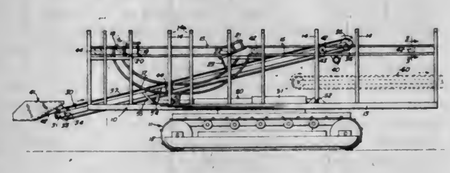
whereby relative movement takes place between said ribbon and said ribbon supporting means only during movement of said carriage in the typing direction.

3,283,877

TUNNELING APPARATUS

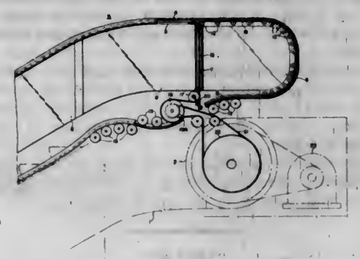
Daniel August Santa Maria, 172 Marin Ave., Pittsburg, Calif.

Filed Feb. 24, 1965, Ser. No. 434,945
6 Claims. (Cl. 198—7)



1. A tunneling machine comprising in combination, track means disposed in a generally vertical plane; elongated dipper stick means having a powered conveyor extending therealong having a pair of spaced sliding pivot means supporting the dipper stick means in said track means for movement therealong and an open ended shovel attached to a leading end of said dipper stick means; said track means having a generally horizontal run portion and a generally semielliptical run portion depending from the horizontal portion and having a leading end joining with the horizontal portion at a position spaced in a relatively short distance from the leading end while the trailing end joins with the horizontal portion at a position spaced in a relatively long distance from the trailing end of the horizontal portion, a track switch means at each juncture of the generally semielliptical track portion with the horizontal portion, the leading end switch being biased to a closed position whereby movement of a sliding pivot means from the semielliptical portion opens the switch and permits the sliding pivot means to move to the leading end of the horizontal track and the switch closes thereafter while the other switch is biased to open position in said horizontal portion whereby the leading sliding pivot means on backward movement in the horizontal portion closes the rearward switch and permits passage of the sliding pivot means along the horizontal track portion while forward movement of said forward sliding pivot means strikes said open switch and is directed into the trailing end of the depending elliptical track portion; and a power means attached to the dipper stick means for moving the same whereupon the open ended shovel is moved upwardly and forwardly to pick up a load and tips backwardly permitting its load to slide out its rear end onto said conveyor for further transporting rearwardly off the trailing end of said endless conveyor.

3,283,878
PASSENGER CONVEYORS
Lennius R. Rissler, Newark, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 16, 1964, Ser. No. 383,035
5 Claims. (Cl. 198—16)



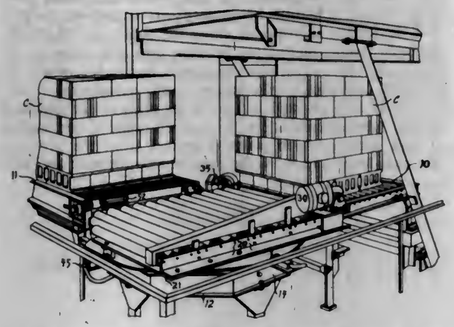
1. In a conveyor having a moving-belt for transporting loads, a stationary structure comprising a stationary balustrade having handrail guide means, a flexible handrail in the form of a loop having an upper run supported by the guide-means forming part of the stationary balustrade, and also a return run which is out of sight below said balustrade, a curved end-portion of said balustrade connecting said guide-means for said upper run to that for said return run, end guide means at said curved end-portion for supporting said flexible handrail, a hollow post extruding from a point adjacent said upper run towards said return run, a flexible endless auxiliary-belt passing through said post and between the inner face of said handrail and said guide means and making frictional engagement with said handrail to drive it.

3,283,879
BOWLING PIN CONVEYING MECHANISM
John M. Ernst, Shelby, Ohio, assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Nov. 27, 1963, Ser. No. 326,522
6 Claims. (Cl. 198—20)



1. A bowling pin handling mechanism for a bowling pin spotting machine comprising a conveyor having a first elongated portion and a second elongated portion connected thereto in angular relationship, pin conveying means for moving articles along said first elongated portion and delivering them onto and along said second elongated portion to a point of discharge therefrom, and pivoted vertically movable means mounted above said first named portion for aligning each pin as it moves along said first portion onto said second portion to prevent upward swinging movement of the head end of each such pin and insure its movement centrally along said second elongated portion to its point of discharge.

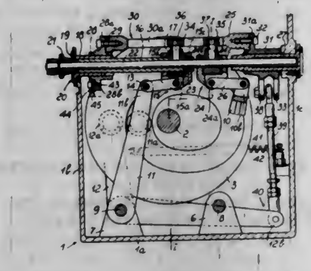
3,283,880
POWERED CUBE TURNTABLE
Harry F. Cruzen, Jr., % Besser Company, Alpena, Mich.
Filed Jan. 21, 1964, Ser. No. 339,210
4 Claims. (Cl. 198—21)



1. A powered conveyor device mounted upon a powered turntable adapted to be used in a right-angled gravity fed conveyor system for cubed block handling comprising in combination, a generally circular turntable base, support rollers spaced around and carried on an upper surface of said turntable base, a roller conveyor section carried by the support rollers of said turntable base, said conveyor section being coextensive and in alignment with an input end of said right-angled gravity fed conveyor system in one position and coextensive and in alignment with an output end of said conveyor system in a second position, switch means to selectively position cubed block received on said powered conveyor section, power means comprising a chain section anchored at opposite ends to underside of roller conveyor section, a sprocket trained in said chain section and carried by said turntable base, a gearhead motor operatively journalled to said sprocket to drive same, said switch means coupled with a timer means to initiate and rotate said turntable to said output position of the conveyor system and advance the cubed block thereto, and means including said timer means to return said conveyor section and powered turntable to its initial position for succeeding cubed block.

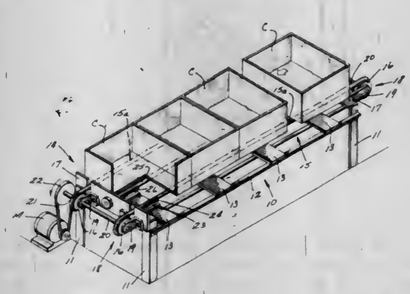
3,283,881
UNIVERSAL FEEDING DEVICE FOR WRAPPING MACHINES, PARTICULARLY FOR WRAPPING MACHINES FOR SWEETS
Cesare Tartarini, Via Roma 38, Zola Predosa, Bologna, Italy
Filed Feb. 18, 1965, Ser. No. 433,576
Claims priority, application Italy, Feb. 21, 1964, 4,295/64
3 Claims. (Cl. 198—24)

1. A feeding device for feeding shaped products to a wrapping machine, which comprises a frame, a hollow shaft supported axially slidable and rotatable on said frame, a telescoping shaft slidable within said hollow shaft and coaxial therewith, said telescoping shaft extending beyond the ends of said hollow shaft, a first connecting assembly fixed on said hollow shaft, a second connecting assembly fixed on said telescoping shaft at a portion thereof outside said hollow shaft, a driving shaft spaced from said hollow shaft and supported on said frame, a first bilaterally acting cam means, a second bilaterally acting cam means and a unilaterally acting cam means, all said cam means being fixed on said driving shaft, first kinematic chain means having on one end thereof a follower member bilaterally guided by said first cam means and on the other end thereof a member articulated to said first connecting assembly, a second kinematic chain means having on one end thereof a follower member bilaterally engaged by said second cam means and on the other end thereof a member articulated to said second connecting assembly, said first and second cam means when rotated by said driving shaft, imparting through said first and second kinematic chains an axial reciprocating motion to said hollow and said telescoping shafts, a first sleeve member coaxial with said telescoping shaft and rotatably supported on said frame near one end of said telescoping shaft, said first sleeve member having a radially projecting portion, a second sleeve member coaxial with said first sleeve member and rotatably supported on said frame at a distance from said first sleeve member, a rod member fixed on said first and said second sleeve member and extending parallel to said hollow and said telescoping shaft at a distance therefrom, said rod member slidably engaging said first and said second connecting assembly and allowing a relative movement between said rod member and said connecting assemblies in the direction parallel to said hollow and said telescoping shafts and preventing relative movements therebetween in the direction transverse to said rod member, a third kinematic chain means having at one end thereof a unilateral follower member unilaterally guided by said unilaterally acting cam means and having at the other end thereof a member articulated to said radially projecting portion of said first sleeve member, spring means connected with



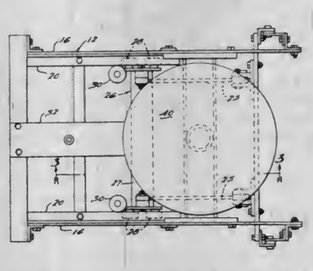
one end thereof to said frame and with the other end thereof to said unilateral follower member and resiliently urging said unilateral follower member against said unilaterally acting cam means, said unilaterally acting cam means, when rotated by said driving shaft, imparting through said third kinematic chain means a rotatory motion to said first sleeve member and therethrough to the group including said rod member, said second sleeve member, said hollow shaft and said telescoping shaft; a first gripping means fixed on an end of said hollow shaft and a second gripping means fixed on the end of said telescoping shaft nearest to said first gripping means, stop means rigid with said second sleeve member, a pawl member normally engaging said stop means to prevent rotation of said sleeve member and, through said rod member, of said hollow and telescoping shafts in an angular position thereof in which said unilateral follower member is at the maximum distance from the axis of rotation of said unilaterally acting cam means, lever means connected with said pawl member, conveyor means for the products to be fed, said conveyor means defining a path for said products, said lever means having an arm reaching into the path of said products and adapted to disengage said pawl from said stop means when one of said products is urged by said conveyor means against said arm thereby allowing rotation of said gripping means, said path extending between said first and said second gripping means thereby allowing said gripping means to engage and entrain said products.

3,283,882
CARTON ACCUMULATING CONVEYOR SECTION
Keith Conrad, Toledo, Ohio, assignor to Owens-Illinois Inc., a corporation of Ohio
Filed Feb. 15, 1965, Ser. No. 432,777
10 Claims. (Cl. 198—190)



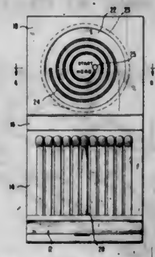
1. An accumulator-type conveyor comprising a horizontal main frame, a pair of endless flexible elements arranged side by side to provide two horizontal parallel carton supporting reaches extending lengthwise of the conveyor, means for moving the carton-supporting reaches at the same lineal speed, and a counter-moving element positioned between and at the same level as said two reaches for continuous braking contact with the bottoms of cartons resting upon the two reaches.

3,283,883
BLOCK TURNTABLE
Harry F. Cruzen, Jr., % Besser Company, Alpena, Mich.
Filed Feb. 12, 1964, Ser. No. 344,333
4 Claims. (Cl. 198—209)



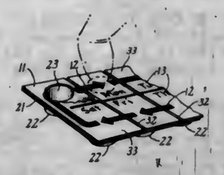
1. A block turntable comprising a frame, a turntable rotatably mounted on said frame in block-receiving position, a spindle dependent centrally from the turntable axis, chain and sprocket means mounted in said frame and trained around said spindle, powered means comprising a reciprocable rollered carriage including a one-way dog operable longitudinally in the frame, spaced lug means on said chain contactable by said one-way dog on the powered means to index said turntable a predetermined amount, spring loaded stop means associated with said chain and sprocket means to arrest turntable movement when said index is reached, said powered means operable to bias the spring of said stop means to render same inoperable in timed relation to said indexing after block have been moved off the turntable, and sequential means to continue said power indexing as additional block are presented to the turntable for successive rotation and movement therefrom.

3,283,884
MATCHBOOK
Thomas J. Greer, Jr., Warner Bldg., Washington, D.C.
Filed Sept. 27, 1965, Ser. No. 490,304
6 Claims. (Cl. 206—29)



1. A match book having a plurality of matches removably mounted therein and having back and front flaps, a stiff sheet adapted to execute vibratory motion, said sheet having a surface portion thereof provided with undulations corresponding to information recorded thereon, said sheet being mounted on and carried by one of said flaps.

3,283,885
PACKAGE FOR MEDICAMENT TABLETS AND THE LIKE
Heinz Grunewald and Karlheinz Lindner, Berlin, Germany, assignors to Schering A.G., Berlin, Germany
Filed July 30, 1964, Ser. No. 386,300
Claims priority, application Germany, July 31, 1963, Sch 34,197
3 Claims. (Cl. 206—42)



1. A packaging unit for medicaments or the like comprising a sheet of a thin, tough, moldable material formed with parallel rows of depressions therein, said depressions being substantially pairwise aligned across said rows, to define a tray portion having a plurality of individual containing means depressed below substantially planar peripheral and central areas thereof, and a plurality of pressure-rupturable cover segments affixed to said peripheral and central areas of said tray portion to cover said depressions, said cover segments having thereon indicia of the seven days of the week in multiples of said seven days, said indicia being sequentially correlated with said individual containing means and in cyclical head-to-tail relationship within said parallel rows of depressions and across said rows at the ends thereof.

3,283,886
TAPE DISPENSER
Edwin C. Addis, Florence, and Frederick C. Wilda, Hadley, Mass., assignors to Chart-Pak, Incorporated, Leeds, Mass., a corporation of Connecticut
Filed Feb. 19, 1965, Ser. No. 434,084
5 Claims. (Cl. 206—52)

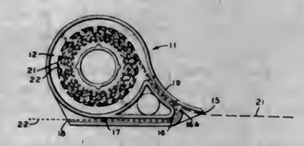
1. A tape dispenser for holding and dispensing tape portions from a coil made of two tapes in superposition comprising:

a walled housing including a base portion adapted to rest when dispensing tape on a substantially flat surface;

means disposed in said housing and elevated from said base portion for journaling a coil of tape comprising a bottom tape and a superposed top tape;

a nose portion extending from said housing and forming an integral part therewith;

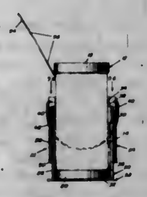
said nose portion including at its distal end a tape discharge aperture by which the top tape is adapted to be discharged from said housing and nose portion substantially at the elevation of said base portion, and including a further aperture for manually contacting the top tape prior to it being discharged from said discharge aperture;



a transverse tape guide disposed in said nose portion rearwardly of said discharge aperture having a relatively blunt curved surface about which the bottom tape is adapted to be fed, said curved surface providing substantially low frictional contact with the bottom tape in order to permit the tape to be moved into and out of the dispenser by manual control exercised at said further aperture;

a channel disposed in said base portion for receiving the bottom tape and guiding it from said tape guide in a direction away from said tape discharge aperture, while the top tape is discharged from said dispenser through said aperture at the distal end of said nose portion.

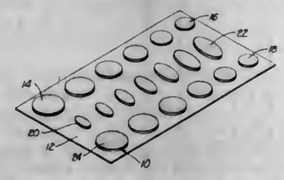
3,283,887
CONTAINER FOR REELS OF ELONGATED MATERIAL
Leonard B. Rosen, R.D. 2, Jamestown, Pa.
Filed Oct. 23, 1965, Ser. No. 503,475
20 Claims. (Cl. 206—52)



12. In combination, a reel having a central core and a flange member extending outwardly from at least one extremity of said core, an elongated material wound on said core with the exterior layer of said material extending outwardly from said core a distance less than the periphery of said flange member, a container having said reel therewithin, said container including a base member supporting said reel and a cover member, said base member having an upstanding, annular side wall with a substantially open upper end and a substantially closed lower end, said cover member having an upstanding annular side wall with substantially open upper and lower ends, said side wall of said cover member telescopingly engaging said side wall of said base member to permit movement of said cover member with respect to said base member between a lowered, opened position and a raised, closed position, and gripping means on said upper end of said side wall of said cover member engaging said flange member of said reel when said cover member is raised

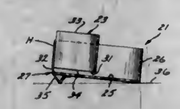
to said closed position, said side walls of said base member and said cover member being dimensioned with respect to each other and with respect to said reel so as to define an annular space for withdrawal of said elongated material between said upper end of said side wall of said cover member and said flange member of said reel when said cover member is lowered to said opened position, and so as to define a substantially continuous enclosure extending in spaced, protective, overlying relationship to said elongated material when said cover member is raised to said closed position with said gripping means engaging said flange member of said reel.

3,283,888
DIGIT DISC
Charles Scott, 2144–A W. Juno Ave., Anaheim, Calif.
Filed Oct. 19, 1964, Ser. No. 404,819
1 Claim. (Cl. 206—56)



A plurality of devices each being adapted for attachment to a human finger tip so as to provide improved coefficient of friction with respect to paper, each of said devices having a body, said body having a top surface and a bottom surface, said body being comprised of flexible, rubber-like material in foamed condition, said body having a cross section generally parallel to said top surface, said cross section being of suitable configuration for placement on a human finger tip, said cross section of at least two of said devices being different from each other, said top surface having cut open foam cells so that its coefficient of friction with respect to paper is enhanced, said bottom surface being coated with pressure sensitive adhesive, said pressure sensitive adhesive of each of said plurality of devices being positioned against a single release sheet so that said pressure sensitive adhesive is protected against contamination until each device is removed from said release sheet for positioning upon a human finger tip, so that when said device is so positioned on a human finger tip, said device is semi-permanently secured to the finger tip and the finger tip effectively has enhanced coefficient of friction with respect to paper so that paper can be readily handled without substantial finger encumberment.

3,283,889
FOOD OBJECT HOLDER AND DRIP PREVENTER
Robert E. Hetrick and John W. Hetrick, both of 22119 Hansom Ave., Torrance, Calif.
Filed Dec. 28, 1964, Ser. No. 421,560
3 Claims. (Cl. 206—56)



1. A food object holder and drip preventer, comprising: downwardly recessed tray means having a bottom wall portion and a laterally partially enclosing upstanding side wall portion extending partially therearound and having a front opening in said side wall portion effectively comprising food object discharge and egress means, said bottom wall portion being, in a width direction, of a size adapted to receive thereon a specific type of food object and being somewhat smaller in a back-to-front direction extending between a back part of said upstanding side wall portion and said front opening in said side wall portion whereby to cause a front portion of said food object to project forwardly into said discharge and egress means beyond a front edge of a corresponding front part of said bottom wall portion to facilitate eating said forwardly projecting portion of said food object in an unobstructed manner; and pusher means controllably digitally movably positioned within said downwardly recessed tray means between said back part of said upstanding side wall portion and said discharge and egress means for digitally caused movement toward said discharge and egress means for forcing said food object toward said discharge and egress means into a forwardly projecting relationship with respect to and beyond the front edge of the corresponding front part of said bottom wall portion; said bottom wall portion of said tray means being provided with downwardly directed support means adapted to rest upon an underlying substantially horizontally auxiliary supporting surface, and being so positioned and shaped as to cause said bottom wall portion to have said front edge thereof higher than a back edge thereof in a rearwardly downwardly tilted relationship with respect to said underlying substantially horizontal auxiliary supporting surface.

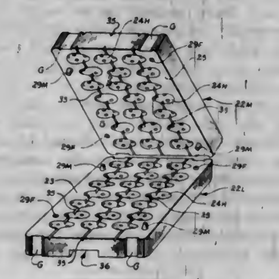
3,283,890
THERMOPLASTIC ADHESIVE RODS OR STRIPS
Thomas C. Morris, deceased, late of Lexington, Mass., by Edith J. Morris, administratrix, Lexington, Mass., and Eric C. Johnson, Littleton, Mass., assignors to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Continuation of application Ser. No. 377,162, Aug. 28, 1953. This application June 22, 1964, Ser. No. 377,137
1 Claim. (Cl. 206—59)



A package of solid flexible thermoplastic adhesive in coil form, said coil comprising a plurality of turns of rod of substantially uniform cross-section, said rod being formed of a thickness of between about ⅛ and ½ inch of a normally solid, flexible thermoplastic mixture of at least two ingredients at least one of which is a normally solid, thermoplastic, high molecular weight synthetic polymer and the other of which is a relatively low molecular weight short chain thermoplastic resinous polymer, said mixture being fluid with a viscosity suitably low for adhesive application at temperatures in the range of 250° F. to 400° F., the physical properties of said rod including the characteristics that said rod is self-supporting, dry, non-tacky, flexible and sufficiently hard to be coiled for use as needed without cracking, said rod being sufficiently stiff to be capable of being fed from said coil and being reducible progressively and rapidly by heat in said

temperature range to a fluid condition in quantities as needed for use in a direct through feed industrial cement applying and dispensing system.

3,283,891
PROTECTIVE PACKING APPARATUS FOR EASILY DAMAGED OBJECTS
Edgar English, Jr., Edwards, Calif. (P.O. Box 169, Rosamond, Calif.)
Filed Mar. 18, 1965, Ser. No. 440,846
12 Claims. (Cl. 206—65)



1. Protective packing apparatus for easily damaged objects, comprising: container means taking the form of at least two closely adjacent area-coextensive protective compressible pad means having a plurality of opposed mating aligned recess means portions formed therein, each of said opposed mating recess means portions cooperating with the similar adjacent aligned recess means portions to define a corresponding plurality of complete recess means, with each recess means being adapted to receive and physically protectively support therein a substantially similarly shaped and sized, easily damaged object with said mating recess means portions being in surface contact with at least portions of the surface areas of said easily damaged object in a manner such as to firmly and protectively support same within said recess means in nested relationship with respect to the exterior of said container means, a first one of said compressible pad means comprising a corresponding wall portion of said container means, a second one of said compressible pad means comprising a corresponding oppositely positioned wall portion of said container means, said compressible pad means being provided with controllably disengageable alignment and registration means normally matingly engaging each other and maintaining all of said compressible pad means in aligned registration relationship with respect to each other with all of said mating recess means portions in said opposed recess means-defining relationship; and controllably engageable and disengageable fastening and locking means cooperable with said plurality of compressible pad means for firmly locking them together in said aligned registration.

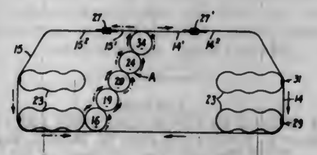
3,283,892
CONTAINER FOR SPOOLS OF SHOCK-SENSITIVE ELONGATED MATERIAL
Leonard B. Rosen, R.D. 2, Jamestown, Pa.
Filed Oct. 23, 1965, Ser. No. 503,473
4 Claims. (Cl. 206—65)

1. In combination, a reel having a longitudinally extending central core and upper and lower flange members carried by said core at the extremities of said core, said flange members extending at least substantially perpendicularly to said core, each of said flange members having a peripheral portion spaced from said core, said peripheral portions of said upper and lower flange members being substantially aligned, an elongated filamentary material wound on said core with the exterior layer of said matreial extending a distance less than said peripheral portions of said flange members from said core, a container receiving said reel and including an elongated, continuous, tubular side wall with an open upper end, said side wall being at least substantially as long as the height of said reel and extending between said peripheral portions of said flange members in spaced, protective, overlying relationship to said elongated material, the interior of said side wall corresponding in configuration to the shape of said peripheral portions of said flange members and slightly exceeding the dimensions of said flange members to define a space between the interior of said side wall and said peripheral portions of said flange members, an inwardly directed bottom element carried by the lower



end of said side wall to at least partially close the same to thereby permit passage of said reel through said open upper end of said side wall while precluding passage of said reel through said lower end of said side wall, an inwardly directed flexible element carried by the interior of said side wall and spaced from said bottom element a distance substantially equal to the height of said lower flange member of said reel whereby said lower flange member is resiliently wedged between said flexible element and said bottom element, said space between said peripheral portion of said upper flange member of said reel and the interior of said side wall of said container being smaller than the thickness of said elongated material whereby the end portion of said elongated material is frictionally gripped when disposed therebetween.

3,283,893
METHOD OF BUNDLING PIPE, ROD AND LIKE ARTICLES
Robert F. Durocher, Montreal, Quebec, Alfred J. Leroux, Ville Jacques Cartier, Quebec, and Bernard J. McHugh, Montreal, Quebec, Canada, assignors to Bell Asbestos Mines Ltd., Quebec, Canada
Filed Nov. 2, 1964, Ser. No. 408,038
13 Claims. (Cl. 206—65)



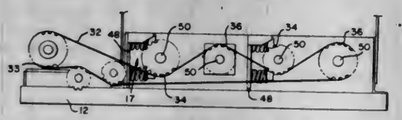
9. A shipping unit comprising a plurality of longitudinally extending pipes or like articles arranged in horizontal layers one above the other with the pipes in one layer being nested with the pipes in adjacent layers, one or more pairs of binding straps securing the said shipping unit in its layer arrangement, the individual straps of each pair being disposed side by side with each other and having oppositely running ends wrapped about one pipe in each layer in succession from the bottom layer upwards, the wrapped pipes in each layer being disposed in a common plane passing through the axis of the wrapped pipes, the opposite ends of the said individual straps in each pair being wrapped about the layers of pipes on each side of the said wrapped pipes, and means to secure the opposing ends of the said straps to each other.

3,283,894
PACKAGING CONTAINER
Hans Hafner, Yonkers, and Christian Bayer, Armonk, N.Y., assignors to Tiros Plastics Corporation, a corporation of New York
Filed Feb. 9, 1965, Ser. No. 431,393
4 Claims. (Cl. 206—16.5)



3. A package for a thermometer comprising a tube of cross-sectional area greater than that of a thermometer to be contained therein and of a length approximating that of the thermometer, and similar end caps sealing the ends of the tube by means of an annular tube receiving groove and a tapered plug portion, said tapered plug portion being hollow and having flexible integral ribs projecting inwardly from its inner wall, said flexible ribs being adapted to engage and shock mount the end portions of a thermometer.

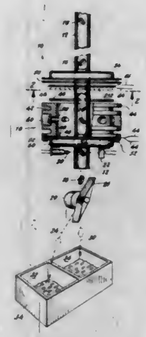
3,283,895
BEET CLEANING APPARATUS
Eugene C. Rollins, Ogden, Utah, assignor to Hesston Manufacturing Co., Inc., Hesston, Kans., a corporation of Kansas
Filed May 18, 1964, Ser. No. 368,203
3 Claims. (Cl. 209—107)



1. A beet cleaning apparatus comprising in combination:
two adjacent pairs of elongated rollers disposed in juxtaposed parallelism and lying in a common plane;
suspension means for said rollers including yieldable means arranged to allow for independent limited resilient movement in the plane of conveying of at least one roller of each adjacent pair;
drive sprockets on one end of each of said rollers; and
a chain drive for said rollers having a continuous chain engaging, on its driving run, alternately the tops and bottoms of adjacent sprockets and arranged to impart rotation to said rollers so that the opposed surfaces of each pair of rollers are moved downwardly relative to an upright plane between the pair when said chain drive is moved in one direction, said yieldable means being disposed to permit movement of the corresponding rollers in the direction of movement of said chain drive run when the latter is moved in said one direction whereby movement of the chain drive enhances the tendency of one roller of each pair to move away from its corresponding roller.

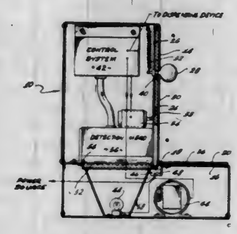
3,283,896
SORTING APPARATUS
Frank E. Jirik, San Jose, and Richard A. Wood, Sunnyvale, Calif., assignors to Chemical Holding Company, Inc., a corporation of Panama
Filed Sept. 28, 1964, Ser. No. 399,531
27 Claims. (Cl. 209—111.6)

1. Apparatus for sorting objects from one another, said apparatus comprising, in combination, means for guiding said objects along a predetermined path, lamp means positioned near said path for illuminating each of said objects as it moves along said path, apertured photoelectric cell means substantially encircling said path for receiving illumination from said objects at a plurality of



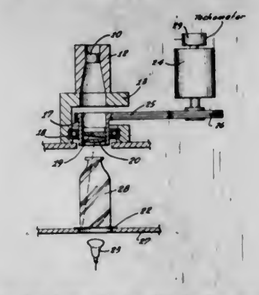
positions around said path, and means positioned adjacent said path for directing selected ones of said objects into another path in response to the illumination received by said photoelectric cell means from said object.

3,283,897
BILL ACCEPTANCE AND DETECTION SYSTEM
George D. Haville, Santa Barbara, Calif., assignor, by mesne assignments, to Litton Industries, Inc., Beverly Hills, Calif., a corporation of Delaware
Substituted for abandoned application Ser. No. 265,826, Mar. 18, 1963. This application Dec. 14, 1964, Ser. No. 418,205
11 Claims. (Cl. 209—111.7)



3. A device for receiving and evaluating paper money of prescribed denomination, comprising:
a bill detection system including a detection head and a control system;
an enclosure about said bill detection system, said enclosure having a front panel member, said panel member having an opening through which a bill may be inserted and placed in alignment with said detection head;
movable means within said enclosure and adjacent said opening having a portion accessible from outside said enclosure, said movable means being operable from outside said enclosure from an open position to a closed position overlying said opening in said panel member;
locking means for locking said movable means in a closed position;
means responsive to closing of said movable means to activate said detection system;
and means responsive to said detection system for releasing said locking means.

3,283,898
INSPECTION APPARATUS
Fredrick L. Calhoun, Torrance, Calif., assignor to Geo. J. Meyer Manufacturing Co., Cudahy, Wis., a corporation of Wisconsin
Continuation of application Ser. No. 20,884, Apr. 8, 1960. This application July 16, 1965, Ser. No. 475,316
36 Claims. (Cl. 209—111.7)



7. A system for inspecting a bottle for small particles of foreign matter, including

means for illuminating the bottle to provide a field of light modulated by the optical characteristics of the bottle and any particles of foreign matter in the bottle,

a bank of photocells for converting light to electrical signals,

cyclically movable optical means for directing the light from different areas of the field of light to said bank of photocells, the cross-sectional area of the beam of light from the area at said bank of photocells being substantially the same as the composite sensitive area of the photocells of the bank, the photocells being arranged to together intercept all of the light from said optical means,

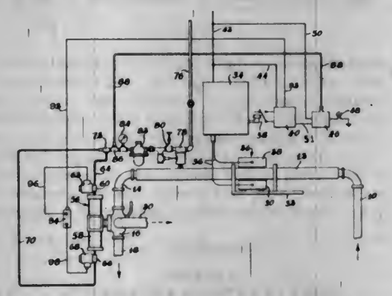
means for cyclically adjusting said optical means to sequentialy direct the light from different overlapping areas of the field to scan the entire field, whereby the image of a particle in the bottle effectively repeatedly moves across said bank of photocells,

means electrically coupled to said bank of photocells for sequentially sampling the electrical signals provided by the different photocells, and

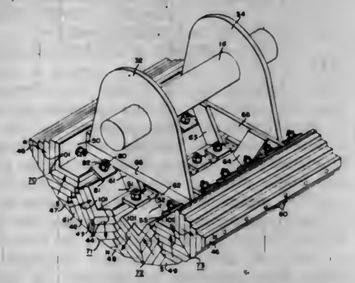
bottle reject apparatus responsive to sampled signals from said sampling means having predetermined characteristics for rejecting a bottle being scanned.

3,283,899
AUTOMATIC FOOD QUALITY CONTROL MEANS
Andrew H. Vedvik, Justin R. Jellings, and Boleslaus J. Sadeski, Madison, Wis., assignors to Oscar Mayer & Co., Inc., Chicago, Ill., a corporation of Illinois
Filed Feb. 27, 1963, Ser. No. 261,429
1 Claim. (Cl. 209—111.8)

In a food processing system wherein food batter is continuously advanced through conduit means toward a processing zone, automatic means for preventing batter having metallic particles therein from advancing to the processing zone comprising, a non-metallic conduit in said conduit means, an electronic metal detector having a sensing head mounted adjacent said non-metallic conduit, valve means located in said conduit means between said non-metallic conduit and said processing zone, which valve means includes a by-pass opening, said valve means being adapted in a first position thereof to communicate said non-metallic conduit with said processing zone and being adapted in a second position thereof to communicate said non-metallic conduit with said by-pass opening, a pneumatic valve actuator operatively associated with said valve means for actuating the same between said two positions, means supplying air under pressure to said pneumatic valve actuator, solenoid means for controlling the air supply to said valve actuator for operating the same electric timing means connected with said solenoid means and arranged with the same so that upon energizing of such timing means said valve means is substantially instantaneously actuated to its second position and automatically returned to its first position after a predetermined length of time which is determined by said timing means, said detector being in electrical communication with said timing means for energizing the latter upon activation of the former by the presence of metallic particles in said non-metallic conduit, and warning means actuated by the air pressure in said air supply means for indicating whether or not an adequate supply of air is in communication with said pneumatic valve actuator.

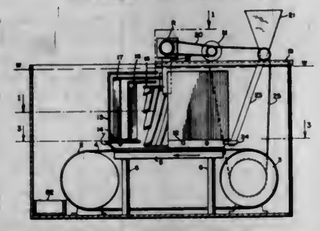


3,283,900
V-SHAPED MAGNETIC SEPARATOR ASSEMBLY
Carroll D. Sloan, Murrysville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 18, 1963, Ser. No. 296,041
10 Claims. (Cl. 209—223)



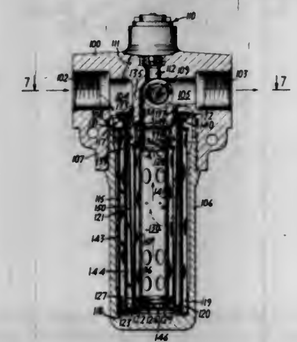
7. In a magnetic separator, a drum having a cylindrical sidewall composed of a non-magnetic material and mounted for rotation on a shaft, a permanent magnet assembly having two poles at a working face thereof adapted to attract magnetic material to be separated towards the external surface of the sidewall of the drum and mounted within the drum, said working face being positioned in close proximity to the internal surface of said sidewall, the magnetic assembly comprising a V-shaped yoke of permeable soft magnetic material having two arms extending away from the working face thereof, a pair of pole members of permeable soft magnetic material each spaced from and parallel to an arm of said yoke, bodies of oriented permanent magnetic material substantially completely filling the spaces between the arms of the yoke and the pole pieces and extending to the working face of the magnetic assembly, the arrangement and direction of magnetization of the oriented permanent magnet material being such as to couple said magnetic bodies in series through said yoke.

3,283,901
ENDLESS BELT TYPE SOLIDS SEPARATOR
George Dee Goodwin, Rte. 1, Florence, Colo.
Filed Mar. 21, 1963, Ser. No. 266,967
3 Claims. (Cl. 209—428)



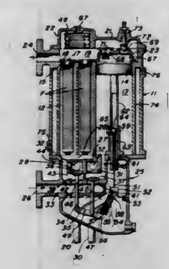
1. A rotary type solids separator comprising an endless conveyor belt, a gateway pan supported above the conveyor belt, a cylindrical housing supported on said gateway pan, spaced concentric cylindrical flow inducers rotatably mounted in said cylindrical housing, the innermost of said flow inducers having inclined blades formed with an outward pitch and the outermost of said flow inducers having vertical blades formed with an outward pitch, a cylindrical flow stabilizer having vertical blades formed with an inward pitch, said stabilizer concentrically and fixedly mounted in said cylindrical housing between said flow inducers, feed means to supply mixed materials to said conveyor belt, and motor means to drive said feed means, said conveyor belt, and said rotatable flow inducers.

3,283,902
FILTER UNIT HAVING RESERVE FILTER ELEMENT
John A. Farris, Oyster Bay, Leslie Seawert, Glen Cove, and Bernard F. Silverwater, Plainview, N.Y., assignors to Pall Corporation, Glen Cove, N.Y., a corporation of New York
Filed Feb. 19, 1963, Ser. No. 259,500
8 Claims. (Cl. 210—90)



1. A filter assembly comprising, in combination, a housing having an inlet and an outlet, a primary filter element disposed in the housing; a primary passage leading from the inlet to the primary filter element; a secondary reserve filter element fixed in relation to the primary filter element, and disposed in the housing; a secondary passage communicating with the inlet and the secondary filter element; a relief bypassing passage in the housing connecting the inlet and the outlet; a fluid flow separating means disposed between and spaced from the primary and secondary filter elements, preventing flow between the primary and secondary filter elements; a valve comprising a self-closing fluid pressure-responsive spring disk disposed across the secondary passage, and normally closing off flow to the secondary filter element therethrough, but responsive to a predetermined pressure differential across the primary filter element to open and allow flow through the secondary passage, bypassing the primary filter element, to the secondary filter element; and a second fluid pressure-responsive self-closing relief valve disposed across the relief passage, responsive to a predetermined pressure differential between the inlet and the outlet, to open and allow flow through this passage bypassing both the primary and secondary filter elements whenever the predetermined pressure differential thereacross is exceeded.

3,283,903
FILTERING EQUIPMENT FOR FLUIDS
Jacques Muller, La Garenne-Colombes, France, assignor to Rellumit Inter, S.a.r.L., La Garenne-Colombes, France, a corporation of France
Filed Feb. 18, 1964, Ser. No. 345,653
Claims priority, application France, Mar. 4, 1963, 926,651
13 Claims. (Cl. 210—108)



1. Equipment for filtering impurities from fluids comprising a casing having an inlet port for unfiltered fluids and an outlet port for filtered fluids, filter means in said casing through which fluid may flow from said inlet port to said outlet port, for filtering of such fluid, said filter means having a fluid port at its upper end, a chamber in said casing positioned above said filter means in communication with the fluid port thereof, said outlet port being in communication with said chamber, an actuating cylinder having a piston slidable therein, means providing communication between one side of said piston and said chamber, valve means associated with the inlet port and movable between two positions, one of said positions providing communication between said inlet port and said casing for flow of unfiltered fluid through said filter means, and the other position providing communication between said inlet port and the other side of said piston, and means controlled by movement of said piston in said cylinder between the ends thereof to effect successive movement of said valve means between its two positions, whereby when said piston is moved toward said chamber when said inlet port is connected to said other side of said piston a portion of the filtered fluid in said chamber above said piston will be forced through said outlet port and another portion thereof will be forced into the fluid port of said filter means for flow through the filter means in reverse direction to clean the filter means.

3,283,904
FILTER ELEMENT HAVING DUAL POROSITIES
Kenneth Ernest Buckman, Winsor, near Woodlands Southampton, Stanley William Kemp, Totton, Derrick Percival Tuffnell, North Baddesley, and Ronald Arthur Cross, Maybush, Southampton, England, assignors to General Motors Corporation, Detroit, Mich, a corporation of Delaware
Filed Sept. 9, 1963, Ser. No. 307,557
Claims priority, application Great Britain, Sept. 11, 1962, 34,612/62; Jan. 16, 1963, 1,900/63
3 Claims. (Cl. 210—132)

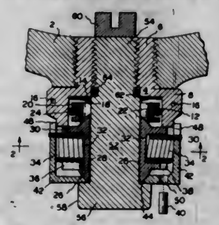


1. A filter for liquid comprising a tubular support having openings therein, two fixed portions of filter material, one of said portions having a fine porosity and the other a less fine porosity, said portions being in contact with and covering an exterior surface of said tubular support, a part of the said exterior support surface corresponding with said fine porosity portion having a number of said openings per square inch of area greater than a number of said openings per square inch of area in part of the said exterior support surface corresponding with said less fine porosity portion.

ERRATUM

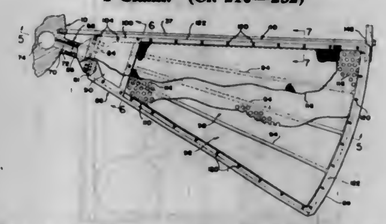
For Class 210—136 see:
Patent No. 3,284,349

3,283,905
SELF-CLOSING MAGNETIC PLUG
Joseph T. Cass, 3528 Edgewater Lane, Chester, Pa.
Filed Oct. 23, 1965, Ser. No. 507,989
18 Claims. (Cl. 210—222)



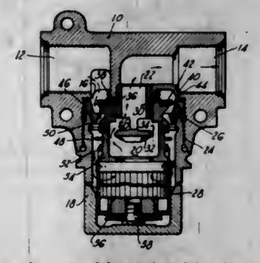
2. A drain unit, for use in connection with a gear case or the like, comprising:
(a) a housing having a central bore therethrough to form a drain passage and adapted to be mounted in an opening in a gear case with said drain passage in open communication with the interior of said gear case;
(b) valve means mounted in the bore of said housing in a position below the interior drain level of said gear case when said housing is mounted in said gear case for alternately opening and closing said drain passage;
(c) spring means adapted to urge said valve means toward its closed position;
(d) plug means, mounted in said drain passage and passing through said housing and said valve means to the interior of said gear case, for holding said valve open and closing said drain passage when inserted in said housing and to maintain said drain passage closed until said valve closes as it is being removed from said housing; and
(e) a magnet mounted on the end of said plug extending beyond said housing and into said gear case, whereby said magnet is freely exposed to fluids in said gear case.

3,283,906
VACUUM FILTER
Alfred W. Crane, Parma, Ohio, and Frank Dittrich, Chagrin Falls, Ohio (both % The Cleveland Electric Illuminating Co., P.O. Box 5000, Cleveland, Ohio)
Filed Dec. 19, 1963, Ser. No. 331,691
1 Claim. (Cl. 210—232)



In a vacuum filter comprised of a vacuum disk having a plurality of flat sectors with oppositely facing flat, filtering surfaces and adapted to rotate through a slurry of water and small suspended particles; each of said sectors comprising a wedge-shaped metal body and an integral mounting hub at the smaller end of said body, a first plenum chamber in said mounting hub, a plurality of radially extending ribs in said body and terminating at said first plenum chamber, said ribs forming a plurality of inner plenum chambers each of which are communicated with said first plenum chamber and with both of said filtering surfaces, and said hub having an inlet communicated with a source of vacuum; the improvement comprising; said hub having a generally relatively large area flat surface facing in the same direction as one of said filtering surfaces, an opening in said flat surface of said hub, said opening communicated directly with said first plenum chamber, a removable cover secured over said opening, and means on said cover for aligning said cover with said opening.

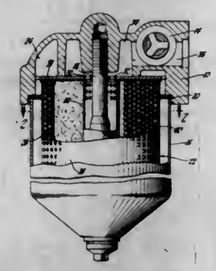
3,283,907
FILTER WITH AUTOMATIC SHUT-OFF VALVE
James C. Whiting, Madison Heights, Mich., assignor to The Bendix Corporation, Madison Heights, Mich., a corporation of Delaware
Filed Aug. 8, 1963, Ser. No. 300,888
3 Claims. (Cl. 210—234)



1. A filter unit comprising a head having an inlet port and an outlet port communicating respectively with outer and inner concentric chambers, a hollow cylindrical guide member operatively connected to said head for separating said outer and inner concentric chambers, a valve stop member formed integrally with and extending from said guide member, said valve stop member having a valve seat formed on the upper surface thereof, a ring member

located in said outer chamber and concentrically positioned with respect to the cylindrical guide member, said ring member having a valve seat formed on the upper surface of the inner edge thereof, a cylindical valve sleeve located between said guide and ring members and slidable on said guide member from an open to a closed position, lower and upper sealing means located on said valve sleeve for engagement respectively with the valve seats formed on the valve stop and ring members when said valve sleeve moves to a closed position to thereby prevent communication between the outlet port and the inner concentric chamber and between the inlet port and the outer concentric chamber, resilient means for urging said valve sleeve from an open to a closed position, a bowl removably attached to the head in sealing engagement therewith, a filter element located in said bowl, means operatively connected to said filter element and bowl for urging the filter element towards the bottom of the bowl, said filter element being in abutting relationship with said valve sleeve and causing same to move from a closed position to an open position upon sealing engagement of said bowl with said head, and adjustable resilient means interposed between the lower end of the filter element and the bottom of the bowl for varying the preload of said resilient means and the free length of the filter element to insure proper movement of said valve sleeve from its closed to its open position.

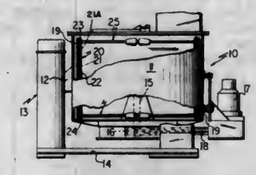
3,283,908
NODULAR FILTER MASS OF PREDETERMINED VOLUME
Julius M. Komarmy, Flint, Karl Schwartzwalder, Holly, and George E. Suchy, Flint, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 30, 1963, Ser. No. 334,194
2 Claims. (Cl. 210—266)



2. A filter comprising a mass of fluid permeable and discrete nodules distorted together under pressure, each of said nodules having a covering of filter material and a hard nucleus, the space between the nuclei of said mass being substantially filled with said filter material due to said pressure, the ratio of nodule diameter to nucleus diameter being in the range of from about 1.2 to about 2.0, the diameter of said nucleus being within the approximate range of from 1/32 to 3/16 of an inch, and fluid permeable wall means retaining said mass under said pressure.

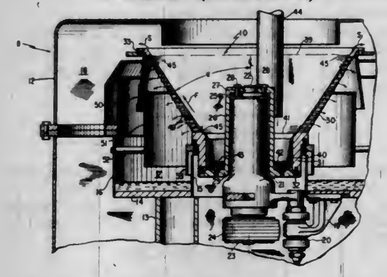
3,283,909
CENTRIFUGAL SEPARATOR
Edward A. Daubman, East Moline, Ill., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 20, 1963, Ser. No. 332,161
2 Claims. (Cl. 210—380)

1. In a centrifugal separator, a housing; a spindle mounted in said housing; a basket made from a perforated sheet material connected to said spindle; a lining within said basket and including a cylindrical screen having its inner surface covered with a fabric lining; a protective sheet of perforated metal on the inner surface of said fabric lining; expansible and retractable hoop retaining means within and adjacent at least one end of said basket; said retaining means including two substantially semicircular elements, each end of one element and each end of the other element being arranged in an aligned pair, each aligned pair of ends being bent inwardly and extending



along their length in a line defined by a plane passing through a chord of said hoop, turnbuckle means adjustably connecting the ends of each aligned pair to one another, said turnbuckle means having an outermost surface extending outwardly to substantially the outermost periphery of said hoop whereby said hoop and said turnbuckle means have coincident outer surfaces which engage the inner surface of said metal sheet; and means for rotating said spindle.

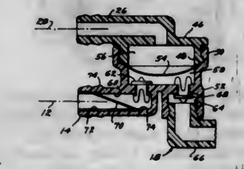
3,283,910
CENTRIFUGAL BASKET
William Grieselhuber and Charles B. Sazavsky, Hamilton, Ohio, assignors to The Western States Machine Company, Hamilton, Ohio, a corporation of Utah
Filed Apr. 2, 1964, Ser. No. 356,763
4 Claims. (Cl. 210—380)



1. A centrifugal basket constituted by a unitary metal wall of frusto-conical form and a perforated screen of complementary form overlying the inner surface of said wall, said wall having a multiplicity of annular grooves recessed circumferentially in said inner surface to a depth sufficient to receive and drain off liquid filtered through said screen, said grooves being separated from one another by circumferential ribs integral with said wall and the tops of which define elements of a common conical surface and are sufficiently closely spaced apart to support said screen against the loads and centrifugal force applied to it during rotation of the basket, said wall further having drain holes extending therethrough, each of said drain holes being cut through only alternate ribs so as to communicate with and lead liquid radially away from the grooves adjacent each of said alternate ribs, said drain holes being arranged in circumferential tiers extending along each of said alternate ribs of said wall, the ribs between each two of said alternate ribs being unbroken and free of drain holes to prevent liquid filtered through said screen into said grooves from climbing along the inner surface of the wall, the drain holes in each of said tiers

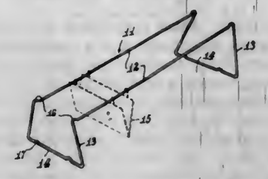
being staggered circumferentially with respect to the drain holes of the next adjacent tiers to dispose the drain holes of alternate tiers in rows extending along generatrices of said frusto-conical wall, whereby all of said grooves communicate with drain holes and undue weakening of said wall by said drain holes is avoided.

3,283,911
FILTER FOR FUEL PUMP
Donald A. Reise, St. Louis, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Nov. 26, 1962, Ser. No. 239,947
5 Claims. (Cl. 210—416)



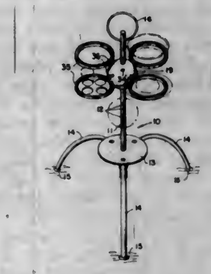
1. The combination in a fuel pump having a pumping chamber and means forming an inlet passage communicated with said pumping chamber, filter means retained in said means forming said inlet passage and including said means forming said inlet passage being comprised of a moldable material, a peripheral shoulder formed on an internal wall of said means forming said inlet passage and lying in a plane disposed in an acute angle to the longitudinal axis of said passage, a planar filter screen positioned in said means forming an inlet passage and having the edge thereof peripherally coextensive with and abutting said peripheral shoulder, an elongated retaining member having open ends and being fixedly secured in said passage, and said member having one edge disposed in coextensive engagement with the periphery of said filter screen for maintaining the latter in said passage, thereby forming a liquid tight seal at said filter screen periphery.

3,283,912
RACK STRUCTURES
James E. L. Cullen, Crayford, England, assignor to Gary Industries, Inc., a corporation of Nevada
Original application June 14, 1963, Ser. No. 287,867. Divided and this application Oct. 8, 1965, Ser. No. 493,983
1 Claim. (Cl. 211—46)



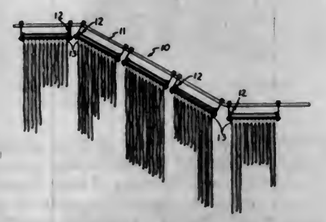
An elongated rack for suspension of file folders having hangers on their uppermost edge, said rack comprising, in combination, a single piece of rod-like stock shaped to provide a pair of spaced apart parallel longitudinal rails for receiving the hangers thereon, the rails terminating at each of their ends in a downwardly laterally outwardly inclined leg, an upstanding offset at the juncture of each rail with its associated leg, lateral base portions one integrally joining the lower end of the legs at each end of said rails, and a pair of recesses on the bottom face of each base portion one inwardly of each juncture with a leg and in substantial vertical alignment with the respective rail portions.

3,283,913
PORTABLE ROTATABLE FOOD SERVER
Maurice J. Van Horn, Jr., Rte. 2, box 236, Church Road, Reisterstown, Md.
Filed Oct. 2, 1964, Ser. No. 401,034
3 Claims. (Cl. 211—78)



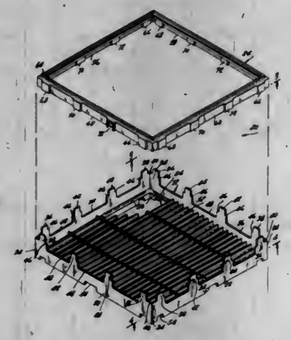
1. A portable rotatable food server comprising a stand having a generally upright post, said post having a series of openings spaced along the length thereof, a spherical support member rotatably mounted on said post, adjusting means for adjusting the vertical position of said support member on said post, said adjusting means including a bushing having an inner sleeve slidably mounted on said post, an upper flange on said inner sleeve, an outer sleeve slidably mounted on the lower portion of said inner sleeve, the upper portion of said outer sleeve being in spaced relation to said flange, a bearing ring connected to said support member and adapted to rest upon the upper edge of said outer sleeve and be rotatably supported thereby, means carried by said sleeves to engage a selected one of said holes and a plurality of holders mounted about the periphery of said support member in at least two vertical planes.

3,283,914
CONVEYOR LOCK-BAR-TROLLEY
Clarence P. Robinson, 723 Wellner Road, Naperville, Ill.
Filed Aug. 12, 1964, Ser. No. 389,028
2 Claims. (Cl. 211—123)



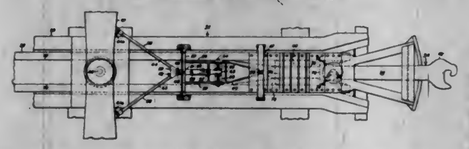
1. A trolley bar adapted to receive and support a plurality of hooks for movement along a conveyor rail structure comprising, in combination, an elongated body member, means adjacent each end of said body for suspending said body from the rail structure, said body adapted to receive a consolidated group of the hooks and having a plurality of spaced apart depressions formed in the upper surface thereof for initially locating the hooks in spaced apart relation along the length of said body, said depressions being generally V-shaped permitting said consolidated group of hooks to be spread axially along the length of the body member with one hook located in each of said depression, a bracket member secured to said body member adjacent each end thereof and extending generally upwardly therefrom, a latch bar disposed above said body member and eccentrically pivoted adjacent the ends thereof on said bracket members, said latch bar being swingable from a lowered position whereby one edge thereof is disposed in close proximity to said upper surface of said body member to retain said hooks within said depressions and a raised position whereby said edge is spaced from said upper surface of said body to permit the removal of the hooks from said depressions, and stop means interposed between one of said brackets and said latch bar, said latch bar being placed in an overcentered orientation and adapted to rest against said stop means when in said upraised position.

3,283,915
TRAY OR RACK ASSEMBLY
Louis Maslow, Huntsville Road, Dallas, Pa.
Filed Mar. 31, 1964, Ser. No. 356,200
31 Claims. (Cl. 211—126)



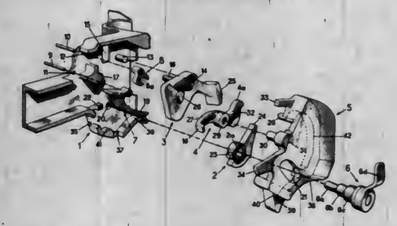
1. An article of the character described comprising an integral walled base member provided with an open gridwork extending between the walls thereof and having portions projecting upwardly from said walls, and an overlying frame member, means defining open recesses at the lower surface of said frame member, said projecting portions being engaged in associated recesses, and means for securing said projecting portions in their associated recesses to retain said members in assembled relation.

3,283,916
AUTOMATIC COUPLER CENTERING DEVICE
Geoffrey W. Cope, Williamsville, N.Y., assignor to Symington Wayne Corporation, Salisbury, Md., a corporation of Maryland
Filed July 30, 1965, Ser. No. 475,975
18 Claims. (Cl. 213—15)



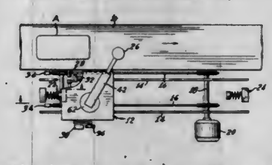
1. In draft rigging for a railway car having sill means extending longitudinally thereof and a coupler mounted in said sill means and swingable laterally relative to said car, an automatic coupler centering device comprising compound lever means connected forwardly to means fixed to said car and rearwardly to an adjoining truck bolster for lateral swinging therewith relative to said car, and means operatively connecting said coupler and lever means for causing said coupler when uncoupled to swing laterally with said lever means in response to said relative lateral swinging of said bolster.

3,283,917
FIXED-JAW CAR COUPLER
Marius Georges Dufourmantel, Paris, France, assignor, by mesne assignments, to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Filed July 9, 1965, Ser. No. 470,668
Claims priority, application France, July 28, 1964, 983,347, Patent 1,412,470
11 Claims. (Cl. 213—100)



1. A fixed-jaw railway car coupler intended for cooperation with a similar coupler on another railway car comprising:
(A) a coupler head having a casing,
(B) a forwardly facing abutment on the interior of said casing,
(C) a lock pivotally mounted in said casing to pivot between a locking position in which the two couplers cannot be separated and an unlocking position in which they can be separated,
(D) a stub shaft or spigot on said lock, and
(E) an anticreep element pivotally mounted on said stub shaft for pivotal movement between a first position in which the said element, in being carried by the lock through a slight movement thereof rearwardly, can engage the abutment to prevent movement of the lock to its unlocked position and a second position in which the path of movement of the anticreep element upon pivotal movement of the lock to its unlocked position is clear of the said abutment.

3,283,918
COORDINATED CONVEYOR AND PROGRAMMED APPARATUS
George C. Devol, Brookside Drive, Greenwich, Conn.
Filed Dec. 2, 1963, Ser. No. 327,296
27 Claims. (Cl. 214—1)



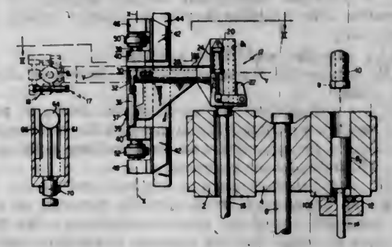
1. In combination, program-controlled apparatus having a main base and including a work device, a conveyor for transporting an article along a path past said program-controlled apparatus, and reciprocable driving means for transporting said base forward along the conveyor to enable the work device to perform prescribed operations on an article while in transit and to return the base to a starting position preparatory to the advance of another article, said program-controlled apparatus including supporting and actuating means for moving said work device in multiple degrees of freedom, program-control means, sensing means cooperating with said program-control means, and control means for said actuating means and for said work device controlled by said sensing means, and coordinating means for initiating operation of said program-controlled apparatus and said base-driving means and said coordinating means including article-position indicating

elements movable coordinately with said conveyor and control means for said base-driving means movable coordinately with said program-controlled apparatus and cooperable with said article-position indicating means for maintaining prescribed orientation of said program-controlled apparatus in relation to an article on the conveyor during the program-controlled operation of said apparatus.

3,283,919
APPARATUS FOR TRANSFERRING METAL BILLETS

Leslie George Dean, Poole, Dorset, Gerald William Grant, Bournemouth, and Allan Ball, Parkstone, Dorset, England, assignors to The Loewy Engineering Company Limited, Bournemouth, England, a company of Great Britain

Filed Sept. 23, 1964, Ser. No. 398,716
Claims priority, application Great Britain, Sept. 24, 1963, 37,612/63
9 Claims. (Cl. 214—1)



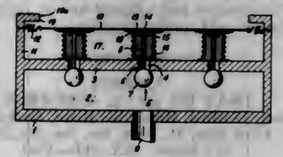
1. In combination; a vertical press, a loading station next to said vertical press, a horizontal press, a discharge station next to said horizontal press, apparatus for transferring metal billets from said vertical press to said horizontal press and for tilting said billets from an upright position at the vertical press to a prone position at the horizontal press, said apparatus comprising a billet receptacle open at both ends, a cantilever arm supporting said receptacle, a vertical pillar supporting said arm, means for rotating said arm about the axis of said pillar to move said receptacle from one station to the other, means for tilting said receptacle about a transverse axis situated halfway between the ends of said receptacle, and selector means operable independently of said rotating means for controlling the direction of the tilting movement of said receptacle from an upright to a prone position.

3,283,920
INFRASTRUCTURE ELEMENT FOR AN INSTALLATION FOR CONVEYING OBJECTS BY PNEUMATIC FLOATING

Max Schonfelder, Petit-Lancy, Geneva, and Donald S. C. Rodgers, Meyrin, Geneva, Switzerland, assignors to Melksham Spencer Limited, Melksham (Wiltshire), England

Filed Aug. 18, 1965, Ser. No. 480,653
Claims priority, application Switzerland, Aug. 18, 1964, 10,793
10 Claims. (Cl. 214—1)

1. An infrastructure element for a gas film conveyor for conveying objects by pneumatic floating, said element comprising a hollow base adapted to be supplied with compressed gas and having a top wall formed with a plurality of spaced gas passages therethrough; a valve associated with each of said passages to control the flow of gas therethrough; a mattress overlaying said top wall and having a normally smooth and gas impervious glide path forming upper surface spaced from said top wall and recuperatively deformable through pressure applied thereon, and a plurality of rigid portions, each having an aperture, located opposite said passages and positioned adjacent said upper surface thereby to move with said surface when said surface is deformed in the vicinity thereof; and a plurality of gas impervious deformable conduits extending between said top wall and said rigid portions to provide fluidtight communication between each of said passages and the aperture of the oppositely located rigid portion; each of said valves having a valve member normally closing the associated passage and a control member secured to said valve member and to the oppositely located rigid portion through the intermediate deformable conduit.



3,283,921
APPARATUS FOR STRINGING TOBACCO LEAVES

John W. Bell, Jr., 141 W. 19th St., Paris, Ky.

Filed Oct. 14, 1964, Ser. No. 403,802
4 Claims. (Cl. 214—5.5)

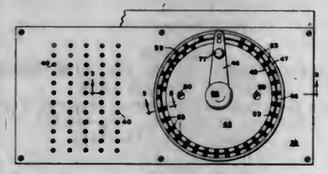


1. Apparatus for stringing tobacco leaves and comprising in combination, a generally horizontal table for supporting a supply of leaves to be strung, a generally V-shaped apron mounted at one end of said table for guiding strung leaves downwardly away from said table by gravity, said apron having an upwardly directed apex with a first end thereof located above the plane of said table and a second end located below said plane, a rotatable bobbin assembly mounted at an end of said table opposite said apron and at a higher elevation than said first end of said apron apex and feeding a pair of separate strings to a junction point with each other adjacent said first end of said apron apex, said strings being separated from each other at progressively shorter distances as they approach said junction point whereby leaves interposed between said strings adjacent said junction point are closely confined by said strings, an electric motor for driving said bobbin assembly and for effecting twisting of said strings about said leaves, and a pressure-actuated switch for controlling the starting of said motor, said switch being mounted adjacent said first end of said apron apex and in the path of movement of leaves being moved in confinement between said strings and toward said junction point of said strings thereby to provide a brushing of said confined leaves against said switch and a subsequent operation of said switch to start said motor.

3,283,922
TRANSPORTER

John H. Wiltse, Hannibal, N.Y., assignor to Lamson Corporation, Syracuse, N.Y., a corporation of New York

Filed July 3, 1964, Ser. No. 380,154
4 Claims. (Cl. 214—11)

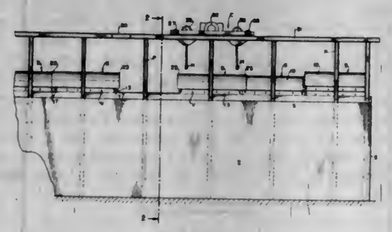


1. A transporter system for advancing articles from a loading station to a selected work station, an endless conveyor having a run extending from the loading station to and past a plurality of work stations spaced along said conveyor, a constant speed motor for operating said conveyor for the advancement of articles thereby from said loading station, a support at said loading station, a series of station indicators mounted on said support and arranged in an elongated path, said station indicators being adjustable along said path to effect spacing of said indicators comparable to the spacing of said work stations, a pointer manually movable from a start position along said series into registration with a selected one of said station indicators, a synchronous motor connected to said pointer and operable when energized to return said pointer to start position, and switch means for simultaneously energizing said motors and for simultaneously de-energizing said motors upon return of said pointer to start position.

3,283,923
BUILDING HAVING REMOVABLE ROOF SECTIONS AND CRANE THEREFOR

Auxilius P. Schnyder, 146 Cherry Lane, Teaneck, N.J.

Filed July 15, 1964, Ser. No. 382,740
1 Claim. (Cl. 214—16)

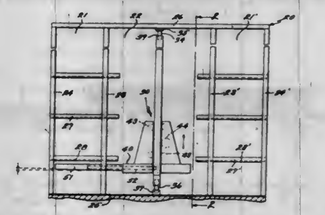


The combination of a building covering a space of land and a traveling crane which comprises a roof for the building having a plurality of removable sections resting on their edges on wall portions of the building and having edge portions for supporting one section on another, a crane mounted in operative connection to the building having lift means above the roof, means on each section of the roof for attachment to the crane, and means to move the crane to carry the removable sections from their positions on the roof to a position of rest.

3,283,924
EXTRACTOR APPARATUS WITH CURVED GUIDES

Anthony R. Chasar, Columbiana, Ohio, assignor to The Triax Company, Cleveland, Ohio, a corporation of Ohio

Filed June 9, 1965, Ser. No. 462,532
16 Claims. (Cl. 214—16.4)

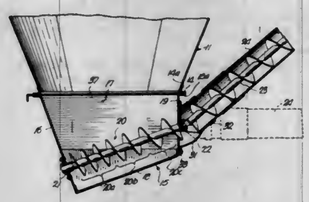


15. In a mechanized warehousing system, a vertically movable carriage for moving loads to different storage levels; a load transferring extractor mounted to said carriage for projecting horizontally in a load carrying path outwardly from said carriage; said extractor comprising a frame for receiving said load; interfitting guide means connecting said carriage with said frame; means for driving said frame outwardly cantilevered with respect to said carriage; said guide means having upwardly turned surface portions extending parallel to said path and causing said frame to tilt upwardly as it projects outwardly, whereby said upward tilt at least partially counteracts the tendency of said cantilevered frame to settle downwardly.

3,283,925
STORAGE STRUCTURE WITH SIDE DRAW-OFF

Gerald A. Gutekunst, Independence, Mo., assignor to Butler Manufacturing Company, a corporation of Missouri

Filed Jan. 18, 1965, Ser. No. 426,317
5 Claims. (Cl. 214—17)

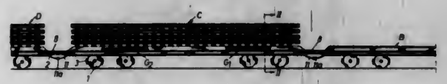


1. A storage structure comprising
an upright tank having a downwardly tapering hopper section, said hopper section terminating at its lower end in an oblong discharge outlet,
a boot secured to the lower end of said hopper and forming a chamber below said outlet, said boot having front and rear end walls, opposed side walls, and a bottom wall, said bottom wall inclined upwardly from its juncture with the rear end wall to its juncture with the front end wall,
said front end wall provided with a discharge opening, and
a rotatable auger screw disposed in said chamber with its long axis substantially parallel with said bottom wall and aligned with said discharge opening,
the pitch of said screw being non-uniform and greater on that portion of the auger nearest said front end wall than that portion nearest the rear end wall.

3,283,926
TRANSPORTING UNIT, ESPECIALLY FOR RAILWAY TRACK SECTIONS

Karl-Heinz Eckhardt, Minden, Westphalia, Christian Stiefel, Aachen, Rudolf Stahn, Minden, Westphalia, and Wilhelm Blank, Aachen, Germany, assignors to Waggonfabrik Talbot, Aachen, Germany

Filed Oct. 23, 1964, Ser. No. 406,124
Claims priority, application Germany, Oct. 23, 1963, W 35,493
11 Claims. (Cl. 214—38)

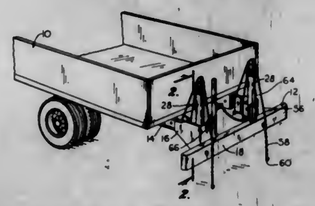


1. A transporting unit for long heavy goods, especially railway track sections, which includes: at least two rail vehicles coupled together in end to end relation; each vehicle having a load supporting surface, track means supported by and extending lengthwise along said vehicles and across the space therebetween, said track means being disposed at a level beneath the level of said supporting surfaces, carriage means moveably supported on said track means and adapted to support said goods to be transported by said transporting unit, said carriage means having a length not greater than the length of one of said vehicles and being disposed within the vertical space beneath said load supporting surface, driving means carried by said carriage means and drivingly connected thereto for driving the carriage means on said track means, load engaging means on said carriage means retractable thereon to a level beneath said load supporting surfaces and elevatable thereon to a level above said load supporting surfaces, and hoisting means on said carriage means adapted selectively to raise and lower said load engaging means thereon to different levels for picking up a load from a said load supporting surface or for depositing a load on a said load supporting surface.

3,283,927
TOWING DEVICE

Vernon Scott, Ankeny, Blue Earth, Minn., assignor to Greater Iowa Manufacturing Company, a corporation of Iowa

Filed Jan. 31, 1964, Ser. No. 341,668
11 Claims. (Cl. 214—86)

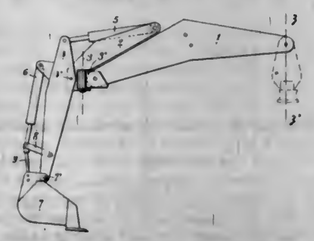


1. In a towing device, comprising in combination,
a supporting structure,
a pair of normally upright hydraulic cylinders pivotally secured to opposite sides of said supporting structure,
a piston rod slidably extending from the upper end of each of said hydraulic cylinders,
a first pulley rotatably secured to the outer end of each of said piston rods,
a second pulley rotatably secured to said supporting structure adjacent the lower end of each of said hydraulic cylinders,
a pair of cables each having one end secured to the outer end of each of said piston rods and first extending downwardly, thence around said second pulley, thence upwardly and over said first pulley, thence downwardly and terminating in a hook element secured thereto,
said supporting structure having means on its forward end for securing said supporting structure to a vehicle,
and a means for operatively moving said piston rods.

3,283,928
LATERAL OFFSET MOUNTING FOR POWER SHOVEL DIPPER ARM

Pierre de Bosredon, 10 Rue Durou, Bergerac, France

Filed June 17, 1965, Ser. No. 464,751
2 Claims. (Cl. 214—138)



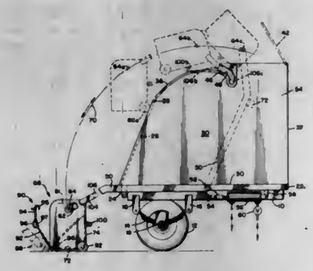
1. Power shovel adapted to operate under laterally offset conditions, mounted on a swivelling platform, provided with a bucket and adapted, during the shovelling work, to avoid the development of oblique reactions on intermediate members disposed between said bucket and said platform, said power shovel comprising a jib having a supported end carried by said platform on the swivel axis of said platform and a head adapted to describe a horizontal circle about said swivel axis, a pivot pin carried by said head and having its axis substantially parallel to the swivel axis of said platform, a support mounted for free rotation on said pivot pin carried by said jib head, a crank arm extending laterally from, and rigid with, said support, a first hydraulic actuator having a bearing end laterally pivoted on said jib and a working end pivoted on said crank arm for controlling the pivotal movements of said support in relation to said jib, another pivot pin mounted on said support and having its axis disposed at right angles to the pivot axis of said support, a dipper arm fulcrumed on said other pivot pin, a second hydraulic actuator having a bearing end pivoted on said support and a working end pivoted on one end of said dipper arm, for controlling the angular movements of said dipper arm in relation to said support about said other pivot pin, a bucket mounted on the opposite end of said dipper arm, and a third hydraulic actuator having a bearing end pivoted on said dipper arm and a working end pivoted on said bucket for controlling the pivotal movements of said buckets in relation to said dipper arm.

3,283,929
METHOD OF HANDLING CLASSIFIABLE MATERIALS

Joseph P. Miller, 111 N. Vine St., Kewanee, Ill.

Original application Mar. 19, 1964, Ser. No. 353,223, now Patent No. 3,211,312. Divided and this application Sept. 7, 1965, Ser. No. 485,384
3 Claims. (Cl. 214—152)

1. A method of handling classifiable and gravitationally compactible material in a gravity loaded compartmented tank that is plurally resiliently mounted and tiltable for dumping on an axis transverse of the resilient mounts, comprising the steps of, loading differently compactible classes of material into different of the compartments, causing compacting of said material in at least one of said compartments whereby to attain a predetermined rigidity in reinforcing relationship with parts of the structure of said tank, tilting said tank into dumping position, and

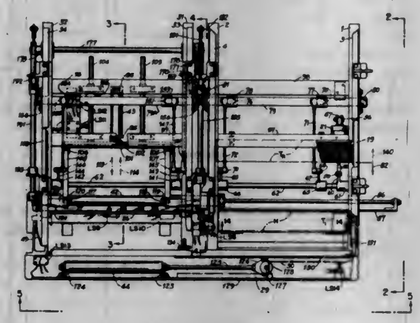


causing said compacted material to be dumped, after material in another compartment is dumped, whereby the compacted rigidity of the compacted material will reinforce the tank structure against stress forces released by the resilient mounts of the tank during dumping of the material in said other compartment.

3,283,930
TRAY FEED MECHANISM

Jack Cascio, Cambria Heights, and William C. Kerker, Yonkers, N.Y., assignors to American Machine & Foundry Company, a corporation of New Jersey

Filed July 30, 1964, Ser. No. 386,280
7 Claims. (Cl. 214—302)

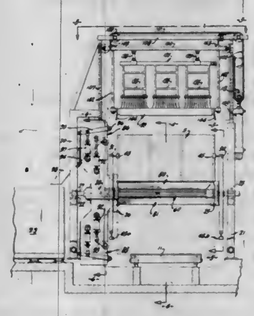


1. In an automatic tray-feeding device for cigarette-packaging machines provided with a vertical feed hopper and to which the cigarettes are fed from trays having slidably removable bottom slats; a substantially U-shaped conveyor situated in a substantially horizontal plane above said hopper for movably supporting said trays in a common horizontal plane; said conveyor having an entrance point for full trays, a delivery station over said hopper, and an exit point for empty trays, all co-planar with respect to each other; means comprising a first set of tray pawls carried by a first pair of pusher bars oscillatable in a forward and backward motion for advancing said full trays one step at a time to said delivery station, means for oscillating said bars, and for advancing a preceding and previously emptied tray one step forward of said delivery station, means for resetting said first part of pusher bars to their normal position, wherein all of said trays traverse a co-planar path; means comprising a slat-puller oscillatable in a left and right motion for pulling out the bottom slat from a full tray positioned over said delivery station to cause said full tray to discharge its contents into said hopper and means for resetting said slot puller to its normal position without causing said full tray to deviate from said co-planar path; means comprising slat-pusher fingers for transferring said pulled-out slat forwardly one position in advance of its pulled-out position, and means for resetting said slat-pusher fingers rearwardly to their normal positions; means comprising empty-tray cross-indexing pusher means for leftwardly moving the said preceding and previously emptied tray from its position one step forward of said hopper and for subsequently rightwardly moving said pusher means to reset it to its normal position without causing said cross-indexed tray to deviate from said co-planar path; means comprising tray-actuated slat elevator means for lifting the right-hand end of the said forwardly transferred slat to cause it to be threaded into the bottom of said cross-indexed tray during its said lateral movement; means comprising an empty-tray double-indexing assembly carried by a pair of double-indexing shafts oscillatable in a forward and backward direction for pushing a preceding and previously emptied tray two steps rearwardly toward said exit point, means for oscillating said shafts, and wherein said tray continues to traverse said co-planar path, and means for resetting said double-indexing shafts to their normal positions; and means comprising a second set of tray pawls carried by a second pair of pusher bars oscillatable in a forward and backward motion for pushing empty trays rearwardly one step at a time toward said exit position and wherein said empty trays do not deviate from said co-planar path.

3,283,931
APPARATUS FOR REMOVING DRIED PRODUCTS FROM A SUPPORT STRUCTURE

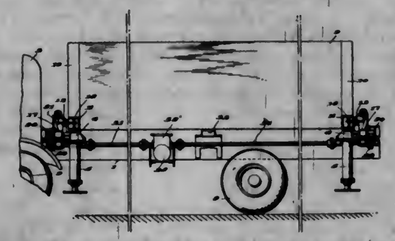
Alfred W. Gerrans, San Jose, Calif., assignor to Sunsweet Dryers, San Jose, Calif., a corporation of California

Filed June 8, 1964, Ser. No. 373,368
21 Claims. (Cl. 214—310)



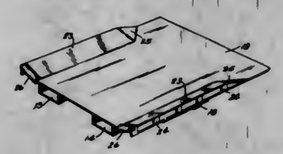
1. Apparatus for removing dried fruit from an array of parallel drying trays, comprising: means including a support frame for gripping and positioning an array of drying trays with surfaces thereof disposed in substantially vertical planes, a scraper assembly including fruit engaging contacts vertically movable between surfaces of adjacent trays, and means for vertically moving said scraper assembly to bring said contacts into engagement with fruit that adheres to supporting surfaces of said trays.

3,283,932
APPARATUS FOR HANDLING CONTAINERS
James W. Dempster, Thomas J. Huey, Jr., and Steven C. Voorhees, Knoxville, Tenn., assignors to Dempster Brothers, Inc., Knoxville, Tenn., a corporation of Tennessee
Filed Dec. 30, 1964, Ser. No. 422,146
3 Claims. (Cl. 214—516)



3. In transporting equipment, the combination with a vehicle, of a container having surrounding sides and mounted on the vehicle for movement transversely relative thereto onto and off the vehicle, said container having a hook bar connected therewith on one of the sides of the container above the bottom-most surface of the container, means forming a plurality of hook stations spaced apart lengthwise of the hook bar and each hook station having a hooking surface, a carriage mounted on the vehicle and spaced laterally outside the container for movement transversely relative thereto, a cantilever device, means pivotally mounting the cantilever device for horizontal swinging movement toward and from the hook bar in a position above the bottom surface of the container, and hook means on the cantilever device in position to engage the hook surface of each respective hook station to move the container transversely of the vehicle upon movement of the carriage.

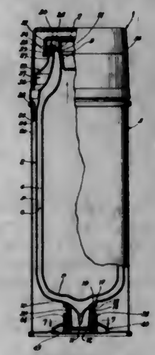
3,283,933
ATTACHMENTS FOR FORK LIFT TRUCKS
Tuenis Vander Wal, 1432 W. Madison St., Milwaukee, Wis.
Filed Aug. 14, 1964, Ser. No. 389,701
2 Claims. (Cl. 214—620)



1. An attachment for fork lift trucks, comprising a rectangular base plate, a pair of fork-receiving channels subjoined thereto, outwardly flared after ends on said channels to facilitate easy entry of lift forks, a tilt plate carried on said base plate and hinged thereto, a pair of elongated inclined side elements marginally arranged on said tilt plate, and a pair of rollers rotatably mounted adjacent the after ends of said inclined side elements.

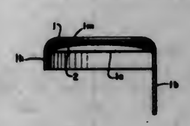
3,283,934
FILLER SUPPORT FOR THERMOS BOTTLES
Horace M. Chappell, Nashville, Tenn., assignor to Aladdin Industries, Incorporated, Chicago, Ill., a corporation of Illinois
Filed July 23, 1964, Ser. No. 384,619
6 Claims. (Cl. 215—13)

1. In a thermos bottle, the combination comprising a protective jacket having a side wall and a bottom wall, a vacuum-insulated filler received within said protective jacket and having a centrally disposed downwardly projecting fragile tubulation thereon, a generally cup-shaped tubulation projector mounted on said filler around said tubulation, said protector having a downwardly tapering side wall and a downwardly facing annular shoulder extending around the upper portion of said side wall, a generally cylindrical sleeve made of soft resilient rubbery material and received around said side wall of said tubulation protector with the upper end of said sleeve engaging said downwardly facing annular shoulder, the lower end of said sleeve projecting below the lower end of said tubulation protector, and a socket member



mounted centrally on said bottom wall of said jacket, said socket member having a downwardly tapering socket therein with an upwardly facing annular shoulder extending around the lower portion of said socket, said socket member having a plurality of ribs projecting radially into said socket and extending longitudinally therealong, said sleeve being received in said socket with the lower end of said sleeve engaging said upwardly facing annular shoulder, the outside of said sleeve being in snug engagement with said ribs, whereby said sleeve provides a resiliently spring support for said filler and is adapted to bulge outwardly between said ribs when compressed longitudinally by force applied to said filler.

3,283,935
CROWN CAP
Glenn A. Samuels, 1370 Pennsylvania Ave., Pine City, N.Y., and Theodore Peterson, 951 W. Church St., Elmira, N.Y.
Filed Dec. 21, 1964, Ser. No. 419,804
3 Claims. (Cl. 215—39)



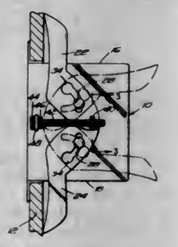
1. A cap for the necks of bottles and like containers comprising an initial crown-shaped blank having a head and having a marginal skirt adapted to receive the bottle neck; said skirt having a line of scoring defining a circular line of weakness in its inner wall spaced from the lower end thereof; and a floating liner in said cap formed of low-density polyethylene disposed between the head and scoring, said liner being of slightly larger diameter than the inner diameter of the skirt and the peripheral edge of the liner being engaged in said line of weakness,

whereby when the cap is crimped and pressed around the bottle neck the liner will be held by suction within the cap and the deformed edges of the liner will be engaged in the line of scoring to form an airtight and leakproof closure.

3,283,936
CURED VINYL CHLORIDE RESIN-EPOXIDIZED LINSEED OIL COMPOSITIONS AS CLOSURE CAP GASKETS
Alfred W. Kehe, Berkeley, and Harold W. Unger, Elmhurst, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
No Drawing. Filed Nov. 2, 1962, Ser. No. 235,120
7 Claims. (Cl. 215—40)

1. A closure cap adapted for application to a glass container in sealing relation therewith, said cap having applied to an inner surface thereof a cross-linked gasket or liner composition consisting essentially of vinyl chloride base resin and epoxidized linseed oil having a minimum oxirane content of 9% and a maximum iodine value of 5, the contendt of vinyl chloride base resin exceeding the content of epoxidized linseed oil.

3,283,937
OUTLET BOX WITH OPPOSED WALL ENGAGING MEANS
Panagiotis C. Theodorides, Boston, Mass. (623 River St., Mattapan, Mass.)
Filed May 7, 1964, Ser. No. 365,633
5 Claims. (Cl. 220—3.6)



1. An electrical outlet box having clamping means on two sides thereof, the means on each side comprising a pair of fingers rockably attached to a side of the box, said fingers being pivotally connected to each other at one end thereof, and actuating means operable from in front of the box to rock said fingers from a position in which the ends of the fingers opposite from the pivoted ends are between planes defined by the top and bottom of the box to positions beyond said planes and adjacent to the plane of the open end of the box.

3,283,938
ASH-TRAYS
João Vidal, Riva 5 du Julho 236, Apt. 701, Rio de Janeiro, Brazil
Filed Oct. 19, 1965, Ser. No. 497,732
Claims priority, application Brazil, Sept. 6, 1965, 172,882
1 Claim. (Cl. 220—20.5)

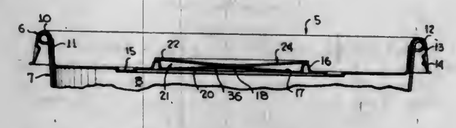
An ash-tray for smoker's articles, comprising,
a cylindrical body having a closed bottom wall and an open top portion provided at diametrically opposite locations with notches opening at the upper edge of the wall and extending downwardly from said edge to form vertically unobstructed mouth portions leading to pivot supporting saddles,

and an automatically re-closable cover having diametrically opposite projecting pins free to enter and to leave said unobstructed mouth portions of the notches



by manual lowering and lifting thereof, said pins located above the center of gravity of the cover to close the open top of said body automatically when the pins rest on the bottom of the groove.

3,283,939
VENTED LIDS FOR HOT DRINK CUPS
William L. Miller, Skokie, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Original application Apr. 10, 1961, Ser. No. 101,979, now Patent No. 3,193,130, dated July 6, 1965. Divided and this application Nov. 13, 1964, Ser. No. 410,866
4 Claims. (Cl. 220—44)

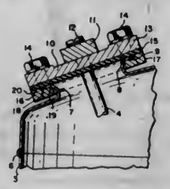


1. A closure of the type described comprising a disc-like body having means at its periphery for effecting attachment to a cup or other container, said means being an annular curl, an upstanding annular bead radially inwardly of said curl, a floor portion encompassed by said bead, said bead and floor portion defining a chamber, an imperforate disc having its peripheral margin freely resting on said bead, said disc being bonded to said floor portion, there being included venting orifice means opening through the floor portion into the chamber for the continuous and uninterrupted passage of vapor pressure into said chamber from a cup to which the closure is adapted to be attached, additional venting orifice means for permitting the escape of vapor pressure from the chamber to atmosphere, said first-mentioned venting orifice means being an opening in the floor portion whereby vapor pressure is free to condense in said chamber after passing through said opening, and said second-mentioned venting orifice means being defined between the peripheral margin of said disc and said upstanding annular bead whereby said peripheral margin is movable away from said annular bead under the influence of vapor pressure in said chamber to permit the escape of the vapor pressure to atmosphere.

3,283,940
HEATER ELEMENT FITTING FOR PRESSURIZED TANK
Robert N. Coates, 8251 W. Mercer Way, Mercer Island, Wash., and John T. Baillargeon, Seattle, Wash., said Baillargeon assignor to said Coates
Filed Oct. 21, 1964, Ser. No. 405,460
3 Claims. (Cl. 220—46)

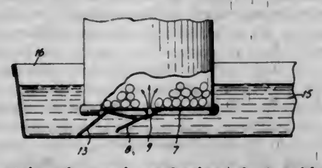
1. A fitting structure for mounting a heating element to the curved end wall of a pressurized tank comprising; a cylindrical neck extending outwardly from said curved end wall and defining an opening therein, a continuous annular flange formed on the outer end of said neck and including a continuous outwardly flared lip portion, said neck and said flange being integral with and formed from

material extruded from said curved wall, a heating element mounting plate having a substantially flat surface for cooperation with said flange, a plurality of gripping members encircling the neck and contacting the underside of the lip portion of said flange, each of said gripping members having a depression in the portion of the upper surface thereof along the edge adjacent the neck, said de-



pression having a depth equal to the flange thickness and forming a seat for the flange, the remaining portion of the upper surface of said gripping member providing a raised contacting portion, compressible seal means acting between said flange and the flat surface of said plate for sealing the plate to the flange, and means for clamping said gripping members together with said lip being received in the depressions in said gripping members.

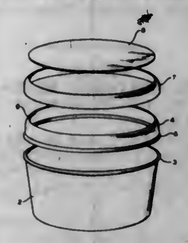
3,283,941
CONTAINER FOR HYDRATABLE PRODUCTS
Murray L. Rollins, Old Tappan, and Thomas M. Ott, Westwood, N.J., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware
Filed Feb. 11, 1964, Ser. No. 344,069
19 Claims. (Cl. 220—53)



1. A container for use in packaging a hydratable product comprising, an elongate body portion of relatively rigid packaging material, end closures of relatively rigid packaging material connected to said body portion to define therewith a vacuum sealed enclosure, and easy open vacuum release means for opening said container at a discrete area thereof to release said vacuum through the resultant opening, said vacuum release means including a tab member connected to said container and actuatable in response to a relatively light force exerted thereon through said body portion and directed axially of said body portion to push said vacuum release means against a force-resisting object.

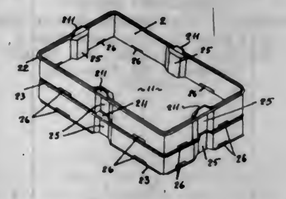
3,283,942
FORMED CONTAINER AND CLOSURE THEREFOR
Stafford D. Collie, Orangeburg, N.Y., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 28, 1964, Ser. No. 421,230
5 Claims. (Cl. 220—60)

1. A closable container comprising a container portion open at one end and a friction-retained lid or closure therefore, said container being formed of a plastic of a predetermined gauge or thickness and having a plastic reinforcing annular element tapered inwardly toward the top thereof providing a closure engaging portion and rigidity for such container portion disposed at, and integral with, the open end of said container, said lid having a cover portion and a depending skirt portion, said skirt portion having a form so disposed and arranged as to mate with said element upon application of said lid thereto and being tapered similarly to said element but with less taper angle whereby when pressure is applied to the lid to close the



container at least the skirt portion of said lid stretches and frictionally engages the tapered portion of said element.

3,283,943
STACKING CONTAINER
Italo Cargnelutti, 46 Via Dante, Gemona del Friuli, Italy
Filed May 15, 1964, Ser. No. 367,717
4 Claims. (Cl. 220—97)

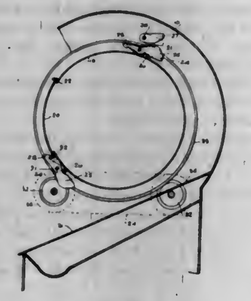


1. A rectangular container having a bottom and four side walls, and in which the bottom is convex both in longitudinal and transversal direction; an upper perimetrical rib all around said side walls, a little below their top edge; a lower perimetrical rib provided all around said side walls at the level of the junction surface of the bottom with said walls, but interrupted for a certain length in an intermediate position of the said four side walls, a hollow portion in correspondence of each of said intermediate position, said hollow portion originating from the bottom end of each of said container walls and extending up to the said upper rib, which closes said hollow like a roofing and a projection of the container side walls edge provided in correspondence of their hollow portions and forming four teeth having such a height and width as to penetrate into the said hollow portions of the side walls when the containers are stacked, thus preventing side shifting of the stacked containers.

3,283,944
BARREL APPARATUS
James Richard Richardson, Harborne, Birmingham, England, assignor to Richardson Engineering (Birmingham) Limited, Edgbaston, Birmingham, England, a British company
Filed June 19, 1963, Ser. No. 288,981
Claims priority, application Great Britain, June 20, 1962, 23,680/62
2 Claims. (Cl. 220—41)

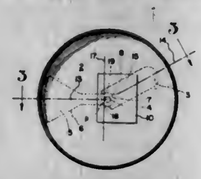
1. Rotatable barrel apparatus comprising,
(a) a barrel mounted for rotation about a horizontal axis and having a door opening in its circumferential wall,
(b) a door slidably mounted on the exterior of the barrel and moveable circumferentially thereof between an open position and a position in which it closes said door opening,

(c) first catch means mounted on the barrel exterior and spaced circumferentially away from the leading edge of said door opening,
(d) a first projection on the leading edge of said door engageable by said first catch means to hold the door in the open position,
(e) second catch means mounted on the barrel exterior adjacent the trailing edge of said door opening,



(f) a second projection on the trailing edge of the said door engageable by said second catch means to hold the door in the closed position and,
(g) an operating member mounted in a fixed position above the barrel adjacent the top dead-centre position thereof and selectively engageable with one or other of said catch means, during rotation of the barrel, to release it from engagement with its associated projection.

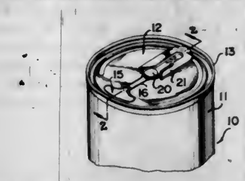
3,283,945
CONTAINER OPENING DEVICE
Frederick J. Close, Pittsburgh, Pa., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 21, 1964, Ser. No. 419,950
9 Claims. (Cl. 220—54)



1. A metal can end having an elongated removable tear strip defined by scoring, a pull-tab affixed to an end of said tear strip by means of a rivet formed integrally with said tear strip, a portion of said scoring disposed adjacent said rivet having a relatively small hole penetrating through said end, and sealing material filling said hole.

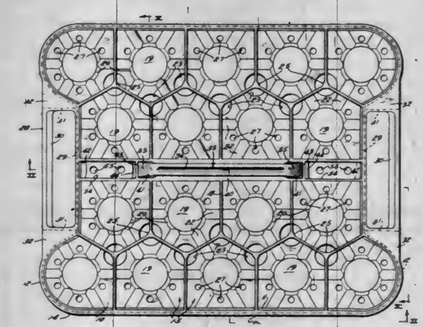
3,283,946
CAN END
Frederick J. Stec, Oak Lawn, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Jan. 19, 1965, Ser. No. 426,536
10 Claims. (Cl. 220—54)

1. An easy opening can end particularly adapted for use as a closure for liquids packaged under pressure, said can end having a removable panel defined by a peripheral score line and including a starting end portion, a large terminal end portion and an elongated connecting strap between said end portions, and said connecting strap being materially narrower than each of said end portions whereby the force exerted on said connecting strap by pressure within an associated can is held to minimum thereby



preventing the accidental blow out of said removable panel after the initial rupture of the can end along said score line.

3,283,947
BOTTLE CARRIER
Richard T. Cornelius, Minneapolis, Minn., assignor to The Cornelius Company, Anoka, Minn., a corporation of Minnesota
Filed June 2, 1965, Ser. No. 460,786
14 Claims. (Cl. 220—102)

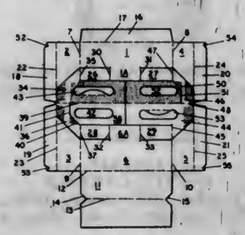


1. A molded plastic bottle-carrier of the character described comprising:
(a) base and upstanding wall structures defining a carrying tray having side and end wall portions, and integral dividers subdividing the tray into an array of longitudinal rows of upwardly opening cells including two inner rows along the longitudinal center of the tray and two outer rows having common boundaries with the respective inner rows and bounded by the side wall portions, the cells in the inner rows being staggered with relation to the cells of the outer rows and with the end cells of both of the outer rows at one end of the tray projecting endwise beyond the contiguous end cells of the inner rows, the adjacent end wall portion bounding all of the end cells and being indented between said outer row end cells;
(b) and a handle bar integral with the end wall areas bounding said outer row end cells and spaced from the indented portion of the end wall and defining a hand hole therewith.

3,283,948
HANDLE STRUCTURE FOR ARTICLE CARRIERS
Homer W. Forrer, Jonesboro, Ga., assignor to The Mead Corporation, a corporation of Ohio
Filed Aug. 4, 1965, Ser. No. 477,123
4 Claims. (Cl. 220—113)

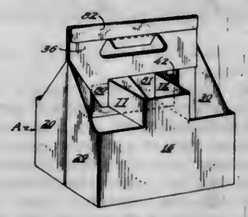
1. Handle structure for an article carrier comprising a main exterior handle panel joined at the outer end thereof to one end of the carrier, the inner end edge of said main

exterior panel being generally vertically disposed, a complementary exterior handle panel joined at the outer end thereof to the other end of the carrier along a substantially vertical fold line, the inner end edge of said complementary exterior handle panel being diagonally disposed with respect to the outer end edge thereof and the inner end of said complementary handle panel being secured in flat face contacting overlapping relation to at least a part of the inner end of said main exterior handle



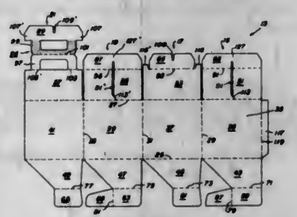
panel and one end of said diagonally disposed inner end edge of said complementary exterior handle panel being approximate registry with the inner end edge of said main exterior handle panel, and an interior reinforcing panel having an inner end in substantial coincidence with the inner end edge of said main exterior handle panel and foldably joined to the upper edge of said main exterior handle panel and folded into flat face contacting relation therewith.

3,283,949
BOTTLE CARRIERS
Lawrence S. Wysocki, Chicago, Ill., assignor to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota
Filed Oct. 6, 1965, Ser. No. 493,421
4 Claims. (Cl. 220—113)



1. A collapsible bottle carrier including:
a sheet cut and creased to provide;
a pair of bottom panels hingedly connected along a central longitudinal fold line,
a pair of side walls hingedly connected along their lower edges to the respective bottom panels,
two pairs of end panels disposed at opposite ends of said side walls and hinged to the end edges of said side walls,
connecting panels pivotally connected to the other edges of the respective end panels and extending inwardly from their end panels and secured in face contact to provide connections between said end panels, at the respective ends of the carrier,
a pair of handle panels disposed on opposite side faces of said connecting panels and foldably connected to two opposed of said connecting panels along extensions of the fold lines connecting these connecting panels to their respective end panels,
said side walls having upward extensions formed thereon throughout the middle one-third thereof,
separating bars pivoted to opposite end edges of said upward extensions, said separating bars extending in parallel relation to points located below the one-third points of said handle panels,
handle reinforcing panels hinged to the end edges of said handle panels opposite the ends hinged to said two opposed connecting panels and folded between said handle panels,
extensions fixedly connected to said handle panels and handle reinforcing panels and affording vertical edges located at the one-third points along and below the lower edge of said handle panels and handle reinforcing panels,
said last named extensions being connected along vertical fold lines at said vertical edges to the other ends of said separating bars, and
a reinforcing flap hinged to one of said handle reinforcing panels along a longitudinal fold line and folded between the lower portions of said handle reinforcing panels and said last named extensions,
said connecting panels being between said handle panels and handle reinforcing panels and secured thereto, at least a portion of said last named extensions residing between said handle panels when said carrier is erected.

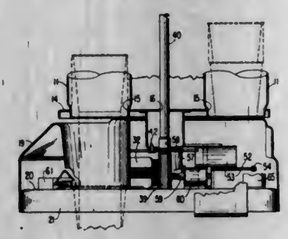
3,283,950
PARTITIONED PAPERBOARD BOX MEANS
Hubert V. Bolding, Memphis, Tenn., assignor to Piedmont Carton Company, a subsidiary of East Texas Pulp and Paper Company, Charlotte, N.C.
Filed Mar. 30, 1965, Ser. No. 443,967
13 Claims. (Cl. 220—115)



1. Box means for forming an erected paperboard box comprising a somewhat rectangular flat blank of paperboard or similar material; said blank being in four sections including a first, second, third and fourth section, and with each section including a side portion, a bottom portion and a top portion; fold lines extending transversely and demarcating said blank into said four sections, a first substantially continuous fold line extending longitudinally the length of said blank, a second substantially continuous fold line parallel with and spaced from said first fold line and extending longitudinally the length of said blank, said first and said second fold lines substantially intersecting said transversely extending fold lines of said blank at right angles and demarcating side portions for each of said four sections, marginal edges respectively of said bottom portion of each of said sections extending respectively from said first fold line and defining substantially opposing edges of said bottom portion of each of said sections, each said bottom portion being independently foldable along said first fold line of said blank, marginal edges respectively of said top portion of each of said sections extending from said second fold line and defining substantially opposing edges of said top portion of each of said sections, each said top portion being independently foldable along said second fold line of said blank, a bottom partition portion included in said bottom portion being joined to a respective bottom portion along a fold line extending parallel to said first fold line of said

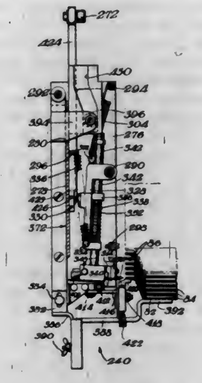
blank; first, second and third top partition portions included in and joined respectively to said top portions of said first, second and third sections along respective fold lines extending parallel to said second fold line of said blank; a handle portion of two alike and joined U-shaped half portions including an inner half portion and an outer half portion, said half portions being integrally joined along a medianly disposed fold line with the leg portions of the respective half portions extending oppositely, said inner half portion being integrally joined along a fold line at the respective base of each leg of said inner half portion to said top portion of said fourth section, a fourth top partition portion joined at the respective base of each leg of said outer half portion of said handle portion, said fourth top partition portion having oppositely extending ear portions aligned respectively longitudinally with said blank; each of said first, second, third and fourth top partition portions having a marginal edge extending substantially parallel to said second fold line; two recesses extending transversely of said blank and respectively from said marginal edges of said second and said fourth top partition portions, two slots extending transversely of said blank and substantially bisecting respectively said first and said third top partitions portions with each of said slots having a terminus spaced a short distance from said second fold line of said blank, two narrow slits extending obliquely of said blank and intersecting respectively the terminus of each slot of said first and said third top partition portions, and means for binding said first and said fourth side portions together in right-angular relationship in forming the erected box.

3,283,951
CUP DISPENSER
Alan D. Gladfelder, 3207 Hanover St., Rockford, Ill.
Filed May 25, 1964, Ser. No. 369,706
11 Claims. (Cl. 221—11)



1. A cup dispenser of the type having a multiturret cup magazine containing a plurality of cup stacks, comprising in combination at least one cup dispensing cam associated with the magazine and adapted to dispense cups from the turret in closest proximity thereto, motive means operatively connected to and adapted to activate said dispensing cam, magazine driving means operatively connected to said motive means and comprising a rotated pinion having a portion thereof which is movable into engagement with said magazine to index same, adjustable means associated with said magazine driving means and having a second position wherein a portion thereof is engageable with said movable portion of said pinion to move said movable portion into engagement with said magazine and a first position wherein it is incapable of doing such, cup sensing means for sensing the depletion of cups in the turret in closest proximity to said cup dispensing cam, a power circuit including said adjustable means and said cup sensing means, said sensing means when operated due to cup depletion adapted to close said circuit to provide power to said adjustable means to move it from said first to said second position.

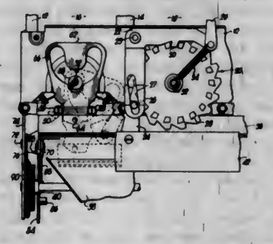
3,283,952
DISPENSING APPARATUS
Donald E. Burt, Boston, Mass., assignor to Keyes Fibre Company, Waterville, Maine, a corporation of Maine
Filed June 5, 1964, Ser. No. 374,881
14 Claims. (Cl. 221—13)



1. An arrangement for dispensing articles from one end of a stack thereof, the articles being of the type having lateral rim portions, comprising means for holding a longitudinal stack of such articles with their rim portions in generally straight alignment defining an edge of the stack, dispensing means connected to remove end articles individually from one end of a stack in the holding means including a finger support member mounted for independent longitudinal travel away from and back to the end of the stack to effect removal of end articles away from the stack, a stripping finger member mounted on the support member for shifting laterally into and out of operative engagement with the end articles to be removed from the stack, a stack retaining member mounted for shifting laterally into and out of operative engagement with the edge of the stack to prevent removal of the balance of the stack from the holding means when end articles are being removed therefrom, and a stack support member mounted for shifting laterally into and out of engagement with articles at the one end of the stack to prevent removal of the stack from the holding means when the stack retaining member is out of operative engagement with the edge of the stack, the lateral shifting of the stack support member into operative engagement including an increment of longitudinal motion toward the stack, drive means connected to operate the dispensing means through a cycle of motion to remove end articles from the one end of the stack including a prime motivator comprising a pair of telescopically associated members, an operating member mounted for to-and-fro longitudinal travel relative to the stack, means anchoring one of the telescopically associated members of the prime motivator to the holding means, and means connecting the other of the telescopically associated members to the operating member for driving the operating member longitudinally to-and-fro from the prime motivator, a first cam member mounted for longitudinal travel relative to the stack to control lateral shifting of the stripping finger member, a direct mechanical connection between the first cam member and the operating member to actuate the stripping finger member laterally in response to travel of the operating member, a second cam member mounted for longitudinal travel relative to

the stack to control lateral shifting of the stack retaining member, a direct mechanical connection between the second cam member and the operating member to actuate the stack retaining member laterally in response to travel of the operating member, a third cam member mounted for longitudinal travel relative to the stack to control lateral shifting of the stack support member, a direct mechanical connection between the third cam member and the operating member to actuate the stack support member laterally in response to travel of the operating member, a lost motion connection between the finger support member and the operating member to actuate independent longitudinal travel of the stripping finger member in response to only a portion of the travel of the operating member, means connected to impart to the stripping finger member an increment of lateral shifting out of operative engagement with end articles removed from the stack in addition to the aforesaid shifting into and out of operative engagement with the articles to be removed from the stack, the drive means being connected to shift the stack retaining member and the stripping finger member laterally into and the stack support member laterally out of operative engagement during a first portion of the travel of the operating member in one direction before the lost motion connection is established, to generate independent longitudinal travel of the finger support member away from the end of the stack during a later portion of the travel of the operating member in the one direction while the lost motion connection is established, and to impart to the stripping finger member the increment of lateral outward shifting near the terminus of the independent longitudinal travel of the finger support member away from the stack during a final portion of the travel of the operating member in the one direction, and to control repositioning of the dispensing means during travel of the operating member back in the other direction to complete an article dispensing cycle.

3,283,953
ICE BREAKER UNIT FOR STAGGERED STACK VENDING MACHINES
Elmer C. Johnson, Raytown, Mo., assignor to The Vendo Company, Kansas City, Mo., a corporation of Missouri
Filed Jan. 25, 1965, Ser. No. 427,698
5 Claims. (Cl. 221—67)

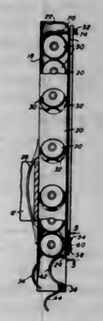


1. In article-dispensing apparatus provided with a refrigerated compartment having opposed walls for receiving a pair of upright, overlapping, staggered columns of articles, and a retainer for each column respectively shiftable between a normal position underlying the lowermost article of the associated column and a location clearing said lowermost article thereof to release the same, the combination with said retainers of:

structure carried by each of said retainers respectively for engaging the lowermost article of the associated column to move the same away from the articles thereabove as the corresponding retainer moves from its normal position to its article-releasing location; and

means operably associated with said retainers for alternately forcing the latter away from said normal positions and toward said locations thereof, whereby to dislodge the lowermost article of each column to assure dispensing thereof if the same is frozen to an adjacent article or to one of the walls of said compartment.

3,283,954
SHOTGUN SHELL DISPENSER
Lee Roy Spooner, 121 1st St. SW., Watertown, S. Dak.
Filed Oct. 12, 1964, Ser. No. 402,990
6 Claims. (Cl. 221—232)

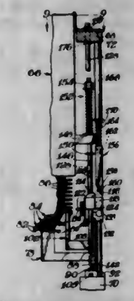


1. A shotgun shell dispensing magazine comprising an elongated container of sufficient length, width and thickness for storing a plurality of shotgun shells in side by side relation in a single row, said container having pairs of generally parallel opposite side walls, said container having a discharge opening in a first of said side walls adjacent one end thereof and of sufficient size for the sidewise passage of a shell therethrough, a dispenser element pivotally mounted upon said container for rocking movement about a transverse axis adjacent said discharge opening, said element having a portion disposed within said container and engaging and supporting the endmost shell of said row of shells and being movable for conveying said endmost shell to and discharging it through said discharge opening while supporting the next adjacent shell and preventing its movement longitudinally of said container to said opening, a shell follower disposed in said container and engaging the outermost shell from said discharge opening and urging said shells towards the latter, one of said container side walls having a longitudinal slot therein, said follower having a guide member projecting through and being slidably and guidingly disposed in said slot, an actuator rod upon which said guide member is adjustably secured, and a spring yieldingly urging said actuator rod and the attached follower in a direction for feeding said shells toward said discharge opening.

3,283,955
DISPENSING APPARATUS FOR NESTED ARTICLES
Kenneth L. Crabtree, Fairfield, Maine, assignor to Keyes Fibre Company, Portland, Maine, a corporation of Maine
Filed Jan. 29, 1964, Ser. No. 340,976
10 Claims. (Cl. 221—251)

1. An arrangement for dispensing articles from one end of a stack thereof, the articles being of the type having lateral rim portions, comprising means for holding a longitudinal stack of such articles with their rim portions in generally straight but not necessarily uniformly spaced longitudinal alignment defining an edge of the stack, dispensing means connected to remove articles individually from one end of a stack in the holding means including

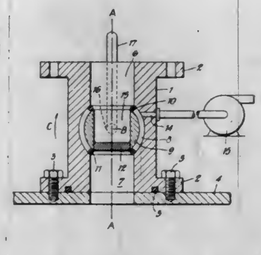
article stripping means mounted for lateral shifting into and out of operative engagement with the edge of the stack and for independent longitudinal travel away from and back to the end of the stack to remove end articles individually away from the stack, stack retaining means mounted for lateral shifting into and out of operative engagement with the edge of the stack, and sensing means connected to locate the end articles to be removed and properly position the article stripping means and the stack retaining means longitudinally with respect to the rim portions thereof including sensing finger means mounted for lateral shifting independently of the article stripping means and the stack retaining means into and out of operative engagement with the edge of the stack, means mounting the sensing finger means, the article stripping means and the stack retaining means for travel in a limited longitudinal range adjacent the end of the stack, yieldable motivating means connected to urge the sensing finger means within the range longitudinally toward the stack until the sensing finger means engages the end articles to be removed, follower means connecting the article stripping means and the stack retaining means



with the sensing finger means to properly position them with respect to the rim portions of the end articles when the sensing finger means has engaged the end articles, and drive means connected to first shift the sensing finger means laterally into operative engagement with the edge of the stack and the article stripping means and stack retaining means laterally out of operative engagement with the edge of the stack, the yieldable motivating means urging the sensing finger means into engagement with end articles, next shift the article stripping means and the stack retaining means laterally into operative engagement with the edge of the stack, the follower means properly positioning them with respect to the rim portions of end articles, then shift the sensing finger means laterally out of operative engagement with the edge of the stack to permit removal of end articles individually therefrom, thereafter cause independent longitudinal travel of the article stripping means away from the stack to remove end articles individually therefrom and, finally, cause independent longitudinal travel of the article stripping means back to the end of the stack to complete an article dispensing sequence.

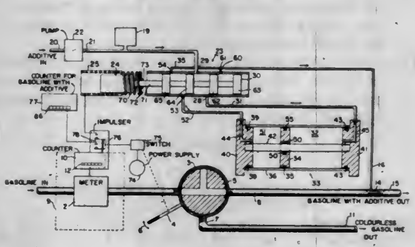
3,283,956
DEVICE AND A METHOD FOR TRANSFERRING A CHARGE OF MATERIAL
Kenneth Briggs Craswell, Cheltenham, England, assignor to Bir-Vac Limited, Cheltenham, England, a British company
Filed Sept. 21, 1964, Ser. No. 397,889
Claims priority, application Great Britain, Sept. 23, 1963, 37,413/63
5 Claims. (Cl. 222—1)

5. A method for transferring a charge of material from a first zone to a second zone at a pressure lower than that of said first zone by means of a turnable element mounted in a hole in a housing member and having a blind recess comprising the steps of: moving said element so as to position said blind recess in communication with said first zone, charging said recess with said material, moving said element so as to position said



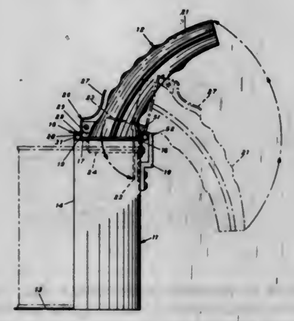
blind recess in communication with a duct means connected to a suction pump; reducing the pressure in said blind recess; moving said element so as to position said blind recess in communication with said second zone; and discharging said material from said blind recess at said reduced pressure into said second zone.

3,283,957
LIQUID PROPORTIONING SYSTEM
William Dick Henderson, 2328 Henderson Highway, Winnipeg, Manitoba, Canada
Filed Jan. 26, 1965, Ser. No. 428,084
Claims priority, application Canada, Jan. 27, 1964, 894,153
8 Claims. (Cl. 222—57)



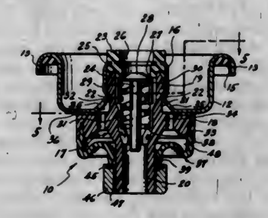
1. Apparatus for discharging liquid and for introducing additive into said liquid in controlled proportion which comprises, a liquid flow line, metering means for said additive for supplying additive to said liquid in a chosen proportion to flow of said liquid in said flow line, means for supplying liquid additive under pressure to said metering means, said metering means comprising, a cylinder, a floating piston in said cylinder, first and second valves for respectively passing additive into and from said cylinder on one side of said piston, third and fourth valves for respectively passing additive into and from said cylinder on the other side of said piston, means for opening said first and fourth valves and said second and third valves alternately for passing additive to and from said metering means in accordance with liquid flow in said flow line, means for leading metered additive from said metering means into said liquid, routing means for liquid in said flow line, and means for energizing said first and fourth and said second and third valve opening means in accordance with the setting of said routing means.

3,283,958
CAN OPENER AND DISPENSING DEVICE
Charles E. Driza, Belleville, N.J., assignor to Chevron Research Company
Filed Feb. 18, 1965, Ser. No. 433,649
1 Claim. (Cl. 222—83.5)



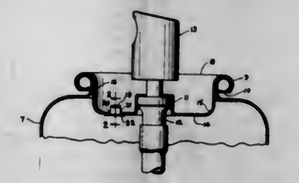
A combined can opener and pouring spout comprising
(a) a half cylindrical base member having a bottom plate and an upper bracket at the open upper end thereof,
(b) a plate hinged to said base member at the upper open end and having mounted thereto a pouring spout and a cutting blade,
(c) a resilient member secured to said upper bracket and including a slotted spike extending upwardly from said member, said upper bracket being provided with a cut-out portion to accommodate said spike,
(d) a cut-out portion in said hinged plate in cooperating alignment with said slotted spike and adapted to pass said spike through said plate and to engage said slot in latching engagement,
(e) and means on said resilient member for moving said spike with respect to said plate to permit said plate to be released from its latching engagement with said spike.

3,283,959
VALVE ASSEMBLY FOR CONTAINER OF FLUID UNDER PRESSURE
John E. Muller, Monroe, N.Y., assignor to Acme Air Appliance Co., Inc., Hackensack, N.J., a corporation of New York
Filed July 24, 1964, Ser. No. 384,991
19 Claims. (Cl. 222—396)



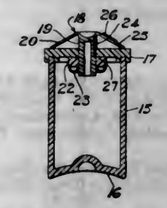
19. A valve assembly for a container of fluid under pressure comprising a generally tubular valve body adapted to be mounted in a fixed position on the container and having means defining a valve seat, a valve member movable in said body from a closed position in sealing engagement with said seat to an open position permitting flow of fluid under pressure through said tubular body, inner and outer annular supports fixed relative to said body and spaced apart radially thereabout, an imperforate resilient annular partition bridging and normally sealing the gap between said supports and defining with said supports a space outside said body vented to the atmosphere, each of said supports having an annular seat thereon, said partition having inner and outer annular edges to bear against the annular seats of said inner and outer supports, respectively, and being stressed between said supports so as normally to hold said annular edges in sealing engagement with the respective annular seats, said partition presenting an extended surface between said supports and being elastically deformable by an excess of fluid pressure acting against said surface at the side thereof away from said vented space to move one of said annular edges away from the respective annular seat and thereby release the excess pressure into said vented space.

3,283,960
SAFETY DISCHARGE MEANS
Selden T. Williams, Middlebury, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Jan. 19, 1965, Ser. No. 426,529
3 Claims. (Cl. 222—397)



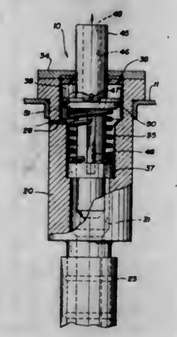
1. Safety discharge means for a pressure fluid container comprising a thin container wall portion having a small section sheared away and formed outwardly to provide an opening through the container wall with a laterally directed relief outlet adapted to discharge material in a direction generally parallel to said container wall portion, said outwardly formed section providing an impervious bridge over said opening, said bridge being integrally united to said container wall along part of the edges of said opening, and substantially co-extensive with said opening, and a frangible membrane covering said outlet and sealed to the inner surface of said wall portion around said opening.

3,283,961
AEROSOL CONTAINER WITH VALVE HAVING A BIASED ACTUATOR
Joseph M. Rait, 95 Huxley Drive, Snyder, N.Y.
Filed Aug. 2, 1965, Ser. No. 476,369
10 Claims. (Cl. 222—402.11)



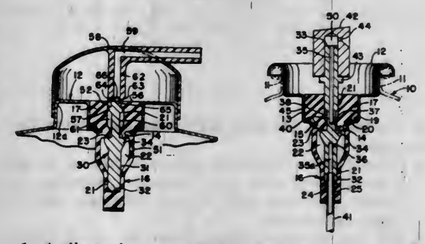
2. In a dispensing closure structure for pressurized containers, a container wall having an aperture and an annular outer surface portion surrounding said aperture, an operating member comprising a shank slidably journaled in said aperture and having an annular flange formation at its outer end, said flange formation being of resilient material, the marginal portion of said flange being substantially in slidable abutment with said annular outer surface and the remainder of said flange being normally axially spaced outwardly from said container wall whereby the central portion of said flange may be manually depressed against the resilient resistance of the material thereof to move said shank axially inwardly with said abutting marginal portions of said flange slidable radially on said container wall outer surface to permit relative free flexure of said flange, discharge passage means leading from the interior of said container wall to the exterior of said dispensing closure structure, and an annular valve at the inner end of said shank and normally biased outwardly against an inner portion of said container wall by the resiliency of said flange formation to close said discharge passage means and movable inwardly by manual pressure against the bias of said resilient flange formation.

3,283,962
THREE-POSITION VALVE FOR AEROSOL CONTAINER HAVING A CHAMBER WITH SPACED INLETS FROM CONTAINER INTERIOR
Max E. Whitmore, 7585 Samuel Lord Drive, Chagrin Falls, Ohio
Filed Sept. 9, 1964, Ser. No. 395,172
16 Claims. (Cl. 222—402.18)



14. In a liquid dispensing apparatus including a container for liquid and a gaseous pressuring agent, the combination with said container of a valve mechanism comprising:
(a) a hollow valve body projecting into said container, said valve body having first and second spaced inlet openings communicating with the inside of said container;
(b) a valve stem reciprocable in said valve body, said valve stem having an outlet passage extending from an inlet port to an outlet port venting to the outside of said container;
(c) a three-position valve means operably connected to said valve stem;
(d) said three-position valve means including a means for bringing said inlet port into communication with the inside of said hollow valve body when said three-position valve is in a second and third position and for preventing said inlet port from communicating with the inside of said hollow valve body when said three position valve is in a first position;
(e) said three-position valve means including a means for closing said first spaced inlet opening while said three position valve means is in said second position; and,
(f) said three-position valve means including a means for closing said second spaced inlet opening while said three-position valve means is in said third position.

3,283,963
VALVE FOR PRESSURIZED CONTAINERS
Ralph K. Boyer, Cleveland, and Homer F. Eyerdam, Lakewood, Ohio, assignors to Eaton Manufacturing Company, a corporation of Ohio
Filed Nov. 23, 1964, Ser. No. 412,914
23 Claims. (Cl. 222—402.24)



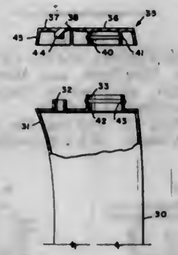
1. A dispensing valve structure for a pressurized fluid container comprising in combination:
(a) a resiliently flexible member enclosing a chamber;
(b) a fluid outlet from the chamber in said member;
(c) a valve seat surrounding said outlet;
(d) a fluid inlet to the chamber in said member spaced from said outlet;
(e) an externally accessible rigid valve stem extending into the chamber through said fluid outlet into engagement with an internal portion of said member said stem being of such a length so as to engage the bottommost end of said chamber for deflecting the entire chamber enclosing resilient member;
(f) a valve carried by said stem and biased by said flexible member into seating outlet closing engagement with said valve seat;
whereby movement of the valve stem against the engaged portion of said member will resiliently deflect the entire flexible member, unseat the valve, and open the outlet to control the dispensing of fluid through said chamber.

21. A dispensing valve structure for a pressurized fluid container comprising in combination:
(a) a resiliently flexible member enclosing a chamber;
(b) an elongated fluid outlet from the chamber in said member;
(c) a plurality of spaced valve seats located along a common axis surrounding said outlet;
(d) a fluid inlet to the chamber in said member spaced from said outlet;
(e) an externally accessible rigid valve stem extending into the chamber through said fluid outlet into engagement with an internal portion of said member said stem being of such a length so as to engage the bottommost end of said chamber for deflecting the entire chamber enclosing resilient member;
(f) a plurality of axially spaced valves carried by said stem and biased by said flexible member into seating outlet closing engagement with each of said valve seats;
whereby movement of the valve stem against said flexible member will resiliently deflect the entire flexible member, simultaneously unseat each valve to open the outlet to permit dispensing of fluid from said chamber.

3,283,964
SIDE-POURING DISPENSER AND CLOSURE

Victor F. Anderson, Wenonah, N.J., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Dec. 22, 1964, Ser. No. 420,405
2 Claims. (Cl. 222—487)



1. A combined side-pouring dispenser and closure therefor comprising:

a closed-bottom elongated receptacle having an integrally formed offset spout member protruding outwardly from one side of said receptacle near the upper end thereof;

a top slab member formed across the top of said receptacle and said offset spout member and integral therewith, said top slab member having a large filling opening comprising an axially extending cylindrical wall defining an open bore, said bore having an internally formed groove intermediate of the ends of said cylindrical wall, said top slab member also having a small dispensing opening aligned with said spout member comprising an axially extending cylindrical wall defining an open bore;

a unitary closure comprising a plastic top sheet means having peripheral edges, a first member for sealing said large filling opening and a second member for sealing said small dispensing opening, said first sealing member comprising a hollow, downwardly extending cylindrical portion having an outer diameter substantially equal to the inner diameter of said filling opening bore, one end of said cylindrical portion being integral with said top sheet means, said cylindrical portion having a radially outwardly projecting circumferential shoulder adapted to matingly fit within said annular groove of said bore, said second sealing member comprising a resilient, downwardly protruding stopper for sealing said small dispensing opening, one end of said stopper being integral with said top sheet means;

a substantial portion of said edges extending in contoured alignment with the periphery of said top slab member;

skirt means integrally formed with said top sheet means around said peripheral edges and adapted to extend flush with the plane of said top slab member;

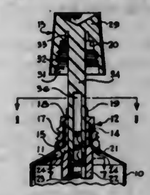
said skirt means being interrupted along a transverse line between said first and second sealing members whereby said top sheet means constitutes a hinge means having an axis lying parallel to the plane of said top sheet means.

3,283,965
CLOSURE FOR COLLAPSIBLE TUBES

Stanley Wonso, 9940 S. Crawford Ave., Oak Lawn, Ill.

Filed Apr. 28, 1965, Ser. No. 451,437
14 Claims. (Cl. 222—519)

1. A closure for a collapsible tube comprising an externally threaded neck affixed to the collapsible tube and a cap mounted for limited reciprocation toward and away from said neck, said cap and neck threadingly engaging to seal the tube, said neck including a slotted depending cylindrical sleeve, and said cap including a depending plunger mounted for limited longitudinal movement in said sleeve, said plunger having a closed lower end and

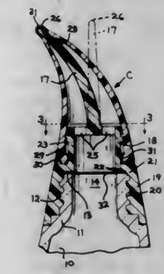


an elongated slot adapted to be aligned with a slot in the depending sleeve for the passage and dispensing of a limited quantity of the contents of the tube, the upper end of the slot in the plunger being exposed above the threaded neck when the cap is disengaged from the neck and the cap and its plunger withdrawn.

3,283,966
LIQUID DISPENSER AND CLOSURE FOR BOTTLES

Ira H. Miller, Lambertville, Mich., assignor to Owens-Illinois, Inc., a corporation of Ohio

Filed Oct. 18, 1965, Ser. No. 497,201
5 Claims. (Cl. 222—525)



1. In a combined closure and liquid dispenser attachable to a bottle neck, a generally cylindrical hub having open ends, means at one end of the hub for securing it to a bottle neck with their axes in alignment, an elongated rod-like valve member extending from the other end of and normally initially disposed coaxially with the hub, said member formed of a plastic material and being laterally flexible, a hollow elongated generally conical nozzle enclosing the valve member and having a discharge orifice at its apex, said nozzle curved laterally in the apex end section and having a coaxial collar at its base end telescoped over, and both axially and rotatably movable on said hub, the length of the valve member and nozzle curvature being such that a predetermined degree of longitudinal movement of the nozzle in one direction relative to the valve member laterally flexes the latter to close the discharge orifice.

3,283,967
DISPENSING CLOSURE

Edward G. Akers, Downey, Calif., assignor to Polytop Corporation, Slatersville, R.I., a corporation of Massachusetts

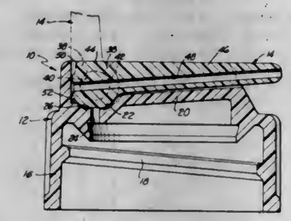
Filed Jan. 11, 1965, Ser. No. 424,556
1 Claim. (Cl. 222—536)

In a dispensing closure having
a cap part and a spout part
said spout part having a cylindrical base, a spout extending from said base and a passage extending through said base and said spout,

said cap part having a top, said top having a depression located therein, an opening located so as to lead through said top from the bottom of said depression, sealing means for forming a seal against said base located within said depression around said opening, and means for rotatably holding said spout part, said means engaging portions of said spout part so as to rotatably mount said spout part,

in such a manner that said spout part is capable of being rotated between an open position in which said passage is aligned with said opening to a closed position in which said passage is spaced from said opening, said base engaging said sealing means during such rotation between said open and closed positions,

the improvement which comprises;



a deformable, upstanding resilient wall extending from said top and spaced from the center of the base a distance greater than the radius of the base and said wall being spaced from said opening and said sealing means

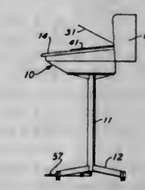
a protuberance located on said base adjacent to said wall in a position so that as said spout is rotated from said open position to said closed position it engages said wall, temporarily deforming said wall so as to allow said protuberance to pass from adjacent to one portion of said wall to adjacent another portion of said wall

said wall and said protuberance being located so that the deformation of said wall does not cause the pressure on said sealing means exerted by said base of said spout part to change as said spout part is rotated between said open and closed positions in order to avoid the possibility of leakage between said base of said spout part and said sealing means.

3,283,968
SHIRT FOLDING MECHANISM

Edmund N. Neckel, Rochester, and Victor Shur, East Rochester, N.Y., assignors to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware

Filed Mar. 8, 1965, Ser. No. 438,010
13 Claims. (Cl. 223—37)

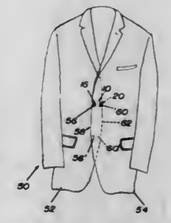


1. A shirt folding mechanism comprising a table for supporting a shirt thereon front down, a form plate movable downwardly onto the central body portion of a shirt on said table, a first folding arm at one side of said form plate and second and third folding arms on said table at the other side of said form plate over which side portions of said shirt are placed, a frame below said table, means pivotally supporting said folding arms on said frame for movements in respective paths crossing each other, two-way intercouplings with varying transmission ratios between said folding arms causing the arms to be moved sequentially through their paths from open to closed positions in an arrangement wherein said first arm is moved across said second arm and said third arm is thereupon moved across said first arm and two-way motive means for operating said arms.

3,283,969
GARMENT FORM RETAINERS

Frank Y. Sherbondy, P.O. Box 10236, San Antonio, Tex.

Filed June 8, 1965, Ser. No. 462,289
5 Claims. (Cl. 223—71)



1. A form retainer for a coat garment, said garment having overlapping front portions with at least one button hole on one portion and at least one button on the other portion, said retainer comprising an elongated flat body of yieldable material for insertion between the overlapping front portions of the garment, said body having a button hole retaining means spaced longitudinally from the ends of said body, said button hole retaining means comprising a tab coupled to said body by a tab connection integral with said tab and said body, said tab being swingable away from said body about an axis defined by said tab connection, said tab connection extending substantially parallel to the longitudinal axis of said body, said body further having at least one button retaining means spaced longitudinally from said tab and from the ends of said body, each of said button retaining means comprising a pair of opposed flaps each coupled to said body by a flap connection integral with said body and said flap, each of said flaps being swingable away from said body about an axis defined by its flap connection and having an edge portion spaced from said flap connection, said edge portions of said flaps being juxtaposed and together defining an elongated slit, said flap connections and said slit each extending substantially perpendicular to the longitudinal axis of said body and additional slits extending substantially parallel to the longitudinal axis of said body and connecting the upper and lower extremities of said edge portions of each of said flaps with the upper and lower extremities of their respective flap connections.

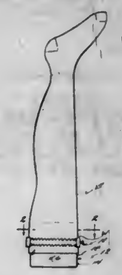
3,283,970
HOSIERY BOARDING CLAMP

James L. Faulkner, Burlington, N.C., assignor to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware

Filed Jan. 12, 1965, Ser. No. 424,959
5 Claims. (Cl. 223—75)

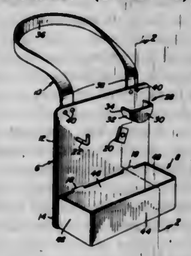
1. In combination: a flat hosiery boarding form having a plan profile configuration of a predetermined shape of a leg, said flat hosiery boarding form being substantially rigid and adapted to receive thereon for shaping a stocking having a welt; and movable clamping means

adapted to apply a clamping pressure to opposite elongated portions of the welt against opposite elongated portions of the edges of said flat boarding form in a direction substantially parallel of a plane through the flat boarding form, said clamping means including a pair of clamping elements having opposite elongated edge receiving recesses therein, means interconnecting said clamping elements to each other in a plane spaced out-



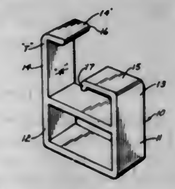
wardly of the recesses in said elements, said last-mentioned means normally urging said clamping elements toward each other, and means positioned on the same side of said clamping elements as said last-mentioned means for limiting the movement of said clamping elements toward each other and for simultaneously moving said clamping elements away from each other when applying or removing said clamping means from said flat hosiery boarding form.

3,283,971
BIB-TYPE PAINTER'S AID
Jefferson F. Jones, P.O. Box 20142, Montclair Station, Denver, Colo.
Filed June 29, 1965, Ser. No. 467,882
2 Claims. (Cl. 224—5)



1. A painter's aid device comprising a panel formed of substantially rigid material and of a size and shape to define a bib-like apron, said panel having upper and lower end portions, flexible neck embracing means carried by the upper end portion for supporting the panel in a vertical overlying position relative to the front of the upper torso of the body of a user with the panel being adapted to assume a substantially vertical position bearing against the front of the upper torso of the body of a user who is in a standing erect position and the panel being swingable in a pendulous manner out of such engagement and away from the front of the user's body when the user leans forwardly with the panel then in a vertical suspended position, said panel having a flat front face, a rigid receptacle adapted to contain paint or similar liquid and having a rigid bottom wall, side walls and front and rear walls, said walls being connected and said receptacle having an open top, said rigid rear wall of the receptacle having a flat rear face, and means cooperatively carried by the rear wall of the receptacle and the panel for removably securely mounting the receptacle on the front face of the panel with the receptacle positioned transversely of the panel and disposed at the lower end portion thereof and with the rear face of the rear wall of the receptacle engaging the front face of the panel in fixed face to face surface contacting relation therewith, said cooperative securing means including the provision of transverse slots formed through the panel at the lower end portion and spaced apart widthwise thereof, said panel having a substantially flat rear face, flat retainer tongues connected in upstanding offset rearward parallel relation with the rear wall of the receptacle, lateral shoulders connecting the tongues to the rear wall of the receptacle and said tongues being passed through the slots and engaging the rear face of the panel with the shoulders seated on the lower bounding edges of the slots.

3,283,972
LADDER CARRYING DEVICES
Lawrence A. Kocina, Simsbury, Conn., assignor to R. D. Werner Co., Inc., Greenville, Pa., a corporation of Pennsylvania
Filed May 12, 1965, Ser. No. 455,140
3 Claims. (Cl. 224—42.1)

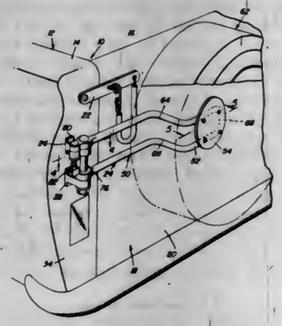


1. The combination with ladders having channel shaped rail members and tubular connecting rungs secured within openings in the web of each of said rails, which ladders are adapted to be positioned lengthwise of a vehicle top, of flexible plastic ladder carriers each having a base section, a pair of legs disposed on opposite sides of said base section, each leg having a flanged end portion, the said flanged end portions of said legs being directed toward each other, said legs extending upwardly from the base, the flanged end portion of one of said legs adapted to be secured within one of the openings in said rungs and the other of said legs adapted to be disposed within a rail flange of said rail member, the rung engaging leg being longer than the rail engaging legs, the base of each said carrier being adapted to be disposed on said vehicle top and spacing the ladder rail therefrom.

3,283,973
END GATE SPARE TIRE RACK
Mike Jay Wargo, 108 14th St., South Streator, Ill.
Filed Jan. 3, 1964, Ser. No. 335,470
8 Claims. (Cl. 224—42.21)

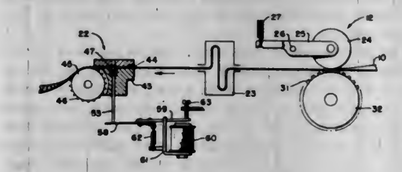
1. In combination with a truck bed body of the type including a pair of longitudinally extending opposite side walls defining a loading opening between their rear ends and having an upstanding end gate disposed in and closing said opening and pivotally secured to said body for rotation about an axis extending transversely of said body and along the lower edge portion of said end gate and movement of said end gate to an open position with the free upper edge portion swung rearwardly and downwardly away from said side walls, an end gate spare tire rack including a first pair of vertically spaced and aligned journal members secured to the rear end portion of one of said side walls, elongated support arm means including a pair of vertically spaced and generally horizontal arm members interconnected at one pair of corresponding ends and including a second pair of vertically spaced

and aligned journal members at their other pair of corresponding ends, said arm means being positioned with each of said second journal members vertically aligned with and disposed above the corresponding one of said first journal members, a pivot fastener secured through said aligned pairs of first and second journal members, the journal members of each of the last-mentioned pairs of journal members including means defining bearing surfaces disposed in sliding frictional engagement with each other for support of said arm members from said first journal members, said arm means being swingable between a first position with said one pair of ends spaced



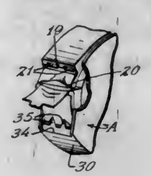
slightly behind said end gate when the latter is in the closed position and a second position with said one pair of ends disposed to the rear and to the side of said opening defined by said one side wall, the lowermost portions of said arm means positionable in registry with said opening being disposed at an elevation spaced above a horizontally disposed plane containing the uppermost portions of said end gate when the latter is in its open position, thereby also enabling said arm means to be swung between said first and second positions when said end gate is in its open position, the other end of said arm means including means adapted to support a spare tire therefrom.

3,283,974
CHADLESS PERFORATOR
Jerome L. De Boo, Barrington, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware
Filed Sept. 10, 1965, Ser. No. 486,501
8 Claims. (Cl. 225—2)



1. The method of perforating chadless telegraph tape comprising:
perforating arcuate slots in a tape on opposite sides of each possible code hole location in the tape;
moving said tape past a hole bursting station; and
applying bursting pressure to the tape at selected code hole locations to break one of the imperforate sections between said arcuate slots while said tape is moving through the bursting station.

3,283,975
DISPENSER FOR ELECTRICAL TAPE
Benjamin C. Sebesta, 1795 Dayton Ave., St. Paul, Minn.
Filed Mar. 2, 1965, Ser. No. 436,492
12 Claims. (Cl. 225—7)



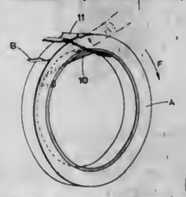
1. A tape dispenser comprising:
(a) a hollow dispenser body,
(b) spindle means normal to said body to rotatably carry a roll of tape,
(c) said body having an opening spaced from said spindle means through which an end of said tape is adapted to be led,
(d) a closure plate pivotally secured to said body having a tooth end,
(e) said tooth end of said closure plate adapted to be moved substantially normal to the plane of said body opening and closely adjacent to said opening,
(f) at least one tooth on said tooth end of a width closely corresponding to the width of said tape, said tooth having a tape piercing end,
(g) an edge of said body opening having a convex tape distorting means against which said tape is adapted to be urged by said tooth acting to flex the tape into channel-shaped form in cross-section,
(h) an abutment having at least one tooth receiving recess registrable with said tooth, said abutment spaced from said convex distorting means,
(i) said abutment having face portions adapted to be in abutting relation to corresponding portions of said closure plate end when said tooth is registered in said recess.

3,283,976
ATTACHMENTS FOR SPOOLS OF THREAD
Benjamin L. Snyder, Brookline, Mass., assignor to Pentapco, Inc., Elizabeth, N.J., a corporation of New Jersey
Filed Mar. 31, 1965, Ser. No. 444,322
1 Claim. (Cl. 225—64)



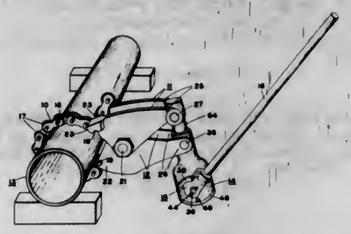
In combination with a thread spool of the type having a central hole therethrough and top and bottom end faces, a generally resilient element having a flat portion and opposite end portions; said flat portion facing and in contact with the top end face of the spool between the end portions; one end portion of said element being an upward step overlying the spool end, the top of said step being located in a plane which is above and substantially parallel to the plane of the flat portion; said step being provided with a notch, a separate flat blade fixedly carried by said step in the general plane of said step and crossing said notch, said blade having a sharp edge for severing a thread when forced thereagainst; the space between said step and the plane of the top end face of the spool being unobstructed to permit the free end of the thread to be entered between the top face and the flat portion; the space between said blade edge and said plane being unobstructed, and means at the other end of said element, in frictional engagement with the wall of the central hole of the spool whereby said element is mounted on the spool.

3,283,977
DEVICE FOR DISPENSING TAPE FROM AN ANNULAR ROLL
Jean A. Schluchter, Geneva, Switzerland, assignor to Intercontinental Technical Services Limited, London, England, a corporation of Great Britain
Filed Feb. 25, 1965, Ser. No. 435,244
Claims priority, application Switzerland, Feb. 27, 1964, 2,558/64
2 Claims. (Cl. 225—65)



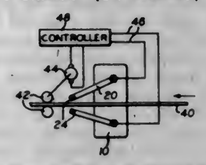
1. A device for dispensing tape from an annular roll of tape comprising a shoe slidably clamped to the outer surface of said roll by a wire spring, said shoe having upstanding side flanges and a forward cutting edge, the flanges of said shoe having transversely aligned notches, said spring comprising a single strand of wire which has its medial portion traversing said shoe through said notches, and its end portions extending divergently across opposite sides of said roll and with each free end extending transversely across the inner side of said annular roll and terminating in an upwardly turned tongue whereby said shoe is resiliently clamped to said roll.

3,283,978
TOOL FOR FRACTURING PIPE
Sanford E. Coblitz, 567 Knollwood Ave., Ashtabula, Ohio
Filed Aug. 26, 1964, Ser. No. 392,207
1 Claim. (Cl. 225—103)



Apparatus for parting a fracturable member comprising in combination, a flexible non-extensible cutter chain adapted to be wrapped substantially around said fracturable member and then tension-squeezed thereagainst for fracturing and parting same without substantial relative rotation or oscillation thereabout, said wrapped-around cutter chain having first and second spaced engageable portions with a circumferential gap therebetween, draw means to draw said first and second spaced portions relatively toward each other and thereby tension-squeeze said chain about said fracturable member, said draw means comprising a pair of pivotally connected jaw means having first and second jaw-end portions and third and fourth jaw-end portions, said third and fourth jaw-end portions having respectively first and second trunion receiving means, first fastening means for fastening said first spaced portion of said wrapped-around chain to said first jaw-end portion, second fastening means for fastening said second spaced portion of said wrapped-around chain to said second jaw-end portion, first and second screw means turnable relative to each other, first connection means for connecting said first screw means to said third jaw-end portion, said first connection means including a housing connected to said first screw means and having laterally extending first trunnion means fitting into said first trunion receiving means, second connection means for connecting said second screw means to said fourth jaw-end portion, said second connection means including a hollow sleeve connected to said second screw means and having laterally extending second trunion means fitting into said second trunion receiving means, said hollow sleeve having an internal longitudinal opening into which said first screw means extends and having an external surface slidably mounted into said housing, said pair of jaw means extending away from said first and second spaced portions of said wrapped-around chain and disposed substantially perpendicular to the axis of said fracturable member with said screw means extending in a direction transverse to that of the axis of said fracturable member, a shaft mounted in said housing substantially perpendicular to said screw means, gear means interconnecting said first screw means and said shaft for rotating said first screw means relative to said second screw means, said second screw means being constrained against rotation by said second trunion means fitting into said second trunion receiving means, and mechanical advantage torque actuating means including a ratchet connected to said shaft and a hand-operated lever connected to said ratchet and extending in a direction transverse to said axis of said fracturable member to operate said shaft and said screw means and thereby tension-squeeze said chain about said fracturable member to fracture and part said member.

3,283,979
AUTOLEVEL CONTROL
George Wintriss, Carversville, Pa.
Filed May 22, 1964, Ser. No. 369,383
11 Claims. (Cl. 226—43)

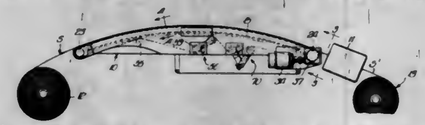


1. Control apparatus for automatic machines including a housing containing control means, two studs extending from the outside of the housing, an arm on each of the studs and adjustable angularly about the axes of the studs, probes extending outwardly from the arms at locations spaced from the studs and on opposite sides of the arms from the studs and in directions generally parallel to the axes of the studs whereby angular adjustment of the arms changes the spacing of the probes from one another, an electric circuit in the housing, and conductors leading from different parts of the electric circuit to the respective probes.

3. The control apparatus described in claim 1 characterized by strip processing units from one of which a strip is fed to the other with a loop of strip between said units, the probes being located between said units along the loop with one probe above the strip and the other below the strip, power means for feeding the strip, the electric circuit in the housing being operably connected with the power means for feeding the strip.

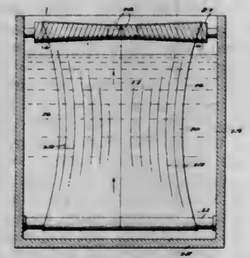
3,283,980
APPARATUS FOR HANDLING METAL SHEETING
Dario Buccicone, Gary, Ind., assignor to Bucciconi Engineering Co., Inc., Gary, Ind., a corporation of Indiana
Filed Nov. 19, 1964, Ser. No. 412,496
14 Claims. (Cl. 226—93)

1. Apparatus for handling elongate metal sheeting which is unwound from one coil and subsequently rewound into another coil, said apparatus comprising an upright, generally rectangular support frame having a bowed face, two spaced rollers journaled at opposite ends of the frame for rotation on vertical axes, means for driving one of said rollers, a plurality of endless belt members of rubber-like material and of substantial width supported on said end rollers, electromagnets positioned beneath said belt members for exerting a pull on metal sheeting so as to hold it against the outwardly bowed face of the one run of the belt members for advance



therewith, said belt members having parallel grooves on their inner faces extending throughout their length, rib formations on the bowed face of said support frame which are positioned to extend into said grooves and to hold said belt members in predetermined paths, and a relatively narrow support belt carried on said end rollers at the bottom of said frame which support belt has an upwardly facing edge of sufficient width for receiving thereon in edge supporting relation the bottom edge portions of a strip of sheeting as it is advanced by said endless belt members.

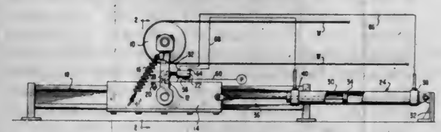
3,283,981
FILM ADVANCING ROLL
Robert G. Allen, Lecompton, Kans., and Vernon P. Fruehauf, Snyder, N.Y., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Apr. 26, 1962, Ser. No. 190,493
4 Claims. (Cl. 226—190)



1. A film advancing roll having a straight, fixed axis comprising: a cylindrical center portion and tapered sections separated by said center portion having small ends of the same diameter as said center portion and which vary in size from the diameter of the center portion outward to the diameter of the end portions, said end portions having a diameter of at least 0.2% greater than the diameter of said center portion, said roll having in its surface at least one pair of twin spiral grooves of equal and opposite pitch with each of said pair of twin spiral grooves leading from a point midway from the ends of said roll and extending toward opposite ends.

3,283,982
WEB TENSION CONTROL MEANS
Lawrence H. Haskin, Jr., Richmond, Va., assignor to The Inta-Roto Machine Company, Inc., Richmond, Va., a corporation of Virginia
Filed Jan. 27, 1965, Ser. No. 428,504
9 Claims. (Cl. 226—195)

1. Web tensioning apparatus, comprising a dancer roll around which a continuous web is to be trained, support means journaling said dancer roll, mounting means movably supporting said support means to enable movement of said dancer roll in accordance with variations in web tension, spring means between said support means and said mounting means and continuously biasing said dancer roll in web-tensioning direction and establishing a given initial equilibrium position of said roll relative to said



mounting means, bed means movably supporting said mounting means for reciprocatory movement generally parallel to the path of roll movement, and means responsive to movement of said dancer roll from said initial relative equilibrium position for displacing said mounting means to return said dancer roll to said relative equilibrium position, whereby the web tension is maintained constant.

3,283,983
POWDER ACTUATED TOOL
Roy G. Neighorn, Raymond V. Pomeroy, and Dale L. Robinson, Portland, Oreg., assignors to Omark Industries, Inc., Portland, Oreg., a corporation of Oregon
Filed May 4, 1965, Ser. No. 453,136
15 Claims. (Cl. 227—11)



1. In a powder actuated tool,
a breech housing,
pad means of resilient, compressible material mounted in the breech housing and maintained normally in a partially precompressed condition,
breech means adapted to carry a cartridge and slidable along the breech housing from a forwardly located normal position out of engagement with the pad means into engagement with the pad means at a rearwardly located firing position and also movable rearwardly from the firing position to a recoil position,
and firing means adapted when the breech means is in the firing position thereof to fire a cartridge carried by the breech means.

3,283,984
NAILING MACHINE
Charles A. Davis, Saugus, Mass., assignor to Young W. J. Machinery Co., Inc., Lynn, Mass., a corporation of Massachusetts
Continuation of abandoned application Ser. No. 274,002, Apr. 18, 1963. This application Dec. 20, 1965, Ser. No. 522,010
4 Claims. (Cl. 227—30)

1. In a nailing mechanism a means for nailing members to a partially completed shoe on a last having a metal heel plate comprising,
(a) nail driving means for driving a group of nails upwardly in a group comprising a die block having a plurality of upwardly extending holes, a plurality of cylindrical nail drivers positioned each with an

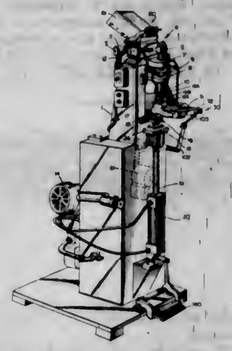
end in said holes and a driver plate supporting said cylindrical nail drivers,

(b) means for actuating (a) comprising a ram like member positioned for reciprocal movement below and engaging said driver plate and power means engaging said ram like member for movement of said ram like means upwardly,

(c) means for securing a member above said nail driving means comprising a clamping mechanism having a pair of opposed arms adapted to grip said member, block means pivotally supporting said arms, and means including a slide member supporting said block means for reciprocal movement whereby said arms may be moved in a horizontal direction to and from a position in vertical alignment with (a),

(d) means for securing a metal heel last having a partially completed shoe above a member in (c) comprising a drive shaft, journal means supporting said shaft for vertical reciprocal movement with holder means detachably securing said last to the lower end of said shaft,

(e) means for selectively aligning a metal heel last carried by (d) in vertical adjacent alignment with a member secured by (c) and with nails positioned in said holes of (a) comprising a common drive source, a clutch mechanism for engaging said common drive source, a lever linkage mechanism connected at one end to said slide member of (c), and interconnected at the other through said clutch mechanism to said common drive source, said linkage mechanism adapted on actuation to move said slide member to and from an aligned position in which members carried by said clamping mechanism are positioned intermediate and in vertical alignment with said metal heel last and said nails,



(f) nail feed mechanism and nail transfer mechanism for feeding nails sequentially in groups to said holes of said nail driving means with the pointed ends of said nails directed upwardly,

(g) means for actuating (f) comprising a lever mechanism engaging (f) at one end and connected through said clutch mechanism to said common drive source at the other end, for reciprocating (f) to and from an aligned position with said nail feed mechanism positioned in vertical alignment with (a),

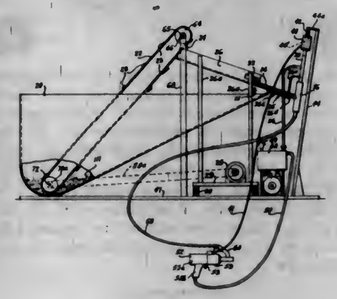
(h) means for synchronizing (e) and (g) whereby nails will be fed to (a), then (c) and (d) will be positioned above (a) on actuation of (a) by (b), comprising actuating means interengaged with (b) for actuation on movement of said ram like member, said actuating means interlinked with said clutch mechanism for operatively engaging said clutch mechanism for a selected interval with said common drive source, whereby said nail transfer mechanism will first be cycled into and from said aligned position to position nails in said holes, then said slide member will be positioned into said aligned position to receive a member by said common drive source.

3,283,985

UPHOLSTERER'S PNEUMATIC TACK HAMMER DEVICE AND CONTINUOUS TACK FEEDER COMBINATION

Clyde P. Willis, Box 335, Conover, N.C.

Filed Feb. 6, 1964, Ser. No. 342,963
4 Claims. (Cl. 227—112)



1. A pneumatic tack hammer and continuous tack supply mechanism therefor comprising in combination, a tack supply hopper, a magnetic tack conveyor extending therefrom, an inclined vibrating tack sorting trough, means for brushing tacks from said conveyor onto said trough, a tack positioning tube fed by gravity from the lower end of said trough, said tube being of inverted T shaped cross sectional configuration whereby said tacks are positioned head down, a sleeve communicating with said tube, a gate intermittently openable to pass tacks to said sleeve in head first position, a solenoid for actuating said gate, a pneumatic tack driving gun having a barrel and a tack inverter adjacent said barrel, a flexible tube connecting said sleeve and said tack inverter, pneumatic means for supplying air to said sleeve to force tacks through said flexible tube and said inverter into said barrel in point first relation, spring biased dogs for aligning a tack in said barrel, pneumatically operated piston means driving said tack into an adjacent substance, and magnetic means holding a tack head against the end of said piston.

3,283,986

TIE-WIRE INSTALLATION APPARATUS

Dale P. McKee, Woodland Hills, Calif., assignor to Powers Wire Products Company, Inc., El Monte, Calif., a corporation of California

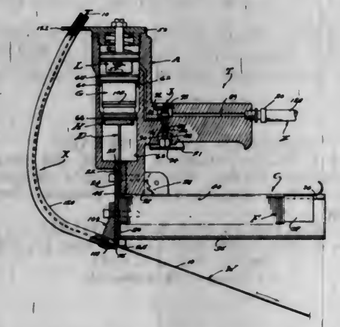
Filed June 25, 1964, Ser. No. 377,821
3 Claims. (Cl. 227—120)

1. Apparatus for affixing continuous lengths of wire to a supporting surface, and including in combination:

(a) a means supplying continuous lengths of wire,

(b) a fastener driving tool with a head having a front and a lower end face and adapted to receive fasteners and with a driver blade operated by the tool to propel a fastener from said lower end face and into engagement with said wire and into said surface,

(c) and a guide means carried by the tool and comprising, an eye-shaped element adjacent the head, and a curved tubular part leading from behind the head and into said eye-shaped element, said element and part being cooperatively related with the head to receive and so as to direct the lengths of wire through the tubular part and to issue rearwardly from the eye-shaped element along an axis disposed at the plane



of the lower end face of the head and into the path of the fastener as it is propelled by the blade.

3,283,987

AUTOMATIC MACHINE FOR BENDING AND SOLDERING TERMINAL LEADS TO CIRCUIT MODULES

Ronald D. Kauffman, Allentown, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed June 11, 1964, Ser. No. 374,330
9 Claims. (Cl. 228—5)

1. In a machine for soldering a terminal lead to a circuit pattern,

means for bending the end of a section of terminal stock,

means for advancing the terminal stock through the bending means to advance the bent end of terminal stock,

a support for holding the circuit pattern in engagement with the tip of said bent end,

means rendered effective upon advance of the stock for flowing solder down the bent section of the terminal stock and onto the circuit path,

and means for severing the stock to form a terminal lead.

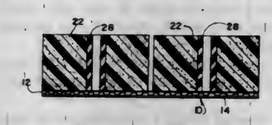
3,283,988

SHOCK ISOLATOR ELEMENT FOR CUSHIONED CONTAINER UNIT AND METHOD OF MAKING THE SAME

James Sutton Hardigg, P.O. Box 89, Conway, Mass.

Filed Apr. 2, 1965, Ser. No. 445,164
8 Claims. (Cl. 229—14)

1. A shock isolator element comprising a body of compressible cellular elastomeric material having at least one flexible rod element embedded therein and extending between opposite surfaces thereof, said rod element being relatively stiff and functioning with lateral support of the surrounding elastomeric material as a column resistant to buckling under static load, but being adapted to buckle under shock forces applied in direction axial thereof, the



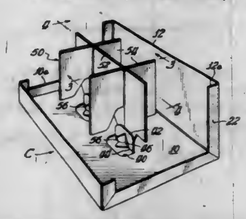
cross-sectional area ratio of said compressible cellular elastomeric material to said rod element being at least about 20:1.

3,283,989

PARTITION LOCK FOR BOTTLE CARRIER

Richard E. De Paul, Norristown, Pa., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware

Filed Sept. 24, 1964, Ser. No. 398,939
6 Claims. (Cl. 229—15)



5. A sleeve-type, wrap-around, paperboard, carrier carton for enclosing a plurality of articles arranged in side-by-side relation, comprising:

(a) opposed pairs of top and bottom horizontal walls and side walls hingedly interconnected to form an outer tubular structure;

(b) a separate internal partition for separating the articles from each other;

(c) said partition having a height less than the distance between the top and bottom walls of the carton;

(d) means for restricting vertical movement of the partition within the carton to maintain the partition in a predetermined position relative to one of the carton horizontal walls;

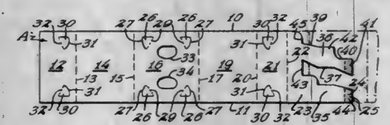
(e) said means including at least one tab cut from and hinged to said one horizontal wall of the carton and at least one other tab formed on said partition, said tabs interlocking with one another to provide an interlocking connection between said one horizontal wall and said partition.

3,283,990

CAN CARRIERS

William M. Tolaas, St. Paul, Minn., assignor to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota

Filed June 21, 1965, Ser. No. 465,289
3 Claims. (Cl. 229—40)



1. A carrier for two rows of generally cylindrical objects arranged with their axes substantially parallel, the carrier comprising an elongated strip of paperborad creased along parallel fold lines to provide:

a top panel of a width approximately equal to twice the diameter of the cylindrical objects,

a pair of side wall panels hinged to said top panel and having a width substantially equal to the axial length of the cylindrical objects.

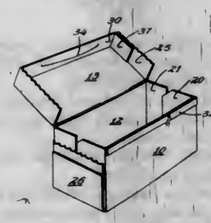
a first bottom panel hinged to one side wall and approximately of a width equal to the diameter of the cylindrical objects,

a partition panel hinged to said first bottom panel and of a width substantially equal to that of said side walls,

a glue flap hinged to said partition panel and adhered to the undersurface of said top panel,

said partition panel and glue flap being cut throughout the major portion of their length to provide two spaced straps, one of which has an edge coinciding with one longitudinal edge of said strip, and the other strap starting from an area relatively closely spaced from the other longitudinal edge of the strip a distance equal to the width of the first strap and inclining toward the center of the top panel, and the space between said straps being equal to the width of said second strap.

3,283,991
RECLOSABLE CARTONS
John G. Hughes, St. Paul, Minn., assignor to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota
Filed Nov. 9, 1964, Ser. No. 409,685
7 Claims. (Cl. 229—51)



1. A reclosable carton including:

a body portion including a rectangular bottom panel, front, rear, and end walls hinged marginally to said bottom panel and extending upwardly therefrom, and means connecting said walls in rectangular relation,

a cover portion hinged to the upper edge of said rear wall and including a top panel, a front cover flap hinged to said top panel along a fold line parallel to the fold line connecting said cover to said rear wall, end cover flaps hinged to the end edges of said top panel, and corner flaps holding said front cover flaps and said end cover flaps in right angular relation overlapping the front wall and end walls of said body portion and outwardly thereof,

a locking flange hinged to the lower edge of said front cover flap and folded inwardly thereof,

said locking flange having a cut line forming a cut edge extending across the center portion of said flange and terminating short of the end edges of said flange, the area of said flange between said cut edge and the edge of said flange hinged to said front cover flap being free of direct attachment to the inner surface of said front cover flap and free to bow inwardly toward said front wall in closed position of said cover portion,

said flange including an area extending beyond said cut edge in a direction toward the line of fold connecting said front cover flap to said cover panel,

means attaching said area of said flange in face contact with said front cover flap, and

an abutment flange secured in face contact with outer surface of said front wall along the upper edge and above said cut edge of said flange in closed position of said cover,

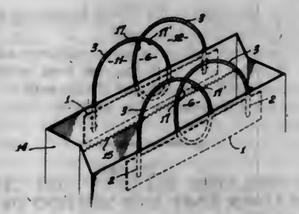
said abutment flange having an edge providing a shoulder against which the cut edge of said flange may lock in closed position of said cover portion.

3,283,992
EMBOSSED ANTI-SKID BAGS
Lawrence A. Hanson, Thornhill, Ontario, and Aleck M. Kingsborough, Lindsay, Ontario, Canada, assignors to Union Carbide Canada Limited, Toronto, Ontario, Canada
Filed Feb. 10, 1965, Ser. No. 431,621
Claims priority, application Canada, Apr. 17, 1964, 900,593, Patent 723,018
7 Claims. (Cl. 229—53)



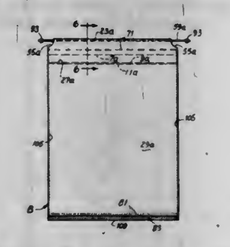
1. In a bag fabricated from a thin plastic film and having opposed top and bottom walls joined by side walls, the improvement which comprises a plurality of spaced-apart first ridges formed in and constituting a part of each of said top and bottom walls of said bag, said first ridges opening inwardly of said bag, and a plurality of spaced-apart second ridges formed in and constituting a part of each of said top and bottom walls of said bag, said second ridges opening outwardly of said bag, said first and second ridges extending in at least two different directions in both said top and bottom walls of said bag, said ridges being adapted to interlock with and overlap similar ridges formed in another bag when said bags are in stacked relationship to resist sliding of said bags relative to each other.

3,283,993
THONG TYPE HANDLES FOR MANUALLY PORTABLE RECEPTACLES
Wayne William McLean, 4080 N. Mission Road, Los Angeles, Calif.
Filed Oct. 26, 1964, Ser. No. 409,347
3 Claims. (Cl. 229—54)



1. In a handle of the type such as used on shopping bags and like receptacles wherein the two ends of a narrow, elongate thong are fixed to an upper extremity of the receptacle in spaced-apart relationship one to the other, the unfixed remainder of the thong forming an arch disposed above the receptacle, means to structurally convert the thong so as to alleviate the unequal, local pressures and discomfort on the fingers of the hand engaging the thong in carrying a load therefrom, consisting of interrupting the unfixed continuity of the arching thong by bilaterally crossing the thong upon itself midway between said spaced-apart, fixed ends of the thong so as to form two, substantially collinear arches, a first arch asymmetrically straddling the center of the length of said upper extremity of the receptacle on one direction of said length, a second, complementary, reciprocating arch straddling the center of the upper extremity in the opposite direction, with said first and second arches partially overlapping one another so as to form a third arch common to said first and second arches and symmetrically straddling a partial extent of said upper extremity midway between said two ends and fixing two, opposed, basal portions of the medial, common arch to the receptacle.

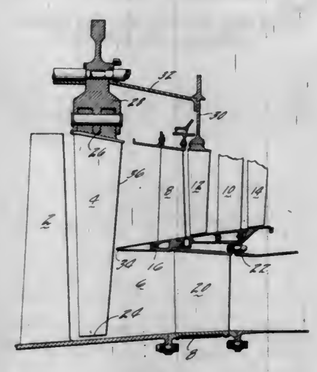
3,283,994
BAG
Keeth B. Miller, Terre Haute, Ind., assignor to Bemis Company, Inc., a corporation of Missouri
Filed Apr. 19, 1965, Ser. No. 449,199
5 Claims. (Cl. 229—55)



1. A bag construction comprising an inner bag and an outer bag, the inner bag being disposed within the outer bag, the inner bag having front and back walls and an intucked gusset extending across the top thereof, the outer bag having front and back walls which extend upward beyond the upper margins of the front and back walls of the inner bag and an intucked gusset extending across the top thereof, the top gusset of the outer bag being joined by folds at the front and back margins thereof to the upper margins of the front and back walls of the outer bag, the top gusset of the outer bag being deeper than the top gusset of the inner bag and being intucked in the top gusset of the inner bag, and draw cord means disposed within said folds above the upper margins of the front and back walls of the inner bag.

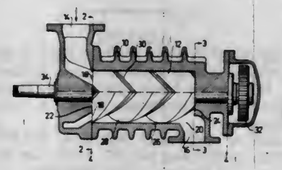
3,283,995
SPLITTER VANE CONSTRUCTION FOR TURBOFAN ENGINE
James A. Figg, Jr., East Hartford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Apr. 28, 1965, Ser. No. 451,477
3 Claims. (Cl. 230—122)

1. An axial flow compressor having a row of stator vanes, a row of rotor blades directly downstream of and closely adjacent to the vanes, each of said blades having a root, a tip, a trailing edge, and a chord that varies from root to tip, and a splitter downstream of the row of blades and located at a position radially of the rotor between the root and tip of the blade, the blades having no spanwise obstruction to the flow over the blade adjacent to the splitter, said splitter dividing the flow from the blade and having its leading edge closely adjacent to the trailing edge of the blade, said leading edge being spaced from the trailing edge of the blade a distance less than



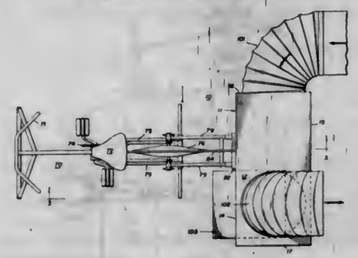
one-half the chord length of the blade at said position of said splitter whereby said splitter affects the radial component of flow over the surfaces of the blades.

3,283,996
SCREW ROTOR MACHINE FOR ELASTIC WORKING FLUID
Lauritz Benedictus Schibbye, Saltsjo-Duvnas, Sweden, assignor to Svenska Rotor Maskiner Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed Sept. 8, 1964, Ser. No. 394,985
Claims priority, application Sweden, Sept. 12, 1963, 9,983/63
9 Claims. (Cl. 230—143)



1. A screw rotor machine for elastic working fluid comprising two coplanar intermeshing male and female rotors having helical lands with a wrap angle of less than 360° and intervening grooves and a casing enclosing said rotors in sealing relationship to provide working space for the fluid, said lands having profiles comprising substantially circular portions on the male flanks lying outside the pitch circle of the male rotor and substantially circular portions on the female flanks lying inside the pitch circle of the female rotor, each of the lands of the female rotor further having an addendum portion extending outside the pitch circle of the female rotor, the radial extent of said addendum being within the range of from 18% to 37.5% of the length of the chord of the portion of the pitch circle of the female rotor lying within the land and the bottom portion of each of the grooves of the male rotor having a dedendum portion lying inside the pitch circle of the male rotor and having a profile complementary to that of said addendum portions of the female rotor land.

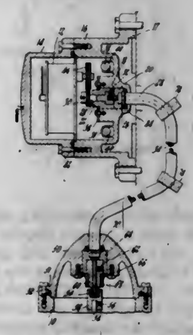
3,283,997
PORTABLE VENTILATORS
Robert A. Bambenek, Glenview, and Edward J. Rollo, Jr., Des Plaines, Ill., assignors to General American Transportation Corporation, Chicago, Ill., a corporation of New York
Filed May 14, 1965, Ser. No. 455,694
7 Claims. (Cl. 230—215)



1. A portable ventilator comprising an enclosing casing, a partition arranged in said casing and dividing the interior thereof into two adjacent chambers, said partition having an opening therein communicating between said chambers, an impeller mounted within said casing adjacent to said opening, means for rotating said impeller, rotation of said impeller causing air to be pumped from one of said chambers through said opening into the other of said chambers, said casing having an air inlet communicating with said one chamber and an air outlet communicating with said other chamber, whereby said other chamber constitutes a plenum chamber positioned between said impeller and said air outlet when said ventilator is in use, a flexible inlet hose adapted to be detachably connected to said air inlet, and a flexible outlet hose adapted to be detachably connected to said air outlet, said flexible hoses being collapsible into compact form for convenient storage in said other chamber, whereby said other chamber may constitute a storage chamber for said collapsed hoses when said ventilator is not in use.

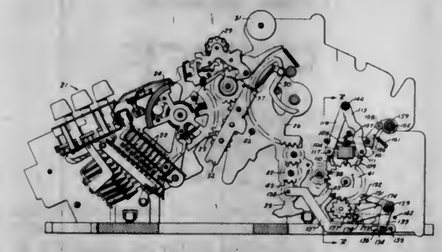
3,283,998
REGISTERING REMOTELY FROM METER
Roger W. Hood, North Attleboro, and Anthony M. Dell' Orfano, Watertown, Mass., assignors to Hersey-Sparling Meter Company, Dedham, Mass., a corporation of Massachusetts
Continuation of application Ser. No. 353,172, Mar. 19, 1964. This application July 27, 1965, Ser. No. 475,139
2 Claims. (Cl. 235—91)

1. Remote reading apparatus comprising
a housing cap,
a retaining washer,
a housing body,
said housing body including a mounting portion and a support portion,
said support portion and said mounting portion being generally symmetrical about a common axis, said mounting portion being further from said axis than said support portion and extending further in a direction of said axis away from said housing cap,
said housing body cooperating with said housing cap at a portion opposed to said mounting portion and extending further in a direction of said axis toward said housing cap than said support portion, and
said support portion including an axial counterbore and said retaining washer support surface therearound,
a spindle bushing held in said counterbore by a retaining washer,
a spindle mounted for rotation in said spindle bushing and about said axis,
a seal washer mounted in said counterbore between said housing body and said spindle bushing,
said seal washer including successively in an axial direction away from said spindle bushing, a hole, a counterbore, and a countersink,
a sheath with one end thereof seated in the seal washer counterbore,
a flexible drive shaft extending through and beyond said sheath and said seal washer and secured in said spindle,
a fastener seated in said countersink and including teeth engaging said sheath, said teeth being inclined to facilitate introduction of said sheath into said seal washer counterbore and discourage removal thereof therefrom,
a connection cap remote from said housing body,
said connection cap including a mounting portion for cooperation with a water meter and a support portion,
the connection cap support portion and connection cap mounting portion being generally symmetrical about a common axis, said connection cap mounting portion being further from said axis than said connection cap support portion and the latter being spaced from said water meter,



the connection cap support portion including a counterbore axial thereof and a coupling bushing reception surface thereabout,
a bushing seated in the connection cap counterbore, said bushing including a coupling counterbore toward said water meter, a countersink away therefrom, and a hole and sheath counterbore therebetween, said hole accepting said flexible drive shaft therethrough, and said sheath counterbore accepting the other end of said sheath,
a second fastener seated in the last-mentioned countersink and including teeth engaging said sheath, said teeth being inclined to facilitate introduction of said sheath into the bushing counterbore and discourage removal thereof therefrom,
a coupling secured on said flexible drive shaft and rotatably seated in said bushing counterbore, and
a coupling bushing securing said coupling against said reception surface,
each of said housing cap, housing body, connection cap, and sheath being formed of plastic,
whereby is provided a simple and practical remote reading register capability.

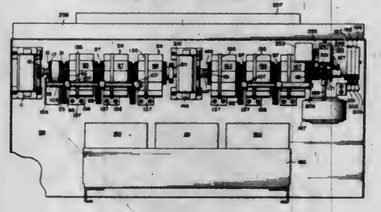
3,283,999
TRANSFER MECHANISM FOR A CALCULATING MACHINE
Harold J. Chall, Castro Valley, Calif., assignor to Friden, Inc., a corporation of California
Filed Aug. 24, 1964, Ser. No. 391,448
5 Claims. (Cl. 235—137)



1. In a calculating machine comprising in combination:
ordinally arranged accomulator wheels;
means for entering values into said accumulator wheels;
an interponent for each of certain ones of said accumulator wheels, each interponent movable to an active position by the rotation of an accumulator wheel through its tens-transfer position;
an addition set of primary tens-transfer actuators, a subtraction set of primary tens-transfer actuators, at least one of said interponents in its active position enabling two of said primary tens-transfer actuators, one from each set;
control mechanism automatically operated by an additive condition of said value-entering means for effecting an operation of said addition primary tens-transfer actuators and by a subtractive condition of said value-entering means for effecting an operation of said subtraction primary tens-transfer actuators; and
a plurality of secondary tens-transfer actuators for said accumulator wheels, each said secondary actuator driven by the adjacent lower order accumulator wheel as that lower order wheel is rotated through its tens-transfer position in either direction by said primary tens-transfer actuator for entering the secondary tens-transfer simultaneously with the primary tens-transfer operation.

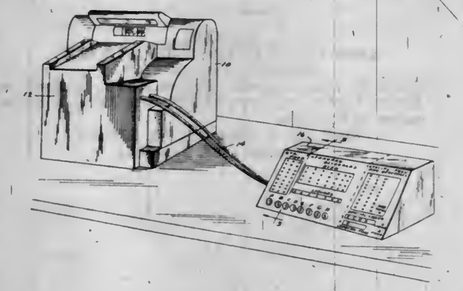
3,284,000
FLAP TYPE INDICATORS
Albert F. Romanowski, Greenville, Tenn., assignor to Bowser, Inc., Greenville, Tenn., a corporation of Indiana
Filed July 5, 1962, Ser. No. 208,977
10 Claims. (Cl. 235—144)

1. In an indicating mechanism for mechanical counters of the type used in gasoline dispensing service stations in which the gallons of gasoline and monetary value of gasoline dispensed are indicated, comprising in combination:
(a) a reset shaft adapted to support in a substantially horizontal line a first bank of indicating wheels for gallons of gasoline dispensed and a second bank of indicating wheels for the monetary value of gallons dispensed,
(b) a first stepping motor for rotating the gallon indicating wheels in the transfer direction,
(c) a first gear train means operatively connecting the first stepping motor with the gallon indicating wheels,
(d) a second stepping motor for rotating the monetary wheels in the transfer direction,
(e) a second gear train means operatively connecting the second stepping motor with the monetary wheels,
(f) a reset motor provided with means for energizing or deenergizing said reset motor,



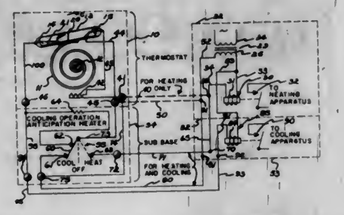
(g) means for connecting the reset motor to the reset shaft when the reset motor is energized to rotate the gallon indicating wheels and the monetary wheels simultaneously to a zero position.

3,284,001
REMOTE CONTROL SYSTEM FOR MANIPULATING A BUSINESS MACHINE
Felix V. Coja, 1523 22nd St. NW., Washington, D.C.
Filed Oct. 22, 1965, Ser. No. 502,107
6 Claims. (Cl. 235—146)



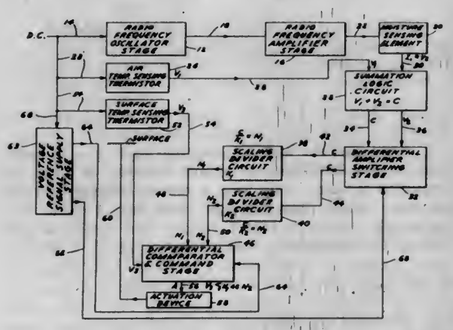
1. Apparatus for manipulating the keys of a business machine keyboard from a remote location to enter information therein, comprising a remote control console, converter means interconnected with said console and operatively related to said keyboard, and means at said console for transmitting information in the form of electrical signals to said converter means, said converter means being responsive to said information to manipulate the keyboard in conformity with the information; said converter including key manipulating means positioned adjacent a key to be operated, connecting means positioned adjacent to said manipulating means and normally out of operational relationship therewith, a first solenoid for actuating said connecting means upon energization of the solenoid, and a second solenoid joined to said connecting means for selectively displacing said connecting means on energization of said second solenoid to move the connecting means into operational relationship with said key manipulating means, and means for simultaneously energizing by said signals both said first and second solenoids whereby the actuation of said connecting means moves the key manipulating means to operate said key.

3,284,002
CONTROL APPARATUS
Walter E. Edelman and David J. Sutton, Minneapolis, Minn., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Oct. 26, 1964, Ser. No. 406,397
13 Claims. (Cl. 236—1)



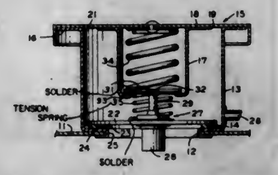
1. In a thermostat for controlling heating and cooling apparatus, a main unit having a base, temperature responsive switch means mounted on said base, a first heater mounted in thermal relation to said temperature responsive switch means, and connection means adapted to connect said heater and said switch means in a circuit for controlling the heating apparatus, a subbase unit having a second heater, means for mounting said main unit on said subbase unit to thermally connect said second heater to said temperature responsive switch means and electrically connect said second heater to said switch means and said switch means to control the cooling apparatus.

3,284,003
DEW POINT DETECTING AND ICE PREVENTING DEVICE
Michael F. Ciemochowski, Warren, Mich., assignor to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed Jan. 2, 1964, Ser. No. 335,285
8 Claims. (Cl. 236—44)



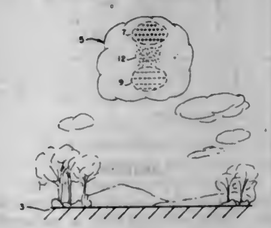
1. A device for predicting condensation of moisture on a surface, said device comprising means for producing a first voltage signal proportional to relative humidity, means for providing a second voltage signal proportional to ambient air temperature, means for adding said first and second voltage signals and dividing the sum thereof by an appropriate constant to produce a third voltage signal proportional to dew point, means for producing a fourth voltage signal proportional to the temperature of said surface, and means for comparing said third and fourth voltage signals and signaling when said fourth voltage is substantially equal to or below said third voltage.

3,284,004
TEMPERATURE AND PRESSURE RESPONSIVE FILLER CAP
Alastair S. MacLennan, Farmington, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Nov. 18, 1964, Ser. No. 412,175
4 Claims. (Cl. 236—92)



1. A liquid cooling system for an internal combustion engine including a filter neck through which liquid coolant may be added to said system, a filler cap detachably received on said filler neck for closing said system, a pressure responsive valve member carried by said filler cap for venting said cooling system to the atmosphere, biasing means urging said valve member to its closed position, stop means limiting maximum movement of said biasing means to establish a preload thereon, and temperature responsive means for alternating the preload upon said biasing means for increasing pressure required to open said valve means in response to increases in the coolant temperature, said temperature responsive means being located on the coolant side of said valve member, said stop means being capable of preventing said biasing means from moving said valve member to its closed position at temperatures below a preselected value.

3,284,005
WEATHER CONTROL BY ARTIFICIAL MEANS
Heinz W. Kasemir, Neptune, and Helmut K. Weickmann, Interlaken, N.J., assignors to the United States of America as represented by the Secretary of the Army
Filed Sept. 23, 1964, Ser. No. 398,816
3 Claims. (Cl. 239—2)

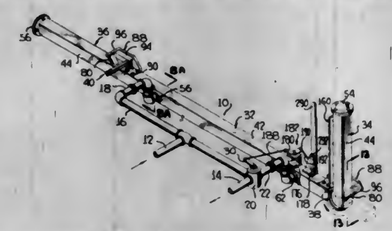


1. The method of inhibiting lightning discharge comprising the seeding of a region between two areas of opposite type electric space charge with a plurality of metallized nylon threads, said nylon threads being at least one centimeter in length.

3,284,006
HOT SPRAY BAR FOR DISTRIBUTING ROADWAY COATING MATERIALS
Horace A. Cartwright, 1166 Timberlake Drive, Lynchburg, Va.
Filed Oct. 9, 1964, Ser. No. 402,903
19 Claims. (Cl. 239—166)

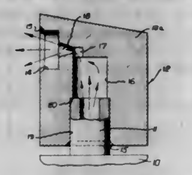
1. In a spray bar of the character described, a bar structure comprising inner and outer pipes in spaced parallel relation, means closing the ends of said pipes collectively and establishing communication therebetween, means for supplying one of said pipes with material to

be dispensed, means in the said outer pipe for dispensing said material, hinge means coupling a portion of said structure with another portion thereof facilitating folding of said portion relative to said another portion, the respective pipes of the respective portions having opposing flat terminal edges lying in parallel planes oblique to the length of the pipes, the said hinge means comprising opposing flat apertured plates secured to the said ends of



the said outer pipe only and having plane, opposed parallel functional faces parallel with said planes, seal forming coupling means interposed between said plates, and connecting means between the said ends of the said outer pipe for facilitating pivotal swinging of said one portion on an axis normal to said planes and intersecting the longitudinal axis of the said outer pipe, the said apertures of said plates coinciding with the said end edges of the said outer pipe.

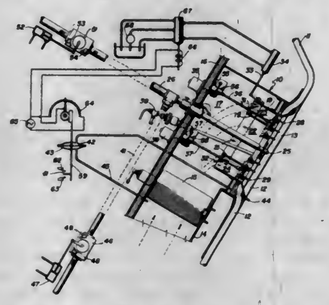
3,284,007
REVERSIBLE AEROSOL SPRAY TIP
Clarence Clapp, Montebello, Calif., assignor to Aerosol Techniques Incorporated, Bridgeport, Conn., a corporation of New York
Filed Nov. 3, 1964, Ser. No. 408,519
7 Claims. (Cl. 239—392)



1. The combination comprising a tubular aerosol container valve stem operable to discharge an aerosol stream, and a reversible spray tip body applied to said stem, said tip body containing a pair of communicating bores respectively axially in the bottom of the tip and laterally in the side thereof and of corresponding diameter sized to have fluid tight fit with the exterior surface of said stem, said tip body having closed finger pressure surfaces selectively positionable above each of said bores for downward pressure application and discharge of said stream laterally of the tip and said tip body being removable from the stem and applicable thereto for accommodation of the stem within either of said bores, thus to provide for spray reversal through the tip body.

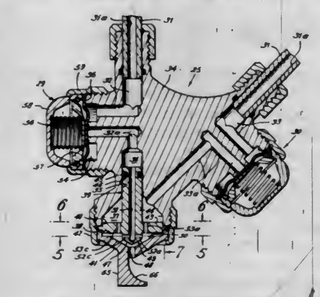
3,284,008
BURNER
Earle C. Miller, Worcester, Mass., assignor to Riley Stoker Corporation, Worcester, Mass., a corporation of Massachusetts
Filed Nov. 9, 1964, Ser. No. 409,868
4 Claims. (Cl. 239—412)

1. A burner for use with gas and oil, comprising
(a) vanes which, in a first setting, give a narrow flame and, in a second setting, give a broad flame,
(b) a first means supplying gas to the burner,
(c) a second means supplying oil to the burner, and
(d) a third means associated with the first means, the second means, and the vanes to provide the first set



ting for the vanes when the first means is operative at low load and when the second means is operative at either high or low load and to provide the second setting for the vanes when the first means is operative at high load.

3,284,009
APPARATUS FOR MIXING AND DISPENSING FLUIDS
Emerson Bosse Stull and Judd Morrow, San Antonio, Tex., assignors, by mesne assignments, to Hercules Incorporated, a corporation of Delaware
Original application May 2, 1961, Ser. No. 105,258, now Patent No. 3,197,299, dated July 27, 1965. Divided and this application Apr. 23, 1965, Ser. No. 461,218
3 Claims. (Cl. 239—427)



1. A multifluid mixing nozzle for dispersing immiscible fluids comprising:
(A) a nozzle body having a chamber therein and an opening providing access to said chamber from outside said nozzle body;
(B) an insert body mounted in said nozzle body, said insert body comprising:
(1) a cylindrical body having a closed cone-shaped lower end and an axial bore therein;
(2) a seal means carried by said cylindrical body dividing said chamber into an upper inlet portion and an intermediate inlet portion;
(3) a separator plate carried by said cylindrical body dividing said insert body into an upper portion and a lower portion;
(4) a seal means carried by said separator plate sealing said plate to said nozzle body, the combination of said seal means and said separator plate dividing said chamber into said intermediate inlet portion and a lower annular mixing portion;

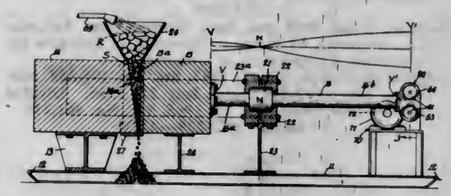
(5) transverse passages formed in said separator plate to connect said intermediate inlet portion with said lower annular mixing portion;

(6) passages in the lower portion of said cylindrical body extending radially outwardly from said axial bore in said cylindrical body, the axes of said passages and of the transverse passages formed in said separator plate being at substantially right angles with respect to each other;

(C) a cap carried by said nozzle body normally covering the opening therein, said cap having a substantially cone-shaped inner surface spaced radially outwardly from said cone-shaped lower end of said cylindrical body to provide an annular conoidal mixing passageway connected at its upper extremity with said annular mixing portion of said chamber and connected at its lower extremity with an outlet orifice formed in said cap at the vertex end thereof; and

(D) means for separately supplying fluid under pressure to each of said upper inlet portion and said intermediate inlet portion of said chamber.

3,284,010
CRUSHING APPARATUS WITH SONIC WAVE ACTION
Albert G. Bodine, Jr., 7877 Woodley Ave., Los Angeles, Calif.
Filed Jan. 31, 1964, Ser. No. 341,608
2 Claims. (Cl. 241—38)



1. In an apparatus of the character described:

a pair of opposed, massive crusher jaws between which a substance to be cyclically squeezed may be positioned, and at least one of which is vibratory toward and from the other,

a sonic wave generator adapted to deliver an alternating output force,

an elastically vibratory solid material vibration transmission system having a range of elastic vibration and intercoupled between said generator and said vibratory jaw, so as to receive said alternating force, undergo corresponding elastic vibration, and impart said vibration to said vibratory jaw,

and a liquid confining cavity between said jaws having joints between relatively moving parts of said jaws which retain liquid in a body substantially filling said cavity, whereby pressure cycles are generated in said retained liquid body so as to act upon elements introduced into said cavity.

2. Apparatus as defined in claim 1 having a means introducing liquid into said cavity and with flow capacity maintaining a body of said liquid in said cavity.

3,284,011
WIRE STRAPPING TOOL
Peter F. Boomgaard, Spring Lake Township, Ottawa County, Mich., assignor to Gardner-Denver Company, a corporation of Delaware
Filed May 11, 1964, Ser. No. 366,465
3 Claims. (Cl. 242—7)

1. A wire strapping tool comprising:

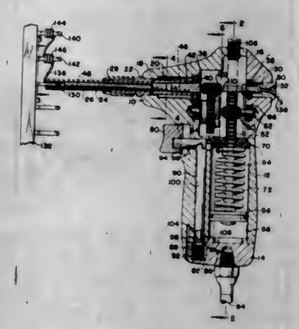
housing means;

spindle means disposed in said housing means and having a longitudinal wire passage therethrough;

wire wrapping bit means drivably connected to said spindle means and having wire-receiving means communicating with said wire passage;

rotary driving means disposed in said housing for rotating said spindle and said bit;

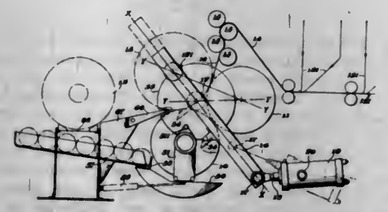
said driving means including a longitudinally reciprocating member cooperable with a first stop member for limiting longitudinal movement of said recip-



rocating member in one direction thereby to determine the total rotational displacement of said bit during each wrapping operation; and

said reciprocating member having a plurality of longitudinally spaced abutments, a selectable one of which being cooperable with said first stop member to establish different limits of longitudinal movement of said recriprocating member in said one direction.

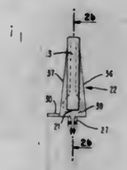
3,284,012
TEXTILE LAP-FORMING MACHINES
Alec Walter Stafford, Springhead, near Oldham, England, assignor to T.M.M. (Research) Limited, Oldham, England, a British company
Filed July 6, 1964, Ser. No. 380,410
Claims priority, application Great Britain, July 4, 1963, 26,592/63
13 Claims. (Cl. 242—55.1)



1. A textile lap-forming machine wherein a sheet of textile fibrous material is wound upon a bobbin, comprising two spaced driving drums for driving said bobbin, said drums and bobbin all having parallel axes, respectively, lap loading means for holding the bobbin with the lap in contact with said drums, pivotally mounted motive means, and linkage means operatively connecting said motive means with said lap loading means for applying pressure to the bobbin, said motive means acting through said linkage means on said lap loading means for automatically augmenting the pressure applied to said bobbin during turning of said motive means at its pivotal mounting as the lap diameter increases, said lap loading means being movable in a plane containing the axis of said bobbin and extending normally to a plane containing the axis of said driving drums, a link forming part of

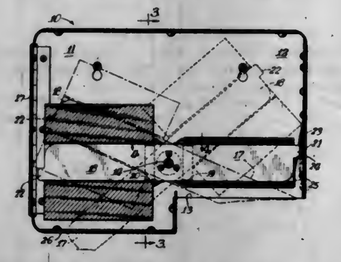
said linkage means and an operative linearly acting component forming part of said motive means, said component of said motive means acting through said link on said lap loading means for urging said bobbin toward said second-mentioned plane, the line of action of said component being disposed at an angle to said first-mentioned plane which varies as the lap diameter increases, and said motive means cooperating through said linkage means with said lap loading means for providing an effective loading force acting on said lap loading means which is augmented proportionately with the variation of said angle.

3,284,013
INVERTED V VACUUM LOOP BOX
Mark Naiman, South Lincoln, Mass., and Herbert Frazer Welsh, deceased, late of Philadelphia, Pa., by Julea S. Chaplina, executrix, Philadelphia, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed June 16, 1964, Ser. No. 376,301
6 Claims. (Cl. 242—55.12)



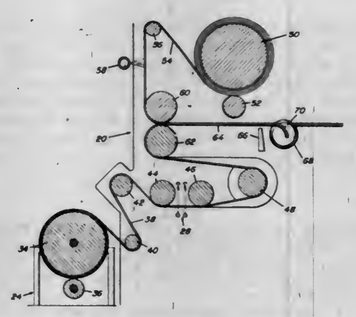
4. In a tape transport; capstan means for moving tape at a predetermined rate, storage reel means feeding tape to said capstan means at said predetermined rate, a vacuum loop box storing a loop of said tape between said capstan means and said storage reel means, said vacuum loop box comprising four walls forming an elongated, enclosed space having an opening at one end and a fifth wall enclosing said space at the other end, two of said four walls including a pair of oppositely disposed surfaces sloping inwardly from bottom to top causing the cross sectional area of said space to decrease from bottom to top, the other two of said four walls further including a pair of opposite disposed parallel surfaces to which the flat portions of the stored tape are substantially parallel.

3,284,014
DISPENSER FOR TOILET PAPER
Robert B. Wiggins and Bernard A. Dahlin, both of Green Bay, Wis., assignors to Fort Howard Paper Company, a corporation of Wisconsin
Filed Mar. 11, 1965, Ser. No. 438,925
5 Claims. (Cl. 242—55.53)



1. A dispenser for toilet paper comprising, a container having a pair of compartments therein each of sufficient size to receive a roll of toilet paper, one of said compartments having an opening therein to permit withdrawal of toilet paper therefrom, a shaft movably mounted in the container, a pair of toilet paper roll carriers connected to the shaft and arranged to be moved from one compartment to the other with movement of the shaft whereby a roll of toilet paper carried by one of the carriers can be moved into the compartment having the opening therein with movement of the shaft, and means operable from outside the container for moving the shaft.

3,284,015
WEB REGISTRATION AND TENSIONING MEANS
Lawrence King, New York, N.Y., assignor to Rosfor Mills Corporation, New York, N.Y., a corporation of New York
Filed Apr. 13, 1964, Ser. No. 359,379
15 Claims. (Cl. 242—57.1)



10. In a laminating machine, the combination comprising:

(a) frame means;

(b) roller means on said frame means for receiving sheet material and moving the material in a given direction for processing thereof;

(c) said roller means including at least one tensioning roller receiving material thereabout;

(d) fluid operated friction brake means coupled to said tensioning roller to permit rotation thereof by material in contact therewith only when the rotational force exerted on said tensioning roller by the material passing thereabout exceeds a predetermined value;

(e) carriage means for supporting a roll of sheet material thereon to be fed in said given general direction to said roller means;

(f) guide means supporting said carriage means for reciprocal movement along a path extending transverse to said general direction;

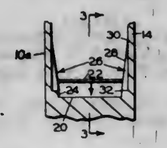
(g) sensing means for sensing the position of material on said roller means and producing an electrical output signal when material is improperly positioned on said roller means; and

(h) carriage positioning means for moving said carriage means along said path of movement thereof to restore material to the proper position as sensed by said sensing means, said carriage positioning means including electrically actuable control means responsive to said electrical output signal for controlling the movement of said carriage.

3,284,016
REEL WITH HOLDING GROOVE
Paul A. Miettunen, 3833 S. Calaroga Circle, Lake Oswego, Oreg.
Filed Aug. 31, 1965, Ser. No. 483,936
9 Claims. (Cl. 242—74)

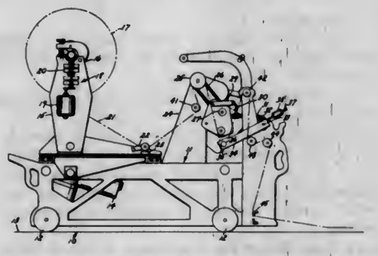
1. A reel for the storage of magnetic recording tape comprising a hub and a pair of side flanges molded in-

tegrally with said hub and disposed substantially in parallel relation for confining tape wound on said hub, said flanges having inwardly and outwardly facing surfaces, said hub having a peripheral surface on which tape may be wound, and laterally spaced wall means having tape engaging portions extending radially outwardly from the peripheral surface of said hub and arranged to receive a tape therebetween, the lateral spacing between said



tape engaging portions being slightly less than the width of a tape for frictionally engaging the side edges of the tape to obtain a temporary grip thereon, said wall means extending radially only a short distance greater than the thickness of a tape and having an integral molded connection with said hub whereby to receive the lateral stability of said hub in maintaining the lateral spacing of said tape engaging portions.

3,284,017
CLOTH LAYING MACHINE HAVING INTERMITTENT POSITIVE FEEDING MEANS
Edward M. Merrill, Sayville, N.Y., assignor to Cutting Room Appliances Corp., New York, N.Y., a corporation of New York
Filed Sept. 22, 1965, Ser. No. 489,214
1 Claim. (Cl. 242—75.43)



In a reciprocating cloth laying carriage having a principal axis of reciprocation for use with a cloth laying table, the improvement comprising:

(a) means for supporting a cloth supply roll for rotation about an axis perpendicular to said axis of reciprocation;

(b) electric motor means for accelerating and decelerating said roll using dynamic braking upon the interruption of current flowing thereto;

(c) a first nip roller lying in the path of a web of material emanating from a cloth supply roll disposed upon said supporting means;

(d) switch means conducting current to said motor means upon the absence of sufficient slack in said web of material in the area of said first nip roller;

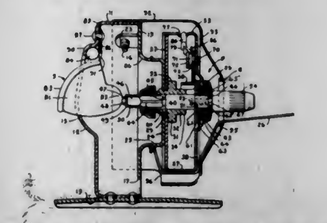
(e) a driven feed roller engaging said web, and means for rotating said feed roller in a single direction in response to reciprocation of said carriage in either of two directions;

(f) overrunning clutch means interconnecting said feed roller and said driving means;

(g) and a second nip roller engaging said web of material, and serving to engage said clutch in the absence of sufficient slack in the area of said second nip roller;

(h) whereby upon the occurrence of excess feeding by said feed roller, the corresponding occurrence of slack in the area of said second nip roller will serve to disengage said clutch, following which the interruption of positive feeding by said feed roller will cause the occurrence of slack in said web in the area of said first nip roller and the interruption of current to said motor means, said motor means then acting as a dynamic brake upon said cloth supply roll, resulting tension in said cloth web between said supply roll and said feed roller serving to retard said feed roller.

3,284,018
SPINNING REEL
Morris E. Wood, Bronson, Mich., assignor to Bronson Specialties, Incorporated, Bronson, Mich., a corporation of Michigan
Original application Nov. 28, 1961, Ser. No. 157,039, now Patent No. 3,123,318, dated Mar. 3, 1964. Divided and this application Apr. 26, 1965, Ser. No. 450,782
18 Claims. (Cl. 242—84.2)

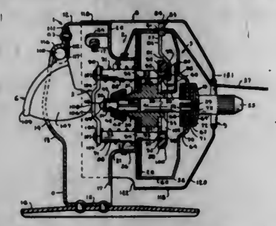


3. A spinning reel comprising a frame, a spool disposed in the frame and carrying a fixed bearing, a driven shaft carried by and reciprocally and rotatably mounted in said bearing, a line pickup assembly carried by the fore end of the shaft for directing the line onto the spool, means for rotating the shaft and pickup assembly, a cover mounted on said frame and having an end wall disposed in front of the pickup assembly and provided with an opening through which the line may flow to and from the spool, means for securing said cover, frame and spool in assembled relation, friction-producing means carried by the shaft and engaging the pickup assembly, control means mounted on the fore end of the shaft for digital operation in a manner whereby the friction-producing means may be readily adjusted to control relative rotational movement between the shaft the pickup assembly, and an actuator carried by the frame for reciprocating the driven shaft and pickup assembly thereon forwardly for clamping the line between this assembly and the cover.

3,284,019
SPINNING REEL
Morris E. Wood, Bronson, Mich., assignor, by mesne assignments, to Bronson Specialties, Incorporated, Bronson, Mich., a corporation of Michigan
Continuation of applications Ser. No. 60,647, Oct. 5, 1960, Ser. No. 105,631, Apr. 26, 1961, and Ser. No. 227,627, Sept. 24, 1962. This application Apr. 26, 1965, Ser. No. 453,552
33 Claims. (Cl. 242—84.21)

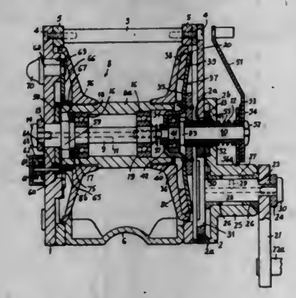
5. A spinning reel having a housing provided with a bearing, a support for a line adapted for connection therewith, a shaft mounted on the bearing, means for rotating the shaft in one direction and means for preventing its reverse rotation, a line guide rotatable on the shaft disposed opposite the support, an element pivotally mounted on the guide for movement to a position whereby the line may freely peel off the support and to another position for engaging the line so that a pull on the latter will rotate the member relative to the shaft when the

shaft is held against rotation by said preventing means, means for retarding relative rotation between said guide and shaft, manually operable means, means responsive to said manually operable means whereby said shaft, guide and element may be shifted forwardly as a unit



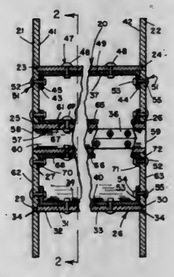
to a predetermined position, means for automatically holding said unit in said predetermined position, and said responsive means being engageable with said element when said unit is so held for controlling its positions by operating said manually operable means.

3,284,020
FRICTION CLUTCH MECHANISM FOR A FISHING REEL
Hyman Policansky, Valley House, Oak Ave., Kenilworth, Cape Town, Cape Province, Republic of South Africa
Filed May 22, 1964, Ser. No. 369,453
Claims priority, application Great Britain, May 24, 1963, 20,854/63
11 Claims. (Cl. 242—84.46)



6. A fishing reel comprising a frame including a pair of side members, a spindle assembly comprising two parts, said two parts being mounted respectively in said side members, screw thread means connecting said two parts together in axial alignment and for relative axial adjustment, means normally yieldingly restraining said parts against turning relative to said side members, abutments disposed respectively on said two parts in a position between said side members, said two abutments having mutually facing abutment surfaces, a spool for fishing line including a hub, rolling bearings rotatably mounting said hub on one of said spindle parts, one of said bearings including inner and outer race members and being adapted to withstand thrust, and said inner race member abutting the abutment surface on said one part, a friction surface rotatable with said spool, a friction member opposing said friction surface, a further rolling bearing which includes inner and outer race members and is adapted to withstand thrust rotatably mounting said friction member on the other spindle part, said inner race member of said further bearing abutting the abutment surface on said other part, manual means for turning said two parts relative to one another, a winding handle carried by the frame, gear means operatively connecting said winding handle to said friction member, and a pawl and ratchet mechanism preventing said friction member from rotating in one direction relative to said side members.

3,284,021
KNOCK-DOWN REEL
Paul A. Ryll, 77 Mt. Vernon St., Haverhill, Mass., and Walter Ryll, Broad Brook Road, Ashuelot, N.H.
Filed Apr. 28, 1964, Ser. No. 363,205
9 Claims (Cl. 242—118.6)



9. A wire holding reel, having:

a pair of annular disc-like heads,

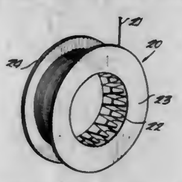
a hollow cylindrical drum extending between said heads, and

at least two metal cross braces of U shape extending between said heads, within said drum, each brace being secured in intimate contact with the inside face of said drum at spaced distances therealong, and having a right angular tongue at each opposite end thereof in intimate contact with the inside face of said heads; a core tube secured axially between said annular disc-like heads for rotatably mounting said reel and

detachable mechanical fastening means securing said tongues to said heads;

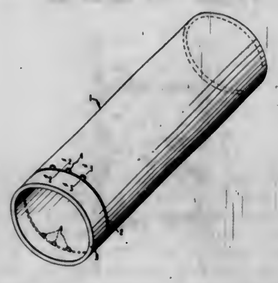
whereby said braces form axially extending interior ribs along said drum and said drum and braces support said tongues against torsional, rotational or axial thrust.

3,284,022
COLLAPSIBLE REELS
Stephen L. Eifrid, 641 61st Place, La Grange, Ill.
Filed Nov. 26, 1963, Ser. No. 326,056
12 Claims. (Cl. 242—118.8)



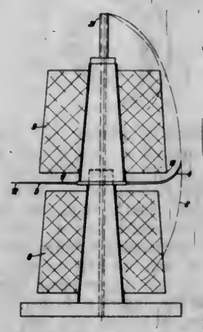
1. A reel having a tubular core and annular ring shaped flanges extending radially and outwardly from each end of the core, the core being formed from fingers of longer and shorter lengths extending from the inner peripheries of the annular rings, the longer fingers of each ring being connected to the shorter fingers of the other ring in an overlapping manner and the shorter fingers extending less than one-half the distance between the flanges, and all of said fingers being foldable along lines of connection of the fingers with their respective flanges and the longer fingers having fold lines in a median plane between the flanges to allow with flanges to be moved together as the fingers of both lengths bend along said lines of connection.

3,284,023
TEXTILE CORE WITH A YARN ENGAGING GROOVE
Lyles Howard Sowell, Madison, Tenn., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Dec. 15, 1965, Ser. No. 513,942
4 Claims. (Cl. 242—125.1)



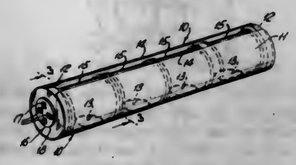
1. For use in winding yarn packages at high speed, a textile core having a cylindrical body for supporting the yarn, a circumferential groove near one end of the body for engaging yarn when starting to wind a package, said groove being a generally V-shaped notch of substantially uniform depth in the exterior surface of the body and aligned in a plane perpendicular to the cylinder axis of the body, the opposite sides of the groove converging to meet in an acute angle at the bottom of the groove, and a plurality of yarn traps along the groove for catching yarn in the groove and for breaking off the lead end of the yarn to start a package, each of said traps comprising a protuberance on one side of the groove which substantially touches the opposite side of the groove, is situated in the lower ¾ of the depth of the groove, and has a width measured along the groove of less than 0.25 times the circumference of the body.

3,284,024
MEANS FOR WITHDRAWING YARN FROM YARN PACKAGES
Gustav Franzen, 91 Krefelderstrasse, Neersen, Germany
Filed Sept. 23, 1963, Ser. No. 310,619
Claims priority, application Germany, Feb. 4, 1963, V 23,603; Aug. 29, 1963, N 23,668
23 Claims. (Cl. 242—128)



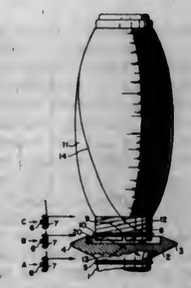
1. A device for supporting a yarn package for the overend withdrawal of yarn from said package comprising an elastically yielding disc arranged so that the margin of the disc is deformable by the tension of the yarn running across the periphery of said disc.

3,284,025
HOLDER FOR SPOOLS OF THREAD AND OTHER ARTICLES
Doris I. Fridolph, 1233 Smithwood Drive, Los Angeles, Calif.
Filed Apr. 7, 1964, Ser. No. 357,919
2 Claims. (Cl. 242—137)



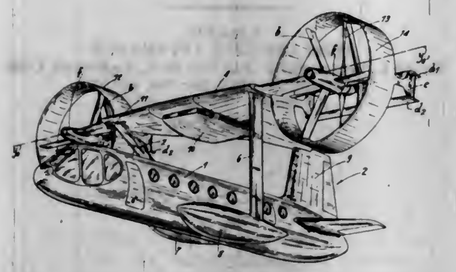
1. A holder for spools of thread comprising an elongated tubular member of relatively thin pliable material and having a relatively wide slot extending throughout the length thereof, said slot having a width of the order of one-half the diameter of said spools, end members secured to the ends of said tubular member for retention of spools within said tubular member and maintaining the configuration thereof, said tubular member having a plurality of openings opposite said slot and spaced at intervals along its length with each interval being approximately equal to the length of a spool, and thread attaching and cutting means carried by said holder for each spool of thread.

3,284,026
YARN PACKAGE
Bert Zuidema, Arnhem, Netherlands, assignor to American Enka Corporation, Enka, N.C., a corporation of Delaware
Original application Dec. 11, 1963, Ser. No. 329,685. Divided and this application Feb. 24, 1966, Ser. No. 529,801
Claims priority, application Netherlands, Dec. 19, 1962, 286,993
4 Claims. (Cl. 242—165)



1. A yarn package assembly comprising a yarn package wound on a bobbin and provided with a transfer tail and an initial thread end which are fixed on the bobbin, characterized in that one end of the bobbin and at a distance from said yarn package a separate small bundle of windings is laid, under which bundle said transfer tail is fixed by means of the windings of said bundle, and to which bundle said initial thread end is fixed by means of an adhesive.

3,284,027
VTOL AIRCRAFT HAVING FREELY PIVOTED PROPULSION MEANS
Marc Mesniere, Montrouge, France, assignor to Nord-Aviation Societe Nationale de Constructions Aeronautiques, Paris, France, a joint-stock company of France
Filed Jan. 5, 1965, Ser. No. 423,465
Claims priority, application France, Jan. 9, 1964, 959,850; June 12, 1964, 978,163
2 Claims. (Cl. 244—12)



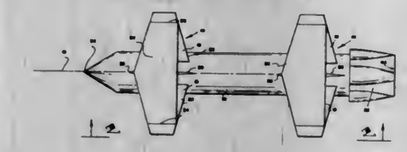
1. A flying machine with a fixed wing system capable of maneuvering during the various phases of flight, vertical, hovering, transitory and horizontal, the said flying machine having two identical propulsion units arranged symmetrically with respect to its longitudinal plane of symmetry, the said propulsion units being freely articulated on a common pivotal axis perpendicular to the said plane of symmetry and to the axes of thrust of the said propulsion units in which:

an arrangement of the whole of the machine such that said pivotal axis is located before the intake side of the propulsion units;

at least one flap located in the discharge flow of each of the propulsion units, the said flap being articulated on an axis which is perpendicular to the axis of thrust and parallel to the pivotal axis of the propulsion unit;

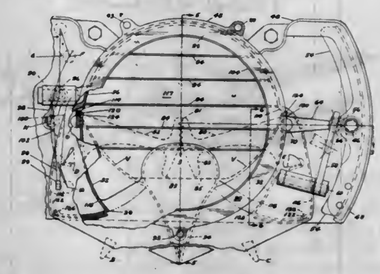
and control means for each of the propulsion units, permitting the incidence of the said flap to be varied at will with respect to the discharge flow so as to cause the pivotal movement of the corresponding unit by aerodynamic reaction.

3,284,028
AIRCRAFT
Robert L. Robertson, Phoenix, Ariz. (6859 E. Gary Road, Scottsdale, Ariz.)
Filed Dec. 7, 1964, Ser. No. 416,203
6 Claims. (Cl. 244—15)



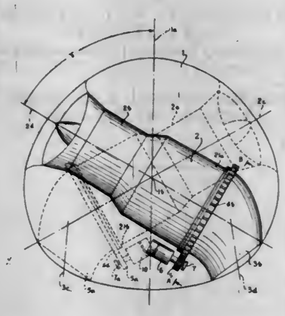
1. In an aircraft the combination of: an elongated fuselage; a generally pointed forward end of said fuselage; a rearward end of said fuselage; jet propulsion means having efflux passages directed rearwardly from said rearward end; a plurality of airfoil assemblies secured to said fuselage and spaced relative to each other longitudinally along said fuselage; said fuselage having a longitudinal neutral axis disposed at substatnially the middle of the cross section thereof; a pair of first airfoil portions of each airfoil assembly coupled to said fuselage above said neutral axis and diverging upwardly to a level above said fuselage; a second substantially horizontal airfoil portion interconnecting said first airfoil portions at a level above said fuselage and below the extremities of said first airfoil portions.

3,284,029
REACTION CONTROL VALVE
Walter R. Kaminski, Ferndale, and Raymond L. Ensinger, Detroit, Mich., assignors to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed Sept. 8, 1964, Ser. No. 394,986
8 Claims. (Cl. 244—52)



1. In a vertical take-off and landing vehicle, a thrust reaction control valve, said valve comprising a rotatable housing having a chamber therein and an opening through a wall thereof, a wedge secured in said opening, a separate door rotatably mounted across said opening forming a nozzle with said wedge, first means for rotating said door to vary the size of said nozzle and second means for rotating said housing.

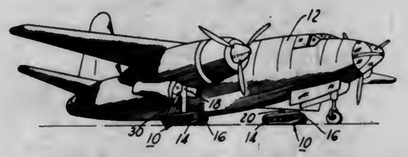
3,284,030
ENGINE ARRANGEMENT FOR SHORT TAKE OFF AIRCRAFT
Gero Madelung, Munich, Germany, assignor to Messerschmitt A.G., Augsburg, Germany
Filed Feb. 24, 1965, Ser. No. 434,996
Claims priority, application Germany, Feb. 26, 1964 M 60,066
20 Claims. (Cl. 244—56)



1. In combination with an aircraft part having a longitudinal axis, at least one pair of jet engines mounted on said aircraft part in angularly displaced positions for discharging jet streams in two angularity spaced directions, each engine being disposed in a plane inclined to said longitudinal axis; and at least one pair of deflecting nozzle

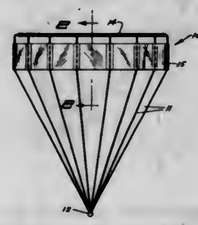
means each associated with one of said pair of jet engines and movable between a lifting position substantially vertically downwardly deflecting the jet streams and a propelling position substantially horizontally rearwardly deflecting said streams, so that the substantially horizontally rearwardly deflected jet streams provide the sole means of propulsion in horizontal direction.

3,284,031
AIRPLANE LANDING GEAR WITH ENDLESS TRACK
Franklin C. Albright, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Sept. 30, 1964, Ser. No. 400,409
5 Claims. (Cl. 244—100)



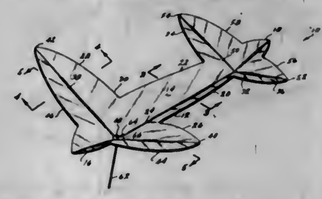
5. An endless track type gear for an aircraft supported by a shock strut, said landing gear comprising:
- a fluid filled tubular track means;
- a front and rear bearing roller means revolvably connected by a first bell crank to said shock strut and adapted to have said elastic tubular track stretch thereover;
- a shock absorbing mechanism normally biased to depend from said shock strut means and operatively arranged to telescope within said shock strut means;
- a second bell crank means operatively connecting said front and rear bearing roller means to said shock absorbing means;
- a plurality of load roller means having one roller pivotally and revolvably arranged between said front and rear bearing rollers and connected to said shock strut with the remaining load rollers operatively connected to said shock absorbing means so as to stretch said endless elastic tubular track means into a circular profile until the weight of said aircraft has telescoped the shock absorbing means within said shock strut to elongate said elastic tubular track means.

3,284,032
SHAPED PARACHUTE WITH STABLE FLIGHT CHARACTERISTICS
Clinton V. Eckstrom, Faribault, Minn., assignor to G. T. Schjeldahl Company, Northfield, Minn., a corporation of Minnesota
Filed May 19, 1964, Ser. No. 368,646
8 Claims. (Cl. 244—145)



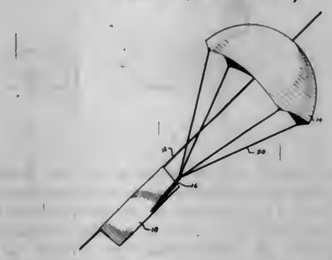
1. A parachute including a canopy with a plurality of elongated supporting cords secured thereto and extending therefrom, said canopy comprising a central disc having a certain predetermined diameter and being disposed along a certain plane, and a generally circular cylindrical band having a central axis which is substantially normal to said certain plane disposed in spaced relationship to said disc, having a diameter substantially equal to said predetermined diameter and defining a gap area therebetween, said generally cylindrical band having an axial length which is between about 15 percent and 18 percent of said disc diameter, the gap between the edge of said disc and the edge of said cylindrical band being between about 4 percent and 9 percent of said disc diameter.

3,284,033
AIRPLANE KITE APPARATUS
Joseph L. Ventre, 601 E. Fairview Blvd., Inglewood, Calif.
Filed Apr. 19, 1965, Ser. No. 448,933
8 Claims. (Cl. 244—154)



1. Kite apparatus comprising:
- a body member formed in a monolithic lightweight substantially rigid sheet configuration and having a fuselage portion with nose and tail portions, an elevator-stabilizer with tip and leading and trailing portions and a wing with tip and leading and trailing portions, said body member being formed to define a longitudinal dihedral, keel-like fold line extending from said nose portion to said tail portion and along which said elevator-stabilizer, fuselage, and wing portions are, in symmetrically dihedral fashion, folded upwardly,
- said body member being formed also to define a wing fold line along the length of said wing and extending between its said tip portions and along which its said leading portions along with said nose portion are folded dihedrally upwardly with respect to its said trailing portions,
- said body member being formed also to define a tail fold line along the length of said elevator-stabilizer and extending between its said tip portions and along which its said trailing portions are folded dihedrally upwardly with respect to its said leading portions.

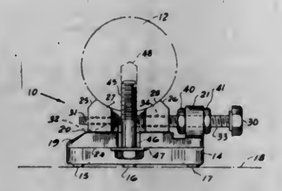
3,284,034
KITE SKY DIVER KIT
Rudolph McDougal, 1014 Campeau St., South Bend, Ind.
Filed Sept. 10, 1964, Ser. No. 395,373
5 Claims. (Cl. 244—155)



5. A sky diver kit for use with a kite and kite string, comprising an open top elongated cabin, hook means for slidably holding said kite string in a top covering relation

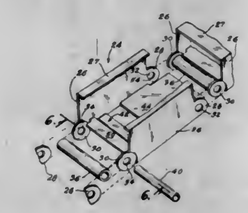
with said cabin, a yoke connected to said cabin, and a parachute connected to said yoke.

3,284,035
MOUNTING FOR ROUND MACHINE WAYS
John B. Thomson, 1029 Plandome Road, Manhasset, N.Y.
Filed Aug. 6, 1964, Ser. No. 387,943
14 Claims. (Cl. 248—23)



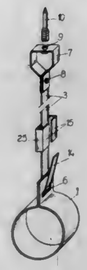
1. A mounting unit for supporting and aligning a round machine way in a desired position, comprising: a base, means mounted on the base for supporting said way, vertical adjustment means for adjusting the vertical position of said way, and horizontal adjustment means for independently adjusting the horizontal or lateral position of said way, said vertical and horizontal adjustment means each affecting only one of the positions of the way.

3,284,036
CARRIER LINK CHAIN ASSEMBLY FOR HOSES
Harold K. Nansel, Waverly, Nebr., assignor to National Crane Corporation, Waverly, Nebr., a corporation of Nebraska
Filed May 6, 1965, Ser. No. 453,690
6 Claims. (Cl. 248—49)



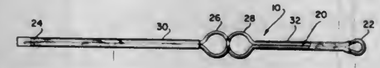
1. In a carrier chain link assembly for hoses or the like, comprising,
- a plurality of link members, each of said link members having a pair of side walls, an element interconnecting said pair of side walls at each end of said link, said side walls having portions with aligned openings at each end adjacent their lower edges, pin means pivotally received in the aligned openings of adjacent link members, and said element at one end of said link extending in a plane adjacent the top of said pin means and the element at the other end extending under the adjacent pin means, and said link elements each facing in the same direction and adapted to pivot to positions along an arc, said element at said other end of each link engaging the said element at said one end of the adjacent link upon said link elements being pivoted to said arcuate position thereby limiting the pivoting movement of adjacent link elements relative to each other.

3,284,037
PIPE SUSPENSION MEANS
Franz Müller and Helmut Müller, both of Konigsteiner Strasse 132, Frankfurt-Unterliederbach, Germany
Filed Nov. 12, 1965, Ser. No. 507,285
Claims priority, application Germany, Nov. 18, 1964, M 63,164
6 Claims. (Cl. 248—62)



1. An infinitely variable adjustment pipe suspension comprising, in combination:
- (a) a flexible suspension band,
- (b) means on said band adjacent one end thereof, for fastening the band to an overlying support,
- (c) a clip band adapted to be placed around a pipe, said clip band being in the form of a loop and having end flanges which may be drawn together to cause the clip band to embrace the pipe, at least one of said end flanges having a slot, said flanges being registrable with each other above said pipe,
- (d) said clip band being separate from the suspension band and the clip band flanges having outer bearing surfaces at least one of which is above said slot,
- (e) said suspension band passing through said slot and being bent back through a flat angle to engage an outer bearing surface,
- (f) a clamp ring extending around holding portions of the suspension band which adjoin said bend thereof,
- (g) said clamp ring around said slot of the flange and around the bend of the suspension band,
- (h) the bottom edge of the clamp ring being engageable with the loop of said clip band,
- (i) said clamp ring clamping a holding portion of the suspension band against said bearing surface located above said slot.

3,284,038
CABLE CLAMP
John J. Udry, Woodland Hills, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed May 19, 1965, Ser. No. 457,051
4 Claims. (Cl. 248—74)



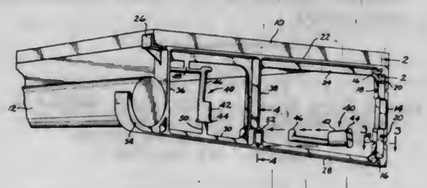
1. A fastener for supporting an elongated object and being attached to a supporting structure comprising:
- a length of continuous wire folded upon itself over its entire length forming a loop at one end and having a free end on the other end, and
- means for insulating the wire encompassing and conforming to the folded wire substantially over the wire's entire length tending to prevent the wire from moving from its folded condition.

3,284,039
MOVE ABOUT FLOWER POT
Reuben H. Brunner, Rte. 1, Alexandria, Ohio
Filed Aug. 9, 1965, Ser. No. 478,098
3 Claims. (Cl. 248—153)



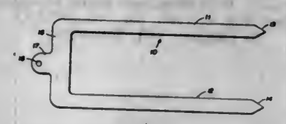
1. A flower pot holder comprising an elongated support rod, means on the lower end of said rod for penetrating into the ground surface, and a basket structure mounted on said rod, said basket including upwardly converging rods, adjacent converging rods having a joining ring at the upper end thereof removably supported from the upper end of said support rod thus enabling removal of said basket, said means on the lower end of the support rod including a generally triangular plate to penetrate the ground and to prevent rotation of the support rod, said basket including an upper wire ring, a lower wire ring spaced vertically below the upper ring, a plurality of concentric wire rings spaced progressively radially inwardly from said lower ring with the inner-most ring being in the form of a washer slidable on said support rod, and a plurality of radial rods interconnecting said concentric rods, the outer ends of said radial rods being upturned and interconnecting the lower and upper rods.

3,284,040
SHELF AND POLE BRACKET
John D. Marontate, 2132 Pacific Ave., Tacoma, Wash.
Filed Apr. 12, 1965, Ser. No. 447,392
7 Claims. (Cl. 248—235)



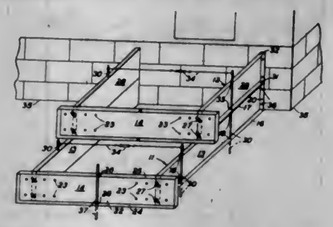
1. A shelf and pole bracket comprising
(a) an upright base,
(b) a shelf support arm extending horizontally from and supported by the base,
(c) a brace arm extending horizontally from and supported by the base a spaced distance vertically from the shelf support arm,
(d) the brace arm being formed at its outer end with an integral pole socket,
(e) at least one strut interconnecting the shelf support and brace arms and
(f) securing means for securing the base to a structural support.

3,284,041
HOLDING DEVICE
Owen G. Tjaden, 607 Hillcrest Drive, Monticello, Iowa
Filed June 14, 1965, Ser. No. 463,491
1 Claim. (Cl. 248—311)



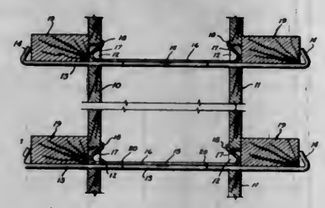
A carton holder comprising a body portion of a single flat sheet material of H-shape with pointed arms and an apertured extension adapted to be attached to the headliner of a vehicle and formed with a carton receiving portion which extends from the main body portion and upon which a carton may be placed in the longitudinal position, said carton receiving portion having a pair of arms which extend outwardly and are spaced apart a distance such that they tightly fit into the carton to hold it firmly and such arms being of a length to extend substantially the entire length of the carton and the main body portion being connectible to the vehicle adjacent the headliner so that the arms and carton are firmly held in position against the headliner.

3,284,042
FORM FOR CONCRETE STAIR
Fred A. Ingalise, Omaha, Nebr., assignor of one-half to Samuel A. Rizzuto, Omaha, Nebr.
Filed June 1, 1964, Ser. No. 371,278
4 Claims. (Cl. 249—14)



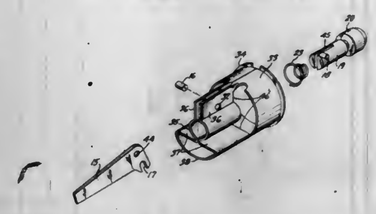
4. A sectional form into which concrete is adapted to be poured to produce a stair unit, said sectional form comprising:
(A) A pair of superimposed frames, each of said frames comprising a plurality of elongate substantially rectangular trays, each tray having a planar generally-rectangular base and a plurality of flanged integral side walls, the side walls being turned outwardly of the form, each of said elongate trays being supported in an upright position by one of the longer flanged side walls thereof, one of said trays being a leg member detachably connected to a second tray back member of the frame,
(a) the two parallel elongate flanged side walls of the leg member being multi-perforate in vertical alignment along the length of the elongate flanged side walls, one elongate dimension of the leg member planar base being slightly truncated,
(b) a bracket pivotably connected to the leg member by means of a pivot pin, said pivotably connected bracket comprising a multi-perforate rectangular portion integrally and perpendicularly connected to a wedge portion, said pivot pin passing through the leg member planar base near its full length elongate dimension and through the tapered end of the wedge portion, the wedge portion being provided with at least one perforation positioned remotely of the tapered end thereof, and a removable fastener passing through a said remotely positioned wedge perforation and through the leg member planar base near the truncate elongate dimension thereof,
(c) the two parallel elongate flanged side walls of the detachably connected back member being centrally perforate in vertical alignment along the length of the elongate flanged side walls, said back member rectangular base being provided with sets of perforations, each set being in registry with perforations of the multi-perforate rectangular portion of the leg member pivotably connected bracket,
the leg of the upper frame overyling the frame of the frame therebeneath, the upper frame leg being shorter than the lower leg therebeneath so as to dispose the back members of the superimposed frames in offset relationship so that said offset backs provide stair risers for the form, while the two overlying legs provide upright sides for the form, and
(B) Detachable bolt connections between the back member of each frame and the pivotably connected bracket of the adjacent leg members.

3,284,043
CONCRETE FORM TIES
Joseph Campo, Colorado Springs, Colo., assignor to Campo Construction Co., Colorado Springs, Colo., a partnership
Filed June 3, 1964, Ser. No. 372,338
4 Claims. (Cl. 249—41)



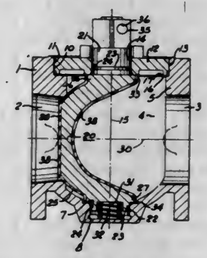
1. A concrete form comprising:
(a) two form panels spaced apart in parallel relation to receive the concrete between their inner faces;
(b) horizontally aligned and horizontally spaced tie holes formed in said panels, the holes in each panel being in registering alignment with the holes in the other panel;
(c) tie rods extending through registering holes in both of said panels and extending outwardly beyond the outer faces of both of said panels;
(d) upturned terminal hooks formed on both extremities of each of said tie rods in outwardly spaced relation to the outer faces of said panels;
(e) backing studs positioned between said terminal hooks and the outer faces of said panels and so as to prevent separation of said panels;
(f) means on each of said tie rods contacting the inner faces of said panels and acting to prevent said panels from approaching each other;
(g) a form clamping member medially attached to and in alignment with each of said tie rods; and
(h) upturned form clamps on the extremities of each of said form clamping members in alignment with the inner faces of said panels.

3,284,044
VALVE DISC GUIDE FOR LEVER-OPERATED SOLENOID VALVES
Michael J. Zaleske, Union, and Alfred J. Kryspin, East Hanover, N.J., assignors to Automatic Switch Co., Florham Park, N.J., a corporation of New York
Filed Apr. 3, 1964, Ser. No. 357,247
5 Claims. (Cl. 251—138)



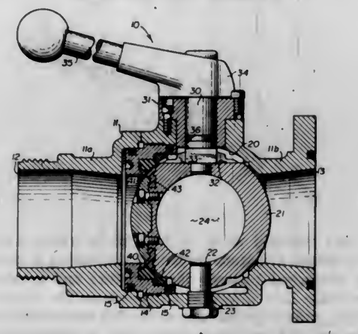
1. In a solenoid valve of the type in which a reciprocable solenoid armature controls an actuating lever operatively interposed between the armature and a valve disc reciprocable in a direction crosswise to the direction of armature reciprocation, the valve disc comprising an operative part carried by a valve stem a valve disc guide carrying said valve disc, said disc guide comprising a deformed initially flat metallic element, the deformation defining a front-end cylindrical region of larger diameter and a rear-end concentric cylindrical region of smaller diameter, the larger region being adapted to fit concentrically within the conduit through which fluid flow is to be controlled, and the smaller region serving as a support for slidably accommodating said valve stem.

3,284,045
PLUG VALVE
Robert P. Kulisek, Aliquippa, Pa.
(% Homestead Valve Mfg. Co., Coraopolis, Pa.)
Filed Apr. 13, 1965, Ser. No. 449,928
2 Claims. (Cl. 251—315)



1. A plug valve assembly including a valve body with a chamber having an inlet and an outlet port and a flat transverse wall surface across one end and a circular unfinished valve seat recessed therein and connecting said valve chamber with one of said ports, a spherical plug sector covered with an elastomer and having a valve seating spherical zone surface the polar axis of which is aligned with the axis of said one port which axis is offset relative to the rotary axis of said spherical plug sector, a cap closing said spherical plug sector in said valve chamber, an operating stem on said spherical plug sector having one end journaled in the bottom of said valve chamber and the other end journaled in said cap, characterized in that said circular unfinished valve seat has within its axial limits a convex cross section longitudinally of the axis of said seat to receive said spherical valve zone seating surface in seating engagement.

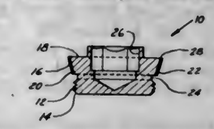
3,284,046
ROTARY VALVES
George G. Allenbaugh, Jr., Rittman, Ohio, assignor to Akron Brass Company
Continuation of application Ser. No. 291,329, June 28, 1963. This application July 1, 1965, Ser. No. 470,337
2 Claims. (Cl. 251—315)



1. A ball valve comprising in combination:
(a) structure including first and second detachable sections forming a valve body housing;
(b) said valve body housing having walls defining a fluid chamber;
(c) said chamber having an inlet port and an outlet port spaced from said inlet port;
(d) a first, continuous, annular seal element circumscribing one of said ports and forming a valve seat;
(e) said structure including an annular member carried by the first section to form a continuation of said one port, said valve seat being carried by the annular member so that said seat can be replaced by disconnecting the sections and the annular member;
(f) a rotatably mounted valve ball assembly;
(g) said assembly including a ball having a through passage and being rotatable in said fluid chamber between a first position in which said passage establishes fluid communication between said inlet and outlet ports and a second position in which the ends of said passage are spaced from said ports;
(h) said assembly including a ring of polytetrafluoroethylene defining a second continuous seal;
(i) said ball including a detachable portion normally holding said ring in position so that the ring can be replaced without completely removing the ball from the chamber;
(j) said second seal being located to mate with said valve seat at an annular sealing interface circumscribing said one port when said ball is in said second position to prevent fluid flow between said ports;
(k) said portion defining said second seal and all other surfaces of said ball being spaced from the walls of said fluid chamber in all positions of said ball; and,
(l) said first seal being formed of rubber.

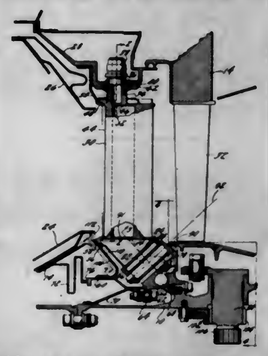
3,284,047
STATIC SEAL
Frank Herta, Royal Oak, Mich., assignor to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed May 7, 1964, Ser. No. 365,755
5 Claims. (Cl. 251—363)

1. A static seal element comprising a body having external threads formed near one end thereof, a frustro-conical portion formed near the other end thereof, said frustro-conical portion having an axial length less than its smaller diameter and an included angle of substantially 15°, a Teflon coating having a thickness bonded to said tapered portion, an annular groove formed around the



periphery of said body intermediate said external threads and said tapered portion, and means formed on said other end for turning said body.

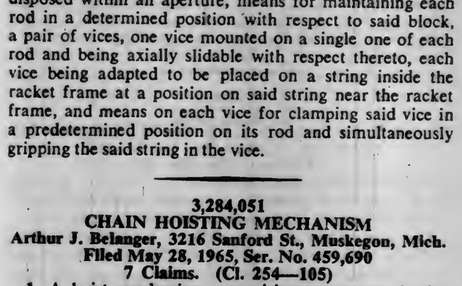
3,284,048
VARIABLE AREA TURBINE NOZZLE
Julius W. Tumavicus, Indian Town, Old Saybrook, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Apr. 28, 1964, Ser. No. 363,685
15 Claims. (Cl. 253—78)



1. A variable area nozzle ring including, inner and outer support rings, vanes extending between said rings and supported thereby, each of said vanes at one end being hinged individually on the adjacent support ring for movement about an axis making an acute angle with the ring axis, the angles for all of the vanes being substantially equal and means for moving one of said support rings relative to the other to produce movement of said vanes about the hinge axis.

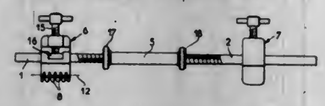
3,284,049
FEED WHEEL DRIVE MECHANISM FOR STRAPPING TOOLS
William J. Haraden, Libertyville, Ill., assignor to Signode Corporation, a corporation of Delaware
Filed Mar. 31, 1965, Ser. No. 444,294
4 Claims. (Cl. 254—51)

1. In a package strapping tool for tensioning a loop of strapping about an article, said loop having overlapping free end and feed end portions, a frame adapted to rest upon the article and having an anvil surface adapted to underlie said overlapping end portions, a rotatable strap-tensioning feed wheel mounted on said frame for swinging movement about a first horizontal axis bodily toward and away from the anvil surface into and out of strap-engaging position, said feed wheel being provided with a series of peripheral teeth thereon engageable with the feed end portion of the strapping for strap tensioning purposes when the feed wheel is rotated in a tensioning direction, a strap tensioning lever pivoted to said main frame for oscillatory rocking movement about a second horizontal axis displaced from said first horizontal axis, a driving pawl pivotally mounted on said lever and having a series of teeth thereon directly engageable with teeth on the feed wheel for applying driving torque to the feed wheel when the tensioning lever is rocked in a tensioning direction, spring means normally urging the pawl into cooperating engagement with the feed wheel the combined effective length of the driving pawl and effective diameter of the feed wheel being slightly greater than the distance between the axis of rotation of the feed wheel and the pivotal axis of the pawl



whereby in any position of the feed wheel a self-energizing binding action of the teeth on the pawl against the teeth on the feed wheel with consequent relative sliding tooth engagement will take place when the lever is rocked in a tensioning direction, and a holding pawl pivotally mounted on the main frame and also having teeth thereon directly engageable with the teeth on the feed wheel for assimilating countertorque when the tensioning lever is rocked in a reverse direction.

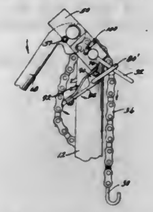
3,284,050
CLAMPING TENSIONED STRINGS FOR THE STRINGING OR RESTRINGING OF RACKETS
Alfons De Meyer, Ostend, Belgium
(U.M.H.K.-S.E.M.-Kolwezi, Republic of Congo)
Filed Feb. 17, 1965, Ser. No. 433,429
Claims priority, application Belgium, Aug. 14, 1964, 1,850, Patent 651,864
7 Claims. (Cl. 254—67)



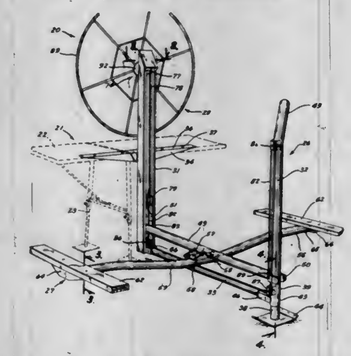
1. In a system for clamping tensioned strings within a racket frame when stringing or restringing rackets, a variable-length rigid support member comprising a block having apertures therein and further comprising a pair of rods at opposite ends of said block, each rod being disposed within an aperture, means for maintaining each rod in a determined position with respect to said block, a pair of vices, one vice mounted on a single one of each rod and being axially slidable with respect thereto, each vice being adapted to be placed on a string inside the racket frame at a position on said string near the racket frame, and means on each vice for clamping said vice in a predetermined position on its rod and simultaneously gripping the said string in the vice.

3,284,051
CHAIN HOISTING MECHANISM
Arthur J. Belanger, 3216 Sanford St., Muskegon, Mich.
Filed May 28, 1965, Ser. No. 459,690
7 Claims. (Cl. 254—105)

1. A hoist mechanism comprising: a support having rotatable means thereon; a hoisting roller chain over said rotatable means; oscillating chain shifting means engageable with said roller chain and movable to advance said chain and to arrest the rate of its reverse movement; chain catch means on said support engageable between its rollers to hold said chain in a particular position; chain releaser means shiftably mounted on said support adjacent said catch means and adapted to temporarily release a section of roller chain from said catch means, and including releaser actuation control means shiftable between a first active position causing repeat actuation of said releaser means with oscillation of said chain shifting means, and another inactive position preventing such actuation.



3,284,052
BOAT LIFT APPARATUS
Byron L. Godbersen, Ida Grove, Iowa
Filed July 15, 1964, Ser. No. 382,888
2 Claims. (Cl. 254—148)

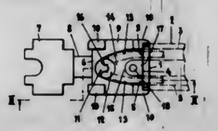


1. A boat lift apparatus comprising in combination:
frame means including a pair of interconnected, transversely spaced, upright posts, one of said posts engageable with a ground surface, said frame means including a flange member secured to the other post and extended laterally therefrom, said flange adapted for engagement to the platform of a conventional boat dock;
lift means including a longitudinally extended bar, a pair of transversely extended support means secured at opposite ends of said bar, and a cross bar secured to said longitudinal bar, the cross bar having opposite ends guidably engaged with said posts; and
hoist means for raising and lowering said lift means, said hoist means including a clutch unit mounted on one post, a first pulley unit also mounted on said one post and operable by said clutch unit, a cable one end of which is connected to said first pulley unit, a second pulley unit mounted at the lower end of said one post, a third pulley unit mounted at the lower end of said other post, and a fourth pulley unit mounted at the upper end of said other post, said cable threaded beneath said second and third pulley units and over said fourth pulley unit, said cable secured to said lift means.

3,284,053
END MEMBER FOR GUIDING THE CORD IN CURTAIN-DRAWING GEAR

Alexander Weber, Zollikofen, near Bern, Switzerland, assignor to Hans Beer, Bern, and Emma Weber-Horisberger, trading as AWEPA, Zollikofen, near Bern, Switzerland

Filed Apr. 15, 1964, Ser. No. 360,018
Claims priority, application Switzerland, Apr. 18, 1963, 4,858/63
7 Claims. (Cl. 254—190)

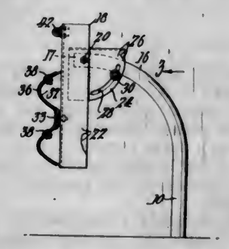


1. In a cord guiding arrangement for curtain cord drawings means having two cord guiding channels, in combination, an end member having an end face adapted to be located adjacent a surface of support to which said end member is to be connected, said end member being formed with a cavity having an open end at said end face and extending from said end face into said member and being extended at one side of said cavity into a pair of spaced openings respectively adapted to be aligned with said two cord guiding channels, and a single outlet opening extending from said cavity through a wall portion of said end member opposite said end face thereof; a cover and a flexible connecting member connected at opposite ends thereof to said end member and said cover, respectively, so that the latter is movable between a closed position extending over said cavity and an open position providing access to the interior of the cavity, said flexible connecting member, said cover and said end member forming an integral unit.

3,284,054
GUARD RAIL FENCE

Henry St. Pierre, 50 Frank St., Worcester, Mass.

Filed Apr. 15, 1964, Ser. No. 359,848
1 Claim. (Cl. 256—13.1)

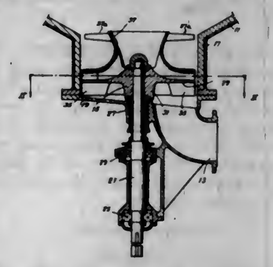


A guard rail construction comprising a series of posts, each post including a member comprising an upright portion having its lower end disposed in the ground and an upper end portion projecting laterally from the upright portion, a generally channel-shaped strut for each post pivotally secured adajacent an end thereof to the free end of the laterally extending portion of each post and depending therefrom in general parallelism with the upright portion of each post and being swingable with respect thereto, means for resisting said swinging action, said means comprising a pair of plates secured to the strut at opposite sides of each post, each plate having an arcuate slot, frictional connecting means extending through the slots at a point below the laterally extending portion of each post in substantial contact therewith, a short horizontally extending plate secured to each strut, an elongated plate secured at its ends in overlapping sliding engagement with the two adjacent ends of the pair of short plates on adjacent posts, and frictional means connecting the elongated plates to the short plates, said frictional means resisting sliding motion of the elongated plates relative to the short plates, whereby the guard rail is extensible under impact and said channel members are swingable inwardly toward said posts under impact.

3,284,055
MIXING APPARATUS, PARTICULARLY FOR MIXING OF BLEACHING AGENTS INTO CELLULOSIC PULP

Rolf Jomar Johansen, Karlstad, Sweden, assignor to Aktiebolaget Kamyr, Karlstad, Sweden, a Swedish company

Filed July 2, 1964, Ser. No. 379,910
Claims priority, application Sweden, July 5, 1963, 7,467/63
5 Claims. (Cl. 259—7)



1. Mixing apparatus comprising a casing having a generally cylindrical shell and means defining a casing end wall, said end wall extending generally obliquely to the longitudinal axis of said shell; a rotatable agitator enclosed in said casing near said end wall and extending longitudinally therein, the agitator including at least one disk-like portion and means defining projections on said disk-like portion extending from one face thereof toward said oblique end wall a substantial portion of the distance between said disk-like portion and said oblique end wall, said disk-like portion having the periphery thereof generally adjacent said cylindrical shell and said disk-like portion including means defining at least one aperture communicating between the faces of said disk-like portion, inlet means for supplying material to be mixed to said casing eccentrically thereof between said oblique end wall and said disk-like portion; whereby material to be mixed, supplied through said inlet, is engaged by said projections and rotated by said agitator, said material being pulsated back and forth through said aperture by the interaction of said agitator and said oblique end wall.

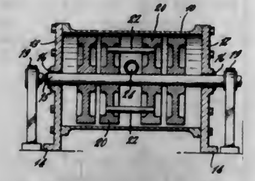
3,284,056
EMULSIFIER

Kenneth E. McConnaughay, P.O. Box 871, Lafayette, Ind.

Filed Feb. 14, 1964, Ser. No. 344,862
7 Claims. (Cl. 259—10)

1. An emulsifier comprising
(a) a housing having a cylindrical inner wall,
(b) a rotatable shaft coaxial with said housing,
(c) a plurality of axially spaced rotors mounted on said shaft for rotation therewith with their outer faces disposed adjacent the inner wall of said housing,
(d) at least one rod extending axially between a plurality of said rotors for rotation therewith,

(e) an inlet opening in said housing in alignment with the space between the most centrally located pair of rotors, and

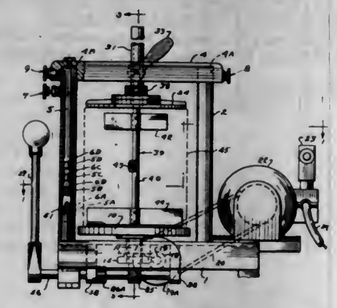


(f) a pair of outlet openings in said housing between the outermost rotors and the ends of said housing in direct communication with the space between said outermost rotors and said ends of the housing.

3,284,057
COMBINATION PAINT MIXING AND CAN CLOSING DEVICES

Robert J. Duquette, 128½ Clinton Ave., Waterville, Maine

Filed July 7, 1965, Ser. No. 470,298
15 Claims. (Cl. 259—88)



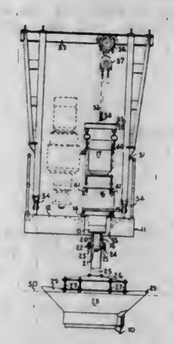
1. In a paint mixer for mixing paint in a can after the cover thereof has been removed, a base, a can-supporting turntable rotatably mounted on said base, means to rotate said turntable, a support on said base, a disc dimensioned to close the can seated on said turntable and rotatably carried by said support above and coaxial with said turntable, a stirring element detachably connected to said support and depending axially relative to said disc for entry into a cam seated on said turntable, said disc and said element being movable relative to said base from a fixed position in which said can is closed upwardly at least into a position in which said element may be removed from the can, and means operable to effect relative vertical movement between said turntable and said disc, one towards the other, whereby, after stirring and after the disc and element have been lifted from the can and the element detached, the can cover set in place on its can, and the disc reseated thereon, said relative movement may be effected to reseat the cover.

3,284,058
SURFACE AERATION OF LIQUIDS

James F. Bolton, Heywood, England, assignor to Ames Crosta Mills, & Company Limited, a corporation of Great Britain, Northern Ireland and Isle of Man

Filed Feb. 8, 1965, Ser. No. 430,943
Claims priority, application Great Britain, Feb. 7, 1964, 5,213/64
4 Claims. (Cl. 259—102)

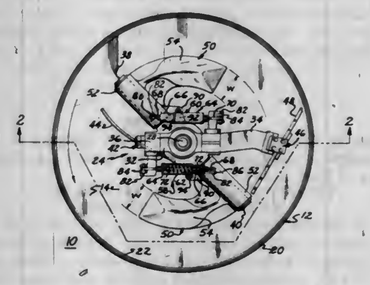
1. Apparatus for the surface aeration of liquids, comprising a tank for containing the liquid under treatment; a submerged uptake tube mounted vertically in said tank, a platform above said tank and having a circular opening therein directly above said uptake tube; an annular baseplate mounted on said platform around said opening and adjustable with reference to said uptake tube; a drive unit supported on said baseplate; a dependant spigot on said drive unit located on said baseplate; a vertical output shaft extruding from said drive unit and through said opening in concentricity with said spigot; a hollow extension detachably coupled to said shaft at a position normally beneath said platform; a circular plate fixed at its centre to said extension; a rotary aerator suspended from said plate in coaxial relation with said shaft and partially submerged in the liquid under treatment.



3,284,059
MULLING SHOE MIXER

Elbert C. Troy, Highland Park, Ill., assignor, by mesne assignments, to National Engineering Company, Chicago, Ill., a corporation of Delaware

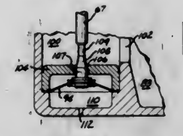
Filed Mar. 18, 1965, Ser. No. 440,901
10 Claims. (Cl. 259—107)



1. Apparatus for conditioning material comprising a mixing chamber having a bottom wall for supporting a mass of said material, a mixing head assembly mounted in said chamber for rotation in one direction about a central axis, said head assembly including a pressure shoe for forcing said material against said bottom wall, means mounting said shoe for pivotal movement about a pivot axis extending outwardly of said central axis, said shoe including a body portion extending to trail said pivot axis in a direction opposite said direction of rotation, said body

portion including an enlarged pressure surface facing said bottom wall and sloping upwardly toward said pivot axis.

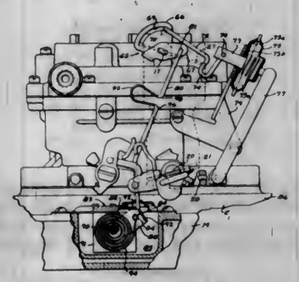
3,284,060
CARBURETOR
Ralph E. Kalert, Jr., Granite City, Ill., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Aug. 16, 1965, Ser. No. 479,803
3 Claims. (Cl. 261—23)



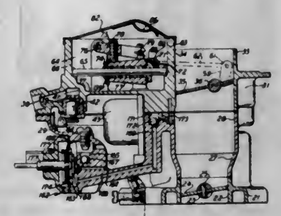
1. A multistage carburetor comprising:
a body structure having a primary mixture conduit and a secondary mixture conduit for the flow of an air and fuel mixture therethrough,
means including a primary nozzle for providing fuel flow into the said primary conduit.
a secondary nozzle for providing fuel flow into the said secondary conduit,
manually operable means including a primary throttle and a secondary throttle movably mounted respectively within said primary and secondary conduits and downstream respectively of said primary and secondary fuel nozzles,
an air valve within said secondary conduit upstream of said secondary fuel nozzle,
means eccentrically mounting said air valve for movement from a position closing said secondary conduit toward an open position for air flow through said secondary conduit,
biasing means operatively connected to said air valve normally biasing said air valve against said air flow toward said closed position, and
dashpot means operatively connected to said air valve for retarding the movement of said air valve from a first position to a second position the said dashpot also having means for modulating the action of said dashpot whereby greater resistance to movement is provided only at initial opening and final closing of the said air valve.

3,284,061
CARBURETOR
Dwight M. Gordon, Farmington, Mich., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Mar. 2, 1964, Ser. No. 348,497
5 Claims. (Cl. 261—39)

1. A carburetor comprising a body having an air and fuel mixture conduit therethrough, a throttle valve movably mounted within said mixture conduit, a choke valve mounted for movement within said mixture conduit from an open to a closed position, means responsive to engine operation to move said choke valve to an open position, a temperature responsive spring to resist opening movement of said choke valve below a predetermined range of engine temperatures with a force inversely proportional to engine temperature, means exposing said temperature responsive spring to engine temperature, an elongated connection joining said temperature responsive spring to said choke valve, said connection including a partially rigid member, and a spring like yieldable link integral therewith, said link exhibiting a greater resistance to yield above zero degrees Fahrenheit than at temperatures below zero degrees Fahrenheit, whereby said link will yield at temperatures below zero degrees Fahrenheit and not transmit force exerted by said spring to said choke, but at temperatures above zero degrees Fahrenheit, said link will not yield and thereby transmit the force exerted by said spring to said choke.

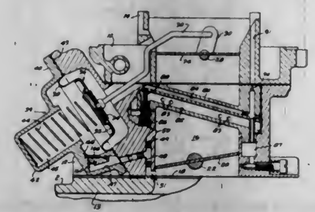


3,284,062
FUEL METERING CONTROL FOR A CONSTANT METERING FORCE CARBURETOR
Ernest J. Obermeyer, Jr., Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed May 13, 1964, Ser. No. 367,098
7 Claims. (Cl. 261—39)



1. A carburetor for an internal combustion engine comprising an induction passage, a throttle valve for controlling the flow of combustible mixture through said induction passage, air valve means in said induction passage anterior to said throttle valve, said air valve means being movable in response to pressure variations in said induction passage for maintaining a substantially constant pressure between said air valve and said throttle valve, a fuel source, a fuel discharge circuit for discharging fuel from said fuel source into the portion of said induction passage between said air valve and said throttle valve, a fuel metering valve for controlling a rate of fuel flow through said fuel discharge circuit, a metering cone supporting shaft fixed relative to said carburetor, a metering cone supported by said metering cone supporting shaft for axial and rotary movement relative to said shaft, follower means in engagement with said metering cone for movement upon axial and rotary movement of said metering cone upon said metering cone supporting shaft, means interconnecting said follower means with said fuel metering valve for operating said metering valve upon movement of said metering cone, means operatively connecting said air valve and said metering cone for simultaneous movement of said metering cone in one of said directions upon movement of said air valve, and means responsive to an engine operating condition for moving said metering cone in the other of said directions in response to changes in said condition.

3,284,063
CARBURETOR
James T. Bickhaus, Granite City, Ill., Dwight M. Gordon, Farmington, Mich., and Forrest W. Cook, Webster Groves, Mo., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed July 29, 1963, Ser. No. 298,263
5 Claims. (Cl. 261—50)



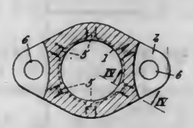
1. A carburetor comprising a body structure having an air and fuel mixture conduit therethrough, a throttle valve mounted across said mixture conduit for movement from an open position to a position closing said mixture conduit, means for operating said throttle valve, an air valve mounted within said mixture conduit anteriorly of said throttle valve for movement from an open to a position closing said mixture conduit, means for supplying fuel to said mixture conduit, a servo motor means connected to said air valve to move said air valve between said open and closed positions thereof, means forming an air passage from said mixture conduit to said servo motor to move said air valve in response to air pressure downstream of said air valve, and valve means in said air passage for restricting the flow of air from said servo motor to said mixture conduit, said valve means being constructed to permit relatively free flow from said mixture conduit to said servo motor, said valve means comprising a valve member and a seat having at least one opening therethrough operative to pass air when said valve member is seated.

3,284,064
APPARATUS FOR RECOVERY OF HEAT AND CHEMICALS
Ernest L. Kolm, Alliance, and William J. Darmstadt, Akron, Ohio, assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 28, 1963, Ser. No. 268,666
2 Claims. (Cl. 261—62)



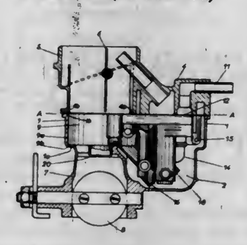
1. In liquid-gas apparatus, the combination comprising walls defining a gas passage having a throat portion between co-axially arranged converging inlet and diverging outlet portions, means for passing a hot dust-laden gas into the inlet portion of said passage and through said gas passage, means for introducing a liquid in a finely divided condition into the converging portion of said passage, and flow restrictive means positioned in the throat portion of said passage for adjustably changing the cross-sectional flow area thereof including a pivoted damper symmetrically arranged about a pivot axis extending transversely across said throat portion equidistant the opposite walls of said throat portion, said damper having a cross-sectional shape so that in its maximum flow restrictive position it occupies only a minor part of the cross-section of said throat portion, said damper being located downstream in a gas flow sense of said liquid introducing means.

3,284,065
CARBURETOR MOUNTING MEANS
André Louis Mennesson, Neuilly-sur-Seine, France, assignor to Societe Industrielle de Brevets et d'Etudes S.I.B.E., Neuilly-sur-Seine, France, a society of France
Continuation of application Ser. No. 84,689, Jan. 24, 1961. This application Jan. 4, 1965, Ser. No. 425,676
Claims priority, application France, Dec. 29, 1960, 848,260
7 Claims. (Cl. 261—65)



1. In combination with an internal combustion engine having an intake pipe, said intake pipe being provided with a connection flange of elongated outline, said intake pipe being, in service, heated to a high temperature, a carburetion apparatus comprising a conduit to be connected with said pipe, said conduit carrying on the inside thereof at a point adjacent said pipe a throttle member, a flange plate made of a metal having a coefficient of thermal expansion lower than that of the metal of said conduit, said flange plate having an outline similar to that of said pipe flange, said flange plate being provided with a hole in register with the bore of said conduit, anchoring means integral with said plate for uniting it with the mass of said conduit, said anchoring means being located close to the inner wall of said conduit, and fixation means for securing said flange plate to said pipe flange at two points diametrically opposed with respect to said hole and located near the respective ends of said flange plate and said pipe flange, said fixation means being the only means for securing said carburetion apparatus to said intake pipe.

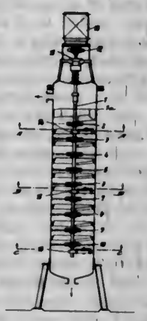
3,284,066
CARBURETORS
Jean Biver, Paris, France, assignor to Societe du Carburateur Zenith, Lyon, France, a company of France
Filed May 10, 1963, Ser. No. 279,443
Claims priority, application France, May 17, 1962, 897,902
2 Claims. (Cl. 261—70)



1. A carburetor having an induction passage comprising a main body, a constant level fuel chamber and a first section of said induction passage in said main body, a horizontal rim at the upper end of said main body above the fuel level in said fuel chamber, a horizontal bearing surface provided in said main body below the fuel level

and surrounding the upper end of said first induction passage section, a carburetion block in said main body separate therefrom and providing a second section of said induction passage coextensive with said first section, fuel passages in said block for connecting said fuel chamber with said second induction passage section, a horizontal annular surface provided in said block around the lower end of said second induction passage section, an insulating gasket interposed between said bearing surface of the main body and said annular surface of said block, said block having a horizontal top surface situated in the same plane as said rim, a cover providing a third section of said induction passage coextensive with said first and second sections and forming an air intake to said carburetor said cover having a lower horizontal surface contacting both said rim of said body and said top surface of said block.

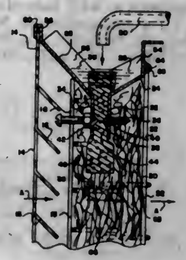
3,284,067
LIQUID DISTRIBUTION APPARATUS
Konrad Mattern, Bad Homburg vor der Hohe, Germany, assignor to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany
Filed Oct. 5, 1964, Ser. No. 401,492
Claims priority, application Germany, Oct. 8, 1963, M 58,459
4 Claims. (Cl. 261—84)



1. An apparatus for distributing a liquid in a gas or vapor comprising in combination a rotatable shaft having liquid distributor means attached thereto, a casing surrounding the shaft and distributor means, a bearing shaft suspension means whereby the shaft is rotatably mounted on said bearing which permits the shaft to both rotate and swing like a pendulum, shaft centering means comprising bearings which are yieldingly connected to the casing and shaft through shock absorbing means.

3,284,068
FLOW ADJUSTABLE WATER TROUGH MEANS FOR EVAPORATIVE COOLER PADS
Adam D. Goettl, Phoenix, Ariz., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Feb. 26, 1964, Ser. No. 347,415
3 Claims. (Cl. 261—97)

1. In a flow adjustable water distributor means for evaporative cooler pads the combination of: conduit means for delivering water to an area above an evaporative cooler pad; a compressible hygroscopic distributor element disposed to receive water from said conduit means; and opposed clamp means engaging opposite sides of said compressible distributor element and disposed to contain water therebetween in said distributor element and disposed to hold an area of said distributor element in compression to control flow and distribution of water therethrough; a portion of said distributor element above said opposed clamp means being in relatively uncompressed condition; a portion of said distributor element, below said clamp means, being relatively uncompressed



and adapted to uniformly deliver water to an evaporative cooler pad element therebelow; and an evaporative cooler pad below said relatively uncompressed portion.

ERRATUM

For Class 261—151 see:
Patent No. 3,284,435

3,284,069
BURNERS USED IN OPEN HEARTH FURNACES
Jean M. Levaux, Jemeppe sur Meuse, Belgium, assignor to Societe Anonyme Cockerill-Ougree
Filed Mar. 6, 1964, Ser. No. 349,821
Claims priority, application Austria, Mar. 11, 1963, 1,907/63
8 Claims. (Cl. 263—15)

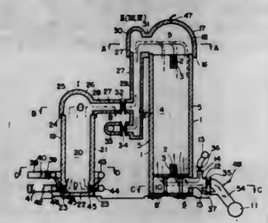


1. In a furnace, a burner comprising two tubes placed one inside the other so as to define an inner duct surrounded by and discrete from an outer annular duct, a flat plate which is oblique in relation to the tubes and is fixed to the tubes in such a manner that each of the ducts communicates separately with at least one hole in the plate, the axes of these holes being approximately perpendicular to the plate, the burner passing through an aperture in the wall of the furnace, the axes of the holes in the plate extending into the furnace.

3,284,070
HOT BLAST STOVE HAVING ONE COMMON COMBUSTION CHAMBER
Saichi Nishida, Takayuki Imaida, and Haruki Uchiyama, all of Kitakyushu, Japan, assignors to Yawata Iron & Steel Co., Ltd., Tokyo, Japan, a corporation of Japan
Filed Jan. 28, 1964, Ser. No. 340,644
Claims priority, application Japan, Feb. 1, 1963, 38/5,076
1 Claim. (Cl. 263—19)

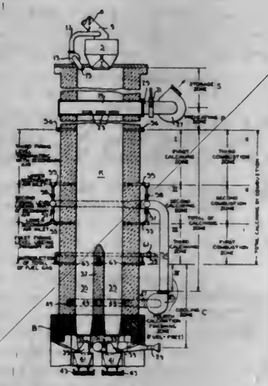
A hot blast stove for supplying hot blast to a blast furnace, comprising a plurality of more than two regenerators, the inside of each of said regenerators being filled with checker-work, and one common combustion

chamber, a connecting pipe between each of said regenerators and said combustion chamber, a water cooled combustion gas valve in each connecting pipe, a fuel preheater and a combustion air preheater connected to the intake end of said combustion chamber, a gas fuel supply pipe connected to the fuel preheater, a gas flow regulating valve and a gas shutoff valve in said gas fuel supply pipe for regulating fuel coming through the fuel supply



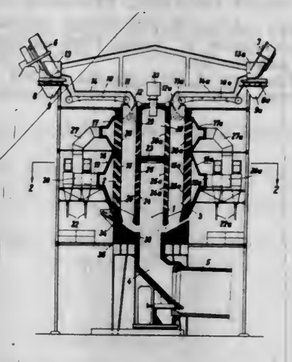
pipe, a combustion air supply pipe connected to said combustion air preheater, an air flow regulating valve and air shutoff valve in said air supply pipe for regulating air flowing in said air supply pipe, and a fan at the upstream end of said air supply pipe, by means of which valves said fuel and air for combustion of normal temperature and normal pressure are regulated before entering said preheaters.

3,284,071
CALCINING METHOD AND APPARATUS
Victor Julius Azbe, Clayton, Mo., assignor to Azbe Corporation, Clayton, Mo., a corporation of Missouri
Filed Nov. 18, 1964, Ser. No. 412,080
5 Claims. (Cl. 263—29)



1. A lime kiln comprising a substantially vertical shaft having an upper stone inlet, exhaust means in the upper portion of the shaft below said stone inlet for withdrawing substantially all spent gases from the upper portion of the kiln and determining the lower end of a storage zone and the upper end of a preheating zone, said shaft having a lower lime outlet with fuel-free air inlet means connected therewith and determining the lower end of a lime cooling zone, fuel injection means connected with the shaft at a level above said air inlet means and determining the lower end of a first combustion zone, a plurality of air injection means at spaced levels above said fuel injection means, said spaced air injection means determining a second combustion zone between their levels and the bottom of a third combustion zone above them, means for abstracting some air from the shaft at a level between said air inlet means and fuel injection means and for delivering the abstracted air to said plurality of air injection means for use as secondary combustion air for the fuel, the remaining unabstracted air being drawn upwardly through the shaft by said exhaust means to function as primary air for combustion of the fuel, whereby a fuel-free calcination finishing zone is established in the cooling zone below said fuel injection means, and whereby first, second and third calcining zones subject to air-fuel combustion are established in descending order below said preheating zone.

3,284,072
PREHEATERS FOR REVOLVING TUBULAR KILNS
Walter Kramer, Frankfurt am Main, Germany, assignor to Fellner & Ziegler G.m.b.H., Frankfurt am Main, Germany
Filed Feb. 13, 1964, Ser. No. 344,701
Claims priority, application Germany, Feb. 16, 1963, F 39,035
5 Claims. (Cl. 263—32)

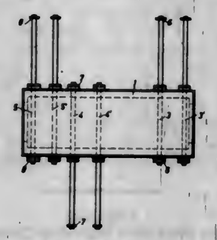


1. Method of treating material such as cement, magnesite, lime and the like prior to burning in a revolving furnace or kiln in a shaft preheater having adjacent generally vertical gas and material shafts, said method comprising the steps of drawing the exhaust gases upwardly into the lower portion of the exhaust gas shaft of the preheater, then directing said gases transversely through the material in the lower portion of a material shaft in the preheater, cleaning the exhaust gases upon passing through the material in a dust separator, and then forcing the gases by ventilator means upwardly and then transversely through the material layer in the upper portion of the material shaft of the preheater and into the upper portion of the exhaust gas shaft.

3,284,073
PULL-THROUGH FURNACE FOR THE CONTINUOUS STRESS-RELIEF ANNEALING OF ROLLED PRODUCTS IN STRIP FORM
Erwin Engelhardt, Gelsenkirchen-Buer, Germany, assignor to Mannesmann Aktiengesellschaft, Dusseldorf, Germany
Filed Dec. 28, 1964, Ser. No. 421,401
Claims priority, application Germany, Dec. 30, 1963, M 59,419
9 Claims. (Cl. 266—3)

1. In a pull-through furnace for the purpose of continuous stress-relief annealing of rolled products in strip form the combination of: a straightening roller between two strip supporting rollers, the said roller being transversely disposed in the said furnace relative to the path

of the strip, the said straightening roller engaging the top side of the strip and each said roller being adjustable in the transverse direction, wherein each said roller has

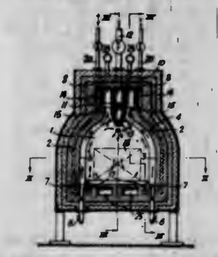


a length greater than twice the width of the said furnace, the said rollers being axially displaceable along their length at least for a distance equal to the width of the furnace.

3,284,074
HEAT TREATING FURNACE

Josef Kotátko and Josef Šmálek, Prague, Czechoslovakia, assignors to Zavody V.I. Lenina Plzen, narodni podnik, Plzen, Czechoslovakia

Filed July 31, 1961, Ser. No. 128,101
Claims priority, application Czechoslovakia, Aug. 1, 1960, 4,835/60
7 Claims. (Cl. 266—5)



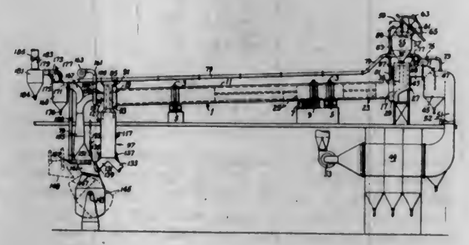
1. A heat treating furnace comprising, in combination:
(a) floor means;
(b) wall means extending upward from said floor means, said floor means and said wall means jointly defining a working space therebetween, said wall means being formed with
  (1) a plurality of vertically elongated grooves laterally open toward said working space, and with
  (2) outlet port means directly communicating with a portion of each of said grooves remote from said floor means in an upward direction; and
(c) burner means for producing a combustion gas, said burner means including a plurality of conduits communicating with portions of respective grooves adjacent said floor means, each conduit having an orifice in the respective groove facing in the direction of elongation of said groove toward said outlet port means.

3,284,075
LIME PRODUCTION

Victor J. Azbe, Clayton, Mo., assignor to Azbe Corporation, Clayton, Mo., a corporation of Missouri

Filed Mar. 18, 1963, Ser. No. 265,781
31 Claims. (Cl. 266—13)

1. Lime-producing apparatus comprising a counterflow type of sloping rotatable drum assembly having an opening at each end, means for delivering stone into the drum at its upper end and for receiving spent gas therefrom, a receiver at the lower end of the drum for receiving stone from the drum and having a firing port for delivering gas thereto, a connection with said firing port for supplying air to the drum with combustible waste-heat gas of varying temperatures from a source of the same, a terminal calciner located below and connected with said receiver, said terminal calciner having an upper fuel- and air-fired terminal calcining section adapted to receive incompletely calcined stone with lime from the lower end of the drum, firing means in said upper section for further calcination, spent gases from the firing means pass-

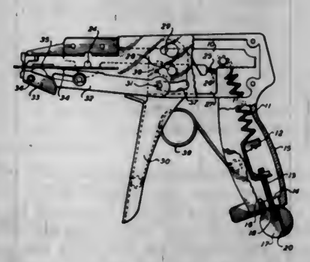


ing to the drum, said terminal calciner also having a lower heat-soaking section for substantial completion of calcination, a storage section below said heat-soaking section, and means for rotating the drum assembly at comparatively high and low speeds according to comparatively high or low temperatures and volumes of said waste-heat gas but in either event at a speed to forestall any substantially complete calcination of stone to lime in the drum, the heat mass of the drum and of uncalcined stone therein being of an amount to absorb heat from the gas under high-speed high-temperature operation and to release heat under low-speed temperature operation.

3,284,076
ADJUSTABLE TENSIONING MEANS FOR TOOLS

Howard B. Gibson, Glen Ridge, N.J., assignor to The Thomas & Betts Co., Elizabeth, N.J., a corporation of New Jersey

Filed July 20, 1964, Ser. No. 383,802
5 Claims. (Cl. 267—1)

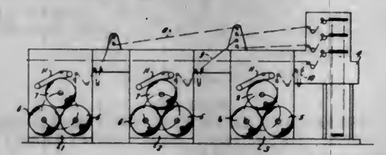


1. In a tool having a casing and a first member on which tension is to be exerted, a tension member engaging said first member, said casing having a slot, means passing through the casing slot and engaging said tension member, roller means eccentrically connected to said means passing through said slot and adapted to rotatably engage said casing whereby, on rotation of said roller means in engagement with the casing, the means passing through the slot will be moved and the degree of tension of the tension means may be varied.

3,284,077
PRODUCTION OF BOOKS AND THE LIKE

Walter E. S. Matuschke, Kaiser-Wilhelm-Strasse 6, Hamburg, Germany

Continuation of application Ser. No. 309,101, Sept. 16, 1963. This application Jan. 13, 1966, Ser. No. 528,689
10 Claims. (Cl. 270—5)



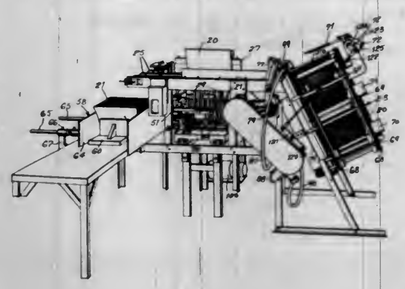
1. The method of continuously producing bound multileaved printed products such as books and the like, which comprises
continually operating at least one rotary web printing apparatus on successive runs of continuous web material to repetitively print on said web material indicia for respective leaves of said printed products, continually winding the printed material of each of said runs as it is printed into at least one roll thereof separate from the rolls of the printed materials of the other runs, and changing the indicia printed on said successive runs in accordance with a predetermined sequence so that, at the conclusion of each said sequence, there is formed at least one set of said rolls of web material bearing different repetitive indicia corresponding to all of said leaves of said printed products;
when at least one of said sets has been formed, unwinding continuously and simultaneously the different printed webs of all of the rolls of one of said sets and, as they are unwound, continuously forming them lengthwise into a multiplicity of ribbons having indicia thereon corresponding to all of said leaves of the printed products and continuously moving said ribbons lengthwise at a combined rate approximating the rate of production of the runs of web material by said printing apparatus, and, during the continuous lengthwise movement of said ribbons, successively assembling said ribbons together with their respective indicia in register, binding the assembled continuous ribbons and severing the bound assembly into a succession of said printed products;
and when the webs of the set of rolls being unwound are about to expire splicing them respectively to the correspondingly printed webs of another of said sets of rolls and continuing the unwinding, ribbon forming, assembling, binding and severing operations on the webs of said other set;
whereby said printed products are produced concurrently with and at substantially the rate of the production of the printed web materials.

3,284,078
COMBINATION FOLDING AND PUNCHING MACHINE

Arthur F. Brook, 140 S. Hamilton St., Poughkeepsie, N.Y.

Filed Aug. 31, 1964, Ser. No. 393,174
10 Claims. (Cl. 270—82)

1. A sheet folding and punching machine comprising in combination,
a punch for perforating the folded edges of folded sheets,
a folder for folding and delivering the folded edges of said folded sheets to said punch,
an elevator adjacent said folder for raising a stack of the sheets to be folded and punched,

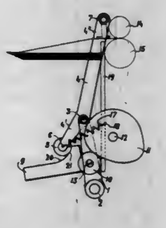


sheet feeding means for delivering sheets from the top of the stack on said elevator to said folder, and
common drive means for synchronizing and operating said parts combined as aforesaid.

3,284,079
DEVICE FOR FEEDING PAPER SHEETS IN PRINTING MACHINES

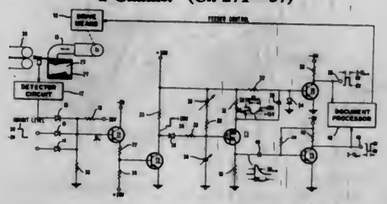
Josef Jurný, Sebranice u Kunstatu, and Karel Štěpánek, Drnovice u Boskovice, Czechoslovakia, assignors to Adamovske strojirny, narodni podnik, Adamov, Czechoslovakia

Filed Nov. 4, 1964, Ser. No. 408,863
4 Claims. (Cl. 271—27)



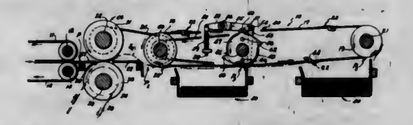
1. A sheet feeding mechanism comprising, in combination:
(a) a support;
(b) a first cam member fixedly mounted on said support;
(c) a second cam member mounted on said support for rotation about an axis;
(d) an arm member having an end portion pivotally mounted on said support;
(e) a lever member having two arms and a fulcrum portion intermediate said arms said fulcrum portion being pivotally mounted on said arm member;
(f) first cam follower means on one arm of said lever member;
(g) second cam follower means on said arm member;
(h) yieldably resilient means holding said first cam follower means in engagement with said first cam member and holding said second cam follower means in engagement with said second cam member;
(i) suction means on the other arm of said lever member for holding a sheet to be fed; and
(j) drive means for rotating said second cam member about said axis.

3,284,080
DOCUMENT FEEDER WITH DELAYED PULSE GENERATOR CONTROL
Robert A. Jones, Euless, Tex., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed July 9, 1964, Ser. No. 381,398
2 Claims. (Cl. 271—57)



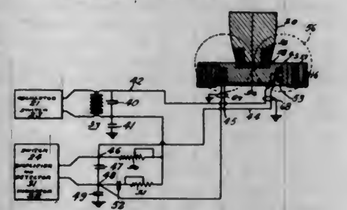
1. Means for controlling the advancement of documents comprising a document feeder, drive means responsive to signals for cyclically operating said feeder, document advancing means juxtaposed said feeder for receiving documents from said feeder, a pulse generator for generating pulses indicative of the absence of documents at said document feeder for controlling said drive means, said pulse generator comprising a first transistor amplifying stage adapted to receive input signals, a second transistor coupled to said first transistor in an emitter-follower relationship, a unijunction transistor having an emitter, a first base and a second base, unidirectional conducting means coupled between said second transistor and said emitter, capacitive means coupled to said emitter, a source of potential for charging said capacitive means, said unidirectional conducting means providing a discharge path for said capacitive means only when said second transistor is in a conduction state, means responsive to the passage of documents providing said input signals to turn on said second transistor, a pair of output signal means, one of said pair coupled to said first base and the other of said pair coupled to said second base, and document detector means adjacent said document feeder for generating input signals to said first transistor amplifying stage to control said drive means through said pulse generator.

3,284,081
SHEET CONVEYING APPARATUS
William F. Huck, 81 Greenway Terrace, Forest Hills, Long Island, N.Y.
Filed July 24, 1964, Ser. No. 384,827
22 Claims. (Cl. 271—64)



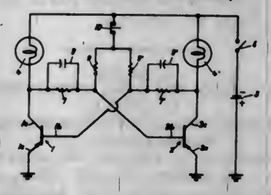
1. A sheet conveying apparatus comprising
an elongated flexible carrier moving continuously along a path which includes a portion of relatively small curvature followed, in the direction of movement of said carrier, by a portion of relatively large curvature;
a plurality of gripping elements secured to said carrier at locations spaced along the latter,
each gripping element having a closed position in which it grips a sheet to be conveyed and an open position in which its grip on the sheet is released,
each gripping element being normally in its closed position during movement along said small curvature portion and being in its open position during movement along said large curvature portion;
first sheet receiving means located adjacent and beneath said large curvature portion to receive the conveyed sheets which are released upon opening of the gripping elements at said large curvature portion;
additional sheet receiving means at least at one location adjacent and beneath said small curvature portion in advance of said first sheet receiving means; and
means operative to open selected ones of said gripping elements separated by others of said elements as said selected elements pass said location of the additional sheet receiving means, and to cause the sheet conveyed by each of said selected elements so opened to remain at said location and be deposited downwardly from said path into said additional sheet receiving means.

3,284,082
PIN DETECTION BRIDGE CIRCUIT WITH RESONATING DETECTION LEG AND REACTIVE DIAGONAL ELEMENTS
Sampson Isenberg, Albert E. Shaw, and Robert J. Moon, Chicago, Ill., assignors to Brunswick Corporation, a corporation of Delaware
Filed June 24, 1963, Ser. No. 289,864
5 Claims. (Cl. 273—52)



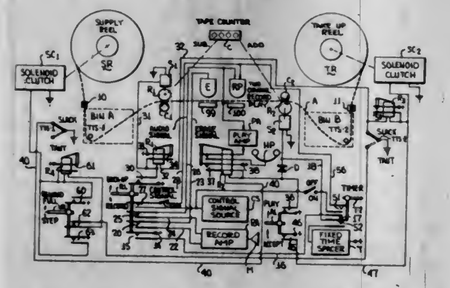
1. A pin detection system for use in conjunction with a bowling alley having a pin spot comprising: a reactive element located at said pin spot; a pin having a construction adapted to affect the reactive element when in position on said pin spot; an alternating current bridge circuit including said reactive element in one leg thereof and having balanced and unbalanced operating conditions; a detection system coupled across one diagonal of said bridge circuit; a source of alternating current signal coupled across the other diagonal of said bridge circuit; and a reactive device coupled across said detection system and resonating with said reactive element when said bridge circuit is in the unbalanced condition.

3,284,083
SWITCH ACTUATED MULTIVIBRATOR CHANCE DEVICE
Morton S. Levin, Woodcliff Lake, and James Q. Maloy, Clifton, N.J., assignors to Martin Schnur and Mel Appel, doing business as Schnur-Appel, Short Hills, N.J.
Filed Mar. 26, 1964, Ser. No. 354,911
6 Claims. (Cl. 273—138)



1. An entertainment device comprising a free running multivibrator including a pair of transistors, a source of electric current, the multivibrator normally oscillating under the effect of the electric current, a pair of indicating means each responsive to ON-OFF condition of one of the transistors, the multivibrator including biasing means, and interrogation switch means connected in the biasing means circuit and adapted to be actuated for the interruption thereof thereby converting the free running multivibrator to a bistable multivibrator, the indicating means showing one or the other of the transistors in the ON position at the moment of opening of the switch.

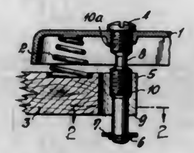
3,284,084
TAPE EDITING MACHINE
James N. Cooper, Hyattsville, Md., assignor of one-third to Hyman Hurvitz, Washington, D.C.
Filed Oct. 20, 1965, Ser. No. 498,582
15 Claims. (Cl. 274—11)



11. In a tape recorder system,
means for recording on a random length of magnetic tape at random position within a tape reel while transiently storing the recorded random length of tape, said random length of tape having a random start position and a random terminate position,
means for pulling back the recorded length of magnetic tape precisely to said start position,
means reading out only said length of magnetic tape while again transiently storing the recorded tape,
means automatically terminating operation of said means reading out when said tape attains said terminate position,
means selectively operative at will for thereafter permanently storing said length of magnetic tape as accepted material or again pulling back said recorded length of magnetic tape precisely to said start position for re-recording.

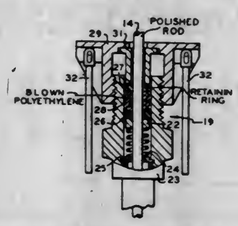
3,284,085
SAFETY TRANSPORT DEVICE FOR PHONOGRAPHS
Heinrich Zimmermann and Helmut Laufer, both of St. Georgen, Black Forest, Germany, assignors to Dual Gebruder Steidinger, a corporation of Germany
Filed Mar. 17, 1964, Ser. No. 352,518
Claims priority, application Germany, Mar. 21, 1963, St 20,425
4 Claims. (Cl. 274—39)

1. A phonograph comprising
a base plate,
a base board disposed below said base plate,
spring means disposed between said base plate and said base board and supporting resiliently said base plate on said base board,
said base plate having at least one portion carrying inner thread extending therethrough,
a screw member having a head portion and extending through said portion of said base plate carrying said inner thread,
said base board having a laterally open recess extending therethrough and receiving a portion of said screw member,
said screw member having a portion carrying outer thread and an enlargement disposed below said base board and being larger in one direction perpendicularly to the longitudinal axis of said screw member than the width of said laterally open recess of said base board, and



said screw member having a portion of smaller outer diameter between said head portion and said portion carrying outer thread such that said screw member can be tilted about its longitudinal axis, upon moving said portion of smaller outer diameter into said portion of said base plate carrying inner thread, so that said enlargement of said screw member can be tilted outwardly from said laterally open recess of said base plate.

3,284,086
STUFFING BOX PACKING
Tommie Haskell Primrose and William Earl Boen, Elmore, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 31, 1963, Ser. No. 320,272
3 Claims. (Cl. 277—1)

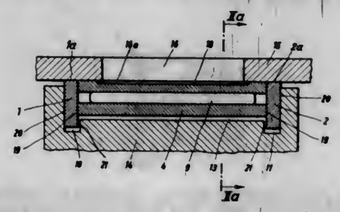


1. The method of packing a stuffing box through which a polished rod reciprocates which comprises placing a first resilient retaining ring in a first end of the stuffing box; compacting blown linear polyethylene fibers into the central portion of the stuffing box; placing a second resilient retaining ring in the second end of the packing box; tightening a stuffing box cover onto the stuffing box to compact the packing about the polished rod, and reciprocating the polished rod through the stuffing box.

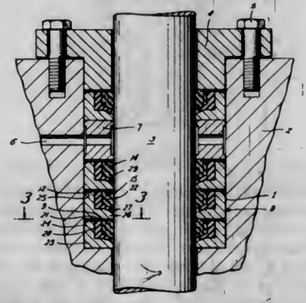
3,284,087
SEAL FOR SEALING AREAS OF DIFFERENT PRESSURES WITH REGARD TO EACH OTHER
Friedrich W. Lück, Berlin-Frohnau, Germany, assignor to Borsig Aktiengesellschaft, Berlin-Tegel, Germany, and Wankel G.m.b.H., Lindau (Bodensee), Germany
Filed Dec. 2, 1963, Ser. No. 327,407
Claims priority, application Germany, Dec. 6, 1962, B 69,894, B 73,478
10 Claims. (Cl. 277—58)

1. In combination with a first and second body movable relative to each other and respectively having a first and second surface confining with each other a gap with spaced areas of different pressure, said first surface being provided with first grooves extending in longitudinal direction of said gap and being spaced from each other in a

direction transverse to the longitudinal direction of said gap, said first surface also having therein a plurality of second grooves longitudinally extending in a direction transverse to the longitudinal direction of said first grooves and being spaced from each other in longitudinal direction of said first grooves, a sealing arrangement, which includes: at least one pair of first sealing strips respectively arranged in said first grooves for sealing engagement with said second surface, and a plurality of second sealing strips respectively arranged in said second grooves and interposed between said first strips, at least the end portions of said second strips consisting of slightly yieldable and deformable material and being adapted in condition of operation of said bodies sealingly to engage the respective adjacent portions of said first strips thereby in cooperation with the latter to seal said areas relative to each other when said bodies are in operation.

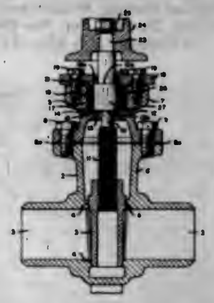


3,284,088
COMPOSITE NONADJUSTABLE SEAL ASSEMBLY
Aaron J. Pippert, Houston, Tex., assignor to Universal Packing & Gasket Company, Houston, Tex., a corporation of Texas
Filed July 24, 1963, Ser. No. 297,388
7 Claims. (Cl. 277—124)



1. A composite seal assembly comprising an annular base of hard material unyieldable under compression in an axial direction, a seal means including an annular flexible body carried by and extending axially from said base and having a part deflectable radially beyond said base in one radial direction, an annular axial spacer and support member separate from said base and seal means of material hard and unyieldable under compression having a part extending axially and engaging said base and providing a rigid support between one face of said base and a remote end of the assembly, said seal means being a moving seal means and said assembly including also a moving seal energizer with an annular body of elastomer in force transmitting relation to the deflectable part of said moving seal so that when distorted it will apply a resilient pressure to said part in a direction to deflect it radially beyond said base and said spacer and support member has a second part positioned to cooperate with said base and moving seal to partly confine the energizer and distort the same, said energizer being of insufficient volume to completely fill the space available to it between said base, said moving seal means and said spacer and support member when said spacer and support member is in engagement with said base.

3,284,089
SEAL FOR A VALVE OPERATOR
Edward N. Wrenshall, Ross Township, Allegheny County, Pa., assignor to Miller Printing Machinery Co., Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 6, 1963, Ser. No. 278,200
2 Claims. (Cl. 277—125)



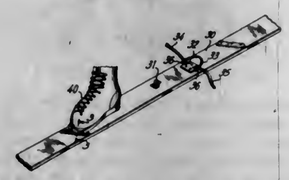
1. A seal for a valve operator comprising a casing, a stem rotatably mounted on and extending into the casing and packing about the stem sealing the stem to the casing, the packing comprising flexible packing and a rigid member with an internal O ring in sealing engagement with the stem and an external O ring in sealing engagement with the casing, the O rings effectively sealing the stem to the casing against low pressure leakage, the flexible packing being disposed inwardly of the O rings inhibiting high pressure leakage and protecting the O rings against deterioration by gas so hot that it would bake out the O rings without the interposition of the flexible packing.

3,284,090
ANIMATED HORSE ATTACHMENT FOR A TRICYCLE
Ruth G. Blair, 1256 N. Central Ave., Batesville, Ark.
Filed Sept. 10, 1964, Ser. No. 395,393
6 Claims. (Cl. 280—1.202)



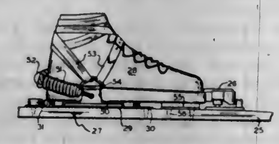
1. In combination with a tricycle having a frame, two parallel spaced apart wheels rotatably mounted on the rearward end of said frame, a seat portion centrally located on said frame, a substantially vertical fork wheel support pivotally mounted on the forward end of said frame, handle bar members operatively secured to said fork wheel support, a relatively larger wheel rotatably secured to the lower end of said fork wheel support, and pedal means secured to the center portion of said larger wheel, elongated support members secured to the fork wheel support above said pedals to provide clearance for the rotation of said pedals, a simulated animal supported on said support members forwardly of said larger wheel, said animal including a body portion, a head portion and rearward and forward leg portions at opposite sides of said body portion, and link means connecting said pedal means to the two rearward leg portions, one of said rearward leg portions being connected to said two forward leg portions so that movement of said pedal means will impart movement to said rearward leg portions and movement of said one rearward leg portion imparting movement to the two forward leg portions.

3,284,091
BOOT SCRAPER FOR APPLICATION TO A SKI
I. Martin Spier, 50 Park Ave., New York, N.Y.
Filed Nov. 20, 1964, Ser. No. 412,673
3 Claims. (Cl. 280—11.13)



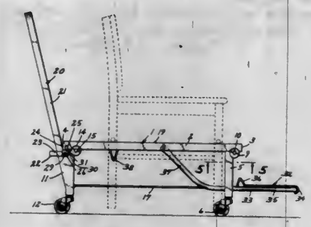
1. Boot scraper for application to a ski comprising a flat molded plastic bar having an axis and a bottom surface and a top surface and elongated in its axial direction, said bar being generally rigid except that it can be flexed about a line crosswise to its axis, said bar having means on its bottom surface for adherence thereof to the ski, and an upstanding flange on the upper surface of said bar unitarily molded therewith, said flange extending axially and generally axially coextensive with said bar, said flange having a plurality of axially spaced slots extending downwardly from its upper edge and extending a substantial proportion of its height, said flange being generally rigid to flexing about a line crosswise to said axis except that said flange below a slot is of sufficiently little height so as to be able to flex to accommodate the flexing of said bar, each said slot having sufficient axial dimension to accommodate movement of its walls towards each other by flexing of said bar and flange.

3,284,092
SAFETY SKI BINDING
Merwin B. Rumaner, 310 Albert Road, Syracuse, N.Y.
Filed Mar. 16, 1964, Ser. No. 351,908
7 Claims. (Cl. 280—11.35)



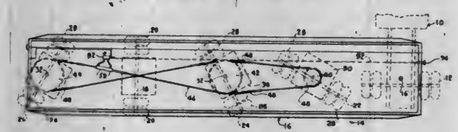
1. In a safety binding for releasably attaching a ski boot to a ski: a releasable boot heel retaining device comprising a substantially flat elongated plate adapted to be positioned on the ski beneath the heel of the boot; means on said plate for connecting it to the boot; a second and a third plate fixed to the ski adjacent the front and rear ends respectively of said elongated plate; coacting means on said second plate and said elongated plate to releasably connect the front end of the elongated plate to the ski; and coacting means on said third and said elongated plate to releasably connect the rear end of the elongated plate to the ski; said last-named means including corresponding upstanding means on said elongated and third plates, a pair of spring biased detents slidably mounted in the upstanding means of said third plate and engageable with the upstanding means of said elongated plate, and a single adjustable cam member operable to vary the spring pressure acting on the detents.

3,284,093
CHAIR LIFT
Albert N. Engelmeier, Rte. 2, Albany, Minn.
Filed Mar. 19, 1964, Ser. No. 353,062
3 Claims. (Cl. 280—43.13)



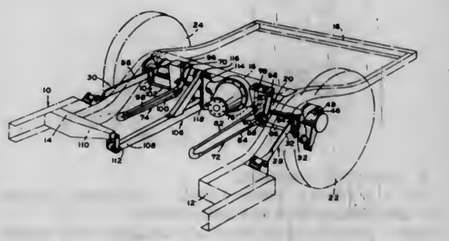
1. A chair lift comprising:
(a) a horizontal frame having a supporting surface and defining front and rear portions,
(b) a pair of spaced front legs equipped with wheels and disposed adjacent the front portion of said frame, at least one of said front legs having a support portion extending in a lateral direction,
(c) a pair of spaced rear legs equipped with wheels and disposed adjacent the rear portion of said frame,
(d) meaps mounting said front and rear legs to said frame for pivotal movements about spaced generally laterally and horizontally extending axes and between collapsed positions defining a lower position of said frame, to permit movement of the frame under a chair, and generally upright positions for elevating and supporting a chair,
(e) means connected said front legs to said rear legs for concerted movement thereof,
(f) a generally flat foot rest member positioned adjacent said front legs and projecting forwardly thereof, said foot rest member being pivotally mounted to said frame at a position rearwardly of said front legs and also engaging said support portion of said one of the front legs for sliding movement with respect to said front legs upon pivotal movement of the latter.

3,284,094
STEERABLE AXLE ARRANGEMENT FOR VEHICLE TRAILER
Karl Grace, 20451 Balfour Road, Harper Woods, Mich.
Filed Apr. 3, 1964, Ser. No. 357,146
9 Claims. (Cl. 280—81)



1. In a vehicle trailer the combination of a frame, an axle fixed on the frame against turning movement, a pair of axles spaced longitudinally of the trailer frame and each spaced from the fixed axle, wheels on the opposite ends of each of said axles, each axle in said pair being pivotally mounted on the trailer frame for turning movement about a vertical axis to provide two pair of steerable wheels, means comprising a mechanical linkage mechanism interconnecting said steering axles for turning movement in unison, said linkage mechanism including means for opposing the tendency for said axles to turn freely in response to lateral forces exerted on the wheels of the pivoted axles by reason of their traction with the road surface.

3,284,095
LINKAGE TYPE REAR SUSPENSION SYSTEM FOR A MOTOR VEHICLE
William D. Allison, Grosse Pointe Farms, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Continuation of application Ser. No. 419,483, Dec. 18, 1964. This application Apr. 1, 1966, Ser. No. 544,654
17 Claims. (Cl. 280—124)



1. A vehicle frame, a vehicle axle, suspension means interconnecting said axle and said frame, said suspension means comprise a pair of left and right suspension links each having one of their ends pivotally connected to said axle and the other of their ends pivotally connected to said frame, said suspension links being arranged in a forwardly and outwardly diverging relationship, said suspension links being formed of leaf spring material and having laterally resilient spring portions, a pair of left and right brackets secured to said frame adjacent to said links, a pair of left and right U-shaped torsion bars, each of said bars having one lever arm end secured to a bracket and another portion pivotally connected to the same bracket, said torsion bars each having a laterally extending lever arm portion connected to a suspension link, a ball and socket joint interconnecting the ends of said laterally extending lever arms and said suspension links, a torque arm interconnecting said axle and said frame, means connecting one end of said torque arm to said axle and constructed to permit lateral displacement of said axle relative to said frame while at the same time resisting rotation of said axle about its own axis, said means comprising a bracket secured to said axle and having vertically spaced apart resilient bushings, said one end of said torque arm being connected to said spaced apart bushings, means connecting the other end of said torque arm to said frame and constructed to permit said other end to be displaced longitudinally while resisting vertical displacement of said other end relative to said frame, said means comprising a shackle pivotally connected to said frame at one of its ends and pivotally connected to said torque arm at the other of its ends, said suspension means permitting said vehicle frame to move laterally with respect to said axle whereby one end of said axle is moved forwardly and the other end of said axle is moved rearwardly to provide an understeer effect.

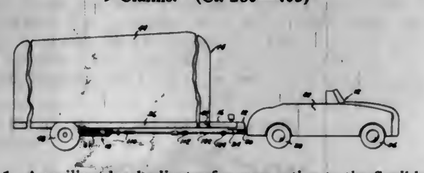
3,284,096
BICYCLE ACCESSORY
Douglas R. Hansen and Donald L. Cook, both of Santa Monica, Calif., assignors to Wham-O Mfg., Co., San Gabriel, Calif., a corporation of California
Filed May 20, 1966, Ser. No. 551,699
9 Claims. (Cl. 280—289)

1. An accessory for a bicycle, the bicycle having a frame, and front and rear wheels with axes of rotation, the accessory comprising:
steering means for changing a direction of motion of the bicycle;
attachment means adapted to be secured to the bicycle frame to extend rearwardly from the axis of rotation of the rear wheel; and
mounting means secured to the steering means and the attachment means for mounting the steering means to contact the ground rearwardly of a ground-contact point of the rear wheel when the front wheel is raised out of ground contact, and for mounting



the steering means to be itself pivotable about an axis which is inclined at a positive caster angle in the range of about 10 degrees to about 80 degrees when the steering means contacts the ground, whereby banking of the bicycle with the steering means in ground contact causes the steering means to turn in a direction away from a direction in which the bicycle is banked.

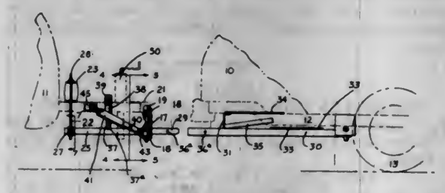
3,284,097
RESILIENT LOAD ADJUSTER FOR TRACTOR-TRAILER LOAD DISTRIBUTORS
Marshall D. Koontz, deceased, late of Detroit, Mich., by Dorothy G. Koontz, administratrix, 15326 Petoskey Ave., Detroit, Mich.
Filed Sept. 11, 1964, Ser. No. 395,961
9 Claims. (Cl. 280—405)



1. A resilient load adjuster for connection to the flexible load-transmitting members of a tractor-trailer vehicle load distributor, said load adjuster comprising
a frame having means thereon for attachment thereof to the vehicle,
a main screwshaft rotatably mounted in said frame,
means for rotating said main screwshaft,
and a movable leaf spring structure having an intermediate threaded portion movably mounted on said frame for displacement relatively thereto and threadedly engaging said main screwshaft for travel therealong in response to rotation thereof,
said leaf spring structure having resilient opposite outer end portions extending outward in opposite directions from said intermediate threaded portion with outer ends disposed remote from said threaded portion and containing means for the connection thereto of the flexible load-transmitting members of the vehicle load distributor.

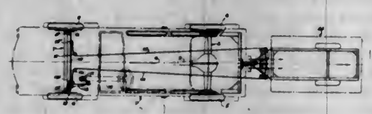
3,284,098
LOAD-TRANSFERRING AND OSCILLATION DAMPING TRAILER HITCH
Emmett J. Worley, 1320 W. Lincoln St., Mount Prospect, Ill.
Filed Sept. 15, 1964, Ser. No. 396,488
9 Claims. (Cl. 280—406)

1. A hitch assembly for establishing a flexible connection between the forwardly projecting tongue of a trailer and a towing vehicle for movement of said trailer and said vehicle in unison in varying degrees of unalignment including right and left turns over uneven terrain, said assembly including a hanger member pivotally suspended from the forward end of said trailer tongue, a torsion bar, means for pivotally connecting one end of said torsion bar to said hanger member in downward coaxial alignment with the axis on which said hanger member has horizontal pivotal movement relative to said trailer tongue and means supporting said torsion bar at its other end in rearwardly spaced relation to said hanger member and in downwardly spaced vertical alignment with the center line of said trailer tongue, and means for controlling rolling or pivoting action of said hanger



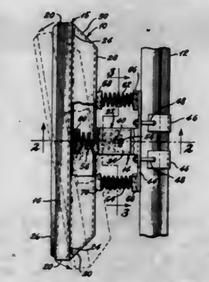
member relative to said trailer tongue including a pair of hydraulic fluid containing cylinders, each of said cylinders containing a piston having a piston rod extending from one end thereof, and fluid flow restricting means for impeding movement of said piston rod out of its associated cylinder to a greater extent than into said cylinder, connecting means between said cylinders and said trailer tongue and said hanger member through which the axes of said cylinders occupy positions in uniformly rearwardly diverging relation to a vertical plane containing the center line of said trailer tongue and in rearwardly and upwardly inclined relation to the connection between said cylinders and said hanger member, and means operatively connecting said hanger member and said towing vehicle.

3,284,099
BACK-UP CONTROL FOR TRAILER
Raymond H. Himes, 15 Merrimac St., Buffalo, N.Y.
Filed May 29, 1964, Ser. No. 371,198
8 Claims. (Cl. 280—446)



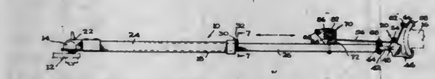
1. In combination, a motor vehicle, a second vehicle, means at the rear of said motor vehicle pivotally connecting said second vehicle thereto, and means for controlling direction of motion of the second vehicle when backing it, the last mentioned means comprising a member attached to the second vehicle and extending transversely thereof and arms pivotally connected at their forward ends to the rear of the motor vehicle adjacent the pivotal connection between the two vehicles and normally trailing from the first vehicle and connected to said member for movement laterally outwardly on said member from said trailing position so as to impose a force upon the second vehicle, preventing gross deviation of movement thereof from the desired direction of movement thereof, and means for selectively moving said arms as aforesaid.

3,284,100
BUFFER DEVICE FOR PUSHER VEHICLES
Lewis M. Goff, 3250 NW. 36th St., Miami, Fla.
Filed Mar. 1, 1965, Ser. No. 435,886
6 Claims. (Cl. 280—481)



1. A buffer device for pusher vehicles comprising: a buffer plate; a mounting plate adapted to be secured rigidly to the front end of a pusher vehicle; a clevis connection between said buffer plate and said mounting plate, said clevis connection including overlapping members projecting rearwardly from said buffer plate and forwardly from said mounting plate respectively, each of said members having vertically aligned apertures formed therein, the apertures in at least one of said members being longitudinally extending slots, and pin means in said apertures extending through said members; and compression spring means acting between said plates to retain said plates in a normally parallel position.

3,284,101
TELESCOPING BUMPER-CLAMPING TOW BAR FOR VEHICLES
Eston Arnold, Buffalo, S.C., assignor of forty percent to Milton C. Carr, Union, S.C.
Filed Dec. 9, 1964, Ser. No. 417,160
12 Claims. (Cl. 280—482)

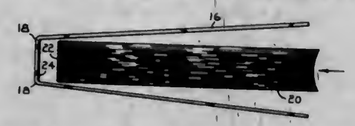


6. A tow bar assembly comprising a tow pole formed of elongated telescoping sections, locking means to lock said telescoping sections in an adjusted position, said tow pole having bumper clamp means at one end and bumper connection means at the other end, said bumper clamp means including a lower clamp member pivoted to said tow pole, an upper clamp member and tensioning means, said tensioning means comprising a cable attached to one end of said upper clamp member, said cable extending through said lower clamp member and being attached at its other end to adjustable means on said tow pole to control the effective length of said tensioning means, whereby movement of said adjustable means urge the bumper clamping means to tightly grip said bumper.

3,284,102
BOOKBINDING
Joseph Sack, Johannesburg, Republic of South Africa, assignor to Print & Plastics (Proprietary) Limited, Johannesburg, Republic of South Africa
Filed Nov. 13, 1964, Ser. No. 410,948
Claims priority, application Republic of South Africa, Nov. 21, 1963, 63/5,296
2 Claims. (Cl. 281—21)

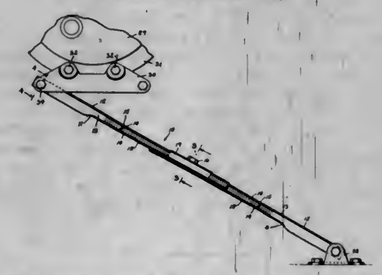
1. A process of bookbinding which consists in applying to at least a portion of one face of a flexible plastic sheet a

strongly adherent layer of discrete fibrous material homogeneously mixed with glue, bending the sheet to trough shape with said layer covering the bottom of the trough,



applying a layer of adhesive to the spine of a book, and applying the glued spine to the layer of discrete fibrous material.

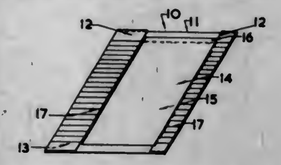
3,284,103
TORQUE ARM
Clayton H. W. Polzin, Milwaukee, and Alfred G. Bade, Brookfield, Wis., assignors to The Falk Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Mar. 19, 1965, Ser. No. 441,128
1 Claim. (Cl. 287—58)



In an adjustable torque arm for connection between a shaft mounted speed reducer and a fixed anchorage, the combination comprising: a pair of identical elongated arm members each having a longitudinal crest and a pair of spaced longitudinal sides extending from said crest, the sides of each arm member being parallel adjacent one end of said arm member to form a mounting end and being provided with aligned openings for pivotal attachment to one of said speed reducer and fixed anchorage, the sides of each arm member diverging outwardly adjacent the other end of said arm member and along a substantial length of said arm member, said diverging sides being provided with longitudinally undulating lateral surfaces defined by series of alternating transverse ridges and valleys of substantial depth, said crests having longitudinally spaced openings, and said arm members being nestled one within the other to have lateral surfaces of said diverging sides in contact and with said mounting ends extending in opposite directions; an outer clamp member disposed to bear against said diverging sides of the outermost one of said nestled arm members; a headed bolt extending through said outer clamp member and said openings in said crests; and inner clamp and nut means threadedly received on said bolt and bearing against said diverging sides of the innermost one of said arm members.

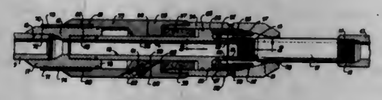
3,284,104
UNIFIED RECORDING BOARD AND RECORD FOR COLLATED COPYMAKING OF NOTE-TAKING IN BOOKS
Alexander Stein, 8455 Granville St., Vancouver, British Columbia, Canada
Filed Sept. 16, 1963, Ser. No. 309,164
1 Claim. (Cl. 282—29)

A unified recording board and record for collated copymaking of notetaking adapted to have inscribed thereon carbon copies of entries made in a book or on a sheet of loose-leaf paper, comprising: a sheet of flexible material having a sheet of carbonpaper attached thereto covering one side thereof but leaving uncovered marginal side areas, said flexible sheet being folded longitudinally in said marginal areas to form guide portions adapted to slidingly



engage the edge of a page of said book or engaging said opposite edges of said sheet of loose-leaf paper, the upper surfaces of said guide portions on the same side of the sheet as the carbonpaper being ruled with corresponding lines.

3,284,105
REMOTELY CONTROLLED CONNECTIONS
Kurt Leutwyler, Whittier, Calif., assignor to Baker Oil Tools, Inc., Los Angeles, Calif., a corporation of California
Filed Aug. 12, 1963, Ser. No. 301,379
9 Claims. (Cl. 285—3)

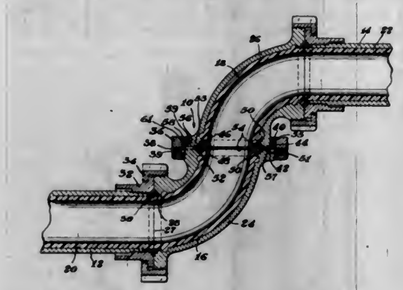


1. In connecting apparatus: a tubular body; circumferentially spaced coupling segments carried by said body and having an internal threaded portion; toothed leaf springs carried by said body and disposed between said segments; a tubular member having an external threaded portion adapted to be placed within said internal threaded portion and said toothed leaf springs and in endwise adjacency to said body, said toothed leaf springs engaging said threaded portion on said tubular member to thereby locate said external threaded portion on said tubular member within the internal threaded portion of said coupling segments; means providing a seal between the adjacent end faces of said body and member; said threaded portions being meshable with each other; a collar slidable longitudinally on said body and having means engageable with said segments for shifting said segments laterally inwardly toward said member; cylinder and piston means on said body and collar; and means providing a fluid under pressure in said cylinder and piston means for shifting said collar longitudinally on said body to shift said segments inwardly and place their threaded portions in mesh with said member threaded portion, whereby said tubular member is connected in sealed relation to said tubular body.

3,284,106
SWIVEL JOINT
Donald L. McIntosh and Wilbur T. Stephenson, Bay City, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Aug. 4, 1964, Ser. No. 387,305
1 Claim. (Cl. 285—55)

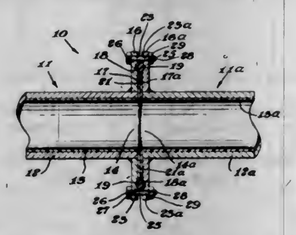
A swivel joint connecting adjacent sections of pipe comprising two joined sections with complementary seating portions in their facing ends, said end faces being substantially normal in the pipe axis, the ends each having an annular recess with a radially inwardly sloping facing surface acute to the axis of said pipe and intersecting the inner wall of said pipe, said recesses defining a V, a self-lubricating gasket fitted in each recess, the outer face of each gasket being located in a plane parallel with but

axially and beyond the facing end of the section in which it is fitted, each said face being smooth and in sealing contact with the face of said other gasket, one of said joined sections being peripherally threaded at the facing end on the outside, and the other of said joined sections having a flange about its periphery on the outside, a thimble nut with at least one set screw therein threaded on said peripheral threads of said one joined section and engaging



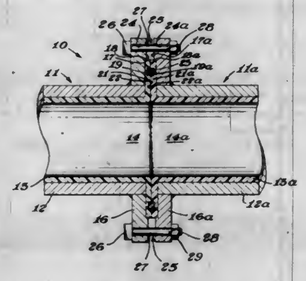
said flange on the other joined section, and lubricant means disposed between said thimble nut and said flange and a lining embracing the inside surfaces of each said joined section, said linings overlapping in continuous surface contact said gaskets fitted within said recesses whereby swivel action between said joined sections is possible without upsetting the seal of said sealing contact of said gaskets of said recesses, and means to prevent movement of said lining with respect to the inner pipe wall.

3,284,107
PIPE JOINT
Walter H. West, Bay City, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Aug. 13, 1965, Ser. No. 479,386
2 Claims. (Cl. 285—55)



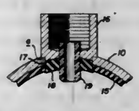
1. A pipe joint between adjacent pipe sections, each of the pipe sections comprising an outer rigid body and a lining of a synthetic resinous material subject to cold flow, each of the pipe sections having a terminal end to be joined, a flange affixed to the rigid outer layer of each pipe section and defining a generally outwardly extending radial surface, each flange having an annular groove within the outwardly extending surface, the grooves being of substantially the same radius, means to secure adjacent flanges to each other, a terminal flange of synthetic thermoplastic resinous material integral with the lining in each pipe section and extending along a centrally located generally circular portion of the radially outwardly extending face of the affixed flange, an O-ring of a resilient sealing material disposed in said grooves, the axial depth of each of the grooves being less than the radius of the O-ring cross-section, the grooves being disposed adjacent the outer terminal portion of the synthetic resinous flanges and within the means to secure adjacent flanges to each other, said securing means drawing said flanges together to compress said O-ring and the terminal flanges to thereby effect a double seal at said joint interface.

3,284,108
PIPE JOINT
Walter H. West, Bay City, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Aug. 27, 1965, Ser. No. 483,055
2 Claims. (Cl. 285—55)



1. A pipe joint between adjacent pipe sections, each of the pipe sections comprising an outer rigid body and a lining of a synthetic resinous material subject to cold flow, each of the pipe sections having a terminal end to be joined, a flange affixed to the rigid outer layer of each pipe section and defining a generally outwardly extending radial surface, means to secure adjacent flanges to each other, a terminal flange of synthetic thermoplastic resinous material integral with the lining in each pipe section and extending along the radially outwardly extending face of the affixed flange, each terminal flange having an annular groove of substantially the same radius within the outwardly extending surface, an O-ring of a resilient sealing material disposed in said grooves, the axial depth of each of the grooves being less than the radius of the O-ring cross-section, the grooves being disposed adjacent the outer terminal portion of the synthetic resinous flanges said securing means drawing said flanges together to compress said O-ring and the terminal flanges to thereby effect a double seal at said joint interface.

3,284,109
TAPPING SADDLE FOR POLYETHYLENE CABLE
Carl L. Parker, Fort Worth, Tex., assignor to Malor Manufacturing, Inc., Fort Worth, Tex., a corporation of Texas
Filed Aug. 24, 1964, Ser. No. 391,648
1 Claim. (Cl. 285—197)



A saddle type clamp and tap for use on synthetic resin conduits comprising upper and lower substantially semi-cylindrical clamping members adapted to encircle said conduit, one of said members having a substantially centrally disposed aperture extending completely through the wall thereof, a fitting having a bore and a counter bore disposed in said aperture in fluid tight relation thereto, the end having said counter bore extending radially outwardly of the convex face of said one member, the inner end of said fitting containing the bore terminating

short of the inner, concave wall of said one member forming thereby a shoulder with the walls of said aperture, resilient gasket means lining the inner concave surfaces of each of said clamp members, the lining in said one member having a coaxial aperture therethrough of a diameter substantially equal to the diameter of the aperture in said clamp, a nipple snugly engaging the walls of said bore and extending beyond the concave surface of the gasket on said one member a distance at least equal to the wall thickness of said conduit, and a resilient washer sealingly disposed around said nipple and in sealing engagement with the said shoulder and with the walls of the aperture in said gasket, and means to draw said clamp members together in tight embracing relation to said conduit.

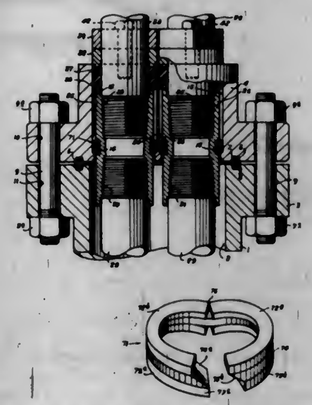
3,284,110
COUPLING MEANS FOR TUBULAR MEMBERS
Ole Marcus, Wantagh, and Charles B. Kurz, West Islip, N.Y., assignors to Koppers Company, Inc., a corporation of Delaware
Filed Oct. 17, 1963, Ser. No. 316,880
5 Claims. (Cl. 285—235)



1. An assembly comprised of a pair of coaxially aligned tubular members having a basket-type weave formed on the outside surface of the confronting end portions thereof, said basket-type weave having spaces between adjacent strands, a yieldable hollow apertured sleeve provided with a basket-type weave having spaces between adjacent strands, said sleeve in the assembled condition encasing the confronting end portions of said tubular members and a continuous synthetic resin mass bonded to and substantially filling the spaces in the outer surface of said end portions and said sleeve.

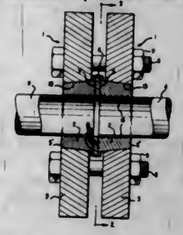
3,284,111
REMOVABLE HANGER SHOULDER
Jerry L. Pinkard, Fort Worth, Tex., assignor to Rector Well Equipment Company, Inc., Fort Worth, Tex., a corporation of Texas
Filed Oct. 18, 1965, Ser. No. 496,931
2 Claims. (Cl. 285—141)

1. Means for suspending pipe under tension in a well comprising a suspension member having a bore therethrough; an annular upwardly facing shoulder in the bore; a tubular hanger member; a groove about the outer surface of the hanger member disposed in said bore; a split ring comprised of separable segments hingedly joined at one end and having free ends, which may be separated about the hinge and passed about the tubular hanger member from laterally thereof and closed in said groove, said ring being of greater diameter than the hanger member so as to provide an outwardly extending removable shoulder about the hanger member arranged to come into contact with the upwardly facing shoulder in the bore; said split ring being comprised of upper and lower pairs of rigid arcuate segments each of said pairs of segments having a combined arcuate length of 360°, having a resilient split sealing ring bonded between the segments; the resilient sealing ring providing a resilient hinge between the ends of the rigid segments; at least one of said pair of arcuate segments being of different circumferential length with respect to said hinge portion so that the abutting free ends of the upper arcuate segments will overlap the abutting free ends of the lower arcuate segments when said split ring is in closed position, and the free ends of the resilient split ring are beveled at their contacting surfaces so that when the free ends of the split ring are brought together there is provided a continuous ring with overlapping sealed beveled surfaces supported on opposite sides by the rigid segments, said bevel extending from the free end of the upper arcute segments to the offset free end of the corresponding lower arcuate segment; means for anchoring the tubing in the well below the suspension member; means for exerting an upward pull on the tubing string above the suspension member; the hanger member being of a diameter without the re-



movable shoulder thereon to permit same to pass through the bore of the suspension member below the upwardly facing shoulder, whereby the hanger member may be lowered through the bore without the removable shoulder thereon and then pulled upwardly above the suspension member for placement of the removable shoulder in the groove from laterally thereof without disjoining the tubing string and then lowered into the bore to suspend the said removable shoulder on said upwardly facing shoulder to thereby suspend the tubing in tension to said suspension member.

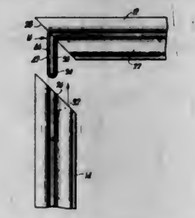
3,284,112
ROTATABLE FLANGE ADJUSTABLE PIPE COUPLING
Alan Martin, Nutley, N.J., assignor to Horace T. Potts Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 11, 1963, Ser. No. 329,815
2 Claims. (Cl. 285—328)



1. A flange-type coupling for joining a pair of aligned unthreaded pipe ends comprising: a pair of identical annular insert elements for opposing alignment with each other, one of which is inserted by a slide fit over each pipe end, each insert element having its axially extending outer surface formed as a truncated cone with the outer conical taper thereof increasing toward the rear end which

lies adjacent the outer edge of each pipe end, the slope of said tapered outer surface of each of said insert elements being from 1 to 5 degrees; annular gasket seal means disposed between the opposing surfaces of said insert elements; a pair of identical annular flange ring members each of which is tapered at its inner bore to fit over a corresponding one of said insert elements; a plurality of flange bolts to draw said insert elements and seal means together in a unitary joint in assembled paired relationship; each of said insert elements having spaced concentrically disposed grooves and lands on the inner bore, said grooves and lands being equally spaced and extending from one axial end of said inner bore to the other and forming right angle serrations, the unthreaded pipe end being inserted therein flush with the axially forward end faces of said inserts and being radially outwardly pressed into said grooves and retained therein by said lands; each of said annular flange members having the maximum diameter of its inner walls less than the maximum outer diameter of said inserts, thereby frictionally locking the inserts in said inner walls; the external face of each of said inserts being provided with a plurality of concentric grooves for grasping the gasket seal means and for preventing leakage of fluid across said gasket seal means; and said inserts being further provided at their axially forward ends with a radially outwardly extending shoulder for preventing the insert from being pulled in an outward direction past said shoulder through said flange bores, the axially forward end face of said shoulder being in the same plane as the axially forward end face of said insert and normal to the axis of said insert, said grooves forming a saw tooth surface extending from the radially outer portion of said flanges to the wall of the bore in said inserts.

3,284,113
PICTURE FRAME STRUCTURE
William M. Howell, 6526 Eby, Merriam, Kans.
Filed Mar. 4, 1964, Ser. No. 349,200
4 Claims. (Cl. 287—20.92)

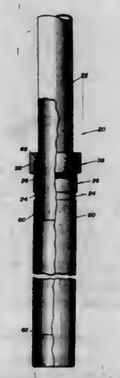


1. Frame structure comprising in combination:
a first elongated frame member provided with an aperture extending longitudinally thereof, said aperture communicating with an end surface of said first member;
a second elongated frame member disposed at an angle to said first member and provided with an aperture extending longitudinally thereof, said aperture communicating with an end surface of said second member, the end surfaces of the first and second members being configured for complemental engagement with one another; and
an angled retainer element comprising a pair of elongated legs, there being a leg disposed in each of said apertures, each leg having a longitudinally extending body engaging the inner surface of a respective aperture for holding the corresponding member at said angle with respect to the other member, said bodies being smaller in one cross-sectional dimension than the respective aperture to provide spacing for glue in the aperture for bonding said element to the members there being a rib on each of said bodies and extending into engagement with the inner surface of the corresponding aperture.

ERRATUM

For Class 287—58 see:
Patent No. 3,284,103

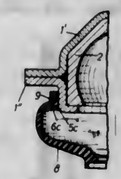
3,284,114
TELESCOPING POLE
Wilfred M. McCord, Jr., Louisville, and Walter J. Williford, Pleasure Ridge Park, Ky., assignors to Vermont American Corporation, Louisville, Ky., a corporation of Kentucky
Filed Aug. 21, 1964, Ser. No. 391,153
4 Claims. (Cl. 287—58)



1. A telescoping pole for use with a pruning saw or the like comprising, in combination, an upper tubular pole extension, a lower tubular pole extension having an inner diameter greater than the outer diameter of said upper pole extension, said upper extension being telescoped within said lower extension, an externally threaded member disposed at the upper end of said lower pole extension and fixed relative to the latter, an upper inner portion of said threaded member being formed as a first annular tapered surface extending upwardly and outwardly, a nut member threaded on the upper end of said threaded member, said nut member being rotatable on said threaded member for adjusting the relative axial position of said nut member and said threaded member, a second annular tapered surface formed internally on said nut member proximate the upper end thereof, said second annular tapered surface extending downwardly and outwardly and being disposed above said first annular tapered surface so as to define therebetween a chamber of variable axial length determined by the relative axial position of said nut member on the threaded member, and an elastic helical collet shaped approximately as a split ring with axially spaced ends when in an unconfined state, said collet having upper and lower annular inclined surfaces formed on the outside thereof for engagement with said first and second annular surfaces respectively of the nut and threaded members which define a chamber of variable axial length, said collet being positioned within said chamber so as to substantially encircle said upper pole extension and being seated against said first annular tapered surface between the latter and said second annular tapered surface on said nut member, whereby said upper tubular extension may be releasably locked in position relative to said lower tubular extension by threading said nut downwardly on said

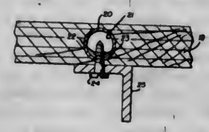
threaded member so as to decrease the axial length of said chamber and deform the elastic collet from its initial helical to a more nearly circular shape and thereby cause said collet to be clamped between said first and second annular tapered surfaces and to tightly engage said upper extension to hold said upper extension against axial movement relative to the lower pole extension.

3,284,115
BALL JOINT HOUSING
Andreas Schmidt, Osterath-Bovert, Germany, assignor to A. Ehrenreich & Cie, Dusseldorf-Oberkassel, Germany
Filed Sept. 19, 1963, Ser. No. 310,101
Claims priority, application Germany, Sept. 27, 1962, E 23,598
3 Claims. (Cl. 287—87)



1. A ball joint housing having an opening for passing a ball stud therethrough, which includes annular retainer ring means forming a separate member from but being mounted on the outer periphery of said housing near said opening, and flange means forming an integral part of said housing and being located between said annular ring and the end of said housing adjacent the opening and firmly securing said annular retainer ring means to said housing.

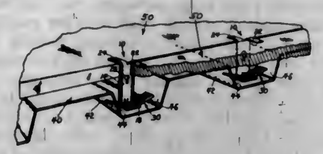
3,284,116
PANEL HAVING EMBEDDED FASTENER SECURING MEANS
James A. George, 145 Woodland Ave., Campbell, Ohio
Filed Sept. 30, 1963, Ser. No. 312,468
2 Claims. (Cl. 287—20.92)



1. In combination with a plywood panel a device for attaching said plywood panel or the like to a structure, said plywood panel having an opening extending therethrough parallel with a surface of said panel, said device comprising a section of longitudinally split tubular material with inturned longitudinal edges positioned in said opening in said plywood panel and arranged to receive screws positioned in the surface of said plywood panel so as to engage said opening and penetrate said tubular fastener between said longitudinal edges and be secured thereto.

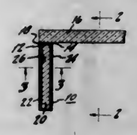
3,284,117
MULTI-PIECE CLIP
Clarence Leonard Meehan, Itasca, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed June 23, 1964, Ser. No. 377,219
6 Claims. (Cl. 287—189.35)

1. A fastener for use in securing at least one complementary panel member to a complementary channel member having opposed side walls including an elongated body member having a head portion at one end for securing the complementary panel in predetermined relation to the channel member, a shank portion extending downwardly from said head portion and terminating in a base portion at the other end of said elongated body member which extends substantially normal to said shank portion, said shank and base portion being provided with means for receiving and securing a substantially V-shaped blade element including a deflectable lug portion associated with said base portion for acceptance within a notch provided in said blade element along one side thereof and an upstanding tab struck from said shank portion for engaging the concave surface of said V-shaped blade element adjacent the side thereof opposed to that



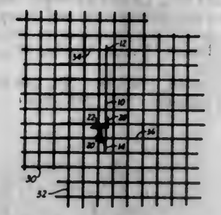
in which the notch is provided, said blade element having free extremities which extend toward said head portion and lie outside of the boundary of said shank portion, a plurality of longitudinally extending corrugations formed in said blade element to strengthen the same and provide gripping means at the free ends of said blade element for engaging the opposed side walls of the channel member, the shank and base portion of said elongated body member cooperating to flatten said blade element when a longitudinal force is applied to said fastener whereby to cause said gripping means to aggressively engage said opposed side walls and resist withdrawal of said fastener.

3,284,118
CERAMIC-TO-METAL SEALS
Sebastian W. Kessler, Jr., Lancaster, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed Aug. 27, 1964, Ser. No. 392,450
7 Claims. (Cl. 287—189.365)



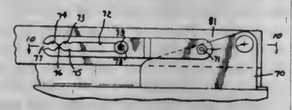
1. A sealed structure comprising:
(a) a composite sheet metal member having at least three layers of metal bonded together and terminating in a common edge,
(b) a ceramic member having a flat surface,
(c) said edge being brazed to said flat surface,
(d) the outer ones of said layers having substantially mutually similar thermal expansion responses laterally of said sheet metal member throughout a given temperature range, an intermediate one of said layers having a different thermal expansion response laterally of said sheet metal member throughout said temperature range than said similar responses, the resultant of said similar and said different thermal expansion responses laterally of said sheet metal member being substantially equal to the thermal expansion response of said ceramic member at said temperature,
(e) whereby the brazed relation of said sheet metal member and said ceramic member is preserved from rupture throughout said temperature range.

3,284,119
SPRING MEANS FOR SECURING SCREEN LAYERS TOGETHER
Harold L. Detrick, Box 258, Montara, Calif.
Filed Apr. 19, 1963, Ser. No. 274,207
6 Claims. (Cl. 287—189.36)



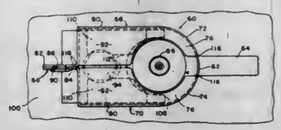
5. A spring clip for locking together pieces of wire mesh comprising an integral strand of resilient material having an elongated shaft portion adapted to extend parallel to a piece of mesh and having a hook portion integrally formed thereon, and a resilient loop extending from said shaft portion on the opposite side from said hook portion with said loop terminating in a strand having an intermediate portion slidably wrapped around said shaft portion and a terminal portion defining a second hook portion on the same side of said wire as said first hook portion and on the opposite side of said wire from said loop with said first and second hook portions facing in opposite directions parallel to said shaft portion whereby said clip may be attached to a piece of wire mesh with each of said hook portions urging the other hook portion into engagement with said mesh responsive to the resiliency of said loop.

3,284,120
TORSIONALLY OPERATED DOOR CLOSURE
Anthony R. Costantini, Lafayette Hill, and Anthony Di Angelus, Manoa, Pa., assignors to Victory Metal Manufacturing Company, doing business as Victory Metal Manufacturing Corporation, Plymouth Meeting, Pa., a corporation of Pennsylvania
Original application Sept. 12, 1963, Ser. No. 308,476. Divided and this application Dec. 23, 1964, Ser. No. 420,542
2 Claims. (Cl. 292—268)



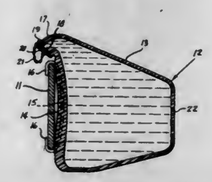
1. In combination, a door, and a restrainer and detent device for use therewith, said door being pivotally mounted between opposed fixed supports for swinging movement into open and closed positions about a vertical axis, said device comprising a substantially rigid elongated link member having one end thereof pivotally secured to one of said supports and its remaining portion extending outwardly from said support and secured to a horizontally extending edge of the door adjacent said one support, said link member having a slot of uniform width extending from a point adjacent its pivotal connection to said support lengthwise toward the outer extremity thereof, a slide element secured to said edge of the door and projecting into the slot, said element being in the form of a rigid, non-compressible member of such fixed transverse dimension relatively to the width of the slot as to permit movement of the slotted link member relative to said slide element without any substantial side play therebetween when said door is swung between its open and closed position, said link member being longitudinally kerfed from the outer end of its slot to and through the outer end of the link member so as to bifurcate the same and provide it with a pair of jaws which are normally biased toward one another and may be sprung apart, said kerf being narrower than the width of the slide element and said jaws being respectively provided with opposed seats for receiving and holding therebetween said slide element when it is shifted through the kerf against the normal bias of said arms, whereby to releasably hold said door in open position.

3,284,121
SEALS
Richard H. Lyon, 10949 SE. Cherry Blossom Drive, Portland, Oreg.
Filed Oct. 7, 1964, Ser. No. 402,224
2 Claims. (Cl. 292—307)



1. A seal comprising
a generally U-shaped member of sheet material including a pair of arms, a tear strip portion connecting adjacent ends of the arms together and a pull tab joined to the tear strip portion,
the member having a pair of score lines extending generally parallel to the longitudinal axis of the member and defining the tear strip portion and weakening the member at the junctures of the tear strip portion and the arms,
the other ends of the arms having means associated therewith to secure said ends against separation without mutilation,
the arms having opposed projections at edges thereof adapted to project under an enlarged portion of a releasable connector with the member in a position enclosing the connector to prevent tampering therewith.

3,284,122
SHOCK ABSORBING BUFFER
John W. Rich, 3224 Churchill Road, Sacramento, Calif.
Filed Dec. 22, 1964, Ser. No. 420,314
5 Claims. (Cl. 293—1)



1. A shock proof buffer assembly comprising a relatively rigid backing plate consisting of an extending portion of the frame of a standard motor vehicle, an elongated hollow body member comprised of a resilient material of sufficient rigidity normally to retain a predetermined shape, and of sufficient strength to resist rupture upon impact thereagainst, means on one longitudinal edge of said body member securing said member to said backing plate, liquid normally filling said member, said member having at least one opening therein, means normally closing said opening, whereby an impact against said member serves to displace said means normally closing said opening, to permit the escape of at least a portion

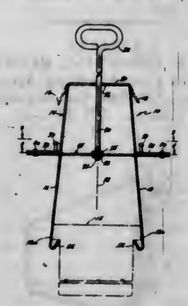
of said liquid in a quantity and at a rate of escape commensurate with the severity of the impact and the consequent deformation of said body member.

3,284,123
TOOL FOR HANDLING SMALL OBJECTS
Charles J. Adams, Bloomington, Ill., assignor to General Electric Company, a corporation of New York
Filed Sept. 21, 1964, Ser. No. 397,928
5 Claims. (Cl. 294—15)



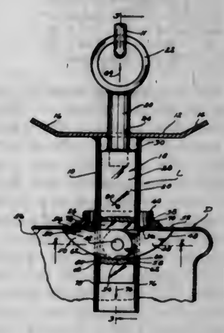
1. A tool for inserting and extracting objects into and out of relatively inaccessible areas comprising:
(a) a hollow cylinder with means thereon for holding said cylinder between two fingers,
(b) a flexible conical wall within said cylinder, said conical wall being a folded continuation of the walls of said cylinder and defining an object-receiving opening, and
(c) actuation means attached to said conical wall for flexing said conical wall relative to said cylinder by thumb pressure on said actuation means to vary the size of said opening to permit engagement and disengagement of various size objects in said opening.

3,284,124
BATTERY CARRYING DEVICE
Emil H. Kuehn, Mazeppa Township, Wabasha County, Minn.
Filed May 27, 1964, Ser. No. 370,521
4 Claims. (Cl. 294—31)



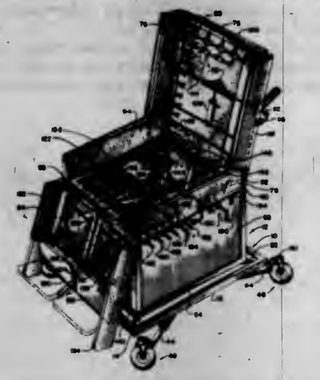
1. In a device for carrying storage batteries the combination comprising, a carrier strap including a substantially horizontal top provided with a centralized aperture therein and a pair of flexible carrier arms extending downwardly from said top obliquely of the axis of said aperture, said carrier arms being oppositely disposed with respect to each other and each provided at its end opposite said top with a carrier hook for engaging the underside of the uppermost peripheral flange of a storage battery, an arm engaging strap below said aperture, a support shaft attached at its one end to said arm engaging strap and provided at its opposite end with a handle, said shaft and said strap moveable along said axis and a first and a second cam means pivotal on said strap and cooperating with said arms to engage and disengage said support hooks from said storage battery.

3,284,125
MEANS OF LIFTING CONTAINERS OR VESSELS
Joseph A. Blaske, Sr., Milwaukee, and Joseph T. Blaske, Jr., Union Grove, Wis., assignors to Product Experimental Development, Union Grove, Wis., a corporation of Wisconsin
Filed Apr. 16, 1965, Ser. No. 448,614
5 Claims. (Cl. 294—86)



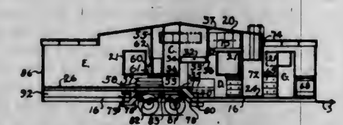
1. A means, for lifting a vessel having an outer and an inner surface and a substantially-small opening, said means comprising, in combination a longitudinal rectangular tubular portion having an outer and an inner extremity and a longitudinal axis, and adapted to freely enter said opening, the inner extremity first, a transverse member integral with said tubular portion at said outer extremity, a rectangular plunger slidably-extending axially into said tubular portion and having an upper and a lower end, said plunger having an axially-extending bifurcation adjacent said lower end, said bifurcation terminating in an abutment surface adjacent said lower end, a pair of dogs having a common pivot in said bifurcation normal to the walls of said bifurcation, said dogs having upper and lower edges, said pivot so positioned relative to the mass of said dogs that the center of gravity of the dogs will tend to pivot away from said axis in mutually-opposed directions, and longitudinal apertures on opposed sides of said tubular portion aligned with said bifurcation to permit said dogs to pivot freely through said apertures, said apertures having upper and lower faces, said plunger terminating at said upper end in a lift-engaging means, when said lift-engaging means is engaged by an upwardly-directed lifting device and said lifting device proceeds to lift said vessel, said plunger is displaced axially and upwardly relative to said tubular portion, permitting pivoting of said dogs outwardly through said apertures relative to said axis until said pivoting causes the said upper edges of said dogs to engage said inner surface resulting in said tubular portion shifting axially inwardly so that said upper faces engage said upper edges, and when said vessel is to be released from said lifting means, said hook-engaging means is disengaged so as to gravitationally shift said tubular portion axially inwardly to cause said outer surface to engage said transverse portion and also permit simultaneous axial displacement of said plunger until said lower faces engage said lower edges of said dogs and pivot the latter upwardly and into said bifurcation, and means in said bifurcation to limit the inward travel of said dogs toward said axis and into said bifurcation to permit removal of said means from said opening.

3,284,126
BED-WHEELCHAIR
Salvatore J. Piazza, N. Lake St., Ransomville, N.Y.
Filed May 14, 1964, Ser. No. 367,310
3 Claims. (Cl. 296—20)



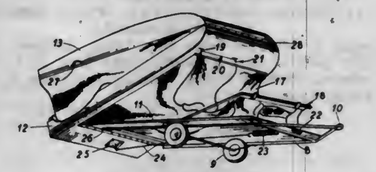
1. A convertible bed-wheelchair assembly comprising, in combination,
a support assembly including an upstanding pedestal having a plurality of wheels supporting the same,
a main frame member rigidly mounted on said pedestal,
a head section pivotally connected to one end of said main frame and forming an extension thereof,
a foot section pivotally connected to the opposite end of said main frame and forming an extension thereof,
said main frame, said head section and said foot section each having side extensions pivotally connected thereto,
means for selectively moving said foot and head sections, relative to said main frame, between coplanar bed positions and angularly disposed wheelchair position,
means for moving said side extensions between coplanar and upstanding positions relative to their respective frame and sections,
and means for extending and retracting said wheel means simultaneously both laterally and longitudinally of said base to vary the supporting area afforded thereby.

3,284,127
TRAILER DWELLINGS
Corwin D. Willson, Lake Orion, Mich.; Lou Temple Willson, executrix of said Corwin D. Willson, deceased
Filed Dec. 18, 1963, Ser. No. 331,438
13 Claims. (Cl. 296—23)



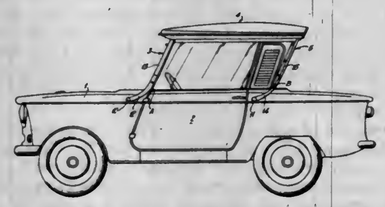
1. A dwelling comprising a vehicle body on ground support and enclosing a housekeeping suite of rooms of story height, said body having a transverse partition wall near the lengthwise center of the body and two alcoves of less than story height fixed back to back against opposite sides of said wall: the forward of said alcoves forwardly opening on one of said rooms, and the rearward of said alcoves rearwardly opening on another of said rooms and having a bottom of substantially higher level than the bottom of said forward alcove, and said ground support comprising roadwheels of which one is spaced closely below said bottom of said rearward alcove and closely behind to extend above said bottom of said forward alcove.

3,284,128
FOLDABLE CAMPING TRAILER
Joseph F. Alarie, 4780 NW. 2nd St., Miami, Fla.
Filed July 28, 1964, Ser. No. 385,634
2 Claims. (Cl. 296—23)



1. A foldable camping trailer comprising a wheel supported base panel, a container body hinged near one end thereof to one end of the said base panel, a container cover hinged to the other end of the said container body, a fabric panel connected between the container body and base panel to limit swinging movement about the first mentioned hinge; a second fabric panel connected between the container body and container cover to limit swinging movement about the second mentioned hinge, latch and spring means interconnecting said base panel and container body and operable to initiate upward movement of said container body and cover with respect to said base panel, and an opening in the container body to permit passage, when the camper is expanded between the enclosure formed by the container body and cover and the enclosure formed under the fabric connecting the container body and base panel.

3,284,129
COLLAPSIBLE VEHICLE
Eric Jaulmes, Paris, France, assignor to Ateliers De La Motobecane, Pantin, Seine, France, a corporation of France
Filed Oct. 7, 1964, Ser. No. 402,245
Claims priority, application France, Oct. 9, 1963, 950,005
2 Claims. (Cl. 296—27)



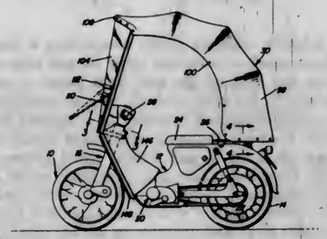
1. In a collapsible vehicle of the type described having a body, at least two opposite doors therein, a horizontal hood extending from the front of and a driver's seat disposed within said body; a collapsible superstructure comprising a windshield and a rear window both of the same vertical dimension and a roof, means pivotally mounting said windshield and said rear window at their lower parts upon said body in front of and behind, respectively, the openings provided by said doors, further means pivotally mounting the front and rear parts of said roof to the upper ends of said windshield and said rear window, respectively, whereby to form a jointed parallelepiped by said superstructure in its road position and to enable the same to be operated to a collapsed garage position with said windshield overlying said hood, with said roof resting

upon the windshield and with said rear window overlying said seat behind said wind-shield, and a pair of latching means each having a first part secured to said windshield and rear window, respectively, and a pair of cooperating latching parts secured to said body, to firmly lock both said windshield and rear window to said body in the road position of said superstructure.

3,284,130
COMBINED MOTORCYCLE SPRAY SHIELD AND WINDSHIELD

Vaughn E. Michael, John Day, Oreg., assignor of one-fifth each to Dick Clanfield, John Day, E. C. Miley, Athena, Richard Camp, Haines, and Gene C. Rose, Baker, Oreg.

Filed May 15, 1964, Ser. No. 367,684
3 Claims. (Cl. 296—78.1)



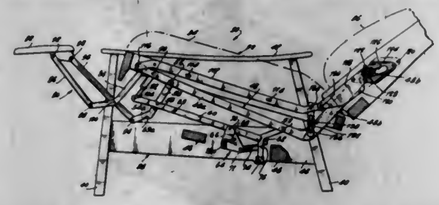
2. In combination, a motorcycle including an upright longitudinally main frame having a rear wheel journalled at its rear end for rotation about a transverse horizontal axis and an upstanding front wheel assembly pivotally supported at its forward end for oscillation about an upstanding axis and including laterally directed handle bar means at its upper end, a combined windshield and spray shield construction comprising an upright windshield frame including a pair of upstanding opposite side members interconnected at their upper ends by means of an upper cross member, said windshield frame including means securing said frame to the forward end of said main frame and with said windshield frame disposed forwardly of the axis of rotation of said front wheel assembly and the lower portion of said windshield frame generally horizontally aligned with said handle bar means, said main frame including a forwardly and upwardly inclined forward portion from whose upper end said front wheel assembly is pivotally supported, said windshield and spray shield construction also including means defining a pair of support arms projecting rearwardly and downwardly from opposite side portions of the lower end portion of said windshield frame, and an upstanding flexible spray shield secured between said arms and passed over said forwardly and upwardly inclined portion of said main frame, said support arms generally paralleling said forwardly and upwardly inclined portion of said main frame and being disposed forwardly of said upwardly inclined portion.

3,284,131
RECLINING CHAIR WITH A SECONDARY MOUNTING LINKAGE

Peter S. Fletcher, Delray Beach, Fla., assignor to Anton Lorenz, Boynton Beach, Fla.

Filed Oct. 28, 1963, Ser. No. 319,279
6 Claims. (Cl. 297—85)

1. In a reclining chair having a support, the improved combination comprising a primary mounting linkage operatively connected to said support, an independent carrier member forming a link of said primary mounting linkage and guided by said primary mounting linkage for primary movement, a secondary mounting linkage, and a body-supporting unit including a seat and back-rest mounted by said secondary mounting linkage on said independent carrier member for movement with said independent carrier member through said primary movement and for secondary movement independent of said independent carrier member to selectively vary the angle between said seat and back-rest, said secondary mounting linkage including a seat link connected to said independent carrier member at a seat pivotal connection, a back-



rest link connected to said seat at a seat-back-rest pivotal connection and further connected to said independent carrier member at a back-rest pivotal connection, and lost motion means at said back-rest pivotal connection to provide relative translation between said back-rest and said independent carrier member, said seat mounted on said seat link and said back-rest mounted on side back-rest link, the included angle between said seat and said back-rest varying as said seat and back-rest are moved through said secondary movement.

3,284,132
SEATING UNIT

Howard D. Chapman, Highland Park, and Henry C. Banke, Chicago, Ill., assignors to Clarin Mfg. Co., Chicago, Ill., a corporation of Illinois

Filed July 1, 1965, Ser. No. 468,807
5 Claims. (Cl. 297—162)

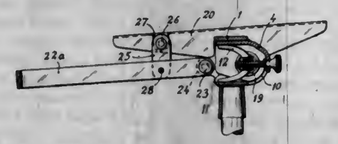


1. An arm assembly for use with a chair having a pair of downwardly diverging legs at each side, which arm assembly comprises a frame, an arm rest mounted on the upper end of said frame, and means at the lower end of said frame adapted to detachably clamp said frame to each of the legs at one side of the chair, said means including a first clamping strip fixedly secured to the lower end of said frame and a second clamping strip, one of said clamping strips including end portions formed to partially encircle and intimately engage the upper portion of the outer surface of each leg member at one side of the chair and the other of said clamping strips including end portions formed to partially encircle and intimately engage the upper portion of the inner surface of each leg member opposite those portions of the outer surfaces of the leg members adapted to be engaged by said one clamping strip, the end portions of said second clamping strip being adapted to cooperate with the end portions of said first clamping strip to define a pair of channels diverging downwardly at an angle equal to the angle of divergence of the leg members, and means for urging said first and second clamping strips toward each other so as to maintain said strips in clamping engagement with each of the leg members at one side of the chair.

3,284,133
DEVICE FOR PIVOTED CONNECTION OF TWO PARTS

Per Gunnar Werner, Gabelsgt. 43, Oslo, Norway

Filed Aug. 27, 1964, Ser. No. 392,492
Claims priority, application Norway, Aug. 28, 1963, 12 Claims. (Cl. 297—304)

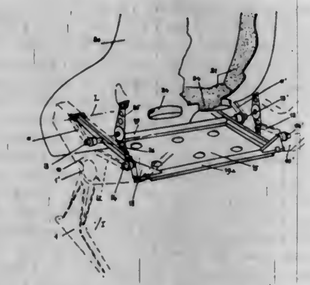


1. A supporting hinge structure for chairs or the like, said hinge structure comprising a fixed bracket, means on said bracket for mounting the same on a support, a movable bracket pivotally mounted on said fixed bracket for movement about a horizontal axis, means on said movable bracket for attaching a body supporting part of a chair, a first abutment surface on said fixed bracket disposed on one side of said axis, a second abutment surface on said movable bracket opposite said first surface and movable from a starting position toward said first surface upon movement of said movable bracket about said axis, spring means disposed between said surfaces to yieldably resist movement of said second surface toward said first surface, and means to move said spring means toward or away from said axis to vary the length of the lever acting on said spring means, whereby the force resisting pivotal movement of said movable bracket may be adjusted.

3,284,134
ADJUSTABLE SEATS

Robert Maliite, Orly, Seine, France, assignor to Compagnie Nationale Air France, Paris, France, a French company

Filed Apr. 30, 1964, Ser. No. 363,925
3 Claims. (Cl. 297—329)

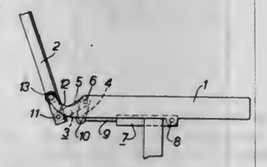


1. An adjustable seat comprising a body having a back portion and a seat portion, a support for the body including a pair of laterally spaced frames defining a front pair of laterally spaced guide slots sloping forwards and upwards and a rear pair of laterally spaced guide slots sloping forwards and downwards, front and rear pairs of laterally spaced bearing rollers mounted on the body under the seat portion thereof and engaging respectively in the front and rear pairs of guide slots to permit tilting adjustment of the body, the guide slots being so sloped that the upper extremity of the back portion of the body moves substantially vertically during tilting adjustment of the body, front and rear pairs of laterally spaced braking rings mounted on the body co-axially with the bearing rollers for limited axial sliding movement and presenting flat end faces adjacent to flat side faces on the frames of the support, and compression springs mounted on the body co-axially with the braking rings and urging the braking rings towards the frames so that said flat end and side faces frictionally interengage and the body is held in adjusted position under normal conditions of use while tilting adjustment of the body by the user is permitted.

3,284,135
DENTAL CHAIR

Hiroshi Hiramatsu, Sakyo-ku, Kyoto, Japan, assignor to Kabushiki Kaisha Morita Seisakusho, Kyoto, Japan, a corporation of Japan

Filed June 15, 1964, Ser. No. 375,140
Claims priority, application Japan, June 19, 1963, 38/32,239
8 Claims. (Cl. 297—361)

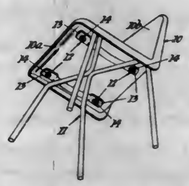


1. A dental chair comprising: a seat frame; bearing means mounted on said seat frame; a back frame so arranged relative to said seat frame as to be received by said bearing means slidably thereon; and driving and guide means coupled with the lower end of said back frame and with said seat frame for moving the lower end of said back frame along a predetermined curve such that as the angle between said back frame and said seat frame is increased said back frame is lowered.

3,284,136
ARTICLES OF FURNITURE

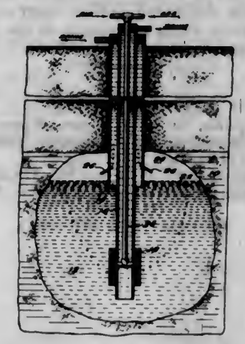
Ronald George Harrison, Birmingham, England, assignor to Pel Limited, Birmingham, England

Filed Apr. 19, 1965, Ser. No. 449,244
Claims priority, application Great Britain, Apr. 27, 1964, 17,361/64
4 Claims. (Cl. 297—451)



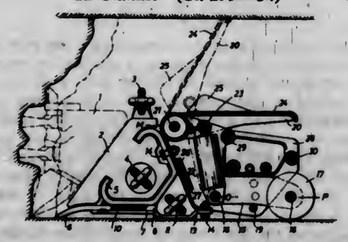
1. An article of furniture comprising a top part moulded in a synthetic plastic material, a plurality of spigot elements integrallly formed on the top part, each spigot element having an intermediate portion of reduced external dimensions defining a head at the free end of each spigot element, an underframe for supporting the top part and including a plurality of parts having apertures therein through which said spigot elements project respectively, and a plurality of retaining elements each of which includes a throat portion of dimensions smaller than the dimensions of the head of each spigot element, the retaining elements being engaged with snap-action between the heads of the spigot elements and said underframe parts to secure the top part to the underframe.

3,284,137
BURNER
SOLUTION MINING USING SUBSURFACE
James E. Wolber, Roselle, Ill., assignor to International Minerals & Chemical Corporation, a corporation of New York
Filed Dec. 5, 1963, Ser. No. 328,296
9 Claims. (Cl. 299—5)



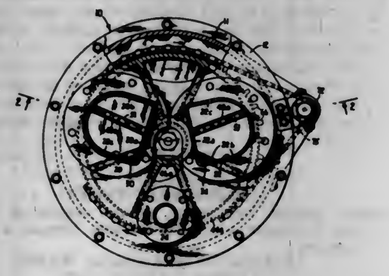
1. In the recovery of soluble minerals from a subterranean formation by circulating an unsaturated solvent downward through an input conduit having an outlet within said formation, and circulating enriched solvent upward through an output conduit having in inlet within said formation whereby soluble mineral is dissolved and a cavity is formed, the improvement comprising disposing a submerged combustion burner within said formation adjacent said outlet, providing conduit means communicating said burner with the surface of the earth, flowing fuel and a free-oxygen-containing gas downward through said conduit means to said burner, concomitantly with the circulation of said solvent burning said fuel to heat said solvent, said fuel and free-oxygen-containing gas being selected to form a volume of non-condensable combustion products, whereby said combustion products collect at the top of said cavity, and flowing said combustion products from the top of said cavity into said output conduit in admixture with said solvent, whereby a lifting force is exerted on the solvent in said output conduit.

3,284,138
PLANER MINING MACHINE WITH ADJUSTABLE TRIPOD GUIDE
Jean Binaut, Frankreich, France, assignor to Gewerkschaft Eisenhutte Westphalia, Werthmar Lunen, Westphalia, Germany, a corporation of Germany
Filed July 9, 1963, Ser. No. 293,712
Claims priority, application France, July 10, 1962, 904,278
12 Claims. (Cl. 299—34)



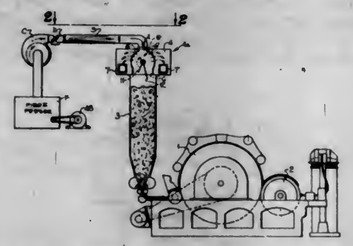
1. Mining arrangement which comprises elongated angularly adjustable tripod guide means adapted to be positioned adjacent a mine face in substantially rigid clamping engagement with both the mine floor and mine roof thereat for guiding a mining machine back and forth therealong in relatively stable operative engagement with the mine face for extracting mineral therefrom, including forwardly extending base leg means for disposition adjacent the mine face and having a lower forward portion extending for supporting contact with the mine face and mine floor thereat, upwardly extending roof leg means for supporting contact with the mine roof thereat, and rearwardly extending reinforcement leg means for supporting contact with the mine floor thereat at a point spaced rearwardly from the point at which said base leg means is disposed for such supporting contact with the mine floor, at least one of said leg means being angularly adjustably mounted with respect to said tripod guide means and provided with positive force urging means operatively interconnecting such angularly adjustable leg with said tripod guide means for achieving such substantially rigid clamping engagement with both said mine roof and mine floor of said leg means under the clamping force of said urging means.

3,284,139
ROTARY FEEDER
Lauritz E. Mylting, Ardmore, Pa., assignor to Buell Engineering Company, Inc., Lebanon, Pa., a corporation of Delaware
Filed Mar. 8, 1965, Ser. No. 437,981
13 Claims. (Cl. 302—49)



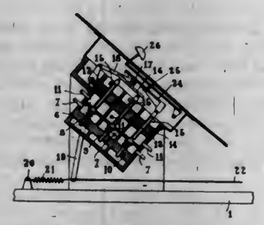
1. A rotary feeder comprising a housing having spaced-apart oppositely disposed wall members, the wall members having, respectively, a conveying fluid inlet opening and a discharge opening and one of the wall members having a material supply opening, a rotor rotatably mounted in the housing and having surfaces engaging the inner surfaces of the housing wall members, and means for rotating the rotor, the rotor including a peripheral element and a plurality of radial elements defining a plurality of material-receiving pockets movable in succession upon rotation of the rotor along a path which brings them into communication first with the material supply opening and then with the conveying fluid inlet opening and the discharge opening, the leading edges of the radial elements of the rotor and the downstream edge, with respect to the direction of rotation of the rotor, of the material supply opening being arranged relative to each other to urge any material engaged therebetween generally inwardly and to shear such material at a radially inward portion thereof, the wall member material supply opening being defined by an inwardly located edge and upstream and downstream edges, with respect to the direction of rotation of the rotor, the downstream edge including an inwardly located substantially straight portion intersecting the inner edge of the opening, and an inwardly facing concave outer curved portion meeting the outer portion of the upstream edge of the opening.

3,284,140
SEPARATING-DISTRIBUTING DEVICE FOR TEXTILE FIBERS
Ferdinand Reiterer, Rueil-Malmaison, France, assignor, by direct and mesne assignments, to Etablissements Neu, Lille, France, a French company
Filed Dec. 18, 1964, Ser. No. 419,301
Claims priority, application France, Dec. 21, 1963, 958,108
15 Claims. (Cl. 302—59)



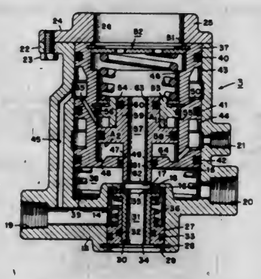
1. In a system for distributing fibers from a source to a location remote from said source including a pneumatic conveyor conduit and a fan for blowing fibers from the source along the conduit; the combination therewith of a housing having a pair of laterally spaced filters defining a chamber therebetween, said housing having an inlet at its upper portion communicating with said chamber for receiving fibers and air from said conduit and also having a discharge opening its lower portion communicating with said chamber, said inlet and discharge opening being arranged so that fibers fall through said inlet, said chamber and said discharge opening under the impetus of air flowing from said conduit, and means including an air impeller for sucking air out of said chamber and outwardly through said filters to relieve the fibers in the chamber from at least a part of the pressure of the air entering the chamber from said conduit whereby the fibers falling through said chamber and then through said discharge opening are subjected to lesser force of the air flowing from said conduit.

3,284,141
THREE-AXLE COMPENSATOR BRAKING SYSTEMS
Edmond Henry-Biabaud, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France
Filed July 19, 1965, Ser. No. 472,903
Claims priority, application France, July 27, 1964, 983,134, Patent 1,410,287
1 Claim. (Cl. 303—7)



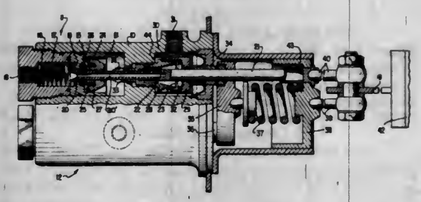
A system for distributing a compressed braking fluid among three axles of a train consisting of a two-axled tractor and a single-axled trailer, which comprises three reaction slide valves having parallel axes, two of said slide valves controlling the brakes of the tractor axles, the third slide valve controlling the brakes of the trailer axle, a compensator lever engaging said first and second slide valves, a roller engaging said compensator lever, means for automatically displacing said roller along said compensator lever between the parallel axes of said first and second slide valves in a manner responsive to the tractor load, another compensator lever engaging said roller and said third slide valve, a brake pedal fulcrumed above said other compensator lever and a knob carried by said brake pedal and adapted to engage said other compensator lever.

3,284,142
CONTROL VALVE
Richard C. Bueler, Glendale, Mo., assignor to Wagner Electric Corporation, St. Louis, Mo., a corporation of Delaware
Continuation of application Ser. No. 395,434, Sept. 10, 1964. This application Mar. 28, 1966, Ser. No. 538,105
17 Claims. (Cl. 303—13)



1. A control valve comprising a housing, and application means movable in said housing and defining with said housing a pressure fluid flow pasage therethrough, said application means being movable in response to an applied force toward a position in said flow passage establishing pressure fluid flow therethrough, said application means including a pair of opposed fluid pressure chambers, and other means movable between said chambers, said other means being automatically movable in response to a ratio between the fluid pressures in said chambers less than a predetermined value toward a position in said flow passage establishing pressure fluid flow therethrough.

3,284,143
BRAKE VALVE STRUCTURE
Udo Saftien, Waiblingen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Dec. 3, 1964, Ser. No. 415,662
11 Claims. (Cl. 303—54)



1. A brake valve for hydraulic brake actuating installations, especially motor vehicles, having a servo-pressure system with a pressure medium supply, comprising:
housing means provided with port means for connection with the supply line leading to the pressure medium supply and with the pressure line leading said pressure medium to the wheel brake cylinders,

piston means slidable within said housing means, said piston means being acted upon on one end face thereof by the pressure of said pressure medium and defining with the other end face thereof a space adapted to be connected with the pressure line leading to the wheel brake cylinders,

actuating means operatively connected with said piston means for displacing said piston means only in case of failure of the servo-pressure to thereby produce a brake pressure in the pressure line,

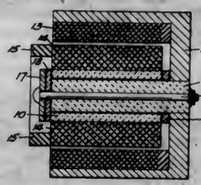
said piston means being normally loaded in one direction by the servo-pressure against a fixed abutment so as to remain stationary during normal operation of the brake valve when the servo-pressure exists,

and spring means for loading the piston means in the opposite direction upon failure of the servo-pressure in such a manner that the piston means is axially displaced in said opposite direction by said spring means into the starting position for the production of braking pressure in case of failure of the servo-pressure.

3,284,144
BEARINGS

Charles W. Moore and Reginald L. Brandon III, Laurens, S.C., and James P. Smyly, Soddy, Tenn., assignors to American Lava Corporation, Chattanooga, Tenn., a corporation of Tennessee

Filed June 8, 1964, Ser. No. 373,280
3 Claims. (Cl. 308—3)



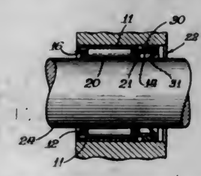
1. A wear-resistant essentially-frictionless bearing consisting essentially of two bodies which present smooth bearing surfaces to each other, said bodies being ceramic bodies of a composition consisting essentially of 91 to 98% by weight of alpha alumina crystals, and at least 2% up to 6% by weight of a refractory glassy matrix, said crystals of alumina being no greater than 150 microns in any dimension, with 98% of the same lying in the range of 0.5 to 40 microns, the material of said bodies being highly compacted such that the density for said bodies is at least 89% of theoretical, with no voids greater than 0.01 inch in cross section in said bodies; the bearing surfaces of said bodies being provided with a surface finish, as described herein, no greater than 20 R.M.S. microinches.

3,284,145
SEALED ANTI-FRICTION BEARING

Thomas G. Bixby, Valparaiso, Ind., assignor to McGill Manufacturing Company, Inc., Valparaiso, Ind., a corporation of Indiana

Continuation of application Ser. No. 259,218, Feb. 18, 1963. This application June 7, 1965, Ser. No. 464,597
5 Claims. (Cl. 308—187.2)

1. In a machine assembly having a shaft and a part including a bore with a wall mounted concentric to one another and with the shaft rotatable in the bore and adapted to receive a preassembled roller bearing around the shaft and within the bore, the improvement comprising a preassembled roller bearing including in combination a housing member having a raceway portion snugly positioned at its outside-surface-portion against the wall of the bore and having rollers retained in the raceway portion in engagement with the shaft, said housing member having spaced away from the bore wall an integral flange portion which extends in an axial direction in the bore away from said outside surface portion a dimension less than the axial length of the bore wall, said flange portion having a radially and angularly bent lip at the end thereof, sealing means for said roller bearing at said integral flange portion of said housing member for sealing the same against the passage through the bearing of lubricant and contaminants and for also sealing the bore over its full radial dimension at the portion of said bore corresponding in position therein to the housing-member-flange-portion, said sealing means comprising a one-piece molded nylon member having a body portion and a yieldable lip portion with a groove between the first two named

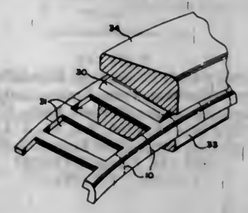


portions, said body portion being positioned over said flange-portion lip and extending axially substantially over said entire flange portion with the extremity of said lip in the groove of said sealing means and with the body portion thereof fitted snugly in a friction fit between the integral flange portion and the bore wall and with the yieldable lip portion of said molded nylon member resiliently engaging said shaft, said sealing means being retained snugly in said machine assembly bore by said bore wall and the integral flange portion against radial displacement and being retained by the connection of the flange-portion lip at the groove against displacement in an axial direction within said bore.

3,284,146
ROLLER-BEARING CAGES

John B. Ripple, 229 Lake Ave. NE., Massillon, Ohio

Filed Jan. 8, 1965, Ser. No. 424,383
4 Claims. (Cl. 308—217)



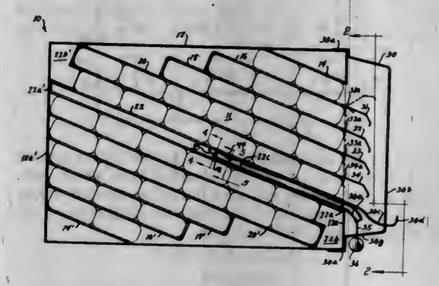
1. An annular roller-bearing cage which comprises spaced rims with interconnecting webs which are generally axial, the rims and webs defining pockets for rollers, the cage being composed of sectors adhered to one another circumferentially side by side, each sector being molded from powdered metal, the number of sectors being no more than the number of pockets in the cage, and the cage comprising at least four such sectors.

3,284,147
DISPENSING ARRANGEMENT

Carl E. Schroer, 6551 Pollack Ave., Evansville, Ind., and William C. Brazelton, Evansville, Ind.; said Brazelton assignor to said Schroer

Filed Aug. 11, 1964, Ser. No. 388,793
6 Claims. (Cl. 312—71)

1. A dispensing arrangement comprising, in combination, a shipping container with tiers of inclined shelves for articles to be dispensed, said articles arranged on said shelves in rows which open at one portion of said container, an independent removable dispenser control device covering said portion of said container and communicating with said rows, means forming part of said dispenser control device and responsive to the passage

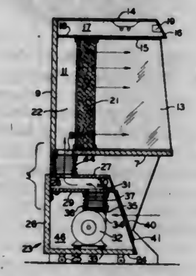


of said articles through said dispenser control device blocking movement of said articles from certain of said rows in preselected order, and content indicator means responsive to the passage of the articles in one of said rows for indicating the presence or absence of articles in said container.

3,284,148
BLOWER-CONTAINED VIBRATION-FREE WORK BENCH

Tiberiu Justinian Ramniceanu, 18 4th St., South River, N.J.

Filed Feb. 24, 1965, Ser. No. 434,925
1 Claim. (Cl. 312—209)



A blower-contained vibration-free work bench of the type described, comprising,

a work platform supported on a pair of legs and having an opening in its rear portion serving as an air entry into a plenum chamber,

a separate cabinet disposed between said legs and in spaced relation under said platform, said cabinet having a base on which a blower may be mounted, and having a back, a top, sides, and a front, and an opening in the rear portion of its top, serving as an air outlet, and disposed in alignment with said platform opening when in use,

a panel disposed in the upper portion of said cabinet in spaced relation below said cabinet top, thereby forming an ante-plenum chamber therewith, and having an opening in its forward portion in staggered relation to said opening in the cabinet top,

a blower mounted on said cabinet base and having an outlet flange,

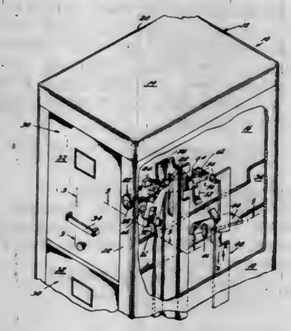
a flexible conduit connected at its bottom to and over said cabinet top in outside sealing relation therewith, and circumscribing the opening in said cabinet top, and having its upper portion connected to and under said platform and circumscribing the plenum opening in outside sealing relation, and

a flexible conduit connected at its top to the bottom of said panel in outside sealing relation therewith and circumscribing the opening in said panel, and having its lower end connected on said blower outlet flange in outside sealing relation therewith.

3,284,149
LOCKING ARRANGEMENT FOR MULTIPLE DRAWER CABINETS AND THE LIKE

Otto Lewin, York, Pa., assignor to Cole Steel Equipment Co., Inc., New York, N.Y., a corporation of New York

Filed Apr. 23, 1965, Ser. No. 450,300
16 Claims. (Cl. 312—218)



1. A mechanism for simultaneously securing one or more of a plurality of movable members against movement, comprising

(a) securing means disposed for coaction with each member of the plurality of movable members and for movement between a first position securing one or more of the plurality of movable members against movement and a second position permitting movement of all of the plurality of movable members;

(b) lock means disposed for movement between a locked position and an unlocked position; and

(c) actuator means pivotally mounted upon suitable pivot means fixedly disposed with respect to said securing means, said lock means and said actuator means;

(d) said actuator means being interconnected to said lock means and said securing means without the use of intermediate elements by being formed with a hook engaged with a pin disposed on said lock means and by being formed with an arm engaged in a slot in said securing means, and interconnecting said lock means and such securing means so that movement of said lock means to said locked position effects a movement of said securing means to said first position, and so that movement of said lock means to said unlocked position effects a movement of said securing means to said second position.

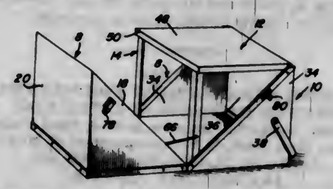
3,284,150
COMBINATION TACKLE BOX AND FOLDING SEAT

Elvane E. Cline, 1865 E. 76th St., Kansas City, Mo.

Filed May 10, 1965, Ser. No. 454,294
10 Claims. (Cl. 312—235)

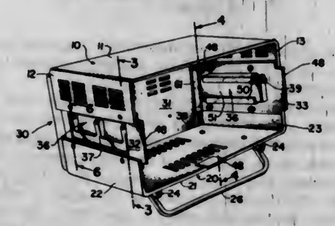
1. In combination, a hollow base section embodying a bottom wall adapted to assume a horizontal position when in use, vertical end and side walls and open at its top, said section providing a container and having facilities therein to assist in storing tackle, a cover section having

a wall which is horizontal and coplanar with the first-named bottom wall when in use and being hingedly connected thereto and further having end walls and a side wall and being open, the open side of said section being adapted to register when the sections are in abutting relationship, said cover section being provided with a pivotally



mounted carrying and handling bail, means carried by certain of the walls to fasten the sections in closed relationship, a seat panel cooperable with one wall of the cover section and adapted to be folded within the confines thereof when not being used, and prop means foldably mounted on and within said cover section and cooperable with an edge portion of said seat.

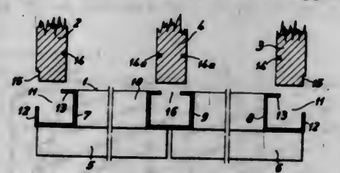
3,284,151
INSTRUMENT CABINETS
Herbert Morrison and Paul O. Rawson, Trumbull, and George L. Schick, Georgetown, Conn., assignors, by mesne assignments, to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 6, 1964, Ser. No. 409,495
8 Claims. (Cl. 312—244)



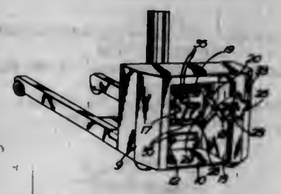
1. A cabinet for instruments including three U-shaped members, a first one of said U-shaped members comprising a top having a first pair of side sections extending downwardly from said top, a second one of said U-shaped members comprising a back having a second pair of side sections extending forwardly from said back, said back having a substantially greater height than said second pair of side sections, and a third one of said U-shaped members comprising a bottom having a third pair of side sections extending upwardly from said bottom, the lower surface of each of said first pair of side sections overlapping and being fastened respectively to the upper surface of one of said second pair of side sections, the upper surface of each of said third pair of side sections overlapping and being fastened respectively to the lower surface of one of said second pair of side sections, said first, second, and third pairs of side sections forming the sides of said cabinet.

3,284,152
KNOCKDOWN FURNITURE
Franz Schörghuber, Munich, Germany, assignor to Küche und Haustechnik G.m.b.H., Munich, Germany
Filed Oct. 14, 1964, Ser. No. 403,834
Claims priority, application Germany, Dec. 10, 1963, K 51,586
19 Claims. (Cl. 312—257)

1. A cabinet or similar furniture piece capable of being disassembled and more particularly kitchen furniture pieces, comprising a front frame and planar wall members, means for assembling said planar wall members to said frame defined by supports, having a channel-like cross section, at least one side wall of each support having an inwardly directed flange cooperable with a groove formed in one side of the wall member with which such support is cooperable, and said inwardly directed flange having a width in excess of the depth of the groove of the wall member associated therewith.



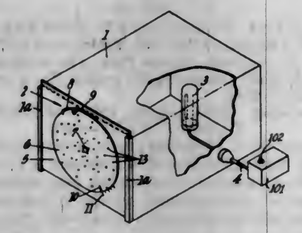
3,284,153
VEHICLE BATTERY MOUNTING
Cecil Goodacre, Basingstoke, England, assignor to Lansing Bagnall Limited, Basingstoke, England, a British company
Filed Aug. 4, 1964, Ser. No. 387,380
Claims priority, application Great Britain, Aug. 6, 1963, 30,993/63
4 Claims. (Cl. 312—331)



1. An electrically-driven vehicle of the type having a compartment for an electric storage battery, wherein an expanding linkage is mounted in the compartment, the linkage being adapted to carry the battery and being so positioned and proportioned that when a battery is mounted on it and it is expanded, it guides the battery in a substantially horizontal direction between a contracted position in which the battery is inside or mainly inside the compartment and an expanded position in which the battery is clear of the compartment, said linkage comprising a first link, which is pivoted to a fixed member in the upper part of the compartment and extends downwardly therefrom, a second link, which is pivoted at a point between its ends to the first link and has its lower end guided for up-and-down movement, a third link pivoted to the first link at a point below the pivot between the first and second links and a fourth link which is pivoted to the second link at a point above the pivot between the first and second links and is also pivoted to the third link, said fourth link being adapted to carry the battery and the arrangement being such that said fourth link moves in a substantially horizontal direction during expansion and contraction of the linkage.

3,284,154
VISUAL FIELD TEST APPARATUS WITH FLASH TUBE ILLUMINATOR
Allan Isadore Friedmann, 41 Maresfield Gardens, London, England
Filed Jan. 29, 1962, Ser. No. 169,384
Claims priority, application Republic of South Africa, Feb. 1, 1961, 61/404
1 Claim. (Cl. 351—23)

Apparatus for testing the field of vision of the human eye, which includes a housing, screen means mounted in said housing, said screen means defining a plurality of groups of apertures of which each group is arranged in a predetermined pattern in accordance with a visual test to be carried out upon the field of vision, a shutter mounted adjacent said screen means whereby only one of said groups of apertures is exposed for viewing, means for moving said shutter relatively to said screen means and thereby selectively exposing for viewing alternative



ones of said groups of apertures, means for identifying the relative positions of the screen means and shutter and thereby indicating the particular group of apertures exposed for viewing at any instant, an electronic flash tube mounted within said housing for momentarily rendering visible all of the apertures of the exposed group of apertures for a period of about 1/600 of a second, and means for activating said flash tube at any desired instant.

3,284,155
CONTINUOUS FILM CARTRIDGE
Volmer S. Jensen, Glendale, and Louis M. Goldstone, Beverly Hills, Calif., assignors to Jayark Films Corporation, New York, N.Y., a corporation of New York
Filed June 15, 1964, Ser. No. 374,997
11 Claims. (Cl. 352—29)

1. A cartridge for holding and storing motion picture film arranged in a continuous loop, the film having sprocket holes and a magnetic sound track thereon, said cartridge comprising:

(a) a housing having a front portion;

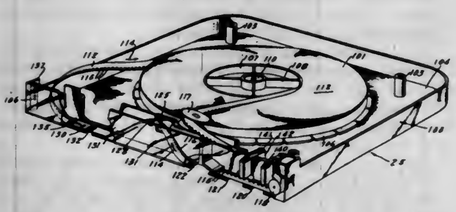
(b) a plate rotatably disposed in said housing for supporting a reel of the film;

(c) a first idler rotatably disposed in said housing and having an axis inclined with respect to the axis of rotation of said plate, said first idler being disposed substantially above the plane of the film reel for removing the film from the inner loop of the film reel;

(d) a second idler rotatably disposed in said housing and having an axis disposed at right angles to said axis of rotation for guiding the film between said first idler and a predetermined path of the film along said front portion, the film being returned from said predetermined path to the outside loop of the film reel;

(e) a first aperture in the front portion of said housing along said predetermined path for allowing access to the sound track on the film;

(f) a second aperture in said front portion along said predetermined path;



(g) a curved plate in said housing cooperating with said second aperture for permitting a sprocket wheel to engage the sprocket holes in the film, thereby to move the film at a constant rate past said first aperture;

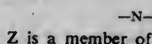
(h) a third and a fourth aperture in the front portion of said housing and along said predetermined film path, said third aperture permitting light to be projected through said cartridge and said film substantially parallel to a plane tangent to the film in said film reel, and said fourth aperture permitting access of an intermittent film-advancing mechanism to the sprocket holes in the film; and

(i) a spring disposed between said curved plate and said third aperture for guiding the film in a self-adjusting loop to take up the intermittent film movement.

CHEMICAL

3,284,156
SYNTHETIC POLYAMIDE TEXTILE MATERIAL HAVING A POLYORGANOSILOXANE GRAFTED THERETO
Eugene Edward Magat and David Tanner, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Sept. 28, 1961, Ser. No. 141,304
5 Claims. (Cl. 8—115.5)

1. A water repellant textile formed from a polyamide selected from a linear polyamide containing recurring units of the formula



wherein Z is a member of the class consisting of a divalent hydrocarbon radical and divalent radical of the formula



wherein G and G' are divalent hydrocarbon radicals, having a polyorganosiloxane graft-polymerized thereto, the said polyorganosiloxane being graft polymerized to the said linear polyamide by ionizing radiation having an energy from about 50,000 ev. to about 100 mev. at a radiation dose of from about 0.05 mrep to about 80 mrep.

3,284,157
TREATMENT OF WOOD
Guilford B. Peters, Mendham, N.J., assignor to Stapling Machines Co., Rockaway, N.J., a corporation of Delaware
No Drawing. Filed Dec. 29, 1964, Ser. No. 422,029
4 Claims. (Cl. 21—7)

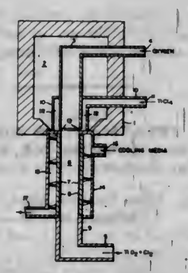
1. In the method of treating wood with an anti-fungal agent by contacting said wood with a solution of said agent, the improvement which comprises thoroughly drying green wood directly after cutting to inhibit the sporulation of fungi during storage prior to treatment with said anti-fungal agent, then, immediately prior to the treatment with the anti-fungal agent, adjusting the moisture content of the dried wood to at least about 28 to 35 percent by weight of said dried wood, but to less than saturation levels, and briefly contacting the moisturized wood with a solution of said anti-fungal agent until a solution

pickup of 6 to 8 percent by weight of said dried wood has taken place, the concentration of said anti-fungal agent in said solution being such that said solution pickup of 6 to 8 percent transfers an effective amount of said anti-fungal agent to said wood.

3,284,158
METHOD OF AND APPARATUS FOR REMOVING SULFUR COMPOUNDS FROM GASES
Friedrich Johswich, Essen, Germany, assignor to Reinluft G.m.b.H., Essen, Germany, a limited-liability company of Germany
Filed Mar. 23, 1964, Ser. No. 353,922
Claims priority, application Germany, June 20, 1963, R 35,460
9 Claims. (Cl. 23—178)

1. A method of removing sulfur compounds from a gas stream containing up to about 10% by volume of gaseous oxidizing-sulfur compounds and reducing-sulfur compounds, comprising the steps of:
(a) modifying the concentration of said oxidizing-sulfur compounds and said reducing-sulfur compounds so that said oxidizing-sulfur compounds and said reducing-sulfur compounds are present in a molar-ratio range between 1.1:1 and 3.5:1, based upon the sulfur present in said compounds;
(b) passing the gas stream into contact with a solid carbonaceous adsorbent in the presence of an oxidizing agent at a temperature in excess of 50° C. and sufficient to oxidize substantially all of said reducing sulfur compounds and thereby convert them into at least one substance selected from the group which consists of elemental sulfur, sulfur dioxide and sulfur trioxide, adsorbing said oxidizing-sulfur compounds on said adsorbent, and depositing sulfuric acid thereon;
(c) heating said adsorbent to a temperature between substantially 300° and 500° C. for a period sufficient to convert substantially all of said elemental sulfur, said sulfuric acid and said oxidizing-sulfur compounds to sulfur dioxide; and
(d) removing sulfur dioxide from said adsorbent.

3,284,159
PIGMENTARY TiO_2 MANUFACTURE
Willard Emil Kruse, Dickson, Tenn., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Jan. 3, 1964, Ser. No. 335,548
4 Claims. (Cl. 23—202)

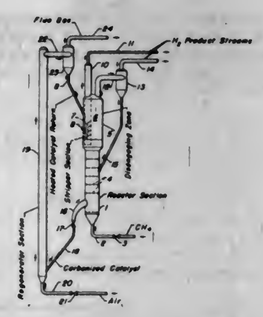


1. A method for preventing corrosion and deterioration of a metallic imperforated reaction zone wall in which zone oxidation at an elevated temperature of titanium tetrachloride to produce a titanium oxide is effected which comprises coating the internal surface of the metallic imperforated reaction zone wall with a layer of titanium dioxide having an average thickness ranging from .01 inch to 0.1 inch in order to form a glazed surface thereon that prevents corrosion of the metallic surface and TiO_2 contamination and subsequently reacting titanium tetrachloride with oxygen in the vapor phase in the reaction zone while cooling the metallic reaction zone wall to a temperature below about 500° C. and recovering titanium dioxide.

3,284,160
TREATMENT OF RECYCLED MINERAL OIL IN THE PRODUCTION OF SODIUM HYDRIDE
William E. Milligan, Allison Park, Pa., assignor to Callery Chemical Company, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Aug. 26, 1959, Ser. No. 836,848
7 Claims. (Cl. 23—204)

4. A method of producing coarse sodium hydride which comprises reacting sodium with hydrogen at elevated temperatures in a mineral oil which has been recovered from a process in which sodium hydride in said oil was reacted with methyl borate and treated with Panther Creek bentonite.

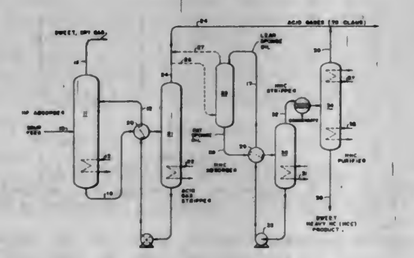
3,284,161
METHOD FOR HYDROGEN PRODUCTION BY CATALYTIC DECOMPOSITION OF A GASEOUS HYDROCARBON STREAM
Jack B. Pohlenz, Arlington Heights, and Norman H. Scott, Villa Park, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed Jan. 22, 1963, Ser. No. 253,085
2 Claims. (Cl. 23—212)



1. A continuous method for converting a hydrocarbon stream into hydrogen and carbon in the presence of subdivided catalyst particles, which comprises, introducing heated and stripped catalyst particles to the upper portion of a vertically elongated reaction zone and passing such particles downwardly therethrough countercurrently to a hydrocarbon charge stream being introduced to the lower end of such zone at decomposition conditions effecting the production of a hydrogen containing stream and carbonized particles, passing resulting carbon containing particles to the lower end of a regeneration zone and contacting them in a rising fluidized column with a regeneration stream containing free oxygen in a controlled quantity whereby to effect the burning and removal of at least a portion of the carbon content on such particles, discharging resulting heated particles and flue gas from the upper end of said regeneration zone into a separating zone and therein effecting the separation thereof at an elevation above said reaction zone, passing separated particles by gravity flow downwardly through a stripping zone countercurrently to a stripping stream comprising a portion of the hydrogen containing product stream rising from said reaction zone whereby to effect the removal

of carbon oxides from such particles, subsequently passing stripped catalyst particles downwardly in further gravity flow from the lower end of said stripping zone to the upper portion of said reaction zone which is in open communication with the lower end of the stripping zone for downward flow countercurrently through the hydrocarbon charge stream as aforesaid, separating the hydrogen containing product from the upper portion of the reaction zone into separate streams in a disengaging zone above the reaction zone, introducing one of the last-named streams into the lower end of the stripping zone as said stripping stream, and separately withdrawing hydrogen containing product streams from both the upper end of said disengaging zone and the upper end of said stripping zone.

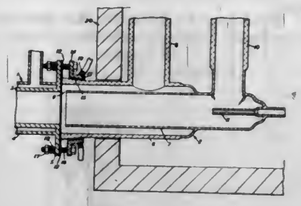
3,284,162
SEPARATION PROCESS
Carl H. Deal, Jr., Amsterdam, Netherlands, Elwood L. Derr and Michael N. Papadopoulos, Walnut Creek, Calif., and Grant M. Wilson, Emmaus, Pa., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Dec. 31, 1962, Ser. No. 261,244
(Filed under Rule 47(b) and 35 U.S.C. 118)
7 Claims. (Cl. 23—226)



7. The process which comprises:
(1) contacting a sour natural gas containing at least 0.1 mol percent hydrogen sulfide together with normally gaseous hydrocarbons under a pressure in excess of about 10 p.s.i.a. with a dialkyl N-substituted aliphatic acid amide in a rectified absorption zone, the temperature differential between the top and bottom of the zone being between about 50° F. and about 150° F. whereby hydrogen sulfide is absorbed and separated from rejected hydrocarbons;
(2) introducing sulfur dioxide into the absorption zone, whereby elemental sulfur is formed by reaction between sulfur dioxide and hydrogen sulfide;
(3) separating elemental sulfur from the amide;
(4) oxidizing sulfur so separated to form sulfur dioxide;
(5) injecting sulfur dioxide from step (4) for the absorption zone of step (2); and
(6) recycling amide from step (3) to the absorption zone in step (1).

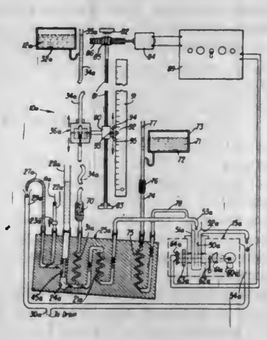
3,284,163
MEANS FOR CONNECTING METAL AND REFRACTORY TUBULAR MEMBERS
William Noel Dear, Grimsby, England, assignor to Laporte Titanium Limited, London, England, a British company
Filed June 25, 1963, Ser. No. 290,479
Claims priority, application Great Britain, July 11, 1962, 26,718/62
11 Claims. (Cl. 23—252)

1. Apparatus comprising a tubular part made entirely of metal and a tubular part made entirely of a refractory material, said parts being arranged end-to-end with a thermally insulating gasket interposed between the tubular parts to prevent any contact between their abutting surfaces, a metal ring disposed about the refractory part, the outer surface of the refractory part being shaped to limit movement of the metal ring towards the metal part



and relative to the refractory part, a layer of thermally insulating material interposed between the ring and the refractory part, connecting means for resiliently securing the ring to the metal part, and means for cooling the ring.

3,284,164
APPARATUS FOR AUTOMATIC ANALYZING
Clifford C. Hach, Ames, Iowa, assignor to Hach Chemical Company, Ames, Iowa, a corporation of Iowa
Original application Apr. 19, 1960, Ser. No. 23,246, now Patent No. 3,186,799, dated June 1, 1965. Divided and this application Dec. 16, 1964, Ser. No. 418,688
2 Claims. (Cl. 23—253)

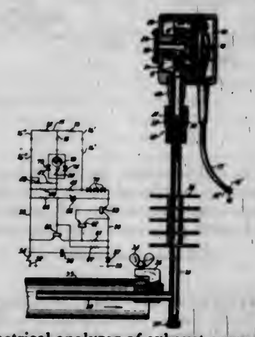


1. Apparatus for continuously combining measured quantities of two fluids in varying proportion comprising, in combination, a frame block, said block having a combining passage with a capillary metering tube at one end opening to a discharge outlet, a first conduit including a passage in said block for conducting a stream of the first fluid to said combining passage, means defining an overflow outlet opening through said block to said combining passage for establishing a constant head pressure on said first fluid in the combining passage, said block having a second metering tube with one end opening into said combining passage, a second conduit coupled to the other end of said second metering tube for conducting a stream of said second fluid to said combining passage, and a vertically movable float valve interposed in said second conduit so that the head pressure, and thus the flow rate, of said second fluid to said passage can be varied to vary the proportion of said fluids being combined.

3,284,165
ELECTRICAL MEASURING DEVICE FOR THE ANALYSIS OF EXHAUST GASES OF INTERNAL COMBUSTION ENGINES

Günther Baumann and Hermann Scholl, Stuttgart, Wolfgang Reichardt, Stuttgart-Rohr, Hans Zeller, Doffingen, Wurttemberg, and Josef Wahl, Stuttgart-Kaltental, Germany, assignors to Robert Bosch G.m.b.H., Stuttgart, Germany

Filed Sept. 11, 1964, Ser. No. 395,760
Claims priority, application Germany, Sept. 12, 1963, B 73,481
3 Claims. (Cl. 23—255)



1. An electrical analyzer of exhaust gases of an internal combustion engine, comprising, in combination,

measuring head means comprising two separate compartments;

tubular conduit means secured at one end to said measuring head means communicating with one of said compartments therein, said tubular conduit means being inserted at its other end into the exhaust pipe of an internal combustion engine and causing exhaust gases therefrom to stream into and through said one compartment;

first resistor means including a measuring resistor comprising a platinum wire positioned in said one compartment and heated by passage of an electric current therethrough so as to assume a predetermined resistance and temperature and thereby to ignite combustible components of said exhaust gases entering said one compartment, the burning of such combustible components in turn additionally heating said measuring resistor and thereby changing the predetermined resistance thereof;

second resistor means including a reference resistor constituted by a platinum wire positioned in the other of said compartments and heated by electric current passing therethrough to assume a substantially constant reference resistance;

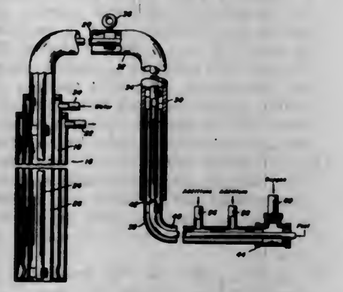
a source of electric energy for supplying electrical energy, said source having two terminals of opposite polarity; and

electric circuit means including a bridge circuit comprising a multi-lead connection entering at one end thereof said measuring head means and connecting said measuring resistor in said one compartment and said reference resistor in said other compartment as two branches of said bridge circuit, said electric circuit means comprising at least two supplementary resistors connected in two other branches of said bridge circuit, an electric circuit measuring instrument connected as a diagonal of said bridge circuit, said multi-lead connection connecting said measuring and reference resistors with the remainder of said bridge circuit, said electric measuring instrument being connected in said bridge circuit in a manner whereby it measures and indicates a change of resistance of said measuring resistor relative to the substantially constand resistance of said reference resistor during passage of said exhaust gases through said one compartment, such change of resistance being an indication of the proportion between combustible components and non-combustible components of said exhaust gases, and automatic regulating means connected between said bridge circuit and said source of electric energy for keeping the voltage applied to said measuring and reference resistors from said source of electric energy substantially constant when the output voltage of said source varies considerably, said regulating means comprising a load-carrying transistor having an emitter electrode, a collector-base circuit and an emitter-collector circuit connected between one terminal of said source and a point between adjacent branches of said bridge circuit, a first additional resistor, a first control transistor having a base electrode and an emitter-collector circuit connected in series with said first additional resistor across the two terminals of said source, a second control transistor having an emitter-collector circuit connected in series with the collector-base circuit of said load-carrying transistor, said second control transistor having a base electrode connected to a point between the emitter-collector circuit of said first control transistor and said first additional resistor thereby controlling the conductivity of said load-carrying transistor and thereby causing a regulated voltage to be applied to said bridge circuit, and a voltage divider connected between the other terminal of said source and the emitter electrode of said load-carrying transistor.

3,284,166
APPARATUS FOR TREATING SLAG

George A. Bartholomew, Pittsburgh, Pa., assignor to United States Steel Corporation, a corporation of Delaware

Original application June 6, 1963, Ser. No. 286,084. Divided and this application Sept. 30, 1965, Ser. No. 491,536
2 Claims. (Cl. 23—259.1)

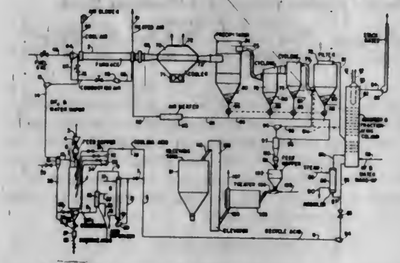


1. Apparatus for treating molten metallurgical slag comprising a container for receiving molten slag, a vertically movable U-shaped lance having an inner conduit surrounded by an outer conduit, one leg of said lance being movable from a position where its lower end is below said slag to a position where its lower end is above said slag, an additive container, an oxygen container, a source of fuel, a double conduit having an inner chamber surrounded by an outer chamber, means connecting said source of fuel to said inner chamber, and means connecting said additive container and said oxygen container to said outer chamber, said double conduit being received within the second leg of said lance with its inner chamber connected to said inner conduit and its outer chamber connected to said outer conduit.

3,284,167
APPARATUS FOR PRODUCING PIGMENTARY SILICA

George L. Heller, James W. White, and Elton F. Gunn, Jr., all of Monroe, La., assignors to CBN Corporation, a corporation of Delaware

Original application May 29, 1961, Ser. No. 113,270, now Patent No. 3,233,969, dated Feb. 8, 1966. Divided and this application June 1, 1965, Ser. No. 475,620
4 Claims. (Cl. 23—262)

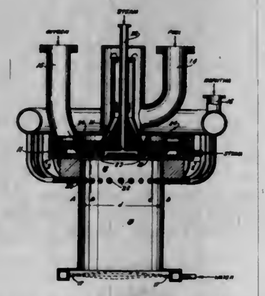


1. Apparatus especially adapted for the production of pigmentary silica which comprises in sequence a hydrofluoric acid vaporizer, a vapor superheater for super heating the hydrofluoric acid vaporized in said vaporizer, a SiF_4 generator adapted to hold a vertically-elongated bed of crystalline silica, a hydrolyzer, a cooler, separator means adapted to the separation of suspended solids from gaseous media, and an absorption and fractionating column, means for conveying an aqueous acid condensate from the absorption and fractionating column to the vaporizer and thence through the superheater to the SiF_4 generator, means for conveying the resultant gas mixture from the generator to the hydrolyzer, ducts leading from the hydrolyzer to the cooler and thence to the separator means and conduit means for passing the gaseous medium from the separating means to the absorption and fractionating column.

3,284,168
APPARATUS FOR THERMAL DECOMPOSITION OF HYDROCARBONS

Frederic F. A. Braconier, Plainevaux, and Jean J. L. E. Riga, Liege, Belgium, assignors to Societe Belge de l'Azote et des Produits Chimiques du Marly, Liege, Belgium

Filed Feb. 11, 1963, Ser. No. 257,591
4 Claims. (Cl. 23—277)

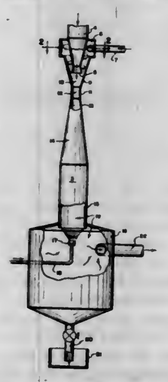


1. In a pyrolysis reactor for pyrolyzing hydrocarbons into less saturated hydrocarbons by injection thereof into hot combustion gases in said reactor, the combination which comprises a cylindrical combustion chamber for producing said hot combustion gases by combustion of a fuel gas and a comburent gas therein, a pyrolyzed chamber in direct flow communication with said combustion chamber and into which said hydrocarbons to be pyrolyzed are injected, said pyrolysis chamber being downstream of said combustion chamber in the line of flow of said hot combustion gases, a distributor at the upstream end of said combustion chamber consisting essentially of a plurality of injection ports in said distributor arranged in pairs with the center point of both ports of each pair lying on a common radius of said combustion chamber for injecting a plurality of separate streams of said fuel and comburent gases for admixture and combustion in said combustion chamber, said plurality of pairs of ports being disposed in said distributor in only two circles with one each of each said pair being in each circle and with the circles being coaxial with each other and with said cylindrical combustion chamber and having a diameter greater than one-half that of said combustion chamber, one of said circles having a diameter larger than the other and forming the radially outer circle and the smaller one forming the radially inner circle of ports, the axis of each of said ports being downwardly inclined with respect to the axis of said combustion chamber and with the axis of each respective fuel and comburent gas port intersecting for admixture of said gases at said intersections to form a ring of flames, and the angle between the axis of the radially outer port of each said pair and the axis of said combustion chamber being greater than the angle between the axis of the radially inner port of each said pair and the axis of said combustion chamber for deflecting radially inwardly said flames formed at said intersections avoiding direct impingement of said flames on periphery walls of said combustion chamber upstream of said hydrocarbon injection.

3,284,169
REACTOR EQUIPMENT FOR THE PRODUCTION OF TETRAFLUOROETHYLENE

Kenichi Tominaga, Yutaka Kimura, and Hiroshi Suzuki, Osaka, Japan, assignors, by mesne assignments, to Thiokol Chemical Corporation, Trenton, N.J., a corporation of Delaware

Filed Feb. 20, 1963, Ser. No. 259,868
Claims priority, application Japan, Feb. 21, 1962, 37/6,817
3 Claims. (Cl. 23—284)



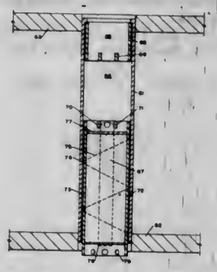
1. A reactor for the production of tetrafluoroethylene by the steam-initiated pyrolysis of chlorodifluoromethane, comprising a vertically-mounted enclosed reaction vessel having consecutively positioned and interconnected therewithin a mixing zone, a reaction zone, an adiabatic expansion zone, and a cooling zone, a steam-jet injection nozzle having a diffusion lip extending downwardly through the top of the reaction vessel into the mixing zone, a fully enclosed inlet manifold chamber concentrically disposed about the steam-jet injection nozzle, inlet means for

cyclonically introducing preheated chlorodifluoromethane into the inlet manifold chamber above the diffusion lip of the steam-jet injection nozzle, spray cooling means for quenching the cooling zone the hot reaction gases which exit from the adiabatic expansion zone, means for withdrawing tetrafluoroethylene and other gaseous reaction products from the cooling zone, and means for withdrawing by-product hydrochloric acid and coolant from the cooling zone, the mixing zone being defined by a conical wall of the reaction vessel extending downwardly from the bottom of the inlet manifold chamber and surrounding the diffusion lip of the steam-jet injection nozzle and converging to a cylindrical Venturi-throat, the reaction zone being defined by the wall of said cylindrical Venturi-throat, and the adiabatic expansion zone being defined by a second conical wall of the reaction vessel diverging in diameter from its upper to its lower end, the conical wall defining the mixing zone, the cylindrical Venturi-throat defining the reaction zone, and the second conical wall defining the adiabatic expansion zone all being axially disposed with respect to the steam-jet injection nozzle, the length of the adiabatic expansion zone and the ratio of the cross-sectional areas of the upper end to that of the lower end of the adiabatic expansion zone being sufficient to permit adiabatic expansion of the hot chlorodifluoromethane-steam recation gases which exit from the reaction zone.

3,284,170
APPARATUS FOR THE CONVERSION OF ALCOHOL TO CARBONYL COMPOUNDS

Sandford D. Neely, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Original application Mar. 26, 1959, Ser. No. 802,198, now Patent No. 3,106,581, dated Oct. 8, 1963. Divided and this application Jan. 14, 1963, Ser. No. 266,463
2 Claims. (Cl. 23—288)



1. An apparatus for converting alcohols to carbonyl compounds comprising a vaporizer and preheater for an alcohol-oxygen mixture in series with a reaction chamber which contains a plurality of tubes therein, said tubes being contained in the reaction chamber by means of tube sheets on each end of the tubes, means for the input of coolant into the reaction chamber around the exterior of said tubes, said tubes containing catalyst screens in a portion thereof and the tubes containing an internal member by means of which the reaction products exiting from the catalyst may be forced against the inner surface of said tubes, a spacer member encircling the inner tube member whereby the reaction products may be caused to exit at high velocity, said inner tube member being closed at each end concentrically disposed within the tubes, spaced from said tubes by a wire wound helically around said inner tube member, and constructed of stainless steel metal, the walls of the tube being of a thickness such that a good heat transfer may be accomplished through the tube wall, the tube member being internally provided with an alcohol inlet section, a catalyst section and a cooling section, the cooling section being comprised of an inner tube-like member generally conforming to the outer tube member and spaced therefrom by a wire encircling the inner tube member.

3,284,171
PROCESS FOR CONCENTRATING ORTHOPHOSPHORIC ACID WITH A MISCIBLE WATER ENTRAINER AND CRYSTALLIZING

Douglas Charles Harper, 135 Rushmere Road, Ipswich, England

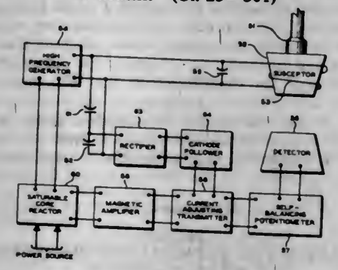
No Drawing. Filed Mar. 27, 1964, Ser. No. 355,449
Claims priority, application Great Britain, Apr. 6, 1963, 13,776/63
14 Claims. (Cl. 23—301)

10. A process for the preparation of crystalline orthophosphoric acid which comprises distilling aqueous orthophosphoric acid in the presence of a miscible water entrainer at a temperature below 150° C. to obtain a residue comprising orthophosphoric acid of a concentration of at least 95% by weight, and cooling the residue to yield crystalline orthophosphoric acid.

3,284,172
APPARATUS AND PROCESS FOR PREPARING SEMICONDUCTOR RODS

Richard J. Binder, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed Oct. 13, 1964, Ser. No. 403,489
6 Claims. (Cl. 23—301)



1. In a method of melt drawing a mono-crystalline semiconductor rod wherein a semiconductor material is melted within a susceptor by use of inductive heating through the medium of a work coil energized by a high frequency electrical source, and thereafter drawing said semiconductor material into rod form from said melt by means of a mechanical arrangement while controlling the temperature of said melt by sensing temperature fluctuations in said melt, converting said temperature fluctuations to an error voltage representing the difference between the fluctuated temperature and a desired temperature, and utilizing said error voltage to control the power source to said high frequency energy source and thereby control the power in said work coil, the improvement which comprises utilizing changes in the voltage of said work coil without materially influencing said voltage by summing with said error voltage to stabilize the power in said work coil and thereby stabilize the temperature of said melt.

3,284,173
PREPARATION OF PLUTONIUM HEXAFLUORIDE

Jack Fischer, Lisle, Ill., assignor to the United States of America as represented by the United States Atomic Energy Commission

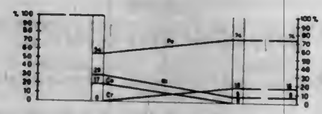
No Drawing. Filed Apr. 27, 1965, Ser. No. 451,366
2 Claims. (Cl. 23—326)

1. A process of removing a plutonium compound selected from the group consisting of plutonium dioxide, plutonium tetrafluoride and plutonyl fluoride from alumina, comprising admixing to the plutonium-containing alumina a bismuth catalyst selected from the group consisting of bismuth metal and bismuth trifluoride, bringing the temperature of the mixture to between 450 and 600° C., and passing fluorine gas over the mixture at said temperature, whereby plutonium hexafluoride is formed and volatilized.

3,284,174
COMPOSITE STRUCTURES MADE BY BONDING CERAMICS, CERMETS, ALLOYS, HEAVY ALLOYS AND METALS OF DIFFERENT THERMAL EXPANSION COEFFICIENT

Frantisek Zimmer, Brussels, Belgium, assignor to Bureau d'Etudes Industrielles Fernand Courtoy, Brussels, Belgium, a limited company of Belgium

Filed Apr. 16, 1962, Ser. No. 187,801
14 Claims. (Cl. 29—183.5)



1. A composite structure comprising two spaced apart component parts and a connecting piece metallurgically bonded between said component parts:
(A) said component parts being selected from the group consisting of:
(1) ceramics and metals,
(2) cermets and metals,
(3) cermets and super alloys,
(4) heavy tungsten alloys and metals,
(5) ceramics and cermets, and
(6) ceramics and super alloys,
(B) said connecting piece being at least one alloy formed by powder metallurgy and having a coefficient of expansion which varies substantially continuously from one end to the other and in which said coefficient of expansion at each end of said connecting piece substantially matches the coefficient of expansion at the adjacent end of the component part to which it is bonded, the alloy of said connecting piece consisting essentially of a combination of the hereinafter specified elements, the amount of each specified element in the alloy varying substantially continuously from one end to the other within the indicated range, said alloys being selected from the group consisting of:
(a) an alloy consisting essentially of iron over the range of 54 to 74%, nickel over the range of 29 to 8%, cobalt over the range of 17 to 0%, and chromium within the range of 0 to 18%;
(b) an alloy consisting essentially of iron over the range of 58 to 74%, nickel over the range of 42 to 8%, and chromium over the range of 0 to 18%;
(c) an alloy consisting essentially of zirconium over the range of 100 to 0%, and titanium over the range of 0 to 100%;
(d) an alloy consisting essentially of tungsten over the range of 94 to 0%, carbon over the range of 6 to 0%, and cobalt over the range of 0 to 100%;
(e) an alloy consisting essentially of titanium over the range of 81.5 to 0%, carbon over the range of 18.5 to 0%, and nickel over the range of 0 to 100%;
(f) an alloy consisting essentially of tungsten over the range of 92 to 0%, nickel over the range of 5 to 100%, and copper over the range of 3 to 0%; and
(g) an alloy consisting essentially of iron over the range of 74 to 79.5%, chromium over the range of 18 to 3.5%, nickel over the range of 8 to 12%, and manganese over the range of 0 to 5%.

3,284,175
GOLD COATED STEEL ARTICLE

Neville S. Spence, Ottawa, Ontario, Louis Badone, Willowdale, Ontario, and William A. Morgan and Roger D. McDonald, Ottawa, Ontario, Canada, assignors, by direct and mesne assignments, to Her Majesty The Queen in right of Canada, as represented by the Minister of Mines and Technical Surveys

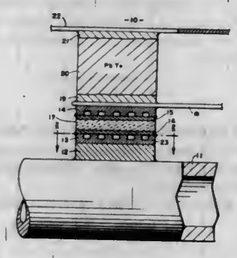
No Drawing. Filed Mar. 9, 1964, Ser. No. 350,525
1 Claim. (Cl. 29—183.5)

A structural component of ultra high strength steel having a minimum yield strength of 175,000 p.s.i. and having thereon a continuous, pore-free, hydrogen-impermeable gold coating of a minimum thickness of the order of $\frac{1}{1,000,000}$ of an inch, and a protective outer layer of cadmium overlying and coextensive with said gold coating.

3,284,176
BONDED METALLIC AND METALIZED CERAMIC MEMBERS AND METHOD OF MAKING

Edward L. Reed, Woodland Hills, Calif., Bruce Gradle, Wolfgang, near Hanau, Germany, and Everett E. Garrett, Simi, Calif., assignors to North American Aviation, Inc.

Filed Oct. 28, 1963, Ser. No. 319,334
8 Claims. (Cl. 29—195)



5. A thermally stable bonded assembly of a metallic member and a ceramic member which comprises, in combination, a metallic member having a first surface containing a regular integral cross-hatched pattern of depressed and stud-like raised portions of said metallic member, a ceramic member having a metalized surface disposed adjacent said metallic member first surface, and a brazing alloy contacting said raised portions and said metalized surface joining said metallic and ceramic members.

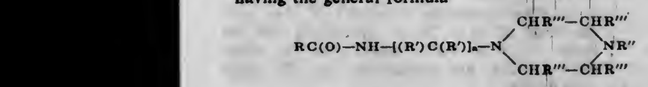
3,284,177
GASOLINE COMPOSITION

Eddie G. Lindstrom, Martinez, and Maurice R. Barusch, Richmond, Calif., assignors to Chevron Research Company, a corporation of Delaware

No Drawing. Filed June 19, 1963, Ser. No. 289,445
5 Claims. (Cl. 44—56)

4. An additive concentrate intended for incorporation into a gasoline, consisting essentially of an organic, gasoline-compatible solvent boiling substantially in the gasoline range and selected from the group consisting of hydrocarbon solvents and C_3–C_6 aliphatic alcohols, and, dissolved in said organic solvent, from about 10 to about

70% by weight of an oil-soluble aminoalkylene amide having the general formula



in which R is an acyclic hydrocarbon radical of 11 to 17 carbon atoms, R′ is selected from the group consisting of hydrogen, methyl and ethyl radicals, *n* is an integer from 2 to 4, and R″ is a radical selected from the group consisting of hydrogen, C_1–C_4-alkyl, C_1–C_4-hydroxyalkyl and C_1–C_4-aminoalkyl radicals and R‴ is selected among hydrogen, methyl and ethyl radicals.

3,284,178

METAL BACKED ABRASIVES

William F. Timmer, Cohoes, and Nolan A. Curry, Troy, N.Y., assignors to Norton Company, Troy, N.Y., a corporation of Massachusetts

Filed June 20, 1963, Ser. No. 289,264
3 Claims. (Cl. 51—297)



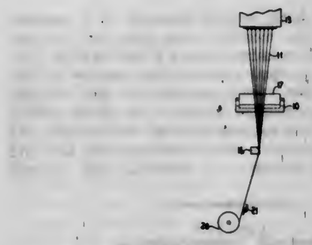
1. An abrasive article comprising: a metal backing member; a presize coating having a thickness of from 0.0001 inch to 0.005 inch adhered to one surface of said metal backing, said presize coating consisting essentially of a reaction product of alcohol-soluble nylon having an intrinsic viscosity of at least 0.4 with a thermosetting, alkali-catalyzed unmodified phenol-formaldehyde resin, the ratio of nylon to resin ranging from 19:1 to 1:4; and a plurality of abrasive grains adhesively bonded to said presize coating.

3,284,179

METHOD OF FORMING GLASS FIBERS

George E. Eilerman, Pittsburgh, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 2, 1963, Ser. No. 249,066
5 Claims. (Cl. 65—3)



1. A method which comprises drawing glass filaments from a molten supply of glass at a high rate of speed, gathering the filaments and combining them into a strand and applying an aqueous size to the filaments as they are being drawn, said size consisting essentially of an aqueous dispersion containing 2 to 15 percent by weight of starch and 2 to 15 percent by weight of a synthetic resin latex selected from the group consisting of:

(A) homopolymers of vinyl acetate, methyl methacrylate, methyl acrylate, vinyl chloride, styrene, acrylonitrile, chlorovinyl acetate and vinylidine chloride;
(B) homopolymeric mixtures containing at least two of the homopolymers of (A);
(C) copolymers of butadiene with a monomer selected from the group consisting of:
(1) styrene, and
(2) acrylonitrile;
(D) polymeric mixtures of a homopolymer of (A) and a copolymer of (C); and
(E) polymeric mixtures of a mixture of homopolymers of (B) and a copolymer of (C),

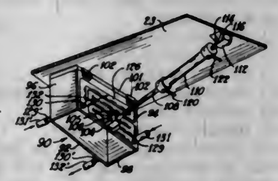
the combined weight of the starch and latex solids plus a small, effective amount of an oil-free, textile softener constituting about 13 to 20 percent by weight of the size, said solids, softener and water being the essential ingredients of the size, said size having a viscosity of about 1 to 20 centipoises at 20° C.

3,284,180

APPARATUS FOR PRODUCING FIBERS FROM HEAT-SOFTENABLE MATERIAL

Charles J. Stalego, Newark, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware

Original application Oct. 19, 1961, Ser. No. 146,197, now Patent No. 3,233,991, dated Feb. 8, 1966. Divided and this application Mar. 24, 1965, Ser. No. 442,274
5 Claims. (Cl. 65—12)



1. Apparatus for processing heat-softened glass, in combination, a feeder containing the heat-softened glass having orifices for flowing a group of streams of the glass, support means for the feeder, means engaging filaments formed from the streams for attenuating the streams to filaments, and an imperforate walled enclosure supported in substantially air tight relation to the feeder and surrounding the group of streams to isolate the streams from ambient atmospheric currents, a wall region of the enclosure having channel means accommodating heat conducting fluid for controlling temperature conditions at the region of the group of streams.

3,284,181

PROCESS FOR FINISHING FLOAT GLASS

William C. Harrell, Arnold, and Henry M. Demarest, Jr., Natrona Heights, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 29, 1964, Ser. No. 385,874
5 Claims. (Cl. 65—31)

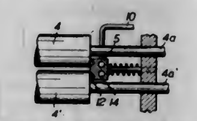
1. In the method of forming a glass sheet by depositing molten glass on a bath of molten tin or an alloy of tin to form a sheet of glass supported on the surface of said bath, and removing from the surface of said bath a sheet of glass that exhibits iridescence upon heating or upon heating and bending, the improvement comprising removing in the absence of an abrasive, at least a portion of the surface of the glass that was in contact with said bath without substantially changing the thickness of the glass.

3,284,182

DEVICE FOR THE FABRICATION OF U-SHAPED PROFILES OF GLASS IN A CONTINUOUS ROLLING PROCEDURE

Fridolin Jamnik, Vienna, Austria, assignor to Moosbrunner Glasfabriks-Aktiengesellschaft, Vienna, Austria

Original application June 22, 1961, Ser. No. 118,904, now Patent No. 3,226,219, dated Dec. 28, 1965. Divided and this application Oct. 21, 1965, Ser. No. 499,577
Claims priority, application Austria, June 14, 1961, A 4,624/61
The portion of the term of the patent subsequent to Dec. 23, 1982, has been disclaimed
3 Claims. (Cl. 65—170)



1. An apparatus for the manufacture of vitreous products, comprising

equalizing means, including a pair of rotatable superposed parallel rollers spaced from one another so as to define an elongated gap having open ends, said rollers each having respective opposite end faces adjacent said open ends;

a source of molten vitreous material located upstream of said equalizing means for continuously feeding a mass of molten material into said gap from one side so that said material emerges from the other side of said gap as a continuous band;

sealing means sealing said open ends of said gap, said sealing means comprising a pair of blocks having respective faces engaging said end faces of said rollers, said faces of said blocks being provided with open recesses in contact with said end faces of said rollers and said blocks being formed rearwardly of said recesses with bores;

heat-exchanger means cooperating with said bores of said blocks for regulating the temperature thereof;

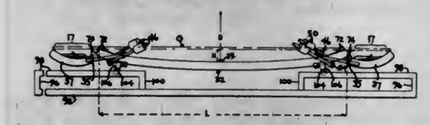
and lubricating means for introducing lubricant into said recesses of said block faces of said blocks intermediate said end faces of said rollers and said sealing means for reducing friction therebetween.

3,284,183

GLASS SHEET BENDING MOLD WITH PIVOTED END SECTIONS

Lloyd V. Black, Murphy, N.C., and Harold E. McKelvey, Wayne County, Mich., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 21, 1965, Ser. No. 499,675
6 Claims. (Cl. 65—291)



1. Apparatus for bending glass sheets to complex curvatures comprising a peripheral-type mold including a sectionalized shaping surface consisting of a center section and a pair of end sections movably joined to the opposite ends of said center section, said end sections being movable from an open position wherein a flat glass sheet is supported thereon to a closed position in which the bent sheet is received on all said sections, said center section including a pair of spaced, opposed shaping rails curved in elevation, one of said center section shaping rails being shaped in plan to correspond to the outline of the central portion of one longitudinal side edge of said glass sheet, the other of said center section shaping rails being shaped in plan to correspond to the outline of the central portion of the other longitudinal side edge of said glass sheet, each end mold section also including a shaping rail comprising an intermediate portion extending obliquely of the mold and a pair of end portions extending longitudinally inward from the opposite ends of the intermediate portion with the uppermost portion of said rail along a substantial portion of the rail length forming a straight line of support lying in a substantially horizontal plane when said mold sections are in the open position.

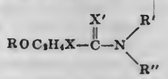
3,284,184

CONTROLLING VEGETATION WITH ARYLOXYETHYL ESTERS OF THIOCARBAMIC ACIDS

Richard O. Zerbe, Nitro, W. Va., and Anton G. Weiss, Basel, Switzerland, assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Aug. 7, 1963, Ser. No. 300,619
9 Claims. (Cl. 71—2.5)

1. The method of controlling vegetation which comprises applying thereto a phytotoxic concentration of a phytotoxic ester of the structure



where R is selected from the group consisting of phenyl, tolyl, p - ethylphenyl, monochlorophenyl, 2,4 - dichlorophenyl, 2,6 - dichlorophenyl, 2,4,5 - trichlorophenyl, 2, 4,6 - trichlorophenyl, and 2,3,6 - trichlorophenyl, X and X′ are selected from a group consisting of oxygen and sulfur at least one of X and X′ being sulfur, R′ alone is lower alkyl, R″ alone is selected from the group consisting of lower alkyl, cyclohexyl, and phenyl and R′ and R″ taken together form with the nitrogen a heterocyclic radical selected from the group consisting of 1 - pyrrolidinyl, 1 - piperidinyl, 5 - ethyl - 2 - methyl - 1-piperidinyl - 4 - morpholinyl and hexamethylenimino.

3,284,185

METHOD OF DEFOLIATING PLANTS

Harmannus Koopman and Jasper Daams, both of Van Houtenlaan, Weesp, Netherlands

No Drawing. Filed Dec. 27, 1965, Ser. No. 516,694
Claims priority, application Netherlands, Sept. 14, 1962, 283,262
3 Claims. (Cl. 71—2.5)

1. A method of defoliating plants having an annual leaf drop comprising the step of applying to said plants in an amount sufficient to cause defoliation, ethyl-aminopentachloro-phosphonitrile.

3,284,186

HERBICIDAL COMPOSITION AND METHOD

Herbert A. Pass, St. Lambert, Quebec, and Beresford J. Watt, Valois, Quebec, Canada, assignors to The Sherwin-Williams Co. of Canada, Limited, Green Cross Division

No Drawing. Filed Feb. 27, 1964, Ser. No. 347,659
Claims priority, application Canada, Mar. 1, 1963, 869,971
18 Claims. (Cl. 71—2.6)

1. A herbicidal composition, including as essential active constituents, a first ingredient comprising a chlorophenoxyacetic herbicide selected from the group consisting of 2,4-dichlorophenoxyacetic acid, esters, amines and herbicidally effective salts thereof and 2-methyl-4-chlorophenoxyacetice acid, esters, amines and herbicidally effective salts thereof, a second ingredient comprising a chlorophenoxypropionic herbicide selected from the group consisting of 2-methyl-4-chlorophenoxypropionic acid, esters, amines and herbicidally effective salts thereof, and 2,4-

dichlorophenoxypropionic acid, esters, amines and herbicidally effective salts thereof, and a third ingredient comprising a methoxychlorobenzoic herbicide selected from the group consisting of 2-methoxy-3,6-dichlorobenzoic acid, esters, amines and herbicidally effective salts thereof, the total amount of the chlorophenoxyacetic and chlorophenoxypropionic herbicides together being present in a weight ratio to the methoxy chlorobenzoic herbicide of between about 1.5:1 and about 1:1; the chlorophenxyacetic herbicide being present in a weight ratio to the chlorophenoxypropionic herbicide of between about ¼:1 to about 4:1, each of the ratios being calculated on the basis of the active ingredients.

3,284,187

DISPERSANT COMPOSITIONS AND TOXICANT CONCENTRATES CONTAINING THE SAME

Paul L. Lindner, Evanston, Ill., assignor to Witco Chemical Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 10, 1962, Ser. No. 243,577
16 Claims. (Cl. 71—3)

14. A combination biocidal toxicant water-soluble inorganic salt fertilizer composition containing an aqueous phase comprising a water solution of said water-soluble inorganic salt fertilizer material, and a normally water-immiscible oleaginous phase comprising an organic solvent solution of said biocidal toxicant, said composition comprising a substantially homogeneous emulsion which includes, in admixture therewith, (a) a compound represented by the formula



where R is higher molecular weight aliphatic containing a chain of from 8 to 24 carbon atoms, R^1 is a member selected from the group consisting of hydrogen and lower alkyl, and M and M' are members selected from the group consisting of alkali metals and organic substituted ammonium radicals with the proviso that at least one of M and M' is an organic substituted ammonium radical, and (b) an amine salt of an alkyl benzene sulfonic acid in which alkyl contains from 12 to 18 carbon atoms, the weight ratio of said (a) to said (b) ingredient being from about 2 to about 20 of (a) to 1 of (b), the total of said (a) and (b) ingredients constituting from 3 to 30%, by weight, of the water-immiscible oleaginous phase.

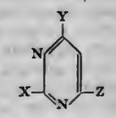
3,284,188

METHOD AND COMPOSITION FOR SUPPRESSING THE NITRIFICATION OF AMMONIUM NITROGEN IN SOIL

Michio Amagasa, Fukisawa, Kanagawa, Kisaburo Ueno, Kanagawa, and Masato Koshi, Akira Hirose, and Tetsuichi Shinozawa, Yokohama, Japan, assignors to Toyo Koatsu Industries, Incorporated, Chuo-ku, Tokyo, Japan, a corporation of Japan

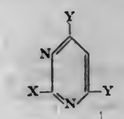
No Drawing. Filed Mar. 23, 1964, Ser. No. 354,102
Claims priority, application Japan, Apr. 12, 1963, 38/17,893
8 Claims. (Cl. 71—54)

1. A method for suppressing the nitrification of ammonium nitrogen in soil and preventing rapid loss of ammonium nitrogen therefrom comprising treating the soil in a plant growing area with a pyrimidine derivative having the formula



wherein X represents a member of the group consisting of amino, chlorine and trichloromethyl, Y represents a member of the group consisting of hydrogen, amino, chlorine and trichloromethyl, and Z represents a member of the group consisting of methyl, chlorine and trichloromethyl, and wherein said derivative is further characterized in that at least one of the members X, Y and Z is different from the other said members.

7. A fertilizer composition comprising a reduced nitrogen fertilizer selected from the group consisting of ammonia, ammonium salts and urea and a pyrimidine derivative having the formula



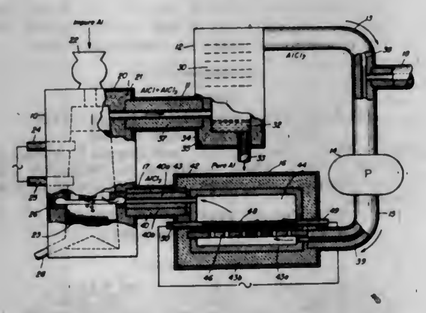
wherein X represents a member of the group consisting of amino, chlorine and trichloromethyl, Y represents a member of the group consisting of hydrogen, amino, chlorine and trichloromethyl and Z represents methyl, chlorine and trichloromethyl, and wherein, said derivative is further characterized in that at least one of the members X, Y and Z is different from the other said members, said pyrimidine derivative being present in a concentration of at least 0.5 percent by weight based on the weight of the reduced nitrogen in the reduced nitrogen fertilizer.

3,284,189

PROCESS AND APPARATUS FOR REFINING ALUMINUM

Frederick William Southam, Arvida, Quebec, Canada, assignor to Aluminium Laboratories Limited, Montreal, Quebec, Canada, a corporation of Canada

Filed Mar. 10, 1965, Ser. No. 438,513
29 Claims. (Cl. 75—68)



1. In a subhalide process of refining aluminum wherein gas consisting essentially of normal halide of aluminum is advanced along a conduit path, including a heating region where carbonaceous material is exposed to the gas at a temperature above 1000° C., to a converting region where said halide is reacted with the aluminum of a quantity of impure aluminum, under the influence of heat, to yield gas containing aluminum subhalide, the method of heating said first-mentioned gas while preventing formation of silicon carbide deposits in said path, which comprises advancing said first-mentioned gas along said path while elevating the temperature of said first-mentioned gas in said heating region to a temperature above 1,000° C. and while keeping said first-mentioned

gas substantially out of contact with silica, by providing said conduit path in said heating region with a lining of refractory material which is essentially free of silica, said lining being constituted of an inner layer which consists substantially wholly of refractory material selected from the class consisting of alumina, silicon nitride, aluminum nitride, boron nitride, and silicon nitride-bonded silicon carbide and contains no more than about 0.5% silica, and an outer layer which consists substantially wholly of refractory material selected from the class consisting of alumina, silicon carbide, silicon nitride, aluminum nitride, and boron nitride and contains no more than about 5% silica.

3,284,190

SEPARATION OF URANIUM FROM NOBLE AND REFRACTORY METALS

James B. Knighton, Joliet, and Robert K. Steunenberg, Naperville, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Feb. 8, 1966, Ser. No. 526,329
7 Claims. (Cl. 75—84.1)

1. A process for the separation of uranium values from refractory metals and noble metals comprising: dissolving said values in a molten alloy of copper containing 4–8 percent magnesium, contacting said alloy with a molten salt containing an alkali metal chloride or an alkaline earth metal chloride to oxidize the uranium to uranium chloride which dissolves in the salt, and contacting the salt with a molten magnesium alloy to reduce the uranium chloride to uranium whicch precipitates in the molten magnesium alloy.

3,284,191

NICKEL-ALUMINUM ALLOY STEEL FOR PRODUCTION OF GEARS, STEEL PLATE AND THE LIKE

Peter Paul Hydrean, Mahwah, Damian Vincent Gullotti, Jersey City, and John Trimble Eash, Allendale, N.J., and Ralph Bertram Grenville Yeo, Pittsburgh, Pa., assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 9, 1966, Ser. No. 526,034
13 Claims. (Cl. 75—124)

1. A novel, low alloy tempaging steel characterized in the aged condition by a yield strength of up to about 200,000 p.s.i., a Rockwell hardness of at least about Rc 37 and up to at least Rc 43 and a Charpy V-Notch impact energy level of about at least 20 ft.-lbs. and having a composition within the following ranges: 0.04% and up to not more than 0.25% carbon, at least 4.5% and up to 10% nickel, at least 0.6% and up to about 1.2% aluminum, the ratio of nickel to aluminum being at least 5 to 1, about 0.5% to 2% molybdenum, up to 1.5% chromium, manganese in an amount up to 0.5%, silicon in an amount up to 0.5%, up to 5% cobalt, up to 2% copper and the balance essentially iron.

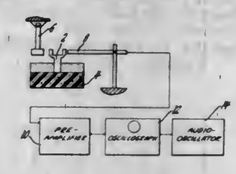
3,284,192

METHOD OF DETERMINING GRAPHITE SHAPES IN NODULAR IRON

William B. Larson, Kenneth E. Spray, and Thomas W. Mueller, Saginaw, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Jan. 22, 1963, Ser. No. 253,119
2 Claims. (Cl. 75—130)

1. In a method of testing molten free graphite containing ferrous metal to determine such final physical properties of parts cast therefrom as strength and ductility while corrective measures may be taken including the steps of casting a sample of a given shape and size, reducing the temperature of the sample casting on a defined schedule to room temperature, setting said sample casting into resonant vibration, determining the frequency of said resonant vibration as an indication of the size and shape of the graphite particles therein which determines



the physical properties of parts cast from the melt and adding corrective materials to the melt if necessary to produce parts of desired strength from the melt.

3,284,193

ALUMINUM ALLOY

William E. Anderson, Bethlehem, Pa., and William E. Quist, Seattle, Wash., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware

No Drawing. Filed Dec. 5, 1963, Ser. No. 328,168
2 Claims. (Cl. 75—141)

1. An aluminum alloy of high fracture toughness and crack growth resistance consisting essentially of by weight percent as follows: zinc, 6.3 to 6.7%; magnesium, 2.4 to 2.7%; copper, 1.6 to 2.0%; iron, 0.1% maximum; silicon, 0.1% maximum; manganese, 0.1% maximum; chromium, 0.18 to 0.28%; titanium, 0.1% maximum; all other extraneous elements, 0.05% maximum for each; total limit for all other extraneous elements, 0.15% maximum; and the balance aluminum.

3,284,194

METHOD OF FORMING DUCTILE METALS

David M. Scruggs, Southfield, Mich., assignor to The Bendix Corporation, Southfield, Mich., a corporation of Delaware

No Drawing. Original application Mar. 23, 1962, Ser. No. 182,074, now Patent No. 3,175,279, dated Mar. 30, 1965. Divided and this application Feb. 3, 1964, Ser. No. 342,291
10 Claims. (Cl. 75—206)

1. A method of increasing the purity of metals to enhance their physical properties, said method comprising: selecting a metal whose properties are to be enhanced and which forms an oxide which in turn will form a spinel, selecting a material which at elevated temperatures will be a metal oxide which unites with the metal oxide of said selected metal to form a spinel, causing said material to be distributed in finely divided form throughout said selected metal, and holding said distributed materials at an activation temperature to form a spinel and to cause the impurities to migrate to and be retained by said spinel.

3,284,195

METHOD OF FABRICATING ARTICLES FROM POWDERS

John M. Googin and Lawrence M. McLaughlin, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission

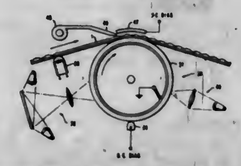
Filed June 26, 1963, Ser. No. 292,197
5 Claims. (Cl. 75—226)

1. In a method for making a body from a metal value-containing powder by confining a mass of said powder within a die cavity, and applying pressure to said mass, the improvement comprising the steps of placing a mass of flake graphite in pressure-transmitting relationship with a surface of said body, and transmitting pressure to said body through said graphite.

3,284,196
APPARATUS AND METHOD FOR ELECTRIC RECORDING

Robert V. Mazza, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Oct. 11, 1962, Ser. No. 229,892
2 Claims. (Cl. 96—1.1)



1. The method of recording an image on a thermoplastic record medium having a first surface and a second heat deformable surface comprising the steps of:

casting a light image on a pre-charged, electrically biased photoconductive surface to form an electrostatic latent image thereon;

raising the temperature of the second surface of said thermoplastic medium above its deformation temperature;

placing the first surface of said thermoplastic medium in contact with the photoconductive surface thereby inducing in the second surface a pattern of deformations representative of said electrostatic latent image; and

lowering the temperature of said second surface below its deformation temperature thereby solidifying the thermoplastic surface and preserving the pattern of deformations representative of the electrostatic latent image.

3,284,197
METHOD FOR MAKING LITHOGRAPHIC PLATES

Daniel Smith, Riverdale, N.Y., and James W. Howard, Pompton Lakes, and Paul W. Greubel, Great Neck, N.J., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio

No Drawing. Filed Nov. 6, 1961, Ser. No. 150,155
1 Claim. (Cl. 96—33)

In the method for the preparation of lithographic plates, the improvement which comprises preparing a transparency from a graphic original having graphic representations highly absorptive of infra-red rays on a background which is relatively non-absorptive of infra-red rays by placing the original in heat-conductive relationship with a coated sheet comprising a transparent base carrying an opaque blushed lacquer coating containing a yellow ultraviolet light absorbing dye which coating transparentizes responsive to heat, irradiating the original with infra-red rays whereby the rays are absorbed and converted to heat by the graphic representations on the original and said heat is transferred to said coated sheet to produce a transparentness in the coating carried thereon in a pattern corresponding to said graphic representations and then exposing a light sensitive coating carried on a lithographic plate base to light through said transparency.

3,284,198
METHOD FOR MAKING PHOTOLITHOGRAPHIC PLATE

Henry M. Grotta, Delaware, Ohio, and Myron N. Lugasch, deceased, late of Columbus, Ohio, by Phyllis T. Lugasch, heir, Scranton, Pa., assignors, by mesne assignments, to Martin-Marietta Corporation, New York, N.Y., a corporation of Maryland

No Drawing. Filed Sept. 11, 1963, Ser. No. 308,307
4 Claims. (Cl. 96—33)

1. The method for preparing a deep-etch photolithographic plate comprising the steps of coating a metallic plate with an aqueous coating composition comprising sulfonated diazidocarbazole and polymeric colloid, drying the coating, exposing the coating to a light image, applying deep-etch developers to the coating to remove the portion of coating not struck by light and expose the metal thereunder, deep-etching the exposed metal, cleaning the exposed metal, applying a lacquer coating to the partially coated plate, applying deep-etch developing ink to the lacquer coating, washing with warm water to remove the stencil, and applying gum arabic to the plate.

3,284,199
BUFFERED STOP BATH FOR INTERRUPTED PHOTOGRAPHIC DEVELOPMENT

Vere Maffet, East Brunswick, N.J., and Earl Delzon Peters, Staten Island, N.Y., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 2, 1963, Ser. No. 277,477
8 Claims. (Cl. 96—50)

1. A process for controlling the development of a photographic film which comprises:

(1) placing an exposed photographic film containing latent silver halide images which has been partially developed, in an aqueous solution containing at least one buffering compound, said buffer solution

(a) having a pH below that at which the developer becomes inactive,

(b) having a buffering capacity such that the introduction of 0.10 equivalent of sodium hydroxide into 1000 milliliters of the unused buffer solution at a pH of 7.2±0.2 will cause a pH rise of not more than 5.0 pH units or less than 0.5 pH unit, and

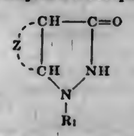
(2) reinserting the film in the developer to continue development of the film.

3,284,200
3-PYRAZOLIDONE DEVELOPERS

Geoffrey Ernest Ficken, Ilford, Essex, England, assignor to Ilford Limited, Ilford, England, a British company

No Drawing. Filed May 20, 1963, Ser. No. 281,802
Claims priority, application Great Britain, June 7, 1962, 22,157/62
6 Claims. (Cl. 96—66)

1. A silver halide photographic emulsion developing composition which comprises a compound of the formula:



where Z is a grouping selected from the class consisting of trimethylene and tetramethylene groupings and R_1 is aryl, together with an alkaline substance.

3,284,201
THREE LAYERED LIGHT-SENSITIVE DIAZOTYPE MATERIAL

Jan Cornelis Meijs, Louis Bernard Heuts, and Jozef Maria Martinus Dohmen, all of Venlo, Netherlands, assignors to Chemische Fabriek L. van der Grinten N.V., Venlo, Netherlands

No Drawing. Filed Dec. 19, 1962, Ser. No. 245,644
Claims priority, application Netherlands, Dec. 21, 1961, 272,831
16 Claims. (Cl. 96—75)

1. A heat-developable diazotype material comprising a support carrying in cohering superposed relation on a side thereof

(a) a light-sensitive two-component diazotype layer containing a light-sensitive diazo compound, an azo component capable of coupling with said compound to form an azo dyestuff and a substance preventing coupling of said component with said compound,

(b) a developer layer containing an agent capable of reacting with said substance to render it incapable of preventing said coupling, and

(c) between said layers a thermoplastic film layer holding said agent inaccessible to said substance at normal atmospheric temperatures, said agent being in liquid state upon a heating of said layers insufficient to pyrolyze said diazo compound, and said film layer upon such heating melting and admitting said agent in liquid state into said light-sensitive layer to bring about said coupling.

3,284,202
LITHOGRAPHIC PLATE, ITS PREPARATION AND TREATMENT SOLUTION THEREFOR

Robert F. Leonard, East Rockaway, N.Y., assignor to Litho Chemical and Supply Co. Inc., Lynbrook, N.Y., a corporation of New York

No Drawing. Filed Aug. 11, 1961, Ser. No. 131,014
2 Claims. (Cl. 96—75)

1. A lithographic plate composed of a metal selected from the group consisting of aluminum and zinc the surface of which has been treated with a solution of the following components in the following relative proportions:

Ethylene diamine tetraacetic acid	grams	6.62
Sodium hydroxide	grams	9.54
Water	milliliters	3,780

in which solution each of the components can be varied only within ±20% of the stated quantity, rinsed and then coated with a conventional bichromated colloid, thereby preventing reaction between the plate metal and the bichromated colloid and inhibiting polyvalent metal ions during preparation of the lithographic plate.

3,284,203
DIRECT POSITIVE PHOTOGRAPHIC MATERIALS

Yoshito Takao, Odawara-shi, Isao Matsumoto, Minamiashigara-machi, and Teruo Kobayasi, Odawara-shi, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Kanagawa-ken, Japan, a corporation of Japan

No Drawing. Filed Mar. 8, 1965, Ser. No. 438,053
Claims priority, application Japan, May 2, 1961, 36/15,685
3 Claims. (Cl. 96—84)

1. A direct positive photographic material comprising a layer of a silver halide emulsion having latent fog centers which are depressed by Herschel effect on exposure to a long-wavelength light and a surface layer adjacent to the emulsion layer, at least one of said layers containing a material selected from the group consisting of 2-hydroxy-4-methoxybenzophenone-5-sulfonic acid and sodium 4,4'-bis (dimethylamino) benzophenone-3,3'-disulfonate.

3,284,204
PHOTOGRAPHIC FILMS AND PROCESS OF MAKING SAME

Heinrich von Lillin, Neu Isenburg, Germany, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 5, 1964, Ser. No. 342,824
Claims priority, application Germany, Mar. 6, 1963, A 42,521
12 Claims. (Cl. 96—87)

1. A photographic element comprising, in order,

(a) a hydrophobic polymer film base,

(b) a substratum comprising a mixture of gelatin, dialdehyde starch and an alkylene glycol ester of polymannuronic acid, said alkylene group containing 2–5 carbon atoms, and

(c) a water-permeable marcromolecular colloid layer on said substratum.

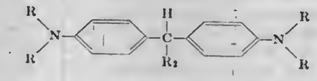
3,284,205
BENZOTRIAZOLE AND HETEROCYCLIC KETIMIDE ACTIVATORS FOR LEUCO COMPOUNDS

Robert H. Sprague, Chagrin Falls, John A. Stewart, Parma, and James M. Lewis, Cleveland, Ohio, assignors to Horizons Incorporated, Cleveland, Ohio, a corporation of New Jersey

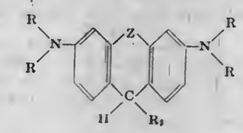
No Drawing. Filed Sept. 17, 1963, Ser. No. 309,407
11 Claims. (Cl. 96—90)

1. A composition which prints out a visible image directly as a result of exposure to visible light said composition comprising an intimate mixture consisting essentially of:

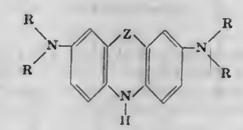
(1) at least one leuco compound selected from the group consisting of leuco compounds represented by one of the following general formulas



wherein each R is a monovalent radical selected from the group consisting of H, lower alkyl and aryl and not all of the R's need be the same and R_2 is a monovalent radical selected from the group consisting of H, lower alkyl and aryl: and



and



wherein each R has the same meaning as indicated above and Z represents a member selected from the group consisting of O, S, Se and —NH, and R_3 is a monovalent radical selected from the group consisting of H, alkyl and aryl; and

(2) at least one colorless nitrogen-containing organic compound selected from the group consisting of benzotriazoles and heterocyclic ketimides in which the imide nitrogen is attached to a ring carbon in a heterocyclic nucleus having at least 5 and not more than 6 atoms.

3,284,206
IMAGE YIELDING LAYERS

Ralph Kingsley Blake, Westfield, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 13, 1964, Ser. No. 403,661
10 Claims. (Cl. 96—107)

1. A photographic emulsion layer comprising, before exposure to actinic radiation, light-sensitive silver halide crystals having associated therewith in greater than fog-inhibiting amounts a silver selenide of a selenyl compound of the formula

$$R_1—Se—H$$

wherein R_1 is an organic radical that is attached to the Se atom by a carbon atom; said silver selenide being of lower solubility in water than silver chloride, the silver

halide crystals so associated with the silver selenide dissolving more slowly in 10% aqueous sodium thiosulfate than untreated silver halide crystals at a predetermined pH, the selenyl compound of said formula being present in such amount, in terms of the ratio of its weight to the surface area of said silver halide crystals, that when admixed in such ratio with an aqueous silver chlorobromide (70/30 mole percent) gelatin dispersion containing 10 g. of gelatin per mole of Ag and .57 mg. of Ag per ml., and said silver chlorobromide dispersion is treated with 10%, by weight, aqueous sodium thiosulfate (so that the resulting mixture contains 0.29 mg. of silver and 100 mg. of sodium thiosulfate), at least three times the amount of silver chlorobromide remains undissolved as compared with a similar dispersion successively treated with 5%, by weight, aqueous sodium hypochlorite and 10%, by weight, aqueous sodium thiosulfate (so that the resulting mixture contains 0.29 mg. of silver, 25 mg. of sodium hypochlorite and 100 mg. of sodium thiosulfate), after vigorous agitation of both dispersions for 30 seconds at 25° C.

3,284,207

PHOTOGRAPHIC LIGHT-SENSITIVE MATERIALS

John Peter Stonham, Ilford, England, assignor to Ilford Limited, Ilford, England, a company of Great Britain

No Drawing. Filed Mar. 11, 1963, Ser. No. 264,073
Claims priority, application Great Britain, Mar. 29, 1962, 12,114/62
2 Claims. (Cl. 96—114)

1. A photographic colloid silver halide emulsion in which the colloid consists at least in part of a polyacrylamide in which 2 to 20% of the amide groups have been converted to amino groups.

3,284,208

PHOTOGRAPHIC PRODUCTS AND PROCESSES FOR THE PRODUCTION THEREOF

Edwin H. Land, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Apr. 30, 1963, Ser. No. 276,785
19 Claims. (Cl. 96—118)

1. In a process for preparing a photographic multicolor screen element, the steps which comprise exposing a lenticular film having a first photoresponsive coating contiguous one surface thereof, said first photoresponsive coating adapted to be differentially hardened as a result of selective photoexposure to first radiation incident on said lenticular film at first angles, to provide exposed areas of said first coating contiguous each lenticule of said lenticular film receiving said first radiation; removing unexposed photoresponsive coating; dyeing exposed areas of said first coating with a first color to obtain a first series of chromatic filter elements; applying a second photoresponsive coating on the same side of said lenticular film as said first coating; exposing said second photoresponsive coating to second radiation incident on said lenticular film at second angles, to provide exposed areas of said second coating contiguous each lenticule of said lenticular film receiving said second radiation; removing unexposed photoresponsive coating; dyeing exposed areas of said second coating with a second color to obtain a second series of chromatic filter elements; applying a third photoresponsive coating on the same side of said lenticular film as said first and said second coatings; exposing said third photoresponsive coating to radiation incident on said lenticular film at third angles, to provide exposed areas of said third coating contiguous each lenticule of said lenticular film receiving said third radiation; removing unexposed photoresponsive coating; and dyeing exposed areas of said third coating with a third color to obtain a third series of chromatic filter elements.

3,284,209

RE-EXPANDING COMPRESSED EXFOLIATED VERMICULITE

Joseph A. Kelley, Chicago, Ill., assignor, by mesne assignments, to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Oct. 6, 1960, Ser. No. 60,771
3 Claims. (Cl. 99—2)

1. In the process of re-expanding compressed exfoliated vermiculite which has been formed into a unitary, self-supporting structure having a density of about 40–130 pounds per cubic foot by subjection to severe compressive forces the improvement which comprises contacting said structure of compressed exfoliated vermiculite after subjection to severe compressive forces with an aqueous fluid.

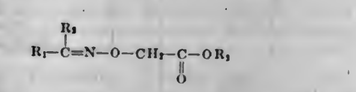
3,284,210

FEED COMPOSITIONS CONTAINING N-SUBSTITUTED AMINOOXYACETIC ACID COMPOUNDS AND METHODS

Hans R. Rosenberg, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 9, 1962, Ser. No. 172,083
10 Claims. (Cl. 99—2)

1. An animal feed concentrate comprising from 1 to 50% by weight of a compound of the formula:



wherein

R_1 is selected from the group consisting of hydrogen and alkyl of 1 through 6 carbon atoms;

R_2 is selected from the group consisting of hydrogen, alkyl of 1 through 5 carbon atoms and the radical $-CO_2R_3-$;

R_3 is selected from the group consisting of hydrogen, alkyl of 1 through 4 carbon atoms, sodium, potassium, calcium, and magnesium; and

R_1 and R_2 can be joined forming a cycloalkylene radical of the formula: $-(CH_2)_n-$, where n is a whole positive integer of 4 through 6, both inclusive, and the cycloalkylene is substituted with a radical selected from the group consisting of hydrogen, methyl, ethyl, propyl and isopropyl.

3,284,211

METHOD OF PREPARATION OF FAT COATED FEED ANNULI

Merl A. Williams, Craigville, Ind., assignor to Central Soya Company, Inc., Fort Wayne, Ind., a corporation of Indiana

Filed Dec. 17, 1963, Ser. No. 331,147
1 Claim. (Cl. 99—2)

A method of animal food production comprising heating and moistening an animal food mixture, in a pressure cooking chamber, said mixture including 20–32% crude protein 2–8% crude fiber, 5–15% ash and 50–70% grain to a temperature of about 230° F., and a moisture content of about 40%, passing said mixture to a screw extruder and uniformly extruding said food as an annulus of about 1" diameter, while simultaneously transversely severing the annulus to provide a plurality of discrete annuli and while exhausting air about the severed annuli to reduce the moisture content therein to about 25–35% and expanding the same, drying said annuli to reduce the moisture content therein to about 10–15%, spraying liquid fat on said annuli at a temperature above the melting point of the fat while tumbling said annuli to add about 3% fat to the annuli, and cooling said annuli to provide an animal food having a surface substantially impregnated with a layer of fat.

3,284,212

FOOD PRESERVATIVE COMPRISING ENZYMES AND ANTIOXIDANTS

Talmadge B. Tribble and Eugene L. Rondenet, Glenview, Ill., assignors to Flavor Corporation of America, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Mar. 6, 1963, Ser. No. 263,134
10 Claims. (Cl. 99—9)

2. A food preservative comprising non-toxic antioxidants and enzymes combined in substantially equal proportionate amounts by weight of antioxidants and enzymes; the antioxidants comprising ethoxyquin and butylated hydroxytoluene and the enzymes comprising a major proportion of diastase and a minor proportion of cellulase.

3,284,213

PROCESS FOR INHIBITING BREAKDOWN IN HEATED COOKING OILS

Leon A. Van Akkeren, Lombard, Ill., assignor to Armour and Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Sept. 16, 1963, Ser. No. 309,338
1 Claim. (Cl. 99—118)

In a process for treating heated triglyceride cooking oils to inhibit breakdown during heating and to prevent foaming, the steps of adding about 0.05 to 3.5 percent of concentrated phosphoric acid to the oil, heating the oil slowly to a temperature of about 100° C. while stirring slowly to prevent the formation of free acid in the oil, adding bleaching clay to the oil when the same has reached about 100° C. and heating the mixture to about 120° C. for about 15–30 minutes, cooling and filtering the oil to remove the clay and phosphoric acid material, and then heating the oil filtrate to about 220–225° C. under reduced pressure.

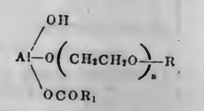
3,284,214

PROCESS FOR EFFECTING WATER REPELLENCY

Edwin B. Michaels and Clayton A. Wetmore, Norwalk, Conn., assignors to Stamford Chemical Industries, Inc., Cincinnati, Ohio, a corporation of Ohio

No Drawing. Original application Oct. 4, 1962, Ser. No. 228,247, now Patent No. 3,214,450. Divided and this application Aug. 26, 1965, Ser. No. 482,935
9 Claims. (Cl. 106—2)

1. A process for rendering matter in the form of a fiber, filament yarn and fabric water repellent by treating the same with an aluminum compound comprising the steps of: applying to said matter a water-repellent composition containing a mixture essentially of (a) from 1 to 10 parts by weight of an aluminum compound in about 1000 parts by volume of a compatible organic solvent, said aluminum compound having the general formula:



where R is a radical selected from the group consisting of alkyl and alkyl substituted phenyl, said alkyl containing from 6 to 18 carbon atoms, n is an integer from zero to six, and R_1 is an aliphatic hydrocarbon radical containing from 9 to 17 carbon atoms, (b) from 5 to 25 parts by weight of a wax-like substance selected from the group consisting of paraffin and beeswax, and (c) from 1 to 15 parts by weight of a compatible wax hardening resin selected from the group consisting of limed rosin, pentaerythritol abietate, polymerized terpene resin and polymerized petroleum resin, and thereafter drying the matter so treated, whereby from about 1% to about 15% of said aluminum compound adheres thereto.

3,284,215

WERNER CHROMIUM COMPLEXES AND METHODS FOR THEIR PREPARATION

Adam A. Bartz, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 5, 1965, Ser. No. 477,582
12 Claims. (Cl. 106—13)

1. A composition of a Werner complex, stable against gel formation, having a total water content of from 8 to 50% by weight water, the remainder consisting essentially of (a) a Werner complex having a basic trivalent nuclear chromium atom coordinated with a carboxylic acido group of an aliphatic monocarboxylic acid having a solubility in water less than 0.1% by weight at 20° C. to give a ratio of chromium atoms to acido groups of from 1:1 to 10:1, said complex being further characterized by having a ratio of coordinated water to chromium atoms from at least 2:1 up to 4:1; and (b) a monohydric aliphatic alcohol containing 1 to 4 carbon atoms.

3,284,216

FIRE-RETARDANT COATING COMPOSITION

Benjamin B. Kaplan, West Hartford, Conn., assignor to Albi Manufacturing Company, Inc., Rockville, Conn., a corporation of Connecticut

No Drawing. Filed Nov. 8, 1965, Ser. No. 506,885
14 Claims. (Cl. 106—16)

1. In an intumescent paint consisting essentially of a volatile liquid vehicle, 35 to 150 parts by weight of a resinous film-forming binder, 120 to 475 parts by weight of a solid spumific agent which when heated to 400° C. causes a dried film of the paint to increase in thickness at least four times, in combination, glass fibers in an amount from 2% to 30% by weight (exclusive of the weight of any organic coating on said fibers) based on the remaining ingredients of said paint.

2. An intumescent paint as claimed in claim 1 in which said binder is a member of the class consisting of drying oils, alkyd resins, cellulose esters, cellulose ethers, sodium carboxymethyl cellulose, starch, chlorinated rubber, rubber hydrochloride, polymers and copolymers of vinyl chloride, polymers and copolymers of vinylidene chloride, polychloroprene, epoxy resins, a mixture of urea with a source of aliphatic aldehyde, a mixture of thiourea with a source of aliphatic aldehyde, a mixture of dicyandiamide with a source of aliphatic aldehyde, a mixture of melamine with a source of aliphatic aldehyde, and resins formed from said mixtures; and in which said spumific agent is a member of the class consisting of dicyandiamide, melamine pyrophosphate, monoammonium phosphate, diammonium phosphate, phosphoric acid, guanyl urea phosphate, ammonium sulfate, sulfamic acid, ammonium sulfamate, ammonium bromide, sodium tungstate, boric acid, sodium borate, phosphorylamide polyphosphorylamide, and metaphosphates of sodium, potassium calcium, and zinc.

3,284,217

BASIC REFRACTORY

Frank H. Walther, Jr., Bethel Park, Pa., assignor to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Dec. 21, 1964, Ser. No. 420,042
7 Claims. (Cl. 106—59)

1. A fusion of chrome ore and magnesia consisting of, by weight, on an oxide basis:

Silica (SiO_2)	Less than 4%.
Alumina (Al_2O_3)	Less than 5%.
Iron oxide (Fe_2O_3)	Less than 6%.
Chromic oxide (Cr_2O_3)	At least 15%.
Lime (CaO)	Less than 3%.
Magnesia (MgO)	At least 60%.

said fusion characterized by a microstructure consisting of relatively small, closely packed, mostly attached crystals

of periclase, said crystals of periclase having an average diameter of about 0.1 to about 0.3 millimeter, said crystals of periclase characterized by extensive exsolved separate and discrete spinel deposits throughout said periclase crystals, boundary areas between contiguous periclase crystals characterized by extensive euhedral spinel crystal development forming with the periclase crystals an intergrown network isolating contained silicates into dispersed pockets.

3,284,218
HIGH ALUMINA REFRACTORIES
Donald F. King, Pittsburgh, Pa., assignor to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Jan. 14, 1965, Ser. No. 425,611
2 Claims. (Cl. 106—65)

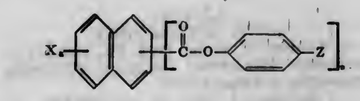
1. A phosphate-bonded high alumina refractory composition consisting essentially of a refractory size-graded mixture of high alumina refractory material, about 1–10% of said material being $Al(OH)_3$, by weight, a phosphate-bonding ingredient sufficient to provide P_2O_5 equivalent to that provided by about 2–15% of 75% phosphoric acid and oxalic acid in an amount sufficient to increase storage life by retarding breakdown of the phosphate bond thereby assuring greater strength in eventual service.

3,284,219
INTERNALLY PLASTICIZED CASEIN
Robert B. Dean and William L. Marino, Bainbridge, N.Y., assignors to The Borden Company, New York, N.Y., a corporation of New Jersey
No Drawing. Filed Nov. 22, 1963, Ser. No. 325,791
7 Claims. (Cl. 106—147)

2. A permanently plasticized protein composition comprising the reaction product of a protein selected from the group consisting of casein, soy protein and peanut protein with a polyalkoxylated chlorocarbonate ester of the formula $ClCO(OC_nH_{2n})_xOR$ in which n and x are integers within the ranges 2–6 and 2–30, respectively, and R is an alkyl group having 1–6 carbon atoms.

3,284,220
STABILIZED POLYMER COMPOSITIONS CONTAINING NAPHTHOIC ACID ESTERS
Constantine E. Anagnostopoulos, Kirkwood, Mo., and Aubert Y. Coran, Charleston, W. Va., assignors to Monsanto Company, a corporation of Delaware
No Drawing. Filed June 15, 1962, Ser. No. 202,679
31 Claims. (Cl. 106—178)

1. A composition comprising a polymer selected from the class consisting of natural and synthetic, linear and cross-linked polymers, and from amout 0.001% to about 10% by weight, based upon the weight of the polymer, of a compound of the formula



wherein:

a is an integer from 0 to 2;

X is selected from the group consisting of chlorine, alkyl of 1 to 4 carbon atoms, and alkoxy of 1 to 4 carbon atoms;

Z is selected from the group consisting of α-cumyl and



where R, R_1 and R_2 are alkyl of 1 to 21 carbon atoms and the sum of $R+R_1+R_2$ is up to 23 carbon atoms; and

n is an integer from 1 to 2, provided that when n is 2, the carboxyl groups are on non-adjacent carbon atoms of the naphthalene nucleus.

3,284,221
PROCESS FOR THE MANUFACTURE OF COLD-WATER DISPERSIBLE ADHESIVES
John W. Huebschmann and John H. Wrightsman, Decatur, Ill., assignors to A. E. Staley Manufacturing Company, Decatur, Ill., a corporation of Delaware
No Drawing. Filed Apr. 23, 1963, Ser. No. 274,931
5 Claims. (Cl. 106—213)

1. A process for producing dry, cold-water-soluble amylaceous adhesives which comprises acid hydrolyzing at a temperature of from about 200° F. to about 270° F. an aqueous dispersion of a starch mixture in the presence of from about 0.1 to about 3% by weight terpineol based on the weight of the starch dry substance to obtain a hydrolyzed product having a Brookfield viscosity at 85° F. and 20 r.p.m. ranging from about 50 to about 20,000 cps. when measured in water at a solids content of 26%, the said mixture containing on a dry substance basis not less than 5% by weight of an oxidized starch and at least 85% by weight of native starch, adding to the said hydrolyzed product from about 7 to about 25% by weight borax based on the weight of the starch dry substance, then cooling the resulting mixture to a temperature of less than 150° F., adjusting the pH of the mixture to from about 8.5 to about 9.8 with a compound selected from the group consisting of alkali metal hydroxides and alkaline earth metal hydroxides and drying the resulting composition to obtain a dry cold-water-soluble adhesive.

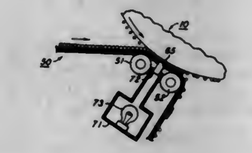
3,284,222
VALUABLE PRODUCT FROM MONTAN RESIN AND PROCESS FOR ITS MANUFACTURE
Walter Brotz, Gersthofen, near Augsburg, and Karl Maier, Augsburg, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed July 9, 1963, Ser. No. 293,867
Claims priority, application Germany, July 20, 1962, F 37,368
5 Claims. (Cl. 106—239)

1. A process for the manufacture of a gasoline-soluble product having a high dropping point which comprises saponifying the free acid contained in montan resin having an acid number between 20 and 50 to form the lithium salt of said montan resin having an acid number below 2.

3,284,223
MAGNETIC RECORDING TAPE SUPPORTED ON TEREPHTHALATE POLYESTERS OF 1,4-CYCLOHEXANEDIMETHANOL
Marshall T. Watson and William D. Kennedy, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed May 19, 1965, Ser. No. 457,154
6 Claims. (Cl. 117—7)

1. An improved magnetic recording tape comprising a thin layer of a magnetically susceptible material dispersed in a nonmagnetic binder coated on a flexible support consisting essentially of an asymmetrically oriented high-melting linear polyester of substantially equimolar proportions of a dicarboxylic acid and 1,4-cyclohexanedimethanol, said dicarboxylic acid being essentially composed of terephthalic acid which support in its amorphous form has been solely oriented by a process consisting of longitudinal stretching in the range of from about 2.5 to about 5.5 times and establishing the widthwise dimension within the range of from about 0.95 to about 1.3 times the width of the longitudinally stretched support, said support being characterized in that it has (1) a percentage of elongation at break no greater than about 35% and (2) a percentage of elongation at yield of at least 4.9%.

3,284,224
CONTROLLED XEROGRAPHIC DEVELOPMENT
Ernest Henry Lehmann, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Jan. 4, 1963, Ser. No. 249,482
16 Claims. (Cl. 117—17.5)



14. A method of developing an electrostatic latent image previously formed on the surface of an image-bearing member comprising:

(a) placing a control member spaced closely substantially parallel to the surface of the image bearing member and which control member is characterized by a changeable electrical property when activated by an applied external control;

(b) presenting a quantity of developer material between the control member and the image bearing member to effect development of the latent image on the image bearing member; and

(c) during said last-recited step selectively applying said control to activate said control member uniformly to an electrical state capable of affecting a more uniform developer deposition on the latent image than when the control member is inactivated.

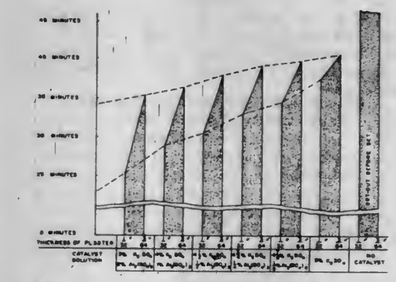
3,284,225
RADIANT HEAT REFLECTIVE COATINGS AND METHOD FOR APPLICATION
Alden W. Smock, Huntsville, Ala., and Vaughn F. Seitzinger, Fayetteville, Tenn., assignors to the United States of America as represented by the Secretary of the Army
No Drawing. Filed Jan. 14, 1963, Ser. No. 251,446
9 Claims. (Cl. 117—35)

1. A heat reflective device comprising a metallic substruction, a high temperature maturing porcelain high-gloss enamel coating on said substruction, and a reflective metal coating substantially no thicker than 0.00001 inch on said enamel.

3,284,226
METHOD OF TREATING OPAL GLASS SURFACES
James R. A. Taylor, Plainfield, Ill., assignor, by mesne assignments, to Brockway Glass Company, Inc., Brockway, Pa., a corporation of New York
No Drawing. Filed Oct. 11, 1963, Ser. No. 315,685
20 Claims. (Cl. 117—54)

1. In the method of decorating opal glass surfaces with fired-on noble metal film, the opal glass consisting of matrix of relatively high refractive index soda-lime-silica glass containing as inclusions low refractive index crystals of calcium fluoride and sodium fluoride and the noble metal deposited from the heat decomposition of a noble metallo organic compound, the improvement comprising pretreating the opal glass surface, prior to the application thereto of the noble metal decoration, with a dilute aqueous solution of an organic acidic compound selected from the group consisting of citric acid, lactic acid, glycolic acid, ascorbic acid, uric acid, fumaric acid, ethylenediaminetetraacetic acid and mixtures thereof to effect removal from said opal glass surface of excess oxides and fluorides of alkali and alkaline earth metals.

3,284,227
CATALYZED GYPSUM WALLBOARD AND METHOD OF PRODUCTION THEREOF
Mark E. Gerton, Pleasanton, Calif., assignor to Fibreboard Paper Products Corporation, San Francisco, Calif., a corporation of Delaware
Filed Dec. 6, 1962, Ser. No. 242,806
5 Claims. (Cl. 117—60)



1. A method of wall construction comprising impregnating the surface of a wallboard backing with an aqueous solution of a gypsum setting catalytic agent selected from the group consisting of potassium sulphate and mixtures of potassium sulphate and aluminum sulphate, and plastering a single thin coat of gypsum plaster comprising about 15 to 30 percent inert filler, about 2 to 10 percent plasticizer clay, about 0.5 to 2% of a mixture of polyvinyl acetate and polyvinyl alcohol, and the remainder consisting essentially of gypsum, upon the catalyzed surface of said backing, and final-finishing the thin plaster coat to form a continuous plaster exterior surface.

3,284,228
METHOD OF RENDERING POLYOLEFINE SURFACES NON-ADHERENT
Karl-Erik Ekstrom and Thorsten Lennartson Lindh, Lund, Sweden, assignors to AB Tetra Pak, Lund, Sweden, a Swedish company
No Drawing. Filed Feb. 11, 1963, Ser. No. 257,761
Claims priority, application Sweden, Feb. 14, 1962, 1,603/62
2 Claims. (Cl. 117—65.2)

1. A method of treating packaging material having at least a surface layer of polyethylene which comprises coating said surface layer with molten paraffin wax having a melting temperature substantially within the melting point range of said polyethylene, cooling said coated surface to solidify said molten paraffin wax, pressing a solid surface heated to a temperature above the melting point range of said polyethylene against said coated surface and then while still hot separating said solid surface from said coated surface, the thickness of said coating of paraffin, the temperature of said solid surface, the time of contact between said solid surface and said coated surface and the pressure between said solid surface and said coated surface being so adjusted that said coated surface does not adhere and offset to said solid surface.

3,284,229
MANUFACTURE OF COLORED CELLULOSE SPONGE

Clarence J. Waddle, Columbia, Tenn., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

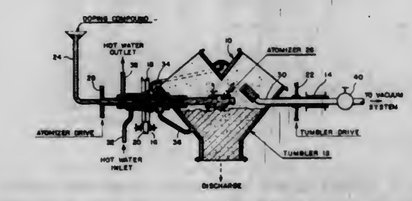
No Drawing. Filed Oct. 23, 1962, Ser. No. 233,193
6 Claims. (Cl. 117—98)

1. In a method of making colored cellulose sponge of improved brilliance, the improvement consisting essentially of impregnating colored cellulose sponge with a liquid composition consisting essentially of a sponge-softening material and hydrogen peroxide until the brilliance of the sponge is improved, said liquid composition having a hydrogen peroxide content, calculated as 100% H_2O_2, of about 0.004 to 0.2% by weight.

3,284,230
METHOD OF DOPING TUNGSTEN OXIDE

Herman R. Heytmeijer, Belleville, and George H. Lockwood, Bloomfield, N.J., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 4, 1963, Ser. No. 249,490
16 Claims. (Cl. 117—100)



1. The method of doping finely divided tungsten oxide particles with a predetermined amount of selected doping compound in order that incandescible tungsten filamentary wire prepared by powder metallurgy techniques from the resulting doped tungsten oxide will have improved performance characteristics, which method comprises:

(a) atomizing into said tungsten oxide particles while agitating same, a predetermined amount of solution containing a predetermined concentration of selected doping compound dissolved in liquid vehicle, with the rate of solution atomization into said agitating tungsten oxide particles being sufficiently slow to insure uniform distribution of said solution throughout said agitating tungsten oxide particles, and with the total liquid in contact with said tungsten oxide particles after atomization of all doping compound solutions being sufficient to dampen said tungsten oxide particles but not rendering said tungsten oxide particles sufficiently wet to pelletize same; and

(b) thereafter volatilizing the liquid component of said solution from said tungsten oxide particles while continuing to agitate same to leave a deposit of doping compound uniformly distributed on said finely divided tungsten oxide particles.

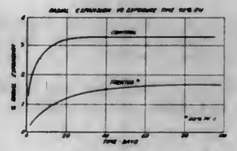
3,284,231
METHOD AND MEANS OF STABILIZING CELLULOSIC MATERIALS AND THE PRODUCTS PRODUCED THEREBY

Fraidoun Shafizadeh, Seattle, Wash., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington

Filed July 6, 1965, Ser. No. 486,579
7 Claims. (Cl. 117—118)

1. A method of increasing the dimensional stability of wood comprising

impregnating said wood with an aqueous solution consisting essentially of methylolphenols and free formaldehyde, said solution having a pH that is approximately that of the pH of the wood and a free formaldehyde content of from 1–15% of the total weight of the solution, and a methylolphenol content of from 6–45% of the weight of the solution, and



drying said impregnated wood slowly whereby the solution will be concentrated and diffuse further into the cell walls of the wood where it may react to provide bulking and dimensional stability.

3,284,232
SHAPED OBJECTS OF A CRYSTALLINE POLYESTER COATED WITH A HYDROPHILIC POLYMER COMPOSITION

John R. Caldwell, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 21, 1961, Ser. No. 104,547
15 Claims. (Cl. 117—138.8)

1. A coated object comprising (A) a shaped object consisting essentially of a high-melting crystalline linear polyester selected from the group consisting of bisphenol polycarbonates and polyesters of (a) diols and (b) dicarboxylic bifunctional compounds consisting essentially of hexacarbocyclic nuclearly attached dicarboxylic bifunctional compounds wherein the carboxy radicals are nuclearly situated in a para relationship, and (B) a resin coating on said shaped object having a composition consisting essentially of (B1) from about 80 to 60% by weight of a cured unsaturated polyester resin of a polyhydric alcohol constituent and a polycarboxylic acid constituent, of which any unsaturated acid constituent constitutes at least 30 mol percent of such acid and any unsaturated alcohol constituent constitutes at least 40 mol percent of such alcohol, and (B2) from about 20 to 40% by weight of at least one of the following adjuvants selected from the group consisting of: (a) a preformed hydrophilic addition polymer derived from at least one olefinically unsaturated monomer containing a functional group selected from the group consisting of a carboxy group, a tertiary amine group and an amide group, said polymer, other than for said functional groups, being essentially composed of carbon and hydrogen atoms, and (b) an inert pigment.

3,284,233
BONDED NONWOVEN FABRICS AND BINDERS FOR THE MANUFACTURE THEREOF

Fred H. Sexsmith, Passaic, N.J., assignor to Johnson & Johnson, a corporation of New Jersey

No Drawing. Filed Mar. 4, 1965, Ser. No. 437,257
15 Claims. (Cl. 117—140)

9. A bonded nonwoven fabric of overlapping, intersecting individualized fibers bonded together by binder areas constituting from about 7% to about 100% of the total surface area of the fabric, said binder areas comprising a film of from about 5 parts to about 95 parts by weight of a member selected from the group of alkaline soluble cellulosic derivatives consisting of hydroxyethyl cellulose, carboxymethyl cellulose and cellulose xanthate and from about 95 parts to about 5 parts by weight of polyolefin.

3,284,234
STABILIZED CELLULOSIC MATERIAL

Laurence R. B. Hervey, West Concord, and Richard P. Tschirch, Westwood, Mass., assignors, by mesne assignments, to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Sept. 3, 1963, Ser. No. 306,287
8 Claims. (Cl. 117—154)

1. A stabilized cellulosic material which comprises a cellulosic material impregnated with at least 0.1 percent by weight of the cellulosic material of a hydrazide selected from the group consisting of the following compounds and mixtures thereof:

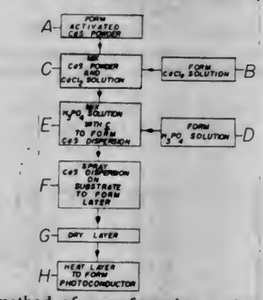
(I) $RCONHNH_2$
(II) $RCONHNHCOR$
(III) $R'(CONHNH_2)_2$

wherein each R is independently selected from the group consisting of hydrogen and alkyl containing from 1 to 8 carbon atoms and wherein R′ is selected from the group consisting of $(—CH_2—)_n$, wherein n is an integer having a value of 0 to 5 and an alkylene of 2 to 6 carbon atoms interrupted by from 1 to 2 atoms selected from the group consisting of oxygen and sulfur.

3,284,235
METHOD OF MANUFACTURING PHOTOCONDUCTIVE LAYERS

Johannes Gerrit van Santen, Hendrik Esvelt, and Hendrik Jacobus Maria Joormann, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Feb. 4, 1963, Ser. No. 255,837
Claims priority, application Netherlands, Feb. 14, 1962, 274,816
11 Claims. (Cl. 117—201)



1. A method of manufacturing a photoconductor device comprising a layer of photoconductive material selected from the group consisting of cadmium sulphide, cadmium selenide and mixed crystals thereof, comprising the steps, dispersing said photoconductive material in powdered form in a solution consisting essentially of a minor amount of phosphorus in oxidized form and at least one cadmium halide selected from the group consisting of cadmium chloride, cadmium bromide and cadmium iodide, depositing a portion of said solution onto a support to form a layer, and thereafter heating said deposit to produce the photoconductive material.

3,284,236
METHOD OF COATING A METAL SURFACE WITH A FERRITE COMPOSITION

Anthony N. Schmitz, Levittown, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

No Drawing. Filed June 26, 1963, Ser. No. 290,865
6 Claims. (Cl. 117—230)

1. The method of providing a ferrite coating for metal surfaces, said method comprising:

(a) applying a thin even coating of a ferrite composition to said metal surface at room temperature while maintaining the relative humidity within the range of 50% to 90%, said ferrite composition consisting essentially of 35% to 45% by weight powdered ferrite, 35% to 45% ethyl silicate, and 20% by weight silica;

(b) air drying said coating;

(c) subsequently baking said coating at a temperature of 250° F. for a time sufficient to insure bonding of said ferrite coating to said metal surface.

3,284,237
THERMAL IMPREGNATING PROCESS FOR NEGATIVE ELECTRODES

Robert L. Lambert and Russell E. Palmateer, Emporium, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware

No Drawing. Filed Apr. 16, 1965, Ser. No. 448,840
4 Claims. (Cl. 136—24)

1. In a process for preparing electrodes for alkaline batteries, the steps comprising:

impregnating a porous plate with a cadmium nitrate compound and heating the impregnated plate in a reducing atmosphere to a temperature in the range of about 185° C. to 250° C., at substantially ambient pressure and from about one minute to two hours, to reduce said compound to metal, said reducing atmosphere consisting of water vapor and ammonia and being characterized by the capability to combine with the compound to form volatile neutral salts.

3,284,238
NOVEL GEL COMPOSITIONS AND METHODS FOR PREPARATION THEREOF

Malcolm L. White, Bethlehem, Pa., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

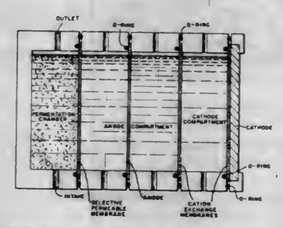
No Drawing. Original application Aug. 26, 1960, Ser. No. 52,014. Divided and this application Apr. 3, 1963, Ser. No. 270,153
2 Claims. (Cl. 136—86)

1. In a gaseous fuel cell composed of electrodes, a membrane and a gas inlet and outlet, the improvement in which said membrane comprises a uniformly hydrophilic, cross-linked, water-insoluble gel of a normally water-soluble, gelable polymer as the matrix, having ion-exchange material, which is different from said gel, occluded therein.

3,284,239
BIOCHEMICAL FUEL CELL

Herbert F. Hunger, Long Branch, and John Perry, Jr., New Shrewsbury, N.J., assignors to the United States of America as represented by the Secretary of the Army

Filed June 3, 1963, Ser. No. 285,158
1 Claim. (Cl. 136—86)



A multicompartment diffusion type biochemical fuel cell comprising a fermentation chamber for decomposing sugar to ethanol by means of yeast cells, an anode compartment including a platinized platinum screen anode in

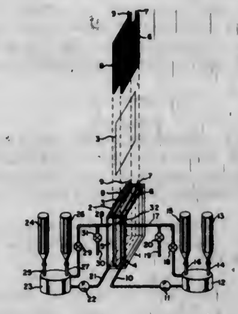
a phosphate buffer solution having a pH of about 7, said anode compartment being adjacent to said fermentation chamber and separated therefrom by an organic film of nitrocellulose which permits the diffusion of the ethanol into the anode compartment but hinders the diffusion of the sugar and yeast cells into the anode compartment, and a cathode compartment containing a platinized carbon-air electrode as the cathode in a phosphate buffer solution having a pH about 7 as the catholyte, said cathode compartment being adjacent to said anode compartment and separated therefrom by a cation exchange membrane and where said cathode has a second cation exchange resin membrane attached to its surface in contact with the phosphate buffer solution.

3,284,240

CELLS FOR GENERATING ELECTRICAL ENERGY EMPLOYING A HYDROGEN PEROXIDE ELECTROLYTE IN CONTACT WITH AN IMPROVED PLATINUM ELECTRODE

Elbert V. Kring, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Dec. 20, 1962, Ser. No. 246,244
6 Claims. (Cl. 136—86)



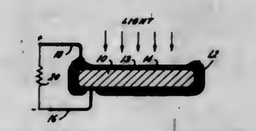
1. In a fuel cell for the generation of electrical energy, the combination therewith of an electrode in contact with an acidic electrolyte having dissolved therein a peroxygen compound, said electrode comprising an active platinum surface which has been heated to a temperature of at least 200° C. in an atmosphere comprising molecular oxygen.

3,284,241

PHOTO-EMISSIVE DEVICE INCLUDING EMITTER AND INSULATOR OF LESS THAN MEAN FREE PATH DIMENSIONS

Marvin E. Lasser, Elkins Park, and Gerald Lucovsky, Roslyn, Pa., assignors to Philco Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Feb. 13, 1962, Ser. No. 172,934
10 Claims. (Cl. 136—89)



1. A photovoltaic device for converting incident light to electrical energy, comprising, in combination:

a first photoabsorptive, photoemissive, and electrically continuous conductive layer comprising a film of metal having a thickness of about 50 to 300 angstorms and less than the mean free path for electrons in said metal, whereby incident light will generate free electrons in said film yet said film will be thick enough to be mechanically stable and electrically continuous, one surface of said layer being exposed so that light can be received substantially directly thereon,

a layer of insulating material adjacent said first layer, said insulating layer having a thickness of about 70 to 100 angstroms and less than the mean free path for electrons in said insulating material, whereby said insulating layer will have an effective reverse resistance of greater than 10^6 ohms per square centimeter for an applied potential difference thereacross of one volt, and whereby free electrons generated in said first layer will be able to pass through said insulating layer,

a conductive collector layer of a material different from the metal film of said first layer and adjacent the other side of said insulating layer, said collector layer having a thickness of about 1000 angstroms or greater, whereby said collector layer will reflect rather than absorb most of the residual light reaching it through said first and said insulating layers, and

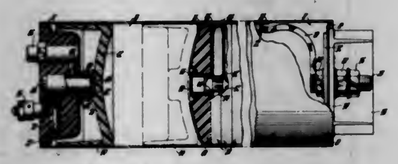
means for providing respective electrical connections to said collector layer and said first layer to which a load impedance may be connected, said first conductive layer and said collector layer being insulated from each other.

3,284,242

DEFERRED ACTION BATTERY

Warren R. Schilke, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Nov. 21, 1961, Ser. No. 153,986
4 Claims. (Cl. 136—90)



1. A battery comprising a tubular housing, closures for each end of said tubular housing, a transverse divider wall in said housing forming an electrolyte reservoir compartment and a voltaic cell compartment axially aligned therein, at least one voltaic cell in said cell compartment, a piston in said reservoir, electrolyte in said reservoir between said piston and said housing divider wall, said divider wall having an aperture therein which communicates said reservoir with said cell, a rupturable diaphragm sealing said aperture to retain said electrolyte in said reservoir, means for urging said piston against said electrolyte with sufficient force to rupture said diaphragm and flow electrolyte into said cell from said reservoir, a first gas flow restriction for venting the reservoir area behind the piston to the battery ambient, a second gas flow restriction communicating reservoir areas on opposite sides of said piston to relieve gas pressure generated by said cell, and means for collecting current generated by said cell.

3,284,243

GAS DIFFUSION OF ELECTRODES OF ORIENTED POROSITY AND PROCESS OF PRODUCING SUCH ELECTRODES

Ferdinand von Sturm, Erlangen, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

Filed Dec. 11, 1962, Ser. No. 243,846
Claims priority, application Germany, Dec. 14, 1961, S 77,126
7 Claims. (Cl. 136—120)

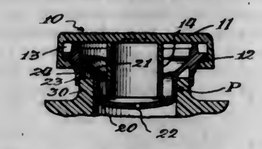
1. A gas diffusion electrode having a gas side and an electrolyte side and comprising an electrode structure composed of a multiplicity of filaments having metallic surfaces and extending approximately parallel and in contact with one another between said two sides, said filaments forming substantially parallel interstitial pores and said filaments having respective cross-sectional areas gradually decreasing from said electrolyte side to said gas side so that said pores continuously taper from said gas side to said electrolyte side, said filaments consisting of a non-catalytic carrier material and a coating of catalyst metal.

3,284,244

MULTIPLE VENT PLUG ASSEMBLY

Gordon B. Lucas, River Forest, Ill., assignor to The Richardson Company, Melrose Park, Ill., a corporation of Ohio

Filed Oct. 4, 1965, Ser. No. 492,731
7 Claims. (Cl. 136—177)



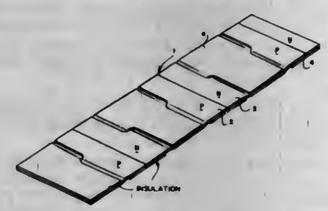
1. A multiple vent plug assembly for electrical storage battery filling wells comprising a one-piece, elongated plastic body provided with a plurality of inwardly extending projections which form pairs of opposing recesses spaced at predetermined intervals along the longitudinal axis at the underside of said body, a plurality of hollow vent plugs having laterally projecting lugs extending into said recesses, said plugs being suspended from said body by means of said lugs, and means for permitting egress of gases from battery cells to the atmosphere through said vent plugs.

3,284,245

THERMOELECTRIC GENERATORS

Herbert B. Nottage, Encino, and Paul L. Winskell, Burbank, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.

Filed Apr. 10, 1961, Ser. No. 101,832
15 Claims. (Cl. 136—212)



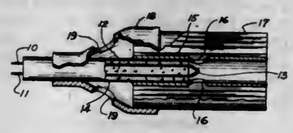
14. A thermoelectric generator comprising a first series of thermoelectric junctions defining a current path therethrough, means including a second series of thermoelectric junctions arranged perpendicularly to said first series insulatingly covering alternate junctions of each series, said first and second series of junctions lying in at least parallel planes whereby exposure of the uncovered junctions to a temperature different from the temperature of the covered junction causes an electric current to flow.

3,284,246

HEAT RADIATION PROTECTED THERMOCOUPLE

John Macatician, P.O. Box 136, Lake Hopatcong, N.J.

Filed Nov. 30, 1962, Ser. No. 241,320
5 Claims. (Cl. 136—231)



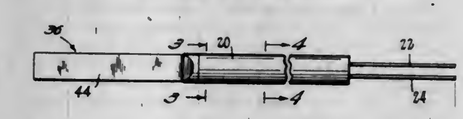
1. A thermocouple comprising a body, a thermocouple junction exposed adjacent at least one end of said body, a heat-conductive foil heat radiation shield disposed about said junction in spaced relationship thereto, and means for attaching said shield to said body, said shield being spiral in cross-section and having a plurality of spaced spiral turns.

3,284,247

THERMOCOUPLE PROBE CONSTRUCTION

Clarence I. McCall, Waterbury, Conn., assignor to Lewis Engineering Company, Naugatuck, Conn., a corporation of Connecticut

Filed July 15, 1963, Ser. No. 295,066
6 Claims. (Cl. 136—233)



1. A thermocouple probe construction comprising, in combination:

(a) a tubular metal sheath of finite length, having a tip portion adapted to be subjected to heat,

(b) a pair of thermocouple wires disposed and extending lengthwise in the sheath, corresponding end portions of the wires being welded to the interior of said tip portion at two spaced and different locations, and

(c) a tip member welded to and extending into the tip portion of the sheath, said member closing the tip portion of the sheath and having cavity formations to provide clearance for the welded ends of the wires.

3,284,248

METAL SURFACE TREATMENT

George G. Rumberger, Portage Township, Kalamazoo County, Mich., assignor, by mesne assignments, to Brown Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 7, 1963, Ser. No. 249,589
10 Claims. (Cl. 148—6)

1. The method of treating metal surfaces of casting apparatus which adhere to normally solid materials which have undergone a change-of-state in contact therewith comprising applying a perfluorocarboxylic acid to said metal surface in an amount to cover said surface with at least a continuous mono-molecular film of the perfluorocarboxylic acid to provide said metal with a releasable surface for the normally solid material after a change-of-state has occurred.

3,284,249
DECORATIVE FINISH FOR COPPER
Donald H. Osborn, Naugatuck, Conn., assignor to Anaconda American Brass Company
No Drawing. Filed June 28, 1963, Ser. No. 291,237
8 Claims. (Cl. 148—6.24)

1. A method of imparting a decorative statuary bronze finish to a cupreous surface which comprises treating said surface with potassium permanganate, thereby forming discrete adherent microscopic particles of predominately cuprous oxide uniformly distributed on said surface and spaced apart at a distance greater than the dimension of said particles, continuing said treatment for a controlled period of time, whereby said oxide particles grow to cover a predetermined fraction of the total area of said surface, and thereafter reacting said oxide with an aqueous ammoniacal sulfide solution whereby a decorative statuary bronze finish is provided on said surface with a predetermined depth of color.

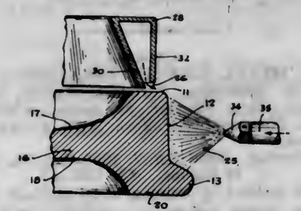
3,284,250
AUSTENITIC STAINLESS STEEL AND PROCESS THEREFOR
Ralph B. G. Yeo, Westfield, N.J., and Tom E. Scott, Ames, Iowa, assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 9, 1964, Ser. No. 336,808
8 Claims. (Cl. 148—12)

1. A process for improving the yield strengths of and achieving finer grain sizes in austenitic stainless steels consisting of about 0.06% to about 0.08% carbon, about 8% to about 12% nickel, about 17.5% to about 19.5% chromium, about 0.18% to about 0.28% columbium, up to 1% silicon, up to 2% manganese, up to 0.1% aluminum, up to 0.3% nitrogen and the balance essentially iron which comprises hot working the steels within the temperature range of about 2300° F. to about 2000° F., cold working the steel without a prior process annealing treatment to obtain a reduction in area of 40% to 60% and thereafter recrystallizing the steel by subjecting it to an annealing treatment within the temperature range of about 1750° F. to about 1850° F. in accordance with the following formula:

$$45.3=(460+T)(\log t+20)\times 10^{-3}$$

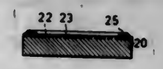
wherein T represents temperature in degrees Fahrenheit and t is time in hours.

3,284,251
METHOD OF SURFACE HARDENING
Arthur W. Farrell, Tallman, N.Y., assignor to American Brake Shoe Company, New York, N.Y., a corporation of Delaware
Filed Mar. 12, 1964, Ser. No. 351,447
3 Claims. (Cl. 148—146)



1. The method of selectively quenching a tread and a portion of the front rim face and flange of a preheated railroad car wheel, said method comprising: the steps of positioning the preheated railroad car wheel in a horizontal position with the flange thereof positioned downwardly, applying a liquid quenching medium to the tread of the car wheel, said quenching medium moving across the flange of the car wheel and moving across the front rim face of the car wheel, and directing a gaseous stream across the front rim face of the car wheel to form a barrier to prevent the liquid quenching medium from flowing onto the plate of the car wheel.

3,284,252
METHOD OF MANUFACTURING SEMICONDUCTOR SYSTEMS COMPRISING CADMIUM CHALCOGENIDE SEMICONDUCTORS
Hermann George Grimmeiss and Werner Kischio, Aachen, and Rüdiger Memming, Hamburg, Germany, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 1, 1963, Ser. No. 269,420
Claims priority, application Germany, Apr. 3, 1962, N 21,413
3 Claims. (Cl. 148—188)



1. A method of making a barrier layer semiconductor device comprising coating a surface of a cadmium sulphide body with a metal selected from the group consisting of copper, gold, silver, and nickel, diffusing a portion of the coating into the cadmium sulphide body, and thereafter etching at least part of the remaining metal coating with a selective alkaline etching agent to remove the coated metal but without attacking the underlying cadmium sulphide body, said etching agent comprising a solution consisting essentially of about 5%–30% by weight of potassium cyanide and about 0.1%–5% by weight of hydrogen peroxide, balance water.

3,284,253
DENSIFIED NITROCELLULOSE - HYDROCARBON PRODUCT AND PROCESS OF MANUFACTURE
John G. Enders Westfield, and Daniel S. Wilt, Cranford, N.J., assignors to Hercules Incorporated, a corporation of Delaware
No Drawing. Filed Aug. 27, 1963, Ser. No. 304,985
14 Claims. (Cl. 149—2)

1. A process for preparing hydrocarbon-wet nitrocellulose which comprises

(a) contacting a slurry of fibrous nitrocellulose with agitation in a heated aqueous bath with an organic liquid solvent which has active solvent power for said nitrocellulose;

(b) regulating the amount of said solvent between about 0.3 part and about 2 parts by weight per part of nitrocellulose to soften and destroy the fibrous structure of said nitrocellulose without dissolution of said nitrocellulose;

(c) removing substantially all of said solvent by distillation while continuing agitation to transform the softened nitrocellulose into smooth, hardened, densified, irregular granules having a free-draining physical structure capable of holding between about 10% and about 40% by weight of sorbed nonsolvent liquid;

(d) separating excess water from the resulting hardened nitrocellulose granules to produce nitrocellulose granules wet with sorbed water;

(e) thereafter substantially displacing sorbed water from the water-wet nitrocellulose granules by distillation in the presence of an excess of volatile hydrocarbon liquid;

(f) separating excess hydrocarbon liquid; and

(g) recovering nitrocellulose granules wetted with between about 10% and about 40% by weight of sorbed hydrocarbon, based on total weight.

3,284,254
EXPLOSIVE PLASTIC FOILS CONTAINING GELATINIZED NITROCELLULOSE
Hans-Joachim Riedl, Recklinghausen, and Heinz Schlüter, Merfeld-Dulmen, Germany, assignors to Wasag-Chemie, A.G., Essen, Germany, a corporation of Germany
No Drawing. Filed Aug. 6, 1964, Ser. No. 388,009
Claims priority, application Germany, Aug. 16, 1963, W 35,098
8 Claims. (Cl. 149—2)

1. Moldable, self-supporting, adhesive explosive foils 2 to 20 mm. thick and comprised of an explosive mixture consisting of nitrocellulose gelatinized with an explosive liquid nitric acid ester, and an explosive substance from the group consisting of alkaline nitrates, ammonium nitrate, cyclotrimethylene trinitramine, nitropentaerythrite and mixtures thereof, and 5 to 45% ferric oxide, the content of inert substances being between 10 to 60%.

3,284,255
EXPLOSIVE INITIATOR COMPRISING BARIUM STYPHNATE AND LEAD AZIDE
Lewis Robert Rothstein, Keith Benner Mullin, and Wayne Eugene Jewsbury, all of Asheville, N.C., assignors, by mesne assignments, to Northrop Carolina, Inc., Swannanoa, N.C., a corporation of North Carolina
No Drawing. Filed July 1, 1965, Ser. No. 468,963
2 Claims. (Cl. 149—23)

1. An insensitive explosively detonatable composition for igniting secondary explosives comprising between 1 part barium styphnate to 1 part lead azide and 10 parts barium styphnate to 1 part lead azide.

3,284,256
METHOD OF MANUFACTURING A COMPOSITE, HEAT-INSULATING MATERIAL OF THE TYPE FORMED BY STACKING FOILS OF OXIDISABLE METAL
Lucien Alfille, Orsay, and Raymond Darras, Versailles, France, assignors to Commissariat a l'Energie Atomique, Paris, France
No Drawing. Filed Oct. 3, 1961, Ser. No. 142,504
Claims priority, application France, Oct. 10, 1960, 840,707
6 Claims. (Cl. 156—1)

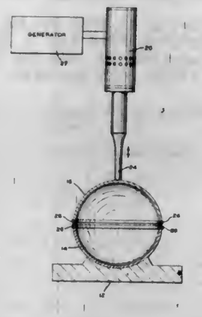
1. In a method of manufacturing a composite, heat-insulating material comprising layers of foils of an oxidisable metal in which each layer has at least one surface covered by a heat insulating substance, the steps of forming a stack of alternately thick and thin foils of the same metal having low neutron absorption around an object to be thermally insulated, said metal being selected from the group consisting of magnesium and aluminum and then completely oxidizing the thin metal foils at an elevated temperature between 350° C. and 525° C. in an atmosphere of carbon dioxide at a pressure higher than atmospheric pressure between 15 kg./cm.² and 60 kg./cm.² to form a layer of refractory oxide between the thick foils.

3,284,257
METHOD OF BONDING NON-THERMOPLASTIC PARTS BY SONIC ENERGY
Robert S. Soloff, Stamford, and Seymour G. Linsley, Bridgeport, Conn., assignors to Branson Instruments, Incorporated, Stamford, Conn., a corporation of Delaware
Filed Aug. 6, 1965, Ser. No. 477,758
4 Claims. (Cl. 156—73)

1. The method of fusion welding relatively stiff non-thermoplastic parts which are provided with thermoplastic sealing surfaces, comprising the steps of:

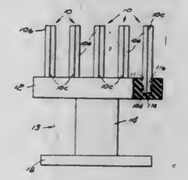
(a) holding at least two of said parts in intimate contact along such sealing surfaces and,

(b) introducing sonic energy into a surface of at least one of the parts over an area substantially greater than the total area of intimate contact of said parts



along said sealing surfaces to thereby effect a fusion weld between the parts.

3,284,258
METHOD OF MAKING A PLASTIC ARTICLE HAVING A METALLIC INSERT
Dante J. Patti, Middletown, R.I., and Stephen Horbach, Mountain Lakes, N.J., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 12, 1962, Ser. No. 230,192
3 Claims. (Cl. 156—84)



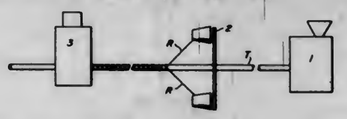
1. The method of making a plastic article having a metallic insert secured therein and projecting therefrom, which comprises the following steps:

molding the article of a thermosetting plastic resin of a type which shrinks upon cooling, the molded article having a cylindrical hole therein,

providing an elongated metallic insert having a transverse cross section at a base portion defining at least three sharp corners which are equidistant from the longitudinal axis of the insert, the distance from the longitudinal axis of the insert to each corner being between one-half and three thousandths of an inch greater than the radius of the hole in the article; and,

forcing the insert longitudinally into the hole while the article is still hot from the molding step to position the base portion of the insert in the hole so that the remainder of the insert projects therefrom, the sharp corners of the insert scoring the sides of the hole as the insert is forced in to provide an interference fit between the insert and the article, the thermosetting resin shrinking onto the insert upon cooling to secure the insert tightly in the hole against both torsional and longitudinal forces applied to the insert.

3,284,259
METHOD OF MAKING REINFORCED HOSE
Frederick M. Galloway, Langhorne, and Robert H. Sinnamon, Huntingdon Valley, Pa., assignors to H. K. Porter Company, Inc., Pittsburgh, Pa., a corporation of Delaware
Original application May 23, 1962, Ser. No. 197,156, now Patent No. 3,168,910, dated Feb. 9, 1965. Divided and this application May 27, 1963, Ser. No. 287,734
2 Claims. (Cl. 156—149)

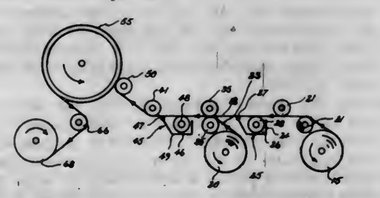


1. The method of making hose which comprises the steps of extruding a tube of uncured elastomeric material, encasing said tube in a tubular reinforcing structure comprising continuous filament yarn, extruding about the reinforced tube a metallic lead jacket having circumferentially spaced longitudinal ribs projecting inwardly from its inner surface and into engagement with said reinforcement, subjecting the lead-jacket-encased reinforced tube to heat and internal pressure to thereby force elastomeric material radially through interstices in the reinforcement and into contact with the lead jacket between adjacent ribs therein and concurrently cure said elastomeric material, then relieving the internal pressure and stripping the lead jacket from the hose.

3,284,260
METHOD OF MAKING A COMPOSITE SHAPED ARTICLE
John S. Best, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Feb. 28, 1966, Ser. No. 538,497
6 Claims. (Cl. 156—212)

1. The method of fabricating a composite shaped article having curved surfaces comprising providing a generally flat rigid cellular sheet, disposing adjacent at least a major surface thereof a layer of expanded metal mesh, forming a coating on the surface of the sheet of a resin in a gel stage thereby providing a flat composite article of a cellular sheet, metal mesh and resin in a gel stage, bending the flat article to form a curved composite shaped article with the mesh adjacent the convex surface thereof and allowing the resin in the gel stage to cure beyond the gel stage.

3,284,261
CAST COATING METHOD
Vincent A. Lauderman and Harry S. Pedley, Hamilton, Ohio, assignors to Champion Papers Inc., Hamilton, Ohio, a corporation of Ohio
Filed June 1, 1962, Ser. No. 199,315
4 Claims. (Cl. 156—280)

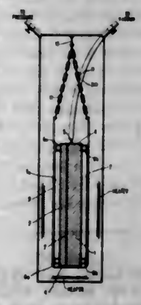


1. Method for the continuous production of cast coated stocks of heavy basis weight comprising the steps of: (a) laminating two moving plies of paper by means of an intermediate layer of aqueous based bonding composition containing a tacky adhesive, (b) before substantial evaporation of the water contained in the aqueous bonding composition, contacting an exposed surface on one of the plies with an aqueous based mixture of paper coating adhesive and finely divided mineral pigment, (c) before substantial evaporation of the water contained in the aqueous bonding and coating composition, and drying the thusly laminated and coated sheet material against a heated finishing casting surface, and (d) finally stripping the resultant sheet material from said casting surface.

3,284,262
PROCESS OF APPLYING A POLYESTER COATING TO A REINFORCED, COATED SUBSTRATE
Arthur P. Dowling, Lakewood, Ohio, assignor, by mesne assignments, to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware
No Drawing. Filed Mar. 24, 1960, Ser. No. 17,271
9 Claims. (Cl. 156—280)

1. In a process for coating a surface with a polyester-containing coating material comprising the steps of coating said surface with a solvent-cut lacquer subcoating capable of drying by solvent evaporation and containing a free radical catalyst and a topcoating, capable of being cured by said catalyst in said subcoating, of an unsaturated polyester dissolved in a polymerizable monomer, the improvement which comprises applying to said surface a solvent-cut lacquer subcoating, which is resistant to the solvent action of said polyester topcoating, creating a pressure-sensitive adhesive layer of said subcoating by partially evaporating solvent from said subcoating, thereafter adhesively uniting a permeable fibrous membrane and said polyester topcoating to said subcoating and allowing said subcoating to dry to a non-adhesive residue by solvent evaporation and said polyester topcoating to cure by the action of said catalyst in said subcoat layer.

3,284,263
METHOD AND APPARATUS FOR PRODUCING A LAMINATED GLAZING ASSEMBLY
Bernard Jamet, Saint-Cyr-l'Ecole, France, assignor to Societe Industrielle Triplex, Paris, France
Filed Feb. 1, 1962, Ser. No. 170,350
Claims priority, application France, Feb. 3, 1961, 851,666, Patent 1,287,588
3 Claims. (Cl. 156—286)



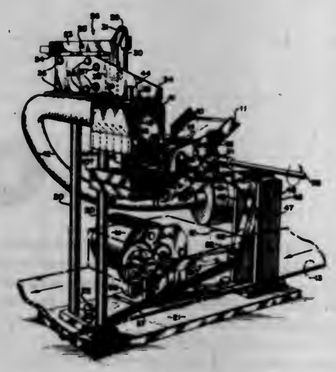
1. A method of producing a laminate consisting of polymethylmethacrylate sheets and a polyvinyl butyral interlayer which comprises assembling the sheets and layer, sealing the periphery thereof with a ribbon the edges of which are adhesively attached to the peripheral edges of the laminated sheets and the center of which is pneumatically open to the interfaces of sheets and interlayer, suspending the assembled laminate vertically within an autoclave, heating the laminate to a temperature at which the polyvinyl butyral is adhesive, and simultaneously increasing the pressure of the air within the autoclave bearing on the laminate and evacuating the air enclosed between the elements thereof through the ribbon, thereby sealing the sheets to the interlayer.

3,284,264
METHOD OF MAKING A BELLOWS STRUCTURE OF THERMOSETTING MATERIAL
Gerald J. O'Rourke, 2620 Anita Drive, Brookfield, Wis.
Filed Mar. 1, 1965, Ser. No. 439,514
7 Claims. (Cl. 156—289)



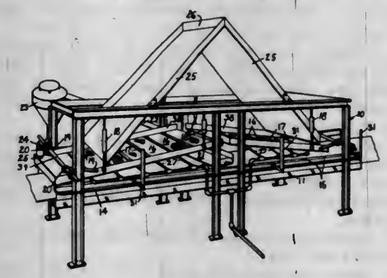
1. The method of manufacturing bellows fabricated of a plurality of sections comprising; forming the individual sections of a flexible thermosetting uncured material; placing the several sections in a stack; placing masks between said sections, said masks being formed of a material that resists the heat to which the stack is subjected and being of such sizes and configurations as to expose those portions of each section which are to be bonded to adjoining sections; applying pressure to the stack of sections and masks for holding adjacent surfaces of the sections in firm contact with each other; and subjecting the stack while under pressure to sufficient heat to cure the material forming the sections and thereby fuse together adjoining sections along the areas which are exposed by said masks; whereby said sections are united in the proper relationship into an integral structure forming the bellows.

3,284,265
LABEL APPLICATORS
Frederick C. Carroll and Fred H. Weihs, Toledo, Ohio, assignors to Toledo Scale Corporation, Toledo, Ohio, a corporation of Ohio
Filed Aug. 3, 1962, Ser. No. 214,563
9 Claims. (Cl. 156—350)



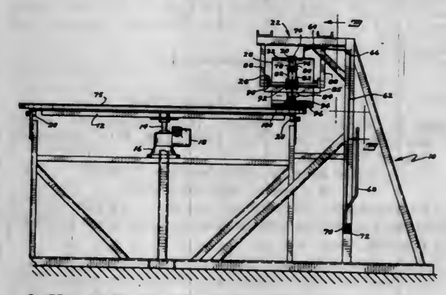
6. An automatically operable label applicator comprising, in combination, label applying means, supply means for delivering labels into position for use by the label applying means, said supply means including first and second conveyor belt means one on top of the other and between which the labels are conveyed, and interlock means operated by labels carried by the conveyor belt means for preventing operation of the applicator unless a label is in said position for use.

3,284,266
MANUFACTURE OF PARTICLE BOARD
Milton L. Clifford, 708 Sherman, Coeur d'Alene, Idaho
Filed Sept. 24, 1962, Ser. No. 225,681
6 Claims. (Cl. 156—373)



1. An apparatus for stratifying tree particles for use in the production of particle board, comprising:
a supporting framework;
caul support means on said framework adapted to maintain individual cauls in a horizontal position and to effect longitudinal motion thereof;
screen means mounted above said caul support means, said screen means comprising a plurality of longitudinally adjacent screen sections having varying screen openings in a progressive size sequence along the length thereof, each section being separated from the sections adjacent thereto by transverse solid partitions;
reciprocating drive means on said framework operatively connected to said screen means adapted to effect motion of particles on said sections progressively along the sections toward the section having the largest screen openings;
delivery means located above said screen means adapted to deposit a mixture of tree particles upon a screen section having relatively small screen openings;
and transverse binder supply means located intermediate the caul support means and said screen means vertically below each partition of said screen means adapted to direct a binding agent toward said caul support means in a laterally dispersed downward direction.

3,284,267
APPARATUS FOR SEALING AND FORMING A TUNNEL WITH HEAT-SEALABLE TAPE
Norman R. Buck, Northfield, and Dale C. Wood, Farmington, Minn., assignors to G. T. Schjeldahl Company, Northfield, Minn., a corporation of Minnesota
Filed Dec. 26, 1961, Ser. No. 162,112
6 Claims. (Cl. 156—383)



3. Heat sealing apparatus comprising:
(a) a frame structure,

(b) a turntable mounted on said frame structure for rotation about a vertical axis, said turntable having a flat horizontal surface for the support of a sheet of plastic material,
(c) a heated bonding wheel mounted for rotation about a horizontal axis above said turntable, said bonding wheel having a circumferential groove,
(d) a supply reel mounted on said frame structure for paying out a strip of heat sealable tape so that said tape passes about an upper segment of said bonding wheel and then beneath said wheel in order to be presssed against said sheet material,
(e) an auxiliary wheel mounted on said frame structure at an elevation so as to bear against said tape after it has passed part way around said bonding wheel to flex a central portion of said tape into said groove,
(f) a guide block having a longitudinal groove formed on its underside,
(g) means mounting said guide block on said frame structure so that its groove is parallel to the horizontal surface of said turntable and in tangential alignment with said circumferential groove, and
(h) means carried on said frame structure for directing a flexible elongated element into the groove of said guide block whereby said elongated element enters between said tape and sheet to prevent adherence of said tape to said elongated element and to said sheet in the region of said elongated element and thus form a tunnel.

3,284,268
APPARATUS FOR FORMING A NET OF INTERSECTING THREADS

Walter Rösler, Soest, Westphalia, Germany, assignor to Drahtwerke Rosler K.G., Soest, Westphalia, Germany
Filed Dec. 26, 1962, Ser. No. 247,066
Claims priority, application Germany, Dec. 30, 1961, D 37,821
9 Claims. (Cl. 156—439)

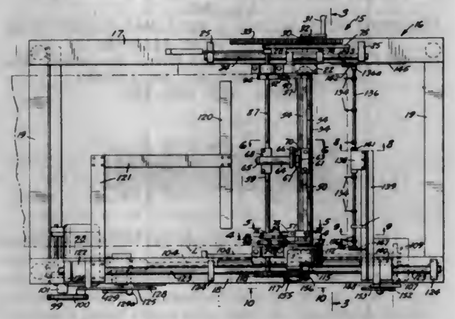


1. A thread laying device comprising an endless drive chain having parallel intermediate runs, a guide rail disposed intermediate said drive chain runs, an endless thread laying chain mounted on said guide rail for movement therearound, said thread laying chain having thread sleeves, and drive members on said drive chain engaging and driving said thread laying chain above and below said thread laying chain so that said thread laying chain maintains the same relative position, said thread laying chain and said guide rail being floatingly supported by said drive chain.

3,284,269
SEALING APPARATUS

John J. Grevich, Star Prairie, Wis., assignor to Doughboy Indnstries, Inc., New Richmond, Wis., a corporation of Wisconsin
Filed June 20, 1963, Ser. No. 289,354
10 Claims. (Cl. 156—498)

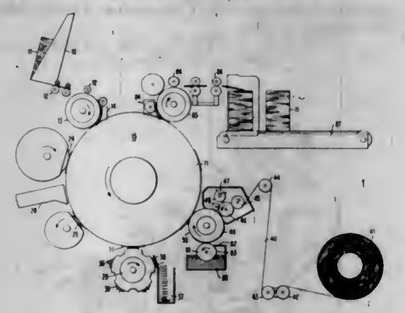
1. Apparatus for severing a pair of superposed film laminae and sealing together the laminae edges produced in the severance,
comprising a frame,
an elongate roller having heat-conductive means defining an outer roller surface against which the superposed laminae lie,
a heated film-severing and sealing element having an elongate and convexly bowed edge extending longitudinally of the roller and in confronting relation with the outer surface thereof and bearing against the laminae and roller at one point along said edge,



means mounting said severing and sealing element for rocking the bowed edge longitudinally along the roller,
and means producing rocking of said element along the roller to progressively move said point longitudinally along the roller and progressively produce severance of the superposed laminae and sealing of the superposed edges produced in the severance.

3,284,270
RECORD CARD MACHINE

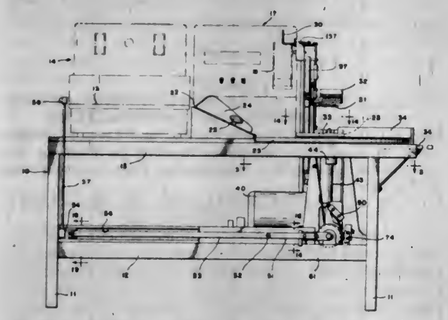
Robert C. Noll and Joseph C. Seigh, Endicott, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed May 6, 1963, Ser. No. 278,127
13 Claims. (Cl. 156—514)



1. In a machine for automatically producing from a stack of blank record cards and a film roll record cards each having a shouldered aperture therein and a film piece secured over said shouldered aperture in one face of the card, the combination of:
a central rotating card drum;
mean for depositing successive blank record cards onto the surface of said drum;
vacuum means associated with said drum for retaining successive record cards deposited thereon, said drum conveying said successive record cards past a plurality of mechanisms arranged in successive order around the periphery of said drum for performing operations simultaneously on separate cards;
said mechanisms including first and second grinding mechanisms coacting with said drum for forming a rectangular shoulder depression in each card;
a scoring and chip removal mechanism coacting with said drum for forming an apertured area within the rectangular shoulder depression of each card;
a film applying mechanism for cutting said film roll into film pieces, applying an adhesive border to each film piece and securing a film piece over the aperture and to the rectangular shoulder depression in each card on said drum; and
mechanism for removing and stacking film record cards from said drum.

3,284,271
LABELING MACHINE

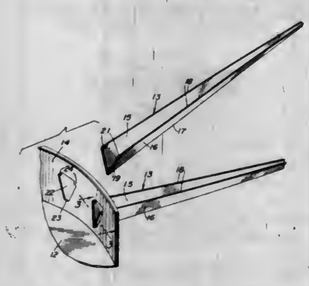
Merwin S. Parks, Seattle, Wash., assignor to Nelson-Parks Corporation, Seattle, Wash., a corporation of Washington
Filed May 10, 1962, Ser. No. 193,734
3 Claims. (Cl. 156—566)



1. In a labeling machine providing a table adapted to have a package stationed thereon for labeling, a carrier supported for vertical travel above the labeling station between an upper location elevated above and a lower location approximating the upper level of a package occupying the station, a pick-up arm mounted upon the carrier for reciprocal up and over swing movement about an approximately horizontal axis from a normal position extending horizontally in one lateral direction from center into and from a pick-up position extending horizontally in the other lateral direction from center, a brush also mounted upon the carrier for reciprocal swing movement from a normal position in which the same overlies the pick-up arm when the latter is in its normal position into and from a position out of the swing path of said pick-up arm, means operating when the carrier is in its elevated position for swinging the pick-up arm and the brush first moving the brush into its out-of-the-way position, then reciprocating the pick-up arm, and finally returning the brush, a frame for holding an adhesively-coated label, adhesive side up, located at the approximate upper limit of the carrier's travel in a location whereat the pick-up arm, moving to its pick-up position, is brought downwardly against the adhesive coating of the label to cause the label to adhere thereto and by its return swing transfers the label from the frame to a position overhead to the package with the adhesive side down, means made to operate when the pick-up arm and brush have completed their swing movements for operating the carrier reciprocally in its vertical motion first moving downwardly to place the label upon the package and then returning to the elevated position preparatory to initiating a following cycle of operation, and means acting upon the package while the arm is at its low position for pushing said package horizontally from beneath the arm and the brush so that the arm slips out from under the label while the brush wipes the label onto the package.

3,284,272
MOUNTING MEANS

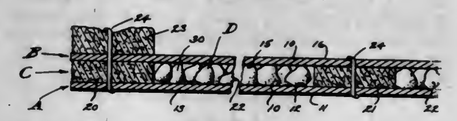
Sidney Swislow, Glencoe, Ill., assignor to Harwood Manufacturing Co., Chicago, Ill., a corporation of Illinois
Filed Feb. 11, 1965, Ser. No. 431,801
5 Claims. (Cl. 161—17)



1. A wall display comprising
a support having a peripheral side flange,
said side flange having a plurality of mounting openings formed therein and spaced therearound,
each of said openings being formed with a central portion and a marginal portion of reduced dimension,
a plurality of elongated display members extending outwardly from said support,
each of said display members comprising a pair of resiliently divergent walls,
said walls being formed with a plurality of notches adjacent the mounting end thereof,
the mounting ends of said members being positioned through said openings and said notches and walls closely engaging the marginal portions of said openings to hold the members firmly against rocking movement,
said walls being resiliently compressible to disengage said marginal portions and move said walls into the central portions of said openings whereby said members may be readily removed from said flange.

3,284,273
ABSORBENT PAD

Earl E. Prentice, Palos Verdes Estates, Calif., assignor to John A. Haslett, doing business as John A. Haslett Co., San Gabriel, Calif.
Filed July 13, 1962, Ser. No. 209,590
1 Claim. (Cl. 161—83)



A laminated floor pad for standing support and for storing liquid contacting the same and including:
(a) a base lamina of liquid absorbent paper felt with an impervious film on its lowermost supported face,
(b) a top surface lamina of liquid absorbent paper felt spaced from and overlying the base lamina,
(c) a marginal spacer separating said laminae with a chamber space therebetween,
(d) and a liquid retaining lamina comprised of a single layer of loose liquid saturable crush resistant pellets occupying the chamber space between said laminae and engageably supporting the surface laminae in order to uniformly space the first two mentioned laminae and to receive liquid therefrom and to store said liquid.

3,284,274
CELLULAR POLYMERIC SHEET MATERIAL AND METHOD OF MAKING SAME
Donald G. Hulslander, Newburgh, and William F. Manwaring, Cornwall, N.Y., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Aug. 13, 1962, Ser. No. 216,576
10 Claims. (Cl. 161—159)



1. A sheet material having a permeability value of at least 1000 and comprising a cellular layer of polymeric material in adherence with a surface of a porous fibrous sheet materials at least 50% of the volume of said layer being composed of contiguous elongated cells having
(a) an average cross-section diameter of about 20–200 microns,
(b) a substantially perpendicular orientation of their longest dimension in relation to the plane of the surface of the sheet, and
(c) thin microporous cell walls which, by virtue of their microporosity, render the cells intercommunicating;
wherein at least 51% by weight of said polymeric material consists of a polyurethane elastomer and up to 49% by weight of said polymer consists of a vinyl chloride polymer and wherein the polyurethane elastomer comprises a chain-extended polyurethane polymer formed by the reaction of an excess of an organic diisocyanate and an active hydrogen containing polymeric material selected from the group consisting of polyalkyleneether glycols and hydroxyl-terminated polyesters which produce an isocyanate-terminated polyurethane prepolymer, said prepolymer being chain-extended with a compound having two active hydrogen atoms each bonded to an amino-nitrogen atom.

3,284,275
EXPANSIBLE POLYURETHANE FOAM
George R. Nelson, Framingham, Mass., assignor to Dennison Manufacturing Company, a corporation of Nevada
No Drawing. Filed May 9, 1961, Ser. No. 108,764
8 Claims. (Cl. 161—168)

1. An expansible sheet of flexible polyurethane foam compressed to one-half or less of its original as-formed thickness, said compressed thickness being stable at ambient conditions, said sheet having dispersed therein a solid material which is, when melted, a solvating agent for said foam, said solvating agent being present in an amount effective, on melting, to substantially expand said foam, said solvating agent being non-reactive with the foam and melting above ambient temperature but below the decomposition temperature of the foam.

3,284,276
COATED CELLOPHANE ARTICLE AND PROCESS FOR OBTAINING THE SAME
Morris B. Berenbaum, Levittown, Pa., Rolf F. Foerster, Hamilton Square, N.J., Riad H. Gobran and David C. Guth, Levittown, Pa., Ronald F. Snyder, Bordentown, N.J., and Theodore F. Wells III, Morrisville, and Arthur J. Yu, Levittown, Pa., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
No Drawing. Filed Nov. 6, 1962, Ser. No. 235,839
9 Claims. (Cl. 161—184)

1. As an article of manufacture a cellophane substrate coated on at least one surface thereof with the reaction product of
(A) at least one copolymer essentially consisting of about 75 to 95 mol percent of vinylidene chloride and about 5 to 25 mol percent of at least one acid material selected from the group consisting of α,β-unsaturated, aliphatic caroxylic acids and their anhydrides, and
(B) at least one polyepoxide in an amount such as to provide about 0.01 to 2.5 mols of epoxide groups per mol of carboxyl groups present in said copolymer.
5. A process for coating a cellophane substrate comprising applying to at least one surface of said substrate a solution containing
(A) at least one copolymer essentially consisting of about 75 to 95 mol percent of vinylidene chloride and about 5 to 25 mol percent of at least one acid material selected from the group consisting of α,β-unsaturated, aliphatic caroxylic acids and their anhydrides, and
(B) at least one polyepoxide in an amount such as to provide about 0.01 to 2.5 mols of epoxide groups per mol of carboxyl groups present in said copolymer,
removing the solvent medium from said solution, and crosslinking said copolymer with said polyepoxide whereby said crosslinked copolymer forms a coating on said substrate.

3,284,277
LAMINAR STRUCTURES OF POLYVINYL FLUORIDE AND METHOD OF MANUFACTURE
John C. Bonacci, Germantown, Pa., and Leon E. Wolinski, Buffalo, N.Y., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed June 14, 1965, Ser. No. 463,949
17 Claims. (Cl. 161—188)

1. A method for preparing laminar structures of polyvinyl fluoride and unsaturated polyesters which comprises subjecting at least one surface of a polyvinyl fluoride film structure to an electrical discharge in a gaseous atmosphere consisting essentially of ammonia; contacting at least one treated surface of said polyvinyl fluoride film structure with an unsaturated polyester polymeric material consisting essentially of at least one unsaturated organic linear polymeric ester having recurring ethylenic unsaturation and at least one addition-polymerizable ethylenically unsaturated organic monomer; and curing said polyvinyl fluoride film and unsaturated polyester to form a cured laminar structure comprising at least one layer of polyvinyl fluoride integrally bonded to at least one layer of said unsaturated polyester.
8. A laminar structure comprising at least one layer of polyvinyl fluoride surface activated by electrical discharge in the presence of ammonia integrally bonded to at least one layer of an unsaturated polyester.

3,284,278
PROCESS FOR THE ADHESIVE BODYING OF OLEFIN COPOLYMERS TO SYNTHETIC AND NATURAL FIBERS AND SHAPED ARTICLES OBTAINED THEREFROM
Luigi Falcone, Como, and Giuseppe Strano and Mario Milano, Ferrara, Italy, assignors to Montecatini Società Generale per l'Industria Mineraria e Chimica, Milan, Italy
No Drawing. Filed Sept. 15, 1965, Ser. No. 487,609
Claims priority, application Italy, Oct. 6, 1961, 18,051/61, Patent 660,426
23 Claims. (Cl. 161—190)

1. A process for the adhesive bodying onto a fiber material of a saturated amorphous copolymer of ethylene with a higher alpha-olefin having the formula

$$CH=CH—CH_2R$$

in which R is a hydrogen atom or a methyl group, which comprises applying onto the fiber material a first coating consisting of an adhesive for diene rubbers that is selected from the group consisting of a phenol-formaldehyde resin and a polyisocyanate, drying said first coating, applying onto said treated fiber material a second coating consisting of (*a*) an adhesive for saturated elastomers that is selected from the group consisting of a sulphochlorinated ethylene-propylene copolymer, a sulphochlorinated ethylene-butene-1 copolymer, an ethylene-propylene copolymer partially cross-linked with maleic acid or anhydride, an ethylene-butene-1 copolymer partially cross-linked with maleic acid or anhydride, the reaction product of an organic polyisocyanate with an ethylene-propylene copolymer partially cross-linked with maleic acid, and the reaction product of an organic polyisocyanate with an ethylene-butene-1 copolymer partially cross-linked with maleic acid, (*b*) reinforcing fillers and, as vulcanization agents, an organic peroxide and a free-radical acceptor, drying the second coating, applying onto the second coating a layer containing a saturated amorphous copolymer of ethylene with a higher alpha-olefin as above defined, an organic peroxide and a free-radical acceptor, and finally vulcanizing the whole mass by heating to a temperature from 110° to 220° C.
23. A vulcanized article comprising (1) a textile fiber material; (2) a first coating containing an adhesive selected from the group consisting of a phenol formaldehyde resin and a polyisocyanate; (3) a second coating containing an adhesive selected from the group consisting of a sulphochlorinated ethylene-propylene copolymer, a sulphochlorinated ethylene-butene-1 copolymer, an ethylene copolymer partially cross-linked with maleic acid or anhydride, an ethylene-butene-1 copolymer partially cross-linked with maleic acid or anhydride, the reaction product of an organic polyisocyanate with an ethylene-propylene copolymer partially cross-linked with maleic acid and the reaction product of an organic polyisocyanate with an ethylene-butene-1 copolymer partially cross-linked with maleic acid, and (4) a layer containing a copolymer of ethylene with a higher alpha-olefin having the formula $CH_2=CH—CH_2R$ in which R is a hydrogen atom or a methyl group.

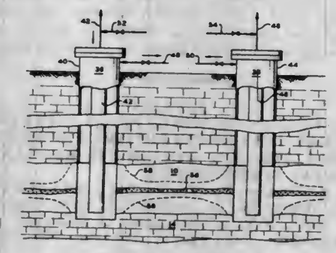
3,284,279
MICROCRYSTALLINE WAX SUBSTITUTE
George G. Rumberger, Portage Township, Kalamazoo County, Mich., assignor, by mesne assignments, to Brown Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 15, 1962, Ser. No. 238,044
The portion of the term of the patent subsequent to July 13, 1982, has been disclaimed
8 Claims. (Cl. 161—235)

5. A composition suitable for laminating and coating sheet materials consisting essentially of from about one to about 20 parts by weight of crystalline hydrocarbon polymer having an average molecular weight of from about 2,000 to about 40,000 and a density at 20° C. of from .910 to .960, from two to about 50 parts by weight of an amorphous atactic polypropylene polymer having an average molecular weight of from about 2,000 to about 100,000 and a solid density at 20° C. of from .75 to .89, and from about 50 to about 97 percent of a paraffinic distillate petroleum wax having a melting point of from 120° F. to 200° F. composition.
7. Two sheet materials, at least one of which is cellulosic, laminated together with the composition of claim 5.

3,284,280
RAPID SETTING POLYVINYL ACETATE ADHESIVES
Walter B. Armour, Plainfield, and Walter C. Kania, Colonia, N.J., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 21, 1962, Ser. No. 225,388
7 Claims. (Cl. 161—250)

1. An aqueous adhesive composition comprising a mixture of an emulsion of a water-insoluble partially hydrolyzed polyvinyl acetate together with trimethylol phenol; wherein said partially hydrolyzed polyvinyl acetate contains from about 7 to about 21% of hydroxyl groups, as based on the original number of acetate groups in the polymer.
5. A wooden laminate comprising at least two laminae which are adhesively bound with a film consisting of a dried residue of an aqueous adhesive composition comprising a mixture of an emulsion of a water-insoluble partially hydrolyzed polyvinyl acetate together with trimethylol phenol; wherein said partially hydrolyzed polyvinyl acetate contains from about 7 to about 21% of hydroxyl groups, as based on the original number of acetate groups in the polymer.

3,284,281
PRODUCTION OF OIL FROM OIL SHALE THROUGH FRACTURES
Rosswell W. Thomas, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 31, 1964, Ser. No. 393,113
8 Claims. (Cl. 166—2)

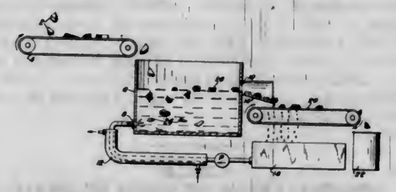


1. The process for producing oil from oil shale containing kerogen which comprises the steps of:
(1) heating said shale around a well-penetrating same to an elevated temperature so as to swell a section of the shale around said well;
(2) fracturing the shale thru and beyond the swollen section radially outwardly from said well;
(3) following step (2), again heating the shale around said well so as to crack the kerogen therein and cause released hydrocarbon fluids to flow through said fracture into said well;
(4) recovering said hydrocarbon fluids from said well;
(5) continuing the heating of step (3) until the shale adjacent the area of the fracture remote from said well swells and closes the fractures in said area;
(6) following step (5), again applying fluid fracturing pressure on the shale around said well at fracture level so as to extend said fracture deeper into said shale; and
(7) repeating steps (4), (5), and (6).

3,284,282
APPARATUS FOR RECOVERING EXPANDABLE POLYSTYRENE FROM WASTE PAPER FOAM MATERIALS
Richard H. Immel, Sewickley, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
Filed July 11, 1963, Ser. No. 294,305
1 Claim. (Cl. 162—4)

An apparatus for the treatment of paper-expanded polystyrene waste laminates whereby the paper in said laminates is separated from the expanded polystyrene comprising a tank, a conduit leading to said tank for feeding water to said tank, a heater for heating said water in said conduit, a movable conveyor belt positioned above the liquid level in said tank for feeding waste laminates such that said laminates are introduced into the water

in said tank whereby the paper in said waste laminates becomes separated from said expanded polystyrene, said tank including a discharge port remote from said movable conveyor belt for continually discharging water from said tank at the liquid level in said tank whereby said separated expanded polystyrene which floats in said water is discharged with said water through said port, a screened



conveyor belt located adjacent to and below said port for separating said expanded polystyrene from said water, a spout attached to said discharge port for directing said water containing separated expanded polystyrene to said screened conveyor belt, a collecting tank to receive said separated water and a conduit between said collecting tank and said water tank to continually recycle said removed water through said heater to said water tank.

3,284,283

PRODUCTION OF WOOD PULPS INCLUDING TREATMENT OF CELLULOSIC FIBERS WITH BISULFITE ION FOLLOWED BY ALKALI METAL BOROHYDRIDE

Robert R. Kindron, Pennington, N.J., and Louis P. Cartsunis, Morrisville, Pa., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 17, 1964, Ser. No. 345,119
4 Claims. (Cl. 162—25)

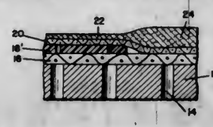
1. Method of producing cellulosic pulps having high brightness, comprising impregnating cellulosic fibers with an aqueous solution containing bisulfite ion and having a pH of 2 to 7 to provide at least about 0.04% of said bisulfite ion on the fibers, contacting the resulting bisulfite ion-impregnated fibers containing said at least about 0.04% of bisulfite ion with 0.01 to 0.5% of the weight of the fibers of an alkali metal borohydride, and permitting the reagents to act on the fibers to increase their brightness.

3,284,284

CONTROLLED DEPOSITION PULP MOLDING METHOD AND APPARATUS

Roger Wells, Stamford, Conn., assignor to Diamond International Corporation, a corporation of Delaware

Filed Mar. 12, 1964, Ser. No. 351,489
11 Claims. (Cl. 162—218)



1. A method of forming a variable thickness pulp deposit comprising: placing a selectively perforated mold having small effective holes at one part and large effective holes at another part in contact with a pulp stock having a water draining capacity greater than at least the water draining capacity of the small holes, said mold having a shim plate thereon to provide said small effective holes and being covered with a screen, said low water draining capacity of the small holes corresponding to holes on ½" centers of no greater than 0.040" diameter; and applying differential pressure to said mold in contact with said pulp to effect deposition of said pulp on said mold.

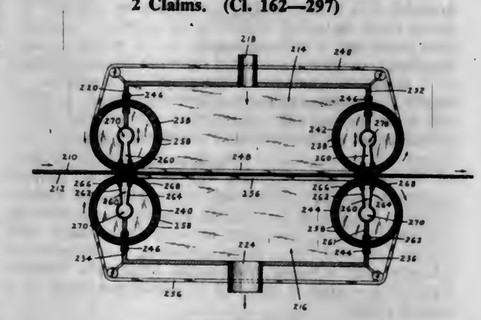
4. A mold for forming pulp articles comprising a body portion shaped complementary to the shape of the article desired to be produced, said body portion having walls defining relatively large holes extending therethrough from one side of the body to the other side thereof, a backing screen contacting the front face of said body portion, a thin perforated plate contacting at least part of the front face of said backing screen, and a facing screen contacting the front face of said perforated plate, the holes in said perforated plate being sufficiently small to control the drainage capacity through said mold and being spaced apart a minimum of about ¼".

3,284,285

APPARATUS FOR DEWATERING OF FIBROUS WEBS IN PAPERMAKING AND SIMILAR MACHINES

Grenville R. Holden, New Canaan, Conn., assignor to Huyck Corporation, Rensselaer, N.Y., a corporation of New York

Filed Mar. 18, 1963, Ser. No. 265,833
2 Claims. (Cl. 162—297)



1. In apparatus for dewatering a web of paper being manufactured in a papermaking machine by purging of water therefrom in liquid form the combination of an endless belt of porous material having gas- and water-permeable openings therethrough, means for driving said belt through an endless path at the linear speed at which a web of paper is being manufactured in said machine, means for guiding said web of paper to position one surface thereof in face to face contact with one surface of said endless belt for movement with said belt through a portion of the path of said belt, a stationary housing having a substantially rectangular opening extending transversely and longitudinally of said portion of the path of said belt through which the interior of said housing is in communication with the opposite surface of the entire width and a longitudinally extending portion of said web as said web moves progressively through said portion of said path, first sealing means for forming substantially gas-tight seals of the transversely extending edges of said opening with respect to said opposite surface of said web, second sealing means for forming substantially gas-tight seals of the longitudinally extending edges of said opening with respect to said opposite surface of said web, means for supplying gas at substantial superatmospheric pressure to the interior of said housing for passage through the thickness of said web of paper to dislodge water from said web and to discharge said water into the openings in said belt, said first sealing means comprising two pairs of pressure rolls disposed transversely of the path of travel of said endless belt and web to form two spaced nips through which said belt and the web in contact therewith pass successively upon entering and leaving said portion of the path of said belt, at least the pair of pressure rolls at the entering end of said portion of the path of said belt having perforated cylindrical outer shells, and means for supplying gas at substantial superatmospheric pressure through the perforations in the nip zone only of the roll which is in contact with said opposite surface of said web.

3,284,286

METHOD FOR DESTROYING NEMATODES WITH 2-CHLOROALLYL ISOTHIOCYANATE

Abron B. Gee, St. Louis, Mo., Harry C. Fink, San Luis Obispo, Calif., and David J. Beaver, Richmond Heights, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Apr. 2, 1963, Ser. No. 269,857
2 Claims. (Cl. 167—22)

1. The method of destroying the soil phase of parasitic nematodes which comprises incorporating in the nematode-infested soil 2-chloroallyl isothiocyanate at a rate of 5 to 200 pounds per acre.

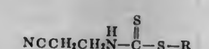
3,284,287

INHIBITING GROWTH OF FUNGI AND BACTERIA

John J. D'Amico, Charleston, W. Va., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Jan. 29, 1964, Ser. No. 341,127
7 Claims. (Cl. 167—22)

1. A method of protecting foliage against *Venturia inaequalis* fungus growth which comprises applying thereto in a concentration toxic to *Venturia inaequalis* a compound of the formula



where R is selected from a group consisting of lower 2-alkenyl, lower halo-2-alkenyl, and lower cyanoalkyl.

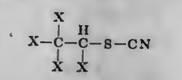
3,284,288

PESTICIDES AND PRODUCTION THEREOF

Klaus Sasse, Cologne-Stammheim, Richard Wegler, Leverkusen, Bernhard Homeyer, Opladen, and Paul-Ernst Frohberger, Burscheid, Bezirk Dusseldorf, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Feb. 10, 1965, Ser. No. 431,731
3 Claims. (Cl. 167—22)

1. A method for protecting plants against crop pests comprising applying to the area to be protected an active amount of a compound of the formula



wherein X is a member selected from the group consisting of chloro and bromo.

3,284,289

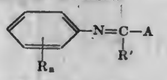
METHOD FOR PROTECTING PLANTS FROM FUNGI

Dieter Duerr, Oetlingerstrasse 1, Basel, Switzerland; Hans Aebi, Baeumlihofstrasse 421, Riehen, Switzerland; and Ludwig Ebner, Gartenstrasse 240, Stein, Aargau, Switzerland

No Drawing. Filed Mar. 5, 1963, Ser. No. 262,863
Claims priority, application Switzerland, Mar. 8, 1962, 2,800/62
10 Claims. (Cl. 167—30)

1. The method for protecting plants from harmful fungi which comprises applying as active principle to the area whereon the said effect is desired, a fungicidal amount of a member selected from the group consisting of

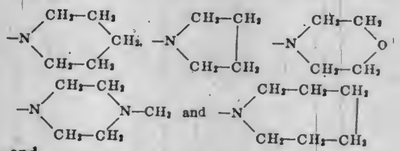
(A) a compound of the formula



wherein R represents a member selected from the group consisting of the chlorine atom, the bromine atom, lower alkyl, lower alkoxy, chlorophenoxy, NO_2— and CF_3—, n represents a number of at most 2, R′ represents a member selected from the group consisting of the hydrogen atom and methyl, and A represents a member selected from the group consisting of (a) the radical



wherein R_1 represents a member selected from the group consisting of the hydrogen atom and lower alkyl, and R_2 represents lower alkyl, and (b) a member selected from the group consisting of the radicals



and

(B) a salt of a compound set forth above under (A) with an acid selected from the group consisting of HCl, HBr, HI, HF, H_2SO_4, H_3PO_4, HPO_3, HNO_3, $HClO_4$, HSO_3NH_2, CH_3COOH, CCl_3COOH, citric acid, lactic acid, formic acid, oxalic acid, glycollic acid, benzoic acid, oleic acid; 2,3,6-trichlorobenzoic acid, dodecyl benzene sulfonic acid, salicylic acid, nicotinic acid; CH_3—CCl_2—COOH.

3,284,290

TIN DIBUTYL DISALICYLATE FUNGICIDE

Dorsey R. Mussell, Clare, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 1, 1963, Ser. No. 277,121
3 Claims. (Cl. 167—30)

1. The process for the control of plant-pathogenic fungi that comprises the step of applying to a plant part susceptible of fungus attack a fungus-controlling amount of tin dibutyl disalicylate.

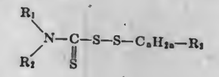
3,284,291

ANTIMICROBIAL COMPOSITIONS COMPRISING DITHIOCARBAMIC ACID DERIVATIVES AND METHOD OF USE

Ranajit Ghosh, Bracknell, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Original application Aug. 20, 1962, Ser. No. 218,149, now Patent No. 3,232,974, dated Feb. 1, 1966. Divided and this application Aug. 7, 1964, Ser. No. 394,095
Claims priority, application Great Britain, Aug. 31, 1961, 19,653/61
6 Claims. (Cl. 167—30)

4. A method of combating plant pathogens which comprises treating the area subject to said pathogens with a compound of the formula:



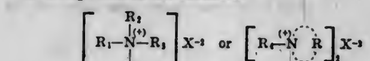
in which R_1 and R_2 are selected from the group consisting of hydrogen, alkyl of up to four carbon atoms, monocyclic carbocyclic aryl and the member which represents the atoms necessary to complete a heterocyclic ring with the adjacent nitrogen atom selected from the group consisting of piperidine, piperazine and morpholine; R_3 is monocyclic carbocyclic aryl; and n is an integer from 1 to 4.

3,284,292
QUATERNARY SALTS OF AROMATIC DISULFONIC ACIDS AND THEIR USE FOR COMBATING PHYTOPATHOGENIC MICROORGANISMS

Otto Scherer, Bad Soden, Taunus, and Georg Schaeffer, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Sept. 9, 1964, Ser. No. 395,307
Claims priority, application Germany, Sept. 10, 1963, F 40,714
7 Claims. (Cl. 167—30)

1. Compound of the formula



in which R_1, R_2 and R_3 represent alkyl groups of 1 to 4 carbon atoms, R_4 represents an alkyl of 10 to 18 carbon atoms,



represents a monocyclic or bicyclic mononitrogen heterocycle or a lower alkyl substituted derivative thereof, and X^{-2} is the anion of a benzene disulfonic acid.

7. The combating of phytopathogenic microorganisms, which comprises treating the habitat of said microorganisms on plants with a preparation containing as a pesticide a compound defined in claim 1 in conjunction with conventional adjuvants for pesticidal formulations and in a concentration which is harmful to the phytopathogenic microorganisms.

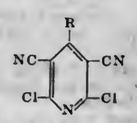
3,284,293
NOVEL FUNGICIDES

Günther Mohr, Konrad Niethammer, Sigmund Lust, and Gerhart Schneider, Darmstadt, Germany, assignors to E. Merck Aktiengesellschaft, Darmstadt, Germany

No Drawing. Filed Mar. 30, 1964, Ser. No. 355,929
Claims priority, application Germany, Apr. 2, 1963, M 56,343
10 Claims. (Cl. 167—33)

1. A fungicidal dusting composition comprising:

(A) as an essential fungicide, a fungicidally effective concentration of at least one compound of the formula



wherein R is selected from the group consisting of alkyl of

1–8 carbon atoms,

phenyl, naphthyl, pyridyl,

substituted phenyl where the substituted moiety is at least one member of the group consisting of

CH_3, C_2H_5, CH_3O, C_2H_5O, —O—CH_2—O—, HO, F, Cl, Br, NO_2, NH_2 and dialkyl amino containing 1–6 carbon atoms per alkyl group, and

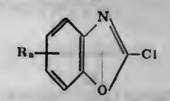
(B) an inert pulverulent solid diluent.

3,284,294
METHODS AND COMPOSITIONS FOR TREATING SOIL

Klaus Sasse, Cologne-Stammheim, and Bernhard Homeyer, Opladen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Apr. 26, 1965, Ser. No. 451,072
Claims priority, application Germany, Apr. 29, 1964, F 42,750
47 Claims. (Cl. 167—33)

46. Method of combating nematodes and soil fungi in the soil which comprises applying in a concentration of substantially between about 1–500 parts per million parts of soil to such nematodes and fungi in the soil a nematocidal and fungicidal amount of a 2-chloro-benzoxazole compound having the formula



in which each R respectively represents a member selected from the group consisting of hydrogen, halogen, alkyl having 1–4 carbon atoms, haloalkyl having 1–4 halo atoms and 1–4 carbon atoms, and alkoxy having 1–4 carbon atoms, and n is an integer from 1 to 4.

3,284,295
STABLE PULVERULENT PESTICIDE FORMULATIONS

Milton R. Johnson, Springfield, N.J., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

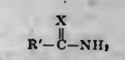
No Drawing. Filed Feb. 17, 1964, Ser. No. 345,097
6 Claims. (Cl. 167—42)

1. A stable pulverulent insecticide composition comprising

a cyclic polychlorohydrocarbon toxicant selected from the group consisting of aldrin, dieldrin, endrin, isodrin, chlordane, heptachlor, toxaphene, strobane, and 1,3,4,5,6,7,8,8-octachloro-3a,4,7,7-alpha-tetrahydro-4,7-methanophthalan;

a thiophosphate toxicant selected from the group consisting of parathion, methyl parathion, phorate, trithion, methyl trithion, and demeton;

an inert horticultural diluent; and a stabilizer of the formula



where X is selected from the group consisting of oxygen and sulfur, and R' is alkyl of from 1 to 20 carbon atoms.

3,284,296
TRIALKYL TIN COMPOUNDS AS MOLLUSCICIDES

Ashley H. Freiberg, Santa Clara, Calif., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 21, 1966, Ser. No. 528,814
7 Claims. (Cl. 167—46)

1. A method of combating snails which comprises contacting said snails with an effective amount of a compound of the formula

(lower alkyl)$_3$—Sn—XR

wherein the lower alkyl groups contain from 1 to 6 carbon atoms, inclusive, X is selected from the group consisting of oxygen and sulfur, and R is selected from the group consisting of phenyl, naphthyl, quinolyl and substituted phenyl, napthyl and quinolyl groups, wherein said substituents are selected from the group consisting of halogen, lower alkyl containing from 1 to 6 carbon atoms, nitro, and combinations thereof.

3,284,297
2-N - METHYLAMMONIUMETHYLTHIOSULFURIC ACID AND ITS USE AS A RADIOPROTECTIVE AGENT

Norman A. Rosenthal, Levittown, Pa., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Dec. 22, 1961, Ser. No. 161,370
3 Claims. (Cl. 167—65)

1. 2-N-methylammoniumethylthiosulfuric acid.

2. As a radioprotective agent, an aqueous solution of 2-N-methylammoniumethylthiosulfuric acid.

3,284,298
ANALGETIC COMPOSITIONS AND METHODS

Hajime Fujimura, 9–2 Shishigatani-shimo-miyanomae-cho, Sakyo-ku, Kyoto, Japan, and Kazuo Shinozaki, 10 Izumi-cho, Nishinomiya, Hyogo, Japan

Filed Sept. 23, 1963, Ser. No. 310,597
Claims priority, application Japan, Sept. 26, 1962, 37/42,261
12 Claims. (Cl. 167—65)

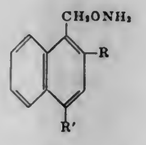
10. The method of combating pain which comprises administering to a human or animal requiring relief from pain an analgetic composition, which comprises, as active ingredients, from 0.05 to 3.0 grams of β-hydroxybutyric acid p-phenetidide per 0.05 to 3.0 grams of ethoxybenzamide, per day per 50 kilograms of body weight.

3,284,299
MUSCLE RELAXANT COMPOSITIONS AND METHODS

William R. McGrath and Edward M. Roberts, Cincinnati, Ohio, assignors to Richardson-Merrell Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 21, 1963, Ser. No. 317,767
5 Claims. (Cl. 167—65)

1. A method for inducing a centrally mediated muscle relaxation which comprises administering to animals an effective amount of an aminoxyalkylnaphthalene of the formula:



wherein R and R' are selected from the group consisting of hydrogen and methyl, and at least one of R and R' is hydrogen.

3,284,300
SUBSTITUTED YOHIMBANE COMPOSITIONS AND METHODS OF USE

John Shavel, Jr., Mendham, and Maximilian von Strandtmann, Rockaway Township, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed July 21, 1964, Ser. No. 384,259
8 Claims. (Cl. 167—65)

3. Method for the relief of pain and inflammation in a warm-blooded mammal which comprises administering to said mammal afflicted with pain and inflammation a composition in dosage unit form comprising an inert pharmaceutical carrier and 5 mg. to 200 mg. of a member of the group consisting of 1-methylyohimbane and the nontoxic pharmaceutically acceptable acid addition salts.

3,284,301
PLASMIN STERILIZATION

Joseph Martin Schor, Monsey, N.Y., and Edward Clarence De Renzo, Hillsdale, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Aug. 28, 1963, Ser. No. 305,208
4 Claims. (Cl. 167—73)

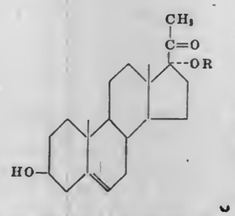
1. A method of treating plasmin which comprises heat-treating at a temperature of about 60° C. for about 10 hours an aqueous solution of not more than 10 percent by weight of plasmin having a pH between about 0.3–4.5.

3,284,302
STEROID COMPOSITIONS AND METHOD OF USING SAME

Fred A. Kincl, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Jan. 17, 1963, Ser. No. 252,028
12 Claims. (Cl. 167—74)

1. A method of treating domestic animal females to produce progestational and anti-estrogenic effects, which comprises orally administering to a living domestic animal female a pharmaceutical composition containing a pharmaceutical carrier and from 0.5 to 10 mg., approximately per kilogram of body weight, of a compound of the following formula:



wherein R is a hydrocarbon carboxylic acyl of less than 12 carbon atoms.

3,284,303
ORALLY ACTIVE PROGESTERONE COMPOSITIONS

Albert Meli, East Orange, N.J., assignor to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed Nov. 14, 1963, Ser. No. 323,608
2 Claims. (Cl. 167—74)

1. An oral progestational composition comprising the combination of 1 part by weight of progesterone dissolved in about 9 parts by weight of glyceryl monostearate.

3,284,304
COMPOSITIONS AND METHODS OF USING CORTICOSTEROIDS AND THIAMINE DERIVATIVES

Jean Montandraud, Casablanca, Morocco, assignor to Societe d'Applications Chimiques, d'Etudes & de Recherches "S.A.C.E.R.," Monte Carlo, Monaco

No Drawing. Filed June 5, 1962, Ser. No. 200,050
Claims priority, application Great Britain, June 21, 1961, 22,357/61
4 Claims. (Cl. 167—77)

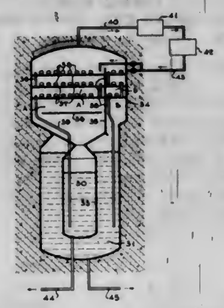
1. A method of counteracting the adverse side effect of digitalis sensitivity in a subject resulting from the administration of a pharmaceutical dose of a corticosteroid, said method comprising jointly administrating to said subject together with said pharmaceutical dose of the corticosteroid a thiamine derivative in a weight ratio with said corticosteroid of between 1:5 and 50:1, said thiamine derivative being selected from the group consisting of thiamine, phosphoryl-thiamine, diacetylthiamine,

dithiopropylthiamine, and the hydrochlorides of the same and then administering digitalis to the subject requiring same.

3,284,305
PROCESS OF PRODUCING ENERGY BY NUCLEAR FISSION

Harold C. Urey, Chicago, Ill., Karl Cohen, New York, N.Y., and Frank T. Barr, Summit, N.J.; said Urey assignor to the United States of America as represented by the United States Atomic Energy Commission and said Cohen and said Barr assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed June 2, 1947, Ser. No. 751,734
1 Claim. (Cl. 176—13)



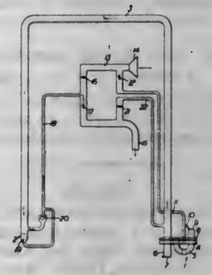
A process for producing and utilizing energy, comprising maintaining D_2O and finely divided, enriched uranium in an amount sufficient to sustain a nuclear chain reaction in a fission zone, maintaining a mixture of D_2O and a fertile material in a neutron absorbing zone substantially surrounding said fission zone, separating the effluent from the fission zone into liquid and steam components in a first scrubbing zone and returning the liquid to the fission zone, separating the effluent from the neutron absorbing zone into liquid and steam components in a second scrubbing zone and returning the liquid to the neutron absorbing zone, combining the steam components from the first and second zones, circulating the steam components through a catalytic deuterium-oxygen recombiner, a power generating unit and a condenser, and returning the condensate in selected parts to the fission zone and neutron absorbing zone.

3,284,306
NUCLEAR IRRADIATION INSTALLATION

Imre Balla, Yad Eliahu, Tel Aviv, Israel, assignor to The State of Israel, Ministry of Defence, Tel Aviv, Israel

Filed Feb. 26, 1964, Ser. No. 347,521
Claims priority, application Israel, Mar. 24, 1963, 18,904
5 Claims. (Cl. 176—15)

3. A nuclear irradiation installation comprising a receiving station located outside the irradiation zone of the installation to receive containers of samples to be irradiated, and a processing station inside the irradiation zone, a conveyor duct communicating with said stations, a pneumatic evacuation system coupled to the conveyor duct so as to create a suction therein, said pneumatic system being coupled by a pair of branch lines, each being provided with one of a pair of check valves to the conveyor duct, respectively in advance and to the rear of the processing station, the intervening portion of the conveyor duct providing an air cushion between the loci of interconnection of the respective branches therewith in the closed position of the second valve when the pneumatic system is coupled for air flow through the duct from the receiving station toward the processing station, control

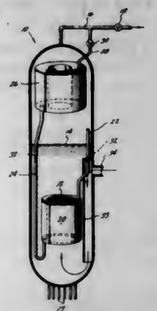


valves arranged to control the direction of air flow in the conveyor duct with respect to said processing station, and a sample container of spherical shape fitting movably in the conveyor duct.

3,284,307
FLUID CONTROL SYSTEM FOR BOILING NUCLEAR REACTOR

Walter E. Schortmann, West Hartford, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

Filed Oct. 30, 1963, Ser. No. 320,203
11 Claims. (Cl. 176—20)

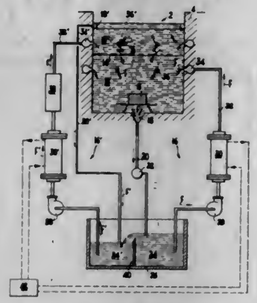


1. A boiling reactor comprising a container, a core mounted in said container, means directing a coolant-moderator in heat exchange relation with said core with a portion of the coolant-moderator being vaporized, said reactor having the characteristic that incident to a pressure change in the reactor there is a change in heat output with the heat output increasing with an increase in pressure, a pressure operated, fluid control system effective to compensate, at least in part, for this variation in heat output with variation in pressure, said system including a portion in the vicinity of the core, a closed portion in communication with the first named portion and disposed thereabove and another portion extending upward from the first named portion and open to the interior of the container, said system having disposed therein a fluid having a pronounced effect upon the reactivity in the core.

3,284,308
PROCESS FOR THE STRATIFICATION OF A BODY OF LIQUID IN TWO SUPERPOSED LAYERS AND INSTALLATION FOR THE APPLICATION OF THE PROCESS

Jacques Dollfus, 49 Rue Jeanne d'Arc, Saint-Mande, France, and René Guilloteau, 169 Ave. Aristide Briand, Cachan, France

Filed Mar. 16, 1964, Ser. No. 352,204
Claims priority, application France, Mar. 26, 1963, 929,220
8 Claims. (Cl. 176—37)

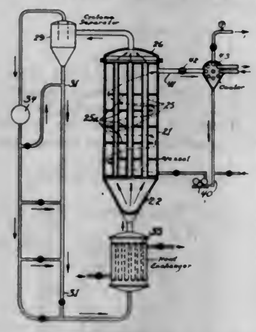


1. A process for stratifying a body of liquid in a bottom layer subjected to radioactive contamination and a top layer free of contamination comprising the steps of withdrawing liquid from the bottom layer, cooling a part of said withdrawn liquid and injecting said part of said withdrawn liquid into said bottom layer, withdrawing liquid from said top layer, forming a liquid mixture of said liquid withdrawn from said top layer and the remainder of said liquid withdrawn from said bottom layer, decontaminating said liquid mixture of radioactive contamination, bringing said liquid mixture to a temperature higher than the temperature of said part of said withdrawn liquid which is injected into said bottom layer and then injecting said liquid mixture into said top layer.

3,284,309
NUCLEAR POWER GENERATING APPARATUS

Eger V. Murphree, Summit, N.J., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed July 27, 1943, Ser. No. 496,373
1 Claim. (Cl. 176—45)

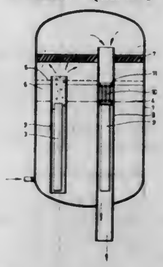


An apparatus for the generation of power comprising, a nuclear reaction vessel containing a plurality of spaced substantially vertical tubes for the passage of a fluidized mixture of an inert gas and finely divided enriched uranium in an amount sufficient to maintain a nuclear chain reaction, said tubes surrounded by D_2O neutron slowing and heat exchange liquid, a gas-solid separator adapted to separate the enriched uranium from the inert gas, a first exchanger for extracting heat energy from the fluidized mixture, means for circulating the fluidized mixture in a cyclic path including the reaction vessel, separator and first heat exchanger, a second heat exchanger for extracting heat energy from the D_2O neutron slowing and heat exchanger liquid, and means for circulating the D_2O liquid in a cyclic path including the reaction vessel and the second heat exchanger.

3,284,310
BOILING WATER-SUPERHEAT NUCLEAR REACTOR

Matts Valter Stråat, Saltsjobaden, Sweden, assignor to Aktiebolaget Atomenergi, Stockholm, Sweden, a company of Sweden

Filed Dec. 2, 1963, Ser. No. 327,176
Claims priority, application Sweden, Dec. 4, 1962, 13,071/62
1 Claim. (Cl. 176—54)



A nuclear reactor of the boiling water type comprising a reactor vessel containing a body of water having a normal water level and a steam space above said level, a first group of substantially vertical open-ended tubes disposed in said water and wholly within said vessel, a heating element of fissile material positioned in each tube of said first group for boiling the water, said heating elements having their upper ends positioned substantially in a horizontal plane below the upper ends of said tubes of said first group, said water level being at a substantial distance above said horizontal plane but below the upper ends of said tubes of said first group, a second group of tubes in said vessel the upper ends of which extend above said water level and communicate with said steam space and the lower ends of which extend through the bottom of said vessel, an element of fissile material positioned in each of said second group of tubes with their upper ends substantially in said horizontal plane for superheating the steam, a separate heating element of fissile material in each of said second group of tubes positioned above said superheating elements and located in the zone between said horizontal plane and said water level for drying the steam before passing over each superheating element, each of said separate elements being independently removable relative to said superheating elements.

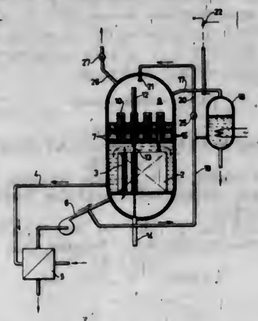
3,284,311
INTERNAL PRESSURIZATION OF A NUCLEAR REACTOR OF THE PRESSURIZED WATER TYPE

Brian McHugh, Lidingo, Sweden, assignor to Aktiebolaget Atomenergi, Stockholm, Sweden, a Swedish company

Filed Dec. 14, 1964, Ser. No. 417,893
4 Claims. (Cl. 176—54)

1. A nuclear reactor of the pressurized water type, comprising a reactor tank, a space for water in the lower portion of said reactor tank, nuclear fuel in said water space, means for supplying pressurized water to said water

space to be heated by said nuclear fuel, means for withdrawing heated pressurized water from said water space, a steam space in the upper portion of said reactor tank, means for producing steam having a temperature higher than that of the pressurized water and for supplying said steam into said steam space, and a thermal barrier situated



below but near the normal operating water level in the reactor for reducing heat transfer from the steam space to the water space, said thermal barrier comprising a partition wall having openings therein for the free passage of water and other openings therein connected to tubes that extend above said normal operating water level in said reactor.

3,284,312
BOILING WATER NUCLEAR REACTOR ORGANIZATION

John M. West, Dunedin, Fla., assignor, by mesne assignments, to Combustion Engineering, Inc., a corporation of Delaware

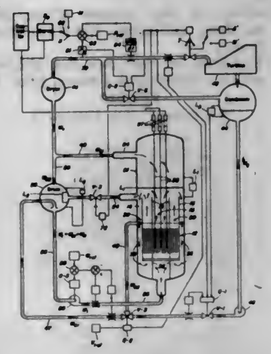
Filed Oct. 9, 1959, Ser. No. 845,531
30 Claims. (Cl. 176—56)

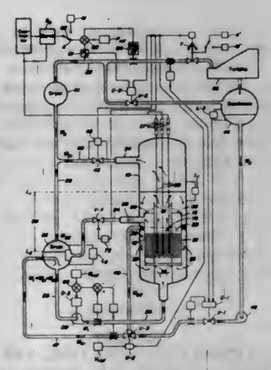
1. A boiling nuclear reactor including a core through which is conveyed a vaporizable liquid coolant, said core having an upright central portion and an upright annular portion disposed about said central portion, means to separate said central portion from said annular portion, means, including a pump, operative to establish a forced circulation of the liquid coolant through the central portion of the core and means operative to establish a natural circulation of this liquid coolant through said annular core portion.

8. In a power plant system the combination of a boiling water nuclear reactor having a core disposed in a container, said core having a central region and a separate outer region disposed thereabout, means for circulating water serially therethrough, means for supplying water below saturation temperature for initial passage through the central region, means for supplying said water for initial passage through the outer region and regulatable means for controlling these last two means and the introduction of water thereby to control the power output of the reactor.

28. The method comprising generating heat via a nuclear chain reaction in a predetermined zone, establishing a circulation of water, pumping said water through a central portion of said zone, supplying sufficient heat to said water in passing through said central portion to vaporize a portion thereof, receiving the steam and water mixture thus produced and separating the steam from the remaining water, conveying this remaining water through said zone at a location outwardly of said central portion where the power density is decreased and in a less positive manner than through said central zone and supplying sufficient heat thereto to vaporize a portion thereof, and receiving the steam and water mixture thus produced and separating the steam from the remaining water.

30. A boiling water nuclear reactor having a core, means dividing said core into separate regions in each of which boiling takes place, separate means receiving the



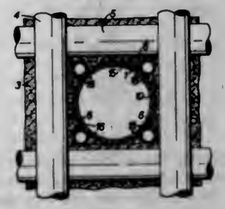


steam and water mixture from the separate regions and within which means separation of the steam and water takes place, and means for conveying the thus separated steam to a point of use.

3,284,313
STANDPIPES FOR NUCLEAR REACTORS

Derek Bromley, Cheadle, England, assignor to United Kingdom Atomic Energy Authority, London, England

Filed Dec. 10, 1963, Ser. No. 329,557
Claims priority, application Great Britain, Dec. 21, 1962, 48,314/62
4 Claims. (Cl. 176—58)

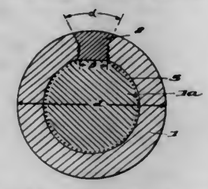


1. A standpipe extending through a prestressed concrete pressure vessel surrounding a gas-cooled nuclear reactor and connecting with a channel in said nuclear reactor, said standpipe having a plurality of coolant-carrying means symmetrically disposed around it and in contact with it, each coolant carrying means consisting of at least one pipe with its axis are substantially parallel to the axis of the standpipe at least through that region of the pressure vessel containing prestressing means.

3,284,314
FUEL MATERIAL FOR NUCLEAR REACTORS AND PROCESS AND APPARATUS FOR ITS MANUFACTURE

Lothar Rachor, Kleinauheim (Main), and Horst Lotz, Niederrodenbach, Germany, assignors to Nukem Nuklear-Chemie und- Metallurgie Gesellschaft m.b.H., Wolfgang, near Hanau, Germany

Filed Sept. 4, 1964, Ser. No. 394,404
Claims priority, application Germany, Sept. 5, 1963, N 23,700, N 23,701
13 Claims. (Cl. 176—71)

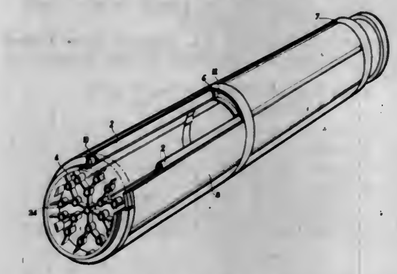


1. Fuel element for nuclear reactors comprising a substantially spherical one-piece graphite shell having a hollow therein with an inner wall, at least one nuclear material selected from the group consisting of fuel and breeder materials forming a layer on said inner wall of substantially less thickness than the diameter of said hollow, and a neutron-favorable high-temperature-resistant substance filling the hollow within said layer, said shell having a filling opening which at its widest extent is of substantially less cross-section than the cross-section of the hollow.

3,284,315
NUCLEAR REACTOR FUEL ELEMENT ASSEMBLY

Paul Thome, Saint-Cloud, France, assignor to Commissariat à l'Energie Atomique, Paris, France

Filed Dec. 4, 1964, Ser. No. 415,928
Claims priority, application France, Dec. 18, 1963, 957,629
6 Claims. (Cl. 176—76)



1. An improvement in a fuel element assembly for gas-cooled nuclear reactors, wherein canned fuel rods are assembled in parallel relation so as to form a fuel cluster and are maintained in this geometry by means of at least one support grid having an outer sleeve, said improvement comprising fitting said outer sleeve with a heat insulating packing keyed in position to said outer sleeve by means of vibration-absorbing material.

3,284,316
STABLE PAPAIN DERIVATIVE

Theodore Cayle, Brooklyn, N.Y., assignor to Baxter Laboratories, Inc., Morton Grove, Ill., a corporation of Delaware

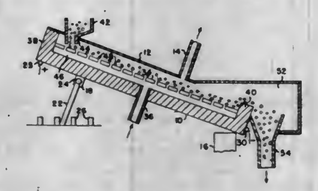
No Drawing. Filed Jan. 27, 1966, Ser. No. 523,242
6 Claims. (Cl. 195—63)

1. A storage stable solid papain derivative comprising a white amphorous, solid zinc papain composition, said composition containing about 0.15% to 0.25% of zinc by weight, having a proteolytic activity of about 14%–18% of the activity potentially available upon exogenous activation, and being storage stable for long periods of time up to and over 10 months without substantial loss of proteolytic activity.

3,284,317
CALCINING FLUID COKE

Charles E. Jahnig, Rumson, and Edward J. Gornowski, Cranford, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed June 19, 1963, Ser. No. 289,054
5 Claims. (Cl. 201—17)

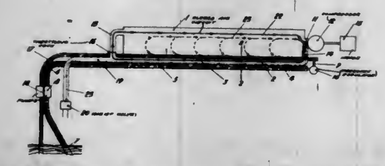


1. A method of calcining fluid petroleum coke particles of a size between about 10 and 300 mesh which comprises introducing such coke particles into the upper end of an enclosed inclined gas slide type calcining zone above a porous inclined electrical resistance heating grid, introducing fluidizing gas into the bottom portion of said calcining zone and passing it up through said porous grid to fluidize said coke particles and move them down along the inclined calcining zone, passing electric current through said grid to heat said porous grid and to heat the coke particles thereon to a temperature between about 2000° F. and 2400° F. for about 1 to 5 minutes as the coke particles move down over said grid and through said inclined calcining zone, withdrawing calcined coke particles from the lower end of said inclined calcining zone as product and removing gaseous material overhead from said calcining zone.

3,284,318
APPARATUS FOR RECOVERING HEAT RELEASED BY CONDENSATION OF A VAPORIZED LIQUID

Henri Coanda and Marguerite H. Coanda, both of 81 Blvd. Saint Michel, Paris, France

Filed Dec. 27, 1962, Ser. No. 247,725
Claims priority, application France, Dec. 30, 1961, 883,577
5 Claims. (Cl. 202—160)



1. Apparatus for recovering the heat released by the condensation of a vapor, comprising means defining at least one pair of chambers, said chambers comprising a

first enclosed chamber for evaporating a liquid to produce said vapor and a second enclosed chamber for condensing said vapor, said chambers of said pair having a common, heat-conducting wall between them; said wall defining one side of each of said chambers; means on the second chamber side of said common wall for increasing the surface area thereof and for promoting the formation of drops of liquid from the condensed vapor; first means for supplying said liquid to said first chamber at one end thereof, whereby a portion of the depth of said chamber is filled with liquid; second means for discharging the unevaporated portion of said liquid from the other end of said first chamber; third means including air pump means for creating a partial vacuum in said first chamber and connecting said pair of chambers at one end thereof and fourth means including a pressure regulating means therein connecting said pair of chambers at the other ends thereof, whereby gas is sucked through said first chamber and blown into said second chamber and drawn once again into said first chamber; fifth means for collecting the liquid condensed in said second chamber, said pair of chambers being elongated and sloped whereby said one end is elevated above said other end, and said pair of chambers being configured to twist about a surface of revolution.

3,284,319

COMPOSITION FOR TREATING METAL SURFACES

Uno T. Hill, Gary, Ind., assignor to Inland Steel Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Jan. 8, 1965, Ser. No. 424,209
8 Claims. (Cl. 252—389)

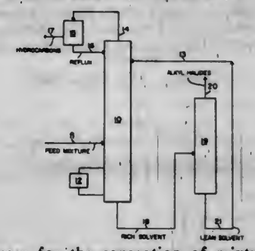
1. A composition for treating a metal surface susceptible to damage by corrosion selected from the group consisting of zinc, magnesium and aluminum and alloys thereof comprising as an essential active ingredient an aqueous dispersion of between about 0.1% and about 30% by weight tributyl phosphate in combination with 0.1% and about 10% by weight chromic anhydride and with at least a portion of said chromic anhydride being dissolved by said tributyl phosphate, and said tributyl phosphate and chromic anhydride being dispersed in water containing between about 0.1% and about 30% by weight monoethanolamine as an emulsifying agent, and said aqueous dispersion having a pH of between about pH 2.5 and 6.

3,284,320

SEPARATION OF MIXTURES OF ALKYL MONOBROMIDES AND HYDROCARBONS BY EXTRACTIVE DISTILLATION WITH A DI-ESTER OF PHTHALIC ACID

Loyd W. Fannin, Creve Coeur, and Charles H. Middlebrooks, St. Louis, Mo., assignors to Monsanto Company, a corporation of Delaware

Filed June 10, 1963, Ser. No. 286,801
9 Claims. (Cl. 203—60)



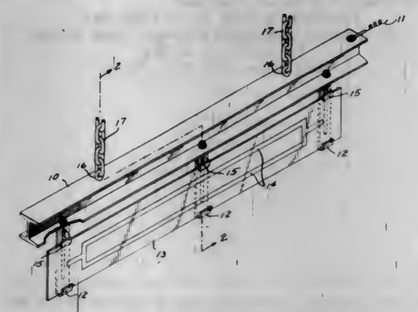
1. A process for the separation of mixtures of alkyl mono-bromides and hydrocarbons which are difficultly separable therefrom comprising extractively distilling said mixture in the presence of a solvent comprising a di-ester of phthalic acid, recovering an overhead distillate fraction from said distillation substantially richer in hydrocarbon concentration than said original mixture, removing the alkyl mono-bromides rich solvent fraction from said distillation and recovering from said alkyl mono-bromides rich solvent a fraction substantially richer in alkyl mono-bromides concentration than said original mixture.

3,284,321

MANUFACTURE OF ALUMINUM ARTICLES WITH ANODIZED SURFACES PRESENTING MULTI-COLOR EFFECTS

Howard A. Fromson, Rogues Ridge Road, Weston, Conn.

Filed July 19, 1962, Ser. No. 210,908
18 Claims. (Cl. 204—15)



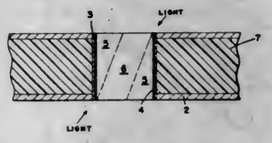
1. In a process of producing a multi-color effect on the surface of an aluminum article, the combination of steps comprising applying a resistant mask to a predetermined undyed area of said surface while leaving another undyed area exposed, anodizing the exposed area by treatment in an anodizing electrolytic bath, stripping the mask from the article, and anodizing the stripped area of the surface by treatment in an anodizing electrolytic bath, while the previously anodized undyed area is also exposed to the latter bath, the two anodizing steps being carried out under conditions to produce different colorations in the two anodized areas resulting solely from anodization of both of said areas by the end of the second anodization period.

3,284,322

SPLITTING PLATED-THROUGH HOLES OF PRINTED CIRCUIT BOARDS INTO TWO CONDUCTIVE SEGMENTS

Fred Pearlstein, Philadelphia, Pa., assignor to the United States of America as represented by the Secretary of the Army

Filed Aug. 26, 1963, Ser. No. 304,747
3 Claims. (Cl. 204—15)



1. A method of splitting plated-through holes of opaque, printed circuit boards into conductive segments comprising the steps of applying a photosensitive resist to the sides of said holes, disposing beams of light on opposite sides of said boards, obliquely directing said beams of light toward the sides of said holes to produce thereon illuminated areas separated by shadow, exposing said illuminated areas of resist to said beams of light until the exposed resist has set, removing unexposed resist, removing the conductive plating bared by the removal of said unexposed resist, and removing remaining resist to bare resultant conductive segments.

3,284,323

ELECTROPLATING OF ALUMINUM AND ITS ALLOYS

Roberto Leloup, Bilbao, Spain, assignor to W. Canning & Company Limited, Birmingham, England

No Drawing. Filed Aug. 30, 1962, Ser. No. 220,549
Claims priority, application Great Britain, Sept. 12, 1961, 32,724/61
14 Claims. (Cl. 204—38)

1. An aqueous alkaline solution for use as a zincate dip for aluminum, comprising a dissolved alkali metal zincate, a dissolved complex between nickel and cyanide ions, said nickel being present in an amount of at least 2 gms. per liter of solution, and a dissolved alkali metal hydroxide.

14. In a process of nickel plating aluminum or aluminum-based alloys wherein prior to the electro-deposition of nickel the surface to be plated is immersed in an aqueous bath containing a dissolved alkali metal zincate and a dissolved alkali metal hydroxide, the improvement which comprises adding a dissolved nickel salt and a source of cyanide ion successively to the aqueous bath to form a dissolved nickel cyanide complex in the aqueous bath prior to the immersion of the surface to be plated.

3,284,324

SUBSTRATE PREPARATION METHOD

Frank H. Appél, Campbell, Calif., Victor E. Hauser, Jr., Corvallis, Oreg., and Robert S. Smith, San Jose, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 28, 1962, Ser. No. 247,997
6 Claims. (Cl. 204—38)

4. In a method of electroplating a nickel-cobalt layer on a substrate containing aluminum, the steps comprising:

immersing the surface of soid substrate in a bath comprising copper ions so as to deposit a copper containing continuous film over the surface;

thereafter polishing said continuous film to level the film to a surface of at least one microinch, arithmetic average, whereby portions of the substrate surface are exposed;

thereafter immersing said polished surface into said bath to cover said exposed portions of said substrate surface with a copper containing film and thereby again form a continuous film over the substrate surface; and

electroplating said nickel-cobalt layer on said continuous film of said substrate containing aluminum.

3,284,325

PRODUCTION OF ALKALINE EARTH METALS

Allan Robert Gibson, Didcot, and Jan Zbigniew Lang, Aldershot, England, assignors to United Kingdom Atomic Energy Authority, London, England, and Elgar Trading Limited, Mytchett, Aldershot, Hampshire, England

Filed Oct. 15, 1962, Ser. No. 230,466
Claims priority, application Great Britain, Oct. 25, 1961, 38,188/61
9 Claims. (Cl. 204—69)

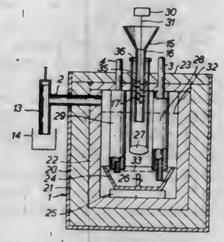
1. A process for the production of alakline earth metals comprising the steps of

(a) dissolving the sulphide of an alkaline earth metal selected from the group consisting of calcium, strontium and barium metal in a fused salt bath,

(b) electrolysing such sulphide using a cathode formed by molten alloy of the alkaline earth metal with copper,

(c) applying a vacuum to the alloy enriched by the electrolysis to cause the alloy to flow upwardly to a vacuum distillation apparatus where alkaline earth metal is distilled therefrom,

(d) causing alloy depleted in alkaline earth metal to return under gravity for further enrichment by electrolysis,



(e) and removing product alkaline earth metal from said distillation apparatus.

3,284,326

ELECTROLYTIC ETCHING OF ANODISABLE METAL FOIL

Henry Anthony Martin, London, England, assignor to Sprague Electric Company, North Adams, Mass, a corporation of Massachusetts

No Drawing. Filed Apr. 8, 1963, Ser. No. 271,504
Claims priority, application Great Britain, Apr. 9, 1962, 13,568/62
5 Claims. (Cl. 204—141)

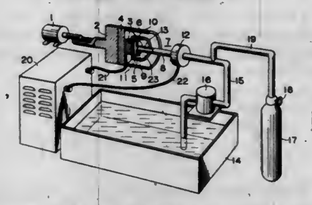
1. A process of treating aluminium foil to increase its capacitance magnification which comprises subjecting it to a direct current electrolytic etching process in an electrolyte consisting of a chloride bath consisting essentially of chloride ions, sulphate ions and cations innocuous to the foil use in a capacitor, the cations including not more than 10 mole percent of hydrogen ions, the chloride ion content being at least the equivalent of a 1% solution of sodium chloride, the sulphate ion content being at least the equivalent of a 0.1% solution of sodium sulphate and the total anion content being at least the equivalent of a solution containing a minimum aggregate content of sodium chloride and sulphate of 10 parts per 100.

3,284,327

ELECTROLYTIC MACHINING PROCESS USING A GAS-CONTAINING ELECTROLYTE

Sachio Maeda, Nagao Saito, and Shinji Arai, all of Amagasaki, Hyogo Prefecture, Japan, assignors to Mitsubishi Denki Kabushiki-Kaisha, Toyko, Japan

Filed June 4, 1963, Ser. No. 285,318
Claims priority, application Japan, June 8, 1962, 37/23,686; Sept. 20, 1962, 37/40,885; Sept. 24, 1962, 37/41,743
2 Claims. (Cl. 204—143)



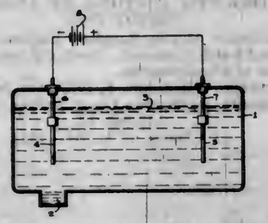
1. A process of electrolytically machining a workpiece of metallic material, comprising the steps of disposing the workpiece oppositely to a machining electrode so as to form a machining gap therebetween, feeding and circulating a machining liquid electrolyte into and through

said machining gap at a reduced pressure, admixing gas from an external source with said machining liquid electrolyte prior to feeding said machining liquid electrolyte into the machining gap, said gas being admixed with said machining liquid electrolyte in an amount corresponding to at least 50% by volume of the machining liquid electrolyte fed into said machining gap, calculated at a pressure of one atmosphere, and said amount of gas being controlled to prevent the formation of a mist at said reduced pressure, and applying a direct current voltage across said workpiece and said machining electrode while maintaining said workpiece positive with respect to said machining electrode to electrolyze said machining liquid electrolyte flowing through said machining gap thereby to machine said workpiece into a configuration complementary to that of said machining electrode.

3,284,328
METHOD OF PREVENTING FORMATION OF BOILER SCALE

Sidney Levine, 8404 Donneybrook Drive, Chevy Chase, Md.

Filed Apr. 9, 1964, Ser. No. 359,553
2 Claims. (Cl. 204—149)



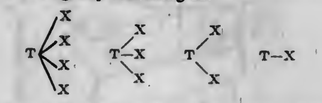
1. The method of removing carbonates and other scale producing salts from water in an evaporator comprising:
immersing in the water of said evaporator at least one anode and one cathode which are chemically inert and electrolytically insoluble,
electrically isolating and spacing said anode and cathode from the inner walls of said evaporator,
heating to boiling the water in said evaporator, and
applying direct current potential to said anode and cathode prior to said heating, during said heating and continuing until the water has returned to ambient temperature after the termination of said heating.

3,284,329
NOVEL PROCESS FOR THE PRODUCTION OF CATALYST COMPONENTS

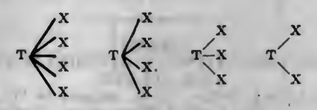
Victor D. Aftandilian, Watertown, Mass., assignor to Cabot Corporation, Boston, Mass., a corporation of Delaware

No Drawing. Filed Jan. 21, 1963, Ser. No. 252,585
20 Claims. (Cl. 204—157.1)

1. A novel process for producing a polymerization catalyst component comprising a finely-divided inorganic solid carrying in chemical combination surface structures chosen from the group consisting of:



where T is a metal chosen from the group consisting of the meals of Groups IV*a*, V*a* and VI*a*; each X is any halogen; and where said structures are chemically linked directly from T to at least one oxygen atom on the surface of said solid, and where T is in a lower valency state, which process comprises exposing to ultraviolet light a finely-divided inorganic solid carrying in chemical combination surface structures chosen from the group consisting of



where T is a metal chosen from the group consisting of the metals of Groups IV*a*, V*a* and VI*a*; each X is any halogen; and where said structures are chemically linked directly from T to at least one oxygen atom on the surface of said solid.

3,284,330
METHOD OF PHOTONITROSATION OF CYCLOALKANES

Yoshikazu Ito, Mizuho-ku, Nagoya, and Ryoh Endoh, Aichi-gun, Aichi-ken, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

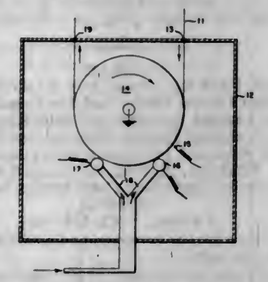
No Drawing. Filed Sept. 17, 1962, Ser. No. 224,243
Claims priority, application Japan, Sept. 22, 1961, 36/34,318
2 Claims. (Cl. 204—162)

1. In a method of photonitrosating cycloalkanes by reacting the same in a photoreaction system with nitrosyl chloride and hydrogen chloride gas while irradiating with light to provide hydrochloric acid addition salts of the corresponding cycloalkanone oximes, the improvement of feeding to the photoreaction system hydrogen chloride gas in excess of an equimolar quantity based on the amount of cycloalkane fed to the system, recovering from said photoreaction system a waste gas containing hydrogen chloride and nitrosyl chloride, adding to said waste gas nitrosyl chloride and hydrogen chloride gas in amounts to replace the respective amounts thereof that have been consumed by the reaction in said photoreaction system, and passing the resultant mixture of said waste gas and said additional nitrosyl chloride and hydrogen chloride gas streams into said photoreaction system to react with additional cycloalkanes therein.

3,284,331
ADHERABILITY TREATMENT OF THERMOPLASTIC FILM

Richard T. McBride, Buffalo, and John H. Rogers, Jr., Kenmore, N.Y., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed June 10, 1965, Ser. No. 469,026
2 Claims. (Cl. 204—165)



1. A process for treating an organic thermoplastic polymeric film which comprises passing the organic thermoplastic polymeric film onto an electrically grounded moving surface; depositing an electrical charge of at least 0.23 microcoulomb per square inch on the upper surface of the film at least adjacent to each side edge of the film whereby said film adheres firmly to said moving surface; and thereafter subjecting said film to an electrical discharge at substantially atmospheric pressure between spaced electrodes, one of which is the electrically grounded moving surface, continuously applying to said electrodes an alternating current at a voltage in excess of 1,000 volts and at a frequency in excess of 350 cycles per second in an atmosphere effective to create an electrical discharge between said electrodes.

3,284,332
FUEL CELL ELECTRODE

Elroy M. Gladrow, Edison Township, Middlesex County, and Charles E. Thompson, Fanwood, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

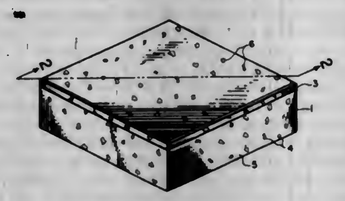
No Drawing. Filed May 29, 1961, Ser. No. 113,075
6 Claims. (Cl. 204—284)

1. A process of preparing an improved carbon electrode which comprises contacting said electrode with an aqueous solution of a salt of a catalytic metal, which forms an insoluble sulfide, until the metal ion of said salt is adsorbed on said electrode, contacting the electrode with an ionizable sulfide until said metal ion is converted to the corresponding insoluble metal sulfide on the electrode surface, heating the electrode in an inert atmosphere at a temperature of about 200° to 1000° F., heating the electrode with hydrogen at an elevated temperature in the range of about 800° to 1200° F.

3,284,333
STABLE LEAD ANODES

Edgardo J. Parsi, Wellesley Hills, and Albert Szczur, Jr., New Bedford, Mass., assignors to Ionics, Incorporated, Cambridge, Mass., a corporation of Massachusetts

Filed May 22, 1962, Ser. No. 196,758
2 Claims. (Cl. 204—292)



1. A composite article of manufacture for use as an anode electrode comprising a substantially flat lead metal base having discrete particles of a spongy noble metal dispersed throughout said lead metal, the working surface of said anode comprising an adherent layer of lead peroxide with said discrete particles being of a size no greater than 50 mesh and which comprises between 0.01% and 0.1% by weight of said anode electrode.

3,284,334
MOLDED CARBON BODIES

William Joseph Metrailer and Wayne Hoover, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

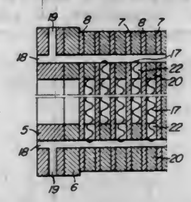
No Drawing. Filed Dec. 4, 1963, Ser. No. 328,103
10 Claims. (Cl. 204—294)

8. A green prebake electrode formulation consisting essentially of coarse coke having an average particle size of 250 to 350 microns, fine coke having an average particle size of 40 to 50 microns, a ratio of coarse coke to fine coke of 2:1 to 3:1 and a ratio of the average size of coarse coke to fine coke of 6:1 to 10:1, and containing 9 to 13 wt. percent of carbonaceous binder, said coarse coke and said fine coke being produced by the thermal decomposition of a hydrocarbon feed in a fluidized bed of coke particles at a temperature of 1800 to 2500° F.

3,284,335
MULTI-CELL ELECTRODIALYSIS APPARATUS HAVING RESILIENT SPACERS

Yoshio Tsunoda, Tokyo, and Maomi Seko, Kazuyuki Fuzita, and Masaaki Watanabe, Nobeoka-shi, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

Filed July 1, 1964, Ser. No. 379,559
Claims priority, application Japan, Aug. 25, 1960, 35/35,744
10 Claims. (Cl. 204—301)



1. A multi-cell electrodialysis apparatus comprising a plurality of stacked alternate anion permeable membranes and cation permeable membranes, frames between each two adjacent membranes defining an electrodialysis chamber within the periphery of the frame and between the membranes, the chambers alternately being diluting and concentrating chambers through the stack, the peripheries of the membranes and frames having aligned holes therein forming supply and exhausting conduits for supplying and carrying away diluting and concentrating solutions from the stack, each frame having solution paths between the holes and chamber defined within the frame and providing communication only between diluting chambers and supply and exhaust conduits for the diluting solution and only between a concentrating chamber and the supply and exhaust conduits for the concentrating solution, a part of the frame between a hole and the electrodialysis chamber being cut away to form at least one of the solution paths for diluting solution and concentrating solution, and compressible porous spacers woven of chemical and water resistant fibers and each having a thickness prior to being positioned in said apparatus at least slightly greater than the thickness of the frame and having a thickness the same as the thickness of the frame when positioned in the apparatus and which will regain its original shape and thickness when removed from the apparatus, and there being at least one of said spacers in the center opening defining the electrodialysis chamber in each of the frames and extending into at least part of said at least one solution path and holding said membranes in spaced relationship.

3,284,336
METHOD OF TREATING OILS DERIVED BY THERMAL TREATMENT OF SOLID CARBONACEOUS MATERIALS

William J. Culbertson, Jr., and Thomas D. Nevens, Denver, and Werner D. Schnackenberg, Englewood, Colo., assignors to The Oil Shale Corporation, New York, N.Y., a corporation of Colorado

No Drawing. Filed June 10, 1965, Ser. No. 463,043
22 Claims. (Cl. 208—11)

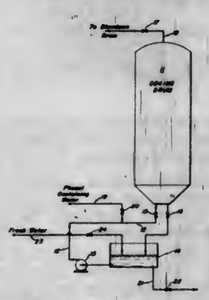
7. A method for reducing the pour point of an oil derived by thermal treatment of solid carbonaceous materials and containing hydrocarbons which comprises treating said oil under substantially non-cracking conditions to obtain at least one light fraction and an oil residue, heat treating said oil residue at a temperature above about

600° F. and below the point of incipient thermal decomposition of the residue for a period of time which is inversely proportional to said temperature to produce a product which when combined with a light fraction results in an oil having a pour point lower than the original crude oil, said heat treatment producing substantially no non-condensible hydrocarbons and substantially no elemental carbon; and combining said modified oil residue product with at least a portion of a light fraction to produce an oil of lower pour point than the original crude.

3,284,337
METHOD OF REMOVING PHENOLIC COMPOUNDS FROM WASTE WATER

Gene Stoneburner, Williamsburg, Va., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

Filed May 22, 1961, Ser. No. 111,750
3 Claims. (Cl. 208—46)

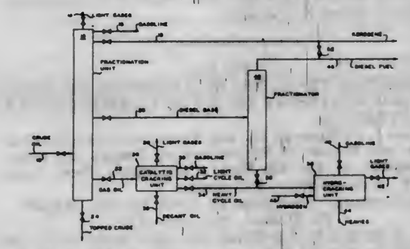


1. A process of reducing the amount of soluble phenolic compounds in refinery effluent waste waters to an amount below about 10 parts per million, which process comprises introducing an effluent waste water containing about 100 parts per million of phenolic compounds into a hot bed of coke in a coking drum of a delayed coking unit, cooling said coke with said waste water, withdrawing said waste water from the cooled bed of coke to recover a waste water containing below about 10 parts per million of phenolic compounds.

3,284,338
REFINING OF HYDROCARBONS TO PRODUCE DIESEL FUELS AND GASOLINE

Phillip O. Patrick and John H. Engel, Sweeny, Tex., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Feb. 24, 1964, Ser. No. 346,713
2 Claims. (Cl. 208—68)

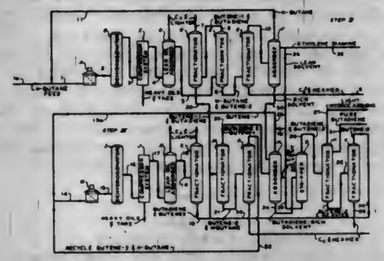


1. A process comprising the steps of:
(1) distilling a crude oil to recover separate virgin streams of gas, gasoline, kerosene, diesel oil having a pour point of about 22° F. and a 10 percent point of about 521° F., gas oil, and topped crude;
(2) fractionating the diesel oil stream of step (1) into two substantially equal portions of a lighter fraction and a heavier fraction thereof; and
(3) blending a sufficient amount of the kerosene stream of step (1) with the lighter fraction of step (2) to produce a commercially acceptable diesel fuel having a 0° F. pour point, a 485° F. maximum 10 percent point, and a cetane number of about 51.

3,284,339
PROCESS FOR SEPARATION OF HYDROCARBONS FROM MORE SATURATED HYDROCARBONS WITH ETHYLENE DIAMINE SOLVENT

John W. Begley, Richard W. Carney, and Le Roy C. Kahre, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Mar. 25, 1963, Ser. No. 267,505
2 Claims. (Cl. 208—87)



1. A process for the preparation of diolefins comprising catalytically dehydrogenating a normal paraffin to form a mixture of paraffins and alkenes, intimately contacting said mixture with ethylene diamine in a first extraction zone, withdrawing raffinate containing said paraffins, withdrawing and passing solvent enriched with said alkenes to a second extraction zone, passing a second mixture containing alkenes to said second extraction zone, passing selective solvent to said second extraction zone, withdrawing and passing raffinate containing monoolefins to a second catalytic dehydrogenation zone wherein a second mixture comprising mono- and diolefins are produced and passed to said second extraction zone as said second mixture, withdrawing and passing solvent enriched with diolefins and containing some monoolefins to an extractive distillation zone, withdrawing monoolefins as overhead, withdrawing solvent enriched with said diolefins and passing same to a stripping zone, recovering said diolefins as overhead, and removing solvent as bottoms product from said stripping zone.

3,284,340
METHOD FOR PRODUCING LUBRICATING OILS

Raymond R. Halik, Pitman, Henry R. Ireland, West Deptford Township, Gloucester County, and Michael T. Smilski, Mantua Township, Gloucester County, N.J., assignors to Mobil Oil Corporation, a corporation of New York

Filed Mar. 25, 1964, Ser. No. 354,620
6 Claims. (Cl. 208—111)

2. A method for producing lubricating oils which comprises passing a residuum containing from about 2 to about 70 volume percent asphalt with hydrogen at a pressure above 1500 p.s.i.g. and a temperature below about 850° F. in contact with a hydrocracking catalyst under condition to maintain the fresh feed reactant space velocity below about 1.0 to thereby produce hydrocracked product material, and recovering hydrocracked product material boiling above 60° F. for dewaxing to produce lube oils.

3,284,341
PROCESS FOR PRODUCING OLEFINS AND AROMATICS BY THE CATALYTIC CRACKING OF A NAPHTHA

Alfred M. Henke, Springdale, and Robert E. Kline and William C. Offutt, Pittsburgh, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed Mar. 20, 1964, Ser. No. 353,390
2 Claims. (Cl. 208—120)

1. A highly selective process for the catalytic conversion of a hydrocarbon feed stock selected from a naphtha-gasoline fraction boiling in the range of between about 100° and 450° F. which comprises contacting said feed stock with a silica alumina cracking catalyst containing about 10 to 50% alumina at a liquid hourly space velocity between about 4.5 and 8, at a pressure between about 600 mm. and 20 p.s.i.g., and at a temperature between about 1000° and 1200° F., thereby producing a high yield of mixed olefinic hydrocarbons having from 2 to 5 carbon atoms and mixed aromatic hydrocarbons having from 6 to 8 carbon atoms and a reduced yield of saturated gaseous hydrocarbons and coke.

3,284,342
DESULPHURISATION OF HYDROCARBON MATERIALS

Wilfred Samuel Nathan, deceased, late of Sunbury-on-Thames, Middlesex, England, by Shirley Gertrude Nathan, Surbiton, Surrey, England, and Gerald Stanley Davis, London, England, personal representatives, and John Frederick Ford, Sunbury-on-Thames, England, assignors to The British Petroleum Company Limited, London, England, a British joint-stock corporation

No Drawing. Filed Nov. 21, 1961, Ser. No. 154,932
Claims priority, application Great Britain, Nov. 20, 1960, 40,093/60
10 Claims. (Cl. 208—208)

1. A process for reducing the sulphur content of a sulphur-containing heavy hydrocarbon oil containing at least a proportion of material boiling above 250° C., which comprises treating the oil with a peroxide-containing oxidant, the mol ratio of peroxide to the sulphur present being from about 1:1 to about 6:1, heating the treated oil containing sulfones at a temperature from about 350° C. to about 400° C. under conditions to rupture the sulphur-carbon bond yielding volatile sulphur compounds, and recovering a heavy hydrocarbon oil of reduced sulphur content.

3,284,343
REMOVAL OF SULFUR BODIES

William L. Shirley and Russell U. Smith, Houston, Tex., assignors to Petrolite Corporation, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 6, 1964, Ser. No. 350,101
4 Claims. (Cl. 208—221)

1. The process of removing sulfur bodies from a hydrocarbon consisting essentially of (1) treating said hydrocarbon with a solution of caustic alone, (2) separating said caustic from said so-treated hydrocarbon, (3) treating said caustic treated hydrocarbon with sulfuric acid having a titrable acidity of about 80% to about 98%, (4) separating said sulfuric acid from said so-treated hydrocarbon, (5) treating said caustic and sulfuric acid treated hydrocarbon with a solution of caustic alone, and (6) separating said caustic from said so-treated hydrocarbon.

3,284,344
HYDROCATALYTIC REFINING OF CHLORINE CONTAINING LUBRICATING OILS

Jacques Demeester and Raymond Helion, Paris, France, assignors to The British Petroleum Company Limited, London, England, a British joint-stock corporation

No Drawing. Filed Nov. 14, 1963, Ser. No. 323,611
Claims priority, application France, Nov. 16, 1962, 915,701
9 Claims. (Cl. 208—262)

1. A process for the catalytic treatment of a lubricating oil containing minor amounts of chlorine containing material therein, which tends to deactivate the catalyst, so as to prevent catalyst deactivation thereby and to produce an oil having improved color stability without a material change in the viscosity thereof, said process comprising contacting the lubricating oil with a catalyst comprising the oxides of cobalt and molybdenum on a refractory oxide support at a temperature of from 150–340° C. at a pressure of from 5–80 atmospheres, in the presence of hydrogen, and in the presence of from 0.01 to about 0.75% by weight of oil treated of an added chlorine suppressing compound selected from the group consisting of ammonia and an amine having from 1–4 carbon atoms, said chlorine suppressing compound being added in the above amounts from the beginning of the treatment.

3,284,345
PROCESS FOR DESULFURIZATION OF CRUDE OIL OR HEAVY OIL

Toshimasa Ishiko and Takaaki Tamura, Tokyo, Japan, assignors to Yawata Iron & Steel Co., Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed June 26, 1964, Ser. No. 378,439
4 Claims. (Cl. 208—244)

1. In a process for removing the sulfur from crude oil by intimately admixing a desulfurizing agent and said crude oil and precipitating and separating the sulfur from said crude oil, the improvement wherein said crude oil and the desulfurizing agent are admixed and agitated at room temperature and the desulfurizing agent is powdered pyrophoric iron produced by reducing lateritic iron ore containing a large quantity of alumina at a temperature of 500° to 800° C. at a reduction rate of about 50 to 80% in a reducing gas atmosphere containing 50 to 80% hydrogen.

3,284,346
MOLECULAR SIEVE SEPARATION OF HYDROCARBON MIXTURES BOILING ABOVE C_9 HYDROCARBONS

Roger Hilary Anstey and Robert Marshall Macnab, Sunbury-on-Thames, England, assignors to The British Petroleum Company Limited, London, England, a British joint-stock company

No Drawing. Filed Feb. 7, 1964, Ser. No. 343,213
Claims priority, application Great Britain, Feb. 10, 1963, 30,742/63
15 Claims. (Cl. 280—310)

1. A process for separating straight-chain hydrocarbons from a petroleum fraction boiling above C_9 comprising diluting the feedstock with a diluent selected from the group consisting of an inert gas and a low boiling straight-chain hydrocarbon, contacting the diluted feedstock at an elevated temperature and in the vapor phase with a 5 A. molecular sieve in an absorption stage, purging said molecular sieve in the vapor phase to remove non-absorbed material from the sieve surface thereof, and subjecting said molecular sieve to a desorption stage at an elevated temperature and in the vapor phase and at a pressure below that employed in the absorption stage to obtain straight-chain hydrocarbons.

3,284,347

SOLVENT EXTRACTION OF HYDROCARBONS WITH HEXAFLUOROISOPROPYL AND TRIFLUOROETHYL ALCOHOLS

David G. Hutton and William T. Robinson, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 15, 1965, Ser. No. 439,957
11 Claims. (Cl. 208—333)

1. A process for enriching the components of a normally liquid hydrocarbon mixture which comprises

(a) contacting a liquid mixture of hydrocarbons comprising at least one paraffin component and at least one component selected from the group consisting of an olefin and an aromatic with a sufficient amount of a liquid alcohol to form a distinct extract phase, said alcohol having the formula $(CF_3)_nCH_{3-n}OH$, wherein n is an integer from 1 to 2, and

(b) separating said extract phase from said hydrocarbon mixture.

3,284,348

AZEOTROPIC DISTILLATION OF HYDROCARBONS WITH HEXAFLUOROISOPROPYL ALCOHOL

David Glenn Hutton, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 15, 1965, Ser. No. 439,972
6 Claims. (Cl. 208—348)

1. The process for separating non-aromatic hydrocarbons from a mixture thereof with aromatic hydrocarbons, which process comprises

(a) distilling in a distillation column at a head temperature of up to about 60° C.,

(b) a mixture of hydrocarbons which consists essentially of non-aromatic hydrocarbons normally boiling between 60° C. and 150° C. and aromatic hydrocarbons normally boiling between 80° C. and 150° C.,

(c) with hexafluoroisopropyl alcohol in a proportion of from about 1 to about 100 parts by weight for each part of the non-aromatic hydrocarbons to be separated from the mixture,

(d) taking off at least one overhead fraction consisting essentially of a low-boiling azeotrope of hexafluoroisopropyl alcohol and at least one of said non-aromatic hydrocarbons and leaving a still residue containing most of said aromatic hydrocarbons,

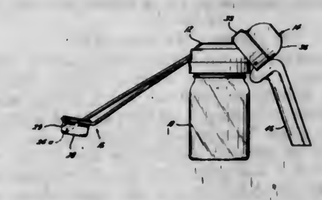
(e) and separating from both the overhead fraction and the still residue the hexafluoroisopropyl alcohol contained therein.

3,284,349

SKIMMER

Milton A. Wessels, 10322 Moorberry, Houston, Tex.

Filed Nov. 12, 1963, Ser. No. 323,038
6 Claims. (Cl. 210—136)



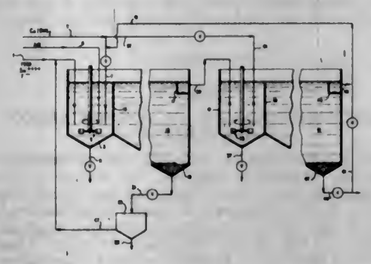
6. A skimmer, comprising, a container to receive the skimmed liquid; a suction head removably attached to the container through which the skimmed liquid can flow into the container; first and second passageways in the suction head; a collecting cup for the skimmed liquid; means removably attaching the cup to the head; a thin-walled, disposable tube having one end extending into the first passage and one end extending into the collecting cup through which the liquid collected can flow into the suction head; a suction cup assembly attached to the suction head to cause air to flow from the suction head through the second passageway, including a collapsible suction cup of resilient material, check valve means for allowing air to flow through the second passageway from the suction head into the suction cup and to allow air to flow out of the suction cup to the ambient atmosphere; and a handle arranged to allow the skimmer to be held and operated with one hand.

3,284,350

REMOVAL OF TIN AND FLUORIDE FROM AQUEOUS SOLUTIONS OF THE SAME

Robert C. Williamson, Chesterton, Ind., assignor to National Steel Corporation, a corporation of Delaware

Filed Feb. 12, 1964, Ser. No. 344,495
13 Claims. (Cl. 210—46)



1. A method of removing tin and fluoride from solution in water, comprising adding, to water containing dissolved tin in the stannic oxidation state and fluoride, calcium hydroxide in an amount to precipitate a greater proportion of the dissolved tin than of the dissolved fluoride, the precipitate containing stannic hydroxide, separating the precipitate containing stannic hydroxide from at least most of the water, and thereafter adding to the water more calcium hydroxide in an amount to precipitate a greater proportion of the original dissolved fluoride than of the original dissolved tin.

3,284,351

WATER PURIFICATION METHOD

Mahmoud T. Dajani, Park Forest, and Ralph B. Thompson, Hinsdale, Ill., assignors to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed July 15, 1963, Ser. No. 295,238
15 Claims. (Cl. 210—63)

1. A method of purifying iron-bearing waters intended for consumer use which comprises the steps of contacting said water containing at least ferrous ions, with a metal phthalocyanine catalyst in presence of an oxidizing agent, whereby said ferrous ions are oxidized to ferric ions, and removing the ferric ions from said water as a water-insoluble precipitate.

3,284,352

DRILLING FLUID TREATMENT

Ralph F. Burdyn and Ludwig D. Wiener, Dallas, Tex., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Aug. 19, 1963, Ser. No. 303,152
4 Claims. (Cl. 252—8.5)

1. A drilling fluid having a solid phase and a liquid phase, said solid phase comprising a clay capable of being hydrated and dispersed by water with consequent increase in the yield point of said drilling fluid and said liquid phase having a continuous water phase capable of hydrating and dispersing said clay with consequent increase in the yield point of said drilling fluid and containing a surfactant comprising phenol adducted with from 10 to 50 mols of ethylene oxide and oxyethylene ether of nonyl phenol having the formula $C_9H_{19}—C_6H_4—(CH_2—CH_2—O)_n—H$ where n is a whole number not greater than 3.

3,284,353

DRILLING MUD AND PROCESS

Jack B. Batdorf, Wilmington, and Richard T. Gardner, Jr., Newark, Del., assignors to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Sept. 27, 1963, Ser. No. 311,964
4 Claims. (Cl. 252—8.5)

1. A water base well drilling mud having improved stability and water loss properties under elevated temperature and high salt concentration conditions, said mud comprising an aqueous mixture containing suspended solids which forms a filter cake on the wall of the well and carboxymethyl hydroxyethyl cellulose having a carboxymethyl D.S. of 0.05–0.2 and a hydroxyethyl M.S. of 1.5–2.5, the amount of said carboxylmethyl hydroxyethyl cellulose being at least about 0.5 pound per barrel of said drilling mud.

3,284,354

REACTION PRODUCT OF METAL DITHIOPHOSPHATE, POLYAMINE AND ALKENYL SUCCINIC ACID OR ANHYDRIDE

Norman Tunkel, Perth Amboy, and Harold N. Miller, Plainfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Dec. 12, 1963, Ser. No. 329,955
8 Claims. (Cl. 252—32.7)

1. The mineral-oil-soluble reaction product of (1) an adduct of (A) about 0.2 to 4.0 molar proportions of a metal dihydrocarbon dithiophosphate wherein said hydrocarbon group contains 1 to 30 carbon atoms each, and wherein said metal is a metal capable of coordination with an amine and (B) a molar proportion of a polyamine containing 2 to 12 amine groups separated by saturated C_1 to C_5 hydrocarbon groups, and (2) about 0.5 to 2.0 molar proportions of an acid material selected from the group consisting of alkenylsuccinic anhydride and alkenylsuccinic acid, per mole of said polyamine, wherein said alkenyl group contains 30 to 250 carbon atoms.

4. A lubricating oil composition comprising a major amount of lubricating oil and about 0.1 to 20.0 wt. percent of the product of claim 1.

3,284,355

LUBRICATING COMPOSITIONS

Andreas G. Papayannopoulos, Woodbury, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Sept. 12, 1963, Ser. No. 308,348
12 Claims. (Cl. 252—32.7)

1. An extreme pressure lubricating composition comprising a major proportion of a mineral lubricating oil having a Saybolt Universal viscosity at 210° F. of at least 50 seconds and a minor proportion sufficient to improve the extreme pressure characteristics thereof, of a carboxylic acid compound containing from 5 to about 9 carbon atoms selected from the group consisting of perchlorinated aliphatic carboxylic acid compounds and perfluorochlorinated aliphatic carboxylic acid compounds.

4. The composition of claim 1 wherein there is present a member selected from the group consisting of tricapryl-amine, zinc dihexyldithiophosphate, tri-isooctothionophosphate and tri-butyltrithiophosphite wherein said members are present in a molar ratio of from about 0.01:1 to about 5:1 of said member to said carboxylic acid compound.

ERRATA

For Class 252—49.6 see:
Patent No. 3,284,410

For Class 252—49.9 see:
Patent No. 3,284,409

3,284,356

LUBRICANT COMPOSITION

Robert L. Peeler, Albany, Calif., assignor to Chevron Research Company, a corporation of Delaware

No Drawing. Original application Mar. 28, 1963, Ser. No. 268,591. Divided and this application June 30, 1964, Ser. No. 379,344
2 Claims. (Cl. 252—50)

1. A lubricating oil containing in an amount sufficient to inhibit oxidation, a nonsludging antioxidant consisting essentially of dibornyldiphenylamine.

3,284,357

GREASE THICKENERS

Theodore H. Koundakjian, Berkeley, Calif., assignor to Chevron Research Company, a corporation of Delaware

No Drawing. Filed June 23, 1964, Ser. No. 377,388
7 Claims. (Cl. 252—51.5)

1. A grease composition comprising an oil of lubricating viscosity and, in an amount sufficient to thicken said oil to the consistency of a grease, an amino aryl diurea of the general formula:

$$NH_2(R—NH)_xR—NHCONH—R_1—NHCONH—R_2$$

wherein R is a hydrocarbylene radical of 1 to 15 carbon atoms, x is 0 to 6, the total number of carbon atoms in the R radicals is from 2 to 15, R_1 is a divalent aromatic hydrocarbon radical of from 6 to 14 carbon atoms and R_2 is a hydrocarbyl radical of 1 to 32 carbon atoms.

3,284,358

PROCESS FOR IMPROVING THE MAGNETIC PROPERTIES OF COLLOIDAL DISPERSION OF MAGNETIC PARTICLES

John R. Thomas, Lafayette, and Joe B. Lavigne, Berkeley, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed June 10, 1963, Ser. No. 286,503
10 Claims. (Cl. 252—62.5)

1. A method of improving the magnetic properties of a stable dispersion of particles of metals of atomic number 26 to 28, wherein said metal particles are of a size in the range of about 10 to 1,000 A., encapsulated in a polymeric envelope and are dispersed in a solvent of dielectric constant in the range of about 1.7 to 6.0 and are present in an amount of from about 0.5 to 25% by weight of the total composition, which comprises heating at a temperature in the range of about 35° C. to 250° C. in an atmosphere of an inert gas.

3,284,359
BARIUM POTASSIUM FERRITE MAGNETIC MATERIAL EXHIBITING NON-VANISHING ROTATIONAL HYSTERESIS IN APPLIED MAGNETIC FIELDS

Walter L. Roth, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Dec. 26, 1963, Ser. No. 333,348
2 Claims. (Cl. 252—62.5)

1. A magnetic material possessing non-vanishing rotational hysteresis in an applied magnetic field; said material consisting of a fired mixture having a composition according to the formula:

$$A_{1-x}{\cdot}B_x$$

where: A is a ferrimagnet selected from the group consisting of $PbFe_{12}O_{19}$ and $BaFe_{12}O_{19}$; B is an antiferromagnetic potassium ferrite from the group consisting of $K_2O{\cdot}11Fe_2O_3$; and $K_2O{\cdot}7Fe_2O_3$; and x is greater than zero and less than one.

3,284,360
MAGNETIC TRANSFER SHEET

John V. Peshin, Islington, Mass., assignor to The Carters Ink Company, Cambridge, Mass., a corporation of Massachusetts

Filed Feb. 24, 1964, Ser. No. 346,631
7 Claims. (Cl. 252—62.5)

1. A coating composition, consisting of stearamide, an amount of magnetic pigment equal to from 1 to 1.5 times the weight of stearamide, and sufficient volatile solvent for the stearamide to dissolve it and form a coatable dispersion with the pigment.

3,284,361
AIR FILTER COATING COMPOSITION

Albert G. Rocchini, Oakmont, and Charles E. Trautman, Cheswick, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed July 27, 1964, Ser. No. 385,469
6 Claims. (Cl. 252—88)

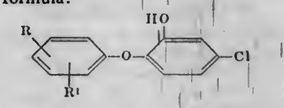
1. An air filter coating composition consisting essentially of a homogeneous mixture of about 55 to about 60 percent by volume of tricresyl phosphate, about 10 to about 20 percent by volume of a mineral oil having a viscosity of about 40 to about 45 SUS at 210° F. and about 20 to about 30 percent by volume of a liquid chlorinated hydrocarbon having a viscosity of about 160 to about 170 SUS at 210° F. and a chlorine content of about 40 to about 55 percent by weight.

3,284,362
STABILIZATION OF SOAP COMPOSITIONS

Hyman W. Zussman, Scarsdale, N.Y., assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Filed July 15, 1964, Ser. No. 382,969
14 Claims. (Cl. 252—107)

1. A composition comprising an alkali metal fatty acid soap and a germicidally effective amount of a bacteriostat of the formula:



wherein

R is a halogen atom, and

R^1 is a member selected from the group consisting of hydrogen and chloro,

and about 10% to about 100% by weight of the amount of the bacteriostat of a member selected from the group consisting of a benzene carboxylic acid having from one to six carboxylic acid groups and the alkali metal salts thereof.

3,284,363
GERMICIDAL SOAPS

Willard M. Bright, Winston-Salem, N.C., assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine

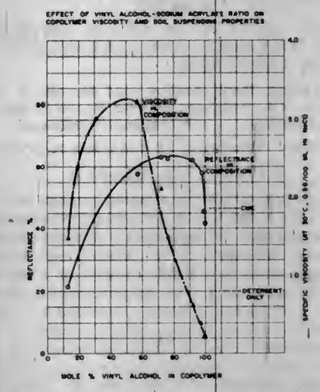
No Drawing. Continuation of application Ser. No. 38,751, June 27, 1960. This application July 12, 1965, Ser. No. 471,475
4 Claims. (Cl. 252—107)

1. A germicidal soap composition consisting essentially of a water-soluble alkali metal soap having from about 8 to about 26 carbon atoms and from about 0.1% to about 0.5% by weight of the soap of a synergistic germicidal mixture of from about 40% to about 10% by weight of the mixture of 3,4',5-tribromosalicylanilide and from about 60% to about 90% respectively by weight of 3,4,4'-trichlorocarbanilide; said composition being substantially as white as the same composition without said synergistic mixture therein.

3,284,364
SOIL ANTI-REDEPOSITION AGENTS

Frederick H. Siegele, Westport, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed Jan. 25, 1963, Ser. No. 253,931
6 Claims. (Cl. 252—132)



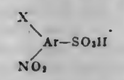
1. A detergent composition capable of preventing the redeposition of soil comprising a detergent and as a soil redeposition inhibitor an organic linear hydrocarbon chain polymer containing relative molar ratios of hydroxyl to carboxylic acid group of from about 30 to 99 to 1 to about 70, respectively, said polymer being present in effective soil redeposition inhibiting amounts.

3,284,365
PAINT STRIPPING COMPOSITIONS AND PROCESS

George P. Bourean, Detroit, Mich., and James E. Maloney, St. Paul, Minn., assignors to Detrex Chemical Industries Inc., Detroit, Mich., a corporation of Michigan

No Drawing. Filed Jan. 31, 1964, Ser. No. 341,766
9 Claims. (Cl. 252—156)

1. A solid paint stripping composition for use in dilute aqueous solution consisting essentially of a major amount of a caustic alkali metal compound selected from the class consisting of sodium and potassium hydroxide, and an amount in the range of from about five percent by weight to about forty percent by weight of a halogenated organic acid compound selected from the group consisting of the halogenated aromatic carboxylic acids having the general formula X—Ar—COOH, where X represents a ring substituted halogen radical upon Ar, which represents a phenyl radical; the halogenated aromatic sulfonic acids having the general formula X—Ar—SO_3H, where X represents a radical selected from the group consisting of mono- and poly-ring substituted halogen radical upon Ar, which represents a phenyl radical; the halogenated nitro substituted sulfonic acids having the general formula



where X represents a radical selected from the group consisting of mono- and poly-ring substituted halogen radical upon Ar, which represents a phenyl radical; and a halogenated aromatic-aliphatic ether compound selected from the class consisting of 2,4-dichlorophenoxyacetic acid and 2,4,5-trichlorophenoxyacetic acid.

3,284,366
PROCESS OF MAKING SEAWATER DESALTING BRIQUETS

Calvin Calmon, Springfield Township, Burlington County, and William Allen, Jr., Birmingham, N.J., assignors to Ritter Pfaudler Corporation, a corporation of New York

No Drawing. Filed Feb. 18, 1965, Ser. No. 433,797
3 Claims. (Cl. 252—179)

1. The process of making desalting briquets from a mixture of granulated components consisting of 85 to 99.4 percent cation exchange material in the silver form which in turn consists of 30 to 99.5 percent silver alumino silicate and 0.5 to 70 percent water insoluble silver cation exchange resin selected from the group consisting of sulfonated styrene-divinyl copolymer, phosphonated styrene-divinyl copolymer, phenol formaldehyde copolymer, and a carboxylic type copoylmer prepared from acrylics and divinyl benzene, each treated with silver nitrate solution, 0.5 to 3.0 percent stearic acid, 0.1 to 2.0 percent activated carbon and 0 to 10 percent barium hydrate, which process comprises drying said mixture to a moisture content of less than 1 percent and bringing it to an elevated temperature in the range of 70° C. to 200° C., limiting the time during which the mixture is maintained at said elevated temperature when said elevated temperature is above 110° C. to 4 minutes at 200° C. and to a period which may be lengthened beyond 4 minutes if said elevated temperature is below 200° C., to an indefinite period if said elevated temperature is below 110° C., and then compressing said mixture under pressure sufficient to form stable briquets while said mixture is maintained at a temperature of 70° C. to 200° C.

3,284,367
SOLVENT MIXTURES AND METHODS FOR THE STORAGE OF OZONE

Francis Mahieux, Gennevilliers, France, assignor to l'Air Liquide, Societe Anonyme pour l'Etude et l'Exploitation des Procedes Georges Claude

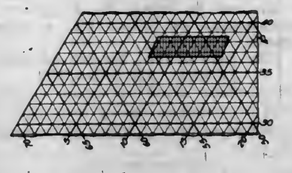
No Drawing. Filed Aug. 23, 1963, Ser. No. 304,255
Claims priority, application France, Aug. 31, 1962, 908,333, Patent 1,344,944
4 Claims. (Cl. 252—364)

1. A solution of ozone in a liquid solvent mixture consisting essentially of about five parts by volume of 1,2-dichloro-1,1,2,2-tetrafluoroethane and about two parts by volume of trichlorofluoromethane.

3,284,368
PHOSPHATE GLASS COMPOSITION

George B. Hatch, Allison Park, Pa., assignor to Calgon Corporation

Filed Apr. 3, 1964, Ser. No. 357,034
4 Claims. (Cl. 252—389)



1. A phosphate glass consisting essentially of MO and P_2O_5 in a mol ratio of from about 1.60:1 to about 1.75:1, in which MO comprises Na_2O and ZnO in a mol ratio of from about 3.5:1 to about 7:1.

3,284,369
SILICA SUPPORTED CATALYSTS AND METHOD OF PREPARATION THEREOF

Horacio E. Bergna, West Park, Wilmington, Del., and Frank A. Simko, Jr., Cedar Grove, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 12, 1965, Ser. No. 479,278
6 Claims. (Cl. 252—454)

1. A porous, amorphous silica supported metallic catalyst having a density of from 1 to 2 grams per cubic centimeter as determined by mercury displacement and characterized by consisting essentially of: amorphous silica with respect to which there is dispersed substantially homogeneously at least one metal-containing constituent selected from the group consisting of metals and metal oxides, the metal in said constituent being present in the proportion of from 0.01 to 5% by volume based on the silica and being selected from the group consisting of copper, cadmium, manganese, calcium, magnesium, zinc, chromium, aluminum, molybdenum, tungsten, vanadium, cerium, mercury, barium, tin, lead, bismuth, thallium, iron, cobalt, nickel, platinum, palladium, rhodium, ruthenium, iridium, and osmium, the amorphous silica being in the form of ultimate particles in the size range of from 5 to 200 millimicrons, and the pores in the catalyst having such uniformity of size that no more than 5% of the total void volume is present as pores having a size greater than twice the average pore size.

3,284,370
ALUMINA SUPPORTED COPPER OXIDE-RARE EARTH OXIDE CATALYST COMPOSITIONS

Alan Frank Clifford, West Lafayette, Ind., and Joseph Jaffe, Berkeley, Calif., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Dec. 31, 1962, Ser. No. 248,299
8 Claims. (Cl. 252—462)

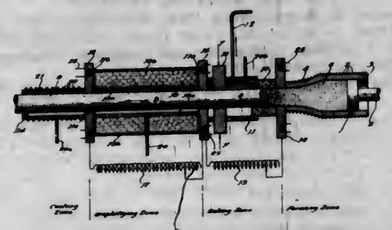
6. A catalyst consisting essentially of a catalytically active, porous metal oxide selected from the group consisting of alumina and thoria, said porous metal oxide having a pore volume in the range of from about 0.1 to about 0.7 milliliter per gram, an average pore diameter in the range of from about 25 to about 400 Angstroms and a specific surface area of from about 5 to about 500 square meters per gram, and having substantially on the internal and external surfaces of said oxide a mixture of (a) from about 1 to about 20 parts by weight, based on 100 parts by weight of said porous metal oxide, of copper oxide and (b) from about 0.05 to about 0.9 part by weight, based on 100 parts by weight of said porous oxide, of a rare earth metal oxide selected from the group consisting of ceria group rare earth metal oxides, europium oxides,

terbium oxides and dysprosium oxides, said rare earth metal oxide being oxidizable to valences higher than the tervalent state.

3,284,371
ELECTROGRAPHITIC BRUSH
Walter G. Krellner, St. Marys, Pa., assignor to Stackpole Carbon Company, St. Marys, Pa., a corporation of Pennsylvania
Filed Jan. 14, 1964, Ser. No. 337,640
1 Claim. (Cl. 252—502)

A electrographitic brush consisting essentially of a bonded body of grahphite having from about 0.5 to 10 percent by weight of pulverized glassy carbon distributed through the body.

3,284,372
APPARATUS AND PROCESS FOR CONTINUOUSLY MAKING BAKED AND GRAPHITIZED CARBON BODIES
Bruce L. Bailey, Lewiston, N.Y., assignor to Great Lakes Carbon Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 14, 1965, Ser. No. 490,155
26 Claims. (Cl. 252—502)



1. A process for applying electrothermal energy to a green electrically conductive composition which becomes rigid upon being heated, which comprises:
(A) substantially continuously and mechanically forcing said green composition into and through a heating zone wherein said green composition is resistively heated and rendered substantially rigid and self-supporting by the passage of current therethrough, said current being made to flow by applying a voltage across the moving composition by means of electrical conductors at least one of which is in direct contact with a green portion of said moving composition;
(B) maintaining said moving composition under a substantial pressure during its transition from the green to rigid state, said pressure being maintained by a restraining force excited upon the rigid mass, which restraining force tends to oppose the axial movement of the composition as it is being processed, said restraining force being at least equal to that necessary to maintain the structural integrity of the conductive composition during the time it is heated from the green state to the rigid state; and
(C) supporting said moving conductive composition during its transition to the rigid state and substantially preserving its shape by means of a transition section which contains a high temperature resistant electrical insulating material.

16. An apparatus for producing baked carbon bodies from a green electrically conductive carbonaceous mass which evolves gases and which becomes rigid upon being heated, said green carbonaceous mass having an A.D. of at least 1.4 g./cc., which comprises means for substantially continuously and mechanically forcing said green carbonaceous mass into and through the apparatus, means for resistively heating the green mass while it is moving substantially continuously to render it substantially rigid and self-supporting, said heating means comprising electrical conductors at least one of which is in direct contact with said green carbonaceous mass and which conductors are adapted to include the moving carbonaceous mass as a resistance element and to apply a voltage across same and to cause a current to flow therethrough, means containing a high temperature resistant electrical insulating material for supporting said green carbonaceous mass while it is moving and during its transition to the rigid state, said supporting means being a system which surrounds and physically contacts the green carbonaceous mass between the point that voltage is applied across same and the point that said mass becomes rigid and self-supporting, means for permitting the escape of the gases from the green mass when it is heated, and means for maintaining said carbonaceous mass under a substantial pressure during its transition from the green to rigid state, said means including a restraining member exerting a reverse axial thrust excited upon the substantially continuously moving rigid mass, said restraining member tending to oppose the forward axial movement of the rigid mass as it is being processed, and said restraining member exerting a force at least equal to that necessary to maintain the structural integrity of the carbonaceous mass during the time it is heated from the green state to the rigid state and while the gases are evolved.

3,284,373
MOLDED CARBON BODIES
William Joseph Metrailer, Baton Rouge, La., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed June 16, 1964, Ser. No. 375,636
4 Claims. (Cl. 252—506)

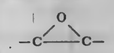
1. A process for forming a molded coke body comprising the steps of
(a) mixing a pitch binder with a sufficient amount of boric acid so that after dehydration said binder will contain 0.2–2.0 wt. percent, based on the total weight of said binder, of B_2O_3,
(b) heating the mixture prepared in step (a) at a temperature of 200–800° F. to dehydrate the boric acid,
(c) mixing the B_2O_3 containing pitch binder with an aggregate of coke particles,
(d) heating the mixture prepared in step (c) at a temperature of 1700–2200° F. for a period of time sufficient to convert the pitch binder to binder coke, and
(e) recovering a molded coke body in which the coke particles are bound together with a B_2O_3 containing binder coke.

3,284,374
PROCESS FOR POLYMERIZING OLEFIN OXIDES WITH A CATALYST CONSISTING OF AN ORGANOZINC COMPOUND AND AN AMINE
Hiroshi Daimon and Kosaku Kamio, Uozu-shi, Toyamaken, and Shimpei Kojima, Namerikawa-shi, Toyamaken, all of Japan, assignors to Nippon Carbide Kogyo Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
No Drawing. Filed Mar. 1, 1961, Ser. No. 92,458
Claims priority, application Japan, Mar. 5, 1960, 35/7,344; Mar. 16, 1960, 35/8,855; Apr. 26, 1960, 35/22,153; May 1, 1960, 35/23,282, May 14, 1960, 35/24,526
8 Claims. (Cl. 260—2)

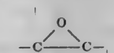
1. A method comprising polymerizing olefin oxides having less than 12 carbon atoms at 0 to 200° C. in the presence of a catalyst system consisting of 0.001–10 mole percent, based on the monomer, of at least one organozinc compound of the formula ZnR_1R_2, wherein R_1 and R_2 are selected from the group consisting of lower alkyl and aryl groups and 0.01 to 10 parts by weight, based on said first material, of a second material selected from the group consisting of lower aliphatic and aromatic amines.

3,284,375
EPOXY CONTAINING CONDENSATION PRODUCTS AND METHOD OF MAKING SAME
Edward C. Shokal, Walnut Creek, Calif., assignor to Shell Oil Company, a corporation of Delaware
No Drawing. Filed Sept. 3, 1954, Ser. No. 454,203
18 Claims. (Cl. 260—2)

1. A polyepoxide comprising a condensation polymer selected from the group consisting of polyesters and polyamides, each member of said group having a main polymer chain containing, in addition to carbon, a dissimilar element of the group consisting of oxygen, nitrogen, sulfur, phosphorous and silicon in at least two different locations in the chain, each of the polyesters and polyamides containing at least two internal



groups and said



groups being located at the former site of carbon-to-carbon unsaturated linkages in the condensation polymer.

3,284,376
FLAME RESISTANT URETHANE POLYMER COMPOSITIONS OF IMPROVED DIMENSIONAL STABILITY CONTAINING A TRIS(POLYHALOPHENYL)BORATE
Joseph J. Pedjac, Mount Pleasant, and Charles T. Pumpelly, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Dec. 12, 1963, Ser. No. 329,975
10 Claims. (Cl. 260—2.5)

6. A self-extinguishing foam having improved dimensional stability comprising a normally flammable polyurethane resin in intimate admixture with from about 2 to about 5 percent based on the weight of the foam of an antimony compound selected from the oxide, chloride, bromide, iodide, oxychloride, and sulfide and an amount of a tris(polyhalophenyl)borate in which each polyhalophenyl group has from 3 to 5 halogen atoms selected from chlorine and bromine sufficient to provide about 3 to about 20 percent halogen in the foam.

3,284,377
POLYURETHANE PLASTICS PREPARED FROM A NITROGEN CONTAINING POLYOL
Rudolf Merten and Günther Braun, Cologne-Flittard, and Hans-Joachim Hennig, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
No Drawing. Filed Sept. 12, 1963, Ser. No. 308,347
Claims priority, application Germany, Sept. 12, 1962, F 37,794
6 Claims. (Cl. 260—2.5)

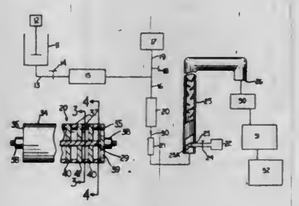
1. A polyurethane plastic prepared by a process which comprises reacting an organic polyisocyanate with a polyol prepared by a process which comprises reacting an ethylenically unsaturated compound having a molecular weight of from about 28 to about 250 with ammonia, an organic polyamine or a hydrazine where the organic polyamine or hydrazine has at least 3 hydrogen atoms bonded to nitrogen atoms in the proportion of 0.1 to *n*-2 mols of ethylenically unsaturated compound per mol of ammonia, organic polyamine or a hydrazine and then reacting the resulting product with an alkylene oxide to prepare said polyol, *n* being at least 3 and corresponding to the number of hydrogen atoms bonded to nitrogen in the ammonia, organic polyamine or a hydrazine, the reaction between the ethylenically unsaturated compound and the ammonia, organic polyamine or a hydrazine being carried out at a temperature of 0 to 100° C., said hydrazine having the formula $RHN—NH_2$ wherein R is hydrogen, alkyl, aryl or a hetrocyclic radical, said polyol having an hydroxyl number of from about 30 to about 750.

2. The polyurethane plastic of claim 1 wherein a blowing agent is included for the reaction between the organic polyisocyanate and the polyol to obtain a cellular polyurethane plastic.

3,284,378
FLAME RESISTANT PLASTIC COMPOSITION
George G. Roberts, 447 Eleanor Drive, Woodside, Calif., and Henry Nakagawa, 907 E. 5th Ave., San Mateo, Calif.
No Drawing. Filed Mar. 16, 1964, Ser. No. 352,333
7 Claims. (Cl. 260—9)

1. A flame-resistant self extinguishable plastic having corrosion resistance, consisting essentially of
(a) 40% to 55% of polyester resin condensation product of dicarboxylic acids with dihydroxy alcohols,
(b) 25% to 40% of inert mineral filler, namely, a mixture of clay and asbestos,
(c) 10% to 20% of chopped sisal fiber, and
(d) 5% to 10% of fire retardant.

3,284,379
UREA-FORMALDEHYDE FOAM
Frederick Brasco, Weston and Philip R. Temple, West Medway, Mass., assignors, by mesne assignments, to Arthur D. Little Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Mar. 13, 1963, Ser. No. 264,897
4 Claims. (Cl. 260—2.5)



1. A method for making a urea-formaldehyde foam substantially free from cracking upon drying in its final form, comprising the steps of
(a) forming a urea-formaldehyde foam into a self-supporting wet mass containing an acid catalyst capable of curing said urea formaldehyde; and
(b) while said foam is still wet, exposing it to gaseous ammonia thereby to neutralize at least a portion of any of said unreacted acid, said neutralization being carried out until the pH of said foam is raised to a value of at least 5.

3,284,380
POLAR POLYMER MODIFIED-ETHYLENE-PROPYLENE COPOLYMER LATICES
James W. Davis, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware
No Drawing. Filed July 14, 1961, Ser. No. 124,007
9 Claims. (Cl. 260—8)

1. A paper coating color comprising an aqueous dispersion of substantial quantities of a pigment and an adhesive, said adhesive containing at least 10% by weight

of a latex of an ethylene-propylene copolymer containing from about 24% to about 55% by weight of propylene, said latex being modified by blending with a polymer in an amount from about 1% to about 25% by weight, based on total weight of polymer and copolymer, said polymer being compatible with ethylene-propylene copolymers and containing polar radicals selected from the group consisting of carboxylic acid, hydroxyl, and amide radicals.

5. In a process of coating a paper with a coating color comprising an aqueous dispersion of substantial quantities of a pigment and an adhesive, the improvement of using an adhesive containing at least 10% by weight of a latex of an ethylene-propylene copolymer containing from about 24% to about 55% by weight of propylene, said latex being modified by blending with a polymer in an amount from about 1% to about 25% by weight, based on total weight of polymer and copolymer, said polymer being compatible with ethylene-propylene copolymers and containing polar radicals selected from the group consisting of carboxylic acid, hydroxyl, and amide radicals.

3,284,381

AMYLOSE-BASED CORRUGATING ADHESIVES

Lawrence J. Hickey, Livingston, Robert H. Williams, New Brunswick, and Emil D. Mazzarella, Plainfield, N.J., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 14, 1962, Ser. No. 195,029
7 Claims. (Cl. 260—17.3)

1. An adhesive composition comprising a carrier portion for ungelatinized starch and a quantity of from 300–700 parts of ungelatinized starch solids suspended in said carrier portion, said carrier portion comprising an aqueous solution of dispersed amylose and from 10–100 parts of (a) a member selected from the group consisting of paraformaldehyde, aqueous solutions of methanol stabilized formaldehyde, and aqueous alkaline solutions of formaldehyde, and from 5–100 parts of (b) a member selected from the group consisting of urea, monomethylol urea, succinamide and adipamide; the latter proportions being based on the weight of solids per 100 parts by weight of dispersed amylose in said adhesive composition, there being at least about 14.0% of amylose, as based on the total weight of solids, present in said composition.

6. The method of preparing an adhesive composition for use in making corrugated paperboard which comprises mixing an aqueous alkaline amylose dispersion with paraformaldehyde and urea, thereby forming a stabilized aqueous amylose carrier portion, and mixing a quantity of ungelatinized starch solids with said carrier portion, thereby producing a suspension of the ungelatinized starch solids in said carrier portion; wherein in said composition paraformaldehyde is present in a concentration ranging from 10 to 100 parts, by weight per 100 parts of dispersed amylose; and, the urea is present in a concentration ranging from 5 to 100 parts, by weight, per 100 parts, by weight, of dispersed amylose; there being at least about 14.0% of amylose, as based on the total weight of solids, present in the composition.

3,284,382

POLYVINYL BUTYRAL RESIN MODIFIED CELLULOSE BATTERY SEPARATOR AND METHOD FOR PREPARATION

Charles M. Rosser, Wallingford, and Richard A. Glinski, Clifton Heights, Pa., assignors, by mesne assignments to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed May 11, 1962, Ser. No. 194,101
6 Claims. (Cl. 260—17.4)

1. A non-fibrous regenerated cellulose sheet having uniformly dispersed therein a minor proportion of polyvinyl butyral resin.

6. A method of making an oxidation-resistant cellulose sheet which comprises casting a sheet of collodion containing polyvinyl butyral resin, removing the solvent, denitrating the cellulose nitrate in a deoxidizing bath, washing, and drying said sheet.

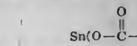
3,284,383

EPOXIDE COMPOSITIONS

William R. Proops, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 29, 1961, Ser. No. 163,050
7 Claims. (Cl. 260—18)

1. A curable composition comprising an epoxide compound containing at least one vicinal epoxy group and a catalytic amount of a catalyst prepared by reacting a liquid stannous acylate of the formula:



wherein each R is a monovalent hydrocarbon radical containing from 1 to 54 carbon atoms, with an anhydrous oxidizing agent selected from the group consisting of oxygen, benzoyl peroxide, diacetyl peroxide, and potassium permanganate at a temperature of from 25° C. to 125° C.

3,284,384

COATING COMPOSITIONS COMPRISING SILICON AND NITROGEN - CONTAINING POLYMERS AND OIL MODIFIED ALKYD RESINS

Konrad Parker, Park Ridge, Ill., assignor, by mesne assignments, to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Aug. 2, 1963, Ser. No. 300,713
8 Claims. (Cl. 260—22)

1. A coating composition capable of being cured to a hard, infusible state consisting essentially of (1) an unsaturated vegetable oil modified alkyd resin and (2) the polymeric product of an anhydrous reaction occurring at a temperature below 0 degrees C. between (a) a member of the class consisting of ammonia and an alkyl primary amine and (b) a silicon halide having the general formula R_nSiHal_{4-n} wherein R is selected from the group consisting of hydrogen, alkyl, vinyl and aryl radicals and n is 0–2, (a) being present in the reaction in an amount in excess of that required to replace all the halogen atoms to the silicon of (b), said polymeric reaction product being characterized by having a silicon-nitrogen-silicon linkage as part of its molecular structure and nitrogen-containing groups as the sole functional groups, there being from 1 to 12 parts by weight of said alkyd resin (1) per part of said polymeric reaction product (2).

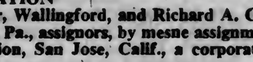
3,284,385

UNSATURATED ADDITION POLYMERS CONVERTIBLE BY OXYGEN TO INSOLUBLE POLYMERS

Gaetano F. D'Alelio, South Bend, Ind., assignor, by direct and mesne assignments, to Dal Mon Research Co., Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed July 2, 1962, Ser. No. 207,012
20 Claims. (Cl. 260—23)

11. The process of preparing a linear polymer comprising the step of polymerizing a monomer of the formula



wherein

R' is a radical selected from the class consisting of hydrogen and methyl radicals;

R_d is an unsaturated aliphatic radical containing no less than 15 or no more than 24 carbon atoms and consisting of a terminal —CH_3 group, at least 1 and no more than 4 —CH=CH— groups, and the remainder consisting of —CH_2— groups; and

Y is a polyvalent hydrocarbon radical of no more than 20 carbon atoms having a valency of at least 2 and no more than 6, the valencies in excess of those shown in said above formula being occupied by groups selected from the class consisting of R_dCOO—, HO—, RO—, and RCOO— groups in which R is a hydrocarbon radical of no more than 24 carbon atoms;

said polymerization being effected in the presence of an anionic initiator and at a temperature in the range of about —80° to 80° C.

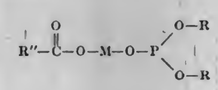
3,284,386

VINYL HALIDE RESINS STABILIZED WITH METALLO-PHOSPHOROUS COMPOUNDS

Gordon M. Juredine, Cleveland Heights, Ohio, assignor to Synthetic Products Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Jan. 30, 1963, Ser. No. 255,071
15 Claims. (Cl. 260—23)

1. A composition comprising a vinyl halide polymer containing a minor amount by weight sufficient to heat stabilize said polymer of at least one compound having the general formula



where R and R'' are selected from the group consisting of alkyl, cycloaliphatic, aryl, aralkyl, and alkaryl radicals and their halogen substituted derivatives, where R has from 4 to 18 carbon atoms, where R'' has from 3 to 17 carbon atoms, and where M is selected from the group consisting of barium, calcium, and strontium.

3,284,387

STABILIZED POLYMERIC COMPOSITION AND METHOD OF PREPARING SAME

Giuseppe Cantatore and Fosco Bordini, Terni, Italy, assignors to Montecatini Società Generale per l'Industria Mineraria e Chimica, Milan, Italy

No Drawing. Filed Feb. 5, 1963, Ser. No. 256,249
Claims priority, application Italy, Feb. 8, 1962, 2,349/62
10 Claims. (Cl. 260—23)

1. A polymeric composition which is stable against the action of heat, ageing and light, said composition comprising:

(a) a polypropylene consisting prevailingly of isotactic macromolecules and

(b) a stabilizing mixture comprising

(1) a hydroxybenzotriazole and

(2) a basic condensation product of epichlorohydrin with an amine or imine or of a dihalogen alkane with a diamine, said basic condensation product being present in an amount of from about 1 to 99% by weight of said stabilizing mixture.

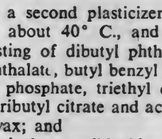
3,284,388

IMIDAZOLINE-AMINE SOAP-RUBBER MIXTURES AS ASPHALT ADDITIVES

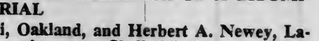
Robert F. Stierli, Lexington, Mass., assignor to W. R. Grace & Co., Cambridge, Mass.

No Drawing. Filed May 31, 1963, Ser. No. 284,310
8 Claims. (Cl. 260—23.7)

1. A composition for rubberizing asphalt comprised of rubber and the reaction product of a higher fatty acid and a polyamine, said reaction product containing a predominant amount of an imidazoline having the general formula



wherein R is the radical of the higher fatty acid, x is an integer from 1 to 5 and n is an integer from 2 to 4; and a remaining amount of an amido-amino-amine soap having the general formula



wherein R is a radical of a higher fatty acid and x represents the radical of a polyamine containing originally 3 to 7 amine groups per molecule, said radical being the amine less the terminal amine groups when said reaction product is present at a level of 15 to 50 percent by weight of the composition and said rubber is a polymer which has been formed through carbon to carbon double bond interaction.

3,284,389

PLASTICIZED POLYMERIC COATING COMPOSITION AND COATED ARTICLES

William Paul Kane, Bon Air, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 16, 1964, Ser. No. 383,228
17 Claims. (Cl. 260—27)

1. A coating composition comprising by weight about

50–100 parts vinyl chloride homopolymer;

10–50 parts copolymer of 35–96.5% by weight vinylidene chloride, 0.5–25% by weight of an acidic ethylenic compound and 3–40% by weight of at least one other polymerizable monoolefinic monomer;

10–30 parts of a first plasticizer having a melting point below about 40° C. and selected from the group consisting of dicyclohexyl phthalate, tricyclohexyl phosphate, triphenyl phosphate and tricyclohexyl citrate;

5–15 parts of a second plasticizer having a melting point above about 40° C., and selected from the group consisting of dibutyl phthalate, di(methylcyclohexyl) phthalate, butyl benzyl phthalate, diphenyl 2-ethylhexyl phosphate, triethyl citrate, tributyl citrate, acetyl tributyl citrate and acetyl trioctyl citrate;

0.5–10 parts wax; and

0.1–1 part particulate antiblocking agent.

3,284,390

PROCESS FOR PREPARING EPOXY-CONTAINING MATERIALS IN THE PRESENCE OF A BITUMINOUS MATERIAL

James R. Scheibli, Oakland, and Herbert A. Newey, Lafayette, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 30, 1960, Ser. No. 79,574
10 Claims. (Cl. 260—28)

1. A process for preparing an epoxy-containing composition which avoids the problem of gelation and is accomplished without the use of a catalyst which consists of heating a polycarboxylic acid with at least 1.5 times the chemical equivalent amount of a polyepoxide containing more than one epoxy group in the presence of a bituminous material.

3,284,391
DISPERSIONS FOR TREATING FABRICS
James K. Campbell, % Dow Corning Corporation, Midland, Mich.
No Drawing. Filed Apr. 2, 1962, Ser. No. 184,520
8 Claims. (Cl. 260—29.2)

1. A dispersion consisting essentially of
(A) 100 parts by weight of an organotitanium compound selected from the group consisting of
(1) the reaction product of a titanium compound of the general formula TiR_4, wherein R is selected from the group consisting of alkoxy radicals and chlorine atoms and from 1 to 4 mols per mol of titanium compound of a dihydric alcohol which is no more than slightly soluble in water at 20° C., said dihydric alcohol having from 6 to 12 inclusive carbon atoms, the two



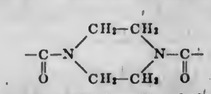
radicals in the dihydric alcohol being separated by less than 2 carbon atoms, and
(2) the partial hydrolyzate of said reaction product,
(B) from 5 to 50 parts by weight of a monocarboxylic acid of at least 8 carbon atoms, and
(C) at least 100 parts by weight water.

3,284,392
ADHESIVE SOLUTION COMPRISING A PHENOL-FORMALDEHYDE RESIN AND A POLYURETHANE ELASTOMER IN A SOLVENT MIXTURE OF METHYLENE CHLORIDE AND AN AQUEOUS ETHYL ALCOHOL SOLUTION
Murray Steinfink, Claymont, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Aug. 28, 1964, Ser. No. 392,929
6 Claims. (Cl. 260—29.3)

1. A fluid adhesive composition comprising a solvent medium consisting essentially of about 90 to 25 parts by weight of methylene chloride and about 10 to 75 parts by weight of an alcohol consisting of 91.75% by weight ethyl alcohol, about 0.5% by weight benzene, and the remainder water, said solvent medium containing up to about 30% by weight of dissolved solids which consist essentially of 25 to 75 parts by weight of a thermoplastic secondary polyurethane elastomer and 75 to 25 parts by weight of a thermosetting phenol/formaldehyde resin, said thermoplastic secondary polyurethane elastomer consisting essentially of the units

$$—O—(CH_2CH_2CH_2CH_2O)_n—$$

wherein n is the number of units required to give a number average molecular weight of 800 to 3000 and $—O—(CH_2)_4—O—$ connected by the bivalent acyl radical



with the units $—O—(CH_2)_4—O—$ being present in the amount of 4 moles per mole of the first mentioned units.

3,284,393
WATER-IN-OIL EMULSION POLYMERIZATION PROCESS FOR POLYMERIZING WATER-SOLUBLE MONOMERS
John W. Vanderhoff and Ralph M. Wiley, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Nov. 4, 1959, Ser. No. 850,751
8 Claims. (Cl. 260—29.6)

1. A water-in-oil emulsion polymerization method for making latex polymers and copolymers of water-soluble ethylenic unsaturated monomers which method comprises forming a water-in-oil emulsion of the group consisting of a water-soluble ethylenic unsaturated monomer having a water solubility of at least 5 weight percent and aqueous solutions thereof, in an inert hydrophobic liquid organic dispersion medium containing between 0.1 and 10 percent by weight of a water-in-oil emulsifying agent, wherein the proportion of monomer phase ranges between 30 and 70 percent of the emulsion, heating the emulsion under free radical forming conditions to polymerize monomer in a disperse phase in said dispersion medium and recovering the polymerized latex product.

3,284,394
AQUEOUS DISPERSION OF A COPOLYMER OF METHYLMETHACRYLATE AND BETA-HYDROXYETHYLMETHACRYLATE
Tzeng Jiueq Suen, New Canaan, and William C. Meisenhelder, Darien, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Mar. 24, 1965, Ser. No. 442,516
1 Claim. (Cl. 260—29.6)

A composition comprising an aqueous dispersion capable of forming substantially insoluble and infusible continuous films comprising:
(1) a reactive water-insoluble emulsion copolymer of (A) from about 65 to 90% by weight of methylmethacrylate and (B) from 2 to 20% by weight of β-hydroxyethylmethacrylate, and
(2) a plasticizing quantity of hexakis(methoxymethyl) melamine.

3,284,395
HIGH ACRYLONITRILE POLYMER SOLUTIONS CONTAINING A MIXTURE OF MONOCHLORINATED ORTHOPHENYLPHENOLS
Fred J. Lowes, Jr., Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed July 26, 1965, Ser. No. 474,945
13 Claims. (Cl. 260—29.6)

1. Bacteriostatic composition comprising a spinnable solution of: (1) a fiber-forming acrylonitrile polymer which contains in the polymer molecule at least about 85 weight percent of acrylonitrile, any balance being another monoethylenically unsaturated monomeric material that is copolymerizable with acrylonitrile, (2) an aqueous saline solvent for polyacrylonitrile; said solvent having additionally dissolved therein (3) at least about 5 weight percent based on said fiber-forming polymer weight of a bacteriostatic agent composed of predominant amounts of 6-chloro-2-phenylphenol with the remainder being 4-chloro-2-phenylphenol.

3,284,396
RUBBER LATEX SUBJECTED TO A FREEZE-THAW CYCLE IN THE PRESENCE OF A PLASTICIZER
Leon Talalay, New Haven, Conn., assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
No Drawing. Filed Sept. 12, 1960, Ser. No. 55,161
9 Claims. (Cl. 260—29.7)

1. A method for internally plasticizing butadiene hydrocarbon polymer particles of an emulsion-polymerized butadiene hydrocarbon polymer synthetic latex which comprises preparing a mixture of an emulsion-polymerized butadiene hydrocarbon polymer synthetic latex and an aqueous emulsion of a liquid non-volatile plasticizer for the butadiene hydrocarbon polymer of the said butadiene hydrocarbon polymer latex, the said liquid plasticizer being one that is fluid at the temperature at which the mixture is to be frozen, the amount of emulsifier present in the mixture of butadiene hydrocarbon polymer latex and plasticizer-emulsion being insufficient to cause complete coverage of the surfaces of the butadiene hydrocarbon polymer particles in the mixture with emulsifier, and causing said liquid plasticizer of said mixture to penetrate into the polymer particles of the said butadiene hydrocarbon polymer synthetic latex of said mixture by freezing said mixture to a solid mass at a temperature above temperatures at which the said mixture coagulates and thawing the frozen mass.

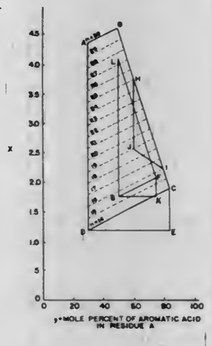
3,284,397
HYDROCARBON OIL-AQUEOUS ACID RUBBER EMULSION
Nelson G. Johnston, Tulsa, Okla., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed June 20, 1963, Ser. No. 289,390
4 Claims. (Cl. 260—29.7)

1. The method of preparing an emulsion of rubber in a hydrocarbon oil and an aqueous liquid selected from the class consisting of water and aqueous acid and salt solutions, which is highly resistant to deterioration by the action of heat, consisting essentially of: heating a mixture of between 0.3 and 2.0 parts by weight of rubber, which has been particulated to a size which passes through a No. 10 mesh sieve, selected from the class consisting of unvulcanized, vulcanized, and reclaimed natural and synthetic rubber and 1 part by weight of a plasticizer oil selected from the class consisting of alkyl-substituted benzenes, phenyl-substituted alkanes and mixtures thereof, tricresyl phosphate, crude oil, kerosene, naphtha, diesel oil, gas oil, residuum remaining from petroleum oil fractionating and cracking operations, and heat-liquefiable solid hydrocarbons containing at least 10 parts by weight aromatic oil, subjecting the mixture so made to a temperature of between about 400° F. and 500° F. for a sufficient time to make a substantially homogeneous mass of rubber and plasticizer oil, and cooling the homogeneous mass so made to a temperature of between about 68° F. and about 122° F., admixing the thus cooled mass with a liquid to be emulsified selected from the class consisting of (a) a hydrocrabon oil to be subsequently admixed with an aqueous liquid, (b) an aqueous liquid to be subsequently admixed with an oil, and (c) a mixture of a hydrocarbon oil and aqueous liquid in a ratio of between 0.1 and 9.0 of the aqueous solution to 1 of the oil by volume, and then mixing the oil and aqueous liquid to make an emulsion, employing the rubber and plasticizer oil emulsifier in an amount of between about 0.1 and about 5 parts by volume thereof based on the volume of the resulting emulsion.

3,284,398
HIGH TEMPERATURE ADHESIVE
John M. Warren, Weatherford, and Harold P. Owen, Fort Worth, Tex., assignors to General Dynamics Corporation, Fort Worth, Tex., a corporation of Delaware
No Drawing. Filed Nov. 5, 1963, Ser. No. 321,409
10 Claims. (Cl. 260—30.4)

1. An adhesive composite possessing high temperature strength and stability consisting of:
(A) from about 30.0% to 45.0% by weight epoxy novolac resin having an epoxy equivalent weight of about 175–182, a molecular weight of about 600 and a functionality of about 3.3 to 3.6 epoxy groups per molecule,
(B) from about 10.0% to 20.0% by weight exothermic catalyst from the amine group having an amine hydrogen equivalent weight of about 62,
(C) from about 2.0% to 15.0% by weight reactive cyclic epoxy siloxane plasticizer having an epoxy equivalent weight of about 174 and a molecular weight of about 870,
(D) from about 8.0% to 32% by weight thixotropic filler material having a particle size wherein 100% passes a 100 mesh sieve of an inorganic pigment,
(E) from about 13.0% to 31.0% by weight filler material of powdered inorganic pigment.

3,284,399
VINYL HALIDE RESINS PLASTICIZED WITH AN ALKANOL TERMINATED OLIGOESTER
John O. Van Hook, Abington, Pa., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware
Filed Mar. 4, 1963, Ser. No. 262,775
17 Claims. (Cl. 260—31.8)



1. A plasticized vinyl chloride resinous composition comprising a vinyl chloride resin selected from the group consisting of homopolymers of vinyl chloride and copolymers of vinyl chloride with an ethylenically unsaturated monomer, said copolymer containing at least about 60% by weight of combined vinyl chloride, and incorporated therein a plasticizing amount of an alkanol terminated oligoester having the general formula

$$R—\left[A—G\right]_x—A—R$$

wherein
R is a saturated aliphatic alcohol residue consisting of a hydrocarbon nucleus and an oxygen atom linked thereto having an average carbon content of 7 to 13 carbon atoms,
A is an organic dibasic acid residue consisting of a hydrocarbon nucleus and two carbonyl groups linked thereto, said organic dibasic acid residue further having an average of 4 to 14 carbon atoms derived from a mixture of an aliphatic dibasic acid and an aromatic dibasic acid,
G is a glycol residue consisting of a hydrocarbon nucleus and two oxygen atoms linked thereto having an average of 2 to 6 carbon atoms,
x represents the number of recurring glycol dibasic acid units in the oligoester and ranges from 1.2 to 4.6,
the oligoester being further characterized by the fact that the value for y, the molar percent of the aromatic residue in the organic acid residue of the oligoester and the value for x is a common point falling within the pentagram ABCED of FIGURE I of the annexed drawing, and that the value for n, the sum of the carbon atoms in one mole of the components R, A, and G of the oligoester is not less than the value represented by a line belonging to a family of lines, the limits of which are AB and DC.

3,284,400
PROCESS FOR PREPARING IMPROVED OIL-EXTENDED POLYEPOXIDE COMPOSITIONS AND RESULTING PRODUCTS

Richard C. Nelson, Westport, Conn., and Hans E. Kubitschek, Concord, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 5, 1963, Ser. No. 270,822
16 Claims. (Cl. 260—33.6)

1. A process for preparing oil-extended polyepoxide compositions having improved strength on cure which comprises adding to a mixture of a glycidyl polyether of a polyhydric phenol and a compatible highly aromatic petroleum oil having an aromatic content of at least 60%, another oil which has an aromatic content of less than about 30%, an aromatic carbon atom analysis (C_A) between 1 and 30, a naphthenic carbon atom analysis (C_N) between 25 and 50 and paraffinic carbon atom analysis (C_P) between 30 and 80 and poor solvent power in sufficient quantity so as to form a two-phase cured system, the amount of the glycidyl polyether making up from 15% to 85% by weight of the combined mixture of glycidyl polyether and the two oils, and the oil of low aromatic content making up from 3% to 40% by weight of the combined weight of the two oils.

3,284,401
STABILIZED RUBBER, OLEFIN POLYMER OR VINYL CHLORIDE POLYMER COMPOSITIONS CONTAINING 1,2-DITHIOLE-3-THIONES

Sheila Ann Evans, nee Hughes, Oswestry, England, and Ernest Bryson McCall, Llangollen, Wales, assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Nov. 27, 1962, Ser. No. 240,416
Claims priority, application Great Britain, Dec. 29, 1961, 46,627/61
6 Claims. (Cl. 260—45.8)

6. An oxygen-stabilized composition chosen from the group consisting of natural rubber, hydrocarbon synthetic rubbers, olefin polymers, and vinyl chloride polymers having incorporated therein as an antioxidant a minor amount of a 1,2-dithiole-3-thione chosen from the group consisting of monoaryl-1,2-dithiole-3-thiones and benzo-1,2-dithiole-3-thiones.

3,284,402
STABILIZED SULFUR CONTAINING ALIPHATIC POLYCARBONAMIDES

Robert W. Cottingham, Stoneham, Mass., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 27, 1964, Ser. No. 347,674
4 Claims. (Cl. 260—45.75)

3. Fiber - forming poly(hexamethylene adipamide) wherein recurring carbonamide groups are an integral part of the main polymer chain which is stabilized against the degradative effects of heat and light by containing from about 0.3% to about 0.7% by weight sulfur, said sulfur being substantially exclusively in the form of divalent sulfur chemically bonded intralinearly along the main polymer chain, said sulfur and said carbonamide groups being separated by at least three carbon atoms.

4. The composition of claim 3 wherein said fiber-forming poly(hexamethylene adipamide) has incorporated therein about 0.1% by weight of potassium iodide and about 0.01% by weight cupric acetate.

3,284,403
STABILIZED POLYOLEFIN POLYMER COMPOSITIONS CONTAINING A DIALKYLTHIODIPROPIONATE AND A POLYPHENOLIC ALKANE

Stanley A. Murdock, Concord, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Jan. 7, 1963, Ser. No. 249,576
15 Claims. (Cl. 260—45.85)

1. A stabilized olefin polymer composition comprising a 2 to 8 carbon-atom aliphatic olefin polymer having incorporated therein from about 0.05 to about 0.5 weight percent, based on olefin polymer weight, 2,2,5,5-tetrakis-p-hydroxy-phenyl hexane; and, from about 0.1 to about 0.5 weight percent, based on olefin polymer weight of a thiodipropionate selected from the group consisting of dilaurylthiodipropionate and distearylthiodipropionate.

3,284,404
ENVIRONMENTAL STRESS-CRACK RESISTANT POLYESTERURETHANES CONTAINING TRIACETIC ACID SUBSTITUTED ALKYLENE DIAMINES

Charles S. Schollenberger and Walter T. Murphy, Cuyahoga Falls, Ohio, assignors to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

No Drawing. Filed Aug. 9, 1963, Ser. No. 301,174
5 Claims. (Cl. 260—45.85)

1. A composition of matter comprising in combination 100 parts of an essentially linear polyesterurethane elastomer and from 0.5 to 5.0 parts of a tri-acetic acid-substituted alkylene diamine having the formula



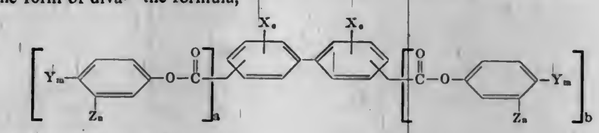
wherein R is a hydrocarbon group having from 6 to 20 carbon atoms on the average and R' is an alkylene group having from 2 to 10 carbon atoms.

3,284,405
STABILIZED POLYMER COMPOSITIONS CONTAINING DIPHENYL MONO- OR DI-CARBOXYLATES

Aubert Yaucher Coran, Charleston, W. Va., and Constantine Emmanuel Anagnostopoulos, St. Louis, Mo., assignors to Monsano Company, a corporation of Delaware

No Drawing. Filed Dec. 23, 1963, Ser. No. 332,941
11 Claims. (Cl. 260—45.85)

1. A composition comprising a major amount of a material selected from the group consisting of vinyl halide polymers and normally solid polymers of a mono-olefinic aliphatic hydrocarbon monomer having from 2 to 4 carbon atoms, and a stabilizing amount of a compound of the formula,



wherein:

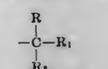
a and *b* are integers from zero to one, and the sum of *a*+*b* is at least one;

c is an integer from zero to two;

m and *n* are unlike integers from zero to one;

X is selected from the group consisting of alkyl and alkoxy of one to four carbon atoms;

Y is selected from the group consisting of α-cumyl and



wherein R, R_1 and R_2 are each alkyl of one to twenty-one carbon atoms, and the sum of the carbon atoms in R, R_1 and R_2 is up to twenty-three; and

Z is alkoxy of one to eighteen carbon atoms.

3,284,406
ORGANOSILOXANE ENCAPSULATING RESINS

Melvin E. Nelson, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Dec. 18, 1963, Ser. No. 331,384
14 Claims. (Cl. 260—46.5)

1. A composition of matter, stable for several days at −20° C., consisting essentially of

(1) a polysiloxane of the formula

$$R_2(CH_2{=}CH)SiO(R'_2SiO)_nSiR_2(CH{=}CH_2)$$

in which R and R' are both selected from the group consisting of methyl and phenyl radicals, at least 80 mol percent of the R' groups being methyl, in which siloxane (1) *n* has a value such that the viscosity of (1) is from 500 to 500,000 cs. inclusive at 25° C.,

(2) from 5 to 50% by weight based on the total weight of (1) and (2) of a copolymer of SiO_2, $(CH_3)_3SiO_{.5}$ and $(CH_3)_2CH_2{=}CHSiO_{.5}$ siloxane units in which copolymer there is from 1.5 to 3.5 inclusive percent by weight vinyl groups based on the weight of (2) and in which copolymer (2) the ratio of the total $(CH_3)_3SiO_{.5}$ and $(CH_3)_2CH_2{=}CHSiO_{.5}$ to SiO_2 units is from 0.6:1 to 1:1,

(3) a compound compatible with (1) and (2) which is a siloxane containing from 0.1 to 1.7% by weight silicon-bonded hydrogen atoms, the remaining valences of the silicon atoms in (3) being satisfied by radicals selected from the group consisting of phenyl and methyl radicals, there being at least three silicon-bonded hydrogen atoms per molecule and in (3) any hydrocarbon radicals attached to SiH silicon are essentially all methyl radicals, the amount of (3) being such that there is from .75 mol of SiH per mol of vinyl radicals in (1) and (2) to 1.5 mols of SiH per mol of vinyl radicals in (1) and (2), and

(4) a platinum catalyst.

7. A method which comprises mixing

(1) a polysiloxane of the formula

$$R_2(CH_2{=}CH)SiO(R'_2SiO)_nSiR_2(CH{=}CH_2)$$

in which R and R' are both selected from the group consisting of methyl and phenyl radicals, at least 80 mol percent of the R' groups being methyl, in which siloxane (1) *n* has a value such that the viscosity of (1) is from 500 to 500,000 cs. inclusive at 25° C.,

(2) from 5 to 50% by weight based on the total weight of (1) and (2) of a copolymer of SiO_2, $(CH_3)_3SiO_{.5}$ and $(CH_3)_2CH_2{=}CHSiO_{.5}$ siloxane units in which copolymer there is from 1.5 to 3.5 inclusive percent by weight vinyl groups based on the weight of (2) and in which copolymer (2) the ratio of the total $(CH_3)_3SiO_{.5}$ and $(CH_3)_2CH_2{=}CHSiO_{.5}$ to SiO_2 units is from 0.6:1 to 1:1,

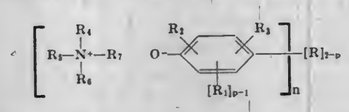
(3) a compound compatible with (1) and (2) which is a siloxane containing from 0.1 to 1.7% by weight silicon-bonded hydrogen atoms, the remaining valences of the silicon atoms in (3) being satisfied by radicals selected from the group consisting of phenyl and methyl radicals, there being at least three silicon-bonded hydrogen atoms per molecule and in (3) any hydrocarbon radicals attached to SiH silicon being essentially all methyl radicals, the amount of (3) being such that there is from .75 mol of SiH per mol of vinyl radicals in (1) and (2) to 1.5 mols of SiH per mol of vinyl radicals in (1) and (2), and (4) a platinum catalyst, and thereafter curing the mixture.

3,284,407
EPOXIDE RESIN COMPOSITIONS CONTAINING A POLYCARBOXYLIC ACID ANHYDRIDE AND A SUBSTITUTED AMMONIUM PHENATE

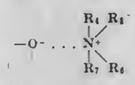
Graham Winfield, Cambridge, and Brian William Cunningham Ashcroft, Newnham, Cambridge, England, assignors to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed Feb. 6, 1961, Ser. No. 87,085
3 Claims. (Cl. 260—47)

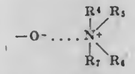
3. A hardenable composition comprising (1) a 1,2-epoxy compound having a 1,2-epoxy equivalency greater than one and having more than one epoxy group per molecule, (2) as hardening agent a polycarboxylic acid anhydride and (3) as hardening accelerator a substituted ammonium phenate corresponding to the formula



wherein R represents an aliphatic radical having *n* free valencies, R_1 is a member selected from the class consisting of a hydrogen atom, halogen atom, nitro group, hydroxy group, alkyl group, alkoxy group and a group of the formula



R_2 and R_3 are selected from the group consisting of hydrogen, hydroxy, alkyl, alkoxy, a group of the formula



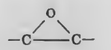
and together each of R_2 and R_3 form the residue of fused benzene ring, R_4, R_5 and R_6 each represents a member selected from the class consisting of an alkyl group, hydroxyalkyl group and aralkyl group; R_7 is a member selected from the class consisting of a hydrogen atom, alkyl group, hydroxyalkyl group and aralkyl group, *n* is an integer of at least 1, *p* is an integer of at least 1 and at most 2, with the proviso that the product of *n* times *p* is at least 2.

3,284,408
LATENT CURING AGENTS AND PROCESSES FOR CURING EPOXY RESINS AND PRODUCTS RESULTING THEREFROM

Gilbert F. Pollnow and Daniel T. Haworth, Milwaukee, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis., a corporation of Delaware

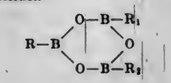
No Drawing. Filed Aug. 14, 1961, Ser. No. 131,105
15 Claims. (Cl. 260—47)

1. A process for producing and curing a latent epoxy resin selected from the group consisting of polyglycidyl ethers of 2,2-bis(4-hydroxy phenyl) propane and carboxylates of 3,4 epoxy-6-methyl cyclohexylmethyl 3,4 epoxy-6-methylcyclohexane having a



epoxy equivalency greater than unity which comprises the sequential steps of

(1) first forming an adduct of boroxine having the structural formula



wherein R and R_1 are selected from the group consisting of hydroxyl, alkyl, aryl and alkoxy radicals and R_2 is selected from the group consisting of alkyl, aryl an dalkoxy radicals, and an amine selected from the group consisting of primary, secondary and tertiary amines having low molecular weight, by mixing the amine and boroxine at an amine-to-boroxine mole ratio of from 0.03:1 to 4.0:1 and reacting the mixture until the equilibrium viscosity of the mixture is reached forming a coordination type compound and then

(2) mixing the adduct with the epoxy resin and then heating the adduct-epoxy resin mixture to a temperature sufficient to decoordinate the adduct and cross-link the epoxy resin.

3,284,409
SUBSTITUTED SUCCINIC ACID-BORON-ALKYLENE AMINE PHOSPHATIDE DERIVED ADDITIVE AND LUBRICATING OIL CONTAINING SAME

Casper John Dorer, Lyndhurst, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Filed June 22, 1965, Ser. No. 466,089
15 Claims. (Cl. 252—49.9)

1. A composition comprising (A) a boron-containing product obtained by the reaction of a hydrocarbon-substituted succinic acid compound having at least about 50 aliphatic carbon atoms in the hydrocarbon substituent, at least about 0.5 equivalent of an alkylene amine, and at least about 0.1 equivalent of a boron reactant selected from the class consisting of boron acids, boron oxide, ammonium salts of boron acids, and esters of boron acids with monohoydric alcohols and (B) from about 0.01 to about 3 moles, per mole of boron in said boron-containing product of (A), of a phosphatide.

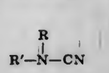
13. A lubricating composition comprising a major proportion of a lubricating oil and a minor proportion of the composition of claim 1.

3,284,410
SUBSTITUTED SUCCINIC ACID-BORON-ALKYLENE AMINE-CYANAMIDO DERIVED ADDITIVE AND LUBRICATING OIL CONTAINING SAME

Norman A. Meinhardt, Lyndhurst, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Filed June 22, 1965, Ser. No. 466,116
14 Claims. (Cl. 252—49.6)

1. A composition comprising (A) a boron-containing product obtained by the reaction of a hydrocarbon-substituted succinic acid compound having at least about 50 aliphatic carbon atoms in the hydrocarbon substituent, at least about 0.5 equivalent of an alkylene amine, and at least about 0.1 equivalent of a boron reactant selected from the class consisting of boron acids, boron oxide, ammonium salts of boron acids, and esters of boron acids with monohydric alcohols and (B) from about 0.01 to about 3 moles, per mole of boron in said boron-containing product of (A), of a cyanamido compound having the formula



wherein R is selected from the class consisting of hydrogen and alkyl radicals and R′ is selected from the class consisting of hydrogen, alkyl, and guanidine radicals.

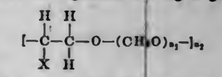
12. A lubricating composition comprising a major proportion of a lubricating oil and a minor proportion of the composition of claim 1.

3,284,411
OXYMETHYLENE COPOLYMERS

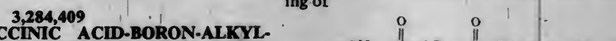
Kenneth Vincent Martin and Otto Franz Leopold Vogl, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 21, 1963, Ser. No. 289,736
2 Claims. (Cl. 260—67)

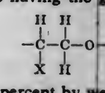
1. An oxymethylene copolymer containing a variety of reactive groups as side chain branches from the main polymer chain or as terminal groups on the polymer chain and having a major portion of the polymer chain consisting essentially of segments having a general formula



wherein X is a member selected from the class consisting of



and alkali metal and alkaline earth metal salts of carboxylic acids having 1 to 10 carbon atoms, and R is a group selected from the class consisting of alkyl, aralkyl, aryl and alkylene groups having 2 to 10 carbon atoms and n_1 and n_2 are positive integers, and wherein the portion of the segments having the general formula



comprises 0.1 to 20 percent by weight of said copolymer.

3,284,412
METHOD OF THE PREPARATION OF STABLE ALDEHYDE POLYMERS

Junji Furukawa and Takeo Saegusa, Kyoto, and Shigeyasu Ohta, Takatsuki, Japan, assignors to Faidan Hojin Nihon Kagaku Seni Kenyusho, Kyoto, Japan, an incorporated foundation of Japan

No Drawing. Filed Jan. 21, 1963, Ser. No. 252,602
2 Claims. (Cl. 260—67)

1. A method for producing thermally stable polymers of aliphatic aldehydes having from two to four carbon atoms including polymerizing said aliphatic aldehyde in the presence of an ethylenically unsaturated hydrocarbon having from two to eight carbon atoms and a catalyst system consisting of an organometallic compound selected from the group consisting of organometallic compounds of lithium, sodium, magnesium, zinc and mercury, having the general formula

$$RM$$

wherein R is an aliphatic hydrocarbon radical, M is one of said metals and organometallic compounds of aluminum having the general formula

$$R_{3-n}AlX_n$$

wherein R is an aliphatic hydrocarbon radical and X is a member selected from the group consisting of a halogen and an alkyloxy radical, and n is an integer from 0–2; and halides of metals belonging to groups II–VI of the Periodic Table by using a liquid hydrocarbon as a solvent, the mole ratio of said halide to said organometallic compound being in the range of from 0.01 to 2.0, said polymerization being effected at a temperature of less than −40° C.

3,284,413
PREPOLYMER ISOCYANURATE RESINS

Herbert L. Heiss, New Martinsville, W. Va., assignor to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Dec. 16, 1964, Ser. No. 418,879
3 Claims. (Cl. 260—77.5)

1. A method of preparing isocyanurate compositions which comprises admixing under trimerization conditions in the presence of a trimerization catalyst (a) an organic diisocyanate having a molecular weight of at least about 400 the addition product of an excess of monomeric organic diisocyanate and an organic compound containing active hydrogen containing groups, said groups being reactive with isocyanate groups, said organic compound being selected from the group consisting of dihydroxyl polyesters prepared by the process which comprises reacting dihydric alcohols and dicarboxylic acids, dihydroxyl polyester amides, dihydric polyalkylene ethers, dihydric polyalkylene thioethers and dihydric polyacetals and (b) an organic monoisocyanate, the molar ratio of said monoisocyanate to said diisocyanate being from about 0.2:1 to about 2:1.

3,284,414
PROCESS FOR PREPARING WATER-SOLUBLE COPOLYMERS OF ACRYLIC ACIDS AND N-VINYL HETEROCYCLIC MONOMERS IN A HALOGENATED HYDROCARBON

Sherman C. Lashua and Billy B. Hibbard, Midland, and Dan E. Ranck, Sanford, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

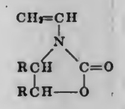
No Drawing. Filed May 23, 1963, Ser. No. 285,848
6 Claims. (Cl. 260—77.5)

1. In a process for preparing a copolymer of

(A) an acrylic acid selected from the group consisting of acrylic acid, methacrylic acid and α-ethylacrylic acid and

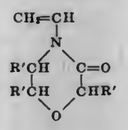
(B) an N-vinylheterocyclic monomer selected from the group consisting of:

(1) N-vinyl-2-oxazolidinones of the general formula:



wherein each R individually is selected from the group consisting of hydrogen and C_1–C_2 alkyl radicals,

(2) N-vinyl-3-morpholinones of the general formula:



wherein each R′ individually is selected from the group consisting of hydrogen and C_1–C_4 alkyl radicals,

(3) N-vinyl-2-pyrrolidone, and

(4) N-vinyl-2-piperidone,

by a free radical vinyl addition polymerization in a liquid medium at 20°–140° C., the improvement which consists essentially in using as the polymerization medium a C_1–C_4 halogenated aliphatic hydrocarbon containing from 1 to 4 bromine or chlorine atoms and having a normal boiling point between 20° and 140° C.

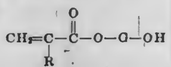
3,284,415
POLYURETHANE FROM ETHYLENE-HYDROXYALKYL ACRYLATE COPOLYMERS

Jack W. Horvath, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Sept. 4, 1964, Ser. No. 394,619
12 Claims. (Cl. 260—77.5)

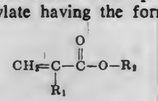
1. A polyurethane composition comprising the product obtained by mixing and reacting an organic polyisocyanate with a resinous polyol selected from the group consisting of

(a) a copolymer containing from about 65 to about 96 percent by weight ethylene and from about 4 to about 35 percent by weight of a β-hydroxyalkyl acrylate having the general formula



wherein R is selected from the group consisting of hydrogen and methyl and G is an alkylene group containing from 2 to 8 carbon atoms, and

(b) a terpolymer containing from about 61 to about 95 percent by weight ethylene, from about 4 to about 35 percent by weight of said β-hydroxyalkyl acrylate and from about 1 to about 35 percent by weight of an alkyl acrylate having the formula



wherein R_1 is selected from the group consisting of hydrogen and methyl and R_2 is an alkyl group having from 1 to 8 carbon atoms, and mixtures of (a) and (b).

3,284,416
POLYMERIC FAT ACID BASED POLYAMIDEUREAS

Marwan R. Kamal, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 250,217, Jan. 9, 1963. This application Feb 1, 1966, Ser. No. 523,957
8 Claims. (Cl. 260—77.5)

1. A polyamideurea prepared from (1) a polyamine of the formula:

$$R[CH_2NH(COR'NH)_yH]_x$$

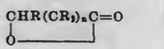
where R is the hydrocarbon group of polymeric fat acids, said polymeric fat acids having been prepared by polymerizing monobasic aliphatic carboxylic acids of 8 to 24 carbon atoms, R′ is a divalent hydrocarbon group containing from about 1 to about 20 carbon atoms selected from the group consisting of divalent aliphatic groups, divalent aromatic groups and divalent alicyclic groups, y is an integer of from about 1 to about 40 and x is an integer of 2 to about 4, and (2) an organic compound selected from the group consisting of organic polyisocyanates and organic polythioisocyanates.

3,284,417
PROCESS FOR THE PREPARATION OF LACTONE POLYESTERS

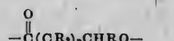
Fritz Hostettler, George Magnus, and Harry Vineyard, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Nov. 13, 1963, Ser. No. 323,222
13 Claims. (Cl. 260—78.3)

1. A process which comprises heating a lactone of the formula:



wherein n is an integer of from four to six, wherein at least $n+2$ R's are hydrogen, and wherein the remaining R's are of the groups consisting of hydrogen, alkyl, cycloalkyl, alkoxy, and single ring aromatic hydrocarbon radicals; with an organic functional initiator having at least one reactive hydrogen substituent capable of opening the lactone ring; in the presence of stannous diacylate as the catalyst therefor; to a temperature of at least about 50° C.; said lactone being in sufficient molar excess with relation to said organic functional initiator to produce a product having at least two substantially linear groups of the formula:



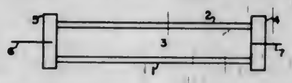
wherein the variables n and R have the aforesaid meanings; said product having an average molecular weight of at least about 300.

3,284,418

POLYMERS OF HETEROCYCLIC NITROGEN COMPOUNDS

Bernard S. Wildi, Kirkwood, Mo., assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

Filed Feb. 1, 1963, Ser. No. 255,483
3 Claims. (Cl. 260—78.4)



1. The method which comprises heating 2,4,6-tricyano-s-triazine with quinoline to obtain a thermally stable, solid polymer having semi-conducting properties and consisting essentially of said triazine and quinoline in substantially equimolar proportions.

3,284,419

POLY(PERCARBOXYLIC ACIDS)

Friedrich G. Helfferich, Berkeley, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 23, 1961, Ser. No. 97,760
9 Claims. (Cl. 260—79.3)

1. A water-insoluble, cross-linked resin having a hydrogen peroxide-resistant matrix to which is attached strongly dissociated, hydrophilic acid groups and carboxylic acid groups, the said strongly dissociated, hydrophilic acid groups being in sufficient proximity to the carboxylic acid groups to cause the resin to swell in the vicinity of these carboxylic acid groups when in aqueous hydrogen peroxide solution so such solution can penetrate to said carboxylic acid groups, the said strongly dissociated hydrophilic acid groups and carboxylic acid groups being in a mole ratio of at least 0.1:1 but not greater than 4:1, and at least 20% of said carboxylic acid groups being percarboxylic acid groups (—COOOH).

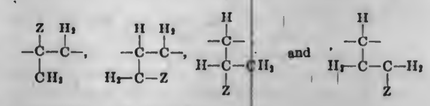
3,284,420

MODIFIED ETHYLENE-PROPADIENE POLYMERS

Stanley Tocker, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 24, 1965, Ser. No. 458,376
3 Claims. (Cl. 260—79.3)

1. A modified copolymer of improved adherability to itself and other materials of 65–99 mole percent of ethylene and 1–35 mole percent of propadiene, said modification being by reaction with an oxy acid of sulfur selected from the group consisting of sulfuric acid, sulfurous acid, chlorosulfonic acid, thiosulfuric acid, pyrosulfuric acid and para-toluene sulfonic acid, to provide 1–35 mole percent of a random selection of recurring units selected from the group consisting of



where Z is the sulfate radical.

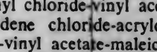
3,284,421

MODIFYING POLYMERS

David S. Breslow, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed June 20, 1963, Ser. No. 289,427
The portion of the term of the patent subsequent to Oct. 12, 1982, has been disclaimed
20 Claims. (Cl. 260—80.5)

3. The process of modifying a polymer selected from the group consisting of hydrocarbon polymers, cellulose esters, cellulose partial alkyl ethers, condensation products of a dibasic acid and a polyhydric alcohol, poly(alkylene oxides), polyamides, esters of allyl pentaerythritol with a fatty acid, condensation products of triallyl pentaerythritol and diallylidene pentaerythritol, poly(vinyl alkyl ethers), poly(vinyl acetals), poly(vinyl chloride), vinyl chloride-vinyl acetate copolymers, vinyl chloride-vinylidene chloride copolymers, vinyl chloride-maleic anhydride copolymers, vinyl chloride-fumaric acid copolymers, vinyl chloride-vinyl acetal copolymers, vinyl chloride-vinylidene chloride-acrylonitrile terpolymers, vinyl chloride-vinyl acetate-maleic anhydride terpolymers, nitrocellulose, chlorinated natural rubber, polysulfides, polyurethanes, poly(vinyl acetate), ethylene-vinyl acetate copolymers, poly(vinylidene chloride), vinylidene chloride-acrylonitrile copolymers, ethyl acrylate–2-chloroethyl vinyl ether copolymers, poly(ethyl acrylate), poly(ethyl methacrylate), poly[3,3 - bis(chloromethyl)oxetane], vinyl modified polydimethylsiloxanes, polychloroprene, butadiene acrylonitrile copolymers, and sulfochlorinated polyethyene which comprises heating said polymer at an elevated temperature with a small amount of an azidoformate having a boiling point of at least about 100° C. at a pressure of 70 mm. of mercury and having the general formula



where x is an integer of from about 1 to about 4 and R is an organic radical inert to said polymer.

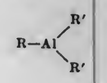
3,284,422

PROCESS FOR POLYMERIZING VINYL AND ACRYLIC ESTERS WITH ALLYL ACRYLATE WHEREIN AN ALUMINUM ALKYL AND OXYGEN ARE USED AS CATALYSTS

Rajendra N. Chadha, Silver Spring, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of New York

No Drawing. Filed Sept. 25, 1963, Ser. No. 311,336
3 Claims. (Cl. 260—80.5)

1. The process of polymerizing a member of the vinyl monomer group consisting of acrylic and vinyl esters in the presence of a catalyst consisting essentially of free molecular oxygen and 0.3 to 10% by weight of an aluminum alkyl compound of the formula



in which R is alkyl and R' is a member of the group consisting of hydrogen, halogen and alkyl, all of said alkyls containing 1 to 8 carbon atoms, and, additionally in the presence of a 3–20% by weight of a bifunctional cross-linking agent consisting of allyl acrylate; percentages based on the total weight of the vinyl monomer present in the composition, which comprises admixing said vinyl monomer group and said allyl acrylate with said aluminum alkyl compound in an inert atmosphere, and then exposing said mixture to free oxygen until the reaction stops.

3,284,423

PRESSURE-SENSITIVE CREEP-RESISTANT RESIN COMPOSITION

Edmund C. Knapp, Wilbraham, Mass., assignor, by mesne assignments, to Monsanto Company, a corporation of Delaware

No Drawing. Filed Dec. 20, 1963, Ser. No. 332,281
8 Claims. (Cl. 260—80.5)

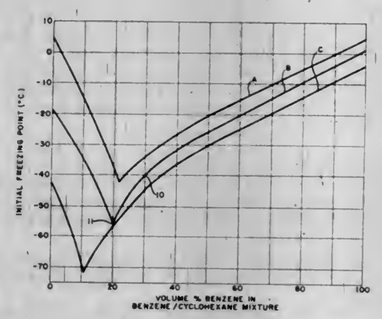
1. A tacky and pressure-sensntive crosslinked adhesive copolymer consisting of (a) 35 to 75% by weight of acrylic acid esters having between 6 and 15 carbon atoms per molecule, (b) 10 to 60% by weight of a lower alkyl acrylate taken from the group consisting of methyl acrylate and ethyl acrylate, (c) 0.1 to 10% by weight of an acid taken from the group consisting of acrylic acid, methacrylic acid, itaconic acid and crotonic acid, (d) 0.1 to 10% by weight of a glycidyl ester taken from the group consisting of glycidyl acrylate and glycidyl methacrylate.

3,284,424

PROCESS FOR PREPARING A COPOLYMER OF ETHYLENE AND 1,4-HEXADIENE

Hans Karl Frensdorff, Wilmington, and Edward Karcher Gladding, New Castle, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Aug. 13, 1963, Ser. No. 301,839
4 Claims. (Cl. 260—88.2)



1. In a process for the preparation of an ethylene/1,4-hexadiene copolymer which comprises reacting ethylene with 1,4-hexadiene in the presence of a coordination catalyst at 0° C. or below, the improvement which consists in conducting said reaction in a liquid reaction medium consisting of 1,4-hexadiene, cyclohexane and benzene, said reaction medium containing no more than about 55 volume percent benzene and no more than about 90 volume percent cyclohexane, the ratio of benzene to cyclohexane in said liquid reaction medium ranging from about 1:9 to 11:9.

3,284,425

CONVERSION OF POLYMETHACRYLATE TO POLYMETHACRYLIMIDE IN AN AQUEOUS SYSTEM

Günter Schröder, Darmstadt, Germany, and Klaus Tessmar, deceased, late of Darmstadt, Germany, by Ruth Helene Tessmar, widow and sole heir, Darmstadt, Germany, assignors to Rohm & Haas G.m.b.H., Darmstadt, Germany

No Drawing. Filed May 15, 1964, Ser. No. 368,452
Claims priority, application Germany, Mar. 26, 1959, R 25,227
6 Claims. (Cl. 260—89.5)

1. The method of making water-insoluble alkali-resistant polymethacrylimides which are substantially free of carboxy groups and wherein the degree of imidization of said polymethacrylimides is at least 95 percent, which method comprises heating, at a temperature between about 180° C. and 300° C. and at a pressure of about 8 to about 85 atmospheres, a member selected from the group consisting of homopolymers of methyl methacrylate and copolymers of methyl methacrylate with up to 90 percent by weight of a comonomer selected from the group consisting of methacrylic acid, methacrylonitrile, methacrylamide, methacrylamides of primary lower alkyl monoamines having 1 to 4 carbon atoms, methacrylic acid chloride, and ammonium methacrylate, with an aqueous solution containing from about 1 to about 30 percent, by weight of said solution, of a primary aliphatic monoamine, sufficient solution being used so that an amount of monoamine at least equivalent to the imide-forming groups of the polymer being treated is present.

3,284,426

CRYSTALLINE POLY(VINYL ETHERS) AND PREPARATION THEREOF

Edwin J. Vandenberg, Blue Rock Manor, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Mar. 18, 1957, Ser. No. 646,539
10 Claims. (Cl. 260—91.1)

1. Crystalline poly(vinyl methyl ether) characterized as consisting of a solid homopolymer which is insoluble in cold water, methanol and n-heptane, having a high degree of crystallinity with a melting point of from 115° C. to 150° C., being capable of being formed into an unsupported film, having a reduced specific viscosity of at least about 0.3 as measured on a 0.1% solution of the polymer in cyclohexanone at 135° C., and exhibiting a crystalline-type X-ray diffraction powder pattern in which the d-spacings are at about 8.0, 5.8, 4.7, 4.09, 3.44, 3.18, 2.78, 2.39 and 2.11 angstroms.

3,284,427

MONOSUBSTITUTED ALUMINUM DIHALIDE CATALYSTS FOR OLEFIN POLYMERIZATION

Harry W. Coover, Jr., Kingsport, Tenn., and Newton H. Shearer, Jr., Zurich, Switzerland, assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Feb. 20, 1963, Ser. No. 260,080
The portion of the term of the patent subsequent to Aug. 30, 1977, has been disclaimed and dedicated to the Public
16 Claims. (Cl. 260—93.7)

1. In a polymerization of α-olefins containing up to ten carbon atoms to form solid crystalline polymer, the improvement which comprises catalyzing the polymerization with a catalytic mixture of an aluminum dihalide having the formula R_1AlX_2 wherein R_1 is a hydrocarbon radical containing 1 to 12 carbon atoms and selected from the group consisting of alkyl, aryl and aralkyl and

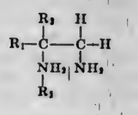
X is a halogen selected from the group consisting of chlorine, bromine and iodine, a compound of a transition metal selected from the group consisting of titanium, zirconium, vanadium, chromium and molybdenum, said compound being selected from the group consisting of halides, alkoxyhalides and acetylacetonates and a compound of a Group VA element having the formula R_3Z wherein Z is a Group VA element selected from the group consisting of arsenic and antimony and each R is a radical selected from the group consisting of hydrogen and hydrocarbon radicals containing 1 to 12 carbon atoms selected from the group consisting of alkyl, aryl and aralkyl.

3,284,428
DYEABLE POLYOLEFINS

Albin F. Turbak, New Providence, Allen Noshay, East Brunswick, and Gabriel Karoly, Elizabeth, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed May 21, 1963, Ser. No. 282,117
6 Claims. (Cl. 260—93.7)

1. A dyeable composition of matter comprising a polymer of a hydrocarbon alpha-olefin blended with a nickel salt derivative of a vicinal diamine having the following formula:



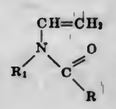
wherein R_1, R_2, and R_3 can be hydrogen or a C_1–C_{18} alkyl or aryl group.

3,284,429
PURIFICATION OF POLYOLEFINS

Otto Fuchs, Hofheim, Taunus, and Anton Staller, Dieter Ulmschneider, and Josef Walter, Frankfurt am Main, Germany, assignors to Hercules Incorporated

No Drawing. Filed Sept. 14, 1964, Ser. No. 396,400
Claims priority, application Germany, Sept. 25, 1963, F 40,827
9 Claims. (Cl. 260—93.7)

1. In the purification of a polyolefin which has been prepared in an inert organic diluent in the presence of a catalyst comprising a compound of a metal selected from the group consisting of the metals of Group IV–B and V–B of the Periodic Table in combination with an organometallic compound of a metal of Group III–A of the Periodic Table wherein the polymer is contacted with water, the improvement which comprises effecting said contact in the presence of a wetting agent selected from the class consisting of (a) homopolymers of an N-vinyl amide having the formula



where R is selected from the class consisting of hydrogen, alkyl, oxalkyl, alkylaryl and aryl radicals and R_1 is selected from the class consisting of R and acyl radicals, (b) copolymers of such N-vinyl amides with ethylenically unsaturated comonomers, (c) water soluble polymers of N-vinyl lactams, and (d) water soluble copolymers of such n-vinyl lactams with ethylenically unsaturated comonomers.

3,284,430
BATCH PROCESS FOR THE POLYMERIZATION OF DIOLEFINS WHEREIN A PORTION OF THE REACTION MEDIA IS CARRIED OVER TO THE NEXT BATCH

Lawrence E. Forman and Charles H. Hammond, Akron, Ohio, assignors to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed Oct. 16, 1961, Ser. No. 146,081
6 Claims. (Cl. 260—94.2)

1. Process which comprises (I–A) charging a monomeric composition selected from the group consisting of conjugated diolefins containing up to 10 carbon atoms and mixtures thereof with polymerizable ethylenically unsaturated compounds free from highly negative groups, plus an inert organic solvent, plus a stereodirective catalyst into a first primary reactor whereby to cause a solution of a polymer of said monimeric composition to be formed, (II–B) simultaneously with step (I–A), transferring from 3% to 97% of a solution of a polymer of said selected monomeric composition previously formed in a second primary reactor to a holding vessel while retaining, in said second primary reactor, conversely from 97% to 3% of said previously formed solution, the percentages being based on the total charge present in said second primary reactor just before discharge thereof, thereafter (II–A) charging said selected monomeric composition, plus an inert organic solvent, plus a stereodirective catalyst into said second primary reactor whereby to cause a solution of a polymer of said monomeric composition to be firmed, (I–B) simultaneously with step (II–A), transferring from 3% to 97% of the polymer solution previously formed in said first primary reactor to the holding vessel while retaining, in said first primary reactor, conversely 97% to 3% of said previously formed solution, the percentages being based on the total charge present in said first primary reactor just before discharge thereof, and repeating the steps (I–A) and (II–B) on the one hand and (II–A) and (I–B) on the other hand in alternating sequence, whereby to provide a substantially continuous flow of polymer solution to said holding vessel, any step (I–A) being carried out with the first primary reactor still containing the polymer solution retained therein by the immediately preceding step (I–B), and any step (II–A) being carried out with the second primary reactor still containing the polymer solution retained therein by the immediately preceding step (II–B).

3,284,431
PRODUCTION OF CIS-1,4 POLYBUTADIENE WITH A HIGHER FATTY ACID SALT OF COBALT-DIHYDROCARBON ALUMINUM HALIDE-ALUMINUM CATALYST

Morris Gippin, Akron, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Mar. 18, 1963, Ser. No. 266,059
2 Claims. (Cl. 260—94.3)

1. Process of polymerizing butadiene to form polymers high in cis-1,4-structure, which comprises contacting the same with a catalyst consisting of the reaction product of (1) a dihydrocarbon aluminum halide in which the hydrocarbon groups each contain from 1 to 30 carbon atoms, (2) a higher fatty acid salt of cobalt and (3) an activating agent consisting of metallic aluminum, the dihydrocarbon aluminum halide being supplied to the extent of from 1 to 100 millimols per 100 grams of butadiene, the higher fatty acid salt of cobalt being supplied to the extent of from .005 to 1.0 millimol per 100 grams of butadiene, and the activating agent being supplied in a ratio of 0.01 to 3.0 millimols of activating agent per millimol of dihydrocarbon aluminum halide.

3,284,432
POLYMERIZATION OF ETHYLENE IN THE PRESENCE OF A FREE RADICAL INITIATOR AND AMMONIA

George A. Mortimer, La Marque, Tex., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Dec. 29, 1961, Ser. No. 163,021
9 Claims. (Cl. 260—94.9)

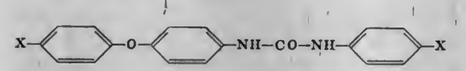
1. In a process for the polymerization of ethylene at elevated temperatures and pressures in the presence of a free-radical initiator chosen from the group consisting of peroxides, azo compounds and oxygen, the improvement which comprises controlling the polymerization reaction by the addition of trace amounts of ammonia.

3,284,433
4-PHENOXY-CARBANILIDES

Harold J. Becker, Rahway, and Edward F. Rogers, Middletown, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

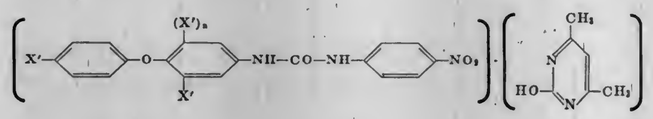
No Drawing. Filed July 17, 1963, Ser. No. 295,819
18 Claims. (Cl. 260—96.5)

1. A compound selected from the group consisting of (1) compounds of the formula:



wherein each X is independently selected from the group consisting of chlorine, bromine, and nitro; and (2) compounds of the same formula as (1) except that a hydrogen in at least one of the rings of (1) is replaced by a substituent selected from the group consisting of chlorine, bromine, nitro and lower alkyl radicals.

17. A complex of the formula:



with each X′ being a halogen independently selected from the group consisting of bromine and chlorine; and *n* is selected from the group consisting of zero and 1.

3,284,434
PROTEIN ISOLATION AND PREPARATIONS

Gerald Bonar Sutherland, Lawrence, Kans., assignor to Kansas University Endowment Association, Lawrence, Kans., a corporation of Kansas

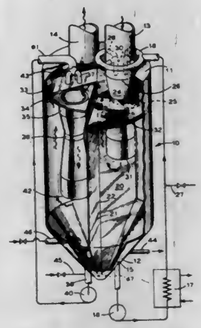
No Drawing. Filed Aug. 29, 1960, Ser. No. 52,367
7 Claims. (Cl. 260—112)

1. The process of separating a protein (antigen) from a protein system in one of two otherwise identical protein systems comprising the steps of producing an antiserum to the one protein system, adding the other protein system to the antiserum to leave the antibody directed to the antigen as the only precipitatable antibody remaining in the antiserum, adding the one protein system to the remaining antiserum to precipitate the antibody-antigen, coagulating the precipitated antibody, exposing the coagulated antibody to the one protein system whereby antigen directed to the antibody is removed on the coagulated antibody to form a complex, separating the complex, and acidifying to free the antigen from the coagulated antibody and separating the antigen from the coagulated antibody.

3,284,435
GAS ABSORPTION APPARATUS

Robert A. McIlroy and Henry P. Markant, both of Alliance, Ohio, assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey

Continuation of application Ser. No. 216,432, Aug. 13, 1962. This application Nov. 19, 1965, Ser. No. 514,745
6 Claims. (Cl. 261—151)



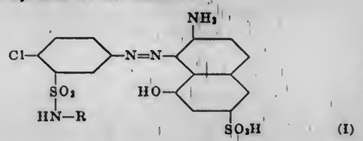
1. Gas and liquid contact apparatus having an upright vessel of generally circular horizontal cross-section, a plurality of radially extending vertical baffle plates arranged to divide the entire cross-sectional area of said vessel into a plurality of parallel substantially separate gas chambers of sectoral horizontal cross-section, said vessel having a closed bottom forming a liquid collecting space, said baffle plates having their lower ends terminating below the normal liquid level in said liquid collecting space, means providing a flow of liquid in said liquid collecting space between said chambers, means providing a gas flow sequentially through said chambers comprising a gas inlet to said vessel at the top of a first of said chambers, a gas outlet from said vessel at the top of the chamber farthest downstream in a gas flow sense from said gas inlet, means providing a gas flow passage between the upper ends of at least two of said chambers, vertically arranged Venturi-shaped gas ducts in at least two of said chambers having their lower ends terminating above the normal liquid level in said chambers and arranged to receive gas for a downward flow sequentially therethrough, a spray nozzle arranged to discharge a downwardly directed spray of liquid into each of said Venturi-shaped gas ducts in intimate contact with the gas flowing downwardly through said gas ducts, means for withdrawing liquid from the portion of said liquid collecting space below the first chamber, and means for supplying make-up liquid to the portion of said liquid collecting space below a chamber downstream in a gas flow sense of said first chamber.

3,284,436
MONOAZO DYESTUFFS CONTAINING AN AMINO-NAPHTHOL

Franz Frisch, Porza, Ticino, Switzerland, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Nov. 23, 1965, Ser. No. 509,441
Claims priority, application Switzerland, July 24, 1959, 76,170/59; June 30, 1960, 7,397/60
2 Claims. (Cl. 260—198)

1. An azo dyestuff of the formula



(I)

wherein

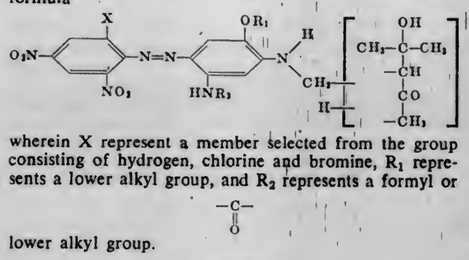
R is a member selected from the group consisting of 2,4-dimethylphenyl, 3,5-dimethylphenyl, 3,6-dimethylphenyl and 2,4,6-trimethylphenyl.

3,284,437
WATER-INSOLUBLE MONOAZO-DYESTUFFS

Helmut Gies, Hofheim, Taunus, and Helmut Lindner and Arthur Siebert, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Oct. 13, 1964, Ser. No. 403,642
Claims priority, application Germany, Oct. 25, 1963, F 41,086
7 Claims. (Cl. 260—207)

1. The monoazo-dyestuff insoluble in water of the formula



wherein X represent a member selected from the group consisting of hydrogen, chlorine and bromine, R_1 represents a lower alkyl group, and R_2 represents a formyl or

lower alkyl group.

3,284,438
PROCESSES FOR MAKING CYCLIC CARBONATE AND CYCLIC THIOCARBONATE ESTERS OF LINCOMYCIN

Fred Kagan, Kalamazoo, and Robert D. Birkenmeyer, Comstock Township, Kalamazoo County, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Apr. 20, 1964, Ser. No. 361,225
8 Claims. (Cl. 260—210)

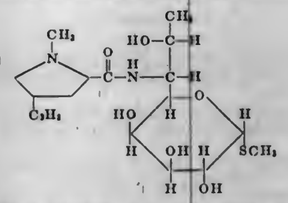
1. A process for making lincomycin cyclic carbonate which comprises reacting lincomycin with N,N'-carbonyldiimidazole in an inert solvent for the reactants and isolating the lincomycin cyclic carbonate so produced.

3,284,439
PROCESS FOR THE PREPARATION OF METHYL α-THIOLINCOSAMINIDE AND 4-ETHYL-L-HYGRIC ACID HYDRAZIDE

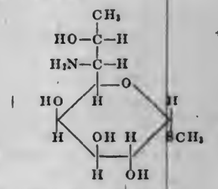
Alexander D. Argoudelis, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed June 15, 1964, Ser. No. 375,325
4 Claims. (Cl. 260—210)

2. A process for the production of methyl α-thiolincosaminide and 4-ethyl-L-hygric acid hydrazide which comprises: heating lincomycin B free base of formula:



with hydrazine hydrate to obtain methyl α-thiolincosaminde of the formula:



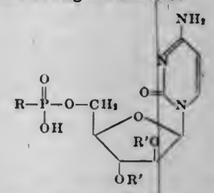
and 4-ethyl-L-hygric acid hydrazide.

3,284,440
PHOSPHATE ESTERS OF CYTOSINE ARABINOIDE AND PROCESS FOR PREPARING SAME

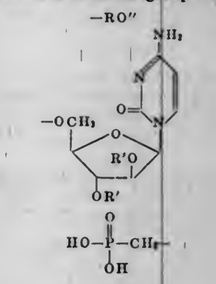
Arthur A. Patchett, Cranford, and Tsung-Ying Shen, Westfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed June 12, 1964, Ser. No. 374,809
20 Claims. (Cl. 260—211.5)

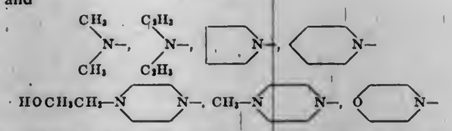
1. Compounds having the structure



in which R is selected from the group consisting of



and



and R' is selected from the group consisting of —H, lower alkanoyl radicals and benzoyl, and R'' is selected from the group consisting of —H, lower alkyl radicals and phenyl-lower alkyl radicals.

3,284,441
PROCESS OF PREPARING CARBOXYMETHYLCELLULOSE

Robert G. Bishop and William R. Simmons, Hopewell, Va., assignors to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed July 26, 1965, Ser. No. 475,007
4 Claims. (Cl. 260—231)

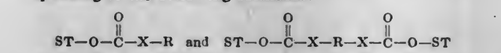
1. A slurry process of preparing water-soluble carboxymethylcellulose having a D.S. of 0.25–0.75 that is very uniformly substituted and which in solution has substantially improved salt tolerance, which comprises preparing alkali cellulose, the alkali/cellulose weight ratio range in the alkali cellulose period being 0.4/1.0–2.0/1.0, reducing the amount of alkali to an alkali/cellulose weight ratio range of zero/1.0–0.25/1.0 in excess of that which will be chemically consumed during the etherification, and then etherifying the alkali cellulose in the presence of said reduced amount of alkali.

3,284,442
NOVEL STARCH ESTER DERIVATIVES

Wadym Jarowenko, Plainfield, and Otto B. Wurzburg, White House Station, N.J., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 3, 1962, Ser. No. 184,670
3 Claims. (Cl. 260—233.5)

1. Starch derivatives comprising starch esters corresponding to the following formulae:

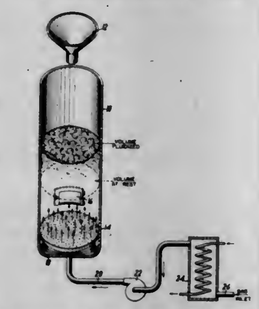


wherein ST represents the starch molecule, X is a radical selected from among the group consisting of oxygen and sulfur radicals and R is a non-polymerizbale radical selected from the group consisting of alkyl and substituted alkyl radicals containing from 1 to 18 carbon atoms, aryl and substituted aryl radicals, and arylalkyl and substituted arylalkyl radicals, the substituent groups present on said substituted alkyl, substituted aryl and substituted arylalkyl radicals being selected from the groups consisting of nitro, amino, sulfo, chloro, bromo, iodo and fluoro radicals.

3,284,443
STARCH-PHOSPHATE REACTION PRODUCTS AND METHOD OF MAKING SAME

Julian A. Hay, Gary, Ind., and Forrest J. Mork, Calumet City, Ill., assignors to American Maize-Products Company, a corporation of Maine

Filed Apr. 17, 1963, Ser. No. 273,777
9 Claims. (Cl. 260—233.5)



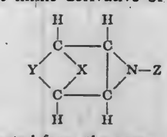
1. In a process of reacting starch with an inorganic phosphate salt by heating starch granules containing at least one absorbed alkali metal phosphate salt and not more than 20% by weight of moisture, the steps which comprise passing a stream of hot inert gas through a bed of said starch granules at a velocity sufficient to fluidize and heat said granules to reaction temperatures and maintaining said granules in the fluidized and heated state until the desired reaction between the starch and phosphate salt is completed.

3,284,444
AZIRIDINE DERIVATIVES

John E. Franz, Crestwood, and Carl Osuch, Kirkwood, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Jan. 4, 1963, Ser. No. 249,313
2 Claims. (Cl. 260—239)

1. An ethylene imine derivative of the structure,



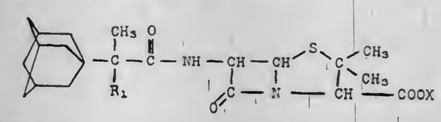
wherein X is selected from the group consisting of sulfur, oxygen, NH and CH_2; Y is a divalent hydrocarbon containing at least two and not more than seven carbon atoms; Z is a member of the group consisting of $—SO_2R$, —PORR' and —PSRR'; and R and R' are members of the group consisting of alkyl, phenyl, phenylalkyl, phenoxy and phenylalkoxy.

3,284,445
α-SUBSTITUTED-1-ADAMANTYLMETHYL PENICILLINS

Edward C. Hermann, Newark, and Jack A. Snyder, Claymont, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 17, 1964, Ser. No. 411,689
4 Claims. (Cl. 260—239.1)

1. A compound selected from the group consisting of compounds of the formula



where

R_1 selected from the group consisting of hydrogen and methyl; and

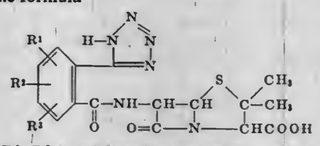
X is selected from the group consisting of hydrogen and a non-toxic anion.

3,284,446
ORTHO-(5-TETRAZOLYL) PHENYLPENICILLINS

Raymond U. Lemieux and John Howard, Edmonton, Alberta, Canada, assignors to R & L Molecular Research Ltd., Edmonton, Alberta, Canada, a body corporate of Alberta

No Drawing. Filed Nov. 24, 1964, Ser. No. 413,645
7 Claims. (Cl. 260—239.1)

1. A member selected from the group consisting of an acid of the formula



wherein R^1, R^2 and R^3 each represent a member selected from the group consisting of hydrogen, fluoro, chloro, bromo, iodo, trifluoromethyl, (lower)alkyl, (lower)alkoxy, methylenedioxy, nitro, methylsulfonyl and (lower)

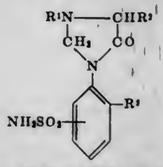
alkylmercapto; and nontoxic pharmaceutically acceptable salts thereof.

3,284,447
IMIDAZOLIDINONESULFONAMIDE DERIVATIVES

Fuyuki Kusuda, Kyoto-fu, Yoshiharu Matsuo, Kyoto, and Eisuke Seto, Kyoto-fu, Japan, assignors to Nippon Shinyaku Co. Ltd., Kyoto, Japan, a corporation of Japan

No Drawing. Filed Mar. 7, 1966, Ser. No. 532,091
Claims priority, application Japan, Mar. 31, 1965, 40/19,162, 40/19,163
6 Claims. (Cl. 260—239.9)

1. An imidazolidinonesulfonamide derivative of the formula:



in which R^1 is lower alkyl and R^2 and R^3 are each hydrogen or lower alkyl.

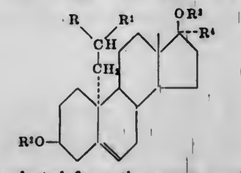
4. The compound 1-(4-sulfamoylphenyl)-3-methyl-4-isopropylimidazolidinone-5.

3,284,448
19-SUBSTITUTED-10α-ANDROSTANES

Alexander D. Cross, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed June 15, 1964, Ser. No. 375,383
23 Claims. (Cl. 260—239.55)

1. A compound of the following formula:



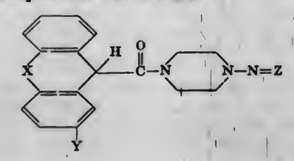
wherein R is selected from the group consisting of hydroxyl, tosyloxy, a hydrocarbon carboxylic acyloxy group of less than 12 carbon atoms, and a cyano group; R^1 is hydrogen; R and R^1, together, are selected from the group consisting of an oxygen atom and a methylene grouping; R^2 and R^3 are selected from the group consisting of hydrogen, a hydrocarbon carboxylic acyl group of less than 12 carbon atoms and a tetrahydropyranyl grouping; and R^4 is a member of the group consisting of hydrogen, lower alkyl, lower alkenyl and lower alkinyl.

3,284,449
HYDRAZONES OF 1-AMINO-4-XANTHENECARBONYLPIPERAZINES

John W. Cusic, Skokie, and Peter Yonan, Chicago, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Dec. 29, 1964, Ser. No. 422,057
5 Claims. (Cl. 260—240)

1. A compound of the formula



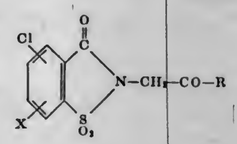
wherein X is selected from the group consisting of O and S; Y is selected from the group consisting of hydrogen and chlorine; and Z is selected from the group consisting of fluoren-9-ylidene and =CHR wherein R is selected from the group consisting of phenyl, tolyl, halophenyl, hydroxyphenyl, methoxyphenyl, methylenedioxyphenyl, and pyridyl.

3,284,450
CYCLIZED o-CARBOXYBENZENESULFONIC ACID DERIVATIVES AND METHOD OF PREPARING THE SAME

Adriaan Kraaijeveld, Oegstgeest, and Antony M. Akkerman, Amsterdam, Netherlands, assignors to N.V. Nederlandsche Combinatie voor Chemische Industrie, Amsterdam, Netherlands, a limited-liability company of the Netherlands

No Drawing. Filed Sept. 16, 1963, Ser. No. 309,595
Claims priority, application Netherlands, Sept. 21, 1962, 283,525
7 Claims. (Cl. 260—243)

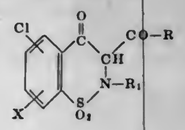
1. A compound having the formula:



in which:

X is selected from the class consisting of hydrogen and the sulfamoyl group, and R is selected from the class consisting of alkyl having up to three carbon atoms, biphenylyl, phenyl substituted by halogen having a maximum atomic weight of 80, and 1,3-benzodioxole.

2. Compounds having the formula:



in which:

X is selected from the class consisting of hydrogen and the sulfamoyl group;

R is selected from the class consisting of alkyl having up to 12 carbon atoms, phenyl-lower-alkyl, phenyl, biphenylyl, phenyl subsituted by halogen having a maximum atomic weight of 80, phenyl substituted by a maximum of two aliphatic ether functions in which a maximum of 2 carbon atoms are involved, and cycloalkyl and cycloalkyl-alkyl containing up to 8 carbon atoms; and

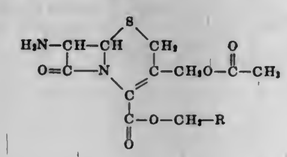
R_1 is selected from the class consisting of hydrogen, and alkyl, alkenyl, alkynyl, aralkyl, and keto-substituted alkyl and aralkyl radicals, containing up to 9 carbon atoms.

3,284,451
ACTIVATED ESTERS OF 7-AMINO-CEPHALOSPORANIC ACID

Lee C. Cheney, Fayetteville, John C. Godfrey, Syracuse, Leonard B. Crast, Jr., North Syracuse, and Joyce R. Luttinger, Syracuse, N.Y., assignors to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 22, 1965, Ser. No. 474,150
8 Claims. (Cl. 260—243)

1. Activated esters of 7-aminocephalosporanic acid of the formula



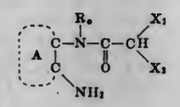
wherein R represents (lower)alkanoyl, N-phthalimido, benzoyl, naphthoyl, furoyl, thenoyl, nitrobenzoyl, halobenzoyl, methylbenzoyl, methanesulfonylbenzoyl or phenylbenzoyl; and acid addition salts thereof.

3,284,452
1:4-DIAZINE PREPARATION AND CERTAIN PTERIDENES PRODUCED THEREBY

Paul Schmidt, Therwil, Kurt Eichenberger, Basel, Alberto Rossi, Oberwil, Basel-Land, and Max Wilhelm, Basel, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

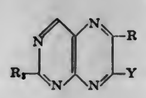
No Drawing. Filed June 18, 1963, Ser. No. 288,625
Claims priority, application Switzerland, June 22, 1962, 7,533/62; Sept. 7, 1962, 10,632/62; Oct. 12, 1962, 12,055/62; May 31, 1963, 6,828/63
30 Claims. (Cl. 260—247.5)

1. A process for the manufacture of 1:4-diazines, which comprises reacting a cyclic compound of the formula



in which A stands for a cyclic ring selected from the group consisting of an alicyclic ring, a carbocyclic aromatic ring and a heterocyclic ring, R_o stands for a member selected from the group consisting of hydrogen and hydrocarbon, X_1 and X_2 each stands for a member selected from the group consisting of hydroxyl, etherified hydroxyl, esterified hydroxyl, halogen and, when taken together, for the oxo group, with a compound selected from the group consisting of ammonia and an amine, and dehydrogenating the compound obtained.

17. A compound of the formula



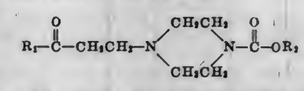
in which R represents hydroxyl, Y represents a member selected from the group consisting of amino, lower alkylamino, di-lower alkylamino, piperidino, pyrrolidino, morpholino and piperazino and R_2 stands for a member selected from the group consisting of hydrogen and lower alkyl.

3,284,453
4-(2-AROYLETHYL)-1-PIPERAZINECARBOXYLIC ACID ESTERS

Andrew Stephen Tomcufcik, Old Tappan, N.J., Joyce Margaret Craig, Greenwich, Conn., and Stuart Dwight Willson, Park Ridge, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Sept. 29, 1964, Ser. No. 400,248
19 Claims. (Cl. 260—268)

1. A compound of the formula:



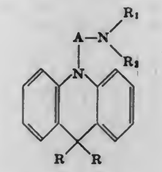
wherein R· is selected from the group consisting of lower alkyl phenyl, hydroxy phenyl, lower alkoxy phenyl, halophenyl, nitrophenyl, aminophenyl, loweralkanoylaminophenyl or trifluoromethylphenyl, naphthyl, phenanthryl, biphenylyl, thienyl, pyridyl and furyl, R_2 is selected from the group consisting of lower alkyl and phenyl(lower)-alkyl.

3,284,454
PHARMACOLOGICALLY ACTIVE ACRIDANS AND THEIR SALTS

Marc Häring, Istvan Molnar, and Theodor Wagner-Jauregg, all of Zofingen, Switzerland, assignors to Siegfried Aktiengesellschaft, Zofingen, Switzerland, a corporation of Switzerland

No Drawing. Filed Dec. 13, 1962, Ser. No. 244,249
Claims priority, application Switzerland, Dec. 18, 1961, 14,646/61; Aug. 3, 1962, 9,307/62
3 Claims. (Cl. 260—279)

1. A chemical compound selected from the class consisting of a free base and its pharmaceutically acceptable nontoxic acid addition salts, said free base having the formula



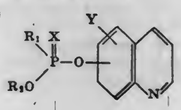
in which R is lower alkyl having 1–4 carbon atoms; A is alkylene having 2–3 carbon atoms; and R_1 and R_2, when individual groups, are selected from the group consisting of lower alkyl and hydrogen, only one of said R_1 and R_2 being hydrogen, and when R_1 and R_2 are part of a chain, they are ethylene groups linked together by a group selected from the class consisting of alkyl-bearing nitrogen atom and hydroxyalkyl-bearing nitrogen atom to form a piperazine ring.

3,284,455
PHOSPHONIC AND THIONOPHOSPHONIC QUINOLYL ESTERS

Christa Fest, Wuppertal-Elberfeld, and Gerhard Schrader, Wuppertal-Cronenberg, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Oct. 11, 1963, Ser. No. 315,673
Claims priority, application Germany, Oct. 17, 1962, F 38,063
10 Claims. (Cl. 260—283)

1. A compound of the formula



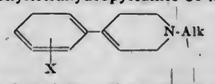
in which R_1 is a member selected from the group consisting of lower alkyl up to 4 carbon atoms, phenyl and chlorophenyl, R_2 is lower alkyl having up to 4 carbon atoms, X is a member selected from the group consisting of oxygen and sulfur and Y is a member selected from the group consisting of hydrogen and halogen.

3,284,456
METHOD OF PRODUCING PYRIDINE, 2-PICOLINE AND 4-PICOLINE
Akira Shimizu, Hirakata, and Kiyonori Igarashi, Joto-ku, Osaka, Japan, and Junichi Hashimoto, deceased, late of Osaka, Japan, by Shigako Hashimoto, executor, Joto-ku, Osaka, Japan, assignors to Koei Chemical Co., Ltd., Doshomachi, Higashi-ku, Osaka, Japan
No Drawing. Filed Nov. 12, 1963, Ser. No. 323,160
3 Claims. (Cl. 260—290)

1. In a process for producing pyridine and pyridine bases by heating to a temperature of from 400° to 550° C. a gaseous reaction mixture of formaldehyde, acetaldehyde, and ammonia in the presence of a pyridine catalyst selected from the group consisting of silica, alumina, silica/alumina, and silica/magnesia, the improvement wherein the amount of acetaldehyde is not less than 5.0 moles and not more than 25.0 moles per mole of formaldehyde, whereby pyridine, 2-picoline, and 4-picoline are concurrently produced without formation of a substantial amount of 3-picoline.

3,284,457
1-LOWER ALKYL-4-SUBSTITUTED PHENYL-1,2,3,6-TETRAHYDROPYRIDINES AND ACID ADDITION SALTS
Helmut Beschke, Frankfurt am Main, and Wilhelm Alfons Schuler, Bad Homburg von der Hohe, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany
No Drawing. Filed Jan. 8, 1965, Ser. No. 424,194
Claims priority, application Germany, Jan. 17, 1964, D 43,367
3 Claims. (Cl. 260—290)

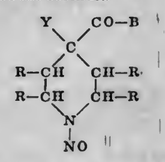
1. A compound selected from the group consisting of substituted phenyltetrahydropyridines of the formula



wherein X is selected from the group consisting of halogen atoms and trifluoromethyl and Alk is alkyl of 1 to 6 carbon atoms and its acid addition salts with pharmaceutically acceptable acids.

3,284,458
1-NITROSOPIPERIDINES
Bill Elpern, Lafayette Hill, Pa., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 19, 1963, Ser. No. 303,179
12 Claims. (Cl. 260—294.3)

1. A compound of the formula

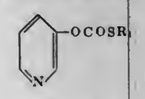


wherein B is a member of the group consisting of lower-alkoxy, lower-alkyl, phenyl-lower-alkyl and di-(lower-alkyl)amino-lower-alkyl, R is a member of the group consisting of H and lower-alkyl, and Y is a member of the group consisting of H, phenyl-lower-alkyl, phenyl, naphthyl, thienyl and phenyl substituted with a member of the class consisting of lower-alkyl, lower-alkoxy, lower-alkylmercapto, lower-alkanesulfonyl, halo, di-(lower-alkyl)amino, lower-alkanoylamino, trifluoromethyl and hydroxy.

5. 4-ethoxycarbonyl-1-nitroso-4-phenylpiperidine.

3,284,459
PYRIDYLTHIOLCARBONATES AND PROCESS FOR THEIR PRODUCTION
Godfrey Wilbert, Carmel, and Henry Wetstein, Monroe, N.Y., assignors to Nepera Chemical Co., Inc.
No Drawing. Filed Nov. 27, 1964, Ser. No. 414,476
3 Claims. (Cl. 260—294.8)

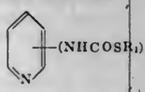
1. A compound of the formula:



wherein R_1 is lower alkyl or phenyl.

3,284,460
PYRIDYLTHIOLCARBAMATES AND PROCESS FOR THEIR PRODUCTION
Godfrey Wilbert, Carmel, and Henry Wetstein, Monroe, N.Y., assignors to Nepera Chemical Co., Inc.
No Drawing. Filed Dec. 4, 1964, Ser. No. 416,109
6 Claims. (Cl. 260—294.8)

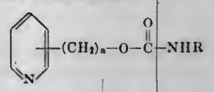
1. A compound of the formula:



wherein the position para to the nitrogen is unsubstituted and R_1 is lower alkyl or phenyl and n is 1 or 2.

3,284,461
O-PYRIDYLALKYL-N-ALKENYL URETHANES AND PROCESS FOR THEIR PRODUCTION
Godfrey Wilbert, Carmel, and Seymour Hyden, Spring Valley, N.Y., assignors to Nepera Chemical Co., Inc.
No Drawing. Filed Nov. 27, 1964, Ser. No. 414,466
3 Claims. (Cl. 260—295)

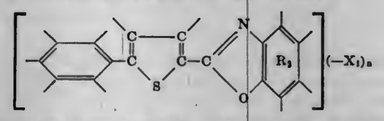
1. A compound of the formula



wherein R is lower alkenyl and n is 1 or 2.

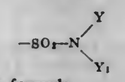
3,284,462
2-AROXAZOLYL-5-ARYL-THIOPHENE COMPOUNDS
Peter Liechti, Binningen, Basel-Land, Leonardo Guglielmetti, Basel, Erwin Maeder, Aesch, Basel-Land, and Emil Adolf Siegrist, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company
No Drawing. Filed Nov. 23, 1964, Ser. No. 413,287
Claims priority, application Switzerland, Nov. 25, 1963, 14,454/63
16 Claims. (Cl. 260—307)

1. A thiophene compound of the formula



wherein the benzene ring R_3 may contain a member selected from the group consisting of a phenyl group and

1 to 2 alkyl groups having from 1 to 4 C-atoms, n stands for a whole number from 1 to 2, and X_1 indicates a member selected from the group consisting of a sulfonyl chloride, a sulfonyl fluoride group, a lower alkyl sulfonate group, a phenyl sulfonate group, a sulfonamide group of the formula



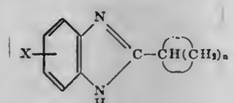
and a radical of the formula

$$-SO_2-W_1$$

wherein Y stands for a member selected from the group consisting of a hydrogen atom and a hydroxyethyl group and Y_1 stands for a member selected from the group consisting of a hydrogen atom, an alkyl, alkenyl, hydroxyalkyl, carboxyalkyl and an alkoxyalkyl group each containing up to 20 C-atoms, an amino alkyl group which may be further substituted on the nitrogen atom, wherein W_1 stands for a phenyl radical, and wherein the remaining valencies carry hydrogen atoms.

3,284,463
2-CYCLOALKYL-HALOBENZIMIDAZOLES
Harry Goldsmith and Robert F. Crawford, La Mirada, Calif., assignors to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada
No Drawing. Filed Jan. 22, 1964, Ser. No. 339,334
5 Claims. (Cl. 260—309.2)

1. A compound of the formula



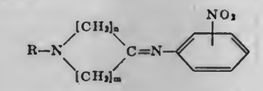
where X is halogen radical selected from bromine and chlorine and n is an integer selected from 2 and 3.

3,284,464
3,5-BIS(TRIFLUOROMETHYL)PYRAZOLE
Milton Wolf, Chester, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 26, 1963, Ser. No. 333,623
1 Claim. (Cl. 260—310)

3,5-bis(trifluoromethyl)pyrazole.

3,284,465
NITROPHENYLIMINO DERIVATIVES OF PYRROLIDINE AND PIPERIDINE
Daniel A. Scola, Andover, Mass., assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Feb. 24, 1964, Ser. No. 347,030
5 Claims. (Cl. 260—326.85)

1. A nitrophenylimino derivation of a member selected from the class consisting of pyrrolidine and piperidine having the formula



in which n and m are integers of from 0 to 4, the sum of n and m is from 3 to 4, and R is an unsubstituted saturated hydrocarbon alkyl radical of from 1 to 6 carbon atoms.

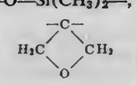
5. 1-methyl-2-(4-nitrophenylimino)pyrrolidine.

3,284,466
PREPARATION OF MONOMERIC DISULFIDES
Norman A. Rosenthal, Tuxedo, N.Y., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
No Drawing. Filed July 12, 1963, Ser. No. 294,756
12 Claims. (Cl. 260—327)

1. A method of making a cyclic disulfide which comprises slowly adding an alkali metal sulfide to a solution of an organic compound having the general formula

$$X-S-CH_2-R-CH_2-S-X$$

wherein R is a member selected from the group consisting of $-Si(CH_3)_2-O-Si(CH_3)_2-$,



and

$$-[(CH_2)_p-Y]_m-(CH_2)_p-$$

wherein Y is a member selected from the group consisting of —O—, —S—, —NH— and —CH=CH—, n is an integer of 0 to 7, m is an integer of 0 to 2 and p is an integer of 0 to 2, provided that the total number of carbon, oxygen, sulfur and nitrogen atoms in said member is 1 to 7, and wherein X is a member selected from the group consisting of $-SO_3Na$, —CN, $-NH_2$, —Cl, —Br, —I, —SH and $-C(NH_2)NH$, to effect ring closure of the aliphatic radical to form a cyclic disulfide of the structure



and removing said cyclic disulfide from said solution, the rate of addition of said alkali metal sulfide being regulated to prevent substantial polymerization of said cyclic disulfide before it is removed from said solution.

3,284,467
POLYCHLOROETHYLMERCAPTOMETHANE - SULFENYL CHLORIDES, POLYHALO - 1,3 - DITHIOLANES AND THEIR PREPARATION
Harold M. Pitt, Lafayette, and Harry Bender, El Cerrito, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 6, 1963, Ser. No. 321,664
11 Claims. (Cl. 260—327)

1. A process for producing a new class of sulfur containing compounds of the formula

$$R-S-CX_2-S-X$$

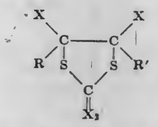
wherein X is halogen and R is haloalkyl, comprising reacting unsaturated hydrocarbons selected from the group consisting of alkene and alkyne, a halogen and carbon disulfide in the presence of a free radical initiator.

3. A process for producing a new class of sulfur containing compounds of the formula

$$R-S-CX_2-S-R'$$

wherein X is halogen, R and R' are haloalkyl, comprising reacting unsaturated alkenes, a halogen and carbon disulfide in the presence of a free radical initiator.

5. A process for producing 1,3-dithiolanes represented by the following formula



wherein X is halogen, R and R' are selected from the group consisting of hydrogen, alkyl, haloalkyl, aralkyl, and haloaralkyl, comprising reacting an unsaturated alkyne, a halogen and carbon disulfide in the presence of a free radical initiator.

3,284,468
SUBSTITUTED XYLENEDIOLS

Fred Keller, Northridge, Calif., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

No Drawing. Filed May 24, 1965, Ser. No. 458,367
17 Claims. (Cl. 260—332.3)

1. α-(Di-lower alkylamino-lower alkyl)-o-xylene-α,α'-diol.

3,284,469
SUBSTITUTED PHTHALANS

Fred Keller, Northridge, Calif., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

No Drawing. Filed May 24, 1965, Ser. No. 458,475
12 Claims. (Cl. 260—332.3)

1. 1-(di-lower alkylamino-lower alkyl)phthalan.

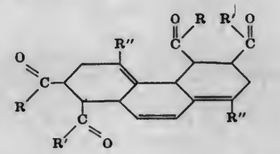
3,284,470
OCTAHYDROPHENANTHRENETETRACARBOXYLIC ACIDS, ANHYDRIDES, ESTERS AND THE PROCESS OF THEIR PREPARATION

Hugh A. Farber, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 21, 1965, Ser. No. 465,709
12 Claims. (Cl. 260—346.3)

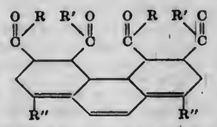
1. A compound having ones of the formulas

I.



and

II.



wherein R and R' when taken separately are hydroxy or alkoxy of 1–8 carbon atoms and when taken together R and R' constitute an oxygen atom, and wherein R'' is hydrogen or methyl.

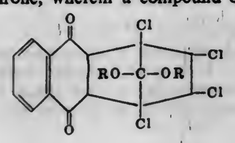
11. A process for making the compound of claim 1 which comprises reacting by contacting at least about two moles of a maleic acid compound with a mole of at least one of the compounds m-divinylbenzene, p-divinylbenzene, m-diisopropenylbenzene and p-diisopropenyl benzene in liquid phase at a temperature of 100–250° C.

3,284,471
PREPARATION OF 1,2,3,4-TETRACHLORO-9-ANTHRONE

Paul Kniel, Muttenz, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed Jan. 28, 1963, Ser. No. 254,465
Claims priority, application Switzerland, Feb. 2, 1962, 1,309/62
6 Claims. (Cl. 260—351)

1. A process for the manufacture of 1,2,3,4-tetrachloro-9-anthrone, wherein a compound of the formula



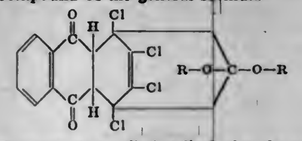
in which R is alkyl is heated to temperatures of at least 100° C. with a hydrohalic acid.

3,284,472
PROCESS FOR THE PREPARATION OF 2,3,4-TRICHLOROANTHRAQUINONE - 1 - CARBOXYLIC ESTERS

Paul Kniel, Muttenz, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed Jan. 28, 1963, Ser. No. 254,464
Claims priority, application Switzerland, Feb. 2, 1962, 1,310
7 Claims. (Cl. 260—376)

1. A process for preparing 2,3,4-trichloroanthraquinone-1-carboxylic acid alkyl esters which comprises reacting a compound of the general formula



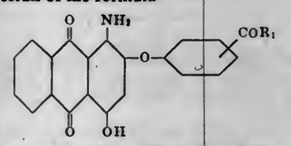
wherein R represents an alkyl radical of at the most 5 carbon-atoms in an organic solvent inert toward halogenation with a member selected from the group consisting of chlorine and bromine, under conditions to produce hydrogen halide and recovering the corresponding alkyl ester of 2,3,4-trichloroanthraquinone-1-carboxylic acid wherein the reaction is carried out at a temperature of from about 50° C. to the boiling point of the solvent employed.

3,284,473
1-AMINO-4-HYDROXY-2-PHENOXY-ANTHRAQUINONES

Visvanathan Ramanathan, Basel, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed Apr. 24, 1963, Ser. No. 275,199
Claims priority, application Switzerland, Apr. 28, 1962, 5,084/62
6 Claims. (Cl. 260—376)

1. A dyestuff of the formula



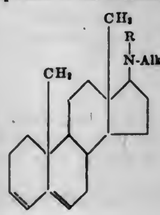
in which R_1 represents a member selected from the group consisting of lower alkoxy, methyl and phenyl groups, and the group —COR_1— is in meta-position or para-position to the oxygen bridge atom.

3,284,474
17β-N-(DIALKYLAMINOALKYL)-AMINOANDROST-5-ENES, 3-DEHYDRO COMPOUNDS CORRESPONDING AND DERIVATIVES THEREOF

Paul D. Klimstra, Northbrook, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Feb. 8, 1965, Ser. No. 431,169
9 Claims. (Cl. 260—397)

1. A compound of the formula



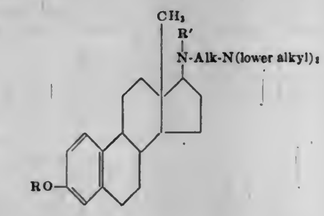
wherein R is selected from the group consisting of hydrogen, a formyl and a lower alkyl radical, Alk is a lower alkylene radical, and the dotted line indicates the optional presence of a doubly-bonded linkage between carbon atoms 3 and 4.

3,284,475
17β - (DIALKYLAMINOALKYL)AMINOESTRA - 1,3,5(10)-TRIEN-3-OLS, ALKYL AND ACYL DERIVATIVES THEREOF

Paul D. Klimstra, Northbrook, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Feb. 8, 1965, Ser. No. 431,183
11 Claims. (Cl. 260—397.4)

1. A compound of the formula



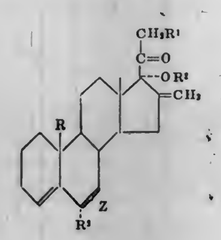
wherein R is a member of the class consisting of hydrogen, a formyl and a lower alkyl radical, R' is selected from the group consisting of hydrogen, a formyl and a methyl radical and Alk is a lower alkylene radical.

3,284,476
3-UNSUBSTITUTED, 16-METHYLENE PREGNENES AND PREGNADIENES

Fred A. Kincl, Stockholm, Sweden, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,274
21 Claims. (Cl. 260—397.4)

1. A compound represented by the general formula:



wherein R is selected from the group consisting of hydrogen and methyl, R' is selected from the group consisting of hydrogen, fluorine and chlorine, R^2 is selected from the group consisting of hydrogen and a hydrocarbon carboxylic acyl group containing less than 12 carbon atoms, R^3 is selected from the group consisting of hydrogen, methyl, fluorine and chlorine, and Z is selected from the group consisting of a double bond and a saturated linkage between the carbon atoms at the 6- and 7-positions.

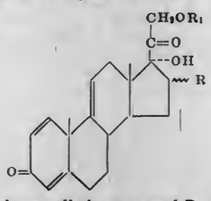
2. 16-methylene-Δ^4-pregnen-17α-ol-20-one.

3,284,477
DIURETIC 1,4,9(11)-PREGNATRIENES

Richard C. Rausser, Union, and Eugene P. Oliveto, Glen Ridge, N.J., assignors to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Filed July 10, 1963, Ser. No. 294,150
5 Claims. (Cl. 260—397.45)

1. A compound having the formula:



wherein R is a lower alkyl group and R_1 is a member of the group consisting of H and lower alkanoyl.

3,284,478
PROCESS FOR THE OXIDATIVE BLEACHING OF ESTER WAXES

Robert Schirmer, Aystetten, near Augsburg, Ludwig Jürgen-Lohmann and Heinrich Voit, Augsburg, and Friedrich Zinnert, Gersthofen, near Augsburg, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

Filed July 2, 1963, Ser. No. 292,425
Claims priority, application Germany, July 6, 1962, F 37,244
8 Claims. (Cl. 260—423)

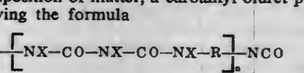
1. In the process for the oxidative bleaching of ester waxes by treating them with chromosulfuric acid the steps which comprise emulsifying the ester wax and the chromosulfuric acid in a ratio such that the proportion by volume of the wax phase to the acid aqueous phase is 1:X, in which proportion by volume of acid aqueous phase X is at most equal to 3, the average CrO_3 concentration in the reaction space not exceeding 30 g. per liter of the acid aqueous solution used, breaking the emulsion, and separating the acid aqueous phase from the wax phase after their disintegration.

3,284,479
ORGANIC POLYISOCYANATES

Erwin Windemuth, Kuno Wagner, and Otto Bayer, Leverkusen, and Hans Joachim Hennig, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Nov. 26, 1963, Ser. No. 326,224
Claims priority, application Germany, Nov. 29, 1962, F 38,417
4 Claims. (Cl. 260—453)

1. As a composition of matter, a carbamyl biuret polyisocyanate having the formula



wherein X is selected from the group consisting of hydrogen and —CO—NX—R—NCO and at least one of said group members is —CO—NX—R—NCO, R is a divalent organic radical obtained by removing the —NCO groups from an organic diisocyanate selected from the group consisting of tetramethylene diisocyanate, hexamethylene diisocyanate, decamethylene diisocyanate, cyclohexane-1,4-diisocyanate, dicyclohexylmethane-4,4'-diisocyanate, meta-xylylene diisocyanate, para-xylylene diisocyanate, meta-phenylene diisocyanate, para-phenylene diisocyanate, a diphenylmethane-4,4'-diisocyanate, 1,3-diisocyanato-methyl cyclobutane, toluylene-2,4-diisocyanate, toluylene-2,6-diisocyanate, 1-chlorobenzene-2,4-di-

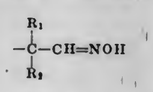
isocyanate, 1-methyl cyclohexane-2,4-diisocyanate and 1-methyl cyclohexane-2,6-diisocyanate and *n* is a positive integer of 1 to 4.

3,284,480
STABILIZATION OF ORGANIC ISOCYANATES WITH ORGANIC ALDOXIMES

David T. Manning, South Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed May 9, 1963, Ser. No. 279,338
10 Claims. (Cl. 260—453)

1. A solution of organic isocyanate and a sufficient amount of organic compound bearing a



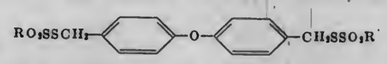
group to retard discoloration of the organic isocyanate where R_1 and R_2 are hydrogen or a 1–12 carbon atom alkyl group.

3,284,481
α,α′-BIS(SUBSTITUTED SULFONYLTHIO)-p-TOLYL ETHERS

Joseph E. Dunbar, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Oct. 28, 1963, Ser. No. 319,493
3 Claims. (Cl. 260—453)

1. A compound corresponding to the formula



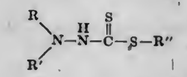
wherein R represents a member of the group consisting of lower alkyl, phenyl, lower alkylphenyl, halophenyl, and lower alkyl-halophenyl, wherein halo represents a member of the group consisting of chlorine, bromine and iodine.

3,284,482
CHLOROBENZYL CARBAZATES

John J. D'Amico, Charleston, W. Va., and Philip C. Hamm, Webster Groves, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Original application July 30, 1962, Ser. No. 213,158. Divided and this application Oct. 13, 1965, Ser. No. 509,666
6 Claims. (Cl. 260—455)

1. A compound of the structure



where R is selected from the group consisting of hydrogen, lower alkyl and hydroxy lower alkyl, R′ is selected from the group consisting of hydrogen and lower alkyl and R″ is chloro-substituted benzyl selected from the group consisting of o-chlorobenzyl, p-chlorobenzyl, 2,5-dichlorobenzyl, 2,6-dichlorobenzyl, 3,4-dichlorobenzyl, 2,3,6-trichlorobenzyl and 2,4,5,6-tetrachlorobenzyl.

3,284,483
PROCESS FOR PREPARING AROMATIC NITRILES

William E. Erner, Wilmington, Del., assignor to Air Products and Chemicals, Inc., Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Feb. 21, 1963, Ser. No. 260,308
9 Claims. (Cl. 260—465)

1. The method for preparing aromatic nitriles which comprises reacting a nuclearly halogenated carbocyclic aromatic compound having 1 to 4 halogen atoms substituents selected from the group consisting of chlorine, bromine and iodine with at least a stoichiometric amount of hydrogen cyanide in vapor phase at a space rate between 0.1 and 5.0 L.H.S.V., and at a temperature in the range of 700 to 1100° F. in the presence of a metal cyanide complex catalyst to effect the replacement of nuclearly substituted halogen by cyanide, wherein said catalyst is prepared by reacting a metal salt selected from the group consisting of salts of iron, nickel and cobalt with hydrogen cyanide.

3,284,484
FLUORINATED AROMATIC NITRILES AND PREPARATION THEREOF

Leon Jerzy Belf and Michael William Buxton, Avonmouth, England, assignors to The National Smelting Company Limited, Avonmouth, England

No Drawing. Filed Apr. 2, 1963, Ser. No. 269,865
Claims priority, application Great Britain, Apr. 4, 1962, 12,995/62
7 Claims. (Cl. 260—465)

1. 1,2-dicyano-3,4,5,6-tetrafluorobenzene.

3. A method for preparing a fluorinated nitrile from the group consisting of pentafluorobenzonitrile; 1,2-dicyanotetrafluorobenzene; 1,3-dicyanotetrafluorobenzene; and 1,4 dicyanotetrafluorobenzene, comprising heating a compound from the group consisting of C_6F_5Cl, C_6F_5Br, C_6F_5I, $C_6F_4Cl_2$, $C_6F_4Br_2$ and $C_6F_4I_2$ with cuprous cyanide in a polar aprotic solvent selected from the group consisting of dimethylformamide and N-methylpyrrolidone at a temperature between 100° C. and 200° C.

3,284,485
ORGANOPOLYSILOXANES CURED WITH ORGANOSILYL TRIS-CARBAMATES

John C. Goossens, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Dec. 20, 1963, Ser. No. 332,297
3 Claims. (Cl. 260—46.5)

1. A room temperature curing organopolysiloxane composition comprising a liquid silanol chain-stopped polydiorganosiloxane having the formula:

$$HO[Y_2SiO]_nH$$

and an organosilyl tris-carbamate having the formula:

$$RSi(OCNR'R'')_3$$

where Y and R are members selected from the class consisting of monovalent hydrocarbon radicals, halogenated monovalent hydrocarbon radicals and cyanoalkyl radicals, R′ is a member selected from the class consisting of hydrogen and lower alkyl radicals and R″ is a lower alkyl radical and *n* has a value of at least 10, said organosilyl tris-carbamate being present in an amount equal to from 0.25 to 5 moles per mole of silicon-bonded hydroxyl groups in said polydiorganosiloxane.

3,284,486
PROCESS FOR THE PRODUCTION OF PYRETHRIC ACID

Masanao Matsui and Yasuhiro Yamada, Tokyo, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed May 21, 1963, Ser. No. 282,147
Claims priority, application Japan, May 25, 1962, 37/21,494, 37/21,495, 37/21,496
8 Claims. (Cl. 260—468)

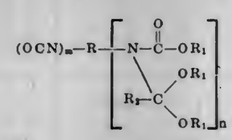
1. A process for the production of pyrethric acid, comprising heating tert.-butyl pyrethrate at a temperature of about 200–280° C. for de-isobutenation to yield pyrethric acid.

3,284,487
ADDUCTS OF ORTHOCARBOXYLATES AND ISOCYANATES AND THEIR PREPARATION

Hanswilli von Brachel, Koln-Sulz, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Aug. 24, 1962, Ser. No. 219,118
Claims priority, application Germany, Aug. 29, 1961, F 34,805
14 Claims. (Cl. 260—471)

1. A composition having the following general formula:



wherein R is selected from the group consisting of aliphatic, cycloaliphatic and aromatic radicals; the R_1's are selected from the group consisting of lower alkyl, cycloalkyl having from 4 to 6 carbon atoms, and mononuclear aryl radicals; R_2 is selected from the group consisting of hydrogen, lower alkyl and mononuclear aryl radicals; *m* is in integer of from 0 to 3; *n* is an integer of from 1 to 4, and the sum of *m* and *n* is equal to the valence of R.

9. A method for the preparation of a urethane which comprises contacting an orthocarboxylic acid ester with an organic isocyanate of the formula

$$R(NCO)_m$$

wherein R is selected from the group consisting of aliphatic, cycloaliphatic and aromatic radicals and *m* is an integer of from 1 to 4, in the presence of a Friedel-Crafts catalyst, said orthocarboxylic acid ester derived from an alcohol containing at least one hydroxyl group and having from 1 to 18 carbon atoms and an orthocarboxylic acid.

3,284,488
PROCESS FOR PRODUCING HALF ESTER ACYL CHLORIDES OF AROMATIC DICARBOXYLIC ACIDS

Gustav Renckhoff, Witten (Ruhr), and Wolfgang Wolfes, Witten-Bommern, Germany, assignors to Chemische Werke Witten G.m.b.H., Witten (Ruhr), Germany

No Drawing. Filed Dec. 12, 1961, Ser. No. 158,878
Claims priority, application Germany, Dec. 29, 1960, C 23,058
9 Claims. (Cl. 260—475)

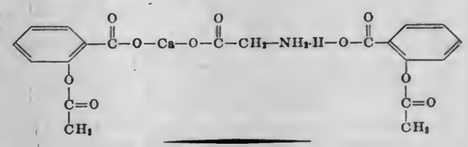
1. A process for the production of half ester acyl chlorides of benzene dicarboxylic acids and the nuclear-chlorine substituted derivatives thereof which comprises heating an ester selected from the group consisting of trichloromethylbenzoic acid esters of primary alkanols containing from 1 to 5 carbon atoms and nuclear-chlorine substituted trichloromethylbenzoic acid esters of primary alkanols containing from 1 to 5 carbon atoms with a chloroacetic acid selected from the group consisting of monochloroacetic acid, dichloroacetic acid and trichloroacetic acid in the presence of a coordinately unsaturated inorganic polyhalogen compound as catalyst at a temperature of between about 50° and 160° C.

3,284,489
CALCIUM MONO-GLYCINE ACETYLSALICYLATE

Alexander Galat, 126 Buckingham Road, Yonkers, N.Y.

No Drawing. Filed Aug. 13, 1962, Ser. No. 216,294
1 Claim. (Cl. 260—480)

The compound:

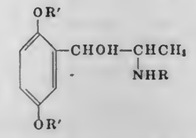


3,284,490
1-(2,5-DIALKOXYPHENYL)-2-TERTIARY-ALKYLAMINO PROPANOLS

Richard Baltzly, Scarsdale, and Nariman B. Mehta, Valhalla, N.Y., assignors to Burroughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, N.Y., a corporation of New York

No Drawing. Filed July 10, 1964, Ser. No. 381,881
9 Claims. (Cl. 260—501)

1. A compound selected from the class consisting of a free base and its acid addition salts with pharmaceutically acceptable acids, said free base being represented by the formula



wherein R′ is selected from the class consisting of methyl, ethyl and propyl, and R is selected from the class consisting of the secondary and tertiary alkyls having 3 to 7 carbon atoms and the sum of the carbon atoms of R and the two R″s is an integer from 5 to 9.

3,284,491
PREPARATION OF A PERACID IN A SINGLE LIQUID PHASE

Malcolm Korach and Donald R. Nielsen, Corpus Christi, Tex., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 5, 1963, Ser. No. 293,080
8 Claims. (Cl. 260—502)

1. In the process of preparing a peracid by reacting hydrogen peroxide with a carboxylic acid and distilling water and water immiscible solvent which forms an azeotrope with water from the resulting reaction mixture, the improvement which comprises conducting the distillation from a mixture which contains sufficient inert water soluble organic solvent that no layer of aqueous phase can separate from the organic liquid phase.

3,284,492
PREPARATION OF CARBOXYLIC ACIDS

Maximilian I. Fremery and Ellis K. Fields, Chicago, Ill., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed July 13, 1962, Ser. No. 209,746
17 Claims. (Cl. 260—523)

1. The method for the preparation of carboxylic acids which comprises: forming an aqueous alkaline emulsion of (A) an organic compound containing a non-aromatic —CH=CH— group, (B) hydrogen peroxide, and (C) an alkaline compound of a metal of the group consisting of alkali and alkaline earth metals, said emulsion containing per mole of said organic compound at least one mole of hydrogen peroxide and at least two moles of

said alkaline compound; and passing ozone through said emulsion at a temperature between about —35° C. and about 35° C.

3,284,493

PROCESS FOR THE CONVERSION OF METHYL-SUBSTITUTED BENZENE COMPOUNDS TO CARBOXYLIC ACIDS

Sheldon Chibnik, Plainfield, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Oct. 7, 1963, Ser. No. 314,498
7 Claims. (Cl. 260—524)

1. A process for preparing benzene carboxylic acids which comprises the steps of (a) providing a solution of a methyl-substituted benzene compound in a lower fatty acid having two to four carbon atoms and containing about 2 to 20% of said methyl-substituted benzene compound and at least 1% of 2-butanol by weight of said fatty acid, said solution containing a cobalt salt of a lower fatty acid having 2 to 4 carbon atoms in an amount corresponding to about 0.1 to 1.0% cobalt by weight of the fatty acid and having an initial water content of 1 to 10% by weight; (b) contacting the said solution at a temperature between about 125 and 140° C. with a gas containing molecular oxygen at a partial pressure of oxygen of about 100 to 1,000 pounds per square inch; and (c) continuing the reaction until about 30 to 95% of the methyl-substituted benzene compound has been oxidized to the corresponding benzene carboxylic acid.

3,284,494

PROCESS FOR PRODUCING ALPHA HYDROXY-ISOBUTYRIC ACID

Erwin F. Schoenbrunn, Ridgefield, Conn., assignor to Escambia Chemical Corporation, Pace, Fla., a corporation of Delaware

No Drawing. Filed Oct. 16, 1964, Ser. No. 404,524
10 Claims. (Cl. 260—533)

1. In the process of producing alpha hydroxyisobutyric acid by oxidizing isobutylene with dinitrogen tetroxide, the improvement which consists of carrying out the oxidation of isobutylene in a reaction solvent consisting essentially of a mixture of acetic and nitric acids and no more than about 15% by weight of water, wherein the molar ratio of acetic to nitric acids in the reaction solvent is between about 0.5 and 3 to 1, wherein the initial oxidation temperature is less than 100° C.

3,284,495

PROCESS FOR THE CONTINUOUS MANUFACTURE, PURIFICATION, AND ISOLATION OF LACTIC ACID

Wilhelm Vogt, Knapsack, near Cologne, Heinz Erpenbach, Surth, near Cologne, Herbert Joest, Cologne-Zollstock, and Lothar Strie, Knapsack, near Cologne, Germany, assignors to Knapsack-Grieshelm Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

Filed Apr. 11, 1963, Ser. No. 272,334
Claims priority, application Germany, Apr. 26, 1962, K 46,571
8 Claims. (Cl. 260—535)

1. A process for the continuous manufacture, purification and isolation of lactic acid, which comprises hydrolyzing lactic acid nitrile with at least the molar amount of a 50 to 70% sulfuric acid at a temperature within the range of about 120 to 130° C. and within 2 to 4 hours with the resulting formation of lactic acid; extracting the resulting and cooled reaction mixture and thereby separating organic constituents from ammonium bisulfate in a first extraction column at a temperature within the range of about 20 to 30% C. in counter-current with an excess of isopropylether; eliminating the resulting extraction solution from the head of the first extraction column, washing the extraction solution with a small amount of water and removing the solvent from the extraction solution by vaporization; introducing the resulting extract into the middle porion of a second extraction column maintained at the same temperature as the first extraction column; introducing about double the amount by weight of isopropylether, calculated on the amount of extract, into the lower portion of said second extraction column; introducing at least 15% by weight water, calculated on the amount of ethereal solution, into the upper portion of the said second extraction column; separating the extract into an aqueous lactic acid-containing phase and into an ethereal phase containing organic by-products; removing the aqueous phase at the bottom portion of the second extraction column; and vaporizing the water contained in said aqueous phase and thereby converting it into pure lactice acid of about 90% strength.

3,284,496

PREPARATION OF ETHYNYLSULFUR PENTAFLUORIDE

Donald D. Coffman, West Chester, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 16, 1962, Ser. No. 195,326
2 Claims. (Cl. 260—543)

1. The process of preparing ethynylsulfur pentafluoride which comprises reacting a 1,2-dihaloethenylsulfur pentafluoride, the 1- and 2-halogens being of atomic number 17–35, with a metal selected from Groups I–B and II–B of the Periodic Table at a temperature in the range of about 75–150° C.

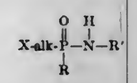
3,284,497

PHOSPHINIC AMIDES

Morris L. Nielsen, Dayton, Ohio, assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed July 29, 1963, Ser. No. 298,401
3 Claims. (Cl. 260—551)

1. The compound of the formula



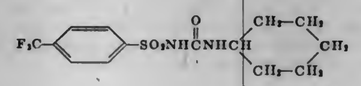
in which X is halogen having an atomic weight of over 35, alk denotes an alkylene radical of from 1 to 5 carbon atoms, and R and R′ denote aromatic hydrocarbyl which is free of olefinic and acetylenic unsaturation, contains from 6 to 12 carbon atoms and is attached through nuclear carbon to the remainder of the molecule in which it is present.

3,284,498

SUBSTITUTED BENZENE SULFONYL UREA

Lee C. Cheney, Fayetteville, N.Y., and Yvon Gaston Perron, Ville d'Anjou, Quebec, Canada, assignors to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 7, 1964, Ser. No. 336,144
1 Claim. (Cl. 260—553)



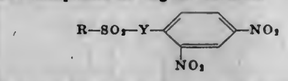
3,284,499

N-[4 - (2,4 - DINITROANILINO)PHENYL] ALKANE- AND ARENESULFONAMIDES AND N-[4-(2,4-DINITROPHENYLIMINO) - 2,5 - CYCLOHEXADIENYLIDENE] ALKANE- AND ARENESULFONAMIDES

Joseph E. Dunbar, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 2, 1964, Ser. No. 408,320
6 Claims. (Cl. 260—556)

1. The compound having the formula



wherein R represents a member of the group consisting of lower alkyl, phenyl, lower alkyl phenyl and halophenyl; and Y represents a member of the group consisting of p-phenylenediimino, monohalo-p-phenylenediimino and 2,5-cyclohexadien-1,4-ylenedinitrilo.

3,284,500

HALOGENATION OF BETA-OXO ACID AMIDES

Charles H. Tieman, Modesto, Calif., assignor to Shell Oil Company, New York, N.Y., a Delaware corporation

No Drawing. Filed Dec. 6, 1963, Ser. No. 328,484
7 Claims. (Cl. 260—561)

1. In the process for preparing alpha-chloro-beta-oxo-lower alkanoic acid amides, containing only hydrogen atoms and lower alkyls on the amide nitrogen, by reaction of the corresponding beta-oxo-lower alkanoic acid amides and sulfuryl chloride, the improvement which comprises conducting the reaction in the liquid phase at a temperature below about 100° C. in the presence of from about 1.5 to 20 volumes of diluent per volume of amide, said diluent being at least one halogenated lower alkane wherein each halogen has an atomic number from 17 to 35.

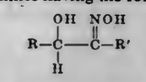
3,284,501

α-HYDROXY OXIMES

Ronald R. Swanson, New Hope, Minn., assignor to General Mills, Inc., a corporation of Delaware

No Drawing. Filed July 2, 1965, Ser. No. 469,336
3 Claims. (Cl. 260—566)

1. α-Hydroxy oximes having the formula



where R and R′ are branched chain alkyl groups containing 6 to 20 carbon atoms attached to the carbons substituted with the —OH and =NOH groups through secondary carbon atoms, said oximes being further characterized as having a total carbon atom content of 14 to about 40.

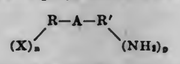
3,284,502

POLYHALOGENATED PHENYL-DIAMINO PHENYL-ETHERS, SULFIDES, AND SELENIDES

Robert J. Knopf, St. Albans, and Thomas K. Brotherton, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Sept. 20, 1963, Ser. No. 310,461
12 Claims. (Cl. 260—571)

1. Polyhalogenated polyamines of the formula:



wherein A is selected from the group consisting of oxy (—O—), thio (—S—), and seleno (—Se—) radicals; R and R′ are each aryl of from 6 to 14 carbon atoms; X is selected from the group consisting of chlorine, bromine, and iodine; and *n* and *p* are each integers of at least 2, whose upper limit is equal to the number of hydrogen atoms present in the unsubstituted aryl groups R and R′.

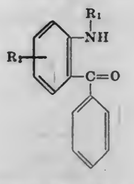
3,284,503

2-CYCLOALKYLMETHYLAMINO-BENZHYDROLS AND BENZOPHENONES

Freeman H. McMillan, Dover, and Ian Pattison, Denville, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Original application Mar. 1, 1963, Ser. No. 262,221, now Patent No. 3,192,199, dated June 29, 1965. Divided and this application Jan. 21, 1965, Ser. No. 427,079
4 Claims. (Cl. 260—570)

1. A compound of the formula:



in which R_1 is a member selected from the group consisting of cyclopropylmethyl, cyclobutylmethyl and cyclopentylmethyl and R_2 is a member of the group consisting of hydrogen, chlorine, bromine, lower alkyl and lower alkoxy.

3,284,504

O-ALKYLATION OF HYDROXYARYLAMINES

Robert H. Rosenwald, Western Springs, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed July 6, 1965, Ser. No. 469,912
8 Claims. (Cl. 260—571)

1. A process for the O-alkylation of a hydroxyarylamine of the general formula $(OH)_m—Ar—(NR_2)_n$ wherein *m* is 1 to 2, Ar represents aryl or mono-hydroxyaryl and (NR_2) represents an amino radical wherein R is selected from the group consisting of hydrogen, lower alkyl and aryl, *n* being a number from 1 to 3, which process comprises heating said arylamine with a mono-olefinic lower alkene or lower cycloalkene at a temperature of from about 50° C. to about 125° C. in contact with a stoichiometric excess of an inorganic alkylation catalyst selected from the group consisting of Friedel-Crafts metal halides, acid-acting metal oxides, phosphoric acid, sulfuric acid and hydrofluoric acid, said excess being with respect to the amino substituents of said arylamine and recovering the resulting alkoxyarylamine.

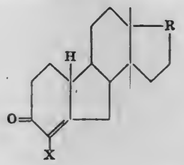
3,284,505

19-NOR-B-NORTESTOSTERONES

Kenneth G. Holden, Stratford, N.J., and James F. Kerwin, Broomall, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

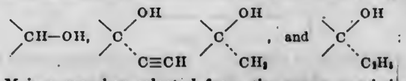
No Drawing. Filed Mar. 16, 1965, Ser. No. 440,284
8 Claims. (Cl. 260—586)

1. A compound having the formula:



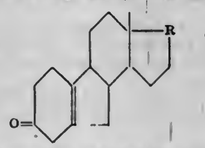
in which:

R is a member selected from the group consisting of

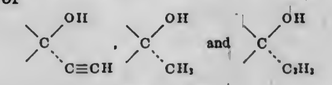


X is a member selected from the group consisting of hydrogen, hydroxy, fluoro, bromo and chloro.

7. A compound having the formula:



in which R is a member selected from the group consisting of



3,284,506
METHOD OF DEPHENOLIZING CUMENE

Attilio Mantegazza, Cesare Reni, and Franco Ferré, Milan, Italy, assignors to Societá Italiana Resine S.p.A., Milan, Italy

No Drawing. Filed Dec. 20, 1962, Ser. No. 245,968
Claims priority, application Italy, Jan. 10, 1962, 1,002
2 Claims. (Cl. 260—593)

1. In the process for producing phenol and acetone comprising oxidizing cumene to cumene hydroperoxide, decomposing the latter to phenol and acetone in the presence of an acid catalyst and unreacted cumene, separating from the decomposition mixture a cumene fraction containing up to 5% phenol, and extracting the fraction by means of an aqueous casutic soda solution; the improvement comprising performing the extraction at a superatmospheric pressure of one to ten atmospheres gage at a temperature not exceeding 20° C.

3,284,507
PROCESS FOR PREPARING ALDEHYDES AND KETONES

Günter Mau, Frankfurt am Main, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed July 16, 1963, Ser. No. 295,514
Claims priority, application Germany, July 20, 1962, F 37,366
4 Claims. (Cl. 260—597)

1. In a process for the production of a carbonyl compound from an olefinic hydrocarbon, said carbonyl compound being selected from the group consisting of aldehydes and ketones corresponding to said olefinic hydrocarbon and containing one olefinic bond less than the olefinic hydrocarbon, in the presence of an aqueous solution of a salt of a metal of the platinum group and of a member selected from the group consisting of copper chloride and copper bromide, the improvement which comprises adding cadmium ions to the aqueous solution.

3,284,508
RECOVERY OF P-TOLUALDEHYDE

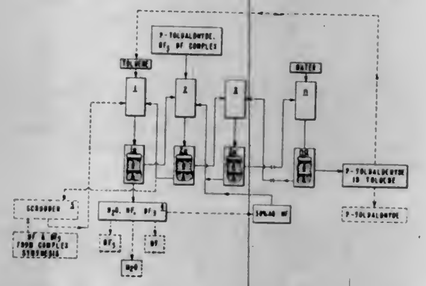
Eugene R. Gray and Charles N. Masten, Pitman, N.J., and Gene M. Pettingill, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Feb. 18, 1963, Ser. No. 259,125
7 Claims. (Cl. 260—599)

1. A process for the recovery of p-tolualdehyde from the complex obtained by the carbonylation of toluene in the presence of hydrogen fluoride and boron trifluoride which comprises the following steps carried out at a temperature of about from 20 to 80° C.:

(1) thoroughly mixing said complex with aqueous hydrogen fluoride containing about from 5 to 60% by weight of hydrogen fluoride, the aqueous effluent obtained from Step (3) below, and the organic effluent from Step (4) below,

(2) allowing the resulting mixture to stratify into an organic phase and an aqueous phase,



(3) countercurrently extracting the organic phase from Step (2) with water in an amount about from 20 to 60% of the total weight of water introduced in Step (1), returning the resulting aqueous effluent containing at least about 30% by weight of boron trifluoride and hydrogen fluoride to Step (1) and withdrawing the resulting organic effluent comprising the p-tolualdehyde product in solution in toluene, and

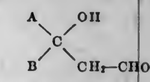
(4) extracting the aqueous phase from Step (2) with toluene to yield an aqueous solution of boron trifluoride and hydrogen fluoride, the organic effluent being used in Step (1), the concentration of the fluorides in the aqueous phase in each of said steps being less than about 70% by weight.

3,284,509
HALOALKYL HYDROXYALDEHYDES

Horace R. Davis, Roseville, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Original application Apr. 16, 1962, Ser. No. 173,808, now Patent No. 3,164,610, dated Jan. 5, 1965. Divided and this application Feb. 24, 1964, Ser. No. 354,197
3 Claims. (Cl. 260—602)

1. As compositions of matter, hydroxyaldehydes having the structure:



wherein each of A and B is a perhaloalkyl group of 1 to 7 carbon atoms fully substituted on the α-carbon atom by halogen atoms selected from the group consisting of fluorine and chlorine at least one of said halogen atoms being fluorine.

3,284,510
CARBONYLATION OF OLEFIN-POLYOLEFIN MIXTURES

James William Robinson, Baton Rouge, La., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Feb. 12, 1963, Ser. No. 257,879
9 Claims. (Cl. 260—604)

1. A process for producing oxygenated organic compounds which comprises carbonylating an olefin feed containing a minor amount of a conjugated diolefin with carbon monoxide and hydrogen having a $CO:H_2$ molar ratio of at least 1.3/1 to about 4/1 at a temperature in the range of 150° F. to 450° F. and a pressure in the range of about 1000 to 4500 p.s.i.g. in the presence of a cobalt containing catalyst.

3,284,511
HALOGENATED, DIOLEFIN-STYRENE POLYMERS WITH TERMINAL HYDROXY GROUPS

Stanley P. Rowland, Ervin G. Pritchett, and Noel L. Hofmann, all of Cincinnati, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Dec. 13, 1961, Ser. No. 159,139
1 Claim. (Cl. 260—618)

A halogenated terminal glycol having a molecular weight in the range of about 300 to about 25,000 and having the general formula

$$HO—[CH_2—CH_2]_m[Cl_n(A)_a(B)_b][CH_2CH_2]_m—OH$$

wherein A is a polymerized diolefin unit selected from the group consisting of butadiene and isoprene, B is a unit of polymerized monomer selected from the group consisting of styrene and alkyl-substituted styrenes, *a* is a whole number ranging from 2 to about 200, *b* is 0 to about 1800, the ratio of *b* to *a* ranges from 0 to about 9 inclusive, *m* ranges from 0 to 1 inclusive, and *n* is a whole number ranging from about 2 to 2*a*; said halogenated terminal glycol being that which is obtained by halogenating a compound having the general formula

$$HO—[CH_2—CH_2]_m[(A)_a(B)_b][CH_2—CH_2]_m—OH$$

wherein A, B, *a*, *b* and *m* are as defined above, with a halogenating agent selected from the group consisting of elemental chlorine and sulfuryl chloride at a temperature between about −60° and +100° C.

3,284,512
PREPARATION OF TRIBROMOBISPHENOL A

Henry E. Hennis and Leonard R. Thompson, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Oct. 2, 1963, Ser. No. 313,178
3 Claims. (Cl. 260—619)

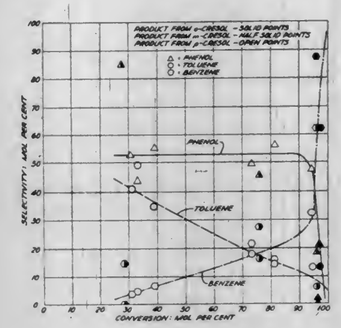
1. A process for making 2,2',6-tribromo-4,4'-isopropylidenephenol which comprises reacting by contacting a solution of one mole of p,p'-isopropylidenediphenol in a solvent consisting essentially of 90–100% by volume of a primary alkanol of 1–3 carbon atoms and 10–0% of water with about 2.8 to about 3.7 moles of a brominating agent selected from the group consisting of bromine and bromine chloride at about 0° C. to about 50° C., mixing the reacted solution with sufficient water to provide a total of at least about 0.5 part by volume of water per part of alkanol, thereby forming an aqueous phase and a phenolic phase, said phenolic phase consisting of a mixture of liquid and solid, separating said liquid phenolic phase and crystallizing 2,2',6-tribromo-4,4'-isopropylidenediphenol from said liquid phenolic phase at 0–50° C.

3,284,513
PROCESS FOR THE THERMAL HYDRODEALKYLATION OF CRESOLS

Jonas Dedinas, Pittsburgh, Alfred M. Henke, Springdale, and William C. Offutt, Pittsburgh, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed Dec. 19, 1962, Ser. No. 245,848
4 Claims. (Cl. 260—621)

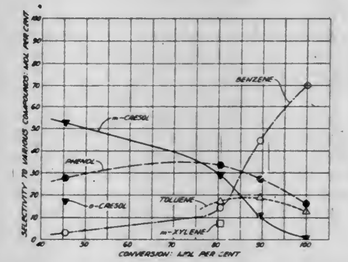
1. A process for converting a cresol which comprises reacting a cresol with at least about one mol per mol thereof of hydrogen at a temperature of about 900° to about 1600° F., at a space velocity of about 0.2 to about 3.5, terminating said reaction when about 88 to about 92 mol percent of said cresol has been converted and thereafter recovering phenol from the reaction product.



3,284,514
PROCESS FOR THE HYDRODEALKYLATION OF A POLYALKYLATED PHENOL

Jonas Dedinas, Pittsburgh, Alfred M. Henke, Springdale, and William C. Offutt, Pittsburgh, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed Dec. 19, 1962, Ser. No. 245,892
2 Claims. (Cl. 260—621)



1. A process for converting a polyalkylated phenol which comprises reacting a polymethyl phenol with at least about two mols per mol thereof of hydrogen at a temperature of about 900° to about 1600° F. at a space velocity of about 0.2 to about 3.5, terminating said reaction when about 75 to about 80 mol percent of said polyalkylated phenol has been converted and thereafter recovering phenol from the reaction product.

3,284,515
TRIBROMOPROPENOL

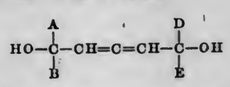
Richard T. Dickerson, Midland, Mich., and William F. Tousignant, Wauwatosa, Wis., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 14, 1963, Ser. No. 287,802
1 Claim. (Cl. 260—633)

2,3,3-tribromo-2-propen-1-ol.

3,284,516
REACTION PRODUCTS OF HALOGENATED KETONES WITH UNSATURATED HYDROCARBONS
Horace R. Davis, Roseville, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
No Drawing. Filed Jan. 7, 1965, Ser. No. 424,108
7 Claims. (Cl. 260—633)

1. A compound of the formula



wherein A, B, D and E are each a lower alkyl radical having exclusively halogen atoms of the groups of fluorine chlorine on the α-carbon atoms, at least one of the said halogen atoms being fluorine.

3,284,517
HYDROGENATION OF ALPHA,BETA-UNSATURATED ALDEHYDES TO ALPHA,BETA-UNSATURATED ALCOHOLS
Paul N. Rylander, Newark, and Nathan G. Himelstein, Hillside, N.J., assignors to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware
No Drawing. Filed Sept. 11, 1963, Ser. No. 308,094
10 Claims. (Cl. 260—638)

1. A process for the production of an olefinically unsaturated alcohol which comprises contacting an alpha, beta-olefinically unsaturated aldehyde dispersed in an organic liquid diluent and in the presence of hydrogen, with a supported platinum catalyst in the presence of silver and iron having a maximum valence of two as promoters to convert the olefinically unsaturated aldehyde to the corresponding unsaturated alcohol.

3,284,518
HALOALKYLATION OF AROMATIC COMPOUNDS
George W. Ayers, Chicago, and William A. Krewer, Arlington Heights, Ill., assignors, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California
No Drawing. Filed Oct. 29, 1962, Ser. No. 233,912
7 Claims. (Cl. 260—651)

1. The process of preparing parahalomethylated aromatic compounds of the group consisting of parabromomethylated and parachloromethylated derivatives of a monosubstituted benzene selected from the class consisting of toluene, ethylbenzene, butoxybenzene, cyclobutylbenzene, chlorobenzene, ethoxybenzene, fluorobenzene, octyl benzene and propoxy benzene, which consists in reacting about 3 moles of said monosubstituted benzene at a temperature of about 10° to 130° C. with about 3 moles of a formaldehyde-producing agent of the group consisting of formaldehyde, paraformaldehyde, trioxymethylene and mixtures thereof and about 1 mole of the corresponding phosphorus compound of the group consisting of phosphorus oxychloride and phosphorus oxybromide and mixtures thereof in the presence of about 0.01 to 5.0% by weight of a hydrohalic acid based on the weight of said reactants.

3,284,519
STABILIZATION OF CHLORINATED PARAFFIN WAX
Bryan C. Redmon, Bernardsville, and Henry O. Mottern, Far Hills, N.J., assignors, by mesne assignments, to Cumberland Chemical Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 23, 1963, Ser. No. 332,967
4 Claims. (Cl. 260—652.5)

1. A stabilized normally-solid, highly-chlorinated paraffin wax which comprises a major amount of a normally-solid, highly-chlorinated paraffin wax and a minor amount, sufficient to stabilize said wax, of diethyl diazo dicarboxylate.

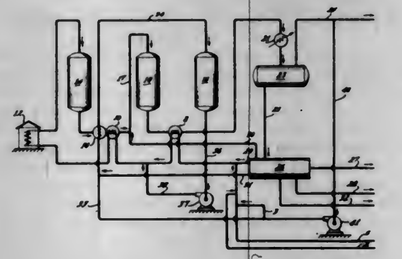
3,284,520
OLIGOMERIZATION
Ernest A. Zuech, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed June 24, 1963, Ser. No. 290,158
1 Claim. (Cl. 260—666)

A process for the oligomerization of 1,3-butadiene which comprises contacting said 1,3-butadiene with a catalyst which forms on commingling bis(triphenylphosphine)dichloronickel and ethoxydiethylaluminum in an organic diluent for about 60 to 100 minutes at a temperature in the range of 25 to 150° C. and subsequently recovering the oligomers of 1,3-butadiene as products of the process.

3,284,521
PROCESS FOR THE PRODUCTION OF CYCLOHEXADIENE
Henry E. Fritz and David W. Peck, Charleston, and Robert R. Gentry, St. Albans, W. Va., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Apr. 10, 1964, Ser. No. 358,946
8 Claims. (Cl. 260—666)

1. In the process of producing cyclohexadiene by dehydrohalogenating a dihalocyclohexane, the improvement comprising substantially dehydrohalogenating at least one member selected from the group consisting of 1,3-dihalocyclohexane and 1,4-dihalocyclohexane from a dihalocyclohexane obtained by the halogenation of cyclohexane to a depth from 0.1–1.0 moles.

3,284,522
CYCLOHEXANE PRODUCTION
Alexander K. Logwinuk, Broomall, and Josef W. Schall, Newtown Square, Pa., assignors to Air Products and Chemicals, Inc., Philadelphia, Pa., a corporation of Delaware
Filed Apr. 20, 1964, Ser. No. 360,919
10 Claims. (Cl. 260—667)



1. The method for the conversion of alkylated benzenes to cyclohexane which comprises:
(a) contacting an alkylated benzene-hydrogen admixture with chrome-alumina catalyst in at least one first reactor at 700 to 1000 p.s.i.g. and 1050 to 1250° F.;
(b) cooling the effluent from the first reactor to a temperature of 250 to 650° F.;
(c) contacting the cooled effluent from the first reactor with a hydrogenation catalyst in at least one second reactor at a pressure substantially equivalent to that of the first reactor thereby forming cyclohexane and methyl cyclohexane;
(d) separating methylcyclohexane from the second reactor effluent;
(e) contacting the methylcyclohexane with a dehydrogenation catalyst in a third reactor at 200 to 500 p.s.i.g. and 700 to 1000° F.
(f) recycling the reactor effluent obtained in the third reactor to the first reactor; and
(g) recovering cyclohexane from the second reactor effluent.

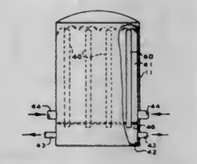
3,284,523
METHOD FOR MAKING 5-t-BUTYL-m-XYLENE
Thomas A. Beck, Park Forest, and Owen H. Thomas, South Holland, Ill., assignors to Sinclair Research, Inc., a corporation of Delaware
No Drawing. Filed July 8, 1963, Ser. No. 293,261
8 Claims. (Cl. 260—668)

1. A method for the production of 5-t-butyl-m-xylene which consists essentially of contacting in a continuous sulfuric acid phase, having a concentration of about 88 to 92%, at a temperature of about −10 to 30° C., a hydrocarbon feedstock selected from the group consisting of 4-tertiarybutyl-meta-xylene and a mixture consisting essentially of meta-xylene and isobutylene, in a ratio of up to about 1.1 volumes of hydrocarbon per volume of sulfuric acid.

3,284,524
METHOD AND CATALYST FOR PREPARING ALKYLBENZENES
Benedetto Calcagno, Milan, Italy, assignor to Societá Italiana Resine S.p.A., Milan, Italy
No Drawing. Filed Dec. 13, 1963, Ser. No. 330,259
Claims priority, application Italy, Jan. 18, 1963, 1,105/63
9 Claims. (Cl. 260—671

1. The method for preparing alkylbenzenes having a linear alkyl chain comprising,
reacting benzene with a hydrocarbon selected from the group consisting of ethylene, propylene and butene in the presence of a catalyst comprising
(a) the reaction product of one mole alkylaluminum with more than two moles of an aluminum halide, and
(b) a halide of a metal selected from the group consisting of titanium, vanadium, zirconium, chromium and iron.

3,284,525
HYDRODEALKYLATION PROCESS
John W. Begley, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 20, 1962, Ser. No. 217,807
2 Claims. (Cl. 260—672)



1. A hydrodealkylation process which comprises forming a mixture comprising a vaporous alkylaromatic and hydrogen, passing said mixture upwardly through a heat exchange zone, passing said mixture downwardly through a reaction zone in indirect heat exchange with said heat exchange zone, maintaining thermal hydrodealkylation process conditions within said reaction zone, passing heat from said reaction zone to said heat exchange zone, and withdrawing from said reaction zone an effluent product stream.

3,284,526
PROCESS FOR THERMAL HYDRODEALKYLATION
James A. Frayer, Pittsburgh, Robert F. Mansfield, New Kensington, Rodney E. Peterson, Oakmont, and Eldon M. Sutphin, Pittsburgh, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
No Drawing. Filed Sept. 4, 1963, Ser. No. 306,598
9 Claims. (Cl. 260—672)

1. A process for the hydrodealkylation of an alkyl aromatic which comprises heating a mixture of said alkyl aromatic and hydrogen to a temperature of about 1150° to about 1250° F., maintaining the temperature of said mixture during said heating period at a temperature below about 950° F. for a time less than about 50 seconds, and thereafter subjecting the resultant heated mixture to a temperature of about 1150° to about 1800° F. and a pressure of at least about 100 pounds per square inch gauge for about one to about 400 seconds to effect dealkylation of said alkyl aromatic.

3,284,527
DEALKYLATION OF ALKYL-SUBSTITUTED AROMATICS
Jack M. Gill and William G. Juhl, St. Louis, Mo., assignors to Monsanto Company, a corporation of Delaware
No Drawing. Filed Dec. 31, 1963, Ser. No. 334,916
7 Claims. (Cl. 260—672)

1. A process for the dealkylation of alkyl substituted aromatic hydrocarbons which comprises passing an alkyl substituted aromatic hydrocarbon feed consisting essentially of alkyl aromatic hydrocarbons selected from the group consisting of alkyl benzenes, alkyl naphthalenes, alkyl phenanthrenes, alkyl anthracenes, alkyl pyrenes, alkyl chrysenes, and mixtures thereof, through a dealkylation zone which is maintained at a temperature of 750 to 1000° F. and a pressure of 400 to 2500 p.s.i.g., said alkyl substituted aromatic hydrocarbons being passed into the dealkylation zone concurrently with a hydrogen donor, said hydrogen donor being a partially-hydrogenated aromatic hydrocarbon, and recovering from said dealkylation zone aromatic hydrocarbons of reduced molecular weight.

3,284,528
PROCESS FOR THE EXTRACTION OF AROMATIC HYDROCARBONS IN ADMIXTURE WITH PARAFFINIC AND NAPHTHENIC HYDROCARBONS BY MEANS OF A SELECTIVE SOLVENT
Gilbert Cousserans, Toulouse, Haute Garonne, France, assignor to Office National Industriel de l'Azote, Haute Garonne, France, a corporation of France
Filed Oct. 2, 1962, Ser. No. 227,875
Claims priority, application France, Oct. 5, 1961, 4,740
4 Claims. (Cl. 260—674)

1. Process for the extraction and purification of aromatic hydrocarbon from a mixture of aromatic hydrocarbon and a member selected from the group consisting of aliphatic and naphthenic hydrocarbons, comprising the steps of
(a) contacting the hydrocarbon mixture with a liquid solvent consisting essentially of water and a compound of the formula $ROCSNH_2$ wherein R is alkyl of 1 to 6 carbons,
(b) separating a raffinate phase from an extract phase, said extract phase comprising the solvent and aromatic hydrocarbon,
(c) distilling the aromatic hydrocarbon and water from said extract phase for subsequent further separation by settling and decanting, and
(d) water washing the raffinate phase whereby entrained solvent is separated therefrom.

3. Process for the extraction and purification of aromatic hydrocarbon from a mixture of aromatic hydro-

carbon and a member selected from the group consisting of aliphatic and naphthenic hydrocarbons, comprising the steps of

(a) contacting the hydrocarbon mixture with a liquid solvent consisting essentially of water, methyl carbamate and compound of the formula $ROCSNH_2$ wherein R is alkyl of 1 to 6 carbons,

(b) separating a raffinate phase from an extract phase, said extract phase comprising the solvent and aromatic hydrocarbon,

(c) distilling the aromatic hydrocarbon and water from said extract phase for subsequent further separation by settling and decanting, and

(d) water washing the raffinate phase whereby entrained solvent is separated therefrom.

4. Process for the extraction and purification of aromatic hydrocarbon from a mixture of aromatic hydrocarbon and a member selected from the group consisting of aliphatic and naphthenic hydrocarbons, comprising the steps of

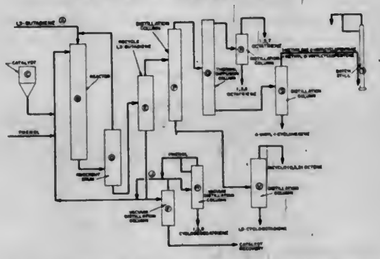
(a) contacting the hydrocarbon mixture with a liquid solvent consisting essentially of from 5 to 15% water and methyl carbamate,

(b) separating a raffinate phase from an extract phase, said extract phase comprising the solvent and aromatic hydrocarbon,

(c) distilling the aromatic hydrocarbon and water from said extract phase for subsequent further separation by settling and decanting, and

(d) water washing the raffinate phase whereby entrained solvent is separated therefrom.

3,284,529
LINEAR OCTATRIENES
Julian Feldman, Bernard A. Saffer, and Orville D. Frampton, Cincinnati, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
Filed Dec. 31, 1962, Ser. No. 248,518
18 Claims. (Cl. 260—677)



1. A process for the production of linear dimers of aliphatic conjugated diolefinic compounds which comprises polymerizing an aliphatic conjugated diolefinic compound having from about four to eight carbon atoms per molecule at a temperature within the range of 70° C. to 160° C. in the presence of a zerovalent nickel catalyst derived from nickel carbonyl and selected from compounds having the formula:

$$[(RO)_3P]_nNi(CO)_{4-n}$$
$$[H_3P]_nNi(CO)_{4-n}$$
$$(R_3Sb)_nNi(CO)_{4-n}$$
$$(R_3As)_nNi(CO)_{4-n}$$

wherein R is an alkyl, aryl or heterocyclic radical, and n has a value of one or two and compounds having the formula:

$$A_{1,2}—Ni—B_2$$

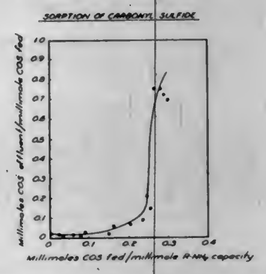
wherein A is triphenyl phosphine or triphenyl phosphite, and B is cinnamonitrile, acrylonitrile, fumaronitrile, or acrolein, and a phenolic compound as co-catalyst, said nickel catalyst being present in an amount equal to 0.5% to 5% by weight of said diolefinic compounds, and said phenolic co-catalyst being present in an amount equal to about 10% to 30% by weight of said conjugated diolefinic compound.

18. 1,3,6-octatriene.

3,284,530
PROCESS FOR ISOLATING OLEFINS FROM MIXTURES BY ABSORPTION
Ernst Nölken, Frankfurt am Main, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed June 18, 1963, Ser. No. 288,594
Claims priority, application Germany, June 27, 1962, F 37,168
9 Claims. (Cl. 260—677)

3. A process for separating an olefinic hydrocarbon from an olefin-containing mixture which comprises bringing said mixture into contact with a silver fluoborate solution containing from about 0.5 to about 3 mols of an addition compound of boron trifluoride selected from the group consisting of boron trifluoride dihydrate, an addition product of boron trifluoride with an aliphatic or cycloaliphatic alcohol having up to 10 carbon atoms, an addition product of boron trifluoride with an aliphatic or cycloaliphatic carboxylic acid having up to 8 carbon atoms, or a mixture thereof, per mol of silver fluoborate.

3,284,531
REMOVING CARBONYL SULFIDE WITH AN ANHYDROUS, BASIC, ANION RESIN
Kernal Glenn Shaw and Stanley A. Murdock, both of Concord, Calif., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed July 6, 1965, Ser. No. 469,511
3 Claims. (Cl. 260—677)



1. A process for the removal of carbonyl sulfide from fluid hydrocarbons containing carbonyl sulfide which comprises contacting said fluid, at normal atmospheric temperatures, with an anhydrous, weakly basic, anion exchange resin.

3,284,532
PROMOTED PYROLYSIS PROCESS
Kenneth J. Frech, Kent, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
No Drawing. Filed Sept. 18, 1963, Ser. No. 309,849
20 Claims. (Cl. 260—680)

1. A cracking process which comprises (A) providing a cracking mixture comprising (1) at least one olefin having in its molecule a carbon-to-carbon single bond which is in a position beta to the double bond and (2) at least one cracking promoter resulting from the reaction of one mol of hydrogen sulfide and at least one and not more than two mols of an amine, said material being present in an amount of at least 0.005 mol per mol of said olefin, (B) cleaving the carbon-to-carbon single bond which is in a position beta to the double bond of said olefin by subjecting said mixture to suitable conditions of temperature ranging from about 500° C. to about 850° C. for periods of time varying from between about 3 minutes to about 0.001 second.

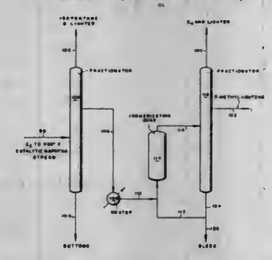
3,284,533
PROCESS FOR THE MANUFACTURE OF ISOPRENE AND ISOBUTENE
Akio Mitsutani, Takarazuka, Japan, assignor to Kurashiki Rayon Company Limited, Sakazu, Kurashiki, Japan
No Drawing. Filed Feb. 26, 1965, Ser. No. 435,731
Claims priority, application Japan, Mar. 7, 1964, 39/12,528
5 Claims. (Cl. 260—681)

1. In the process for the manufacture of isoprene and isobutene in the gaseous phase wherein steam and 4,4-dimethylmetadioxane are passed over a catalyst at elevated temperatures to decompose the dioxane into isoprene and isobutene, the improvement comprising introducing tertiary butanol with the reactants thereby increasing the yield of the isoprene, depressing the formation of isobutene resulting from the catalytic decomposition of the dioxane and at the same time converting the tertiary butanol into isobutene by dehydration.

3,284,534
PROCESS FOR PREPARATION OF CONJUGATED DIOLEFINES
Akio Mitsutani, Obayashi, Takarazuka, and Yoshio Hamamoto, Kita-Kanbara-gun, Japan, assignors to Kurashiki Rayon Co., Ltd., Sakazu, Kurashiki, Japan
No Drawing. Filed Oct. 13, 1965, Ser. No. 495,702
Claims priority, application Japan, Nov. 13, 1964, 39/63,816
4 Claims. (Cl. 260—681)

1. A method for preparing conjugated diolefins which comprises decomposing a member of the group consisting of monoalkyl and dialkyl substituted metadioxanes at elevated temperatures in the presence of a catalyst which has been prepared by calcining a solid phosphoric acid catalyst consisting essentially of phosphoric acid on silica carrier at a temperature above 700° C. for at least 5 hours, extracting the calcined catalyst with water to remove water-soluble substances therefrom and then drying the extracted catalyst at a temperature below 1100° C.

3,284,535
PRODUCTION OF 3-METHYL-1-BUTENE
William R. Edwards, Robert D. Wesselhoft, and Willard N. Mitchell, Baytown, Tex., assignors, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware
Filed May 10, 1963, Ser. No. 279,357
4 Claims. (Cl. 260—683.2)



4. A method of optimizing the production of high purity 3-methyl-1-butene from catalytic naphtha which comprises fractionating said catalytic naphtha to obtain a heart cut consisting essentially of pentene-1, 2-methyl-1-butene, pentene-2, n-pentane, and 2-methyl-2-butene, each of which is a precursor of 3-methyl-1-butene,

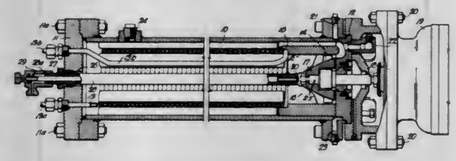
contacting said heart cut in an isomerization zone with an acidic cracking catalyst under isomerization conditions to obtain an isomerized product stream containing more 3-methyl-1-butene than was contained in said heart cut,

fractionating said isomerized product stream to obtain a 3-methyl-1-butene stream and a recycle stream, and recycling at least a portion of said recycle stream to said isomerization zone.

3,284,536
DEHYDROGENATION WITH MAGNESIUM FERRITE
Laimonis Bajars, Princeton, Louis J. Croce, East Brunswick, and Maigonis Gabliks, Highland Park, N.J., assignors to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
No Drawing. Filed Jan. 2, 1964, Ser. No. 335,352
20 Claims. (Cl. 260—683.3)

1. A process for the dehydrogenation of hydrocarbons having at least four carbon atoms which comprises contacting in the vapor phase at a temperature of from greater than 250° C. to about 750° C. a mixture of the said hydrocarbon to be dehydrogenated and from 0.2 to 2.5 mols of oxygen per mol of the said hydrocarbon with a catalyst for the dehydrogenation comprising magnesium ferrite to produce a dehydrogenated hydrocarbon product having the same number of carbon atoms as the said hydrocarbon.

3,284,537
METHOD OF CHARGING REACTANTS THROUGH CONCENTRIC FEED TUBES
Orlando Webb, Jr., Prairie Village, Kans., assignor to Stratford Engineering Corporation, Kansas City, Mo., a corporation of Delaware
Continuation of application Ser. No. 848,094, Oct. 22, 1959, which is a division of application Ser. No. 765,449, Oct. 6, 1958. This application Jan. 14, 1965, Ser. No. 426,477
15 Claims. (Cl. 260—683.58)



7. In a process of alkylation of isoparaffinic hydrocarbons with olefinic hydrocarbons in the presence of an acid catalyst at a controlled temperature wherein a blend of alkylate, excess acid, excess isoparaffinic hydrocarbons and the like are flowed in a reaction vessel in a closed cyclic stream axially of a circulating tube therein, the stream passing through said tube, then around its exterior surface at a flow rate greater than the flow rate of the alkylation feed components into the vessel, a mixing step provided in said stream in said vessel, the blend being withdrawn from the closed, cyclic flowing stream at a rate less than the flow rate of the closed, cyclic flowing stream, the olefinic hydrocarbons being optimally retained at a temperature lower than that of the closed, cyclic flowing stream until they are dispersed therein and mixed with the isoparaffinic hydrocarbons and acid, the improvement which comprises feeding chilled isobutane and ole-

finic hydrocarbons into the blend with the chilled isobutane being fed concentric to the olefinic hydrocarbons until the isobutane and olefinic hydrocarbons are dispersed in said stream, said osobutane and olefinic hydrocarbons passed into said stream immediately prior to said mixing step.

3,284,538

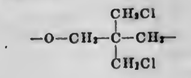
RESINOUS BINDER OF CHLORINATED OXETANE AND PHENOL-FORMALDEHYDE OR UREA-FORMALDEHYDE RESIN

Douglas S. Richart, Reading, Pa., assignor to The Polymer Corporation, a corporation of Pennsylvania

No Drawing. Original application Aug. 20, 1962, Ser. No. 218,104. Divided and this application Aug. 9, 1965, Ser. No. 478,801

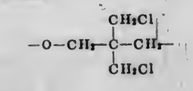
2 Claims. (Cl. 260—838)

1. An adherent coating composition comprised of a major portion of a resinous binder of a chlorinated polyether prepared from 3,3-bis(chloromethyl)oxetane having the recurring structure:



and from about 1% to about 10% by weight of a phenol formaldehyde resin containing active methylol groups.

2. An adherent coating composition comprised of a major portion of a resinous binder of a chlorinated polyether prepared from 3,3-bis(chloromethyl)oxetane having the recurring structure:



and from about 1% to about 10% by weight of a heat reactive urea formaldehyde.

3,284,539

POLYURETHANES FROM TWO DISTINCT POLYURETHANE POLYMERS

Wilbur R. McElroy, New Martinsville, W. Va., assignor to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Dec. 26, 1963, Ser. No. 333,707

9 Claims. (Cl. 260—858)

1. A method for producing stable thermoplastic polyurethane polymers which comprises combining and melting a first solid polymer and a second solid polymer together in a ratio such that the calculated NCO/OH is from about 0.960 to about 1.010 and such that the melt viscosity does not increase substantially within 20 minutes at a temperature at which the combined polymers form a continuous extruded strand at a temperature of from about 230 to about 400° F., said first polymer having been prepared by reacting a substantially linear difunctional hydroxyl terminated polymer having a molecular weight of at least about 600 and a difunctional chain-extending agent containing active hydrogen atoms which are reactive with NCO groups and having a molecular weight less than about 300 with an organic diisocyanate, said first polymer having been prepared at a calculated NCO/OH of from about 0.900 to about 0.995, said second solid polymer having been prepared by reacting a substantially linear difunctional hydroxyl terminated polymer having a molecular weight of at least about 600 and a difunctional chain-extending agent containing active hydrogen atoms which are reactive with NCO groups and having a molecular weight less than about 300 with an organic diisocyanate, said second polymer having been prepared at a calculated NCO/OH of from about 1.005 to about 1.100.

3,284,540

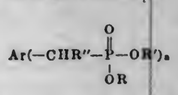
ALKYD COPOLYMERS OF HALOGEN-CONTAINING PHOSPHONIUM MONOMERS AND POLYMERS

Gaetano F. D'Alelio, South Bend, Ind., assignor, by direct and mesne assignments, to Dal Mon Research Co., Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed Mar. 15, 1965, Ser. No. 440,009

6 Claims. (Cl. 260—869)

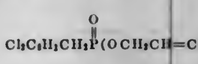
1. A composition of matter comprising the copolymerization product of a polymerizable mass comprising at least one unsaturated alkyd resin and at least one halogenated phosphonate monomer having at least two halogen atoms therein and having the formula



wherein

Ar is an aromatic radical having no more than 20 carbon atoms and selected from the class consisting of benzene, naphthalene, diphenyl and derivatives there-

3. A composition of claim 1 in which the polymerizable mass comprises said alkyd resin and the said phosphonate monomer has the formula



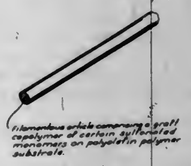
3,284,541

COMPOSITIONS COMPRISING GRAFT COPOLYMERS ON POLYOLEFIN SUBSTRATES OF ONE OR MORE MONOMERS OF THE GROUP OF SULFONATED ACRYLATES AND METHACRYLATES

George W. Stanton, Walnut Creek, and Teddy G. Traylor, Del Mar, Calif., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed June 22, 1962, Ser. No. 206,126

6 Claims. (Cl. 260—878)



1. Dye-receptive graft copolymer composition composed of (1) a polyolefin of a 2 to 8 carbon atom, non-aromatic, monoolefin, said polyolefin having chemically attached thereto to carbon atoms in its chain, as graft copolymerized substituents thereon, a minor proportion of up to about 20 percent by weight, based on the weight of the composition, of units consisting of (2) a polymerized sulfonated monomer selected from the group consisting of sulfonated acrylate and methacrylate monomers of the structural formula:

$$CH_2{=}CR{-}CO{-}Q{-}Y{-}(SO_3A)_n \qquad (I)$$

wherein R is selected from the group consisting of hydrogen and methyl, Q is selected from the group consisting of divalent sulfur, oxygen, and amide nitrogen, Y is selected from the group consisting of bivalent and trivalent hydrocarbon radicals containing 1–4 carbon atoms, A is selected from the group consisting of hydrogen, alkali metals, and alkyl radicals containing 1–5 carbon atoms, and *n* is an integer from 1 to 2.

3,284,542

PREPARATION OF HIGH IMPACT COMPOSITIONS FROM VINYL AROMATIC MONOMERS AND RUBBERY DIOLEFIN POLYMERS

Frederick E. Carrock and Kenneth W. Doak, Wyckoff, N.J., assignors to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

No Drawing. Filed Mar. 22, 1963, Ser. No. 267,365

13 Claims. (Cl. 260—880)

1. In a process for preparing a rubber-modified vinyl aromatic polymer which comprises dissolving, in the absence of aqueous diluents, from 2 to 25 weight percent of a rubbery polymer of a conjugated diolefin in a vinyl aromatic monomer selected from the groups consisting of styrene, lower alkyl nuclear substituted styrene, halogen nuclear substituted styrene and mixtures thereof, and partially polymerizing the resulting monomer-rubber solution to an extent of from 10 to 45 percent conversion, the improvement which comprises transferring the partially polymerized monomer-rubber mixture to an agitated aqueous suspension containing therein hydroxyethyl cellulose as the suspending agent, the partially polymerized monomer-rubber mixture being added in an amount such that its weight ratio to water in the aqueous suspension is about 1:2 to 5:4, said hydroxyethyl cellulose having a viscosity in a 1% aqueous solution at 25° C. of from 750 to 10,000 cps. (Brookfield viscometer) and a peroxide initiator, continuing agitation of the resulting suspension, polymerizing to substantial completion and recovering from said polymerization said rubber-modified vinyl aromatic polymer in bead form.

3,284,543

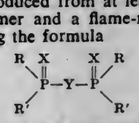
DIPHOSPHINE OXIDES AND DIPHOSPHINE SULFIDES AS FLAME-RETARDANT AGENTS FOR THERMOPLASTIC PRODUCTS

Helen Currier Gillham, Stamford, and Allan Ellis Sherr, Norwalk, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Oct. 16, 1963, Ser. No. 316,525

7 Claims. (Cl. 260—887)

1. A flame-retardant composition comprising a thermoplastic polymer produced from at least one ethylenically unsaturated monomer and a flame-retarding amount of a compound having the formula



wherein R and R′ are individually selected from the group consisting of hydrogen, an aryl radical having from 6 to 10 carbon atoms, inclusive, an alkyl radical having from 1 to 6 carbon atoms, inclusive, an aralkyl radical having from 7–11 carbon atoms, inclusive, a carbamoylalkyl radical having from 1 to 6 carbon atoms, inclusive, in the alkyl group, a cyanoalkyl radical having from 1 to 6 carbon atoms, inclusive, in the alkyl group, a carboxyalkyl radical having from 1–6 carbon atoms, inclusive, in the alkyl group, a halo substituted aralkyl radical having from 7 to 11 carbon atoms, inclusive, and a polyhalo substituted aralkyl radical having 7 to 11 carbon atoms, inclusive, Y represents an alkylene radical having from 1 to 4 carbon atoms, inclusive, and X is selected from the group consisting of oxygen and sulfur, no more than one of R and R′ being hydrogen.

3,284,544

SELF-EXTINGUISHING ALKENYL AROMATIC RESINS CONTAINING ORGANIC POLYSULFIDE

Jacob Eichhorn, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Apr. 1, 1963, Ser. No. 269,740

6 Claims. (Cl. 260—893)

1. A self-extinguishing alkenyl aromatic resin selected from the group consisting of the homopolymers and copolymers of styrene, α-methyl styrene, tert.-butyl styrene, chlorostyrene, vinyl toluene, vinyl xylene and copolymers thereof with acrylonitrile and such homopolymers and copolymers containing about 5 to 20 weight percent of polybutadiene containing as flameproofing agents an organic halide in combination with an organic disulfide selected from the group consisting of benzyl disulfide, xylyl disulfide, butylxanthic disulfide, benzothiazole disulfide, dithiobis[bis(p-tert.-amylphenol)disulfide] and poly(p-tert.-amylphenol disulfide).

6. A method of flameproofing a styrene polymer comprising:

dispersing granules of said polymer in an aqueous solution together with a flameproofing quantity of an organic halide and an organic disulfide selected from the group consisting of benzyl disulfide, xylyl disulfide, butylxanthic disulfide, benzothiazole disulfide, dithiobis[bis(p - tert.-amylphenol)disulfide] and poly(p-tert.-amylphenol disulfide),

agitating the resulting dispersion while increasing the temperature thereof to a level in the range 95–130° C. over a period of about 15 to 45 minutes,

continuing to agitate said dispersion while maintaining said increased temperature level for a period of up to three hours, then

decreasing said temperature to approximately room temperature over a period of about 60–80 minutes, thereafter

recovering said polymer granules from said dispersion.

3,284,545

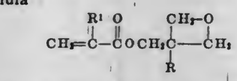
PROCESSING AND STABILIZING AIDS FOR VINYL CHLORIDE RESINS

Harry J. Cenci, Warminster, and Marvin J. Hurwitz, Elkins Park, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Dec. 8, 1964, Ser. No. 416,896

6 Claims. (Cl. 260—899)

1. A homogeneous vinyl chloride resin composition comprising a polymer selected from the group consisting of homopolymers of vinyl chloride and copolymers of vinyl chloride with minor proportions of other ethylenically unsaturated monomers and, blended therewith, a processing and stabilizing amount of an acrylic copolymer of 20 to 98.5 parts methyl methacrylate, 0.5 to 40 parts of ethyl acrylate, and 1 to 40 parts of an ether ester of the formula



in which

R is an alkyl group of one to four carbon atoms, and R^1 is selected from the group consisting of hydrogen and methyl, all parts being by weight.

3,284,546

THIOPHOSPHORIC ESTERS

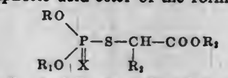
Raffaello Fusco, Giorgio Rossi, and Pietro de Pietri Tonelli, Milan, and Alberto Barontini, San Donato Milanese, Milan, Italy, assignors to Montecatini Società Generale per l'Industria Mineraria e Chimica, a corporation of Italy

No Drawing. Filed Oct. 31, 1962, Ser. No. 234,541

Claims priority, application Italy, Nov. 3, 1961, 19,789/61

9 Claims. (Cl. 260—941)

1. A phosphoric acid ester of the formula:



in which R, R_1, and R_2 are taken from the group consisting of lower alkyl, lower alkenyl, lower alkynyl, fluoro- lower alkyl, fluoro-lower alkenyl, and fluoro-lower alkynyl; at least one of the R, R_1, and R_2 radicals being one of said fluoro radicals; R_3 being taken from the class consisting of hydrogen and phenyl; X being taken from the class consisting of sulfur and oxygen.

3,284,547
PHOSPHORIC ESTERS
Jean Metivier and Michel Sauli, both of Paris, France, assignors to Rhone-Poulenc S.A., Paris, France, a corporation of France
No Drawing. Filed Jan. 3, 1966, Ser. No. 517,993
Claims priority, application France, Jan. 5, 1965, 880
2 Claims. (Cl. 260—941)

1. Phosphoric esters of the formula:

$$(RO)_2P(=S)-CH_2-CO_2C(CH_3)_3$$

wherein R represents methyl or ethyl.

3,284,548
PROCESS FOR MAKING NEUTRAL HYDROXY SUBSTITUTED TRIESTERS OF PHOSPHORODITHIOIC ACID
Emil T. Wierber, Cleveland, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio
No Drawing. Filed May 23, 1963, Ser. No. 282,564
13 Claims. (Cl. 260—978)

1. The process of preparing hydroxy-substituted phosphorodithioic acid triesters which comprises the reaction at a temperature within the range of from about —60° C. to about 200° C. of the ammonium salt of a dialkyl phosphorodithioic acid with at least about an equivalent amount of propylene, with the liberation of ammonia from said salt oxide.

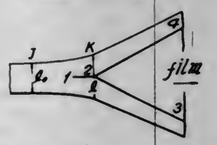
3,284,549
NUCLEAR REACTOR FUEL ELEMENTS
Lionel Houston Ford, St. Anne's-on-the-Sea, Bryan Edward Ingleby, Lea Town, Preston, and Neil Silva Hibbert, Fulwood, Preston, England, assignors to United Kingdom Atomic Energy Authority, London, England
No Drawing. Filed Dec. 11, 1964, Ser. No. 417,825
Claims priority, application Great Britain, Dec. 31, 1963, 51,258/63; Mar. 19, 1964, 11,780/64
4 Claims. (Cl. 264—.5)

1. A method of producing high integrity spheroids of uranium carbide having an outer coating of a substantially impermeable refractory material comprising the steps of applying an initial coating of pyrolytic carbon, 5–20 microns in thickness, on spheroids of uranium monocarbide at a deposition temperature in the range 1200° C. to 1400° C. such that reaction between the applied coating of pyrolytic carbon and the uranium monocarbide spheroids does not take place by a substantial amount, followed by application of an outer coating on the pyrolytic carbon coated uranium monocarbide spheroids of a substantially impermeable refractory material of the group consisting of pyrolytic carbon and silicon carbide said outer coating being applied at a temperature in the range 1500° C.–1800° C. such that reaction takes place between the initial coating of pyrolytic carbon and the uranium monocarbide spheroids to form uranium dicarbide so that voidage, in the form of a gap, is produced between the spheroids and the outer coating of refractory material.

3,284,550
ULTRAHIGH PURITY CARBIDE FORMATION
Robert E. Riley and Keith V. Davidson, both of Los Alamos, N. Mex., assignors to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Mar. 28, 1966, Ser. No. 538,906
4 Claims. (Cl. 264—.5)

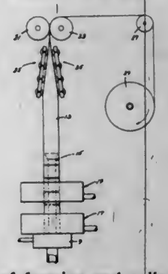
1. A method of forming ultrahigh purity carbide free of vestigial segregates which comprise: (a) arc-melting the elemental constituents, (b) heating to about 2000° C. in vacuum, (c) crushing, and (d) again heating to 2000° C. in vacuum.

3,284,551
STRETCHING PROCESS OF THERMO-PLASTIC FILM
Hirosuke Yumoto, Kazuya Harada, and Masaaki Itoga, all of Mishima-shi, Shizuoka-ken, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
Filed Apr. 30, 1963, Ser. No. 276,703
Claims priority, application Japan, May 10, 1962, 37/23,156
7 Claims. (Cl. 264—25)



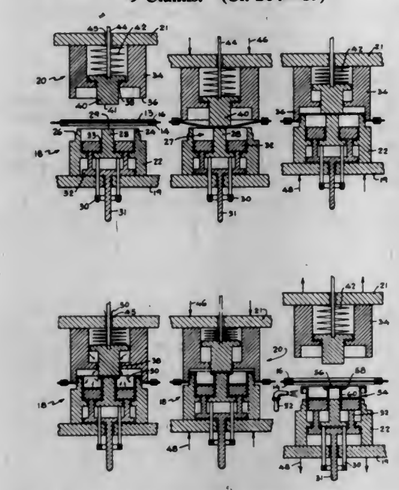
1. A process for transversely stretching a polypropylene film which is characterized by necking when stretched, which comprises exerting opposing forces on the opposite transverse edges of the film and moving the film longitudinally through first a preheating zone having a preheating temperature between 70° C. and the film melting point and having localized heating parallel to the longitudinal direction of film movement at a temperature more than 10° C. greater than said preheating temperature, said film being transversely stretched about 1.7 times its original size in said pre-heating zone and second a stretch heating zone diagonal to the longitudinal direction of film movement wherein stretching of the film in the transverse direction is completed, said localized heating in the preheating zone having a rearwardmost point which meets a forwardmost point of the stretch heating zone.

3,284,552
METHOD FOR MAKING TUBING
Harold A. Haley, Secane, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware
Original application Oct. 1, 1962, Ser. No. 227,234. Divided and this application Mar. 17, 1964, Ser. No. 352,453
7 Claims. (Cl. 264—70)



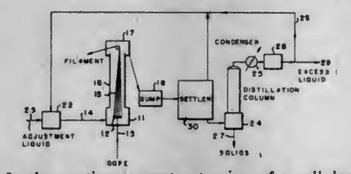
1. A method of forming and collecting thermoplastic seamless tubing including the steps of continuously extruding a flowable film-forming material in the form of a seamless tubing having longitudinally extending elements which differ in thickness, continuously advancing the tubing away from the point of extrusion and engaging its internal surface with a mandrel to expand the tubing to a desired size, setting the extruded tubing concomitantly with the advancement thereof, collapsing the tubing after it leaves the mandrel, collecting the flattened tubing in the form of a roll, and rotating the mandrel in opposite directions to oscillate the expanded portion of the tubing relative to the collapsed portion thereof whereby successive convolutes of an element of the tubing are laterally offset from each other on said roll.

3,284,553
THIN WALLED PLASTIC ARTICLES AND FORMING SAME
Bryant Edwards, Clarendon Hills, Ill., assignor to Illinois Tool Works, Inc., a corporation of Delaware
Original application May 10, 1961, Ser. No. 109,225, now Patent No. 3,105,607. Divided and this application June 4, 1963, Ser. No. 285,463
9 Claims. (Cl. 264—89)



4. A method of forming undercuts in articles made from sheet stock plastic material comprising, heating at least a portion of the plastic material to afford ready stretching thereof, freezing at least a portion of the plastic material in an area adjacent to the heated material portion below the temperature affording ready stretching thereof, and moving at least part of the heated material portion to one side of the frozen material portion while supporting an area of said frozen material portion within the outer peripheral portions thereof to provide an undercut on an article.

3,284,554
PROCESS OF REGENERATING SPENT SPIN BATH AND COMPOSITION THEREOF
Jesse L. Riley, Dunellen, N.J., assignor to Celanese Corporation of America, New York, N.Y., a corporation of Delaware
Original application Aug. 10, 1960, Ser. No. 48,643. Divided and this application Apr. 22, 1964, Ser. No. 367,275
8 Claims. (Cl. 264—179)

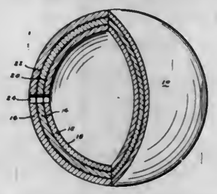


1. In the continuous wet extrusion of a cellulose ester, wherein a solution of said cellulose ester is extruded into a spin bath to effect coagulation of said cellulose ester in the form of a shaped structure and said structure and spent spin bath are continuously withdrawn, the improvement which comprises maintaining the conductivity of the liquid in which coagulation takes place at a value ranging between about 100 to 1000 micromhos.

3,284,555
PROCESS FOR THE PRODUCTION OF SHAPED ARTICLES AND ARTICLES PRODUCED THEREBY
Joachim Löbering, 3 Herrnwiesstrasse, 8022 Munich-Grunewald, Germany
No Drawing. Filed Dec. 21, 1964, Ser. No. 420,156
Claims priority, application Germany, Dec. 21, 1963, L 46,649
9 Claims. (Cl. 264—182)

1. A process for the production of a shaped article from acrylonitrile which comprises dissolving monomeric acrylonitrile in an aqueous solution of $NaZnCl_3$ and phosphoric acid, polymerizing the monomer in the presence of an oxidizing and a reducing agent to produce a spinning solution, and spinning the latter into a precipitating bath containing $NaZnCl_3$ and phosphoric acid in lower concentrations than in the spinning solution.

3,284,556
METHOD FOR INJECTION OR TRANSFER MOLDING LAMINATED PRESSURE VESSELS
Louis E. Hay, 847 Woodhill Road, Dayton, Ohio
Filed Jan. 25, 1963, Ser. No. 254,032
8 Claims. (Cl. 264—221)



1. The method of fabricating a laminated pressure vessel having an inner shell and an outer contiguous shell formed by injection molding in progressive molds and comprising: the method of injection molding the inner shell onto a disposable mandrel removably located within the first mold, then relocating the said disposable mandrel together with the said inner shell in a second mold having a cavity larger than the cavity in the first mold and injection molding the outer shell onto the said inner shell, and then disposing said mandrel from said pressure vessel.

3,284,557
PROCESS FOR CRIMPING AN ARTIFICIAL IMPLANT FOR USE IN AN ANIMAL BODY
Seymour Polansky, Somerville, N.J., assignor to Ethicon, Inc., Somerville, N.J., a corporation of New Jersey
No Drawing. Filed Dec. 20, 1962, Ser. No. 246,002
2 Claims. (Cl. 264—238)

1. The process of forming an artificial implant which is elastic and non-kinking when flexed comprising the steps of:
crimping a tube composed of beef tendon collagen which said collagen has been purified by enzymatic removal of elastin followed by acid swelling;
setting the tube while in the crimped condition with water at a temperature of from 40° C. to 100° C. for between about one and about 20 minutes; and,
drying the crimped tube.

3,284,558
INJECTION MOLDING COMPOSITE BOTTOMS
Herbert P. Ludwig, Desmastr. 112, Uesen, near Bremen, Germany
Filed Oct. 6, 1964, Ser. No. 401,886
11 Claims. (Cl. 264—244)

1. The method of applying bottoms to shoes comprising supporting a last with an upper lasted thereon in engagement with the top of an open top mold, support-

ing a sole plate at the bottom of the mold for movement toward the bottom of the upper on the last, attaching a filler to the bottom of the lasted upper by moving the sole plate toward the bottom of the last to press the filler against the bottom of the lasted upper, moving the sole

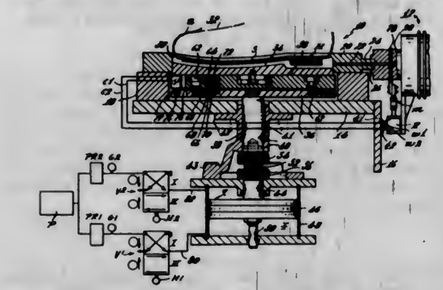
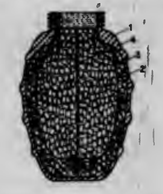


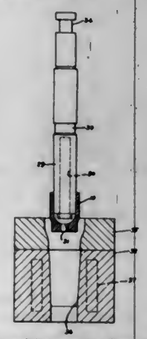
plate away from the bottom of the lasted upper to provide a closed cavity between it and the attached filler for receiving a bottom-forming composition, and injecting a bottom-forming composition into the cavity to form an outsole about the filler.

3,284,559
PROCESS FOR MANUFACTURING AMMUNITION BODIES
Hans Assmann, Kaufing, near Schwanenstadt, Upper Austria, Austria
Filed July 11, 1962, Ser. No. 209,162
Claims priority, application Switzerland, Dec. 22, 1961, 14,894/61
1 Claim. (Cl. 264—250)



A process for manufacturing an ammunition body having an inner jacket and an outer jacket fitted on said inner jacket, said process comprising forming by a molding process at least two parts cooperatively defining the shape of a shell and constituted at least to some extent of high-polymer material, said shell being formed with a narrow throat-like mouthpiece and with an increased thickness and a recess at a location in the wall opposite said mouthpiece, connecting together the thus formed parts so as to form the inner jacket for said ammunition body, and injecting high-polymer material into an injection molding tool in which said inner jacket is supported as a core by engagement of said recess and said mouthpiece in such manner that the thus injected material forms an outer jacket on said core and becomes joined thereon.

3,284,560
METHOD OF MAKING PLASTIC TUBES
William N. King and Edward E. Merritt, Anoka, Minn., assignors to Federal Cartridge Corporation, Minneapolis, Minn., a corporation of Minnesota
Original application Sept. 18, 1963, Ser. No. 309,824. Divided and this application Oct. 19, 1964, Ser. No. 404,662
4 Claims. (Cl. 264—292)

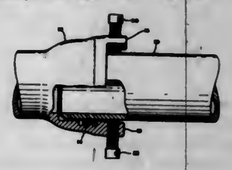


1. A method of making an oriented plastic shot shell hull tube comprising: providing a cup shaped tubular blank of linear polyolefin plastic having an open end and a substantially closed end for forming an integral base wad, passing a tapered male die into the open end of said blank to radially stretch said blank to produce circumferential orientation in said plastic, said male die stretching said blank to an inner diameter less than the original outer diameter of said blank, and passing said blank and male die through a female die to longitudinally stretch said blank to produce longitudinal orientation in said plastic, said male and female dies longitudinally stretching said blank to a uniform outer diameter along its entire length and to an inner diameter tapering outwardly toward the open end of said blank whereby the orientation of said plastic is increased at said open end.

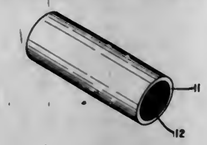
ELECTRICAL

3,284,561
ELECTRICAL CONDUCTIVITY MEANS FOR PIPE JOINT FITTINGS
Loydell Ames Clements, Laval West, Quebec, Canada, assignor to Canada Iron Foundries Limited, Montreal, Quebec, Canada
Filed Feb. 12, 1964, Ser. No. 344,485
Claims priority, application Canada, Apr. 9, 1963, 872,837
5 Claims. (Cl. 174—78)

1. As an article of manufacture, a cast metal pipe member having a bell end for receiving a spigot end of another pipe member, said cast metal pipe member including electric conducting means for effecting electrical connection between said bell end and a spigot end received therein, said electric conducting means comprising an integral lug carried on said bell end and extending outwardly therefrom in a direction generally parallel with the longitudinal axis of said bell end, and a conductor extending through said lug in a direction generally transverse to said bell end axis and adapted to be moved towards said axis and into contact with a spigot end received in said bell end.

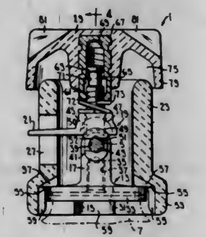


3,284,562
FLEXIBLE ELECTRICAL CONDUCTOR
Leo F. Stebleton, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
Filed Feb. 8, 1965, Ser. No. 430,953
3 Claims. (Cl. 174—110)



1. An insulated electrical conductor comprising:
a multiplicity of free flowing electrically conductive particles positioned in a plurality of layers, and
a tube of electrically insulating elastomeric material enclosing said particles and holding said particles in compression.

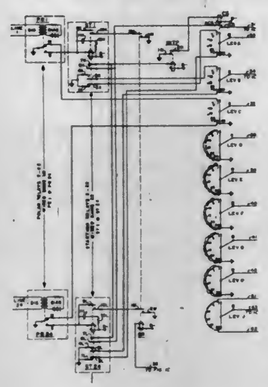
3,284,563
BUSHING PROTECTIVE HOOD AND CONNECTOR
Peter W. Muschong, St. Louis, Mo., assignor to Central Transformer Corporation, Pine Bluff, Ark., a corporation of Arkansas
Filed Oct. 22, 1965, Ser. No. 502,025
7 Claims. (Cl. 174—145)



1. A protective hood and connector for attachment to a cover bushing of a transformer comprising a connector body adapted to be attached to the bushing, a stem on the body having a hole adapted to receive a bared end of an insulated conductor, a clamp jaw on the stem engageable with said bared conductor end when received by the stem, a second clamp jaw movable relative to the stem toward and away from the first jaw and adapted to cooperate with the first jaw for clamping a conductor therebetween, means for moving the second jaw toward the first jaw, the second jaw having an elongate gap electrode projecting from it at an angle of approximately 90° to the axis of a conductor when clamped by the jaws, and a generally cylindrical casing of insulating material positioned around the connector body, the casing having two holes located approximately 90° apart, the casing being movable between first and second positions 90° apart whereby a conductor can be passed through either one of said holes in the casing and the gap electrode can project through the other hole in the casing.

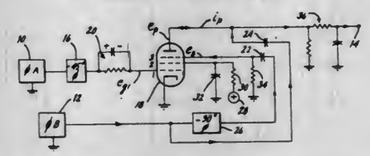
3,284,564
AUTOMATIC CIRCUIT SAMPLER GARBLE DETECTOR
Karl H. Gerhards, 1204 Delaware, Leavenworth, Kans.
Filed Mar. 14, 1963, Ser. No. 265,606
6 Claims. (Cl. 178—4)

4. Circuitry for automatically detecting errors in Teletype transmission comprising, means to sequentially read the Teletype text on a plurality of Teletype lines for a period of time somewhat longer than that required to transmit one line of message text, and means to actuate



an alarm if a carriage return function and a line feed function are not read in that order during said period of time.

3,284,565
COLOR TV PHASE COMPARATOR AND FM DETECTOR CIRCUITS UTILIZING VACUUM TUBE INTERMITTENTLY OPERATING IN SECONDARY EMISSION MODE
Donald R. Taylor, Jr., Philadelphia, Pa., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed July 11, 1963, Ser. No. 294,284
5 Claims. (Cl. 178—5.4)

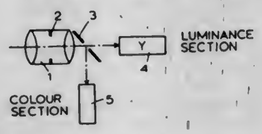


1. A phase comparator for a color television receiver for producing a bipolar phase-error indicative signal for controlling a color reference oscillator, comprising:
(a) an electron tube having a cathode, at least three grids including a control grid, a second grid, a third grid, and a plate, said third grid being the one closest to said plate,
(b) means connecting said cathode to a point at reference potential,
(c) means for supplying a positive bias potential to said second grid,
(d) means for supplying color reference bursts from the composite color television video signal in said receiver across said control grid and said cathode such that space current flows in said tube to said cathode for intermittent intervals during the duration of each applied burst,
(e) means for deriving from the output signal of the color reference oscillator in said color television receiver two dissimilarly phased alternating current signals of the same frequency as said output signal,
(f) means for supplying said alternating current signals to said plate and said third grid, respectively, said alternating current signals being phase such that if said output signal and said color reference bursts have like phase, during one part of each said interval when space current flows said third grid will be more positive than said plate, and during another part of

each said interval said plate will be more positive than third grid, and

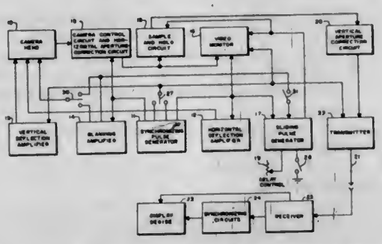
(g) alternating curernt filter means connected to said plate, for passing, a bipolar phase-error indicative output signal from said comparator while suppressing the burst-frequency component of the signal at said plate.

3,284,566
COLOUR TELEVISION CAMERA ARRANGEMENTS
Ivanhoe John Penfound James, Ealing, London, and Hans Gerhard Lubszynski, Waltham St. Lawrence, England, assignors to Electric & Musical Industries Limited, Hayes, Middlesex, England, a corporation of Great Britain
Filed July 12, 1963, Ser. No. 298,517
Claims priority, application Great Britain, July 14, 1962, 27,150/62
9 Claims. (Cl. 178—5.4)



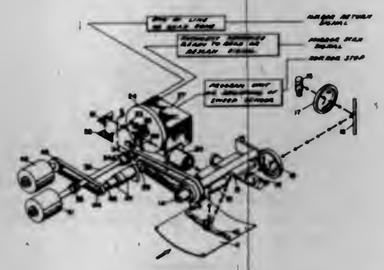
1. A colour television camera arrangement including a luminance pick-up tube for generating a signal representing the luminance of an object, at least one colour pick-up tube for generating a signal representing at least one colour component of said object, an optical system for applying light to said pick-up tubes, aperture means in the optical path to at least one of said pick-up tubes which cause the light reaching the luminance tube to be of a given aperture and the light reaching said colour pick-up tube to be obtained at least from light outside said given aperture.

3,284,567
NARROW BANDWIDTH TELEVISION SYSTEM
Glen R. Southworth, Boulder, Colo., assignor to Ball Brothers Research Corporation, Boulder, Colo., a corporation of Colorado
Filed Nov. 26, 1963, Ser. No. 326,086
5 Claims. (Cl. 178—6.8)



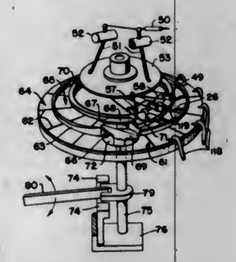
1. A reduced bandwidth television system which comprises means for generating a wide band television signal representative of at least one frame of a scene, wide band signal monitoring means for receiving and displaying the wide band signal information for adjustment purposes, and means for sampling the wide band television signal to produce a series of sample pulses, each of said respective pulses having an amplitude proportional to the amplitude of the wide band television signal at the instant it is sampled and said series of sample pulses constituting a narrow band television signal for transmission purposes having a line rate equal to the frame rate of the wide band television signal and a frame rate equal to the amount of time required to sample the entire scene.

3,284,568
SWEEP DEMAND SYSTEM
Harvey L. Cook, Jr., Falls Church, and Richard A. Clark, Arlington, Va., assignors to Farrington Electronics, Incorporated, Alexandria, Va., a corporation of Massachusetts
Filed Apr. 10, 1963, Ser. No. 272,007
7 Claims. (Cl. 178—7.6)



6. In apparatus for reading intelligence-bearing items arranged in lines of items, means for scanning the items in scanning strokes each spanning a plurality of the items in a line of items, first continuously driven means coupled to said scanning means and continuously applying a first driving force thereto for moving the scanning means relative to the items, in a first direction through a read stroke along a line of the items, second continuously driven means normally disconnected from said scanning means and selectively connectible thereto to apply a second driving force thereto superior to said first driving force for moving said scanning means through a return stroke in a second direction opposite to said first direction, and means responsive to electrical signals for connecting said second driven means to said scanning means to apply said superior second driving force to said scanning means in opposition to said first driving force to overpower the latter and initiate return movement of said scanning means in said second direction at any position during movement of said scanning means in said first direction.

3,284,569
ELECTROMECHANICAL SHIFT REGISTER
Leo Hohoff, Park Ridge, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware
Filed Apr. 10, 1963, Ser. No. 272,040
10 Claims. (Cl. 178—52)



1. A mechanical shift register for translating seriatim input signals of a first or second condition into simultaneous, parallel output signals comprising;

(a) a plurality of elements successively movable about an axis at a predetermined rate,

(b) a stationary means divided into a first and a second

portion corresponding to a first and a second condition of a signal,

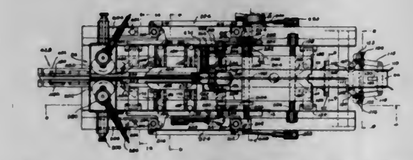
(c) gating means for positioning said elements on either said first and second portion in accordance with the condition of a signal being received,

(d) electrically responsive means responsive to input signals of said first and second conditions for actuating said gating means to position said elements on the portions of the stationary means corresponding to the conditions of the signal being received,

(e) a plurality of segment means on each portion of said stationary means and electrically isolated from one another, said segment means being engageable by said rotatable elements, and

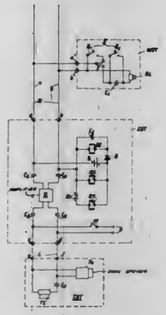
(f) parallel output means associated with predetermined ones of the said segment means to read out simultaneously the position of a predetermined number of rotatable elements.

3,284,570
CASING-IN MACHINE INCLUDING PLURAL COATING MEANS
James H. Thorp, Hartford, Conn., assignor to The Smyth Manufacturing Company, Bloomfield, Conn., a corporation of Connecticut
Filed Dec. 5, 1961, Ser. No. 157,109
23 Claims. (Cl. 118—224)



1. A feeding apparatus for use with a cyclically operable book casing-in machine having a plurality of vertically reciprocable upright saddle plates uniformly spaced about a vertical axis and having means operable during each cycle for indexing said plates about said axis to move them successively to and from a book filler receiving station, said feeding apparatus comprising in combination: a horizontal rail normally positioned in longitudinal register with a saddle plate of said machine at said receiving station, said rail being adapted to support a succession of book fillers in vertical positions with their backs facing upwardly, means connectible with said casing-in machine and operable in synchronism therewith during each cycle for engaging successive fillers and for feeding them along the rail and toward said machine, said filler engaging and feeding means being so constructed and timed that each filler is moved to a transfer position beyond the end of the rail and coinciding with the filler receiving station of the casing-in machine immediately after the indexing of a saddle plate of said machine to said receiving station, and two longitudinal filler supporting platforms adjacent said end of the rail and oppositely spaced transversely from the central vertical plane of said rail and of the saddle plate at said receiving station, said platforms being normally at a level below the bottom of said saddle plate to permit indexing movement thereof, and means cyclically operable after each saddle plate indexing and before each filler feeding for automatically moving said supporting platforms upwardly at the sides of the saddle plate at the receiving station and to upper positions at the level of the top of said rail in which positions they are adapted for guiding the filler onto said saddle plate, the last said means being also cyclically operable after each filler feeding for automatically moving said supporting platforms downwardly to provide clearance for the next following indexing movement of the saddle plates.

3,284,571
COMBINED INTERCOM AND DOOR OPENER SYSTEM
Gerhart Wittig, Mannheim, Germany, assignor to Handelskontor Helder G.m.b.H., Westphalia, Germany
Filed Feb. 18, 1963, Ser. No. 259,040
Claims priority, application Germany, Feb. 24, 1962, H 45,001; Dec. 1, 1962, H 47,569
7 Claims. (Cl. 179—2)



1. A combined intercom and door opener system with a door station and at least one remote cooperating station, comprising, in combination, a door station having two first terminals and including first electro-acoustical transducer means and electrical door opener means connected in parallel with each other to said terminals; a central station having two second terminals respectively connected with said first terminals, and including two third terminals, amplifier means connected between said second and third terminals for cooperating with said transducer means, a plurality of relay means for controlling the operation of said amplifier means and the operation of said door opener means, respectively; and supply means for applying electrical energy to said relay means, amplifier means and door opener means, respectively; at least one cooperating station having two fourth terminals and including second electro-acoustical transducer means and control means including switch means for controlling the operation of said second transducer means and the operation of said relay means, respectively, said second transducer means and said control means being connected with said fourth terminals; and two-line connection means arranged between said two third terminals and said two fourth terminals, respectively, for transmitting control criteria from said switch means in said cooperating station to said relay means in said central station and for transmitting signals between said first and second electro-acoustical transducer means.

3,284,572
ELECTRIC SIGNALLING DEVICE FOR THE TRANSMISSION OF SIGNALS IN THE FORM OF PULSE TRAINS
Tore Gottfrid Hesselgren, 1 Borensvagen, Johanneshov, Sweden
Filed Dec. 27, 1961, Ser. No. 162,499
Claims priority, application Sweden, Jan. 2, 1961, 7/61
8 Claims. (Cl. 179—5)

1. An electrical signalling device for the automatic transmission of signals in the form of pulse trains over a transmission circuit comprising, in combination,

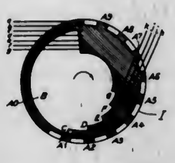
a rotatable member carrying a number of contact segments which are curved concentrically about the axis of rotation of the rotatable member;

driving means for rotating said rotatable member;

a first sliding contact resting against a part of said rotatable member which carries a sequence of said

contact segments disposed with spacings at equal radial distance from the axis of rotation of the rotatable member;

a second sliding contact resting against a part of said rotatable member which carries a further one of said contact segments, said further contact segment being galvanically connected with all of the contact segments of said sequence of contact segments and arranged so that said second sliding contact slides over said further contact segment at the same time as said



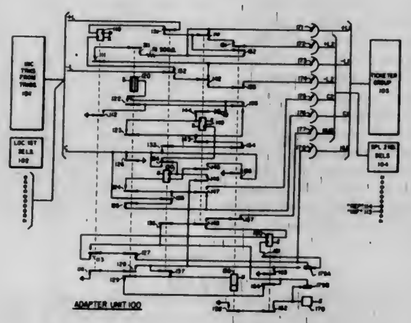
first sliding contact slides over said sequence of contact segments;

additional sliding contacts resting against parts of said rotatable member which carry additional contact segments of different lengths galvanically connected with all the contact segments of said sequence of contact segments;

means connecting said first and second sliding contacts into said circuit;

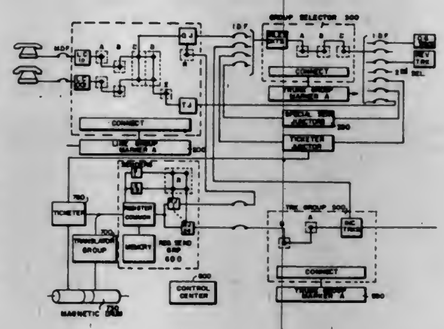
and switching means for selectively connecting any of said additional sliding contacts with said first sliding contact.

3,284,573
SINGLE DIGIT ADAPTER CIRCUIT
Lester L. Smith, McHenry, and Jack W. Taugner, Park Ridge, Ill., assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Nov. 12, 1963, Ser. No. 322,756
8 Claims. (Cl. 179—7.1)



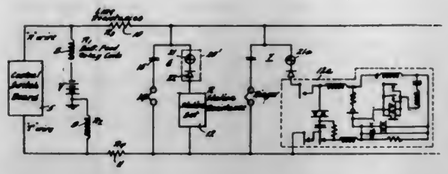
1. In an automatic toll ticketing telephone system, an access circuit, a ticketer, a special selector, and an adapter circuit comprising: control means connected to said access circuit; connecting means including circuit connections to said access circuit, to said ticketer, and to said special selector, and further including a circuit connection to said control means; said control means operated in response to receipt of a first pulse transmitted to said access circuit to condition said connecting means to prepare a connection between said access circuit and said ticketer, and in response to receipt of a second pulse from said access circuit, transmitted within a predetermined time interval, to operate said connecting means to connect said access circuit to said ticketer; and timing means included in said control means, operated in response to absence of receipt of said second pulse, after the expiration of said predetermined time interval to operate said connecting means to connect said access circuit to said special selector.

3,284,574
MAGNETIC DRUM TRANSLATOR
Evangelos P. Kostogiannis and Michael A. Langowski, Chicago, Ill., assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Sept. 16, 1963, Ser. No. 309,093
14 Claims. (Cl. 179—18)



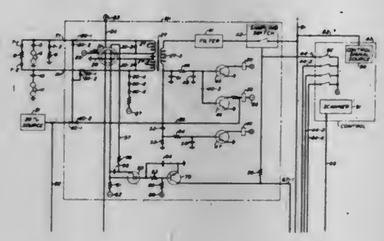
1. An automatic telephone system including register-senders, a common translator, and a translator allotter, said translator including: a first plurality of incoming register means operated upon receipt of a plurality of digits to register said digits, a record means having recorded therein a plurality of sets of coded call routing and control data items, readout means adapted to read said recorded data from said record means, counter means external to said record means arranged to indicate the address of said record means corresponding to said readout means, coincidence detecting means, comparison buffer register means, transfer buffer register means, counter gating means, process control means, means connecting said incoming register to said coincidence means, a first means in said process control means operated upon receipt of said digits to enable said counter gating means to pass said counter count to said comparison buffer register means and simultaneously enable said readout means to continuously read out said recorded data, first gating circuit means connecting said transfer buffer register means to said readout means, said transfer buffer register means operable via said first gating circuit means by said readout means to register said record data in synchronism with said counter count presented to said coincidence means, said coincidence means thereby operated to compare said data from said incoming register and said counter count, coincidence signal means in said coincidence means operated upon parity between said two sets of data to signal said process control means, control means in said process control means operated responsive to said coincidence signal to operate said first circuit means to operate said transfer buffer register to register said appropriate coded call routing and control data items from said readout means, said transfer buffer register thereafter operated to transfer said information to said incoming register, other means thereafter operated to send said coded call routing and control data from said incoming register to said register-sender.

3,284,575
THRESHOLD RESPONSIVE ISOLATION FOR PARTY TELEPHONE LINES
Kal W. Howard, Charlottesville, Va., assignor to Stromberg-Carlson Corporation, a corporation of Delaware
Filed Dec. 9, 1963, Ser. No. 329,178
6 Claims. (Cl. 179—31)



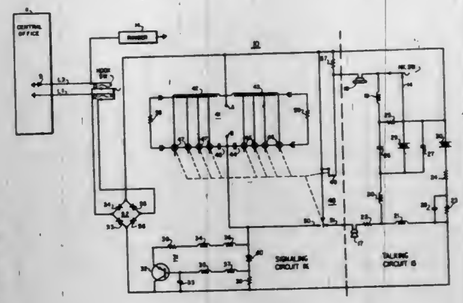
1. A party telephone line comprising in combination, a pair of telephone wires, a direct current voltage source, a plurality of station sets each having a hook switch for connecting the set between said wires, and a voltage threshold device connected between each of the sets and the same one of the wires which breaks down to pass current when encountering substantially the entire voltage from the source but remains non-conductive when encountering only the potential drop across the line due to current flow through the station set from said source.

3,284,576
TELEPHONE LINE CIRCUIT
Robert K. York, Piscataway Township, Middlesex County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 4, 1963, Ser. No. 285,372
12 Claims. (Cl. 179—84)



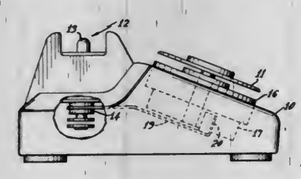
1. Supervisory equipment for a telephone system comprising a plurality of multi-party line circuits each respectively connected to one of a plurality of telephone lines, a respective supervisory magnetic core coupled to the tip and ring line conductors in each of said line circuits, means coupled to all of said cores for maintaining the magnetization of said cores in a first state, control means for selectively transmitting control signals to said line circuits, means in each of said line circuits responsive to first control signals for applying ringing current to one of the respective tip and ring conductors, means for extending said ringing current to the other of said conductors responsive to an answer by the called party to switch the magnetization of the respective core to a second state, means in each of said line circuits coupled to the respective core for detecting the switching of the core magnetization to determine that the called party has answered, and means in said control means for selectively interrogating said detecting means.

3,284,577
SUBSTATION APPARATUS EMPLOYING A MULTI-FREQUENCY SIGNALING ARRANGEMENT
Robert V. Burns, Markham, and Robert T. Cleary, Lockport, Ill., assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Oct. 10, 1963, Ser. No. 315,136
5 Claims. (Cl. 179—84)



1. A telephone signaling arrangement comprising a resonant circuit having a plurality of selectively controllable resonant frequencies, means for selecting a frequency of said resonant circuit, amplifier means coupled to said resonant circuit and including a biassing circuit, a circuit extending over said resonant circuit and said biassing circuit in series, and switching means operative to short circuit the resonant circuit portion of said series circuit for simultaneously starting oscillations of said resonant circuit and rendering said amplifier means effective whereby sustained oscillations are set up at said selected frequency.

3,284,578
DIRECT-DIALING LONG-DISTANCE TELEPHONE SYSTEMS
Earl R. Evans, Bergenfield, N.J. (580 Bedford Road, Pleasantville, N.Y.)
Filed Feb. 11, 1963, Ser. No. 257,721
7 Claims. (Cl. 179—90)



7. In a direct-dialing telephone system employing multiple-digit area codes in which one digit is a "one" or "zero," in combination,

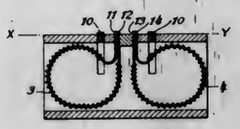
subscriber's lines,

switching equipment for interconnecting said lines,

pulse-producing means including a rotatable dial on each of said lines for controlling said switching equipment by said subscribers, and

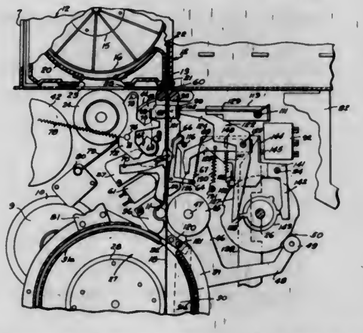
means including code-responsive means positioned by said dial for impairing the rotation of said dial to modify the operation of said pulse-producing means in response to setting up thereby any of said area code containing said digit "one" or "zero."

3,284,579
MAGNETIC RECORDING AND READING HEAD MOUNTING ASSEMBLY
Gerhard Dirks, 12120 Edgecliff Place, Los Altos Hills, Calif.
Continuation of application Ser. No. 785,848, Jan. 9, 1959. This application July 10, 1961, Ser. No. 123,957
Claims priority, application Great Britain, Jan. 15, 1958, 1,368/58
4 Claims. (Cl. 179—100.2)



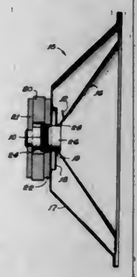
1. A mounting assembly comprising, in combination, a mounting block of non-magnetic material, said mounting block having a substantially planar face having a channel formed therein and a slot formed in the face of said mounting block in parallel and spaced relation to said channel so as to form a deformable portion between said slot and said channel in the face of said mounting block; a block arranged in said channel and having a side face at least a portion of which is spaced from a face of said channel forming a gap between said face portion of said block and said face of said channel; a magnetic head mounted in said gap; and a wedge inserted in said first-mentioned slot so as to deform the deformable portion of the face of said mounting block and thereby clamp said magnetic head in position in said gap between said block and said mounting block..

3,284,580
RECORDING TAPE MECHANISM
Sheldon Lee Pastor, Chicago, Ill., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Nov. 6, 1962, Ser. No. 235,644
7 Claims. (Cl. 179—100.2)



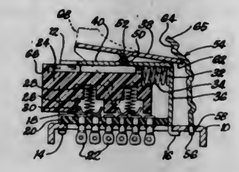
1. For use with a supply reel wound with magnetic recording tape having a relatively stiff leader attached to the outer end of the tape,
a magnetic tape recorder including
means for rotatably mounting said supply reel,
a rotatably driven take-up reel,
means for automatically feeding a said leader from the supply reel along a predetermined direct path to the take-up reel and for effecting winding engagement of the leader on the take-up reel,
a magnetic transducer head positioned in spaced relationship from said direct path,
a capstan and cooperating pressure roller positioned on opposite sides of said direct path between the head and the take-up reel, and
a tape-travel counter,
said tape recorder having in combination:
a pair of pads each having a resilient low-friction surface positioned on opposite sides of said direct path between the magnetic head and the supply reel,
a sensing member positioned between said pads and said pressure roller-capstan and adjacent said direct path prior to transport of a said stiff leader from the supply reel,
biasing means urging said sensing member against said leader and tape and toward said magnetic head when the leader is transported to the take-up reel along said direct path,
said biasing means being of insufficient strength to overcome the stiffness of the leader across the spacing between said pads and said pressure roller-capstan so that the leader remains substantially within said direct path and being of sufficient strength to move a relatively limp magnetic recording tape to an indirect path and into confronting relation to said magnetic head to indicate the end of the leader, and
means controlled by said movement of the sensing member for (1) biasing one of said pads transversely of said indirect path toward the other pad to press the tape between the pad surfaces and thereby afford uniform tape tension, (2) actuating said counter, and (3) actuating the magnetic head.

3,284,581
LOUD SPEAKER CONSTRUCTION
Clarence L. Fender, Fullerton, Calif., assignor, by mesne assignments, to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York
Filed June 3, 1963, Ser. No. 284,905
6 Claims. (Cl. 179—115.5)



1. In combination with a loud speaker having a speaker cone having an aperture at the apex thereof, a voice coil arrangement comprising
a cylindrical bobbin extending through said aperture to an end portion adjacent and inwardly of said aperture, a coil of wire on the opposite end portion of said bobbin,
said coil having electrical leads extending therefrom through said aperture,
said leads extending to the surface of said cone adjacent but radially outward of said aperture,
a membrane extending over said leads adjacent said first-mentioned end of said bobbin for spacing said leads from said speaker cone at said aperture,
and adhesive means securing said leads to said surface.

3,284,582
LATCH STRUCTURE FOR MINIATURE SWITCH CONSTRUCTIONS
James E. Hill, Prospect Heights, and Matthew C. Podgorski, Wood Dale, Ill., assignors to F & F Enterprises, Inc., Chicago, Ill., a corporation of Illinois
Filed Mar. 11, 1965, Ser. No. 439,009
19 Claims. (Cl. 200—5)



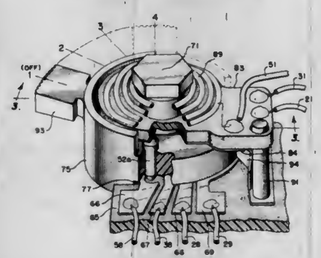
1. In a switch construction comprising a mounting means, a plurality of stationary contacts formed in an insulating base, said base being secured to said mounting means, and including a holder movably held on said mounting means, said holder supporting sliding contacts, said holder being movable over said base for disposing said sliding contacts in at least first and second positions with respect to said stationary contacts, the improvement comprising a latch means for retaining said holder in a position in which the holder is set, said latch means including a rocker having a portion thereof operatively connected to said holder, means pivotally mounting said rocker, a latch member, means for urging said latch member into contact with one end of said rocker, and at least one retaining means defined by said latch member, pivotal movement of said rocker operating to bring said one end of the rocker into contact with said retaining means, the operative connection of said holder with said rocker resulting in sliding movement thereof concurrently with said pivotal movement.

3,284,583
PERMUTATION SWITCH WITH MULTIPLE CONTACT RODS AND ARRESTING DEVICE
Ugo Buzzi, Zug, Switzerland, assignor to Anstalt Europäische Handelsgesellschaft, Vaduz, Liechtenstein, a corporation of Liechtenstein
Filed Dec. 16, 1963, Ser. No. 330,935
Claims priority, application Switzerland, Dec. 21, 1962, 15,020/62
8 Claims. (Cl. 200—11)



1. A contact disk arrangement for an electrical switching device comprising a rotatable contact disk, said rotatable contact disk incorporating an insulating plate provided with an opening, at least one conductor rod piercingly extending through said opening, a conductive contact ring provided with an opening through which said at least one conductor rod likewise piercingly extends, said conductive contact ring being carried by said insulating plate, whereby both said insulating plate and said conductive contact ring encircle and are supported by said piercingly extending conductor rod.

3,284,584
ADJUSTABLE SWITCHING APPARATUS COMPRISING RESILIENT MEANS BIASING MOVABLE PLATE STRUCTURE
Witalij Didyk, Chicago, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Aug. 30, 1965, Ser. No. 483,686
6 Claims. (Cl. 200—11)

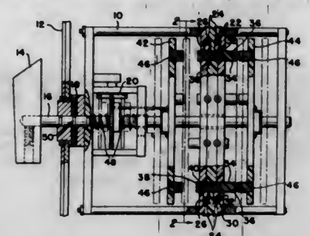


1. Adjustable switching apparatus comprising:
a first insulating sheet to which is affixed on one side thereof at least one fixed conductive switch contact;
a second insulating sheet to which is affixed on one side thereof at least one fixed conductive switch contact;
a rotatable insulating disc having an aperture which extends therethrough from one side to the other;
means including a shaft for supporting and aligning said first and second insulating sheets and said disc in parallel spaced apart relation such that said disc is journalled on said shaft between said first and second insulating sheets for rotation as between at least a plurality of different discrete positions and the sides of said insulating sheets, to which said fixed contacts are affixed, are adjacent each other;
said insulating disc having a manual control tab extending in a direction perpendicular to its axis of rotation to facilitate adjustment from one position to the next and also having a plurality of detent notches on its periphery corresponding to the plurality of different positions of said disc;
a movable contact pin retained in said aperture of said rotatable insulating disc and, in at least one position of said disc, engaging and electrically interconnecting the fixed contacts of said first and second insulating sheets;
a resilient detent which mates with a different notch on the periphery of said insulating disc in each different position of said disc;
and resilient means for urging one of said first and second insulating sheets toward the other.

3,284,585
SET-RESET ROTARY SWITCH
Howard F. Hall, Milwaukee, Wis., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 501,993
9 Claims. (Cl. 200—11)

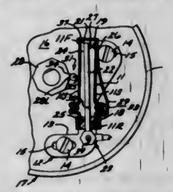
1. An electric switch comprising: a switch housing; actuator means being rotatable and axially slidable in said switch housing into a plurality of operative positions; a plurality of relatively fixed contact means carried by said switch housing in circular fashion with respect to said ac-

tuator means; and movable contact means, each being slidable in said fixed contact means in response to axial



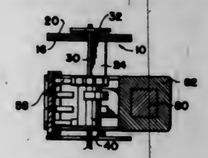
movement of said actuator means to selectively energize several of a plurality of electrical circuits.

3,284,586
EXTENDED LIFE ELECTRICAL CONTACT MEANS
Marcius N. Gover, Los Angeles, Calif.
(311 Pat Mell Road SW., Apt. 12–B, Marietta, Ga.)
Filed Apr. 9, 1965, Ser. No. 446,807
14 Claims. (Cl. 200—19)



1. Extended life electrical contact means, comprising: hollow longitudinal cantilever enclosing envelope means of resilient electrically conductivity material provided at a rear end thereof with rigid electrically conductive mounting bracket means flexibly mounting said cantilever envelope means in a cantilever manner extending outwardly therefrom, said envelope means having a sealed front end longitudinally spaced from said rear end and capable of being resiliently arcuately forcibly displaced from an initial rest position; a rigid longitudinal support member of electrically conductive material extending through the rear end of said envelope means and along the length thereof to an interior position in a predetermined interior relationship with respect to said front end of said envelope means and spaced from and out of contact with inside surfaces of said envelope means; a first electrical contact member effectively carried by an inside surface of a side portion of said envelope means and in electrical engagement therewith; and a second electrical contact member aligned with, opposed to, and facing said first electrical contact member and effectively carried by said rigid longitudinal support member within said envelope means and in electrical engagement with respect to said rigid longitudinal support member, said first and second electrical contact members together comprising an effective electrical switch; said rear end of said envelope means being provided with inner sealing plug means effectively closing and sealing same and being made of electrical insulating material effectively electrically insulating said rigid longitudinal support member from the rear end of said cantilever envelope means, an exterior side portion of said envelope means being provided with laterally directed cam follower means in engagement with a cam for corresponding cantilever deflection of said envelope means with respect to the non-deflected inner rigid longitudinal support member whereby to forcibly cause corresponding relative movement of said first and second electrical contact members within said sealed envelope means in an effective switch operating manner, said envelope means defining a completely sealed interior chamber provided with a substantially non-oxidizing gaseous medium therein; said cantilever envelope means being provided with effective resilient flexible convoluted hinge means adjacent to said rear end and positioned outwardly of the mounting engagement thereof with respect to said mounting bracket member and providing an effective pivot point, each of said first and second electrical contact members being spaced from said effective pivot point by a distance substantially equivalent to the corresponding radius of pivotal rotation of the resiliently movable one of said electrical contact members.

3,284,587
METER APPARATUS FOR TELEMETERING SYSTEMS INCLUDING IMPROVED SWITCH CONTACT STRUCTURES
Max A. Hoefgen, 9502 Shade, Wichita, Kans.
Filed Nov. 16, 1964, Ser. No. 411,364
7 Claims. (Cl. 200—18)

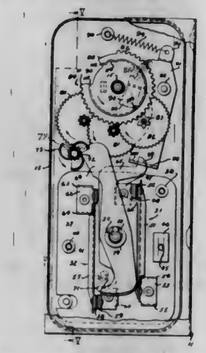


7. A meter having a plurality of drive shafts connected to a remote reading system comprising, a frame mountable on said meter, binary coded cams mountable on said drive shafts positioned in said frame, electrical switch means for sensing the positions of said cams comprising, guide means mounted on said frame, a switch mounting plate movably mounted on said guide means, contact arms mounted on said plate and positioned in operative engagement to said cams, said contact arms secured in one end portion to said mounting plate and having another portion positioned to contact the camming projections on said cams, said contact arms arranged on said mounting plate in sets, said sets comprised of a contact arm associated with said cams, a plurality of contact plates mounted in operative relation to said arms, terminal means on said contact plates, terminal means for said sets of contact arms, electro-magnetic means mounted in operative relation to said meter and adapted to urge said mounting plate into operative engagement with said binary coded cams, said meter in operation in a data transmission system adapted to produce an electric signal that can be received at a remote location, and interpreted to convey a meter reading.

3,284,588
APPLIANCE TIMER
John L. Harris, Whitefish Bay, Wis., assignor to Miller-Harris Instruments Company, Milwaukee, Wis., a corporation of Wisconsin
Continuation of application Ser. No. 813,169, May 14, 1959, which is a division of application Ser. No. 458,421, Sept. 27, 1954, now Patent No. 2,917,988, dated Dec. 22, 1959. This application Aug. 17, 1962, Ser. No. 217,699
3 Claims. (Cl. 200—38)

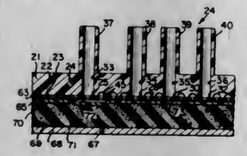
1. A combination time and heat control comprising, a switch, a motor, a cam and pinion mechanically coupled to and driven by said motor, a cam follower engaging and operated by said cam for operating the switch at intervals of short duration, means including a manual control shaft for varying the percentage of time that the switch is closed, a gear train mechanically coupled to and

driven by said pinion, a second cam, said second cam being driven by said gear train, a second cam follower engaging and operated by said second cam, said second cam follower being arranged to control the switch in conjunction with the first cam follower, said second cam having a raised cam surface and a notched section, the second cam follower being arranged to cause opening of



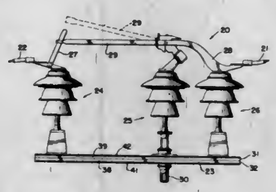
the switch irrespective of the first cam and follower when the second cam follower is in the notched section of its cam, and to cause operation of the switch by the first cam and follower when the second cam follower is on the raised portion of its cam, and manual control means for setting said second cam, with respect to the second cam follower.

3,284,589
PROGRAMMER UTILIZING DIAPHRAGM OPERATED SWITCHES
Robert L. Golden and Clarence Wantz, Greensburg, Pa., and Harold W. Rice, Fullerton, Roland D. Beck, Anaheim, and Reed A. Palmer, Los Alamitos, Calif., assignors to Robertshaw Controls Company, a corporation of Delaware
Filed Mar. 5, 1963, Ser. No. 262,885
8 Claims. (Cl. 200—46)



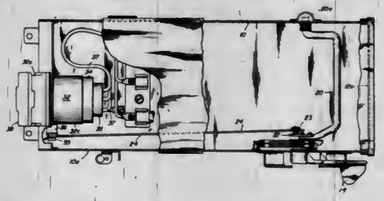
8. In combination, a reading head having opposed surfaces, means defining first, second, and third ports through one of said surfaces, means defining a groove in said one surface, said groove leading from said first port to said second port, a thin flexible tape secured on said one surface and covering said groove and ports, said tape having two aperture means passing therethrough and aligned with said first and third ports, said tape conforming to the contour of said one surface of said reading head and being directly secured to said one surface at least completely around and at the periphery of said groove and ports, a reading member movable over said tape and having means for selectively and fluidly interconnecting said first port with said third port so that said third port is fluidly interconnected to said second port, and a second tape being secured on top of said first-named tape to provide a raised reading surface over said aperture means for said reading member, said second tape also having an aperture means passing therethrough and respectively aligned with said first-named aperture means.

3,284,590
AIR BREAK SWITCH AND A MOUNTING BASE THEREFOR
Bush Hondalus, Bon Air, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Continuation of application Ser. No. 71,467, Nov. 25, 1960. This application Aug. 4, 1965, Ser. No. 479,049
11 Claims. (Cl. 200—48)



1. In combination, a longitudinal structural base having a pair of spaced parallel mounting webs and a pair of spaced parallel transverse webs respectively interconnected to the facing surfaces of said mounting webs inboard of the side edges of said mounting webs whereby said base has a substantially rectangular tubular structure extending throughout the longitudinal length thereof and one of said mounting webs has mounting portions extending beyond said transverse webs, said mounting portions of said one mounting web being thicker than the portion thereof disposed intermediate said transverse webs, an air break switch disposed on said one mounting web of said base, said air break switch including stack means disposed in longitudinally aligned relation along the longitudinal axis of said mounting web and extending substantially perpendicular relative thereto, said air break switch including movable switch arm means for opening and closing said air break switch to only said mounting portions stack means and being substantially parallel with the longitudinal axis of said base, and fastening means fastening said switch, said arm means extending across said of said one mounting web outboard of said transverse webs whereby said interconnected base and switch minimize torsional forces imposed thereon during a short-circuited condition so that deflection in said base is minimized.

3,284,591
ENCLOSED SWITCH WITH COVER SWITCH AND CONNECTOR INTERLOCKING MEANS
Daniel F. Daly, Newington, Conn., assignor to The Arrow-Hart & Hegeman Electric Company, Hartford, Conn., a corporation of Connecticut
Filed Oct. 9, 1964, Ser. No. 402,763
6 Claims. (Cl. 200—50)



1. An interlocking connector and switch combination, comprising a box having an openable cover, an operating handle outside the box, switch contacts and operating mechanism for said contacts in the box operated by said handle for moving the switch between open and closed positions, means on said cover and on said operating

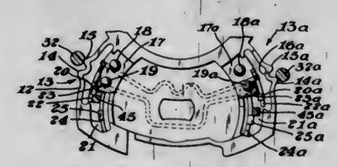
mechanism inter-engaging to lock said cover closed when said switch is closed, a connector member having contacts and mounted on said box, a second connector member having contacts connectable with the contacts of said first connector member, an interlocking bar moved lengthwise by said operating mechanism, and a locking pin moved laterally with respect to said second connector member by said bar as it and said operating mechanism move between switch-closed and switch-open positions, said second connector member being formed to engage said pin and prevent interconnection and disconnection of said connector members when said switch is closed.

3,284,592

AUTOMATIC CANCELLING TURN SIGNAL WITH AN INTERMEDIATE SIGNAL POSITION WHICH IS MANUALLY OPERABLE AND RELEASABLE

Walter T. Stoi, Warren, and Robert Thomson, Dearborn, Mich., assignors to Boyne Products, Inc., Boyne City, Mich., a corporation of Michigan

Filed Oct. 11, 1965, Ser. No. 494,623
18 Claims. (Cl. 200—61.34)



1. In direction signaling apparatus of the kind having an actuating member mounted on a support member for movement from a neutral position toward a latched operating position, electrical contact means operable in response to such movement to condition an electrical circuit for operation, and operating means for moving said actuating member from said neutral position toward said latched position: abutment means on said members engageable in response to movement of said actuating member from said neutral position toward said latched position to arrest said actuating member in an intermediate position between said neutral position and said latched position and in which said electrical contacts are operable to condition said circuit for operation, said operating means being capable of exerting sufficient force on said actuating member to disable said abutment means and move said actuating member from said intermediate position to said latched position.

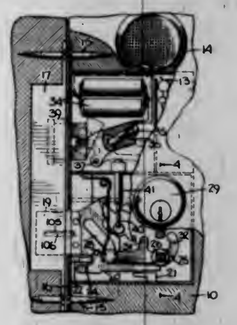
3,284,593

ALARM LOCK FOR DOORS HAVING A KEY OPERATED MAGNETIC SWITCH CONTROL

Paul Maddison Hawkins, Jericho, N.Y., assignor to General Alarm Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 28, 1965, Ser. No. 451,411
25 Claims. (Cl. 200—61.64)

1. In apparatus for actuating an alarm upon movement of a closure member relative to a stationary member, the combination which comprises, a magnet mounted on one of said members and means formed of magnetic material supported on the other of said members adjacent said magnet when the closure member is in closed position, a carrier mounted so as to be held in one position by the action of said magnet when adjacent said means formed of magnetic material and released for movement to a second position when said means formed of magnetic material is beyond the field of attraction of said magnet due to relative movement therebetween, a switch associated with said carrier and operable to actuate an alarm circuit between operative and inoperative conditions is response to said movement of the carrier, and



means adapted to prevent said carrier from moving to said second position.

3,284,594

ELECTRICAL SWITCH WITH EXTENDING CONTACT ARM

Irving Strauss, Fairfield, Conn.
(81 Cherry Hill, Bridgeport, Conn.)

Original application Aug. 24, 1959, Ser. No. 835,631, now Patent No. 3,109,901, dated Nov. 5, 1963. Divided and this application Nov. 4, 1963, Ser. No. 321,205
2 Claims. (Cl. 200—67)



1. In an electrical switch, an elongate actuator device comprising a pair of substantially aligned actuator arms having juxtaposed ends operatively connected together, at least one of the said arms being conductive; electrical terminal means mounting the remote end of said one of said arms and means mounting the remote end of the other of said arms to enable the arms to have relative, substantially angular movement whereby the said juxtaposed ends may shift laterally of the device, at least one of said mounting means being movable in directions substantially directly toward and away from the other mounting means to effect the said lateral shifting of the juxtaposed ends and angular movement of the arms; a conductive extension on said one actuator arm and having a free end extending beyond the juxtaposed end of said one actuator arm; and an electrical switch contact on said extension near said free end to move therewith for controlling an electrical circuit.

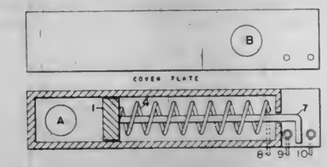
3,284,595

AIR-OPERATED ELECTRICAL SWITCHES

Oran M. Heath, 1410 Crescent Drive, Corpus Christi, Tex.

Filed June 25, 1964, Ser. No. 377,867
8 Claims. (Cl. 200—82)

5. An electrical switch comprising at least two movable restrictive bodies positioned on opposite sides of an input vent and inwardly from two output vents within an enclosure open to air admission; two springs having one end of each connected individually to each of said restrictive bodies and the opposite end fixed relative to stationary enclosure elements; electrical contacts, and means for connecting said contacts to selected circuitry; each of said restrictive bodies being opposingly responsive to unidirectional air movement by said springs biasing said restrictive bodies relative to said contacts; and



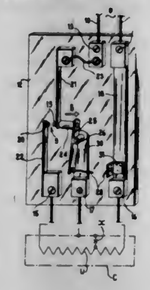
contact activating means affixed to each of said restrictive bodies whereby electrical switching is accomplished by movement of said restrictive bodies in response to air movement.

3,284,596

SAFETY CIRCUIT BREAKER WITH FUSIBLE MEANS OPPOSING MOVABLE CONTROL BIAS

Salvatore Augusto Barone, Aradeo, Lecce, Italy

Filed Nov. 20, 1964, Ser. No. 412,667
Claims priority, application Italy, Nov. 25, 1963, 663,284
8 Claims. (Cl. 200—117)



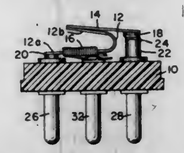
1. For a circuit to be connected to an electrical appliance having electrically energized components and a metallic component to be maintained at zero potential wherein said circuit has a "hot" lead and a neutral lead at zero potential: a safety circuit breaker comprising a base of insulating material, first and second input terminals connected to said "hot" and to said neutral lead respectively, three output terminals, the first and second of which are connected to said appliance to supply current thereto while the output terminal is connected to said metallic component, a conductor connecting said second input to said second output terminal, relatively movable contacts connected to said first input and to said first output terminal, respectively, and resiliently biased apart to form and maintain an air gap therebetween, a metallic pivot connected to said third output terminal, a metallic lever pivotally secured to said pivot and electrically connected thereto, an insulated pusher secured to said lever remote from said pivot, said lever and said pusher being arranged to be swung towards and against one of said relatively movable contacts for urging said contacts into contacting and electrically conductive relationship, and a fuse member replaceably secured between said conductor and said lever to maintain said lever and said pusher in said position in which the contacts are urged into electrically conductive relation while providing an electrical connection between said neutral and said metallic component, so as to be subject to rupture when a potential occurs therebetween and cause said relatively movable contacts to form said air gap.

3,284,597

ELECTRICAL CONTROL DEVICE OF THE THERMAL DELAY TYPE

Arthur J. Hollis, Danvers, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Apr. 30, 1965, Ser. No. 452,047
3 Claims. (Cl. 200—122)



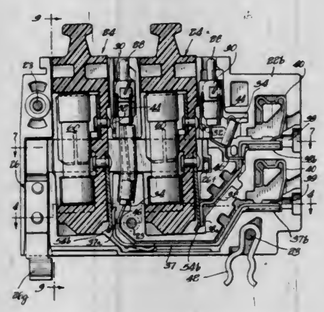
1. An electrical control device of the thermal delay type comprising:
a pair of terminal posts;
a fixed electrical contact mounted on one of said terminal posts;
a substantially U-shaped primary bimetal member, the legs thereof being of unequal length, the outside face thereof being the high expansion side and the inside face thereof being the low expansion side, the outside face of the free end of the longer leg being secured to the other of said terminal posts;
a substantially flat secondary bimetal member, narrower in width than said primary bimetal member, the upper face thereof being the high expansion side and the lower face thereof being the low expansion side, said secondary bimetal member being affixed at one end of the lower face thereof to the outside face of the free end of the shorter leg of said primary bimetal member;
a movable electrical contact mounted on the other end of the lower face of said secondary bimetal member, said movable electrical contact being normally closed with respect to said fixed electrical contact; and a heater coil wrapped about the longer leg of said primary bimetal member.

3,284,598

CARTRIDGE FUSE PULL-OUT SWITCH

Melvin J. George, Ferndale, Mich., and Harris I. Stanback, Lexington, Ky., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan

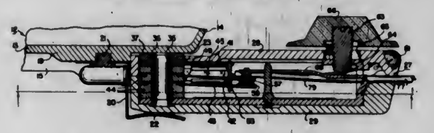
Filed Jan. 6, 1965, Ser. No. 423,680
8 Claims. (Cl. 200—133)



1. A cartridge fuse pull-out switch comprising a casing, a line terminal mounted adjacent one end of said casing, a terminal strap in said casing electrically connected to said line terminal, and a pair of separate elongated fuse holders disposed in said casing, each of said fuse holders

being removably insertable in the casing longitudinally of the fuse holder and axially of a cartridge fuse when a cartridge fuse is mounted in the fuse holder, each of said fuse holders being removably insertable in the casing selectively in ON and OFF positions, and each of said fuse holders including a pair of generally flat contact blades linearly displaced from each other along a longitudinal axis of the fuse holder and angularly displaced substantially ninety degrees from each other about the longitudinal axis of the fuse holder, and said terminal strap being engaged with a contact blade of each of said fuse holders when said fuse holders are in the ON position in said casing.

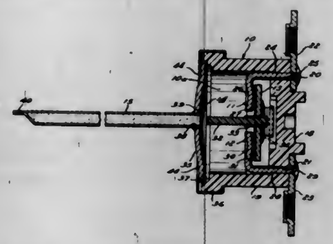
3,284,599
THERMOSTATIC SWITCH WITH HEAT COLLECTOR MEMBER
Charles S. Mertler, Mansfield, Ohio, assignor to Stevens Manufacturing Company, Inc., a corporation of Ohio
Filed Feb. 6, 1964, Ser. No. 342,973
10 Claims. (Cl. 200—136.5)



1. A thermostatic switch for an electrical heater to heat a utensil having a flat surface portion,
said thermostatic switch including a housing,
a base within said housing,
said housing having a surface portion with an aperture therein,
a heat collector member of good heat conductive metal carried by said base,
a bimetallic member carried by said base contiguous to said heat collector member and being positioned within said housing,
first and second contacts carried on said thermostatic switch and relatively moved by movement of said bimetallic member,
adjustment means extending through said housing surface portion to relatively adjust said contacts,
said heat collector member extending through said aperture in said housing surface portion in the same direction as said adjustment means to a level slightly beyond said surface portion,
said heat collector member having a major dimension which is the largest dimension of said heat collector member, said major dimension being substantially contiguous with said bimetallic member, the heat flow through said heat collector member being substantially transverse to said major dimension,
and conductor means to connect said contacts to a voltage source to control energization to the electrical heater.

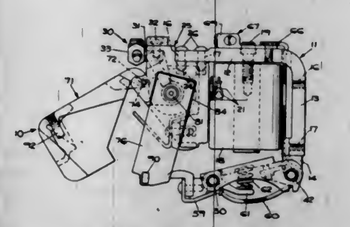
3,284,600
ELONGATED THERMOSTATIC CONTROL
Charles S. Mertler, Mansfield, Ohio, assignor to Stevens Manufacturing Company, Inc., a corporation of Ohio
Filed July 9, 1964, Ser. No. 381,420
6 Claims. (Cl. 200—140)

2. A thermostatic control device for a heater, comprising, a base, a switch carried on said base,
a diaphragm positioned on said base to act on said switch,
an elongated temperature sensing device positioned in heat-receiving relationship with the heater,
said elongated temperature sensing device acting on said diaphragm to cause same to move in one direction to actuate said switch to one condition upon increase in temperature in said temperature sensing device,
one of said diaphragm and said switch being snap acting,
means including said diaphragm and said elongated temperature sensing device defining an enclosed chamber,



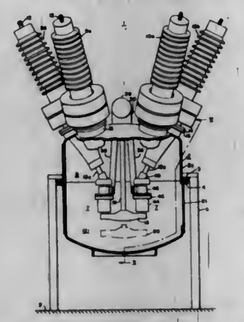
and a fillant of a heat expansible fluid under less than atmospheric pressure in said enclosed chamber with normal atmospheric pressure acting on one side of said diaphragm to normally maintain said diaphragm in the opposite direction to actuate said switch to the opposite condition.

3,284,601
ELECTRICAL CONTACTOR WITH REMOVABLE ARC CHUTE
Carl M. Harrington, Columbus, Ohio, assignor to Jeffrey Galion Manufacturing Company, a corporation of Ohio
Filed Sept. 10, 1963, Ser. No. 307,893
9 Claims. (Cl. 200—144)



1. An electrical contactor comprising a frame on which the several elements of the contactor are supported, said frame having a first leg and a second leg which are laterally directed with respect to each other, an integral blowout coil housing secured to the first leg, a first terminal secured to the blowout coil housing, a blowout coil within the housing connected to said first terminal, a first contact secured to the blowout coil housing and connected to the blowout coil, lever means connected to the second leg, a second contact secured to said lever means to be moved thereby into and out of contact with the first contact, pole pieces secured to said blowout coil and to said blowout coil housing and extending from the blowout coil to adjacent the first and second contacts to elongate the arc upon separation of the first and second contacts, an integral arc chute enclosing said first and second contacts, pin means for swingably supporting the arc chute on the blowout coil housing for swinging the arc chute toward and away from a seated position adjacent and between the pole pieces, a lead connected to the second contact, said lead extending from the second contact around the lever means and up along the second leg adjacent the inner surface thereof to a second terminal, and said second terminal being secured to said frame.

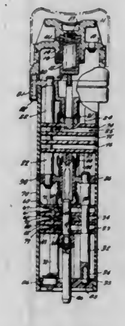
3,284,602
COMPRESSED-GAS CIRCUIT INTERRUPTERS
Robert E. Friedrich, Upper Saint Clair Township, Allegheny County, Robert G. Colclaser, Jr., Franklin Township, Westmoreland County, and Henrik Greger, Swissvale, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 20, 1961, Ser. No. 160,957
10 Claims. (Cl. 200—148)



1. A circulating-type compressed-gas circuit interrupter including a single grounded metallic exhaust tank, three pairs of terminal bushings extending into said single exhaust tank, three pole-units associated with the interior ends of the three pairs of terminal bushings, each pole-unit including a pair of serially-related compressed-gas arc-extinguishing units and a movable conducting bridging member, a pair of movable tubular venting contacts secured adjacent the ends of each bridging member, each arc-extinguishing unit being of the orifice type and secured to the inner end of the respective terminal bushing, a source of high-pressure gas at ground potential, conduit means including three pairs of elongated insulating blast tubes for supplying blasts of high-pressure gas from said high-pressure source to each of the three pole-units, a single blast valve at ground potential disposed adjacent the upper end of said metallic exhaust tank for simultaneously controlling the blasting of gas through each of said pairs of blast tubes, a vertical lift rod for each bridging member, means for simultaneously actuating the three lift rods in a vertical direction including a reciprocally-movable horizontally-extending operating rod and linkage interposed between said horizontally-extending operating rod and the three lift rods for converting horizontal operating movement to vertical contact movement of the lift rods, a releasable blast-valve operating means for each of the three blast valves disposed at the upper end of the tank and simultaneously actuated by said actuating means, whereby a timed flow of high-pressure gas flows through the six blast tubes and through the respective orifices of the respective units and at least partially through the movable venting contact to exhaust into the general interior of the exhaust tank.

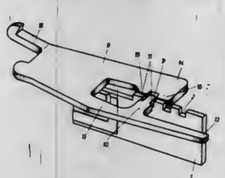
3,284,603
OIL CIRCUIT BREAKER INTERRUPTER STRUCTURE WITH REMOVABLE EXTERNAL INSULATION TUBE
Earl B. Rietz, La Canada, and Roy W. Lindberg, Sierra Madre, Calif., assignors to I.T.E. Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Sept. 13, 1963, Ser. No. 308,726
3 Claims. (Cl. 200—150)

1. In combination; an interrupter structure, an insulation housing for said interrupter structure and a mounting support for said interrupter structure and said hosing; said interrupter structure being secured to said mounting support by first mounting means; said insulation housing enclosing said interrupter structure and being connected to said support by second mounting means; said insulation housing being removable from said common support to expose said interrupter structure by removal of said second mounting means; said common mounting support including oil pressure generating means



communicating with the interior of said insulation housing; said oil pressure generating means comprising a piston movable within a cylinder; said cylinder having an opening therein; said piston enclosing a portion of said opening when said interrupter is closed; the open portion of said partially enclosed opening defining a flow path for circulation of oil; said opening being completely exposed when said piston is moved within said cylinder.

3,284,604
SWITCHING ARRANGEMENT FOR CONTACT SPRING STRIPS
Johannes Bernutz, Ludwigsburg-Hoheneck, and Gerhard Sobel, Eningen, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 8, 1965, Ser. No. 485,683
Claims priority, application Germany, Sept. 26, 1964, St 22,732
6 Claims. (Cl. 200—166)

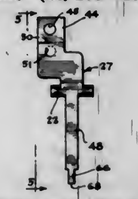


1. A switching device incorporating contact making and breaking components, comprising
a miniature plug incorporating studs and a plurality of separated strips forming conductive contacts,
a disconnecting piece incorporating means for engaging said studs,
said miniature plug incorporating said studs along one side thereof to selectively engage said disconnecting piece and thereby position respective ones of said conductive contacts,
said means for engaging said studs comprising a flexible part of said disconnecting piece to permit shifting said miniature plug relative to said disconnecting piece and to permit engagement of different studs with said disconnecting piece.

3,284,605
ELECTRICAL DEVICES HAVING TERMINAL INTERLOCKING MEANS

Carl G. Anderson, Elk Grove, and Bradlee W. Williams, Barrington, Ill., assignors to Comar Electric Company, Chicago, Ill., a corporation of Illinois

Filed Dec. 23, 1964, Ser. No. 420,737
3 Claims. (Cl. 200—166)

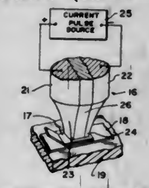


1. In an electrical device presenting a terminal adapted to be disposed in an upright position, an insulating base formed with an aperture into which one portion of a terminal element is entered to be disposed generally in a vertical plane when in an upright position, a cross slot in the base presenting side walls within the base which communicate with said aperture, and said terminal element having a generally horizontal flexible cross arm in said slot, said cross arm extending laterally from said portion of said terminal element and normally canted at an angle out of said vertical plane and relative to the plane of said slot whereby the cross arm in said slot is bent from its normal position producing a wedge fit between said cross arm and said slot to mechanically interlock the terminal element with said base without the need for an adhesive.

3,284,606
HEAT SINK MATERIAL AND APPLICATIONS THEREOF

John H. Schroeppel, 108 Fairwood Drive, Lemont, Ill.

Filed June 30, 1965, Ser. No. 468,375
16 Claims. (Cl. 219—86)



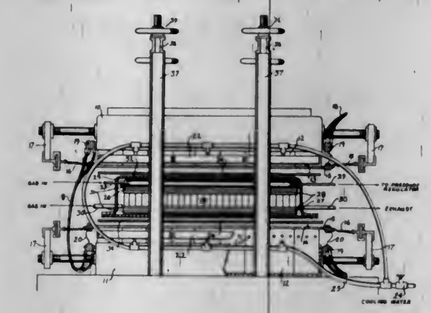
1. In electrical apparatus wherein current is passed through a portion of a work piece to heat an internal zone thereof, heat sink material for engaging a surface area of said portion of the work piece disposed generally parallel to current flow in said portion to conduct heat away from said surface area and to produce a positive temperature gradient inwardly from said surface area to said internal zone, said heat sink material having high heat conductivity in a direction transverse to said surface area and low electrical conductivity in a direction generally parallel to said surface area.

3,284,607
BRAZING METHOD AND APPARATUS

Donald E. Wernz, Baltimore County, Md.; Georgia N. Wernz, executrix of Donald E. Wernz, deceased; Harris M. Dolan, Glen Arm, and Joseph A. Gaydos, Baltimore, Md., assignors to Martin-Marietta Corporation, a corporation of Maryland

Filed Sept. 9, 1959, Ser. No. 838,887
6 Claims. (Cl. 219—85)

4. An electrothermal fixture for brazing metal honeycomb core panel comprising upper and lower sections of refractory material having opposed contoured surfaces between which parts to be brazed are positioned, a plurality of electrical heating elements disposed on said surfaces, means to maintain said elements under

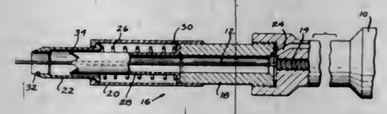


tension, actuating means for lowering said upper section and bringing said heating elements and said parts to be brazed into compressive relation, and electric power means connected to said heating elements for heating said elements to the required brazing temperature.

3,284,608
CLEANER DEVICE FOR WELDING NOZZLE

Ralph C. McDonald, 228½ Short St., Troy, Ohio

Filed Sept. 29, 1965, Ser. No. 491,359
9 Claims. (Cl. 219—130)

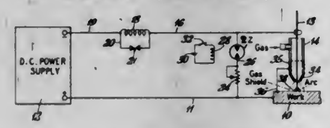


1. In a welding nozzle; a body having an axial bore therethrough, a nozzle member reciprocally carried by said body and projecting from one end of said body, an axial bore through said nozzle member coaxial with the bore in the body and including a reduced diameter portion at the outer end of the nozzle member which is remote from the said one end of the body, a spring acting between said body and said nozzle member urging said nozzle member axially away from said one end of said body to extended position while permitting movement of said nozzle member axially toward said one end of said body to retracted position, a cleaning sleeve element inside said nozzle member coaxial with said axial bores having one end engaging said one end of said body and extending therefrom toward said bore portion of said nozzle member, at least the other end of said sleeve element which is remote from said one end of said body having a diameter only slightly smaller than the diameter of said bore portion, said other end of said sleeve element being disposed inwardly from the outer end of said bore portion when said nozzle member is in extended position and passing through said bore portion and projecting from the outer end of said bore portion when said nozzle member is moved against the bias of said spring to retracted position whereby the said other end of said sleeve element will dislodge foreign material from said bore portion, the wire electrode being utilized passing through said axial bores and said sleeve element.

3,284,609
ARC STARTING APPARATUS AND METHOD

John P. C. Allen, Fanwood, Ernest R. Ehritz, Kenilworth, and Roscoe R. Lobosco, Fanwood, N.J., assignors to Union Carbide Corporation, a corporation of New York

Filed May 20, 1965, Ser. No. 457,421
2 Claims. (Cl. 219—135)

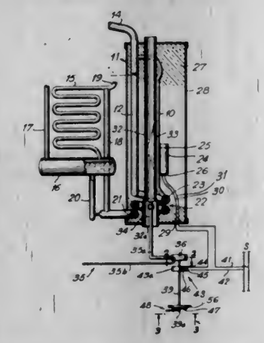


1. Work in circuit, nonconsumable electrode, inert-gas shielded arc working system, comprising in combination: a torch provided with a gas cup, the body of which is composed of insulating material having conductive means encircling such body; grounding means connecting such conductive means to the work; work arc circuit means for applying and maintaining a working arc potential across a gap between the end of a nonconsumable electrode supported in such torch and the work in a stream of inert gas flowing through such cup, and means for applying an electrical pulse at a potential sufficient to break down such gap, rendering it conductive and establishing a working arc, the polarity of such pulse with respect to the work being the same as that of the working arc potential, such pulse acting in conjunction with such conductive means and such grounding means to facilitate the establishment of such working arc the resistance of such grounding means and such conductive means in combination being of substantially lower conductivity (higher resistivity) than that of the work arc circuit.

3,284,610
HEAT OPERATED REFRIGERATOR OPERABLE ON GAS OR ELECTRICITY

Gunnar Axel Grubb, Bromma, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden

Filed Dec. 14, 1964, Ser. No. 417,936
Claims priority, application Sweden, Dec. 16, 1963, 13,979/63
4 Claims. (Cl. 219—279)

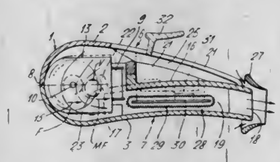


1. In apparatus of the class described having a refrigerating system of the type alternatively employing gas or electricity as power sources and in which cooling is effected by a heat operated refrigeration unit provided with a heat receiving part, the part being heated by a gas burner heating means disposed adjacent thereto and means for supplying gas energy to the burner heating means and also being heated by electrical heating means and means for conducting electrical energy to the electrical heating means, the combination of control means connected to the gas energy supply means and to the electrical energy conducting means which is operable to connect one or the other of the energy means respectively to its associated heating means, said control means comprising structure defining a curved path of convex form having an elongated surface which extends between spaced first and second regions and in which all parts of the surface including the first and second regions thereof are in a single plane perpendicular to the surface, an element means for mounting the element for movement on the elongated surface between the first and second regions, means for holding the element against the surface by force acting thereon in a direction perpendicular to the surface, the control means being operable to connect only one of the energy means to its associated heating means responsive to movement of the element to the first region on the elongated surface and being operable to connect only the other of the energy means to its associated heating means responsive to movement of the element to the second region on the elongated surface, the holding means being operable to hold the element against the elongated surface at the first and second regions and at all regions of the surface between the first and second regions thereof, the surface between the first and second regions having a depression or ditch of concave form including a bottom and opposing sides, each of the sides being inclined toward a different one of the first and second regions, the element, after being moved from either of the first and second regions toward the ditch, being movable on a part of the surface at either side of the ditch and adjacent thereto and along either one of the inclined sides of the ditch to the bottom thereof responsive to a first force imparted thereto which is of one magnitude, and each side of the ditch being inclined at such an angle to the part of the elongated surface which is adjacent thereto and extends therefrom that the element is movable along the surface toward either one of the first and second regions from the bottom of the ditch along either one of the sides thereof responsive to a second force imparted thereto at the bottom of the ditch which is of higher magnitude than the first force.

3,284,611
PORTABLE HAIR DRYERS

Nikolaus Laing, Hofener Weg 35, Aldingen, near Stuttgart, Germany

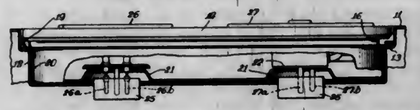
Filed Apr. 12, 1965, Ser. No. 447,287
Claims priority, application Germany, Apr. 17, 1959, L 33,210
15 Claims. (Cl. 219—370)



1. A hair dryer comprising a casing having a top wall having a finger rest portion thereon, a bottom wall, a curved rear wall merging into the top and bottom walls and closed end walls joining the top and bottom walls, said curved rear wall of the size adapted to rest between the thumb and forefinger when the casing is grasped in the hand, the casing having an inlet over an area of the top wall, and an outlet between the end walls opposite the rear wall; motor driven bladed cylindrical rotor means adjacent the rear wall with the rotor means opposite the outlet; a partition positioned between the

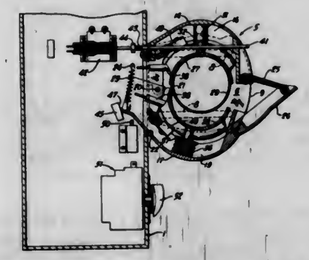
top and bottom walls defining with the interior surface of the casing bottom wall an outlet duct leading from the rotor means to the outlet; a guide surface on the end of the partition adjacent said rotor; and electric heater means extending completely across the path of air flow passing from the inlet to the outlet; the rotor means in operation cooperating with the guide surface to induce a flow of air into the inlet, through the outlet duct and out of the outlet.

3,284,612
SURFACE UNIT ASSEMBLY
Leroy C. Hanson, Elmhurst, Ill., assignor to Ferro Corporation, a corporation of Ohio
Filed Jan. 27, 1964, Ser. No. 340,320
2 Claims. (Cl. 219—455)



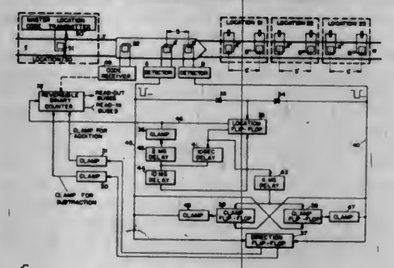
2. A surface unit assembly for use on a cook top having a generally rectangular opening therein provided with an inwardly extending lip, said assembly comprising in combination, a generally rectangular platform panel having a plurality of fingers extending therebeneath and engaging the lip at spaced areas to support said panel in said opening, said panel having a pair of generally square apertures therein, a spring mounted on the edge portion of the panel at one end thereof and engaging the edges of said opening resiliently to retain the panel therein, a spillage pan positioned beneath said apertures and having an outwardly extending notched rim resting on said lip with said fingers positioned in the notches of the rim, a pair of raised portions in the bottom of said pan generally centrally located beneath said square apertures with each of said raised portions being provided with a hole therein, a terminal block below said hole and aligned therewith, and a coiled heating unit having downwardly extending terminals received in said terminal block when said heating unit is positioned in said aperture.

3,284,613
FOOD HEATING APPARATUS
Gilbert C. Gettelman, 2510 W. Dunwood Road, Glendale, Wis., and Merlin G. Rostad, 317 Evergreen Drive, Cedarburg, Wis.
Filed Feb. 25, 1964, Ser. No. 347,198
2 Claims. (Cl. 219—535)



1. An apparatus for heating a food product in a can having a bottom and a side wall, comprising a supporting structure including a generally horizontal support member to support the can to be heated, a pair of clamping members mounted on the supporting structure above the support member, means for mounting a first of said clamping members for relative movement with respect to the second of said clamping members with said first clamping member being movable from an open can-receiving position to a closed can-clamping position, a heating member associated with each clamping member and adapted to engage the outer surface of the can when the clamping members are in the closed position to thereby heat the can and the product therein, means for automatically moving the said first clamping member to the open position at the completion of a preselected heating period, and resilient means disposed to be engaged by said first clamping member as said first clamping member moves to the open position to dampen the movement thereof and prevent splashing of the product from the can.

3,284,614
REVERSIBLE COUNTING SYSTEM FOR LOCATING MOVING OBJECTS
Donald W. Bramer, Fairport, N.Y., assignor to General Signal Corporation, a corporation of New York
Filed Sept. 14, 1962, Ser. No. 223,671
14 Claims. (Cl. 235—92)

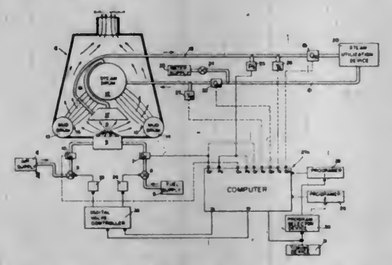


1. A reversible counting system comprising the combination of a binary counter capable of accepting a predetermined count from an external source, means for setting a predetermined count in the counter, a plurality of pairs of inert coils disposed at several locations, one coil of each of the pairs being tuned to one common frequency and the other coil of each of the pairs being tuned to a second common frequency, a pair of pick-up coils, one of the pick-up coils being tuned to the one common frequency and the other of the pick-up coils being tuned to the second common frequency, means for altering the count in response to inductive coupling of both pick-up coils with both inert coils at any of the several locations, and means for communicating the altered count to a remote indicator without destroying the count.

3,284,615
DIGITAL CONTROL PROCESS AND SYSTEM
Edward W. Yetter, West Chester, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Sept. 24, 1956, Ser. No. 611,519
4 Claims. (Cl. 235—150.1)

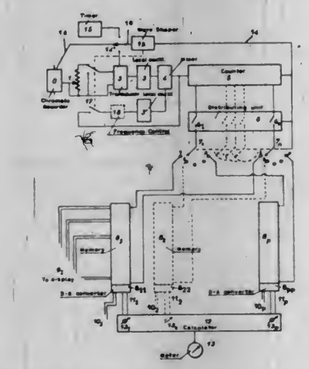
4. A method of optimalizing the operation of a continuous process system dependent on input energy for its operation, said method comprising the steps of

(a) measuring the difference between the output of the system and a predetermined desired output,
(b) adjusting the input energy of the system in the direction for reducing the measured difference to substantially zero,
(c) introducing the input energy into the system and measuring said energy as it is introduced,
(d) generating and physically storing a first efficiency signal having a physical parameter uniquely characteristic, in a predetermined manner, of the magnitude of the efficiency with which said system converts input energy into load energy at said adjusted rate of input energy,
(e) arbitrarily changing the rate of input energy by an incremental amount,
(f) generating and physically storing a second efficiency signal having a physical parameter uniquely characteristic, in a predetermined manner, of the magnitude of the efficiency at the arbitrarily changed rate of input energy,



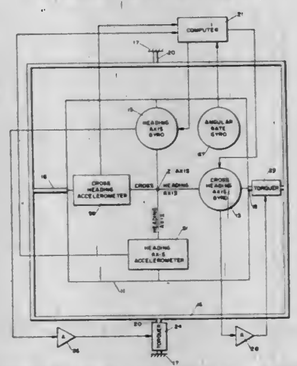
(g) comparing said first and second efficiency signals to determine the difference in their magnitude, and
(h) adjusting the input energy in an amount and a direction which are functions of said determined difference in magnitude.

3,284,616
MEMORY DEVICES FOR STORING THE PEAK, INSTANTANEOUS OR INTEGRAL VALUES OF THE VARIABLE INPUT
Herbert Ernyei and Claude Le Robellec, Paris, France, assignors to Societe Lignes Telegraphiques et Telephoniques, Paris, France, a joint-stock company of France
Filed Oct. 26, 1962, Ser. No. 233,362
Claims priority, application France, Nov. 8, 1961, 878,278; Oct. 30, 1962, 910,853
5 Claims. (Cl. 235—150.5)



1. An analog input digital memory device comprising:
means for converting the information to be stored into electrical signals;
means for changing said signals to analog voltages;
a first local oscillator;
means for modulating the frequency of said oscillator in accordance with said analog voltages;
a digital counter;
a second local oscillator operating at the nominal frequency of said first local oscillator;
means for combining the output of said first and second local oscillators, and for supplying a resultant signal to said digital counter;
a switching matrix connected to the output of said counter;
memory means connected to the output of said switching matrix;
and a timing generator connected to said counter, switching unit, and memory for controlling the operation thereof.

3,284,617
HYBRID STRAPDOWN INERTIAL NAVIGATION SYSTEM
Harold Lerman, Paramus, N.J., assignor to General Precision, Inc., Little Falls, N.J., a corporation of Delaware
Filed May 15, 1962, Ser. No. 194,765
9 Claims. (Cl. 235—150.25)



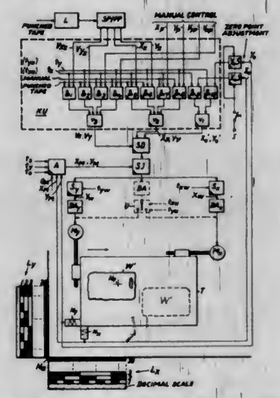
3. An inertial system comprising a cluster having a heading axis, a cross heading axis and a Z axis defined therein mutually perpendicular to each other, directional gyro means stabilizing said cluster only about said heading and cross heading axes, a first accelerometer mounted on said cluster to produce an output signal representing the acceleration of said cluster along said heading axis, a second accelerometer mounted on said cluster to produce an output signal representing the acceleration of said cluster along said cross heading axis, angular rate means mounted on said cluster to measure the angular rate of rotation of said cluster about said Z axis, and means responsive to the output signals of said accelerometers and said angular rate gyro means to maintain the Z axis of said cluster aligned with vertical and including a computer to perform mathematical operations on the output signals of said accelerometers and said angular rate means to provide navigational information.

3,284,618
NOMINAL VALUE POSITION CONTROL SYSTEM
Elmar Götz and Peter Boese, both of Berlin-Frohnau, Germany, assignors to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany
Filed Mar. 16, 1962, Ser. No. 180,259
Claims priority, application Germany, Mar. 22, 1961, L 38,512, L 38,513
21 Claims. (Cl. 235—151.11)

1. For use with a record carrier carrying a program in the form of digital position values which are referenced with respect to a point of a work piece which point constitutes a relative origin, a controlled arrangement comprising, in combination:

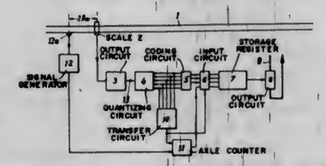
(a) a machine tool having a component which is movable relative to a point of the machine tool which last-mentioned point constitutes an absolute origin;

(b) a position control system for controlling the movement of said component with respect to said absolute origin; and



(c) means for algebraically adding to the position values of programmed points carried by the record carrier the digital difference between the position of the relative origin of the work piece and the position of said absolute origin of said machine tool thereby to form digital desired position values for said control system.

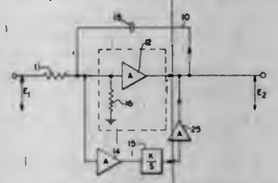
3,284,619
QUANTIZING SYSTEM USED IN WEIGHING ROLLING RAIL VEHICLES
Peter Wentzel, Munich, Germany, and Karl Steinbach, Alexandria, Va., assignors to Telefunken Aktiengesellschaft, Berlin.
Filed Mar. 24, 1961, Ser. No. 98,144
Claims priority, application Germany, Mar. 31, 1960, T 18,165
8 Claims. (Cl. 235—151.33)



3. A system for picking up and utilizing the maximum value of a varying amount, comprising, in combination: a quantizing circuit for receiving the varying amount and quantizing the same, said quantizing circuit having a plurality of comparators each of which has an output; a storage register having input means connected to said outputs of said comparators, said input means being such that the output of said comparators can be fed to said storage register only upon the generation of a write-in signal; and transfer means connected to said outputs of said comparators and to the said input means for generating a write-in signal when a signal appearing at the output of any responding comparator first disappears.

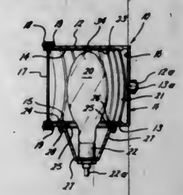
3,284,620
INTEGRATOR
Harold Lerman, Paramus, N.J., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Mar. 21, 1962, Ser. No. 181,324
3 Claims. (Cl. 235—183)

1. In a device to integrate a changing value with time, including a resistor on the input side of said device, an amplifier coupled in series to said resistor, and a capacitor in parallel with said amplifier, the improvement therein



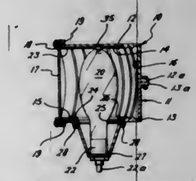
comprising the combination of mechanical filter means in a feed forward loop which is in parallel with said amplifier and capacitor.

3,284,621
FLOODLIGHT
Buell Moore, Houston, Tex., assignor to Esquire, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 30, 1964, Ser. No. 414,671
4 Claims. (Cl. 240—3)



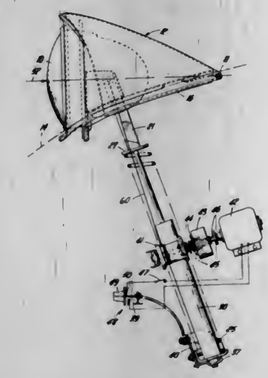
1. A floodlight, comprising a case having a top and bottom and an opening in one side, a reflecting surface in the case opposite the opening therein, an electrical socket in the bottom of the case for mounting a lamp in an upright position intermediate the reflecting surface and the opening in the case, a pin extending downwardly from the top of the case and having a slot across its lower end, and a layer of heat insulating and cushioning material disposed about the pin for fitting closely within a recess in the upper end of the lamp and having its free ends turned into the slot.

3,284,622
FLOODLIGHT
Buell Moore, Houston, Tex., assignor to Esquire, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 30, 1964, Ser. No. 414,720
1 Claim. (Cl. 240—3)



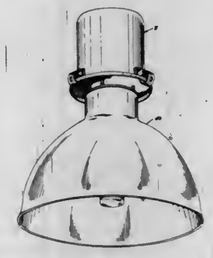
A floodlight, comprising a case having a top and bottom and an opening in one side, a reflecting surface in the case opposite the opening therein, an electrical socket in the bottom of the case for mounting a lamp in an upright position intermediate the reflecting surface and opening in the case, a cylindrical metal post extending downwardly from the top of the case, a groove about the post, and a ring within the groove having a portion thereof projecting circumferentially from the outer periphery of the post so to fit closely with a recess in the upper end of the lamp, said ring being of a material having the characteristics of polytetrafluoroethylene in that it has sufficient elasticity to permit it to be stretched over the end of the post and sufficient resistance to heat to withstand lamp temperatures up to 600° F. without decomposing.

3,284,623
RETRACTABLE VEHICLE HEADLAMP
Philip David Neal, Coventry, England, assignor to Humber Limited, Coventry, Warwickshire, England, a British company
Filed June 29, 1964, Ser. No. 378,739
Claims priority, application Great Britain, July 2, 1963, 26,231/63
1 Claim. (Cl. 240—7.1)



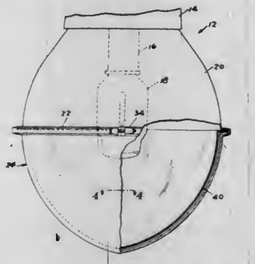
A motor vehicle having:
(a) a headlamp mounted on the vehicle body for pivotal movement between a raised position for use and a retracted position.
(b) a recess in the vehicle body to receive the headlamp when in its retracted position.
(c) a fairing attached to the lamp for movement therewilh and arranged to cover the mouth of the recess when the lamp is retracted.
(d) the pivot axis of the lamp being transverse to the vehicle body and closely adjacent to, the resultant line of action on the headlamp and fairing, when in the raised position, of the air impinging on the headlamp and fairing due to the forward motion of the vehicle.
(e) the fairing having along each of its lower fore and aft edges, an out-turned lip which engages the underside of the vehicle body around the recess when in the fully raised position, whereby the headlamp is positively located relative to the body in its fully raised position.
(f) spring means acting between the body and the headlamp in the direction to move the headlamp from its fully retracted to its fully raised position.
(g) a damper to control the action of the spring means.
(h) latch means on the body and engageable with the headlamp to retain the headlamp and fairing in the retracted position against the action of the spring means.
(i) means operable from inside the vehicle to release the latch means to raise the headlamp, and
(j) means operable from inside the vehicle to lower the headlamp against the spring to engage the latch means.

3,284,624
UNITIZED FIXTURE AND ASSEMBLY
Joseph Brasty, Maple Heights, and Gerald Spero, Cleveland Heights, Ohio, assignors to The Spero Electric Corporation, a corporation of Ohio
Filed May 12, 1964, Ser. No. 366,700
9 Claims. (Cl. 240—11.4)



1. A unitized lighting fixture and ballast assembly comprising in combination:
(a) a housing;
(b) a ballast for mounting within the housing;
(c) means coacting with the ballast for mounting the ballast within the housing, such that the ballast can be moved relative to the housing, and to a position where the ballast is at least partially removed from the housing and supported by the housing in said removed position;
(d) a light reflector including a socket for receiving a lamp, extending from the housing; and
(e) means for mounting the light reflector and socket for unitary movement with the ballast.

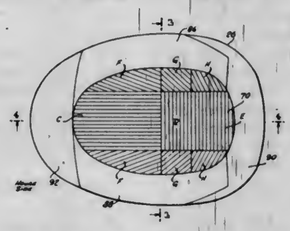
3,284,625
OUTDOOR LIGHTING EQUIPMENT
Jocelyn T. Barnes, Redford Township, Wayne County, Mich., assignor to Lexa Lite Corporation, Southfield, Mich., a corporation of Michigan
Filed May 8, 1964, Ser. No. 366,000
5 Claims. (Cl. 240—25)



1. For a luminaire having a light source and light-transmitting means held by support means in light-transmitting relation to the light source, improved light-transmitting means comprising,
a bowl-shaped, form-retaining element made of a tough, weather-resistant, translucent plastic material, said element having an inner side and an outer side,
a bowl-shaped film made of a heat-resistant, translucent plastic material, said film having a thickness of at least about 1 mil and being substantially opaque to ultraviolet radiation,
said film being separate from said element and being removably insertable within said element,

said element and film being dimensioned and configured to be mounted in light-transmitting relation to the light source of a luminaire with which they are adapted to be used with said inner side disposed toward the light source and said film positioned between said inner side and light source,
said film being dimensioned and configured to fit closely but loosely within said element,
and said improved means including positioning means effective when the same is so mounted on a luminaire to position said film within said element so that a thin insulating air space is provided between said film and said inner side of said element.

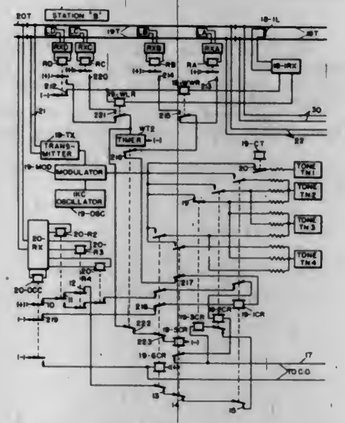
3,284,626
LUMINAIRE
Kurt Franck, Newark, Ohio, assignor to Holoplane Company, Inc., New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 306,970, July 24, 1963, which is a continuation of application Ser. No. 727,352, Apr. 9, 1958. This application Sept. 22, 1965, Ser. No. 496,229
11 Claims. (Cl. 240—25)



8. For use in a luminaire having a reflector and a light source; a substantially ellipsoidal refractor comprising downwardly extending sides and end portions and a central bottom portion extending therebetween at the lowermost portions thereof, said sides comprising means for receiving parallel beams from said reflector and for vertically redirecting the same, said central bottom portion being substantially horizontally orientated and including means for receiving down light from the reflector and light source and for distributing light incident thereon into a substantially uniform elongated rectangular area, said means being at least partially formed of a plurality of prisms arranged in continuous substantially curved rows, for distributing light incident thereon into a uniform elongated between the beams, some of said substantially curved rows of prisms being generated about axes perpendicular to a generally horizontal plane and extending in paths from one side of the longitudinal center line of said ellipsoidal refractor to the other side.

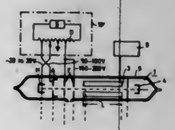
3,284,627
VEHICLE CONTROL SYSTEM
Clinton S. Wilcox, Rochester, N.Y., assignor to General Signal Corporation
Filed Sept. 5, 1962, Ser. No. 221,553
17 Claims. (Cl. 246—187)

1. In a system for remotely controlling the operation of vehicles from the wayside along a right of way having a substantial portion thereon over which vehicles of different identities are to be operated differently during similar advance traffic conditions, the combination of,
(a) information conveying means on the wayside for substantially continuously conveying selected control messages from the wayside portion to said vehicles while they are passing over said portion of the right of way distinctive to the desired operation of said vehicles on said right of way, and
(b) message selecting means responsive to the identity of a vehicle approaching said right of way portion for selecting the control message to be conveyed from the wayside to said vehicle by said information conveying means in accordance with the identity of said approaching vehicle, said message selecting



means comprising vehicle identity communicating means partly on the vehicle and partly on the wayside in the approach of said right of way portion for communicating information distinctive of the identity of said approaching vehicle from said vehicle to the wayside.

3,284,628
MASS FILTER HAVING AN ION SOURCE STRUCTURE WITH PRESELECTED RELATIVE POTENTIALS APPLIED THERETO
Karl-Georg Günther, Nurnberg, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, and Erlangen, Germany, a corporation of Germany
Filed Feb. 4, 1963, Ser. No. 256,169
Claims priority, application Germany, Feb. 3, 1962, S 77,875
2 Claims. (Cl. 250—41.9)

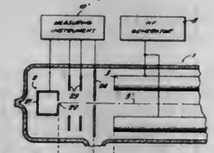


1. A system for separating ions having different charge-to-mass ratios, comprising an evacuated vessel, electrode means, means for holding said electrode means in spaced relation in said vessel, ion source means for creating charged particles in said vessel and including in said vessel an anode and an apertured extraction electrode, voltage means for applying to said anode a positive voltage and for applying to said apertured extraction electrode a negative voltage, and source means for generating a voltage having an arbitrary periodical function $f(t)$ and applying it to said electrode means thereby creating a time-periodical field the potential of which is the general quadratic function

$$\varphi=f(t)(\alpha x^2+\beta y^2-\gamma z^2)$$

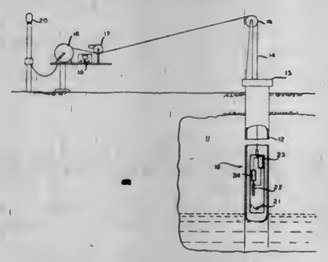
of the rectangular coordinates x, y, z of the electrode arrangement, α, β, and γ being constants satisfying the equation $\alpha+\beta=\gamma$, said source means including potential means for superimposing upon the axis of said electrode means a potential having a magnitude in the range from zero to the negative voltage of said apertured extraction electrode.

3,284,629
MASS FILTER HAVING AN ION SOURCE STRUCTURE WITH PRESELECTED RELATIVE POTENTIALS APPLIED THERETO
Ulf von Zahn, Minneapolis, Minn., assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed Feb. 4, 1963, Ser. No 255,769
Claims priority, application Germany, Feb. 3, 1962, S 77,876
3 Claims. (Cl. 250—41.9)



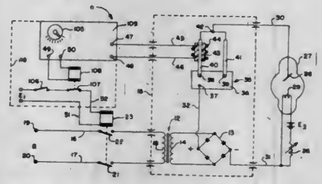
1. A mass spectroscope system, comprising an ion source including an ion forming device and a field entrance diaphragm, an evacuated vessel surrounding the ion source and including therein analyzer field means, power means for energizing said ion source and for applying to said ion forming device and said entrance diaphragm the respective direct potentials φ_{Io} and φ_{EB}, where $\varphi_{Io}>\varphi_{EB}$, voltage means for applying to said field means a potential $\varphi=+f_1(t)(\alpha x^2+\beta y^2-\gamma z^2)+\varphi_{Tr}$, where $f_1(t)$ is any desired periodic function of time, x, y and z are space coordinates and α, β and γ are constants satisfying the equation $\alpha+\beta=\gamma$, and wherein $\varphi_{Tr}>\varphi_{EB}$.

3,284,630
MEANS FOR DETERMINING FLUID INTERFACE IN UNDERGROUND STORAGE SPACE
Ernest L. Clark, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed May 7, 1963, Ser. No. 278,663
1 Claim. (Cl. 250—43.5)



Means for determining a fluid interface in an underground storage space, comprising:
a measuring device comprising a housing, means in said housing for generating and detecting gamma rays and amplifying the resulting signal comprising a source of gamma radiation, a gamma ray detector, convertor means for converting low voltage direct current electrical power to high voltage direct current electrical power and applying said high voltage power to said gamma ray detector, and amplifying means for the output from said gamma ray detector;
a cable attached to said housing for lowering and raising said device, a first conductor of said cable being electrically connected at said measuring device with said convertor means to supply low voltage direct current electrical power thereto, and a second conductor of said cable being connected with said gamma ray detector amplifier to transmit an amplified signal therefrom;
a source of low voltage direct current electrical power connected with the other end of said first conductor at the surface of the ground;
a reel for said cable;
a depth indicator for said cable;
a signal light;
a count rate meter connected with said second conductor at the ground, said count rate meter comprising an amplifier, a pulse shaper, a cathode follower circuit and a digital to analog circuit in the output of said cathode follower circuit;
a recorder communicating with the output of said rate countmeter;
an indicating meter communicating with the output of said count rate meter, said indicating meter having a switch associated therewith actuated at an extreme indication of said indicating meter; and
a relay actuated by said switch to control the operation of said light.

3,284,631
DEVICE FOR DETERMINING THE CURRENT-TIME OUTPUT OF AN X-RAY TUBE
Walter E. Splain, North Olmsted, Ohio, assignor to Picker X-Ray Corporation, Walte Manufacturing Division, Inc., Cleveland, Ohio, a corporation of Ohio
Filed July 16, 1964, Ser. No. 383,015
19 Claims. (Cl. 250—95)

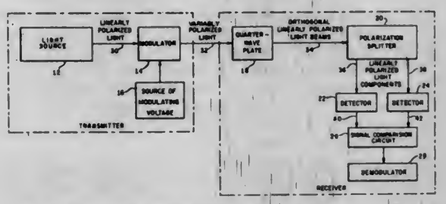


6. A device to be connected in an X-ray tube circuit between the X-ray tube and an energy source for determining the current-time exposure provided by the X-ray tube, said device comprising:
(a) an energy storage circuit means including a storage capacitor connected in series with the X-ray tube;
(b) a sensing circuit means connected to said storage circuit for sensing the energy level of the energy stored in the capacitor;
(c) a discharge circuit means connected to said storage circuit means and being responsive to said sensing circuit means for discharging said capacitor each time the sensing circuit means determines that the energy stored in the capacitor has reached a predetermined level as sensed by the sensing circuit means; and,
(d) indicator means operatively associated with at least one of said circuit means for giving an indication of the total capacitor discharge after a series of discharges during an X-ray exposure.

3,284,632
POLARIZATION MODULATION AND DEMODULATION

Walter K. Niblack and Edwin H. Wolf, Buffalo, N.Y., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed July 31, 1963, Ser. No. 298,894
6 Claims. (Cl. 250—199)

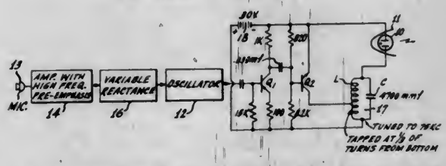


1. A communication system comprising:
a transmitter including means for polarization modulating an electromagnetic wave in response to an input signal to thereby provide a carrier having polarization parameters depending on said input signal;
a receiver in axial alignment with said transmitted carrier, said receiver including:
means for converting said carrier to linearly polarized waves;
means for separating said linearly polarized waves according to direction of polarization;
detection means for the outputs of said last-mentioned means; and
means for reconverting the detected output to the form of said input signal.

3,284,633
SIGNAL TRANSMISSION AND RECEPTION SYSTEM COMPRISING FREQUENCY MODULATED LIGHT BEAM

Jarrett Lewis Hathaway, Manhasset, N.Y., assignor to Radio Corporation of America, a corporation of Delaware

Filed Dec. 24, 1963, Ser. No. 333,112
8 Claims. (Cl. 250—199)



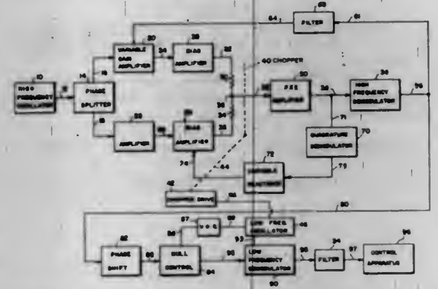
1. A transmitter for transmitting information by modulated light, said transmitter comprising means for producing a continuous wave voltage that is frequency modulated in accordance with the information to be transmitted, a glow discharge lamp, and means for applying said frequency modulated voltage to said lamp for intensity modulating its light output, said voltage wave having a frequency sufficiently low so that said glow lamp can become extinguished once per cycle.

3,284,634
APPARATUS FOR POSITIONING A BODY RELATIVE TO A RADIANT ENERGY SOURCE

Richard C. Redwood, Jr., Los Angeles, Calif., assignor to Honeywell Inc., a corporation of Delaware

Filed Dec. 28, 1962, Ser. No. 248,039
11 Claims. (Cl. 250—214)

1. Apparatus of the class described comprising, in combination: first and second impedances connected in series to form a common junction; signal source means having an output of variable magnitude and phase; means connecting said signal source means to said first and second impedances so that signals of a first and an opposite phase are presented across said first and second impedances respectively, the signal at the common junction normally being substantially zero; first means in circuit with the common junction responsive to signals of the first and

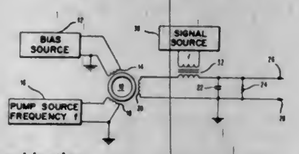


opposite phase and operable to vary the magnitude of the output from said signal source means; and second means in circuit with the common junction responsive to signals of phase quadrature with respect to the first and opposite phase and operable to vary the phase of the output from said signal source means, said first and second means maintaining the signal at the common junction normally at substantially zero.

3,284,635
PARAMETRIC ELECTRONIC DEVICE

John Presper Eckert, Jr., Gladwynne, Albert Brown, Philadelphia, Leonard R. Hulls, Gwynedd Valley, and Robert A. Brinker, Philadelphia, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 30, 1962, Ser. No. 241,286
7 Claims. (Cl. 307—88)



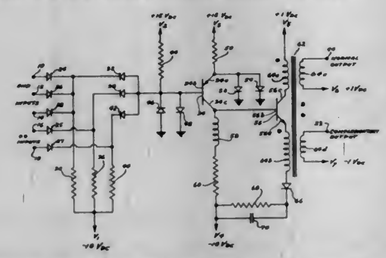
1. In combination,
a magnetically saturable element having saturating means and an output winding;
a bias source coupled to said means;
a pump frequency source having a frequency *f* coupled to said means;
a capacitor coupled to said output winding forming a circuit resonant at said frequency *f*; and
a signal source having said frequency *f* coupled to said circuit.

3,284,636
PULSE TRANSFER CIRCUIT HAVING LIMITING MEANS, PEAKING MEANS, AND COMPLEMENTARY OUTPUTS

Norman B. Talsoe, St. Paul, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 13, 1961, Ser. No. 88,874
11 Claims. (Cl. 307—88.5)

1. A pulse transfer circuit comprising: input means; at least two cascaded semiconductor means each of which includes at least three electrodes; transformer means which includes a plurality of winding means; means coupling said input means directly to a first electrode of a first of said semiconductor means; means limiting the voltage swing of said first electrode of said first semiconductor means; means limiting the voltage swing of a second electrode of said first semiconductor means; means coupling a third electrode of said first semiconductor means directly to a first electrode of a second of said semiconductor means; an inductive impedance means coupling said third electrode of said first semiconductor means to a first voltage source; means coupling a second

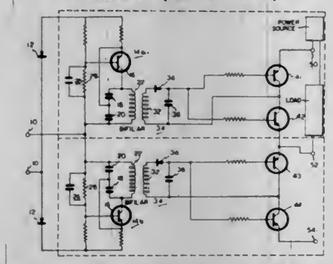


electrode of said second semiconductor means through a first winding means to a second voltage source; a third electrode of said second semiconductor means coupled to a third voltage source through the serial combination of a second winding means of said transformer means and a unidirectional impedance means; said first and second winding means coupling the output signal of said second semiconductor means to a third winding means of said transformer means such that said third winding means provides an output signal substantially similar to an input signal impressed upon said input means.

3,284,637
SEMICONDUCTOR CHOPPERS

Jon R. Berry, Lutherville, Md., assignor to Airpax Electronics Incorporated, Cambridge, Md., a corporation of Maryland

Filed July 16, 1962, Ser. No. 210,116
9 Claims. (Cl. 307—88.5)

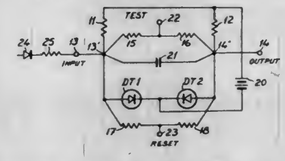


1. A transistor chopper for applying a level of electrical energy to a load comprising input terminals connected for receiving and passing a current through a circuit between the input terminals, said circuit including a transistor oscillation circuit having a collecter connected to drive the oscillation circuit, said oscillation circuit having an inductance component, a substantial portion of the inductance component including one conductor of a bifilar winding and forming a primary, said bifilar winding being wound on a core for forming a transformer having a pair of conductors in a common insulation material and in which one conductor has generally a one-to-one turn ratio with the other conductor of the bifilar winding, said other conductor forming a secondary, a rectifier-filter network connected to said other conductor for producing a D.C. output, and semiconductor switch elements for passing a D.C. signal applied to an output terminal to said load.

3,284,638
INVERTING STORAGE CIRCUIT

Jean-Jacques Laupretre, Le Perreux sur Marne, France, assignor to Compagnie des Machines Bull (Société Anonyme), Paris, France

Filed Jan. 23, 1963, Ser. No. 253,398
Claims priority, application France, Jan. 30, 1962, 886,360
6 Claims. (Cl. 307—88.5)

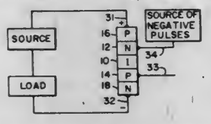


1. An inverting storage circuit arrangement for direct current signals, comprising:
a first tunnel diode,
a second tunnel diode, both diodes admitting substantially equal peak currents and having their cathode connected directly to a common reference potential,
a first resistor for connecting the anode of said first diode to a direct current voltage source,
a second resistor for connecting the anode of said second diode to said voltage source, said resistors being such as to ensure for both of said diodes a stable "low voltage" operation state and a stable "high voltage" operation state, the current normally flowing during the "low voltage" state through said first diode being substantially greater than that flowing through said second diode,
an input terminal connected to the anode of said first diode for receiving an input signal represented by the presence or absence of a positive voltage excursion at a given instant of time,
a test terminal for receiving after said given instant of time a positive test pulse,
a third resistor for connecting said test terminal to the anode of said first diode,
a fourth resistor for connecting said test terminal to the anode of said second diode, and
a capacitor connected between the anodes of both of said diodes and whose capacitance is chosen so that, upon receipt of said test pulse, said second diode is prevented to switch to its "high voltage" state if said first diode has been switched to its "high voltage" state by a positive excursion of said input signal at said given instant of time.

3,284,639
SEMICONDUCTOR SWITCH DEVICE OF CONTROLLED RECTIFIER TYPE RESPONSIVE TO APPROXIMATELY EQUAL GATE SIGNALS OF EITHER POLARITY

Michael N. Giuliano, Halethorpe, and Gene Strull, Pikesville, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

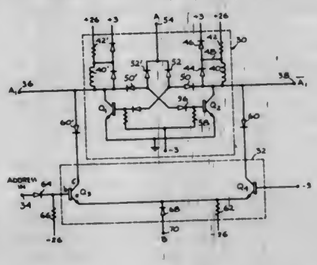
Filed Feb. 19, 1963, Ser. No. 259,616
6 Claims. (Cl. 307—88.5)



1. A semiconductor switch device comprising: at least five regions of semiconductive material including, in

sequence, a first region of semiconductive material of a first type of conductivity, a second region of semiconductive material of a second type of conductivity, a third region of material which has a low dopant concentration so that it exhibits low extrinsic semiconductivity relative to the other regions of the device, a fourth region of semiconductive material of said first type of conductivity and a fifth region of semiconductive material of said second type conductivity; an electrically independent contact on each of said first, second, fourth and fifth regions; a load circuit connected between said contacts on said first and fifth regions and a source of switching pulses connected to one of said contacts on said second and fourth regions.

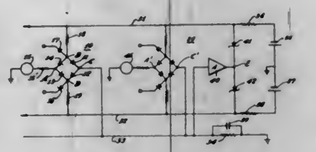
3,284,640
MEMORY ADDRESSING REGISTER COMPRISING BISTABLE CIRCUIT WITH CURRENT STEERING MEANS HAVING DISABLING MEANS
Edward Lindell, Los Angeles, Calif., assignor to Ampex Corporation, Culver City, Calif., a corporation of California
Filed Feb. 28, 1963, Ser. No. 261,721
6 Claims. (Cl. 307—88.5)



1. In a register for storing binary address signals identifying locations in a memory storage device and for applying said signals to a decoding circuit connected to said memory storage device, a bistable circuit having first and second input terminals and first and second output terminals and means connecting each of said output terminals to a different one of said input terminals; a current steering circuit having an input terminal and first and second output terminals; means applying said address signals to said current steering circuit input terminal; said current steering circuit being responsive to the two possible values of said applied binary address signals for respectively providing output signals on either its first or second output terminals; and means for connecting said first output terminals together and to said decoding circuit and said second output terminals together and to said decoding circuit; and means for selectively disabling said current steering circuit.

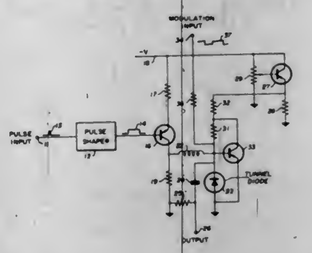
3,284,641
GATING SYSTEM
Dale E. St. John, Rolling Hills Estates, Calif., assignor to Arnoux Corporation, Culver City, Calif., a corporation of California
Filed Dec. 26, 1963, Ser. No. 333,463
15 Claims. (Cl. 307—88.5)

14. A gating system comprising:
a plurality of gating networks, each including a diode rectifier bridge having two anode-to-cathode connecting terminals, a cathode-to-cathode and an anode-to-anode connecting terminal, gating diodes connected to said cathode-to-cathode and said anode-to-anode terminals, further including two resistances respectively connected to said cathode-to-cathode and said anode-to-anode terminals;
a source of positive and a source of negative biasing potentials;
two resistances respectively connected to said sources of biasing potentials;
a pair of Zener diodes connected in series and interconnecting said latter two resistances, thereby forming three terminals for three different constant voltage potentials;



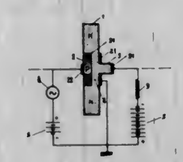
coupling means for connecting the output terminals of each of said gating networks to that one of said three terminals having the intermediate potential; and means for connecting the resistances of said gating networks to the other two of said three constant potential terminals.

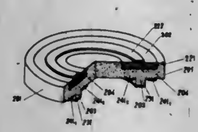
3,284,642
PULSE TIME DELAY CIRCUIT EMPLOYING TUNNEL DIODE AND SWITCH COMBINATION GATED IN RESPONSE TO RAMP INPUT
Quentin A. Kerns, Orinda, Calif., Mier Birk, Rehovoth, Israel, and Thomas A. Nunamaker, San Pablo, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Jan. 10, 1964, Ser. No. 337,114
8 Claims. (Cl. 307—88.5)



1. In an electronic circuit for providing a controllable time delay between input and output pulses, the combination comprising an input circuit for standardizing the shape and duration of input pulses, a current ramp generator of the class providing a linearly increasing quantity of current after receipt of a standardized input pulse, said ramp generator being coupled to said input circuit, an element of the class having a current-voltage characteristic divided into a low voltage range and a high voltage range separated by a negative resistance range, said element being connected to the output of said ramp generator, a current source also connected to said element to provide a reference current level therethrough, and a normally open voltage-controlled switch means connected in parallel with said element, said switch being of the class closing in response to a high voltage thereacross.

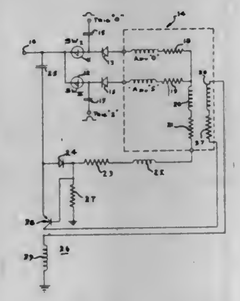
3,284,643
HIGH FREQUENCY, SINGLE JUNCTION, BIPOLAR TRANSISTOR
Maurice J. Ménoret, 12 Ave. de Verdum, Chatillon-sous-Bagneux, France, and Marc E. Savelli, deceased, late of Frejus, France, by Reneé Savelli, widow representative, 10 Caracas, Frejus, France
Filed Jan. 6, 1964, Ser. No. 339,057
Claims priority, application France, Jan. 7, 1963, 920,664/63
5 Claims. (Cl. 307—88.5)





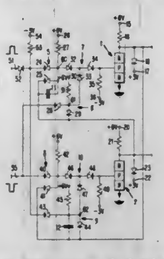
1. A single junction bipolar transistor comprising a circular semiconductor wafer body provided on one side thereof with a coaxial cylindrical projection of reduced cross section, said body having a first circular region including said projection of a given type of conductivity, said body having a second circular region which is coaxially included in the side of said first region opposite to said projection and which is of the opposite type of conductivity, a junction between said first and second regions, an emitter electrode in ohmic contact with said second region, a collector electrode in ohmic contact with the free end of said projection and an annular base electrode coaxially surrounding said projection in spaced relation thereto and being in ohmic contact with said first region.

3,284,644
DRIVER CIRCUIT FOR MAGNETIC CORE DEVICE
Keith Henry Dormer, Harrisburg, and Charles Thomas Wyrick, Camp Hill, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed June 29, 1964, Ser. No. 378,652
15 Claims. (Cl. 307—88.5)



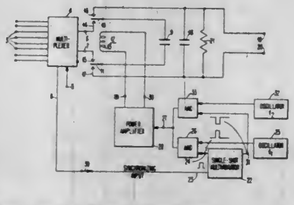
1. An electronic circuit comprising solid state switch means connected to be driven to conduction, to operate load means an input for applying a constant voltage to said switch means, means in circuit with said switch means and responsive to conduction thereof to produce output pulses, to said load means and means connected to said last-mentioned means to delay recharging thereof to provide control current to a further load means and to provide proper sequential conduction of said switch means.

3,284,645
BISTABLE CIRCUIT
Edward B. Eichelberger, Endicott, and Melvin P. Xylander, Apalachin, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Oct. 27, 1964, Ser. No. 406,692
9 Claims. (Cl. 307—88.5)



1. In a direct current coupled bistable device of the type in which a pair of alternatively energized amplifiers each include a logical input circuit and an output circuit crosscoupled to the input circuit of the other amplifier and in which each logical input circuit responds to a pair of bivalued complementary input signals to change the state of the device each time that the input signals change in one sense only from one set of values to the opposite,
the combination therewith of a pair of capacitors each connected to a respective logical input circuit to integrate and thereby delay the change in value of one of said input signals in said one sense, thereby assuring turning off of the energized amplifier to initiated a change in the stable state of the device.

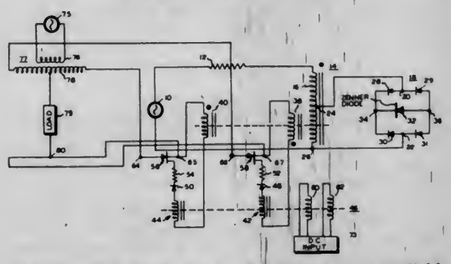
3,284,646
FILTER CIRCUIT
Thomas J. Harrison and James Jursik, San Jose, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Mar. 11, 1963, Ser. No. 264,269
3 Claims. (Cl. 307—105)



1. A dual mode filter compising:
a pair of input terminals and a pair of output terminals,
first and second capacitor means having the capacitance values C_1 and C_2, respectively, where C_2 is greater than C_1,
means connecting said second capacitor means between said output terminals,
first switch means for connecting said input terminals to said output terminal,
second switch means for alternating the connection of said first capacitor means between said input terminals and to said output terminals,
means for closing said first switch means for a period of time t_1, and
means for operating said second switch means at a frequency f during the second period of time t_2 sub-

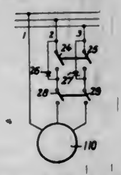
sequent to t_1 whereby the 3 db bandwith of said filter during said second period of time approximates $C_1 f_1 / 2\pi C_2$ cycles per second.

3,284,647
SIGNAL PRODUCING CIRCUIT
Burnette P. Chausse, Roanoke, Va., assignor to General Electric Company, a corporation of New York
Filed Aug. 24, 1961, Ser. No. 133,660
1 Claim. (Cl. 307—106)



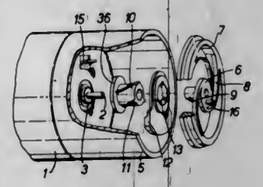
A circuit for producing more than one controllable signal comprising square wave generating means, transformer means having at least two secondary windings, a first secondary winding directly coupled to said primary winding and a second secondary winding inversely coupled to said primary winding, means connecting said square wave generating means to said primary winding of said transformer, a first signal circuit comprising a first electrical circuit connection to one end of said first secondary winding and a second electrical circuit connection to the other end of said first secondary winding, said second electrical circuit connection comprising a first self-saturating saturable reactor in series circuit with a first diode and a first resistor, a second signal circuit comprising a third electrical circuit connection to one end of said second secondary winding and a fourth electrical circuit connection to the other end of said second secondary winding, said second electrical circuit connection comprising a second self-saturating saturable reactor in series circuit with a second diode and a second resistor, and control windings coupled to said saturable reactors, said control windings being adapted to control the time at which said self-saturating saturable reactors are saturated upon application of a control signal to said respective control windings.

3,284,648
SWITCHING CIRCUIT
Floris Koppelmann, Berlin-Siemensstadt, Germany, assignor to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany
Original application Dec. 8, 1960, Ser. No. 74,561. Divided and this application Apr. 7, 1965, Ser. No. 446,367
8 Claims. (Cl. 307—136)



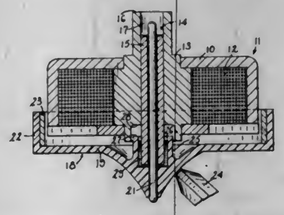
1. A polyphase system having a plurality of n lines, n being at least 3, none of which is a neutral line, there being rectifier-equipped switching means incorporated in only $(n-1)$ of said n lines, respectively, each of said switching means including at least one switch and a circuit which is connected in parallel with such switch and which includes a semiconductor rectifier, the semiconductor rectifiers all being connected to have the same polarity with respect to a load connected to the system.

3,284,649
SYNCHRONOUS ELECTRIC MOTOR WITH AN INERTIA FLYWHEEL AND A UNIDIRECTIONAL STARTER
Boris Victorien Barlow, Edgware, Middlesex, England, assignor to S. Smith & Sons (England) Limited, London, England, a British company
Filed Sept. 21, 1964, Ser. No. 397,753
4 Claims. (Cl. 310—41)



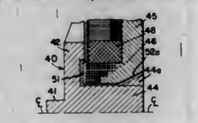
1. A synchronous electric motor including a rotor, means for ensuring that said rotor rotates in a desired direction comprising a rotatable member arranged to be driven by said motor and formed with helical splines, a weight rotatable with said rotatable member and mounted for axial movement along said rotatable member, said weight being formed with helical grooves cooperating with said splines to effect said axial motion of said weight upon rotation of said rotatable member, first and second stop members disposed so as to limit the motion of said weight along the axis of said rotatable member between first and second extreme axial positions, and a third stop member disposed so that said weight collides with said third stop member when said weight rotates in its first extreme axial position, the arrangement being such that when said rotor rotates in the correct direction, said weight is driven to its second extreme axial position and rotates there, and when said rotor rotates in the incorrect direction, said weight is driven to its first extreme axial position, rotates there and collides with said third stop member, the impulse generated by the collision serving to reverse the direction of rotation of said rotor.

3,284,650
MOTOR HAVING BEARING CHAMBERS IN WHICH THE OIL IS RETAINED BY MENISCUS FORCES
Frederick Franz, 2 Woodruff St., West Haven, Conn.
Filed Jan. 16, 1964, Ser. No. 338,254
10 Claims. (Cl. 310—90)



1. A lubricated motor including, in combination:
(A) a collar having a first end and a second end,
(i) said collar having a central bearing portion with a longitudinal aperture therethrough,
(ii) said central bearing portion having a first end approaching the first end of said collar within said collar to define a first lubricant-receiving chamber between the first end of said collar and the first end of the bearing portion thereof,
(iii) said central bearing portion having a second end projecting beyond the second end of said collar,
(B) a shaft rotatably mounted in the longitudinal aperture in said bearing portion,
(i) one end of said shaft extending through the first end of said bearing portion into said first chamber, and
(C) a rotor element secured to the other end of said shaft,
(i) said rotor element being secured to said shaft beyond the second end of said bearing portion,
(ii) said rotor element including a central annular projection extending along a part of the projecting bearing portion in parallelism thereto and being spaced therefrom to define a second lubricant-receiving chamber.

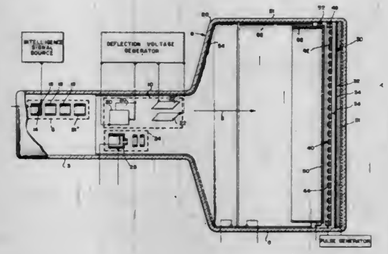
3,284,651
COMPACT INDUCTOR ALTERNATOR
Adolph J. Wesolowski, Phoenix, Ariz., assignor to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Original application Aug. 10, 1962, Ser. No. 216,253. Divided and this application Oct. 21, 1965, Ser. No. 499,436
4 Claims. (Cl. 310—168)



1. A compact inductor alternator comprising:
(a) a stator including a stationary metal support, an annular armature mounted on said support, said armature having a plurality of circumferentially spaced laminated teeth projecting away from the face of said support, and an armature coil wound around and between said teeth in planes substantially parallel to the face of said support, and a field coil mounted on said support within the confines of said annular armature and in proximity to the center thereof; and
(b) a rotor comprising a shaft extending through said field coil and armature, a one-piece metal disc disposed on the end of said shaft, said disc having one smooth face and a plurality of poles uniformly spaced around the periphery of said disc, and said disc and shaft being disposed to provide a narrow constant air gap between said smooth face and said armature during rotation of said disc, said stator and rotor being shaped so that at least a portion of said air gap is angularly disposed with respect to said shaft to direct the magnetic forces in a predetermined manner.

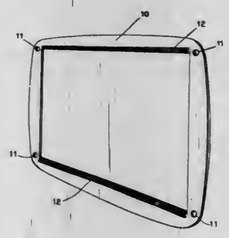
3,284,652
DISPLAY SCREEN ADJACENT STORAGE TARGET COMPRISING PHOSPHOR, LEAKY DIELECTRIC AND TRANSPARENT CONDUCTIVE LAYERS
Leon S. Yaggy, Carlsbad, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Oct. 28, 1963, Ser. No. 319,095
5 Claims. (Cl. 313—68)

1. A moving target direct-viewing indicator tube comprising an evacuated envelope containing:
(A) a storage target adapted to have an electrical charge pattern formed thereon in response to electron bombardment thereof;
(B) means disposed on a first side of said storage target for forming an electron beam for scanning said storage target therewith in point-to-point fashion to thereby form an electrical charge pattern thereon;
(C) means disposed on said first side of said storage target for forming a flood electron beam for flooding said storage target therewith;



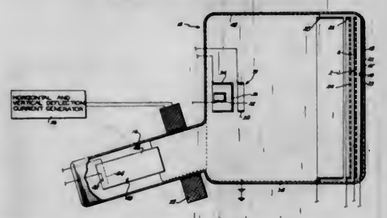
(D) and a viewing target disposed on a second side of said storage target and including:
(1) a phosphor layer on which flood electrons penetrating said storage target impinge;
(2) a leaky dielectric layer adjacent said phosphor layer;
(3) and a conductive electrode member adjacent said leaky dielectric layer.

3,284,653
CATHODE RAY TUBE WITH A GRID OF SINGLE CONTINUOUS WIRE
Henri de France and Roger Raymond Cahen, Levallois, France, assignors to Compagnie Francaise de Television, Paris, France, a corporation of France
Filed Apr. 9, 1963, Ser. No. 271,634
Claims priority, application France, Apr. 18, 1962, 894,864
9 Claims. (Cl. 313—89)



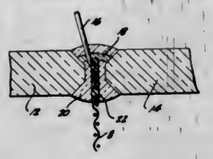
1. A grid comprising a frame, two parallel rods fixed to said frame, and a continuous wire extending from one rod to the other and forming between said rods a plane wire surface; each one of said rods comprising: a longitudinal face, said face comprising substantially transversal parallel grooves, and thread elements separating said grooves; each of said thread elements terminating, at one end, in an overhanging portion; said continuous wire passing through at least some of said grooves of each of said rods, and under at least some of said overhanging portions of said thread elements of each of said rods.

3,284,654
CATHODE RAY STORAGE TUBE FOR DISPLAYING STORED AND NON-STORED DISPLAYS IN DIFFERENT COLORS
Jenny Bramley, Falls Church, Va., and Norman H. Lehrer, Pacific Palisades, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Jan. 2, 1963, Ser. No. 249,018
1 Claim. (Cl. 313—92)



A half-tone visual display storage tube comprising:
(a) a storage target including a conductive support member having a layer of bombardment induced conductivity material on at least a portion of one side thereof, and exhibiting both bombardment induced conductivity and secondary electron emission over a continuous range of electron beam energy levels whereby said storage target may be charged in substantially equal and opposite electrical senses at a predetermined portion of said range;
(b) a first electron source for directing flood electrons uniformly over said storage target;
(c) a second electron source for producing a scanning electron beam having an energy level corresponding to said predetermined portion of said range of electron energy levels;
(d) and a viewing target disposed adjacent said storage target on the side thereof opposite the said one side and having phosphor means adapted to produce, respectively, light of different colors in response to impingement thereof by said flood electrons and by electrons in said scanning beam.

3,284,655
CATHODE RAY TUBE MESH ASSEMBLY SUPPORTED BETWEEN ENVELOPE SECTIONS
Frederick G. Oess, Oceanside, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed June 10, 1963, Ser. No. 286,568
2 Claims. (Cl. 313—286)



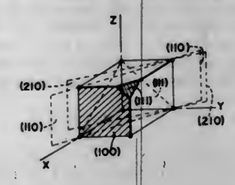
1. In an electronic vacuum tube of the type having a mesh target disposed therein, the improvement compirsing: at least a pair of envelope members having adjacent beveled edge portions and defining a chamber therewithin, a mesh target assembly disposed in and across said chamber and having a mesh portion secured to imperforate peripheral portions, said imperforate portions of said target assembly being disposed between said beveled edge portions of said envelope members, electrical lead-in means external to said chamber extending between said beveled edge portions of said envelope members and electrically connected to said imperforate peripheral portions of said target assembly, and sealing means disposed in and filling the space between said beveled edge portions of said envelope members thereby hermetically joining said envelope members and securing said target assembly and said electrical lead-in means thereto.

3,284,656
ELECTRON EMITTING CATHODES
Albert Trevor Watts and Thomas William Myford, London, England, assignors to Thorn-AEI Radio Valves and Tubes Limited, London, England, a British company
Filed Apr. 1, 1964, Ser. No. 376,605
5 Claims. (Cl. 313—337)



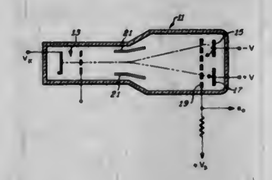
1. A heater-cathode assembly suitable for use in an electron discharge device comprising in combination:
a cathode in the form of a metal tube having a coating of potentially electron-emissive material affixed to the outer surface thereof and a heater disposed within and spaced from said tube, said heater including a metal wire core extending along the longitudinal axis of said tube, a layer of insulating material affixed to said wire core, a pair of metal eyelets affixed to said wire core, said eyelets being longitudinally spaced on said wire core and said wire core passing through said eyelets, and a refractory metal wire mesh sleeve having opposite ends thereof affixed to said spaced eyelets, said wire mesh sleeve being supported by said eyelets affixed to said wire core and having the greater part of the length thereof spaced from said layer of insulating material affixed to said wire core.

3,284,657
GRAIN-ORIENTED THERMIONIC EMITTER FOR ELECTRON DISCHARGE DEVICES
Ira Weissman, Palo Alto, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed June 3, 1963, Ser. No. 285,150
19 Claims. (Cl. 313—346)



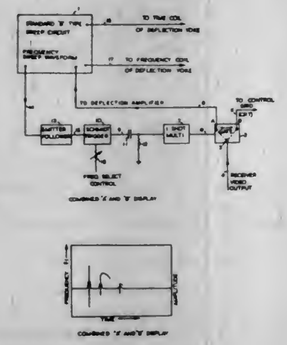
1. A thermionic emitter adapted to operate at elevated temperature comprising, a body of high melting point material having at least one surface portion adapted to act as an electron emissive surface, and said electron emissive surface being constituted of a grain oriented polycrystalline material.

3,284,658
SYMBOL GENERATING TUBE HAVING TARGET MATRIX WITH CONDUCTING ELEMENTS
Raymond Winfield, Wantagh, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Dec. 30, 1963, Ser. No. 334,393
11 Claims. (Cl. 315—21)



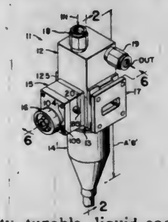
1. A symbol generating electron tube comprising an elongated tube envelope; an electron gun positioned near one end of the tube envelope and arranged to provide an electron beam along the axis of the tube envelope; a target matrix arranged transversely in the path of said electron beam; means to sweep the electron beam across the target matrix; electrically conducting target elements in said matrix; means to supply on and off control voltages to the individual target elements whereby varying numbers of electrons are allowed to escape from the target matrix in response to the applied control voltage; and signal output means to collect electrons escaping from the target.

3,284,659
APPARATUS AND METHOD FOR COMBINING "A" AND "B" TYPE DISPLAYS ON AN OSCILLOSCOPE HAVING A "B" TYPE SWEEP CIRCUIT
Laurence Edmund Outhouse, Truro, Nova Scotia, and Dennis Henry Covill, Hacketts Cove, Nova Scotia, Canada, assignors to E.M.I.-Cossor Electronics Ltd., Dartmouth, Nova Scotia, Canada
Filed Jan. 9, 1964, Ser. No. 336,760
Claims priority, application Canada, Oct. 29, 1963, 887,840
13 Claims. (Cl. 315—22)



1. A method of combining "A" and "B" type displays in a "B" type sweep oscilloscope having input terminals associated with the control grid and the frequency coil of the deflection yoke and an output terminal associated with the frequency sweep waveform, said method including the steps of:
(i) switching an incoming signal alternately between said control grid and said frequency coil of the said deflection yoke,
(ii) providing a variable frequency trigger circuit to control said switching operation,
(iii) utilizing said frequency sweep waveform to control said trigger circuit, and
(iv) varying said trigger frequency until it is synchronised with a selected frequency.

3,284,660
HIGH FREQUENCY ELECTRON DISCHARGE DEVICE
Wayne G. Abraham, Palo Alto, Jesse F. Kendall, Jr., Sunnyvale, and Frederick L. Salisbury, Los Altos, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Jan. 6, 1964, Ser. No. 335,796
21 Claims. (Cl. 315—5.39)



1. A two cavity, tunable, liquid cooled, low noise and rugged electron discharge device comprising an electron gun, an interaction structure disposed within a main body portion of said device and a collector structure operatively connected together in a vacuum sealed relationship and disposed along a central beam axis, said interaction structure including two coupled cavities, wherein said two cavities are provided with iris coupling means, said two cavities being additionally provided with tuning means, said tuning means being adapted and arranged to simultaneously tune said two cavities while varying the coupling between said cavities such that a linear tuning characteristic is realized over the tunable bandwidth of the device, said tuning means including a single tuning diaphragm, said diaphragm having a tuner stud fixedly attached thereto, said stud being driven by a tuner shaft securely yet movably attached thereto, said tuner shaft having a calibrated dial mechanism fixedly attached thereto, said tuner shaft being driven by a worm gear drive mechanism and said tuner shaft being provided with spring loaded anti-backlash means, said collector and said main body portion of said device being provided with interconnected cooling channels, said main body cooling channels comprising a pair of spaced U-shaped channels, said electron gun having a cathode assembly, said electron gun including said cathode assembly having conductors for providing the device operating voltages extending therefrom, said conductors being surrounded by insulation means, said insulation means and said conductors being further surrounded by a conductive sleeve, said conductive sleeve being electrically shorted to the main body portion of said device.

3,284,661
MEMBRANE FOR IMAGE CONVERTER AND AMPLIFIER
Gottfried R. Rosendahl, Fort Wayne, Ind., assignor to Ball Brothers Research Corporation, Boulder, Colo., a corporation of Colorado
Original application June 9, 1960, Ser. No. 35,079, now Patent No. 3,100,817, dated Aug. 13, 1963. Divided and this application July 1, 1963, Ser. No. 291,826
2 Claims. (Cl. 315—10)

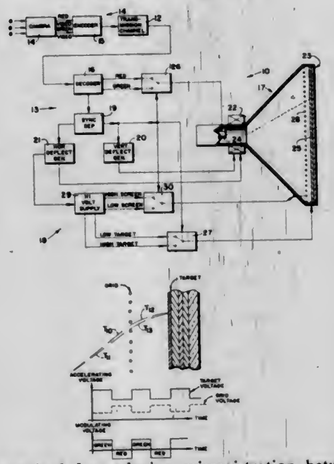
2. A membrane for an image converter and amplifier, comprising: a layer including particles of electroelastic material; a semiconductive layer on each opposite side

thereof with at least one of said semiconductive layers being a photoconductive layer; a thin layer of light reflecting metal on the other of said semiconductive layers;



means for producing a direct current voltage difference between said semiconductive layers; and means for producing a direct current voltage difference across each of said semiconductive layers.

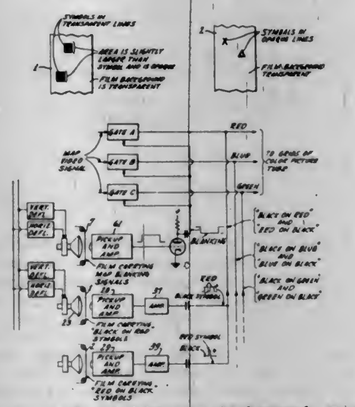
3,284,662
METHOD AND MEANS FOR REDUCING KINESCOPE MISREGISTRATION
Sholly Kagan, Natick, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Feb. 14, 1964, Ser. No. 344,914
16 Claims. (Cl. 315—17)



1. A method for reducing misregistration between a pair of images sequentially formed on a kinescope target by an electron beam that periodically scans said target where one of said pair of images is formed when said target is held at a first potential relative to the gun producing said beam during a portion of the periodic scan thereof and the other of said pair of images is formed when said target is held at a second potential, lower than said first potential, relative to said gun during another portion of said periodic scan, and where an electron permeable grid is interposed between said gun and said target, including the step of maintaining a voltage on said grid relative to said gun that is always lower than either said first or second potentials.

3,284,663
DISPLAY SYSTEMS
Arthur Charles Stocker, Moorestown, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed May 17, 1963, Ser. No. 281,114
1 Claim. (Cl. 315—22)

In a system for displaying symbols, a display device, means for producing signals representative of the configuration of certain of said symbols, means for applying said signals to said display device with a polarity to make said symbols appear on said display device as bright symbols against a comparatively dark background, means for producing signals representative of symbol-containing areas, said areas being only slightly larger than the symbol inside the area, means for applying said last-mentioned signals to said display device with a polarity to make said last-mentioned symbols each appear on said display device as a comparatively dark symbol against a



small surrounding bright area background, a circuit through which signals representative of a background display may be applied to said display device, a gate in said circuit, means for producing blanking pulses each of which occurs simultaneously with the occurrence of said signals representative of said symbols and said symbol-containing areas, and means for applying said blanking pulses to said gate to make it ineffective to pass signals for the duration of each blanking pulse.

3,284,664
PRESSURE REGULATION OF FLUORESCENT LAMPS BY PELTIER COOLING MEANS
Joseph R. Morin, Hamilton, and Carl J. Bernier, Beverly, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Continuation of application Ser. No. 843,740, Oct. 1, 1959. This application Feb. 6, 1964, Ser. No. 343,070
3 Claims. (Cl. 315—108)

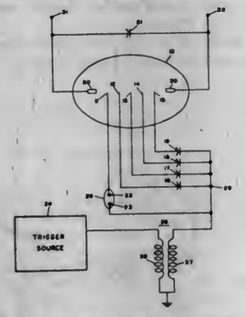


1. Apparatus for operating a low pressure mercury lamp, said apparatus comprising a thermoelectric junction formed of flat ribbons to the curvature of the outer surface of the lamp, and a spring to press the junction against said outer surface of said lamp.

3,284,665
MULTIPLE ELECTRODE FLASHLAMP CIRCUIT WITH A GAS HOLDOFF TUBE IN CIRCUIT WITH A TRIGGER ELECTRODE ADJACENT THE ANODE
John H. Goncz, Waltham, Mass., assignor to Edgerton, Germeshausen & Grier, Inc., Boston, Mass., a corporation of Massachusetts
Filed Jan. 29, 1964, Ser. No. 341,060
5 Claims. (Cl. 315—168)

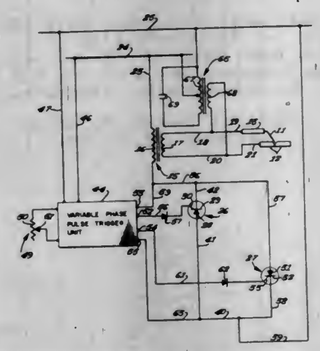
1. An electric system comprising:
a discharge device having an anode, a cathode and a plurality of trigger electrodes disposed therebetween;

means for connecting the anode and cathode across a source of potential normally ineffective to cause a discharge therebetween;
means for connecting each of said plurality of trigger electrodes to a source of triggering impulses;
a breakdown device connected in series with said source of triggering impulses and the trigger elec-



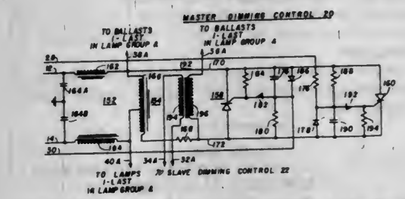
trode adjacent the anode electrode, said breakdown device having a breakdown voltage which is greater than the firing voltage of the other trigger electrodes and less than the maximum voltage of the triggering impulses; and
isolating impedances disposed in said connecting means between each of the other trigger electrodes and said source of triggering pulses.

3,284,666
VARIABLE WELD CURRENT APPARATUS HAVING AUXILIARY ARC ESTABLISHING MEANS
Frank J. Hajicek, St. Paul, Minn., assignor to Marquette Corporation, Minneapolis, Minn., a corporation of Delaware
Filed May 4, 1964, Ser. No. 364,554
7 Claims. (Cl. 315—174)



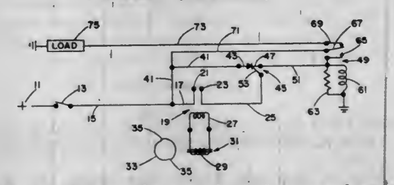
1. In welding apparatus, electrode means to provide a welding arc, power supply means adapted to be connected to a source of cyclically varying voltage for supplying a cyclically varying current to said electrode means, control means for said power supply means effective to vary the portion of each cycle of the voltage of said source during which current is supplied to said electrode means to vary the current flowing in said welding arc, and an auxiliary power supply means for applying to said electrode means independently of said control means a voltage sufficiently high to cause initial establishment of the welding arc so that regardless of the setting of said control means, a welding arc will be established during each cycle.

3,284,667
DIMMER CONTROL FOR SYSTEM HAVING MASTER AND SLAVE DIMMING DEVICES USING PULSE SIGNALLING THEREBETWEEN
Roy J. T. Harris and Wayne C. Lippincott, Milton, Wis., assignors to Thomas Industries Inc., Fort Atkinson, Wis., a corporation of Delaware
Filed Sept. 9, 1963, Ser. No. 307,667
15 Claims. (Cl. 315—195)



15. A dimming system for controlling the lumen output of a plurality of lamp banks energized from a source of alternating current comprising a master dimming circuit for a first bank of lamps including input means for connecting said master dimmer circuit to said source, a first and a second electronic switch means including a phase shift network for providing control voltages to operate at least one of said electronic switches during an interval of one-half cycle of said alternating current, intensity selector means for varying the duration of said interval, output means for coupling current to said first bank of lamps during said interval of operation of said switches, and pulse derivation means for providing a pulse of electrical energy in response to each switching operation by one of said switches; and a slave dimming circuit for controlling a second bank of lamps including control means responsive to said pulse from said pulse derivation means to operate said second bank of lamps for a period corresponding to the period of operation of said first bank of lamps, including pulse-responsive means, means connecting said pulse responsive means to the pulse derivation means of said master dimming circuit, further switches connected for selective operation by said pulse responsive means, output means for coupling current to the second lamp bank responsive to energization of said further switches, and pulse derivation means for coupling a pulse to a further slave dimming circuit responsive to operation of one of said further switches.

3,284,668
ELECTRONIC SPEED SENSOR
Donald B. Heaslip, Sauquoit, N.Y., assignor to The Bendix Corporation, Utica, N.Y., a corporation of Delaware
Filed Oct. 28, 1963, Ser. No. 319,162
3 Claims. (Cl. 317—5)



1. A control system for a mechanical source of power having an associated primary source of electrical power connected to a load comprising:
electrical signal generating means generating a signal proportional to the speed of a portion of the mechanical source of power;
a resonant reed relay having a plurality of contacts electromagnetically linked to the electrical signal generating means;

a silicon controlled rectifier having an anode, a cathode and a gate, one of said resonant relay contacts connected to the anode of the silicon controlled rectifier, another of said resonant relay contacts connected to the gate lead of the silicon controlled rectifier;

a switch means having a first electrical connection between the cathode of said silicon controlled rectifier and the primary source of electrical power and a second electrical connection for the load, the switch means controlling the electrical energization of the load; and

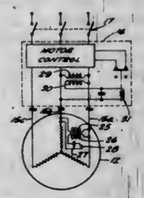
the anode of the silicon controlled rectifier having an electrical connection for the primary source of electrical power.

3,284,669

PRESSURE AND HEAT SENSING MEANS FOR SUBMERSIBLE MOTORS

Clinton A. Boyd, Tulsa, Okla., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed Nov. 28, 1962, Ser. No. 240,552
6 Claims. (Cl. 317—13)



1. A device for above-ground indication of a physical condition present at a three phase submersible electric motor positioned in a well bore, comprising: a power cable having three wires coupling the motor to an above-ground power distribution system, a sensing element associated with the motor for responding to such physical condition, a first bucking transformer associated with the motor and having primary and secondary windings, said primary winding being connected from a first of said wires to a second of said wires, one end of said secondary winding be coupled to said first wire and the other end of said secondary winding being coupled through said sensing element to said second wire, said sensing element being operable to vary the electrical current in said secondary winding in a predetermined manner upon variation of the physical condition sensed by said sensing element, said varying electrical current in said secondary winding superimposing an electrical signal current on the electrical power current in said first and second wires, a second bucking transformer located above-ground and having primary and secondary windings each coupled between said first and second wires, and means coupled in series with said secondary winding of said second transformer for responding to said superimposed electrical signal current for operation of a circuit breaking means.

3,284,670

GROUND FAULT RESPONSIVE CONTROL MEANS FOR AN ELECTRIC CIRCUIT RECLOSER OR THE LIKE

Philip B. Fairman, Media, and August L. Streater, Broomall, Pa., assignors to General Electric Company, a corporation of New York

Filed June 17, 1963, Ser. No. 288,186
14 Claims. (Cl. 317—47)

1. A fault-imposing switching arrangement for a polyphase A.-C. power system, comprising:

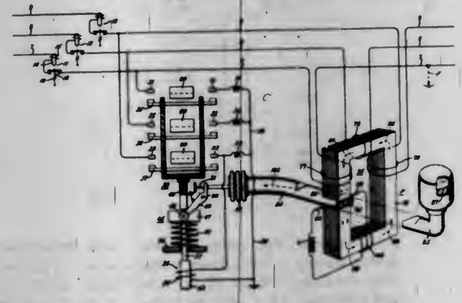
(a) a plurality of reactors, one for each phase of said system,

(b) a normally-open switch operable when closed to establish a circuit between each of said phases and an electrically-common point through the reactor individual to said phase,

(c) stored-energy means operable upon discharge to drive said switch into closed position,

(d) latch means for holding said stored-energy means in a charged condition and releasable to effect discharge of said stored-energy means and resultant closing of said switch,

(e) means sensitive to the zero-phase-sequence component of current in said power system for releasing



said latch in response to zero-phase-sequence current of a predetermined minimum value in said power system,

(f) magnetic means energized by the current flowing through said switch upon switch-closing to hold said switch closed while current flows through said switch,

(g) means operated by current through said switch for recharging said stored-energy means,

(h) and means for opening said switch when the current flow through said switch ceases.

3,284,671

ELECTRONIC ASSEMBLY WITH DIP-SOLDERED LEADS

Ronald A. Baker, Mexico City, Mexico, and David J. Propps, Indianapolis, Ind., assignors to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware

Filed Oct. 9, 1964, Ser. No. 402,810
6 Claims. (Cl. 317—101)



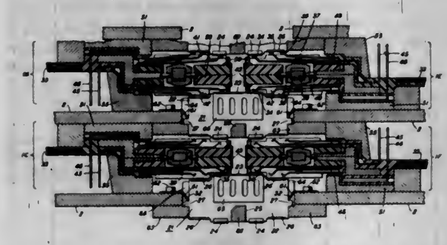
5. An electronic assembly comprising: a pair of predeterminately spaced parallel electrically conductive frames having electrical terminals formed at an extremity of said frames and a plurality of spaced notches formed in the side thereof, said notches of one of said frames being aligned with said notches of the other of said frames; a plurality of components having axial leads disposed between said frames so as to have said leads held by said notches, each of said leads being wrapped about and soldered to an adjacent lead and soldered to said notches; a first container for enclosing said assembly, said container being disposed about said frames and said components; an insulating inner container for separating said frame and said components from said first container; and a top cover for sealing said first container, said top cover having hermetically sealed feedthrough means for interfitting with said electrical terminals formed on said frame.

3,284,672

ELECTRONIC PACKAGE WITH TERMINAL MEANS ALONG THREE SIDES OF CHASSIS

Alfred J. Munn, Lyndhurst, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 24, 1964, Ser. No. 420,944
4 Claims. (Cl. 317—101)



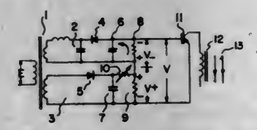
1. An electronic circuit package comprising a rack having a plurality of compartments with parallel side walls, a plurality of circuit chassis containing electric circuits and having parallel sides for slidable insertion in said compartments, a plurality of deflectable contact springs supported along at least one of the parallel sides of each chassis, said springs being connected to said electric circuits, a plurality of stationary contact terminals supported by said compartment walls so that each terminal is opposite one of said springs when its chassis is in a compartment, a mechanical means in said chassis for deflecting its contact springs to either of two positions, one position connecting said springs to the contact terminals and the other position disconnecting said springs to permit withdrawal of the chassis from its compartment.

3,284,673

SIGNAL SELECTOR

Masatoshi Shimada, 78 2-chome, Todoroki, Tamagawa, Setagayaku, Tokyo, Japan

Filed Jan 4, 1963, Ser. No. 249,517
Claims priority, application Japan, Jan. 9, 1962, 37/325; Feb. 10, 1962, 37/4,399
10 Claims. (Cl. 317—147)



1. Frequency selective apparatus responsive to a call signal of a given frequency comprising:

an input signal receiving circuit;

a first branch circuit connected to be energized by said signal receiving circuit and to provide an output voltage;

a second branch circuit connected to be energized by said signal receiving circuit, having rectifier means to provide a D.C. output voltage;

one of said branch circuits including a resonant circuit providing a maximum output at said call signal frequency and the output of the other branch circuit being substantially independent of frequency and proportional only to the amplitude of the input signal;

an electron discharge device such as a transistor having a base, an emitter and a collector;

means for applying said output voltage of said first branch circuit between the base and emitter of said transistor;

an electro-responsive device connected to the collector of said transistor;

means for applying said D.C. output voltage of said second branch circuit between the base and emitter of said transistor with such a polarity as to decrease the base current of said transistor, so that when the output voltage of said first branch circuit exceeds the D.C. output voltage of said second branch circuit said transistor is activated by flowing of its base current, and in setting said respective output voltages of said first and second branch circuits to such relative values that said base current has approximately a zero value at one predetermined input frequency above and another below the resonant frequency of said resonant circuit;

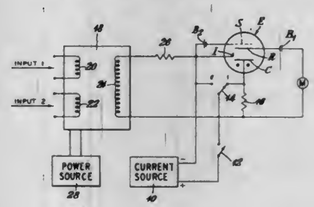
whereby, a base current activating said transistor will flow when a signal having a frequency in the band between said predetermined frequencies is impressed on said signal receiving circuit, and no base current will flow when an input signal having a frequency outside said band is impressed on said signal receiving circuit, and whereby said band is substantially independent of variations of the input signal voltage.

3,284,674

COUPLING CIRCUIT FOR AN ELECTRICAL READOUT INTEGRATOR

James J. Moore, Austin, Tex., assignor to Union Carbide Corporation, a corporation of New York

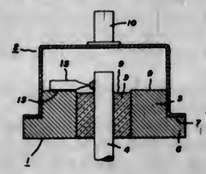
Filed Oct. 22, 1962, Ser. No. 232,133
5 Claims. (Cl. 317—231)



1. In combination, an electrical readout integrator, a magnetic amplifier having a plurality of input control windings and an output control winding; said integrator comprising a cell containing as an electrolyte a solution of a reversible redox system, said solution being divided into zones of different concentration of a measured species of said system, a readout electrode and a common electrode in one of said zones having a variable concentration of said measured species and an input electrode in another of said zones high in concentration of said measured species; means for biasing said readout electrode negative with respect to said common electrode,

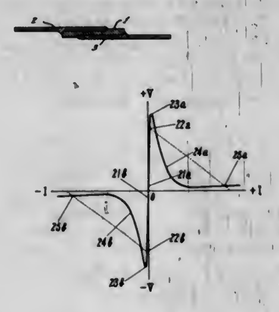
said output control winding of said magnetic amplifier being connected across said input and common electrodes of said integrator.

3,284,675
SEMICONDUCTOR DEVICE INCLUDING CONTACT AND HOUSING STRUCTURES
James M. Smith and Tage P. Sylvan, Liverpool, N.Y., assignors to General Electric Company, a corporation of New York
Filed Apr. 5, 1961, Ser. No. 100,933
8 Claims. (Cl. 317—234)



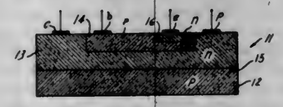
1. A semiconductor device comprising a planar insulating member having a conductive lead extending axially therethrough and a conductive area in one surface thereof in spaced relationship to said lead, a body of semiconductor material positioned on the said insulating member with a portion abutting and directly secured to said conductive area and extending across the insulating space toward said lead and another portion abutting and directly secured to said lead, and means for making electrical connections to said conductive area.

3,284,676
BILATERALLY BISTABLE SEMI-CONDUCTOR DEVICE
Hideo Izumi, Tokyo, Japan, assignor to Nippon Telegraph and Telephone Public Corporation, Tokyo, Japan, a corporation of Japan
Filed Dec. 21, 1961, Ser. No. 161,009
Claims priority, application Japan, Dec. 26, 1960, 35/50,224
8 Claims. (Cl. 317—234)



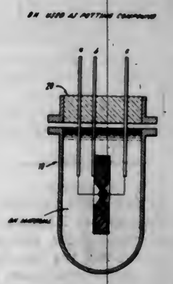
1. A semiconductor device having bilaterally bistable characteristics comprising a thin plate of a single crystal of n-type silicon having a specific resistance of more than 300 ohm cm. and the thickness of less than 250 microns, and at least two regrown layers of silicon having at least one flat portion, the layers opposed to each other through said thin plate of silicon so as to cause said regrown layers to be arranged in parallel with each other in the cross section, said regrown layers containing gold and at least one V group element and having higher specific resistance than that of the matrix single crystal of silicon and thickness of less than 1.2 microns.

3,284,677
TRANSISTOR WITH ELONGATED BASE AND COLLECTOR CURRENT PATHS
Isy Haas, Cupertino, Calif., assignor to Ameico, Inc., Los Angeles, Calif., a corporation of California
Filed Aug. 23, 1962, Ser. No. 218,971
9 Claims. (Cl. 317—235)



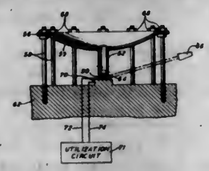
1. A transistor including a support region of one conductivity type, a collector region of opposite conductivity type having one surface forming a first junction with one surface of said support region, a base region of said one conductivity type inset into the collector region from the other surface to form a collector junction substantially parallel to said first junction, an emitter region of said one conductivity type inset into the base region from said other surface to form an emitter junction therewith, said emitter region being substantially smaller in area than the base region, ohmic contact formed with the emitter region, ohmic contact formed with the base region at a portion of the base region spaced from the emitter region to provide a base current path through the base region to the emitter junction which is substantially parallel to the collector junction, a pair of ohmic contacts formed with the collector region, one of said contacts being closely adjacent to the base contact whereby the collector current path is substantially parallel to the collector junction and the base current path and the other ohmic contact disposed on the other side of the emitter region.

3,284,678
SEMICONDUCTOR ENCAPSULATING AND REINFORCING MATERIALS UTILIZING BORON NITRIDE
John McBride, Lansdale, Pa., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Nov. 9, 1962, Ser. No. 236,562
7 Claims. (Cl. 317—235)



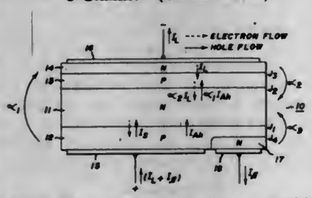
1. In an assembly comprising a closed housing, a semiconductive device having a PN junction within said housing, and electrical insulating means provided in the space between said device and the wall of said housing, said insulating means surrounding and making intimate contact with said device and making intimate contact with the wall of said housing, the improvement wherein said insulating means includes boron nitride in an amount effective to conduct heat from said device to the wall of said housing, whereby said semiconductive device will be conductively cooled when in operation without degrading the surface of the PN junction thereof.

3,284,679
SEMICONDUCTIVE STRESS SENSING DEVICES
Mathew E. Sikorski, Berkeley Heights, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 8, 1963, Ser. No. 322,473
17 Claims. (Cl. 317—235)



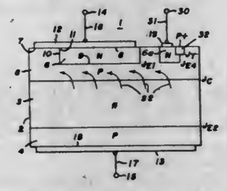
16. A transducer comprising a member of semiconductive material, said material being of uniform character throughout and having a predetermined pressure-resistance characteristic, the latter including a transition region; means for subjecting the member to a fixed initial pressure corresponding substantially to the center of said transition portion; means for superimposing on the member information-bearing pressure variations of a magnitude sufficient to vary the resistance of the member within the limits defined by the bounds of said transition region; and means connected to the member for utilizing said variations in resistance.

3,284,680
SEMICONDUCTOR SWITCH
Finis E. Gentry and Bernard R. Tuft, Skaneateles, N.Y., assignors to General Electric Company, a corporation of New York
Filed Nov. 26, 1963, Ser. No. 326,162
3 Claims. (Cl. 317—235)



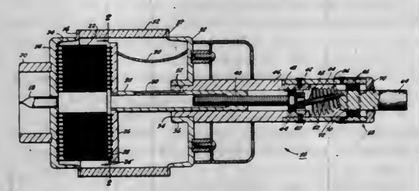
1. A semiconductor switching device capable of being switched between a normally high impedance state and a low impedance state by application of a switching voltage including in combination,
A. a body of semiconductor material having
(a) four regions of one and the opposite conductivity type interleaved to define three pn junctions therebetween,
B. a pair of main current carrying electrodes each in low resistance ohmic contact with one of the external regions of said four regions whereby a main current path is provided through said four regions and three PN junctions and only one of said junctions is reverse biased for a vlotage of one polarity applied between said pair of main current carrying electrodes,
(a) said pair of main current carrying electrodes having major portions directly opposite each other whereby a major component of said device main current path is substantially perpendicular to said three PN junctions,
C. a fifth region of opposite conductivity type formed in one of said external regions of said body of semiconductor material and remote from the main current carrying electrode in ohmic contact therewith,
(a) said fifth region forming a gate pn junction with the adjacent external region and providing transistor action with the next adjacent one of said three pn junctions and
D. a third electrode in low resistance ohmic contact with said fifth region thereby to form a gating electrode for the semiconductor switching device whereby said switching device is switched to its low impedance state upon application of a voltage to said third electrode which is between that applied across the main current carrying electrodes.

3,284,681
PNPN SEMICONDUCTOR SWITCHING DEVICES WITH STABILIZED FIRING CHARACTERISTICS
Finis E. Gentry, Skaneateles, N.Y., assignor to General Electric Company, a corporation of New York
Filed July 1, 1964, Ser. No. 379,656
8 Claims. (Cl. 317—235)



5. A semiconductor switching device including in combination,
A. a body of semiconductor material having
a. four regions of one and the opposite conductivity type interleaved to define three pn junctions therebetween,
B. a pair of main current carrying electrodes each in low resistance ohmic contact with one of the external regions of said four regions whereby a current path is provided through said four regions between said pair of main current carrying electrodes,
C. a gate emitter region formed in one of said internal regions of said body of semiconductor material and having the opposite type conductivity from that adjacent internal region,
D. a third electrode in low resistance ohmic contact with said gate emitter region thereby to provide a gate electrode for supplying gate firing current to the semiconductor switching device and
E. a highly doped region formed straddling a portion of the junction between said gate emitter region and said adjacent internal region thereby to form a tunnel junction therebetween and reduce sensitivity of gate firing current to temperature variations.

3,284,682
CONTROLLED ENVIRONMENT CAPACITIVE ELEMENT
Myron E. Lippman, Los Angeles, Calif. (117420 Nordhoff St., Northridge, Calif.)
Filed Mar. 16, 1964, Ser. No. 352,196
2 Claims. (Cl. 317—245)



1. A variable capacitor comprising: a pair of capacitor plates;

envelope means for maintaining a selected environment surrounding said plates;
tuning means for varying the area of said pair of plates adjacent one another, said tuning means comprising a threaded shaft adaptable for rotation affixed to one of said plates;
first rotating means adapted to rotate with respect to said envelope and to engage said threaded shaft for moving said shaft axially;
an envelope sealing means eccentrically coupled to said first rotating means including bellows means connected to said envelope means and a sealed hollow shaft extending interiorly through said bellows means to engage said first rotating means;
and second means including a driving dog, eccentrically coupling said sealed hollow shaft to a source of rotational motion for causing said sealing element to oscillate radially and for causing said first means to rotate for moving said shaft and the affixed one of said plates in an axial direction.

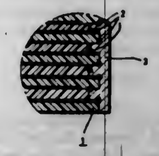
3,284,683
ELECTRICAL CAPACITOR AND METHODS OF FORMING THE CAPACITOR
Harold F. Rieth, Santa Monica, Calif., assignor to Packard-Bell Electronics Corporation, Los Angeles, Calif., a corporation of California
Filed June 19, 1964, Ser. No. 376,513
17 Claims. (Cl. 317—258)



1. The method of manufacturing a ceramic capacitor including the steps of:
providing a support member of an electrically conductive alloy containing nickel and being stable over a first range of temperatures up to a predetermined temperature,
depositing a metal from a group consisting of gold, platinum and palladium on one surface of said support member,
heating the support member and noble metal to a second temperature which is in said range and less than said predetermined temperature to fuse the noble metal onto the said surface of the support and form an electrically conductive film that is impervious to nickel and is electrically conductive,
depositing a pulverized ceramic including barium titanate onto the film of noble metal,
firing the ceramic layer to a temperature less than the second temperature to vitrify the ceramic into a dielectric layer,
depositing an electrically conductive material on the layer of vitrified ceramic, and
heating said electrically conductive material to a temperature less than the second temperature to form a second electrically conductive film.

11. A ceramic capacitor including the combination of:
a support member forming the main structural support of the capacitor, said support member including an electrically conductive material which is effective to retain its structural strength through an extended range of temperatures to a predetermined elevated temperature and which has properties of emitting contaminants especially at elevated temperatures in the extended range,
a film of an electrically conductive metal from a group consisting of gold, platinum and palladium, said film being bonded to the surface of said support member to prevent the transfer of contaminants from the support member through the film, said film forming one plate of the capacitor,
a vitrified layer of ceramic bonded to the film of noble metal and having a predetermined dielectric constant, and
a metallic film disposed on the ceramic film and separated from the first conductive film by the thickness of said ceramic film to form the second plate of the capacitor.

3,284,684
ELECTRICAL CAPACITOR AND METHOD OF MAKING THE SAME
Friedrich Gaenge, also known as Fritz Gaenge, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin and Munich, Germany, a corporation of Germany
Filed Jan. 7, 1965, Ser. No. 424,151
Claims priority, application Germany, Jan. 10, 1964, S 89,011
6 Claims. (Cl. 317—260)



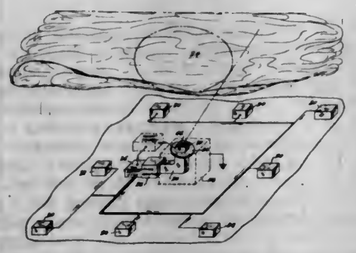
1. An electrical capacitor, with a dielectric of a thermoplastic material, the plates of which consist of thin metal layers produced by metalization, and are contacted by end contact layers of a first-applied high melting metal and a superimposed layer of a low melting metal, characterized by the feature that the high melting metal, first applied, and directly contacting the capacitor structure is disposed thereon in the form of individual particles which do not form a cohesive layer, but cover essentially each winding layer at the ends of the capacitor, said low melting metal connecting said individual particles and anchored thereby to the adjacent winding layers.

3,284,685
ELECTRICAL CAPACITOR FORMED FROM THIN FILMS
Harold F. Rieth, Los Angeles, Calif., assignor to Packard-Bell Electronics Corporation, Los Angeles, Calif., a corporation of California
Original application Feb. 11, 1960, Ser. No. 9,413, now Patent No. 3,130,475, dated Apr. 28, 1964. Divided and this application Apr. 1, 1964, Ser. No. 363,037
8 Claims. (Cl. 317—261)



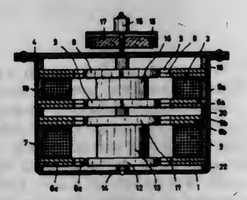
1. A thin ceramic capacitor, including, a metallic disc of high temperature conductive material forming one plate of the capacitor and having a flared periphery turned down in a direction perpendicular to the diametric axes of the disc to increase the structural strength of the disc, a thin layer of ceramic material forming the dielectric of the capacitor and fused to the side of said disc which is opposite to the direction that the flared periphery is turned down, a metallic layer forming a second plate of the capacitor and fused to said thin ceramic layer, a first terminal strip for the capacitor soldered to said metallic layer, and a second terminal strip for the capacitor integral with said metallic disc at a portion of its flared periphery.

3,284,686
METHOD OF DISCHARGING A CLOUD
Harry Moses, Park Forest, and Ronald L. Martin, La Grange, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed May 5, 1964, Ser. No. 365,223
3 Claims. (Cl. 317—262)



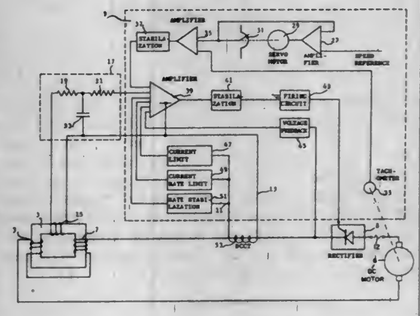
1. A method of discharging to a predetermined location on earth a charge-bearing cloud which is located generally above said predetermined location and at an altitude of not more than eight kilometers comprising determining the spatial position of a charge center of said cloud relative to said predetermined discharge location, generating a beam of charged nuclear particles originating at said predetermined discharge location to form a column of ionized air extending a length sufficient to reach from said predetermined location to said charge center, and directing said column at said charge center, whereby a continuous path of increased conductivity extends between said charge center and said predetermined discharge location.

3,284,687
SMALL SIZE DIRECT CURRENT MOTOR
Walter Schlenker, Schwenningen (Neckar), Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin and Munich, Germany, a corporation of Germany
Filed July 7, 1961, Ser. No. 122,431
11 Claims. (Cl. 318—138)



1. A transistor controlled small size direct current motor, comprising a stepping motor with soft iron working armature and working coil means traversed upon operative connection by a normal current for the purpose of starting the rotation of the working armature, a permanent magnet control armature cooperating with control coil means being thereupon during the running of said motor effective to induce in said control coil means a voltage, said armatures having radially extending pole pieces and being disposed on a common shaft in fixed axially spaced relation, said coils being disposed coaxially relative to said armatures in cooperable relation with fixed pole members having pole pieces associated therewith, disposed for operative cooperation with the pole pieces of the associated armature, the pole pieces of the control armature being radially displaced from the pole pieces of the working armature whereby the control armature will, in the normal resting position dispose the working armature in a self-starting position relative to its cooperable fixed pole pieces, transistor means for amplifying the current of said induced voltage, and circuit means for causing said amplified current to affect the magnitude of the normal current flowing through said working coil means depending upon the position of the working armature.

3,284,688
D.-C. CURRENT REGULATOR INCLUDING A HIGH GAIN SATURATING AMPLIFIER
Kenneth G. Black, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Continuation of application Ser. No. 149,701, Nov. 2, 1961. This application July 27, 1965, Ser. No. 475,091
3 Claims. (Cl. 318—332)

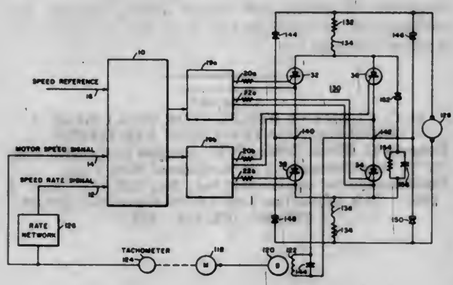


1. A D.-C. power circuit for a load comprising, a rectifier, means for connecting said rectifier to said load, a saturating reactor having a core, means for connecting said saturating reactor between said rectifier and said load to provide an inductance at low current loads, means for sensing the current between said rectifier and the load and for developing a signal proportional to rectifier current therefrom, a regulator for controlling the current from said rectifier to the load, means for applying the signal developed by said sensing means to said regulator to stabilize said regulator, a winding around the core of said saturating reactor adapted to produce a signal at low current flow proportional to the rate of change of rectifier current and the load circuit inductance, and means for applying the signal produced by said winding around the core of said saturating reactor to said regulator to stabilize the regulator.

3,284,689
DYNAMO-ELECTRIC MACHINE CONTROL APPARATUS EMPLOYING PULSES
John Rosa, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 20, 1963, Ser. No. 289,319
9 Claims. (Cl. 318—341)

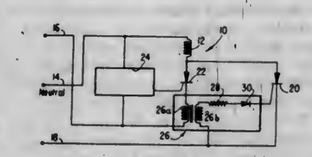
1. In a system for controlling an electrodynamic machine to regulate a condition which is responsive to said

machine, a source of power for energizing said machine, first pulse generating means which produces respective pulse trains of one or the opposite polarity in response to and depending on the direction of deviation of said condition from a predetermined norm, second pulse generating means for generating a train of control pulses in response to said pulse train of one polarity, third pulse generating means for generating a train of control pulses in response to said pulse train of opposite polarity, each of said second and third pulse generating means having an input circuit coupled to said first pulse generating means and an output circuit controlled by the latter input circuit, reversible switch means having first and second modes of operation which respectively connect said power



source in one and the opposite polarity to said machine in response respectively to deviation of said condition in one and the opposite direction, said switch means comprising first and second controllable electronic valves for operating the switch means respectively in its first and second modes, means connecting the output circuit of said second pulse generating means to said first valve for controlling the latter, and means for connecting the output circuit of said third pulse generating means to said second valve for controlling the latter.

3,284,690
CONTROLLED POWER SUPPLY CIRCUIT
Joseph S. Naber, Wheeling, Ill., assignor to Fastener Corporation, Franklin Park, Ill., a corporation of Illinois
Filed May 22, 1963, Ser. No. 282,504
8 Claims. (Cl. 321—8)



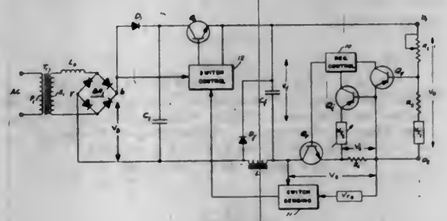
1. A circuit for controlling an electrically operated tool comprising a potential source having a common conductor and at least two phase conductors, winding means for operating the tool, a plurality of controlled conduction devices each having a control electrode, each of the devices connecting the winding means between the common conductor and a different one of the phase conductors, and control circuit means connected to the control electrodes and operative to place the devices in conduction at spaced times so that the winding means is continuously energized by the potential source.

3,284,691
CIRCUIT ARRANGEMENT FOR THE ELECTRIC GENERATOR REQUIRED FOR THE ELECTROLYTIC MACHINING OF METALLIC CONDUCTING MATERIALS
Hans J. Schulz, Wuppertal-Vohwinkel, and Hans Schierholt, Aachen, Germany, assignors to Deutsche Edelstahlwerke Aktiengesellschaft, Krefeld, and Allgemeine Elektricitats-Gesellschaft, Berlin-Grunewald, Germany
Filed Sept. 5, 1961, Ser. No. 136,057
Claims priority, application Germany, Sept. 9, 1960, D 34,231
2 Claims. (Cl. 321—16)



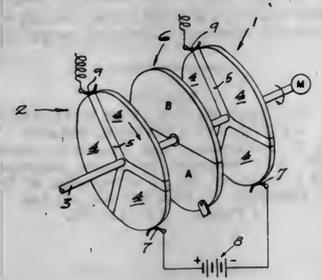
1. In an electrolytic machining apparatus for electrolytically machining metallic conducting materials, a circuit arrangement comprising an A.C. source and an A.C. circuit supplied thereby, a rectifier connected to said circuit and a D.C. circuit connected to said rectifier for circuiting an electrode and a workpiece providing a working gap, a current-limiting non-linear resistance in one of said circuits and a voltage-limiting element across the said D.C. circuit, said element and the said non-linear resistance being matched in such manner that a major voltage rise beyond the normal working range under no-load conditions will be suppressed, and in which the said voltage-limiting element is a buffering battery with a low capacity in ampere-hours and which has a no-load discharging voltage smaller than the voltage at which arcing takes place.

3,284,692
COMPENSATED REGULATED POWER SUPPLY
George Gautherin, Woodside, N.Y., assignor to Lambda Electronics Corporation, Huntington, N.Y., a corporation of New York
Filed June 5, 1963, Ser. No. 285,785
7 Claims. (Cl. 321—16)



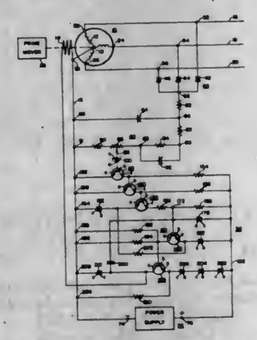
1. In a wide band regulated D.C. power supply having a power transformer secondary winding, rectifier means connected to said winding, switching means connected to said rectifier means, an output circuit including filter capacitance means connected to said rectifier and switching means, and control means connected between said output circuit and said switching means for controlling said switching means to thereby regulate the output of the supply, the improvement comprising compensating means for reducing the effects of leakage inductance in said power transformer, said compensating means comprising capacitive means connected to said rectifier means to be charged from the output of said transforming winding, said capacitive means having a value less than the value of said filter capacitance means.

3,284,693
METHOD AND DEVICE TO INCREASE THE VOLTAGE OF A DIRECT CURRENT VOLTAGE SOURCE
James Lim, 1221 E. 12th St., Oakland, Calif.
Filed May 10, 1963, Ser. No. 279,507
2 Claims. (Cl. 322—2)



1. In a device for increasing the voltage of a direct current voltage source,
(a) a spaced pair of sets of conductors
(b) a plurality of conductors in each set being insulated from one another
(c) dielectric means between said sets of conductors so as to separate said sets of conductors
(d) means to impart a charge of direct current to said conductors
(e) means to discharge said conductors
(f) means to render said charge and discharge intermittent
(g) and means to vary said dielectric means to higher dielectric constant at the charging of said conductors and to lower dielectric constant at said discharging, thereby to increase the voltage from said direct current voltage source.

3,284,694
VOLTAGE REGULATING SYSTEM FOR AN ELECTRICAL GENERATOR
James L. Roof, Fort Shawnee, and Lynn L. Tipton, American Township, Allen County, Ohio, assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 12, 1963, Ser. No. 272,682
1 Claim. (Cl. 322—28)

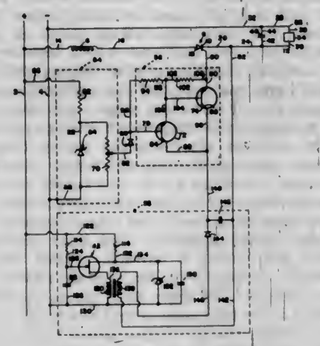


A regulating system for maintaining at substantially a predetermined value the output voltage of an alternating current generator having an excitation field winding, neutral terminal and output terminals comprising rectifier means connected in circuit relation with the output terminals of said alternating current generator, said rectifier means obtaining a unidirectional voltage proportional to the output voltage of said alternating current generator, said unidirectional voltage having a ripple component, first, second, third and fourth resistors serially connected between said rectifier means and said neutral terminal, respectively, first capacitance means connected from the junction between said first and second resistors to said neutral terminal, providing a wave shaping circuit which shapes the ripple component of said unidirectional voltage into a substantially saw-tooth shape, said fourth resistor having predetermined temperature characteristics which thermally stabilizes the regulating system over a predetermined operating temperature range, second capacitance means connected across said second resistor, said second capacitance means and said second resistor providing phase angle correction at the output frequency of said alternating current generator, said third resistor being adjustable and having a movable contact arm, Zener diode means connected to the movable contact arm of said third resistor, said Zener diode means providing control signals at the frequency of said saw-tooth component when the unidirectional voltage and saw-tooth component exceed a predetermined magnitude, said control signals having a width proportional to the deviation of the output voltage of said alternating current generator from the reference voltage determined by said third resistor and said Zener diode, first transistor means having base, collector and emitter electrodes connected in circuit relation with said Zener diode, the control signals of said Zener diode causing periodic pulses of current to flow between the collector and emitter electrodes of said first transistor means producing periodic output pulses, the width of said output pulses varying with said control signals, a plurality of switching transistors connected in circuit relation with said first transistor and amplifying the output pulses of said first transistor, the final switching transistor of said plurality being arranged to be conducting in the absence of an output pulse from said first transistor, and nonconducting while said first transistor is producing an output pulse, power supply means producing a substantially constant direct current voltage, said last switching transistor of said plurality, said power supply means and said excitation field winding being connected in series circuit relation, said last switching transistor controlling the current flowing in said field excitation winding.

3,284,695
ADJUSTABLE UNREGULATED D.C. VOLTAGE REDUCER
Thomas Weisz, Ann Arbor, Mich., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 28, 1963, Ser. No. 268,609
9 Claims. (Cl. 323—22)

9. A D.C. voltage reducer circuit for connection to a two-terminal source of D.C. voltage comprising: an inductor including one end adapted to be connected to one terminal of said source of D.C. voltage and another end; a silicon controlled rectifier including anode, cathode and gate terminals; means for connecting said anode terminal to the other end of said inductor; a capacitor including first and second terminals, means for connecting the first terminal of said capacitor to said cathode terminal and the second terminal of said capacitor being adapted to be connected to the other terminal of said D.C. voltage source; a gate current source including a free-running unijunction transistor relaxation oscillator, and a rectifier means for converting alternating current generated by said oscillator to direct current; a transistor switching means including emitter, collector and base terminals; the emitter-collector circuit of said transistor switching means connecting said gate current source to the gate terminal of said silicon controlled rectifier; a source of reference volt-

age; means for connecting the base terminal of said transistor switching means to said source of reference voltage whereby the potential difference between said gate terminal and said base terminal controls the switching of said transistor switching means and thereby the flow of current to said gate terminal for said gate current source.

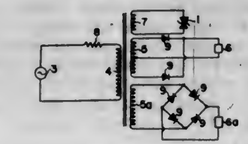


3,284,696

STABLE POWER SOURCE CIRCUIT

Minoru Nagata, Kodaira-shi, Katsunobu Abe, Kitatama-gun, Tokyo-to, and Kiyoshi Takeuchi, Hachioji-shi, Japan, assignors to Kabushiki Kaisha Hitachi Seisaku-sho, Tokyo-to, Japan, a joint-stock company of Japan

Filed June 18, 1963, Ser. No. 288,643
Claims priority, application Japan, June 22, 1962, 37/25,529
5 Claims. (Cl. 323—48)



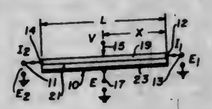
1. A stable power source circuit comprising a transformer having a primary winding connected to the power source side of the circuit, secondary windings connected to respective loads, and a tertiary winding for control and a pair of voltage regulator diodes which are connected together in mutually opposed directions and are further connected in series to the said tertiary winding.

3,284,697

EXPONENTIAL FUNCTION POTENTIOMETER

George A. May, 1223 Richmond St., London, Ontario, Canada

Filed Jan. 21, 1964, Ser. No. 339,120
13 Claims. (Cl. 323—74)



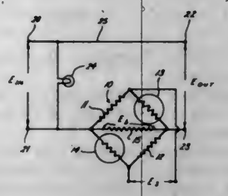
1. A potentiometer comprising a first resistive layer, a second resistive layer in contact with said first resistive layer and having the same length as said first resistive layer, a conductive layer of the same length as said resistive layers and in contact with the second resistive layer but not in contact with said first resistive layer, a pair of terminals one connected to one end of said first resistive layer and the other to the other end of said first resistive layer, a third terminal connected to the conductive layer, a movable contact slidably engaging the first resistive layer and in electrical contact therewith.

3,284,698

A.C. VOLTAGE REGULATOR WITH PHOTO-RESPONSIVE CONTROL MEANS

Tavorath K. Lakshmanan and Roman I. Andrushkiw, Newark, N.J., assignors, by mesne assignments, to Weston Instruments, Inc., a corporation of Delaware

Filed Mar. 11, 1964, Ser. No. 351,180
4 Claims. (Cl. 323—75)



1. A voltage stabilizing circuit for providing a stabilized output voltage with relatively large excursions in an input voltage, said stabilizing circuit comprising:

a pair of input terminals for receiving said input voltage,

a bridge network,

means coupling said input terminals to said bridge network for energizing said bridge network with a voltage varying in correspondence with said input voltage,

a light responsive element connected in at least one arm of said bridge network,

said light responsive element having an electrical resistance which varies inversely with the intensity of impinging light,

a light emitting element for illuminating said light responsive element;

means coupled to said light emitting element to energize said light emitting element by a voltage varying in correspondence with said input voltage, so that when the input voltage decreases the output light decreases in correspondence with said input voltage and when the input voltage increases the output light increases in correspondence with said input voltage;

a pair of output terminals for providing said stabilized voltage, and means including an impedance element connected across a diagonal of said bridge network for coupling said input terminals with said output terminals.

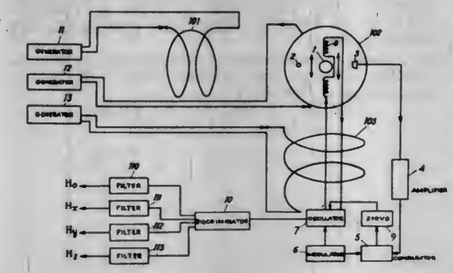
3,284,699

OPTICAL PUMPING MAGNETOMETER

Léon Malnar, Paris, France, assignor to CSF—Compagnie Generale de Telegraphie Sans Fil, a corporation of France

Filed Jan. 16, 1964, Ser. No. 338,122
Claims priority, application France, Jan. 22, 1963, 922,220, Patent 1,354,208
7 Claims. (Cl. 324—.5)

1. A magnetometer capable of measuring magnetic field intensities, comprising: a single field intensity sensing element; one output coupled to said element; means for superimposing, on the magnetic field to be measured, three alternating fields, directed along predetermined reference axes, said fields having fixed respective frequencies; three band pass filters connected to said output, respectively centered on said frequencies, and a low pass filter connected at said output.

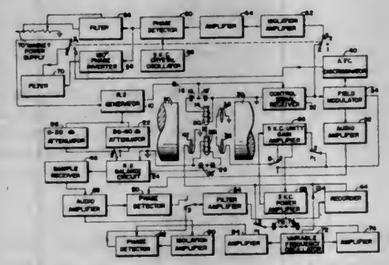


3,284,700

GYROMAGNETIC RESONANCE SPECTROMETER WITH SPIN DECOUPLING

Floyd E. Kingston, Palo Alto, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Aug. 17, 1964, Ser. No. 390,092
6 Claims. (Cl. 324—.5)



1. Gyromagnetic resonance apparatus including a measurement channel and an oscillator channel, said measurement channel adapted to contain a first gyromagnetic substance and said oscillator channel adapted to contain a second gyromagnetic substance, means for producing a unidirectional magnetic field for polarizing said substances, means for applying driving radio frequency magnetic fields so said substances at an angle to said polarizing magnetic field to produce gyromagnetic resonance in said substances, means for modulating one of said polarizing or radio frequency magnetic fields applied to each of said two substances at a periodic low frequency rate to produce radio frequency side band resonance signals from the substances, the parameters of the polarizing and radio frequency fields at each substance being so selected that resonance at one of the side band frequencies is produced in each substance, means in said measurement channel for detecting the resonance condition in said first substance, said oscillator channel including circuit means for supplying the low frequency modulation signal to said polarizing or radio frequency magnetic fields, said low frequency modulation producing the side band resonance signals from the substances, said circuit means including means for detecting said side band resonance signal in said second substance to produce an output signal at said low frequency rate for use by said circuit means as said low frequency modulation signal, means for selectively changing the strength of the driving radio frequency magnetic field applied to said first gyromagnetic substance whereby the radio frequency field of increased strength may produce a spin-decoupling effect on particular secondary atom portions in said first substance, and means operative, when the strength of said radio frequency magnetic field is increased, to apply another low frequency modulation to said first gyromagnetic substance to produce a different side band gyromagnetic resonance signal from primary atom portions in said first substance, said side band resonance signal from the primary atom portions being detected in said detecting means in the measurement channel.

3,284,701

MAGNETIC TESTING APPARATUS FOR MEASURING INTERNAL DIAMETER AND SURFACE VARIATIONS IN WALL CASING

Odis Doyce Kerbow, Houston, Tex., assignor to Camco, Incorporated, Houston, Tex., a corporation of Texas

Filed Sept. 28, 1962, Ser. No. 226,952
2 Claims. (Cl. 324—37)



1. Calipering means for determining internal surface dimensions of a ferromagnetic well tubing wall comprising:

an alternating current electromagnet adapted for longitudinal movement in said tubing and including a spool shaped core whose axially spaced apart cylindrical poles are disk shaped and whose peripheral faces are dimensioned for presentation in radial gap relationship to the tubing wall and having an alternating current solenoid positioned between said disks,

one of said pole disks having a longitudinal peripheral surface area greater than the longitudinal peripheral face area of the other pole disk,

a plurality of circularly spaced apart flux sensing elements arranged in circumferential alignment with one another and fixedly positioned in the flux path surrounding the perimeter of said other pole disk for producing an output voltage proportional to the reluctance of said gap,

indicator means electrically connected with each sensing element and responsive to variations in magnitude of output voltage at any instant during relative longitudinal movement of the electromagnet and the tubing,

said indicator means including separate circuits each connected with all of the sensing elements,

maximum voltage reading circuit and demodulator means in one of the circuits connecting with all sensing elements,

voltage averaging circuit and demodulating means in another of the circuits connecting with all of the sensing elements, and

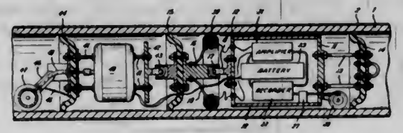
a recorder connected with and actuated in response to demodulated signals received from the last two mentioned circuits.

3,284,702

APPARATUS FOR DETECTING COATING HOLIDAYS IN METAL PIPELINE WALLS UTILIZING HELICALLY WOUND PICK-UP COILS AND SELF-CONTAINED POWER SYSTEM

Warren G. Ownby, Houston, Tex., assignor to Camco, Incorporated, Houston, Tex., a corporation of Texas

Filed Apr. 26, 1963, Ser. No. 275,915
3 Claims. (Cl. 324—37)



1. An apparatus for detecting coating holidays in a protectively coated metallic wall pipeline buried in the ground in which a cathodic protective system having one terminal directly connected to the metallic wall and the other terminal active through the ground over a given lentgh of coated pipeline whereby a circuit of cathodic current will be completed through the wall upon current passage into the wall at the occurrence of a coating holiday comprising,

a magnetic flux detector adapted to be run through said given length of pipeline in a traversing relation with the metallic wall,

an electrically actuated flux measuring recorder connected to said detector,

a battery connected to the recorder,

current generating means connected to the battery for charging the battery, and

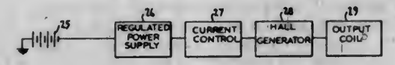
drive mechanism for the generating means engageable with the metallic wall and arranged for driving the generating means in response to travel of the apparatus relative to the pipeline.

3,284,703

HALL EFFECT DEVICE UTILIZED TO COMPENSATE FOR VARIABLE INDUCED FIELDS IN OTHER SENSORS

Joseph Jean André Brunel, Montreal, Quebec, Canada, assignor to Canadair Limited, St. Laurent, Quebec, Canada, a corporation of Canada

Filed May 28, 1963, Ser. No. 283,765
Claims priority, application Canada, Jan. 14, 1963, 866,433
6 Claims. (Cl. 324—45)



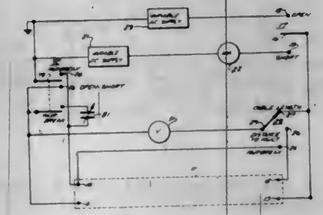
1. A device for sensing magnetic variations comprising a strip of semi-conductor material having a pair of oppositely disposed relatively flat faces, a pair of spaced side edges substantially parallel to the longitudinal axis of said strip and a pair of opposite end edges transverse to said side edges, a pair of concentrator rods disposed adjacent opposite faces of said strip and electrically insulated therefrom, means for connecting the end edges in series with an electrical power supply such that a supply current flows through the semi-conductor strip, output Hall electrodes on said side edges, and a coil serially connected with said strip and power supply and having the windings thereof disposed about one of said concentrator rods the number of winding turns in said coil and the connection thereof being such that the magnetic field of said coil opposes and substantially cancels a component of the magnetic field set up by the electrical power supply.

3,284,704

METHOD FOR DETERMINING THE MAGNITUDE OF AN OPEN FAULT IN ONE OF A PAIR OF CURRENT CARRYING CONDUCTORS BY MEASURING THE VOLTAGE ACROSS A CAPACITANCE IN SERIES WITH THE CAPACITANCE OF SAID PAIR

John Lamont, North Arlington, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 10, 1962, Ser. No. 186,501
2 Claims. (Cl. 324—52)



1. A method of determining the magnitude of an open fault in one of two associated current carrying conductors of a cable comprising:

connecting the ends of said one conductor of said pair together by a common buss,

connecting a capacitance equal in value to the capacitance normally existing between the conductors of said pair when no fault is present, in series with the capacitance of said pair of conductors exhibiting a fault,

applying an A.-C. voltage across said two capacitances in series, and

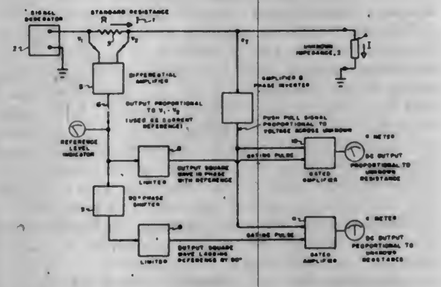
measuring the voltage across said first pair of conductors and across said capacitance in series therewith, respectively, a close correspondence between the two measured voltages indicating a small open fault condition, a wide variation between said two measured voltages indicating a correspondingly larger open fault condition.

3,284,705

DIRECT-READING CARRIER FREQUENCY IMPEDANCE METER

Herbert I. Dobson, Chattanooga, Tenn., assignor to Tennessee Valley Authority, a corporation of the United States

Continuation of application Ser. No. 89,073, Feb. 13, 1961. This application Aug. 23, 1965, Ser. No. 484,786
3 Claims. (Cl. 324—57)



1. A direct-reading carrier frequency impedance meter consisting of an internal variable-frequency source of alternating current, a standard resistance unit, external terminals for connecting an unknown complex impedance in series with said current source and said resistance unit,

the impedance values of said resistance unit and said unknown impedance being of comparable magnitude, differential-amplifier means connected across said standard resistance unit, the output of said differential-amplifier means providing a reference proportional to the current through said standard resistance unit, reference-level indicating means connected with the output of said differential-amplifier means; current-dividing means connected in series with said differential-amplifier means for providing parallel electrical circuits A and B; a 90-degree phase-shifting device for variable frequencies in said B circuit, said phase-shifting device consisting of two R-C sections in which there is a 45-degree phase shift each, said R-C sections each containing a variable capacitor the control means of which is ganged with the control means of said internal variable-frequency source of alternating current in a manner such that there is a dependent and inversely proportional relationship between the capacitance of each of said variable capacitors and the frequency of said internal variable-frequency source of alternating current, whereby the reactive impedance of said variable capacitors is maintained constant throughout the operating range of said control means of both said internal variable-frequency source of alternating current and said variable capacitors in said R-C sections; wave-shaping means in each of said A and B circuits energized by current in said respective A and B circuits for producing a succession of square waves having a duration of one-half alternating-current cycle and spaced by intervals of one-half alternating-current cycle; amplifying and phase-inverting means for deriving a push-pull signal proportional to the voltage drop across said unknown complex impedance; current-dividing means connected in series with said amplifying and phase-inverting means for providing parallel push-pull circuits C and D; gated-amplifier means in each of said C and D circuits, the cathodes of said gated-amplifier means in said C circuit being connected to the square-wave voltage derived from said A circuit, and the cathodes of said gated-amplifier means in said D circuit being connected to the square-wave voltage derived from said B circuit; a first direct-current microammeter electrically connected in the plate circuit of the gated-amplifier means in said C circuit whereby the deflection of said microammeter by the direct-current component in the output of said gated-amplifier means in the C circuit is directly proportional to the resistance of said unknown complex impedance; a second direct-current microammeter having a zero-center scale electrically connected in the plate circuit of the gated-amplifier means in said D circuit whereby the positive and negative deflection of said zero-centered microammeter by the direct-current component in the output of said gated-amplifier means in the D circuit is directly proportional to the inductive and capacitive reactance respectively of said unknown complex impedance.

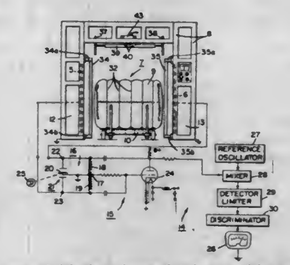
3,284,706

FIELD-MASKING IN CAPACITIVE MOISTURE-CONTENT MEASUREMENTS OF OBJECTS HAVING METAL STRAPS

Warren E. Benson, Jr., Needham, Mass., assignor, by mesne assignments, to Forté Engineering Corporation, Norwood, Mass., a corporation of Delaware

Filed Mar. 27, 1964, Ser. No. 355,278
16 Claims. (Cl. 324—61)

13. The method of testing a packaged dielectric substance having at least one metal binder looped about it which comprises generating an electrostatic flux field between spaced electrode surfaces having a hollow measurement site therebetween, intercepting lines of field flux from the electrode surfaces within oppositely disposed relatively narrow and elongated areas near each of the electrode surfaces on opposite sides of the measurement site and thereby creating a substantially field-free thin planar region through said measurement site, positioning a packaged dielectric substance within said measurement



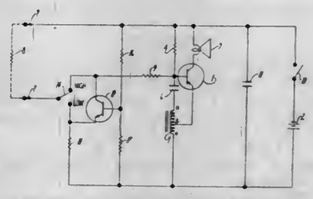
site with the metal binder thereof lying within said substantially field-free region, and measuring the capacitivity exhibited between the electrode surfaces.

3,284,707

CIRCUIT CONTINUITY OR RESISTANCE TESTER HAVING AN AUDIBLE OUTPUT SIGNAL

Henry H. Clinton, Ridgewood, Clinton, Conn.

Filed July 30, 1963, Ser. No. 298,722
3 Claims. (Cl. 324—62)



3. A continuity or resistance testing device comprising a battery-powered blocking oscillator having a first resistor and a capacitor the discharge time of which controls the frequency of the oscillating output current of said oscillator, an electromechanical transducer driven by the oscillating output current of said oscillator for producing an audible sound having a tone related to the frequency of said output current, said first resistor being part of a first discharge circuit for said capacitor, means providing a second discharge circuit for said capacitor and including a transistor, and a biasing circuit for said transistor for varying the resistance of said transistor in said second discharge circuit, said biasing circuit having two points the resistance between which two points controls the resistance of said transistor in said second discharge circuit, and means including a selector switch for selectively connecting an external test circuit either across said two points or in parallel with said first resistor.

3,284,708

INTEGRATING ACCELEROMETER WITH DIGITAL MEMORY CIRCUIT

Harold D. Morris, Orinda, and Wallace E. Hyde, Jr., Moraga, Calif., assignors, by mesne assignments, to Systron-Donner Corporation, Concord, Calif., a corporation of California

Filed June 14, 1961, Ser. No. 117,088
9 Claims. (Cl. 324—70)

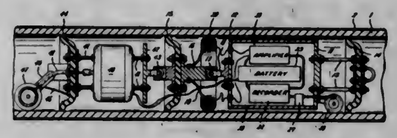
1. In an integrating accelerometer, an accelerometer for measuring acceleration and having an output representing the acceleration being measured, an analog integrator connected to the output of said accelerometer and having an output representing the change in velocity, and a digital memory system connected to the output of the integrator, said digital memory system including a

3,284,702

APPARATUS FOR DETECTING COATING HOLIDAYS IN METAL PIPELINE WALLS UTILIZING HELICALLY WOUND PICK-UP COILS AND SELF-CONTAINED POWER SYSTEM

Warren G. Ownby, Houston, Tex., assignor to Camco, Incorporated, Houston, Tex., a corporation of Texas

Filed Apr. 26, 1963, Ser. No. 275,915
3 Claims. (Cl. 324—37)



1. An apparatus for detecting coating holidays in a protectively coated metallic wall pipeline buried in the ground in which a cathodic protective system having one terminal directly connected to the metallic wall and the other terminal active through the ground over a given lentgh of coated pipeline whereby a circuit of cathodic current will be completed through the wall upon current passage into the wall at the occurrence of a coating holiday comprising,

a magnetic flux detector adapted to be run through said given length of pipeline in a traversing relation with the metallic wall,

an electrically actuated flux measuring recorder connected to said detector,

a battery connected to the recorder,

current generating means connected to the battery for charging the battery, and

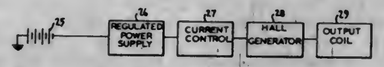
drive mechanism for the generating means engageable with the metallic wall and arranged for driving the generating means in response to travel of the apparatus relative to the pipeline.

3,284,703

HALL EFFECT DEVICE UTILIZED TO COMPENSATE FOR VARIABLE INDUCED FIELDS IN OTHER SENSORS

Joseph Jean André Brunel, Montreal, Quebec, Canada, assignor to Canadair Limited, St. Laurent, Quebec, Canada, a corporation of Canada

Filed May 28, 1963, Ser. No. 283,765
Claims priority, application Canada, Jan. 14, 1963, 866,433
6 Claims. (Cl. 324—45)



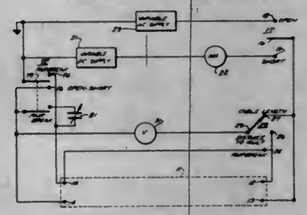
1. A device for sensing magnetic variations comprising a strip of semi-conductor material having a pair of oppositely disposed relatively flat faces, a pair of spaced side edges substantially parallel to the longitudinal axis of said strip and a pair of opposite end edges transverse to said side edges, a pair of concentrator rods disposed adjacent opposite faces of said strip and electrically insulated therefrom, means for connecting the end edges in series with an electrical power supply such that a supply current flows through the semi-conductor strip, output Hall electrodes on said side edges, and a coil serially connected with said strip and power supply and having the windings thereof disposed about one of said concentrator rods the number of winding turns in said coil and the connection thereof being such that the magnetic field of said coil opposes and substantially cancels a component of the magnetic field set up by the electrical power supply.

3,284,704

METHOD FOR DETERMINING THE MAGNITUDE OF AN OPEN FAULT IN ONE OF A PAIR OF CURRENT CARRYING CONDUCTORS BY MEASURING THE VOLTAGE ACROSS A CAPACITANCE IN SERIES WITH THE CAPACITANCE OF SAID PAIR

John Lamont, North Arlington, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 10, 1962, Ser. No. 186,501
2 Claims. (Cl. 324—52)



1. A method of determining the magnitude of an open fault in one of two associated current carrying conductors of a cable comprising:

connecting the ends of said one conductor of said pair together by a common buss,

connecting a capacitance equal in value to the capacitance normally existing between the conductors of said pair when no fault is present, in series with the capacitance of said pair of conductors exhibiting a fault,

applying an A.-C. voltage across said two capacitances in series, and

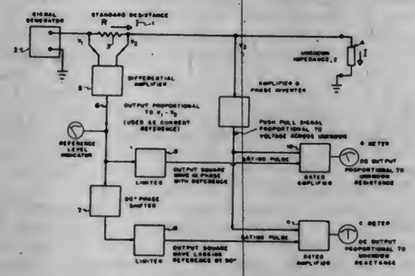
measuring the voltage across said first pair of conductors and across said capacitance in series therewith, respectively, a close correspondence between the two measured voltages indicating a small open fault condition, a wide variation between said two measured voltages indicating a correspondingly larger open fault condition.

3,284,705

DIRECT-READING CARRIER FREQUENCY IMPEDANCE METER

Herbert I. Dobson, Chattanooga, Tenn., assignor to Tennessee Valley Authority, a corporation of the United States

Continuation of application Ser. No. 89,073, Feb. 13, 1961. This application Aug. 23, 1965, Ser. No. 484,786
3 Claims. (Cl. 324—57)



1. A direct-reading carrier frequency impedance meter consisting of an internal variable-frequency source of alternating current, a standard resistance unit, external terminals for connecting an unknown complex impedance in series with said current source and said resistance unit,

the impedance values of said resistance unit and said unknown impedance being of comparable magnitude, differential-amplifier means connected across said standard resistance unit, the output of said differential-amplifier means providing a reference proportional to the current through said standard resistance unit, reference-level indicating means connected with the output of said differential-amplifier means; current-dividing means connected in series with said differential-amplifier means for providing parallel electrical circuits A and B; a 90-degree phase-shifting device for variable frequencies in said B circuit, said phase-shifting device consisting of two R-C sections in which there is a 45-degree phase shift each, said R-C sections each containing a variable capacitor the control means of which is ganged with the control means of said internal variable-frequency source of alternating current in a manner such that there is a dependent and inversely proportional relationship between the capacitance of each of said variable capacitors and the frequency of said internal variable-frequency source of alternating current, whereby the reactive impedance of said variable capacitors is maintained constant throughout the operating range of said control means of both said internal variable-frequency source of alternating current and said variable capacitors in said R-C sections; wave-shaping means in each of said A and B circuits energized by current in said respective A and B circuits for producing a succession of square waves having a duration of one-half alternating-current cycle and spaced by intervals of one-half alternating-current cycle; amplifying and phase-inverting means for deriving a push-pull signal proportional to the voltage drop across said unknown complex impedance; current-dividing means connected in series with said amplifying and phase-inverting means for providing parallel push-pull circuits C and D; gated-amplifier means in each of said C and D circuits, the cathodes of said gated-amplifier means in said C circuit being connected to the square-wave voltage derived from said A circuit, and the cathodes of said gated-amplifier means in said D circuit being connected to the square-wave voltage derived from said B circuit; a first direct-current microammeter electrically connected in the plate circuit of the gated-amplifier means in said C circuit whereby the deflection of said microammeter by the direct-current component in the output of said gated-amplifier means in the C circuit is directly proportional to the resistance of said unknown complex impedance; a second direct-current microammeter having a zero-center scale electrically connected in the plate circuit of the gated-amplifier means in said D circuit whereby the positive and negative deflection of said zero-centered microammeter by the direct-current component in the output of said gated-amplifier means in the D circuit is directly proportional to the inductive and capacitive reactance respectively of said unknown complex impedance.

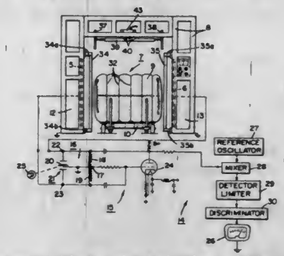
3,284,706

FIELD-MASKING IN CAPACITIVE MOISTURE-CONTENT MEASUREMENTS OF OBJECTS HAVING METAL STRAPS

Warren E. Benson, Jr., Needham, Mass., assignor, by mesne assignments, to Forté Engineering Corporation, Norwood, Mass., a corporation of Delaware

Filed Mar. 27, 1964, Ser. No. 355,278
16 Claims. (Cl. 324—61)

13. The method of testing a packaged dielectric substance having at least one metal binder looped about it which comprises generating an electrostatic flux field between spaced electrode surfaces having a hollow measurement site therebetween, intercepting lines of field flux from the electrode surfaces within oppositely disposed relatively narrow and elongated areas near each of the electrode surfaces on opposite sides of the measurement site and thereby creating a substantially field-free thin planar region through said measurement site, positioning a packaged dielectric substance within said measurement



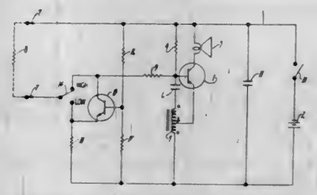
site with the metal binder thereof lying within said substantially field-free region, and measuring the capacitivity exhibited between the electrode surfaces.

3,284,707

CIRCUIT CONTINUITY OR RESISTANCE TESTER HAVING AN AUDIBLE OUTPUT SIGNAL

Henry H. Clinton, Ridgewood, Clinton, Conn.

Filed July 30, 1963, Ser. No. 298,722
3 Claims. (Cl. 324—62)



3. A continuity or resistance testing device comprising a battery-powered blocking oscillator having a first resistor and a capacitor the discharge time of which controls the frequency of the oscillating output current of said oscillator, an electromechanical transducer driven by the oscillating output current of said oscillator for producing an audible sound having a tone related to the frequency of said output current, said first resistor being part of a first discharge circuit for said capacitor, means providing a second discharge circuit for said capacitor and including a transistor, and a biasing circuit for said transistor for varying the resistance of said transistor in said second discharge circuit, said biasing circuit having two points the resistance between which two points controls the resistance of said transistor in said second discharge circuit, and means including a selector switch for selectively connecting an external test circuit either across said two points or in parallel with said first resistor.

3,284,708

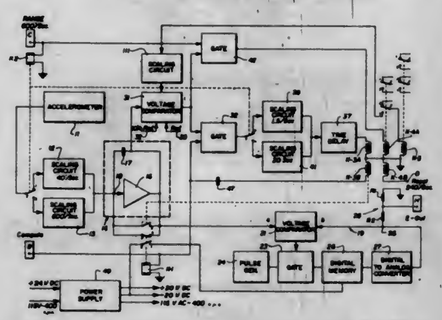
INTEGRATING ACCELEROMETER WITH DIGITAL MEMORY CIRCUIT

Harold D. Morris, Orinda, and Wallace E. Hyde, Jr., Moraga, Calif., assignors, by mesne assignments, to Systron-Donner Corporation, Concord, Calif., a corporation of California

Filed June 14, 1961, Ser. No. 117,088
9 Claims. (Cl. 324—70)

1. In an integrating accelerometer, an accelerometer for measuring acceleration and having an output representing the acceleration being measured, an analog integrator connected to the output of said accelerometer and having an output representing the change in velocity, and a digital memory system connected to the output of the integrator, said digital memory system including a

digital memory register, a comparator connected to said integrator, a pulse generator, gate means connected to the pulse generator and operated by said comparator for applying pulses from said pulse generator to said digital memory, and digital-to-analog converting means connecting the output of said digital memory to said comparator so that said comparator causes pulses to be applied to the digital memory register when the signal supplied to the comparator by the integrator is different from the signal supplied to the comparator by the digital memory register.

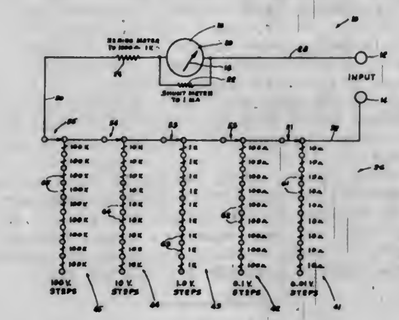


3,284,709

PRECISION VOLTMETER USING SELECTABLE SERIES CONNECTED, DIGITALLY RELATED RESISTORS WHICH ARE CALIBRATED TO READ THE VALUE OF INPUT SIGNAL

Peter A. De Paolo, Elmwood Park, Ill., assignor to American Gage & Machine Company, Chicago, Ill., a corporation of Illinois

Filed Jan. 17, 1962, Ser. No. 166,959
5 Claims. (Cl. 324—98)



1. A precision voltmeter for measuring unknown voltages,

comprising the combination of meter means for measuring electrical current,

said meter means affording a substantially full scale reading at a particular input current determined by the sensitivity of said meter means,

said meter means having a particular resistance thereacross of a value such that the first digit of the product of said particular current and said particular resistance is unity while any and all following digits are substantially zero,

a variable decade resistance array,

a pair of terminals for receiving the unknown voltage to be measured,

and means connecting said decade resistance array and said meter means in a series circuit between said terminals,

the unknown voltage to be measured being the sole source of voltage in said circuit,

said decade resistance array having a plurality of tiers of resistances connected in series,

each of said tiers having nine resistances and switching means for connecting said resistances successively into said series circuit,

all of the resistances of each respective tier being of the same value,

the values of the resistances of adjacent tiers being related by a factor of ten,

said resistances of said successive tiers being related to said particular resistance by sequential powers of ten,

said decade resistance array being calibrated in terms of decimal multiples and submultiples of said particular resistance,

said decade resistance array being adjustable to bring said meter means to said full scale reading for any unknown voltage being measured,

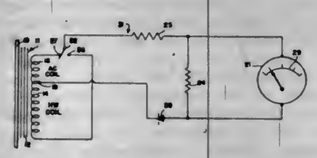
the unknown voltage being indicated directly by the setting of said decade resistance array plus said particular resistance.

3,284,710

A.C. OR PULSATING D.C. INPUT SIGNAL CURRENT MEASURING TRANSFORMER SYSTEM WITH TRANSFORMER OUTPUT RATIOS CORRESPONDING TO THE INPUT SIGNAL

Kenneth W. Schroeder, Arlington Heights, Ill., assignor, by mesne assignments, to Magnaflux Corporation, a corporation of Delaware

Filed July 3, 1962, Ser. No. 207,216
2 Claims. (Cl. 324—127)



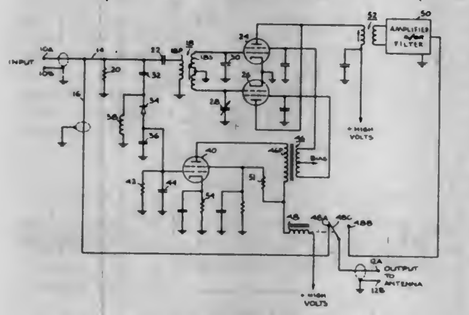
1. An electrical signal measuring system comprising an instrument transformer including first secondary winding means for detecting the presence of an alternating current signal in the transformer primary, and second secondary winding means for detecting the presence of a unidirectionally pulsating current signal in the primary, a series measuring circuit including a half-wave rectifier and meter, said series circuit being selectively connected across either of said secondary winding means, said meter having a single range and a corresponding single scale, one of said secondary winding means having a greater number of turns than the number of turns of the other secondary winding means, the ratio of turns of said secondary winding means to one another being such that output signals from each secondary winding means are equal when the magnitude of one-half cycle of the alternating current primary current is equal to the magnitude of one cycle of the unidirectionally pulsating primary current, whereby the value of alternating current primary current, or unidirectionally pulsating primary current is selectively indicated on the single scale of the meter by the same reading when the magnitude of one-half cycle of the alternating current primary current is equal to the magnitude of one cycle of the unidirectionally pulsating primary current.

3,284,711

AMPLITUDE MODULATION TO SINGLE OR DOUBLE SIDEBAND SUPPRESSED CARRIER CONVERTER

Charles A. Messenger, North Hollywood, and Alfred E. Marygold, Burbank, Calif., assignors to General Radiotelephone Company, Burbank, Calif., a corporation of California

Filed Apr. 8, 1963, Ser. No. 271,341
3 Claims. (Cl. 325—103)



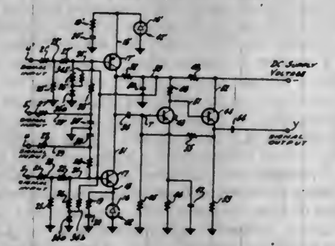
1. A circuit for converting amplitude modulated radio frequency carrier signals to double sideband suppressed carrier signals comprising input terminals to which said signals to be converted are applied, a balanced modulator comprising first and second tubes, each having a cathode, a control grid, a screen grid and anode electrodes, a transformer having a primary winding and a center tapped secondary, winding means connecting said input terminals to said primary winding, means connecting the respective ends of the center tapped secondary winding to the respective control grids of said first and second tubes, means for tuning said transformer to the frequency of said radio frequency carrier signals, means connecting the cathodes of said first and second tubes together, diode demodulator means, means for connecting said diode demodulator means to said input terminals to demodulate the signals applied to said input terminals, means for converting said demodulated signals to push-pull signals, means for connecting the push-pull signals to the screen grids of said first and second tubes, a common output load, and means for connecting the anodes of said first and second tubes to said common output load.

3,284,712

TUNNEL DIODE MODULATOR

Gilbert L. Hobrough, Los Altos, Calif., assignor to Itek Corporation, Lexington, Mass., a corporation of Massachusetts

Filed Sept. 13, 1963, Ser. No. 311,607
12 Claims. (Cl. 325—105)



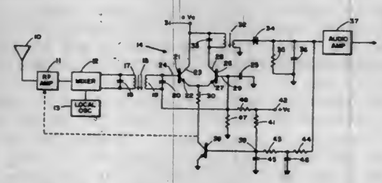
1. In combination with a voltage source and a printed circuit board equipped with conductors, a modulator circuit connected across said voltage source and comprising: a tunnel diode and a transistor connected in series therewith, said transistor having an emitter, base and collector the first of which is connected to said tunnel diode and the last of which comprises an output for said modulator circuit, first and second input means respectively adapted to have applied thereto an A.C. signal to be modulated and a D.C. control signal therefor, a coupling network connecting each of said input means to the base of said transistor, a low frequency oscillation-suppression network in shunt with said diode, and a minimal-inductance high frequency oscillation-suppression capacitance also in shunt with said diode, whereby operation of said diode in the negative resistance region of the characteristic curve thereof is attained and stability of operation in such region enforced, said tunnel diode having an anode connected to one side of said voltage source and a cathode connected to said transistor and a conductive shell connected with said cathode, and said capacitance including a conductive casing disposed about said shell and being in engagement therewith to define an electrical connection therebetween with the result that said casing is electrically connected to said cathode, said anode being connected to a conductor on one side of said board and said casing being secured to said board on the opposite side thereof in facing relation with a portion of said conductor to which said anode is connected, said casing in association with the conductor-equipped board and tunnel diode being operative to provide the aforesaid minimal-inductance capacitance.

3,284,713

EMITTER COUPLED HIGH FREQUENCY AMPLIFIER

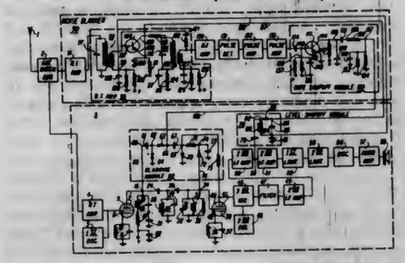
Dean C. Bailey, Scottsdale, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Mar. 26, 1963, Ser. No. 268,026
7 Claims. (Cl. 325—319)



7. An emitter coupled transistor amplifier including in combination, a current source, potential supply means, first and second transistor means matched to each other and having substantially the same emitter resistance characteristics, said first and second transistor means each having an emitter, a base and a collector, said emitters of said first and second transistor means connected to a common terminal, resistance means connected to said common terminal, first transformer means having a winding connected between the base of the first transistor means and the base of the second transistor means for providing a signal input to said amplifier, second transformer means having a winding connected between said potential supply means and the collector of said second transistor means providing a signal output for said amplifier, means connecting the collector of said first transistor means to said potential supply means so that said first transistor means has a common collector configuration, means A.C. coupling the base of said second transistor means to a point of reference potential so that said second transistor means has a common base configuration, means connecting said resistance means to said current source, and means connected between the emitters and bases of said first and second transistor means for controlling the emitter current of said first and second transistor means to thereby provide automatic gain control of said amplifier.

3,284,714
NOISE REDUCING SYSTEM
John W. Battin, Naperville, and Jack Germain, Chicago, Ill., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed Mar. 12, 1963, Ser. No. 264,546
7 Claims. (Cl. 325—478)



7. A noise blanking system for use in a carrier wave receiver which includes an antenna, a first receiver portion coupled to the antenna and in which may appear a modulated carrier wave accompanied by impulse noise of greater amplitude than the carrier wave, and a second receiver portion coupled to said first receiver portion for translating the modulated carrier wave, and in which the second portion is adapted to be interrupted by the application of a blanking pulse thereto, said noise blanking system including in combination; means for the generation of blanking pulses in response to impulse noise applied thereto coupled to the first receiver portion, switch means coupled to said blanking pulse generation means for receiving said blanking pulses, first and second charging path means coupled to said switch means, capacitor means coupling said switch means to the second receiver portion for applying said blanking pulses thereto, said switch means being responsive to said blanking pulses to connect said first charging path means to said capacitor means with a blanking pulse present and to connect said second charging path means to said capacitor means with no blanking pulse present, said first charging path means acting to change the charge on said capacitor means, said second charging path means acting to restore the charge on said capacitor means, said capacitor means acting to vary the amplitude of said blanking pulses in response to the magnitude of the charge thereon, whereby the amplitude of said blanking pulses is reduced in response to blanking pulses having a repetition rate which exceeds a predetermined rate for a predetermined length of time.

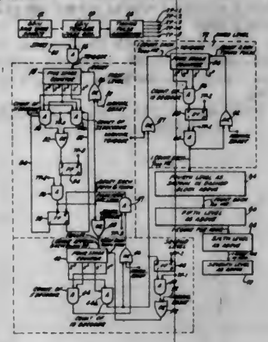
3,284,715
ELECTRONIC CLOCK
Murray F. Kaminsky, Philadelphia, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed Dec. 23, 1963, Ser. No. 332,583
7 Claims. (Cl. 328—41)

1. Apparatus for deriving from an L cycle per second input signal a measurement in fractions $1/R$ of a particular time unit, where L and R are integers, and C is a known factor in seconds/particular time unit, by which L is multipled to express L in said particular time units, comprising:

(a) means for counting the cycles in groups of M and N cycles each until $yM+xN$ cycles have been counted, where x, y M and N are integers, and where M/CL differs in one sense from $1/R$, N/CL differs in an opposite sense from $1/R$, and

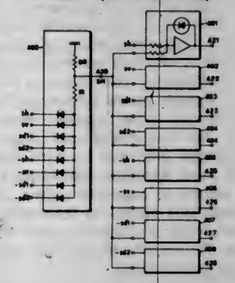
$$\frac{yM+xN}{CL}=\frac{x+y}{R}$$

(b) means for producing, in response to each group of cycles counted, an output signal which may be counted; and



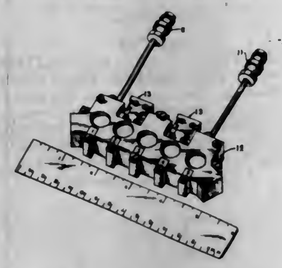
(c) means including the means of (a) above for, repeating the counting of groups of cycles in responsive to each $x+y$ such output signals.

3,284,716
VOLTAGE COMPARISON CIRCUIT
Jacques Louis Chopin, Saint-Mande, France, assignor to Compagnie des Machines Bull (Société Anonyme), Paris, France
Filed June 10, 1963, Ser. No. 286,789
Claims priority, application France, June 19, 1962, 901,160
1 Claim. (Cl. 328—146)



A voltage discriminating device for simultaneously comparing a number of input signals, each signal being applied to said device in the form of two voltages having the same absolute value and opposite polarities, said discriminating device comprising a series of input terminals, said series comprising a number of terminals at least equal to twice the number of signals to be compared, each of said signals being applied in its negative polarity to one of said terminals and in its positive polarity to another of said terminals, said discriminating device further comprising a number of diodes equal to the number of said terminals, a voltage divider circuit consisting of a first resistor and a second resistor connected in series at one of their extremities, the other extremity of said first resistor being connected to a point of zero voltage and the other extremity of said second resistor being connected to each of said terminals via a different one of said diodes, said diodes being poled to conduct an electrical current from said point of zero voltage to said terminals, said discriminating device further comprising a number of detecting circuits equal to the number of said terminals, each detecting circuit comprising two input means, one output means, two resistors of identical values, an amplifier with an input circuit of very high impedance and having an output connected to said output means and an input connected to each of said input means via a different one of said two resistors, and an unidirectional circuit element connected between said amplifier output and said amplifier input to carry an electrical current from said amplifier input to said amplifier output, no potential difference or a constant potential difference existing at the terminals of said unidirectional circuit element according to the direction of said electrical current it carries, each detecting circuit being connected by means of one of its two input means to a respective one of said terminals, and by means of the other input means to the common point of the two series-resistors of said voltage divider circuit, whereby the detecting circuit connected to a respective one of said terminals to which is applied a positive voltage which is higher than a predetermined fraction of the highest in absolute value, supplies a discriminating signal.

3,284,717
INTEGRALLY CONSTRUCTED PARAMETRIC AMPLIFIER-CIRCULATOR UNIT
Robert Damiano, St. James, and Jans Kliphuis, Huntington, N.Y., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Feb. 8, 1966, Ser. No. 526,336
2 Claims. (Cl. 330—4.5)



1. An integrally constructed cryogenically cooled parametric amplifier and circulator unit comprising: an irregularly shaped elongated housing; a first ferrite loaded isolator constructed in said housing; input signal means connected to said first isolator; a first parametric amplifier secured in said housing; a first ferrite loaded circulator constructed in said housing and connected between said first isolator and said amplifier; a second ferrite loaded isolator constructed in said housing and connected to said first circulator; a second parametric amplifier secured in said housing; a second ferrite loaded circulator constructed in said housing and connected between said second parametric amplifier and said second isolator; signal output means; a third ferrite loaded isolator constructed in said housing and connected between said second circulator and said signal output means; and means to apply a pump signal to said first and second parametric amplifiers.

3,284,718
BUFFER-STAGE CIRCUIT
Leo Becker, Ludwigsburg, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 9, 1963, Ser. No. 328,987
Claims priority, application Germany, Dec. 19, 1962, St 20,099
1 Claim. (Cl. 330—12)

A transistor buffer-stage for interconnecting a pair of output terminals of a first network and a pair of input terminals of a second network;

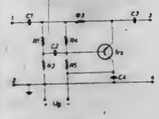
said output terminals of the first network presenting an impedance different than the impedance of the input terminals of the second network;

said buffer stage including a first shunt-arm connected across said output terminals, a second shunt-arm connected across said input terminals and a series-arm connected between an input terminal and an output terminal;

a transistor having a control electrode and two controlled electrodes functioning as an amplifier element;

means connecting said two controlled electrodes of the transistor in series into said second shunt-arm;

an A.C. input signal divider connected serially into the first shunt-arm;



said A.C. input signal divider including a tap for electrical connections;

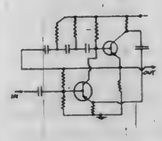
means connecting the tap to the control electrode of the transistor through means for coupling only A.C. input signals;

means coupling one of said controlled electrodes to ground through means for coupling only A.C. signals;

a resistor inserted between the center tap of said A.C. input signal divider and the grounded one of said controlled electrodes for assuring a low buffer-stage output impedance and a constant buffer-stage input impedance independent of load impedance; and

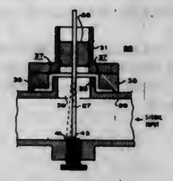
means connected to supply direct current biasing potentials to the electrodes of the transistor.

3,284,719
BAND-PASS AMPLIFIER WITH FEEDBACK CIRCUITRY
Manfred Kahn, Williamstown, Mass., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed Feb. 6, 1962, Ser. No. 171,495
10 Claims. (Cl. 330—26)



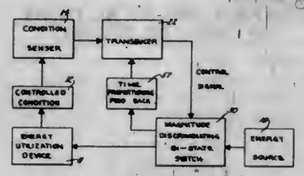
1. A band-pass amplifier having two amplification stages with inputs and outputs and connected in cascade, one of said stages being a voltage follower stage with a normal maximum voltage gain less than 1, said one stage having connected between its output and input a passive RC phase shift positive feedback loop that provides within a frequency band sufficient feedback to bring the loop gain above one so that said one stage becomes a negative impedance within said frequency band, and a stabilizing negative feedback loop from an output of the second stage of the cascade to an input of the first stage of the cascade.

3,284,720
TEMPERATURE COMPENSATION FOR CESIUM BEAM FREQUENCY STANDARD CAVITY
Alexander Brandli, Palo Alto, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Feb. 17, 1964, Ser. No. 345,343
2 Claims. (Cl. 331—3)



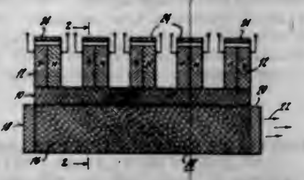
1. A cesium-beam frequency standard comprising:
a microwave cavity resonator having a microwave energy input part and an aperture therein;
means producing a cesium beam passing through said aperture in energy coupling relationship to the microwave signal in said cavity;
an iris disposed at said input part of the cavity to alter the resonant frequency thereof in response to the position of said iris;
said iris including a conductive member which responds to changes in temperature to alter position from a normal position relative to the cavity resonator for maintaining the resonant frequency of said cavity constant with temperature; and
means for coupling microwave signal through said iris into said cavity.

3,284,721
OSCILLATOR CONTROLLER WITH ON-OFF TIME PROPORTIONING
Milton R. Carlson, Rockford, Ill., assignor to Barber-Colman Company, Rockford, Ill., a corporation of Illinois
Filed May 8, 1964, Ser. No. 366,055
16 Claims. (Cl. 331—66)



1. In an on-off system for supplying energy from a source to an energy utilization device to control a variable condition, the combination comprising first means for sensing and signalling the actual value of the variable condition, second means responsive to said first means for creating a control signal which in its magnitude is generally proportional to the actual value of said variable condition within a predetermined band of values of the latter, bi-state means switched in state in response to said control signal passing through a predetermined value for successively turning said utilization device off and on, said second means including therein a reactance element whose reactive value vanes according to the changes in a control voltage applied thereacross and means responsive to variations in the reactance of said element for changing the factor of proportionality between said control signal and said actual value, and means responsive to switching of said bi-state means for changing the value of a control voltage applied across said variable reactance element and in a direction which tends to cause said control signal to pass through said predetermined value sooner than it otherwise would.

3,284,722
LIGHT COUPLING DEVICE
Sidney Gray, Somerville, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Mar. 22, 1963, Ser. No. 267,298
10 Claims. (Cl. 331—94.5)



1. A light conducting medium comprising a layer of evaporable material, the composition of said layer varying from one side to the other whereby the index of refraction of said layer varies from said one side to said other.

3,284,723
OSCILLATORY CIRCUIT AND MONOLITHIC SEMICONDUCTOR DEVICE THEREFOR
Herbert W. Henkels, deceased, late of Rockwood, Pa., by Patricia Henkels, administratrix, Rockwood, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 2, 1962, Ser. No. 207,127
4 Claims. (Cl. 331—107)

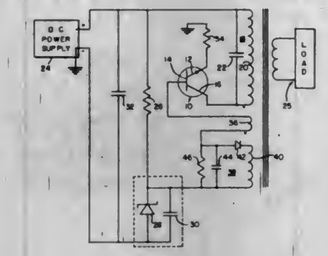


1. A monolithic semiconductive device suitable for use in an oscillatory circuit, said device comprising a plurality of monolithic semiconductive regions, one of said regions being a body region of one conductivity type, a second of said regions forming an emitter of the other conductivity type crystally adjoined with a first zone of said body region adjacent one side thereof, a third of said regions of said other conductivity type crystally adjoined with said body region first zone adjacent a side opposite said one side, said second region and a first portion of said first zone of said body region and said third region and a second portion of said first zone of said body region cooperatively forming respective layers of a four layer bistable diode switch, and loading and filter means including a second zone of said body region for capacitively and resistively loading said switch.

3,284,724
OSCILLATOR WITH FEEDBACK BIAS AMPLITUDE STABILIZATION
Jacob Marlow, King of Prussia, Pa., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Oct. 14, 1963, Ser. No. 315,865
7 Claims. (Cl. 331—109)

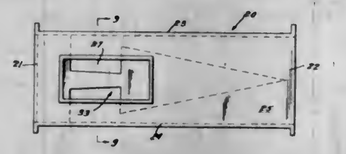
1. An oscillator circuit energized from a D.C. power supply and providing a controlled amplitude output signal comprising:
a transistor having an emitter, base and collector;

a tank circuit connected to said collector and the D.C. power supply;
a series circuit portion connected across said base and emitter including
(a) a D.C. constant voltage source derived from the D.C. power supply,
(b) a resistor, and



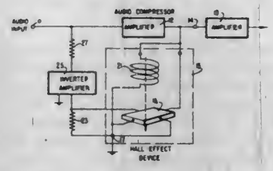
(c) a regenerative feedback winding inductively coupled to said tank circuit, and
means connected across said resistor and responsive to the output signal of the oscillator to produce a D.C. voltage across said resistor which is continuously proportional to the output signal of the oscillator and opposes the voltage of said D.C. constant voltage source.

3,284,725
MICROWAVE COUPLER FOR COMBINING TWO ORTHOGONALLY POLARIZED WAVES UTILIZING A RIDGE-LIKE IMPEDANCE MATCHING MEMBER
David F. Bowman, Wayne, Pa., assignor, by mesne assignments, to Airtron Division of Precision Products, Inc., Morris Plains, N.J., a corporation of Delaware
Filed Jan. 15, 1962, Ser. No. 166,205
6 Claims. (Cl. 333—9)



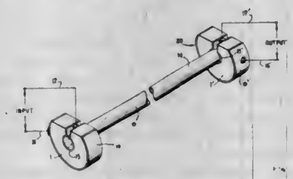
1. A signal coupler comprising an enclosure having a first, second and third opening; said first and third openings being joined by a wall area and being positioned at respective end regions thereof; said wall area including a first and a second pair of generally planar wall surfaces; the wall surfaces of said first pair being perpendicular to the wall surfaces of said second pair; the planes defined by each of said wall surfaces intersecting the plane defined by said first opening; one of said first pair of wall surfaces containing said second opening; said second opening being located away from said first opening; said third opening being positioned to introduce a first wave signal into said enclosure; said second opening being positioned to introduce a second wave signal into said enclosure, said second wave signal being orientated 90 degrees apart in space with respect to said first wave signal; a ridge-like member being contained in a plane generally perpendicular to said second pair of wall surfaces and extending therebetween; a first portion of said ridge-like member being so dimensioned and positioned to deflect said second wave signal towards said first opening, while offering negligible interference, to said first wave signal; and said ridge-like member means extending substantially between said first and third openings, and being of its greatest planar extent in the region between said second and third openings.

3,284,726
SQUARE LAW COMPANDER SYSTEM UTILIZING A HALL EFFECT MULTIPLIER AS THE SQUARE LAW DEVICE
Harry F. Kotecki, Glen Ellyn, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Mar. 3, 1964, Ser. No. 349,014
3 Claims. (Cl. 333—14)



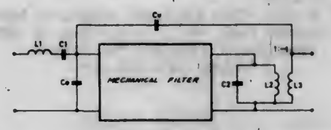
1. A signal amplitude compressor including in combination a first high gain linear amplifier having an input for receiving an input signal and an output, a Hall effect multiplier having first and second input conductors connected to said output of said amplifier and an output conductor, resistor means connected to said output conductor providing a load for said Hall effect multiplier to provide a signal thereacross representing the square of the signal applied to said first and second input conductors, an inverter amplifier connecting said resistor means to said input of said first amplifier for applying the inverted squared signal thereto, so that the inverted squared signal from said Hall effect multiplier is subtracted from the compressor input signal applied to said first amplifier input, said first amplifier providing a compressor output signal at said output thereof which is proportional to the square root of the compressor input signal.

3,284,727
CIRCULAR POLED TRANSDUCER
Kenneth A. Carlson and Donald R. Young, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 21, 1963, Ser. No. 289,603
4 Claims. (Cl. 333—30)



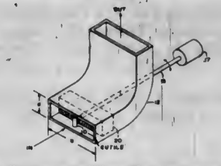
1. A signal delay apparatus comprising, an elongated solid transmitting fiber, a toroid of ferroelectric ceramic material having a radial slot therein, said toroid connected to one end of said fiber in surrounding relation, a first electrode connected to the inner surface of said toroid and said fiber, a second electrode connected to the outer surface of said toroid, means for passing an electrical signal between said electrodes to establish torsional waves in said fiber, and another toroid of ferroelectric ceramic material having a radial slot and electrodes connected about the inner and outer surfaces thereof engaging the opposite end of said fiber in surrounding relation for receiving said torsional waves and reconverting them to delayed electrical signals.

3,284,728
ELECTROMECHANICAL FILTER
Werner Poschenrieder, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin and Munich, Germany, a corporation of Germany
Filed Sept. 21, 1962, Ser. No. 225,970
Claims priority, application Germany, Sept. 22, 1961, S 75,881
1 Claim. (Cl. 333—71)



In an electromechanical band filter, the combination of a mechanical filter structure comprising an even number of mechanically coupled mechanical resonators, a series resonance circuit comprising a coil and a capacity connected ahead of the input of said mechanical filter structure, a parallel resonance circuit forming a transverse branch across the output of said filter structure, an output coil, supplementing said parallel resonance circuit and forming a transformer having a transformation ratio of 1:—1, capacitive coupling means extending from said output coil to a point lying between said mechanical filter structure and said series resonance circuit, and means, forming a transverse capacitor, extending from said point to the other input line, the resonance frequencies of the series resonance circuit and the parallel resonance circuit lying approximately at the middle of the frequency band of the mechanical filter structure.

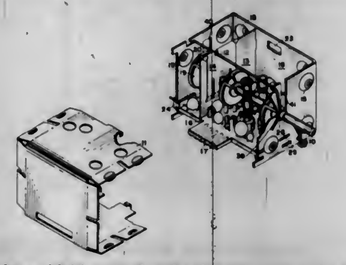
3,284,729
PERIODIC VARIATIONS OF WAVEGUIDE TRANSMISSION BY USE OF ROTATING RUTILE LOADING MEMBER
Aldo E. Linsenbardt, Catonsville, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 28, 1964, Ser. No. 370,839
4 Claims. (Cl. 333—98)



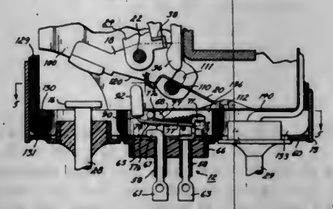
1. A switch for controlling the propagation of microwave energy within a waveguide comprising:
a rutile element having a known first dielectric constant when in a first orientation with said microwave energy and a known second, and lower dielectric constant when oriented 90° from said first orientation; and
means for positioning said rutile element into said first orientation to allow propagation of said microwave energy and for positioning said element 90° therefrom to substantially minimize the propagation of said microwave energy.

3,284,730
RADIO FREQUENCY TUNING DEVICE
Ronnie R. Pitt and Jack Stultz, Indianapolis, Ind., assignors to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware
Filed July 31, 1964, Ser. No. 386,495
8 Claims. (Cl. 334—72)

1. A tuner assembly for accepting very high frequency signals comprising a body, a circuit board within said body, said circuit board having mounted thereon components required to convert said very high frequency signals to an intermediate frequency, said circuit board having plug-connector means for connection to external circuitry, a circular inductor spanning an arc less than 360°, said inductor revolvable by means of a shaft coupled thereto, a contact pressing against the periphery of said inductor so that rotation of said shaft causes a variation of inductance between said shaft and said contact, a partial shield partitioning said body, said shield augmented by a shield ground spring inserted over said shield, said shield ground spring extending into and contacting a groove on said shaft, an insulator with feed-through conductors therein for input signals attached to said body, a U-shaped shaft wire with the base portion bridging the entire body, the sides of said shaft wire fitting into grooves of said shaft and biased thereagainst to force said shaft against bearings made by lancing and forming tabs from said body, and a U-shaped cover pierced by circuit adjusting holes and with protruding tabs for fastening said cover to said body without the use of tools.

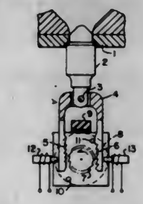


3,284,731
AUXILIARY SWITCH RESPONSIVE TO THE MOVEMENT OF THE CIRCUIT BREAKER LINKAGE
Ronald Nicol, Trenton, N.J., assignor to Heinemann Electric Company, Trenton, N.J., a corporation of New Jersey
Filed Oct. 10, 1963, Ser. No. 315,290
6 Claims. (Cl. 335—21)



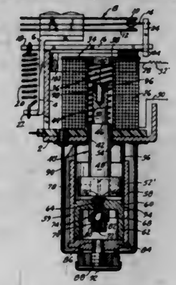
3. In combination, a circuit breaker including a case, a pair of separable circuit breaker contacts housed within said case, an auxiliary switch within said case and extending partially through said case, said circuit breaker further including linkage means to manually open and close said circuit breaker contacts and to automatically open said circuit breaker contacts upon a predetermined overload, an electromagnetic device for collapsing said linkage means and automatically opening said circuit breaker contacts upon said overload, said auxiliary switch comprising a pair of separable switch contacts and a movable blade carrying one of said switch contacts into and out of engagement with the other switch contact, said linkage means having a portion actuating and maintaining said auxiliary switch actuated when said circuit breaker contacts are closed but not maintaining said auxiliary switch actuated while said overload persists, said portion actuating said auxiliary switch at substantially an invariable predetermined position regardless of any circuit breaker contact wear, said movable blade having a plunger, said linkage means comprising toggle means pivotally connected to a movable arm, said plunger lying along the line of movement of the pivotal connection between said toggle means and said movable arm.

3,284,732
HIGH-SPEED RECLOSING CIRCUIT BREAKER HAVING RELEASABLE COUPLING MEANS FOR CONNECTION WITH ROTATING MASS
Fritz Kesselring, Kusnacht, Zurich, Switzerland, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Erlangen, Germany, a corporation of Germany
Filed May 21, 1964, Ser. No. 369,208
Claims priority, application Germany, May 29, 1963, S 85,449
11 Claims. (Cl. 335—24)



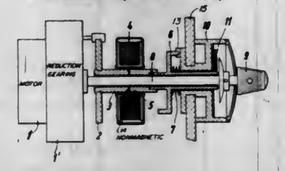
6. A fast opening and fast reclosing circuit breaker comprising a movable contact member, a rotating mass, gear means driven by the mass, toothed rack means disposed on opposite sides of the gear means and pivotally connected to the movable contact member, means for operating the rack means in one direction to engage the rotating mass to open the contact member and in the opposite direction to engage the rotating mass to close the contact member, and releasing means for said toothed rack means operable at the end of the opening and closing operations of the movable contact member.

3,284,733
ELECTROMAGNETIC RELAY WITH DASHPOT TYPE TIME DELAY DEVICE
Arthur M. Cohen, Sturgis Highway, Westport, Conn.
Filed Feb. 18, 1964, Ser. No. 345,735
8 Claims. (Cl. 335—61)



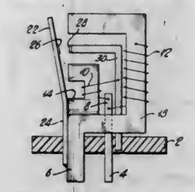
3. A time delay actuator comprising a support, an electromagnet coil thereon, a member operatively associated with said coil and adapted to be moved from first to second operative positions when said coil is energized, damping means operatively connected to said member for restricting the speed of its movement from said first to said second operative position, said member comprising a core movable into and out of said coil from said first and second operative positions respectively, said core comprising first and second parts which respectively lead and trail as said core moves into said coil, at least a portion of said second part being outside said coil when said core is in its first operative position, said first part being narrower than said second part, and an inertia member operatively connected to said second part of said core.

3,284,734
TIME-DELAY RELAY WITH AXIALLY ALIGNED POLES
Helmut Schleicher, Hochwaldsteig 19, Berlin, Germany
Filed July 9, 1964, Ser. No. 381,305
Claims priority, application Germany, July 13, 1963, Sch 33,577
4 Claims. (Cl. 335—68)



1. A time-delay relay comprising drive means, a first pole member positively coupled with said drive means for rotary entrainment thereby, a second pole member coaxial with said first pole member axially adjoining same, electromagnetic coil means surrounding confronting extremities of said members whereby said members are magnetically coupled for joint rotation upon energization of said coil means, an actuating element positively connected with said second member for displacement thereby from the normal position into an off-normal position for the closure of an external circuit upon energization of said coil means, restoring means effective upon de-energization of said coil means for returning said second member to said normal position, and an abrasion-resistant nonmagnetic coating on one of said confronting extremities and in constant contact with the other of said extremities for maintaining the extremities at a precisely defined axial distance.

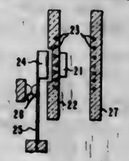
3,284,735
MAGNETIC SERIES FLASHER HAVING TWO ELECTROMAGNETIC COILS AND A MAGNETICALLY REVERSIBLE ARMATURE
Hemming G. Silberg, Union, N.J., assignor to Tung-Sol Electric Inc., a corporation of Delaware
Filed July 12, 1965, Ser. No. 471,120
5 Claims. (Cl. 335—91)



1. An intermittently operating thermoresponsive switch comprising:
(i) an armature fulcrumed at one end thereof and composed of material which loses its magnetic permeability upon heating,
(ii) a first electromagnet having a high electrical resistance winding and a second electromagnet having a low electrical resistance winding,
(iii) means connecting said first electromagnet so that when energized it attracts said armature to said sec-

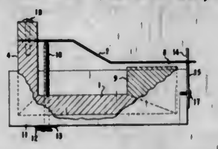
ond electromagnet to be held thereby in the attracted position in which position the winding of the first electromagnet is shunted until said armature moves from said attracted position because of loss of its magnetic permeability.

3,284,736
TEMPERATURE-RESPONSIVE THERMALLY ADJUSTABLE CONTROL DEVICE
Paul A. Vance, Jr., Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Apr. 17, 1964, Ser. No. 360,667
5 Claims. (Cl. 335—146)



5. A thermally adjustable control device responsive to the temperature of a medium surrounding it comprising in combination an insulated frame open to said medium to provide circulation of said medium throughout said frame, a temperature-responsive element which undergoes a first-order, solid-phase-to-solid-phase transition within a narrow temperature range below its Curie point with a sharp change in its magnetic saturation induction, located within said frame for maximum heat transfer from said medium to said element, magnetic means within said frame, said element and magnetic means connected to said frame for relative movement toward and away from each other, electrical switch means positioned to open and close an electrical circuit in response to said movement, a continuous electrical heater embedded in insulating material positioned closely adjacent and in fixed relation to said element, and means cooperating with said heater to adjust the heat output thereof.

3,284,737
SPRING-ADJUSTABLE, THERMALLY RESPONSIVE SWITCH UTILIZING A FIRST-ORDER TRANSITION MATERIAL
Kern M. Bowyer, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed May 12, 1964, Ser. No. 366,831
4 Claims. (Cl. 335—146)



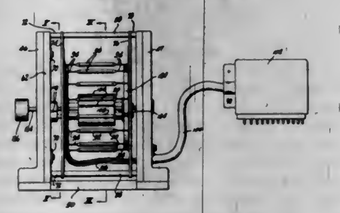
1. A spring-adjustable temperature control device for controlling the temperature of an environment comprising
(a) an electrically conducting ferromagnetic switch means;
(b) magnetic means electrically insulated from said switch means;
(c) a magnetic first-order transition material which undergoes a first-order solid-phase-to-solid-phase transition from a magnetic state to non-magnetic state over a temperature range of about 3 to 20° C. and with a sharp and reversible change in its magnetic saturation induction, said temperature range being below the Curie point of said material, and said material being electrically insulated from said switch means;
(d) said magnetic means and said material arranged to direct magnetic flux toward said switch means only when said material is in said magnetic state; and
(e) variable tension means for varying the ease of movement of said switch means.

3,284,738
REED CONTACT SWITCHING UNIT HAVING RESILIENT STUD MEANS FOR SECURING COIL
Andreas Zerfass, Stuttgart-Weil im Dorf, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 15, 1964, Ser. No. 396,581
Claims priority, application Germany, Sept. 20, 1963, St 21,098
4 Claims. (Cl. 335—152)



1. A reed relay assembly comprising a plurality of reed contacts contained in glass tubes, permanent magnet means arranged parallel to said tubes, resin block means for mounting said tubes and said permanent magnet in a juxtaposed, spaced apart relationship, terminals connected to said contacts and protruding from said resin block, reed relay operating coil means, said resin block having stud means for fixedly mounting said resin block in said coil, said stud means comprising a resilient stud on one end of said block and a firm stud on the other end of said block, and means on said coil for engaging said studs when said block is fully inserted in said coil.

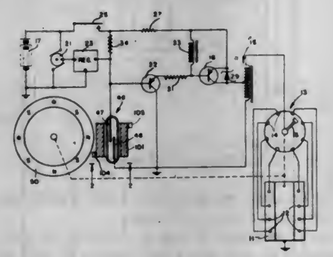
3,284,739
ROTARY REED SWITCH ACTUATOR
Herbert Harold Olson, Jackson, Mich., assignor to Sparton Corporation, Jackson, Mich., a corporation of Ohio
Filed July 19, 1965, Ser. No. 472,811
16 Claims. (Cl. 335—152)



1. Electrical switch apparatus comprising, in combination,
(a) a pair of electrical contacts, at least one of said contacts including a magnetic support whereby opening and closing of said contacts is regulated by the influence of magnetic forces on said magnetic support,
(b) a magnet support,

(c) means supporting said magnet support for rotary movement about a given axis and for a translatory movement in a direction transversely disposed to said axis, said means adapted to move said magnet support adjacent said magnetic contact support during its path of movement,
(d) a magnet mounted on said magnet support and spaced from said axis as to move through a cycloidal-type path of movement upon rotary and translatory movement of said magnet support, said magnetic contact support being positioned so as to be located adjacent the terminus of a cycloidal-type arch described by said magnet path of movement whereby said magnet approaches and withdraws from said magnetic contact support in a cycloidal-type path to open and close said electrical contacts.

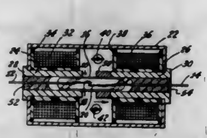
3,284,740
ELECTRONIC IGNITION SYSTEM WITH ENCAPSULATED REED DEVICE AND CONDUCTING SLEEVE THEREABOUT FORMING A FLUX FILTER
Nicholas T. Neapolitakis, Chicago, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed July 15, 1965, Ser. No. 472,138
4 Claims. (Cl. 335—153)



1. A switching structure for use in an electrical system which may be subject to the influence of magnetic fields exhibiting variations in flux, said switching structure including in combination, a reed switch comprising a pair of magnetic reeds encapuslated within a glass tube and operable to control a function of the electrical system, a copper sleeve directly surrounding said glass tube, movable magnetic means operable to provide a magnetic flux through said reeds varying in a given frequency range to open and close said reed switch, said reed switch having a natural resonance frequency which is substantially higher than the given frequency range, said copper sleeve forming a shorted turn about said reeds and being of a thickness to provide a sufficiently low inductance to have a negligible effect of magnetic flux variations within the given frequency range, and acting to filter out magnetic flux variations at frequencies of the order of said natural resonance frequency.

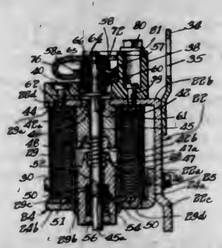
3,284,741
LOCK-UP REED SWITCH
John W. Conklin, Venice, Calif., assignor to McKee Automation Corp., North Hollywood, Calif., a corporation of California
Filed Apr. 21, 1964, Ser. No. 361,456
5 Claims. (Cl. 335—154)

1. In combination with a switch device including an envelope and having a pair of magnetic reeds within the envelope with one end of each reed supported in the envelope and the other ends of the reeds in spaced overlapping relation,
a permanent magnet for providing a magnetic field,
magnetic means operatively coupled to the permanent magnet for locating the permanent magnet at a particular distance from the spaced overlapping ends of the reeds,
means operatively coupled to the permanent magnet for moving the permanent magnet to a position adjacent the overlapping ends of the reeds, and



magnetic means operatively coupled to the permanent magnet for maintaining the permanent magnet at the position adjacent the overlapping ends of the reeds.

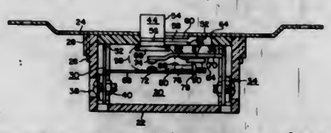
3,284,742
ELECTROMAGNETIC CONTACTOR
Dorn L. Pettit and Edward J. Stark, Milwaukee, Wis., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Aug. 17, 1964, Ser. No. 389,889
15 Claims. (Cl. 335—193)



1. An electromagnetic contactor comprising a magnet frame, an energizable coil magnetically associated with said magnet frame, an armature magnetically associated with said magnet frame and coil and reciprocable upon energization and deenergization of said coil, an operating rod having an end portion connected to said armature for reciprocation therewith, an elongated movable contact arm extending generally perpendicularly to and centrally supported by the other end portion of said operating rod, a bushing disposed between said armature and movable contact arm and reciprocally guiding said operating rod, a pair of terminal members respectively disposed adjacent opposite end portions of said movable contact arm, a flexible electrical conductor electrically connecting one of said terminal members and one end portion of said movable contact arm, said movable contact arm having a movable contact portion on the other end portion thereof, and the other of said terminal members having a stationary contact portion engageable by said movable contact portion of said movable contact arm upon energization of said coil, the reaction force of said stationary contact portion against said movable contact arm tending to tilt said operating rod and increasing friction between said operating rod and said bushing to reduce contact bounce upon energization of said coil.

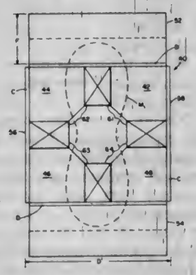
3,284,743
MAGNETIC SWITCHING DEVICE
Metro Spewock, Export, and Walter V. Bratkowski, McKeesport, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 10, 1965, Ser. No. 454,616
8 Claims. (Cl. 335—205)

1. A magnetic switching device comprising a resilient electrically conductive contact arm, first and second con-



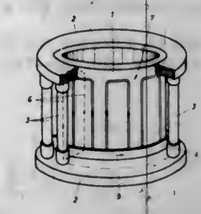
tact means disposed on said contact arm, first and second regions of highly permeable magnetic material disposed on said contact arm and electrically isolated therefrom, another electrically conductive contact arm, a third contact means disposed on said other contact arm for mating engagement with said first contact means, a third region of highly permeable magnetic material disposed on said other contact arm and forming a first gap of predetermined area and length with said first magnetic region, a third electrically conductive contact arm, fourth contact means disposed on said third contact arm for mating engagement with said second contact means, a fourth region of highly permeable magnetic material disposed on said third contact arm and forming a gap of predetermined area and length with said second magnetic region, a movable actuator having permanent magnet means, means for supporting said actuator for movement to at least two positions in which said permanent magnet means generates magnetic flux through respective magnetic circuits respectively including said first and third magnetic regions and said second and fourth magnetic regions to produce attraction forces between said first and third magnetic regions and said second and fourth magnetic regions and thereby to engage and disengage said first and third contact means and said second and fourth contact means, and means for supporting said contact arms.

3,284,744
QUADRUPOLE MAGNET WITH REDUCED LATERAL DIMENSION
Gordon T. Danby, Wading River, and John W. Jackson, Medford, N.Y., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Sept. 3, 1964, Ser. No. 394,369
7 Claims. (Cl. 335—210)



1. A quadrupole electro-magnet of narrow dimension comprising:
(a) four pole pieces assembled in spaced relationship to form the corners of a rectangle and a central air gap;
(b) coils wrapped around each of said pole pieces to carry electric current to establish magnetic fields and fluxes in said pole pieces;
(c) yoke members of magnetic material across two opposite pairs of pole pieces to establish a single magnetic flux path passing through each of said pole pieces and yokes and through the central air gap, the lateral dimension of said magnet without yoke members being relatively small.

3,284,745
CYLINDRICAL ELECTRO-MAGNET
Wolfgang Grobe, Ludwigsburg, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 29, 1964, Ser. No. 421,915
Claims priority, application Germany, Jan. 11, 1964, St 21,547
10 Claims. (Cl. 335—213)

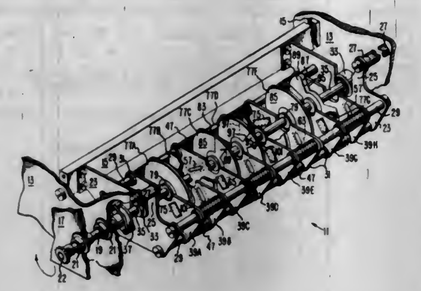


1. A cylindrical magnet having a cylindrical core comprising:
a first winding wrapped about said cylindrical core in a direction coaxial therewith,
a second winding having a plurality of parts placed parallel to and along the surface of said cylindrical core;
said first winding consisting of at least one conductive loop fixed to the cylindrical core;
said conductive loop, in response to appropriate signals, generating a magnetic flux;
said magnetic flux having a configuration such that a cross section thereof displays an arrangement essentially like an imaginary cylindrical hollow surface concentrically provided within the magnet.

3,284,746
MAGNETICALLY CONTROLLED TIMING ASSEMBLY
Robert W. Lenhardt, Milford, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed June 22, 1964, Ser. No. 376,625
7 Claims. (Cl. 335—237)

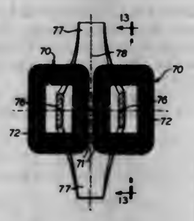
1. In combination with a magnetically operable switch and an adjacently fixed magnet, said switch having armature means held in one position by magnetic energy from said magnet and operable to another position by shunting magnetic energy from said switch armature means, magnetic energy shunting means comprising:
a cyclically driven non-magnetic disk interposed between said switch and said magnet, and
a plurality of discrete arcuate segment magnetic elements carried by said disk on at least one of its surfaces,

said magnetic elements proximately positioned with respect to one another and in combination effecting a first quantum of magnetic energy shunting when carried by said disk into an interposing position between said switch and said magnet,



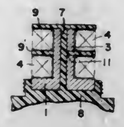
one of said magnetic elements extending beyond and being of greater arcuate extent and expanse than the other element and effecting a second and lesser quantum of magnetic energy shunting when in interposing position.

3,284,747
ELECTROMAGNETIC DEVICE INCLUDING INTERLINKED MAGNETIC FLUX AND ELECTRIC CURRENT LOOPS
Andrew A. Halacsy, 2429 Laura Lane, Mountain View, Calif.
Filed Jan. 25, 1963, Ser. No. 253,838
5 Claims. (Cl. 336—233)



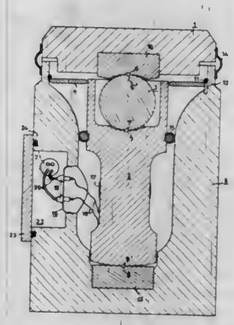
1. An electromagnetic device comprising a first loop of electrically conductive material; and a second loop of paramagnetic material, said loops being interlinked with each loop extending through the other loop substantially axially of the latter; at least one leg of at least one loop having a dimension, perpendicular to the axis of such one loop, substantially less than its dimension parallel to the axis of such one loop; whereby the mean turn length of said loop is substantially reduced for a selected cross sectional area thereof; that portion of said one loop extending through the other loop having a dimension, parallel to the axis of such one loop, substantially less than the dimension, parallel to the axis of such one loop of said one leg, and that portion of said one loop extending through the other loop comprising material having a low hysteretic constant and a resistivity substantially lower than the material comprising the remainder of said one loop.

3,284,748
MAGNETIC COIL SUPPORT HAVING MAGNETIC AND NON-MAGNETIC FLANGES
Hiromi Matsumoto, Tokyo-to, Japan, assignor to Toko Kabushiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan
Filed June 23, 1964, Ser. No. 377,224
Claims priority, application Japan, June 24, 1963, 38/33,320, 38/46,895
6 Claims. (Cl. 336—233)



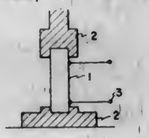
1. A magnetic core for a coil consisting of a yoke of magnetic material, a first flange made of magnetic material fixed to one end of said yoke, a tubular member of nonmagnetic material, said tubular member being adapted to support a coil, and a second flange of nonmagnetic material and connected to the other end of said tubular member remote from said first flange.

3,284,749
STRAIN GAUGE DYNAMOMETER
Georges L. Fouretier, Paris, France, assignor to Société d'Etudes et de Realisations d'Installations de Mesure, Bagnolet, France, a company of France
Filed Apr. 5, 1965, Ser. No. 445,569
Claims priority, application France, Apr. 10, 1964, 970,494
3 Claims. (Cl. 338—5)



2. A strain gauge dynamometer assembly comprising a casing, a solid elongated dynamometer bar of revolution having its lower end resting upon the bottom of said casing, a first spherically shaped bowl portion of a given diameter at the upper end of said bar, a first centering bead affixed to said first bowl portion at the pole of the same, a stress-transmitting base, a second spherically shaped bowl portion of the same diameter as the first in the underpart of said base, a second centering bead affixed to said second bowl portion at the pole of the same, a spherical ball having a diameter smaller than the diameter of said first and second bowl portions inserted between said bowl portions, two diametrically opposite hollow sockets in said ball adapted to receive said first and second centering beads, a flat annular diaphragm secured to said casing along its outer periphery and to said bar along its inner periphery and located in the plane transverse to said bar passing through the center of curvature of the first spherically shaped bowl portion and wire strain gauges bonded to said bar.

3,284,750
LOW-TEMPERATURE, NEGATIVE-RESISTANCE ELEMENT
Kiichi Komatsubara, Kodaira-shi, Japan, assignor to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan
Filed Mar. 25, 1964, Ser. No. 354,528
Claims priority, application Japan, Apr. 3, 1963, 38/16,377
3 Claims. (Cl. 338—22)



1. High-speed electromechanical on-off switching device exhibiting negative resistance characteristics comprising a highly compensated semiconductor element having negative resistance characteristics and provided with two electrodes to impart current to said element, said two electrodes being separated from each other on the surface of said element; means to maintain said element in an extremely low temperature state of 77° K. and less; and means for imparting a mechanical force to said element in accordance with the required switching function.

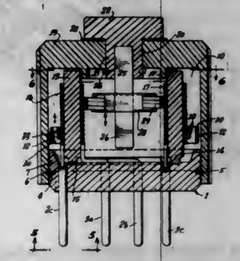
3,284,751
RESISTOR IGNITION LEAD
Robert A. Barker and John W. Shank, Port Huron, Mich., assignors to Eltra Corporation, Brooklyn, N.Y., a corporation of New York
Filed Oct. 11, 1963, Ser. No. 315,464
1 Claim. (Cl. 338—66)



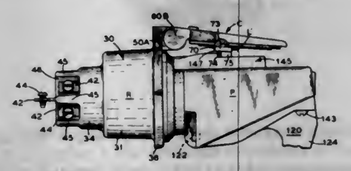
In an ignition cable for use with automotive vehicles having uniformly distributed resistance throughout its length to suppress radio and television interfering emanations therefrom created by high frequency oscillations when a spark discharge occurs, the improvement comprising a flexible resistive conductor of non-conducting fibers coated with conducting material of discrete particles, a conductive rubber coating bonding together the fibers of said conductor, a layer of conducting substance over said rubber coating to act as a release agent for subsequent layers, an insulating rubber layer positioned over the layer of conducting substance, a sheath of braided glass fibers positioned over the rubber layer, and a protective neoprene coating positioned over the said sheath on the exterior thereof and bonded to the rubber layer to form an integral insulating body for the cable.

3,284,752
DUPLEX VARIABLE ELECTRICAL RESISTANCE DEVICE
Oscar Bellar, Alhambra, Calif., assignor to Terence Dalby, Alhambra, Calif.
Filed Oct. 24, 1965, Ser. No. 504,862
9 Claims. (Cl. 338—131)

1. In a duplex, variable electrical resistance device, a base including a resistance assembly support, first and second resistance assemblies carried by said support each comprising a plurality of elongated electrical conductors arranged in side by side relation and electrically insulated from each other throughout their lengths, and a pair of separate, manually operable means carried by said base, one of said manually operable means being associated with said first resistance assembly and the other with said second resistance assembly, each of said manually operable means including a resilient brush component electrically interconnecting the conductors of the one of said assemblies with which it is associated at infinitely variable points in the length thereof, one of said manually operable means additionally serving as the support for the other of said manually operable means, means interconnecting said manually operable means effective to permit movement of either of said manually operable means to effect variation of the associated resistance assembly while maintaining the then existing position of the other of said manually operable means with respect to the resistance assembly with which said other manually operable means is associated, and a plurality of terminals disposed on an exterior surface of said base connected one each to each of said conductors and affording separate connection of the conductors comprising said resistance assemblies into an electrical system, one of said manually operable means serving in cooperation with said base to enclose said support and the resistance assemblies carried by said support.

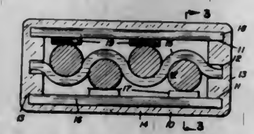


3,284,753
ELECTRICAL CONNECTOR ASSEMBLY
Elliott Goldbaum, Brooklyn, Gordon Ablett, New York, and Odd Larsen, Brooklyn, N.Y., assignors to Lehigh Valley Industries, Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 18, 1963, Ser. No. 309,749
8 Claims. (Cl. 339—44)



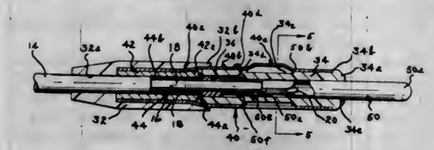
1. A multicircuit electrical connector comprising, in combination, a receptacle formed with an outwardly opening recess, a plurality of first conductors carried by said receptacle in a predetermined pattern within said recess, a cover hinged to said receptacle, spring means cooperating between said receptacle and said cover to bias said cover to close said recess, a plug insertable into said recess upon swinging of said cover to an open position, a plurality of second conductors carried by said plug in a predetermined pattern for engagement with said first conductors on insertion of said plug into said recess, means for guiding said plug in a predetermined relationship with respect to said receptacle on insertion of said plug into said recess, abutment means on the surface of said plug, and latch means displaceably mounted on the inner surface of said cover for movement in a plane substantially parallel to said cover and releasably retained in a latching position, said latch means cooperating with said abutment means under the biasing of said spring means for releasably retaining said plug in said recess, said latch means being shiftable to a non-latching position by said abutment means upon application of a sudden, inadvertent withdrawing stress to said plug.

3,284,754
SNAP-ON TYPE ELECTRICAL WIRE CONNECTOR
Stephen N. Buchanan, 5141 Massachusetts Ave. NW., Washington, D.C.
Filed Dec. 16, 1963, Ser. No. 330,977
3 Claims. (Cl. 339—95)



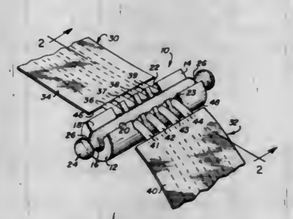
1. An electrical wire connector, comprising a cup of insulating material and having a cup opening, a wire positioning plate of conducting material positioned in said cup and being undulated to define recesses in staggered positions on opposite sides of said wire positioning plate which form wire positioning means, a first wire retaining plate positioned in said cup on one side of said wire positioning plate and having wire retaining means projecting therefrom and being spaced from said wire positioning plate to define a space between said plates opening out of the cup opening and into which the ends of wires to be connected are inserted, and a second wire retaining plate positioned in said cup on the other side of said wire positioning plate and having a wire retaining means projecting therefrom and being spaced from said wire positioning plate to define a space between said plates opening out of the cup opening and into which the ends of wires to be connected are inserted, the wire retaining means projecting from the respective wire retaining plates being opposite recesses in said undulating wire positioning plate which open toward the respective wire retaining plates.

3,284,755
COAXIAL PATCHCORD ASSEMBLY
Dale Brice Mummey, Enola, and Robert G. Trump, Hershey, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Mar. 31, 1964, Ser. No. 356,279
4 Claims. (Cl. 339—128)



1. A plug contactor for terminating coaxial cable of the type having a center conductor surrounded by an insulating member and an outer conductor, the contactor including a metallic shell member of a diameter to be inserted within the aperture of a contactor board member, the said shell member having a plurality of integral spring members of a length approximating the thickness of the board member disposed generally parallel to the longitudinal axis of said contactor and positioned radially outwardly from the main body of said shell member such as to be driven inwardly by insertion in the board member aperture to frictionally engage said board aperture substantially along the length thereof, stop means located on said shell extending radially to limit the insertion of said contactor in said board member, ferrule means disposed in the rearward end of said shell and connected to the outer conductor of said cable, an insulating medium disposed within said shell extending approximately from said ferrule means to the forward end of said shell, a central conductive pin member connected to the cable center conductor and supported by said insulating medium coaxially of a portion of the length of said shell, said pin member extending forwardly of said insulating medium and said shell, the said insulating medium including a portion disposed between the inner end of said pin member and said ferrule means to preclude axial displacement of said pin member toward said ferrule means during assembly and use of said contactor.

3,284,756
ELECTRICAL RIBBON CABLE CONNECTOR
Harold J. Vanstrom, 210 Easy St., Mountain View, Calif.
Filed May 19, 1965, Ser. No. 456,909
10 Claims. (Cl. 339—174)



1. A connector assembly for interconnecting a pair of flat, flexible ribbon cables having a plurality of laterally separated electrical conductors disposed within an insulating covering and having said insulating covering removed from the end portions to be interconnected to expose said conductors, said connector assembly comprising:

a substantially rigid, hollow insulator body having a longitudinal opening defining a pair of spaced edges, the exposed conductor end portions of the pair of ribbon cables to be interconnected being respectively received, from opposite sides and over said spaced edges through said longitudinal opening by the interior of said hollow body for lengthwise overlapping contact of the individual conductors to be connected; and

resilient core means insertable into said hollow body through said longitudinal opening, said core means having a cross section along its length which is greater than the cross section of the interior of said hollow body to securely urge overlapping conductor end portions against one another and the interior surface of said hollow body.

3,284,757
FLAT-TYPE PLUG FOR USE WITH SOLDERING TAG STRIPS IN TELECOMMUNICATION TECHNIQUE
Heinz Krone, Asperg, Wurttemberg, Germany, assignor to Krone G.m.b.H., Ludwigsburg, Wurttemberg, Germany, a German company
Filed Nov. 6, 1964, Ser. No. 409,399
Claims priority, application Germany, Nov. 8, 1963, K 51,317
3 Claims. (Cl. 339—176)

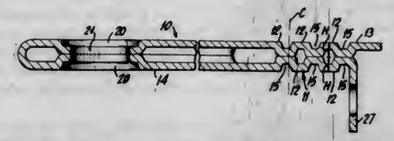
1. A flat-type plug for use in solder terminal strips comprising an elongated flat housing, a handle portion

at one end of said housing having a connection chamber therein, a plurality of leaf springs arranged within and extending longitudinally of said flat housing, each spring having a shank portion and opposite ends with said shank portions and ends lying in planes perpendicular to a broad side of said housing and said shank portions being of different lengths, one end of each spring projecting into said



connection chamber for connection to leads of the plug, each spring intermediate the shank portion and the opposite end having a portion of reduced width, a contact for said opposite end, and said portions of reduced width being of uniform length whereby said contacts lie in echelon formation and project through openings in the broad side of the housing.

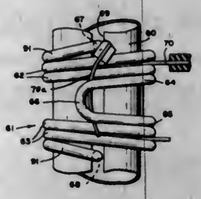
3,284,758
FOLD-OVER BLADES
Ferdinand Klumpp, Jr., Union, N.J., assignor to Heyman Manufacturing Company, Kenilworth, N.J., a corporation of New Jersey
Filed May 19, 1964, Ser. No. 368,461
7 Claims. (Cl. 339—195)



1. A fold-over electric contact blade comprising a first blade section; including a shank; and one end adapted to be attached to an electric wire, a second blade section; including a shank, each said shank each having at least one transverse ridge portion, said ridge portion being across the width of said shank at the cap line of said blade, and said first and second blade sections adapted to be folded with said ridge portions juxtaposed to limit the thinness of the finished blade.

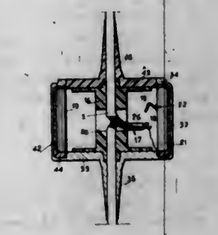
3,284,759
ELECTRICAL CONNECTOR AND CONNECTION MADE THEREWITH
Stephen N. Buchanan and Clark A. Mathis, Washington, D.C., assignors, by mesne assignments, to Stephen N. Buchanan
Filed May 25, 1964, Ser. No. 369,868
4 Claims. (Cl. 339—252)

1. An electrical connector, comprising a post member and at least one coil spring member, at least one of said members being of an electrically conductive material, said coil spring member having at least one first coil tightly wound around said post in one direction and at least one second coil tightly wound around said post in the other direction, and a third coil extending partly around said post in one direction and partly around said post in the other direction and having a part bent back on itself joining the parts of said third coil, said bent back part having at least the bent portion relatively freely related to said post, said post having a slot along the length thereof and the remote ends of the first and second coils on said spring being bent over and extending through said slot for engaging said spring and said post for preventing relative movement of the post and the spring in the direction around said post, whereby when an electrical conductor is placed under the bent back part of said



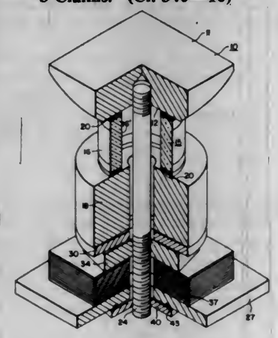
third coil and moved around said post member so that it slides along the parts of the third coil which extend in opposite directions and along the first and second coils, it is held in tight engagement between at least the parts of said third coil and said post by the radial inward forces exerted by the parts of the coil on said post and by the frictional force existing between the post, the coil parts, and the conductor.

3,284,760
HYDROPHONE MEMBERS
Guy Maës, Neuilly-sur-Seine, France, assignor to L'Electronique Appliquée, Paris, France
Filed Feb. 3, 1964, Ser. No. 341,929
Claims priority, application France, Feb. 5, 1963, 923,762, Patent 1,355,675
3 Claims. (Cl. 340—10)



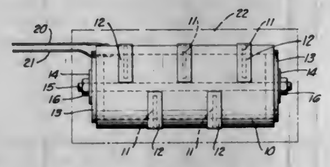
1. A piezoelectric hydrophone for anti-echo submarine listening comprising in combination:
(a) a hollow cylinder of piezoelectric material having inner and outer electrodes thereon;
(b) a rigid hollow spool-shaped member positioned coaxially within said cylinder and spaced radially inwardly thereof, the flanges of said spool lying in substantially the same planes as the end faces of said cylinder, said spool further including a central transverse bore therethrough;
(c) a pair of substantially disk-shaped apertured elastomeric members overlying opposite ends of said spool and said cylinder, and including outwardly axially-extending tubular portions concentric with said apertures and cylindrical portions enclosing said cylinder in water-tight relation and terminating in radially inwardly extending flanges;
(d) and an electrical cable extending through said disk-shaped members and said spool and connected to said electrodes through said transverse bore.

3,284,761
TRANSDUCER
George R. Douglas, Wilkinsburg, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 18, 1964, Ser. No. 390,290
8 Claims. (Cl. 340—10)



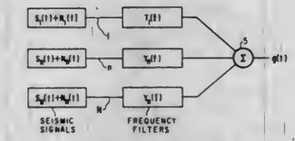
5. A transducer comprising:
a head member for radiating and receiving sonic energy;
a reaction mass member;
driving means interposed between and coupled to said head and reaction mass members;
a stress bolt member affixed to said head member and extending through said driving means and reaction mass member;
a spring member;
a locking member radially extending from said stress bolt;
said spring member being interposed between said locking member and said reaction mass;
said locking member in conjunction with said stress bolt exerting a stressing force on said driving means; and
a plurality of sheets of paper located behind said locking member for resiliently transmitting any static force exerted thereby to a mounting member.

3,284,762
MECHANICAL-TO-ELECTRICAL TRANSDUCER
Harry W. Kompanek, 153 Rametto Road, Santa Barbara, Calif.
Filed Mar. 26, 1965, Ser. No. 443,017
7 Claims. (Cl. 340—11)



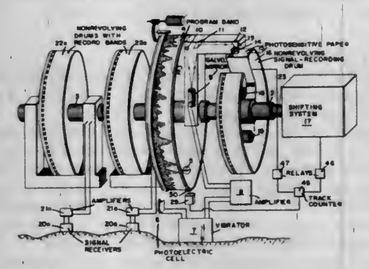
1. A mechanical-to-electrical transducer comprising a tubular piece of material which changes dimension when electrically excited and which has hoop and length vibration modes, said piece having at least one slot through the wall thereof and disposed transverse to one of said vibration modes substantially preventing vibration of the piece in said one mode.

3,284,763
MULTI-POINT, MULTI-CHANNEL LINEAR PROCESSING OF SEISMIC DATA
John P. Burg and William A. Schneider, Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Oct. 30, 1962, Ser. No. 234,191
16 Claims. (Cl. 340—15.5)



1. A linear processor for seismological and seismic prospecting data comprising a plurality of seismic traces, summation means, and means for coupling said traces to said summation means, said last means including means for applying to at least two of said traces different weighting and time delay factors as a function of desired signal frequency and which are dependent upon the noise character in at least one of said traces not included in said two of said traces, whereby said processor synthesizes a velocity filter.

3,284,764
DEVICE FOR RECORDING SEQUENTIAL TRAINS OF VIBRATIONS AFTER PASSAGE THROUGH AN INTERVENING MEDIUM
Jacques Cholet, Rueil-Malmaison, France, assignor of one-half to Institut Francais du Petrole, des Carburants et Lubrifiants, and of one-half to Compagnie Generale de Geophysique, Paris, France
Filed July 8, 1963, Ser. No. 293,363
Claims priority, application France, July 16, 1962, 904,139
11 Claims. (Cl. 340—15.5)

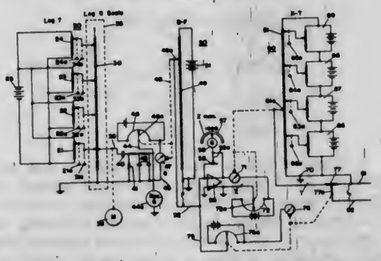


1. A device for controlling the production of signals and their recording after being passed through an intervening medium, said device comprising in combination a revolving program-bearing drum rotated at constant speed by a motor, means for reading said program and producing electric signals in conformity therewith, a vibration generator for transmitting to said intervening medium vibrations corresponding to said electric signals, means for recording the electric signals on a record band borne by a non-revolving drum, optical means for recording on bands borne by other non-revolving drums the vibrations after their passage through said medium, all of said drums being mounted on a common axis and said optical means being movable on said non-revolving drums about the same axis and driven simultaneously with the program-bearing drum, and means for shifting said non-revolving drums in unison along their common axis by a distance corresponding to the width of one of the tracks on the bands after completion of the record on said track.

3,284,765
APPARATUS FOR ESTABLISHING A COMMON DATUM PLANE

Robert H. Bratton and Albert W. Musgrave, Dallas, Tex., assignors to Mobil Oil Corporation, a corporation of New York

Filed Sept. 3, 1963, Ser. No. 306,163
4 Claims. (Cl. 340—15.5)



1. Apparatus for establishing a common datum plane for the several traces of a seismogram based upon the arrival times T of seismic energy at one or more of a plurality of detectors respectively corresponding in number to said traces, said detectors being spaced at varying horizontal distances x from said source of seismic energy, comprising

a first function generator for generating a first electrical signal which varies in accordance with the relationship between log x and log T,

a differentiator, said electrical signal being applied to said differentiator to produce a second electric signal representative of the rate of change of the electrical signal applied thereto,

a second function generator, said second electrical signal being applied to said second function generator for producing a third electrical signal related to said second electrical signal by $B=1-1/n$ and

$$F-2n\int_0^{\pi/2}\sin^n\theta d\theta$$

where B represents said second electrical signal, F represents said third electrical signal and n is a number between 1 and infinity,

a multiplier for multiplying said third electrical signal by a fourth electrical signal proportional to the distance selected for location of said datum plane below the earth's surface to obtain a fifth electrical signal proportional to the distance from said source of seismic energy for the travel of said seismic energy to said depth selected for said datum plane,

a third function generator for producing a sixth electrical signal proportional to the magnitude of said fifth electrical signal in accordance with the relationship between x and T, and

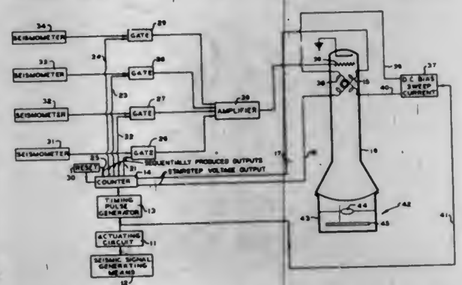
a divider for dividing said sixth electrical signal by said third electrical signal to obtain an output corresponding to the correction to be applied to seismic data to bring said data to said datum plane.

3,284,766
SIMULTANEOUS VARIABLE DENSITY RECORDING SYSTEM

Dan G. Sterry, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Sept. 23, 1963, Ser. No. 310,725
4 Claims. (Cl. 340—15.5)

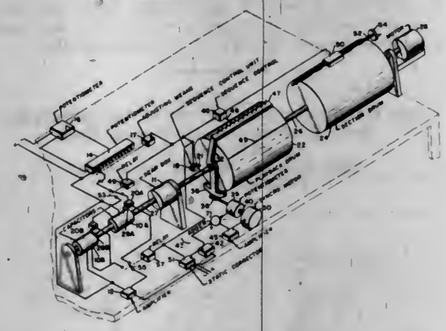
4. A method of producing a visual variable density record of a plurality of seismic signals comprising imparting vibrations to the medium under investigation at a first location; detecting reflected vibrations at a plurality of second locations spaced from said first location and producing a plurality of seismic signals, each being representative of the reflected vibrations detected at a respective one of said plurality of second locations; establishing a plurality of timing pulses; establishing a voltage which increases in amplitude in a stair step fashion responsive to the occurrence of one of said timing pulses; applying said voltage to the Y deflection input of an oscilloscope; sequentially sampling each of said plurality of seismic signals and applying the sampled values thus obtained to the grid of said oscilloscope, each sampling being responsive to the occurrence of a respective predetermined number of said plurality of timing pulses; applying a sweep signal to the X input of said oscilloscope; and photographically recording the image on the screen of said oscilloscope; the frequency of the occurrence of the timing pulses being sufficiently high that the highest frequency of interest in the seismic signals will be sampled several times during each cycle thereof.



3,284,767
APPARATUS FOR MAKING DYNAMIC CORRECTIONS TO SEISMOGRAMS

Kay N. Burns, Tulsa, Okla., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware

Original application Apr. 30, 1959, Ser. No. 809,934, now Patent No. 3,134,958, dated May 26, 1964. Divided and this application Mar. 2, 1964, Ser. No. 348,625
5 Claims. (Cl. 340—15.5)



1. A system for reproducing and correcting seismic signals previously recorded on a reproducible record medium, comprising:

seismic trace reproducing means including a reproducing head for reproducing recorded traces as electrical signals and transport means for the reproducible record medium for operatively positioning the record medium relative to the reproducing head and for moving said medium relative to said head;

variable area capacitor means;

charging means for placing a charge on said capacitor means representative of distance of a seismic transducer from a seismic source;

means connected to said capacitor means for isolating said capacitor means from said charging means after it has been charged thereby;

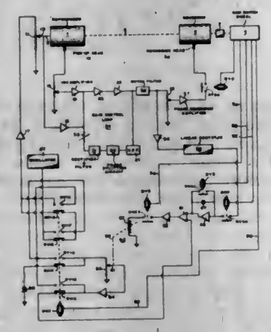
means connected to said reproducing means for varying the area between the plates of said capacitor means in accordance with time as said reproducing head reproduces traces on said record medium; and

means connected to said reproducing head and to said capacitor means for adjusting the relative position of said reproducing head with respect to the record medium transport means in accordance with variations in the voltage across said capacitor means.

3,284,768
NORMALIZING A SEISMOGRAM DATA TRACE

Robert A. Newton and Harry R. Espey, Houston, Tex., assignors, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware

Filed May 6, 1964, Ser. No. 365,296
3 Claims. (Cl. 340—15.5)



1. Apparatus for normalizing a reproducible seismogram data trace comprising:

reproducing means having a pickup head, for reproducing a data trace as an electrical output signal through first and second consecutve reproduction cycles;

recording means having a recording head for recording as a data trace an electrical signal coupled thereto;

an amplifying channel coupling said reproducing means to said recording head including variable gain amplifier means for amplifying the electrical output signal from said reproducing means, the gain of said variable gain amplifier means being controlled in accordance with the amplitude of a control electrical signal coupled thereto;

integrating circuit means for producing an output signal indicative of the time integral of the absolute amplitude of an input signal thereto;

a difference amplifier having first and second input circuits and an output circuit, adapted to produce a signal in said output circuit thereof having magnitude and polarity indicative of the magnitude and polarity of the difference of the amplitudes of the signals applied to said first and second input circuits thereof;

a potentiometer having a variable tap;

servo means for connection to said difference amplifier, connected to said tap for moving said tap until zero differential voltage is applied to said difference amplifier;

coupling circuit means for coupling said variable tap to said difference amplifier second input circuit;

a reference voltage source;

a control signal source; and

means connected to said reproducing means, to said coupling circuit means, to said control signal source, to said reference voltage source, and to said integrating circuit for

connecting said integrating circuit to the output of said variable gain amplifier means during said first reproduction cycles of said reproducing means,

connecting said reference voltage source across said potentiometer on first reproduction cycles of said reproducing means,

connecting said control signal source across said potentiometer when said potentiometer is not connected to said reference voltage source,

connecting said potentiometer tap to said variable gain amplifier means on second reproduction cycles of said reproducing means for controlling the gain thereof,

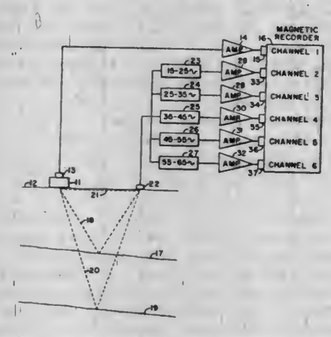
momentarily connecting said servo means to the output of said difference amplifier at the beginning of each reproduction cycle of said reproducing means, and

resetting said integrating means to a reference level at the beginning of each of said first reproduction cycle thereof.

3,284,769
RECORDING METHOD FOR FM CONTINUOUS WAVES

Jesse D. Skelton, Houston, Tex., assignor to Esso Production Research Company, a corporation of Delaware

Continuation of application Ser. No. 795,233, Feb. 24, 1959. This application May 25, 1965, Ser. No. 461,599
1 Claim. (Cl. 340—15.5)



A seismic prospecting method which comprises:

(a) transmitting a frequency modulated seismic signal into the earth at a point near the earth's surface, said signal being non-repetitive over a time interval greater than that required for seismic wave energy to travel from said point to a remote subsurface stratum and return to the earth's surface;

(b) generating an electrical signal corresponding to seismic energy returning to a point near the earth's surface from subsurface strata in response to said frequency modulated seismic signal;

(c) resolving said electrical signal, before any amplification of said signal, into a plurality of electrical

transients falling within predetermined frequency bands within the seismic frequency range;

(d) separately amplifying and recording said electrical transients;

(e) thereafter reproducing the recorded electrical transients in a delayed time sequence corresponding to the time sequence pattern of said frequency modulated seismic signal;

(f) rectifying the delayed signals; and

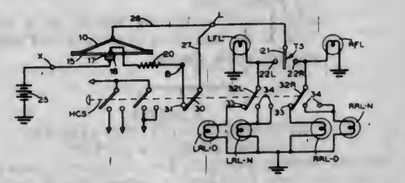
(g) combining the rectified signals to produce a composite signal.

3,284,770

AUTOMOTIVE VEHICLE TURN SIGNALLING SYSTEM WITH VARIABLE CURRENT DRAIN AND CONSTANT FLASHING RATE

Arthur F. Bleiweiss, New York, George Colombo, East Rockaway, and John B. Dickson, Kew Gardens, N.Y., assignors to Lehigh Valley Industries, Inc., New York, N.Y., a corporation of Delaware

Filed May 13, 1964, Ser. No. 367,142
10 Claims. (Cl. 340—81)



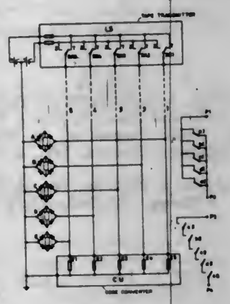
1. An automotive vehicle turn signal system comprising, in combination, a source of potential; signal lamp means selectively operable at a relatively high intensity for daytime use and at a relatively low intensity for nighttime use; selector means operable, responsive to conditioning of the vehicle for daytime operation, to select said lamp means for operation at said relatively high intensity and, responsive to conditioning of the vehicle for nighttime operation, to select said lamp means for operation at such relatively low intensity; a cyclically operable thermomotive circuit breaker having an input terminal connected to said source, and a load terminal; said circuit breaker including a snap action member and an electrically resistive thermally expansible operator secured to said member and controlling snapping thereof between two positions, said circuit breaker further including a pair of load circuit controlling contacts operated between open and closed positions responsive to such snapping of said member between said two positions; means connecting said contacts and said operator in series between said input and load terminals; a manually operable switch selectively operable to connect said lamp means to said load terminal; a bleeder resistor; a second switch; and means connecting said bleeder resistor and said second switch in series between said contacts and said load terminal to form a series circuit in parallel with said operator; said second switch being operable, responsive to conditioning of the vehicle for daytime operation, to a closed position and, responsive to conditioning of the vehicle for nighttime operation, to an open position; said bleeder resistor having an ohmic value sufficient to reduce the load current flow through said operator, during daytime operation of said signal lamp means, to a value substantially equal to the load current drawn by said signal lamp means during nighttime operation thereof.

3,284,771

CIRCUIT ARRANGEMENT FOR ASCERTAINING FAULTY TELEGRAPH SYMBOLS

Karlheinz Bochmann, Munich, and Kurt Fitznar, Munich-Solln, Germany, assignors to Siemens & Halske Aktiengesellschaft, Berlin and Munich, Germany, a corporation of Germany

Filed Mar. 7, 1961, Ser. No. 94,036
Claims priority, application Germany, Mar. 14, 1960, S 67,555
8 Claims. (Cl. 340—146.1)



5. In the art of transmitting telegraph symbols, particularly teleprinter symbols encoded in 5-element code, wherein the element polarities of each symbol are transmitted over parallel transmission means, a circuit arrangement for ascertaining errors occurring in the symbol transmission comprising a supervising device, in the form of gate circuit means, for each code element transmission means operatively connected to its associated transmission means for supervising the electrical conditions obtaining thereon, each such supervising device being constructed to produce a pre-determined operating condition during normal error-free symbol transmission over the respective transmission means associated therewith and to produce another operating condition responsive to deviation in the associated transmission means from normal operation by predetermined amounts, and means controlled by said supervising devices responsive to the respective existing conditions at such means for producing at the output thereof an error criterion responsive to deviation by predetermined values of electrical conditions on the associated transmission means resulting from erroneous symbol transmission.

3,284,772

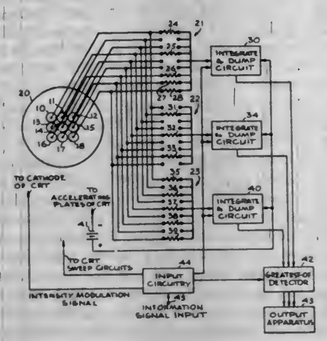
DATA CORRELATION APPARATUS EMPLOYING CATHODE-RAY TUBE INPUT AND VARIABLE RESISTANCE DATA STORAGE AND COMPARISON

Robert M. Stewart, Los Angeles, Calif., assignor to Space-General Corporation, Glendale, Calif.

Filed Nov. 22, 1961, Ser. No. 154,185
14 Claims. (Cl. 340—146.3)

1. A data correlation system wherein an unknown bit of data is identified by comparison with known bits of data, said system comprising: apparatus for projecting an electron-beam in a pattern that corresponds to an unknown bit of data; a memory in which the known bits of data are stored as variable conductivity patterns; means for applying the same positive potential to all of said variable conductivity patterns; electrically conductive means for coupling said variable-conductivity patterns in parallel to said projected electron-beam pattern to simultaneously compare said stored patterns with said projected pattern, whereby different amounts

of electrical current pass through said stored patterns with the maximum amount of current passing through whereat the conductivity pattern and the



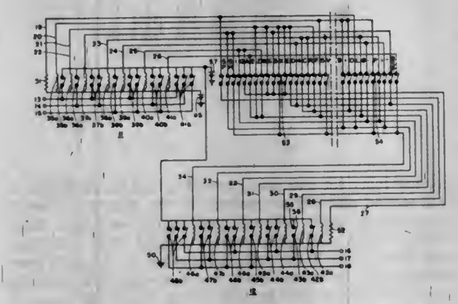
projected pattern are most identical; and output apparatus receptive of said electrical current for detecting the conductivity pattern whereat the maximum amount of electrical current is passed.

3,284,773

MAGNETIC CODING APPARATUS

Joseph John Saykay, Sea Cliff, N.Y., assignor to Fairchild Camera and Instrument Corporation, a corporation of Delaware

Filed Apr. 2, 1963, Ser. No. 270,055
6 Claims. (Cl. 340—147)



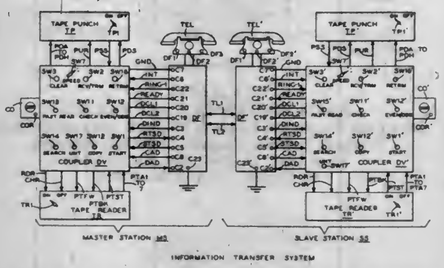
1. A coding apparatus comprising a plurality of banks of units, all but one of said units in each of said banks including at least one contact pair having a normal condition and actuating means responsive to the passage of current therethrough for temporarily changing the normal condition of the contact pairs included in that unit, the other unit in each of said banks comprising an impedance, a current-supply circuit for said actuating means, means for establishing a circuit including said current-supply circuit and any chosen pair of said actuating means and said impedances, each from a different one of said banks, a plurality of output conductors associated with each of said banks, a corresponding contact of all of said contact pairs being connected to said output conductors associated with their respective banks in accordance with a predetermined code, current-supply circuit for said output conductors, the other contact of all of said contact pairs being connected to said current-supply circuit for said output conductors.

3,284,774

INFORMATION TRANSFER SYSTEM

Eugene Leonard, Sands Point, Edward M. Richards, East Northport, Miles Skrivanek, Jr., Glenwood Landing, Edgar Wolf, Floral Park, and Marvin Shapiro, Huntington, N.Y., assignors to Digitronics Corporation, Albertson, N.Y., a corporation of Delaware

Filed Mar. 19, 1962, Ser. No. 180,435
18 Claims. (Cl. 340—172.5)



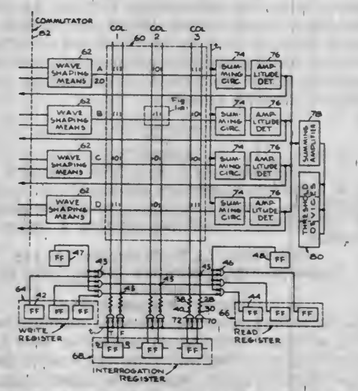
1. A system for serially transmitting units of information that are grouped into words wherein each word includes at least one end of word marker comprising means for transmitting each unit of information, means for generating a count signal for each unit of information which is transmitted, means for accumulating said count signals, means for generating a gating signal after a predetermined number of count signals have been accumulated, means for sensing for the end of word signals, and means for generating a block signal at the occurrence of the first end of word signal during the presence of the gating signal.

3,284,775

CONTENT ADDRESSABLE MEMORY

Ralph J. Koerner, Canoga Park, and Samuel Nissim, Pacific Palisades, Calif., assignors, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware

Filed Apr. 30, 1962, Ser. No. 191,212
12 Claims. (Cl. 340—172.5)



1. A memory system for storing and retrieving digital information comprising:

a memory cell matrix including a plurality of memory cells, arranged to define word locations, each of said memory cells capable of storing an information bit and including means responsive to the application of a binary interrogation signal thereto for providing a bit mismatch signal;

means for generating interrogation signals each representing a search word bit; means for simultaneously applying each of said interrogation signals to the corresponding cell of every word location;

a plurality of sense means each being associated with a different word location and being responsive to the absence of said bit mismatch signals provided by the cells thereof for generating a word match signal;

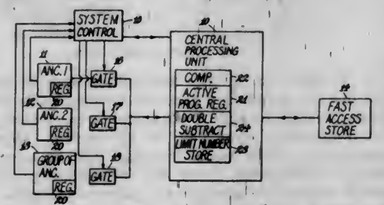
means for summing said word match signals; and

a plurality of threshold energizable devices connected to said summing means and responsive to the output thereof.

3,284,776
DATA PROCESSING APPARATUS

Arye Leib Freedman, London, England, assignor to Decca Limited, London, England, a British company

Filed Sept. 28, 1962, Ser. No. 226,855
11 Claims. (Cl. 340—172.5)



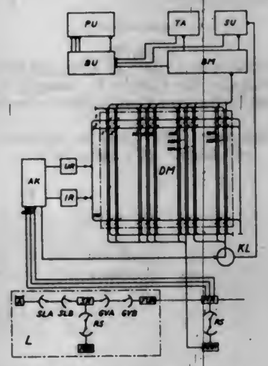
1. Data processing apparatus having a number of ancillary units and a central processing unit for carrying out two or more programmes on a time-sharing basis wherein there is provided a control register storing the number of the programme currently being performed by the central processing unit and wherein each ancillary unit is provided with a register storing the number of the programme currently associated with that ancillary unit and wherein comparator means are provided, operative when an instruction is about to be performed involving the transfer of information from one ancillary unit to another ancillary unit or the transfer of information to or from the central processing unit, which comparator means compare the numbers in the registers of the ancillary units between which the information is to be transferred or the numbers in the control register and the ancillary register if information is to be transferred to or from the central processing unit, said comparator means being arranged to inhibit the transfer of information unless the compared numbers agree.

3,284,777
MESSAGE ACCOUNTING DEVICE

Per A. Carlstrom, Hagersten, and Karl G. G. V. Redelius, Sollentuna, Sweden, assignors to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden

Filed Nov. 13, 1962, Ser. No. 237,145
Claims priority, application Sweden, Nov. 16, 1961, 11,393/61
1 Claim. (Cl. 340—172.5)

An accounting device for automatic telephone exchanges which comprise a number of connecting relay sets each for connecting a calling subscriber with a called subscriber, said accounting device including a register connected to said connecting relay set during at least part of the duration of the call and recording the numbers of the calling and called subscribers, an accounting memory unit having a plurality of memory elements arranged in rows and columns and having row conductors and column conductors, each row corresponding to a definite connecting relay set, first current supplying means for supplying to an arbitrary row conductor a current which together with a current through a column conductor associated to a memory element brings said memory element from one condition to another condition and second current supplying means supplying to said row conductors a current sufficient to switch said memory elements from said other condition to said one condition so as to obtain a signal on column conductors associated with the memory elements switched, a selecting circuit for selecting one of said rows and for connecting the same to said first or said second current supplying means, means in said register for supplying a current to a first plurality of column conductors representing the calling and the called subscriber number in code form, a clock device for supplying a current to a second plurality of column conductors representing time in code form, first means in said connecting relay set operated upon the recording of said calling and called subscriber number in said register for operating said selecting circuit to connect said first current supplying means to the row conductor associated with the respective connecting relay set, the memory elements which have their column conductors energized by the register being brought from said one condition to said other condition, second means in said connecting relay set operated upon the answer of the called subscriber for operating said selecting circuit to connect said first current supplying means to the row conductor associated with the respective con-

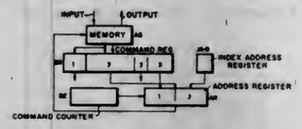


necting relay set and for connecting said clock device to said second plurality of conductors, the memory elements which have their column conductors energized being brought from said one condition to said other condition, and third means in the connecting relay set operated upon terminating the conversation for operating said selecting circuit to connect said second current supplying means to the row conductor associated with the respective connecting relay set so as to produce on the column conductors associated with the switched memory elements signal information concerning the calling and the called subscriber number and the beginning time of the conversation, a treating memory unit having memory elements each corresponding to a column conductor for recording said signal information obtained from said column conductors, clock switching means operated upon operation of said second current supplying means and connecting said clock unit to a third plurality of conductors representing the time in code, a subtracting device supplied with the beginning time information from said treating memory unit and the terminating time information from said clock unit to define the duration of the conversation, a tariff device defining on the basis of the calling and called number the cost of the conversation per time unit, and means for recording charging tickets stating the number of at least the calling subscriber, the cost per time unit, and the length of the conversation time.

3,284,778
PROCESSOR SYSTEMS WITH INDEX REGISTERS FOR ADDRESS MODIFICATION IN DIGITAL COMPUTERS

Heinz Trauboth, Groesshesselohe, near Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft, Munich, Germany, a corporation of Germany

Filed Feb. 28, 1963, Ser. No. 261,597
8 Claims. (Cl. 340—172.5)

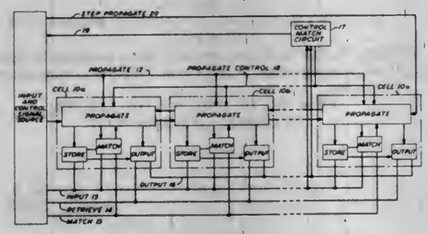


1. A processor system with index registers for modifying the address section of command words for program-controlled digital computers, said processor system comprising a memory having memory cells of which a chosen number serve as index registers, a command register connected to said memory and having an operation-code portion and an address portion and an additional portion, said additional portion having a given number (m) of the total (n) digit positions in the address of said respective index-register cells of said memory, and an index address register apart from said memory and having the remaining number ($m-n$) of digit positions.

3,284,779
ASSOCIATIVE MEMORY INCLUDING MEANS FOR RETRIEVING ONE OF A PLURALITY OF IDENTICAL STORED WORDS

Chi-Yuan Lee, Red Bank, and Marvin C. Paull, Matawan, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 9, 1963, Ser. No. 271,759
6 Claims. (Cl. 340—172.5)

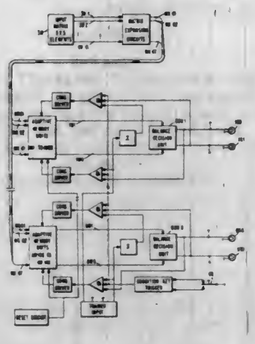


1. A memory comprising a plurality of cells connected in series, means for storing a distinct data symbol in a randomly located plurality of said cells interspersed among cells storing other data symbols, and means for retrieving said distinct data symbol from a single one of said randomly located plurality of cells comprising means in each cell for comparing the stored data symbol with a comparison signal applied simultaneously to each of said cells, means responsive to a match in one cell for activating another cell, means for applying a propagate signal to a predetermined one of said cells, means in each cell for transmitting said propagate signal through adjacent inactive cells, means for deactivating all cells other than the active cell receiving the propagate signal, and means in said remaining active cell responsive to the simultaneous application of a retrieval signal to each of said cells for reading out the stored data symbol.

3,284,780
ADAPTIVE LOGIC SYSTEM

Genung L. Clapper, Vestal, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 19, 1963, Ser. No. 331,832
13 Claims. (Cl. 340—172.5)



1. An input expansion apparatus for an adaptive logic system comprising, in combination,

(a) a plurality of input circuits on which input signals are provided, said plurality of input circuits constituting an entire input field which is divided into a plurality of sub-fields;

(b) combinatorial means having input and output circuits for combining all combinations of signals supplied thereto and providing a plurality of output signals indicative of each possible combination of inputs supplied thereto, one said combinatorial means being provided for each of said sub-fields; and

(c) means for connecting each said combinatorial means to its associated sub-field input circuits.

11. An adaptive logic system comprising, in combination,

(a) a plurality of metastable memory units having a plurality of stable conditions on each side of a neutral condition, each said memory unit having two output circuits, the output signals on said circuits being balanced when said memory unit is in its neutral condition and unbalanced in one direction or the other when said unit is displaced to one side or the other of said neutral condition;

(b) input means connected to said memory units for setting said units in selected conditions;

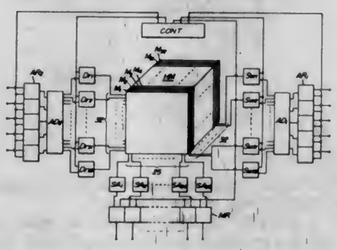
(c) a pair of memory output signal lines connected to the output circuits of all of said memory units and having outputs thereon representative of the summed outputs of all of said memory units, and indicative of the direction of unbalance of the sum of all of said units;

(d) balance detection means connected to said output signal lines and responsive to signals on said lines to provide a first output when the signals on said memory output lines are equal, a second output when the signals on said memory output lines are unbalanced in a first relation, and a third output when the signals on said memory output lines are unbalanced in a second relation;

(e) conditioning means for controlling the conditioning of said memory units to selected conditions in response to input signals, said conditioning means being controlled by said balance detection means to condition said memory units in a direction to displace said units from the condition indicated by said balance detection unit; and

(f) training means settable to selected conditions representing desired outputs, said training means governing said conditioning means to render said conditioning means responsive to govern said memory units when a variance exists between the desired output as selected by said training means and the actual output of said memory units as indicated by said balance detecting means.

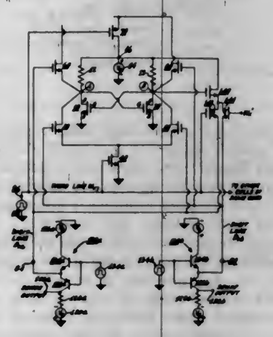
3,284,781
SEMI-PERMANENT MEMORY DEVICE
Shigeru Takahashi, Tokyo, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed July 8, 1963, Ser. No. 293,336
Claims priority, application Japan, July 10, 1962, 37/28,308
2 Claims. (Cl. 340—173)



1. A semi-fixed memory device comprising a plurality of unit memory boards each composed of a pair of printed wiring boards, one of said printed wiring boards having a plurality of digit lines and the other thereof having a plurality of printed word driving lines, said digit lines and said word driving lines being disposed relative to each other at substantially right angle and said word driving lines being provided with a plurality of loops selectively cut to form either a loop portion or a short-circuiting line strip, shielding means provided between said unit memory boards, driving circuit means operatively connected with respective word driving lines, first and second address information means including address registers and address decoders, said driving circuit means being operatively connected with one of said address information means, switching circuit means operatively connecting the other address information means with the word driving lines to enable the driving circuit means to drive the word driving line selected by said switching means, and reading amplifier means operatively connected to said digit lines.

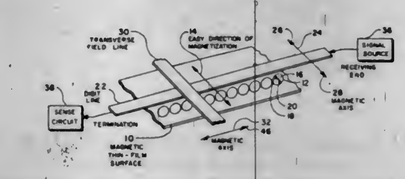
3,284,782
MEMORY STORAGE SYSTEM
Joseph R. Burns, Trenton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Feb. 16, 1966, Ser. No. 527,788
12 Claims. (Cl. 340—173)

1. The combination comprising:
first and second circuit points;
a plurality of transistors, each transistor having an input electrode and an output electrode defining the ends of a conduction path through the transistor, and a control electrode;
means connecting the input electrodes of first and second ones of said transistors to the first circuit point;
first and second impedance means each connected in a separate circuit between the second circuit point and the output electrode of a different one of the first and second transistors;
means cross-coupling the output electrodes of the first and second transistors to the control electrodes of the second and first transistors, respectively;
a third transistor having its conduction path connected between the output electrode of the first transistor and said first circuit point by way of the conduction path of a fourth one of the transistors;
a fifth one of the transistors having its conduction path connected between the output electrode of the second transistor and the first circuit point by way of the conduction path of the fourth transistor;



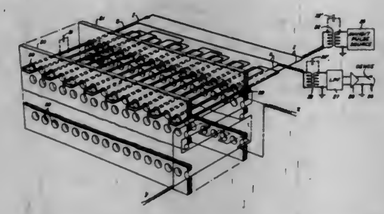
a sixth transistor having its conduction path connected between the output electrode of the first transistor and the second circuit point by way of the conduction path of a seventh one of the transistors; and
an eighth one of the transistors having its conduction path connected between the output electrode of the second transistor and said second circuit point by way of the conduction path of the seventh transistor.

3,284,783
MAGNETIC RECORDING ON A THIN-FILM SURFACE
William W. Davis, Minneapolis, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed July 10, 1961, Ser. No. 122,799
16 Claims. (Cl. 340—174)



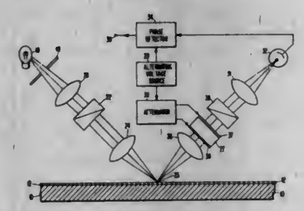
12. A magnetic storage device including a thin-ferromagnetic film of ribbon form exhibiting uniaxial anisotropy such that it has a preferred axis of remanent magnetization aligned along the width dimension, characterized by a plurality of contiguous discrete magnetically saturable areas along the length dimension, each of said discrete areas including a magnetization vector selectively settable to stable states in opposite directions substantially parallel to said preferred axis, and conducting means having a predetermined velocity of propagation and in an operative relationship with said film for receiving signals at one end and for propagating said signals toward a termination end.

3,284,784
NOISE REDUCTION CIRCUIT
Philip A. Harding, Middletown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 15, 1962, Ser. No. 179,870
18 Claims. (Cl. 340—174)



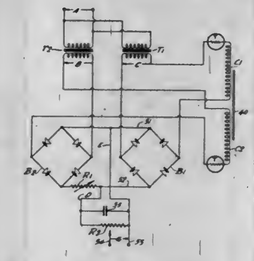
1. An electric signal translation circuit comprising
a current pulse source having two output terminals one of which is grounded,
a transformer having primary and secondary windings and connected on its primary side to said terminals,
a first conductor connected across said secondary winding with no direct connection to ground,
a second conductor connected in an electric circuit loop which is isolated from ground,
output connections, one of which is grounded,
means coupling said second conductor to said connections,
said first and second conductors each including first and second pluralities of segments,
said first conductor having a current of a particular polarity applied thereto from said source,
said first and second segments of said first conductor being substantially parallel to, and coupled by distributed capacity to, corresponding first and second segments of said second conductor, respectively, to complete a leakage current path from said source through said conductors, said output connections, ground, and back to said source, and
said first segments of said second conductor being connected in series-opposing relationship in such conductor with respect to said second segments thereof for current coupled to such conductor by said capacity.

3,284,785
MAGNETO-OPTIC READOUT DETECTOR
Otto Kornei, Monte Sereno, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed July 16, 1963, Ser. No. 295,439
6 Claims. (Cl. 340—174.1)



1. Magnetic record reproducing apparatus comprising,
a specularly reflective magnetic record having discrete magnetized areas thereon representative of digital information,
means for beaming light onto said magnetic record,
means for moving said magnetic record with respect to said light beam whereby said discrete magnetized areas pass by the point of impingement of said light beam upon said record,
light polarizing means interposed in the path of said impinging light,
a photoresponsive device arranged to receive light reflected from said discrete areas,
light analyzing means interposed in the path of said reflected light,
means interposed in the path of said light between said polarizer and said analyzer for imparting periodic rotation to the polarization of said light beam, and
phase detecting means coupled to said photoresponsive device for producing an electric output signal corresponding to the magnetization of said discrete magnetized areas as they pass beneath said point of impingement of said light beam.

3,284,786
ELECTRIC MOTION OR POSITION TRANSMITTER SYSTEM AND METHOD OF ADJUSTING THE SAME
Le Roy S. Harris, Huntingdon Valley, Pa., assignor to Schutte and Koerting Company, Cornwells Heights, Pa., a corporation of Pennsylvania
Continuation of abandoned application Ser. No. 190,171, Apr. 25, 1962. This application Aug. 3, 1965, Ser. No. 476,790
1 Claim. (Cl. 340—195)



Apparatus for producing electrical signals indicative of the rate of flow of a fluid, comprising:
a movable mechanical member the displacement of which from a reference position thereof is nonlinearly related to the rate of flow of a fluid;
an elongated armature member having magnetic material at least at its opposite ends;
a first coil and a substantially-identical second coil each surrounding said armature member and each axially adjustable in position with respect to the other of said coils and with respect to said armature member;
means for moving said armature member through said coils from an initial position thereof in response to displacement of said mechanical member;
a first rectifier bridge having a pair of input terminals and a pair of output terminals;
a second rectifier bridge having a pair of input terminals and a pair of output terminals;
a source of alternating voltage;
means for a applying said alternating voltage in constant amplitude to said first coil and said pair of input terminals of said first bridge in series;
means for applying said alternating voltage in constant amplitude to said second coil and said pair of input terminals of said second bridge in series;

first means connecting the positive output terminal of said first bridge to the negative output terminal of said second bridge;

second means connecting the negative output terminal of said first bridge to the positive output terminal of said second bridge;

a bridge load impedance connected between said first and second connecting means, and including a resistive element connected between said first and second connecting means and a filter capacitor for smoothing variations in voltage across said load impedance;

one of said first connecting means comprising a variable resistor connected between said load impedance and one of said bridges for controllably imbalancing the current components produced in said load impedance by said bridges;

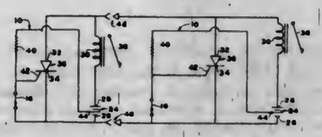
said load impedance comprising a pair of output terminals and a variable impedance element for controlling the fraction of the voltage developed across said load impedance which is applied to said last-named output terminals;

the distance between opposite ends of said coils being at least as great as the length of said armature member; and

adjustable means for enabling adjustment of the positions of said coils relative to the travel of said armature member so that the ends of said armature member remain within said coils in response to said displacement of said mechanical member;

the adjustment of said variable resistor, of the relative positions of said coils, and of said armature member travel being such that said voltage across said bridge load impedance varies substantially proportionally to said displacement of said mechanical member.

3,284,787
MULTI-PURPOSE ALARM SYSTEM
Robert H. Voigt and Jack D. Osborne, Milford, Mich., assignors to Aseco, Incorporated, Milford, Mich., a corporation of Michigan
Filed Feb. 24, 1964, Ser. No. 346,708
11 Claims. (Cl. 340—227)



1. An alarm system comprising:

(a) a plurality of parallel connected alarm circuits each one of which comprises:

(1) a source of electrical direct current power,

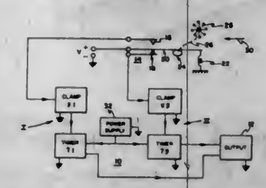
(2) alarm producing means in series with normally off solid state switching means across said source of direct current power, said solid state switching means including a control element and a controlled junction normally held in a non-conductive state as a result of a bias applied to the control element of said solid state switching means,

(3) control means including a plurality of normally low impedance elements in series in the control element bias circuit of said switching means so as to normally hold said controlled junction in a non-conductive state,

(4) whereby said switching means is turned on when the impedance of any one of said impedance elements in said control means increases above a predetermined value;

(b) said alarm circuits being connected in parallel so that when any one of said solid state switching means controlled junction is turned to a conductive state it causes all the alarm producing means to be activated.

3,284,788
FLOW RATE MONITORING SYSTEMS
James L. Hudson, Cranford, N.J., assignor to Elastic Stop Nut Corporation of America, Union, N.J., a corporation of New Jersey
Filed Feb. 17, 1964, Ser. No. 345,461
6 Claims. (Cl. 340—239)



1. A system for monitoring the rate of flow of a substance, said system comprising:

(a) first and second circuits, each of said first and second circuits comprising first and second clamp circuits and first and second timer circuits, respectively,

(b) a two-position switch having a movable contact,

(c) means to apply a source of voltage to said movable contact,

(d) means cooperatively engaged with said movable contact to actuate said switch from one of two positions to the other of said two positions at a frequency whose period is a function of the rate of flow of said substance,

(e) means connecting said first circuit to said switch to energize said first clamp circuit when said switch is in one of said two positions thereof,

(f) means connecting said second circuit to said switch to energize said second clamp circuit when said switch is in the other of said two positions thereof,

(g) means including a source of voltage to energize said first or said second timer circuit when said first or said second clamp circuit, respectively, is de-energized,

(h) said first and said second timer circuits comprising means to produce an output signal when energized for a predetermined period of time, and

(i) means connecting said first and said second timer circuits to said output means to apply said output signal thereto.

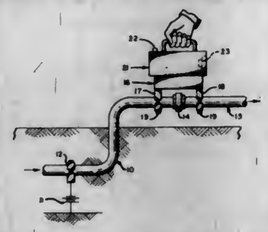
3,284,789
CATHODIC PROTECTION SYSTEM DETECTOR
Robert B. Fisher, El Monte, Calif., assignor to Tinker and Rasor, San Gabriel, Calif., a corporation of California
Filed Mar. 19, 1963, Ser. No. 266,301
13 Claims. (Cl. 340—249)

3. A monitoring apparatus for use with a system of pipelines, cables, or the like, buried in the earth and to which system a source of cathodic protection potential is applied for the cathodic protection of the system, said monitoring apparatus comprising:

an oscillator, and

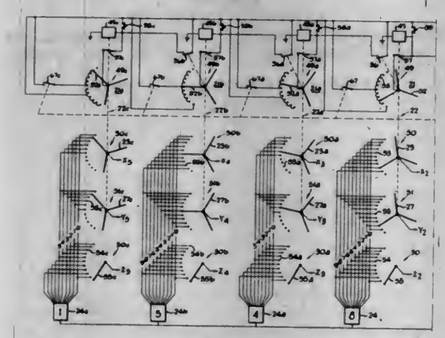
means for connecting the oscillator to a system to which a source of cathodic protection potential is applied for energization of the oscillator by the cathodic protection potential,

said oscillator oscillating with bias potentials supplied solely by the cathodic protection potential, said oscillator being operable when the cathodic protection potential is above a predetermined value higher than



a minimum desired potential and inoperative when the cathodic protection potential is below the predetermined value.

3,284,790
ELECTRICAL TIMING CIRCUIT
James Billy Nobles, 1540 Maple Ave., Northbrook, Ill.
Filed June 4, 1964, Ser. No. 372,487
8 Claims. (Cl. 340—309.4)



1. An electrical timing circuit comprising time base means for providing a series of electrical pulses, one for each predetermined time interval, read-out means having a plurality of inputs, the energization of each input causing the display of a digit corresponding to the energized input, switching means responsive to said pulses and having two levels of contacts, one in each level being closed for each pulse applied to said switching means, said contacts in each level being closed in sequence for successive pulses applied to said switching means, means connecting the inputs of each of said read-out means to said levels in reverse orders, and selector means selectively energizing one of said levels, thereby providing digital displays which are a function of time and said selected levels.

3,284,791
NEAR ALARM RECEIVER HAVING TIME DELAY OF DISCHARGE TYPE
Robert H. Voigt and Jack D. Osborne, Milford, Mich., assignors, by mesne assignments, to Aseco, Incorporated, a corporation of Michigan
Filed Mar. 25, 1963, Ser. No. 267,655
16 Claims. (Cl. 340—310)

1. In an alarm system having a source of electrical power and means selectively imposing a predetermined actuation signal thereon, a delayed action alarm device comprising,

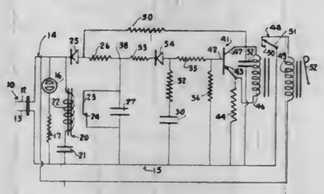
(a) an alarm circuit including switching means and means producing an audible alarm upon actuation of said switching means,

(b) energization means operable to actuate said switching means after a predetermined time interval has elapsed from initial receipt of said actuation signal and including an energizing circuit and a time delay means,

(c) said energizing circuit being operable to activate said time delay means only upon receipt of said predetermined actuation signal,

(d) said time delay means being operable to actuate said switching means upon the lapse of a predetermined time interval after being activated by said energizing circuit,

(e) said time delay means including a first capacitor, a second capacitor, a blocking diode coupling said capacitors, electrical power means normally maintaining said capacitors in a charged state, means discharging said capacitors at a predetermined rate upon said delay means being activated and means actuating said switching means when said capacitors have been discharged a predetermined amount, and



(f) wherein said time delay means further comprises,

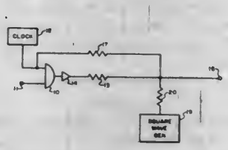
(1) said first capacitor connected in parallel with said discharging means whereby upon receipt of said actuation signal said first capacitor is immediately discharged,

(2) means electrically connecting said first capacitor and said second capacitor, said blocking diode being disposed in said connecting means,

(3) means delaying the discharge of said second capacitor, and

(4) a control circuit operably connected to said switching means and responsive to the delayed discharge of said second capacitor for actuating said switch when said second capacitor has been discharged a predetermined amount.

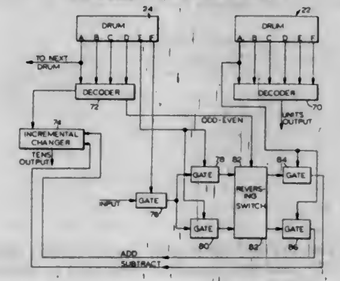
3,284,792
CODE CONVERSION CIRCUIT
Russell Wall, Long Island City, Walter Wolin, New City, and Art T. Arcand, Yorktown Heights, N.Y., assignors to General Precision, Inc., a corporation of Delaware
Filed Jan. 31, 1962, Ser. No. 170,103
8 Claims. (Cl. 340—347)



4. A circuit for converting a nonreturn-to-zero electric code to a return-to-zero electric code and for distinguishing between successive groups of predetermined bits comprising, a source of clock signals for supplying a single pulse during each bit time of the coded electric signal, coincident means for receiving the nonreturn-to-zero code and the clock pulses and for supplying a pulse

output coincident with said clock pulses whenever the code is at a 1 level, an amplifier for amplifying the output from said coincident means, means for alternately providing two different voltages each of which has a duration equal to a predetermined number of bits of said code, and means for summing the said two different voltages with the amplifier output and a portion of each clock pulse whereby the summed output provides a large amplitude pulse for each 1 bit in the code and smaller amplitude pulse for each 0 in the code and adjacent predetermined numbers of pulses constituting groups of pulses are voltage displaced from each other.

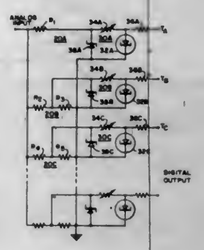
3,284,793
ANALOG TO BINARY CODED DECIMAL ENCODER
Edgar J. Smith, Verona, N.J., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Nov. 1, 1962, Ser. No. 234,707
7 Claims. (Cl. 340—347)



2. An analog to binary decimal encoder comprising first and second carriages mechanically interconnected so that said second carriage rotates once for every ten revolutions of said first carriage, a plurality of code tracks on said second carriage divided into a first group of code tracks for indicating decimal numbers from 0 to 9 in binary form and a second group of code tracks for indicating fractions of each of said decimal numbers in binary form, said first carriage having a plurality of code tracks thereon including at least a first group of code tracks for indicating decimal numbers from 0 to 9 in binary form, and means for reading out the binary numbers indicated by the code tracks on said carriages, said means including incremental changer means for indicating the binary number of said first group of code tracks on said second carriage, and circuit means connected to said incremental changer means for adding and subtracting one when necessary to compensate for transition errors in going from one number to the next, said circuit means being controlled by the fractional number indicated by said second group of code tracks on said second carriage and a signal from said first group of code tracks on said first carriage indicating whether the decimal number thereof is between 0 and 4 or 5 and 9.

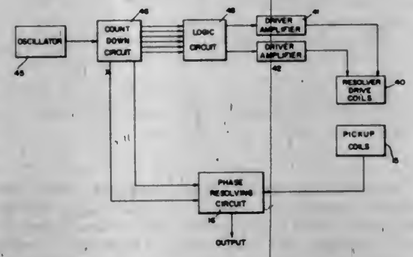
3,284,794
PARALLEL ANALOG TO DIGITAL CONVERTER
Lawrence M. Bean, Waterloo, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 6, 1963, Ser. No. 256,586
8 Claims. (Cl. 340—347)

1. An electronic analog to digital converter for converting an analog voltage into a digital representation, comprising, in combination: a plurality of voltage divider networks each for simultaneously receiving said analog voltage to provide a plurality of successively decreasing control voltages regardless of the value of said analog voltage; a plurality of threshold detectors, each responsive to a different one of said control voltages;



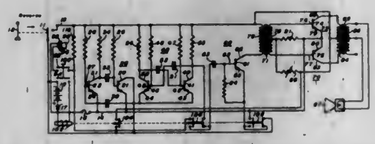
said threshold detectors each having substantially the same threshold level and operable to provide an output signal if its associated control voltage is above said threshold level.

3,284,795
ANGULAR RESOLVER
Kenneth Fertig, 120 Colborne Road, Brighton, Mass., and John F. Hendrickson, 51 Parsons St., West Newton, Mass.
Filed Mar. 31, 1964, Ser. No. 356,280
11 Claims. (Cl. 340—347)



2. An angle resolver comprising a first disc formed of electrically insulating material, a first coil printed on one surface of said first disc, said first coil having a predetermined number of turns, a second coil printed on the opposite surface of said first disc and fixed in space quadrature with said first coil, said second coil having the same number of turns as said first coil; a second disc formed of electrically insulating material, a third coil printed on one surface of said second disc, said third coil having the same number of turns as said first coil and a fourth coil printed on the opposite surface of said second disc in space quadrature with said third coil, said fourth coil having the same number of turns as said third coil, said first and said second discs being concentrically mounted and relatively rotatable with respect to one another, drive signal means for applying to said first coil a signal including a square wave component at a first predetermined frequency and for applying to said second coil a signal including a square wave at said same first predetermined frequency but displaced ninety electrical degrees in phase from said square wave applied to said first coil; phase detector means connected to one of said third and fourth coils and to said drive signal means for providing an output signal indicative of the difference in phase between the square wave component at said first predetermined frequency of said signals applied to said first and second coils and the signals of said first predetermined frequency on said third and fourth coils.

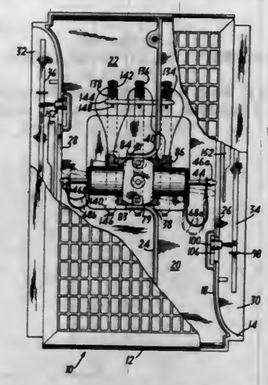
3,284,796
SOUND PRODUCER
Vincent S. Borsattino, 4160 Pierce St.; Chursel E. Marker, 793 Indiana St.; and Harold L. Morris, 1338 Morton St.; all of Gary, Ind.
Filed Oct. 30, 1961, Ser. No. 148,515
3 Claims. (Cl. 340—384)



1. An intermittent sound generator comprising in combination, a transistor switching circuit having means adapted to receive a constant direct current from a power source and provide an intermittent signal, said switching circuit including a first transistor normally conductive and a second transistor normally nonconductive, first capacitor means responsive to the first transistor and adapted to urge the second transistor into conductivity after a predetermined amount of time of conductivity of the first transistor, second capacitor means responsive to the second transistor and adapted to urge the first transistor into nonconductivity after a predetermined amount of time of conductivity of the second transistor, and resistor means positioned to return each of said transistors to their normal state after a predetermined amount of time, whereby said first transistor is alternately conducting and nonconducting, a tone generator coupled to said switching circuit having means adapted to generate an audio frequency tone when a signal is received by the tone generator from the switching circuit, driver means operably connected to said tone generator to amplify the tone generated, a microphone selectably connectable to said driver means, and means to disconnect the tone generator from the driver means when the microphone is connected thereto, power amplifying means operably connected to said driver means, and sound producing means adapted to broadcast the amplified tone operably connected to said amplifying means, whereby interrupted sound is produced from a constant direct current.

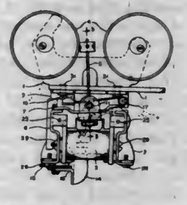
3,284,797
TWO-TONE DOOR CHIME
Kenneth E. Roswell, Fairfield, Conn., assignor to Edwards Company Inc., a corporation of Connecticut
Filed Mar. 25, 1963, Ser. No. 267,613
7 Claims. (Cl. 340—392)

1. A two-tone chime assembly comprising:
(a) a pair of spaced tone elements which vibrate when struck;
(b) a pair of resonating chambers positioned back to back, the first of said chambers having an opening positioned with respect to the first of the spaced tone elements to reinforce the sound produced by the vibrations of the first tone element and the second of said resonating chambers having an opening positioned with respect to the second of said spaced tone elements to reinforce the sound produced by the vibrations of the second tone element, said two chambers each having a second opening which is common to both chambers; and
(c) at least one solenoid actuated striking means positioned in said second opening in said two chambers, said striking means having portions which are closely juxtapositioned with respect to the sidewalls



of the second opening of the two chambers to substantially isolate the air in each of the chambers from the air in the other.

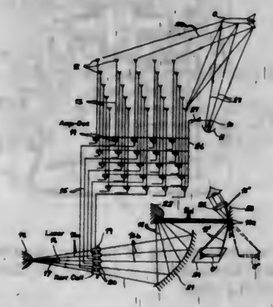
3,284,798
TELEPHONE RINGER
George L. Brown, Evanston, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Dec. 29, 1964, Ser. No. 421,804
3 Claims. (Cl. 340—397)



1. In an electromagnetic telephone ringer comprising a core having a coil winding mounted thereon; a pole piece secured to each end of said core and extending upward therefrom; a pair of armature mounting brackets; one of said armature mounting brackets mounted on the rear sides of said pole piece extensions and the other of said brackets mounted on the front sides of said pole piece extension; an armature; means for mounting said armature between said brackets with each end thereof positioned directly above the corresponding ends of said extensions of said pole pieces; a washer-shaped permanent magnet of a substantial thickness and having its magnetic poles established at the upper and lower flat surfaces thereof; a clapper rod mounted at one end to the center of said armature by means of a hole provided therein and protruding therethrough; said permanent magnet mounted over said protruding one end of said clapper rod and firmly held against the lower side of said armature by means of a retaining nut threaded on said one end, whereby said armature is polarized by said permanent magnet to assume a polarity corresponding to the polarity of the surface of said permanent magnet adjacent thereto; said coil winding, when excited, generating an alternating magnetic flux path including said core, said pole pieces and said polarized armature for controlling movement of said armature and said clapper rod; said polarized

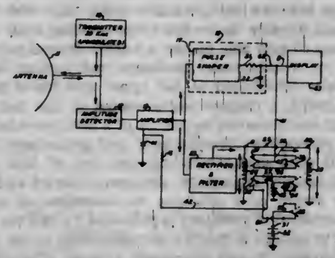
armature excluding said alternating magnetic flux path from said permanent magnet for prolonging the life thereof by stopping deterioration of the magnetic efficiency.

3,284,799
WAVE-FRONT-RECONSTRUCTION RADAR SYSTEM
Karl F. Ross, 5121 Post Road, Riverdale, N.Y.
Filed June 10, 1965, Ser. No. 462,913
7 Claims. (Cl. 343—6)



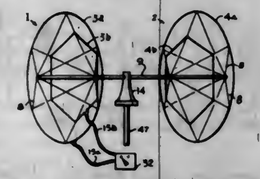
1. A radar system comprising an emitter of coherent high-frequency electromagnetic radiation; an array of receivers for echoes of said radiation spaced apart by less than the wavelength of said radiation; a source of a beam of coherent light; an array of electrooptical transducers disposed in the path of said beam for dividing the latter into a multiplicity of pencils of individually adjustable intensity, the disposition of said transducers being geometrically similar to that of said receivers; circuit means individually connecting the output of each of said receivers together with a reference output from said emitter to an input of a corresponding one of said transducers for controlling the intensity of the respective pencil; and projection means for directing said pencils onto a receiving surface with formation thereon of a pattern of light spots whose relative spacing is related to that of said receivers in substantially the same ratio as the wavelength of said light to that of said radiation whereby an image of an object reflecting said radiation is observable at an angle of view related to the angle of incidence of said echoes.

3,284,800
CONTINUOUS WAVE RADAR SYSTEM
Ole K. Nilsen, Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Apr. 15, 1965, Ser. No. 448,415
8 Claims. (Cl. 343—12)



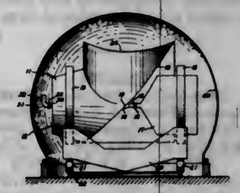
1. A radar system for measuring range between a system and a target in which range is not a constant comprising, a continuous wave transmitting means for radiating a continuous wave signal toward the target, means for receiving the signal reflected from the target, detector means coupled to said last mentioned means for detecting the Doppler signal, and means coupled to said detector means for counting the number of Doppler cycles during a predetermined change in the relative signal strength of the signal reflected from the target.

3,284,801
LARGE LOOP ANTENNA
John J. Bryant, 359 Hawthorn Ave., Glen Ellyn, Ill.
Filed Jan. 15, 1964, Ser. No. 337,821
5 Claims. (Cl. 343—743)



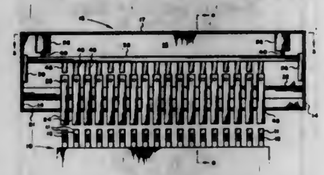
1. In a loop antenna comprising a slender, resilient wand wherein each portion thereof, tending to conform to a straight line, has substantially equal resistance to bending about any bending axis in a typical cross section thereof, means deflecting said wand substantially within the elastic limit thereof to form a non-self-sustaining loop; support means positioned substantially on the axis of said loop; thin flexible tensioned insulating members connected to said loop and extending in opposite directions from the plane of said loop to said support means for sustaining said loop; means for transferring radio frequency energy of substantially a resonent frequency in said loop to and from said loop and a radio frequency current device.

3,284,802
FOLDED HORN-REFLECTOR ANTENNA WHEREIN PRIMARY REFLECTOR IS NONREFLECTIVE AT PORTION WHERE SPECULAR REFLECTION TO FEED WOULD OTHERWISE OCCUR
Jens C. Dolling, Morris Plains, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 12, 1963, Ser. No. 322,826
6 Claims. (Cl. 343—782)



1. An antenna which comprises, a truncated feed horn, a mirror-like reflecting surface at the plane of truncation of said horn, a curved primary reflector spaced from said reflecting surface along the longitudinal axis of said feed horn, and aperture in said primary reflector at the intersection of the axis of said feed horn therewith whereby the effective apex of said horn and the focus of said primary reflector coincide at a point on the side of said primary reflector remote from said reflecting surface, an aperture in said mirror-like reflecting surface substantially on the axis of said horn, the aperture areas in said primary reflector an in said mirror-like reflecting surface being small as compared with the areas of said corresponding reflecting surfaces, and means coupled to said aperture in said mirror-like reflecting surface for dissipating energy incident on said aperture.

3,284,803
SHUTTERS FOR OSCILLOGRAPH RECORDERS
Joe W. Parris, Smyrna, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Sept. 16, 1964, Ser. No. 396,965
8 Claims. (Cl. 346—109)



1. For use in an oscillograph recorder of the type employing a number of optical galvanometers, apparatus comprising:

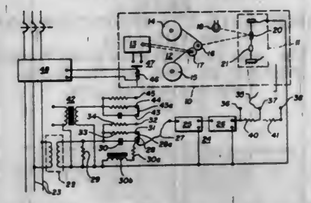
a shutter for each of a plurality of the optical galvanometers in the recorder, each of said shutters being individually movable to a first position in which the light path to the optical galvanometer with which that shutter is associated is not blocked and to a second position in which said light path is blocked;

retaining means operatively associated with each of said shutters to retain said shutters normally in said first position;

actuating means selectively movable into a first position or into a second position relative to said retaining means; and

preselecting means connected to said actuating means, said preselecting means causing certain of said retaining means to be displaced to cause the shutter means associated with said certain retaining means to be moved to said second position when said actuating means is moved to its said second position.

3,284,804
OSCILLOGRAPH CONTROL
Wayne E. Sell, Littleton, Colo., assignor to Hathaway Instruments Inc., Denver, Colo., a corporation of Colorado
Filed Jan. 27, 1965, Ser. No. 428,513
2 Claims. (Cl. 346—109)

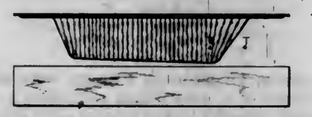


2. A system for recording transient wave phenomena in the output of a wave source comprising a recording oscillograph including a galvanometer and a light-sensitive recording apparatus, means including a time delay circuit for connecting said galvanometer to the wave source whereby said galvanometer is energized continuously by the source to vibrate therewith, said delay circuit comprising a plurality of equal impedance elements connected in series between input and output terminals each element consisting of a resistance and an inductance connected in parallel, a reference potential conductor, each of the connections between adjacent ones of said impedance elements being connected to said conductor through a respective capacitor, said inductances having center taps, each of said center taps being connected to said conductor through a respective capacitor, all of said capacitors having the same capacitance, two capacitors each of one-half the capacitance of said first mentioned capacitors and connected between a respective one of said terminals and said conductor, and means responsive to a predetermined transient condition of said source for starting said recording apparatus whereby said apparatus records continuously the condition of said source and those events which occurred at an interval of time prior to the starting of said apparatus.

DESIGNS

NOVEMBER 8, 1966

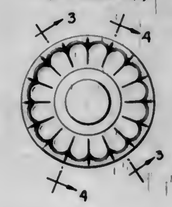
206,145
PLASTIC BATH TUB PROTECTOR UNIT OR THE LIKE
Abraham Yormack, 32—60 Harvest Road, Wantagh, N.Y.
Filed July 28, 1965, Ser. No. 86,328
Term of patent 14 years
(Cl. D4—4)



206,146
SHOESTRING KNOT RETAINER
Charles E. Hendershot, R.R. 4, Nashville, Ind.
Filed May 7, 1965, Ser. No. 85,169
Term of patent 3½ years
(Cl. D7—6)



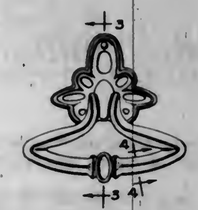
206,147
KNOB
La Verne E. Clayton, Rockford, Ill., assignor to Amerock Corporation, Rockford, Ill., a corporation of Illinois
Filed Jan. 17, 1966, Ser. No. 653
Term of patent 14 years
(Cl. D10—8)



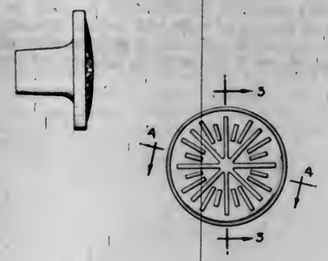
206,148
PULL
La Verne E. Clayton, Rockford, Ill., assignor to Amerock Corporation, Rockford, Ill., a corporation of Illinois
Filed Feb. 1, 1966, Ser. No. 827
Term of patent 14 years
(Cl. D10—8)



206,149
PULL
La Verne E. Clayton, Rockford, Ill., assignor to Amerock Corporation, Rockford, Ill., a corporation of Illinois
Filed Feb. 1, 1966, Ser. No. 847
Term of patent 14 years
(Cl. D10—8)



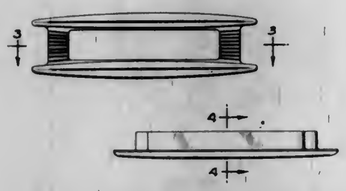
206,150
KNOB
La Verne E. Clayton, Rockford, Ill., assignor to Amerock Corporation, Rockford, Ill., a corporation of Illinois
Filed Feb. 1, 1966, Ser. No. 848
Term of patent 14 years
(Cl. D10—8)



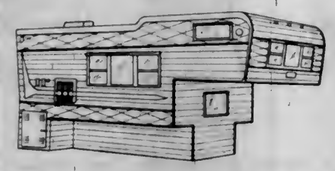
206,151
PULL
La Verne E. Clayton, Rockford, Ill., assignor to Amerock Corporation, Rockford, Ill., a corporation of Illinois
Filed Feb. 1, 1966, Ser. No. 879
Term of patent 14 years
(Cl. D10—8)



206,152
PULL
John R. Morgan, Wheeling, Ill., assignor to Amerock Corporation, Rockford, Ill., a corporation of Illinois
Filed Feb. 2, 1966, Ser. No. 885
Term of patent 14 years
(Cl. D10—8)



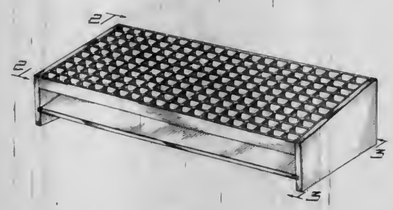
206,153
PICK-UP CAMPER
Roberta L. Dexter, R.R. 2, Bristol, Ind.
Filed Nov. 12, 1965, Ser. No. 88,076
Term of patent 14 years
(Cl. D14—3)



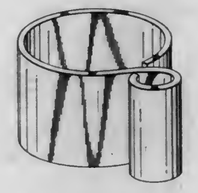
206,154
CHAIR OR SIMILAR ARTICLE
Hall V. V. Bradley, Pasadena, Calif., assignor to Brown-Jordan Company, El Monte, Calif., a corporation of California
Filed Apr. 6, 1965, Ser. No. 84,634
Term of patent 3½ years
(Cl. D15—1)



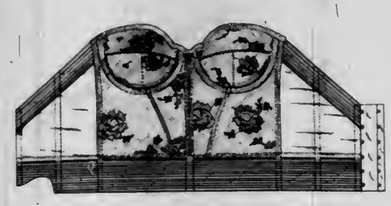
206,155
HOLDING TRAY FOR TEST TUBES, VIALS, OR THE LIKE
Ronald W. Emmitt, 28367 Ridgebrook, Farmington, Mich.
Filed Nov. 24, 1965, Ser. No. 88,202
Term of patent 14 years
(Cl. D16—1)



206,156
RAZOR HOLDER
Martin B. Schinker, 811 Glacier Heights Road, Youngstown, Ohio
Filed May 26, 1965, Ser. No. 85,459
Term of patent 3½ years
(Cl. D17—3)



206,157
LONG-LINE BRASSIERE
Alfred Egon Maas, New York, N.Y., assignor to Maidenform, Inc., New York, N.Y., a corporation of New York
Filed Dec. 7, 1964, Ser. No. 82,938
Term of patent 7 years
(Cl. D20—4)



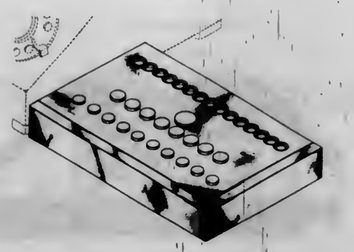
206,158
CASE FOR AN ELECTRIC METER
George D. Perkins and David E. Workman, both of Pasadena, Calif., assignors to Pendleton Tool Industries, Inc., Los Angeles, Calif., a corporation of Delaware
Filed Sept. 14, 1965, Ser. No. 86,993
Term of patent 14 years
(Cl. D26—1)



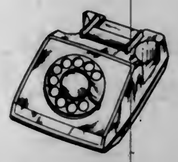
206,159
SPEAKER CONTROL UNIT
Kenneth A. Everhart, 3901 W. 67th St., Prairie Village, Kans.
Filed May 14, 1965, Ser. No. 85,275
Term of patent 3½ years
(Cl. D26—13)



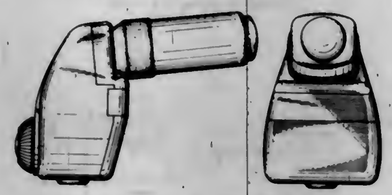
206,160
TELEPHONE NUMBER INDICATOR
Ole Lyster, 5201 E. Casper Road, Mesa, Ariz.
Filed Apr. 17, 1964, Ser. No. 79,537
Term of patent 14 years
(Cl. D26—14)



206,161
TELEPHONE SUBSET
John Dominic Cuccio and Robert Andrew Chieda, Westport, Conn., assignors to International Telephone and Telegraph Corporation
Filed Apr. 9, 1965, Ser. No. 84,705
Term of patent 3½ years
(Cl. D26—14)



206,162
HEARING AID
Robert L. Geib, Wayzata, and Richard T. Martin, Minneapolis, Minn., assignors to Dahlberg Electronics Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Sept. 23, 1965, Ser. No. 87,126
Term of patent 14 years
(Cl. D26—14)



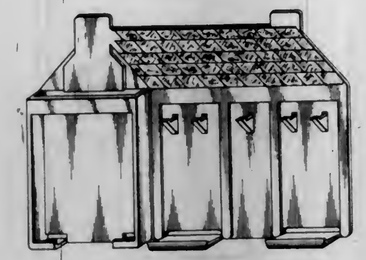
206,163
GAS LASER
Carl J. Clement, Jr., Palo Alto, Calif., assignor to Spectra-Physics, Inc., Mountain View, Calif., a corporation of California
Filed Oct. 20,1965, Ser. No. 87,634
Term of patent 14 years
(Cl. D26—14)



206,164
CHRISTMAS TREE ORNAMENT
Dario Moranduzzo, Via Aretina 161, Florence, Italy
Filed Oct. 22, 1965, Ser. No. 87,770
Term of patent 14 years
(Cl. D29—1)

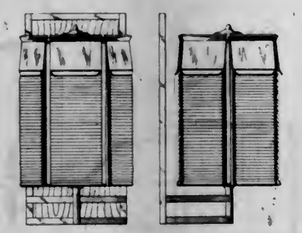


206,165
KEY RACK
McClellan B. Conover, 1209 Kensington, Flint, Mich.
Filed Apr. 13, 1964, Ser. No. 79,467
Term of patent 3½ years
(Cl. D33—3)



206,166
KEY RACK
McClellan B. Conover, 1209 Kensington, Flint, Mich.
Filed Apr. 15, 1964, Ser. No. 79,511
Term of patent 3½ years
(Cl. D33—3)

206,167
ROTATABLE CARD FILE
Alban R. Adkerson, Jr., 3627 Cedarhurst, Dallas, Tex.
Filed Jan. 8, 1965, Ser. No. 83,364
Term of patent 3½ years
(Cl. D33—3)

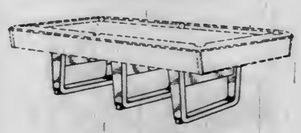


206,168
BOOKREST
Stanislaw D. Degorski, 2910 Oliver Road, and Edward G. Glowacki, 600 Lockwood, both of Royal Oak, Mich.
Filed Aug. 16, 1965, Ser. No. 86,592
Term of patent 3½ years
(Cl. D33—3)

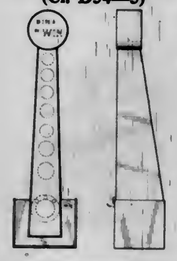


206,169
DRAFTING TABLE OR THE LIKE
Heinz Joseph Gerber, West Hartford, Conn., assignor to The Gerber Scientific Instrument Company, South Windsor, Conn., a corporation of Connecticut
Filed Oct. 1, 1965, Ser. No. 87,259
Term of patent 14 years
(Cl. D33—14)

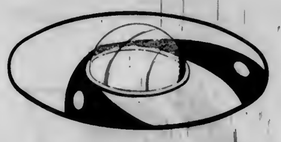
206,170
BILLIARD TABLE OR THE LIKE
Robert I. Anderson, Spring Lake, and Robert C. Kelley, Muskegon, Mich., assignors to Brunswick Corporation, Chicago, Ill., a corporation of Delaware
Filed Oct. 14, 1965, Ser. No. 87,469
Term of patent 14 years
(Cl. D34—3)



206,171
TOKEN-OPERATED AMUSEMENT GAME MACHINE
Frederick N. Kayden, Sterling Road, Harrison, N.Y., and Jerry E. Poncher, 303 N. Deere Park, Highland Park, Ill.
Filed June 16, 1965, Ser. No. 85,769
Term of patent 3½ years
(Cl. D34—5)



206,172
COMBINED TOY FLYING SAUCER AND TRANSPARENT PACKAGE
William S. Nielsen, 504 E. Broadway, Glendale, Calif.
Filed Sept. 18, 1964, Ser. No. 81,779
Term of patent 3½ years
(Cl. D34—15)



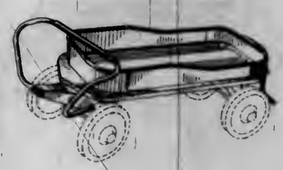
206,173
TOY GUN
Ferdinand D. Began, 263 Harwood St., Elyria, Ohio
Filed Jan. 19, 1965, Ser. No. 83,497
Term of patent 3½ years
(Cl. D34—15)



206,174
CHILD'S TOY JUMPING HASSOCK
Lydia Jedwabnik, New York, N.Y., assignor to A & L Novelty Co., Inc., Brooklyn, N.Y., a corporation of New York
Filed Jan. 7, 1965, Ser. No. 83,321
Term of patent 7 years
(Cl. D34—15)



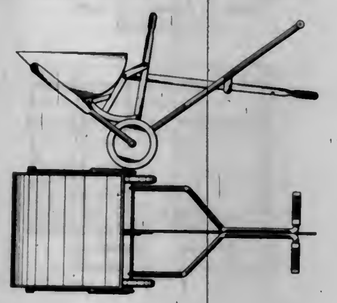
206,175
COASTER WAGON
Alexander B. Musichuk, Parma, Ohio, assignor to The M. T. & D. Company, a corporation of Ohio
Filed Oct. 1, 1965, Ser. No. 87,266
Term of patent 14 years
(Cl. D34—15)



206,176
WHISTLE
Evelyn Guarino, Cranston, R.I., assignor to Lee Ann, Inc., Providence, R.I., a corporation of Rhode Island
Filed Oct. 11, 1965, Ser. No. 87,428
Term of patent 3½ years
(Cl. D34—15)



206,177
COMBINED SNOW SHOVEL AND CART
Oliver K. Unruh, 615 Chestnut St., McPherson, Kans.
Filed Sept. 15, 1965, Ser. No. 87,009
Term of patent 14 years
(Cl. D35—2)



206,178
LIGHT FIXTURE
George E. Eckert, Fort Atkinson, Wis., assignor to Thomas Industries Inc., Louisville, Ky., a corporation of Delaware
Filed Oct. 14, 1965, Ser. No. 87,470
Term of patent 3½ years
(Cl. D48—3)



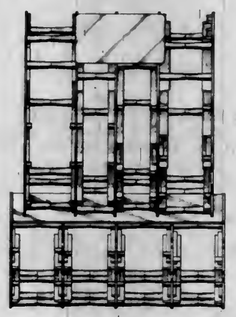
206,179
LAMP SHADE
Sydney J. Robbins, 515 N. Umberland Road, Teaneck, N.J.
Filed Dec. 3, 1965, Ser. No. 31
Term of patent 7 years
(Cl. D48—18.1)



206,180
COMBINED SPOTLAMP AND ROTATABLE COLOR BEACON
Charles P. Crawford, Room 822, 79 W. Monroe St., Chicago, Ill.
Filed Apr. 26, 1965, Ser. No. 84,960
Term of patent 3½ years
(Cl. D48—20)



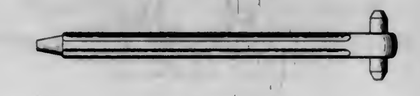
206,181
ARTICLE DISPENSER
Frank Mellion, Providence, R.I., assignor to Jo-Dee Corp., Warwick, R.I., a corporation of Rhode Island
Filed Dec. 6, 1965, Ser. No. 76
Term of patent 14 years
(Cl. D52—2)



206,182
COIN HOLDER
Joseph S. Kopas, 9710 Rosewood Ave., Cleveland, Ohio
Filed Oct. 11, 1965, Ser. No. 87,404
Term of patent 7 years
(Cl. D52—4)



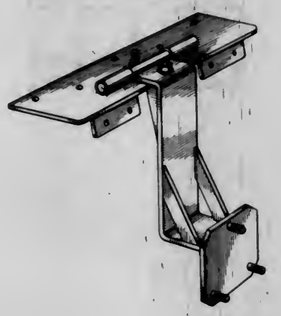
206,183
BRAKE CYLINDER GAUGE
Walter P. Kushmuk, Niles, Ill., assignor to Ammco Tools, Inc., Chicago, Ill., a corporation of Illinois
Filed Dec. 6, 1965, Ser. No. 68
Term of patent 14 years
(Cl. D52—6)



206,184
AIR FLOW MEASURING DEVICE
Howard V. Nielsen, 5119 W. 22nd Place, Cicero, Ill.
Filed Aug. 16, 1965, Ser. No. 86,603
Term of patent 14 years
(Cl. D52—6)



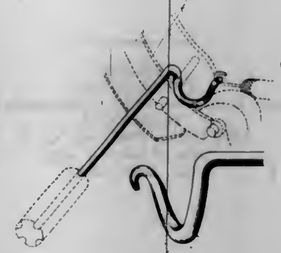
206,185
SPARE TIRE BRACKET
Daniel N. Davis, 260 S. Grove St., Denver, Colo.
Filed Jan. 15, 1965, Ser. No. 83,451
Term of patent 3½ years
(Cl. D54—1)



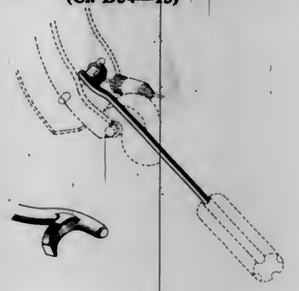
206,186
SPOON
Donald A. Wallance, Croton-on-Hudson, N.Y., assignor to H. E. Lauffer Co., Inc., New York, N.Y., a corporation of New York
Filed Oct. 14, 1964, Ser. No. 82,175
Term of patent 3½ years
(Cl. D54—12)



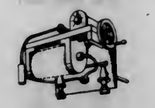
206,187
BRAKE-SPRING INSTALLING TOOL
Paul Romaniuk, 5258 Calhoun St., Dearborn, Mich.
Filed Jan. 24, 1966, Ser. No. 741
Term of patent 14 years
(Cl. D54—13)



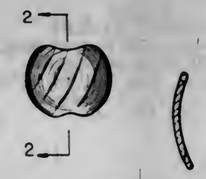
206,188
BRAKE-SPRING REMOVAL TOOL
Paul Romaniuk, 5258 Calhoun St., Dearborn, Mich.
Filed Jan. 24, 1966, Ser. No. 758
Term of patent 14 years
(Cl. D54—13)



206,189
BEVERAGE MAKER OR THE LIKE
Donald L. Freese, 813 S. Cyprus, Santa Ana, Calif.
Filed Nov. 22, 1965, Ser. No. 88,164
Term of patent 14 years
(Cl. D55—1)



206,190
OPTICAL CONTACT LENS
Irving N. Adler, Detroit, Mich., assignor to Richard J. Wlodyga, Warren, Mich.
Division of design application Ser. No. 79,900, Mar. 11, 1964, now Patent No. 203,357, dated Dec. 28, 1964. Continuation of design applications Ser. No. 87,695 and Ser. No. 87,696, Oct. 21, 1965. This application Mar. 11, 1966, Ser. No. 2,130
Term of patent 14 years
(Cl. D57—1)



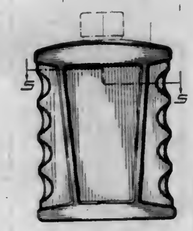
206,191
EYESHADE OR SIMILAR ARTICLE
Paul A. Lawrence, 1660 Beaver, Des Moines, Iowa
Filed Oct. 13, 1965, Ser. No. 87,460
Term of patent 14 years
(Cl. D57—1)



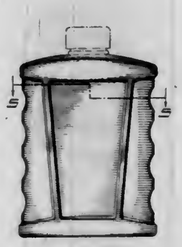
206,192
DIAPER BAG
Mary Hagglund, 921 Chambers, Ottawa, Ill.
Original design application Apr. 20, 1964, Ser. No. 79,584, now Patent No. 202,381, dated Sept. 21, 1965. Divided and this application May 5, 1965, Ser. No. 85,839
Term of patent 14 years
(Cl. D58—2)



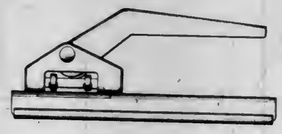
206,193
BOTTLE
Elwyn R. Gooding, Ann Arbor, Mich., assignor to Ex-Cell-O Corporation, Detroit, Mich.
Original design application Apr. 1, 1964, Ser. No. 79,301, now Patent No. 202,445, dated Sept. 28, 1965. Divided and this application July 2, 1965, Ser. No. 85,966
Term of patent 3½ years
(Cl. D58—6)



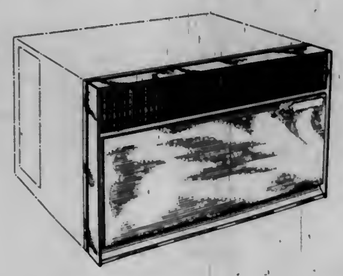
206,194
BOTTLE
Elwyn R. Gooding, Ann Arbor, Mich., assignor to Ex-Cell-O Corporation, Detroit, Mich.
Original design application Apr. 1, 1964, Ser. No. 79,301, now Patent No. 202,445, dated Sept. 28, 1965. Divided and this application July 2, 1965, Ser. No. 85,997
Term of patent 3½ years
(Cl. D58—6)



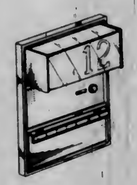
206,195
PHOTOGRAPHIC SLIDE MOUNT PRESS OR SIMILAR ARTICLE
Stanley C. Kaiser, Quarters 6401, Air Force Academy, El Paso County, Colo.
Filed Oct. 11, 1965, Ser. No. 87,384
Term of patent 14 years
(Cl. D61—1)



206,196
AIR CONDITIONER CABINET
Donald A. Schneider, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 16, 1965, Ser. No. 87,029
Term of patent 3½ years
(Cl. D62—4)



206,197
PANEL FOR A COMBINED LETTER DROP, ILLUMINATED HOUSE NUMBER, AND DOOR SIGNAL
Bryan H. Lambert, Covina, and Larry L. Routh, Diamond Bar, Calif., assignors to The Emerson Electric Company, St. Louis, Mo., a corporation of Missouri
Filed June 2, 1964, Ser. No. 80,240
Term of patent 3½ years
(Cl. D74—9)



206,198
FOOD DISPLAY SHIELD
Victor D. Molitor, 2829 S. Santa Fe Drive, Englewood, Colo.
Filed Aug. 2, 1965, Ser. No. 86,385
Term of patent 14 years
(Cl. D80—3)



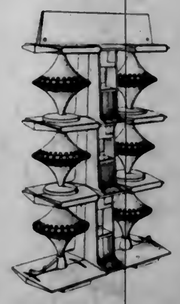
206,199
GARMENT HANGER
Benjamin Zuckerman, New York, N.Y., assignor to Mister Hanger, Inc., New York, N.Y., a corporation of New York
Filed Mar. 8, 1965, Ser. No. 84,152
Term of patent 3½ years
(Cl. D80—8)



206,200
GARMENT HANGER
James H. Ogg, 10707 Burbank Blvd., North Hollywood, Calif.
Filed Apr. 21, 1966, Ser. No. 2,075
Term of patent 14 years
(Cl. D80—8)



206,201
MERCHANDISING DISPLAY STAND FOR WRITING INSTRUMENTS AND THE LIKE
Thaddeus I. Kingsford, Chamblee, and Frank Van Haltern, Jr., Atlanta, Ga., assignors to Scripto, Inc., a corporation of Georgia
Filed Jan. 3, 1966, Ser. No. 419
Term of patent 14 years
(Cl. D80—9)

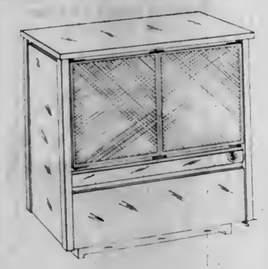


206,202
HEATING STOVE
Norman R. Cole, Central Building, and Philip A. Duryee, 1115 41st E., both of Seattle, Wash.
Filed Jan. 21, 1965, Ser. No. 83,506
Term of patent 14 years
(Cl. D81—10)

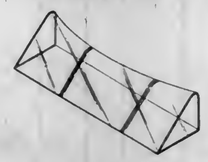


206,203
COMBINED LOG LIGHTER AND BURNER TUBE
Marvin L. Stark, Anchorage, and Frank C. Lewis, Louisville, Ky., assignors to Peerless Manufacturing Division, Dover Corporation, Louisville, Ky., a corporation of Kentucky
Filed July 30, 1965, Ser. No. 86,365
Term of patent 14 years
(Cl. D81—10)

206,204
WOOD HEATER
Nicholas S. Kategianis, Chicago, Ill., assignor to Autocrat Corporation, New Athens, Ill., a corporation of Illinois
Filed Sept. 10, 1965, Ser. No. 86,942
Term of patent 3½ years
(Cl. D81—19)



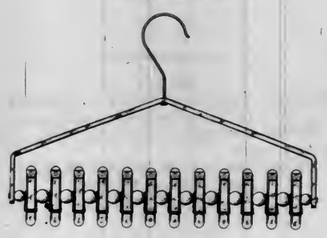
206,205
SOLARIUM
Mike Tecton, 5101 45th St. NW., Washington, D.C. 20016
Filed Oct. 24, 1965, Ser. No. 87,913
Term of patent 14 years
(Cl. D83—1)



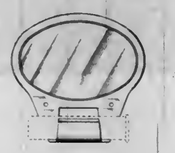
206,206
COMBINED HAIR LIFTER AND HAIR COMB
Anthony Battaglia, 1703 NE. 21st Ave., Miami, Fla.
Filed Feb. 14, 1966, Ser. No. 920
Term of patent 14 years
(Cl. D86—8)



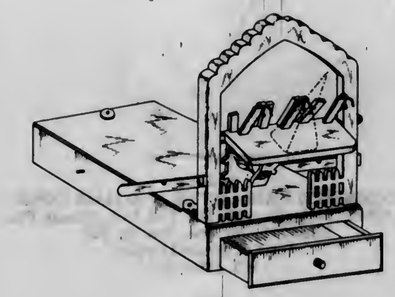
206,207
GARMENT HANGER
Helen L. Stein, 1331 E. 12th St., Des Moines, Iowa
Filed Nov. 22, 1965, Ser. No. 88,185
Term of patent 14 years
(Cl. D80—8)



206,208
COMBINED MIRROR AND LIPSTICK HOLDER
Henry Ashenfarb, 3135 Johnson Ave., Riverdale, N.Y.
Filed June 8, 1965, Ser. No. 85,629
Term of patent 14 years
(Cl. D86—10)



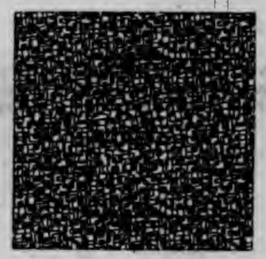
206,209
COMBINED STORAGE CABINET AND RACK FOR COSMETICS OR THE LIKE
Robert Louis Ising, 6701 Boulevard E., West New York, N.J.
Filed Aug. 17, 1965, Ser. No. 86,613
Term of patent 14 years
(Cl. D86—10)



206,210
HAIR DRYER HOOD
James F. Mariol, 6773 Sandalwood Lane, Cincinnati 24, Ohio
Filed Oct. 22, 1965, Ser. No. 87,729
Term of patent 14 years
(Cl. D86—10)



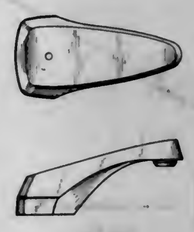
206,211
PLASTIC COATED SHEET MATERIAL
Richard A. Mazur, McFarland, Wis., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 5, 1965, Ser. No. 88,006
Term of patent 14 years
(Cl. D87—3)



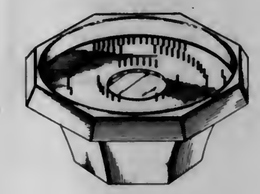
206,212
COSMETIC CASE OR THE LIKE
Emmett H. Heitler, Denver, Colo., and Robert K. Fujioka, Los Angeles, and Tim M. Uyeda and Arthur W. Ellsworth, South San Gabriel, Calif., assignors, by mesne assignments, to Samsonite Corporation, Denver, Colo., a corporation of Colorado
Original design application Nov. 5, 1962, Ser. No. 72,389, now Patent No. 203,096, dated Nov. 30, 1965. Divided and this application May 5, 1965, Ser. No. 85,613
Term of patent 14 years
(Cl. D87—5)



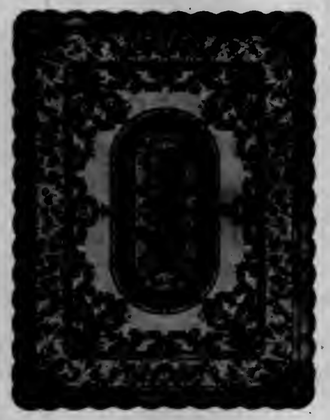
206,213
FAUCET SPOUT
William H. Armstrong, Bloomfield Hills, Mich., assignor to Borg-Warner Corporation, a corporation of Illinois
Filed Dec. 15, 1965, Ser. No. 187
Term of patent 14 years
(Cl. D91—3)



206,214
WATER DISPLAY FOUNTAIN
Jack R. Erbe, Los Angeles County, Calif. (14847 Bessemer St., Van Nuys, Calif.)
Filed Dec. 29, 1965, Ser. No. 360
Term of patent 14 years
(Cl. D91—4)



206,215
TABLE CLOTH
Yasuhiro Oshima, Osaka, Japan, assignor to Meiwa Gravure Chemical Co., Ltd., Osaka, Japan, a corporation of Japan
Filed June 23, 1965, Ser. No. 85,856
Term of patent 3½ years
(Cl. D92—26)



206,216
HAMMER HEAD
Peter Kiteley, Blackburn, Victoria, Australia, assignor to Turner Industries Limited, Nunawading, Victoria, Australia, a corporation of Australia
Filed Jan. 6, 1965, Ser. No. 83,303
Claims priority, application Australia July 23, 1964
Term of patent 3½ years
(Cl. D93—4)





LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 8TH DAY OF NOVEMBER, 1966

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Amori, Joseph A. Fruit orienting and cutting system. Re. 26,111, 11–8–66, Cl. 146—224.
Block & Anderson Ltd.: *See*—
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Bonsch, Francois R., to Block & Anderson Ltd. Hectographic duplicating machines. Re. 26,112, 11–8–66, Cl. 101—91.
Brown, Clifford K. Magnetic direction and inclination indicating device. Re. 26,109, 11–8–66, Cl. 33—205.5.
Carter, Uriel F., and A. F. Kolb, to Cutler-Hammer, Inc. Interlocking operating mechanism. Re. 26,113, 11–8–66, Cl. 200—50.
Cutler-Hammer, Inc.: *See*—
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Grace, W. R., and Co.: *See*—
Harrison, John W., and Lowry. Re. 26,110.
Harrison, John W., and R. D. Lowry, to W. R. Grace and Co. Process for preparing a laminated heat shrinkable endless band. Re. 26,110, 11–8–66, Cl. 156—184.
Kolb, Arthur F.: *See*—
Carter, Uriel F., and Kolb. Re. 26,113.
Lowry, Robert D.: *See*—
Harrison, John W., and Lowry. Re. 26,110.

LIST OF PLANT PATENTEES

Monrovia Nursery Co.: *See*—
Moore, Ralph S. 2,685.
Moore, Ralph S., to Monrovia Nursery Co. Thuja plant. 2,685, 11–8–66, Cl. 50.
Tomlinson, Francis C. Pyracantha plant. 2,684, 11–8–66, Cl. 54.

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A & L Novelty Co., Inc.: *See*—
Jedwabnik, Lydia. 206,174.
Adkerson, Alban R., Jr. Rotatable card file. 206,167, 11–8–66, Cl. D33—3.
Adler, Irving N., to R. J. Wlodyga. Optical contact lens. 206,190, 11–8–66, Cl. D57—1.
Amerock Corp.: *See*—
Clayton, LaVerne E. 206,147–51.
Morgan, John R. 206,152.
Ammco Tools, Inc.: *See*—
Kushmuk, Walter P. 206,183.
Anderson, Robert I., and R. C. Kelley, to Brunswick Corp. Billiard table or the like. 206,170, 11–8–66, Cl. D34—3.
Armstrong, William H., to Borg-Warner Corp. Faucet spout. 206,213, 11–8–66, Cl. D91—3.
Ashenfarb, Henry. Combined mirror and lipstick holder. 206,208, 11–8–66, Cl. D86—10.
Autocrat Corp.: *See*—
Kategianis, Nicholas S. 206,204.
Battaglia, Anthony. Combined hair lifter and hair comb. 206,206, 11–8–66, Cl. D86—8.
Began, Ferdinand D. Toy gun. 206,173, 11–8–66, Cl. D34—15.
Borg-Warner Corp.: *See*—
Armstrong, William H. 206,213.
Bradley, Hall V. V., to Brown-Jordan Co. Chair or similar article. 206,154, 11–8–66, Cl. D15—1.
Brown-Jordan Co.: *See*—
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Chieda, Robert A.: *See*—
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Clayton, LaVerne E., to Amerock Corp. Pull. 206,148, 11–8–66, Cl. D10—8.
Clayton, LaVerne E., to Amerock Corp. Pull. 206,149, 11–8–66, Cl. D10—8.
Clayton, LaVerne E., to Amerock Corp. Knob. 206,150, 11–8–66, Cl. D10—8.
Clayton, LaVerne E., to Amerock Corp. Pull. 206,151, 11–8–66, Cl. D10—8.
Clement, Carl J., Jr., to Spectra-Physics, Inc. Gas laser. 206,163, 11–8–66, Cl. D26—14.
Cole, Norman R., and P. A. Duryee. Heating stove. 206,202, 11–8–66, Cl. D81—10.
Conover, McClellan B. Key rack. 206,165, 11–8–66, Cl. D33—3.
Conover, McClellan B. Key rack. 206,166, 11–8–66, Cl. D33—3.
Crawford, Charles P. Combined spotlamp and rotatable color beacon. 206,180, 11–8–66, Cl. D48—20.
Cuccio, John D., and R. A. Chieda, to International Telephone and Telegraph Corp. Telephone subset. 206,161, 11–8–66, Cl. D26—14.
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Geib, Robert L., and Martin. 206,162.
Davis, Daniel N. Spare tire bracket. 206,185, 11–8–66, Cl. D34—1.
Degorski, Stanislaw D., and E. G. Glowacki. Bookrest. 206,168, 11–8–66, Cl. D33—3.
Dexter, Roberta L. Pick-up camper. 206,153, 11–8–66, Cl. D14—3.
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Cole, Norman R., and Duryee. 206,202.
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Erbe, Jack R. Water display fountain. 206,214, 11–8–66, Cl. D91—4.
Everhart, Kenneth A. Speaker control unit. 206,159, 11–8–66, Cl. D26—13.
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Hagglund, Mary. Diaper bag. 206,192, 11–8–66, Cl. D58—2.
Heitler, Emmett H., R. K. Fujioka, T. M. Uyeda, and A. W. Ellsworth, to Samsonite Corp. Cosmetic case or the like. 206,212, 11–8–66, Cl. D87—5.
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Kayden, Frederick N., and J. E. Poncher. Token-operated amusement game machine. 206,171, 11–8–66, Cl. D34—5.
Kelley, Robert C.: *See*—
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Kiteley, Peter, to Turner Industries Ltd. Hammer head. 206,216, 11–8–66, Cl. D93—4.
Kopas, Joseph S. Coin holder. 206,182, 11–8–66, Cl. D52—4.
Kushmuk, Walter P., to Ammco Tools, Inc. Brake cylinder gauge. 206,183, 11–8–66, Cl. D52—6.
Lambert, Bryan H., and L. L. Routh, to The Emerson Electric Co. Panel for a combined letter drop, illuminated house number and door signal. 206,197, 11–8–66, Cl. D74—9.
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LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 8TH DAY OF NOVEMBER, 1966

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AWEPA: *See*—
Weber, Alexander. 3,284,053.
ACF Industries, Inc.: *See*—
Gordon, Dwight M. 3,284,061.
Kalert, Ralph E., Jr. 3,284,060.
Reise, Donald A. 3,283,911.
AMP Inc.: *See*—
Dormer, Keith H., and Wrick. 3,284,644.
Henkel, Werner O. P., and Over. 3,283,558.
Mummey, Dale B., and Trump. 3,284,755.
ARA, Inc. (Aerospace Research Associates, Inc.): *See*—
Platus, David L., Marovich, and Cunningham. 3,283,857.
A/S Hansa Bryggeri: *See*—
Andersen, John M. 3,283,667.
Abe, Katsunobu: *See*—
Nagata, Minoru, Abe, and Takeuchi. 3,284,696.
Ablett, Gordon: *See*—
Goldbaum, Elliott, Ablett, and Larsen. 3,284,753.
Abraham, Wayne G., J. F. Kendall, Jr., and F. L. Salisbury, to Varian Associates. High frequency electron discharge device. 3,284,660, 11–8–66, Cl. 315—3.39.
Acme Air Appliance Co., Inc.: *See*—
Muller, John E. 3,283,959.
Acme Fishing Tool Co.: *See*—
McKain, Walter P. 3,283,837.
Adamovské strojírny, narodní podnik: *See*—
Jurny, Josef, and Štepánek. 3,284,079.
Adams, Charles J., to General Electric Co. Tool for handling small objects. 3,284,123, 11–8–66, Cl. 294—15.
Addis, Edwin C., and F. C. Wilda, to Chart-Pak, Inc. Tape dispenser. 3,283,886, 11–8–66, Cl. 206—52.
Addressograph-Multigraph Corp: *See*—
Gollwitzer, Walter T. 3,283,870.
Adler, Sherman, and S. Fenster, to Sperry Rand Corp. Gyroscopic caging apparatus. 3,283,592, 11–8–66, Cl. 74—5.1.
Adler, Theodore: *See*—
Gurin, Lawrence R., and Adler. 3,283,434.
Ador Corp.: *See*—
Riegelman, Harry M. 3,283,455.
Aebi, Hans: *See*—
Duerr, Dieter, Aebi, and Ebner. 3,284,289.
Aerojet-General Corp.: *See*—
Gongwer, Calvin A. 3,283,737.
Aerosol Techniques Inc.: *See*—
Clapp, Clarence. 3,284,007.
Aftandilian, Victor D., to Cabot Corp. Novel process for the production of catalyst components. 3,284,329, 11–8–66, Cl. 204—157.1.
Agfa-Gevaert A.G.: *See*—
Froese, Herbert. 3,283,648.
Ahearn, George P., and A. F. Turbak, to Esso Production Research Co. Surfactant for petroleum recovery. 3,283,812, 11–8–66, Cl. 166—9.
Airpax Electronics Inc.: *See*—
Berry, Jon R. 3,284,637.
Air Products and Chemicals, Inc.: *See*—
Erner, William E. 3,284,483.
Logwinuk, Alexander K., and Schall. 3,284,522.
Airtron Division of Litton Precision Products, Inc.: *See*—
Bowman, David F. 3,284,725.
Akers, Edward G., to Polytop Corp. Dispensing closure 3,283,967, 11–8–66, Cl. 222—536.
Akkerman, Antony M.: *See*—
Kraaijeveld, Adriaan, and Akkerman. 3,284,450.
Akron Brass Co.: *See*—
Allenbaugh, George G., Jr. 3,284,046.
Aladdin Industries, Inc.: *See*—
Chappell, Horace M. 3,283,934.
Rownd, Robert M. 3,283,395.
Alarie, Joseph F. Foldable camping trailer. 3,284,128, 11–8–66, Cl. 296—23.
Albi Mfg. Co., Inc.: *See*—
Kaplan, Benjamin B. 3,284,216.
Albright, Franklin C., to The Bendix Corp. Airplane landing gear with endless track. 3,284,031, 11–8–66, Cl. 244—100.
Alalle, Lucien, and R. Darras, to Commissariat a l'Energie Atomique. Method of manufacturing a composite, heat-insulating material of the type formed by stacking foils of oxidisable metal. 3,284,256, 11–8–66, Cl. 156—1.
Alken-Murray Corp.: *See*—
Boyer, Leonard P. 3,283,781.
Allen, John P. C., E. R. Ehritz, and R. R. Lobosco, to Union Carbide Corp. Arc starting apparatus and method. 3,284,609, 11–8–66, Cl. 219—135.
Allen, Robert G., and V. P. Fruehauf, to E. I. du Pont de Nemours, and Co. Film advancing roll. 3,283,981, 11–8–66, Cl. 226—190.
Allen, Thomas O., and J. E. Ortloff, to Esso Production Research Co. Well completions. 3,283,815, 11–8–66, Cl. 166—27.
Allen, William, Jr.: *See*—
Calmon, Calvin, and Allen. 3,284,366.
Allenbaugh, George G., Jr., to Akron Brass Co. Rotary valves. 3,284,046, 11–8–66, Cl. 251—315.
Allgemeine Elektricitats-Gesellschaft: *See*—
Schulz, Hans J., and Schierholt. 3,284,691.
Allis-Chalmers Mfg. Co.: *See*—
Pollnow, Gilbert F., and Haworth. 3,284,408.
Allison, William D., to Ford Motor Co. Linkage type rear suspension system for a motor vehicle. 3,284,095, 11–8–66, Cl. 280—124.
Aluminite Mfg. Co.: *See*—
Andres, Edward J. 3,283,444.
Aluminium Laboratories Ltd.: *See*—
Southam, Frederick W. 3,284,189.
Aluminum Co. of America: *See*—
Close, Frederick J. 3,283,945.
Moorman, John H., and Dickert. 3,283,372.
Alvey, Leroy E., and J. W. Mendenhall, to The Bullard Co. Tool block. 3,283,626, 11–8–66, Cl. 82—36.
Amagasa, Michio, K. Ueno, M. Koshi, A. Hirose, and T. Shinozawa, to Toyo Koatsu Industries, Inc. Method and composition for suppressing the nitrification of ammonium nitrogen in soil. 3,284,188, 11–8–66, Cl. 71—54.
Amana Refrigeration, Inc.: *See*—
Palm, Wentworth E., and Jenewein. 3,283,528.
Amelco, Inc.: *See*—
Haas, Isy. 3,284,677.
American Brake Shoe Co.: *See*—
Farrell, Arthur W. 3,284,251.
Kouns, Herbert H. 3,283,726.
American Cyanamid Co.: *See*—
Gillham, Helen C., and Sherr. 3,284,543.
Schor, Joseph M., and De Renzo. 3,284,301.
Siegele, Frederick H. 3,284,364.
Suen, Tzeng J., and Meisenheider. 3,284,394.
Tomcufcik, Andrew S., Craig, and Willson. 3,284,453.
White, Malcolm L. 3,284,238.
American Enka Corp.: *See*—
Bakker, Willem. 3,283,489.
Zuidema, Bert. 3,284,026.
American Gage & Machine Co.: *See*—
De Paolo, Peter A. 3,284,709.
American Home Products Corp.: *See*—
Wolf, Milton. 3,284,464.
American Lava Corp.: *See*—
Moore, Charles W., Brandon, and Smyly. 3,284,144.
American Machine & Foundry Co.: *See*—
Cascio, Jack, and Kerker. 3,283,930.
Ernst, John M. 3,283,879.
Maslow, Louis. 3,283,731.
American Maize-Products Co.: *See*—
Hay, Julian A., and Mork. 3,284,443.
American Radiator & Standard Sanitary Corp.: *See*—
McMurtrie, Gilbert, Nagel, and Forth. 3,283,340.
Weisz, Thomas. 3,284,695.
American Tobacco Co., The: *See*—
Harris, Otway G. 3,283,806.
Ames Crosta Mills, & Co. Ltd.: *See*—
Bolton, James F. 3,284,058.
Ametek, Inc.: *See*—
Daubman, Edward A. 3,283,909.
Ampex Corp.: *See*—
Lindell, Edward. 3,284,640.
Pfost, Robert F. 3,283,396.
Anaconda American Brass Co.: *See*—
Osborn, Donald H. 3,284,249.
Anagnostopoulos, Constantine E.: *See*—
Coran, Aubert Y., and Anagnostopoulos. 3,284,405.
Anagnostopoulos, Constantine E., and A. Y. Coran, to Monsanto Co. Stabilized polymer compositions containing naphthoic acid esters. 3,284,220, 11–8–66, Cl. 106—178.
Anchor Bay Mfg. Co., Inc.: *See*—
Kiefer, John H., and Loosvelt. 3,283,373.
Andersen, John M., to A/S Hansa Bryggeri. Combination fluid actuated means and control valve. 3,283,667, 11–8–66, Cl. 91—39.
Anderson, Carl G., and B. W. Williams, to Comar Electric Co. Electrical devices having terminal interlocking means. 3,284,603, 11–8–66, Cl. 200—166.
Anderson, Victor F., to Shell Oil Co. Side-pouring dispenser and closure. 3,283,964, 11–8–66, Cl. 222—487.
Anderson, William E., and W. E. Quist, to The Boeing Co. Aluminum alloy. 3,284,193, 11–8–66, Cl. 75—141.
Andren, Karl H., to Artos Engineering Co. Art of producing electrical conductors from cord wire. 3,283,398, 11–8–66, Cl. 29—155.55.
Andres, Edward J., to Aluminite Mfg. Co. Sliding door corner and roller assembly. 3,283,444, 11–8–66, Cl. 49—420.
Andrushkiw, Roma I.: *See*—
Lakshmanan, Tavorath K., and Andrushkiw. 3,284,698.
Angst, Walter, to Kollsman Instrument Corp. Compensating mechanism for aircraft altimeter. 3,283,583, 11–8–66, Cl. 73—386.
Ankeny, Vernon S., to Greater Iowa Mfg. Co. Towing device. 3,283,927, 11–8–66, Cl. 214—86.
Ansingh, Carl H., to P. L. Robertson Mfg. Co. Ltd. Socket head screw. 3,283,638, 11–8–66, Cl. 85—9.
Anstalt Europaische Handelsgesellschaft: *See*—
Buzzi, Ugo. 3,284,583.

Anstey, Roger H., and R. M. Macnab, to The British Petroleum Co. Ltd. Molecular sieve separation of hydrocarbon mixtures boiling above C5 hydrocarbons. 3,284,346, 11–8–66, Cl. 208—310.

Appel, Frank H., V. E. Hauser, Jr., and R. S. Smith, to International Business Machines Corp. Substrate preparation method. 3,284,324, 11–8–66, Cl. 204—38.

Appel, Mel: *See*—
Levin, Morton S., and Maloy. 3,284,083.

Applications Scientifiques, Techniques, Industrielles et Commerciales A.S.T.I.C. (Societe Anonyme Monegasque): *See*—
Launay, Jean J. 3,283,514.

Aral, Shinji: *See*—
Maeda, Sachio, Saito, and Aral. 3,284,827.

Arcand, Art T.: *See*—
Wall, Russell, Wolin, and Arcand. 3,284,792.

Arenco Aktiebolag: *See*—
Axlid, Sven A., Greiner, and Winkler. 3,283,628.

Argoudelis, Alexander D., to The Upjohn Co. Process for the preparation of methyl α-thiolincosaminide and 4-ethyl-L-hygric acid hydrazide. 3,284,439, 11–8–66, Cl. 260—210.

Armbruster, Ronald H. D.: *See*—
Kraft, Derald H., and Armbruster. 3,283,551.

Armfield, George W.: *See*—
Marsh, John A., and Armfield. 3,283,346.

Armour and Co.: *See*—
Van Akkeren, Leon A. 3,284,213.

Armour, Walter B., and W. C. Kania, to National Starch and Chemical Corp. Rapid setting polyvinyl acetate adhesives. 3,284,280, 11–8–66, Cl. 161—250.

Armstrong Machine Works: *See*—
Johnson, Walter C., and Judsen. 3,283,774.

Arnold, Eston, 40% to M. C. Carr. Telescoping bumper-clamping tow bar for vehicles. 3,284,101, 11–8–66, Cl. 280—482.

Arnoux Corp.: *See*—
St. John, Dale E. 3,284,641.

Aronson, David, to Worthington Corp. Mist eliminator means for an absorption refrigeration system. 3,283,533, 11–8–66, Cl. 62—494.

Arrow-Hart & Hegeman Electric Co., The: *See*—
Daly, Daniel F. 3,284,591.

Art Award Co., Inc., The: *See*—
Tytel, Herbert A. 3,283,419.

Arthur, James B., and M. R. Livingston, to Celanese Corp. of America. Process of producing a spun yarn. 3,283,493, 11–8–66, Cl. 57—157.

Artos Engineering Co.: *See*—
Andren, Karl H. 3,283,398.

Arval, John J., Jr., to Ford Motor Co. Rotary pigging machine. 3,283,371, 11–8–66, Cl. 22—63.

Asahi Kasei Kogyo Kabushiki Kaisha: *See*—
Tsunoda, Yoshio, Seko, Fuzita, and Watanabe. 3,284,335.

Aseco, Inc.: *See*—
Voigt, Robert H., and Osborne. 3,284,787.
Voigt, Robert H., and Osborne. 3,284,791.

Ashcroft, Brian W. C.: *See*—
Winfield, Graham, and Ashcroft. 3,284,407.

Asphalt Sealer Products Co., Inc.: *See*—
Gifford, Clayton E., and W. E. and D. T. Linkous. 3,283,675.

Assmann, Hans. Process for manufacturing ammunition bodies. 3,284,559, 11–8–66, Cl. 264—250.

Astro-Space Laboratories, Inc.: *See*—
Rothe, Heinrich C., Mueller, W. E. Rothe, and Loughead. 3,283,408.
Rothe, Heinrich C., Mueller, W. E. Rothe, Martin, and Moore. 3,283,409.

Ateliers de la Molobecave: *See*—
Jaulmes, Eric. 3,284,129.

Atlantic Products Corp.: *See*—
Kish, Michael, Jr. 3,283,793.

Atlantic Refining Co., The: *See*—
Brownscombe, Eugene R., Dunlap, Kern, and Perkins. 3,283,813.
Franklin, Alpheus A. 3,283,488.

Atomenergi, Aktiebolaget: *See*—
McHugh, Brian. 3,284,311.
Straat, Matts V. 3,284,310.

Aumarechal, Jaques. Propeller. 3,283,829, 11–8–66, Cl. 170—159.

Austin, Arthur C.: *See*—
Schirick, Robert J., Bunker, and Austin. 3,283,849.

Automatic Electric Laboratories, Inc.: *See*—
Brown, George L. 3,284,798.
Burns, Robert V., and Cleary. 3,284,577.
Kostagiannis, Evangelos P., and Langowski. 3,284,574.
Smith, Lester L., and Taugner. 3,284,573.

Automatic Switch Co.: *See*—
Zaleske, Michael J., and Kryspin. 3,284,044.

Automotive Products Co. Ltd.: *See*—
Densham, John R. 3,283,612.

Avey Division of the Motch and Merryweather Machinery Co., The: *See*—
Schatzman, Edward W. 3,283,618.

Axlid, Sven A., R. F. Greiner, and G. Winkler, to Arenco Aktiebolag. Device for feeding band material. 3,283,628, 11–8–66, Cl. 83—74.

Ayers, George W., and W. A. Krewer, to Union Oil Co. of California. Haloalkylation of aromatic compounds. 3,284,518, 11–8–66, Cl. 260—651.

Azbe Corp.: *See*—
Azbe, Victor J. 3,284,071.
Azbe, Victor J. 3,284,075.

Azbe, Victor J., to Azbe Corp. Lime production. 3,284,075, 11–8–66, Cl. 266—13.

Azbe, Victor J., to Azbe Corp. Calcining method and apparatus. 3,284,071, 11–8–66, Cl. 263—29.

Babcock & Wilcox Co., The: *See*—
Harvey, John F. 3,283,811.
Koim, Ernest L., and Darmstadt. 3,284,064.
McIlroy, Robert A., and Markant. 3,284,435.

Bacon, Donald V. Reciprocating knife. 3,283,407, 11–8–66, Cl. 30—272.

Bacon Felt Co.: *See*—
Becker, William E. 3,283,451.

Bade, Alfred G.: *See*—
Polzin, Clayton H. W., and Bade. 3,284,103.

Badone, Louis: *See*—
Spence, Neville S., Badone, Morgan, and McDonald. 3,284,175.

Baer, Heinz: *See*—
Fuchs, Heinz, Baer, and Kolaczek. 3,283,742.

Baer, Josef, Maschinenfabrik: *See*—
Fuchs, Heinz, Baer, and Kolaczek. 3,283,742.

Bailey, Bruce L., to Great Lakes Carbon Corp. Apparatus and process for continuously making baked and graphitized carbon bodies. 3,284,372, 11–8–66, Cl. 252—502.

Bailey, Dean C., to Motorola, Inc. Emitter coupled high frequency amplifier. 3,284,713, 11–8–66, Cl. 325—319.

Bailey, Jay R., to McCulloch Corp. Torque wrench. 3,283,620, 11–8–66, Cl. 81—52.4.

Baillargeon, John T.: *See*—
Coates, Robert N., and Baillargeon. 3,283,940.

Bajars, Laimonis, L. J. Croce, and M. Gabliks, to Petro-Tex Chemical Corp. Dehydrogenation with magnesium ferrite. 3,284,536, 11–8–66, Cl. 260—683.3.

Baker Oil Tools, Inc.: *See*—
Hoffman, Jack, and Van Winkle. 3,283,824.
Leutwyler, Kurt. 3,284,105.

Baker, Ronald A., and D. J. Propps, to P. R. Mallory & Co., Inc. Electronic assembly with dip-soldered leads. 3,284,671, 11–8–66, Cl. 317—101.

Bakker, Willem, to American Enka Corp. Device and method for producing a yarn package. 3,283,489, 11–8–66, Cl. 57—34.

Balcenik, Edward G., and F. E. Roth, to Engelhard Industries, Inc. Method of making spinnerettes. 3,283,616, 11–8–66, Cl. 76—107.

Balch, Duane C. Emergency survival capsule. 3,283,717, 11–8–66, Cl. 102—37.8.

Balint, Andrew: *See*—
Smitzer, Louis A., Gawin, Gross, Balint, and Bixby. 3,283,680.

Ball, Allan: *See*—
Dean, Leslie G., Grant, and Ball. 3,283,919.

Ball Bros. Research Corp.: *See*—
Rosendahl, Gottfried R. 3,284,661.
Southworth, Glen R. 3,284,567.

Balla, Imre, to The State of Israel, Ministry of Defence. Nuclear irradiation installation. 3,284,306, 11–8–66, Cl. 176—15.

Baltimore Concrete Plank Corp.: *See*—
Hart, Wayne C. 3,283,457.

Baltzly, Richard, and N. B. Mehta, to Burroughs Wellcome & Co. (U.S.A.) Inc. 1-(2,5-dialkoxyphenyl)-2-tertiary-alkylamino propanols. 3,284,490, 11–8–66, Cl. 260—501.

Bambenek, Robert A., and E. J. Rollo, Jr., to General American Transportation Corp. Portable ventilators. 3,283,997, 11–8–66, Cl. 230—215.

Banke, Henry C.: *See*—
Chapman, Howard D., and Banke. 3,284,132.

Barbera, Edmund C. Inflatable articles. 3,283,799, 11–8–66, Cl. 152—338.

Barker, Robert A., and J. W. Shank, to Eltra Corp. Resistor ignition lead. 3,284,751, 11–8–66, Cl. 333—66.

Barlow, Boris V., to S. Smith & Sons (England) Ltd. Synchronous electric motor with an inertia flywheel and a unidirectional starter. 3,284,649, 11–8–66, Cl. 310—41.

Barnes, Jocelyn T., to Lexa Lite Corp. Outdoor lighting equipment. 3,284,625, 11–8–66, Cl. 240—25.

Barnes, Ralph G. Vibrator. 3,283,598, 11–8–66, Cl. 74—87.

Barone, Salvatore A. Safety circuit breaker with fusible means opposing movable control bias. 3,284,596, 11–8–66, Cl. 200—117.

Barontini, Alberto: *See*—
Fusco, Raffaello, Rossi, de Pietri Tonelli, and Barontini. 3,284,546.

Bartholomew, George A., to United States Steel Corp. Apparatus for treating slag. 3,284,166, 11–8–66, Cl. 23—259.1.

Bartz, Adam A., to E. I. du Pont de Nemours and Co. Werner chromium complexes and methods for their preparation. 3,284,215, 11–8–66, Cl. 106—13.

Barusch, Maurice R.: *See*—
Lindstrom, Eddie G., and Barusch. 3,284,177.

Bastian Blessing Co., The: *See*—
Linna, Eino W. 3,283,778.

Batdorf, Jack B., and R. T. Gardner, Jr., to Hercules Inc. Drilling mud and process. 3,284,353, 11–8–66, Cl. 252—8.5.

Battin, John W., and J. Germain, to Motorola, Inc. Noise reducing system. 3,284,714, 11–8–66, Cl. 325—478.

Batzer, Thomas H., and R. H. McFarland, to United States of America, Atomic Energy Commission. Combination trap pump. 3,283,479, 11–8–66, Cl. 55—316.

Baxter Laboratories, Inc.: *See*—
Cayle, Theodore. 3,284,316.

Bayer, Christian: *See*—
Hafner, Hans, and Bayer. 3,283,894.

Baumann, Gunther, H. Scholl, W. Reichardt, H. Zeller, and J. Wahl, Robert Bosch, G.m.b.H. Electrical measuring device for the analysis of exhaust gases of internal combustion engines. 3,284,165, 11–8–66, Cl. 23—255.

Bayer, Otto: *See*—
Windemuth, Erwin, Wagner, and Bayer. 3,284,479.

Bayne, Peter D., and J. J. Solomon, to Jos. Schlitz Brewing Co. Beverage dispensing and cooling apparatus. 3,283,530, 11–8–66, Cl. 62—389.

Bean, Lawrence M., to Westinghouse Electric Corp. Parallel analog to digital converter. 3,284,794, 11–8–66, Cl. 340—347.

Beaver, David J.: *See*—
Gee, Abron B., Fink, and Beaver. 3,284,286.

Beck, Roland D.: *See*—
Golden, Robert L., Wantz, Rice, Beck, and Palmer. 3,284,589.

Beck, Thomas A., and O. H. Thomas, to Sinclair Research, Inc. Method for making 5-t-butyl-m-xylene. 3,284,523, 11–8–66, Cl. 260—668.

Becker, Harold J., and E. F. Rogers, to Merck & Co., Inc. 4-phenoxy-carbanilides. 3,284,433, 11–8–66, Cl. 260—96.5.

Becker, Leo, to International Standard Electric Corp. Buffer-stage circuit. 3,284,718, 11–8–66, Cl. 330—12.

Becker, William E., to Bacon Felt Co. Polishing felt. 3,283,451, 11–8–66, Cl. 51—390.

Becking, Paul E., J. D. Bungard, and R. E. Sherman, to Dura Corp. Writing system having ordinate and abscissa reader means. 3,283,871, 11–8–66, Cl. 197—20.

Beckman Instruments, Inc.: *See*—
Halasz, Istvan, and Heine. 3,283,483.
Turner, George S., Lorenz, and Von der Launitz. 3,283,563.

Beckman, Paul. Flattening and reversibly bending method of making a thermocouple. 3,283,397, 11–8–66, Cl. 29—155.5.

Beer, Hans: *See*—
Weber, Alexander. 3,284,053.

Begley, John W., to Phillips Petroleum Co. Hydrodealkylation process. 3,284,525, 11–8–66, Cl. 260—672.

Begley, John W., R. W. Carney, and L. C. Kahre, to Phillips Petroleum Co. Process for separation of hydrocarbons from more saturated hydrocarbons with ethylene diamine solvent. 3,284,339, 11–8–66, Cl. 208—87.

Behrends, F. Louis: *See*—
Wilson, William B. 3,283,400.

Behrmann, Georg: *See*—
Ischinger, Franz, Behrmann, and Linzenkirchner. 3,283,800.

Belanger, Arthur J. Chain hoisting mechanism. 3,284,051, 11–8–66, Cl. 254—105.

Belf, Leon J., and M. W. Buxton, to The National Smelting Co. Ltd. Fluorinated aromatic nitriles and preparation thereof. 3,284,484, 11–8–66, Cl. 260—465.

Belkin, Irving: *See*—
Welsch, Samuel L., and Belkin. 3,283,759.

Bell Asbestos Mines Ltd: *See*—
Durocher, Robert F., Leroux, and McHugh. 3,283,893.

Bell & Howell Co.: *See*—
Smitzer, Louis A., Gawin, Gross, Balint, and Bixby. 3,283,680.

Bell, John W., Jr. Apparatus for stringing tobacco leaves. 3,283,921, 11–8–66, Cl. 214—5.5.

Bell Telephone Laboratories, Inc.: *See*—
Dolling, Jens C. 3,284,802.
Harding, Philip A. 3,284,784.
Lee, Chi-Yuan, and Paull. 3,284,779.
Munn, Alfred J. 3,284,672.
Sikorski, Mathew E. 3,284,079.
York, Robert K. 3,284,576.

Bellar, Oscar, to T. Dalby. Duplex variable electrical resistance device. 3,284,752, 11–8–66, Cl. 338—131.

Belshaw Brothers Inc.: *See*—
Belshaw, Thomas E., Wilke, and Scott. 3,283,695.

Belshaw, Thomas E., W. D. Wilke, and G. H. Scott, to Belshaw Brothers Inc. Doughnut frying machine. 3,283,695, 11–8–66, Cl. 99—354.

Bemis Co., Inc.: *See*—
Miller, Keeth B. 3,283,994.
Mueller, Robert C. 3,283,672.

Bender, Harry: *See*—
Pitt, Harold M., and Bender. 3,284,467.

Bendix Corp., The: *See*—
Albright, Franklin C. 3,284,031.
Heaslip, Donald B. 3,284,668.
Irwin, Francis E. 3,283,786.
Julow, Thomas M., French, and Rosback. 3,283,505.
Kasten, Walter. 3,283,477.
Mossey, Joseph L., and Burnett. 3,283,858.
Myers, Robert E. 3,283,604.
Rogers, Francis R., McCombs, and Snider. 3,323,500.
Scruggs, David M. 3,284,194.
Whiting, James C. 3,283,907.

Beneke, James G. *See*—
Brown, Ronald K., and Beneke. 3,283,839.

Benninger, Herbert: *See*—
Singer, Franz, and Benninger. 3,283,686.

Benson, Warren E., Jr., to Forté Engineering Corp. Field-masking in capacitive moisture-content measurements of objects having metal straps. 3,284,706, 11–8–66, Cl. 324—61.

Bentley Engineering Co., Ltd., The: *See*—
Kent, Alfred W. 3,283,544.
Peberdy, Roland. 3,283,539.

Beranek, Emil L., and R. J. Wilson, to Butler Mfg. Co. Perforated grain bin floor. 3,283,459, 11–8–66, Cl. 52—263.

Berck, Joseph, to Duracraft Products Inc. Upholstery cushion construction. 3,283,345, 11–8–66, Cl. 5—345.

Berenbaum, Morris B., R. F. Foerster, R. H. Gobran, D. C. Guth, R. F. Snyder, T. F. Wells, III, and A. J. Yu, to Thiokol Chemical Corp. Coated cellophane article and process for obtaining the same. 3,284,276, 11–8–66, Cl. 161—184.

Berend, John R.: *See*—
Szego, Laszlo L. 3,283,480.

Beres, Steven, W. R. O'Donnell, and W. Stelman, to Valve Corp. of America. Valve construction of pressurized dispensers. 3,283,785, 11–8–66, Cl. 137—628.

Bergna, Horacio E., and F. A. Simko, Jr., to E. I. du Pont de Nemours and Co. Silica supported catalysts and method of preparation thereof. 3,284,369, 11–8–66, Cl. 252—454.

Bernier, Carl J.: *See*—
Morin, Joseph R., and Bernier. 3,284,664.

Bernuts, Johannes, and G. Sobel, to International Standard Electric Corp. Switching arrangement for contact spring strips. 3,284,604, 11–8–66, Cl. 200—166.

Berry, Jon R., to Airpax Electronics Inc. Semiconductor choppers. 3,284,637, 11–8–66, Cl. 307—88.5.

Bertram, August H., J. Horsch, and G. D. Rohweder, to Caterpillar Tractor Co. Retarder control system. 3,283,859, 11–8–66, Cl. 188—90.

Beschke, Helmut, and W. A. Schuler, to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler. 1-lower alkyl-4-substituted phenyl-1,2,3,6-tetrahydropyridines and acid addition salts. 3,284,457, 11–8–66, Cl. 260—290.

Best, John S., to The Dow Chemical Co. Method of making a composite shaped article. 3,284,260, 11–8–66, Cl. 156—212.

Beteiligungs- und Patentverwaltungs-gesellschaft mit beschrankter Haftung: *See*—
Lohner, Kurt. 3,283,750.

Biddison, Elmer M., Jr., to E. I. du Pont de Nemours and Co. Pneumatic deniering apparatus. 3,283,564, 11–8–66, Cl. 73—37.7.

Bills, Ocie D., F. E. Edwards, and O. G. Sledge. Double barrel firearm with a single trigger. 3,283,436, 11–8–66, Cl. 42—42.

Binaut, Jean, to Gewerkschaft Eisenhutte Westfalia. Planer mining machine with adjustable tripod guide. 3,284,138, 11–8–66, Cl. 299—34.

Binder, Richard J., to Monsanto Co. Apparatus and process for preparing semiconductor rods. 3,284,172, 11–8–66, Cl. 23—301.

Birk, Mier: *See*—
Kerns, Quentin A., Birk, and Nunamaker. 3,284,642.

Birkenmeyer, Robert D.: *See*—
Kagan, Fred, and Birkenmeyer. 3,284,438.

Bir-Vac Ltd.: *See*—
Craswell, Kenneth B. 3,283,956.

Bishop, Robert G., and W. R. Simmons, to Hercules Inc. Process of preparing carboxymethylcellulose. 3,284,441, 11–8–66, Cl. 260—231.

Bishop, Roger I., E. R. Kendall, R. A. Palmer ----S

Bishop, Roger I., E. R. Kendall, and R. A. Palmer (deceased by D. Palmer, executrix), to S. Smith & Sons (England) Ltd. Aircraft instruments. 3,283,573, 11–8–66, Cl. 73—178.

Bliuliano, Michael N., and G. Strull, to Westinghouse Electric Corp. Semiconductor switch device of controlled rectifier type responsive to approximately equal gate signals of either polarity. 3,284,639, 11–8–66, Cl. 307—88.5.

Bliver, Jean, to Societe du Carburateur Zenith. Carburetors. 3,284,066, 11–8–66, Cl. 261—70.

Blxby, Thomas G., to McGill Mfg. Co., Inc. Sealed anti-friction bearing. 3,284,145, 11–8–66, Cl. 308—187.2.

Bixby, William E.: *See*—
Smitzer, Louis A., Gawin, Gross, Balint, and Bixby. 3,283,680.

Black, Kenneth G., to General Electric Co. D.-C. current regulator including a high gain saturating amplifier. 3,284,688, 11–8–66, Cl. 318—332.

Black, Lloyd V., and H. E. McKelvey, to Pittsburgh Plate Glass Co. Glass sheet bending mold with pivoted end sections. 3,284,183, 11–8–66, Cl. 65—291.

Black, Sivalls & Bryson, Inc. (BS&B): *See*—
Conover, William J. 3,283,744.

Blair, Ruth G. Animated horse attachment for a tricycle. 3,284,090, 11–8–66, Cl. 280—1.202.

Blake, Ralph K., to E. I. du Pont de Nemours and Co. Image yielding layers. 3,284,206, 11–8–66, Cl. 96—107.

Blanchard, Floyd W. Headrest. 3,283,344, 11–8–66, Cl. 5—338.

Blank, Wilhelm: *See*—
Eckhardt, Karl-Heinz, Stiefel, Stahn, and Blank. 3,283,926.

Blaske, Joseph T., Jr.: *See*—
Blaske, Joseph A., Sr., and J. T. Blaske, Jr. 3,284,125.

Blaske, Joseph A., Sr., and J. T. Blaske, Jr., to Product Experimental Development. Means of lifting containers or vessels. 3,284,125, 11–8–66, Cl. 294—86.

Bleiweiss, Arthur F., G. Colombo, and J. B. Dickson, to Lehigh Valley Industries, Inc. Automotive vehicle turn signalling system with variable current drain and constant flashing rate. 3,284,770, 11–8–66, Cl. 340—81.

Bliss, E. W., Co.: *See*—
Kraft, Derald H., and Armbruster. 3,283,551.

Blodgett, Norman S., M. H. Kuhner, and E. C. Miller, to Riley Stoker. Steam generating unit. 3,283,801, 11–8–66, Cl. 158—1.

Bochmann, Karlheinz, and K. Fitznar, to Siemens & Halske Aktiengesellschaft. Circuit arrangement for ascertaining faulty telegraph symbols. 3,284,771, 11–8–66, Cl. 340—146.1.

Bodett, Peter C., and P. W. Fair, to Motor Wheel Corp. Subbase for hot air furnace. 3,283,753, 11–8–66, Cl. 126—110.

Bodine, Albert G., Jr. Sonic conduit driving system. 3,283,833, 11–8–66, Cl. 175—56.

Bodine, Albert G., Jr. Crushing apparatus with sonic wave action. 3,284,010, 11–8–66, Cl. 241—38.

Boeing Co., The: *See*—
Anderson, William E., and Quist. 3,284,193.
Weglin, Walter. 3,283,662.
Boen, William E.: *See*—
Primrose, Tommie H., and Boen. 3,284,086.

Boerma, Donald J.: *See*—
Boerma, John C. 3,283,733.

Boerma, John C., 50% to D. J. Boerma. Portable and collapsible sportsman's seat. 3,283,733, 11-8-66, Cl. 108—159.

Boese, Peter: *See*—
Gots, Elmar, and Boese. 3,284,618.

Bolding, Hubert V., to Piedmont Carton Co., a subsidiary of E. Texas Pulp and Paper Co. Partitioned paperboard box means. 3,283,950, 11-8-66, Cl. 220—115.

Bolton, James F., to Ames Crosta Mills & Co. Ltd. Surface aeration of liquids. 3,284,058, 11-8-66, Cl. 259—102.

Bonacci, John C., and L. E. Wolinski, to E. I. du Pont de Nemours and Co. Laminas structures of polyvinyl fluoride and method of manufacture. 3,284,277, 11-8-66, Cl. 161—188.

Bonner, Harold W.: *See*—
Childress, Clyde O., and Bonner. 3,283,703.

Boomgaard, Peter F., to Gardner-Denver Co. Wire strapping tool. 3,284,011, 11-8-66, Cl. 242—7.

Borden Co., The: *See*—
Dean, Robert B., and Marino. 3,284,219.

Bordini, Fosco: *See*—
Cantatore, Giuseppe, and Bordini. 3,284,387.

Borg-Warner Corp.: *See*—
Boyd, Clinton A. 3,284,669.

Borg-Warner Corp.: *See*—
Buck, Leo V. 3,283,600.
Fisher, Walter. 3,283,536.

Borsattino, Vincent S., C. E. Marker, and H. L. Morris. Sound producer. 3,284,796, 11-8-66, Cl. 340—384.

Borsig Aktiengesellschaft: *See*—
Luck, Friedrich W. 3,284,087.

Bosch, Robert, G.m.b.H.: *See*—
Baumann, Gunther, Scholl, Reichardt, Zeller, and Wahl. 3,284,165.

Bottomley, Anthony and D. C., to Phillips Petroleum Co. Production of woven thermoplastic fabrics. 3,283,788, 11-8-66, Cl. 139—28.

Bottomley, David C: *See*—
Bottomley, Anthony, and D. C. 3,283,788.

Bourean, George P., and J. E. Maloney, to Petrex Chemical Industries Inc. Paint stripping compositions and process. 3,284,365, 11-8-66, Cl. 252—156.

Bower, Gerald C., to Royal Industries, Inc. Bag tying machine. 3,283,474, 11-8-66 Cl. 53—135.

Bowles Engineering Corp.: *See*—
Manion, Francis M. 3,283,768.

Bowman, Dale E.: *See*—
Cory, Oda L., and Bowman. 3,283,393.

Bowman, David F., to Airtron Division of Litton Precision Products, Inc. Microwave coupler for combining tow orthogonally polarized wave utilizing a ridge-like impedance matching member. 3,284,725, 11-8-66, Cl. 333—9.

Bowser, Inc.: *See*—
Romanowski, Albert F. 3,284,000.

Bowyer, Kern M., to E. I. du Pont de Nemours and Co. Spring-adjustable, thermally responsive switch utilizing a first-order transistion material. 3,284,737, 11-8-66, Cl. 335—146.

Boyd, Charles J. Device for collecting, holding and dispensing flanged primers. 3,283,425, 11-8-66, Cl. 86—45.

Boyd, Clinton A., to Borg-Warner Corp. Pressure and heat sensing means for submersible motors. 3,284,669, 11-8-66, Cl. 317—13.

Boyer, Leonard P., to Aiken-Murray Corp. Feed valve device having valve flushing means. 3,283,781, 11-8-66, Cl. 137—624.17.

Boyer, Ralph K., and H. F. Eyerdam, to Eaton Mfg. Co. Valve for pressurized containers. 3,283,963, 11-8-66, Cl. 222—402.24.

Boyne Products, Inc.: *See*—
Stol, Walter T., and Thomson. 3,284,592.

Braconier, Frederic F. A., and J. J. L. E. Riga, to Societe Belege de l'Azote et des produits Chimiques du Marly. Apparatus for thermal decomposition of hydrocarbons. 3,284,168, 11-8-66, Cl. 23—277.

Bradley, Bryant W., to Shell Oil Co. Acidizing wells. 3,283,816, 11-8-66, Cl. 166—42.

Bradway, Joseph. Electrical locking arrangement. 3,283,550, 11-8-66, Cl. 70—282.

Bramer, Donald W., to General Signal Corp. Reversible counting system for locating moving object. 3,284,614, 11-8-66, Cl. 235—92.

Bramley, Jenny, and N. H. Lehrer, to Hughes Aircraft Co. Cathode ray storage tube for displaying stored and non-stored displays in different colors. 3,284,654, 11-8-66, Cl. 313—92.

Brandli, Alexander, to Hewlett-Packard Co. Temperature compensation for cesium beam frequency standard cavity. 3,284,720, 11-8-66, Cl. 331—3.

Brandon, Reginald L., III: *See*—
Moore, Charles W., Brandon, and Smyly. 3,284,144.

Branson Instruments, Inc.: *See*—
Soloff, Robert S., and Linsley. 3,284,257.

Brasco, Frederick, and P. R. Temple, to Arthur D. Little, Inc. Urea-formaldehyde. 3,284,379, 11-8-66, Cl. 260—2.5.

Brasty, Joseph, and G. Spero, to The Spero Electric Corp. Unitized fixture and assembly. 3,284,624, 11-8-66, Cl. 240—11.4.

Braswell, Samuel P. Inside pipe cutting tool. 3,283,405, 11-8-66, Cl. 30—103.

Bratkowski, Walter V.: *See*—
Spewock, Metro, and Bratkowski. 3,284,743.

Braun, Gunther: *See*—
Merten, Rudolf, Braun, and Hennig. 3,284,377.

Braselton, William C.: *See*—
Schroer, Carl E., and Braselton. 3,284,147.

Bredow, Walter. Overload stamping device for pull or push drives, particularly in stamping presses. 3,283,610, 11-8-66, Cl. 74—582.

Brenner, Ewald, and E. Erhart. Salvage saw apparatus. 3,283,637, 11-8-66, Cl. 83—432.

Breslow, David S., to Hercules Inc. Modifying polymers. 3,284,421, 11-8-66, Cl. 260—80.5.

Brewer, Thomas H., and W. Hilton, to Miles Electronics Ltd. Vehicle trainers. 3,283,418, 11-8-66, Cl. 35—11.

Briggin, Edward: *See*—
Katzman, Lawrence, Briggin, Stolarz, and D'Elia. 3,283,478.

Bright, Willard M., to Lever Brothers Co. Germicidal soaps. 3,284,363, 11-8-66, Cl. 252—107.

Brinker, Robert A.: *See*—
Eckert, John P., Jr., Brown, Hulls, and Brinker. 3,284,635.

Bristol-Myers Co.: *See*—
Cheney, Lee C., Godfrey, Crast, and Luttinger. 3,284,451.
Cheney, Lee C., and Perron. 3,284,498.

British Aluminium Co. Ltd., The. *See*—
Taylor, George O. 3,283,553.

British Nylon Spinners Ltd.: *See*—
Dawes, Stanley V., and Taylor. 3,283,337.

British Petroleum Co. Ltd., The: *See*—
Anstey, Roger H., and Macnab. 3,284,346.
Demeester, Jacques, and Helion. 3,284,344.

Brockway Glass Co., Inc.: *See*—
Taylor, James R. A. 3,284,226.

Brodie, George R., to John C. Motter Printing Press Co. Coating apparatus. 3,283,741, 11-8-66, Cl. 118—262.

Bromley, Derek, to United Kingdom Atomic Energy Authority. Stand pipes for nuclear reactors. 3,284,313, 11-8-66, Cl. 176—58.

Bronder, Herbert, to Ingersoll-Rand World Trade Ltd. Gantry type drilling machines. 3,283,831, 11-8-66, Cl. 173—43.

Bronson Specialties, Inc.: *See*—
Wood, Morris E. 3,284,018.
Wood, Morris E. 3,284,019.

Brook, Arthur F. Combination folding and punching machine. 3,284,078, 11-8-66, Cl. 270—82.

Brophy, Carl R. Folding stairs. 3,283,853, 11-8-66, Cl. 182—156.

Brotherton, Thomas K.: *See*—
Knopf, Robert J., and Brotherton. 3,284,502.

Brotz, Walter, and K. Maier, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Valuable product from montan resin and process for its manufacture. 3,284,222, 11-8-66, Cl. 106—239.

Brown, Albert: *See*—
Eckert, John P., Jr., Brown, Hulls, and Brinker. 3,284,635.

Brown, Boveri & Cie Aktiengesellschaft: *See*—
Gassner, Hans-Jurgen. 3,283,380.

Brown, Cicero C. Screw-set packer. 3,283,821, 11-8-66, Cl. 166—134.

Brown Co.: *See*—
Rumberger, George G. 3,284,248.
Rumberger, George G. 3,284,279.

Brown, George L., to Automatic Electric Laboratories, Inc. Telephone ringer. 3,284,798, 11-8-66, Cl. 340—397.

Brown, Ira D.: *See*—
Flanagan, Samuel V., and Brown. 3,283,776.

Brown, Ronald K., and J. G. Beneke. Stair climbing wheel chair. 3,283,839, 11-8-66, Cl. 180—5.

Brownscombe, Eugene R., H. F. Dunlap, L. R. Kern, and T. K. Perkins, to The Atlantic Refining Co. Saline water conversion by subsurface processes. 3,283,813, 11-8-66, Cl. 166—9.

Brueder, Antoine, to Andre Citroen Societe Anonyme. Automatic regulators for hydrostatic transmissions of automobile vehicles. 3,283,606, 11-8-66, Cl. 74—472.

Brunel, Joseph J. A., to Canadair Ltd. Hall effect device utilized to compensate for variable induced fields in other sensors. 3,284,703, 11-8-66, Cl. 324—45.

Brunner, Reuben H. Move about flower pot. 3,284,039, 11-8-66, Cl. 248—153.

Brunswick Corp.: *See*—
Isenberg, Sampson, Shaw, and Moon. 3,284,082.

Bryant, John J. Large loop antenna. 3,284,801, 11-8-66, Cl. 343—743.

Bucciconi Engineering Co., Inc.: *See*—
Buccione, Dario. 3,283,980.

Buccione, Dario, to Bucciconi Engineering Co., Inc. Apparatus for handling metal sheeting. 3,283,980, 11-8-66, Cl. 226—93.

Buchanan, Stephen N.: *See*—
Buchanan, Stephen N., and Mathis. 3,284,759.

Buchanan, Stephen N. Snap-on type electrical wire connector. 3,284,754, 11-8-66, Cl. 339—95.

Buchanan, Stephen N., and C. A. Mathis, to S. N. Buchanan. Electrical connector and connection made therewith. 3,284,759, 11-8-66, Cl. 339—252.

Buck, Leo V., to Borg-Warner Corp. Dryers. 3,283,600, 11-8-66, Cl. 74—230.17.

Buck, Norman R., and D. C. Wood, to G. T. Schjeldahl Co. Apparatus for sealing and forming a tunnel with heat-sealable tape. 3,284,267, 11-8-66, Cl. 156—383.

Buckman, Kenneth E., S. W. Kemp, D. P. Tuffnell, and R. A. Cross, to General Motors Corp. Filter element having dual porosities. 3,283,904, 11-8-66, Cl. 210—132.

Bueler, Richard C., to Wagner Electric Corp. Control valve. 3,284,142, 11-8-66, Cl. 303—13.

Buell Engineering Co., Inc.: *See*—
Mylting, Lauritz E. 3,284,139.

Bullard Co., The: *See*—
Alvey, Leroy E., and Mendenhall. 3,283,626.

Bungard, James D.: *See*—
Becking, Paul E., Bungard, and Sherman. 3,283,871.

Bunker-Ramo Corp., The: *See*—
Koerner, Ralph J., and Nissim. 3,284,775.

Bunker, Richard D.: *See*—
Schirick, Robert J., Bunker, and Austin. 3,283,849.

Burbank, John E., to Scovill Mfg. Co. Integrally woven zipper stringer. 3,283,379, 11-8-66, Cl. 24—205.1.

Burdyn, Ralph F., and L. D. Wiener, to Mobil Oil Corp. Drilling fluid treatment. 3,284,352, 11-8-66, Cl. 252—8.5.

Bureau d'Etudes Industrielles Fernand Courtoy: *See*—
Zimmer, Frantisek. 3,284,174.

Burg, John P., and W. A. Schneider, to Texas Instruments Inc. Multi-point, multi-channel linear processing of seismic data. 3,284,763, 11-8-66, Cl. 340—15.5.

Burlington Industries, Inc.: *See*—
Faulkner, James L. 3,283,970.

Burnett, Richard T.: *See*—
Mossey, Joseph L., and Burnett. 3,283,858.

Burns, Joseph R., to Radio Corp. of America. Memory storage system. 3,284,782, 11-8-66, Cl. 340—173.

Burns, Kay N., to Esso Production Research Co. Apparatus for making dynamic corrections to seismograms. 3,284,767, 11-8-66, Cl. 340—15.5.

Burns, Robert V., and R. T. Cleary, to Automatic Electric Laboratories, Inc. Substation apparatus employing a multi-frequency signaling arrangement. 3,284,577, 11-8-66, Cl. 179—84.

Burroughs Corp.: *See*—
Lenhardt, Robert W. 3,284,746.
Yetter, Edward W. 3,284,615.

Burroughs Wellcome & Co. (U.S.A.) Inc.: *See*—
Baltzly, Richard, and Mehta. 3,284,490.

Burt, Donald D., to Keyes Fibre Co. Dispensing apparatus. 3,283,952, 11-8-66, Cl. 221—13.

Busch, Edwin. Modular multiple screen film projection systems. 3,283,652, 11-8-66, Cl. 88—24.

Butler Mfg. Co.: *See*—
Beranek, Emil L., and Wilson. 3,283,459.

Butter Mfg. Co.: *See*—
Gutekunst, Gerald A. 3,283,925.

Buxton, Michael W.: *See*—
Belf, Leon J., and Buxton. 3,284,484.

Buzzi, Ugo, to Anstalt Europaische Handelsgesellschaft. Permutation switch with multiple contact rods and arresting device. 3,284,583, 11-8-66, Cl. 200—11.

Byron, John T. Refrigeration system. 3,283,524, 11-8-66, Cl. 62—115.

CBN Corp.: *See*—
Heller, George L., White, and Gunn. 3,284,167.

CSF-Compagnie Generale de Telegraphie Sans Fil: *See*—
Malnar, Leon. 3,284,699.

Cabot Corp.: *See*—
Aftandilian, Victor D. 3,284,329.

Cahen, Roger R.: *See*—
De France, Henri, and Cahen. 3,284,653.

Calcagno, Benedetto, to Societá Italiana Besine S.p.A. Method and catalyst for preparing alkylbenzenes. 3,284,524, 11-8-66, Cl. 260—671.

Caldwell, John R., to Eastman Kodak Co. Shaped objects of a crystalline polyester coated with a hydrophilic polymer composition. 3,284,232, 11-8-66, Cl. 117—138.8.

Calgon Corp.: *See*—
Hatch, George B. 3,284,368.

Calhoun, Frederick L., to Geo. J. Meyer Mfg. Co. Inspection apparatus. 3,283,898, 11-8-66, Cl. 209—111.7.

Callery Chemical Co.: *See*—
Milligan, William E. 3,284,160.

Cal-Meter Co.: *See*—
Granberg, Albert J. 3,283,575.

Calmon, Calvin, and W. Allen, Jr., to Pfaudler Permutit Inc. Process of making seawater desalting briquets. 3,284,366, 11-8-66, Cl. 252—179.

Cameo, Inc.: *See*—
Kerbow, Odis D. 3,284,701.
Ownby, Warren G. 3,284,702.
Tausch, Gilbert H. 3,283,819.
Tausch, Gilbert H. 3,283,820.

Campbell, Bert M., G. B. Miller, and E. W. Deeble, to Frank E. Dayton, (d.b.a.) Dayton Foundry Method and apparatus for casting tubular members embodying flat plane surfaced flanges, and product. 3,283,375, 11-8-66, Cl. 22—131.

Campbell, Claude N., Jr. Bag making machine. 3,283,671, 11-8-66, Cl. 93—8.

Campbell, James K. Dispersions for treating fabrics. 3,284,391, 11-8-66, Cl. 260—29.2.

Campo Construction Co.: *See*—
Campo, Joseph. 3,284,043.

Campo, Joseph, to Campo Construction Co. Concrete form ties. 3,284,043, 11-8-66, Cl. 249—41.

Canada, Her Majesty the Queen in right of as represented by the Minister of Mines and Technical Surveys: *See*—
Spence, Neville S., Badone, Morgan, and McDonald. 3,284,175.

Canada Iron Foundries Ltd.: *See*—
Clements, Loydell A. 3,284,561.

Canadair Ltd.: *See*—
Brunel, Joseph J. A. 3,284,703.

Canning, W., & Co. Ltd.: *See*—
Leloup, Roberto. 3,284,323.

Cantatore, Giuseppe, and F. Bordini, to Montecatini Societá Generale per l'Industria Mineraria e Chimica. Stabilized polymeric composition and method of preparing same. 3,284,387, 11-8-66, Cl. 260—23.

Cargnelutti, Italo. Stacking containers. 3,283,943, 11-8-66, Cl. 220—97.

Carlson, John W. Speed-O-Print Business Machines Corp. Photocopy machine. 3,283,689, 11-8-66, Cl. 95—89.

Carlson, Kenneth A., and D. R. Young, to International Business Machines Corp. Circular poled transducer. 3,284,727, 11-8-66, Cl. 333—30.

Carlson, Roland P.: *See*—
Hart, Benjamin F., and Carlson. 3,283,399.

Carlstrom, Per A., and K. G. G. V. Redelius, to Telefonaktiebolaget L M Ericsson. Message accounting device. 3,284,777, 11-8-66, Cl. 340—172.5.

Carlton, John R. Building structure. 3,283,456, 11-8-66, Cl. 52—223.

Carney, Richard W.: *See*—
Begley, John W., Carney, and Kahre. 3,284,339.

Carolina Insulating Yarn Co.: *See*—
Nisbet, John L., and Woodall. 3,283,389.

Carow, Walter M.: *See*—
Davies, James W., Carow, and De Cotiis. 3,283,586.

Carpenter, Albert S., and W. W. G. Norris, to Courtaulds Ltd. Rollers carrying surface designs for use in printing, embossing and the like. 3,283,714, 11-8-66, Cl. 101—401.1.

Carpenter, O. R.: *See*—
Sumter, Russell G. 3,283,676.

Carr, Milton C.: *See*—
Arnold, Eston. 3,284,101.

Carroll, Frederick C., and F. H. Weihs, to Toledo Scale Corp. Label applicators. 3,284,265, 11-8-66, Cl. 156—350.

Carters Ink Co., The: *See*—
Peshin, John V. 3,284,360.

Cartsunis, Louis P.: *See*—
Kindron, Robert R., and Cartsunis. 3,284,283.

Cartwright, Horace A. Hot spray bar for distributing roadway coating materials. 3,284,006, 11-8-66, Cl. 239—166.

Casolo, Jack, and W. C. Kerker, to American Machine & Foundry Co. Tray feed mechanism. 3,283,930, 11-8-66, Cl. 214—302.

Cass, Joseph T. Self-closing magnetic plug. 3,283,905, 11-8-66, Cl. 210—222.

Caterpillar Tractor Co.: *See*—
Bertram, August H., Horsch, and Rohweder. 3,283,859.

Cauvin, Andre, to Societe Anonyme Simca Automobiles. Apparatus for driving the auxiliary driven devices of an internal combustion engine, particularly for an automobile. 3,283,527, 11-8-66, Cl. 62—133.

Cayle, Theodore, to Baxter Laboratories, Inc. Stable papain derivative. 3,284,316, 11-8-66, Cl. 195—63.

Celanese Corp. of America: *See*—
Arthur, James B., and Livingston. 3,283,493.
Riley, Jesse L. 3,284,554.

Cenci, Harry J., and M. J. Hurwitz, to Rohm & Haas Co. Processing and stabilizing aids for vinyl chloride resins. 3,284,545, 11-8-66, Cl. 260—899.

Cenegy, Louis F., to Hitco. Casket formed from composite plastic layers. 3,283,386, 11-8-66, Cl. 27—3.

Central Soya Co., Inc.: *See*—
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Central Transformer Corp.: *See*—
Muschong, Peter W. 3,284,563.

Cerchi, Julio C. Bed-forming seating device. 3,283,341, 11-8-66, Cl. 5—17.

Chadha, Rajendra N., to W. R. Grace and Co. Process for polymerizing vinyl and acrylic esters with allyl acrylate wherein an aluminum alkyl and oxygen are used as catalysts. 3,284,422, 11-8-66, Cl. 260—80.5.

Chaii, Harold J., to Friden, Inc. Transfer mechanism for a calculating machine. 3,283,999, 11-8-66, Cl. 235—137.

Chambers, Arthur E. Safety razor. 3,283,403, 11-8-66, Cl. 30—60.5.

Chambon, Louis J., to Societe d'Etudes de Machines Speciales. Wiper roll inking device for printing machines using fatty inks. 3,283,712, 11-8-66, Cl. 101—350.

Champion Papers Inc.: *See*—
Lauderman, Vincent A., and Pedley. 3,284,261.

Chandler, Donald W.: *See*—
Kollar, Ernest P., and Chandler. 3,283,432.

Chandley, George D., to TRW Inc. Turbine wheel manufacturing method. 3,283,377, 11-8-66, Cl. 22—212.

Chapline, Julea S.: *See*—
Naiman, Mark, and Welsh. 3,284,013.

Chapman, Howard D., and H. C. Banke, to Clarin Mfg. Co. Seating unit. 3,284,132, 11-8-66, Cl. 297—162.

Chappell, Horace M., to Aladdin Industries, Inc. Filler support for thermos bottles. 3,283,934, 11-8-66, Cl. 215—13.

Charlson, Lynn L., to Germane Corp. Rotary fluid pressure devices. 3,283,723, 11-8-66, Cl. 103—130.

Chart-Pak, Inc.: *See*—
Addis, Edwin C., and Wilda. 3,283,886.

Chasar, Anthony R., to The Triax Co. Extractor apparatus with curved guides. 3,283,924, 11-8-66, Cl. 214—16.4.

Chausse, Burnette P., to General Electric Co. Signal producing circuit. 3,284,647, 11-8-66, Cl. 307—106.

Chemical Holding Co., Inc.: *See*—
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Chemische Fabriek L. Van der Grinten N.V.: *See*—
Meijs, Jan C., Heuts, and Dohmen. 3,284,201.

Chemische Werke Witten G.m.b.H.: *See*—
Renckhoff, Gustav, and Wolfes. 3,284,488.

Cheney, Lee C., J. C. Godfrey, L. B. Crast, Jr., and J. R. Luttinger, to Bristol-Myers Co. Activated esters of 7-aminocephalosporanic acid. 3,284,451, 11-8-66, Cl. 260—243.

Cheney, Lee C., and Y. G. Perron, to Bristol-Myers Co. Substituted benzene sulfonyl urea. 3,284,498, 11-8-66, Cl. 260—553.

Cheskin, David B. Building framing system. 3,283,465, 11-8-66, Cl. 52—648.

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Driza, Charles E. 3,283,958.
Koundakjian, Theodore H. 3,284,357.
Lindstrom, Eddie G., and Barusch. 3,284,177.
Peeler, Robert L. 3,284,356.
Thomas, John R., and Lavigne. 3,284,358.

Chibnik, Sheldon, to Mobil Oil Corp. Process for the conversion of methyl-substituted benzene compounds to carboxylic acids. 3,284,493, 11-8-66, Cl. 260—524.

Childress, Clyde O., and H. W. Bonner, to Crocker-Citizens National Bank. Electrostatic printing brush powder feed system. 3,283,703, 11–8–66, Cl. 101—114.

Chiu, Jen: *See*—
Harden, John C., Vassallo, and Chiu.

Cholet, Bertram. Smoking article. 3,283,763, 11–8–66, Cl. 131—182.

Cholet, Jacques, ¼ each to Institut Francais du Petrole, des Carburants et Lubrifiants, and Compagnie Generale de Geophysique. Device for recording sequential trains of vibrations after passage through an intervening medium. 3,284,784, 11–8–66, Cl. 340—15.5.

Chopin, Jacques L., to Compagnie des Machines Bull (Societe Anonyme). Voltage comparison circuit. 3,284,716, 11–8–66, Cl. 328—146.

Christiansen, Rosalie L.: *See*—
Hurst, Tim. 3,283,381.

Christiansen, Royal E.: *See*—
Hurst, Tim. 3,283,381.

Chrysler Corp.: *See*—
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Kniel, Paul. 3,284,472.
Liechti, Peter, Guglielmetti, Maeder, and Siegrist. 3,284,462.
Ramanathan, Visvanathan. 3,284,473.
Winfield, Graham, and Ashcroft. 3,284,407.

Ciemochowski, Michael F., to Holley Carburetor Co. Dew point detecting and ice preventing device. 3,284,003, 11–8–66, Cl. 236—44.

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Clapper, Loring L., to International Business Machines Corp. Adaptive logic system. 3,284,780, 11–8–66, Cl. 340—172.5.

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Cleary, Robert T.: *See*—
Burns, Robert V., and Cleary. 3,284,577.

Clements, Loydell A., to Canada Iron Foundries Ltd. Electrical conductivity means for pipe joint fittings. 3,284,561, 11–8–66, Cl. 174—78.

Clerk, Robert C., to Formroll Ltd. Manufacture of involute toothed gear wheels. 3,283,559, 11–8–66, Cl. 72—469.

Clifford, Alan F., and J. Jaffe, to Monsanto Co. Alumina supported copper oxide-rare earth oxide catalyst compositions. 3,284,370, 11–8–66, Cl. 252—462.

Clifford, Milton L. Manufacture of particle board. 3,284,266, 11–8–66, Cl. 156—373.

Cline, Elvane E. Combination tackle box and folding seat. 3,284,150, 11–8–66, Cl. 312—235.

Clinton, Henry H. Circuit continuity or resistance tester having an audible out-put signal. 3,284,707, 11–8–66, Cl. 324—62.

Clipper Mfg. Co., Inc.: *See*—
Hahn, Emeran E. 3,283,674.

Close, Frederick J., to Aluminum Co. of America. Container opening device. 3,283,945, 11–8–66, Cl. 220—54.

Clover, Richmond B., Jr., and E. P. Kollar, to International Business Machines Corp. Card storage and selection device. 3,283,761, 11–8–66, Cl. 129—16.1.

Coanda, Henri and M. H. Apparatus for recovering heat released by condensation of a vaporised liquid. 3,284,318, 11–8–66, Cl. 202—160.

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Coanda, Henri and M. H. 3,284,318.

Coates, Robert N., and J. T. Baillargeon; said Baillargeon assor. to said Coates. Heater element fitting for pressurized tank. 3,283,940, 11–8–66, Cl. 220—46.

Coblitz, Sanford E. Tool for fracturing pipe. 3,283,978, 11–8–66, Cl. 225—103.

Cockerill-Ougree Societe Anonyme: *See*—
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Coffing, James E. Adjustable pressure adaptor and sensing device. 3,283,584, 11–8–66, Cl. 73—419.

Coffman, Donald D., to E. I. du Pont de Nemours and Co. Preparation of ethynylsulfur pentafluoride. 3,284,496, 11–8–66, Cl. 260—543.

Cohen, Arthur M. Electromagnetic relay with dashpot type time delay device. 3,284,733, 11–8–66, Cl. 335—61.

Cohen, Henry B. Packaging device. 3,283,473, 11–8–66, Cl. 53—76.

Coja, Felix V. Remote control system for manipulating a business machine. 3,284,061, 11–8–66, Cl. 235—146.

Colclaser, Robert G., Jr.: *See*—
Friedrich, Robert E., Colclaser, and Greger. 3,284,602.

Cole Steel Equipment Co., Inc.: *See*—
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Collie, Stafford D., to Phillips Petroleum Co. Formed container and closure therefor. 3,283,942, 11–8–66, Cl. 220—60.

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Columbia Broadcasting System, Inc.: *See*—
Fender, Clarence L. 3,284,581.

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Alfille, Lucien, and Darras. 3,284,256.
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Compagnie Generale de Geophysique: *See*—
Cholet, Jacques. 3,284,764.

Compagnie des Machines Bull (Societe Anonyme): *See*—
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Laupretre, Jean-Jacques. 3,284,638.

Compagnie Francaise de Television: *See*—
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Compagnie Nationale Air France: *See*—
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Compur-Werk G.m.b.M. & Co.: *See*—
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Compur-Werk Gesellschaft mit beschrankter Haftung & Co.: *See*—
Singer, Franz, and Fahlenberg. 3,283,681.
Singer, Franz, and Hartl. 3,283,687.

Conch International Methane Ltd.: *See*—
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Nachshen, Maurice. 3,283,511.

Connell, Calvin C., to Crusader Marine Corp. Exhaust elbow. 3,283,498, 11–8–66, Cl. 60—30.

Conover, William J., to Black, Sivalls & Bryson, Inc. (B S & B). Multiple floor livestock feeding and farrowing building. 3,283,744, 11–8–66, Cl. 119—16.

Conrad, Keith, to Owens-Illinois Inc. Carton accumulating conveyor section. 3,283,882, 11–8–66, Cl. 198—190.

Container Corp. of America: *See*—
De Paul, Richard E. 3,283,989.

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Kehe, Alfred W., and Unger. 3,283,936.
Miller, William L. 3,283,939.
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Turner, Howard M. 3,283,363.

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Stutz, Theo. 3,283,429.

Cook, Harvey L., Jr., and R. A. Clark, to Farrington Electronics, Inc. Sweep demand system. 3,284,568, 11–8–66, Cl. 178—7.6.

Cooper, James N. Tape editing machine. 3,284,084, 11–8–66, Cl. 274—11.

Coover, Harry W., Jr., and N. H. Shearer, Jr., to Eastman Kodak Co. Monosubstituted aluminum dihalide catalysts for olefin polymerization. 3,284,427, 11–8–66, Cl. 260—93.7.

Cope, Geoffrey W., to Symington Wayne Corp. Automatic coupler centering device. 3,283,916, 11–8–66, Cl. 213—15.

Coran, Aubert Y.: *See*—
Anagnostopoulos, Constantine E., and Coran. 3,284,220.

Coran, Aubert Y., and C. E. Anagnostopoulos, to Monsanto Co. Stabilized polymer compositions containing diphenyl mono- or di-carboxylates. 3,284,405, 11–8–66, Cl. 260—45.85.

Cordell, Martin: *See*—
Studley, Lester J., and Cordell. 3,283,481.

Cornelius Co., The: *See*—
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Cornelius, Richard T., to The Cornelius Co. Bottle carrier. 3,283,947, 11–8–66, Cl. 220—102.

Cory, Oda L., and D. E. Bowman. Apparatus for burnishing straight cylindrical surfaces and for rolling crankshaft fillets. 3,283,393, 11–8–66, Cl. 29—90.

Costantini, Anthony R., and A. Di Angelus, to Victory Metal Mfg. Co. d.b.a. Victory Metal Mfg. Corp. Torsionally operated door closure. 3,284,120, 11–8–66, Cl. 292—268.

Cottingham, Robert W., to E. I. du Pont de Nemours and Co. Stabilized sulfur containing aliphatic polycarbonamides. 3,284,402, 11–8–66, Cl. 260—45.75.

Courtaulds Ltd.: *See*—
Carpenter, Albert S., and Norris. 3,283,714.

Cousserans, Gilbert, to Office National Industriel de l'Azote. Process for the extraction of aromatic hydrocarbons in admixture with paraffinic and naphthenic hydrocarbons by means of a selective solvent. 3,284,528, 11–8–66, Cl. 260—674.

Covill, Dennis H.: *See*—
Outhouse, Laurence E., and Covill. 3,284,659.

Cowles, Warren H., to Holley Carburetor Co. Gas turbine fuel control. 3,283,503, 11–8–66, Cl. 60—39.28.

Crabtree, Kenneth L., to Keyes Fibre Co. Dispensing apparatus for nested articles. 3,283,955, 11–8–66, Cl. 221—251.

Craig, Joyce M.: *See*—
Tomcufcik, Andrew S., Craig, and Willson. 3,284,453.

Cramton, Frank R., to E. B. & A. C. Whiting Co. Crimped binding strap and method of making same. 3,283,378, 11–8–66, Cl. 24—16.

Crane, Alfred W., and F. Dittrich. Vacuum filter. 3,283,906, 11–8–66, Cl. 210—232.

Crast, Leonard B., Jr.: *See*—
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Craswell, Kenneth B., to Bir-Vac Ltd. Device and a method for transferring a charge of material. 3,283,956, 11–8–66, Cl. 222—1.

Crawford, Robert F.: *See*—
Goldsmith, Harry, and Crawford. 3,284,463.

Cretsinger, Hiram W. Platen for contour sanding, grinding and polishing. 3,283,447, 11–8–66, Cl. 51—141.

Critser, Russell F. Safety device in combination with a football helmet. 3,283,336, 11–8–66, Cl. 2—9.

Croce, Louis J.: *See*—
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Crocker-Citizens National Bank: *See*—
Childress, Clyde O., and Bonner. 3,283,703.

Cross, A. T., Co.: *See*—
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Cross, Alexander D., to Syntex Corp. 19-substituted-10a-androstanes. 3,284,448, 11–8–66, Cl. 260—239.55.

Cross Co., The: *See*—
Cross, Ralph E., Tech, and Pierce. 3,283,664.

Cross, Ralph E., K. O. Tech, and G. D. Pierce, to The Cross Co. Feed and drive unit for a machine tool. 3,283,664, 11–8–66, Cl. 90—14.

Cross, Ronald A.: *See*—
Buckman, Kenneth E., Kemp, Tuffnell, and Cross. 3,283,904.

Crouzet, Henri, to Moulinage et Retorderie de Chavanoz. Thermal treatment of synthetic textiles. 3,283,414, 11–8–66, Cl. 34—77.

Crusader Marine Corp.: *See*—
Connell, Calvin C. 3,283,498.

Cruzen, Harry F., Jr. Powered cube turntable. 3,283,880, 11–8–66, Cl. 198—21.

Cruzen, Harry F., Jr. Block turntable. 3,283,883, 11–8–66, Cl. 198—209.

Culbertson, William J., Jr., T. D. Nevens, and W. D. Schnackenberg, to The Oil Shale Corp. Method of treating oils derived by thermal treatment of solid carbonaceous materials. 3,284,336, 11–8–66, Cl. 208—11.

Cullen, James E. L., to Gary Industries, Inc. Rack structures. 3,283,912, 11–8–66, Cl. 211—46.

Cumberland Chemical Corp.: *See*—
Redmon, Bryan C., and Mottern. 3,284,519.

Cummins, James B., to Polaroid Corp. Multiple-image portrait camera. 3,283,685, 11–8–66, Cl. 95—18.

Cunningham, Patrick J.: *See*—
Platus, David L., Marovich, and Cunningham. 3,283,857.

Curry, Nolan A.: *See*—
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Cusic, John W., and P. Yonan, to G. D. Searle & Co. Hydrazones of 1-amino-4-xanthenecarbonylpiperazines. 3,284,449, 11–8–66, Cl. 260—240.

Cutler-Hammer, Inc.: *See*—
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Cutting Room Appliances Corp.: *See*—
Merrill, Edward M. 3,284,017.

Cybulski, Edward B.: *See*—
Thompson, Norman F., 3rd, and Cybulski. 3,283,391.

Czech, Clifford F., to McGraw-Edison Co. Dry cleaning machine. 3,283,548, 11–8–66, Cl. 68—12.

DUAL Gebruder Steidinger: *See*—
Zimmerman, Heinrich, and Laufer. 3,284,085.

Daams, Jasper: *See*—
Koopman, Harmannus, and Daams. 3,284,185.

Dahlin, Bernard A.: *See*—
Wiggins, Robert B., and Dahlin. 3,284,014.

Daimler Benz Aktiengesellschaft: *See*—
Froitzheim, Hans. 3,283,692.
Saftien, Udo. 3,284,143.

Daimon, Hiroshi, K. Kamio, and S. Kojima, to Nippon Carbide Kogyo Kabushiki Kaisha. Process for polymerizing olefin oxides with a catalyst consisting of an organozinc compound and an amine. 3,284,374, 11–8–66, Cl. 260—2.

Dajani, Mahmoud T., and R. B. Thompson, to Nalco Chemical Co. Water purification method. 3,284,351, 11–8–66, Cl. 210—63.

Dalby, Terence: *See*—
Bellar, Oscar. 3,284,752.

D'Alello, Gaetano F., to Dal Mon Research Co. Unsaturated addition polymers convertible by oxygen to insoluble polymers. 3,284,385, 11–8–66, Cl. 260—23.

D'Alello, Gaetano F., to Dal Mon Research Co. Alkyd copolymers of halogen-containing phosphonium monomers and polymers. 3,284,540, 11–8–66, Cl. 260—869.

Dal Mon Research Co.: *See*—
D'Alello, Gaetano F. 3,284,385.
D'Alello, Gaetano F. 3,284,540.

Dalton, Harold R., to Timefax Corp. Electrosensitive facsimile stencil-forming blanks. 3,283,704, 11–8–66, Cl. 101—128.2.

Daly, Daniel F., to The Arrow-Hart & Hegeman Electric Co. Enclosed switch with cover switch and connector interlocking means. 3,284,591, 11–8–66, Cl. 200—50.

Damiano, Robert, and J. Kliphuis, to United States of America, Army. Integrally constructed parametric amplifier-circulator unit. 3,284,717, 11–8–66, Cl. 330—4.5.

D'Amico, John J., to Monsanto Co. Inhibiting growth of fungi and bacteria. 3,284,287, 11–8–66, Cl. 167—22.

D'Amico, John J., and P. C. Hamm, to Monsanto Co. Chlorobenzyl carbazates. 3,284,482, 11–8–66, Cl. 260—455.

Danby, Gordon T., and J. W. Jackson, to United States of America, Atomic Energy Commission. Quadrupole magnet with reduced lateral dimension. 3,284,744, 11–8–66, Cl. 335—210.

Danieli, Luigi. Apparatus for machining variable pitch helicoid grooves in rolling mill rolls. 3,283,661, 11–8–66, Cl. 90—11.5.

D'Arcy, Norman J. H.: *See*—
Hutchison, Thomas B., and D'Arcy. 3,283,506.

Darmstadt, William J.: *See*—
Kolm, Ernest L., and Darmstadt. 3,284,064.

Darras, Raymond: *See*—
Alfille, Lucien, and Darras. 3,284,256.

Daubman, Edward A., to Ametek, Inc. Centrifugal separator. 3,283,909, 11–8–66, Cl. 210—380.

Davidson, Keith V.: *See*—
Riley, Robert E., and Davidson. 3,284,550.

Davies, James W., W. M. Carow, and C. J. De Cotiis, to General Precision Inc. Accelerometer damping control. 3,283,586, 11–8–66, Cl. 73—497.

Davies, Roy D., to Moore Business Forms, Inc. Form feeding devices. 3,283,875, 11–8–66, Cl. 197—133.

Davis, Charles A., to W. J. Young Machinery Co., Inc. Nailing machine. 3,283,984, 11–8–66, Cl. 227—30.

Davis, Charles C., and R. L. Erickson, to Cutler-Hammer, Inc. Pushbutton latching and locking attachment. 3,283,608, 11–8–66, Cl. 74—527.

Davis, Charles E. High speed milling apparatus. 3,283,663, 11–8–66, Cl. 90—12.

Davis, Charles J., and A. B. Mayfield; said Mayfield assor. to said Davis. Heavy self-propelled work performing vehicle. 3,283,841, 11–8–66, Cl. 180—14.

Davis, Horace R., to Minnesota Mining and Mfg. Co. Haloalkyl hydroxyaldehydes. 3,284,509, 11–8–66, Cl. 260—602.

Davis, Horace R., to Minnesota Mining and Mfg. Co. Reaction products of halogenated ketones with unsaturated hydrocarbons. 3,284,516, 11–8–66, Cl. 260—633.

Davis, James W. Polar polymer modified-ethylene-propylene co-polymer latices. 3,284,380, 11–8–66, Cl. 260—8.

Davis, William J. Fluid transmission. 3,283,787, 11–8–66, Cl. 138—148.

Davis, William W.; to Sperry Rand Corp. Magnetic recording on a thin-film surface. 3,284,783, 11–8–66, Cl. 340—174.

Dawes, Stanley V., and W. F. Taylor, to British Nylon Spinners Ltd. Collars and their manufacture. 3,283,337, 11–8–66, Cl. 2—143.

Dayton Foundry: *See*—
Campbell, Bert M., Miller, and Deeble. 3,283,375.

Dayton, Frank E.: *See*—
Campbell, Bert M., Miller, and Deeble. 3,283,375.

Dean, Frank J., Jr., to Tempmaster Corp. Air mixing and sound attenuating unit. 3,283,694, 11–8–66, Cl. 98—38.

Dean, Leslie G., C. W. Grant, and A. Ball, to The Loewy Engineering Co. Ltd. Apparatus for transferring metal billets. 3,283,919, 11–8–66, Cl. 214—1.

Dean, Robert B., and W. L. Marino, to The Borden Co. Internally plasticized casein. 3,284,219, 11–8–66, Cl. 106—147.

Dear, William N., to Laporte Titanium Ltd. Means for connecting metal and refractory tubular members. 3,284,163, 11–8–66, Cl. 23—252.

De Boo, Jerome L., to Teletype Corp. Chadless perforator. 3,283,974, 11–8–66, Cl. 225—2.

De Bosredon, Pierre. Lateral offset mounting for power shovel dipper arm. 3,283,928, 11–8–66, Cl. 214—138.

Decca Ltd.: *See*—
Freedman, Arye L. 3,284,776.

De Cerjat, Aymon, to Edouard Dubied et Cie (Societe Anonyme). Method and device for the individual control of selecting members. 3,283,541, 11–8–66, Cl. 66—50.

Decker, John W., and C. G. Koella, to Michigan Tool Co. Disinfecting cleansing pad. 3,283,357, 11–8–66, Cl. 15—506.

De Cotiis, Consant J.: *See*—
Davies, James W., Carow, and De Cotiis. 3,283,586.

Dedinas, Jonas, A. M. Henke, and W. C. Offutt, to Gulf Research & Development Co. Process for the thermal hydrodealkylation of cresols. 3,284,513, 11–8–66, Cl. 260—621.

Dedinas, Jonas, A. M. Henke, and W. C. Offutt, to Gulf Research & Development Co. Process for the hydroalkylation of a polyalkylated phenol. 3,284,514, 11–8–66, Cl. 260—621.

Deeble, Earle W.: *See*—
Campbell, Bert M., Miller, and Deeble. 3,283,375.

De France, Henri, and R. R. Cahen, to Compagnie Francaise de Television. Cathode ray tube with a grid of single continuous wire. 3,284,653, 11–8–66, Cl. 313—89.

D'Ellia, Anthony N.: *See*—
Katzman, Lawrence, Briggin, Stolarz, and D'Ellia. 3,283,478.

Dell'Orfano, Anthony M.: *See*—
Hood, Roger W., and Dell'Orfano. 3,283,998.

De Long Corp.: *See*—
De Long, Leon B., Finkelson, and Suderow. 3,283,516.

De Long, Leon B., C. B. Finkelson, and G. E. Suderow (deceased, by E. D. Suderow, executrix), to De Long Corp. Walking work barge. 3,283,516, 11–8–66, Cl. 61—46.5.

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Harrell, William C., and Demarest. 3,284,181.

Demeester, Jacques, and R. Helion, to The British Petroleum Co. Ltd. Hydrocatalytic refining of chlorine containing lubricating oils. 3,284,344, 11–8–66, Cl. 208—262.

De Meo, Nicholas L., and J. A. Denner, to United Electric Controls Co. Pneumatic valves. 3,283,769, 11–8–66, Cl. 137—82.

De Meyer, Alfons. Clamping tensioned strings for the stringing or restringing of rackets. 3,284,050, 11–8–66, Cl. 254—67.

Dempster Bros., Inc.: *See*—
Dempster, James W., Huey, and Voorhees. 3,283,932.

Dempster, James W., T. J. Huey, Jr., and S. C. Voorhees, to Dempster Bros., Inc. Apparatus for handling containers. 3,283,932, 11–8–66, Cl. 214—516.

Denner, John A.: *See*—
De Meo, Nicholas L., and Denner. 3,283,769.

Dennison Mfg. Co.: *See*—
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Fietz, Dale H. Material hardness tester. 3,283,566, 11-8-66, Cl. 73—81.

Fietz, Dale H. Internal hardness tester. 3,283,567, 11-8-66, Cl. 73—984.

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Fischer, Jack, to United States of America, Atomic Energy Commission. Preparation of plutonium hexafluoride. 3,284,173, 11-8-66, Cl. 23—326.

Fisher, Robert B., to Tinker and Rasor. Cathodic protection system detector. 3,284,789, 11-8-66, Cl. 340—249.

Fisher, Walter, to Borg-Warner Corp. Flexible mechanical coupling. 3,283,536, 11-8-66, Cl. 64—15.

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Foote, Donald S., and J. H. Whipple, to Remington Arms Co., Inc. Molded plastic shotshell. 3,283,720, 11-8-66, Cl. 102—42.

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Galat, Alexander. Calcium acetylsalicylate monoglycinate salt of acetylsalicyclic acid. 3,284,489, 11-8-66, Cl. 260—480.

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Gary Industries, Inc.: *See*—
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Gassner, Hans-Jurgen, to Brown, Boveri & Cie Aktiengesellschaft. Guy rope of glass-fiber reinforced plastic rods. 3,283,380, 11-8-66, Cl. 24—122.6.

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Komarmy, Julius M., Schwartzwalder, and Suchy. 3,283,-908.
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Larson, William B., Spray, and Mueller. 3,284,192.
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Gerhards, Karl H. Automatic circuit sampler garble detector. 3,284,564, 11-8-66, Cl. 178—4.

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Gerrans, Alfred W., to Sunsweet Dryers. Apparatus for removing dried products from a support structure. 3,283,-931, 11-8-66, Cl. 214—310.

Gersovitz, Benjamin. Shear reinforcement in reinforced concrete floor systems. 3,283,458, 11-8-66, Cl. 52—260.

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Getteiman, Gilbert C., and M. G. Rostad. Food heating apparatus. 3,284,613, 11-8-66, Cl. 219—535.

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Giacosa, Dante, to Fiat Societa per Azioni. Friction clutch control device for motor vehicles. 3,283,866, 11-8-66, Cl. 192—96.

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Gibson, Howard B., to The Thomas & Betts Co. Adjustable tensioning means for tools. 3,284,076, 11-8-66, Cl. 267—1.

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Gill, Jack M., and W. G. Juhl, to Monsanto Co. Dealkylation of alkyl-substituted aromatics. 3,284,527, 11-8-66, Cl. 260—672.

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Gillis, Robert P., to Ingersoll-Rand Co. Impulse tool with bypass means. 3,283,537, 11-8-66, Cl. 64—26.

Gippin, Morris, to The Firestone Tire & Rubber Co. Production of cis-1,4-polybutadiene with a higher fatty acid salt of cobalt-dihydrocarbon aluminum halide-aluminum catalyst. 3,284,431, 11-8-66, Cl. 260—94.3.

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Golden, Robert L., to Robertshaw Controls Co. Pneumatic systems and parts and method. 3,283,666, 11–8–66, Cl. 91—37.

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Goldsmith, Harry, and R. F. Crawford, to United States Borax & Chemical Corp. 2-cycloalkyl-halobenzimidazoles. 3,284,463, 11–8–66, Cl. 260—309.2.

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Goodwin, George D. Endless belt type solids separator. 3,283,901, 11–8–66, Cl. 209—428.

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Gordon, Elias. Shutter devices for viewers and projectors. 3,283,849, 11–8–66, Cl. 88—24.

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Gould, Albert. Wind-driven noise-making devices. 3,283,441, 11–8–66, Cl. 46—58.

Gould, Albert. Spinning toy launcher. 3,283,442, 11–8–66, Cl. 46—72.

Gover, Marcius N. Extended life electrical contact means. 3,284,586, 11–8–66, Cl. 200—19.

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Gray, Sidney, to Radio Corp. of America. Light coupling device. 3,284,722, 11–8–66, Cl. 331—94.5.

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Harris, Roy J. T., and W. C. Lippincott, to Thomas Industries Inc. Dimmer control for system having master and slave dimming devices using pulse signalling therebetween. 3,284,667, 11–8–66, Cl. 315—195.

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Huck, William F. Web processing machines with coordinated web register and tension controls. 3,283,629, 11–8–66, Cl. 83—75.
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Kelleher, Robert R., and W. H. Dutt, to Fabric Research Laboratories, Inc. Method and means for making a papermaker's felt endless. 3,283,388, 11–8–66, Cl. 28—72.

Keller, Fred, to Rexall Drug and Chemical Co. Substituted xylenediols. 3,284,468, 11–8–66, Cl. 260—332.3.

Keller, Fred, to Rexall Drug and Chemical Co. Substituted phthalans. 3,284,469, 11–8–66, Cl. 260—332.3.

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Kiefer, John H., and G. A. Loosveit, to Anchor Bay Mfg. Co., Inc. Multiple wheel weight casting die. 3,283,373, 11–8–66, Cl. 22—92.

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King, James D., and C. E. Edlund, to Southern Gas Assn. Method and apparatus for indicating performance characteristics of reciprocating piston machines. 3,283,569, 11–8–66, Cl. 73—116.

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King, Lawrence, to Rosfor Mills Corp. Web registration and tensioning means. 3,284,015, 11–8–66, Cl. 242—57.1.

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King, William N., and E. E. Merritt, to Federal Cartridge Corp. Method of making plastic tubes. 3,284,560, 11–8–66, Cl. 264—292.

Kingston, Floyd E., to Varian Associates. Gyromagnetic resonance spectrometer with spin decoupling. 3,284,700, 11–8–66, Cl. 324—.5.

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MacLennan, Alastair S., to Ford Motor Co. Temperature and pressure responsive filler cap. 3,284,004, 11–8–66, Cl. 236—92.

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Maffet, Vere, and E. D. Peters, to E. I. du Pont de Nemours and Co. Buffered stop both for interrupted photographic development. 3,284,199, 11–8–66, Cl. 96—50.

Magat, Eugene E., and D. Tanner, to E. I. du Pont de Nemours and Co. Synthetic polyamide textile material having a polyorganosiloxane grafted thereto. 3,284,156, 11–8–66, Cl. 8—115.5.

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Mandato, Angelo A. Traction device. 3,283,798, 11–8–66, Cl. 152—237.

Mangum, Grafton F., and R. T. Willis, Jr., to Thiokol Chemical Corp. Throttlable solid propellant rocket motor. 3,283,510, 11–8–66, Cl. 60—250.

Manion, Francis M., to Bowles Engineering Corp. Vented pure fluid analog amplifier. 3,283,768, 11–8–66, Cl. 137—81.5.

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May, George A. Exponential function potentiometer. 3,284,697, 11–8–66, Cl. 323—74.

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McBride, Richard T., and J. H. Rogers, Jr., to E. I. du Pont de Nemours and Co. Adherability treatment of thermoplastic film. 3,284,331, 11–8–66, Cl. 204—165.

McCall, Clarence I., to Lewis Engineering Co. Thermocouple probe construction. 3,284,247, 11–8–66, Cl. 136—233.

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McConnaughay, Kenneth E. Emulsifier. 3,284,056, 11–8–66, Cl. 259—10.

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McHugh, Brian, to Atomenergi, Aktiebolaget. Internal pressurisation of a nuclear reactor of the pressurised water type. 3,284,311, 11–8–66, Cl. 176—54.

McIlroy, Robert A., and H. P. Markant, to The Babcock & Wilcox Co. Gas absorption apparatus. 3,284,435, 11–8–66, Cl. 261—151.

McIntosh, Donald L., and W. T. Stephenson, to The Dow Chemical Co. Swivel joint. 3,284,106, 11–8–66, Cl. 285—55.

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McLean, Wayne W. Thong type handles for manually portable receptacles. 3,283,993, 11–8–66, Cl. 229—54.

McMillan, Freeman H., and I. Pattison, to Warner-Lambert Pharmaceutical Co. 2-cycloalkylmethylamino-benzhydrols and benzophenones. 3,284,503, 11–8–66, Cl. 260—570.

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Menoret, Maurice J. and M. E. Savelli, deceased, by B. Savelli, widow representative. High frequency, singe junction bipolar transistor. 3,284,643, 11–8–66, Cl. 307—88.5.

Merchant, Charles W., to Euclid Electric & Mfg. Co. Rotational speed sensor control unit. 3,283,588, 11–8–66, Cl. 73—507.

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Merriam, Richard S. Heavy duty caster. 3,283,358, 11–8–66, Cl. 16—20.

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Mertens, Rudolf, G. Braun, and H.-J. Hennig, to Farbenfabriken Bayer Aktiengesellschaft. Polyurethane plastics prepared from a nitrogen containing polyol. 3,284,377, 11–8–66, Cl. 260—2.5.

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Mertler, Charles S., to Stevens Mfg. Co., Inc. Elongated thermostatic control. 3,284,600, 11–8–66, Cl. 200—140.

Merz, Richard C., and K. Jans. Climbing device for poles and the like. 3,283,852, 11–8–66, Cl. 182—92.

Mesmlere, Marc, to Nord-Aviation Societe Nationale de Constructions Aeronautiques. VTOL aircraft having freely pivoted propulsion means. 3,284,027 11/8–66, Cl 244—12.

Messenger, Charles A., and A. E. Marygold, to General Radiotelephone Co. Amplitude modulation to single or double sideband suppressed carrier converter. 3,284,711, 11–8–66, Cl. 325—103.

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Mohler, Roland W. Ice cream mold. 3,283,730, 11–8–66, Cl. 107—19.

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Moore, Buell, to Esquire, Inc. Floodlight. 3,284,622, 11–8–66, Cl. 240—3.

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Moses, Harry, and R. L. Martin, to United States of America, Atomic Energy Commission. Method of discharging a cloud. 3,284,686, 11–8–66, Cl. 317—262.

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Nobles, James B. Electrical timing circuit. 3,284,790, 11–8–66, Cl. 340—309.4.

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Dedinas, Jonas, Henke, and Offutt. 3,284,514.
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Rieth, Harold F. 3,284,685.

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Parks, Merwin S., to Nelson-Parks Corp. Labeling machine. 3,284,271, 11–8–66, Cl. 156—566.

Parris, Joe W., to Lockheed Aircraft Corp. Shutters for oscillograph recorders. 3,284,803, 11–8–66, Cl. 346—109.

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Pass, Herbert A., and B. J. Watt, to The Sherwin-Williams Co. of Canada, Ltd., Green Cross Division. Herbicidal composition and method. 3,284,186, 11–8–66, Cl. 71—2.6.

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Pastor, Sheldon L., to Minnesota Mining and Mfg. Co. Recording tape mechanism. 3,284,580, 11–8–66, Cl. 179—100.2.

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Patrick, Phillip O., and J. H. Engel, to Phillips Petroleum Co. Refining of hydrocarbons to produce diesel fuels and gasoline. 3,284,338, 11–8–66, Cl. 208—68.

Patrick, William A. L-shaped means for dampproofing basements forming passageways between foundation floor and wall. 3,283,400, 11–8–66, Cl. 52—274.

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Patti, Thomas A. Sound reproduction system. 3,283,848, 11–8–66, Cl. 181—31.

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Samuels, Glenn A., and Peterson. 3,283,935.

Peterson, William R., to United States of America, Army. Gas generating apparatus and method. 3,283,501, 11–8–66, Cl. 60—39.47.

Petrol Injection Ltd.: *See*—
Jackson, Harold E. 3,283,771.

Petrolite Corp.: *See*—
Shirley, William L., and Smith. 3,284,343.

Petro-Tex Chemical Corp.: *See*—
Bajars, Laimonis, Croce, and Gabliks. 3,284,536.

Pettibone Mulliken Corp.: *See*—
Rafferty, Cecil W. 3,283,679.

Pettingill, Gene M.: *See*—
Gray, Eugene R., Masten, and Pettingill. 3,284,508.

Pettit, Dorn L., and E. J. Stark, to Square D Co. Electromagnetic contactor. 3,284,742, 11–8–66, Cl. 335—193.

Petty, Olive S.: *See*—
Lindall, Fred H., and Mayne. 3,283,846.

Pfaudler Permutit Inc.: *See*—
Calmon, Calvin, and Allen. 3,284,366.

Pfost, Robert F., to Ampex Corp. Magnetic transducer assembly and manufacture. 3,283,396, 11–8–66, Cl. 29—155.5.

Philco Corp.: *See*—
Lasser, Marvin E., and Lucovsky. 3,284,241.
McBride, John. 3,284,678.
Taylor, Donald R., Jr. 3,284,565.

Phillips, Edwin R.: *See*—
Shebanow, Michael S., and Phillips. 3,283,770.

Phillips, Lloyd H. Floating moveable dock. 3,283,517, 11–8–66, Cl. 61—48.

Phillips Petroleum Co.: *See*—
Begley, John W. 3,284,525.
Begley, John W., Carney, and Kabre. 3,284,339.
Bottomley, Anthony and D. C. 3,283,788.
Clark, Ernest L. 3,284,630.
Collie, Stafford D. 3,283,942.
Hull, Donald E. 3,283,512.
Patrick, Phillip O., and Engel. 3,284,338.
Primrose, Tommie H., and Boen. 3,284,086.
Roberts, William G. 3,283,817.
Santourian, Melcon. 3,283,818.
Sterry, Dan G. 3,284,766.
Thomas, Rosswell W. 3,284,281.
Znech, Ernest A. 3,284,520.

Phillips, Victor D., Jr., and M. M. McLane, to Monsanto Co. Separation of slurries. 3,283,803, 11–8–66, Cl. 159—47.

Piazza, Salvatore J. Bed-wheelchair. 3,284,126, 11-8-66, Cl. 296—20.

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Piedmont Carton Co.: *See*—
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Pierannunzi, Vito L., and H. A. Hurt, to Dixie Machine & Tool Co. Suspension and weighting means of top rolls of a drafting machine. 3,283,367, 11-8-66, Cl. 19—278.

Pierce, Guy D.: *See*—
Cross, Ralph E., Tech, and Pierce. 3,283,664.

Pijls, Hermanus S. J., to North American Philips Co., Inc. Method of connecting objects made of materials having different thermal coefficients of expansion by means of a thermo-setting glue with the use of an auxiliary. 3,283,401, 11-8-66, Cl. 29—470.

Pinkard, Jerry L., to Rector Well Equipment Co., Inc. Removable hanger shoulder. 3,284,111, 11-8-66, Cl. 285—141.

Pinkowski, Henry J., to Illinois Tool Works Inc. Process of sharpening insert blade for rotary cutter. 3,283,449, 11-8-66, Cl. 51—28s.

Pinto, Peter J., to Leslie Salt Co. Tablet dispenser. 3,283,475, 11-8-66, Cl. 53—250.

Pippert, Aaron J., to Universal Packing & Gasket Co. Composite nonadjustable seal assembly. 3,284,088, 11-8-66, Cl. 277—124.

Pitt, Harold M., and H. Bender, to Stauffer Chemical Co. Polychloroethylmercaptomethane-sulfenyl chlorides, polyhalo-1,3-dithiolanes and their preparation. 3,284,467, 11-8-66, Cl. 260—327.

Pitt, Ronnie R., and J. Stultz, to P. R. Mallory & Co. Radio frequency tuning device. 3,284,730, 11-8-66, Cl. 334—72.

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Harrell, William C., and Demarest. 3,284,181.
Korach, Malcolm, and Nielsen. 3,284,491.

Platus, David L., F. A. Marovich, and P. J. Cunningham, to Ara, Inc. (Aerospace Research Associates, Inc.). Beam energy absorbing device. 3,283,857, 11-8-66, Cl. 188—1.

Platz, Stephen: *See*—
Muller, Rudolf, Lessnig, Platz, and Keopke. 3,283,565.

Podgorski, Matthew C.: *See*—
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Pohlenz, Jack B., and N. H. Scott, to Universal Oil Products Co. Method for hydrogen production by catalytic decomposition of a gaseous hydrocarbon stream. 3,284,161, 11-8-66, Cl. 23—212.

Polansky, Seymour, to Ethicon, Inc. Process for crimping an artificial implant for use for an animal body. 3,284,557, 11-8-66, Cl. 264—238.

Polaroid Corp.: *See*—
Cummins, James B. 3,283,685.
Gold, Nicholas, and Sable. 3,283,688.
Kagan, Shelly. 3,284,662.
Land, Edwin H. 3,283,683.
Land, Edwin H. 3,283,684.
Land, Edwin H. 3,284,208.
Rice, Christopher R. 3,283,682.

Policansky, Hyman. Friction clutch mechanism for a fishing reel. 3,284,020, 11-8-66, Cl. 242—84.46.

Pollnow, Gilbert F., and D. T. Haworth, to Allis-Chalmers Mfg. Co. Latent curing agents and processes for curing epoxy resins and products resulting therefrom. 3,284,408, 11-8-66, Cl. 260—47.

Poly Industries, Inc.: *See*—
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Polymer Corp., The: *See*—
Richart, Douglas S. 3,284,538.

Polytop Corp.: *See*—
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Polzin, Clayton H. W., and A. G. Bade, to The Falk Corp. Torque arm. 3,283,103, 11-8-66, Cl. 287—58.

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Maes, Donald A. 3,283,549.

Poschenrieder, Werner, to Siemens & Halske Aktiengesellschaft. Electromechanical filter. 3,284,728, 11-8-66, Cl. 333—71.

Posgate, James C., Jr.: *See*—
North, Daniel A. and Posgate. 3,283,836.

Potter Instrument Co., Inc.: *See*—
Higgins, Leonard J., Schwartz, and Richardson. 3,283,702.

Potter, James A. Toggle switch indicative of rotation direction of rotor. 3,283,599, 11-8-66, Cl. 74—97.

Potter, James A. Servomotor driven balancing system with backlash between components. 3,283,605, 11-8-66, Cl. 74—469.

Pottorf, Newell, to Pan American Petroleum Corp. Marine structure. 3,283,515, 11-8-66, Cl. 61—46.

Potts, Horace T., Co.: *See*—
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Powell, Ennis. Double-lock composition shingle. 3,283,463, 11-8-66, Cl. 52—525.

Powell, Harry C. Verifying machine. 3,283,571, 11-8-66, Cl. 73—136.

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Pratt and Whitney, Inc.: *See*—
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Primrose, Tommie H., and W. E. Boen, to Phillips Petroleum Co. Stuffing box packing. 3,284,086, 11-8-66, Cl. 277—1.

Print & Plastics (Proprietary) Ltd.: *See*—
Sack, Joseph. 3,284,102.

Pritchett, Ervin G.: *See*—
Rowland, Stanley P., Pritchett, and Hofmann. 3,284,511.

Proctor, Richard D. J.: *See*—
Farmer, Everett W., and Proctor. 3,283,348.

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Propps, David J.: *See*—
Baker, Ronald A., and Propps. 3,284,671.

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Putetti, Anthony M., and J. C. McMurray, to Textron, Inc. Apparatus for forming articles. 3,283,556, 11-8-66, Cl. 72—343.

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Lemieux, Raymond U., and Howard. 3,284,446.

Rachor, Lothar, and H. Lotz, to Nukem Nuklear-Chemie und-Metallurgie Gesellschaft. m.b.H. Fuel material for nuclear reactors and process and apparatus for its manufacture. 3,284,314, 11-8-66, Cl. 176—71.

Radio Corp. of America: *See*—
Burns, Joseph R. 3,284,782.
Gray, Sidney. 3,284,722.
Hathaway, Jarrett L. 3,284,633.
Kaminsky, Murray F. 3,284,715.
Kessler, Sebastian W., Jr. 3,284,118.
Stocker, Arthur C. 3,284,663.

Rafferty, Cecil W., to Pettibone Mulliken Corp. Vibratory earth compacting apparatus and method. 3,283,679, 11-8-66, Cl. 94—50.

Ralt, Joseph M. Aerosol container with valve having a biased actuator. 3,283,961, 11-8-66, Cl. 222—402.11.

Ramanathan, Visvanathan, to Ciba Ltd. 1-amino-4-hydroxy-2-phenoxy-anthraquinones. 3,284,473, 11-8-66, Cl. 260—376.

Ramniceanu, Tiberiu J. Blower-contained vibration-free work bench. 3,284,148, 11-8-66, Cl. 312—209.

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Lasua, Sherman C., Hibbard, and Ranck. 3,284,414.

Randolph, William B. Cooking utensil. 3,283,696, 11-8-66, Cl. 99—425.

Rank Precision Industries Ltd.: *See*—
Reason, Richard E. 3,283,568.

Ransomes, Sims & Jefferies Ltd.: *See*—
Jarvis, John S. 3,283,487.

Ran, Karlheins, to Heraeus Quarzschmelze G.m.b.H. Light weight optical mirror with spaced plates connected by trough-like elements. 3,283,655, 11-8-66, Cl. 88—105.

Rausser, Richard C., and E. P. Oliveto, to Schering Corp. Diuretic 1,4,9(11)-pregnatrienes. 3,284,477, 11-8-66, Cl. 260—397.45.

Rawson, Paul O.: *See*—
Morrison, Herbert, Rawson, and Schick. 3,284,151.

Raymond International Inc.: *See*—
Spannhake, Ernst W., and Gendron. 3,283,832.

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Rector Well Equipment Co., Inc.: *See*—
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Red Arrow Products, Inc.: *See*—
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Redelius, Karl G. G. V.: *See*—
Carlstrom, Per A., and Redelius. 3,284,777.

Redmon, Bryan C., and H. O. Mottern, to Cumberland Chemical Corp. Stabilization of chlorinated paraffin wax. 3,284,519, 11-8-66, Cl. 260—652.5.

Redwood, Richard C., Jr., to Honeywell Inc. Apparatus for positioning a body relative to a radiant energy source. 3,284,534, 11-8-66, Cl. 250—214.

Reed, Edward L., B. Gradle, and E. E. Garrett, to North American Aviation, Inc. Bonded metallic and metalized ceramic members and method of making. 3,284,176, 11-8-66, Cl. 29—195.

Regie Nationale des Usines Renault: *See*—
Peras, Lucien. 3,283,374.

Reich, Herwarth. Coupling device. 3,283,534, 11-8-66, Cl. 64—11.

Reichardt, Wolfgang: *See*—
Baumann, Gunther, Scholl, Reichardt, Zeller, and Wahl. 3,284,165.

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Johswich, Friedrich. 3,284,158.

Reise, Donald A., to ACF Industries, Inc. Filter for fuel pump. 3,283,911, 11-8-66, Cl. 210—416.

Reiter, William. Ventilating duct damper. 3,283,691, 11-8-66, Cl. 98—1.

Reiterer, Ferdinand, to Etablissements Neu. Separating-distributing device for textile fibers. 3,284,140, 11-8-66, Cl. 302—59.

Rellumit Inter, S.a.r.L.: *See*—
Muller, Jacques. 3,283,903.

Remington Arms Co., Inc.: *See*—
Foote, Donald S., and Whipple. 3,283,720.

Renckhoff, Gustav, and W. Wolfes, to Chemische Werke Witten G.m.b.H. Process for producing half ester acyl chlorides of aromatic dicarboxylic acids. 3,284,488, 11-8-66, Cl. 260—475.

Reni, Cesare: *See*—
Mantegazza, Attilio, Reni, and Ferre. 3,284,506.

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Keller, Fred. 3,284,469.

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Howell, Raymond P. 3,283,093.

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Rice, Christopher R., to Polaroid Corp. Camera apparatus. 3,283,682, 11-8-66, Cl. 95—13.

Rice, Harold W.: *See*—
Golden, Robert L., Wantz, Rice, Beck, and Palmer. 3,284,589.

Rice, Henry T. M., to Ohlsson & Rice, Inc. Centrifugal one-way clutch. 3,283,867, 11-8-66, Cl. 192—105.

Rich, John W. Shock absorbing buffer. 3,284,122, 11-8-66, Cl. 293—1.

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Richardson Co., The: *See*—
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Richardson, Edward R.: *See*—
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Richardson Engineering (Birmingham) Ltd.: *See*—
Richardson, James R. 3,283,944.

Richardson, James R., to Richardson Engineering (Birmingham) Ltd. Barrel apparatus. 3,283,944, 11-8-66, Cl. 220—41.

Richardson-Merrill Inc.: *See*—
McGrath, William R., and Roberts. 3,284,299.

Richart, Douglas S., to The Polymer Corp. Resinous binder of chlorinated oxetane and phenol-formaldehyde of urea-formaldehyde resin. 3,284,538, 11-8-66, Cl. 260—838.

Riedl, Hans-Joachim, and H. Schluter. Explosive plastic foils containing gelatinized nitrocellulose. 3,284,254, 11-8-66, Cl. 149—2.

Riegelman, Harry M., to Ador Corp. Frame construction for multiple panels. 3,283,455, 11-8-66, Cl. 52—204.

Rieth, Harold F., to Packard-Bell Electronics Corp. Electrical capacitor and methods of forming the capacitor. 3,284,683, 11-8-66, Cl. 317—258.

Rieth, Harold F., to Packard-Bell Electronics Corp. Electrical capacitor formed from thin films. 3,284,685, 11-8-66, Cl. 317—261.

Riets, Earl B., and R. W. Lindberg, to I.T.E. Circuit Breaker Co. Oil circuit breaker interrupter structure with removable external insulation tube. 3,284,603, 11-8-66, Cl. 200—150.

Riley, Jesse L., to Celanese Corp. of America. Process of regenerating spent spin bath and composition thereof. 3,284,554, 11-8-66, Cl. 264—179.

Riley, Robert E., and K. V. Davidson, to United States of America, Atomic Energy Commission. Ultrahigh purity carbide formation. 3,284,550, 11-8-66, Cl. 264—.5.

Riley Stoker Corp.: *See*—
Blodgett, Norman S., Kuhner, and Miller. 3,283,801.
Miller, Earle C. 3,284,008.

Ripple, John B. Roller-bearing cages. 3,284,146, 11-8-66, Cl. 308—217.

Rissler, Lennius R., to Westinghouse Electric Corp. Passenger conveyors. 3,283,878, 11-8-66, Cl. 198—16.

Ritzerfeld, Gerhard. Printing and punching machine. 3,283,701, 11-8-66, Cl. 101—91.

Ritzerfeld, Gerhard. Multiple control arrangement for selective printing machines. 3,283,706, 11-8-66, Cl. 101—32.5.

Rizzuto, Samuel A.: *See*—
Ingalise, Fred A. 3,284,042.

Robbins, Daniel H.: *See*—
Fairbanks, Henry N., and Robbins. 3,283,647.

Roberts, Edward M.: *See*—
McGrath, William R., and Roberts. 3,284,299.

Roberts, George G., and H. Nakagawa. Flame resistant plastic composition. 3,284,378, 11-8-66, Cl. 260—9.

Roberts, William G., to Phillips Petroleum Co. Method and composition for treating formations penetrated by wells. 3,283,817, 11-8-66, Cl. 166—42.

Robertshaw Controls Co.: *See*—
Golden, Robert L. 3,283,666.
Golden, Robert L., Wantz, Rice, Beck, and Palmer. 3,284,589.
Marlow, Jacob. 3,284,724.

Robertson, P. L., Mfg. Co. Ltd.: *See*—
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Robertson, Robert L. Aircraft. 3,284,028, 11-8-66, Cl. 244—15.

Robinson, Clarence P. Conveyor lock-bar-trolley. 3,283,914, 11-8-66, Cl. 211—123.

Robinson, James W., to Esso Research and Engineering Co. Carbonylation of olefin-polyolefin mixtures. 3,284,510, 11-8-66, Cl. 260—604.

Robinson, William K., to Sperry Rand Corp. Electronic shift and shift lock device. 3,283,873, 11-8-66, Cl. 197—71.

Rocchini, Albert G., and C. E. Trautman, to Gulf Research & Development Co. Air filter coating composition. 3,284,361, 11-8-66, Cl. 252—88.

Rodgers, Donald S. C.: *See*—
Schonfelder, Max, and Rodgers. 3,283,920.

Rodnick, Joseph W.: *See*—
Hermes, Robert J., and Rodnick. 3,283,554.

Rodrigues, John J., Jr., to Michrochemical Specialties Co. Liquid dispenser with automatic air purge. 3,283,727, 11-8-66, Cl. 103—203.

Roesser, John O., to Illinois Tool Works Inc. Snap action switch mechanism. 3,283,596, 11-8-66, Cl. 74—54.

Rogers Edward F.: *See*—
Becker, Harold J., and Rogers. 3,284,433.

Rogers, Francis R., H. L. McCombs, Jr., and M. Snider, to The Bendix Corp. Fuel feed and power control apparatus for combustion engines. 3,283,500, 11-8-66, Cl. 60—39.28.

Rogers, John H., Jr.: *See*—
McBride, Richard T., and Rogers. 3,284,331.

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King, Paul F., and Rogers. 3,283,651.

Rohm & Haas Co.: *See*—
Cenci, Harry J., and Hurwitz. 3,284,545.
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Rohm & Haas G.m.b.H.: *See*—
Schroder, Gunter, and Tessmar. 3,284,425.

Rohweder, Gerald D.: *See*—
Bertram, August H., Horsch, and Rohweder. 3,283,859.

Rolling, Eugene C., to Hesston Mfg. Co., Inc. Beet cleaning apparatus. 3,283,895, 11-8-66, Cl. 209—107.

Rollins, Murray L., and T. M. Ott, to General Foods Corp. Container for hydratable products. 3,283,941, 11-8-66, Cl. 220—53.

Rollo, Edward J., Jr.: *See*—
Bambenek, Robert A., and Rollo. 3,283,997.

Romanowski, Albert F., to Bowser, Inc. Flap type indicators. 3,284,000, 11-8-66, Cl. 235—144.

Rondenet, Eugene L.: *See*—
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Roof, James L., and L. L. Tipton, to Westinghouse Electric Corp. Voltage regulating system for an electrical generator. 3,284,694, 11-8-66, Cl. 322—28.

Ross, John, to Westinghouse Electric Corp. Dynamo-electric machine control apparatus employing pulses. 3,284,689, 11-8-66, Cl. 318—341.

Rosaen, Nils O. Cartridge valves. 3,283,779, 11-8-66, Cl. 137—596.14.

Rosback, Richard H.: *See*—
Julow, Thomas M., French, and Rosback. 3,283,505.

Rosen, Leonard B. Amusement device with toppling playing pieces. 3,283,439, 11-8-66, Cl. 46—1.

Rosen, Leonard B. Amusement device with toppling playing pieces. 3,283,440, 11-8-66, Cl. 46—1.

Rosen, Leonard B. Container for reels of elongated material. 3,283,887, 11-8-66, Cl. 206—52.

Rosen, Leonard B. Container for spools of shock-sensitive elongated material. 3,283,892, 11-8-66, Cl. 206—65.

Rosenberg, Hans R., to E. I. du Pont de Nemours and Co. Feed compositions containing N-substituted aminooxyacetic acid compounds and methods. 3,284,210, 11-8-66, Cl. 99—2.

Rosendahl, Gottfried R., to Ball Brothers Research Corp. Membrane for image converter and amplifier. 3,284,661, 11-8-66, Cl. 315—10.

Rosenstein, Nathan, to Spunize Co. of America. Apparatus and method for crimping filamentary textile material. 3,283,387, 11-8-66, Cl. 28—1.

Rosenthal, Norman A., to Thiokol Chemical Corp. 2-N-methylammoniumethylthiosulfuric acid and its use as a radio protective agent. 3,284,297, 11-8-66, Cl. 167—65.

Rosenthal, Norman A., to Thiokol Chemical Corp. Preparation of monomeric disulfides. 3,284,466, 11-8-66, Cl. 260—327.

Rosenwald, Robert H., to Universal Oil Products Co. O-alkylation of hydroxylamines. 3,284,504, 11-8-66, Cl. 260—571.

Rosfor Mills Corp.: *See*—
King, Lawrence. 3,283,543.
King, Lawrence. 3,284,015.

Rosler, Walter, to Drahtwerke Rosler K.G. Apparatus for forming a net of intersecting threads. 3,284,268, 11-8-66, Cl. 156—439.

Rosser, Charles M., and R. A. Glinski, to FMC Corp. Polyvinyl butyral resin modified cellulose battery separator and method for preparation. 3,284,382, 11-8-66, Cl. 260—17.4.

Rossi, Alberto: *See*—
Schmidt, Paul, Eichenberger Rossi, and Wilhelm. 3,284,452.

Rossi, Giorgio: *See*—
Fusco, Raffaello, Rossi, de Pietri, and Barontini. 3,284,546.

Rostad, Merlin G.: *See*—
Gettelman, Gilbert C., and Rostad. 3,284,613.

Roswell, Kenneth E., to Edwards Co. Inc. Two-tone door chime. 3,284,797, 11-8-66, Cl. 340—392.

Roth, Donald R.: *See*—
Jones, Homer C., and Roth. 3,283,850.

Roth, Fred E.: *See*—
Balcenik, Edward G., and Roth. 3,283,616.

Roth, Walter L., to General Electric Co. Barium potassium ferrite magnetic material exhibiting non-varnishing rotational hysteresis in applied magnetic fields. 3,284,359, 11-8-66, Cl. 252—62.5.

Roth, Wilfred. Ultrasonic flowmeter. 3,283,574, 11-8-66, Cl. 73—194.

Rothe, Wilhelm E.: *See*—
Rothe, Heinrich C., Mueller, W. E. Rothe, and Loughead. 3,283,408.

Rothe, Heinrich C., F. K. Mueller, W. E. Rothe, and A. G. Loughead, to Astro-Space Laboratories, Inc. Meridian and latitude indicator. 3,283,408, 11-8-66, Cl. 33—72.

Rothe, Heinrich C., F. K. Mueller, W. E. Rothe, R. C. Martin, and A. E. Moore, to Astro-Space Laboratories, Inc. Gyroscopic indicating device. 3,283,409, 11-8-66, Cl. 33—72.

Rothe, Wilhelm E.: *See*—
Rothe, Heinrich C., Mueller, W. E. Rothe, Martin, and Moore. 3,283,409.

Rothstein, Lewis R., K. B. Mullin, and W. E. Jewsbury, to Northrop Carolina, Inc. Explosive initiator comprising barium styphnate and lead azide. 3,284,255, 11-8-66, Cl. 149—23.

Rowland, Stanley P., E. G. Pritchett, and N. L. Hofmann, to National Distillers and Chemical Corp. Halogenated, diolefin-styrene polymers with terminal hydroxy groups. 3,284,511, 11-8-66, Cl. 260—618.

Rownd, Robert M., to Aladdin Industries, Inc. Roller with handle and anti-stick plastic coating. 3,283,395, 11-8-66, Cl. 29—110.5.

Royal Industries, Inc.: *See*—
Bower, Gerald C. 3,283,474.
Royal Typewriter Co., Inc.: *See*—
Frechette, Kenneth E. 3,283,872.
Ruchser, Erich, to E. Herion. Control valve for hydraulic machinery. 3,283,784, 11–8–66, Cl. 137—625.64.
Rumaner, Merwin B. Safety ski binding. 3,284,092, 11–8–66, Cl. 280—11.35.
Rumberger, George G., to Brown Co. Metal surface treatment. 3,284,248, 11–8–66, Cl. 148—6.
Rumberger, George G., to Brown Co. Microcrystalline wax substitute. 3,284,279, 11–8–66, Cl. 161—235.
Runyan, Doward L., to Chrysler Corp. Axle construction. 3,283,843, 11–8–66, Cl. 180—88.
Rusche, Fredric. Pile driving mandrel. 3,283,519, 11–8–66, Cl. 61—53.72.
Rutter, Hans. Poultry watering trough with a freely suspended drinking vessel and an automatic filling valve. 3,283,746, 11–8–66, Cl. 119—81.
Ryder, Richard E.: *See*—
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Ryder, Richard E., Jr., and R. E. Ryder. Apparatus for processing materials. 3,283,362, 11–8–66, Cl. 18—1.
Rylandr, Paul N., and N. G. Himelstein, to Engelhard Industries, Inc. Hydrogenation of alpha, beta unsaturated aldehydes to alpha, beta-unsaturated alcohols. 3,284,517, 11–8–66, Cl. 260—638.
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Sommer, Hans. Sausage stuffing machine. 3,283,361, 11–8–66, Cl. 17—38.
Sonnenschein, Hans, and R. Friedrich, to Siemens-Schuckertwerke Aktiengesellschaft. Heat exchanger operating with solid mass particles as heat carrier. 3,283,810, 11–8–66, Cl. 165—96.
Southam, Frederick W., to Aluminium Laboratories Ltd. Process and apparatus for refining aluminum. 3,284,189, 11–8–66, Cl. 75—68.
Southern Gas Association: *See*—
King, James D., and Edlund. 3,283,569.
Southworth, Glen R., to Ball Brothers Research Corp. Narrow bandwidth television system. 3,284,567, 11–8–66, Cl. 178—6.8.
Sowell, Lyles H., to E. I. du Pont de Nemours and Co. Textile core with a yarn engaging groove. 3,284,023, 11–8–66, Cl. 242—125.1.
Space-General Corp.: *See*—
Stewart, Robert M. 3,284,772.
Spannhake, Ernst W., and G. J. Gendron, to Raymond International Inc. Hydraulic hammer. 3,283,832, 11–8–66, Cl. 173—126.
Sparton Corp.: *See*—
Olson, Herbert H. 3,284,739.
Specialties Development Corp.: *See*—
Diehl, Donald A. 3,283,827.
Speed-O-Print Business Machines Corp.: *See*—
Carlson, John W. 3,283,689.
Spence, Neville S., L. Badone, W. A. Morgan and R. D. McDonald, to Canada, Her Majesty the Queen in right of as represented by the Minister of Mines and Technical Surveys. Gold coated steel article. 3,284,175, 11–8–66, Cl. 20—183.5.
Spender, Donald L., to Scovill Mfg. Co. Inflating apparatus. 3,283,775, 11–8–66, Cl. 137—224.5.
Spero Electric Corp., The: *See*—
Brasty, Joseph, and Spero. 3,284,624.
Spero, Gerald: *See*—
Brasty, Joseph, and Spero. 3,284,624.
Sperry Rand Corp.: *See*—
Adler, Sherman, and Fenster. 3,283,592.
Davis, William W. 3,284,783.
Eckert, John P., Jr., Brown, Hulls, and Brinker. 3,284,635.
Horton, Harold B. 3,283,766.
Jones, Robert A. 3,284,080.
Koch, Earl E., and Heitshu. 3,283,485.
Naiman, Mark, Welsh, and Chapline. 3,284,013.
Robinson, William K. 3,283,873.
Shebanow, Michael S., and Phillips. 3,283,770.
Talsoe, Norman B. 3,284,636.
Winfield, Raymond. 3,284,658.
Spewock, Metro, and W. V. Bratkowski, to Westinghouse Electric Corp. Magnetic switching device. 3,284,743, 11–8–66, Cl. 335—205.
Spier, I. Martin. Boot scraper for application to a ski. 3,284,091, 11–8–66, Cl. 280—11.13.
Spindler, Gerhard: *See*—
Grebner, Fritz, Kolsch, and Spindler. 3,283,466.
Splain, Walter E., to Picker X-Ray Corp., Waite Mfg. Division, Inc. Device for determining the current-time output of an X-ray tube. 3,284,631, 11–8–66, Cl. 250—95.
Spooner, Lee R. Shotgun shell dispenser. 3,283,954, 11–8–66, Cl. 221—232.
Sprague Electric Co.: *See*—
Kahn, Manfred. 3,284,719.
Martin, Henry A. 3,284,326.
Sprague, Robert H., J. A. Stewart, and J. M. Lewis, to Horizons Inc. Benzotriazole and heterocyclic ketimide activators for leuco compounds. 3,284,205, 11–8–66, Cl. 96—90.
Sprague, Robert W.: *See*—
Farrar, John, and Sprague. 3,283,507.
Spray, Kenneth E.: *See*—
Larson, William B., Spray, and Mueller. 3,284,192.
Spunize Co. of America: *See*—
Rosenstein, Nathan. 3,283,387.
Square D Co.: *See*—
George, Melvin J., and Stanback. 3,284,598.
Pettit, Dorn L., and Stark. 3,284,742.
Stadler, Hans, and H. Gawlick, to Dynamit Nobel Aktiengesellschaft. Cartridge. 3,283,718, 11–8–66, Cl. 102—39.
Stafford, Alec W., to T.M.M. (Research) Ltd. Textile lapforming machines. 3,284,012, 11–8–66, Cl. 242—55.1.
Stahn, Rudolf: *See*—
Eckhardt, Karl-Heinz, Stiefel, Stahn, and Blank. 3,283,926.
Stalego, Charles J., to Owens-Corning Fiberglas Corp. Apparatus for producing fibers from heat-softenable material. 3,284,180, 11–8–66, Cl. 65—12.
Staley, A. E., Mfg. Co.: *See*—
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Staller, Anton: *See*—
Fuchs, Otto, Staller, Ulmschneider, and Walter. 3,284,429.
Stamford Chemical Industries, Inc.: *See*—
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Stanback, Harris I.: *See*—
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Fremery, Maximilian L., and Fields. 3,284,492.
Stoneburner, Gene. 3,284,337.
Stanray Corp.: *See*—
Lodjic, Carl L. 3,283,634.
Stanton, George W., and T. G. Traylor, to The Dow Chemical Co. Compositions comprising graft copolymers on polyolefin substrates of one or more monomers of the group of sulfonated acrylates and methacrylates. 3,284,541, 11–8–66, Cl. 260—878.
Stapling Machines Co.: *See*—
Peters, Guilford B. 3,284,157.
Stark, Edward J.: *See*—
Pettit, Dorn L., and Stark. 3,284,742.
Stark, Edward, to The Gleason Works. Cutter and method for cutting non-generated spiral bevel and hypoid gears. 3,283,659, 11–8–66, Cl. 90—5.
Stauffer Chemical Co.: *See*—
Freiberg, Ashley H. 3,284,296.
Pitt, Harold M., and Bender. 3,284,467.
Stebleton, Leo F., to Dow Corning Corp. Flexible electrical conductor. 3,284,562, 11–8–66, Cl. 174—110.
Stec, Frederick J., to Continental Can Co., Inc. Can end. 3,283,946, 11–8–66, Cl. 220—54.
Steiman, Wolf: *See*—
Beres, Steven, O'Donnell, and Steiman. 3,283,785.
Stein, Alexander. Unified recording board and record for collated copymaking of note-taking in books. 3,284,104, 11–8–66, Cl. 282—29.
Steinfink, Murray, to E. I. du Pont de Nemours and Co. Adhesive solution comprising a phenol-formaldehyde resin and a polyurethane elastomer in a solvent mixture of methylene chloride and an aqueous ethyl alcohol solution. 3,284,392, 11–8–66, Cl. 260—29.3.
Stelzer, Frank. Free piston machine. 3,283,752, 11–8–66, Cl. 123—46.
Stelzer, William, to Kelsey-Hayes Co. Proportioning valve. 3,283,504, 11–8–66, Cl. 60—545.
Štěpánek, Karel: *See*—
Jurnŷ, Josef, and Štěpánek. 3,284,079.
Stephenson Corp.: *See*—
Goodner, Monroe H. 3,283,754.
Stephenson, Wilbur T.: *See*—
McIntosh, Donald L., and Stephenson. 3,284,106.
Sterling Drug Inc.: *See*—
Elpern, Bill. 3,284,458.

Sterry, Dan G., to Phillips Petroleum Co. Simultaneous variable density recording system. 3,284,766, 11–8–66, Cl. 340—15.5.
Steunenberg, Robert K.: *See*—
Knighton, James B., and Steunenberg. 3,284,190.
Stevens Mfg. Co., Inc.: *See*—
Mertler, Charles S. 3,284,599.
Mertler, Charles S. 3,284,600.
Steward, Alan A. Tracking error measuring device. 3,283,411, 11–8–66, Cl. 33—180.
Steward, Jerry H., and F. W. Kring, to Multifastener Corp. Clip nut. 3,283,794, 11–8–66, Cl. 151—41.75.
Stewart, David C., Sr. Tobacco lifting machines. 3,283,856, 11–8–66, Cl. 187—9.
Stewart, John A.: *See*—
Sprague, Robert H., Stewart, and Lewis. 3,284,205.
Stewart, Robert M., to Space-General Corp. Data correlation apparatus employing cathode-ray tube input and variable resistance data storage and comparison. 3,284,772, 11–8–66, Cl. 340—146.3.
Stiefel, Christian: *See*—
Eckhardt, Karl-Heinz, Stiefel, Stahn, and Blank. 3,283,926.
Stiles, John C.: *See*—
Parker, Bernard, Stiles, and Weisbord. 3,283,594.
Stocker, Arthur C., to Radio Corp. of America. Display systems. 3,284,663, 11–8–66, Cl. 315—22.
Stoi, Walter T., and R. Thomson, to Boyne Products, Inc. Automatic cancelling turn signal with an intermediate signal position which is manually operable and releasable. 3,284,592, 11–8–66, Cl. 200—61.34.
Stolarz, Edward M.: *See*—
Katzman, Lawrence, Briggin, Stolarz, and D'Elia. 3,283,478.
Stoneburner, Gene, to Standard Oil Co. Method of removing phenolic compounds from waste water. 3,284,337, 11–8–66, Cl. 208—46.
Stonham, John P., to Ilford Ltd. Photographic light-sensitive materials. 3,284,207, 11–8–66, Cl. 96—114.
Straat, Matts V., to Atomenergi, Aktiebolaget. Boiling water-superheat nuclear reactor. 3,284,310, 11–8–66, Cl. 176—54.
Strano, Giuseppe: *See*—
Falcone, Luigi, Strano, and Milano. 3,284,278.
Stratford Engineering Corp.: *See*—
Webb, Orlando, Jr. 3,284,537.
Strauss, Irving. Electrical switch with extending contact arm. 3,284,594, 11–8–66, Cl. 200—67.
Streater, August L.: *See*—
Fairman, Philip B., and Streater. 3,284,670.
Strie, Lothar: *See*—
Vogt, Wilhelm, Erpenbach, Joest, and Strie. 3,284,495.
Striebig, Ludwig. Sawing jigs for cutting building panels. 3,283,790, 11–8–66, Cl. 143—47.
Strom, Kenneth G., to Prime Mfg. Co. Machine for feeding and cutting adhesive tape. 3,283,631, 11–8–66, Cl. 83—211.
Strull, Gene: *See*—
Biuliano, Michael N., and Strull. 3,284,689.
Strunts, Bernard J. Baseball spike guard. 3,283,424, 11–8–66, Cl. 36—7.5.
Struthers Scientific and International Corp.: *See*—
Ganiaris, Neophytos. 3,283,522.
Studley, Lester J., and M. Cordell, to Studley Paper Co., Inc. Filter bag for vacuum cleaners and collar therefor. 3,283,481, 11–8–66, Cl. 55—367.
Studley Paper Co., Inc.: *See*—
Studley, Lester J., and Cordell. 3,283,481.
Stull, Emerson B., and J. Morrow, to Hercules Inc. Apparatus for mixing and dispensing fluids. 3,284,009, 11–8–66, Cl. 239—427.
Stultz, Jack: *See*—
Pitt, Ronnie R., and Stultz. 3,284,730.
Stutz, Theo, to Contraves AG. Variable display board. 3,283,429, 11–8–66, Cl. 40—65.
Suchy, George E.: *See*—
Komarmy, Julius M., Schwartzwalder, and Suchy. 3,283,908.
Suderow, Ethel D.: *See*—
De Long, Leon B., Finkelson, and Suderow. 3,283,516.
Suderow, George E.: *See*—
De Long, Leon B., Finkelson, and Suderow. 3,283,516.
Suen, Tzeng J., and W. C. Meisenhelder, to American Cyanamid Co. Aqueous dispersion of a copolymer of methylmethacrylate and beta-hydroxyethylmethacrylate. 3,284,394, 11–8–66, Cl. 260—29.6.
Sugino, Koichi, to Kawasaki Jukogyo Kabushiki Kaisha. Sidewise propulsion system for ships. 3,283,735, 11–8–66, Cl. 114—151.
Sumitomo Chemical Co., Ltd.: *See*—
Matsui, Masanao, and Yamada. 3,284,486.
Sumter, Russell G., to O. R. Carpenter. Cement finishing machine. 3,283,676, 11–8–66, Cl. 94—48.
Sun Oil Co.: *See*—
Hodges, James W. 3,283,570.
Simmons, Cincinnattias P. 3,283,354.
Sunbeam Corp.: *See*—
Jepson, Ivar. 3,283,355.
Sunsweet Dryers: *See*—
Gerrans, Alfred W. 3,283,931.
Sutherland, Gerald B., to Kansas University Endowment Association. Protein isolation and preparations. 3,284,434, 11–8–66, Cl. 260—112.
Sutphin, Eldon M.: *See*—
Frayer, James A., Mansfield, Peterson, and Sutphin. 3,284,526.
Sutton, David J.: *See*—
Edelman, Walter E., and Sutton. 3,284,002.
Sutton, Robert W., to The Hydrand Corp. Pipe coupling. 3,283,780, 11–8–66, Cl. 137—614.04.
Suzuki, Hiroshi: *See*—
Tominaga, Kenichi, Kimura, and Suzuki. 3,284,169.
Svenska Rotor Maskiner Aktiebolag: *See*—
Schibbye, Lauritz B. 3,283,996.
Swanson, Ronald R., to General Mills, Inc. 2-hydroxy oximes. 3,284,501, 11–8–66, Cl. 260—566.
Swift & Co.: *See*—
Long, Marshall. 3,283,523.
McBrady, William J., and Reichel. 3,283,469.
Swislow, Sidney, to Harwood Mfg. Co. Mounting means. 3,284,272, 11–8–66, Cl. 161—17.
Sylvan, Tage P.: *See*—
Smith, James M., and Sylvan. 3,284,675.
Sylvania Electric Products Inc.: *See*—
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Lambert, Robert L., and Palmateer. 3,284,237.
Morin, Joseph R., and Bernier. 3,284,664.
Niblack, Walter K., and Wolf. 3,284,632.
Sylvester, Edmund Q. Apparatus for and method of forming clad metal. 3,283,369, 11–8–66, Cl. 22—58.
Symington Wayne Corp.: *See*—
Cope, Geoffrey W. 3,283,916.
Syntex Corp.: *See*—
Cross, Alexander D. 3,284,448.
Kincl, Fred A. 3,284,302.
Kincl, Fred A. 3,284,476.
Synthetic Products Co.: *See*—
Juredine, Gordon M. 3,284,386.
Systrom-Donner Corp.: *See*—
Morris, Harold D., and Hyde. 3,284,708.
Szczur, Albert, Jr.: *See*—
Parsi, Edgardo J., and Szczur. 3,284,333.
Szego, Laszlo L., to J. R. Berend. Dust collector. 3,283,480, 11–8–66, Cl. 55—34.
T. M. M. (Research) Ltd.: *See*—
Stafford, Alec W. 3,284,012.
TRW Inc.: *See*—
Chandley, George D. 3,283,377.
Takahashi, Shigeru, to Hitachi, Ltd. Semi-permanent memory device. 3,284,781, 11–8–66, Cl. 340—173.
Takao, Yoshito, I. Matsumoto, and T. Kobayas, to Fuji Shashin Film Kabushiki Kaisha. Direct positive photographic materials. 3,284,203, 11–8–66, Cl. 96—84.
Takeuchi, Kiyoshi: *See*—
Nagata, Minoru, Abe, and Takeuchi. 3,284,696.
Talalay, Leon, to The B. F. Goodrich Co. Rubber latex subjected to a freeze-thaw cycle in the presence of a plasticizer. 3,284,396, 11–8–66, Cl. 260—29.7.
Talbot, Yorck J. Streamlined outside rear view mirror for motor vehicles. 3,283,654, 11–8–66, Cl. 88—98.
Talsoe, Norman B., to Sperry Rand Corp. Pulse transfer circuit having limiting means, peaking means, and complementary outputs. 3,284,636, 11–8–66, Cl. 307—88.5.
Tamain, Jean P., to Jaccard Corp. Tenderizing meat machines. 3,283,360, 11–8–66, Cl. 17—25.
Tamura, Takaaki: *See*—
Ishiko, Toshimasa, and Tamura. 3,284,345.
Tanner, David: *See*—
Magat, Eugene E., and Tanner. 3,284,156.
Taplin, John F. Rolling diaphragm devices having centered rolling diaphragm and method for manufacturing the same. 3,283,670, 11–8–66, Cl. 92—99.
Tartarini, Cesare. Universal feeding device for wrapping machines, particularly for wrapping machines for sweets. 3,283,881, 11–8–66, Cl. 198—24.
Tatham, Harry, to Ormig Organisations-Mittel G.m.b.H. Selective printing machine. 3,283,700, 11–8–66, Cl. 101—91.
Taugner, Jack W.: *See*—
Smith, Lester L., and Taugner. 3,284,573.
Tausch, Gilbert H., to Camco, Inc. Well packer. 3,283,819, 11–8–66, Cl. 166—120.
Tausch, Gilbert H., to Camco, Inc. Fluid-actuated well packer. 3,283,820, 11–8–66, Cl. 166—120.
Taylor, Donald R., Jr., to Philco Corp. Color TV phase comparator and FM detector circuits utilizing vacuum tube in termittently operating in secondary emission mode. 3,284,565, 11–8–66, Cl. 178—5.4.
Taylor, George O., to The British Aluminum Co. Ltd. Multipurpose tools. 3,283,553, 11–8–66, Cl. 72—116.
Taylor Instrument Companies: *See*—
Heisig, Charles G., and Mitchell. 3,283,562.
Taylor, James R. A., to Brockway Glass Co., Inc. Method of treating opal glass surfaces. 3,284,226, 11–8–66, Cl. 117—54.
Taylor, Thomas P., and L. H. Snively. Self-correcting examination sheet. 3,283,416, 11–8–66, Cl. 35—9.
Taylor, William P.: *See*—
Dawes, Stanley V., and Taylor. 3,283,337.
Tech. Kurt O.: *See*—
Cross, Ralph E., Tech, and Pierce. 3,283,664.
Telefonaktiebolaget L M Ericsson: *See*—
Carlstrom, Per A., and Redelius. 3,284,777.
Teletype Corp.: *See*—
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Hohoff, Leo. 3,284,569.
Temple, Philip R.: *See*—
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Tempmaster Corp.: *See*—
Dean, Frank J., Jr. 3,283,694.
Tennessee Valley Authority: *See*—
Dobson, Herbert I. 3,284,705.
Tessmar, Klaus: *See*—
Schroder, Gunter, and Tessmar. 3,284,425.
Tessmar, Ruthe H.: *See*—
Schroder, Gunter, and Tessmar. 3,284,425.
Tetra Pak, AB: *See*—
Ekstrom, Karl-Erik, and Lindh. 3,284,228.
Texas Instruments Inc.: *See*—
Burg, John P., and Schneider. 3,284,763.

Textron, Inc.: *See*—
Putetti, Anthony M., and McMurray. 3,283,556.
Theodorides, Panagiotis C. Outlet box with opposed wall engaging means. 3,283,937, 11–8–66, Cl. 220—3.6.
Thiokol Chemical Corp.: *See*—
Berenbaum, Morris B., Foerster, Gobran, Guth, Snyder, Wells, and Yu. 3,284,276.
Mangum, Grafton F., and Willis. 3,283,510.
Rosenthal, Norman A. 3,284,297.
Rosenthal, Norman A. 3,284,466.
Tominaga, Kenichi, Kimura, and Susuki. 3,284,169.
Thomas & Betts Co., The: *See*—
Gibson, Howard B. 3,284,076.
Thomas Industries Inc.: *See*—
Harris, Roy J. T. and Lippincott. 3,284,667.
Thomas, John R., and J. B. Lavigne, to Chevron Research Co. Process for improving the magnetic properties of colloidal dispersion of magnetic particles. 3,284,358, 11–8–66, Cl. 252—62.5.
Thomas, Matthew J. Portable mill. 3,283,792, 11–8–66, Cl. 146—192.
Thomas, Owen H.: *See*—
Beck, Thomas A., and Thomas. 3,284,523.
Thomas, Roswell W., to Phillips Petroleum Co. Production of oil from oil shale through fractures. 3,284,281, 11–8–66, Cl. 166—2.
Thome, Paul, to Commissariat a l'Energie Atomique. Nuclear reactor fuel element assembly. 3,284,315, 11–8–66, Cl. 176—76.
Thompson, Charles E.: *See*—
Gladrow, Elroy M., and Thompson. 3,284,332.
Thompson, John R., to Bay State Abrasive Products Co. Organic bonded abrasive article. 3,283,448, 11–8–66, Cl. 51—206.
Thompson, Leonard R.: *See*—
Hennis, Henry E., and Thompson. 3,284,512.
Thompson, Norman, F., 3rd., and E. B. Cybulski, to The Ingraham Co. Apparatus for mass-producing precision parts from longitudinal supply stock. 3,283,301, 11–8–66, Cl. 29—37.
Thompson, Ralph B.: *See*—
Dajani, Mahmoud T., and Thompson. 3,284,351.
Thomson, John B. Mounting for round machine ways. 3,284,035, 11–8–66, Cl. 248—23.
Thomson, Robert: *See*—
Stol, Walter T., and Thomson. 3,284,592.
Thorn-AEI Radio Valves and Tubes Ltd.: *See*—
Watts, Albert T., and Myford. 3,284,656.
Thorp, James H., to The Smyth Mfg. Co. Casing-in machine including plural coating means. 3,284,570, 11–8–66, Cl. 118—224.
Thuraston, Franklin J., and R. V. Sanwald, to GBL Corp. Automatic packing apparatus. 3,283,471, 11–8–66, Cl. 53—55.
Tieman, Charles H., to Shell Oil Co. Halogenation of beta-oxo-acid amides. 3,284,500, 11–8–66, Cl. 260—501.
Timefax Corp.: *See*—
Dalton, Harold R. 3,283,704.
Timmer, William F., and N. A. Curry, to Norton Co. Metal backed abrasives. 3,284,178, 11–8–66, Cl. 51—297.
Tinker and Rasor: *See*—
Fisher, Robert B. 3,284,789.
Tinnerman Products, Inc.: *See*—
Holton, Robert J. 3,283,639.
Tipton, Lynn L.: *See*—
Roof, James L., and Tipton. 3,284,694.
Tires Plastics Corp.: *See*—
Hafner, Hans, and Bayer. 3,283,894.
Tjaden, Owen G. Holding device. 3,284,041, 11–8–66, Cl. 248—311.
Tocker, Stanley, to E. I. du Pont de Nemours and Co. Modified ethylene-propadiene polymers. 3,284,420, 11–8–66, Cl. 260—79.3.
Toffolon, Norman R. Soil footing. 3,283,518, 11–8–66, Cl. 61—53.
Tokarzewski, Albert R. Panorami optical system having an annular afocal lens system. 3,283,653, 11–8–66, Cl. 88—57.
Toko Kabushiki Kaisha: *See*—
Matsumoto, Hiromi. 3,284,748.
Tolaas, William M., to Waldorf Paper Products Co. Can carriers. 3,283,990, 11–8–66, Cl. 229—40.
Toledo Scale Corp.: *See*—
Carroll, Frederick C., and Weihs. 3,284,265.
Tomcufcik, Andrew S., J. M. Craig, and S. D. Willson, to American Cyanamid Co. 4-(2-Aroylethyl)-1-piperazinecarboxylic acid esters. 3,284,453, 11–8–66, Cl. 260—268.
Tominaga, Kenichi, Y. Kimura, and H. Suzuki, to Thiokol Chemical Corp. Reactor equipment for the production of tetrafluoroethylene. 3,284,160, 11–8–66, Cl. 23—284.
Tousignant, William F.: *See*—
Dickerson, Richard T., and Tousignant. 3,284,515.
Toyo Koatsu Industries, Inc.: *See*—
Amagasa, Michio, Ueno, Koshi, Hirose, and Shinozawa. 3,284,188.
Ito, Yoshikazu, and Endoh. 3,284,330.
Yumoto, Hirosuke, Harada, and Itoga. 3,284,551.
Trafford, James E., and L. Kreeger. Fuel conditioning system for internal combustion engines. 3,283,482, 11–8–66, Cl. 55—385.
Trauboth, Heinz, to Siemens & Halske Aktiengesellschaft. Processor systems with index registers for address modification in digital computers. 3,284,778, 11–8–66, Cl. 340—172.5.
Trautman, Charles E.: *See*—
Roechini, Albert G., and Trautman. 3,284,301.
Traylor, Teddy G.: *See*—
Stanton, George W., and Traylor. 3,284,541.
Treff, Conrad C.: *See*—
Hague, Robert Z., Laucks, and Treff. 3,283,782.
Trefny, Thomas F., to Kollsman Instrument Corp. Shock absorbing coupling. 3,283,538, 11–8–66, Cl. 64—27.
Triax Co., The: *See*—
Chasar, Anthony R. 3,283,924.
Tribble, Talmadge B., and E. L. Rondenet, to Flavor Corp. of America. Food preservative comprising enzymes and antioxidants. 3,284,212, 11–8–66, Cl. 99—9.
Troy, Elbert C., to Herbert Simpson Corp. Mulling shoe mixer. 3,284,059, 11–8–66, Cl. 259—107.
Truhon, John A. Straight edges for drafting boards and the like. 3,283,410, 11–8–66, Cl. 33—80.
Trump, Robert G.: *See*—
Mummey, Dale B., and Trump. 3,284,755.
Truninger, Paul. Stretching machines for stretching and straightening material. 3,283,555, 11–8–66, Cl. 72—297.
Tschirch, Richard P.: *See*—
Hervey, Laurence R. B., and Tschirch. 3,284,234.
Tsuji, Hiroshi: *See*—
Hiratsuka, Kosai, Tsuji, and Ota. 3,283,749.
Tsunoda, Yoshio, M. Seko, K. Fuzita, and M. Watanabe, to Asahi Kasei Kogyo Kabushiki Kaisha. Multi-cell electrodialysis apparatus having resilient spacers. 3,284,335, 11–8–66, Cl. 204—301.
Tuffnell, Derrick P.: *See*—
Buckman, Kenneth E., Kemp, Tuffnell, and Cross. 3,283,904.
Tuft, Bernard R.: *See*—
Gentry, Finis E., and Tuft. 3,284,680.
Tumavicus, Julius W., to United Aircraft Corp. Variable area turbine nozzle. 3,284,048, 11–8–66, Cl. 253—78.
Tung-Sol Electric Inc.: *See*—
Silberg, Hemming G. 3,284,735.
Tunkel, Norman, and H. N. Miller, to Esso Research and Engineering Co. Reaction product of metal dithiophosphate, polyamine and alkenyl succinic acid or anhydride. 3,284,354, 11–8–66, Cl. 252—327.
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146–192	3,283,792	110	3,284,562	140	3,284,600	220– 3.6	3,283,937	137	3,284,025		3,284,485
224	RE.26,111	145	3,284,563	144	3,284,601	20.5	3,283,938	165	3,284,026	47	3,284,407
148– 6	3,284,248	175– 56	3,283,833	148	3,284,602	41	3,283,944	244– 12	3,284,027		3,284,408
6.24	3,284,249	267	3,283,834	150	3,284,603	44	3,283,939	15	3,284,028	67	3,284,411
12	3,284,250	317	3,283,835	166	3,284,604	46	3,283,940	52	3,284,029		3,284,412
146	3,284,251	330	3,283,836		3,284,605	53	3,283,941	56	3,284,030	77.5	3,284,413
188	3,284,252	414	3,283,837	201– 17	3,284,317	54	3,283,945	100	3,284,031		3,284,414
149– 2	3,284,253	176– 13	3,284,305	202–160	3,284,318		3,283,946	145	3,284,032		3,284,415
	3,284,254	15	3,284,306	203– 60	3,284,320	60	3,283,942	154	3,284,033		3,284,416
23	3,284,255	20	3,284,307	204– 15	3,284,321	97	3,283,943	155	3,284,034	78.3	3,284,417
150– 1.5	3,283,793	37	3,284,308		3,284,322	102	3,283,947	246–187	3,284,627	78.4	3,284,418
151– 41.75	3,283,794	45	3,284,309	38	3,284,323	113	3,283,948	248– 23	3,284,035	79.3	3,284,419
152–187	3,283,795	54	3,284,310		3,284,324		3,283,949	49	3,284,036		3,284,420
218	3,283,796		3,284,311	69	3,284,325	115	3,283,950	62	3,284,037	80.5	3,284,421
228	3,283,797	56	3,284,312	141	3,284,326	221– 11	3,283,951	74	3,284,038		3,284,422
237	3,283,798	58	3,284,313	143	3,284,327	13	3,283,952	153	3,284,039		3,284,423
338	3,283,799	71	3,284,314	149	3,284,328	67	3,283,953	235	3,284,040	88.2	3,284,424
397	3,283,800	76	3,284,315	157.1	3,284,329	232	3,283,954	311	3,284,041	89.5	3,284,425
156– 1	3,284,256	177– 1	3,283,838	162	3,284,330	251	3,283,955	249– 14	3,284,042	91.1	3,284,426
73	3,284,257	178– 4	3,284,564	165	3,284,331	222– 1	3,283,956	41	3,284,043	93.7	3,284,427
84	3,284,258	5.4	3,284,565	284	3,284,332	57	3,283,957	250– 41.9	3,284,628		3,284,428
149	3,284,259		3,284,566	292	3,284,333	83.5	3,283,958		3,284,629		3,284,429
184	RE.26,110	6.8	3,284,567	294	3,284,334	396	3,283,959	43.5	3,284,630	94.2	3,284,430
212	3,284,260	7.6	3,284,568	301	3,284,335	397	3,283,960	95	3,284,631	94.3	3,284,431
280	3,284,261	52	3,284,569	206– 16.5	3,283,894	402.11	3,283,961	199	3,284,632	94.9	3,284,432
	3,284,262	179– 2	3,284,571	29	3,283,884	402.18	3,283,962		3,284,633	96.5	3,284,433
286	3,284,263	5	3,284,572	42	3,283,885	402.24	3,283,963	214	3,284,634	112	3,284,434
289	3,284,264	7.1	3,284,573	52	3,283,886	487	3,283,964	251–138	3,284,044	198	3,284,436
350	3,284,265	18	3,284,574		3,283,887	519	3,283,965	315	3,284,045	207	3,284,437
373	3,284,266	31	3,284,575	56	3,283,888	525	3,283,966		3,284,046	210	3,284,438
383	3,284,267	84	3,284,576		3,283,889	536	3,283,967	363	3,284,047		3,284,439
439	3,284,268		3,284,577	59	3,283,890	223– 37	3,283,968	252– 8.5	3,284,352	211.5	3,284,440
498	3,284,269	90	3,284,578	65	3,283,891	71	3,283,969		3,284,353	231	3,284,441
514	3,284,270	100.2	3,284,579		3,283,892	75	3,283,970	32.7	3,284,354	233.5	3,284,442
566	3,284,271		3,284,580		3,283,893	224– 5	3,283,971		3,284,355		3,284,443
158– 1	3,283,801	115.5	3,284,581	208– 11	3,284,336	42.1	3,283,972	49.6	3,284,410	239	3,284,444
1.5	3,283,802	180– 8	3,283,839	46	3,284,337	42.21	3,283,973	49.9	3,284,409	239.1	3,284,445
159– 47	3,283,803	14	3,283,840	68	3,284,338	225– 2	3,283,974	50	3,284,356		3,284,446
160–106	3,283,804		3,283,841	87	3,284,339	7	3,283,975	51.5	3,284,357	239.55	3,284,448
178	3,283,805	48	3,283,842	111	3,284,340	64	3,283,976	62.5	3,284,358	239.9	3,284,447
264	3,283,806	88	3,283,843	120	3,284,341	65	3,283,977		3,284,359	240	3,284,449
348	3,283,807	181– .5	3,283,844	208	3,284,342	103	3,283,978		3,284,360	243	3,284,450
161– 17	3,284,272		3,283,845	221	3,284,343	226– 43	3,283,979	88	3,284,361		3,284,451
83	3,284,273		3,283,846	244	3,284,345	93	3,283,980	107	3,284,362	247.5	3,284,452
159	3,284,274	31	3,283,848	262	3,284,344	190	3,283,981		3,284,363	268	3,284,453
168	3,284,275	33	3,283,849	310	3,284,346	195	3,283,982	132	3,284,364	279	3,284,454
184	3,284,276	61	3,283,847	333	3,284,347	227– 11	3,283,983	156	3,284,365	283	3,284,455
188	3,284,277	182– 2	3,283,850	348	3,284,348	30	3,283,984	179	3,284,366	290	3,284,456
190	3,284,278	15	3,283,851	209–107	3,283,895	112	3,283,985	364	3,284,367		3,284,457
235	3,284,279	92	3,283,852	111.6	3,283,896	120	3,283,986	389	3,284,319	294.3	3,284,458
250	3,284,280	152	3,283,853	111.7	3,283,897	228– 5	3,283,987		3,284,368	294.8	3,284,459
162– 4	3,284,282	184–105	3,283,854		3,283,898	229– 14	3,283,988	454	3,284,369		3,284,460
25	3,284,283	185– 39	3,283,855	111.8	3,283,899	15	3,283,989	462	3,284,370	295	3,284,461
218	3,284,284	187– 9	3,283,856	223	3,283,900	40	3,283,990	502	3,284,371	307	3,284,462
297	3,284,285	188– 1	3,283,857	428	3,283,901	51	3,283,991		3,284,372	309.2	3,284,463
165– 22	3,283,808	78	3,283,858	210– 46	3,284,350	53	3,283,992	506	3,284,373	310	3,284,464
29	3,283,809	90	3,283,859	63	3,284,351	54	3,283,993	253– 78	3,284,048	326.85	3,284,465
96	3,283,810	152	3,283,860	90	3,283,902	55	3,283,994	254– 51	3,284,049	327	3,284,466
142	3,283,811	196	3,283,861	108	3,283,903	230–122	3,283,995	67	3,284,050		3,284,467
166– 2	3,284,281	192– 18	3,283,862	132	3,283,904	143	3,283,996	105	3,284,051	332.3	3,284,468
9	3,283,812	46	3,283,863	136	3,284,349	215	3,283,997	148	3,284,052		3,284,469
	3,283,813	68	3,283,864	222	3,283,905	235– 91	3,283,998	190	3,284,053	346.3	3,284,470
11	3,283,814	84	3,283,865	232	3,283,906	92	3,284,614	256– 13.1	3,284,054	351	3,284,471
27	3,283,815	96	3,283,866	234	3,283,907	137	3,283,999	259– 7	3,284,055	376	3,284,472
42	3,283,816	105	3,283,867	266	3,283,908	144	3,284,000	10	3,284,056		3,284,473
	3,283,817	194– 4	3,283,868	380	3,283,909	146	3,284,001	88	3,284,057	397	3,284,474
	3,283,818	195– 63	3,284,316		3,283,910	150.1	3,284,615	102	3,284,058	397.4	3,284,475
120	3,283,819	197– 2	3,283,869	416	3,283,911	150.25	3,284,617	107	3,284,059		3,284,476
	3,283,820	6.2	3,283,870	211– 46	3,283,912	150.5	3,284,616	260– 2	3,284,374	397.45	3,284,477
134	3,283,821	20	3,283,871	78	3,283,913	151.11	3,284,618		3,284,375	423	3,284,478
169	3,283,822	70	3,283,872	123	3,283,914	151.33	3,284,619	2.5	3,284,376	453	3,284,479
182	3,283,823	71	3,283,873	126	3,283,915	183	3,284,620		3,284,377		3,284,480
212	3,283,824	126	3,283,874	213– 15	3,283,916	236– 1	3,284,002		3,284,379		3,284,481
167– 22	3,284,286	133	3,283,875	100	3,283,917	44	3,284,003	8	3,284,380	455	3,284,482
	3,284,287	168	3,283,876	214– 1	3,283,918	92	3,284,004	9	3,284,378	465	3,284,483
	3,284,288	198– 7	3,283,877		3,283,919	239– 2	3,284,005	17.3	3,284,381		3,284,484
30	3,284,289	16	3,283,878		3,283,920	166	3,284,006	17.4	3,284,382	468	3,284,486
	3,284,290	20	3,283,879	5.5	3,283,921	392	3,284,007	18	3,284,383	471	3,284,487
	3,284,291	21	3,283,880	11	3,283,922	412	3,284,008	22	3,284,384	475	3,284,488
	3,284,292	24	3,283,881	16	3,283,923	427	3,284,009	23	3,284,385	480	3,284,489
33	3,284,293	190	3,283,882	16.4	3,283,924	240– 3	3,284,621		3,284,386	501	3,284,490
	3,284,294	209	3,283,883	17	3,283,925		3,284,622		3,284,387	502	3,284,491
42	3,284,295	200– 5	3,284,582	38	3,283,926	7.1	3,284,623	23.7	3,284,388	523	3,284,492
46	3,284,296	11	3,284,583	86	3,283,927	11.4	3,284,624	27	3,284,389	524	3,284,493
65	3,284,297		3,284,584	138	3,283,928	25	3,284,625	28	3,284,390	533	3,284,494
	3,284,298		3,284,585	152	3,283,929		3,284,626	29.2	3,284,391	535	3,284,495
	3,284,299	18	3,284,587	302	3,283,930	241– 38	3,284,010	29.3	3,284,392	543	3,284,496
	3,284,300	19	3,284,586	310	3,283,931	242– 7	3,284,011	29.6	3,284,393	551	3,284,497
73	3,284,301	38	3,284,588	516	3,283,932	55.1	3,284,012		3,284,394	553	3,284,498
74	3,284,302	46	3,284,589	620	3,283,933	55.12	3,284,013		3,284,395	556	3,284,499

260–561	3,284,500	261– 70	3,284,066	285–141	3,284,111	310–168	3,284,651	324– .5	3,284,699	339– 44	3,284,753
566	3,284,501	84	3,284,067	197	3,284,109	312– 71	3,284,147		3,284,700	95	3,284,754
570	3,284,503	97	3,284,068	235	3,284,110	209	3,284,148	37	3,284,701	128	3,284,755
571	3,284,502	151	3,284,435	328	3,284,112	218	3,284,149		3,284,702	174	3,284,756
	3,284,504	263– 15	3,284,069	287– 20.92	3,284,113	235	3,284,150	45	3,284,703	176	3,284,757
586	3,284,505	19	3,284,070		3,284,116	244	3,284,151	52	3,284,704	195	3,284,758
593	3,284,506	29	3,284,071	58	3,284,103	257	3,284,152	57	3,284,705	252	3,284,759
597	3,284,507	32	3,284,072		3,284,114	331	3,284,153	61	3,284,706	340– 10	3,284,760
599	3,284,508	264– .5	3,284,549	87	3,284,115	313– 68	3,284,652	62	3,284,707		3,284,761
602	3,284,509		3,284,550	189.35	3,284,117	89	3,284,653	70	3,284,708	11	3,284,762
604	3,284,510	25	3,284,551	189.36	3,284,119	92	3,284,654	98	3,284,709	15.5	3,284,763
618	3,284,511	70	3,284,552	189.365	3,284,118	286	3,284,655	127	3,284,710		3,284,764
619	3,284,512	89	3,284,553	292–268	3,284,120	337	3,284,656	325–103	3,284,711		3,284,765
621	3,284,513	179	3,284,554	307	3,284,121	346	3,284,657	105	3,284,712		3,284,766
	3,284,514	182	3,284,555	293– 1	3,284,122	315– 5.39	3,284,660	319	3,284,713		3,284,767
633	3,284,515	221	3,284,556	294– 15	3,284,123	10	3,284,661	478	3,284,714		3,284,768
	3,284,516	238	3,284,557	31	3,284,124	17	3,284,662	328– 41	3,284,715		3,284,769
638	3,284,517	244	3,284,558	86	3,284,125	21	3,284,658	146	3,284,716	81	3,284,770
651	3,284,518	250	3,284,559	296– 20	3,284,126	22	3,284,659	330– 4.5	3,284,717	146.1	3,284,771
652.5	3,284,519	292	3,284,560	23	3,284,127		3,284,663	12	3,284,718	146.3	3,284,772
666	3,284,520	266– 3	3,284,073		3,284,128	108	3,284,664	26	3,284,719	147	3,284,773
	3,284,521	5	3,284,074	27	3,284,129	168	3,284,665	331– 3	3,284,720	172.5	3,284,774
667	3,284,522	13	3,284,075	78.1	3,284,130	174	3,284,666	66	3,284,721		3,284,775
668	3,284,523	267– 1	3,284,076	297– 85	3,284,131	195	3,284,667	94.5	3,284,722		3,284,776
671	3,284,524	270– 5	3,284,077	162	3,284,132	317– 5	3,284,668	107	3,284,723		3,284,777
672	3,284,525	82	3,284,078	304	3,284,133	13	3,284,669	109	3,284,724		3,284,778
	3,284,526	271– 27	3,284,079	329	3,284,134	47	3,284,670	333– 9	3,284,725		3,284,779
	3,284,527	57	3,284,080	361	3,284,135	101	3,284,671	14	3,284,726		3,284,780
674	3,284,528	64	3,284,081	451	3,284,136		3,284,672	30	3,284,727	173	3,284,781
677	3,284,529	273– 52	3,284,082	299– 5	3,284,137	147	3,284,673	71	3,284,728		3,284,782
	3,284,530	138	3,284,083	34	3,284,138	231	3,284,674	98	3,284,729	174	3,284,783
	3,284,531	274– 11	3,284,084	302– 49	3,284,139	234	3,284,675	334– 72	3,284,730		3,284,784
680	3,284,532	39	3,284,085	59	3,284,140		3,284,676	335– 21	3,284,731	174.1	3,284,785
681	3,284,533	277– 1	3,284,086	303– 7	3,284,141	235	3,284,677	24	3,284,732	195	3,284,786
	3,284,534	58	3,284,087	13	3,284,142		3,284,678	61	3,284,733	227	3,284,787
683.2	3,284,535	124	3,284,088	54	3,284,143		3,284,679	68	3,284,734	239	3,284,788
683.3	3,284,536	125	3,284,089	307– 88	3,284,635		3,284,680	91	3,284,735	249	3,284,789
683.58	3,284,537	280– 1.202	3,284,090	88.5	3,284,636		3,284,681	146	3,284,736	309.4	3,284,790
838	3,284,538	11.13	3,284,091		3,284,637	245	3,284,682		3,284,737	310	3,284,791
858	3,284,539	11.35	3,284,092		3,284,638	258	3,284,683	152	3,284,738	347	3,284,792
869	3,284,540	43.13	3,284,093		3,284,639	260	3,284,684		3,284,739		3,284,793
878	3,284,541	81	3,284,094		3,284,640	261	3,284,685	153	3,284,740		3,284,794
880	3,284,542	124	3,284,095		3,284,641	262	3,284,686	154	3,284,741		3,284,795
887	3,284,543	289	3,284,096		3,284,642	318–138	3,284,687	193	3,284,742	384	3,284,796
893	3,284,544	405	3,284,097		3,284,643	332	3,284,688	205	3,284,743	392	3,284,797
899	3,284,545	406	3,284,098		3,284,644	341	3,284,689	210	3,284,744	397	3,284,798
941	3,284,546	446	3,284,099		3,284,645	321– 8	3,284,690	213	3,284,745	343– 6	3,284,799
	3,284,547	481	3,284,100	105	3,284,646	16	3,284,691	237	3,284,746	12	3,284,800
978	3,284,548	482	3,284,101	106	3,284,647		3,284,692	336–233	3,284,747	743	3,284,801
261– 23	3,284,060	281– 21	3,284,102	136	3,284,648	322– 2	3,284,693		3,284,748	782	3,284,802
39	3,284,061	282– 29	3,284,104	308– 3	3,284,144	28	3,284,694	338– 5	3,284,749	346–109	3,284,803
	3,284,062	285– 3	3,284,105	187.2	3,284,145	323– 22	3,284,695	22	3,284,750		3,284,804
50	3,284,063	55	3,284,106	217	3,284,146	48	3,284,696	66	3,284,751	351– 23	3,284,154
62	3,284,064		3,284,107	310– 41	3,284,649	74	3,284,697	131	3,284,752	352– 29	3,284,155
65	3,284,065		3,284,108	90	3,284,650	75	3,284,698				

CLASSIFICATION OF DESIGNS

D 4– 4	206,145	D20– 4	206,157	D33– 14	206,169	D52– 2	206,181	D58– 6	206,193	D81– 19	206,204
D 7– 6	206,146	D26– 1	206,158	D34– 3	206,170	4	206,182		206,194	D83– 1	206,205
D10– 8	206,147	13	206,159	5	206,171	6	206,183	D61– 1	206,195	D86– 8	206,206
	206,148	14	206,160	15	206,172		206,184	D62– 4	206,196	10	206,208
	206,149		206,161		206,173	D54– 1	206,185	D74– 9	206,197		206,209
	206,150		206,162		206,174	12	206,186	D80– 2	206,198		206,210
	206,151		206,163		206,175	13	206,187	8	206,199	D87– 3	206,211
	206,152	D29– 1	206,164		206,176		206,188		206,200	5	206,212
D14– 3	206,153	D33– 3	206,165	D35– 2	206,177	D55– 1	206,189		206,207	D91– 3	206,213
D15– 1	206,154		206,166	D48– 3	206,178	D57– 1	206,190	9	206,201	4	206,214
D16– 1	206,155		206,167	16	206,179		206,191	D81– 10	206,202	D92– 26	206,215
D17– 3	206,156		206,168	20	206,180	D58– 2	206,192		206,203	D93– 4	206,216

CLASSIFICATION OF PLANTS

P. – 50	2,685	P. – 54	2,684

GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

Alabama	1	Louisiana	17	Pennsylvania	37
Alaska	53	Maine	18	Puerto Rico	51
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(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

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	3,284,181		3,284,689		3,283,570		3,284,768		3,284,287		3,284,613
	3,284,193		3,284,715		3,283,578		3,284,769		3,284,383		3,284,667
	3,284,217		3,284,723		3,283,589	43	3,283,512		3,284,405		3,284,742
	3,284,218		3,284,724								

DESIGN PATENTS

2	206,160	5	206,212	12	206,180	21	206,155	21	206,213	34	206,156
4	206,154	6	206,161		206,183		206,165	22	206,162		206,173
	206,158		206,169		206,184		206,166	29	206,179		206,175
	206,163	8	206,205		206,192		206,168	31	206,145		206,182
	206,172	9	206,206		206,204		206,170		206,157		206,210
	206,189	10	206,201	13	206,146		206,187		206,171	38	206,176
	206,197	12	206,147		206,153		206,188		206,174		206,181
	206,200		206,148	14	206,191		206,190		206,186	42	206,167
	206,214		206,149		206,207		206,193		206,199	46	206,202
5	206,185		206,150	15	206,159		206,194		206,208	48	206,178
	206,195		206,151		206,177		206,196		206,209		206,211
	206,198		206,152	16	206,203						

PLANT PATENTS

4	2,684	4	2,685								

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

November 8, 1966 Volume 832 Number 2

TRADEMARKS

NOTICES

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 155,951 (ALFRED DUNHILL in script), Alfred Dunhill of London, Inc., Tobacco-manufactured or unmanufactured, cigars and cigarettes; **Reg. No. 203,732** (UNIQUE DUNHILL LIGHTER AND DESIGN), same, Portable and pocket cigar and cigarette lighters; **Reg. No. 527,207** (DUNHILL), Alfred Dunhill Limited, Pyrophoric lighters; **Reg. No. 527,208,** same, Tobacco pipes, cigar and cigarette holders; **Reg. No. 534,705,** same, Tobacco pouches made of leather; **Reg. No. 539,892,** same, Raw tobacco, smoking and chewing tobacco, snuff, cigars, and cigarettes; **Reg. No. 540,389,** same, Billfolds, purses, handbags, document cases and wallets, all being goods made of leather; **Reg. No. 541,949** (DUNHILL DOUBLE-CLARO), Alfred Dunhill of London, Inc., Tobacco products, particularly cigars; **Reg. No. 634,071** (ALFRED DUNHILL), same, Men's ties, **filed** Aug. 18, 1966, D.C., S.D.N.Y., Doc. 66/2607, *Alfred Dunhill of London, Inc.* v. *Dunhill Records, Ltd. et al.*

CONDITION OF TRADEMARK APPLICATIONS AS OF SEPTEMBER 30, 1966

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]..... 28,584
Date of oldest new application..... August 4, 1965
Date of oldest amended application (filing date)..... November 26, 1963

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. BETTENDORF, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	8-4-65	4-30-64
(II) F. H. WETHERBEE, Classes 1, 3, 6, 7, 9, 10, 18, 22, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	12-3-65	11-23-63
Renewals (All Classes)	8-17-66	
Sec. 12(c) Publications (All Classes)	8-23-66	

Applications filed during the month of September—2,089

Registrations Issued.....410—No. 818,073 to No. 818,482
Renewals Issued.....50

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 182,246. Contina Bureaux- und Rechenmaschinenfabrik, Mauren, Liechtenstein. Filed Dec. 3, 1963.

Jntrascope

Priority claimed under Sec. 44(d) on Liechtenstein Reg. No. 1,500, dated June 5, 1963. The mark consists of the word "Intrascope."

Class 26—Measuring and Scientific Appliances

For Devices for Optically Investigating the Interior of Hollow Bodies Such as Tubes, Pipes and Channels.

Class 44—Dental, Medical, and Surgical Appliances

For Optical Instruments for Exploring and Examining Cavities of Humans and Animals.

SN 192,644. Varo, Inc., Garland, Tex. Filed May 4, 1964.

VARO

Owner of Reg. Nos. 613,828, 744,336, and 744,403.

Class 100—Miscellaneous

For Research Services in the Field of Physical Sciences.

Class 103—Construction and Repair

For Production and Maintenance of Equipment in the Fields of Electricity, Electronics, Electromechanics, and Optics.

First use in or about April 1949.

SN 203,475. Harsco Corporation, Galion, Ohio, assignee of Cobey Corporation, Galion, Ohio. Filed Oct. 7, 1964.

COBEY

Class 2—Receptacles

For Containers for Self-Loading Refuse Collection Trucks.
First use Jan. 1, 1952.

Class 19—Vehicles

For Truck and Trailer Bodies and Beds, Wagons, Wagon Gear, Cargo Hauling Trailers, and Self-Loading Refuse Collection Trucks.
First use June 1, 1945.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Farm Machinery for Forage and Tillage, Dump Hoists, Mobile and Truck Cranes, Fertilizer Spreaders, and Power Operated Elevating Tailgates.
First use June 1, 1945.

SN 209,789. Otto Junker, Kreis Monschau, Germany. Filed Jan. 12, 1965.



Owner of German Reg. No. 540,758, dated Aug. 8, 1940.

Class 21—Electrical Apparatus, Machines, and Supplies

For Industrial Electrically Haeted Furnaces for Smelting, Annealing or Treating of Materials or Objects of Iron, Metal or Ceramic Materials, Industrial Electrically Heated Furnaces for Chemical Processes; Accessory and Auxiliary Installations for the Said Industrial Furnaces—Namely, Transformers, Charging Apparatus, as Well as Discharging Apparatus, Protective Gas Installations for White Annealing Furnaces; Switches, Regulators and Overload Protective Devices for Electrically Heated Industrial Furnaces of the Above Type; Auxiliary Machinery for Rolling Mills—Namely, Machine Saws for Billets and Slabs, Shaping Machines for Billets and Slabs, Racking Machinery for Sheets, Rods, and Sectional Beams, Straightening Machinery and Shears for Sheets and Rods, Metal Tape Fastening Machines; Foundry Machinery—Namely, Continuous Molds, Cooled Molds, Moving Devices for Molds; and Conveyor Chains.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Conveyors.

First use 1930; in commerce 1954.

SN 210,093. Circle Import-Export Company, Los Angeles, Calif. Filed Jan. 18, 1965.

KELVIN'S

Class 8—Smokers' Articles, Not Including Tobacco Products

For Ash Trays and Cigarette Boxes.

Class 21—Electrical Apparatus, Machines, and Supplies

For Plates for Electrical Wall Switches.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Stainless Steel Flatware.

Class 30—Crockery, Earthenware, and Porcelain

For Chinaware and Earthenware—Namely, Dinnerware, Cups, Salt and Pepper Shakers, Animals and Figures, and Fancy Porcelain Goods.

Class 33—Glassware

For Fancy Glassware—Namely, Bonbon Dishes, Vases, and Tableware.

Class 50—Merchandise Not Otherwise Classified

For Stuffed People Caricatures, Stuffed Animals, Figurines, Wooden Candles, and Artificial Flowers.

First use at least as early as 1954.

SN 213,416. Controlled Environment Equipment Corporation, Whitman, Mass. Filed Mar. 5, 1965.



Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Work Tables for Use in Atmospheres, the Particulate Contamination of Which Is Controlled.
First use Jan. 26, 1962.

Class 26—Measuring and Scientific Appliances

For Air Samplers for Sampling Particulate Contamination in Atmospheres, Particularly Atmospheres in Which Particulate Contamination Is Controlled.
First use Apr. 17, 1963.

Class 50—Merchandise Not Otherwise Classified

For Foot Mats, Including Foot Mats Having a Sticky Surface for Removing Particulate Contaminants From the Soles and Heels.
First use June 14, 1962.

SN 216,023. Symington Wayne Corporation, Salisbury, Md. Filed Apr. 7, 1965.

SK WAYNE

Owner of Reg. Nos. 80,295, 679,222, and others.

Class 2—Receptacles

For Tool Boxes and Chests.
First use May 14, 1964.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Hand Tools, Consisting of: Wrenches—Namely, Socket, Box End, Open End, Combination, Adjustable, Pipe and Rim; Pliers—Namely, Groove and Rib Joint, Thin Nose, Combination, Diagonal Cutting, Lineman's, End Cutting, Nipper, Electrician's Side Cutting, Battery, Chain Nose, Needle Nose, Hose Clamp, Small Precision Including Flat and Round Nose, and Water Pump; Tire Irons; Snips—Namely, Standard, Duck Bill, and Aviation; Punches—Namely, Prick, Pin, Machine Drift, and Aligning; Chisels—Namely, Cold, Diamond Point, Cape, and Round Nose; Handles, Extensions, and Universal Joints for Socket Wrenches; Sets of the Before-Mentioned Tools, and Parts Thereof.
First use Jan. 24, 1964.

SN 218,360. Lipper and Mann Inc., New York, N.Y. Filed May 10, 1965.

DOLPHIN

Class 13—Hardware and Plumbing and Steam Fitting Supplies

For Stainless Steel Holloware Such as a Butter Dish, Gravy Boat With Ladle, Salad Bowl, Sugar-Creamer Set, Chip 'n Dip Set, Vegetable Server, Bread Tray, and Chafing Dish.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Stainless Steel Cutlery such as Salad Server Pair, Meat Carving and Serving Set, Spoon and Rack Set, Knife and Rack Set, and Steak Board Set.

Class 30—Crockery, Earthenware, and Porcelain

For Dinnerware, Coffee Mugs, TV Snack Sets, Cups and Saucers, Tea Pots, Trays, Gourmet Serving Pieces, Vegetable Servers, All of the Above Items Being Made in Whole or in Part of Chinaware, Stoneware, and Semi-Porcelain.

First use July 3, 1964.

SN 220,400. Penguin Associates, Inc., Malvern, Pa. Filed June 4, 1965.

PROTECT-A-CASE

Class 9—Explosives, Firearms, Equipments, and Projectiles

For Shotgun Cases, Rifle Cases, Hand Gun Cases, Combination Shotgun (or Rifle) and Scope Cases.

Class 22—Games, Toys, and Sporting Goods

For Billiard Cases, Tennis Racquet Cases, and Archery Cases.

Class 26—Measuring and Scientific Appliances

For Scope Cases, Camera and Photographic Equipment Cases.

First use May 7, 1965.

SN 220,988. Gemstone Corporation, Indianapolis, Ind. Filed June 14, 1965.

CARASTONE

Class 12—Construction Materials

For Synthetic Stone Cast as Slabs for Vanity Tops, and Window Sills.
First use Apr. 30, 1965.

Class 50—Merchandise Not Otherwise Classified

For Statuary and Figurines Made of Synthetic Stone.
First use Apr. 28, 1965.

SN 221,127. Western Litho Plate and Supply Company, St. Louis, Mo. Filed June 14, 1965.

WESTERN

Class 6—Chemicals and Chemical Compositions

For Lithographic Plate Preparation Materials—Namely, Agents for Etching, Staging Out, Coating, Developing, Copperizing, Cleaning, and Correcting Such Plates in Preparation for Printing and for Maintaining Distinctiveness Between Printing and Non-Printing Areas on the Same During Printing.

Class 50—Merchandise Not Otherwise Classified

For Lithographic Plates.

First use February 1959.

SN 222,796. Halliburton Company, Duncan, Okla. Filed July 7, 1965.



Class 1—Raw or Partly Prepared Materials

For Materials Used in the Construction, Completion, Treating and Servicing of Wells, Such as Oil, Gas, Brine and Water Wells—Namely, Pozzolans, Fibrous, Granular and Lamellated Lost Circulation Additives Such as Wood Fibers, Perlites, Walnut Shells and Cellulose Film Flakes, Heavyweight Additives (Namely, Ilmenite Ores and Barites), Sand, Silica Flour, Resins, Montmorillonite Clays Such as Bentonite, Other Clays, Natural Gums Such as Guar Gum, Propping Agents (Namely, Sand, Walnut Shells and Resins) and Radioactive Coated Propping Agents (Namely, Sand and Walnut Shells Coated With a Radioactive Material, Namely, Zirconium-Niobium, Cobalt, Irridium and Iron).

First use on or before Dec. 31, 1952.

Class 6—Chemicals and Chemical Compositions

For Chemicals Used in the Treatment of Wells, Such as Oil, Gas, Brine and Water Wells—Namely, Acids, Acid or Corrosion Inhibitors, Cement Retarders, Cement Accelerators, Low Water Loss Additives, Friction Reducers, Special Cement Additives, Surface Active Agents, Scale Removal and Control Agents, Paraffin Inhibiting and Control Additives, Natural and Synthetic Resins, Catalysts for Resins and Resin Diluents, Sodium Silicate, Temporary Bridging Agents, Mud Cleanout and Removal Agents, Foaming Agents, Gelling Agents, Additives for Fracturing Solutions, Alkalies, Salts, Sequestering Agents, Emulsifiers and Fillers.

First use June 30, 1958.

Class 12—Construction Materials

For Materials Used in the Construction, Completion, Treating and Servicing of Wells, Such as Oil, Gas, Brine and Water Wells—Namely Portland Cement.

First use on or before June 30, 1958.

Class 14—Metals and Metal Castings and Forgings

For Propping Agents—Namely, Aluminum Pellets.

First use on or before Dec. 31, 1960.

Class 16—Protective and Decorative Coatings

For Paints—Namely, Paints for Protectively and Decoratively Coating Metal, Wood, and Other Surfaces.

First use June 10, 1963.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Cementing Equipment and Tools—Namely, Mobile Cementing Units, Skid Cementing Units, Jet-Type Mixers, Plug Containers, Cementing Plugs, Plug Valves, Sand Screens, Bridge Plugs, Steel Liners, Well Packers, Sub Assemblies, Circulating Valves, Tubing Testers, Setting Tools, Multiple Stage Cementers, Cementing Collars, Well Bore Wall Cleaners, Swivels, Clamps, Packer Shoes, Packer Setting Devices, Baffles, Centralizers, Tubing Spacers, Cement Baskets, Guide Shoes, Float Shoes, Float Valves, Float Collars, Bulk Cementing Pneumatic Equipment, Pneumatic Handling and Conveying Equipment, Baskets for Paraffin Control Materials, Thermal Units, Fracturing Units, Fracturing Heads, Hydra-Jet Tools, Tubing Anchor Swivels, Hydra-Jet Cleanout Tools, Collar Locators, Fracturing Packers, Straddle Packers, Fracturing Cross-Over Tools, Auxiliary Valves, Anchor Catchers, Tubing Hold Downs, Dump Bailer Units, Bridging Baskets, Formation Testing Tools, High Pressure Control Heads and Manifolds, Reversing Subs, Pressure Equalizers, Hydraulic Jars, Safety Joints, Formation Sampling Tools, and Hydraulic Jetting Equipment.

First use on or before May 6, 1957.

Class 26—Measuring and Scientific Appliances

For Measuring Devices for Determining Depths in Bore Holes, Pressure Recording Devices, Density Meters, Flow Meters, Fracometers, Temperature Recorders, Cement Consistometers, Pressure-Temperature Thickening Time Testers, Flow Analyzers, and Densitrollers for Control of Slurry Density.

First use Jan. 7, 1959.

Class 33—Glassware

For Propping Agents—Namely, Glass Beads.

First use May 31, 1962.

Class 103—Construction and Repair

For Chemical and Engineering Services in the Oil and Gas Well Servicing Industry—Namely, Cementing Services, Fracturing Services, Chemical Services, Well Stimulation Services, Sand and Water Control Services, Testing Services, and Special Tools Services; and Also for Industrial Cleaning Services, Pressure Grouting Services, and Design, Engineering and Installation Services in Connection With Pneumatic Bulk Material Handling Systems.

First use on or before Dec. 31, 1946.

SN 223,388. Dainhonbungu Co., Ltd., Adachi-ku, Tokyo, Japan. Filed July 15, 1965.



Owner of Japanese Reg. Nos. 448,804 and 453,311, dated July 28, 1954, and Oct. 15, 1954, respectively.

Class 16—Protective and Decorative Coatings

For Oil Paints, Varnish, Enamel, Lacquer, Synthetic Resin Paints, Water Paints, Chemical-Resistant Paints, Anti-Corrosive Paints and Fluorescent Paints; Pastels, Paint Solvents, and Coloring Materials for Paints.

Class 37—Paper and Stationery

For Pencils, Mechanical Pencils, Chalk, Fountain Pens, Ball Point Pens, Marking Pens, Writing Instruments, and Crayons.

SN 223,389. Dermott Inc., Chicago, Ill. Filed July 15, 1965.



The words "Of London" are disclaimed apart from the composite mark. Owner of Reg. No. 388,203.

Class 51—Cosmetics and Toilet Preparations

For Preparations for the Care, Grooming and Beautification of the Hair—Namely, Setting Lotion and Gel, Rinse, Conditioner, Dressing and Holding Spray; and After-Bath Refresher With Deodorant.

Class 52—Detergents and Soaps

For Hair Shampoo.

First use September 1964; 1931 as to the words "Dermott Of London."

SN 227,374. Western Farmers Association, Seattle, Wash. Filed Sept. 7, 1965.

WESTERN TRAIL

Class 18—Medicines and Pharmaceutical Preparations

For Vitamin-Mineral Supplements for Horses.

Class 46—Foods and Ingredients of Foods

For Horse Feeds.

First use Sept 11, 1964.

SN 230,020. Caterpillar Tractor Co., East Peoria, Ill. Filed Oct. 13, 1965.

CAT

Owner of Reg. Nos. 564,272, 778,638, and others.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Tools, Auxiliary Equipment and Apparatus for Use in Connection With Welding Machines, More Particularly Automatic Handling Equipment for Loading and Unloading the Welding Machines; Flash Forming Equipment; Rolling and Coining Equipment for Shaping Bar Ends; Fixturing; and Flash Removal Lathes.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Welding Machines, Parts for Such Welding Machines, and Auxiliary Equipment Therefore, More Particularly Induction and Resistance Heaters for Heating Work Pieces.

First use Feb. 1, 1965.

SN 230,111. Decca Limited, London, England. Filed Oct. 14, 1965.

HI-FIX

Class 21—Electrical Apparatus, Machines, and Supplies

For Radio Transmitters, Radio Receivers, Radio Antennae, Batteries and Battery Chargers for Use in Ships and Aircraft, and Parts Therefor.

Class 26—Measuring and Scientific Appliances

For Scientific Instruments and Apparatus for Use in Ships and Aircraft in Connection With Surveys and Position-Fixing—Namely, Remote Indicators, Left-Right Indicators, Track Plotters, Lane Identification Display Units, Frequency Independent Displays, Fix-Printers, Camera Control and Display Units, and Parts Therefor.

First use July 1963; in commerce July 1963.

SN 231,064. Denoyer-Geppert Company, Chicago, Ill. Filed Oct. 22, 1965.

BIOVUE

Owner of Reg. Nos. 633,603 and 746,359.

Class 26—Measuring and Scientific Appliances

For Transparencies, Transparency Viewing Apparatus, and an Educational Transparency Visual Teching Aid—Namely, Transparencies, Lesson Books and Viewing Apparatus, Sold as a Unit.

Class 38—Prints and Publications

For Bound Lesson Books, Teachers' Guides, and Printed Transparencies.

First use Sept. 21, 1965.

SN 236,245. Eaton Yale & Towne Inc., Cleveland, Ohio. Filed Jan. 12, 1966.



Owner of Reg. No. 398,796.

Class 19—Vehicles

For Vehicle Heating and Ventilating Apparatus; Vehicle Air Conditioners and Parts Terefor; Vehicle Springs; Stamped Closures for Tanks and Cooling Apparatus for Vehicles.

First use on or about Dec. 21, 1923.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Drive Axles for Vehicles, Including Motor Trucks; Vehicle Drive Axle Parts, Including Shafts; Differentials, and Housings; Air and Electric Shift Controls for Vehicle Drive Axles.

First use on or about Dec. 21, 1923.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Devices for Moisture Conditioning Air and Controls Therefor.

First use on or about Aug. 5, 1964.

SN 237,780. Terrytown Importing & Manufacturing Corporation, Hickory, N.C. Filed Feb. 2, 1966.

TERRYTOWN

Class 32—Furniture and Upholstery

For Table Tops Made of Synthetic Marble.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Lamp Bases Made of Synthetic Marble.

First use Oct. 1, 1963.

SN 237,930. Branson Instruments, Incorporated, Stamford, Conn. Filed Feb. 3, 1966.

BRANSON

Class 21—Electrical Apparatus, Machines, and Supplies

For Ultrasonic Cleaning Apparatus and Components Thereof for Industrial Use; and High Energy Ultrasonic Converters.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Vapor Degreasing Apparatus, and Components Thereof.

Class 44—Dental, Medical, and Surgical Appliances

For Ultrasonic Cleaning Apparatus, and Components Thereof for Medical and Surgical Instruments.

First use at least in 1954.

SN 238,910. Meister-Brothers, Inc., Cleveland, Ohio. Filed Feb. 16, 1966.

meistergram

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Mongramming Machines and Parts Thereof, Including Monogram Stencils.

Class 43—Thread and Yarn

For Thread.

First use in or about September 1932.

SN 239,481. Arnold J. Weber, New York, N.Y. Filed Feb. 24, 1966.

COTTOLENE

Class 39—Clothing

For Wearing Apparel—Namely, Men's Dress Shirts and Sport Shirts, Men's Pajamas, Men's Underwear; Women's Shirts and Blouses, and Women's Dresses.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers, or any combinations thereof.

First use Dec. 27, 1965.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 227,152. Jones & Scully, Inc., Miami, Fla. Filed Sept. 3, 1965.

Orchidglade

For Orchid Plants.
First use January 1946.

SN 237,644. Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. Filed Feb. 1, 1966.

LUTOFAN

For Plastic Dispersions and Plastic Solutions.
First use June 30, 1951; in commerce Nov. 9, 1965.

SN 239,959. Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. Filed Mar. 2, 1966.

PROPIOFAN

For Chemicals as Plastic Dispersions and Plastic Emulsions.
First use Dec. 3, 1953; in commerce Aug. 30, 1965.

SN 243,114. Fiberfil, Inc., Evansville, Ind. Filed Apr. 11, 1966.

SULFIL

For Plastics, Specifically Synthetic Injection Molding Materials in Pellet or Granular Form.
First use Sept. 21, 1965.

SN 243,723. Spaulding Fibre Company, Inc., Tonawanda, N.Y. Filed Apr. 18, 1966.

ARMITE

For Vulcanized Fibre and Laminates in Sheet, Board, Block, Strip, and Roll Form, Particularly for Use as Electrical Insulation and as Backing for Sheet Abrasives.
First use on or about Mar. 20, 1931.

SN 244,400. Extrudo Film Corporation, New York, N.Y. Filed Apr. 27, 1966.

EXTREL

For Polyethylene Film.
First use Oct. 1, 1965.

SN 244,905. Georgia Kaolin Company, Elizabeth, N.J. Filed May 4, 1966.

ALBAGEN

For Bentonite Type of Clay.
First use January 1965.

SN 244,906. Georgia Kaolin Company, Elizabeth, N.J. Filed May 4, 1966.

ALBAGEL

For Bentonite Type of Clay.
First use January 1965.

SN 245,030. Timberland Products Co., Inc. Stamford, N.Y. Filed May 5, 1966.

kwikets

For Charcoal Briquettes.
First use Feb. 14, 1966.

SN 245,031. Timberland Products Co., Inc., Stamford, N.Y. Filed May 5, 1966.

Hibachi-ets

For Charcoal Briquettes.
First use Apr. 3, 1965.

SN 247,255. Rohm and Haas Company, Philadelphia, Pa. Filed June 3, 1966.

KORAD

For Synthetic Plastic Film.
First use on or about May 4, 1966.

Class 2—Receptades

SN 218,885. Merck & Co., Inc., Rahway, N.J. Filed May 14, 1965.

PROPAK

Applicant disclaims the word "Pak" apart from the mark as shown.
For Paper Cartons and Plastic Tubular Container for Veterinary Preparations.
First use in or about July 1964.

SN 224,751. International Paper Company, New York, N.Y. Filed Aug. 2, 1965.

VALA FLUTE

For Folding Cartons Made from Corrugated Paperboard.
First use July 6, 1965.

SN 224,870. Waite McClain, d.b.a. McClain Products Company, Canton, Ohio. Filed Aug. 3, 1965.

Durastone

For Burial Vaults.
First use Apr. 1, 1928.

SN 225,114. Container Corporation of America, Chicago, Ill. Filed Aug. 6, 1965.

EGG'N FOAM

For Egg Cartons.
First use July 16, 1965.

SN 235,364. United Steel and Wire Company, Battle Creek, Mich. Filed Dec. 27, 1965.

TRAK-STAK

For Wire Trays Used in Storing Bakery Products.
First use May 7, 1965.

SN 235,415. Merck & Co., Inc., Rahway, N.J. Filed Dec. 28, 1965.

5-12 PAK

For Card Container for Medicinal Tablets Arranged in a Sequential Dosage Schedule.
First use Oct. 8, 1965.

SN 236,032. Weyerhaeuser Company, Tacoma, Wash. Filed Jan. 7, 1966.

ACE

For Paper Cartons—Namely, Folding Cartons Made From Paperboard.
First use Jan. 1, 1929.

SN 236,385. J. C. MacElroy Co., Inc., New York, N.Y. Filed Jan. 13, 1966.

MAC TAINER

For Walk-In Type Shipping Boxes and Containers.
First use Nov. 26, 1965.

SN 236,509. The Plastic Forming Company, Inc., Tonawanda, N.Y. Filed Jan. 14, 1966.

PFC

For Carrying Cases for Tool Bits.
First use Dec. 7, 1965.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 224,136. Ralph F. Young, d.b.a. R. F. Young Company, Indianapolis, Ind. Filed July 23, 1965.

SYN/TUF

For Vinyl Coated Fabric Which Is Incorporated as a Component Part of Attache Cases, Brief Bags and Portfolios.
First use May 24, 1965.

Class 4—Abrasives and Polishing Materials

SN 201,984. George Warren, d.b.a. Warren Chemical Company, Trenton, N.J. Filed Sept. 15, 1964.

SATELLITE PRODUCTS

The word "Products" is disclaimed apart from the mark as shown.
For Polishing Materials for Metals.
First use Aug. 25, 1964.

SN 230,310. Turtle Wax, Inc., Chicago, Ill. Filed Oct. 15, 1965.

PENNY SHOE SHINE

The words "Shoe Shine" are disclaimed apart from the mark as shown. Owner of Reg. No. 707,357.
For Cleaning and Polishing Preparations for Leather, Plastics, and the Like.
First use Oct. 27, 1958.

SN 230,426. Puritan Chemical Company, Atlanta, Ga. Filed Oct. 18, 1965.

TROPHY

For Metal Polish.
First use Sept. 29, 1965.

Class 5 — Adhesives

SN 231,192. The Borden Company, New York, N.Y., assignee of Mystik Tape, Inc., New York, N.Y. Filed Oct. 22, 1965.

MYSTIKLEER

Owner of Reg. Nos. 708,889, 729,929, and 765,670.
For Pressure Sensitive Tape.
First use Apr. 21, 1965.

SN 231,236. W. J. Rusco Company, Akron, Ohio. Filed Oct. 22, 1965.

RELI-O-BOND

For Rubber Cements, Particularly the Thermoplastic Nitrile Rubber Cements.
First use Aug. 6, 1964.

SN 252,140. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Aug. 11, 1966.

ARMALON

Owner of Reg. Nos. 563,268 and 654,507.
For Pressure Sensitive Tapes.
First use Mar. 10, 1966.

Class 6 — Chemicals and Chemical Compositions

SN 188,737. The Elco Corporation, Cleveland, Ohio. Filed Mar. 16, 1964.

SULFO-CHLORO-LEAD

Owner of Reg. Nos. 430,561 and 430,562.
For Chemical Composition Comprising Derivatives of Sulphur, Chlorine and Lead, Which Applicant Sells as an Additive for Lubricants and Which Enhances Their Antiwear and Film Strength Characteristics.
First use Dec. 9, 1940.

SN 219,421. Ulrich J. Fregeau, d.b.a. de Corporation, Denver Colo. Filed May 21, 1965.



For Insecticidal Washing Compound.
First use Feb. 15, 1965.

SN 227,990. Archer-Daniels-Midland Company, Minneapolis, Minn. Filed Sept. 17, 1965.

DISTAL

For Distilled Tallow Fatty Acids Derived from Fats and Oils, for Use as an Ingredient for Chemical Manufacturing.
First use in or about 1942.

SN 228,110. Archer-Daniels-Midland Company, Minneapolis, Minn. Filed Sept. 20, 1965.

COSMOL

For Chemically Processed Derivative of Sperm Whale Oil.
First use in or about 1938.

SN 231,084. Fabcon Incorporated, Chagrin Falls, Ohio. Filed Oct. 22, 1965.

PAN-AID

For Chemical Composition for Use as a Processing Aid in the Manufacture of Sugar From Sugar Juices, Syrups, and Massecuites Derived From Sugar Cane and Sugar Beets.
First use Nov. 20, 1964.

SN 231,085. Fabcon Incorporated, Chagrin Falls, Ohio. Filed Oct. 22, 1965.

FABCON

For Composition for Use as an Aid in the Clarification and Evaporation of Sugar Juice in the Manufacture of Sugar.
First use Nov. 27, 1963.

SN 232,834. Leon Hart Texas Enterprises, Incorporated, Birmingham, Mich. Filed Nov. 17, 1965.

TIRE-TRU

For Liquid Packaged in a Pressurized Can for Balancing Wheels.
First use July 15, 1965.

SN 237,645. Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. Filed Feb. 1, 1966.

STEROCOLL

For Chemicals and Chemical Compounds as Thickening and Levelling Agents for the Paper Industry.
First use Aug. 5, 1958; in commerce January 14, 1966.

SN 238,048. Cargill, Incorporated, Minneapolis, Minn. Filed Feb. 4, 1966.

OPTAMINE

For Chemicals, Specifically Ethoxylated Amines.
First use Dec. 10, 1965.

SN 238,083. The Harshaw Chemical Company, Cleveland, Ohio. Filed Feb. 4, 1966.

1200SL

For Catalyst for Use as an Addition Agent in Plating Baths for the Production of a Decorative and/or Microcracked Chromium Deposit.
First use Nov. 22, 1965.

SN 239,958. Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. Filed Mar. 2, 1966.

LATEKOLL

For Chemicals as Thickening and Stabilizing Agents for the Plastic and Lacquer Industries.
First use July 11, 1935; in commerce Jan. 2, 1966.

SN 241,292. Westchester Veterinary Products, Inc., White Plains, N.Y. Filed Mar. 17, 1966.

DR. MERRICK'S

Owner of Reg. No. 500,316.
For Insecticides for Domestic Animals.
First use August 1942.

SN 243,943. American Cyanamid Company, Wayne, N.J. Filed Apr. 21, 1966.

CYANASET

Owner of Reg. No. 756,606.
For Urethane Curative.
First use Feb. 24, 1966.

SN 244,134. Olin Mathieson Chemical Corporation, New York, N.Y. Filed Apr. 22, 1966.

TERRACLOR SUPER X

Owner of Reg. No. 625,671.
For Soil Fungicides.
First use at least as early as Apr. 2, 1965.

Class 7 — Cordage

SN 231,193. Norcross, Inc., New York, N.Y. Filed Oct. 22, 1965.

LUSTRE-STRIPE

Owner of Reg. Nos. 628,086, 740,463, and 792,618.
For Ribbon.
First use August 1965.

SN 241,731. Armco Steel Corporation, Middletown, Ohio. Filed Mar. 24, 1966.

TUF-FLEX

For Wire Rope Cores.
First use Feb. 24, 1966.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 224,330. Protecto Plastics, Inc., Wind Gap, Pa. Filed July 27, 1965.



No claim is made to the word "Kaddy" apart from the mark as shown.
For Plastic Carrying Cases—Namely, Shotgun, Rifle, and Hand Gun Cases.
First use December 1962.
Subj. to Intf. with SN 220,400.

Class 10 — Fertilizers

SN 227,313. Micro-Lite, Inc., Norton, Kans. Filed Sept. 7, 1965.

"TINY GRAINS THAT HOLD THE RAINS"

For Soil Conditioner.
First use Feb. 27, 1965.

SN 234,104. Anvil Mineral Products Corporation, Bay Springs, Miss. Filed Dec. 7, 1965.

MICRO-MIN

For Combination Soil Conditioner and Fertilizer.
First use November 1962.

SN 239,372. Boise Cascade Corporation, Boise, Idaho. Filed Feb. 23, 1966.

CASCADE

Owner of Reg. Nos. 763,312 and 764,146.
For Natural Tree Bark Used for Decorative Landscaping, Mulches, and Ground Coverings.
First use June 24, 1964.

SN 239,904. Golden Acres Fertilizer Co., Inc., Amarillo, Tex. Filed Mar. 1, 1966.



For Lawn and Garden Fertilizers.
First use Jan. 13, 1966.

Class 11 — Inks and Inking Materials

SN 233,646. Sun Chemical Corporation, New York, N.Y. Filed Nov. 30, 1965.

MORR KLEEN

For Printing Inks.
First use Oct. 27, 1965.

Class 12 — Construction Materials

SN 218,736. James A. Brown, Jr., d.b.a. Piedmont Equipment Company, Greenville, S.C. Filed May 13, 1965.

BANTAM CHEF

For Prefabricated Fully-Equipped Roadside Dinettes Sold as a Unit.
First use Aug. 13, 1964.

SN 230,876. Nufold Corporation, Philadelphia, Pa. Filed Oct. 21, 1965.

NUFOLD

For Folding Doors.
First use Oct. 12, 1965.

SN 232,467. Lockheed Aircraft Corporation, Burbank, Calif. Filed Nov. 10, 1965.

LOCKWOOD

For Plastic Impregnated Wood for Construction Purposes and for General Use in the Industrial Arts.
First use no later than Dec. 21, 1964.

SN 238,288. Potlatch Forests, Inc., San Francisco, Calif. Filed Feb. 7, 1966.

TWINSIDE FENCE

The word "Fence" and the fence design are disclaimed apart from the mark as a whole.
For Fences Made of Wood.
First use Dec. 29, 1965.

SN 238,372. Vancouver Plywood Co., Vancouver, Wash. Filed Feb. 8, 1966.

VANACITE

For Prefinished Plywood.
First use Aug. 5, 1963.

SN 238,373. Vancouver Plywood Co., Vancouver, Wash. Filed Feb. 8, 1966.

vanply

For Plywood.
First use June 30, 1935.

SN 238,712. Century Industries, Inc., Eugene, Oreg. Filed Feb. 14, 1966.

ACRYLOGLAS

For Flat Structural Glazing Sheets.
First use Jan. 26, 1966.

SN 240,631. Robert H. Kuecker, d.b.a. Kuecker Enterprises, Elgin, Ill. Filed Mar. 10, 1966.



For Weather Stripping.
First use prior to Feb. 2, 1966.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 232,138. Otis Engineering Corporation, Dallas, Tex. Filed Nov. 4, 1965.

OTIS

Owner of Reg. Nos. 356,656, 572,820, and others.
For Oil and Gas Well Producing and Servicing Equipment—Namely, Safety Valves, Surface Safety Valves, and Parts Therefor.
First use Jan. 1, 1936.

SN 232,253. Vernay Laboratories, Inc., Yellow Springs, Ohio. Filed Nov. 5, 1965.

VERNADIZED

For Flow Control Valves, Such as Needle Valves, and Parts Therefor.
First use Oct. 25, 1965

SN 234,390. Continental Industries, Inc., Tulsa, Okla. Filed Dec. 13, 1965.

FASTTAP

For Piping Tees.
First use Dec. 1, 1961.

SN 235,967. Falcon Line Products Corp., Pittsburgh, Pa. Filed Jan. 7, 1966.



The word "Products" is disclaimed apart from the mark as shown.
For Casing Insulators and Flange Insulation Kits Comprising Center Insulating Gaskets, Insulating Sleeves, Insulating Washers and Cadmium Plated Steel Washers.
First use Aug. 18, 1965.

SN 237,253. Sealol, Inc., Warwick, R.I. Filed Jan. 25, 1966.

CHEMPRO

For Expansion Joints and Flexible Couplings.
First use Jan. 19, 1951.

SN 237,460. Teledyne Inc., Inglewood, Calif. Filed Jan. 27, 1966.

LINLOK

For Industrial Tube Fittings.
First use Dec. 1, 1965.

SN 239,909. Holmes Hardware & Sales Co., Los Angeles, Calif. Filed Mar. 1, 1966.

U-HAMM'R-IN

For Joist Hangers, Truss Brackets, and Framing Anchors.
First use Jan. 1, 1966.

SN 242,792. The Bishop and Babcock Corporation, Toledo, Ohio. Filed Apr. 6, 1966.

P

Owner of Reg. No. 784,263.
For Sheet Metal Fastening Devices, Including J-Shaped Clips; C-Shaped Clips; Flat Nuts Having Screw-Receiving Impressions; Bridge Spacers; Capacitor Clips; Push-On Fasteners; Tube and Wire Clips; Yoke Clamp Fasteners; Snap Nut Fasteners; Retainer Rings; Angle Bracket Fasteners; and Vehicle Body Fasteners.
First use May 9, 1955.

SN 245,210. The Lunkenheimer Company, Cincinnati, Ohio. Filed May 9, 1966.

707XL

For Valves.
First use Apr. 1, 1966.

SN 245,324. Lerner Manufacturing, Inc., Melville, N.Y. Filed May 10, 1966.

BATH SERVER

For Units Providing Shelf Space for Bath Needs and Accessories.
First use Apr. 13, 1966.

SN 245,414. National Welding Equipment Co., Richmond, Calif. Filed May 11, 1966.

SIMET

For Gas Mixing Valves and Regulators.
First use Apr. 5, 1966.

SN 245,504. Plastiline, Inc., Pompano Beach, Fla. Filed May 12, 1966.



For Plastic Pipe Fittings for Use With Plastic Pipe.
First use Sept. 1, 1964.

SN 245,505. Plastiline, Inc., Pompano Beach, Fla. Filed May 12, 1966.

Plastiline

For Plastic Pipe Fittings for Use With Plastic Pipe.
First use Sept. 1, 1964.

SN 245,561. Buell Engineering Company, Inc., Lebanon, Pa. Filed May 13, 1966.

spiraflo

For Pipe and Pipe Fittings.
First use September 1964.

SN 245,562. Buell Engineering Company, Inc., Lebanon, Pa. Filed May 13, 1966.

permaflo

For Pipe and Pipe Fittings.
First use May 25, 1965.

SN 245,606. The North and Judd Manufacturing Company, New Britain, Conn. Filed May 13, 1966.

MARINIUM

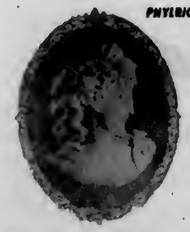
Owner of Reg. No. 790,916.
For Marine Hardware, Including Cleats, Chocks, Tiller Fittings, Deck Plates, Hinge Sets, Winches, Eye Straps, Window Frames, Flag pole Holders, Mast Steppe Plates, Hand Rail Sockets, Rub Rail Caps, Gudgeons, Mast Tabernacles, etc.
First use Mar. 7, 1966.

SN 248,605. Hyman Eventoff, d.b.a. Bathbee Company, Long Island City, N.Y. Filed June 21, 1966.

THE SOAP RAFT

For Bath Trays.
First use May 1966.

SN 251,101. Phyirich International, Los Angeles, Calif. Filed July 27, 1966.



For Robe Holders, Soap Dishes, Tumbler and Toothbrush Holders, Towel Rings, Towel Bars, Paper Holders, Door Levers, Door Knobs, Cabinet Knobs, Faucet Handles, Cover Plates, Spouts, Water Valves, Diverters of Water From Spouts to Shower-Heads, Shower-Heads, and Miscellaneous Parts Thereof.
First use Apr. 19, 1966.

SN 253,101. Bliss & Laughlin Industries Incorporated, Oak Brook, Ill. Filed Aug. 25, 1966.

SPHINX

For Casters, Furniture Hardware, Glides, and Chair Controls and Bases.
First use Jan. 27, 1947.

Class 14 — Metals and Metal Castings and Forgings

SN 235,383. Associated Spring Corporation, Bristol, Conn. Filed Dec. 28, 1965.

BAR-COMP

Owner of Reg. Nos. 704,504, 429,031, and others.
For Cold Rolled Saw Steel.
First use Nov. 3, 1965.

SN 235,599. The Timken Roller Bearing Company, Canton, Ohio. Filed Dec. 30, 1965.

TDS

For Hollow Drill Steel.
First use May 18, 1965.

Class 16 — Protective and Decorative Coatings

SN 238,097. Atlas Chemical Co., Miami, Fla. Filed Feb. 17, 1966.

DYNACRYL

For Vinyl Acrylic Coating for Use on Wood, Metal, Synthetic Fabrics, and Molded Plastics.
First use Oct. 14, 1965.

Class 17 — Tobacco Products

SN 232,123. Wally Frank, Ltd., New York, N.Y. Filed Nov. 4, 1965.

STALLION

For Tobacco Products—Namely, Cigars.
First Use Oct. 20, 1963.

SN 252,991. Universal Cigar Corporation, New York, N.Y. Filed Aug. 24, 1966.

DERBY

For Cigars.
First use Aug. 12, 1966.

Class 18 — Medicines and Pharmaceutical Preparations

SN 218,237. Paul Wortzel, d.b.a. Linnay Pharmaceuticals, Newark, N.J. Filed May 6, 1965.

LINNAY

For Medicinal Preparations for Relief From Stomach Upsets, Temporary Relief of Minor Sore Throat and Eye Lotion for Relief of Redness, Minor Irritations Due to Exposure to Wind, Sun, Dust, Tobacco Smoke, and Smog.
First use September 1956.

SN 221,583. Dawe's Laboratories, Inc., Chicago, Ill. Filed June 21, 1965.

NITRONIC POWDER

Applicant disclaims the word "Powder" apart from the mark as shown.
For Organic Arsenic Compounds and Medicated Poultry and Animal Feed Compositions Containing Same.
First use May 3, 1965.

SN 226,783. Pure Pharmacal Company, Houston Tex. Filed Aug. 30, 1965.

NASATEX

For Decongestant Antihistamine Nasal Spray.
First use at least as early as May 5, 1965.

SN 231,175. Moser Paper Company, Chicago, Ill. Filed Oct. 22, 1965.

SUPERIOR

Owner of Reg. No. 550,908.
For Antiseptic Preparation for Use by Undertakers.
First use January 1941.

SN 231,415. FRST Company, Clatskanie, Oreg. Filed Oct. 23, 1965.

FRST

For Medicinal Preparation for Burns.
First use Aug. 10, 1965.

SN 232,872. Syntex Laboratories, Inc., Palo Alto, Calif. Filed Nov. 17, 1965.

OVERLAY

For Steroid Hormone Preparation for Veterinary Use.
First use Oct. 21, 1965.

SN 233,761. Bernard Trupp, Baltimore, Md. Filed Dec. 1, 1965.

TARGET

For Antiseptic Preparation for Interdental Lavage, an Adjunct in the Treatment of Periodontal Disease and Dental Decay.
First use Aug. 30, 1965.
Subj. to Intf. with SN 237,401.

SN 237,377. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Jan. 26, 1966.

FORMULA 5

The word "Formula" is disclaimed apart from the mark as shown.
For Veterinary Preparations Useful in the Prevention and Treatment of Diseases and for Nutritional Purposes.
First use Dec. 9, 1965.

SN 237,401. Target Stores, Inc., Minneapolis, Minn. Filed Jan. 26, 1966.

TARGET

For Aspirin, APC Aspirin Compound, Cough Syrup, Ascorbic Acid, Dicalcium Phosphate, Dietary Supplement, Antiseptic Mouth Wash for Oral Hygiene, Sleeping Tablets and Vitamin Preparations, All for Human Use.
First use on or about May 1, 1962.
Subj. to Intf. with SN 233,761.

SN 237,566. Kasar Company, Niles, Ill. Filed Jan. 28, 1966.

REDUTYME

For Pharmaceutical Product in the Form of a Sustained Release Capsule Useful as an Adjunct in Weight Reduction and Alcoholism.
First use Jan. 19, 1966.

SN 238,666. Progressive Drugs of America, Inc., Chattanooga, Tenn. Filed S.R. Feb. 11, 1966; am. P.R. June 24, 1966.

TIME ZONE

For Medicine in Tablet Form for Inducing Sleep.
First use Apr. 19, 1963.

SN 241,646. Daiichi Seiyaku Kabushiki Kaisha, d.b.a. Daiichi Seiyaku Co., Ltd., Chuo-ku, Tokyo-to, Japan. Filed Mar. 23, 1966.

DAIMETON

For Sulfa Drugs.
First use Feb. 19, 1959; in commerce July 6, 1965.

SN 242,553. Billy N. Bellis, d.b.a. Anatox Co., Santa Maria, Calif. Filed Apr. 4, 1966.

ANATOX

For Antihistaminic Preparation for the Relief of Itching and Discomfort Associated With Skin Irritation Resulting From Poison Oak or Poison Ivy in Capsule and Tablet Form.
First use Feb. 3, 1954.

SN 242,884. E. C. De Witt & Co., Inc., Chicago, Ill. Filed Apr. 7, 1966.

KORN GONE

For Preparation for Removing Corns and Calluses.
First use August 1922.

SN 243,364. Veterinary Supply Depot Incorporated, Dallas, Tex. Filed Apr. 13, 1966.

TUSSA-PRIME

For Antitussive and Decongestive Preparation for Veterinary Use.
First use Sept. 5, 1964.

SN 243,369. Johann A. Wulfing, Dusseldorf, Germany. Filed Apr. 13, 1966.

DIPYRONIN

Owner of German Reg. No. 808,854, dated July 1, 1965.
For Antirheumatics.

SN 243,490. Sterimed, Inc., Brooklyn, N.Y. Filed Apr. 14, 1966.

STERI-MED

For Digoxin Tablets.
First use on or about Jan. 17, 1966.

SN 243,609. Western Research Laboratories, Inc., Denver, Colo. Filed Apr. 15, 1966.

W R L

For Appetite Depressants, Thyroid, Thyroid Preparations, Laxatives, Tranquilizers, Relaxants, Diuretics, Digestive Preparations, Sedatives, Bile Enzyme Therapy Preparation, Potassium Gluconate, Hematinic Preparations, Analgesic Compounds, Hormone Preparations, Vitamin B Complex Preparations, Sustained Action Tablets, Multi-Vitamin Preparations, Calcium-Magnesium Preparations, and Pentaerythritol Tetranitrate.
First use July 29, 1965.

SN 243,635. Colgate-Palmolive Company, New York, N.Y. Filed Apr. 18, 1966.

PIPTALAKE

Owner of Reg. No. 596,314.
For Gastrointestinal Preparation.
First use on or about Mar. 28, 1966.

SN 243,636. Colgate-Palmolive Company, New York, N.Y. Filed Apr. 18, 1966.

ORFERON

For Hematinic Preparation.
First use on or about Feb. 25, 1966.

SN 243,758. American Home Products Corporation, New York, N.Y. Filed Apr. 19, 1966.

QUIET WORLD

For Calmative Preparation.
First use Mar. 18, 1966.

SN 243,760. American Home Products Corporation, New York, N.Y. Filed Apr. 19, 1966.

MEDSIBANE

For Analgesic Calmative.
First use Mar. 18, 1966.

SN 245,662. Alfanal Laboratories, Inc., Ashland, Oreg. Filed May 16, 1966.

ALFANAL

For Palliative Aid for Relief of Aching Muscles, Arthritis, and Rheumatism.
First use 1950.

SN 246,055. The Drug Products Co., Inc., Bloomfield, N.J. Filed May 19, 1966.

NATRICO

For Medicinal Preparation Used in the Treatment of High Blood Pressure and All Forms of Hypertension of the Cardio-Vascular System.
First use June 9, 1924.

SN 246,644. Bristol-Myers Company, New York, N.Y. Filed May 26, 1966.

LOOK AHEAD

For Foods and the Ingredients of Foods—Namely, Vitamin and Mineral Supplement Preparation.
First use Apr. 6, 1966.

SN 246,646. Bristol-Myers Company, New York, N.Y. Filed May 26, 1966.

WIPACID

For Medicines and Pharmaceutical Preparations—Namely, an Antacid Preparation for the Relief of Gastric Acidity.
First use Apr. 28, 1966.

SN 246,650. Bristol-Myers Company, New York, N.Y. Filed May 26, 1966.

INVESTIN

For Foods and the Ingredients of Foods—Namely, a Vitamin and Mineral Supplement Preparation.
First use Apr. 6, 1966.

SN 252,057. American Home Products Corporation, New York, N.Y. Filed Aug. 10, 1966.

ANEW

For Vitamin-Iron Tonic.
First use July 20, 1966.

SN 252,234. Standard Laboratories, Inc., Morris Plains, N.J. Filed Aug. 12, 1966.

AFTER-ACTION

For External Analgesic.
First use July 27, 1966.

SN 252,990. Ortho Pharmaceutical Corporation, Raritan, N.J. Filed Aug. 24, 1966.

SULTRIN

Owner of Reg. Nos. 677,939 and 727,671.
For Vaginal Suppositories.
First use Apr. 14, 1966.

SN 253,089. American Home Products Corporation, New York, N.Y. Filed Aug. 25, 1966.

DRIPTIN

For Decongestant Nasal Spray.
First use Aug. 3, 1966.

SN 253,098. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Aug. 25, 1966.

RONDOSTATIN

Owner of Reg. No. 645,992.
For Antibiotic Preparation.
First use Aug. 18, 1966.

SN 253,586. American Home Products Corporation, New York, N.Y. Filed Sept. 1, 1966.

ANESTADE

For Anaesthetic Adjunct.
First use Aug. 24, 1966.

SN 253,588. E. R. Squibb & Sons, Inc., New York, N.Y. Filed Sept. 1, 1966.

KENASORB

For Anti-Inflammatory Preparation.
First use July 12, 1966.

Class 19—Vehicles

SN 222,604. Nautec Corporation, New York, N.Y. Filed July 2, 1965.

BERTRAM

Owner of Reg. No. 790,248.
For Boats and Ships.
First use January 1962.

SN 228,751. Roll-On Mfg. Corp., Chicago, Ill. Filed Sept. 27, 1965.

ROLL-ON

For Mobile Tool Storage Cart and Work Bench.
First use Sept. 20, 1960.

SN 229,476. Hutchens & Son Metal Products, Inc., Springfield, Mo. Filed Oct. 7, 1965.

HUTCH Line

The word "Line" is disclaimed apart from the mark as shown. Owner of Reg. No. 751,555.
For Vehicle Suspension Assemblies and Component Parts Thereof.
First use Aug. 30, 1961.

SN 231,103. Jeffrey Galion Manufacturing Company, Columbus, Ohio. Filed Oct. 22, 1965.

RAMCAR

For Shuttle Cars for Material Hauling.
First use on or about Oct. 5, 1965.

SN 232,989. Fleet Products Company, Inc., Mosta Mesa, Calif. Filed Nov. 19, 1965.

yak-yak

For Kayak-Type Boats.
First use in or about June, 1965.

SN 247,297. James J. Delaney, d.b.a. Delaney's Surplus Sales, North Freedom, Wis. Filed June 6, 1966.

DUNPHY

For Boats.
First use 1854.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 171,233. Communication Papers Inc., Moosic, Pa. Filed June 18, 1963.

TIMEMARK 118

The exclusive right to use the number 118 is disclaimed apart from the mark as shown. Owner of Reg. No. 753,235.
For Electrosensitive Recording Paper.
First use Nov. 29, 1961.

SN 203,379. Desmond P. Corcoran, El Paso, Tex. Filed Oct. 6, 1964.

ELECTRO-SCHEMATIC FLICKBOARD

Applicant hereby disclaims exclusive right to the use of the words "Electro-Schematic" apart from the mark as shown.
For Wiring Diagram Board Units for Electronics Instruction.
First use Aug. 12, 1964.

SN 209,226. Anderson Electric Corporation, Leeds, Ala. Filed Jan. 4, 1965.

ANDERLITE

Owner of Reg. No. 742,932.
For Electrical Insulating Fiberglass Brackets.
First use Aug. 11, 1964.

SN 219,351. Methode Electronics, Inc., Chicago, Ill. Filed May 20, 1965.

RELI-ALOK

For Combination, Hand Operated Ejector and Locking Mechanism for Ejecting Printed Circuit Boards From Modular Channel Guides, and for Holding Printed Circuit Boards in Modular Channel Guides.
First use on or about Apr. 28, 1965.

SN 222,361. General Precision, Inc., Glendale, Calif. Filed June 30, 1965.

LIBRACOAT

Owner of Reg. Nos. 372,767, 612,471, 715,753, and others.
For Persistent Electro-Luminescent Display Panel Comprising an Image Storing Screen of Controllable Persistence.
First use Apr. 9, 1965.

SN 227,172. Murata Manufacturing Co., Ltd., Otokuni-gun, Kyoto-fu, Japan. Filed Sept. 3, 1965.

CM

For Components of Electrical Apparatus Machines, and Supplies—Namely, Capacitors, Resistors, Capacitor and Resistor Networks, and Electro-Mechanical Transducers and Filters.
First use Feb. 15, 1964; in commerce Dec. 28, 1964.

SN 227,553. Burr-Brown Research Corporation, Tucson, Ariz. Filed Sept. 10, 1965.

BURR-BROWN RESEARCH CORPORATION

The wording "Research Corporation" is disclaimed apart from the mark as a whole.
For Amplifiers, Function Modules, Power Supplies, Computers, Geophysical Instruments and Accessories.
First use on or about March 1958.

SN 228,444. Digital Systems, Inc., Covina, Calif. Filed Sept. 23, 1965.

DS

For Digitally Controlled Electronic Programming, Production Machines Used for the Fabrication and Comparison of Electrical Circuit Boards and the Like.
First use July 1961.

SN 228,640. Cole-Parmer Instrument & Equipment Co., Chicago, Ill. Filed Sept. 27, 1965.

MICRO-V

For Electric Motor Driven Stirrer and Accessories Therefor.
First use June 8, 1963.

SN 229,025. RCK Inc., Sunnyvale, Calif. Filed Sept. 30, 1965.

ANA-LOCK

For Automatic Computer Furnace Operation Control Systems.
First use Dec. 7, 1964.

SN 229,674. PM & E. Electronics, Inc., East Providence, R.I. Filed Oct. 8, 1965.

EDUCATOR

For Head Set Receiver.
First use Feb. 28, 1962.

SN 251,362. S. Parker Hardware Mfg. Corp., New York, N.Y. Filed Aug. 1, 1966.

PERMA-GUARD

For Battery Operated, Door-Actuated Buzzer-Alarms.
First use May 8, 1966.

SN 251,860. Empire Tube Sales, Inc., Jacksonville, Fla. Filed Aug. 8, 1966.



The design outline of a television picture tube is disclaimed apart from the mark as shown.
For Television Picture Tubes.
First use Sept. 1, 1958.

Class 22 — Games, Toys, and Sporting Goods

SN 197,479. Donald E. Du Bois, Los Angeles, Calif. Filed July 9, 1964.

LUCKY MATCH

Applicant disclaims the exclusive rights to the use of the word "Match."
For Game Equipment Comprising Books of Matches for Playing Poker Type Games of Chance.
First use 1955.

SN 217,136. Playskool Manufacturing Company, Chicago, Ill. Filed Apr. 22, 1965.

CONSTRUCTIONEER

For Toy Building Sets.
First use on or about Feb. 12, 1965.

SN 218,512. Wiener Metalwarenfabrik Smolka & Co., Schwechat, Austria. Filed May 10, 1965.

Tyrolia

For Skis, Ski Bindings, Ski Poles, Ski Pole Rings, and Parts Thereof.
First use February 1949; in commerce 1950.

SN 219,354. Pearce-Simpson, Inc., Miami, Fla. Filed May 20, 1965.

TRU-LINE

For Pool Balls for Playing Billiards.
First use July 1, 1963.

SN 225,729. Chartered Enterprises, d.b.a. Superior Sports Specialties, San Fernando, Calif. Filed Aug. 16, 1965.

GIAD-HOOK

For Ski Tow Rope Connector.
First use Mar. 22, 1965.

SN 231,960. Lavoy Winton, Mount Dora, Fla. Filed Nov. 1, 1965.

F-80

For Carnival or Amusement Park Airplane Ride.
First use in or about January 1964.

SN 232,335. Model Products Corporation, Mount Clemens, Mich. Filed Nov. 8, 1965.

DYN-O-CHARGER

For Toy Slot Racer and Parts for Building Same Including Motor, Chassis, Magnets, Tires, and Body.
First use Feb. 24, 1965.

SN 234,039. King-Seeley Thermos Co., Ann Arbor, Mich. Filed Dec. 6, 1965.

THERMOS

For Sleeping Bags for Outdoor or Campers' or Similar Recreational Use.
First use on or about Oct. 8, 1965.

SN 234,185. E.S.R., Inc., Montclair, N.J. Filed Dec. 8, 1965.

THINKaDOT

For Apparatus Sold as a Unit for Playing a Computerized Marble Game.
First use Aug. 23, 1965.

SN 234,504. Gerald Bissell, Detroit, Mich. Filed Dec. 13, 1965.

FISH-N-MATE

For Snelled Fishing Hook and Line Holder.
First use Feb. 1, 1962.

SN 234,904. Eva H. Jacobs, Arlington, Va. Filed Dec. 20, 1965.

Pocket Poko

No claim is made to the representation of the deuce of spades apart from the mark in its entirety.
For Equipment Comprising Moveable Balls and Game Board for Playing a Poker-Type Board Game.
First use Aug. 31, 1965.

SN 236,944. Frank J. Yaussi, d.b.a. Laporte Mfg. and Distr. Company, Laporte, Colo. Filed Jan. 20, 1966.

PLASTI-SINKER

For Plastic Fishing Sinkers.
First use Jan. 8, 1965.

SN 254,209. Hart Ski Mfg. Co., Inc., St. Paul, Minn. Filed Sept. 13, 1966.

HOLIDAY

For Snow Skis.
First use Mar. 18, 1965.
Subj. to Intf. with SN 230,488 and SN 233,763.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 211,813. Heany Industrial Ceramic Corporation, Rochester, N.Y. Filed Feb. 11, 1965.



The drawing is lined for the color red. Owner of Reg. No. 436,314.
For Wear Resistant Ceramic Guides and Tension Devices and Other Wear Resistant Parts for the Textile, Wire, and Other Industries.
First use Jan. 1, 1940.

SN 223,143. Mohr Lino-Saw Company, Skokie, Ill. Filed July 12, 1965.

MOHR

For Controls and Accessories for Use With Linecasting Machines in the Graphic Arts Field.
First use at least as early as 1919.

SN 224,556. The Seeburg Corporation, Chicago, Ill. Filed July 29, 1965.

DISC-TEEN

For Vending Machines.
First use May 12, 1965.

SN 225,103. Nelson Harvey Bogie, Gilbertsville, Ky. Filed Aug. 6, 1965.

BOGIE

For Pugmills.
First use June 1, 1959.

SN 225,226. La Spirotechnique, Paris, France. Filed July 26, 1965.

AQUADAG

Priority claimed under Sec. 44(d) on French Reg. No. 527,657, dated Jan. 28, 1965 (Paris); Natl. Inst. No. 239,739.
For Daggers and Knives for Underwater Use and for Bladed Underwater Tools Adapted To Be Worn From a Belt About the Waist or the Leg.

SN 225,228. La Spirotechnique, Paris, France. Filed July 26, 1965.

SPIRODAG

Priority claimed under Sec. 44(d) on French Reg. No. 527,658, dated Jan. 28, 1965 (Paris); Natl. Inst. No. 239,740.
For Daggers and Knives for Underwater Use and for Bladed Underwater Tools Adapted To Be Worn From a Belt About the Waist or the Leg.

SN 225,662. Oliver Corporation, Chicago, Ill. Filed Aug. 13, 1965.



For Multi-Bottom, Tractor Operated, Plows.
First use Sept. 22, 1963.

SN 227,652. Curtiss-Wright Corporation, Cleveland, Ohio. Filed Sept. 13, 1965.

Precisionspring

Owner of Reg. No. 787,504.
For Coil or Spring Clutches and Brakes.
First use on or about Mar. 1, 1956.

SN 229,398. Applied Power Industries, Inc., Milwaukee, Wis. Filed Oct. 6, 1965.

DYNAWHEEL

For Hydraulically Powered Wheels.
First use July 27, 1965.

SN 232,220. Madison Industries, Inc., Pawtucket, R.I. Filed Nov. 5, 1965.

FAESSLER

Owner of Reg. No. 210,445.
For Roller Burnishing Tools and Recessing Tools.
First use 1882.

SN 232,305. Gatto Machinery Development Corp., Farmingdale, N.Y. Filed Nov. 8, 1965.



For Plastic Extrusion Handling Machinery.
First use in or about January 1962.

SN 233,096. Gehl Bros. Manufacturing Company, West Bend, Wis. Filed Nov. 22, 1965.

CHOP-KING

Owner of Reg. Nos. 698,964, 776,132, and others.
For Agricultural Machinery—Namely, Harvesters.
First use on or about Apr. 2, 1965.

SN 234,110. Athey Products Corporation, Raleigh, N.C. Filed Dec. 7, 1965.

KOLMAN/ATHEY

For Portable Conveyor-Screen Plants, Stationary Conveyors, Portable Loaders, Radial Stackers, Screens, and Feeders.
First use on or about June 1, 1965.

SN 234,575. Norvey, Inc., Los Angeles, Calif. Filed Dec. 14, 1965.

ZOOM-SPOUT

For Hand-Operated Dispensers Filled With Oil or Penetrant.
First use June 1, 1960.

SN 238,116. Sandvikens Jernverks AB, Sandviken, Sweden. Filed Feb. 4, 1966.

MOVATOR

Owner of Swedish Reg. No. 112,577, dated Apr. 2, 1965.
For Moving Band Passenger Conveyors.

SN 238,132. Vlier Engineering Corporation, Los Angeles, Calif. Filed Feb. 4, 1966.

HI-LIFE

For Spring Plungers.
First use Jan. 7, 1966.

SN 238,147. Allis-Chalmers Manufacturing Company, Milwaukee, Wis. Filed Feb. 7, 1966.

CREEP-OR-DRIVE

For Power Transmitting Control Systems for Tractors.
First use Aug. 5, 1965.

SN 238,148. Allis-Chalmers Manufacturing Company, Milwaukee, Wis. Filed Feb. 7, 1966.

BEACHMASTER

For Tractors.
First use July 28, 1964.

SN 238,324. Wilton Corporation, Schiller Park, Ill. Filed Feb. 7, 1966.

7 BY 7

For Woodworker's Vises.
First use Jan. 12, 1966.

SN 238,529. Alvin W. Hughes, d.b.a. A. W. Hughes Co., Bensenville, Ill. Filed Feb. 10, 1966.

COMVAC

For Meat Processing Machinery, Especially Machines for Comminuting and Deaerating Meat Products.
First use Dec. 30, 1965.

SN 238,644. Kenneth M. Last, d.b.a. Express Tool Company, Miami, Fla. Filed Feb. 11, 1966.

HURRICANE

For Masonry Drills, Mechanics' Hand Tools, Carpenters' Tools, Masonry Tools, and Small Hand Tools.
First use on or about Sept. 1, 1964, on masonry drills.

SN 238,645. Kenneth M. Last, d..b.a. Express Tool Company, Miami, Fla. Filed Feb. 11, 1966.

EXPRESS

For Masonry Drills, Mechanics' Hand Tools, Carpenters' Tools, Masonry Tools, and Small Hand Tools.
First use on or about Sept. 1, 1964, on masonry drills.

SN 238,991. American Chain & Cable Company, Inc., New York, N.Y. Filed Feb. 17, 1966.

SAFEWAY

Owner of Reg. Nos. 546,613 and 774,929.
For Electric Chain Hoists and Parts Thereof.
First use in or about March 1950.

SN 239,493. Brother International Corporation, New York, N.Y. Filed Feb. 24, 1966.

CHARGER

For Typewriters, Sewing Machines, and Pencil Sharpeners.
First use June 1, 1965.

SN 239,998. R. H. Hood Company, Philadelphia, Pa. Filed Mar. 2, 1966.

SCHOFIELD

For Textile Machinery for Fiber Preparation—Namely, Precarders, Pickers, Conveyor Aprons, Relagged Cylinders, Raw Stock Feeders, and Blenders.
First use 1900.

SN 240,652. Ratcliff Hoist Company, Inc., Belmont, Calif. Filed Mar. 10, 1966.



For Load Sustaining Devices and Components Thereof.
First use during or about June 1961.

SN 243,464. Melroe Manufacturing Company, Gwinner, N. Dak. Filed Apr. 14, 1966.



Owner of Reg. Nos. 659,026 and 670,566.
For Self-Propelled Front End Loader Vehicles.
First use Dec. 26, 1961.

SN 244,085. Daffin Corporation, Hopkins, Minn. Filed Apr. 22, 1966.

CORN Blurr

For Grinding Mills and Like Grain Processing Equipment.
First use Aug. 16, 1965.

SN 244,352. Portable Elevator Manufacturing Company, Bloomington, Ill. Filed Apr. 26, 1966.

ADJUSTO-PITCH

For Implement Shank Mountings.
First use Jan. 17, 1966.

SN 245,060. Boremaster Tool Corp., Clearwater, Fla. Filed May 6, 1966.

BOREMASTER

For Drilling Machinery.
First use June 1957.

SN 245,603. National Air Vibrator Company, Houston, Tex. Filed May 13, 1966.

PERM-LUBE

For Air Vibrators.
First use Dec. 14, 1965.

SN 246,707. Misceramic Tile, Inc., Cleveland, Miss. Filed May 26, 1966.

SPLICE-O-MATIC

For Machine for Trimming the Edges of Laminate Sheets and Banding for Application to Laminated Surfaces.
First use at least as early as March 1966.

SN 248,782. Dashé, Inc., d.b.a. Scorpion, Inc., Beverly Hills, Calif. Filed June 23, 1966.

SCORPION

For Carpet Handling Machine for Measuring, Cutting, and Rolling Carpeting.
First use Nov. 10, 1965.

Class 26—Measuring and Scientific Appliances

SN 229,943. John L. Cassingham, d.b.a. Rayscope Company, North Hollywood, Calif. Filed Oct. 12, 1965.

RAYSCOPE

For Electronic Metal and Mineral Detectors and Pipe Detectors.
First use 1960.

SN 230,816. General Electric Company, East Cleveland, Ohio. Filed Oct. 21, 1965.

MARDI GRAS

For Photographic Accessory—Namely, an Illuminating Light Attachment for Movie Cameras.
First use May 1, 1965.

SN 232,600. Sawyer's, Inc., Portland, Oreg. Filed Nov. 12, 1965.

ENTERTAINER

For Photographic Projection Devices—Namely, a Rear Screen Projection Device Associated With Sound Reproduction Mechanism.
First use Oct. 2, 1965.

SN 232,778. Femco, Inc., Irwin, Pa. Filed Nov. 16, 1965.

AMEDA

For Automated, Optical Electronic Data Accumulating and Dissimulating Equipment for Measuring and Detecting Optical and Physical Properties of Specimens Under Examination, and Electrical and Electronic Components and Accessories Therefor—Namely, Electro-Mechanical, Auto-Scan Specimen Stage Drive Apparatus, Optical-Electronic Apparatus and Accessories Used in Connection Therewith, Specimen Stage Leveling and Supporting Apparatus, Digital Counters and Digital Computer Systems, and Electrical Control Apparatus for Controlling the Operation of Such Apparatus and Systems.
First use Mar. 17, 1965.

SN 232,810. Automation Devices, Inc., Erie, Pa. Filed Nov. 17, 1965.

BEAM-TRON

For Instrument for Detecting Variations in Infrared Emissivity and Parts Thereof.
First use Oct. 8, 1965.

SN 235,543. Ace Glass Incorporated, Vineland, N.J. Filed Dec. 30, 1965.

INSTATHERM

For Scientific Glassware—Namely, Flasks, Beakers, Chromatographic Columns, and Funnels Heated by Self-Contained Metallic Electrical Resistance Coatings.
First use September 1964.

SN 236,255. Hazleton Laboratories, Inc., d.b.a. Instrument Development Company, Reston, Va. Filed Jan. 12, 1966.



For Air Pollution Monitoring Equipment.
First use Aug. 26, 1965.

SN 237,372. National Distillers and Chemical Corporation, New York, N.Y. Filed Jan. 26, 1966.

POLYTRIP

For Electronic Device for Detecting Volatile Organic Contaminants in Containers.
First use Jan. 5, 1966.

SN 239,713. Brainerd Mfg. Co., East Rochester, N.Y. Filed Feb. 28, 1966.

EYE-SPY

For Door Viewers.
First use Mar. 19, 1963.

SN 246,835. Esterline Angus Instrument Company, Inc., Indianapolis, Ind. Filed May 31, 1966.

EVENT *Graph*

The suffix "graph" is disclaimed apart from the mark as shown.
For Rectilinear Movements for Recording Instruments.
First use Jan. 11, 1964.

SN 248,720. The Magnavox Company, Fort Wayne, Ind. Filed June 22, 1966.

MAGNAVOX

For Reproduction Apparatus and Parts Thereof—Namely, a Facsimile Device for Transmitting and Receiving Signals Transmittable by Telephone or Electro-Magnetic Wave Means.
First use Sept. 27, 1963.

Class 27 — Horological Instruments

SN 225,514. Mido G. Schaeren & Co., S.A., Bienne, Switzerland. Filed Aug. 11, 1965.



For Watch Cases, Watches, Chronometers, Watch Movements, Dials, and Parts of Watches.
First use Mar. 30, 1943; in commerce Mar. 30, 1943.

SN 234,437. Kilburg Geochron Corporation, San Mateo, Calif. Filed Dec. 13, 1965.

GEOCHRON

For Horological Instruments for Designating Prevailing Time at All Points of the Earth's Surface.
First use Jan. 25, 1965.

SN 235,236. Sheffield Watch Inc., New York, N.Y. Filed Dec. 23, 1965.

STATUS

For Watches and Clocks.
First use Nov. 30, 1965.

Class 28 — Jewelry and Precious-Metal Ware

SN 226,542. Lori Jewelers, Inc., New York, N.Y. Filed Aug. 26, 1965.



For Jewelry Made of Precious Metal.
First use Apr. 19, 1965.

SN 234,756. Keith & Griffman, Inc., Boston, Mass. Filed Dec. 16, 1965.



The lining in the mark on the drawing is to indicate the color red or pink.
For Jewelery—Namely, Earrings, Bracelets, Pins, Necklaces, and Pearls.
First use about 1950.

SN 249,759. B. B. Greenberg Co., Cranston, R.I. Filed July 7, 1966.

RAPALLO

For Women's Jewelry for Personal Wear and Adornment, Not Including Watches.
First use June 6, 1966.

SN 252,318. Frank A. Kalanzis, Middletown, Ohio. Filed Aug. 15, 1966.

MINIFRINS

For Jewelry Links, for Use in Bracelets, Necklaces, Anklets, Pendant Chains, and the Like.
First use July 5, 1966.

Class 29 — Brooms, Brushes, and Dusters

SN 232,525. Cecilia Products Ltd., New York, N.Y. Filed Nov. 12, 1965.

CECILIA

Owner of Reg. No. 798,912.
For Make-Up Brush and Case, and Pencil and Brow Brush.
First use June 15, 1963.

SN 235,153. Apag, Inc., New York, N.Y. Filed Dec. 23, 1965.

PRIOR-DENT

For Toothbrush.
First use on or about Oct. 28, 1965.

SN 235,482. Arsco Paint Rollers, Inc., Hialeah, Fla. Filed Dec. 29, 1965.

ARDYNE

For Pile Fabric Paint Roller Covers.
First use June 7, 1961.

SN 252,159. John O. Butler Company, Chicago, Ill. Filed Aug. 11, 1966.

PERIDENTAL

For Toothbrushes.
First use in or about 1926.

Class 31 — Filters and Refrigerators

SN 170,997. Dynalectron Corporation, Washington, D.C. Filed June 14, 1963.

DYNACART

For Equipment for Filtering and Conditioning Pneumatic and Hydraulic Actuating Systems.
First use on or about May 3, 1962.

SN 216,743. Wayne I. Spies, d.b.a. Wisco Supply, Canton, Ohio. Filed Apr. 16, 1965.

METERMASTER

For Water Softening and Conditioning Equipment for Domestic Use.
First use not later than Dec. 11, 1964.

SN 233,010. Sears, Roebuck and Co., Chicago, Ill. Filed Nov. 19, 1965.

FLASH DEFROST

The word "Defrost" is disclaimed apart from the mark as shown and without waiver of applicant's common law rights.
For Home Freezer.
First use on or about Mar. 15, 1965.

SN 234,566. Ice Butlers, Inc., Arlington, Va. Filed Dec. 14, 1965.



For Ice Merchandisers (Apparatus for the Storage and Sale of Ice).
First use on or about Oct. 15, 1961.

SN 235,431. Seaway Associates, Inc., Ann Arbor, Mich. Filed Dec. 28, 1965.

IKON

For Device for Chilling Drinking Glasses, Including a Liquified Gas Sold in an Aerosol Container.
First use Apr. 19, 1965.

SN 241,132. Ebco Manufacturing Company, Columbus, Ohio. Filed Mar. 16, 1966.

HIDE-AWAY

For Electrically Refrigerated Water Coolers.
First use Mar. 8, 1966.

SN 241,249. General Thermetics, Inc., Farmingdale, N.Y. Filed Mar. 17, 1966.

SEA CHEST

For Ice Boxes.
First use Jan. 31, 1966.

SN 241,250. General Thermetics, Inc., Farmingdale, N.Y. Filed Mar. 17, 1966.

WEEKENDER

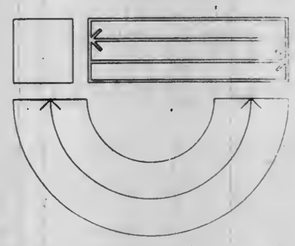
For Refrigerators.
First use Mar. 3, 1966.

SN 241,514. Research Products Corporation, Madison, Wis. Filed Mar. 21, 1966.

TRIM-TO-SIZE

Owner of Reg. Nos. 744,487 and 793,347.
For Air Filter Panels.
First use Sept. 24, 1957.

SN 250,541. Union Tank Car Company, Chicago, Ill. Filed July 18, 1966.



For Ion Exchange Equipment.
First use June 1966.

SN 253,258. Continental Air Filters, Inc., Louisville, Ky. Filed Aug. 29, 1966.

CONOFLO

For Air Filters.
First use May 27, 1966.

Class 32 — Furniture and Upholstery

SN 230,892. Premier Metal Products Company, Inc., Bronx, N.Y. Filed Oct. 21, 1965.

TWIN-TEX

For Metal Panels.
First use Oct. 11, 1965.

SN 242,331. Clark Foam Products Co., Inc., Chicago, Ill. Filed Mar. 31, 1966.

EVERFLUFF

For Pillows.
First use at least as early as Feb. 25, 1964.

SN 252,622. Pedicraft, Inc., Jacksonville, Fla. Filed Aug. 18, 1966.

PEDI-CRIB

For Cover Attachments for Cribs.
First use Aug. 4, 1966.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 226,302. Southwestern Engineering Co., City of Commerce, Calif. Filed Aug. 23, 1965.

SWECO

Owner of Reg. No. 790,284.
For Shell and Tube Heat Exchangers, Including High Pressure Process Heat Exchangers and Nuclear Heat Exchangers, Feedwater Heaters, and Surface Condensers.
First use May 15, 1948.

SN 227,353. King-Seeley Thermos Co., d.b.a. Structo Division, Freeport, Ill. Filed Sept. 7, 1965.

STRUCTO

For Outdoor Grills, With and Without Hoods and With and Without Motor Drives, Wagon Barbecues and Grills, Portable Fireplace Grills Useful Indoors or Outdoors; Grill Accessories— Namely, Hood, Motor and Spit Sets for Application to Grills, Serving Carts, and Inner Fire Bowl With Built-In Drip Pan, Foldable Type Portable Picnic Grills, Portable Motorized Table Top Grills, Portable Folding Braziers, and Braziers With Warming Ovens.
First use 1957; 1912 as to the trademark "Structo."

SN 227,355. King-Seeley Thermos Co., d.b.a. Structo Division. Freeport, Ill. Filed Sept. 7, 1965.

STRUCTO

For Outdoor Grills, With and Without Hoods and With and Without Motor Drives, Wagon Barbecues and Grills, Portable Fireplace Grills Useful Indoors or Outdoors; Grill Accessories— Namely, Hood, Motor and Spit Sets for Application to Grills, Serving Carts, and Inner Fire Bowl With Built-In Drip Pan, Foldable Type Portable Picnic Grills, Portable Motorized Table Top Grills, Portable Folding Braziers, and Braziers With Warming Ovens.
First use May 1965; 1912 as to "Structo."

SN 233,212. Webr Corporation, Milwaukee, Wis. Filed Nov. 23, 1965.

CHANNEL-AIRE

For Air Handling Equipment, Particularly Air Diffusers.
First use Sept. 16, 1965.

SN 238,687. Young Radiator Company, Racine, Wis. Filed Feb. 11, 1966.

YR

For Heat-Transfer Units—Namely, Radiators, Oil Coolers, After-Coolers, Heat Exchangers Used in the Cooling of Engine-Jacket Water and Lubricating Oil and Air for Compressors.
First use Oct. 19, 1965.

SN 238,913. American Heat Reclaiming Corporation, New York, N.Y. Filed Feb. 16, 1966.

ahrco

For Spiral-Plate Heat Exchangers.
First use Feb. 28, 1963.

SN 241,486. Maxon Premix Burner Company, Inc., Muncie, Ind. Filed Mar. 21, 1966.

AIRFLO

Owner of Reg. No. 686,286.
For Line Burners, Air Gas Mixing Devices for Gas Burners, and Air Heating Systems.
First use May 1, 1958.

SN 242,406. The Tappan Company, Mansfield, Ohio. Filed Mar. 31, 1966.

PROVINCIAL

For Domestic Cooking Ranges.
First use October 1965.

SN 242,517. Kitchener B. Tassell, d.b.a. Marine Equipment Company, Grand Rapids, Mich. Filed Apr. 1, 1966.

MECO

For Marine Refrigeration Equipment.
First use during January 1956.

SN 242,581. Fan Way Corporation, Milwaukee, Wis. Filed Apr. 4, 1966.

FAN-WAY

For Industrial Ovens and Dryers.
First use at least as early as Dec. 1, 1932.

SN 242,941. Tunlaw Corporation, Washington, D.C. Filed Apr. 7, 1966.

HOT NEWS

For Grates for Burning Newspapers in Manner as To Extract Useful Heat Therefrom.
First use Aug. 27, 1965.

SN 250,570. Ferro Corporation, Cleveland, Ohio. Filed July 19, 1966.

MONOFIRE

For Ceramic Refractory Setters for Firing Ceramic Ware, Particularly for Glazing Ceramic Wall Tile.
First use on or about June 21, 1966.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 225,120. Dunlop Tire and Rubber Corporation, Buffalo, N.Y. Filed Aug. 6, 1965.

REMINGTON SAFE TRACTION

Applicant disclaims the words "Safe Traction" aside from the combination with the word "Remington." Owner of Reg. Nos. 530,345, 615,788, and 611,092.
For Tires.
First use July 23, 1965.

SN 229,800. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Oct. 11, 1965.

CROWN VINALAWN

Owner of Reg. No. 806,738.
For Garden Hose.
First use Feb. 2, 1965.

SN 230,150. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Oct. 14, 1965.

POWER BELT

For Tires.
First use June 29, 1946.

SN 230,752. American Brake Shoe Company, New York, N.Y. Filed Oct. 21, 1965.

ESLINE

For Friction Elements for Brakes and Clutches.
First use Oct. 7, 1965.

SN 231,141. Kelly-Springfield Tire Company, Allegany County, Md. Filed Oct. 22, 1965.

ENTERPRISE

For Tires.
First use Sept. 4, 1965.

SN 231,220. H. K. Porter Company, Inc., Pittsburgh, Pa. Filed Oct. 22, 1965.

THERMOBOND

For Brake Lining Segments.
First use Aug. 12, 1960.

SN 231,569. Jetzon Tire & Rubber Corporation, Bridgeport, Conn. Filed Oct. 24, 1965.

GEMINI

For Vehicle Tires.
First use Oct. 15, 1965.

SN 231,784. United States Rubber Company, New York, N.Y. Filed Oct. 28, 1965.

SUPER FLEET CARRIER

Owner of Reg. Nos. 345,358, 745,475, and others.
For Pneumatic Tires.
First use Mar. 30, 1959.

SN 231,785. United States Rubber Company, New York, N.Y. Filed Oct. 28, 1965.

FLEET TRAILER

Owner of Reg. Nos. 345,358, 745,475, and others.
For Pneumatic Tires.
First use Mar. 21, 1963.

SN 231,786. United States Rubber Company, New York, N.Y. Filed Oct. 28, 1965.

FLEET T SPECIAL

Owner of Reg. Nos. 345,358, 745,475, and others.
For Pneumatic Tires.
First use May 13, 1963.

Class 36 — Musical Instruments and Supplies

SN 221,754. The Reader's Digest Association, Inc., New Castle, N.Y. Filed June 22, 1965.

PLEASURE PROGRAMMED

For Phonograph Records and Phonograph Record Albums.
First use May 6, 1965.

SN 224,541. Metro-Goldwyn-Mayer, Inc., New York, N.Y. Filed July 29, 1965.



Owner of Reg. No. 681,168.
For Mechanically Grooved Phonograph Records of the Disc Type.
First use Feb. 1, 1965.

SN 226,237. Herschel Katchen, d.b.a. Inn Timate, Aurora, Colo. Filed Aug. 23, 1965.

INN TIMATE

For Phonograph Records.
First use Feb. 15, 1965.

Class 37 — Paper and Stationery

SN 236,075. Extrudo Film Corporation, New York, N.Y. Filed Jan. 10, 1966.

FITTED FILM

No claim is made to the word "Film" separate and apart from the mark as shown.
For Polypropylene and Polyethylene Film for Wrapping and Packaging Articles.
First use May 27, 1965.

SN 238,099. Moore Business Forms, Inc., Niagara Falls, N.Y. Filed Feb. 4, 1966.

PARAGON

Owner of Reg. No. 46,304.
For Partially Printed Business Forms.
First use 1883.

SN 238,498. Consolidated Papers, Inc., Wisconsin Rapids, Wis. Filed Feb. 10, 1966.

Consolidated

Owner of Reg. Nos. 500,488 and 550,747.
For Printing Paper and Paperboard.
First use February 1964.

SN 239,234. Container Corporation of America, Chicago, Ill. Filed Feb. 21, 1966.

LINACOR

Owner of Reg. No. 749,431.
For Paper Board.
First use Oct. 25, 1964.

SN 239,359. Weyerhaeuser Company, Tacoma, Wash. Filed Feb. 21, 1966.

GLEAMPRINT

For Printing Paper.
First use Feb. 10, 1965.

SN 242,612. Kee Lox Manufacturing Company, Rochester, N.Y. Filed Apr. 4, 1966.

KEELECTRO

Owner of Reg. No. 508,594.
For Electrostatic Copy Paper.
First use Mar. 8, 1966.

SN 242,733. David Ketner, d.b.a. Modern Research Laboratories, New York, N.Y. Filed Apr. 5, 1966.

MEMORY BOARD

The exclusive use of the word "Board" is disclaimed apart from the trademark as a whole.
For Cardboard Holder for Note Pads and Pen or Pencil.
First use February 1965.

SN 243,567. Moore Business Forms, Inc., Niagara Falls, N.Y. Filed Apr. 14, 1966.

SPEEDILOPE

Owner of Reg. Nos. 692,826, 693,199, and others.
For Partially Printed Business Forms and Envelopes.
First use Mar. 26, 1966.

SN 244,032. St. Regis Paper Company, New York, N.Y. Filed Apr. 21, 1966.

CLEARMASK

For Coated Masking Paper.
First use on or about Apr. 29, 1960.

SN 244,144. Shelby Business Forms, Inc., Shelby, Ohio. Filed Apr. 22, 1966.

INSTANT MAIL

For Paper Business Forms.
First use Oct. 14, 1965.

SN 244,200. Eberhard Faber Inc., Wilkes-Barre, Pa. Filed Apr. 25, 1966.

TP 35

For Writing and Marking Pens.
First use Apr. 4, 1966.

SN 244,234. Marcal Paper Mills, Inc., East Paterson, N.J. Filed Apr. 25, 1966.

HUCK

For Household Paper Products—Namely, Placemats.
First use on or about Dec. 21, 1965.

SN 244,255. Sanford Ink Company, Bellwood, Ill. Filed Apr. 25, 1966.

20/20

For Marking Pens.
First use Apr. 1, 1966.

SN 251,028. Westab Inc., Dayton, Ohio. Filed July 25, 1966.

CAMPUS MATES

Owner of Reg. Nos. 92,523 and 501,499.
For Stationery Products—Namely, Packages Containing a Combination of a Binder, a Theme Book, and a Notebook.
First use Mar. 29, 1966.

Class 38 — Prints and Publications

SN 209,765. Commercial Decal, Inc., Mount Vernon, N.Y. Filed Jan. 12, 1965.

STRIPLAC

For Decalcomanias for Use on Ceramic Ware and Glassware, and Plastic, Metal, and Other Suitable Surfaces.
First use Nov. 30, 1964.

SN 228,970. American Aviation Publications, Inc., Washington, D.C. Filed Sept. 30, 1965.

BUSINESS AVIATION

Owner of Reg. No. 777,591.
For Weekly Newsletter.
First use Sept. 17, 1965.

SN 234,359. David S. Patterson, Sr., Santa Rosa, Calif. Filed Dec. 10, 1965.

THE FELLOW OF SLIM CHANCE UNIVERSITY

For Printed Motto Cards.
First use Dec. 8, 1965.

SN 235,507. Portal Press, Inc., New York, N.Y., by change of name from The Great Society Press, Inc., New York, N.Y. Filed Dec. 29, 1965.

SPRINGBOARDS

For Pamphlets To Be Used in Connection With the Instruction of Slow Learners.
First use May 14, 1965.

SN 238,327. American Association of Retired Persons, Washington, D.C. Filed Feb. 8, 1966.

DYNAMIC MATURITY

Owner of Reg. No. 737,930.
For Bi-Monthly Magazine.
First use November 1965.

SN 243,479. Pilgrim Badge & Label Corporation, Boston, Mass. Filed Apr. 14, 1966.

PILGRIM

For Printed Badges, Labels and Advertising Specialties—Namely, Credit Cards, Calendar Cards, Rulers, and the Like.
First use at least as early as June 1933.

SN 244,950. The Hearst Corporation, New York, N.Y. Filed May 5, 1966.

BUENHOGAR

For Magazine.
First use on or about Jan. 27, 1966.

SN 249,449. Kirk Shivell, New York, N.Y. Filed July 1, 1966.

LOOKING FORWARD

For Monthly Newsletter Containing General Miscellaneous Information Directed to the Consumer at Large.
First use June 7, 1966.

Class 39 — Clothing

SN 175,028. Gentex Corporation, New York, N.Y. Filed Aug. 14, 1963.

RIOTER

For Protective Helmets.
First use July 25, 1963.

SN 188,847. Converse Rubber Corporation, Malden, Mass. Filed Mar. 17, 1964.

STORMGARDS

For Waterproof Footwear.
First use Jan. 23, 1964.

SN 214,478. Stedman Manufacturing Company, Asheboro, N.C. Filed Mar. 18, 1965.

necker T

For Men's and Boys' Underwear, T-Shirts, Sport Shirts, Athletic Shirts, and Jackets.
First use Mar. 10, 1965.

SN 222,590. Marx-Haas Clothing Co., St. Louis, Mo. Filed July 2, 1965.

ATHLETE

For Men's and Young Men's Suits and Sport Coats.
First use 1958.

SN 224,773. Georges Meyer Corp., New York, N.Y. Filed Aug. 2, 1965.

PARALAC

For Hat Bodies.
First use May 12, 1965.

SN 225,018. Four Corners Sportswear, Inc., Boston, Mass. Filed Aug. 5, 1965.

FOUR CORNERS

For Ladies' Sportswear—Namely, Skirts, Blouses, Shorts, Jumpers, and Jackets.
First use Dec. 7, 1964.

SN 227,091. Fourrures Ronax, Societe Anonyme, Paris, France. Filed Aug. 12, 1965.

MADD

Owner of French Reg. No. 509,724, dated Dec. 6, 1962 (Seine); Natl. Inst. No. 195,943.
For Ladies' Wearing Apparel—Namely, Dresses, Coats, Suits, Ensembles, Jackets, Raincoats, Skirts, Pants, Shirts, Sweaters, Caps, Shorts, Bathing Suits, Shoes, Scarves, Hats, Parkas, Beach Ensembles, and Ski Ensembles.

SN 232,131. The Leader Garment Company, Inc., St. Louis, Mo. Filed Nov. 4, 1965.

Weathermore

For Ladies' Coats, Including Car Coats and All-Weather Coats.
First use Oct. 19, 1965.

SN 233,047. Allen-Edmonds Shoe Corporation, Belgium, Wis. Filed Nov. 22, 1965.

ALLEN EDMONDS

For Men's Shoes.
First use 1936.

SN 234,841. Pink Pussycat of Hollywood, Los Angeles, Calif. Filed Dec. 17, 1965.

PINK PUSSYCAT

Owner of Reg. No. 770,850.
For Clothing—Namely, Shirts, Sweat Shirts, Night Gowns, Brassieres, Panties, Hose, Dresses, Slacks, and Blouses.
First use Dec. 7, 1965.

SN 235,379. Bayard Shirt Corp., New York, N.Y. Filed Dec. 28, 1965.

LadyBayard

Owner of Reg. Nos. 629,752 and 734,354.
For Ladies' and Girls' Dresses, Shifts, and Shirt Dresses.
First use Mar. 27, 1961.

SN 235,643. Exquisite Form Industries, Inc., New York, N.Y. Filed Jan. 3, 1966.

OH BRA

Applicant disclaims the word "Bra" apart from the mark as shown.
For Brassieres.
First use Dec. 17, 1965.

SN 236,316. Artisan House Imports, New York, N.Y. Filed Jan. 10, 1966.

Artisan House

For Ladies' Sweaters, Slacks, Skirts, and Dresses; and Men's Sweaters.
First use Nov. 1, 1964.

SN 239,376. Camp and McInnes, Inc., Reading, Pa. Filed Feb. 23, 1966.

DYNAMO

For Men's Hosiery.
First use Sept. 21, 1965.

SN 239,392. Desco Shoe Corporation, New York, N.Y. Filed Feb. 23, 1966.

Revelaires

For Men's Footwear.
First use Oct. 10, 1965.

SN 239,520. Jane Holly, Inc., New York, N.Y. Filed Feb. 24, 1966.

HOLLY-MATES

For Blouse and Skirt Sets.
First use Jan. 19, 1966.

SN 239,642. The Middishade Company, Inc., Philadelphia, Pa. Filed Feb. 25, 1966.

WETH'R-CHEK

For Raincoats, Topcoats, and All-Weather Coats.
First use Feb. 7, 1966.

SN 239,679. Timely Clothes, Inc., Rochester, N.Y. Filed Feb. 25, 1966.

JOHN KEITH

The name "John Keith" is fictitious and does not refer to any living person.
For Men's Suits, Slacks, and Sport Coats.
First use Oct. 1, 1965.

SN 239,743. Crescent Corset Company, Inc., Cortland, N.Y. Filed Feb. 28, 1966.

ActionBack

Owner of Reg. No. 586,804.
For Ladies' Foundation Garments.
First use Apr. 17, 1952.

SN 240,755. Macshore Classics, Inc., New York, N.Y. Filed Mar. 11, 1966.

SHORESMOOTH

For Skirts, Blouses, Outer Dress and Sport Shirts, Dresses, Combinations of Skirts and Blouses, Outer Shorts and Outer Slacks of Different Lengths, All for Women and Young Women.
First use June 30, 1965.

SN 240,758. Maidenform, Inc., New York, N.Y. Filed Mar. 11, 1966.

SKINDERGARTERS

For Foundation Garments.
First use Jan. 10, 1966.

SN 240,759. Maidenform, Inc., New York, N.Y. Filed Mar. 11, 1966.

SHAPE-CAPERS

Owner of Reg. No. 569,154.
For Foundation Garments.
First use Jan. 10, 1966.

SN 247,680. Desco Shoe Corporation, New York, N.Y. Filed June 9, 1966.

REVELATIONS

Owner of Reg. No. 560,746.
For Shoes.
First use Oct. 19, 1949.

SN 250,720. Emporium World Millinery Co., Chicago, Ill. Filed July 21, 1966.

helen adair

The mark is fanciful and does not refer to any living individual.
For Women's Hats.
First use in the year 1937.

SN 252,314. Cooper's Incorporated, Kenosha, Wis. Filed Aug. 15, 1966.

MIDWAY

Owner of Reg. No. 386,835.
For Hosiery.
First use no later than Aug. 1, 1966; as early as Oct. 23, 1937, on related goods.

SN 252,617. Best Coat Company, Boston, Mass. Filed Aug. 18, 1966.

For Men's and Women's Raincoats and Rainwear.
First use at least as early as July 18, 1966.

SN 252,618. Dive-ettes, Inc., New York, N.Y. Filed Aug. 18, 1966.

Dive-ettes

For Women's and Girls' Bathing Suits.
First use 1958.

SN 252,818. Chips 'N Twigs, Inc., Philadelphia, Pa. Filed Aug. 22, 1966.

TURN STYLE

Owner of Reg. No. 213,665.
For Men's and Boys' Suits, Jackets, Coats, Sport Coats, Top Coats, Overcoats, Pants, Shorts, Shirts, Hats, and Beachwear.
First use May 3, 1966.

SN 252,819. Chips 'N Twigs, Inc., Philadelphia, Pa. Filed Aug. 22, 1966.

Turn Style

Owner of Reg. No. 213,665.
For Men's and Boys' Suits, Jackets, Coats, Sport Coats, Top Coats, Overcoats, Pants, Shorts, Shirts, Hats, and Beachwear.
First use May 3, 1966.

Class 40—Fancy Goods, Furnishings, and Notions

SN 204,889. Cavalcade Manufacturing Corp., New York, N.Y. Filed Oct. 27, 1964.

ADJUSTO-CURLER

For Plastic Hair Curlers.
First use Feb. 5, 1964.

SN 237,345. Dorothy W. Hill, d.b.a. Wig Imports Wholesale Company, Salt Lake City, Utah. Filed Jan. 26, 1966.

CLEOPATRA

For Human Hair Wigs and Wiglets.
First use on or about Jan. 20, 1965.

SN 239,498. Consolidated Millinery Company, Chicago, Ill. Filed Feb. 24, 1966.

WIGS BY PAULA

Applicant disclaims the use of the term "Wigs by" apart from the mark as shown.
For Wigs.
First use Jan. 31, 1966.

SN 239,758. Fifth Avenue Wig Co., Ltd., New York, N.Y. Filed Feb. 28, 1966.

MADEMOISELLE WIG

The term "Wig" is disclaimed apart from the mark as shown.
For Wigs.
First use June 1965.

SN 250,922. Biltwell Company, Inc., St. Louis, Mo. Filed July 25, 1966.

MAGI-CUFF

For Detachable Pants Cuffs.
First use Feb. 1, 1966.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 217,854. Cone Mills Inc., New York, N.Y. Filed May 3, 1965.

POLYCORD

For Corduroy Piece Goods Made From Cotton and Synthetic Fibers.
First use Mar. 1, 1965.

SN 237,462. Ronald Margolin, Inc., New York, N.Y. Filed Jan. 27, 1966.

RONALD MARGOLIN INC R.M. P.P.

POLY - PERM

For Woven Fabrics of Synthetic Fibers and of Blends of Cotton and Synthetic Fibers.
First use Jan. 13, 1966.

SN 238,724. Eisen Mercantile, Inc., Merriam, Kans. Filed Feb. 14, 1966.

EMCO

For Piece Goods for Making Into Garments, Slipcovers, Draperies, Upholstering, Bedspreads, Table Coverings, Trimmings, and the Like.
First use in or about December 1958.

SN 239,282. Klopman Mills, Inc., Rockleigh, N.J. Filed Feb. 21, 1966.

ULTRA VINO

For Greige and Finished Fabrics in the Piece of All Types, for Use in Men's, Women's, and Children's Apparel, in Home Furnishings, and in the Industrial Field.
First use Oct. 19, 1965.

SN 240,322. A. E. Nathan Company, Inc., New York, N.Y. Filed Mar. 7, 1966.

WHITE ROSE

Owner of Reg. No. 351,593.
For Cotton Piece Goods.
First use June 3, 1910.

SN 240,433. Graniteville Company, Graniteville, S.C. Filed Mar. 8, 1966.

A la MOD

For Twills, Poplins, Oxfords Made of Blends of Cotton and Synthetics and/or Two or More Synthetics Used for Jackets, Slacks, and the Like.
First use Jan. 28, 1966.

SN 242,071. Societe Anonyme Etablissements Steiner Freres, Pantin (Seine), France. Filed Mar. 18, 1966.

ROYAL PARIS

No claim is made to the word "Paris." Owner of French Reg. No. 468,430, dated Nov. 22, 1957 (Paris); Natl. Inst. No. 98,477.
For Canvas in the Piece Used for Embroidery.

SN 242,518. Trend Mills, Inc., Rome, Ga. Filed Apr. 1, 1966.

SOMETHING ELSE

For Pile Fabric Suitable for Use in Making Coats and the Like.
First use Feb. 28, 1966.

SN 242,957. Acme Quilting Company, Inc., New York, N.Y. Filed Apr. 8, 1966.

POLY FLUFF

For Mattress Pads, Patchwork Quilts, and Bedspreads.
First use Mar. 22, 1966.

SN 243,197. Troy Textiles, Inc., New York, N.Y. Filed Apr. 11, 1966.

ROYALLA

For Napped Fabrics for Making Children's, Women's, and Men's Ready-To-Wear Clothing.
First use Mar. 8, 1966.

SN 243,215. Avondale Mills, Sylacauga, Ala. Filed Apr. 12, 1966.

SAND DENIM

No claim is made to the exclusive use of the word "Denim" apart from the mark as shown.
For Cotton Piece Goods and for Textiles Made of a Blend of Polyester Fibers and Cotton, Used in the Manufacture of Men's and Boys' Trousers and Women's and Girls' Skirts, and for Home Sewing of Various Items of Wearing Apparel.
First use Apr. 1, 1966.

SN 243,509. Westwood Textile Manufacturing, Inc., Southbridge, Mass. Filed Apr. 14, 1966.

BARQ-WEST

For Textile Fabrics To Be Used in Women's Wear, Dresses, Coats, Suits, and Sportswear.
First use Jan. 1, 1966.

SN 243,596. J. P. Stevens & Co., Inc., New York, N.Y. Filed Apr. 15, 1966.

FLORGARDE

For Textile Rugs and Carpets.
First use Apr. 6, 1966.

SN 245,882. Desican N.V., Amsterdam-C, Netherlands. Filed May 18, 1966.

ENSEIGNE DE PLAID DU QUEBEC

The words "Plaid" and "Quebec" are disclaimed apart from the mark as shown.
For Fabric of Natural Fibers or Synthetic Fibers, or Mixtures of Natural and Synthetic Fibers, for Articles of Wearing Apparel, Upholstery, and Luggage.
First use Jan. 7, 1966; in commerce Jan. 7, 1966.

SN 245,883. Desican N.V., Amsterdam-C, Netherlands. Filed May 18, 1966.

ENSIGN OF ONTARIO TARTAN

The words "Ontario" and "Tartan" are disclaimed apart from the mark as shown.
For Fabric of Natural Fibers or Synthetic Fibers, or Mixtures of Natural and Synthetic Fibers, for Articles of Wearing Apparel, Upholstery, and Luggage.
First use Jan. 7, 1966; in commerce Jan. 7, 1966.

SN 252,310. West Point-Pepperell, Inc., d.b.a. Pepperell Manufacturing Company, West Point, Ga. Filed Aug. 15, 1966.

BELMONT

Owner of Reg. No. 55,613.
For Blankets.
First use Dec. 6, 1962.

SN 252,311. West Point-Pepperell, Inc., d.b.a. Pepperell Manufacturing Company, West Point, Ga. Filed Aug. 15, 1966.

LIBERTY

Owner of Reg. No. 53,925.
For Blankets.
First use Feb. 16, 1962.

SN 253,266. Indian Head Inc., New York, N.Y. Filed Aug. 29, 1966.

THERMODERMO

For Thermal Insulating Fabric.
First use Dec. 2, 1965.

Class 43 — Thread and Yarn

SN 242,995. Lily Mills Company, Shelby, N.C. Filed Apr. 8, 1966.

KOOL-KNIT

For Hand Knitting Yarn.
First use Feb. 19, 1966.

SN 244,139. Rohm and Haas Company, Philadelphia, Pa. Filed Apr. 22, 1966.



Owner of Reg. No. 797,392.
For Elastic Threads.
First use on or about Feb. 23, 1966.

Class 44 — Dental, Medical, and Surgical Appliances

SN 204,261. Jobst Institute, Inc., Toledo, Ohio. Filed Oct. 19, 1964.

VENOUS PRESSURE GRADIENT

For Surgical Garments Involving Biomechanical Pressures, Including Surgical Supports, Elastic Stockings, Elastic Arm Bands, and Elastic Leotards.
First use June 1, 1950.

SN 218,852. Evsco Pharmaceutical Co., Oceanside, N.Y. Filed May 14, 1965.

CYCLONE "400"

For Hair Dryers for Dogs.
First use Apr. 15, 1965.

SN 229,352. Thomas R. Huff, Paoli, Pa. Filed Oct. 5, 1965.

HUFF TMJ

The surname "Huff" is disclaimed apart from the mark shown.
For Dental Occlusion Demostrator Particularly Useful in Demonstrating the Movements and the Interrelation of the Jaws, the Jaw Joints, and the Biting Surfaces of the teeth.
First use Aug. 24, 1965.

SN 230,170. Kimberly-Clark Corporation, Neenah, Wis. Filed Oct. 14, 1965.

SOFT-IMPRESSIONS

For Sanitary Napkins, Santiary Tampons, Belts, and Holders for Sanitary Napkins.
First use Oct. 8, 1965.

SN 233,477. Dupaco Incorporated, Arcadia, Calif. Filed Nov. 29, 1965.

DIASYST

For Blood Pressure Cuff Transducer.
First use Feb. 15, 1965.

SN 235,951. Associated Mills, Inc., Chicago, Ill. Filed Jan. 7, 1966.

RELAX & SLEEP

For Portable Vibrating Bed Massager.
First use Dec. 14, 1965.

SN 236,691. Reuben Zaslaw, d.b.a. Selective Hearing Center, Phoenix, Ariz. Filed Jan. 17, 1966.

AUDIO-NERVE

For Hearing Aid.
First use Nov. 8, 1965.

Class 45—Soft Drinks and Carbonated Waters

SN 209,313. Societe Anonyme des Liqueurs Combier, Paris, France. Filed Jan. 4, 1965.

COMBIER

Owner of Reg. No. 789,215.
For Syrups for Making Soft Drinks.
First use 1832; in commerce Feb. 21, 1952.

SN 227,856. John E. Mitchell Company, Inc., Dallas, Tex. Filed Sept. 15, 1965.



Owner of Reg. No. 724,170 and 229,298.
For Carbonated Soft Drinks Dispensed From Drink Dispensing Machines.
First use Feb. 16, 1962.

SN 231,703. Saratoga Vichy Spring Company, Saratoga Springs, N.Y. Filed Oct. 27, 1965.



The word "Water" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 129,867 and 372,822.
For Bottled Carbonated Spring Water Fortified With Carbonic Gas.
First use Jan. 4, 1965; 1876 as to "Saratoga Vichy" and the monogram "SV."

SN 232,730. Silver Brook Beverage Company, d.b.a. Henry Burkhardt Beverages, Chicago, Ill. Filed Nov. 15, 1965.



The drawing is lined for the color red.
For Dietetic Carbonated Soft Drinks.
First use June 10, 1965.

SN 238,171. The Coca-Cola Company, Atlanta, Ga. Filed Feb. 7, 1966.

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The mark as shown is the Chinese rendition of the registered mark "Fanta." Owner of Reg. Nos. 513,565 and 616,935.
For Non-Alcoholic, Maltless Soft Drinks, and the Syrups for Preparing Soft Drinks.
First use June 10, 1965.

SN 238,297. Royal Crown Cola Co., Columbus, Ga. Filed Feb. 7, 1966.

GUSTO

For Soft Drinks and Concentrates Therefor.
First use Dec. 8, 1965.

SN 238,439. John E. Mitchell Company, Inc., Dallas, Tex. Filed Feb. 9, 1966.

ICEE

Owner of Reg. Nos. 724,170 and 229,298.
For Carbonated Soft Drinks Dispensed From Drink Dispensing Machines.
First use Feb. 16, 1962.

Class 46—Foods and Ingredients of Foods

SN 177,536. National Fruit Product Co., Inc., Winchester, Va. Filed Sept. 23, 1963.



The words "Brand" and "Distilled Vinegar," and the representation of the pineapple are disclaimed apart from the mark as shown.
For Vinegar.
First use August 1942.

SN 178,594. Dawn Donut Company, Inc., Jackson, Mich. Filed Oct. 9, 1963.



No claim of exclusive right is made to the word "Donuts" apart from the mark as shown. Owner of Reg. No. 227,939.
For Cake and Yeast Doughnuts of Various Shapes and Forms.
First use 1926.

SN 182,625. Kinsman Food Distributors, Inc., d.b.a. Alesci's and Alesci's Imported Foods, Cleveland, Ohio. Filed Dec. 9, 1963.



For Meatless Pizza, Canned Goods—Namely, Vegetables and Fruits; and Condiments and Meatless Sauces—Namely, Pickled Peppers, Pepper Sauce, Tomato Sauce, and Vegetable Sauce.
First use 1942.

SN 191,499. Allen E. Bond, Brockway, Mont. Filed Apr. 20, 1964.

WHEE CHIPS

The word "Chips" is disclaimed apart from the mark as shown.
For Expanded Wheat Product for Snack Purposes Which Has Been Germinated and Treated With Cooking Oils.
First use Jan. 15, 1964.

SN 198,397. Ulysses G. Auger, d.b.a. Blackie's House of Beef, Washington, D.C. Filed July 23, 1964.



The word "Dressing" is disclaimed apart from the mark shown. Owner of Reg. Nos. 655,350 and 690,009.
For Salad Dressing.
First use June 13, 1964.

SN 199,620. W. A. Scholten's Chemische Fabrieken N.V., d.b.a. W. A. Scholten's Fabrieken, Foxhol, Groningen, Netherlands. Filed Aug. 10, 1964.

BRINTA

Owner of Dutch Reg. No. 84,706, dated June 17, 1946.
For Food Starch and Food Starch Preparations—Namely, Pre-Cooked Cereals.

SN 200,077. Creamland Dairies, Inc., Albuquerque, N. Mex. Filed Aug. 18, 1964.

The words "Cream Dip" are disclaimed apart from the mark as shown.
For Dairy Products—Namely, Cream Dips for Snack Crackers, and the Like.
First use June 12, 1964.

SN 205,066. Lake to Lake Dairy Cooperative, d.b.a. Lake to Lake Dairy, Manitowoc, Wis. Filed Oct. 29, 1964.



Applicant disclaims all geographical matters shown in the drawing (whether wording, or a representation of a map of a State, or part of a State).
For Dairy Products—Namely, Fluid Milk, Cheese, Both Natural and Processed, Cheese Spreads, Buttermilk, Fluid Cream, Butter, and Ice Cream; Fruit Flavored Food Beverages in Cartons; and Dairy Feeds and Food for Livestock.
First use Dec. 5, 1945.

SN 205,683. Fromageries Grosjean S.A., Lons-le-Saunier, Jura, France, by change of name from Fromageries Grosjean Freres, Societe Anonyme, Lons-le-Saunier, Jura, France. Filed Nov. 6, 1964.

GROSJEANBON

Owner of French Reg. No. 1,221, dated June 12, 1962 (Lons-le-Saunier); Natl. Inst. No. 187,050.
For Cheeses, Ham-Flavored Spreading Cheeses, Fluid Milk, Cream, and Butter.

SN 206,800. Wm. Wrigley Jr. Company, Chicago, Ill. Filed Nov. 23, 1964.

HANDY TREATS

No claim is made to the exclusive use of the word "Treats" apart from the mark as shown.
For Chewing Gum.
First use Sept. 15, 1964.

SN 208,351. F & F Laboratories, Inc., Chicago, Ill. Filed Dec. 17, 1964.

TINGLE TARTS

For Candy Lozenges.
First use on or about Nov. 2, 1964.

SN 208,364. Ernest E. Johnson Co., Inc., Chicago, Ill. Filed Dec. 17, 1964.

TINGLES

For Candy Lozenges.
First use on or about May 27, 1963.

SN 216,700. Interstate Bakeries Corporation, Kansas City, Mo. Filed Apr. 16, 1965.

DANISH VILLAGE

Applicant does not claim to have the exclusive right to use the word "Danish" on products known as Danish pastries.
For Bakery Products, Specifically Sweet Rolls.
First use during the week ending Nov. 5, 1960.

SN 219,034. Clare P. McKaye, Cooksville, Ontario, Canada. Filed May 17, 1965.

MUTT'N JEFF

Owner of Canadian Reg. No. 136,184, dated June 12, 1964.
For Animal Foods—Namely, Dog Food.

SN 220,344. American Dairy Queen Corporation, Minneapolis, Minn. Filed June 4, 1965.

MR. MISTY TWINS

Applicant disclaims the word "Twins" separate and apart from the mark as shown. Owner of Reg. No. 699,518.
For Frozen Confection in Bar Form.
First use May 3, 1965.

SN 220,780. Milani Foods, Inc., Los Angeles, Calif. Filed June 9, 1965.

GOOD LIFE

Owner of Reg. No. 705,036.
For Dry Soup Bases, Canned Chopped Chicken Liver, and Matzo Ball Mix.
First use Feb. 12, 1960.

SN 221,052. Heublein, Inc., Hartford, Conn. Filed June 14, 1965.

GUSTO

For Wine Basting and Cooking Sauce.
First use Apr. 6, 1965.

SN 221,789. Cacao- en Chocoladefabrieken Bensdorp N.V., Bussum, Netherlands. Filed June 23, 1965.

ROYAL DUTCH

Applicant disclaims the word "Dutch" apart from the mark as shown. Owner of U.S. Reg. No. 592,480.
For Ice Cream and Ice Milk.
First use May 1, 1963; in commerce May 1, 1963.

SN 227,092. Rowse Company of N.H., Inc., Greenville, N.H. Filed Aug. 17, 1965.

WINTER HILL

Owner of Reg. Nos. 715,507, 775,506, and 775,507.
For Vinegars; and Canned and Bottled Applesauce, and Fruit Juice Food Beverages.
First use Apr. 30, 1951.

SN 227,614. Riviana Foods Inc., Houston, Tex. Filed Sept. 10, 1965.

CAROLINA

Owner of Reg. Nos. 423,450, 791,932, and others.
For Rice.
First use at least Dec. 22, 1927.

SN 227,764. Locatelli S.p.A., Milan, Italy. Filed Sept. 14, 1965.



Owner of Italian Reg. No. 168,040, dated July 17, 1964.
For Cheeses, Except Fresh Cheeses With Low Fat Content, and Except Quark Dry or Otherwise.

SN 228,147. Ellsworth R. Goslin, Phoenix, Ariz. Filed Sept. 20, 1965.

LIQUIK

For Liquid Mix for Making a Specialty Bread, Comprising 100% Whole Wheat Flour, Salt, Granulated Sugar, Brown Sugar, Milk, Shortening, Peanut Butter, and Honey.
First use July 2, 1965.

SN 228,773. Vitamin Products Company, Milwaukee, Wis. Filed Sept. 27, 1965.

BETALCO

For Food Concentrate To Be Used as a Dietary Supplement.
First use June 3, 1948.

SN 228,774. Vitamin Products Company, Milwaukee, Wis. Filed Sept. 27, 1965.

CATALYN

Owner of Reg. No. 331,921.
For Food Concentrate To Be Used as a Dietary Supplement.
First use May 1930.

SN 228,776. Vitamin Products Company, Milwaukee, Wis. Filed Sept. 27, 1965.

BETARIS

For Food Concentrate To Be Used as a Dietary Supplement.
First use Aug. 18, 1944.

SN 228,777. Vitamin Products Company, Milwaukee, Wis. Filed Sept. 27, 1965.

RUTAPLEX

For Food Concentrate To Be Used as a Dietary Supplement.
First use Aug. 16, 1947.

SN 228,778. Vitamin Products Company, Milwaukee, Wis. Filed Sept. 27, 1965.

RUTA-PLUS

For Food Concentrate To Be Used as a Dietary Supplement.
First use May 20, 1964.

SN 228,779. Vitamin Products Company, Milwaukee, Wis. Filed Sept. 27, 1965.

DRENAPLEX

For Food Concentrate To Be Used as a Dietary Supplement.
First use Apr. 28, 1964.

SN 228,781. Vitamin Products Company, Milwaukee, Wis. Filed Sept. 27, 1965.

EFLEX

For Food Concentrate To Be Used as a Dietary Supplement.
First use Dec. 27, 1945.

SN 228,782. Vitamin Products Company, Milwaukee, Wis. Filed Sept. 27, 1965.

MINAPLEX

For Food Concentrate To Be Used as a Dietary Supplement.
First use July 21, 1945.

SN 228,783. Vitamin Products Company, Milwaukee, Wis. Filed Sept. 27, 1965.

PHOSPHADE

For Food Concentrate To Be Used as a Dietary Supplement.
First use July 15, 1934.

SN 228,784. Vitamin Products Company, Milwaukee, Wis. Filed Sept. 27, 1965.

FERROPLUS

For Food Concentrate To Be Used as a Dietary Supplement.
First use Jan. 17, 1945.

SN 228,786. Vitamin Products Company, Milwaukee, Wis. Filed Sept. 27, 1965.

PROTEDYN

For Food Concentrate To Be Used as a Dietary Supplement.
First use Oct. 7, 1953.

SN 229,722. Anderson, Clayton & Co., Dallas, Tex. Filed Oct. 11, 1965.

SOUTHERN QUEEN

Owner of Reg. No. 205,183.
For Shortening of Both Animal and Vegetable Nature, Margarine, and Salad and Cooking Oil.
First use March 1917 on shortening.

SN 229,987. McKee Baking Company, d.b.a. Mighty Mike Bakery, Collegedale, Tenn. Filed Oct. 12, 1965.



The mark is taken from a photo of Michael K. McKee, son of Jack C. McKee, whose consent is of record.
For Cakes, Cookies, and Pies.
First use Aug. 25, 1965.

SN 230,242. Florasynth Laboratories, Incorporated, Bronx, N.Y. Filed Oct. 15, 1965.

SPICESYNTH

Owner of Reg. No. 774,694.
For Aromatic Chemicals and Essential Oils for Use in Manufacturing Food Flavoring Materials.
First use Sept. 9, 1965.

SN 230,320. Vitamin Products Company, d.b.a. Standard Process Laboratories, Milwaukee, Wis. Filed Oct. 15, 1965.

THYMEX

For Food Concentrate To Be Used as a Dietary Supplement.
First use Sept. 25, 1957.

SN 230,321. Vitamin Products Company, d.b.a. Standard Process Laboratories, Milwaukee, Wis. Filed Oct. 15, 1965.

OVEX

For Food Concentrate To Be Used as a Dietary Supplement.
First use Aug. 25, 1958.

SN 230,329. Vitamin Products Company, d.b.a. Standard Process Laboratories, Milwaukee, Wis. Filed Oct. 15, 1965.

CARDIO-PLUS

For Food Concentrate To Be Used as a Dietary Supplement.
First use Nov. 22, 1957.

SN 230,608. Cal Pops Corporation, d.b.a. Cal Pops, Brooklyn, N.Y. Filed Oct. 20, 1965.

PETER BANANA POPS

The words "Banana Pops" are disclaimed apart from the mark as shown.
For Edible Confection Mounted on a Stick, Sold in a Refrigerated State.
First use Aug. 1, 1965.

SN 230,800. Cecil V. Dickson, d.b.a. Dixall Food Products, Oakland, Calif. Filed Oct. 21, 1965.

DIXALL

For Dehydrated Fruits, Berries, Tomatoes, and the Juices Thereof; Green and Root Vegetables and the Juices Thereof; Meats; Fish; Crustaceans; and Prepared Mixes of the Foregoing for Use in Making Muffins, Hot Cakes, Waffles, Cup Cakes, and Biscuits.
First use Dec. 15, 1961.

SN 230,897. R.G.B. Laboratories, Inc., Kansas City, Mo. Filed Oct. 21, 1965.

R. G. B.

For Coloring for Food Purposes; Stabilizers for Use in Making Ice Cream, Concentrated Butter Flavor and Cream Replacement Products.
First use Oct. 20, 1956.

SN 230,940. Sommer Maid Creamery, Inc., Doylestown, Pa. Filed Oct. 21, 1965.

Sommer Maid

For Butter.
First use 1959; July 20, 1924, as to "Sommer Maid."

SN 230,953. Topps Chewing Gum, Incorporated, Brooklyn, N.Y. Filed Oct. 21, 1965.

GRAPE SHAKE

The word "Grape" is disclaimed apart from the mark as shown, without disclaiming any common law rights therein. Owner of Reg. No. 798,871.
For Candy.
First use Sept. 13, 1963.

SN 230,957. Topps Chewing Gum, Incorporated, Brooklyn, N.Y. Filed Oct. 21, 1965.

GRAPEROO

For Chewing Gum.
First use Jan. 3, 1963.

SN 230,959. Topps Chewing Gum, Incorporated, Brooklyn, N.Y. Filed Oct. 21, 1965.

ROCKS O' GUM

The word "Gum" is disclaimed apart from the mark as shown, without disclaiming any common law rights therein.
For Chewing Gum.
First use Jan. 4, 1963.

SN 230,969. Vitamin Products Company, d.b.a. Therapeutic Foods Company, Milwaukee, Wis. Filed Oct. 21, 1965.

DRENAMIN

For Food Concentrate To Be Used as a Dietary Supplement.
First use Apr. 28, 1964.

SN 230,971. Vitamin Products Company, d.b.a. Therapeutic Foods Company, Milwaukee, Wis. Filed Oct. 21, 1965.

BETACOL

For Food Concentrate To Be Used as a Dietary Supplement.
First use Aug. 16, 1947.

SN 230,973. Vitamin Products Company, d.b.a. Therapeutic Foods Company, Milwaukee, Wis. Filed Oct. 21, 1965.

CYROPLEX

For Food Concentrate To Be Used as a Dietary Supplement.
First use Dec. 21, 1943.

SN 230,974. Vitamin Products Company, d.b.a. Therapeutic Foods Company, Milwaukee, Wis. Filed Oct. 21, 1965.

PHOSFOOD

The term "Food" is disclaimed apart from the mark.
For Food Concentrate To Be Used as a Dietary Supplement.
First use Feb. 17, 1944.

SN 231,251. Snake River Trout Company, Twin Falls, Idaho. Filed Oct. 22, 1965.

CONTINENTAL

For Fresh and Frozen Rainbow Trout Eviscerated Down the Back.
First use on or about Aug. 15, 1964.

SN 231,536. Robert Daniel Boone, d.b.a. Daniel Boone, Parkersburg, W. Va. Filed Oct. 24, 1965.



The name "Daniel Boone" is that of the historical character and does not represent any particular living individual.
For Cookies and Cakes.
First use Sept. 25, 1965.

SN 232,394. Eastern Boneless Beef Co., Philadelphia, Pa. Filed Nov. 9, 1965.

NATURE'S DELIGHT BRAND

The word "Brand" is disclaimed apart from the mark as shown.
For Frozen Beef Patties, and Frozen Chipped Beef Steaks
First use Oct. 13, 1965.

SN 234,311. Sucrest Corporation, New York, N.Y. Filed Dec. 9, 1965.

DRIFOND

Owner of Reg. No. 701,480.
For Dry Sugar Product—Namely, a Pre-Cooked Fondant.
First use on or about Nov. 9, 1965.

SN 234,486. TV Time Foods, Inc., Chicago, Ill. Filed Dec. 13, 1965.

MERRY POPPIN'

The word "Poppin'" is disclaimed apart from the mark as shown.
For Unpopped Popcorn and Popping Oil.
First use Aug. 4, 1965.

SN 234,656. M. Licht & Son, Knoxville, Tenn. Filed Dec. 15, 1965.

SMOKY MOUNTAIN

Owner of Reg. No. 636,540.
For Artificial Food Sweetener.
First use Oct. 26, 1964.

SN 236,229. Calgon Corporation, Pittsburgh, Pa. Filed Jan. 12, 1966.

FREEZEGARD

For Food Grade Phosphate for Use in the Treatment of Seafood and Fresh Water Fish Prior to Freezing To Inhibit Excessive Loss of Moisture and Soluble Nutrients on Thawing.
First use Oct. 19, 1965.

SN 236,698. Carnation Company, Los Angeles, Calif. Filed July 28, 1965.

BRENTWOOD

For Dairy Products—Namely, Fluid Milk, Ice Cream, and Cottage Cheese.
First use at least as early as December 1945.

SN 238,671. Rocket Citrus Products, Inc., St. Louis, Mo. Filed Feb. 11, 1966.

NO. 007

For Fruit Punch Base.
First use Apr. 12, 1965.

SN 238,923. Carmine Foods, Inc., Richmond, Va. Filed Feb. 16, 1966.

Harvest Gold BRAND

For Frozen French Fried Potatoes.
First use May 21, 1964.

SN 240,558. Vala's Ice Cream, Inc., Chicago, Ill. Filed Mar. 9, 1966.

VALA'S

For Ice Cream.
First use May 4, 1965.

SN 244,172. H. J. Seiler Co., Inc., Boston, Mass. Filed Apr. 25, 1966.

Seiler's OF NEW ENGLAND

No registration rights are claimed herein for the words "of New England" apart from the mark as shown in the drawing; but applicant waives none of its common law rights in said mark or any feature thereof.
For Frozen Foods—Namely, Clam Chowder, Chicken Croquettes, Scallop and Lobster Croquettes, English Muffins, Oyster Stew, Shrimp Soup, and Chicken Puffs; and Fresh Bakery Products—Namely, English Muffins, Oatmeal Muffins, and Cinnamon-Raisin Buns.
First use Sept. 3, 1964, on clam chowder; 1873 as to "Seiler's."

SN 246,236. Colonial Provision Company, Inc., Boston, Mass. Filed May 23, 1966.

COLONIAL

Owner of Reg. No. 784,092.
For Smoked Ham, Canned Ham, Frozen Ham, Canned Ham Salad, Fresh Ham Salad, Fresh Corned Beef, Cured Corned Beef, Canned Corned Beef, Canned Corned Beef Hash, Frankfurters, Bacon, Sausage, Bologna, Liverwurst, Brisket, Salami, Chicken Loaf, Canned Beef, Pork Shoulder Picnics, Pork Shoulder Butts and Other Smoked, Cured, Canned and Pickled Prepared Meats, and Canned Turkey.
First use May 1939.

SN 247,467. Crest Brokerage Company, d.b.a. Crest Brokerage Co., and Crest Brokerage Company, Inc., Los Angeles, Calif. Filed June 7, 1966.

SEA CHEF

Owner of Reg. No. 728,926.
For Fresh Frozen Shrimp, Fresh Frozen Frog Legs, Frozen Whole Cooked Lobster, and Frozen Lobster Tails.
First use Dec. 2, 1960, on whole cooked lobster.

SN 248,942. H. E. Butt Grocery Company, d.b.a. Harlingen Canning Company, and Harlingen Canning Co., Corpus Christi, Tex. Filed June 27, 1966.

Primero

The Spanish word "Primero" means "first."
For Canned Fruits; Canned Fruit Juices; Canned Vegetables; Canned Vegetable Juices; Pickles; Hot Sauce; Barbecue Sauce; Hamburger and Hot Dog Relish.
First use at least as early as May 1, 1956.

SN 249,284. American Home Products Corporation, New York, N.Y. Filed June 30, 1966.

BREV

For Protein Food Supplement.
First use June 15, 1966.

SN 250,713. Mars, Incorporated, d.b.a. M & M Candies, Wilmington, Del. Filed July 21, 1966.

SPRINT

For Candy.
First use July 18, 1966.

SN 250,808. General Mills, Inc., Minneapolis, Minn. Filed July 22, 1966.

SALTY SAILS

Applicant disclaims any rights to the word "Salty" apart from the mark as shown.
For Cereal Derived Ready To Eat Snacks.
First use Apr. 25, 1966.

SN 251,542. J-B Distributing Co., Los Angeles, Calif. Filed Aug. 2, 1966.

WHITE HOUSE

Owner of Reg. No. 222,933.
For Fresh Deciduous Fruits; Melons, Fresh Vegetables, and Fresh Grapes.
First use Apr. 1, 1926.

SN 251,585. Eskimo Pie Corporation, Richmond, Va. Filed Aug. 3, 1966.

DIET-SERV

For Frozen Desserts—Namely, Ice Milk.
First use July 26, 1966.

SN 252,236. Copeland Sausage Company, Inc., d.b.a. Copeland Sausage Co., Alachua, Fla. Filed Aug. 12, 1966

COPELAND

For Meat, Processed Meat Products, and Prepared Meat Products—Namely, Fresh Frozen Beef Steaks, Fresh and Smoked Sausages, Frankfurters, Hams, Sliced Turkey, Bacons, and Luncheon Meats or Cold Cuts Processed From Pork and Beef.
First use 1948; 1933 on sausages.

Class 47 — Wines

SN 228,193. L. N. Renault & Sons, Inc., Egg Harbor City, N.J. Filed Sept. 20, 1965.

EMERALD GODDESS

For Wines.
First use Sept. 14, 1965.

SN 234,885. Delaforce Sons & Ca. Limitada, Villa Nova de Gaya, Portugal. Filed S.R. Dec. 20, 1965; Am. P.R. Sept. 14, 1966.

HIS EMINENCE'S CHOICE

For Port Wine.
First use 1927; in commerce Nov. 24, 1933.

SN 235,540. Vina Concha y Toro S.A., Santiago, Chile. Filed Dec. 29, 1965.

CONCHA Y TORO

The English translation of "Concha y Toro" is "shell (such as a seashell) and bull."
For Wines.
First use 1923; in commerce July 30, 1965.

Class 48 — Malt Beverages and Liquors

SN 228,151. Heineken's Brouwerijen Nederland N.V., Amsterdam, Netherlands. Filed Sept. 20, 1965.



The drawing is lined for the color brown. No claim is made to the following wording apart from the mark as a whole: "Special Dark Beer; Hors Concours Membre du Jury Paris 1900; Trade Mark; Grand Prix Paris 1888; Diplome d'Honneur Amsterdam 1883; Medaille d'Or Paris 1875; and Brewed in Holland." Owner of Reg. Nos. 547,390 and 767,954.
For Beer.
First use May 2, 1964; in commerce May 2, 1964; December 1937 in a different form.

SN 228,152. Heineken's Brouwerijen Nederland N.V., Amsterdam, Netherlands. Filed Sept. 20, 1965.



The drawing is lined for the colors green and red. No claim is made to the following wording apart from the mark as a whole: "Lager Beer; Hors Concours Membre du Jury Paris 1900; Trade Mark; Grand Prix Paris 1888; Diplome d'Honneur Amsterdam 1883; Medaille d'Or Paris 1875; and Brewed in Holland." Owner of Reg. Nos. 547,390 and 767,954.
For Beer.
First use Apr. 1, 1961; in commerce Apr. 1, 1961.

SN 228,153. Heineken's Brouwerijen Nederland N.V., Amsterdam, Netherlands. Filed Sept. 20, 1965.



No claim is made to the following wording apart from the mark as a whole: "Lager Beer; Hors Concours Membre du Jury Paris 1900; Trade Mark; Grand Prix Paris 1888; Diplome d'Honneur Amsterdam 1883; Medaille d'Or Paris 1875; and Brewed in Holland." Owner of Reg. Nos. 547,390 and 767,954.
For Beer.
First use December 1937; in commerce December 1937.

Class 49 — Distilled Alcoholic Liquors

SN 215,953. Duff Gordon & Co., S.A., Puerto de Santa Maria, Cadiz, Spain. Filed Apr. 7, 1965.

DUFF GORDON

Owner of Spanish Reg. No. 132,514, dated Oct. 20, 1964; and U.S. Reg. Nos. 91,908 and 330,617.
For Brandy.

SN 233,376. National Distillers and Chemical Corporation, d.b.a. National Distillers Products Co., and Carrington and Company, Ltd., New York, N.Y. Filed Nov. 26, 1965.

CARRINGTON

Owner of Reg. No. 584,745.
For Whisky.
First use Oct. 13, 1965; Nov. 20, 1951, as to "Carrington's."

SN 237,937. Continental Distilling Corporation, d.b.a. W. A. Haller Company, Philadelphia, Pa. Filed Feb. 3, 1966.

ENGLISH CROWN

The applicant disclaims the word "English" apart from the mark as shown, reserving all of its common law rights therein.
For Gin.
First use Dec. 28, 1965.

SN 239,388. Continental Distilling Corporation, d.b.a. Continental Distilling Co., Philadelphia, Pa. Filed Feb. 23, 1966.

SCOTINI

For Scotch Liqueur.
First use Jan. 21, 1966.

SN 239,461. Robt. Thorne & Sons (Whisky Merchants) Limited, Dumbarton, Scotland. Filed Feb. 23, 1966.

THORNE'S



Owner of U.S. Reg. Nos. 644,850 and 814,650.
For Scotch Whisky.
First use on or about July 27, 1965; in commerce on or about July 1965; in or about December 1955 as to "Thorne's."

SN 247,465. Puerto Rico Distillers, Inc., d.b.a. Compania de Bebidas Del Oriente, Arecibo, Puerto Rico. Filed June 7, 1966.



Reserving all common law rights, applicant hereby disclaims the word "Liqueur." Owner of Reg. No. 751,831.
For Liqueurs.
First use May 19, 1966.

Class 50 — Merchandise Not Otherwise Classified

SN 231,035. The Borden Company, New York, N.Y. Filed Oct. 22, 1965.

PARK AND PATIO

For Fabric Backed Plastic Covers.
First use Apr. 13, 1964.

SN 232,236. Revere Copper and Brass Incorporated, New York, N.Y. Filed Nov. 5, 1965.

TRIPLEMETAL

For Zinc Alloy Printing Plates for Photoengraving.
First use November 1938.

SN 235,282. Davison Clark Inc., Cleveland, Ohio. Filed Dec. 27, 1965.

ETCHAWAY

For Art Devices—Namely, Coated Sheets Used in Making Pictures or Designs.
First use Nov. 17, 1965.

SN 243,152. Neil A. Medlock, d.b.a. Safety Aid Kit Company, and Safety Aid Kit Co., Santa Ana, Calif. Filed Apr. 11, 1966.

SAK

For Safety Aid Kit Containing a Fire Extinguisher, a First Aid Kit, a Flashlight, Two Railroad-Type Flares, and First Aid Instructions.
First use Mar. 28, 1966.

SN 248,966. Campana Art Products, Inc., Camden, N.J. Filed June 27, 1966.

CAMPANA

For Wall Plaques, Artificial Floral Wall Plaques, and Artificial Floral Centerpieces.
First use 1954 on wall plaques.

SN 253,103. Stafast Corporation, New York, N.Y. Filed Aug. 25, 1966.

THERMO-'NITIALS

For Heat Reactive, Adhesive Backed Alphabetic Characters of Various Sizes.
First use on or about July 1, 1965.

Class 51 — Cosmetics and Toilet Preparations

SN 199,266. John H. Breck, Inc., Springfield, Mass. Filed Aug. 5, 1964.

COOL-TONE

For Hair-Coloring Preparation.
First use June 30, 1964.

SN 208,680. Chan Chow-Kian, d.b.a. Fen Brothers Company, Singapore, Malaysia. Filed Dec. 22, 1964.

GALON

The word "Galon" has the Spanish and Swedish meaning of "gallon" and has the French meaning of "braid" or "lace."
For Hand and Face Lotion, Face Powder, Hair Spray, Lipstick, and Liquid Makeup.
First use Nov. 27, 1964; in commerce Nov. 27, 1964.

SN 220,616. Climate Cosmetics Corp., New York, N.Y. Filed June 7, 1965.

clima-soleil

For Hand Creams, Cleansers in Liquid or Cream Form for the Skin, Moisturizers for Dry Skin, Skin Toners, Liquid Night Concentrates, Body Balm, Bronze Sheen for Producing Even Tan on the Skin, and Lipsticks.
First use Apr. 26, 1965.

SN 223,042. E. R. Squibb & Sons, Inc., New York, N.Y., assignee of Olin Mathieson Chemical Corporation, New York, N.Y. Filed July 9, 1965.

SL-65

For Anhydrous Aluminum Silicate Incorporated as an Ingredient in a Dentifrice.
First use June 24, 1965.

SN 227,069. Revlon, Inc., New York, N.Y. Filed Sept. 2, 1965.

'GURKHA'

For Fragrances for Men.
First use Aug. 20, 1965.

SN 227,320. Nassour Studios, Inc., Los Angeles, Calif. Filed Sept. 7, 1965.

KING OF SPORTS

For Men's Cologne and Shaving Lotion.
First use Aug. 5, 1965.

SN 227,408. Eversharp, Inc., Milford, Conn. Filed Sept. 8, 1965.

TOUCH OF SPICE

Applicant disclaims the term "Spice" apart from the mark as shown.
For Men's Toiletries—Namely, After Shave Lotion.
First use Aug. 25, 1965.

SN 229,129. Ravel Perfume Corp., d.b.a. Ravel N.Y., New York, N.Y. Filed Oct. 1, 1965.

GREEN JADE

For Skin Moisturizers, After Shaving Lotions, Beard Softeners, Hair Tonics, Hair Dressings, Shaving Creams, and Colognes and Toilet Waters.
First use Sept. 1, 1965.

SN 230,542. International Latex Corporation, Dover, Del. Filed Oct. 19, 1965.

LIVING

For Antiperspirants and Deodorants.
First use Oct. 1, 1965.

SN 235,898. De Beaufort, Ltd., New York, N.Y. Filed Jan. 6, 1966.

REGIMENTAL

For Men's Cologne.
First use Sept. 25, 1957.

SN 235,900. De Beaufort, Ltd., New York, N.Y. Filed Jan. 6, 1966.

DENIM

For Men's Cologne.
First use July 30, 1956.

SN 238,096. Les Parfums de Dana, Inc., d.b.a. Dana, New York, N.Y. Filed Feb. 4, 1966.

EN ROUTE

For Travel Kits Containing Cologne, Talc, and Bath Soap.
First use Dec. 10, 1965.

SN 238,894. Societe Charrier & Cie, Vallauris, Alpes Maritimes, France. Filed Feb. 15, 1966.

IMPUDENT

Owner of French Reg. No. 948, dated Apr. 14, 1965 (Antibes); Natl. Inst. No. 246,295.
For Perfumes, Colognes, Toilet Waters, Facial Creams, Make-Up Foundation Creams, Creams for the Care of the Hair, and Creams for Fingernails.

SN 240,411. Mary Chess, Inc., New York, N.Y. Filed Mar. 9, 1966.

SHEER SATIN

For Cologne.
First use February 1966.

SN 240,846. Bonne Bell, Inc., Lakewood, Ohio. Filed Mar. 14, 1966.

1006

Owner of Reg. Nos. 382,124 and 739,531.
For Skin Lotion and After Shave Lotion.
First use 1936.

SN 240,847. Bonne Bell, Inc., Lakewood, Ohio. Filed Mar. 14, 1966.

Ten-O-Six 1006 Lotion

The word "Lotion" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 382,124 and 739,531.
For Skin Lotion and After Shave Lotion.
First use 1946.

SN 241,252. Haviland Laboratories, Inc., New York, N.Y. Filed Mar. 17, 1966.

U.S. MALE

For Bath Oil, Cologne.
First use Mar. 2, 1966.

SN 241,350. Ethel Rogell Lewis and Seymour Phillips, executors of the will of Arnold L. Lewis, Los Angeles, Calif. Filed Mar. 18, 1966.

Dep SET

Applicant disclaims the word "Set" apart from the mark as shown. Owner of Reg. Nos. 651,002 and 796,115.
For Preparation Used in the Styling and Conditioning of the Hair.
First use July 27, 1964; May 10, 1956, as to the word "Dep."

SN 241,863. Colgate-Palmolive Company, New York, N.Y. Filed Mar. 25, 1966.

ULTRA BRITE

Owner of Reg. No. 815,139.
For Dentifrice.
First use Mar. 1, 1966.

SN 241,869. Helene Curtis Industries, Inc., Chicago, Ill. Filed Mar. 25, 1966.

TWICE AS EASY

For Hair Waveset.
First use on or about Jan. 28, 1966.

SN 241,932. The Realistic Company, Cincinnati, Ohio. Filed Mar. 25, 1966.

ARC

For Permanent Wave Curling Solutions.
First use on or about Mar. 3, 1966.

SN 242,053. Scandia Cosmetics Corporation, New York, N.Y. Filed Mar. 28, 1966.

LIP SUPREME

For Lipstick and Lipstick Refill.
First use Mar. 15, 1966.

SN 242,079. The William A. Webster Co., Memphis, Tenn. Filed Mar. 28, 1966.

Eva St. Claire

The name "Eva St. Claire" is not known to be that of a particular living individual.
For Skin Cream.
First use Feb. 16, 1966.

SN 242,185. American Home Products Corporation, New York, N.Y. Filed Mar. 30, 1966.

STRONG'N BRITE

For Children's Fluoride Toothpaste.
First use Feb. 16, 1966.

SN 242,188. American Home Products Corporation, New York, N.Y. Filed Mar. 30, 1966.

STARBRITE

For Children's Fluoride Toothpaste.
First use Feb. 16, 1966.

SN 242,190. American Home Products Corporation, New York, N.Y. Filed Mar. 30, 1966.

MAGIC STAR

For Children's Fluoride Toothpaste.
First use Feb. 16, 1966.

SN 242,192. American Home Products Corporation, New York, N.Y. Filed Mar. 30, 1966.

SHINING STAR

For Children's Fluoride Toothpaste.
First use Feb. 16, 1966.

SN 242,194. American Home Products Corporation, New York, N.Y. Filed Mar. 30, 1966.

STAR WHITE

For Children's Fluoride Toothpaste.
First use Feb. 16, 1966.

SN 242,200. Beauty Counselors, Inc., Grosse Pointe, Mich. Filed Mar. 30, 1966.

WHITE GOLD

For Perfume, Perfume Stick, Aerosol Perfume Spray, Cologne, and Dusting Powder.
First use September 1962.

SN 243,939. Redken Laboratories, Inc., Van Nuys, Calif. Filed Apr. 21, 1966.

BIO-WAVE

For Permanent Wave Solution.
First use Mar. 5, 1962.

SN 246,649. Bristol-Myers Company, New York, N.Y. Filed May 26, 1966.

GENTIQUE

For Cosmetics and Toilet Preparations—Namely, Feminine Shaving Lotion and Deodorant.
First use Apr. 27, 1966.

SN 253,090. American Home Products Corporation, New York, N.Y. Filed Aug. 25, 1966.

HOG WASH

For Hand Lotion.
First use Aug. 3, 1966.

Class 52—Detergents and Soaps

SN 201,985. George Warren, d.b.a. Warren Chemical Company, Trenton, N.J. Filed Sept. 15, 1964.



The word "Products" is disclaimed apart from the mark as shown.
For General Purpose Cleaners.
First use Aug. 25, 1964.

SN 204,349. C-Z Chemical Co., Inc., Beloit, Wis. Filed Oct. 20, 1964.

ENZ-ALL

For Non-Caustic Enzyme Product for the Purpose of Cleaning Sewage Waste From Grease Traps, Drains, Septic Tanks, and Cesspools.
First use Jan. 12, 1960.

SN 215,477. Alberto-Culver Company, Melrose Park, Ill. Filed Apr. 1, 1965.

POWER SOFT

Applicant disclaims rights to the word "Soft" as separate and apart from the mark as shown.
For Detergents for Use in Households.
First use Mar. 16, 1965.

SN 215,478. Alberto-Culver Company, Melrose Park, Ill. Filed Apr. 1, 1965.

SOFT POWER

Applicant disclaims rights to the word "Soft" as separate and apart from the mark as shown.
For Detergents for Use in Households.
First use Mar. 16, 1965.

SN 236,354. Bonewitz Chemicals, Inc., Burlington, Iowa. Filed Jan. 13, 1966.

BONALUME

For Preparations for Cleaning Food Plant and Industrial Equipment.
First use Jan. 6, 1959.

SN 240,780. The Procter & Gamble Company, Cincinnati, Ohio. Filed Mar. 11, 1966.



The word "Institutional" is disclaimed apart from the mark. The drawing is lined for the colors red, silver, and gold. Owner of Reg. Nos. 248,425 and 629,287.
For Sudsing Detergent-Cleanser for Cleaning and Disinfecting Kitchens, Bathrooms, and Hospital Rooms and Fixtures.
First use Oct. 1, 1965; November 1911, as to the word "Comet."

SN 242,180. American Home Products Corporation, New York, N.Y. Filed Mar. 30, 1966.

STRONG'N BRITE

For Children's Hair Shampoo.
First use Feb. 16, 1966.

SN 242,191. American Home Products Corporation, New York, N.Y. Filed Mar. 30, 1966.

MAGIC STAR

For Children's Hair Shampoo.
First use Feb. 16, 1966.

SN 242,193. American Home Products Corporation, New York, N.Y. Filed Mar. 30, 1966.

SHINING STAR

For Children's Hair Shampoo.
First use Feb. 16, 1966.

SN 245,812. Cole National Corporation, Cleveland, Ohio. Filed May 17, 1966.

L'IL SQUIRT

For Cleaning Fluid for Eyeglasses.
First use on or about May 2, 1966.

SN 246,736. Diamond Alkali Company, Cleveland, Ohio. Filed May 27, 1966.

DACOTEX

For Dry Cleaning Detergents, and Dry Cleaning Specialty Products—Namely, Spotters.
First use Feb. 1, 1966.

SN 247,157. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed June 2, 1966.

ENTRANCEMENT

Owner of Reg. No. 632,414.
For Toilet Soap.
First use May 25, 1966.

SN 249,290. The Procter & Gamble Company, Cincinnati, Ohio. Filed June 30, 1966.

YOUNG HANDS FORMULA

The word "Formula" is disclaimed apart from the mark.
For Household Liquid Detergent.
First use Dec. 6, 1965.

SN 253,087. C. J. Webb Inc., Dresher, Pa. Filed Aug. 24, 1966.



Owner of Reg. Nos. 696,251, 708,612, and others.
For Motor and Equipment Cleaner.
First use Aug. 5, 1966.

SERVICE MARKS

Class 100 — Miscellaneous

SN 194,419. R & J Corporation, Ogden City, Utah. Filed May 27, 1964.



The words "Burger Spud" are disclaimed apart from the mark as shown, without prejudice to applicant's common law rights.
For Restaurant Services.
First use Oct. 7, 1963; in 1914 as to "Ross & Jack."

SN 205,409. J & C Hollywood Drive-Ins, Inc., Rockford, Ill. Filed Nov. 3, 1964.

HOLLYWOOD

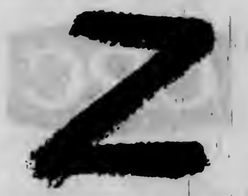
For Drive-In Restaurant Service.
First use June 1954.

SN 205,411. J & C Hollywood Drive-Ins, Inc., Rockford, Ill. Filed Nov. 3, 1964.



No registration rights are claimed for the word "Drive-In" or for the representation of a sandwich shown in the mark.
For Drive-In Restaurant Service.
First use June 1954.

SN 214,398. James C. Zaccaro, d.b.a. Zaccaro Associates, New York, N.Y. Filed Mar. 17, 1965.



For Portrait and Commercial Photographic Services, Including Advisory and Consulting Services Relating to Photography.
First use September 1963.

SN 218,957. Birch Tree Inn, Inc., Michigan City, Ind. Filed May 17, 1965.



For Restaurant Services.
First use May 2, 1964.

SN 219,500. American Building Maintenance Co. of California, d.b.a. American Building Maintenance Company, San Francisco, Calif. Filed May 24, 1965.



For Building Janitorial and Maintenance Cost Analysis Rendered to Others.
First use Feb. 24, 1965.

SN 225,291. Crisfield Seafood Co., d.b.a. Crisfield Seafood Restaurant, Silver Spring Md. Filed Aug. 9, 1965.

CRISFIELD SEAFOOD RESTAURANT

No claim is made to the words "Seafood Restaurant" apart from the mark as shown.
For Restaurant Services.
First use September 1939.

SN 230,409. Mister Softee, Inc., Runnemede, N.J. Filed Oct. 18, 1965.



Owner of Reg. Nos. 663,546 and 667,335.
For Snack-Type Restaurant Services.
First use on or about Mar. 30, 1962.

SN 230,866. Mister Softee, Inc., Runnemede, N.J. Filed Oct. 21, 1965.

MISTER SOFTEE

Owner of Reg. Nos. 663,546 and 667,335.
For Snack-Type Restaurant Services.
First use on or about Mar. 30, 1962.

SN 233,222. Southern California Gas Company, Los Angeles, Calif. Filed Nov. 22, 1965.



Applicant hereby disclaims exclusive right to the use of the words "The Future Belongs to Gas" in connection with the use of the mark and in that connection applicant states that it asserts no exclusive rights in and to that portion of the mark utilizing said words, standing alone.
For Transmission and Distribution of Natural Gas to the Public.
First use February 1961.

SN 233,223. Southern California Gas Company, Los Angeles, Calif. Filed Nov. 22, 1965.



For Transmission and distribution of Natural Gas to the Public.
First use February 1961.

SN 233,224. Southern California Gas Company, Los Angeles, Calif. Filed Nov. 22, 1965.



For Transmission and Distribution of Natural Gas to the Public.
First use May 1963.

SN 233,366. The Macke Company, Washington, D.C. Filed Nov. 26, 1965.

COIN 'N COUNTER

For Serving of Food by Cafeteria and Vending Machines.
First use October 1965.

SN 233,732. Ocean Spray Cranberries, Inc., Hanson, Mass. Filed Dec. 1, 1965.

CRANBERRY HOUSE

Owner of Reg. No. 796,851.
For Retail Food Store Services.
First use Aug. 31, 1964.

SN 235,601. Valle's Steak House, Portland, Maine. Filed Dec. 30, 1965.



Owner of Reg. Nos. 649,480 and 755,225.
For Service of Foods and Beverages in Restaurants.
First use on or about July 1, 1965.

SN 236,712. Bachrach, Inc., Newton, Mass. Filed Jan. 18, 1966.

BACHRACH

For Portrait Photographic Services.
First use 1905.

SN 240,324. Neurotics Anonymous International Liaison, Inc., Washington, D.C. Filed Mar. 7, 1966.

NEUROTICS ANONYMOUS

The word "Neurotics" is disclaimed apart from the mark as shown.
For Services in Connection With an Organization of Persons With Mental-Health Problems—Namely, Conducting Meetings to Help the Emotionally Disturbed, Publication of Literature and a Newsletter for Members, Preparation and Placement of Newspaper, Radio, and Television Advertising for the Purpose of Stimulating Growth of the Association, and Encouraging Public Interest in the Work of the Group.
First use Feb. 3, 1964.

Class 101 — Advertising and Business

SN 186,694. Shurfine-Central Corporation, Northlake, Ill., assignee of Central Retailer-Owned Grocers, Inc., Northlake, Ill. Filed Feb. 14, 1964.



For Providing Prepared Advertising to Grocers.
First use July 2, 1962.

SN 189,280. The Electric Motor Supply Co., Baltimore, Md. Filed Mar. 23, 1964.



For Providing Advice and Consultation on Electric Motor Problems, Including the Acquisition of Renewal Parts for Others.
First use Feb. 10, 1963.

SN 194,938–J. Weyerhaeuser Company, Tacoma, Wash. Filed June 4, 1964.

WEYERHAEUSER

Owner of Reg. No. 614,708.
For Advertising and Business Consultation Services Performed for Others.
First use January 1963.

SN 194,939–J. Weyerhaeuser Company, Tacoma, Wash. Filed June 4, 1964.



The mark consists of a stylized coniferous tree in a triangle. Owner of Reg. Nos. 698,826 and 722,722.
For Advertising and Business Consultation Services Performed for Others.
First use January 1963.

SN 197,303. Institute for Financial Planning, Inc., New York, N.Y. Filed July 7, 1964.



For Developing and Advising as to Financial Planning Programs in Relation to, and as to Materials Utilizable in, Selling Life Insurance, and as to Life Insurance Contracts; and Advising Life Insurance Companies in Their Management and Operations in Relation to Such Financial Planning Programs and in Relation to Selling Life Insurance.
First use Mar. 22, 1960.

SN 198,305. Whitlock and Company, Inc., River Forest, Ill. Filed July 21, 1964.

ECONOMY READING PLAN

For Program for Increasing the Circulation of Newspapers by Means of Advertising and Selling Newspaper and Magazine Subscriptions at a Combined Low Price, and by Counseling the Newspaper and Providing Instructional and Advertising Materials Pertaining to Said Program.
First use Sept. 2, 1936.

SN 198,630. At Your Service, Inc., St. Paul, Minn. Filed July 28, 1964.



For Custom Preparation and Distribution of Novelty and Specialty Items for Advertising Purposes.
First use Sept. 1, 1959.

SN 202,810. Ladlor Kennels, Reg., South El Monte, Calif. Filed Sept. 28, 1964.

LADLOR

For Dog Breeding Services.
First use Dec. 15, 1958.

SN 210,964. S. S. Kresge Company, Detroit, Mich. Filed Jan. 29, 1965.



The word "Mart" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 743,912 and 774,794.
For Retail Discount Store Services.
First use on or before Feb. 28, 1962.

SN 221,527. Ski Council of America, Inc., New York, N.Y. Filed June 18, 1965.

SNOW SHOW

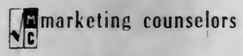
The word "Show" is disclaimed apart from the mark as shown.
For Staging Trade Shows for Manufacturers of Equipment and Apparel Used in Winter Sports.
First use June 1963.

SN 231,370. At Your Service, Inc., St. Paul, Minn. Filed Oct. 23, 1965.



For Custom Preparation and Distribution of Novelty and Specialty Items for Advertising Purposes; Promotional Advertising and Sales Promotion for Others.
First use Apr. 15, 1960.

SN 233,115. Marketing Counselors, d.b.a. Marketing Counselors, Inc., Glendale, Calif. Filed Nov. 22, 1965.



No claim is made to the words "Marketing Counselors" except in the association shown.
For Promoting the Sale of Goods of Others by Means of Merchandising Coupons Redeemed by Applicant, and Planning and Implementing Various Coupon Campaigns.
First use on or about June 21, 1961; Mar. 15, 1957, in a different form.

SN 233,334. Food Fair Stores, Inc., Philadelphia, Pa. Filed Nov. 26, 1965.



Owner of Reg. Nos. 390,295, 732,231, and 787,855.
For Supermarket Services.
First use June 25, 1964.

SN 233,449. Christopher J. Bravos, d.b.a. Globe Copy Company, Chicago, Ill. Filed Nov. 29, 1965.

INSTANT PRINTING

Owner of Reg. No. 775,150.
For Reproducing Multiple Copies of Printed Matter for Others.
First use July 1, 1962.

SN 234,118. Dun & Bradstreet, Inc., New York, N.Y. Filed Dec. 7, 1965.

DMI

For Supplying Sales and Marketing Information Concerning the Business Community According to the Requirements of Customers.
First use April 1965.

SN 235,473. Marketing Counselors, Glendale, Calif. Filed Nov. 22, 1965.



For Promoting the Sale of Goods of Others by Means of Merchandising Coupons Redeemed by Applicant, and Planning and Implementing Various Coupon Campaigns.
First use on or about June 21, 1961; Mar. 15, 1957 in a different form.

SN 246,986. Cybernetics Corporation, Manchester, N.H. Filed June 1, 1966.



No claim is made to the words "Corporation" and "Cybernetics" or to the expression "Electronic Data Processing Services" apart from the mark as shown.
For Electronic Data Processing Services.
First use 1961.

Class 102 — Insurance and Financial

SN 194,938–K. Weyerhaeuser Company, Tacoma, Wash. Filed June 4, 1964.

WEYERHAEUSER

Owner of Reg. No. 614,708.
For Financial Services—Namely, Financing Home Construction, Performed for Others.
First use January 1963.

SN 210,963. S. S. Kresge Company, Detroit, Mich. Filed Jan. 29, 1965.

Kmart

The word "Mart" is disclaimed apart from the mark as show. Owner of Reg. Nos. 743,912 and 774,794.
For Financial Services—Namely, Check Cashing.
First use on or before Feb. 28, 1962.

SN 230,878. Old Republic Life Insurance Company, Chicago, Ill. Filed Oct. 21, 1965.

Old Republic Companies

Owner of Reg. No. 660,430.
For Underwriting of All Types of Insurance.
First use Oct. 5, 1964.

Class 103 — Construction and Repair

SN 177,340. The Decker Corporation, Bala Cynwyd, Pa. Filed Sept. 19, 1963.

decker

For Overhaul, Modification, Maintenance, and Repair of Aircraft Instruments—Namely, Electronic Equipment, Gyroscopes, and Pressure Meters.
First use on or about Oct. 1, 1951.

SN 194,938–L. Weyerhaeuser Company, Tacoma, Wash. Filed June 4, 1964.

WEYERHAEUSER

Owner of Reg. No. 614,708.
For Providing Advice and Aid in the Construction and Repair of Homes.
First use January 1963.

SN 194,939–L. Weyerhaeuser Company, Tacoma, Wash. Filed June 4, 1964.



The mark consists of a stylized coniferous tree in a triangle. Owner of Reg. Nos. 698,826 and 722,722.
For Providing Advice and Aid in the Construction and Repair of Homes.
First use January 1963.

SN 238,795. Southern Reneedling Works, Incorporated, Gastonia, N.C. Filed Feb. 14, 1966.

SR

For Reneedling of Textile Comber and Pin Drafting and Gilling Machinery.
First use on or about Jan. 31, 1951.

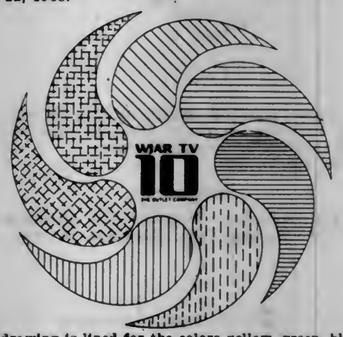
SN 249,915. Carl A. Morse, Inc., New York, N.Y. Filed July 11, 1966.



For Industrial Building Construction Services.
First use Sept. 17, 1965.

Class 104 — Communication

SN 231,201. The Outlet Company, Providence, R.I. Filed Oct. 22, 1965.



The drawing is lined for the colors yellow, green, blue, violet, red and orange, but no claim is made to color apart from the mark as shown. The mark consists of a color pinwheel in motion which depicts different colors, superimposed upon each other, when utilized on color television programs. The Outlet Company disclaims rights to the "letters" which may be placed in the center of the color pinwheel but reserves the right to place such "letters" therein without altering its trademark protection for the color pinwheel.
For Locally Produced Color Television Programs Broadcast by Applicant.
First use July 19, 1965.

Class 105 — Transportation and Storage

SN 198,638. Compania Mexicana de Aviacion, S.A., Mexico City, Mexico. Filed July 28, 1964.



For Transporting Freight and Passengers by Air.
First use Aug. 19, 1959; in commerce Aug. 19, 1959.

SN 225,204. Security Van Lines, Inc., Kenner, La. Filed Aug. 6, 1965.

"THE BEST MOVE YOU'LL EVER MAKE"

For Transportation and Storage Services.
First use 1954.

SN 226,163. P & O-Orient Lines, Inc., San Francisco, Calif. Filed Aug. 20, 1965.

TELPOL

For Providing Facilities to Travel Agencies to Make Reservations for Their Clients.
First use on or about Aug. 1, 1965.

SN 229,758. The Castanea Corporation, d.b.a. Thru-Flight Service, Farmingdale, N.J. Filed Oct. 11, 1965.



Applicant disclaims exclusive right to use of the words "Thru-Flight Service" apart from the mark as shown and descibed.
For Air Transportation of Passengers.
First use Apr. 28, 1965.

SN 232,345. Puget Sound Tug & Barge Company, Seattle, Wash. Filed Nov. 8, 1965.



The drawing is lined for the colors blue and red; no claim is made to color as a feature of the mark.
For Ocean Transportation of Loaded Freight Cars on Barges.
First use June 5, 1963.

Class 106 — Material Treatment

SN 225,708. Alton Box Board Company, Alton, Ill. Filed Aug. 16, 1965.



Owner of Reg. No. 681,321.
For Custom Manufacturing of Packages for Others.
First use Mar. 1, 1965.

SN 226,967. Accurate Anodizing Corp., Cicero, Ill. Filed Sept. 2, 1965.

PORACC

For Anodizing Aluminum Products of Others.
First use July 1958.

SN 230,948. Target Photo Finishers, Inc., d.b.a. Early Bird Fast Photo Service, Jackson, Miss. Filed Oct. 21, 1965.



For Developing, Printing and Enlarging Photographs.
First use on or about Mar. 1, 1963.

SN 248,281. Mildred C. DeBlauwe, d.b.a. Maplewood Studios, Waterloo, Iowa. Filed June 17, 1966.



The word "Studio" is disclaimed apart from the mark shown. The drawing is lined for the color red, but color is not claimed as a feature of the mark.
For Developing and Printing Pictures.
First use Dec. 1, 1958.

Class 107 — Education and Entertainment

SN 180,657. Flying W Ranch, Inc., Colorado Springs, Colo. Filed Nov. 7, 1963.

FLYING W

Owner of Reg. No. 762,893.
For Restaurant Services Featuring Western-Style Meals, and the Providing of Western Folk Style Music, and Especially Facilities for Convention Groups and Patrons of Travel Agencies.
First use on or about May 1, 1951.

SN 192,836. Mildred M. Lutz, Harville, Ohio. Filed May 6, 1964.

DA-X-BE

For Educational Services—Namely, Demonstrating and Lecturing on Garment Fitting.
First use Apr. 29, 1963.

SN 195,106. International Play Group Inc., New York, N.Y. Filed June 8, 1964.



For Operating a Preschool Program for the Children of Foreign Parents Sent to This Country by Their Government for a Temporary Tour of Duty.
First use Sept. 15, 1963.

SN 212,631. Allstate Insurance Company, Skokie, Ill. Filed Feb. 24, 1965.



Owner of Reg. Nos. 761,091, 621,917, and others.
For Sponsorship of Driver Training Programs in Schools and Similar Organizations, by Making Available Driver Training Films To Be Used With Vehicle Simulators in Said Programs.
First use on or about July 15, 1964.

SN 219,338. Golden West Broadcasters, Los Angeles, Calif. Filed May 20, 1965.

AIRWATCH

For Broadcasting, by Radio and/or Television, Information Relating to Traffic, Emergencies, and Other Matters of Public Interest, as Observed From an Airborne Vehicle.
First use December 1957.

SN 219,993. Hilton Hotels Corporation, South San Francisco, Calif. Filed May 28, 1965.

TIGER-A-GO-GO

For Cocktail Lounge Services, Including the Supplying of Entertainment to Customers Thereof.
First use Jan. 7, 1965.

SN 222,774. Soupy Sales, New York, N.Y. Filed July 6, 1965.

THE ADVENTURES OF PHILO KVETCH

The name "Philo Kvetch" is fanciful.
For Entertainment Services—Namely, the Presentation of a Television Program in the Form of a Humorous Detective Story.
First use February 1965.

SN 229,655. William L. Horan, Leesburg, Fla. Filed Oct. 8, 1965.



For Providing Classroom and Field Training in Cheerleading and Songleading.
First use Sept. 1, 1959.

SN 233,000. Massey Junior College, Inc., Atlanta, Ga. Filed Nov. 19, 1965.



For Educational Services—Namely, Providing a College Program of Study.
First use Dec. 21, 1960.

SN 234,102. American Students Abroad, Inc., Cincinnati, Ohio. Filed Dec. 7, 1965.



For Travel Agency Services Catering Especially to the Needs of Persons Who Are Studying or Intend to Study Abroad.
First use September 1965.

SN 235,014. San Antonio Fair, Inc., d.b.a. Hemisfair, San Antonio, Tex. Filed Dec. 21, 1965.



For Establishment of an International Exposition to Promote Trade of Subscribers and Others.
First use Sept. 28, 1965.

SN 245,900. National Bowling Council, d.b.a. Bowlers Victory Legion, Washington, D.C. Filed May 18, 1966.



Applicant disclaims any rights to the exclusive use of the term "Bowlers" and the phrase "Bowlers of America" except as they are used in and are a part of the context and design of the servicemark. The drawing is lined for blue, but no claim is made to color as a feature of the mark.
For Conducting Bowling Leagues and Tournaments for Hospitalized Veterans.
First use 1942.

COLLECTIVE MEMBERSHIP MARKS

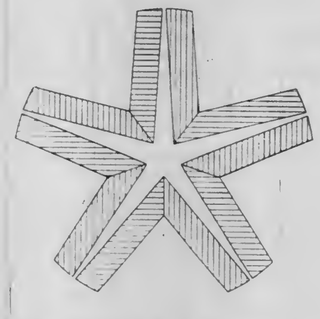
Class 200

SN 233,550. American Institute of Ultrasonics in Medicine, Los Angeles, Calif. Filed Nov. 2, 1965.

AMERICAN INSTITUTE OF ULTRASONICS IN MEDICINE

For Indicating Membership in Applicant.
First use August 1953.

SN 237,185. Young Republican National Federation, Washington, D.C. Filed Jan. 24, 1966.



The drawing is lined for red and blue.
For Indicating Membership in the Association.
First use Sept. 25, 1965.

CERTIFICATION MARKS

Class A — Goods

SN 220,637. The Clay Products Association of the Southwest, Inc., Austin, Tex. Filed June 8, 1965.

CP Carefree Village

The mark certifies that the homes to which the mark is applied and used in connection with, are constructed of eight-inch cavity wall brick manufactured by members of the Clay Products Association of the Southwest or other manufacturers in the States of Texas and Arkansas and meets minimum specifications established by the applicant as to material, mode of manufacture, and quality. Owner of Reg. No. 764,518.

For Brick Homes.

First use Nov. 5, 1964.

SN 233,225. Southern Counties Gas Company of California, Los Angeles, Calif. Filed Nov. 22, 1965.

Balanced Power Homes

Applicant hereby disclaims exclusive right to the use of the words "Balanced Power Homes" in connection with the use of the within mark. The mark certifies that the homes to which the mark is applied, or the plans and specifications therefor, conform to certain minimum standards and specifications as to the use of both natural gas and electricity and gas and electric appliances as set forth in applicant's Balanced Power Homes program, a nation-wide program of applicant to promote the use of gas appliances in homes.

For Homes.

First use February 1961.

SN 233,227. Southern Counties Gas Company of California, Los Angeles, Calif. Filed Nov. 22, 1965.



The mark certifies that the homes to which the mark is applied, or the plans and specifications therefor, conform to certain minimum standards and specifications as to the use of both natural gas and electricity and gas and electric appliances as set forth in applicant's Balanced Power Homes program, a nation-wide program of applicant to promote the use of gas appliances in homes.

For Homes.

First use February 1961.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

818,073. CEGEMIX. Compagnie Generale d'Electricite. SN 213,414. Pub. 8–23–66. Filed 3–5–65.

818,074. PENNINGTON GREEN AND DESIGN. Pennington Grain & Seed, Inc. SN 227,200. Pub. 8–23–66. Filed 8–30–65.

818,075. GREENFIELD. Eli Lilly and Company. SN 229,532. Pub. 8–23–66. Filed 10–7–65.

818,076. FROM THE HAND OF THE VETERINARIAN TO RESEARCH. Charles River Breeding Laboratories, Inc. SN 229,945. Pub. 8–23–66. Filed 10–12–65.

818,077. MAR-VALS. Marble Products Company of Georgia, d.b.a. Marble Products Company. SN 235,921. Pub. 8–23–66. Filed 1–6–66.

818,078. AAB. Anthony A. Buford, d.b.a. Buford Polled Hereford Farms. SN 235,955. Pub. 8–23–66. Filed 1–7–66.

818,079. COMET. Moore & Munger. SN 236,279. Pub. 8–23–66. Filed 1–12–66.

818,080. 909. The Dow Chemical Company. SN 236,476. Pub. 8–23–66. Filed 1–14–66.

818,081. ADMINO. Archer-Daniels-Midland Company. SN 236,706. Pub. 8–23–66. Filed 1–18–66.

818,082. BENAQUA. National Lead Company. SN 237,866. Pub. 8–23–66. Filed 2–2–66.

818,083. KOBAH. The Veneko Corporation. MULTIPLE CLASS (Classes 1 and 22). SN 237,909. Pub. 8–23–66. Filed 2–3–66.

818,084. NIMBUS. The General Tire & Rubber Company. SN 239,143. Pub. 8–23–66. Filed 2–18–66.

818,085. VANTRESS. Vantress Farms, Inc. SN 239,840. Pub. 8–23–66. Filed 2–28–66.

818,086. GFC. General Foam Corporation. SN 240,602. Pub. 8–23–66. Filed 3–10–66.

818,087. MINICEL. Haveg Industries, Inc. SN 240,607. Pub. 8–23–66. Filed 3–10–66.

Class 2 — Receptacles

818,088. DISPOSABLE TABLEWARE BY CONEX AND DESIGN. Illinois Tool Works Inc. SN 216,954. Pub. 8–30–66. Filed 4–20–65.

818,089. FRIGID PAK. Milprint, Inc. MULTIPLE CLASS (Classes 2 and 37). SN 217,968. Pub. 11–16–65. Filed 5–4–65.

818,090. WENDY. Kaymar Paper Company, Inc. SN 230,165. Pub. 8–23–66. Filed 10–14–65.

818,091. THE BACOVA GUILD ORIGINAL AND DESIGN. Malcolm Hirsh, d.b.a. The Bacova Guild. MULTIPLE CLASS (Classes 2, 13, 22, 32, 34, and 50). SN 231,873. Pub. 8–23–66. Filed 11–1–65.

818,092. ST. REGIS. St. Regis Paper Company. SN 234,300. Pub. 8–23–66. Filed 12–9–65.

818,093. ST. REGIS. St. Regis Paper Company. SN 234,301. Pub. 8–23–66. Filed 12–9–65.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

818,094. VISTRAM AND DESIGN. Farbenfabriken Bayer Aktiengesellschaft. SN 234,189. Pub. 8–23–66. Filed 12–8–65.

Class 4 — Abrasives and Polishing Materials

818,095. AMER-REZ. American-Lincoln Corporation. SN 229,483. Pub. 8–23–66. Filed 10–7–65.

Class 5 — Adhesives

818,096. SCP AND DESIGN. Standard Chemical Products, Inc. MULTIPLE CLASS (Classes 5, 6, and 52). SN 164,072. Pub. 8–23–66. Filed 3–6–63.

818,097. HQM. Harvest Queen Mill & Elevator Company. SN 194,610. Pub. 8–23–66. Filed 6–1–64.

818,098. GOLD EAGLE. Morris Feldstein & Son, Inc. SN 225,133. Pub. 8–23–66. Filed 8–6–65.

818,099. UDS. United Distributors Service, Inc., d.b.a. United Distributors Service. SN 227,785. Pub. 8–23–66. Filed 9–14–65.

Class 6 — Chemicals and Chemical Compositions

818,096. (See Class 5 for this trademark.)

818,100. DRI-PAK. Speed-O-Print Business Machines Corporation. SN 207,666. Pub. 8–23–66. Filed 12–7–64.

818,101. TRI-NI. The Udylite Corporation. SN 212,073. Pub. 8–23–66. Filed 2–15–65.

818,102. ALKEN EVEN-FLO. Alken-Murray Corporation. MULTIPLE CLASS (Classes 6, 15, and 52). SN 212,723. Pub. 8–23–66. Filed 2–25–65.

818,103. ALKEN. Alken-Murray Corporation. MULTIPLE CLASS (Classes 6, 15, and 52). SN 212,724. Pub. 8–23–66. Filed 2–25–65.

818,104. LUCKY-MACK. McCall Manufacturing Company, Incorporated. SN 219,801. Pub. 8–23–66. Filed 5–26–65.

818,105. CHEM-I-DROP. Com-Pak Chemical Corporation. SN 226,340. Pub. 8–23–66. Filed 8–24–65.

818,106. GERM-A-SAFE. Aerosol Specialties, Inc. SN 228,237. Pub. 8–23–66. Filed 9–21–65.

818,107. CY-DRIL. American Cyanamid Company. SN 228,311. Pub. 8–23–66. Filed 9–22–65.

818,108. CYANOFOL. American Cyanamid Company. SN 228,597. Pub. 8–23–66. Filed 9–27–65.

818,109. CARB-RITE. Carb-Rite Company. SN 232,523. Pub. 8–23–66. Filed 11–12–65.

818,110. FERROGEN. Foseco International Limited. SN 233,709. Pub. 8–23–66. Filed 12–1–65.

818,111. CUPATIER. Riedel & Co. SN 234,364. Pub. 8–23–66. Filed 12–10–65.

818,112. KA–101. Kaiser Aluminum & Chemical Corporation. SN 234,434. Pub. 8–23–66. Filed 12–13–65.

818,113. SUTRO. Atlas Chemical Industries, Inc. SN 234,618. Pub. 8–23–66. Filed 12–15–65.

818,114. ELMAT AND DESIGN. Elmat Corporation. SN 234,632. Pub. 8–23–66. Filed 12–15–65.

818,115. CYFLO. American Cyanamid Company. SN 234,713. Pub. 8–23–66. Filed 12–16–65.

818,116. CARGUARD. Cargill, Incorporated. SN 234,877. Pub. 8–23–66. Filed 12–20–65.

818,117. GEMASYN. Sandoz, Inc. SN 235,026. Pub. 8–23–66. Filed 12–20–65.

818,118. HECK-CHECK. The Heckerman Corporation. SN 235,103. Pub. 8–23–66. Filed 12–22–65.

818,119. CHECK-IT. The Heckerman Corporation. SN 235,104. Pub. 8–23–66. Filed 12–22–65.

818,120. BASOLON. Badische Anilin- & Soda-Fabrik Aktiengesellschaft. SN 235,258. Pub. 8–23–66. Filed 12–27–65.

818,121. BASOPON. Badische Anilin- & Soda-Fabrik Aktiengesellschaft. SN 235,259. Pub. 8–23–66. Filed 12–27–65.

818,122. CYCLO-FLO. Crowley Tar Products Company Incorporated. SN 235,280. Pub. 8–23–66. Filed 12–27–65.

818,123. CALO-GRAN. Mallinckrodt Chemical Works. SN 235,316. Pub. 8–23–66. Filed 12–27–65.

818,124. DYLOPON. Arkansas Company, Inc. SN 235,382. Pub. 8–23–66. Filed 12–28–65.

818,125. NOCRYSS. West Virginia Pulp and Paper Company. SN 236,858. Pub. 8–23–66. Filed 1–19–66.

818,126. PREGSLIDE. The Denver Chemical Manufacturing Company, d.b.a. Wampole Laboratories. SN 239,238. Pub. 8–23–66. Filed 2–21–66.

818,127. ARLANEX. Lever Brothers Company. SN 239,914. Pub. 8–23–66. Filed 3–1–66.

818,128. WILTROL. National Polychemicals, Inc. SN 242,267. Pub. 8–23–66. Filed 3–30–66.

818,129. DACAGIN. Diamond Alkali Company. SN 244,449. Pub. 8–23–66. Filed 4–28–66.

818,130. "SOURCE-TO-SILO." Diamond Alkali Company. SN 245,049. Pub. 8–23–66. Filed 5–6–66.

Class 8 — Smokers' Articles, Not Including Tobacco Products

818,131. J–2. Japan Gas Lighter Corp. SN 225,873. Pub. 8–23–66. Filed 8–17–65.

Class 10 — Fertilizers

818,132. NITROPOTASH RUSTICA. Ruhr-Stickstoff Aktiengesellschaft. SN 196,809. Pub. 8–23–66. Filed 6–30–64.

818,133. NITROHUMUS AND DESIGN. Kellogg Supply Co., Inc. SN 227,154. Pub. 8–23–66. Filed 9–3–65.

818,134. NITROHUMUS. Kellogg Supply Co., Inc. SN 233,209. Pub. 8–23–66. Filed 11–23–65.

Class 11 — Inks and Inking Materials

818,135. MORR-BRITE. Sun Chemical Corporation. SN 228,849. Pub. 8–23–66. Filed 9–28–65.

818,136. MILLER AND DESIGN. Columbia Ribbon & Carbon Manufacturing Co., Inc. SN 230,613. Pub. 8–23–66. Filed 10–20–65.

818,137. DURACOTE. Columbia Ribbon & Carbon Manufacturing Co., Inc. SN 230,786. Pub. 8–23–66. Filed 10–21–65.

Class 12 — Construction Materials

818,138. COOLCRETE. Edward J. Dees and Harry M. Campbell (partnership), d.b.a. Coolcrete Co. SN 172,647. Pub. 8–23–66. Filed 7–9–63.

818,139. TEXURE. Purity Paint Products Corp. SN 224,883. Pub. 8–23–66. Filed 8–3–65.

818,140. UDS. United Distributors Service, Inc., d.b.a. United Distributors Service. SN 227,786. Pub. 8–23–66. Filed 9–14–65.

818,141. APOC-HITEX AND DESIGN. Asahi Fancy Plywood Company, Limited. SN 229,179. Pub. 8–23–66. Filed 10–4–65.

818,142. CHEM-SEAL AND DESIGN. Woodall Industries, Incorporated. SN 229,323. Pub. 8–23–66. Filed 10–4–65.

818,143. PRISMALITE. Panelboard Manufacturing Company, Inc. SN 234,063. Pub. 8–23–66. Filed 12–6–65.

818,144. ST REGIS. St. Regis Paper Company. SN 243,030. Pub. 8–23–66. Filed 4–8–66.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

818,091. (See Class 2 for this trademark.)

818,145. WH. Wesco Hardware Co. SN 187,219. Pub. 8–23–66. Filed 2–21–64.

818,146. A AND DESIGN. Apparatus Controls. SN 204,949. Pub. 8–23–66. Filed 10–28–64.

818,147. CRAWLER GRIP AND DESIGN. Idealspaten- und Schaufelwalzwerk vorm. Eckardt & Co. GmbH. SN 212,004. Pub. 8–23–66. Filed 2–15–65.

818,148. AEROFAST. Aerofast, Inc., assignee of Jack R. Martens, d.b.a. Aerofast Company. SN 222,726. Pub. 8–23–66. Filed 7–6–65.

818,149. ARCHON. Associated Design Group. SN 236,708. Pub. 8–23–66. Filed 1–18–66.

Class 14 — Metals and Metal Castings and Forgings

818,150. SUN (DESIGN). Gianini Scientific Corporation. SN 212,108. Pub. 8–30–66. Filed 2–16–65.

Class 15 — Oils and Greases

818,102. (See Class 6 for this trademark.)

818,103. (See Class 6 for this trademark.)

818,151. UDS. United Distributors Service, Inc., d.b.a. United Distributors Service. SN 227,787. Pub. 8–23–66. Filed 9–14–65.

818,152. KAYO AND DESIGN. Kayo Oil Company. SN 233,357. Pub. 8–23–66. Filed 11–26–65.

818,153. KAYO. Kayo Oil Company. SN 233,358. Pub. 8–23–66. Filed 11–26–65.

818,154. "SPEEDY" KAYO AND DESIGN. Kayo Oil Company. SN 233,359. Pub. 8–23–66. Filed 11–26–65.

818,155. DUZ-ALL. Frank J. Underwood, d.b.a. Duz-All Oil Company. SN 233,964. Pub. 8–23–66. Filed 12–3–65.

Class 16 — Protective and Decorative Coatings

818,156. STOP LITE. Marcoa International, Inc. SN 236,111. Pub. 8–23–66. Filed 1–10–66.

818,157. TYLINE. Baltimore Paint and Chemical Corporation. SN 236,174. Pub. 8–23–66. Filed 1–11–66.

818,158. REZ-SEAL. The Euclid Chemical Company. SN 236,726. Pub. 8–23–66. Filed 1–18–66.

818,159. WIPETTE. Fish Furniture Shop, Inc. SN 236,741. Pub. 8–23–66. Filed 1–18–66.

818,160. ROCSUEDE. Rock Paint & Chemical Co. SN 237,592. Pub. 8–23–66. Filed 1–28–66.

818,161. STYBAR. Snyder Brothers Company. SN 238,123. Pub. 8–23–66. Filed 2–4–66.

818,162. PYROLAC. Vulcan Lacquer and Coatings Co., Inc. SN 239,092. Pub. 8–23–66. Filed 2–17–66.

818,163. ISO-DEK. Witco Chemical Company, Inc. SN 240,690. Pub. 8–23–66. Filed 3–10–66.

818,164. VEL-SATIN. Geo. D. Wetherill & Co., Inc. SN 241,610. Pub. 8–23–66. Filed 3–22–66.

818,165. SKINFOIL. Ferro Corporation. SN 241,774. Pub. 8–23–66. Filed 3–24–66.

818,166. REVIVE. Wolverine Shoe and Tanning Corporation. SN 242,159. Pub. 8–23–66. Filed 3–29–66.

Class 17 — Tobacco Products

818,167. HIGH-TIME. P. Lorillard Company. SN 240,455. Pub. 8–23–66. Filed 3–8–66.

Class 18 — Medicines and Pharmaceutical Preparations

818,168. PURITAN. Stanley Drug Products, Inc., d.b.a. Puritan Chemical Co. SN 216,107. Pub. 8–23–66. Filed 4–8–65.

818,169. KWIK-AID. Drug Guild Co-Operative, Inc. SN 219,695. Pub. 8–23–66. Filed 5–25–65.

818,170. STYLIZED JI (DESIGN). Johnson Industries, Inc. SN 230,838. Pub. 8–23–66. Filed 10–21–65.

818,171. DEC-INDOCIN. Merck & Co., Inc. SN 232,222. Pub. 8–23–66. Filed 11–5–65.

818,172. GPC-EXPECTORANT. Savage Laboratories, Inc. SN 233,134. Pub. 8–23–66. Filed 11–22–65.

818,173. ORBEDEC. Orbit Pharmaceutical, Inc. SN 235,703. Pub. 8–23–66. Filed 1–3–66.

818,174. LUNASPAS. Orbit Pharmaceutical, Inc. SN 235,706. Pub. 8–23–66. Filed 1–3–66.

818,175. ASMAVERT. Nephron Company. SN 236,194. Pub. 8–23–66. Filed 1–11–66.

818,176. ULTABS. Burlington Pharmacal, Inc. SN 236,314. Pub. 8–23–66. Filed 1–12–66.

818,177. ALCORUB. Purepac Corporation. SN 236,415. Pub. 8–23–66. Filed 1–13–66.

818,178. SOLAGETIC. Carter-Wallace, Inc. SN 236,718. Pub. 8–23–66. Filed 1–18–66.

818,179. SPRAY LIN AND DESIGN. Spray Lin, Inc. SN 237,394. Pub. 8–23–66. Filed 1–26–66.

818,180. ULTRASPAN. Bristol-Myers Company. SN 237,654. Pub. 8–23–66. Filed 2–1–66.

818,181. COLD WHIP. Bristol-Myers Company. SN 238,141. Pub. 8–23–66. Filed 2–1–66.

818,182. FANZIL. Hoffmann-La Roche Inc. SN 241,340. Pub. 8–23–66. Filed 3–18–66.

818,183. CATROPAM. Hoffmann-La Roche Inc. SN 241,341. Pub. 8–23–66. Filed 3–18–66.

818,184. SANAMENTOL. Avelino Maldonado, d.b.a. Lacriolla Food Products Co. SN 241,483. Pub. 8–23–66. Filed 3–21–66.

818,185. ALAVON. Smith Kline & French Laboratories. SN 241,692. Pub. 8–23–66. Filed 3–23–66.

818,186. INBEN. Merck & Co., Inc. SN 242,140. Pub. 8–23–66. Filed 3–29–66.

818,187. DIMENSION. American Home Products Corporation. SN 242,181. Pub. 8–23–66. Filed 3–30–66.

818,188. DMISSION. American Home Products Corporation. SN 242,182. Pub. 8–23–66. Filed 3–30–66.

818,189. MICRO-SPRIN. American Home Products Corporation. SN 242,183. Pub. 8–23–66. Filed 3–30–66.

818,190. HEMOREZE. American Home Products Corporation. SN 242,186. Pub. 8–23–66. Filed 3–30–66.

818,191. BANACALM. American Home Products Corporation. SN 242,187. Pub. 8–23–66. Filed 3–30–66.

818,192. CW (DESIGN). Carter-Wallace, Inc. SN 242,426. Pub. 8–23–66. Filed 4–1–66.

818,193. BETASPAN. Schering Corporation. SN 243,719. Pub. 8–23–66. Filed 4–18–66.

818,194. MICRO-PIRIN. American Home Products Corporation. SN 243,759. Pub. 8–23–66. Filed 4–19–66.

Class 19 — Vehicles

818,195. SHERWOOD AND DESIGN. Interstate Engineering Corporation. SN 220,098. Pub. 8–23–66. Filed 6–1–65.

818,196. WESTLAND. Westland Aircraft Limited. SN 225,623. Pub. 8–23–66. Filed 8–12–65.

818,197. TORBILIZER. Skandia Manufacturing, Inc. SN 226,949. Pub. 8–23–66. Filed 9–1–65.

818,198. UDS. United Distributors Service, Inc., d.b.a. United Distributors Service. SN 227,784. Pub. 8–23–66. Filed 9–14–65.

818,199. REPEL. Ideal Safety Products, Inc. SN 245,875. Pub. 8–23–66. Filed 5–2–66.

Class 21 — Electrical Apparatus, Machines, and Supplies

818,200. HA ETC. AND DESIGN. Hast Associates. SN 184,378. Pub. 10–27–64. Filed 1–10–64.

818,201. FP AND DESIGN. Sigma Instruments, Inc. MULTIPLE CLASS (Classes 21 and 26). SN 186,900. Pub. 10–26–65. Filed 2–17–64.

818,202. OHMICONE. Consolidated Electronics Industries Corp., assignee, by mesne assignment, of Ohmite Manufacturing Company. SN 188,263. Pub. 8–23–66. Filed 3–9–64.

818,203. AS AND DESIGN. Aluminum Specialty Company. MULTIPLE CLASS (Classes 21 and 50). SN 202,000. Pub. 8–23–66. Filed 9–16–64.

818,204. AMPCO. Wells Mfg. Corporation. SN 213,177. Pub. 8–23–66. Filed 3–2–65.

818,205. HOBART. Motor Generator Corporation. SN 219,047. Pub. 8–23–66. Filed 5–17–65.

818,206. METEX. General Cable Corporation. SN 219,980. Pub. 8–23–66. Filed 5–28–65.

818,207. MISCELLANEOUS DESIGN. General Time Corporation. SN 220,094. Pub. 8–23–66. Filed 6–1–65.

818,208. JXP. Air Reduction Company, Incorporated. SN 221,238. Pub. 8–23–66. Filed 6–16–65.

818,209. POW-R-EQUIP. John R Parts Company, assignee of Aimpro, Inc. SN 227,663. Pub. 8–23–66. Filed 9–13–65.

818,210. UDS. United Distributors Service, Inc., d.b.a. United Distributors Service. SN 227,788. Pub. 8–23–66. Filed 9–14–65.

818,211. CH-AMP. AMP Incorporated. SN 227,911. Pub. 8–23–66. Filed 9–16–65.

818,212. LO-CON. Russell & Stoll Company, Inc. SN 228,407. Pub. 8–23–66. Filed 9–22–65.

818,213. TENSOR. Tensor Corporation. SN 228,850. Pub. 8–23–66. Filed 9–28–65.

Class 22 — Games, Toys, and Sporting Goods

818,083. (See Class 1 for this trademark.)

818,091. (See Class 2 for this trademark.)

818,214. DOLPHIN. Sportsways, Inc. SN 214,574. Pub. 8–23–66. Filed 3–19–65.

818,215. EXECUTIVE 300 BY EBONITE. Stowe-Woodward, Inc. SN 217,967. Pub. 8–23–66. Filed 5–3–65.

818,216. BEETLE-CLACKER GO-GO-GO. Sky-Way Products, Inc. SN 230,912. Pub. 8–23–66. Filed 10–21–65.

818,217. CALAMITY JIDDLE. Mattel, Inc. SN 231,441. Pub. 8–23–66. Filed 10–23–65.

813,218. GRETA GRIDDLE. Mattel, Inc. SN 231,445. Pub. 8–23–66. Filed 10–23–65.

818,219. LIDDLE DIDDLE. Mattel, Inc. SN 231,446. Pub. 8–23–66. Filed 10–23–65.

818,220. LOLA LIDDLE. Mattel, Inc. SN 231,448. Pub. 8–23–66. Filed 10–23–65.

818,221. FLORENCE NIDDLE. Mattel, Inc. SN 231,449. Pub. 8–23–66. Filed 10–23–65.

818,222. FALCON. Jas. D. Easton, Inc. SN 233,256. Pub. 8–23–66. Filed 11–24–65.

818,223. NEMROD BY SEAMLESS. Rexall Drug and Chemical Company, d.b.a. The Seamless Rubber Company. SN 233,826. Pub. 8–23–66. Filed 12–2–65.

818,224. SPIN OUT. Parker Brothers, Inc. SN 242,385. Pub. 8–23–66. Filed 3–31–66.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

818,225. TRIUMPH LION-BRAND ETC. AND DESIGN. Manufacture Belge d'Aiguilles. SN 163,198. Pub. 8–23–66. Filed 2–20–63.

818,226. VITTLE VENDOR. Star Metal Corporation. SN 192,764. Pub. 8–23–66. Filed 5–5–64.

818,227. "KEY REGISTERED." Jas. H. Matthews & Co. SN 192,921. Pub. 8–23–66. Filed 5–7–64.

818,228. CENTRISORTER. Bird Machine Company. SN 214,237. Pub. 8–23–66. Filed 3–16–65.

818,229. DOUBLE ENDER. The Miles Standard Corporation. SN 214,355. Pub. 8–23–66. Filed 3–17–65.

818,230. RAVEN EXTEND-O-VEYOR. Raven Mfg. Co., Inc. SN 215,054. Pub. 8–23–66. Filed 4–2–65.

818,231. WHIRL OFF. Robert C. Collins Company. SN 217,008. Pub. 8–23–66. Filed 4–29–65.

818,232. MAGNA-PRESS. Beckett-Harcum Company. SN 219,844. Pub. 8–23–66. Filed 5–27–65.

818,233. CHLORO GUARD AND DESIGN. Chloro-Guard Electronics. SN 221,543. Pub. 5–24–66. Filed 6–18–65.

818,234. AIR-WAY. American Chain & Cable Company, Inc. SN 221,879. Pub. 8–23–66. Filed 6–24–65.

818,235. LANCO LIKWIFIER. Lanco Products Corporation. SN 225,576. Pub. 8–23–66. Filed 8–12–65.

818,236. UDS. United Distributors Service, Inc., d.b.a. United Distributors Service. SN 227,789. Pub. 8–23–66. Filed 9–14–65.

818,237. ONEIDA AND DESIGN. Oneida Ltd. SN 228,743. Pub. 8–23–66. Filed 9–27–65.

818,238. R AND DESIGN. Rollem Corporation of America. SN 229,680. Pub. 8–23–66. Filed 10–8–65.

818,239. SPACEMAKER. NRM Corporation. SN 231,197. Pub. 8–23–66. Filed 10–22–65.

818,240. PUNCHODEX. Zephyr American Corporation. SN 233,427. Pub. 8–23–66. Filed 11–26–65.

818,241. UNCLE HENRY. Imperial Knife Associated Companies, Inc. SN 233,506. Pub. 8–23–66. Filed 11–29–65.

818,242. DIE-VIDER. Mahaffy & Harder Engineering Company. SN 233,510. Pub. 8–23–66. Filed 11–29–65.

818,243. E-Z TEX. Essick Manufacturing Company. SN 233,555. Pub. 8–23–66. Filed 11–26–65.

818,244. VERSI-TROWEL. Walter E. Selck and Co. SN 233,639. Pub. 8–23–66. Filed 11–30–65.

818,245. MK. Merkle-Korff Gear Co. SN 233,725. Pub. 8–23–66. Filed 12–1–65.

818,246. SCHIMANEK. Schimanek Brothers KG. SN 233,834. Pub. 8–23–66. Filed 12–2–65.

818,247. WABCO AND DESIGN. Westinghouse Air Brake Company. SN 234,692. Pub. 8–23–66. Filed 12–15–65.

818,248. DICTAPHONE. Dictaphone Corporation. SN 236,065. Pub. 8–23–66. Filed 1–10–66.

Class 24 — Laundry Appliances and Machines

818,249. . . . PUT YOUR RELIANCE ON A P.S. APPLIANCE AND DESIGN. The Proctor-Silex Corporation. SN 228,566. Pub. 8–23–66. Filed 9–24–65.

Class 26 — Measuring and Scientific Appliances

818,201. (See Class 21 for this trademark.)

818,250. SUMLOG. VDO Tachometer Werke Adolf Schindling GmbH., assignee of Rune Kock. SN 129,371. Pub. 8–23–66. Filed 10–6–61.

818,251. OMEGA. Omega Engineering, Inc. SN 207,975. Pub. 9–21–65. Filed 12–11–64.

Class 27 — Horological Instruments

818,252. EXACTRON. Bulova Watch Company, Inc. SN 232,898. Pub. 8–23–66. Filed 11–18–65.

Class 28 — Jewelry and Precious-Metal Ware

818,253. ONEIDA AND DESIGN. Oneida Ltd. SN 228,742. Pub. 8–23–66. Filed 9–27–65.

818,254. PERSONAL TOUCH. D. Klein & Son, Inc. SN 232,404. Pub. 8–23–66. Filed 11–9–65.

Class 29 — Brooms, Brushes, and Dusters

818,255. KANEBO. Kanegafuchi Boseki Kabushiki Kaisha, d.b.a. Kanegafuchi Spinning Co., Ltd. SN 224,206. Pub. 8–23–66. Filed 7–26–65.

818,256. SKID-BRUSH. Skid's Brushes Inc. SN 231,248. Pub. 8–23–66. Filed 10–22–65.

818,257. POLY-PAINTER. Art & Sign Brush Mfg. Corp. SN 231,975. Pub. 8–23–66. Filed 11–2–65.

818,258. PRIORITY "100." Hanlon & Goodman Company. SN 232,402. Pub. 8–23–66. Filed 11–9–65.

818,259. COILEX. Keystone Plastics, Inc. SN 232,463. Pub. 8–23–66. Filed 11–10–65.

Class 30 — Crockery, Earthenware, and Porcelain

818,260. ROYAL SPHINX ETC. AND DESIGN. N.V. Koninklijke Sphinx Ceramique V.H. Petrus Regout, d.b.a. Royal Sphinx Ceramique. SN 190,021. Pub. 8–23–66. Filed 3–31–64.

818,261. LENOX. Lenox, Incorporated. SN 230,667. Pub. 8–23–66. Filed 10–20–65.

818,262. MEMORY LANE. Royal China, Inc. SN 232,598. Pub. 8–23–66. Filed 11–12–65.

Class 31 — Filters and Refrigerators

818,263. WATERITE. Kelly Well Company, Inc. SN 183,073. Pub. 8–23–66. Filed 12–16–63.

Class 32 — Furniture and Upholstery

818,091. (See Class 2 for this trademark.)

818,264. DAUPHINE. Califoam Corporation of America. SN 215,175. Pub. 8–23–66. Filed 3–29–65.

818,265. CCA AND DESIGN. Califoam Corporation of America. SN 215,176. Pub. 8–23–66. Filed 3–29–65.

818,266. HEART O' FOAM. Califoam Corporation of America. SN 224,508. Pub. 8–23–66. Filed 7–29–65.

818,267. E-Z-ZIBIT. Richard L. Nordstrom, d.b.a. Display-Pak. SN 234,835. Pub. 8–23–66. Filed 12–17–65.

818,268. CEE AND DESIGN. Carr Engineering Corporation. SN 234,879. Pub. 8–23–66. Filed 12–20–65.

818,269. TRU-BALANCE. Palmer Bedding Company. SN 234,929. Pub. 8–23–66. Filed 12–20–65.

818,270. ORTHOBALANCE. Palmer Bedding Company. SN 234,930. Pub. 8–23–66. Filed 12–20–65.

818,271. D.D.F. Hickory Tavern Furniture, Inc. SN 235,067. Pub. 8–23–66. Filed 12–20–65.

818,272. GOLDEN CARE. Mattress Warehouse, Inc. SN 235,114. Pub. 8–23–66. Filed 12–22–65.

818,273. ACCENT. Invincible Metal Furniture Company. SN 235,194. Pub. 8–23–66. Filed 12–23–65.

818,274. CASTILLO. Simmons Company. SN 235,346. Pub. 8–23–66. Filed 12–27–65.

818,275. HUSH-A-BOOTH. Korfund Dynamics Corporation. SN 235,994. Pub. 8–23–66. Filed 1–7–66.

818,276. SLEEPERATOR. Spartan Enterprises, Inc. SN 236,019. Pub. 8–23–66. Filed 1–7–66.

818,277. WHITE. White Furniture Company. SN 243,290. Pub. 8–23–66. Filed 4–13–66.

818,278. WHITE. White Furniture Company. SN 243,366. Pub. 8–23–66. Filed 4–13–66.

818,279. WHITE AND DESIGN. White Furniture Company. SN 243,367. Pub. 8–23–66. Filed 4–13–66.

818,280. VICON. The Valtronic Corporation. SN 245,045. Pub. 8–23–66. Filed 5–6–66.

Class 34 — Heating, Lighting, and Ventilating Apparatus

818,091. (See Class 2 for this trademark.)

818,281. CCI. Contamination Control, Inc. SN 230,791. Pub. 8–23–66. Filed 10–21–65.

818,282. FERTL-AIRE. Master Consolidated Inc. SN 231,438. Pub. 8–23–66. Filed 10–23–65.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

818,283. FITZGERALD. The Fitzgerald Manufacturing Company. SN 221,591. Pub. 8–23–66. Filed 6–21–65.

818,284. RAIN-TRAC. Dean R. Hough and George W. Kendall (partnership). SN 225,320. Pub. 8–16–66. Filed 8–9–65.

Class 36 — Musical Instruments and Supplies

818,285. DEVON AND DESIGN. Devon Electronics Corporation. SN 222,833. Pub. 8–23–66. Filed 7–7–65.

Class 37 — Paper and Stationery

818,089. (See Class 2 for this trademark.)

818,286. DUPLI-PRINT AND DESIGN. Max E. Watson, d.b.a. Watson Associates. SN 218,509. Pub. 8–23–66. Filed 5–10–65.

818,287. CURWOOD. Curwood, Inc. SN 227,653. Pub. 8–23–66. Filed 9–13–65.

818,288. WIK-STIK. Micropoint, Inc. SN 228,384. Pub. 8–23–66. Filed 9–22–65.

818,289. VIP AND DESIGN. Valcour Imprinted Papers, Inc. SN 229,151. Pub. 8–23–66. Filed 10–1–65.

818,290. PULL-OPE. Tension Envelope Corporation. SN 229,599. Pub. 8–23–66. Filed 10–7–65.

818,291. T-LAM. Paramount Packaging Corporation. SN 229,675. Pub. 8–23–66. Filed 10–8–65.

818,292. SOFTWINS. Arden-Mayfair, Inc., d.b.a. Mayfair Markets. SN 229,738. Pub. 8–23–66. Filed 10–11–65.

818,293. FAROY. Faroy, Inc. SN 230,041. Pub. 8–23–66. Filed 10–13–65.

818,294. MEDILOG. Creative Packaging, Incorporated. SN 230,136. Pub. 8–23–66. Filed 10–14–65.

818,295. WENDY. Kaymar Paper Company, Inc. SN 230,166. Pub. 8–23–66. Filed 10–14–65.

818,296. STRAUSS STORES AND DESIGN. Strauss Stores Corporation. SN 234,586. Pub. 8–23–66. Filed 12–14–65.

Class 38 — Prints and Publications

818,297. DOWN BEAT NAMM DAILY. John Maher Printing Company. SN 223,136. Pub. 8–23–66. Filed 7–12–65.

818,298. TRIMARK. Cities Service Oil Company. SN 228,632. Pub. 8–23–66. Filed 9–27–65.

818,299. GS AND DESIGN. G & S Bindery, Inc. SN 233,335. Pub. 8–23–66. Filed 11–26–65.

Class 39 — Clothing

818,300. JANCARA. Janie Originals, Inc. SN 171,883. Pub. 3–17–64. Filed 6–26–63.

818,301. BARE ESSENTIAL. Vanity Fair Mills, Inc. SN 211,767. Pub. 2–22–66. Filed 2–10–65.

818,302. THE PROFESSOR HENRY HIGGINS OF MY FAIR LADY. CBS Films Inc. SN 216,565. Pub. 8–23–66. Filed 4–15–65.

818,303. LILY OF FRANCE. Lily of France, Inc. SN 216,708. Pub. 8–23–66. Filed 4–16–65.

818,304. SEPARATE LIVES. Dynasty of Hong Kong Ltd., assignee of Products of Asia Inc. SN 222,970. Pub. 8–23–66. Filed 7–8–65.

818,305. MAPLE LEAF TARTAN. Rotex Limited. SN 223,164. Pub. 5–17–66. Filed 7–12–65.

818,306. A WORLD OF WEAR IN EVERY PAIR. The Atlas Company, d.b.a. The Atlas Co. SN 226,999. Pub. 8–23–66. Filed 9–2–65.

818,307. ATLAS. The Atlas Company, d.b.a. The Atlas Co. SN 227,000. Pub. 8–23–66. Filed 9–2–65.

818,308. MIGHTY ATLAS. The Atlas Company, d.b.a. The Atlas Co. SN 227,114. Pub. 8–23–66. Filed 9–3–65.

818,309. ALICE BLUE JEANS AND DESIGN. The Atlas Company, d.b.a. The Atlas Co. SN 227,472. Pub. 8–23–66. Filed 9–9–65.

818,310. REGAL MATES. Regal Accessories, Inc. SN 227,872. Pub. 8–23–66. Filed 9–15–65.

818,311. ROBBIE RIVERS. Bobbie Brooks, Incorporated. SN 228,240. Pub. 8–23–66. Filed 9–21–65.

818,312. LADY MAVERICK. Blue Bell, Inc. SN 229,190. Pub. 8–23–66. Filed 10–4–65.

818,313. DRY ICE. Sportville Mens Wear, Inc. SN 229,304. Pub. 8–23–66. Filed 10–4–65.

818,314 CIELLA. S. Augstein & Co., Inc. SN 230,024. Pub. 8-23-66. Filed 10-13-65.

818,315. Q AND DESIGN. Quabaug Rubber Company. SN 230,288. Pub. 8-23-66. Filed 10-15-65.

818,316. CARIOCA! Caressa, Inc. SN 230,508. Pub. 8-23-66. Filed 10-19-65.

818,317. ION-LESS. Eagle Bros., Inc. SN 233,329. Pub. 8-23-66. Filed 11-26-65.

818,318. JUNIOR WEST AND DESIGN. Junior West, Inc. SN 233,355. Pub. 8-23-66. Filed 11-26-65.

818,319. FARA WHITE. Farah Manufacturing Company, Inc. SN 233,890. Pub. 8-23-66. Filed 12-3-65.

818,320. MAGICONTOUR. Melville Shoe Corporation. SN 234,450. Pub. 8-23-66. Filed 12-13-65.

818,321. IRON WITH LIGHTNING BOLT (DESIGN). Blue Bell, Inc. SN 235,953. Pub. 8-23-66. Filed 1-7-66.

818,322. VIVA. Superba Cravats, Inc. SN 236,666. Pub. 8-23-66. Filed 1-17-66.

818,323. SKYLARK. Superba Cravats, Inc. SN 236,667. Pub. 8-23-66. Filed 1-17-66.

818,324. MULLENAIRE. J. R. McMullen Company, Inc. SN 236,836. Pub. 8-23-66. Filed 1-19-66.

818,325. TEMPO. The Joseph & Feiss Company. SN 240,099. Pub. 8-23-66. Filed 3-3-66.

Class 40 — Fancy Goods, Furnishings, and Notions

818,326. DOLLY BOWS BY FLOWER STYLE ORIGINALS AND DESIGN. Flower Style Originals, Inc. SN 221,034. Pub. 8-23-66. Filed 6-14-65.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

818,327. LOOMPRIDE. Kausas City White Goods Manufacturing Company. SN 229,013. Pub. 8-23-66. Filed 9-30-65.

818,328. CLED AND DESIGN. Société a Responsabilité Limitée dite Textile du Vermandois. SN 231,254. Pub. 8-23-66. Filed 10-22-65.

818,329. WOMEN MAKE HISTORY. J. P. Stevens & Co., Inc. SN 235,133. Pub. 8-23-66. Filed 12-22-65.

818,330. NEXUS. Burlington Industries, Inc. SN 235,159. Pub. 8-23-66. Filed 12-23-65.

818,331. DESERT ROSE. The Procter & Gamble Company. SN 235,223. Pub. 8-23-66. Filed 12-23-65.

818,332. FROSTY FLUFF. Benrose Fabrics Corporation. SN 235,547. Pub. 8-23-66. Filed 12-30-65.

Class 43 — Thread and Yarn

818,333. COURTAULDS. Courtaulds Limited. SN 226,628. Pub. 8-23-66. Filed 8-27-65.

818,334. ETINCELLE. Filatures Prouvost & Cie la Lainiere de Roubaix. SN 235,645. Pub. 8-23-66. Filed 1-3-66.

818,335. FLANERIE. Filatures Prouvost & Cie la Lainiere de Roubaix. SN 235,646. Pub. 8-23-66. Filed 1-3-66.

818,336. HERISSE. Filatures Prouvost & Cie la Lainiere de Roubaix. SN 235,647. Pub. 8-23-66. Filed 1-3-66.

818,337. CORRIDA. Filatures Prouvost & Cie la Lainiere de Roubaix. SN 235,650. Pub. 8-23-66. Filed 1-3-66.

818,338. BANQUISE. Filatures Prouvost & Cie la Lainiere de Roubaix. SN 235,651. Pub. 8-23-66. Filed 1-3-66.

818,339. MEPHISTO. Filatures Prouvost & Cie la Lainiere de Roubaix. SN 235,653. Pub. 8-23-66. Filed 1-3-66.

818,340. LA HOULE. Filatures Prouvost & Cie la Lainiere de Roubaix. SN 235,655. Pub. 8-23-66. Filed 1-3-66.

818,341. RITOURNELLE. Filatures Prouvost & Cie la Lainiere de Roubaix. SN 235,656. Pub. 8-23-66. Filed 1-3-66.

818,342. POUDREUSE. Filatures Prouvast & Cie la Lainiere de Roubaix. SN 235,658. Pub. 8-23-66. Filed 1-3-66.

Class 44 — Dental, Medical, and Surgical Appliances

818,343. FLUFF-SEAL. Diana Manufacturing Company. SN 231,742. Pub. 8-23-66. Filed 10-28-65.

818,344. HEMO-CLAMP. Edward Weck & Company, Inc. SN 231,867. Pub. 8-23-66. Filed 10-29-65.

818,345. ACROTONE. Acrodent Limited. SN 234,870. Pub. 8-23-66. Filed 12-20-65.

Class 45 — Soft Drinks and Carbonated Waters

818,346. PIXIE. Sunline, Inc. SN 230,100. Pub. 8-23-66. Filed 10-13-65.

818,347. SLAP HAPPY. Morton Foods, Inc. SN 237,470. Pub. 8-23-66. Filed 1-27-66.

Class 46 — Foods and Ingredients of Foods

818,348. WIMPY AND DESIGN. Wimpy International, Inc. SN 177,938. Pub. 8-23-66. Filed 9-27-63.

818,349. DHARMA. Certified Products Company. SN 192,267. Pub. 8-23-66. Filed 4-29-64.

818,350. FLAVORICH. Universal Foods Corporation. SN 201,982. Pub. 8-23-66. Filed 9-15-64.

818,351. TASTEMAKER. John A. Dey, d.b.a. Virgin Island Spices. SN 206,007. Pub. 8-23-66. Filed 11-12-64.

818,352. BROASTED CHICKEN. The Broaster Co. SN 207,193. Pub. 8-23-66. Filed 12-1-64.

818,353. CIELO CELESTE. Anthony Castello, d.b.a. Castello Packing Company. SN 209,840. Pub. 8-23-66. Filed 1-13-65.

818,354. GAINES-PATTIES. General Foods Corporation. SN 210,555. Pub. 8-23-66. Filed 1-25-65.

818,355. PIRATE. Wards Cove Packing Co., Inc. SN 213,173. Pub. 8-23-66. Filed 3-2-65.

818,356. RED CROWN. Wards Cove Packing Co., Inc. SN 213,175. Pub. 8-23-66. Filed 3-2-65.

818,357. FISH 'N CHIPS DELIGHT. Chicken Delight, Inc. SN 219,182. Pub. 8-23-66. Filed 5-19-65.

818,358. QUISP. The Quaker Oats Company. SN 221,296. Pub. 7-26-66. Filed 6-16-65.

818,359. FLAVOR PLUS. Food Plus, Inc. SN 221,491. Pub. 8-23-66. Filed 6-18-65.

818,360. STAR PREMIUM. Manhattan Coffee Company, assignee, by mesne assignment, of Star Coffee Company. SN 221,650. Pub. 8-23-66. Filed 6-21-65.

818,361. PRO-LIX. Rico Liquids, Inc. SN 223,260. Pub. 8-23-66. Filed 7-13-65.

818,362. WENDY. Kaymar Paper Company, Inc. SN 230,167. Pub. 8-23-66. Filed 10-14-65.

818,363. MISCELLANEOUS DESIGN. The Pillsbury Company. SN 230,888. Pub. 8-23-66. Filed 10-21-65.

818,364. THINSHELL MR. TWIST AND DESIGN. Lusk Candy Company. SN 231,158. Pub. 8-16-66. Filed 10-22-65.

818,365. DISCO-TEEN. Philadelphia Chewing Gum Corporation. SN 231,206. Pub. 8-23-66. Filed 10-22-65.

818,366. BULL FROG. Winter Garden Citrus Growers Association. SN 232,884. Pub. 8-23-66. Filed 11-17-65.

818,367. PEN AND QUILL AND DESIGN. Rod's Food Products, Inc., d.b.a. Pen and Quill. SN 233,529. Pub. 8-23-66. Filed 11-29-65.

818,368. BOWL PAC. Kellogg Company. SN 233,601. Pub. 8-23-66. Filed 11-30-65.

818,369. GRAND WAY. The Grand Union Company. SN 233,799. Pub. 8-23-66. Filed 12-2-65.

818,370. DANDY. Blue Ribbon Rice Mills, Inc. SN 233,869. Pub. 8-23-66. Filed 12-3-65.

818,371. METRECAL. Mead Johnson & Company. SN 234,136. Pub. 8-23-66. Filed 12-7-65.

818,372. GRANADA. Gangi Bros. Packing Company, d.b.a. Gangi Bros. Packing Co. SN 234,160. Pub. 8-23-66. Filed 12-7-65.

818,373. SERRA MISSION. Gangi Bros. Packing Company, d.b.a. Gangi Bros. Packing Co. SN 234,161. Pub. 8-23-66. Filed 12-7-65.

818,374. DUTCH BOY AND DUTCH GIRL (DESIGN). Van Brode Milling Co., Inc. SN 234,315. Pub. 8-23-66. Filed 12-9-65.

818,375. SATIN GOLD. The Miami Margarine Company. SN 234,451. Pub. 8-23-66. Filed 12-13-65.

818,376. SUPER-TASTE AND DESIGN. Piggly Wiggly Operators' Warehouse, Inc. SN 234,458. Pub. 8-23-66. Filed 12-13-65.

818,377. MARTINSON'S. Beech-Nut Life Savers, Inc., d.b.a. Martinson's Coffee. SN 234,502. Pub. 8-23-66. Filed 12-13-65.

818,378. OVENCROCK. Clark Foods Limited. SN 234,540. Pub. 8-23-66. Filed 12-14-65.

818,379. FUNNY FACES (DESIGN). The Pillsbury Company. SN 234,934. Pub. 8-23-66. Filed 12-20-65.

818,380. RIBOSALT. Takeda Chemical Industries, Ltd. SN 234,953. Pub. 8-23-66. Filed 12-20-65.

818,381. COCK O' THE WALK AND DESIGN. Tri-Valley Growers. SN 234,957. Pub. 8-23-66. Filed 12-20-65.

818,382. TWIN-O. United Biscuit Company of America. SN 234,963. Pub. 8-23-66. Filed 12-20-65.

818,383. KEEBS. United Biscuit Company of America. SN 234,964. Pub. 8-23-66. Filed 12-20-65.

818,384. SPAN. United Biscuit Company of America. SN 234,966. Pub. 8-23-66. Filed 12-20-65.

818,385. SHAMROCKS. United Biscuit Company of America. SN 234,967. Pub. 8-23-66. Filed 12-20-65.

818,386. PITTER PATTER. United Biscuit Company of America. SN 234,968. Pub. 8-23-66. Filed 12-20-65.

818,387. PEG LEGS. United Biscuit Company of America. SN 234,969. Pub. 8-23-66. Filed 12-20-65.

818,388. HASTY TASTIES. United Biscuit Company of America. SN 234,970. Pub. 8-23-66. Filed 12-20-65.

818,389. HA HA. United Biscuit Company of America. SN 234,971. Pub. 8-23-66. Filed 12-20-65.

818,390. SKIP. United Biscuit Company of America. SN 234,972. Pub. 8-23-66. Filed 12-20-65.

818,391. KOW KRUNCH. Allied Mills, Inc. SN 234,987. Pub. 8-23-66. Filed 12-21-65.

818,392. TAIL CURLER ROCKETS. Allied Mills, Inc. SN 240,052. Pub. 8-23-66. Filed 3-3-66.

818,393. CAVALIERE. Pennsylvania Dutch-Megs, Inc. SN 240,946. Pub. 8-23-66. Filed 3-14-66.

818,394. VALERIE JEAN. R. C. Nicoll, d.b.a. Valerie Jean Date Shop. SN 245,137. Pub. 8-23-66. Filed 5-9-66.

Class 49 — Distilled Alcoholic Liquors

818,395. CANADIAN CHAMP. Blanchard Importing & Distributing Co., Inc. SN 123,404. Pub. 8-23-66. Filed 7-5-61.

818,396. RAMAZZOTTI. Distillerie Fratelli Ramazzotti, S.p.A., d.b.a. Distillerie F.lli Ramazzotti, S.p.A., and F.lli Ramazzotti. SN 225,013. Pub. 8-23-66. Filed 8-5-65.

Class 50 — Merchandise Not Otherwise Classified

818,091. (See Class 2 for this trademark.)

818,203. (See Class 21 for this trademark.)

818,397. VINTAGE. The Valspar Corporation. SN 223,477. Pub. 8-23-66. Filed 7-15-65.

818,398. INARCO AND DESIGN. International Artware Corporation. SN 226,920. Pub. 8-23-66. Filed 9-1-65.

818,399. HANDI KOOL. Rena Bell Hardman, d.b.a. R. B. Hardman Co. SN 234,026. Pub. 8-23-66. Filed 12-6-65.

818,400. HI-CUSHION AND DESIGN. Advertising Mats, Inc. SN 234,163. Pub. 8-23-66. Filed 12-8-65.

818,401. FUTURA. Anderson Electric Corporation. SN 237,794. Pub. 8-23-66. Filed 2-2-66.

Class 51 — Cosmetics and Toilet Preparations

818,402. PETEY PENGUIN. Chas. Pfizer & Co., Inc. SN 214,913. Pub. 8-23-66. Filed 3-24-65.

818,403. LADY EARL. Pure Pharmacal Company. MULTIPLE CLASS (Classes 51 and 52). SN 226,165. Pub. 8-23-66. Filed 8-20-65.

818,404. LADY BRECK. John H. Breck, Inc. SN 226,893. Pub. 8-23-66. Filed 9-1-65.

818,405. U AND DESIGN. MCA Inc. SN 229,830. Pub. 8-23-66. Filed 10-11-65.

818,406. RVPELLENT. Paul B. Elder Company. SN 234,548. Pub. 8-23-66. Filed 12-14-65.

818,407. THANK HEAVEN FOR BABIES. Roesbery Laboratories, Inc. SN 234,936. Pub. 8-23-66. Filed 12-20-65.

818,408. MR. NO GREY. U.S.P. Corporation. SN 235,600. Pub. 8-23-66. Filed 12-30-65.

818,409. DRAMATIQUE. Dorothy Perkins Cosmetics, Inc. SN 236,722. Pub. 8-23-66. Filed 1-18-66.

818,410. TARGET. Target Stores, Inc. SN 237,172. Pub. 8-23-66. Filed 1-24-66.

818,411. REMEDEE. Buty-Wave Products Co. Inc. SN 237,810. Pub. 8-23-66. Filed 2-2-66.

818,412. OILATUM. Stiefel Laboratories, Inc. SN 238,305. Pub. 8-23-66. Filed 2-8-66.

818,413. Pebbles. Gravel Cologne, Inc. SN 238,426. Pub. 8-23-66. Filed 2-9-66.

818,414. SKIN MATE. General Aerosol Corporation. SN 238,513. Pub. 8-23-66. Filed 2-10-66.

818,415. VIENNA WOODS. Wembley, Inc. SN 238,682. Pub. 8-23-66. Filed 2-11-66.

818,416. TYROL. Wembley, Inc. SN 238,684. Pub. 8-23-66. Filed 2-11-66.

818,417. CARTE BLANCHE. Hattie Carnegie, Inc. SN 238,709. Pub. 8-23-66. Filed 2-14-66.

818,418. GLISSANDO. Richard Hudnut. SN 238,738. Pub. 8-23-66. Filed 2-14-66.

818,419. CLOSE-UP. Lever Brothers Company. SN 244,001. Pub. 8-23-66. Filed 4-21-66.

Class 52 — Detergents and Soaps

818,096. (See Class 5 for this trademark.)

818,102. (See Class 6 for this trademark.)

818,103. (See Class 6 for this trademark.)

818,403. (See Class 51 for this trademark.)

818,420. UDS. United Distributors Service, Inc. SN 227,792. Pub. 8-23-66. Filed 9-14-65.

818,421. VIRO-TEC. American Cyanamid Company. SN 232,507. Pub. 8-23-66. Filed 11-12-65.

818,422. SHINE AND DANDY. Bristol-Myers Company. SN 233,871. Pub. 8-23-66. Filed 12-3-65.

818,423. HIGGINS. Higgins Ink Co., Inc. SN 234,200. Pub. 8-23-66. Filed 12-8-65.

818,424. MODERA. Barnes-Hind Laboratories. SN 235,048. Pub. 8-23-66. Filed 12-17-65.

818,425. DETAX. Colgate-Palmolive Company. SN 238,613. Pub. 8-23-66. Filed 2-11-66.

818,426. CONSOL. Consolidated Chemical, Inc. SN 239,126. Pub. 8-23-66. Filed 2-18-66.

818,427. ROLLOFF. Bernard Van Hoose, d.b.a. Van's Chemical Co. SN 239,181. Pub. 8-23-66. Filed 2-18-66.

Service Marks

Class 100 — Miscellaneous

818,428. CONTINENTAL INNS OF AMERICA AND DESIGN. General Hotel Corporation. SN 199,274. Pub. 4-12-66. Filed 8-5-64.

818,429. MCDERMOTT. J. Ray McDermott & Co., Inc. SN 225,045. Pub. 8-23-66. Filed 8-5-65.

Class 101 — Advertising and Business

818,430. A ARGO AND DESIGN. Argo Marine Supply Co., Inc. MULTIPLE CLASS (Classes 101 and 103). SN 221,442. Pub. 8-23-66. Filed 6-18-65.

818,431. MARSUCO AND DESIGN. Marshall Supply & Equipment Company, Inc. SN 223,137. Pub. 8-23-66. Filed 7-12-65.

818,432. PLAY MONEY-PLUS. Creative Marketing, Inc. SN 224,078. Pub. 8-23-66. Filed 7-23-65.

Class 102 — Insurance and Financial

818,433. I AND DESIGN. Intercontinental Leasing, Inc. SN 221,602. Pub. 8-23-66. Filed 6-21-65.

818,434. FARM BUREAU INSURANCE AND DESIGN. American Agricultural Mutual Insurance Company. SN 226,113. Pub. 8-23-66. Filed 8-20-65.

Class 103 — Construction and Repair

818,430. (See Class 101 for this trademark.)

818,435. ACA AND DESIGN. Associated Coin Amusement Co., Inc. SN 227,227. Pub. 8-23-66. Filed 9-7-65.

Class 105 — Transportation and Storage

818,436. ARCHER AND DESIGN. Archer Messenger Service, Inc. SN 203,856. Pub. 8-23-66. Filed 10-13-64.

818,437. MCDERMOTT. J. Ray McDermott & Co., Inc. SN 225,048. Pub. 8-23-66. Filed 8-5-65.

Class 106 — Material Treatment

818,438. REEVEBOND. Reeves Brothers, Inc. SN 221,634. Pub. 8-23-66. Filed 6-21-65.

818,439. AUTO-COLOR. Meisel Photochrome Corporation. SN 227,055. Pub. 8-23-66. Filed 9-2-65.

818,440. AUTO-LINE. Meisel Photochrome Corporation. SN 227,056. Pub. 8-23-66. Filed 9-2-65.

Class 107 — Education and Entertainment

818,441. FLORENCE AND DESIGN. Florence Utt Switchboard Training Systems, Inc. SN 211,139. Pub. 8-23-66. Filed 1-12-65.

818,442. "IT HAPPENED IN AMERICA" THE SECRETS TO SUCCESS. Larry L. Stewart & Associates, Inc. SN 217,799. Pub. 8-23-66. Filed 4-30-65.

818,443. THE ESCORTS. Clarence Nicholas Colleran, Jr. SN 224,936. Pub. 8-23-66. Filed 8-4-65.

Collective Membership Marks

Class 200

818,444. H.R.E.I.A. ETC. AND DESIGN. Hotel and Restaurant Employees and Bartenders International Union. SN 207,721. Pub. 8-23-66. Filed 12-8-64.

818,445. FTD ETC. AND DESIGN. Florists' Transworld Delivery Association. SN 236,982. Pub. 8-23-66. Filed 1-21-66.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

SECTION 1

(Combined Certificates)

818,475. John H. Breck, Inc., Springfield, Mass. SN 205,225. Filed P.R. 11-2-64; Am. S.R. 9-8-66.

Pre-Lightener

Class 51—Cosmetics and Toilet Preparations

For Hair Rinse, Hair Tint and Hair Lightener Preparations.

Class 52—Detergents and Soaps

For Hair Shampoo.

First use Oct. 13, 1964.

SECTION 2

Class 1 — Raw or Partly Prepared Materials

818,446. Polytron Company, Richmond, Calif., assignee of Dayco Corporation, Dayton, Ohio. SN 197,095. Filed P.R. 7-6-64; Am. S.R. 8-4-66.

PolySystems

For Components for Making Foamed-in-Place Plastic Materials.

First use June 11, 1964.

Class 2 — Receptacles

818,447. House of Coins, Elizabeth, N.J. SN 213,319. Filed P.R. 3-4-65; Am. S.R. 6-20-66.

HOUSE OF COINS

For Coin Collectors' Accessories—Namely, Coin Holders, Coin Cases and Trays, etc.

First use on or about Feb. 15, 1965.

Class 4 — Abrasives and Polishing Materials

818,448. Hollywood Shoe Polish Inc., Richmond Hill, N.Y. SN 223,995. Filed P.R. 7-22-65; Am. S.R. 8-29-66.

c'est blanc

"C'est Blanc" is the French equivalent for "it is white."

For Shoe Cleaner and Polisher.

First use June 23, 1965.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

818,449. Dynamit Nobel Aktiengesellschaft, Troisdorf, near Cologne, Germany. SN 174,092. Filed P.R. 7-31-63; Am. S.R. 8-8-66.



Owner of German Reg. No. 743,830, dated Feb. 27, 1960.

For Smokeless Gunpowder.

Class 18 — Medicines and Pharmaceutical Preparations

818,450. Warner-Lambert Pharmaceutical Company, Morris Plains, N.J. SN 209,127. Filed P.R. 12-30-64; Am. S.R. 9-2-66.

STAGE ONE

For Preparation for Symptomatic Relief of Colds.

First use Dec. 18, 1964.

818,451. Warner-Lambert Pharmaceutical Company, Morris Plains, N.J. SN 209,128. Filed P.R. 12-30-64; Am. S.R. 9-2-66.

STAGE TWO

For Preparation for Symptomatic Relief of Colds.

First use Dec. 18, 1964.

Class 22 — Games, Toys, and Sporting Goods

818,452. The Ajac Corporation, Baltimore, Md., assignee of Anthony J. Antonious, Baltimore, Md. SN 219,842. Filed P.R. 5-27-65; Am. S.R. 8-29-66.

TEE-TOTER

For Packet for Holding and Carrying Combination Golf Tee and Multi-Purpose Disc Therefor.

First use Jan. 13, 1965.

Class 38 — Prints and Publications

818,453. Medical Digest, Inc., Northfield, Ill. SN 226,757. Filed P.R. 8-30-65; Am. S.R. 6-24-66.

MODERN UROLOGY

For Controlled Circulation Periodical Publication Presently in the Form of a Pamphlet.

First use May 13, 1965.

818,454. Medical Digest, Inc., Northfield, Ill. SN 226,758. Filed P.R. 8-30-65; Am. S.R. 6-24-66.

MODERN PEDIATRICS

For Controlled Circulation Periodical Publication Presently in the Form of a Pamphlet.

First use May 13, 1965.

818,455. Medical Digest, Inc., Northfield, Ill. SN 226,759. Filed P.R. 8-30-65; Am. S.R. 6-24-66.

MODERN PSYCHIATRY

For Controlled Circulation Periodical Publication Presently in the Form of a Pamphlet.

First use May 13, 1965.

818,456. Medical Digest, Inc., Northfield, Ill. SN 226,760. Filed P.R. 8–30–65; Am. S.R. 6–24–66.

MODERN OBSTETRICS & GYNECOLOGY

For Controlled Circulation Periodical Publication Presently in the Form of a Pamphlet.
First use May 13, 1965.

818,457. Medical Digest, Inc., Northfield, Ill. SN 226,761. Filed P.R. 8–30–65; Am. S.R. 6–24–66.

MODERN DERMATOLOGY

For Controlled Circulation Periodical Publication Presently in the Form of a Pamphlet.
First use May 13, 1965.

818,458. Washington Tapes, Inc., Washington, D.C. SN 227,369. Filed P.R. 9–7–65; Am. S.R. 9–13–66.

WASHINGTON TAPES

Applicant disclaims right to use of "Washington" apart from the mark as shown.
For Printed Pamphlets of Contemporary, Political, Social, Artistic and Economic Interest.
First use Aug. 15, 1965.

818,459. Robert J. Walsh & Co., Inc., Winter Haven, Fla. SN 228,225. Filed P.R. 9–20–65; Am. S.R. 9–7–66.



For Monthly Bulletin.
First use Sept. 5, 1965.

818,460. Free Press Association, Inc., Burlington, Vt. SN 229,645. Filed P.R. 10–8–65; Am. S.R. 8–26–66.

Vermont
The Free Press

For Newspaper Column.
First use Aug. 12, 1965.

818,461. Neurotics Anonymous International Liaison, Inc., Washington, D.C. SN 238,360. Filed P.R. 2–8–66; Am. S.R. 9–9–66.

JOURNAL OF MENTAL HEALTH

For Newsletter.
First use Sept. 1, 1965.

Class 46—Foods and Ingredients of Foods

818,462. The Jolly Rancher, Incorporated, d.b.a. The Candy Cowboys, Wheatridge, Colo. SN 194,617. Filed P.R. 6–1–64; Am. S.R. 8–16–66.

WATERMELON STIX

For Candy.
First use on or about May 1, 1964.

818,463. The Borden Company, New York, N.Y. SN 201,567. Filed P.R. 9–10–64; Am. S.R. 9–2–66.

piquanté

For Prepared Mushrooms.
First use Nov. 1, 1963.

818,464. The Farmers Cooperative Commission Company, Hutchinson, Kans. SN 217,878. Filed P.R. 5–3–65; Am. S.R. 9–7–66.

TREAT-O-WHEAT

For Prepared Bulghour Wheat.
First use Apr. 12, 1965.

818,465. Harvest Brand, Inc., Pittsburg, Kans. SN 223,231. Filed P.R. 7–13–65; Am. S.R. 9–2–66.

SWEET TREET

For Feed for Livestock and Poultry and Also Used as a Feed Ingredient.
First use June 10, 1965.

818,466. Snow-Kist Frozen Foods Corp., Jersey City, N.J. SN 236,849. Filed P.R. 1–19–66; Am. S.R. 8–31–66.

TASTY TATERS

For Frozen Potato Products—Namely, Frozen Potato Puffs, Frozen White Potatoes, and Frozen French Fried Potatoes.
First use on or about Apr. 3, 1962.

Class 49—Distilled Alcoholic Liquors

818,467. Senior & Co., Incorporated, Curacao, Netherlands Antilles. SN 197,511. Filed P.R. 7–9–64; Am. S.R. 6–20–66.



The mark consists of the conformation of a bottle used as the container for applicant's liqueurs.
For Liqueurs.
First use at least as early as February 1949; in commerce at least as early as February 1949.

818,468. Mediterranean Importing Co., Inc., Long Island City, N.Y. SN 228,380. Filed P.R. 9–22–65; Am. S.R. 9–7–66.

PETERSBURG

For Vodka.
First use Apr. 19, 1965.

Class 50—Merchandise Not Otherwise Classified

818,469. G. Heileman Brewing Company, Inc., La Crosse, Wis. SN 221,369. Filed P.R. 6–17–65; Am. S.R. 8–23–66.

Lift Twist

For Caps for Bottles.
First use Sept. 22, 1964.

818,470. Com-Tech, Inc., Beverly Hills, Calif. SN 226,421. Filed P.R. 8–25–65; Am. S.R. 9–6–66.

ID TAPE

For Embossable Pressure-Sensitive Tape Used for Labeling and Marking in Identification Systems.
First use May 19, 1965.

818,471. Robert C. Malicoat, d.b.a. Mal Products, Carmichael, Calif. SN 227,050. Filed P.R. 9–2–65; Am. S.R. 9–6–66.

HANDY CAN HANDLE

Applicant disclaims the right to exclusive use of the words "Can Handle" apart from the mark as shown.
For Attachment for Paint and Other Cans To Assist in Holding the Cans While Using the Contents of the Cans.
First use Aug. 10, 1965.

818,472. Gerard J. Cassedy, Southport, Conn. SN 235,889. Filed 1–6–66.

FLAV-R STRAWS

For Flavored Drinking Straws.
First use Nov. 13, 1964.

Class 51—Cosmetics and Toilet Preparations

818,475. See Section 1 (Combined certificate).

818,473. Clairol Incorporated, New York, N.Y. SN 199,884. Filed P.R. 8–14–64; Am. S.R. 9–7–66.

SEEMS TO SHINE EVEN IN THE DARK

For Hair Color Lotion.
First use Mar. 28, 1961.

818,474. Clairol Incorporated, New York, N.Y. SN 200,074. Filed P.R. 8–18–64; Am. S.R. 9–9–66.

MY HAIR'S GRAY—NOW I LOVE IT THAT WAY!

For Hair Tinting and Coloring Preparations.
First use June 1959.

818,476. Turner Hall Corporation, New York, N.Y. SN 224,128. Filed P.R. 7–23–65; Am. S.R. 9–13–66.

TEMPERATE WAVE

For Cold Permanent Waving Products.
First use June 17, 1965.

818,477. David T. Moose, d.b.a. Andrena Co., San Diego, Calif. SN 226,266. Filed P.R. 8–23–65; Am. S.R. 9–2–66.

PETIT-POUFS

For Balls of Cotton Impregnated With Nail Polish Remover.
First use May 14, 1965.

818,478. Sybil Ives Incorporated, White Plains, N.Y. SN 228,370. Filed P.R. 9–22–65; Am. S.R. 9–16–66.

TIP'N FROST

For Hair Bleaching Powder.
First use Sept 12, 1964.

Class 52 — Detergents and Soaps

818,475. See Section 1 (Combined certificate).

818,479. Dyna-Co., Inc., Wichita, Kans. SN 181,867. Filed P.R. 11-26-63; Am. S.R. 8-26-66.

U-WASH-M

For Additive for Water Used in Washing Motor Vehicles. First use on or about Aug. 17, 1963.

Service Marks

Class 100 — Miscellaneous

818,480. Popular Merchandise Co., Inc., Passaic, N.J. SN 223,821. Filed P.R. 7-20-65; Am. S.R. 9-16-66.

POPULAR TEEN CLUB

For Mail Order Department Store Services Based on Small Groups of Purchasers Formed Into Shopping Clubs. First use April 1965.

818,481. Popular Merchandise Co., Inc., Passaic, N.J. SN 223,822. Filed P.R. 7-20-65; Am. S.R. 9-16-66.

POPULAR SHOPPING CLUB

For Mail Order Department Store Services Based on Small Groups of Purchasers Formed Into Shopping Clubs. First use April 1965.

Class 103 — Construction and Repair

818,482. Dyna-Co., Inc., Wichita, Kans. SN 181,868. Filed P.R. 11-26-63; Am. S.R. 8-26-66.

U WASH M

For Services Provided by Applicant in Car Washing in Providing Equipment and the Establishment for Use by Patrons in Washing Their Cars. First use on or about June 28, 1963.

TRADEMARK REGISTRATIONS RENEWED

50,864. VAN HOUTEN. Cl. 46. 4-3-06.
50,918. H. SAWYER. Cl. 6. 4-3-06.
51,455. SAWYER'S CRYSTAL BLUE. Cl. 6. 3-17-06.
56,280. M.F.A. CO. Cl. 9. 9-4-06.
57,380. STAG (DESIGN). Cl. 14. 11-13-06.
57,391. VELOS. Cl. 14. 11-13-06.
57,450. IMPERIAL AND DESIGN. Cl. 14. 11-13-06.
57,460. IC AND DESIGN. Cl. 14. 11-13-06.
57,461. NV (DESIGN). Cl. 14. 11-13-06.
57,486. Z AND DESIGN. Cl. 14. 11-13-06.
57,612. CAPITAL AND DESIGN. Cl. 14. 11-13-06.
58,701. THE "ALLIGATOR." Cl. 37. 12-25-06.
60,146. WHITE AND DESIGN. Cl. 13. 1-29-07.
213,231. CONTINENTAL. Cl. 26. 5-25-26.
214,131. STONEWALL JACKSON AND DESIGN. Cl. 46. 6-15-26.
214,152. THE YOUTH'S INSTRUCTOR. Cl. 38. 6-15-26.
215,103. HALF MOON AND DESIGN. Cl. 7-13-26.
215,154. TC AND DESIGN. Cl. 52. 7-13-26.
218,002. BESPAKT. Cl. 46. 9-14-26.
219,243. PRINCESS AND DESIGN. Cl. 4. 10-12-26.
219,354. HYTOR. Cl. 23. 10-19-26.
219,547. SPOT LIGHT. Cl. 46. 10-19-26.
219,606. OZEX. Cl. 21. 10-19-26.
219,938. CREMOLAND. Cl. 46. 10-26-26.
219,983. AERTEX. Cl. 39. 10-26-26.
220,289. TRU-TONE. Cl. 37. 11-9-26.
221,621. WHIP-MIX AND DESIGN. Cl. 44. 12-7-26.
221,667. UNITRIM. Cl. 39. 12-7-26.
222,022. GRIMEX. Cl. 52. 12-21-26.
222,157. DG AND EAGLE DESIGN. Cl. 46. 12-21-26.
223,150. UNIDAN. Cl. 23. 1-18-27.
223,174. SYMETRO. Cl. 23. 1-18-27.
223,693. ACROSS THE HALL ACROSS THE CONTINENT. Cl. 2. 2-8-27.
224,183. POLAR STAINLESS STEEL. Cl. 13. 2-22-27.
422,568. GRAND UNION. Cl. 6. 7-30-46.
423,687. ROMA. Cl. 49. 9-10-46.
423,726. CEBEFORTIS. Cl. 18. 9-10-46.
423,867. NATESTRIN. Cl. 18. 9-10-46.
424,035. DEXTROPUR. Cl. 46. 9-17-46.
424,233. CAMOLLIENS. Cl. 18. 9-24-46.
424,332. GRAND UNION. Cl. 52. 10-1-46.
424,442. KITCHEN GARDEN. Cl. 46. 10-8-46.
424,786. CYCLOGESTERIN. Cl. 18. 10-22-46.
425,752. MAGIC COCKLE SHELLS. Cl. 46. 12-3-46.
426,394. B.W. & CO. Cl. 18. 12-24-46.
426,433. BENTHAL. Cl. 6. 12-24-46.
426,737. P AND DESIGN. Cl. 2. 1-7-47.
427,796. MATCH-PATCH. Cl. 35. 2-25-47.
427,829. ADVANCE. Cl. 21. 2-25-47.
427,889. HEAD START. Cl. 46. 2-25-47.

TRADEMARK REGISTRATIONS CANCELED

Section 8

The following registrations issued Sept. 20, 1960

704,419. NSR. Cl. 1.
704,421. IMPERIAL ROSES AND DESIGN. Cl. 1.
704,422. CHANCELLOR CALF. Cl. 1.
704,425. KENTUCKY CINDERELLA COAL AND DESIGN. Cl. 1.
704,427. SPACE AGE. Cl. 1.
704,428. STRAIGHT LACE. Cl. 1.
704,430. SHAWINIGAN RESINS AND DESIGN. Cl. 1.
704,436. THERMOTAN. Cl. 1.
704,439. MAGI-FOAM. Cl. 1.
704,441. PENNTUBE. Cl. 1.
704,448. AIRESKIN. Cl. 1.
704,455. ARTOP. Cl. 5.
704,459. SYMENTARD. Cl. 6.
704,460. QUAKEREST. Cl. 6.
704,464. MILWHITE FOAM BREAKER. Cl. 6.
704,469. K-D-C. Cl. 6.
704,481. GOLDEN BEAUTY. Cl. 7.
704,484. VITA GUANO. Cl. 10.
704,488. PERMA-STRESS. Cl. 12.
704,489. SAGA. Cl. 12.
704,490. REDI-SEAL. Cl. 12.
704,494. COLORWEVE. Cl. 13.
704,496. TWINKLE. Cl. 13.
704,505. NISSEKIWAX. Cl. 15.
704,506. FANCIFUL REPRESENTATION OF A BAT. Cl. 15.
704,512. DISTRA. Cl. 16.
704,515. DYNAMITE. Cl. 16.
704,518. SIOUXLAND "MINI BLOCK." Cl. 18.
704,522. DEPO-BIOSOL. Cl. 18.
704,525. CONI-SEAL THE RED CUP. Cl. 19.
704,527. WANDERER. Cl. 19.
704,531. AMPHIB-A-HOME. Cl. 19.
704,532. REMCO AND DESIGN. Cl. 19.
704,533. TRACKMASTER. Cl. 19.
704,534. DUO. Cl. 19.
704,535. WESTERN FLYER. Cl. 19.
704,538. COLD HEAT AND DESIGN. Cl. 21.
704,542. FLIKA-GLOW. Cl. 21.
704,546. TVX. Cl. 21.
704,548. CRYSTALAIR. Cl. 21.

704,550. MITY-LITE. Cl. 21.
704,551. WORM TURN AND DESIGN. Cl. 22.
704,556. UNDERCOVER. Cl. 22.
704,558. SCHOOLMASTER. Cl. 22.
704,561. WAGON WASHER. Cl. 23.
704,562. BLACK WIDOW. Cl. 23.
704,563. SNOW-FLITE ETC. AND DESIGN. Cl. 23.
704,568. MICROPITCH AND DESIGN. Cl. 23.
704,572. SPRAZALL. Cl. 23.
704,576. NICKEL THIN. Cl. 23.
704,675. CEE-CO AND DESIGN. Cl. 39.
704,680. CORTEZA. Cl. 39.
704,681. SHEEPS-HEAD. Cl. 39.
704,683. PRO LAUN. Cl. 39.
704,685. PEEK-O-KNEES AND DESIGN. Cl. 39.
704,688. C/R AND DESIGN. Cl. 39.
704,690. SECRET HUG. Cl. 39.
704,691. GAINSBORG. Cl. 39.
704,693. KULE-JAK. Cl. 39.
704,694. KULE-JAK AND DESIGN. Cl. 39.
704,617. GAUGE-O-TYPE. Cl. 26.
704,634. KASKADE. Cl. 32.
704,639. SPACEMASTER. Cl. 34.
704,649. HOSTESS HELPERS. Cl. 37.
704,651. MISCELLANEOUS DESIGN. Cl. 37.
704,654. LISTENING POST. Cl. 38.
704,660. HOTEL WORLD-REVIEW AND HOTEL MANAGEMENT. Cl. 38.
704,661. PAY LESS. Cl. 39.
704,663. H. CRAFT. Cl. 39.
704,668. SMILEY U-MAIL 'N. Cl. 39.
704,683. PRO LAUN. Cl. 39.
704,696. NOVEL KNIT. Cl. 40.
704,698. WALLSCAPES. Cl. 42.
704,702. MILCREST. Cl. 42.
704,706. POLY-FIBE. Cl. 43.
704,725. REPRESENTATION OF TWIN TOWERS. Cl. 46.
704,729. PINEBREEZE FARM. Cl. 46.
704,735. PINOCCHIO. Cl. 46.
704,739. OVALTINE. Cl. 46.
704,740. SEVEN SISTERS. Cl. 46.
704,744. ARNOLD AND DESIGN. Cl. 46.
704,745. LA BRONTE. Cl. 47.
704,583. FLIGHT. Cl. 23.
704,598. TACH-PAK. Cl. 26.
704,599. V & VEPHOTA. Cl. 26.
704,600. STL AND DESIGN. Cl. 26.
704,606. JUNIOR. Cl. 26.
704,607. JR. Cl. 26.
704,609. VATIC. Cl. 26.
704,613. TACHETTE. Cl. 26.
704,614. MEZATAP. Cl. 26.
704,616. SHAWMETER. Cl. 26.
704,750. THRIFTY HOSTESS. Cl. 50.
704,751. NECK-LOCK. Cl. 50.
704,752. DESIGN OF POSTER MAN. Cl. 50.
704,753. THE PINK POODLE. Cl. 50.
704,755. MEGEVE. Cl. 51.
704,765. P AND DESIGN. Cl. 100.
704,767. HNI AND DESIGN. Cl. 101.
704,768. THE NUTCRACKER SYSTEM ETC. AND DESIGN. Cl. 101.
704,769. RDCA AND DESIGN. Cl. 101.
704,775. "GOLD SERVICE." Cl. 105.
704,778. DEVELO-PAK AND DESIGN. Cl. 106.
704,780. 7 SECOND DISPLACASE. Cl. 2.
704,785. MASKETTE. Cl. 44.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

244,207. PINEE. Cl. 6. 7-17-28. Julian F. Thornton, doing business as The Pinee Chemical Co. Daly-Herring Company, Kinston, N.C. Amended to appear:

PINEE

582,256. VA AND DESIGN. Cl. 21. 11-10-53. Varian Associates, Palo Alto, Calif. Amended to appear:



602,973. VA AND DESIGN. Cl. 26. 3-8-55. Varian Associates, Palo Alto, Calif. Amended to appear:



650,237. LANDER. Cl. 51. 8-13-57. Lander Co. Inc., doing business as Lander, New York, N.Y. Corrected: In the statement, column 1, line 1, "The" should be deleted.

812,503. UPJOHN VANGUARD OF MEDICINE. Cl. 26. 8-9-66. The Upjohn Company, Kalamazoo, Mich. Corrected: In the statement, column 1, line 6, "process" should be deleted and *progress* should be inserted.

813,296. FASPIN. Cl. 13. 8-23-66. Jack R. Martens, doing business as Aerofast Company. Aerofast, Inc., Wheaton, Ill. Corrected: In the statement, column 1, before line 1, *Aerofast, Inc. (Illinois corporation), 360 Gundersen Drive, Carol Stream, Ill., assignee of* should be inserted.

813,318. RIES' OLD COLONIAL. Cl. 17. 8-23-66. Iwan Ries & Co., Chicago, Ill. Corrected: In the statement, column 1, line 1, before "Co." *&* should be inserted.

814,805. GARDEN-TOX. Cl. 6. 9-13-66. Geigy Chemical Corporation, Ardsley, N.Y. Corrected: In the statement, column 2, line 4, "104,491" should be deleted and *164,491* should be inserted.

INDEX OF REGISTRANTS

NOVEMBER 8, 1966

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

AMP Inc., Harrisburg, Pa. 818,211, pub. 8–23–66. Cl. 21.
Acrodent Ltd., London, England. 818,345, pub. 8–23–66. Cl. 44.
Advance Transformer Co., assor. to Advance Transformer Co., to Advance Transformer Co., Chicago, Ill. 427,829, ren. 11–8–66. Cl. 21.
Advertising Mats, Inc., New York, N.Y. 818,400, pub. 8–23–66. Cl. 50.
Aerofast Co.: *See*—
Aerofast, Inc.
Aerofast, Inc.: *See*—
Martens, Jack R.
Aerofast, Inc., from Jack R. Martens, d.b.a. Aerofast Co., Wheaton, Ill. 818,148, pub. 8–23–66. Cl. 13.
Aerosol Specialities, Inc., Bridgeport, Conn. 818,106, pub. 8–23–66. Cl. 6.
Ahrens Publishing Co., Inc., New York, N.Y. 704,660, canc. Cl. 38.
Aimpro, Inc.: *See*—
Parts, John R., Co.
Air Master Corp., Philadelphia, Pa. 704,490, canc. Cl. 12.
Airpax Products Co., Middle River, Md. 704,598, canc. Cl. 26.
Air Reduction Co., Inc., New York, N.Y. 818,208, pub. 8–23–66. Cl. 21.
Ajac Corp., The, from Anthony J. Antonious, Baltimore, Md. 818,452. Cl. 22.
Aktiebolaget Astra, Apotekarnes Kemiska Fabriker, Sodertalje, Sweden. 704,512, canc. Cl. 16.
Alken-Murray Corp., New York, N.Y. 818,102, pub. 8–23–66. Multiple Class (Classes 6, 15, and 52).
Alken-Murray Corp., New York, N.Y. 818,103, pub. 8–23–66. Multiple Class (Classes 6, 15, and 52).
Allen, Edgar, & Co., Ltd., Sheffield, England. 57,380, ren. 11–8–66. Cl. 14.
Allen, Edgar, & Co., Sheffield, England. 57,450, ren. 11–8–66. Cl. 14.
Allen, Edgar, & Co., Ltd., Sheffield, England. 57,450, ren. 11–8–66. Cl. 14.
Allied Mills, Inc., Chicago, Ill. 818,391, pub. 8–23–66. Cl. 46.
Allied Mills, Inc., Chicago, Ill. 818,392, pub. 8–23–66. Cl. 46.
Aluminum Specialty Co., Manitowoc, Wis. 818,203, pub. 8–23–66. Multiple Class (Classes 21 and 50).
American Agricultural Mutual Insurance Co., Chicago, Ill. 818,434, pub. 8–23–66. Cl. 102.
American Chain & Cable Co., Inc., New York, N.Y. 818,234, pub. 8–23–66. Cl. 23.
American Cyanamid Co., Wayne, N.J. 818,107, pub. 8–23–66. Cl. 6.
American Cyanamid Co., Wayne, N.J. 818,108, pub. 8–23–66. Cl. 6.
American Cyanamid Co., Wayne, N.J. 818,115, pub. 8–23–66. Cl. 6.
American Cyanamid Co., Wayne, N.J. 818,421, pub. 8–23–66. Cl. 52.
American Home Products Corp., New York, N.Y. 818,187, pub. 8–23–66. Cl. 18.
American Home Products Corp., New York, N.Y. 818,188, pub. 8–23–66. Cl. 18.
American Home Products Corp., New York, N.Y. 818,189, pub. 8–23–66. Cl. 18.
American Home Products Corp., New York, N.Y. 818,190, pub. 8–23–66. Cl. 18.
American Home Products Corp., New York, N.Y. 818,191, pub. 8–23–66. Cl. 18.
American Home Products Corp., New York, N.Y. 818,194, pub. 8–23–66. Cl. 18.
American-Lincoln Corp., Toledo, Ohio. 818,095, pub. 8–23–66. Cl. 4.
American-Marietta Co., Chicago, Ill. 704,572, canc. Cl. 23.
American Rack Merchandisers Institute, Chicago, Ill. 704,750, canc. Cl. 50.
Anderson Electric Corp., Leeds, Ala. 818,401, pub. 8–23–66. Cl. 50.
Andrena Co.: *See*—
Moose, David T.
Ansul Chemical Co., Marinette, Wis. 704,469, canc. Cl. 6.
Antonious, Anthony J.: *See*—
Ajac Corp., The.
Apparatus Controls, San Carlos, Calif. 818,146, pub. 8–23–66. Cl. 13.
Archer-Daniels-Midland Co., Minneapolis, Minn. 818,081, pub. 8–23–66. Cl. 1.
Archer Messenger Service, Inc., New York, N.Y. 818,436, pub. 8–23–66. Cl. 105.
Arkansas Co., Inc., Newark, N.J. 818,124, pub. 8–23–66. Cl. 6.
Arden-Mayfair, Inc., d.b.a. Mayfair Markets, Los Angeles, Calif. 818,292, pub. 8–23–66. Cl. 37.
Argo Marine Supply Co., Inc., New York, N.Y. 818,430, pub. 8–23–66. Multiple Class (Classes 101 and 103).
Armour and Co., Chicago, Ill. 704,448, canc. Cl. 1.
Arnold Bakers, Inc., Port Chester, N.Y. 704,744, canc. Cl. 46.
Art & Sign Brush Mfg. Corp., Long Island City, N.Y. 818,237, pub. 8–23–66. Cl. 29.
Artop Products Co.: *See*—
Hinson, Emmett E., Jr.
Asahi Fancy Plywood Co., Osaka, Japan. 818,141, pub. 8–23–66. Cl. 12.
Associated Coin Amusement Co., Inc., Oakland, Calif. 818,435, pub. 8–23–66. Cl. 103.
Associated Design Group, Salt Lake City, Utah. 818,149, pub. 8–23–66. Cl. 13.
Atlas Chemical Industries, Inc., Wilmington, Del. 818,113, pub. 8–23–66. Cl. 6.
Atlas Co., The, d.b.a. The Atlas Co., Ephrata, Pa. 818,306, pub. 8–23–66. Cl. 39.
Atlas Co., The, d.b.a. The Atlas Co., Ephrata, Pa. 818,307, pub. 8–23–66. Cl. 39.
Atlas Co., The, d.b.a. The Atlas Co., Ephrata, Pa. 818,308, pub. 8–23–66. Cl. 39.
Atlas Co., The, d.b.a. The Atlas Co., Ephrata, Pa. 818,309, pub. 8–23–66. Cl. 39.
Attorney General of the United States, Washington, D.C., from Kosaburo Nakayama, Osaka, Japan. 78,895, canc. Cl. 51.
Augstein, S., & Co., Inc., New York, N.Y. 818,314, pub. 8–23–66. Cl. 39.
Auto Union G.m.b.H., Ingolstadt (Danube), Germany. 704,527, canc. Cl. 19.
Bacova Guild, The: *See*—
Hirsh, Malcolm.
Badische Anilin- & Soda-Fabrik Atkiengesellschaft, Ludwigshafen (Rhine), Germany. 818,120, pub. 8–23–66. Cl. 6.
Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. 818,121, pub. 8–23–66. Cl. 6.
Balfour, Arthur, & Co., Ltd.: *See*—
Seebohm & Diekstahl, Ltd.
Baltimore Paint and Chemical Corp., Baltimore, Md. 818,157, pub. 8–23–66. Cl. 16.
Barbara White Decorative Papers: *See*—
Barnes-Hind Laboratories, Sunnyvale, Calif. 818,424, pub. 8–23–66. Cl. 52.
Bean Rubber Mfg. Co., San Jose, Calif. 704,562, canc. Cl. 23.
Beckett-Harcum Co., Wilmington, Ohio. 818,232, pub. 8–23–66. Cl. 23.
Beech-Nut Life Savers, Inc., d.b.a. Martinson's Coffee, New York, N.Y. 818,377, pub. 8–23–66. Cl. 46.
Benrose Fabrics Corp., New York, N.Y. 818,332, pub. 8–23–66. Cl. 42.
Berry Seed Co., Clarinda, Iowa. 704,481, canc. Cl. 7.
Bindery, G & S, Inc., New York, N.Y. 818,299, pub. 8–23–66. Cl. 38.
Bird Machine Co., South Walpole, Mass. 818,228, pub. 8–23–66. Cl. 23.
Bissell Inc., Grand Rapids, Mich. 704,583, canc. Cl. 23.
Blanchard Importing & Distributing Co., Inc., Boston, Mass. 818,395, pub. 8–23–66. Cl. 49.
Bleistiftfabrik vormals Johann Faber Actien-Gesellschaft, Nuremberg, Germany to A. W. Faber-Castell, Nuremberg, Germany. 58,701, ren. 11–8–66. Cl. 37.
Blue Bell, Inc., Greensboro, N.C. 818,312, pub. 8–23–66. Cl. 39.
Blue Bell, Inc., Greensboro, N.C. 818,321, pub. 8–23–66. Cl. 39.
Blue Ribbon Rice Mills, Inc., Houston, Tex. 818,370, pub. 8–23–66. Cl. 46.
Borden Co., The, New York, N.Y. 818,463. Cl. 46.
Bourns, Inc., Riverside, Calif. 704,606, canc. Cl. 26.
Bourns, Inc., Riverside, Calif. 704,607, canc. Cl. 26.
Brandell, John R., d.b.a. Brandell Products Co., Chicago, Ill. 704,551, canc. Cl. 22.
Brandell Products Co.: *See*—
Brandell, John R.
Braniff Airways, Inc., d.b.a. Braniff International Airways, Dallas, Tex. 704,775, canc. Cl. 105.
Braniff International Airways: *See*—
Braniff Airways, Inc.
Breck, John H., Inc., Springfield, Mass. 818,404, pub. 8–23–66. Cl. 51.
Breck, John H., Inc., Springfield, Mass. 818,475. Multiple Class (Classes 51 and 52).
Bristol-Myers Co., New York, N.Y. 818,180, pub. 8–23–66. Cl. 18.
Bristol-Myers Co., New York, N.Y. 818,181, pub. 8–23–66. Cl. 18.
Bristol-Myers Co., New York, N.Y. 818,422, pub. 8–23–66. Cl. 52.
Broaster Co., The, Rockton, Ill. 818,352, pub. 8–23–66. Cl. 46.
Brooks, Bobbie, Inc., Cleveland, Ohio. 818,311, pub. 8–23–66. Cl. 39.
Buford, Anthony A., d.b.a. Buford Polled Hereford Farms, Caledonia, Mo. 818,078, pub. 8–23–66. Cl. 1.
Buford Polled Hereford Farms: *See*—
Buford, Anthony A.
Bulova Watch Co., Inc., Flushing, N.Y. 818,252, pub. 8–23–66. Cl. 27.
Bundy, Earl W., Jr., Erwin, Tenn. 704,609, canc. Cl. 26.

Burlington Industries, Inc., New York, N.Y. 818,330, pub. 8–23–66. Cl. 42.
Burlington Pharmacal, Inc., Burlington, N.C. 818,176, pub. 8–23–66. Cl. 18.
Burroughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, N.Y. 426,394, ren. 11–8–66. Cl. 18.
Buty-Wave Products Co., Inc., Los Angeles, Calif. 818,411, pub. 8–23–66. Cl. 51.
CBS Films Inc., New York, N.Y. 818,302, pub. 8–23–66. Cl. 39.
Cadaco-Ellis, Inc., Chicago, Ill. 704,556, canc. Cl. 22.
Califoam Corp. of America, Compton, Calif. 818,264, pub. 8–23–66. Cl. 32.
Califoam Corp. of America, Compton, Calif. 818,265, pub. 8–23–66. Cl. 32.
Califoam Corp. of America, Compton, Calif. 818,266, pub. 8–23–66. Cl. 32.
Canadian Industries Ltd., Montreal, Quebec, Canada. 704,515, canc. Cl. 16.
Candy Cowboys, The: *See*—
Jolly Rancher, Inc., The.
Carb-Rite Co., Chicago Heights, Ill. 818,109, pub. 8–23–66. Cl. 6.
Caressa, Inc., Miami, Fla. 818,316, pub. 8–23–66. Cl. 39.
Cargill, Inc., Minneapolis, Minn. 818,116, pub. 8–23–66. Cl. 6.
Carnegie, Hattie, Inc., New York, N.Y. 818,417, pub. 8–23–66. Cl. 51.
Carr Engineering Corp., Los Angeles, Calif. 818,268, pub. 8–23–66. Cl. 32.
Carter-Wallace, Inc., New York, N.Y. 818,178, pub. 8–23–66. Cl. 18.
Carter-Wallace, Inc., New York, N.Y. 818,192, pub. 8–23–66. Cl. 18.
Cassedy, Gerard J., Southport, Conn. 818,472. Cl. 50.
Castello, Anthony, d.b.a. Castello Packing Co., Brooklyn, N.Y. 818,353, pub. 8–23–66. Cl. 46.
Castello Packing Co.: *See*—
Castello, Anthony.
Certified Products Co., Evanston, Ill. 818,349, pub. 8–23–66. Cl. 46.
Chapman, Sylvia E., d.b.a. Peek-O-Knees, Gowns, Chicago, Ill. 704,685, canc. Cl. 39.
Charles River Breeding Laboratories, Inc., Wilmington, Mass. 818,076, pub. 8–23–66. Cl. 1.
Chemplast Inc., East Newark, N.J. 790,602, canc. Cl. 15.
Chicago Rawhide Mfg. Co., Chicago, Ill. 704,688, canc. Cl. 39.
Chicken Delight, Inc., Rock Island, Ill. 818,357, pub. 8–23–66. Cl. 46.
Chloro-Guard Electronics, Sacramento, Calif. 818,233, pub. 5–24–66. Cl. 23.
Cinderella Coal Corp., Huntington, W. Va. 704,425, canc. Cl. 1.
Cities Service Oil Co., Tulsa, Okla. 818,298, pub. 8–23–66. Cl. 38.
Clairol Inc., New York, N.Y. 818,473. Cl. 51.
Clairol Inc., New York, N.Y. 818,474. Cl. 51.
Clark Foods Ltd., Westmount, Montreal, Quebec, Canada. 818,378, pub. 8–23–66. Cl. 46.
Coat Craft Co., Inc., Philadelphia, Pa. 704,693, canc. Cl. 39.
Coat Craft Co., Inc., Philadelphia, Pa. 704,694, canc. Cl. 39.
Coco Coat Co., New York, N.Y. 704,675, canc. Cl. 39.
Colgate-Palmolive Co., New York, N.Y. 818,425, pub. 8–23–66. Cl. 52.
Colleran, Clarence N., Jr., Richmond, Va. 818,443, pub. 8–23–66. Cl. 107.
Collins, Robert C., Co., Miami, Fla. 818,231, pub. 8–23–66. Cl. 23.
Columbia Ribbon & Carbon Mfg., Co., Inc., Glen Cove, N.Y. 818,136, pub. 8–23–66. Cl. 11.
Columbia Ribbon & Carbon Mfg., Co., Inc., Glen Cove, N.Y. 818,137, pub. 8–23–66. Cl. 11.
Compagnie Generale d'Electricite, Paris, France. 818,073, pub. 8–23–66. Cl. 1.
Com-Pak Chemical Corp., Shakopee, Minn. 818,105, pub. 8–23–66. Cl. 6.
Com-Tech, Inc., Beverly Hills, Calif. 818,470. Cl. 50.
Consolidated Chemical, Inc., St. Louis, Mo. 818,426, pub. 8–23–66. Cl. 52.
Consolidated Electronics Industries Corp., New York, N.Y., from Ohmite Mfg. Co., Skokie, Ill. 818,202, pub. 8–23–66. Cl. 21.
Contamination Control, Inc., Fort Washington, Pa. 818,281, pub. 8–23–66. Cl. 34.
Continental Optical Corp., New York, N.Y., to Textron Inc., Rochester, N.Y. 213,231, ren. 11–8–66. Cl. 26.
Coolcrete Co., Dallas, Tex. 818,138, pub. 8–23–66. Cl. 12.
Coors Porcelain Co., Golden, Colo. 704,427, canc. Cl. 1.
Corn Products Co.: *See*—
Corn Products Refining Co.
Corn Products Refining Co., to Corn Products Co., New York, N.Y. 424,035, ren. 11–8–66. Cl. 46.
Courtaulds Ltd., London, England. 818,333, pub. 8–23–66. Cl. 43.
Cover Girl: *See*—
Revoc, Inc.
Creative Marketing, Inc., Kalamazoo, Mich. 818,432, pub. 8–23–66. Cl. 101.
Creative Packaging, Inc., Indianapolis, Ind. 818,294, pub. 8–23–66. Cl. 37.
Crowley Tar Products Co., Inc., New York, N.Y. 818,122, pub. 8–23–66. Cl. 6.
Cuban Bat Guano Corp., Havana, Cuba, from Vitaguano Ltd., Nassau, Island of New Providence, Bahama Islands. 704,484, canc. Cl. 10.
Curwood, Inc., New London, Wis. 818,287, pub. 8–23–66. Cl. 37.
Daly-Herring Co.: *See*—
Thornton, Julian F.
Dayco Corp.: *See*—
Polytron Co.
Denver Chemical Mfg., Co., The, d.b.a. Wampole Laboratories, Stamford, Conn. 818,126, pub. 8–23–66. Cl. 6.
Devon Electronics Corp., Port Washington, N.Y. 818,285, pub. 8–23–66. Cl. 36.
Dey, John A., d.b.a. Virgin Island Spices, Miami, Fla. 818,351, pub. 8–23–66. Cl. 46.
Diamond Alkali Co., Cleveland, Ohio. 818,129, pub. 8–23–66. Cl. 6.
Diamond Alkali Co., Cleveland, Ohio. 818,130, pub. 8–23–66. Cl. 6.
Diamond Chain Co., Inc., Indianapolis, Ind. 704,568, canc. Cl. 23.
Diana Mfg. Co., Green Bay, Wis. 818,343, pub. 8–23–66. Cl. 44.
Dictaphone Corp., Bridgeport, Conn. 818,248, pub. 8–23–66. Cl. 23.
Display-Pak: *See*—
Nordstrom, Richard L.
Distillerie F. Lli Ramazzotti S.p.A., and Flli Ramazzotti: *See*—
Distillerie Fratelli Ramazzotti, S.p.A.
Distillerie Fratelli Ramazzotti, S.p.A., d.b.a. Distillerie F. Lli Ramazzotti, S.p.A., and Flli Ramazzotti, Milan, Italy. 818,396, pub. 8–23–66. Cl. 49.
Distributors Service: *See*—
United Distributors Service, Inc.
Dixie Portland Flour Mills, Inc.: *See*—
Shenandoah Milling Co., Inc.
Donovan Industries, Inc., New York, N.Y. 704,422, canc. Cl. 1.
Dow Chemical Co., The, Midland, Mich. 818,080, pub. 8–23–66. Cl. 1.
Dreher Leather Mfg. Corp., New York, N.Y. 704,428, canc. Cl. 1.
Drug Guild Co-Operative, Inc., Brooklyn, N.Y. 818,160, pub. 8–23–66. Cl. 18.
Dux-All Oil Co.: *See*—
Underwood, Frank J.
Dyna-Co., Inc., Wichita, Kans. 818,479. Cl. 52.
Dyna-Co., Inc., Wichita, Kans. 818,482. Cl. 103.
Dynamit Nobel Aktiengesellschaft, Troisdorf, Bez. Koeln, Germany. 818,449. Cl. 9.
Dynasty of Hong Kong Ltd., from Products of Asia Inc., New York, N.Y. 818,304, pub. 8–23–66. Cl. 39.
Dynasty of Hong Kong Ltd., New York, N.Y. 818,304, pub. 8–23–66. Cl. 39.
Eagle Bros., Inc., New York, N.Y. 818,317, pub. 8–23–66. Cl. 39.
Eastern Steel Products Corp., Rocky Mount, N.C. 704,531, canc. Cl. 19.
Easton, Jas. D., Inc., Van Nuys, Calif. 818,222, pub. 8–23–66. Cl. 22.
Elder, Paul B., Co., Bryan, Ohio. 818,406, pub. 8–23–66. Cl. 51.
Elmat Corp., Mountain View, Calif. 818,114, pub. 8–23–66. Cl. 6.
Essick Mfg. Co., Los Angeles, Calif. 818,243, pub. 8–23–66. Cl. 23.
Euclid Chemical Co., The, Cleveland, Ohio. 818,158, pub. 8–23–66. Cl. 16.
F.D.R. Enterprises, Fort Wayne, Ind. 704,496, canc. Cl. 13.
Faber-Castell, A. W.: *See*—
Bleistiftfabrik vormals Johann Faber Actien-Gesellschaft.
Falls City Dental Specialty Co., Inc., to Whip-Mix Corp., Louisville, Ky. 221,621, ren. 11–8–66. Cl. 44.
Farah Mfg. Co., Inc., El Paso, Tex. 818,319, pub. 8–23–66. Cl. 39.
Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 818,094, pub. 8–23–66. Cl. 3.
Farmers Cooperative Commission Co., The, Hutchinson, Kans. 818,464. Cl. 46.
Faroy, Inc., Houston, Tex. 818,293, pub. 8–23–66. Cl. 37.
Feldstein, Morris, & Son, Inc., Brooklyn, N.Y. 818,098, pub. 8–23–66. Cl. 5.
Ferro Corp., Cleveland, Ohio. 818,165, pub. 8–23–66. Cl. 16.
Filatures Prouvost & Cie la Lainiere de Roubaix, Roubaix (Nord), France. 818,334, pub. 8–23–66. Cl. 43.
Filatures Prouvost & Cie la Lainiere de Roubaix, Roubaix (Nord), France. 818,335, pub. 8–23–66. Cl. 43.
Filatures Prouvost & Cie la Lainiere de Roubaix, Roubaix (Nord), France. 818,336, pub. 8–23–66. Cl. 43.
Filatures Prouvost & Cie la Lainiere de Roubaix, Roubaix (Nord), France. 818,337, pub. 8–23–66. Cl. 43.
Filatures Prouvost & Cie la Lainiere de Roubaix, Roubaix (Nord), France. 818,338, pub. 8–23–66. Cl. 43.
Filatures Prouvost & Cie la Lainiere de Roubaix, Roubaix (Nord), France. 818,339, pub. 8–23–66. Cl. 43.
Filatures Prouvost & Cie la Lainiere de Roubaix, Roubaix (Nord), France. 818,340, pub. 8–23–66. Cl. 43.
Filatures Prouvost & Cie la Lainiere de Roubaix, Roubaix (Nord), France. 818,341, pub. 8–23–66. Cl. 43.
Filatures Prouvost & Cie la Lainiere de Roubaix, Roubaix (Nord), France. 818,342, pub. 8–23–66. Cl. 43.
Fish Furniture Shop, Inc., Cleveland, Ohio. 818,159, pub. 8–23–66. Cl. 16.
Fitzgerald Mfg. Co., The, Torrington, Conn. 818,283, pub. 8–23–66. Cl. 35.
Florists' Transworld Delivery Association, Detroit, Mich. 818,445, pub. 8–23–66. Cl. 200.
Flower Style Originals, Inc., New York, N.Y. 818,326, pub. 8–23–66. Cl. 40.
Frances Gee Garment Co., Inc., Kansas City, Mo. 704,661, canc. Cl. 39.
Free Press Association, Inc., Burlington, Vt. 818,460. Cl. 38.
Frendenberg, Carl, Kommanditgesellschaft Aktien, Weinheim (Bergstrasse), Germany. 704,680, canc. Cl. 39.

Food Plus, Inc., New York, N.Y. 818,359, pub. 8–23–66. Cl. 46.
Foseco International Ltd., Birmingham, England. 818,110, pub. 8–23–66. Cl. 6.
G & S Bindery, Inc., New York, N.Y. 818,299, pub. 8–23–66. Cl. 38.
Gangi Bros. Packing Co., Santa Clara, Calif. 818,372, pub. 8–23–66. Cl. 46.
Gangi Bros. Packing Co., Santa Clara, Calif. 818,373, pub. 8–23–66. Cl. 46.
Garrott Candies, Inc., St. Paul, Minn. 776,789, canc. Cl. 46.
Geigy Chemical Corp., Ardsley, N.Y. 814,805. Am. 7(d). Cl. 6.
General Aerosol Corp., Brooklyn, N.Y. 818,414, pub. 8–23–66. Cl. 51.
General Cable Corp., New York, N.Y. 818,206, pub. 8–23–66. Cl. 21.
General Electric Co., Schenectady, N.Y. 704,419, canc. Cl. 1.
General Electric Co., New York, N.Y. 704,540, canc. Cl. 21.
General Foam Corp., New York, N.Y. 818,086, pub. 8–23–66. Cl. 1.
General Foods Corp., White Plains, N.Y. 818,354, pub. 8–23–66. Cl. 46.
General Hotel Corp., Nashville, Tenn. 818,428, pub. 4–12–66. Cl. 100.
General Photo Laboratories, Inc., New York, N.Y. 704,778, canc. Cl. 106.
General Time Corp., New York, N.Y. 818,207, pub. 8–23–66. Cl. 21.
General Tire & Rubber Co., The, Akron, Ohio. 818,084, pub. 8–23–66. Cl. 1.
Ghirardelli Chocolate Co.: *See*—
Ghirardelli, D., Co.
Ghirardelli, D., Co., to Golden Grain Macaroni Co., d.b.a. Ghirardelli Chocolate Co., San Francisco, Calif. 222,157, ren. 11–8–66. Cl. 46.
Gianini Scientific Corp., Amityville, N.Y. 818,150, pub. 8–30–66. Cl. 14.
Globe Distributing Co., The, Washington, D.C. 704,745, canc. Cl. 47.
Golden Grain Macaroni Co.: *See*—
Ghirardelli, D., Co.
Gould & Eberhardt, Inc., Irvington, N.J. 704,538, canc. Cl. 21.
Grand Union Co., The, East Paterson, N.J. 422,568, ren. 11–8–66. Cl. 6.
Grand Union Co., The, East Paterson, N.J. 424,332, ren. 11–8–66. Cl. 52.
Grand Union Co., The, East Paterson, N.J. 424,442, ren. 11–8–66. Cl. 46.
Grand Union Co., The, East Paterson, N.J. 818,369, pub. 8–23–66. Cl. 46.
Gravel Cologne, Inc., New York, N.Y. 818,413, pub. 8–23–66. Cl. 51.
H Craft Coat Co., New York, N.Y. 704,663, canc. Cl. 39.
Hallmark Cards, Inc., Kansas City, Mo. 704,649, canc. Cl. 27.
Hanlon & Goodman Co., Belleville, N.J. 818,258, pub. 8–23–66. Cl. 29.
Hardman, R. B., Co.: *See*—
Hardman, Rena B.
Hardman, Rena B., d.b.a. R. B. Hardman Co., Los Angeles, Calif. 818,399, pub. 8–23–66. Cl. 50.
Hartford Textile Corp., New York, N.Y. 704,698, canc. Cl. 42.
Harvest Brand, Inc., Pittsburg, Kans. 818,465. Cl. 46.
Harvest Queen Mill & Elevator Co., Dallas, Tex. 818,097, pub. 8–23–66. Cl. 5.
Hast Associated, Buena Park, Calif. 818,200, pub. 10–27–64. Cl. 21.
Haveg Industries, Inc., Wilmington, Del. 818,087, pub. 8–23–66. Cl. 1.
Heckerman Corp., The, Inglewood, Calif. 818,118, pub. 8–23–66. Cl. 6.
Heckerman Corp., The, Inglewood, Calif. 818,119, pub. 8–23–66. Cl. 6.
Heileman, G., Brewing Co., Inc., La Crosse, Wis. 818,469. Cl. 50.
Henri's Food Products Co., Inc., Milwaukee, Wis. 704,780, canc. Cl. 2.
Hickory Tavern Furniture, Inc., Hickory, N.C. 818,271, pub. 8–23–66. Cl. 32.
Higgins Ink Co., Inc., Brooklyn, N.Y. 818,423, pub. 8–23–66. Cl. 52.
Hinson, Emmett E., Jr., d.b.a. Artop Products Co., Dallas, Tex. 704,455, canc. Cl. 5.
Hirsh, Malcolm, d.b.a. The Bacova Guild, Bacova, Va. 818,091, pub. 8–23–66. Multiple Class (Classes 2, 13, 22, 32, 34, and 50).
Hoffmann-La Roche Inc., Nutley, N.J. 818,182, pub. 8–23–66. Cl. 18.
Hoffmann-La Roche Inc., Nutley, N.J. 818,183, pub. 8–23–66. Cl. 18.
Hollywood Shoe Polish Inc., Richmond Hill, N.Y. 818,448. Cl. 4.
Home Beautiful Mfg. Co., Inc., Wichita, Kans. 704,639, canc. Cl. 34.
Hotel and Restaurant Employees and Bartenders International Union, Cincinnati, Ohio. 818,444, pub. 8–23–66. Cl. 200.
Hough, Dean R., and George W. Kendall, Wheeling, W. Va. 818,284, pub. 8–16–66. Cl. 35.
House of Coins, Elizabeth, N.J. 818,447. Cl. 2.
Household Needs, Inc., Chicago, Ill. 704,767, canc. Cl. 101.
Hudnut, Richard, Morris Plains, N.J. 818,418, pub. 8–23–66. Cl. 51.
Huerre, Jean, & Cie, S.A.R.L., Levallois-Perret, (Seine), France. 704,755, canc. Cl. 51.
Ideal Safety Products, Inc., New York, N.Y. 818,199, pub. 8–23–66. Cl. 19.
Idealspaten- und Schaufelwalzwerk vorm. Eckardt & Co., G.m.b.H., Rubr, Germany. 818,147, pub. 8–23–66. Cl. 13.
Illinois Tool Works, Inc., Chicago, Ill. 818,088, pub. 8–30–66. Cl. 2.
Imperial Knife Associated Co., Inc., Providence, R.I. 818,241, pub. 8–23–66. Cl. 23.
Industrial Engineering & Erection Corp., d.b.a. Schoolmaster Boat & Tackle Co., San Antonio, Tex. 704,558, canc. Cl. 22.
Intercontinental Leasing, Inc., Wichita, Kans. 818,433, pub. 8–23–66. Cl. 102.
International Artware Corp., Cleveland, Ohio. 818,398, pub. 8–23–66. Cl. 50.
Interstate Engineering Corp., Anaheim, Calif. 818,195, pub. 8–23–66. Cl. 19.
Invincible Metal Furniture Co., Manitowoc, Wis. 818,273, pub. 8–23–66. Cl. 32.
Ivers & Pond Piano Co., Inc.: *See*—
Ivers & Pond Piano Co.
Ivers & Pond Piano Co., Boston, Mass., to Ivers & Pond Piano Co., Inc., Memphis, Tenn. 219,243, ren. 11–8–66. Cl. 4.
Ives, Sybil, Inc., White Plains, N.Y. 818,478. Cl. 51.
Janie Originals, Inc., Brooklyn, N.Y. 818,300, pub. 3–17–64. Cl. 39.
Japan Gas Lighter Corp., New York, N.Y. 818,131, pub. 8–23–66. Cl. 8.
John R Parts Co., Cass City, Mich., from Almpro, Inc., Vassar, Mich. 818,209, pub. 8–23–66. Cl. 21.
Johnson Industries, Inc., Menlo Park, N.J. 818,170, pub. 8–23–66. Cl. 18.
Johnson, Mead, & Co., Evansville, Ind. 818,371, pub. 8–23–66. Cl. 46.
Jolly Rancher, Inc., The, d.b.a. The Candy Cowboys, Wheatridge, Colo. 818,462. Cl. 46.
Jonas & Colver, Ltd., to Jonas & Colver (Novo) Ltd., Sheffield, England. 57,460, ren. 11–8–66. Cl. 14.
Jonas & Colver, Ltd., to Jonas & Colver (Novo) Ltd., Sheffield, England. 57,461, ren. 11–8–66. Cl. 14.
Jonas & Colver (Novo) Ltd.: *See*—
Jonas & Colver, Ltd.
Joseph & Feiss Co., The, Cleveland, Ohio. 818,325, pub. 8–23–66. Cl. 39.
Junior West, Inc., Los Angeles, Calif. 818,318, pub. 8–23–66. Cl. 39.
Kaiser Aluminum & Chemical Corp., Oakland, Calif. 818,112, pub. 8–23–66. Cl. 6.
Kanegafuchi Boseki Kabushiki Kaisha, d.b.a. Kanegafuchi Spinning Co., Ltd., Osaka, Japan. 818,255, pub. 8–23–66. Cl. 29.
Kanegafuchi Spinning Co., Ltd.: *See*—
Kanegafuchi Boseki Kabushiki Kaisha.
Kansas City White Goods Mfg. Co., St. Louis, Mo. 818,327, pub. 8–23–66. Cl. 42.
Kaymar Paper Co., Inc., Bronx, N.Y. 818,090, pub. 8–23–66. Cl. 2.
Kaymar Paper Co., Inc., Bronx, N.Y. 818,295, pub. 8–23–66. Cl. 37.
Kaymar Paper Co., Inc., Bronx, N.Y. 818,362, pub. 8–23–66. Cl. 46.
Kayo Oil Co., Chattanooga, Tenn. 818,152, pub. 8–23–66. Cl. 15.
Kayo Oil Co., Chattanooga, Tenn. 818,153, pub. 8–23–66. Cl. 15.
Kayo Oil Co., Chattanooga, Tenn. 818,154, pub. 8–23–66. Cl. 15.
Kellogg Co., Battle Creek, Mich. 818,368, pub. 8–23–66. Cl. 46.
Kellogg Supply Co., Inc., Wilmington, Calif. 818,133, pub. 8–23–66. Cl. 10.
Kellogg Supply Co., Inc., Wilmington, Calif. 818,134, pub. 8–23–66. Cl. 10.
Kelly Well Co., Inc., Grand Island, Nebr. 818,263, pub. 8–23–66. Cl. 31.
Kendall, George W.: *See*—
Hough, Dean R.
Keystone Plastics, Inc., Newark, N.Y. 818,259, pub. 8–23–66. Cl. 29.
Keystone View Co., Meadville, Pa. 704,613, canc. Cl. 26.
Klein, D., & Son, Inc., New York, N.Y. 818,254, pub. 8–23–66. Cl. 28.
Kock, Rune: *See*—
VDO Tachometer Weke Adolf Schindling G.m.b.H.
Konop Brothers, Inc., Port Huron, Mich. 704,668, canc. Cl. 39.
Kool Kooshion Mfg. Co., Dyersburg, Tenn. 704,634, canc. Cl. 32.
Korfund Dynamics Corp., Westbury, N.Y. 818,275, pub. 8–23–66. Cl. 32.
Lacriolla Food Products Co.: *See*—
Maldonado, Avelino.
Lakewood Fireproof Storage Co., The, to Lakewood Storage, Inc., Lakewood, Ohio. 223,693, ren. 11–8–66. Cl. 2.
Lakewood Storage, Inc.: *See*—
Lakewood Fireproof Storage Co., The.
Lanco Products Corp., New York, N.Y. 818,235, pub. 8–23–66. Cl. 23.
Lander: *See*—
Lander Co., Inc.
Lander Co., Inc., d.b.a. Lander, New York, N.Y. 650,237, cor. Cl. 51.
Lando Products, Inc., Sausalito, Calif. 704,494, canc. Cl. 13.
Laughlin Textile Mills, Inc., Waterford, N.Y. 215,103, ren. 11–8–66. Cl. 40.
Le Bouchon Rapid, Cusset (Allier), France. 704,751, canc. Cl. 50.
Leitch, James E., Owosso, Mich. 704,576, canc. Cl. 23.
Lenox, Inc., Trenton, N.J. 818,261, pub. 8–23–66. Cl. 30.
Lever Brothers Co., New York, N.Y. 818,127, pub. 8–23–66. Cl. 6.

Lever Brothers Co., New York, N.Y. 818,419, pub. 8–23–66. Cl. 51.
Liberty Farms Co., San Francisco, Calif. 219,547, ren. 11–8–66. Cl. 46.
Lilly, Eli, and Co., Indianapolis, Ind. 818,075, pub. 8–23–66. Cl. 1.
Lily of France, Inc., New Haven, Conn. 818,303, pub. 8–23–66. Cl. 39.
Link Research Corp., Beverly Hills, Calif. 704,439, canc. Cl. 1.
Livengood, Glen V.: *See*—
Twentieth Century Mfg. Co.
Lorillard, P., Co., New York, N.Y. 818,167, pub. 8–23–66. Cl. 17.
Lusk Candy Co., Davenport, Iowa. 818,364, pub. 8–16–66. Cl. 46.
MCA Inc., Universal City, Calif. 818,405, pub. 8–23–66. Cl. 51.
M. T. & D. Co., The, Cleveland, Ohio. 704,563, canc. Cl. 23.
Magic Nut Shop, The, to Samuel J. Saul, d.b.a. Magic Nut Kitchens, Los Angeles, Calif. 425,752, ren. 11–8–66. Cl. 46.
Magic Nut Kitchens: *See*—
Magic Nut Shop, The.
Mahaffy & Harder Engineering Co., Totowa, N.J. 818,242, pub. 8–23–66. Cl. 28.
Maher, John, Printing Co., Chicago, Ill. 818,297, pub. 8–23–66. Cl. 38.
Mal Products: *See*—
Malicoat, Robert C.
Maldonado, Avelino, d.b.a. Lacriolla Food Products Co., Chicago, Ill. 818,184, pub. 8–23–66. Cl. 18.
Malicoat, Robert C., d.b.a. Mal Products, Carmichael, Calif. 818,471. Cl. 50.
Mallinckrodt Chemical Works, St. Louis, Mo. 818,123, pub. 8–23–66. Cl. 6.
Manhattan Coffee Co., from Star Coffee Co., St. Louis, Mo. 818,360, pub. 8–23–66. Cl. 46.
Manufacture Belge d'Aiguilles, Eupen, Belgium. 818,225, pub. 8–23–66. Cl. 23.
Marble Products Co.: *See*—
Marble Products Co. of Georgia,
Marble Products Co. of Georgia, d.b.a. Marble Products Co., Atlanta, Ga. 818,077, pub. 8–23–66. Cl. 1.
Marcoa International, Inc., Houston, Tex. 818,156, pub. 8–23–66. Cl. 16.
Marlin Fire Arms Co., The, to The Marlin Firearms Co., New Haven, Conn. 56,280, ren. 11–8–66. Cl. 9.
Marlin Firearms Co., The: *See*—
Marlin Fire Arms Co., The.
Marshall Supply & Equipment Co., Inc., Tulsa, Okla. 818,431, pub. 8–23–66. Cl. 101.
Martens, Jack R., d.b.a. Aerofast Co., to Aerofast, Inc., Wheaton, Ill. 813,296, cor. Cl. 13.
Martinson's Coffee: *See*—
Beech-Nut Life Savers, Inc.
Master Consolidated Inc., Dayton, Ohio. 818,282, pub. 8–23–66. Cl. 34.
Mattel, Inc., Hawthorne, Calif. 818,217, pub. 8–23–66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 818,218, pub. 8–23–66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 818,219, pub. 8–23–66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 818,220, pub. 8–23–66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 818,221, pub. 8–23–66. Cl. 22.
Matthews, Jas. H., & Co., Pittsburgh, Pa. 818,227, pub. 8–23–66. Cl. 23.
Matthews-Riseman, Inc., Boston, Mass. 704,691, canc. Cl. 39.
Mattress Warehouse, Inc., New York, N.Y. 818,272, pub. 8–23–66. Cl. 32.
Mayfair Markets: *See*—
Arden-Mayfair, Inc.
McCall Mfg., Co., Inc., Jasper, Fla. 818,104, pub. 8–23–66. Cl. 6.
McDermott, J. Ray, & Co., Inc., New Orleans, La. 818,429, pub. 8–23–66. Cl. 100.
McDermott, J. Ray, & Co., Inc., New Orleans, La. 818,437, pub. 8–23–66. Cl. 105.
McMullen, J. R., Co., Inc., New York, N.Y. 818,324, pub. 8–23–66. Cl. 39.
Medical Digest, Inc., Northfield, Ill. 818,453. Cl. 38.
Medical Digest, Inc., Northfield, Ill. 818,454. Cl. 38.
Medical Digest, Inc., Northfield, Ill. 818,455. Cl. 38.
Medical Digest, Inc., Northfield, Ill. 818,456. Cl. 38.
Medical Digest, Inc., Northfield, Ill. 818,457. Cl. 38.
Mediterranean Importing Co., Inc., Long Island City, N.Y. 818,468. Cl. 49.
Meisel Photochrome Corp., Dallas, Tex. 818,439, pub. 8–23–66. Cl. 106.
Meisel Photochrome Corp., Dallas, Tex. 818,440, pub. 8–23–66. Cl. 106.
Melville Shoe Corp., New York, N.Y. 818,320, pub. 8–23–66. Cl. 39.
Merck & Co., Inc., Rahway, N.J. 818,171, pub. 8–23–66. Cl. 18.
Merck & Co., Inc., Rahway, N.J. 818,186, pub. 8–23–66. Cl. 18.
Merkle-Korff Gear Co., Chicago, Ill. 818,245, pub. 8–23–66. Cl. 23.
Miami Margarine Co., The, Cincinnati, Ohio. 818,375, pub. 8–23–66. Cl. 46.
Micropoint, Inc., Sunnyvale, Calif. 818,288, pub. 8–23–66. Cl. 37.
Mid-Central Fish Co., to Mid-Central Fish and Frozen Foods, Inc., Kansas City, Mo. 218,002, ren. 11–8–66. Cl. 46.
Mid-Central Fish and Frozen Foods, Inc.: *See*—
Mid-Central Fish Co.
Midwest Metal Stamping Co., Kellogg, Iowa. 704,533, canc. Cl. 19.
Miles Standard Corp., The, Saginaw, Mich. 818,229, pub. 8–23–66. Cl. 23.
Miller Outdoor Advertising Products Co., Inc., Greenville, S.C. 704,752, canc. Cl. 50.
Milligan & Son, Inc., Sioux City, Iowa. 704,518, canc. Cl. 18.
Milprint, Inc., Milwaukee, Wis. 818,089, pub. 11–16–65. Multiple Class (Classes 2 and 37).
Milton Bradley Co., Springfield, Mass. 220,289, ren. 11–8–66. Cl. 87.
Milway, Inc., Milwaukee, Wis. 704,702, canc. Cl. 42.
Milwhite Mud Sales Co., Houston, Tex. 704,464, canc. Cl. 6.
Miskend, Harold J., d.b.a. The Pink Poodle, New York, N.Y. 704,753, canc. Cl. 50.
Mity-Lite, Santa Ana, Calif. 704,550, canc. Cl. 21.
Monsanto Chemical Co., to Monsanto Co., St. Louis, Mo. 426,433, ren. 11–8–66. Cl. 6.
Monsanto Co.: *See*—
Monsanto Chemical Co.
Moore & Munger, New York, N.Y. 818,079, pub. 8–23–66. Cl. 1.
Moose, David T., d.b.a. Andrena Co., San Diego, Calif. 818,477. Cl. 51.
Morton Foods, Inc., Dallas, Tex. 818,347, pub. 8–23–66. Cl. 45.
Motor Generator Corp., Troy, Ohio. 818,205, pub. 8–23–66. Cl. 21.
Mule, Anthony, d.b.a. Mule & Sons and A.M.S. Packing Co., Ozone Park, N.Y. 704,735, canc. Cl. 46.
Mule & Sons and A.M.S. Packing Co.: *See*—
Mule, Anthony.
NRM Corp., Akron, Ohio. 818,239, pub. 8–23–66. Cl. 23.
N.V. Koninklijke Sphinx Ceramique V.H. Petrus Regout, d.b.a. Royal Sphinx Ceramique, Boschstraat, Maastricht, Netherlands. 818,260, pub. 8–23–66. Cl. 30.
Nakayama, Kosaburo: *See*—
Attorney General of the United States.
Nash Engineering Co., South Norwalk, Conn. 219,354, ren. 11–8–66. Cl. 23.
National Lead Co., New York, N.Y. 818,082, pub. 8–23–66. Cl. 1.
National Polychemicals, Inc., Wilmington, Mass. 818,128, pub. 8–23–66. Cl. 6.
Nephron Co., Tacoma, Wash. 818,175, pub. 8–23–66. Cl. 18.
Neurotics Anonymous International Liaison, Inc., Washington, D.C. 818,461. Cl. 38.
Newsweek, Inc., New York, N.Y. 704,654, canc. Cl. 38.
New York Merchandise Co., Inc., New York, N.Y. 704,542, canc. Cl. 21.
Nicoll, R. C., d.b.a. Valerie Jean Date Shop, Thermal, Calif. 818,394, pub. 8–23–66. Cl. 46.
Nielsen Bros., El Centro, Calif., to Point Sal Growers and Packers, Guadalupe, Calif. 427,889, ren. 11–8–66. Cl. 46.
Nippon Sekiyu Kabushiki Kaisha, Tokyo, Japan. 704,506, canc. Cl. 15.
Nipponsekiyu Kabushiki Kaisha, Tokyo, Japan. 704,505, canc. Cl. 15.
Nordstrom, Richard L., d.b.a. Display-Pak, Evanston, Ill. 818,267, pub. 8–23–66. Cl. 32.
Novel Knit, High Point, N.C. 704,696, canc. Cl. 40.
Ohmite Mfg. Co.: *See*—
Consolidated Electronics Industries Corp.
Olga Co., Van Nuys, Calif. 704,690, canc. Cl. 39.
Omega Engineering, Inc., Stamford, Conn. 818,251, pub. 9–21–65. Cl. 26.
Oneida Ltd., Oneida, N.Y. 818,237, pub. 8–23–66. Cl. 23.
Oneida Ltd., Oneida, N.Y. 818,253, pub. 8–23–66. Cl. 28.
Orbit Pharmaceutical, Inc., Kansas City, Kans. 818,173, pub. 8–23–66. Cl. 18.
Orbit Pharmaceutical, Inc., Kansas City, Kans. 818,174, pub. 8–23–66. Cl. 18.
Order of St. Benedict, Collegeville, Minn. 704,725, canc. Cl. 46.
Ovaltine Food Products: *See*—
Wander Co., The.
Pagli, John, d.b.a. John Pagli & Sons, New York, N.Y. 704,617, canc. Cl. 26.
Pagli, John, & Sons: *See*—
Pagli, John.
Palmer Bedding Co., Denver, Colo. 818,269, pub. 8–23–66. Cl. 32.
Palmer Bedding Co., Denver, Colo. 818,270, pub. 8–23–66. Cl. 32.
Panelboard Mfg. Co., Inc., Newark, N.J. 818,143, pub. 8–23–66. Cl. 12.
Paramount Packaging Corp., Chalfont, Pa. 818,291, pub. 8–23–66. Cl. 37.
Parker Brothers, Inc., Salem, Mass. 818,224, pub. 8–23–66. Cl. 22.
Patterson Products Co.: *See*—
Patterson Products, Inc.
Patterson Products, Inc., St. Louis, Mo., from Patterson Products Co., Webster Groves, Mo. 704,785, canc. Cl. 44.
Peabody, Lawrence, d.b.a. Lawrence Peabody Associates, Boston, Mass. 704,765, canc. Cl. 100.
Peabody, Lawrence, Associates: *See*—
Peabody, Lawrence.
Peek-O-Knees, Gowna: *See*—
Chapman, Sylvia E.
Peerless Tube Co., Bloomfield, N.J. 426,737, ren. 11–8–66. Cl. 2.
Pen and Quill: *See*—
Rod's Food Products, Inc.
Pennington Grain & Seed, Inc., Madison, Ga. 818,074, pub. 8–23–66. Cl. 1.

Pennsylvania Dutch-Megs, Inc., Harrisburg, Pa. 818,393, pub. 8–23–66. Cl. 46.
Pennsylvania Fluorocarbon Co., Inc., Philadelphia, Pa. 704,441, canc. Cl. 1.
Perkins, Dorothy, Cosmetics, Inc., St. Louis, Mo. 818,409, pub. 8–23–66. Cl. 51.
Perma-Stress, Inc., Holly Hill, Fla. 704,488, canc. Cl. 12.
Pfizer, Chas., & Co., Inc., New York, N.Y. 818,402, pub. 8–23–66. Cl. 51.
Philadelphia Chewing Gum Corp., Havertown, Pa. 818,365, pub. 8–23–66. Cl. 46.
Piggly Wiggly Operators' Warehouse, Inc., Shreveport, La. 818,376, pub. 8–23–66. Cl. 46.
Pillsbury Co., The, Minneapolis, Minn. 818,363, pub. 8–23–66. Cl. 46.
Pillsbury Co., The, Minneapolis, Minn. 818,379, pub. 8–23–66. Cl. 46.
Pinee Chemical Co., The: *See*—
Thornton, Julian F.
Pink Poodle, The: *See*—
Miskend, Harold J.
Point Sal Growers and Packers: *See*—
Nielsen Bros.
Polar Ware Co., Sheboygan, Wis. 224,183, ren. 11–8–66. Cl. 13.
Polytron Co., Richmond, Calif., from Dayco Corp., Dayton, Ohio. 818,446. Cl. 1.
Popular Merchandise Co., Inc., Passaic, N.J. 818,480. Cl. 100.
Popular Merchandise Co., Inc., Passaic, N.J. 818,481. Cl. 100.
Powell, William, Co., The, Cincinnati, Ohio. 60,146, ren. 11–8–66. Cl. 13.
Procter & Gamble Co., The, Cincinnati, Ohio. 818,331, pub. 8–23–66. Cl. 42.
Proctor-Silex Corp., The, Philadelphia, Pa. 818,249, pub. 8–23–66. Cl. 24.
Professional Laundries Shirt Plan: *See*—
Professional Laundries Shirt Sales, Inc.
Professional Laundries Shirt Sales, Inc., d.b.a. Professional Laundries Shirt Plan, Louisville, Ky. 704,683, canc. Cl. 39.
Pure Pharmacal Co., Houston, Tex. 818,403, pub. 8–23–66. Multiple Class (Classes 51 and 52).
Purepac Corp., Elizabeth, N.J. 818,177, pub. 8–23–66. Cl. 18.
Puritan Chemical Co.: *See*—
Stanley Drug Products, Inc.
Purity Paint Products Corp., Brooklyn, N.Y. 818,139, pub. 8–23–66. Cl. 12.
Quabaug Rubber Co., North Brookfield, Mass. 818,315, pub. 8–23–66. Cl. 39.
Quaker Chemical Products Corp., Conshohocken, Pa. 704,460, canc. Cl. 6.
Quaker Oats Co., The, Chicago, Ill. 818,358, pub. 7–26–66. Cl. 46.
Radio Merchandise Sales, Inc., New York, N.Y. 704,548, canc. Cl. 21.
Ranger Engineering & Mfg.: *See*—
Wetherholt, Frank.
Raven Mfg., Co., Inc., Chicago Ridge, Ill. 818,230, pub. 8–23–66. Cl. 23.
Reeves Brothers, Inc., New York, N.Y. 818,438, pub. 8–23–66. Cl. 106.
Regal Accessories, Inc., Long Island City, N.Y. 818,310, pub. 8–23–66. Cl. 39.
Resources Development Corp. of America, Los Angeles, Calif. 704,769, canc. Cl. 101.
Review and Herald Publishing Association, Takoma Park, Washington, D.C. 214,152, ren. 11–8–66. Cl. 38.
Revoc, Inc., d.b.a. Cover Girl, New York, N.Y. 423,937, canc. Cl. 22.
Rexall Drug and Chemical Co., d.b.a. The Seamless Rubber Co., Los Angeles, Calif. 818,223, pub. 8–23–66. Cl. 22.
Rico Liquids, Inc., Aliceville, Ala. 818,361, pub. 8–23–66. Cl. 46.
Riedel & Co., Bielefeld, Germany. 818,111, pub. 8–23–66. Cl. 6.
Ries, Iwan & Co., Chicago, Ill. 813,318, cor. Cl. 17.
Rock Paint & Chemical Co., Fort Atkinson, Wis. 818,160, pub. 8–23–66. Cl. 16.
Rod's Food Products, Inc., d.b.a. Pen and Quill, Los Angeles, Calif. 818,367, pub. 8–23–66. Cl. 46.
Roesbery Laboratories, Inc., Melba, Idaho. 818,407, pub. 8–23–66. Cl. 51.
Rollem Corp. of America, Manhasset, N.Y. 818,238, pub. 8–23–66. Cl. 23.
Roma Wine Co., to Schenley Industries, Inc., New York, N.Y. 423,687, ren. 11–8–66. Cl. 49.
Rotex Ltd., Toronto, Ontario, Canada. 818,305, pub. 5–17–66. Cl. 39.
Royal China, Inc., Sebring, Ohio. 818,262, pub. 8–23–66. Cl. 30.
Royal Sphinx Ceramique: *See*—
N.V. Koninklijke Sphinx Ceramique V.H. Petrus Regout.
Ruhr-Stickstoff Aktiengesellschaft, Bochum, Germany. 818,132, pub. 8–23–66. Cl. 10.
Russell & Stoll Co., Inc., New York, N.Y. 818,212, pub. 8–23–66. Cl. 21.
St. Regis Paper Co., New York, N.Y. 818,093, pub. 8–23–66. Cl. 2.
St. Regis Paper Co., New York, N.Y. 818,092, pub. 8–23–66. Cl. 2.
St. Regis Paper Co., New York, N.Y. 818,144, pub. 8–23–66. Cl. 12.
Sandoz, Inc., Hanover, N.J. 818,117, pub. 8–23–66. Cl. 6.
Saul, Samuel J.: *See*—
Magic Nut Shop, The.
Savage Laboratories, Inc., Houston, Tex. 818,172, pub. 8–23–66. Cl. 18.
Sawyer Crystal Blue Co., The, Boston, to Standard International Corp., Andover, Mass. 50,918, ren. 11–8–66. Cl. 6.
Sawyer Crystal Blue Co., The, Boston, to Standard International Corp., Andover, Mass. 51,455, ren. 11–8–66. Cl. 6.
Schenley Industries, Inc.: *See*—
Roma Wine Co.
Schering Corp., Bloomfield, N.J. 818,193, pub. 8–23–66. Cl. 18.
Schimanek Brothers KG, Chicago, Ill. 818,246, pub. 8–23–66. Cl. 23.
Schoeneman, J., Inc., Baltimore, Md., to J. Schoeneman, Inc., Owings Mills, Md. 219,983, ren. 11–8–66. Cl. 39.
Schoeneman, J., Inc., Baltimore, Md., to J. Schoeneman, Inc., Owings Mills, Md. 221,667, ren. 11–8–66. Cl. 39.
Schoolmaster Boat & Tackle Co.: *See*—
Industrial Engineering & Erection Corp.
Seamless Rubber Co., The: *See*—
Rexall Drug and Chemical Co.
Seebohm & Dieckstahl, Ltd., to Arthur Balfour & Co., Ltd., Sheffield, England. 57,612, ren. 11–8–66. Cl. 14.
Selck, Walter E., and Co., Chicago, Ill. 818,244, pub. 8–23–66. Cl. 23.
Senior & Co., Inc., Curacao, Netherlands Antilles. 818,467. Cl. 49.
Shaw Instrument Corp., Latrobe, Pa. 704,616, canc. Cl. 26.
Shawinigan Resins Corp., Springfield, Mass. 704,430, canc. Cl. 1.
Sheeps Head Knitwear Corp., Newark, N.J. 704,681, canc. Cl. 39.
Shenandoah Milling Co., Inc., Shenandoah, Va., to Dixie Portland Flour Mills, Inc., Memphis, Tenn. 214,131, ren. 11–8–66. Cl. 46.
Sigma Instruments, Inc., South Braintree, Mass. 818,201, pub. 10–26–65. Multiple Class (Classes 21 and 26).
Simmons Co., New York, N.Y. 818,274, pub. 8–23–66. Cl. 32.
Simplex Wire & Cable Co., Cambridge, Mass. 219,606, ren. 11–8–66. Cl. 21.
Skandia Mfg., Inc., Los Angeles, Calif. 818,197, pub. 8–23–66. Cl. 19.
Skid's Brushes Inc., Cochran, Ga. 818,256, pub. 8–23–66. Cl. 29.
Sky-Way Products, Inc., Brooklyn, N.Y. 818,216, pub. 8–23–66. Cl. 22.
Smidth, F. L., & Co., to F. L. Smidth & Co., New York, N.Y. 223,150, ren. 11–8–66. Cl. 23.
Smidth, F. L., & Co., to F. L. Smidth & Co., New York, N.Y. 223,174, ren. 11–8–66. Cl. 23.
Smith, J. Allen, & Co., Knoxville, Tenn. 704,740, canc. Cl. 46.
Smith Kline & French Laboratories, Philadelphia, Pa. 818,185, pub. 8–23–66. Cl. 18.
Snow-Kist Frozen Foods Corp., Jersey City, N.J. 818,466. Cl. 46.
Snyder Brothers Co., Toccoa, Ga. 818,161, pub. 8–23–66. Cl. 16.
Societa Applicazioni Gomma, Antivibranti "Sage" S.p.A., Milan, Italy. 704,489, canc. Cl. 12.
Societe Anonyme Heuroplan, Paris, France. 704,288, canc. Cl. 27.
Societe a Responsabilite Limitee dite Textile du Vermandois, Laval (Mayenne), France. 818,328, pub. 8–23–66. Cl. 42.
Space Technology Laboratories, Los Angeles, Calif. 704,600, canc. Cl. 26.
Spartan Enterprises, Inc., Spartanburg, S.C. 818,276, pub. 8–23–66. Cl. 32.
Speaker, J. W., Corp., Milwaukee, Wis. 427,796, ren. 11–8–66. Cl. 35.
Speed-o-Print Business Machines Corp., Chicago, Ill. 818,100, pub. 8–23–66. Cl. 6.
Spencer, Walter, & Co., Ltd., Sheffield, England. 57,391, ren. 11–8–66. Cl. 14.
Spencer, Walter, & Co., Ltd., Sheffield, England. 57,486, ren. 11–8–66. Cl. 14.
Sportsway, Inc., Paramount, Calif. 818,214, pub. 8–23–66. Cl. 22.
Sportville Mens Wear, Inc., New York, N.Y. 818,313, pub. 8–23–66. Cl. 39.
Spray Lin, Inc., Shaker Heights, Ohio. 818,179, pub. 8–23–66. Cl. 18.
Standard Chemical Products, Inc., Hoboken, N.J. 818,096, pub. 8–23–66. Multiple Class (Classes 5, 6, and 52).
Standard International Corp.: *See*—
Sawyer Crystal Blue Co., The.
Stanley Drug Product, Inc., d.b.a. Puritan Chemical Co., Portland, Oreg. 818,168, pub. 8–23–66. Cl. 18.
Star Coffee Co.: *See*—
Manhattan Coffee Co.
Star Metal Corp., Philadelphia, Pa. 818,226, pub. 8–23–66. Cl. 23.
Sterling Drug Inc.: *See*—
U.S. Sanitary Specialties Corp.
Stevens, J. P. & Co., Inc., New York, N.Y. 818,329, pub. 8–23–66. Cl. 42.
Stewart, Larry L., & Associates, Inc., Coral Gables, Fla. 818,442, pub. 8–23–66. Cl. 107.
Stiefel Laboratories, Inc., Oak Hill, N.Y. 818,412, pub. 8–23–66. Cl. 51.
Stowe-Woodward, Inc., Newton Upper Falls, Mass. 818,215, pub. 8–23–66. Cl. 22.
Strauss Stores Corp., Maspeth, N.Y. 818,296, pub. 8–23–66. Cl. 37.
Sun Chemical Corp., New York, N.Y. 818,135, pub. 8–23–66. Cl. 11.
Sun Chemical Corp., New York, N.Y. 704,459, canc. Cl. 6.
Sunline, Inc., St. Louis, Mo. 818,346, pub. 8–23–66. Cl. 45.

Superba Cravats, Inc., Rochester, N.Y. 818,322, pub. 8–23–66. Cl. 39.
Superba Cravats, Inc., Rochester, N.Y. 818,323, pub. 8–23–66. Cl. 39.
Surelock Mfg. Co., Inc., Brooklyn, N.Y. 704,525, canc. Cl. 19.
Syn-Pro Inc., Annapolis, Md. 704,706, canc. Cl. 43.
Takeda Chemical Industries, Ltd., Higaski-ku, Osaka, Japan. 818,380, pub. 8–23–66. Cl. 46.
Target Stores, Inc., Minneapolis, Minn. 818,410, pub. 8–23–66. Cl. 51.
Tensor Corp., Brooklyn, N.Y. 818,213, pub. 8–23–66. Cl. 21.
Tension Envelope Corp., Kansas City, Mo. 818,290, pub. 8–23–66. Cl. 37.
Textron Inc.: *See*—
Continental Optical Corp.
Thornton, Julian F., d.b.a. The Pinee Chemical Co. Daly-Herring Co., Kinston, N.C. 244,207. Am. 7(d). Cl. 6.
Tri-Valley Growers, San Francisco, Calif. 818,381, pub. 8–23–66. Cl. 46.
Trostel, Albert, & Sons Co., Milwaukee, Wis. 704,436, canc. Cl. 1.
Turner Hall Corp., New York, N.Y. 818,476. Cl. 51.
Twentieth Century Mfg. Co., Cedar Rapids, to Glen V. Livengood, Burlington, Iowa. 215,154, ren. 11–8–66. Cl. 52.
Tyler Rosé Mart, Inc., Tyler, Tex. 704,421, canc. Cl. 1.
U.S.P. Corp., New York, N.Y. 818,408, pub. 8–23–66. Cl. 51.
Udylite Corp., The, Warren, Mich. 818,101, pub. 8–23–66. Cl. 6.
Underwood, Frank J., d.b.a. Duz-All Oil Co., Birmingham, Ala. 818,155, pub. 8–23–66. Cl. 15.
U.S. Sanitary Specialties Corp., Chicago, Ill., to Sterling Drug Inc., New York, N.Y. 222,022, ren. 11–8–66. Cl. 52.
United Biscuit Co. of America, Melrose Park, Ill. 818,382, pub. 8–23–66. Cl. 46.
United Biscuit Co. of America, Melrose Park, Ill. 818,383, pub. 8–23–66. Cl. 46.
United Biscuit Co. of America, Melrose Park, Ill. 818,384, pub. 8–23–66. Cl. 46.
United Biscuit Co. of America, Melrose Park, Ill. 818,385, pub. 8–23–66. Cl. 46.
United Biscuit Co. of America, Melrose Park, Ill. 818,386, pub. 8–23–66. Cl. 46.
United Biscuit Co. of America, Melrose Park, Ill. 818,387, pub. 8–23–66. Cl. 46.
United Biscuit Co. of America, Melrose Park, Ill. 818,388, pub. 8–23–66. Cl. 46.
United Biscuit Co. of America, Melrose Park, Ill. 818,389, pub. 8–23–66. Cl. 46.
United Biscuit Co. of America, Melrose Park, Ill. 818,390, pub. 8–23–66. Cl. 46.
United Distributors Service: *See*—
United Distributors Service, Inc.
United Distributors Service, Inc., d.b.a. United Distributors Service, Roanoke, Va. 818,099, pub. 8–23–66. Cl. 5.
United Distributors Service, Inc., d.b.a. United Distributors Service, Roanoke, Va. 818,140, pub. 8–23–66. Cl. 12.
United Distributors Service, Inc., d.b.a. United Distributors Service, Roanoke, Va. 818,151, pub. 8–23–66. Cl. 15.
United Distributors Service, Inc., d.b.a. United Distributors Service, Roanoke, Va. 818,198, pub. 8–23–66. Cl. 19.
United Distributors Service, Inc., d.b.a. United Distributors Service, Roanoke, Va. 818,210, pub. 8–23–66. Cl. 21.
United Distributors Service, Inc., d.b.a. United Distributors Service, Roanoke, Va. 818,236, pub. 8–23–66. Cl. 23.
United Distributors Service, Inc., Roanoke, Va. 818,420, pub. 8–23–66. Cl. 52.
Universal Foods Corp., Milwaukee, Wis. 818,350, pub. 8–23–66. Cl. 46.
Utt, Florence, Switchboard Training Systems, Inc., Anaheim, Calif. 818,441, pub. 8–23–66. Cl. 107.
Upjohn Co., The, to The Upjohn Co., Kalamazoo, Mich. 424,233, ren. 11–8–66. Cl. 18.
Upjohn Co., The, Kalamazoo, Mich. 812,503, cor. Cl. 26.
Upjohn Co., The, Kalamazoo, Mich. 704,522, canc. Cl. 18.
Upjohn Co., The, to The Upjohn Co., Kalamazoo, Mich. 423,726, ren. 11–8–66. Cl. 18.
Upjohn Co., The, to The Upjohn Co., Kalamazoo, Mich. 424,786, ren. 11–8–66. Cl. 18.
Upjohn Co., The, to The Upjohn Co., Kalamazoo, Mich. 423,867, ren. 11–8–66. Cl. 18.
VDO Tachometer Werke Adolf Schindling G.m.b.H., Frankfurt Main, Germany, from Kock, Rune, Stockholm, Sweden. 818,250, pub. 8–23–66. Cl. 26.
Valcour Imprinted Papers, Inc., Glen Falls, N.Y. 818,289, pub. 8–23–66. Cl. 37.
Valerie Jean Date Shop: *See*—
Nicoll, R. C.
Valspar Corp., The, Rockford, Ill. 818,397, pub. 8–23–66. Cl. 50.
Valtronic Corp., The, Bronx, N.Y. 818,280, pub. 8–23–66. Cl. 32.
Van Brode Milling Co., Inc., Clinton, Mass. 818,374, pub. 8–23–66. Cl. 46.
Van Hoose, Bernard, d.b.a. Van's Chemical Co., Columbus, Ohio. 818,427, pub. 8–23–66. Cl. 52.
Van Houten, C. J., & Zoon, to Koninklijke Fabrieken C. J. Van Houten & Zoon N.V., Weesp, Netherlands. 50,864, ren. 11–8–66. Cl. 46.
Van's Chemical Co.: *See*—
Van Hoose, Bernard.
Vanity Fair Mills, Inc., Reading, Pa. 818,301, pub. 2–22–66. Cl. 39.
Vantress Farms, Inc., Duluth, Ga. 818,085, pub. 8–23–66. Cl. 1.
Varian Associates, Palo Alto, Calif. 582,256. Am. 7(d). Cl. 21.
Varian Associates, Palo Alto, Calif. 602,973. Am. 7(d). Cl. 26.
Veb Photopapierwerk Dresden, Dresden, Germany. 704,599, canc. Cl. 26.
Veneko Corp., The, Dunkirk, N.Y. 818,083, pub. 8–23–66. Multiple Class (Classes 1 and 22).
Virgin Island Spices: *See*—
Dey, John A.
Vitaguano Ltd.: *See*—
Cuban Bat Guano Corp.
Vought Industries, Inc., Dallas, Tex. 704,534, canc. Cl. 19.
Vulcan Laquer and Coatings Co., Inc., Brooklyn, N.Y. 818,162, pub. 8–23–66. Cl. 16.
Wagoner-Webster, Inc., Muskegon, Mich. 704,561, canc. Cl. 23.
Walker Crosweller & Co. Ltd., Cheltenham, Gloucestershire, England. 704,614, canc. Cl. 26.
Walsh, Robert J., & Co., Inc., Winter Haven, Fla. 818,459. Cl. 38.
Wampole Laboratories: *See*—
Denver Chemical Mfg., Co.
Wander Co., The, d.b.a. Ovaltine Food Products, Chicago, Ill. 704,739, canc. Cl. 46.
Wards Cove Packing Co., Inc., Seattle, Wash. 818,355, pub. 8–23–66. Cl. 46.
Wards Cove Packing Co., Inc., Seattle, Wash. 818,356, pub. 8–23–66. Cl. 46.
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 818,450. Cl. 18.
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 818,451. Cl. 18.
Washington Tapes, Inc., Washington, D.C. 818,458. Cl. 38.
Watson, Max E., d.b.a. Watson Associates, Omaha, Nebr. 818,286, pub. 8–23–66. Cl. 37.
Watson Associates: *See*—
Watson, Max E.
Weck, Edward, & Co., Inc., Long Island City, N.Y. 818,344, pub. 8–23–66. Cl. 44.
Weil Mfg., Corp., Fond du Lac, Wis. 818,204, pub. 8–23–66. Cl. 21.
Wembley, Inc., New Orleans, La. 818,415, pub. 8–23–66. Cl. 51.
Wembley, Inc., New Orleans, La. 818,416, pub. 8–23–66. Cl. 51.
Wesco Hardware Co., Hawthorne, Calif. 818,145, pub. 8–23–66. Cl. 13.
West Virginia Pulp and Paper Co., New York, N.Y. 818,125, pub. 8–23–66. Cl. 6.
Western Auto Supply Co., Kansas City, Mo. 704,535, canc. Cl. 19.
Westinghouse Air Brake Co., Pittsburgh, Pa. 818,247, pub. 8–23–66. Cl. 23.
Westland Aircraft Ltd., Somerset, England. 818,196, pub. 8–23–66. Cl. 19.
Wetherholt, Frank, d.b.a. Ranger Engineering & Mfg., Union City, Mich. 704,532, canc. Cl. 19.
Wetherill, Geo. D., & Co., Inc., Philadelphia, Pa. 818,164, pub. 8–23–66. Cl. 16.
Whip-Mix Corp.: *See*—
Falls City Dental Specialty Co., Inc.
White, Barbara, Decorative Papers: *See*—
White, Barbara J.
White, Barbara J., d.b.a. Barbara White Decorative Papers, New York, N.Y. 704,651, canc. Cl. 37.
White Furniture Co., Mebane, N.C. 818,277, pub. 8–23–66. Cl. 32.
White Furniture Co., Mebane, N.C. 818,278, pub. 8–23–66. Cl. 32.
White Furniture Co., Mebane, N.C. 818,279, pub. 8–23–66. Cl. 32.
White, Rawson J., d.b.a. Rawson J. White Co., San Francisco, Calif. 704,768, canc. Cl. 101.
White, Rawson J., Co.: *See*—
White, Rawson J.
Wimpy International, Inc., Chicago, Ill. 818,348, pub. 8–23–66. Cl. 46.
Winn-Dixie Stores, Inc., Jacksonville, Fla. 704,729, canc. Cl. 46.
Winter Garden Citrus Growers Association, Winter Garden, Fla. 818,366, pub. 8–23–66. Cl. 46.
Witco Chemical Co., Inc., New York, N.Y. 818,163, pub. 8–23–66. Cl. 16.
Wolverine Shoe and Tanning Corp., Rockford, Mich. 818,166, pub. 8–23–66. Cl. 16.
Woodall Industries, Inc., Detroit, Mich. 818,142, pub. 8–23–66. Cl. 12.
Zenith Butter and Egg Co., to Zenith-Godley Co., Inc., New York, N.Y. 219,938, ren. 11–8–66. Cl. 46.
Zenith-Godley Co., Inc.: *See*—
Zenith Butter and Egg Co.
Zephyr American Corp., Long Island City, N.Y. 818,240, pub. 8–23–66. Cl. 23.

U.S. GOVERNMENT PRINTING OFFICE: 0—1966

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
November 15, 1966 Volume 832 Number 3

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of September 1966

Examiner affirmed	190
Examiner affirmed in part	37
Examiner reversed	55
Total	282

Disclaimers

2,999,117.—*Elmar R. Altwicker*, Dayton, and *Alfred B. Garrett*, Columbus, Ohio, *Earl A. Weilmuenster*, Kenmore, N.Y., and *Samuel W. Harris*, Oxford, Ohio. ALKYL DECABORANES AND METHOD FOR THEIR MANUFACTURE. Patent dated Sept. 5, 1961. Disclaimer filed Oct. 11, 1966, by the inventors; the assignee, *Olin Mathieson Chemical Corporation*, assenting.

Hereby enter this disclaimer to claims 2 and 4 of said patent.

3,038,012.—*Elmar R. Altwicker*, Dayton, and *Alfred B. Garrett*, Columbus, Ohio, *Earl A. Weilmuenster*, Kenmore, N.Y., and *Samuel W. Harris*, Oxford, Ohio. PREPARATION OF MONOALKYLATED PENTABORANE. Patent dated June 5, 1962. Disclaimer filed Oct. 11, 1966, by the inventors; the assignee, *Olin Mathieson Chemical Corporation*, assenting.

Hereby enter this disclaimer to claims 7 and 8 of said patent.

3,110,942.—*Darold W. Thiem*, Elm Grove, and *Gordon W. Gottschalk*, Hales Corners, Wis. HOT TOP BOTTOM RING AND METHOD FOR FORMING SAME. Patent dated Nov. 19, 1963. Disclaimer filed June 22, 1966, by the assignee, *Universal Refractories Corporation*.

Hereby enters this disclaimer to claims 10, 11, 12, 14, 17, 18 and 21 of said patent.

New Applications Received During September 1966

Patents	6,948
Designs	446
Plant Patents	19
Reissues	16
Total	7,429

Issue—November 15, 1966

Patents	1,469	No. 3,284,805 to No. 3,286,273, incl.	
Designs	39	No. 206,217 to No. 206,255, incl.	
Total	1,508		

GUIDELINES FOR DRAFTING A MODEL PATENT APPLICATION UNDER THE REVISED RULES

The following guidelines illustrate the preferred lay-out and content for patent applications. They have been prepared to supplement the amendments to the rules which are effective January 1, 1967. These guidelines are suggested for the applicant's use.

Arrangement and Contents of the Specification

The following order of arrangement is preferable in framing the specification and, except for the title of the invention, each of the lettered items should be preceded by the headings indicated.

(*a*) Title of the Invention.
(*b*) Abstract of the Disclosure.
(*c*) Cross-References to Related Applications (if any).
(*d*) Background of the Invention.
1. Field of the Invention.
2. Description of the Prior Art.
(*e*) Summary of the Invention.
(*f*) Brief Description of the Drawing.
(*g*) Description of the Preferred Embodiment(s).
(*h*) Claim(s).

(*a*) *Title of the Invention:* (See Rule 72(a).) The title of the invention should be placed at the top of the first page of the specification. It should be brief but technically accurate and descriptive.

(*b*) *Abstract of the Disclosure:* (See Rule 72(b), MPEP 608.01(a), and 831 O.G. 1328, October 25, 1966.)

(*c*) *Cross-References to Related Applications:* (See Rule 78 and MPEP 201.11.)

(*d*) *Background of the Invention:* The specification should set forth the Background of the Invention in two parts:

(1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions. The statement should be directed to the subject matter of the claimed invention.

(2) Description of the Prior Art: A paragraph(s) describing to the extent practical the state of the prior art known to the applicant, including references to specific prior art where appropriate. Where applicable, the problems involved in the prior art, which are solved by the applicant's invention, should be indicated.

(*e*) *Summary:* A brief summary or general statement of the invention as set forth in Rule 73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.

(*f*) *Brief Description of the Drawing:* A reference to and brief description of the drawing(s) as set forth in Rule 74.

(*g*) *Description of the Preferred Embodiment(s):* A description of the preferred embodiment(s) of the invention as required in Rule 71. The description should be as short and specific as is necessary to adequately and accurately describe the invention.

Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field to which the invention pertains, form a part of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.

(*h*) *Claim(s):* (See Rule 75.) A claim may be typed with the various elements subdivided in paragraph form. There may be plural indentations to further segregate subcombinations or related steps.

Reference characters corresponding to elements recited in the detailed description and the drawings may be used in conjunction with the recitation of the same element or group of elements in the claims. The reference characters, however, should be enclosed within parentheses so as to avoid confusion with other numbers or characters which may appear in the claims. The use of reference characters is to be considered as having no effect on the scope of the claims.

Claims should preferably be arranged in order of scope so that the first claim presented is the broadest. Where separate species are claimed, the claims of like species should be grouped together where possible and physically separated by drawing a line between claims or groups of claims. (Both of these provisions may not be practical or possible where several species claims depend from the same generic claim.) Similarly, product and process claims should be separately grouped. Such arrangements are for the purpose of facilitating classification and examination.

The form of claim required in Rule 75(e) is particularly adapted for the description of improvement type inventions. It is to be considered a combination claim and should be drafted with this thought in mind.

In drafting claims in accordance with Rule 75(e), the preamble is to be considered to positively and clearly include all the elements or steps recited therein as a part of the claimed combination.

Oath

(See Rule 65.) Where one or more previously filed foreign applications are cited or mentioned in the oath, complete identifying data, including the application or serial number as well as the country and date of filing, should be provided.

EDWARD J. BRENNER,
Commissioner of Patents.

Date: Oct. 12, 1966.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF SEPTEMBER 26, 1966

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager	7-3-63	10-2-61
Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.		
GENERAL ORGANIC CHEMISTRY, GROUP 120—G. D. MITCHELL, Manager	6-4-63	8-31-61
Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.		
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—M. STERMAN, Manager	8-1-63	8-21-61
Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.		
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager	2-5-63	1-31-62
Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.		
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager	7-1-63	10-23-61
Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.		
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—M. L. LEVY, Manager	7-15-63	12-15-61
Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.		
SECURITY, GROUP 220—S. BOYD, Manager	1-16-62	9-9-63
Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.		
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—E. J. SAX, Manager	1-7-63	6-6-61
Communications; Multiplexing Techniques; Facsimile; Date Processing, Computation and Conversion; Storage Devices and Related Arts.		
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—F. M. STRADER, Manager	4-12-63	7-31-61
Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.		
PHYSICS, GROUP 280—R. L. EVANS, Manager	1-13-64	10-25-62
Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.		
DESIGNS, GROUP 290—S. BOYD, Manager	6-15-65	1-5-65
Industrial Arts; Household, Personal and Fine Arts.		

Total number of pending applications (excluding Designs)	195,258
Total number of Design applications pending	Not available
Total number of applications awaiting action (excluding Designs)	143,338
Total number of Design applications awaiting action	Not available
Date of oldest new application awaiting action	Jan. 16, 1962
Date of oldest amended application awaiting action	June 6, 1961

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during November 1966, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1965*.

Patents	Numbers 2,486,373 to 2,490,010, inclusive
Plant Patents	Numbers 888 to 903, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid, Flexible and Special Receptacles and Packages.	6-26-64	5-16-63
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks; Fasteners.	5-19-64	3-19-62
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, Etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	2-13-64	3-19-62
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	12-4-64	10-15-63
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	7-8-64	8-20-62
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	10-17-63	7-25-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE SHENANGO CERAMICS, INC.

No. 7612. Decided June 23, 1966

[53 CCPA —; 362 F.2d 287; 150 USPQ 115]

1. TRADEMARK—FUNCTIONAL FEATURE OF GOODS.
"The under-rim configuration here is unregistrable on the Principal Register since it is functional and in essence utilitarian."

2. SAME—SAME—EVIDENCE—UTILITY PATENT.
"It is our view that the expired utility patent is adequate evidence that the under-rim configuration here sought to be registered is indeed functional. We do not find the Board to have erred in rejecting the contention that the present configuration is registrable because its functionality is so incidental as to be 'arbitrary' or a mere design. All the evidence points the other way. Appellant's arguments are futile 'attempts to reduce it [functionality] to a *de minimis* status.' *Deister*, supra, 48 CCPA at 967."

3. SAME—SAME—TRADEMARK ACT OF 1946.
"We think that the 1946 Act is premised on the idea that only non-functional configurations may be registrable thereunder. As stated in truism (4) of the *Deister case*, 48 CCPA 963: '(4) A feature dictated solely by "functional" (utilitarian) considerations may not be protected as a trademark; but mere possession of a function (utility) is not sufficient reason to deny protection.' "

4. SAME—REGISTRABILITY—FEATURE THAT IS SUBJECT OF A UTILITY PATENT—SECTIONS 2, 15 AND 45 [15 U.S.C. 1052 AND 1127].
"In the absence of other valid patent claims, a feature that is the subject of a utility patent goes into the public domain when the patent expires * * *. Such a feature, being free to be used by any person, thus cannot be a 'trademark [a "symbol, or device," section 45] by which the goods of the applicant *may be distinguished*,' section 2, 15 U.S.C. 1052. [Emphasis added.] Similarly, the definition of a trademark under section 45, 15 U.S.C. 1127, requires that the symbol or device 'identify * * * and distinguish * * *' the goods of a manufacturer or merchant from those manufactured or sold by others. We think it the broad policy of the law that a functional feature cannot satisfy the requirements of those words."

5. SAME—FUNCTIONAL FEATURE OF GOODS—EVIDENCE—UTILITY PATENT.
"Although the patent claimed the middle or vibration-throttling rib in combination with a pedestal or foot rib, the result is no different where the configuration is present on a plate having no pedestal rib. The patent is taken only as *some* evidence, here conclusive, that the involved under-rim configuration is indeed functional. Thus the result here is not dependent on the precise scope of the patent claims."

APPEAL from the Patent Office. Serial No. 144,893.

AFFIRMED.

Albert L. Ely, Jr., for appellant.

Joseph Schimmel (*George C. Roeming* of counsel) for the Commissioner of Patents.

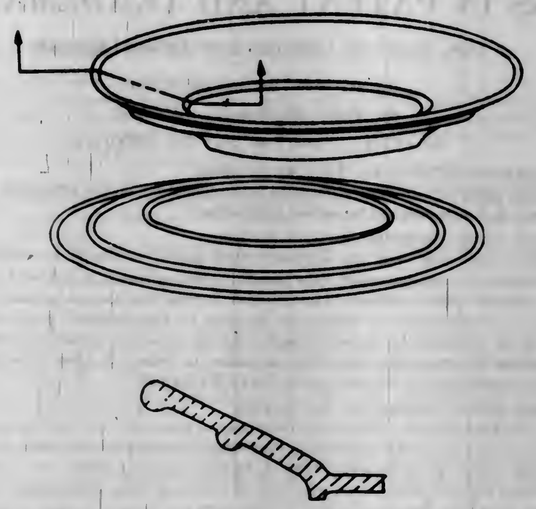
Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

MARTIN, *J.*, delivered the opinion of the court.

This is an appeal from a decision of the Trademark Trial and Appeal Board [1] refusing to register [2] on the Principal Register a por-

[1] Reported in full at 143 USPQ 48 (1964).
[2] Application Serial No. 144,893, filed May 17, 1962, continuous use of the mark since on or about February 13, 1939, being alleged.

tion of the under-rim configuration shown in the drawing below as a trademark for "China dishware."[3]



China dishware incorporating such ribs was the subject of a U.S. Utility Patent 2,178,274, issued October 31, 1939 to R. Ratner. The patent was assigned to the appellant herein (or its predecessor), and that patent expired in 1956. The patent was directed to the use of a median rib as above shown on the undersurface of a tableware article such as a plate. The patent states:

> * * * In virtue of its behavior in protecting the article against chipping, cracking and breaking as the result of vibratory stresses from impact-shocks received by the article, I call this rib the vibration-throttling rib. * * *

The patentee notes that pedestal ribs and perimetral ribs were then conventional, the former "allowing the articles to be stacked without extended face to face contact while in the kiln," and thus are "important in aiding manufacture of the article * * *." Although the perimetral rib had been used "with the idea of strengthening the flange * * *" of tableware, the patentee discovered the lifetime of such ware was shortened rather than prolonged.[4] The patentee teaches that:

> Whether or not the perimetral rib is present, the vibration-throttling rib of the present invention has been found by actual test to act in precisely the way it should act to justify its designation as a vibration-throttling element. * * *

A second "important" advantage taught by the patentee to arise from the use of the ribs is that "convenient and safe handling of the articles is made possible when it is grasped in one hand only," because the space between the ribs affords "a finger stall or seat for naturally

[3] The application states:

> Applicant disclaims any representation of dishware apart from the contour of the undersurface of the rim between the edge and foot, as shown.

Although appellant in its brief and by its counsel at oral argument indicates that only the foot (pedestal) rib is disclaimed, we find it immaterial in this appeal whether only the middle (median) rib or that plus the edge (rim or perimetral) rib (roll) constitutes the mark as applied for.

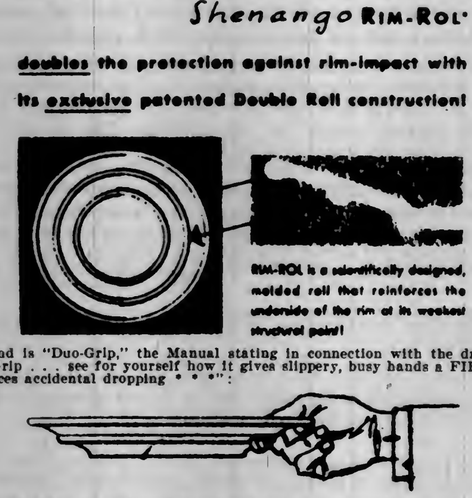
[4] The patentee states:

> * * * The articles are roughly handled, and the extra ring-like mass established by the perimetral rib at the outer edge of the flange acts apparently in some way as an intensifier or multiplier of the vibratory stresses set up in the article when the latter is subjected to impact-shocks.

accommodating a finger of an adult's hand." The claims were directed to the middle rib, either with the pedestal rib or with both the pedestal and perimetral ribs.[5]

The Examiner in refusing to register the "representation of goods" distinguished between containers that may serve as a trademark for the contents therein, and a "representation of goods themselves purporting to be trademarks for the same goods * * *." That point, however, was not the reason for final refusal to register below, nor is it the basis of our decision here. The basic reason for refusal, as stated by the Examiner, was that the rib configuration is a functional feature:

> * * * This configuration of goods is said to be a scientifically designed molded roll that reinforces the underside of the rim at its weakest structural point. The representation of this "exclusive patented double roll construction" is firmly believed not to be a trademark. The trademark is the name Rim-Rol,[6] which



> applicant has given to this utilitarian feature of the goods, but the construction feature of the goods themselves is not a trademark as defined in section 45 of the Trademark Statute, and therefore, it is not a mark capable of distinguishing the goods as required by section 2 of the Trademark Statute. * * *

The refusal to register was affirmed by a majority of the Board (there was also a concurring minority opinion),[7] on the ground that

[5] As an example, claim 1 reads as follows:

> 1. In a platter-like article of tableware made of a single mass of shaped frangible material and of the type comprising a main central section and a rim-like complementary section extended outwardly and upwardly from and continuously all around said central section, and also of the type carrying a pedestal rib on its bottom, a vibration-throttling means forming part of said single mass and including an endless rib running all around the underside of said complementary section, said second rib all around the same being spaced downward from the outer margin of said complementary section and upward from said pedestal rib, at least substantially the entirety of said second rib being at the underside of the article and such rib being of a uniform cross-section all round the article to provide an annularly evenly distributed mass of added material, said rib being of a height and of an average width each of which is at least from one-third to 40% of the thickness of the article at the locus of said rib.

Additional claims 2–4 dependent from claim 1 covered the rib spacing relationship, and claim 4 described a platter-like article of tableware having all three ribs.

[6] Appellant submitted apparently with the application for registration, a "Reference Manual" that makes reference to two word marks used in connection with the ribs (rolls). The first is "Rim-Rol":

[7] The concurring member was of the opinion that as a matter of law "the said design" was not a proper subject matter for registration as a trademark on the Principal Register, and stated, inter alia:

> The question of whether or not one can, in the absence of a valid subsisting patent or copyright, acquire an exclusive right to the shape of an article or to the shape of a feature thereof, has been finally determined in the negative by the Supreme Court of the United States in *Sears, Roebuck & Co.* v. *Stiffel Company*, 140 USPQ 524; and *Compco Corp.* v. *Day-Brite Lighting, Inc.*, 140 USPQ 528 * * *

the subject matter under consideration "is incapable of distinguishing applicant's goods from the goods of others because it is merely a functional feature of a product on which the patent has expired."

Thus this appeal presents the issue whether the preamble of section 2 (15 U.S.C. 1052) and the definition of trademarks under section 45 (15 U.S.C. 1127) preclude the registration on the Principal Register of the present three-dimensional configuration with its functional aspects. No section 2(f) issue is presented.

Appellant contends that the under-rim configuration falls within the statutory definition of a trademark, section 45, as it "includes any * * * symbol, or device * * *," and that the listing of configuration of goods in section 23 (15 U.S.C. 1091) does not preclude registration on the Principal Register. Appellant also argues that section 2 of the 1946 Act is mandatory, that no trademark shall be refused registration "on account of its nature * * *" except for those grounds specifically set forth in subsections (a) to (e) under section 2, none of which include functionality. Thus appellant states:

> All of the reasons advanced by the Examiner and the Board boil down to refusals to register appellant's mark because (*a*) of its mechanically functional nature or, (*b*) when used on ware also having a foot rib, such footed ware identified by appellant's mark was once patented. None of these "natures" of appellant's mark are included in the exceptions recited in sub-sections (a) to (e) of section 2 of the act. The decision below, accordingly, amounts to an attempt to amend the statutory mandate, by administrative decision, by adding "non-patented or non-patentable functional marks" as an additional exception to those now listed in subsections of section 2 of the act and/or further qualifying the present recital in the section 45 definition of a trademark so that "any * * * symbol or device" should read "any * * * *unpatentable, non-functional* symbol or device."

Regarding the functionality of the under-rim configuration appellant's position is:

> * * * Admittedly applicant's rim configuration was selected to function well as a vibration dampening configuration and to aid the gripping of the ware—while also serving as a distinctive identification. * * *
>
> * * * * * * *
>
> it should be pointed out that appellant in no way contends that its mark is non-functional; rather, if mechanical functionality is properly considered at all in determining a trademark's registrability under the 1946 Act, such mechanical functionality of applicant's device is not so non-arbitrary as to impair its obvious function as a distinctive identification of appellant's ware and, therefore, its registrability.

The distinction last quoted represents appellant's attempt to bring the instant under-rim configuration within the class of "shapes which can be monopolized because they are of such an arbitrary nature that the law does not recognize a right in the public to copy them, even if some incidental function is associated with them," *In re Deister Concentrator Co.*, 48 CCPA 952, 965, 289 F.2d 496, 129 USPQ 314. By appellant's reading, the *Deister* case would permit the registration of a functional "symbol, or device" that is "not so non-arbitrary as to impair its obvious function as a distinctive identification of appellant's ware and, therefore, its registrability." We do not so read the *Deister* case, since that reading changes "incidental function" as not barring registration, to: incidental identification as mandatory of registration. We hold the present case to be controlled by the principles of law in *Deister*, and in *In re Shakespeare Co.*, 48 CCPA 969, 289 F.2d 506, 129 USPQ 323. [1] The under-rim configuration here is unregistrable on the Principal Register since it is functional and in essence utilitarian.

[2] It is our view that the expired utility patent is adequate evidence that the under-rim configuration here sought to be registered is indeed functional. We do not find the Board to have erred in rejecting the contention that the present configuration is registrable because its functionality is so incidental as to be "arbitrary" or a mere design. All the evidence points the other way. Appellant's arguments are futile "attempts to reduce it [functionality] to a *de minimis* status," *Deister*, supra, 48 CCPA at 967.

[3] We think that the 1946 Act is premised on the idea that only non-functional configurations may be registrable thereunder. As stated in truism (4) of the *Deister* case, 48 CCPA at 963:

> (4) A feature dictated solely by "functional" (utilitarian) considerations may not be protected as a trademark; but mere possession of a function (utility) is not sufficient reason to deny protection.

Rather than adding an exception to section 2 or amending section 45, we are of the view that the terms of the act provide for the result here. [4] In the absence of other valid patent claims, a feature that is the subject of a utility patent goes into the public domain when the patent expires, *Kellogg Co.* v. *National Biscuit Co.*, 305 U.S. 111, 120-22 (1938); *Singer Mfg. Co.*, 163 U.S. 169, 185 (1896). Such a feature, being free to be used by any person, thus cannot be a "trademark [a 'symbol, or device,' section 45] by which the goods of the applicant *may be distinguished*," section 2, 15 U.S.C. 1052. [Emphasis added.] Similarly, the definition of a trademark under section 45, 15 U.S.C. 1127, requires that the symbol or device "identify * * * and distinguish * * *" the goods of a manufacturer or merchant from those manufactured or sold by others. We think it the broad policy of the law that a functional feature cannot satisfy the requirements of those words. As this court stated in the *Deister* case, 48 CCPA at 968:

> It seems to us that this case perfectly exemplifies what we mean by a functional or utilitarian shape which is incapable of acquiring a legally recognizable "secondary meaning" or of becoming an enforceable trademark for the simple reason that, absent patent protection, the public has the right to copy the shape and enjoy its advantages. * * *

[5] Although the patent claimed the middle or vibration-throttling rib in combination with a pedestal or foot rib, the result is no different where the configuration is present on a plate having no pedestal rib. The patent is taken only as *some* evidence, here conclusive, that the involved under-rim configuration is indeed functional. Thus the result here is not dependent on the precise scope of the patent claims.

We do not find *In re Mogen David Wine Corp.*, 51 CCPA 1260, 328 F.2d 925, 140 USPQ 575, or *In re Minnesota Mining & Mfg. Co.*, 51 CCPA 1546, 335 F.2d 836, 142 USPQ 366, to be apposite to this case. The *Mogen David* case involved the *design* or non-functional configuration of a container for goods and thus cannot stand as precedent on the functionality issue here. The *Minnesota Mining* case involved an arbitrary, non-functional configuration of goods. So far as is pertinent to registrability for federal trademark protection, we believe *Sears, Roebuck & Co.* v. *Stiffel Co.*, 376 U.S. 225, 140 USPQ 524 and *Compco Corp.* v. *Day-Brite Lighting, Inc.*, 376 U.S. 234, 140 USPQ 524 to be consistent with the result reached herein.

For the foregoing reasons the decision of the Board is affirmed.

AFFIRMED.

SMITH, *J.*, concurs in the result.

U.S. Court of Customs and Patent Appeals

ENDO LABORATORIES INC. *v.* "FO-WE" FORSCHUNGS- UND VERWERTUNGS-ANSTALT

No. 7503. Decided December 9, 1965

[53 CCPA —; 353 F.2d 247; 147 USPQ 493]

1. TRADEMARK—CONFUSING SIMILARITY—"COUMADIN" AND "DIOCOUMINE" FOR ANTI-COAGULANTS.

On the issue of confusing similarity between the marks "COUMADIN" and "DIOCOUMINE," both for anti-coagulants, *Held* that "We agree with the Board that persons informed in such matters would probably recognize that the goods to which the marks were applied were derivatives of coumarin, but that fact would not be likely to give rise to confusion because, when considered in their entireties, the marks neither look nor sound alike."

APPEAL from the Trademark Trial and Appeal Board of the Patent Office; 141 USPQ 948. Trademark opposition No. 42,357 by Endo Laboratories, Inc., against "Fo-WE" Forschungs- und Verwertungs-Anstalt, application, Serial No. 141,831.

AFFIRMED.

Charles R. Allen, Jr., and *Alex Friedman*, for appellant.

Russell L. Law for appellee.

Before RICH, *Acting Chief Judge*, MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*, and KIRKPATRICK, *Judge* *

KIRKPATRICK, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Trademark Trial and Appeal Board dismissing an opposition filed by the appellant, Endo Laboratories, Inc., to the appellee's application for registration of a trademark. The opposition is based upon the opposer's prior use. The marks involved in the case are COUMADIN for the opposer and DIOCOUMINE for the applicant. The goods of both parties are anti-coagulants which are derived in part from the drug coumarin and are competitive in character.

[1] We agree with the Board that persons informed in such matters would probably recognize that the goods to which the marks were applied were derivatives of coumarin, but that fact would not be likely to give rise to confusion because, when considered in their entireties, the marks neither look nor sound alike.

The decision of the Trademark Trial and Appeal Board is affirmed.

AFFIRMED.

* United States Senior District Judge for the Eastern District of Pennsylvania, designated to participate in place of Chief Judge Worley, pursuant to provisions of section 294(d), title 28, United States Code.

U.S. Court of Customs and Patent Appeals

IN RE JOHN BULINA (DECEASED), AND JACK T. BROWN

No. 7559. Decided June 23, 1966

[53 CCPA —; 362 F.2d 555; 150 USPQ 210]

1. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT—AFFIDAVIT FILED WITH REQUEST FOR RECONSIDERATION BY BOARD OF APPEALS—*In re Martin* DISTINGUISHED.

In connection with a refusal by the Board of Appeals, citing *In re Martin*, to consider an affidavit filed with a request for reconsideration, *Held* that "It is noted that the *Martin* decision was rendered in 1946, prior to the enactment of section 103"; that "It seems clear to us that whatever may have been the merit in 1946 of the Solicitor's position as to the affidavit in the *Martin* case, it is not controlling here for two reasons: (1) The rejection concerning which the Conrad affidavit was here filed is predicated upon *factual assumptions* first made in the Board opinion, and (2) in arriving at the legal conclusion required by section 103 we must consider the *factual* basis supporting the ultimate legal conclusion."

2. APPEAL TO THE BOARD OF APPEALS—MATTER BEFORE BOARD.

"The Board's refusal to consider the affidavit of Conrad [filed with a request for reconsideration] * * * was erroneous. It should have carefully considered the affidavit since the introduction of the affidavit was occasioned by what appears to be the Board's extrapolation of unsupported facts from the teachings of Cochardt."

3. PATENTABILITY—PARTICULAR SUBJECT MATTER—"DAMPING ALLOYS AND MEMBERS PREPARED THEREFROM."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Damping Alloys and Members Prepared Therefrom," as unpatentable over the prior art, is reversed.

APPEAL from the Patent Office. Serial No. 846,906.

REVERSED.

H. M. Snyder for appellants.

Clarence W. Moore (*Fred W. Sherling* of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern Distict of Pennsylvania*

SMITH, *J.*, delivered the opinion of the court.

The invention here involved is claimed in appealed claims [1] 2, 6 and 7 as a process, in appealed claims 1, 3, 4 and 9 as an alloy, in claims 5 and 11 as a "member" and in claim 12 as a turbine blade. One claim stands allowed.

At the outset there appears to be a substantial question as to the ground or grounds of the rejection on appeal which creates a considerable doubt as to whether the rejection has been so stated as to comply with 35 U.S.C. 132.

This question can be best evaluated against the technical background of the invention in issue. In general, the invention relates to a process for making improved heat-treated alloy members having high damping capacity at elevated temperatures under stress, and to members made in accordance with the process. The process is asserted to be applicable to a broad range of alloys containing nickel and at least one of the elements chromium, iron, and cobalt; the total of the named elements being at least 80% by weight of the alloy. The asserted improvement is the presence in the heat-treated alloy of a particular microstructure, i.e., lamellar colonies forming a cellular precipitate wherein the lamellar colonies constitute at least 3% of any cross section of the alloy. The cellular precipitate is a microstructure previously known and readily recognized by metallurgists. The heat-treated alloy, when employed as a machine element at elevated temperatures, is asserted to suppress vibration, commonly described as a "damping" alloy.

All of the presently appealed claims, as well as claim 8 on which the Examiner's rejection was reversed by the Board of Appeals, appear to have been finally rejected "over the references of record for the reasons of record adequately set forth in Paper No. 6." In Paper No. 6 the claims were all rejected on the following grounds:

Claims 1 to 7, 11 and 12 are rejected as unpatentable over the ASM publication, page 103, in view of Cochardt and the ASM publication, pages 454 to 490

[1] Presented in application Ser. No. 846,906, filed Oct. 16, 1959, for "Damping Alloys and Members Prepared Therefrom."

and 439 to 447. The ASM publication on page 103 shows how aging and overaging increases the damping capacities of an age hardenable alloy. The Cochardt patent discloses a composition of an alloy which is age hardenable and meets the applicants' composition. The ASM publication on pages 454 to 490 and 439 to 447 teaches that aged and overaged alloys of nickel and cobalt form precipitates in a cellular structure. The latter references to the ASM publication also give applicable solution and aging temperatures which fall within the applicants' ranges. It would not be patentable invention to solution treat and age the alloys of Cochardt by the methods disclosed in the ASM publication to obtain better damping capacities because the ASM publication on page 103 shows that aging can increase the logarithmic decrement.

* * * * * * *

Claims 1, 8 and 9 are rejected as unpatentable over Pilling in view of pages 103 and 279 to 287 of ASM publication and for the above stated reasons. The Pilling patent discloses alloys within the ranges of the applicants' alloys. The ASM publication on pages 279 to 287 teaches the applicable heat treating methods for alloys within the range of Pilling's alloy. It would not be patentable invention to combine the teachings of Pilling and the ASM publication to achieve a ferrous alloy with high damping capacity because the effects of age hardening on the damping capacity are shown on page 103 of the ASM publication which shows no new and unobvious results would be realized by such a combination.

The references referred to above by the Examiner were:

Pilling et al. [Pilling], 2,048,163, July 21, 1936.
Cochardt et al. [Cochardt], 2,829,048, April 1, 1958.
ASM, "Educational Lectures on Precipitation From Solid Solution," 103, 279–287, 439–447, 454–490 (1959) [ASM].

The history of the prosecution of this application up to and including the Examiner's "Paper No. 6" is difficult to follow because of what appears to be constantly changing grounds of rejection. It may well be an over-simplification to say that taken in its entirety the Examiner's position seems to us to have been, "It would not be patentable invention" to do what is claimed in view of a combination of references. As to claims 1, 8 and 9, we find in addition, however, the Examiner stating "no new and unobvious result would be realized."

It seems to us, therefore, that the issue joined before the Examiner necessarily arises under 35 U.S.C. 103. The Board eliminated the ASM reference,[2] reversed the Examiner as to his rejection of claim 8, sustained the rejection of claims 1 to 7 and 11 and 12 on Cochardt alone, and sustained the rejection of claims 1 and 9 on Pilling alone. While certain portions of the Board's opinion suggest a rejection based on 35 U.S.C. 102, we think when treated as a whole the rejection was sustained as a rejection for obviousness under section 103. We shall resolve the issue on this basis.

The Supreme Court has suggested that certain guide lines be employed in dealing with such a rejection. In *Graham* v. *John Deere Co.*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), the court observed:

* * * the § 103 condition, which is but one of three conditions, each of which must be satisfied, lends itself to several basic factual inquiries. Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or nonobviousness these inquiries may have relevancy. * * *

The relevance of this observation is demonstrated in the present

[2] There is a substantial and prolonged argument between appellants and the Examiner as to the availability of the teachings of the ASM reference, which because of the Board's action, need not be resolved.

appeal. The factual issue to be resolved as to the patentability of claims 1 to 7 and 11 and 12 in view of Cochardt first requires an understanding of the Cochardt teachings. The Examiner stated his position as to what Cochardt disclosed and appellants filed Cochardt's own affidavit which contradicted this position. The Board in considering this affidavit said:

* * * As indicated in the Cochardt affidavit, a sufficiently long period of aging is responsible for the appearance of the cellular precipitate. In contradiction to the affidavit we do not see how Cochardt et al. could avoid having lengthy aging periods and cellular precipitates when his alloys were used for their intended purpose, as turbine blades with steam having a temperature of 1200° F. Again we observe that Cochardt et al. recognize this possibility of aging during actual use.

So far as we have been able to ascertain, this is the first instance in the present record in which the rejection on Cochardt was predicated upon the factual assumption that turbine blades could be aged to form cellular precipitates by operation of the blades in a steam turbine supplied with steam having a temperature of 1200° F.

Appellants filed a petition for reconsideration in which this factual assumption of the Board was challenged and also filed an affidavit of Joseph D. Conrad, Sr. [hereafter Conrad], in which he stated *inter alia*:

* * * it may not be assumed that satisfactory aging of the turbine blades can be secured after the blades are installed in the turbine and while the turbine is operated in service. The steam temperatures on the turbine blades vary radically between no load or very low load conditions and at substantial load conditions. When a turbine is operated under a load the steam temperatures drop radically at each row of blades since energy is transferred from the steam to the turbine.

That, it is erroneous to assume that the steam impinging on the turbine blades is at the rated maximum steam temperature of the turbine; whereas, in fact, the steam at a nominal inlet temperature of say 1200° F., drops in temperature in passing through the nozzle so that even under full load, the temperature of the steam at the first row of blades is no more than 1130° F.;

That, even under full load, at the second stage of blading the temperature of the steam impinging thereon is less than 1100° F. and at the third stage of blading the steam temperature is about 1050° F., and becomes progressively lower for each subsequent row of blades, and, the 1200° F. aging of the alloy cannot occur in the turbine blades during normal operaton of the turbine * * *

He then concluded that:

* * * aging turbine blades in normal operation under load, of the alloys of the patent to Cochardt et al., will not result in the production of a cellular precipitate, and that if an attempt were made to rely upon this aging procedure for blades without the cellular precipitate in the metal, it might well result in severely damaging the turbine.

The Board, citing the decision in *In re Martin*, 33 CCPA 842, 154 F.2d 126, 69 USPQ 75, as authority for its position, refused to consider the Conrad affidavit stating:

* * * it is not the practice of this Board to consider affidavits filed with a request for reconsideration of our decision. At the most, they will be treated only as arguments.

[1] It is noted that the *Martin* decision was rendered in 1946, prior to the enactment of section 103. It seems clear to us that whatever may have been the merit in 1946 of the Solicitor's position as to the affidavit in the *Martin* case, it is not controlling here for two reasons:

1. The rejection concerning which the Conrad affidavit was here filed is predicated upon *factual assumptions* first made in the Board opinion, and

2. In arriving at the legal conclusion required by section 103 we must consider the *factual* basis supporting the ultimate legal conclusion. Cf. *Graham* v. *John Deere Co.*, supra.

To support a finding of obviousness under section 103 it is essential that it be based on a sound factual basis. We have reviewed the Conrad affidavit which the Board refused to consider and find it persuasive indeed that the *assumptions* or *inferences* of scientific fact which the Board found in the Cochardt reference are not supportable.

As a steam turbine engineer, Conrad averred facts as to the steam temperature in turbines operating at nominal steam inlet temperature of 1200° F. He pointed out that substantial drops in temperature occur as the steam passes through nozzles so that even at the first stage of blades the temperature of the steam is no more than 1130° F. and that the steam temperature at succeeding blade stages is less than 1100° F. Conrad further stated that, to his knowledge, only one steam turbine in the United States has been put into operation using 1200° F. steam and, in any case, high damping alloys of the type disclosed in the Cochardt patent and in the present application have been employed only in steam turbines having nominal steam temperatures of 1050° F. and 1000° F. [2] The Board's refusal to consider the affidavit of Conrad under the circumstances of this case was erroneous. It should have carefully considered the affidavit since the introduction of the affidavit was occasioned by what appears to be the Board's extrapolation of unsupported facts from the teachings of Cochardt. As appellants state in their brief:

> It should be noted that the first effort to produce the cellular precipitate in the cobalt-nickel base alloy required a period of treatment of 2500 hours at 1200° F., or more than 100 *days*. Cochardt et al. suggest a period of about 100 *hours* of aging at 1200° F., for it is Cochardt's observation that prolonged aging does not substantially increase the hardness of the alloy and, consequently, all benefit that can be conferred by the aging treatment has been obtained. The Board, with appellants' disclosure before it, is aware that Cochardt et al. were wrong in their conclusion, for appellants have taught the Board that prolonged aging will yield lamellar colonies forming a cellular precipitate, a microstructure which raises the damping capacity of the alloy far above that achieved by Cochardt et al.

In *In re McKenna*, 40 CCPA 937, 203 F.2d 717, 97 USPQ 348, 350, this court stated:

> * * * the courts should resort not only to an attempt to determine whether an applicant's novel feature is within the capacity of a skilled mechanic in the art, but also to the history and underlying state of the art at or about the time of the alleged invention, the occasion for it, the advantages and successes it achieves. *In re Worrest*, 40 CCPA (Patents) 804, 201 F.2d 930, 96 USPQ 381; *In re Bowden et al.*, 37 CCPA (Patents) 1201, 183 F.2d 115, 86 USPQ 419; *In re Holt*, 34 CCPA (Patents) 1129, 162 F.2d 472, 74 USPQ 155. Of course the record as to the history of the art before the Patent Office tribunals and this court in an *ex parte* case would almost invariably be less complete, and perhaps less reliable, than that before a court in an *inter partes* infringment suit, due to obvious inherent differences in the nature of the two proceedings; and this is a factor to be considered by us in applying the "history of the art test." *In re Worrest*, supra.
>
> Although there are certain obvious shortcomings in *ex parte* affidavits as proof, it seems to us that such affidavits are clearly one of the few practical methods of presenting a factual record sufficient to form a basis for proper application of the "history of the art test" in this type of *ex parte* proceeding. Indeed, in some cases this court has reversed the Patent Office, relying considerably on affidavits presenting facts which convinced us that the invention of the application had some meritorious advantage over the prior art. *In re Robert Burgess, Jr.*, 35 CCPA (Patents) 1076, 167 F.2d 637, 77 USPQ 373; *In re Holt*, supra. Such *ex parte* affidavits must, of course, be closely scrutinized and weighed with care, it being kept in mind that they may unconsciously and unintentionally be colored as a result of enthusiasm for the subject matter of the application. We think also that an affidavit by an applicant or co-applicant as to the advantages of his invention is less persuasive than one made by a disinterested person (see *Ex parte Coleman*, 29 USPQ 378, Bd. of Appeals). However, it is not to be disregarded for that reason alone and may be relied on when sufficiently convincing. See *In re Holt*, supra, and *In re Mock*, 28 CCPA (Patents) 919, 117 F.2d 745, 48 USPQ 545, wherein this court relied on such affidavits in reversing the Board of Appeals.

Applying these observations to both the Conrad and Cochardt [3] affidavits, we disagree with the decision of the Board and it is reversed as to claims 1 to 7 and 11 and 12.

The Board affirmed the rejection of claims 1 and 9 on Pilling alone. The essence of the position of the Board as to Pilling appears to be that it would be inherent from the Pilling disclosure to obtain alloys having at least 3% lamellar colonies. A study of the Pilling patent shows that it fails to teach or disclose any lamellar colonies or cellular precipitate whatsoever in the alloys mentioned. It seems improbable that, even through accident, any heat treatment disclosed therein would produce cellular precipiate in the required amounts. It seems to us the Board here engages in speculation and except for appellants' own teachings we find no facts of record supporting this rejection.

The Pilling patent suggests that boron may be present in the disclosed alloys in amounts of up to ½%. Appellants disclosed that boron inhibits the formation of cellular precipitate. Thus the alloys of Pilling may have boron in sufficient amounts actually to *suppress* the formation of cellular precipitate.

Considered in the light most favorable to the Board's position, the disclosures in the Cochardt and Pilling references of an alloy with damping properties due to their lamellar structures would at best be accidental or unintended. If section 103 is to be applied as the Supreme Court suggests it should be in *Graham*, *Calmar*, *Colgate-Palmolive* [4] and *Adams* [5] cases, there is more reason than ever to apply the statement in *Tilghman* v. *Proctor*, 102 U.S. 707, 711–12 (1880) to such a situation. There, the Supreme Court in considering whether the prior art anticipated a process patent for separating glycerin from fat acids, said:

> If the acids (in the prior art) were accidentally and unwittingly produced, whilst the operators were in pursuit of other and different results, without exciting attention and without its even being known what was done or how it had been done, it would be absurd to say that this was an anticipation of Tilghman's discovery.

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[3] We find appellants' position persuasive as stated in their brief:

> The affidavit of Cochardt indicates how far the Board of Appeals has gone astray in relying on the Cochardt et al. reference as an anticipation for a high damping alloy member containing a substantial proportion of cellular precipitate. Appellants filed the Cochardt et al. affidavit (R. pp. 138 to 141) in order to establish the unobviousness and the merits of the present invention over the prior art, in particular, the Cochardt et al. patent.
>
> As a metallurgist and co-inventor of the Cochardt et al. reference patent, Cochardt stated that he carried out an extensive metallurgical investigation for the purpose of developing alloys having improved damping properties, and that he particularly studied cobalt-base precipitation hardening alloys containing substantial amounts of nickel therein.
>
> Cochardt averred that he had supervised the melting, solution treatment and aging of numerous heats of cobalt-base precipitation hardening alloys and produced, studied and tested many specimens to determine physical properties including damping properties and that some of the alloys had composition similar to those disclosed in this patent application. Cochardt further stated that in the production of alloys in accordance with the patent to Cochardt et al., excellent damping properties were obtained with the specific cobalt-base alloy composition set forth therein and many of these cobalt-base alloys were produced and when examined metallographically showed no cellular precipitate and when tested exhibited good damping properties.
>
> Cochardt states that the aging treatments set forth in the Cochardt et al. patent were not intended to produce a lamellar or cellular precipitate in the alloys treated and that though he and his co-inventor had observed on occasion a cellular precipitate in a few cobalt-base alloy members which had been overaged, they believed, for reasons of strength and ductility, such lamellar precipitate was not desirable.
>
> Clearly, the * * * advance, which the Board would attribute to Cochardt et al. was not within the contemplation of the inventors.

[4] See text, supra.

[5] *United States* v. *Adams*, 383 U.S. 39, 148 USPQ 479 (1966).

We will next consider the Board's criticism of claim 9. The Board stated:

> Assuming that there is in fact a structural distinction over the alloys of Pilling et al., it is thought to be defined with insufficient particularity to amount to a patentable distinction, *In re Fields*, 50 CCPA —, 1962 C.D. 461, 784 O.G. 8, 304 F.2d 691, 134 USPQ 242. On page 3 of the specification the lamellar colonies are described as "areas of relatively depleted matrix continuous with itself and the alloy matrix proper, and spaced strips of precipitate disposed in the depleted matrix." It is not seen how good damping properties can be attributed to the presence of "lamellar colonies" without any further characterization of them.

From a review of the specification we find the lamellar colonies are clearly described in the specification and illustrated in the drawings. It is pointed out in the specification that metallurgists are familiar with the structure. The data relating to damping characteristics presented in the application show the superior damping properties obtained when the lamellar colonies are present. Thus, it seems to us the Board's objection is without support. The term "lamellar colonies" as used in claim 9 is clearly defined in the specification so that one skilled in the art can recognize and identify this critical structure, and can practice the claimed invention and thereby obtain the damping properties described. This fulfills the requirement stated in the first sentence of the second paragraph of 35 U.S.C. 112 which provides:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Reading this requirement in the light of par. 1 of section 112, we think the criticism of the Board is unwarranted.

Appellants summarized as the "primary object of their invention" what the affidavits establish factually as being an unobvious contribution to this highly developed and highly technical art. As stated in the specification this object is:

> * * * to provide an alloy having high damping characteristics, the alloy comprising essentially predetermined critical amounts of nickel and at least one element selected from the group consisting of chromium, iron, and cobalt, and hardening constituents, the alloy structurally comprising a matrix with a substantial proportion of lamellar colonies distributed therein.

We fail to find on the present record that such a basic concept was made obvious in this art until appellants stated it, described it and claimed it. Reading the prior art as we must without the benefit of appellants' teachings, it is clear that appellants' contribution was not obvious within the meaning of section 103.

[3] For the foregoing reasons, the decision of the Board is reversed.

REVERSED.

MARTIN, *J.*, concurs in the result.

U.S. Court of Customs and Patent Appeals

IN RE RONALD HARRY HALLIWELL

No. 7550. Decided April 28, 1966

[53 CCPA —; 358 F.2d 1008; 149 USPQ 511]

1. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT—EXAMINER'S POSITION NOT REVERSED BY BOARD.

"The Examiner and the Board rejected the claims as 'unpatentable over Downing * * * considered with Nelson,' the two patents to which appellant had referred for background purposes in his specification. Their reasons for maintaining the rejection differ in material respects and, since the Examiner's position was not specifically reversed by the Board (Rule 196(a)), we shall discuss the propriety of both positions as raised by appellant's reasons of appeal and brief."

2. PATENTABILITY—REFERENCE—PRIOR ART.

"It will be noted that the Examiner, to support his position that Downing obviously prepared HFP, twice referred to an alleged admission of appellant in the record that Downing does in fact produce HFP in minor amounts. We have examined that purported admission [concerning a private finding, which knowledge was not in the public domain] and agree with appellant that it cannot serve explicitly or implicitly as prior art to be used in rejecting the claims."

3. SAME—PARTICULAR SUBJECT MATTER—"PROCESS FOR THE MANUFACTURE OF PERFLUORO-OLEFINS."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Process for the Manufacture of Perfluoro-Olefins" as unpatentable over the prior art, is reversed.

APPEAL from the Patent Office. Serial No. 58,895.

REVERSED.

Edwin Tocker (*Frederick Schafer* of counsel) for appellant.

Clarence W. Moore (*J. F. Nakamura* of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, JR., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

KIRKPATRICK, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Board of Appeals affirming the rejection of claims 1–6 in appellant's patent application [1] for "Process for the Manufacture of Perfluoroolefins."

The application relates to a process for co-synthesis of hexafluoropropylene ($CF_3—CF=CF_2$, hereafter termed HFP) and tetrafluoroethylene ($CF_2=CF_2$, TFE) by pyrolysis [2] of chlorodifluoromethane ($CHClF_2$, CFM). The ethylenically unsaturated fluorocarbons TFE and HFP are known in the art to be useful in formation of chemically inert resinous copolymers.

Appellant provides the following background information in his specification:

> It has been known heretofore that tetrafluoroethylene may be pyrolysed to give hexafluoropyropylene. Under certain critical conditions high yields may be obtained. See, for example, U.S. Patent 2,758,138 issued to D. A. Nelson on August 7, 1956.
>
> It has also been known that chlorodifluoromethane may be pyrolysed to give tetrafluoroethylene, for example, as described by Downing in U.S. Patent 2,551,573 issued May 8, 1951.
>
> It has not been known heretofore, however, that hexafluoropropylene can be prepared directly from chlorodifluoromethane by pyrolysis in high yield.
>
> It has been discovered that when chlorodifluoromethane is pyrolysed at low conversion [3] so that a high yield [4] of tetrafluoroethylene is formed, a small amount of hexafluoropropylene is also formed. The quantity thus formed is too small to be of economic significance. As the percentage conversion is increased

[1] Serial No. 58,895, filed September 28, 1960.

[2] A pyrolysis reaction occurs essentially through the agency of heat, resulting here in the breakdown of the CFM molecule into smaller fragments, termed free radicals, and the recombination of those fragments into larger molecules.

[3] Conversion means the percent of starting material changed to other products, desirable or otherwise.

[4] Yield is a measure of converted material that is desired product. Appellant points out that, in the chemical industries, it is sometimes necessary to operate at low "conversion" in order to get high "yield" of desired product and little waste.

by increasing the temperature, or the contact time, or both, the amount of hexafluoropropylene formed also increases. On the other hand, the unwanted side products, hereinafter called "unrecoverables," also increase, and at a rate twice as great as the rate of increase of the hexafluoropropylene. However, in the range between 86% conversion and 94% conversion a highly surprising effect has been found. In that range the concentration of hexafluoropropylene suddenly increases until the proportion of hexafluoropropylene is comparable with and may exceed the concentration of tetrafluoroethylene. Moreover, the increase in yield with conversion is accompanied by an increase of 0.8 part of unrecoverables per part of hexafluoropropylene as compared with over 2.0 parts of unrecoverables per part of hexafluoropropylene at lower conversion. Above about 90% conversion, the yield of unwanted products itself shows a sharp increase, and beyond about 94% conversion, the yield becomes less favorable economically. * * *

The subject matter is reflected in claim 1:

1. A process for the co-synthesis of hexafluoropropylene and tetrafluoroethylene which comprises pyrolyzing chlorodifluoromethane at a temperature in the range between 700° C. and 900° C. at a partial pressure between 0.1 and 2.0 atmospheres and at a conversion level between 86% and 94% based on the chlorodifluoromethane charged, cooling the reaction product and thereafter separating tetrafluoroethylene and hexafluoropropylene from the reaction product.

[1] The Examiner and the Board rejected the claims as "unpatentable over Downing * * * considered with Nelson," the two patents to which appellant had referred for background purposes in his specification. Their reasons for maintaining the rejection differ in material respects and, since the Examiner's position was not specifically reversed by the Board (Rule 196(a)), we shall discuss the propriety of both positions as raised by appellant's reasons of appeal and brief. *In re Rubinfield*, 47 CCPA 701, 270 F.2d 391, 123 USPQ 210.

The Examiner's description of the references, which we find to be accurate for our purposes here, and his reasons for the rejection are set forth in his answer as follows:

* * * Downing et al. disclose pyrolyzing chlorodifluoromethane at temperatures between 600° to 1000° C. * * * at pressures between 0.1 and 10 atmospheres * * *, at conversions levels from 30% to 100% * * *. The compound, tetrafluoroethylene is disclosed as being produced by the process * * *. Although there is no indication in Downing et al. that hexafluoropropylene is also a product of the said pyrolysis, the examples in Downing et al. disclose that a variety of products are produced in the pyrolysis of chlorodifluoromethane. Since hexafluoropropylene has a boiling point of about —29° C. it might be present in the apparently unanalyzed fractions boiling above —40° C. in Examples 1 and 9 of Downing et al. It is also noted from appellant's remarks of April 16, 1963 * * * that in the process as disclosed by Downing et al. some hexafluoropropylene is produced in minor amounts. It would therefore appear obvious to determine what conditions within the range of conditions disclosed by Downing et al. leads to simultaneously high yields of tetrafluoroethylene and perfluoropropene.[5] The Nelson reference discloses that tetrafluoroethylene can be pyrolyzed to produce perfluoropropene and therefore it would appear obvious to adjust the pyrolysis conditions disclosed by Downing et al. in the pyrolysis of chlorodifluoromethane to produce substantial yields of both tetrafluoroethylene and perfluoropropene.

* * * * * * * * *

although Downing et al. do not specifically state that perfluoropropene is produced, the instantly claimed reaction conditions fall within the scope of those conditions disclosed by Downing et al. and thus there is reason to believe that besides tetrafluoroethylene, that perfluoropropene is also produced by Downing et al. Although Downing et al. did not analyze in each of their examples all of the products formed, appellants appear to concede, as noted supra, that conditions outside the instantly claimed critical range and also within the range disclosed by Downing et al. do produce some perfluoropropene along with tetrafluoroethylene. No invention is thus seen in optimizing the conditions in order to produce substantial yields of perfluoropropene along with tetrafluoroethylene, particularly since Nelson would indicate to one skilled in the art that tetrafluoroethylene itself pyrolyzes to produce perfluoropropene.

[5] "Perfluoropropene" is another name for the compound "hexafluoropropylene."

[2] It will be noted that the Examiner, to support his position that Downing obviously prepared HFP, twice referred to an alleged admission of appellant in the record that Downing does in fact produce HFP in minor amounts. We have examined that purported admission[6] and agree with appellant that it cannot serve explicitly or implicitly as prior art to be used in rejecting the claims.

The question remains whether there is any competent evidence to suggest that both HFP and TFE can be prepared by Downing's process. In its decision, the Board appears to have adopted, in part, an earlier position of the Examiner set forth in his final rejection that "it appears evident from the Nelson disclosure that the hexafluoropropylene is a product of the Downing pyrolysis * * *." The Board stated:

* * * since the prior art has recognized the desirability of co-synthesizing hexafluoropropylene and tetrafluoroethylene, all that one skilled in the art would have to do, in order to obtain such a mixture, would be to direct a *sequential* operation by carrying out the Downing et al. process of pyrolyzing chlorodifluoromethane to obtain tetrafluoroethylene, and then proceed with Nelson's process by pyrolyzing the tetrafluoroethylene obtained in Downing et al. The process before us merely amounts to no more than the preparation of the precursor material (tetrafluoroethylene) in situ, by means of the Downing et al. process, then proceeding with the Nelson process to obtain his (Nelson) desired mixture. It is, therefore, our opinion that the claimed process fails to patentably differentiate from, and merely follows the suggestion of, the combined suggestions of the references. All appellant has done is to determine the optimum conversions necessary to obtain the best combination of hexafluoropropylene and tetrafluoroethylene, which, in our opinion, is without patentable merit.

At this point, it becomes necessary to describe in somewhat greater detail the disclosure of each of Downing and Nelson. Downing discloses that during the pyrolysis of CFM intermolecular dehydrochlorination of the CFM molecule predominates, stating:

* * * when $CHClF_2$ is pyrolyzed, one molecule may lose a hydrogen and another may lose a chlorine to form the free radicals —$CClF_2$ and —CHF_2, which radicals may further pyrolyze to the free radical =CF_2 [difluorocarbene radical]. Such free radicals condense to form compounds of higher molecular weight, represented by $CF_3{=}CF_2$, $CClF_2CHF_2$, C_4F_8 and the compounds of the series $H(CF_2)n$—Cl in which n is at least 3 * * *.

While Downing carries out his process of producing TFE by passing CFM through a tubular reactor under pressure and temperature conditions closely approximating those employed by appellant and over a range of CFM conversions of 30–100%, Downing mentions neither obtaining HFP nor operating at any specific conversion level of CFM falling within the range of 86–94% specified by appellant in his claims.

Nelson pyrolyzes TFE to HFP in a tubular reactor by a reaction he formulates as:

$$CF_2{=}CF_2 \rightarrow 2{=}CF_2$$
$$CF_2{=}CF_2 + {=}CF_2 \rightarrow CF_3CF{=}CF_2$$

[6] The statement regarded by the Examiner as an admission is as follows:

The Examiner has also taken into account the private finding of hexafluoropropylene in minor amounts in chlorodifluoromethane pyrolysates made outside the critical range. This knowledge was not in the public domain and is not prior art to the present applicant. * * *

The "private finding" referred to above is appellant's discovery set forth in his specification, quoted previously in this opinion.

The reaction conditions employed by Nelson are a temperature of 750°–900° C., a partial pressure of TFE of 0.033 to 0.26 atm., and a flow rate of TFE of 20–5000 grams/liter/hour.

Appellant urges that the respective Downing and Nelson process conditions are so different and incompatible as to negate any possible suggestion by Nelson that HFP could be produced using Downing's process. In support of the Board's position, the Solicitor has presented calculations derived from two of Downing's examples, the accuracy of which has not been challenged, which tend to show that, when Downing employs CFM conversion levels of 27% and 50%, TFE is produced at a space velocity and partial pressure falling within the range of those conditions disclosed by Nelson as necessary for production of HFP in his process.

It may well be that one of ordinary skill in the art, upon considering what is realistically suggested by the reference combination, would reasonably expect some HFP to be produced in Downing's process operating at CFM conversion levels of 25–50%, particularly upon recognition that both Downing and Nelson, under generally similar reaction conditions, produce difluorocarbene radicals which in the former reference are said to condense with each other to produce TFE and in the latter reference are said to condense with TFE to produce HFP. In order to recognize this fact, however, he would first have to conclude that Downing's atmosphere containing hydrogen and chlorine would not adversely affect the reactions disclosed by Nelson as taking place in an atmosphere free of those elements. We know this conclusion to be apparently correct, but principally from the disclosures contained in the present application.

In our view, however, the coincidence of two examples of Downing with Nelson's disclosure falls short of rendering the present claims obvious to one of ordinary skill. As appellant points out, Nelson discloses that certain flow rates of TFE are necessary in order to obtain desired yields of HFP. It seems to us that Downing does not reasonably suggest that those requisite flow rates of TFE will necessarily be obtained when operating his process at a CFM conversion level of 86–94%. Indeed, insofar as Downing is concerned with conversion of CFM, nearly all of his examples disclose pyrolysis of CFM at relatively low conversions, viz, less than 50%, thereby obtaining high yields of TFE. Where Downing does disclose specific CFM conversion levels of 77% and 100%, he indicates that increasingly high percentages of high boiling waste material are obtained; that appears consistent with appellant's specification which discloses that, in the range outside 86–94% CFM conversion, relatively high amounts of unrecoverable waste material are formed at rates greater than the rate of HFP production.

We think insufficient reasons have been offered by the Examiner and the Board as to why the particular operating conditions claimed of 86–94% CFM conversion, or the yields of HFP (on the order of 30–50% of converted CFM) and the concomitant reduction in rate of increase in production of waste material obtained by appellant when operating at the claimed conversion level, would be obvious to one of ordinary skill from the references.

Considering all the factors discussed in this opinion, we think the Board erred. [3] Accordingly, the decision is reversed.

REVERSED.

U.S. Court of Customs and Patent Appeals

IN RE RUDOLF WIECHERT

PER CURIAM.

It appearing from the record, briefs, and oral argument in the above cause that appellant has challenged the authority of the Patent Office Board of Appeals which rendered the decision here on appeal, and the court desiring further argument on this matter, this case is hereby restored to the calendar and assigned for reargument on October 3, 1966, said reargument to be limited to the following questions:

1. Is this court authorized to consider, in the present proceeding, appellant's challenge to the composition of the Board of Appeals whose decision is here appealed?

2. What authority, if any, permits the Commissioner of Patents to designate as members of a Board of Appeals under paragraph 1 of 35 U.S.C. 7, more than one examiner-in-chief serving in such capacity by designation of the Commissioner pursuant to paragraph 2 of 35 U.S.C. 7?

3. Was the Board of Appeals which rendered the decision here appealed validly constituted under 35 U.S.C. 3, 7?

Briefs, in conformity with Rules 26 and 27, shall be filed by each side on or before August 15, 1966 and reply briefs, as deemed necessary by the parties, shall be filed within 30 days thereafter. The oral argument shall be limited to 20 minutes for each side.

U.S. Court of Customs and Patent Appeals

IN RE EDWARD C. KARP

No. 7621. Decided April 28, 1966

[53 CCPA —; 358 F.2d 1012; 149 USPQ 514]

1. PATENTABILITY—AFFIDAVIT.

"The record discloses that the Examiner considered the affidavit in the nature of an opinion unsupported by facts or data sufficient to overcome the Examiner's conclusions of obviousness. In disposing of appellant's petition for reconsideration, the Board stated that '[a]fter reviewing appellant's arguments,' it adhered to its opinion with respect to making any change therein. We are not in agreement, therefore, that the Board 'completely ignored' the affidavit."

2. SAME—SAME—35 U.S.C. 103.

Upon considering an affidavit, wherein "Appellant-affiant stated in substance that since the claimed invention was first marketed in 1961 it had been overwhelmingly acclaimed as a marked advance in the art and that demand for the scales had been continuous; that the National Conference on Weights and Measures had modified its regulatory handbook and approved appellant's index," *Held* that, "Evaluating the affidavit on the basis of whatever affirmative and relevant substance it may contain, it is not of evidentiary sufficiency to resolve in appellant's favor a determination of the issues arising here under 35 U.S.C. 103."

3. SAME—PARTICULAR SUBJECT MATTER—"INDICATING DEVICE INDEX."

The refusal of certain claims in an application entitled "Indicating Device Index," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 116,123.

AFFIRMED.

C. Willard Hayes, James M. Wetzel, Richard G. Lione, Robert L. Harmon for appellant.

Joseph Schimmel (*L. F. Parker* of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

ALMOND, *J.*, delivered the opinion of the court.

Edward C. Karp appeals from the decision of the Board of Appeals affirming the final rejection of claims 3, 4, 6 and 10 of appellant's application [1] entitled "Indicating Device Index." No claims have been allowed.

The issue is whether the subject matter disclosed and claimed by appellant is obvious under 35 U.S.C. 103 in view of the following prior art:

Hallwood (hereinafter Hallwood I), 1,729,106, September 24, 1929.

Hallwood (hereinafter Hallwood II), 1,841,948, January 19, 1932.

Kuhnle (German), 910,601, May 3, 1954.

The subject invention, a device for improving the accuracy of readings on weighing scales such as are commonly employed in grocery markets, can best be understood by a reading of claim 3 in conjunction with FIG. 2 (reproduced below) of appellant's specification. Claim 3 reads (bracketed numerals correspond to the numerals in the drawing):

> 3. An index assembly [34] for accurately reading the indicia carrying face of an indicating device including transparent means [47] [48], said transparent means defining a line of color contrast in a predetermined reading plane, an opaque band [51] lying within the confines of said transparent means and in said reading plane, said opaque band being so thin as to be virtually invisible as a finite line when viewed in said predetermined reading plane, said opaque band cooperating with said line of color contrast to establish a highly intelligible demarcation edge for accurately reading values on said face, said demarcation edge appearing as a line of finite thickness only when viewed in a plane other than said predetermined reading plane whereby parallax error in reading the indicia carrying face is avoided.[2]

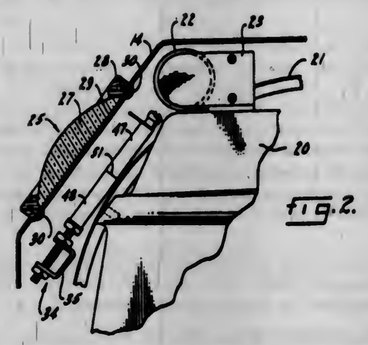


Fig. 2.

Appellant asserts that his device has eliminated certain problems confronting the art, viz (1) providing an index line so thin that "block out" error is eliminated yet definitive enough to meet regulatory requirements and be readily resolvable at standard viewing distances,

[1] Serial No. 116,123, filed June 9, 1961.

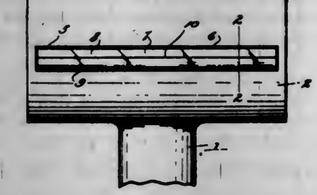
[2] Other elements of the device as illustrated in FIG. 2 are, inter alia, rotatable drum chart 21 and magnifying lens 25.

and (2) eliminating the parallax [3] phenomenon. The specification states:

> * * * the invention contemplates establishing an index line or demarcation edge through the office of a line of contrast between adjoining mediums having relatively higher and lower light transmission properties in conjunction with an extremely thin band of substantially opaque material in the plane between the mediums. This effect is preferably provided through the use of abutting blocks of transparent material such as an acrylic plastic or the like, a film of pigment or pigmented bonding material being provided between the abutting surfaces. To produce a contrast along the abutting surfaces, one of the blocks is tinted a darker color than the other, although any means might be utilized to effect different light transmission characteristics in each block. The pigment or pigmented bonding material is present in a film so thin as to be virtually invisible when viewed along the proper reading plane. Under normal circumstances, such a proper reading plane will lie perpendicular to a plane tangent to the indicia carrying chart of the scale. If the reader's eyes depart the proper reading plane, the virtually invisible film suddenly appears as an increasingly prominent band along the abutting surfaces. The effect of such a phenomenon is to obviate the dangers of parallax, since anytime the plane of sight departs the proper reading plane, the aforementioned band appears to warn the reader.
>
> Because the film of pigment is so thin, graduations on the indicia carrying chart of the scale are not obscured by the index line or confused therewith. This eliminates the accompanying effect of errors in reading the scale. In essence, the use of such a thin film of pigment and consequently fine index line or demarcation edge is made possible solely because of the color contrast between the adjoining mediums.

Hallwood I (see FIG. 1 reproduced below) discloses a weight indicating mechanism for scales having a pair of transparent blocks 8 and 9 with abutting edge surfaces defining a reading plane. A thin opaque ribbon 10 is disposed in this plane between the block edges, visible only as a line when the eye is aligned with the reading plane and which acts to avoid parallax error when the eye is displaced by appearing as a line of finite thickness. The opaque band may be formed as a thin cement or opaque coating layer. The patentee states that the opaque material "because of its very thin body presents nothing more than a line to the vision, which permits the clear reading of the graduations." It is further stated that if one reading the scale "should occupy a position looking angular by downwardly or upwardly from points above or below the plane of the norm 10, the latter will be viewed partially in plan, whereby its thickness or width is observable, and this prevents the desired unobstructed view of the indicating drum, and compels the reader to readjust his position so as to view the indicating mechanism properly," thus avoiding parallax error.

Fig. 1.

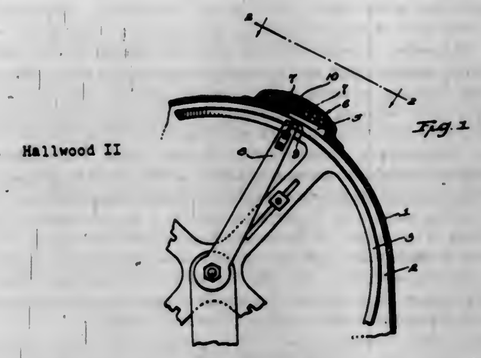


Hallwood I

Hallwood II, a continuation-in-part of Hallwood I, discusses the problem of block out and parallax error and discloses means for com-

[3] Parallax: The apparent displacement (or the difference in apparent direction) of an object, as seen from two different points. Webster's New International Dictionary (2d ed.).

pelling the reader to assume a desired position when reading the indicator. In FIG. 1 of Hallwood II, set forth herewith, the abutting plane surfaces of blocks 7, 7 are rendered opaque by a grinding opera-



tion instead of using a ribbon or coating. The abutting edge surfaces 10 define the reading plane. When the surfaces are viewed in edge elevation, they present "merely a fine line to the sight" and "nothing more than a very line which does not interfere with the vision of the observer."

Kuhnle discloses a scale reading index assembly formed of a plate of two transparent portions which differ in color. Where the two portions meet a readoff "marking can be attained which does not occupy any space."

The Examiner rejected the appealed claims as unpatentable over Kuhnle in view of the Hallwood patents followed by a rejection predicated on the Hallwood patents in view of Kuhnle. The Board reversed the first rejection and affirmed the second. The Board stated:

> The Hallwood patents, however, disclose the edge-abutting relationship of transparent plates to provide a thin index line. The thin band which provides the line is of a nature which provides the anti-parallax feature claimed by appellant. As to the relative thickness of the band, it is noted that Hallwood 1,841,948 discloses the abutment of ground surfaces. Such ground surfaces provide a line which is very thin and which, in our opinion, does not distinguish from the relative thickness of the band claimed by appellant.
>
> The Hallwood patents, however, do not utilize color contrast to provide a thin index line. The broad idea of forming a very thin line by the use of color contrast members in adjoining relationship is taught in Kuhnle. In view thereof, we agree with the Examiner that it would be obvious to utilize the color contrast feature of Kuhnle in the Hallwood lens members. The rejection of the claims as being unpatentable over the Hallwood patents in view of Kuhnle will be sustained.
>
> The limitation in claims 4 and 10 relative to the .001 inch thickness of the band is not considered to be of patentable significance in view of the disclosures in the Hallwood patents as well as in Kuhnle which aim at the desirability of providing extreme thinness. * * *

Comparing, first, appellant's device with those disclosed by Hallwood I and II, we see that both appellant and Hallwood employ a pair of blocks in closely spaced relationship to one another. In appellant's device, the spacing is achieved "by an extremely thin band of substantially opaque material in the plane between the mediums." In Hallwood I, the spacing is achieved by (1) an opaque ribbon or (2)

"* * * the medium of an opaque cement or other opaque material." The spacing in Hallwood I is described as a "very thin body [which] presents nothing more than a line to the vision * * *." Hallwood II discloses a two-piece lens structure wherein the abutting surfaces are ground to achieve the purposes of the opaque material disclosed in Hallwood I. Hallwood II states: "* * * the ground surfaces when viewed in true edge elevation present nothing more than a very line which does not interfere with the vision of the observer." Like appellant's opaque material interposed between abutting lens pieces, Hallwood I's opaque material and Hallwood II's ground surfaces function to prevent the problem known as parallax.

We note two differences between appellant's device and those of the Hallwood patents. First, the difference in the language employed to describe the thinness of the dimension between the abutting lens pieces. We are unable to ascribe patentable significance to this difference in language since, structurally, appellant and Hallwood I appear indistinguishable on this point. Both describe what is in effect on opaque coating between the two lens pieces.

The second difference between appellant's device and those disclosed by the Hallwood patents is the differentially tinted lenses employed by the former and not by the latter. These differentially tinted lenses serve to heighten the definition of the "extremely thin band of substantially opaque material in the plane between the mediums [blocks of transparent material]." As regards this difference, resort must be had to Kuhnle which discloses "a plate * * * consisting of two transparent portions * * * which differ in color," by means of which "a marking can be attained which does not occupy any space." We think this teaching fairly suggests appellant's use of differentially tinted lenses, and taken with Hallwood I and II, we agree with the Board that the subject matter here sought to be patented is obvious within the meaning of 35 U.S.C. 103.

One further matter requires our attention. Appellant contends that the Board did not consider the Karp affidavit in reaching its conclusion of obviousness, and thereby committed reversible error in that the affidavit constituted affirmative evidence of nonobviousness. Appellant-affiant stated in substance that since the claimed invention was first marketed in 1961 it had been overwhelmingly acclaimed as a marked advance in the art and that demand for the scales had been continuous; that the National Conference on Weights and Measures had modified its regulatory handbook and approved appellant's index.

[1] The record discloses that the Examiner considered the affidavit in the nature of an opinion unsupported by facts or data sufficient to overcome the Examiner's conclusions of obviousness. In disposing of appellant's petition for reconsideration, the Board stated that "[a]fter reviewing appellant's arguments," it adhered to its opinion with respect to making any change therein. We are not in agreement, therefore, that the Board "completely ignored" the affidavit. [2] Evaluating the affidavit on the basis of whatever affirmative and relevant substance it may contain, it is not of evidentiary sufficiency to resolve in appellant's favor a determination of the issues arising here under 35 U.S.C. 103.

[3] Finding no reversible error in the decision of the Board, we accordingly affirm.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE LEONARD EDGE

No. 7618. Decided May 5, 1966

[53 CCPA —; 359 F.2d 896; 149 USPQ 556]

1. PATENTABILITY—OBVIOUSNESS—35 U.S.C. 103.

In connection with a statement by the Examiner that to substitute a covering as claimed for one shown by a reference "would amount to no more than the substitution of one equivalent material for another," *Held* that "* * * the issue is not one of equivalence, but obviousness under 35 U.S.C. 103."

2. SAME—SAME—OMISSION OF AN ELEMENT WHILE RETAINING ITS FUNCTION.

"While it may often be true that the mere omission of an element together with its function does not produce a patentable invention, it may also be unobvious to omit an element while retaining its function. *In re Fleissner*, 46 CCPA 831, 264 F.2d 897, 121 USPQ 270, and cases there cited."

3. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT—OPERATIVENESS.

"Claim 7 presents a somewhat closer question. Whereas we, like the Board, 'have some doubts that a sprayed pure bronze powder will adhere to a card surface' and note, moreover, that there is no disclosure in the specification either that the card surface is specially treated to secure the powder thereto or of a bonding carrier for the bronze powder, the fact is that an issue of operability of the invention, or of adequacy of disclosure, is not before us. The sole question is whether obscuring indicia on a paper-like card by bonding a layer of metal directly to the card by spraying bronze powder thereon is obvious."

4. PATENTABILITY—PARTICULAR SUBJECT MATTER—"BUSINESS BONUS CARD."

The refusal of certain claims in an application entitled "Business Bonus Cards," as unpatentable over the prior art, is reversed as to one claim directed to the card and affirmed as to the remaining claims drawn to a method for making the card.

APPEAL from the Patent Office. Serial No. 219,918.

MODIFIED.

Arthur H. Seidel, Joel S. Goldhammer for appellant.

J. Schimmel (*Jere W. Sears* of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, JR., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

RICH, *Acting Chief Judge*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Appeals affirming the Examiner's rejection of claims 1 and 6–8 in application Serial No. 219,918, filed August 28, 1962, for "Business Bonus Card." No claim is allowed.

The invention is a business card, and method of making same, to be used by supermarkets, race tracks, movie theaters, etc., as a business inducing device. The card, of such size as to permit carrying in the customer's wallet, is of paper-like material and contains numerals printed in partitioned areas, usually located around the periphery but possibly elsewhere, which are punched out by an employee of the establishment to designate such matters as the amount of purchases made or the number of weeks of patronage. Also on the card is another indicium, representing the amount of the customer's bonus to which he is entitled once the card has been fully punched, but prior to which time the indicium is obscured from view. It is in the manner of concealing this indicium that appellant's invention resides, all other above discussed features admittedly being old.

Claims 1 and 6 are illustrative (emphasis ours):

1. A business bonus card comprising a layer of paper-like material having a front face and a rear face, means on said layer of paper-like material for providing a record indicative of the occurrence of a plurality of business transactions, indicia on one of said faces, *and a thin layer of metal bonded directly to said one face obscuring said indicia and capable of being erased to enable the denomination of said indicia to be ascertained.*

6. A method of making a business bonus card having a plurality of designated areas which are to be punched as a result of transaction of business comprising the steps of printing indicia on a face of the business card, and obscuring the indicia by bonding a layer of metal directly to the card over the indicia.

Claim 7 qualifies the metal bonding step as including "spraying bronze powder on the card." Claim 8 qualifies this step as including "applying gold foil to the card by a hot pressing operation."

The issue is patentability over the following references:

The Washington Post, page C–8, May 31, 1962.
Hoese, 2,999,698, September 12, 1961.
Neville et al., 2,961,777, November 29, 1960.
Troubleshooting Trainer-Tester, copyright 1954.

The Washington Post disclosure sets out a sales promotional card quite like appellant's, the sole significant difference being that the indicia-obscuring means is a rectangular panel of relatively heavy, high tensile strength, opaque leatherette paper which is attached to the card by zigzag stitching in such manner as allegedly to prevent unnoticed removal and replacement.

Hoese discloses details of a card like that in The Washington Post, and will not be considered further since the pertinent disclosure of the two references is essentially the same.

Neville et al. (hereinafter Neville) discloses special guide and answer sheets for use in training electronics technicians, although the applicability of the invention, according to the patentees, "includes, but is not limited to, the fields of education, entertainment and *sales promotion or advertising*. The invention consists of printing on a sheet, *an overlaying transparent and relatively erasure-proof protecting layer*, and an erasable or removable opaque covering applied over the protecting layer, so as to obscure the original printing until the erasable covering is removed." [Emphasis ours.] The invention is said to represent an improvement over the invention disclosed and claimed in a patent to Buitenkant, which, inter alia, "discloses an ink covering system, the obscuring part of which can be removed by erasure to expose the concealed answers." As explained in the Solicitor's brief, Neville's improvement appears to reside in the provision of the intermediate transparent protective layer, thereby preventing destruction of the printed indicia during erasure of the obscuring cover. Neville's opaque covering is an ink film, containing up to about 50% pigment which *may* consist of titanium dioxide, aluminum powder or other opacifying material. If electrical machine grading is desired, a conductive opaque ink film consisting of "finely divided metallic powder, such as bronze powder" may be dusted onto a suitable size or glue previously overlaid on the intermediate layer.

The Troubleshooting Trainer-Tester reference is an actual answer sheet of the type disclosed in Neville and, as stated by the Solicitor, "adds little of interest."

With regard to claim 1, the essence of the Examiner's position, accepted by the Board, is:

To substitute for the covering material of the Washington Post disclosure

[sewed on leatherette], a metallic coating which may be removed by erasing would involve no more than the substitution of one equivalent material for another. In Neville et al., an intermediate layer of material is positioned between the indicia and the covering to prevent the removal of the indicia. To omit this safeguard and its function would involve no more than a matter of choice.

We disagree with this reasoning for two reasons. [1] First, the issue is not one of equivalence, but obviousness under 35 U.S.C. 103. As stated in *In re Flint*, 51 CCPA 1230, 330 F.2d 363, 141 USPQ 299:

> We agree with appellant and consider as dispositive the rationale of our recent opinion in *In re Scott*, 51 CCPA 747, 323 F.2d 1016, 139 USPQ 297, 299 at [1] wherein we said:
>
> > The Examiner and the Board appear to hold that the mere existence of "functional and mechanical equivalence" establishes "obviousness." We think this involves a non sequitur. Expedients which are functionally equivalent *to* each other are not necessarily obvious *in view of* one another. The statutory mandate of 35 U.S.C. 103 is that the claimed subject matter be unobvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains.

Second, as to the Examiner's point about omission of Neville's intermediate layer, together with its protective function, we agree with appellant that the function of this layer has been *retained*, not omitted, in the present invention since appellant's metal layer can be erased without removing the printed indicia notwithstanding the fact that the metal layer is bonded *directly* to the face of the card. [2] While it may often be true that the mere omission of an element together with its function does not produce a patentable invention, it may also be unobvious to omit an element while retaining its function. *In re Fleissner*, 46 CCPA 831, 264 F.2d 897, 121 USPQ 270, and cases there cited.

Being unable to find in the art any suggestion of a thin layer of metal bonded directly to a paper-like card, obscuring a printed indicia thereon, yet "capable of being erased to enable the denomination of said indicia to be ascertained," we reverse the rejection of claim 1.

With regard to the remaining claims, 6–8 directed to method, we are unable to find such limitations as the one just quoted, or any other serving to distinguish the claimed method from the prior art. We agree with the Board, referring to claim 8, that:

> We see nothing unobvious in the hot pressing step or in the use of gold foil * * * because of the common use of gold foil and the claimed mode of application on covers of books, manuscripts, brochures, etc. of which we take judicial notice.

Claim 6 from which claim 8 depends is even broader calling for "bonding a layer of metal directly to the card over the indicia." It reads on hot pressing gold foil and is unpatentable for the same reasons as claim 8.

[3] Claim 7 presents a somewhat closer question. Whereas we, like the Board, "have some doubts that a sprayed pure bronze powder will adhere to a card surface" and note, moreover, that there is no disclosure in the specification either that the card surface is specially treated to secure the powder thereto or of a bonding carrier for the bronze powder, the fact is that an issue of operability of the invention, or of adequacy of disclosure, is not before us. The sole question is whether obscuring indicia on a paper-like card by bonding a layer of metal directly to the card by spraying bronze powder thereon is obvious.

As we view claim 7, the invention there defined differs from Neville's disclosure of dusting "a finely divided opaque [metallic] powder" only in that appellant bonds his powder "directly" onto the card, as opposed to an intermediate protective layer. We find this difference insufficient to render claim 7 patentable because, unlike article claim 1, claim 7 contains no limitation as to the capacity of the metal layer to be erased to permit reading the printed indicia. Nor do we construe the word "directly" to *preclude* use of some sort of sizing material which would serve merely to bond the powder to the paper.

[4] The decision of the Board as to claim 1 is reversed and as to claims 6, 7, and 8 is affirmed.

MODIFIED.

KIRKPATRICK, *J.*, dissents from the reversal of the rejection of claim 1.

U.S. Court of Customs and Patent Appeals

IN RE WALTHER F. SCHEEL

No. 7647. Decided June 23, 1966

[53 CCPA —; 362 F.2d 299; 150 USPQ 120]

1. PATENTABILITY—AFFIDAVIT—COMPARISON NOT GERMANE TO PRIOR ART IRRELEVANT.

"Appellant submitted an affidavit by one Nelson R. Brownyer, a mechanical engineer in the employ of the assignee of the application at bar. This affidavit contains, inter alia, a comparison between the steering performance of a truck equipped with a wheel assembly conforming to appellant's invention and a truck equipped with a wheel assembly wherein the king pin axis was *inclined* toward the wheel center plane. We have no reason to doubt that the former is an improvement over the latter. However, our analysis of the prior art leads us to the same conclusion reached by the Examiner and the Board, that both Remde and Duby clearly disclose a wheel construction wherein the king pin axis is vertical and is offset relative to the wheel center plane. As to these teachings, the affidavit, relating as it is to an inclined king pin axis, is not relevant."

2. SAME—PARTICULAR SUBJECT MATTER—"VEHICLE STEERING ASSEMBLY."

The refusal of certain claims in an application entitled "Vehicle Steering Assembly," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 134,543.

AFFIRMED.

James E. Nolan for appellant.

Joseph Schimmel (*L. F. Parker* of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, JR., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

ALMOND, *J.*, delivered the opinion of the court.

Walther F. Scheel appeals from the decision of the Board of Appeals affirming the rejection of claims 1, 5, and 7 of his application[1] entitled "Vehicle Steering Assembly." No claims have been allowed.

The rejection is grounded on 35 U.S.C. 103, the prior art being:

Remde, 1,623,554, April 5, 1927.
Duby, 1,982,377, November 27, 1934.
Higbee 2,182,560, December 5, 1939.

[1] Serial No. 134,543, filed August 14, 1961.

Appellant's invention is sufficiently described by claim 1 when read in conjunction with FIG. 3 of the drawings hereinafter reproduced:

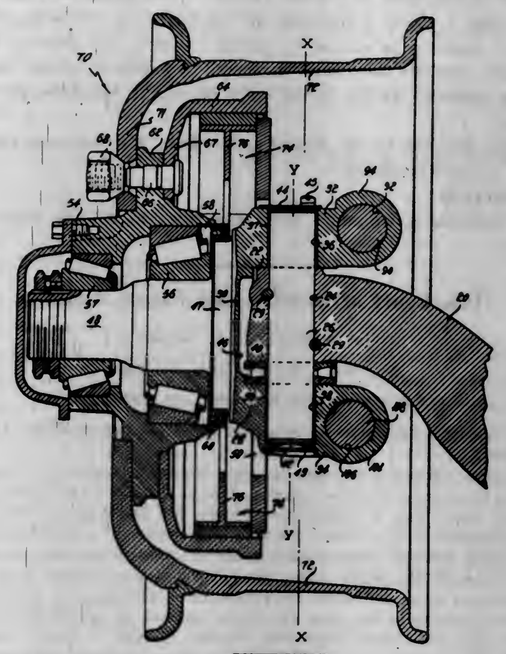


FIG. 3

1. In a roadway vehicle having front [20] and rear axles supported on ground engaging wheels [70], said front axle comprising a rigid transverse member, king pins [26] rigid with opposite ends [22] of said member and disposed substantially parallel and vertical, steering knuckles [28] journalled on said king pins, said king pins extending into bores [24] lined with bushings in said knuckles, each knuckle having a relatively short axially outwardly extending rigid wheel mounting spindle [48], brake mechanism mounting members [50] rigid with said knuckles and secured upon said knuckles axially outwardly of said king pins, drag links [108] rigid with said knuckles and projecting rearwardly below the level of said spindles, a tie rod [not shown] connecting said drag links, a steering arm [90] rigid with one of said knuckles above the levels of said spindles, spaced apart closely adjacent wheel mounting bearings [56] on each of said spindles, the axially innermost of said bearings being the larger, and a front wheel hub [54] mounted on said bearings and comprising a tire mounting rim [72] extending axially inwardly to substantially surround the associated king pin and steering knuckle assemblies and a brake drum [64] rigid with said hub extending over the brake mechanism carried by said mounting members the vertical center diametrical plane of each wheel rim [X—Y] lying axially inwardly of the associated wheel mounting bearings and each king pin axis [X—X] being parallel to and axially offset axially inwardly a small distance from the vertical center diametrical plane of the associated wheel rim. [Numerals added correspond to those in FIG. 3.]

While claim 1, as well as claims 5 and 7, recite numerous elements, appellant in his brief states:

For simplification of the issues appellant freely admits that the various more or less conventional elements of the combination of claim 1 are essentially old as disclosed in Duby or Higbee, but these patents contain no concept of the essential point of the claimed invention, namely *the offset location of the vertical king pin axis a small distance inwardly of the wheel center plane of a roadway vehicle to deliberately and controllably impose a load on the king pin.* [Emphasis added.]

Taking appellant's lead, we will focus our attention primarily on the feature of his invention upon which patentability is predicated—the offset location of the vertical king pin axis.

Duby discloses a vehicle wheel assembly wherein the various parts of a wheel and certain parts of its cooperating members are arranged "in such a manner that the center of gravity of the entire unit will lie in substantially the same vertical plane as the king-bolt axis and the middle of tire tread." This arrangement, illustrated by FIG. 7 of Duby (hereinafter reproduced) is stated to be an improvement over prior wheel assemblies, shown in FIG. 6 of that reference also reproduced below, wherein the king pin axis is positioned a considerable distance away from the center of gravity with respect to the wheel and its associated knuckle member as a unit.

Fig. 6.

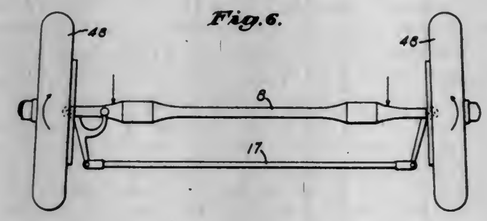


Fig. 7.

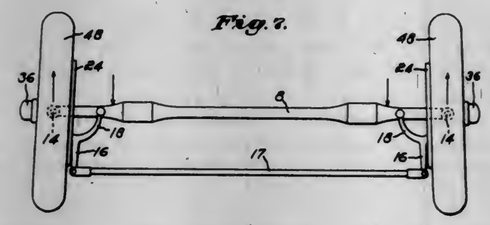
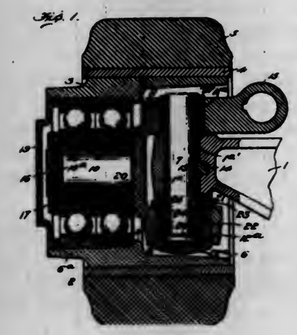


FIGURE 1 of Remde, depicted below, illustrates his invention. The pertinent features of the drawing are axle 1 to which knuckle 1ª is integrally attached, tire 5 and pivot pin 7. While not described in the written specification, it is clear from FIG. 1 that the axis of pin 7 is vertical and offset inwardly from the wheel center plane.



Higbee, like Duby, relates to a dual wheel assembly. So far as the position of the king pin axis relative to the wheel center plane is concerned, Higbee shows the former to be *inclined* (rather than vertical) to the latter.

The position of the Examiner was that it would be obvious to one skilled in the art to offset Duby's king pin 56 slightly inwardly in view of the illustration in Remde's FIG. 1, and the Board in affirming him held that schematic FIG. 6 of Duby also suggested to them the proposed modification of Duby.

We see no reversible error in the Board's conclusions. Remde's FIG. 1 clearly illustrates a wheel construction wherein the axis of the pivot pin is both vertical and laterally offset from the wheel center plane. Appellant advances two arguments to distinguish over Remde, neither of which we deem persuasive. First, appellant contends that the disclosure embodied in FIG. 1 of Remde is incidental, presumably because Remde did not in words describe the arrangement of the pivot pin axis relative to the wheel center plane. We cannot subscribe to this view. Remde clearly and unambiguously shows the offset arrangement noted above in illustrating an improved steering wheel construction. This construction, which includes the offset relation of the pivot pin axis, is stated by Remde to provide

> * * * an improved steering knuckle joint wherein (*a*) the load due to the weight of the vehicle frame and any load or weight thereon is carried by the knuckles independently of the pivot pin for the joint and (*b*) the bearing elements which carry the load between the knuckles are so arranged and correlated as to reduce to a minimum the friction between them incident to the steering operations.

Appellant also seeks to distinguish over Remde on the basis that Remde's axle is not for a roadway vehicle as called for by appellant's claims. We do not read Remde as narrowly as appellant. While Remde illustrates his invention "as adapted for use in an industrial truck," the patent also states:

> The invention may be applied to and embodied in any desired type of vehicle and also vehicle wheels which are driven. In putting my invention into actual use I have applied it to and embodied it in the trailing or load supporting wheels and axle of an industrial truck, more particularly a truck of this character in which a portion of the truck frame is dropped or arranged relatively low to the supporting surface, but, such use and application of my invention is merely by preference and for illustrative purposes.

[1] Appellant submitted an affidavit by one Nelson R. Brownyer, a mechanical engineer in the employ of the assignee of the application at bar. This affidavit contains, inter alia, a comparison between the steering performance of a truck equipped with a wheel assembly conforming to appellant's invention and a truck equipped with a wheel assembly wherein the king pin axis was *inclined* toward the wheel center plane. We have no reason to doubt that the former is an improvement over the latter. However, our analysis of the prior art leads us to the same conclusion reached by the Examiner and the Board, that both Remde and Duby clearly disclose a wheel construction wherein the king pin axis is vertical and is offset relative to the wheel center plane. As to these teachings, the affidavit, relating as it is to an inclined king pin axis, is not relevant.

Considering the teachings of the prior art in their entirety, we are of the opinion that there is no reversible error in the Board's decision finding the subject matter sought to be patented obvious within the meaning of section 103. [2] Accordingly, that decision is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

TRI-VALLEY GROWERS, ASSIGNEE OF ORRELL'S FOOD PRODUCTS, INC.
v.
MAPLE ISLAND, INC.

No. 7504. Decided May 19, 1966

[53 CCPA —; 360 F.2d 248; 149 USPQ 675]

1. TRADEMARK—GOODS—IDENTICAL MARK FOR SYRUP FOR SOFT DRINKS AND FOR CHOCOLATE MALT FLAVORED MILK.

"In an opposition proceeding where the mark sought to be registered was for 'a fountain syrup for making soft drinks' and the opposer's identical registered mark was for 'chocolate malt flavored milk,' *Held* that The Board considered the goods to be 'competitive in character' and we do not consider the difference in goods a sufficient reason for dismissing the opposition."

2. SAME—CONFUSING SIMILARITY—REGISTRATION IS PRIMA FACIE VALID—SECTIONS 2(d) AND 7(b) "BOUNCE."

"It is not asserted that opposer does not have an existing registration of BOUNCE on the Principal Register or that it is not of record herein. Under section 7(b) (15 U.S.C. 1057(b)) that registration is prima facie valid and opposer is prima facie owner of the mark BOUNCE. Section 2(d) (15 U.S.C. 1052(d)) prohibit registration of a mark 'which so resembles a mark registered in the Patent Office * * * as to be likely, when applied to the goods of the applicant, to cause confusion, or to cause mistake, or to deceive * * *.' While the registration of BOUNCE relied on by opposer remains on the register, it is necessary for the Patent Office, and for us, to determine whether that same mark, applied to appellant's goods, would be likely to cause confusion, mistake, or to deceive. The Board answered that question in the affirmative. We agree with that decision. Registration to appellant is therefore prohibited by statute."

APPEAL from the Patent Office. Opposition No. 42,240.

AFFIRMED.

William G. MacKay (*Charles R. Allen, Jr.* of counsel) for appellant.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

RICH, *Acting Chief Judge*, delivered the opinion of the court.

This appeal is from the decision of the Trademark Trial and Appeal Board, sustaining an opposition by appellee to the registration of the word BOUNCE as a trademark for "A fountain syrup for marking soft drinks."

The opposition is based on appellee's Principal Register Registration No. 535,458, Dec. 26, 1950, of the same word as a trademark for "chocolate malt flavored milk."

Since the applicant's claimed date of first use is March 13, 1960, opposer is prior.

Though appellant raises the point that the goods of the parties are different, it is not seriously pressed in this court as a basis for finding absence of a likelihood of confusion. [1] The Board considered the goods to be "competitive in character" and we do not consider the difference in goods a sufficient reason for dismissing the opposition.

Appellant's main point is that because it denied the allegations of the notice of opposition, opposer was under a burden to produce more evidence than its above-mentioned registration to sustain its case. In connection with this argument it points to a letter its counsel allegedly received from a vice president of appellee under date of May 15, 1961,

in response to a letter not made of record, the body of which reads:

> Dear Sir:
> In reply to your letter of May 2, 1961,
> we have discontinued making a BOUNCE
> Brand type of chocolate Milk.
> Thank you for your interest.

This letter was submitted to the Examiner after he cited opposer's registration as ground for refusing registration. He refused to accept it as an ex parte showing of abandonment of opposer's mark and advised the applicant it would have to seek cancellation under section 14(c) to overcome the rejection. Applicant then urged on the Examiner the difference in the goods, arguing that this would justify passing the mark to publication, urging that cancellation is expensive and should be avoided where possible. The mark was thereupon passed to publication and this opposition promptly ensued.

Appellant's answer to the notice of opposition asserted that the above letter estopped opposer from maintaining "a claim of ownership of the brand for the said milk product." In its brief here it is asserted that "The denials put the opposer to proof, but the opposer failed to proceed further, which can only mean that we have here an absolute failure of proof in the face of the denials." It is on this basis, with the supposed aid of quotations from a number of cited cases, that appellant seeks reversal.

[2] It is not asserted that opposer does not have an existing registration of BOUNCE on the Principal Register or that it is not of record herein. Under section 7(b) (15 U.S.C. 1057(b)) that registration is prima facie valid and opposer is prima facie owner of the mark BOUNCE. Section 2(d) (15 U.S.C. 1052(d)) prohibits registration of a mark "which so resembles a mark registered in the Patent Office * * * as to be likely, when applied to the goods of the applicant, to cause confusion, or to cause mistake, or to deceive * * *." While the registration of BOUNCE relied on by opposer remains on the register, it is necessary for the Patent Office, and for us, to determine whether that same mark, applied to appellant's goods, would be likely to cause confusion, mistake, or to deceive. The Board answered that question in the affirmative. We agree with that decision. Registration to appellant is therefore prohibited by statute.

We have carefully considered all of the cases relied on by appellant and find therein nothing which would deny to opposer the right to rely on its registration or would require it to submit any further proof to sustain its opposition. For the most part, they were decided on grounds other than the point for which they were cited. Since we found no case supporting appellant's view, we see no need to review them in detail.

The decision of the Board is affirmed.

AFFIRMED.

MARTIN, *J.*, concurs in the result.

U.S. Court of Customs and Patent Appeals

IN RE JULIUS DIAMOND AND MILTON KELLMAN

No. 7501. Decided May 12, 1966

[53 CCPA —; 360 F.2d 254; 149 USPQ 562]

1. PATENTABILITY—OBVIOUSNESS—INHERENCY IS NOT OBVIOUSNESS.

"The omitted portion of the sentence [in the Examiner's answer] reads 'and any results obtained therefrom would be inherent.' We find that phrase particularly meaningless since the effect of drugs or reactivity of chemical compounds can be nothing else than 'inherent.' But inherency is not obviousness. See *In re Adams*, 53 CCPA —, — F.2d —, 148 USPQ 742, 746."

2 SAME—COMPOSITION—WORDS AND PHRASES—SYNERGISM—35 U.S.C. 103.

Held that "* * * where the combined action is *greater* than the sum of the actions of the ingredients, the term 'synergism' applies * * *. What section 103 requires is 'unexpected synergism,' * * *."

3. SAME—SAME—OBVIOUSNESS.

"We are not convinced of non-obviousness of the combination of the two drugs, A5MP and a glucocorticoid such as hydrocortisone, for use as an anti-inflammatory composition, particularly since the record supports the Solicitor's contention that the drugs selected are two of the commonly used drugs in the treatment of such collagen diseases."

4. SAME—COMPOUND—OBVIOUSNESS—EVIDENCE—TESTS ON END PRODUCT—*In re Widmer* CONSTRUED.

Held, with respect to *In re Widmer*, "a case involving tests on an end product purporting to establish unexpected results for claimed intermediate compounds," that "We noted there that the test is whether one of ordinary skill in the art would reasonably ascribe to the compounds or composition claimed the contributing cause for the differences from the prior art of the tested compound or composition."

5. SAME—PARTICULAR SUBJECT MATTER—COMPOSITIONS OF ADENOSINE-5-MONOPHOSPHATE AND A GLUCOCORTICOID.

Held that "* * * we are compelled to affirm the decision of the Board as to claims 1–14 [to adenosine-5-monophosphate and glucocorticoid compositions], since the Examiner's prima facie accurate analysis as to the proofs submitted on the fact of synergism in the dosages has gone unrebutted on this record."

APPEAL from the Patent Office. Serial No. 49,445.

AFFIRMED.

Greist, Lockwood, Greenawalt & Dewey (*Fred S. Lockwood* of counsel) for appellants.

Clarence W. Moore (*Fred W. Sherling* of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

MARTIN, *J.*, delivered the opinion of the court.

This is an appeal from a decision of the Board of Appeals affirming the rejection of all the claims in appellants' application [1] as obvious in view of certain prior art within the meaning of 35 U.S.C. 103.

Section 103 requires us to determine whether or not the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole was obvious. The parties have come to issue on the question of whether evidence relating to a therapeutic composition shows that the composition exhibits such unexpected results, in terms of an unexpected synergism, as to be non-obvious. Appellants do not rely on their evidence, submitted in "Case Reports" that are discussed in detail below, as showing unexpected results in qualitative statements of the patients as to the efficacy of the therapeutic composition. Rather, appellants posit their case on increased potency evidenced by quantitative reductions in dosage; that, they contend, is a synergism probative of non-obviousness. We think that appellants would be entitled to prevail should they show such synergism to be unexpected. However, we conclude, upon a

[1] Claims 1–14 in Serial No. 49,445, filed August 15, 1960, for "Therapeutic Compositions and Methods of Making the Same."

review of the record, that there is insufficient proof of synergism in the dosage itself, and a fortiori, appellants have not proved it unexpected. We shall first consider the invention before considering the evidence.

As stated in appellants' specification:

> This invention relates to therapeutic compositions and preparations which contain in admixture or in intimate association, a water soluble form of adenosine-5-monophosphate [A5MP] and a glucocorticoid of the group comprising prednisolone and hydrocortisone, and functional derivatives thereof. More specifically, the invention relates to such therapeutic compositions which may be in the form suitable for oral administration or for parenteral use. These compositions and preparations have utility in the treatment of bursitis, tendinitis, myositis, acute arthritis, neuritis and related conditions.

All of the appealed claims define compositions and recite the two ingredients, A5MP and glucocorticoid. Claims 1 through 8 define the composition broadly as a combination of the two ingredients, claims 9 through 11 recite the combination in the form of a layered tablet, the ingredients being in different layers, and claims 12 through 14 recite the combination in a gelatin vehicle.[2]

The references relied on for the rejection of the claims are:

Feinberg et al., Methylprednisolone (Medrol), A Potent New Anti-Inflammatory Steroid, 165 J.A.M.A. 1560 (1957).

"Adenosine-5-Monophosphate," U.S. Dispensatory 1526 (25th ed., 1955).

"Medrol," Annals of Internal Medicine 38, (October 1957) (advertisement).

"Co-Hydeltra," J. Allergy 29 (July 1956) (advertisement).

19 J.A.Ph.A. (Pract. Pharm. Ed.) 15 (January 1958) (advertisement).

"Adenolin," Physicians' Desk Reference 699 (12th ed., 1958).

Sollman, Combination Therapy, A Manual of Pharmacology, 38 (8th ed., 1957).

Drill, Pharmacology in Medicine, 73/12 Table 73/3 (1954).

Goodman et al., Drug Combination, Pharmacological Basis of Therapeutics, 11 (2d. ed., 1955).

We find it unnecessary to discuss several of these references in detail since they show no more than what is acknowledged in appellants' specification:

> While adenosine-5-monophosphate and glucocorticoids such as prednisolone and hydrocortisone, and their functional derivatives, have known utility in the treatment of disorders such as bursitis, so far as is known these two different active therapeutic agents have not been used in combination for treatment of such disorders or for any other purpose.

Thus, the U.S. Dispensatory publication, the "Medrol" ad, the Feinberg et al. article, the "Co-Hydeltra" ad, and the cited portion of the Physicians' Desk Reference all show adenosine-5-monophosphate (A5MP) *or* the glucocorticoid (steroid) component *separately* useful in treating collagen diseases. The "Co-Hydeltra" ad and the J.A.

[2] Exemplary claims are:

> 1. A therapeutic composition comprising a soluble form of adenosine-5-monophosphate and a glucocorticoid selected from the group consisting of prednisolone and functional derivatives thereof and hydrocortisone and functional derivatives thereof.
>
> 9. A therapeutic tablet comprising an outer shell for sublingual absorption containing from about 15 to 50 mg. of the sodium salt of adenosine-5-monophosphate and an inner core for gastrointestinal absorption containing from about 1 to 5 mg. of prednisolone.
>
> 12. A prolonged acting therapeutic composition comprising from about 5 to 30 parts of micronized prednisolone acetate suspended with the aid of gelatin in a solution containing from about 15 to 100 parts of the sodium salt of adenosine-5-monophosphate.

The remaining claims in each group are narrower in their recitation of limitations as to parts (by weight) of the constituent components.

Ph.A. ad show layered pills; appellants do not predicate patentability on the layered pill form of the composition and thus no separate issue is presented thereby.

The Examiner's position, particularly with respect to the Goodman et al. (Goodman) and Sollman references, was summarized fairly by the Board (footnote by the court):

> The Examiner's position is that the combination of two drugs, each shown to be old by the prior art for use in treating inflammatory diseases, is obvious * * *.[3] The Examiner has cited the Goodman * * * reference which teaches generally that when drugs having the same type of action are given in combination, the average dose of each should be reduced. The reference further states that in this manner toxic effects of large dosages of the individual components may be avoided and that combinations of drugs which produce the same end results but through different mechanisms of action, may thus give a combined effective action.
>
> The Sollman reference was cited to show that a desirable synergistic action may result from use of a combination of drugs wherein undesired side effects are not increased or are neutralized and enable the corresponding dosage of each to be reduced.

The Drill reference teaches that there are three types of ACTH[4] in general use, one of which is a "long-acting, lyophilized ACTH in a gelatin menstruum for subcutaneous or intramuscular injection," and that the ACTH dosage in the form of a "long-acting gel" may be less than other forms for comparable effectiveness.[5]

Appellants' position, basically, is twofold. First, the combination of the two drugs is non-obvious since there is no teaching to combine these two out of all the known anti-inflammatory agents.[6] Second, and this is appellants' major position, the resultant combination product has greater potency or effectiveness than that expected on the basis of independent action of each component, i.e., the result is in appellants' terms "synergistic" which we read to mean that the results show unexpected synergism.[7]

Concerning appellants' first position, we think it clear that it is a standard practice in this art to combine ingredients. Both the Goodman and Sollman references discuss in some detail the combination of drugs. The relevant part of Goodman states:

> 7. *Drug Combinations.*—When drugs having the same type of action are given in combination, the average dose of each should be reduced. Certain terms are used to describe the various ways in which drugs may act together. When

[1] [3] The omitted portion of the sentence reads "and any results obtained therefrom would be inherent." We find that phrase particularly meaningless since the effect of drugs or reactivity of chemical compounds can be nothing else than "inherent." But inherency is not obviousness. See *In re Adams*, 53 CCPA —, — F.2d —, 148 USPQ 742, 746.

[4] Dorland's Illustrated Medical Dictionary (23rd ed., 1957), p. 30, defines ACTH as: Adrenocorticotrophic hormone, elaborated by the anterior lobe of the pituitary gland, which influences the action of the adrenal cortex and causes the release of cortisone therefrom.

[5] The U.S. Dispensatory reference describes one form of "My-B-Den," A5MP as available "in 10-ml. vials containing a sustained action vehicle (gelatin-base) with 20 mg. per ml. of adenosine-5-monophosphate (as the sodium salt)."

[6] Appellants have included in their brief a statement that the 1963 edition of Physicians' Desk Reference shows more than 225 anti-inflammatory *products*, and for the treatment of bursitis approximately 140 *preparations* are listed, and 170 *therapeutic agents* are listed under the treatment of arthritis. That statement apparently is taken from a sworn letter of record by Mr. Gary L. Hein, president of Lincoln Laboratories, Inc., the assignee of the application here on appeal.

[7] Both appellants' application and briefs, and the art of record contain various meanings for the term "synergism."

Sollman defines "synergism" to mean the algebraic summation of desirable effects. Goodman terms this "summation." The opposite, algebraic summation of undesirable effects is termed "antagonism" by Sollman.

Where the combined action is unexpectedly greater than the algebraic sum, it is termed "potentiation" by both Goodman and Sollman, or "supplemental synergism" (Sollman alone).

[2] The usual meaning appears to be that of Goodman, algebraic summation being termed summation or mere addition, and where the combined action is *greater* than the sum of the actions of the ingredients, the term "synergism" applies, *In re Huellmantel*, 51 CCPA 845, 324 F.2d 998, 139 USPQ 496; *In re Luvisi*, 52 CCPA 1063, 342 F. 102, 144 USPQ 646. What section 103 requires is "unexpected synergism," *In re Huellmantel*, supra, 51 CCPA at 850, the same as "potentiation" or "supplemental synergism" in the art of record here.

Thus we read appellants' second position to be that the results obtained upon the administration of the therapeutic composition demonstrate unexpected synergism in the reduction of dosage.

the combined effect of two drugs administered at the same time is equal to the algebraic sum of their individual effects the response is known as *summation*. It is sometimes advantageous to prescribe two synergistic drugs rather than a single agent. By this procedure, inasmuch as only a portion of the therapeutic dose of each is employed, it may be possible to obtain a greater margin of safety if the toxic effects of the individual components are exerted on different physiological systems or by a mechanism differing from that of the therapeutic action. Another advantage of drug combination is that drugs which produce the same end result may have entirely different mechanisms of action and in this way combine very effectively. Also two drugs having the same therapeutic effect may differ with respect to the rapidity of onset and duration of action. For example, if one drug has a rapid onset but short duration of action and another has a slow onset and prolonged duration of action, their synergistic action will be characterized by a rapid onset and long duration.

There are instances in which the combined action of two drugs is greater than that which can be anticipated from the sum of their individual actions. Thus is known as *potentiation*. For example, the administration of acid-forming saline diuretics prior to a mercurial diuretic results in a greater volume of urine than is predictable on the basis of individual effects.

Pertinent parts of the Sollman reference state:

Combination Therapy.—* * * Combinations of drugs were formerly popular on the empiric principle of the shot-gun mixture—that of many ingredients, some at least might fit the disease. It is better to employ the newest possible drugs, until it has actually been shown that combinations give superior results in the particular condition. In giving several drugs of similar actions, the dosage of each must be correspondingly reduced.

Variations of Combined Action.—* * * Potentiation or supplemental synergism occurs only if the two agents have different points of attack in the cell. * * * [Investigators] have pointed out numerous important exceptions. It is certainly not universally applicable:

[3] We are not convinced of non-obviousness of the combination of the two drugs, A5MP and a glucocorticoid such as hydrocortisone, for use as an anti-inflammatory composition, particularly since the record supports the Solicitor's contention that the drugs selected are two of the commonly used drugs in the treatment of such collagen diseases.[8] See *In re Huellmantel*, supra.

In our view then, the question of non-obviousness must turn on whether or not the prima facie case of obviousness of the composition comprising a combination of the two drugs is rebutted by a showing of unexpected results. Appellants' above-noted second position is directed to this point. In appellants' view, as stated in the specification, the combination is unexpectedly synergistic:

It has been discovered in accordance with the present invention that these two different types of therapeutic agents may be combined in proportions which complement each other. That is in the combination provided by the present invention the resultant products have greater potency or effectiveness than what would be expected based on their action independently. By reason of such mutual enhancement of activity it is possible to reduce the normal dosages required, especially that of the glucocorticoids. This is especially desirable since glucocorticoids such as prednisolone and hydrocortisone may have undesirable side effects.

For example, therapeutically effective and potent compositions for parenteral injection have been made in accordance with this invention wherein the dosage of prednisolone is as low as one-third of most available parenteral preparations.

As this court noted in *In re Huellmantel*, supra, 51 CCPA at 850:

As to properties, appellant argues that his composition exhibits unexpected synergism. Synergism is one factor to be considered in the ultimate determination of obviousness of the composition. However, we attribute no magic status to synergism per se since it may be expected or unexpected. * * *

In our analysis, we need not decide whether any synergism, the combined effect being greater than the sum of the two parts, is either expected or unexpected, since it appears on this record that the existence of synergism has not been proved.

As a necessary preface to the discussion of synergism, we must decide whether some 94 "Adenocort Case Reports" may be considered as relevant to the establishment of the fact of synergism.

[4] In *In re Widmer*, 53 CCPA —, — F.2d —, 147 USPQ 518, a case involving tests on an end product purporting to establish unexpected results for claimed intermediate compounds,[9] we stated, 53 CCPA at —, 147 USPQ at 525:

* * * Clearly, the proffered evidence must run a greater risk of failing the relevancy test of admissibility in proportion to its remoteness from the claimed subject matter. Whether too remote is a question of law to be determined on the basis of the subject matter *as a whole*.

We noted there that the test is whether one of ordinary skill in the art would reasonably ascribe to the compounds or composition claimed the contributing cause for the differences from the prior art of the tested compound or composition.

Here, the apparent risk of remoteness lies in the fact that the claims call for a composition comprising two ingredients, A5MP and a glucocorticoid, while the "Adenocort Case Reports," insofar as they can be taken as comparative tests, are tests of "Adenocort" as a composition containing five ingredients,[10] of which two are those claimed, and at least two others, niacin and the gelatin vehicle, could clearly be factors in the total therapeutic effect of the combination.[11] Nevertheless, it is clear from the record that but for the addition of a steroid component, the components of the "tested" composition,

[8] Appellants' evidence does not refute that view. Some 161 pages of the record are devoted to about 94 "Adenocort Case Reports" (some are duplicates) in which it is indicated that the following preparations were previously used to treat collagen disease conditions found amendable to "Adenocort" in the Case Reports: ACTH, Adenolin, Pablate, Calcium gluconate, Hypos. of Demerol/Phenergan [sic], Oral Codein/MS/Demerol, Tetracystine-Penicillin [sic], Sodium Salicylate-ASA Comp.-Arthropan Rela [sic], Betathiolin, Vitamins-Cod liver oil, Calcium, Sal-[unreadable], Hydrocortone TBA, Cortisone, Steroids, Buta-[unreadable], Protaxisol, My-[unreadable], Sigmagen, Madribon, Delapyryn Succinate, Antocort [sic], Adenolin Forte, Soma, Extensive Rx, other medication, Papase, Darvon Comp., My-B-Den, Equanil plus other tranquilizers, Prem/Te-[unreadable], B_{12} Vitamin B, Analgesics, and unknown medications. Additionally the sworn letter of Hein, supra fn. 6, indicates:

* * * foreign protein, sulfur, gold, ACTH, cortisone type drugs, hydrocortisone, salicylates, enzymes, butazolidin type therapy, hydroxychloroquine preparations, and some of the newer steroids to mention a few * * *

are presently utilized in the treatment of collagen disorders.

Non-drug therapy listed was: Diathermy, Ultra Sound, and X-ray.

Even assuming each trade name above listed is for a distinct drug different from all the rest, and that the drugs were used only for the collagen diseases rather than for other conditions which some of the patients may have had, the list is considerably shorter than the 225 *products* noted by appellants, and the components used by appellants in their combination are so often mentioned as to be significant members of that shorter list.

[9] And the same is true for compositions, see *In re Huellmantel*, supra, 51 CCPA at 849.

[10] In an attachment to a sworn letter of Dr. Diamond, which attachment was submitted to the F. & D.A., the composition of "Adenocort" is stated to be:

COMPOSITION

When suspended each cc. contains:

Prednisolone Acetate	mg— 10
Adenosine-5-Monophosphate	mg— 25
Cyanocobalamin	mcg— 150
Niacin	mg— 10

In a 17% aqueous Gelatin solution buffered with Sodium Hydroxide and preserved with 1.5% Benzyl Alcohol.

That composition is identical to that stated for the combination of Example I in the specification.

[11] Regarding the gelatin vehicle, Mr. Hein, president of the assignee company, states his *opinion* in a sworn letter of record that:

* * * the gelatin menstruum has virtually no effect on the duration of action gained from the crystalline particles of prednisolone acetate suspended in it. It is therefore not correct to suggest that the use of the gelatin base has made possible the reduction in steroid dose.

Compare that statement with footnote 5 and accompanying text, supra.

The attachment to the sworn letter of Dr. Diamond describes the effect of the niacin component as follows:

Niacin as the amide derivative is a constituent of coenzymes I (DPN) and II (TPN), and the administration of niacin invariably increases the levels of DPN and TPN in the blood. DPN and TPN are mediators in cellular oxidation-reduction reactions vital to the liberation of energy from cellular foodstuffs: * * * Niacin also produces cutaneous vasodilation which increases blood flow in many parts of the body without affecting blood pressure. [Footnote omitted.]

"Adenocort," are the same as those of a composition, "Adenolin," reported in the Case Reports as previously tried by many of the patients.[12] Thus the tested "Adenocort" is the prior used "Adenolin" plus a steroid.

It is against the reported relief obtained from "Adenolin" that the relief obtained from "Adenocort" is compared in certain of the Case Reports. Some of *the same* Case Reports, as well as others, show prior therapy with the glucocorticoid (steroid) component. Thus we are satisfied that one of ordinary skill in the art would ascribe to the combination of the *two* ingredients as claimed, the results obtained upon the administration of the *five-component* "Adenocort."[13] Those reports are thus admissible as probative of the fact of synergism. *In re Widmer*, supra; *Deutsche Gold- und Silber-Scheideanstalt vormals Roessler* v. *Com'r Pats.*, — F. Supp. —, 148 USPQ 412 (D.C. D.C. 1966).

We come then to the dispositive point of this case, whether the claimed composition, in fact, exhibits synergism in dosage reduction. Upon a review of the record, representative portions of which follow, we are constrained to believe that appellants have not shown synergism.

As noted above, appellants' specification states that the products of the claimed combination "have greater potency or effectiveness than what would be expected based on their action independently." It is also stated that "it is possible to reduce the normal dosages required, especially that of the glucocorticoids."

The Examiner stated in the final rejection:

> Contrary to applicants' allegation, the composition has not been shown to result in a dimunition of steroidal dosage beyond that expected with the use, concomitantly, of a nonsteroidal anti-inflammatory agent. • • •

There are no remarks of record by appellants in response to the final rejection. A subsequent amendment of appellants' added specific claims naming each component of the "Adenocort" composition (not entered or on appeal here). In a letter in response thereto the Examiner stated:

> • • • Applicants' argument for the latter [unexpected] results are based upon an allegation of reduced dosage and reduced side effects beyond that normally expected. However, the evidence of record does not substantiate such allegation. Applicants compare the dosage of the instant composition with the dosage of a short acting steroid. However, it must be noted that the instant steroid is given in a *gelatin* menstruum, which protracts its action and invariably reduces its dosage. Hence, the conclusion of reduced dosage is not based upon a valid comparison.

In the Examiner's answer, the Patent Office view was stated thus (all emphasis in the original):

> Although applicants also administer their composition orally, no such allegation of a 50% reduction in dosage is asserted for the oral preparation. This much quoted 50% figure is derived solely from comparisons of *recommended* parenteral dosage. Note pages 1, 2 and 5 of the submitted Exhibit [first series of "Adenocort Case Reports"].

[12] The Physicians' Desk Reference, supra, discloses: ADENOLIN (ah den' o lin)—
Composition.—Each cc. contains 25 mg. Adenosine 5-Monophosphate, 150 mcg. Vitamin B_{12} (cyanocobalamin) activity, and 10 mg. Niacin in 17% Gelatin Solution with 1.5% benzyl alcohol.
Action and uses.—Indicated in all types of inflammatory conditions, bursitis, tendinitis, neuritis, puritis, varicose vein complications, postphlebitic syndrome. • • •

[13] The claims "comprising" the two components clearly cover the "Adenocort" composition. While it is true that "Adenocort" is not merely the two compound composition, it is equally true that the prior art did not in fact use the glucocorticoid or A5MP alone, as evidenced by the "Adenolin" formula, footnote 12, supra. The characterization of the issue as whether or not the composition of a combination of the *two* components is obvious is still accurate.

> It should also be noted that this ". . . recommended dose . . ." which asserts in effect that when the instant steroid—ATP [sic: A5MP] composition is administered, only 50% of the amount of steroid is required by the patient as compared with prior art steroids alone, and at least equal effect is obtained from the instant composition, is based upon the Exhibit and the cases contained therein for proof. Extremely close analysis of this Exhibit, submitted by a coapplicant, Dr. Diamond, fails to prove, *in any manner*, that the instant composition reduces the amount of steroid required by any patient; rather the cases show an *increase* in steroid dosage resulted from the use of the instant composition as compared with previously administered glucocorticoids.
>
> Of the 14 cases submitted only three cases actually set out any information on the actual doses of prior art steroids administered so as to permit an actual comparison of the amount of each steroid with the instant composition. However, it is felt that these three cases are sufficiently representative to permit some conclusion to be drawn. Because of the very complicated dosage computations and the paucity of such information supplied by applicants, the Examiner has summarized the net effect in each of these cases.
>
> Case Report No. 1, page 8, H.L. The prior art steroid was administered over a four week period for a total dose of 80 mg. The instant composition was administered for two weeks for a total dosage of 120 mg. This case demonstrates a *50% increase in steroid* administered in the form of the instant composition.
>
> Case Report No. 3, page 16, M.K.J. The prior art steroid and the instant steroid were given in equivalent dosage, *but* the instant composition was supplemented by ultrasonic therapy. Hence, *no reduction* in dose whatever is shown.
>
> Case Report No. 3, page 17, L.F. Prior art steroid given for 4 weeks for a total of 90 mg. glucocorticoid. The instant composition given for 5 weeks for a total of 140 mg. steroid. The case shows a *56% increase* in steroid dosage resulted from the administration of the instant composition.
>
> Therefore, it appears that the allegation of reduced dosage, urged as the basis of unobvious and unexpected results, has never been proved and careful examination of the cases submitted proves the reverse to be true. But even conceding some reduction in dosage, it is not apparent that in view of the reductions predicated on the basis of combined drug therapy or the employment of a gelatin menstruum that such reduction could serve as the basis of patentability.

In a "Letter to Office" appellants requested additional time to file a reply brief, noting new references cited, and stating, inter alia:

> • • • In the Examiner's answer, for the first time, specific criticisms were made with regard to the case histories of patients which had been submitted by appellants in their response to the Examiner's first official action. The Examiner rendered two official actions after appellants had submitted their case histories but in neither did he criticize or question the case histories on the grounds now contended in the Examiner's answer.

The request was granted and sworn letters accompanied by 80 additional "Adenocort Case Reports" were submitted. The relevant portion of the letters states:

> 2. *The section of Sterane (prednisolone acetate Pfizer) for dosage comparison.*—It appears that the Examiner criticized our selection of Sterane (prednisolone acetate) as a standard reference by which ADENOCORT should be compared. This was a perfectly legitimate selection in that Pfizer's Sterane represents the most widely accepted and well established dosage form for prednisolone acetate injection. As a matter of fact, the Food and Drug Administration suggested to our Dr. Diamond during a phone conversation that Sterane be used as a positive control in carrying out our animal toxicity studies with ADENOCORT. The dosage schedule for injectable prednisolone acetate established by Pfizer has been widely followed by other prednisolone acetate products here and abroad.

Of the 80 additional case reports only four appear to note anything about dosages of "Other" or "Previous" drug therapy. In two of the four, cases B–12 and B–14, wherein "ASA comp" and "Rela" respectively, were given previously, the dosages are "gr x q 4 h" and "II pc & hs." In a third, case B–16, "analgesic" was given in "large"

dosage. In case B–44, "Other Drug Therapy" is listed as "BENIMIDE [sic: Benemid] 0.25 mg. b.i.d. x 7 days then 0.25 mg. daily." The dosage of "Adenocort" in almost all of the cases was 2 cc. intramuscularly every other day for two weeks, for a total of 7 or 8 injections. "Benemid," also termed "Probenecid" according to The Merck Index, 6th ed., p. 789 (1952), is "p-(dipropylsulfamyl) benzoic acid," "ASA comp," an aspirin, phenacetin, caffein and codein compound, and "Rela," each tablet of which contains 350 mg. of carisoprodol, are neither A5MP nor a glucocorticoid.

The Board affirmed the rejection for its own reasons "and those set forth in the Examiner's answer * * *." In the Brief on Appeal here, appellants *do argue* as they argued below, that the Examiner erred in stating that the reduction in dosage stemmed from the use of gelatin menstruum. That point of the Examiner regarding gelatin as the expected cause of any enhanced activity leading to reduced dosages constituted one paragraph of the answer, while the immediately succeeding 7 paragraphs (2 pages) above quoted, challenging the fact of reduction in dosage, has gone unrebutted on this record.

It is clear from the above that the Patent Office view was that there was no synergism evidenced by the dosages listed in the first set of Case Reports submitted by appellants, and that, assuming arguendo, there was, that it was due to the gelatin vehicle. Appellants' response was confined to the latter point. [5] We assume, arguendo, that appellants' response proves the gelatin vehicle not to be the cause of any synergism, but we are compelled to affirm the decision of the Board as to claims 1–14, since the Examiner's prima facie accurate analysis as to the proofs submitted on the fact of synergism in the dosages has gone unrebutted on this record.

AFFIRMED.

SMITH, *J.*, concurs in the result.

U.S. Court of Customs and Patent Appeals

IN RE WALTER SPORMANN AND JOACHIM HEINKE

No. 7599. Decided July 21, 1966

[53 CCPA —; 363 F.2d 444; 150 USPQ 449]

1. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—JUDICIAL NOTICE—SPRAY DRYING TECHNIQUE.

"The Board's reference to 'spray drying' appears to have been injected as something of which it was taking judicial notice, without having been mentioned in any reference of record. While Aydelotte et al. and Haywood both disclose spraying of some sort, neither spray dries. While we have heard of spray drying, it is not a technique of which we would feel free to take judicial notice. We are of the opinion that if the Patent Office wishes to rely on what 'Those familiar with spray drying would know,' it must produce some reference showing what such knowledge consists of. So far as we can see, appellants do spray and their sprayed solution is dried."

2. PATENTABILITY—OBVIOUSNESS—INHERENCY.

"The Board apparently thought that the minimizing of sulfate production would be *inherent* in the process of Friedrich et al. However, this is no support for a rejection for various reasons. Friedrich et al. make no mention of it, as the Board conceded. Their process is not appellants' process. It is a reaction between solid, powdered material and gas, the only water present being chemically combined water and hygroscopic water; appellants react sprayed solution and gas. As we pointed out in *In re Adams*, 53 CCPA —, — F.2d —, 148 USPQ 742, the inherency of an advantage and its obviousness are entirely different questions. That which may be inherent is not necessarily known. Obviousness cannot be predicated on what is unknown."

3. SAME—PARTICULAR SUBJECT MATTER—"PRODUCTION OF SOLID ALKALI SULFITES."

The refusal of certain claims in an application entitled "Production of Solid Alkali Sulfites," as unpatentable over the prior art, is reversed.

APPEAL from the Patent Office. Serial No. 56,353.

REVERSED.

Herbert B. Keil, Mathew C. Thompson for appellants.

Clarence W. Moore (*George C. Roeming* of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, JR., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

RICH, *Acting Chief Judge*, delivered the opinion of the court.

This appeal is from the unanimous decision of the Patent Office Board of Appeals,[1] petition for reconsideration denied, affirming the Examiner's rejection of process claims 7 and 8 in application Serial No. 56,353, filed September 16, 1960, for "Production of Solid Alkali Sulfites." No claim has been allowed.

In essence, the invention is a process of producing alkali metal *sulfites* from alkali metal hydroxides and/or carbonates by spraying the latter, in aqueous solution, into a dry gas containing sulfur dioxide, the temperature and humidity of the gas being such as to immediately vaporize the water to the end that very little *sulfate* is produced. The sulfate results from oxidation of the sulfite but this apparently does not occur to any great extent if the sulfite is dry immediately upon its production. Sulfate is particularly likely to form when the treating gas contains a large amount of oxygen as do waste gases which it is desired to use for economic reasons.

Claim 7 reads (breakdown ours):

7. A process for the production of solid alkali metal sulfite which comprises:
passing a finely dispersed aqueous solution of an alkali metal compound selected from the group consisting of sodium hydroxide, sodium carbonate, sodium bicarbonate, potassium hydroxide, potassium carbonate, potassium bicarbonate and mixtures thereof,
into a substantially dry gas containing sulfur dioxide,
maintaining the temperature of said dry gas at a level such that the water introduced with the solution and formed by the reaction of the alkali metal and the sulfur dioxide is immediately vaporized,
and thereafter separating from the gas the solid alkali metal sulfite which is formed by the reaction of the sulfur dioxide and the alkali metal compound.

Claim 8 differs from claim 7 in two respects. (1) The finely dispersed solution of alkali metal compound is passed "into an upwardly directed stream" of the dry gas containing sulfur dioxide and (2) the temperature of the dry gas is maintained "between about 20 and about 150° C."

A typical reaction, producing sodium sulfite from sodium hydroxide and sulfur dioxide, is

$$2NaOH+SO_2\rightarrow Na_2SO_3+H_2O$$

According to appellants' brief (emphasis ours):

It has long been known, of course, that sulfur dioxide (SO_2) can be reacted with alkali metal hydroxides or carbonates to produce sodium sulfite. Ordinarily, a solution of sodium hydroxide or the like is interacted with SO_2 gas. *There is one major drawback to the use of the known processes. The formed sulfite*

[1] Consisting of Examiner-in-Chief Duncombe and Acting Examiners-in-Chief Behrens and Wyman, the latter writing the opinion.

tends to oxidize, especially in the presence of heavy metal ions. Sodium sulfite, for example, oxidizes to form sodium sulfate (Na_2SO_4). To prevent oxidation of the sulfite it was considered necessary to exclude atmospheric oxygen by using a concentrated sulfur dioxide gas containing relatively minor amounts of free oxygen or by carrying out the reaction between the sulfur dioxide and the alkali metal hydroxide in an inert atmosphere. The need for concentrated SO_2 gases made it *impossible to use roaster or waste gases* containing sulfur dioxide which are formed in great quantities during the production of sulfuric acid. The protective measure described above is difficult to carry out especially in a commercial process. It has also been suggested that the oxidation of alkali sulfite be suppressed by adding substances to the solutions which are capable of binding heavy metal ions. In such processes, however, the substances which are added to bind the metal ions become impurities which contaminate the alkali sulfite.

A method was found by appellant-applicants whereby alkali sulfite can be obtained from alkali hydroxide or alkali carbonate and sulfur dioxide *without the concurrent formation of substantial amounts of alkali sulfate*. The process is carried out successfully without the addition of materials which contaminate the sulfite. In the process, a finely dispersed aqueous solution of an alkali metal hydroxide or carbonate or bicarbonate is passed (sprayed) into a substantially dry gas containing sulfur dioxide. *The temperature and relative humidity of the gas are maintained at such levels that the water introduced with the solution and formed by the reaction of the alkali metal and the sulfur dioxide is immediately vaporized.* Thereafter, solid alkali metal sulfite is separated from the gas. The *sulfite is formed instantly in the dry form and no longer is exposed to the action of oxygen which is present in the gas.* In the subject process, unlike the prior art processes, it is possible to use waste gases as a source of SO_2, which gases contain large quantities of oxygen (as much as 50 parts of oxygen per part of SO_2).

In the process, therefore, a finely divided liquid and a gas are passed into the reaction zone and *solid sodium sulfite particles and water vapor leave the reaction vessel.* The exact point wherein the transition from liquid to solid and vapor occurs is not precisely known. What is known is that the water must be vaporized in the reaction zone leaving only vapor and solid alkali metal sulfite.

Much of this discussion also appears in appellants' specification.

The Examiner finally rejected the claims as unpatentable "over any of" the following patents:

Haywood, 2,210,405, August 6, 1940.
Aydelotte et al., 1,982,241, November 27, 1934.
Friedrich et al., 1,091,429, March 24, 1914.
Strickler, 1,023,179, April 16, 1912.

In his answer, the Examiner also said, "Appellants' process is considered nothing more than the application of this teaching of Friedrich et al. to a spray process such as is described in Aydelotte et al. Such a combination does not meet the provisions for patentability set forth in 35 U.S.C. 103."

The Board said: "As recognized by the Examiner, the rejection on Strickler appears to be cumulative but we will sustain the rejection as being one on Friedrich et al. in view of Aydelotte et al. or Haywood."

Friedrich et al. disclose a process for making sodium sulfites wherein a raw material such as sodium hydroxide or sodium carbonate is passed in a *solid, powdered* form through a horizontal rotating drum having radial plates or helical screw threads which cause the solid raw material to be turned and transported through the vessel. Sulfur dioxide gas is passed in countercurrent flow through the material within the drum. The solid, crushed raw material contains "a definite quantity of chemically combined or hygroscopic water" throughout the entire process, the amount of which "is so calculated in each individual case,

that the heat of the reaction occurring on the absorption of the sulfurous acid gas [SO_2] will partially or completely evaporate the water, so that the finished product issuing from the apparatus will exhibit the required degree of moisture or dryness." The amount of moisture is apparently selected so that the final product will be free flowing yet dustless. The invention is described as an improvement over, and is contrasted with, the then known (1910) "wet" process by eliminating the equipment, power, and related expenses necessary for separation of product from solution.

Aydelotte et al. disclose a process for reducing the sodium hydroxide (caustic soda) content of *solutions* containing a mixture of sodium hydroxide and potassium hydroxide (caustic potash). The patentees' objective is to produce caustic soda-caustic potash solution mixtures of certain ratios which they use in making synthetic indigo, the sodium sulfite being a mere by-product. The mixture, in solution, is treated with waste gas containing sulfur dioxide, "either by bubbling the gas through the liquid, countercurrent spraying of the liquid into the gas, or other means until a test portion when evaporated to about 50° Bé., cooled to about 46° C. and filtered shows that the ratio of mixed caustic has been changed to 40% of caustic soda and 60% of caustic potash." The whole batch of solution is then evaporated to about 50° Bé. and cooled to 40° C. whereupon sodium sulfite precipitates and is separated by filtration or decantation. What remains is, of course, still a solution. According to the patentees, the "crude separated sodium sulfite, containing small amounts of potassium sulfite, occluded caustic, and other impurities may, for some purposes, be used without purification, or it may be partly purified by washing, depending on what purpose it is to be used for."

Haywood discloses a method for producing *calcium* sulfite, especially as filler for paper, whereby a suspension of milk of lime, contained in an "absorber" tank, is whipped up as a fine mist by an agitator into an overhead gas containing from 7% to 20% SO_2. The essentially water-insoluble calcium sulfite product falls back into the suspension. It is stated that the calcium sulfite suspension can then be pumped to a paper machine. Alternatively, the patent states:

> If the material is to be shipped, it should first be dewatered to reduce it to a thick paste or a dry powder. However, if it is to be used near the source of manufacture in a watery suspension, it may be used directly * * *.

As to temperatures in the "absorber" where the reaction between liquid and gas occurs, the specification says:

> This temperature *under ordinary conditions will usually rise to about 70° C.* If desired, the combustion gases [from a sulfur burner where SO_2 is generated for the process] * * * may be cooled to a certain extent by water introduced into the tower * * *. This, however, is not essential and may be dispensed with. if desired. *There is no objection to introducing* the gases into the absorber at a temperature of between 400° and 550° C. [Emphasis ours.]

Strickler discloses a process for producing sodium sulfites, an object of which is to prevent the formation of sulfates through oxidation, which is appellants' principal object. However, in the Strickler process, SO_2 gas is passed into a *suspension* of sodium carbonate in a saturated solution of sodium sulfite. A temperature of about 49° C. (120° F.) is disclosed.

Comparing appellants' process with the prior art, clearly the basic chemical reaction embodied in their process is old, as their specification

acknowledges. Aydelotte et al. would also suggest to one skilled in the art bringing about this reaction by countercurrent spraying of a liquid containing caustic soda into a gas containing sulfur dioxide. The issue therefore is: would it be obvious to one of ordinary skill in this art to conduct the old reaction by such spraying under *all* the conditions set out in the claims and obtain appellants' results, i.e., would the invention as a whole have been obvious?

The Board said:

> Taking cognizance of the fact that spray drying is an old expedient for obtaining a solute in dry form, we fail to see that it is unobvious to modify the method taught by Friedrich et al. so that a solution of sodium carbonate, for instance, is passed in fine droplet form through the gaseous current comprising sulfur dioxide instead of the finely powdered carbonate of Friedrich et al., particularly as Aydelotte et al. and Haywood do show, at least, that it is old to spray an alkaline hydroxide or carbonate solution through sulfur dioxide gas to obtain the corresponding sulfite.
>
> Both appellants and Friedrich et al. obtain a dry sulfite and in such a simultaneous drying and chemical reaction process it is thought to be a *mere difference in degree whether the water is present in such an amount as to dissolve the carbonate or is merely present as adhering water* (Friedrich et al., page 2, lines 42 to 49). We note that Friedrich et al. only require that a sufficient amount of water be present to permit the chemical reaction to take place. Those familiar with spray drying know that dry products can be obtained even though a large amount of water may be present with the material to be dried.
>
> Appellant urges that his product does not have much sulfate as a contaminant. *Though not mentioned by Friedrich et al.*, this *seems* to be merely an additional characteristic *inherent* in their process, *In re Arnold et al.*, 50 CCPA 1160, 1963, C.D. 400, 794 O.G. 502, 315 F.2d 951, 137 USPQ 330. [Emphasis ours.]

[1] The Board's reference to "spray drying" appears to have been injected as something of which it was taking judicial notice, without having been mentioned in any reference of record. While Aydelotte et al. and Haywood both disclose spraying of some sort, neither spray dries. While we have heard of spray drying, it is not a technique of which we would feel free to take judicial notice. We are of the opinion that if the Patent Office wishes to rely on what "Those familiar with spray drying would know," it must produce some reference showing what such knowledge consists of. So far as we can see, appellants do spray and their sprayed solution is dried. We are unable to find, however, any indication in the references that such a step would have the effect which appellants sought and found, namely, a reduction of the undesirable oxidation of sulfite to sulfate in an old reaction tending to produce sulfate when the reactant gas contained large amounts of oxygen.

[2] The Board apparently thought that the minimizing of sulfate production would be *inherent* in the process of Friedrich et al. However, this is no support for a rejection for various reasons. Friedrich et al. make no mention of it, as the Board conceded. Their process is not appellants' process. It is a reaction between solid, powdered material and gas, the only water present being chemically combined water and hygroscopic water; appellants react sprayed solution and gas. As we pointed out in *In re Adams*, 53 CCPA —, — F.2d —, 148 USPQ 742, the inherency of an advantage and its obviousness are entirely different questions. That which may be inherent is not necessarily known. Obviousness cannot be predicated on what is unknown.

The result of appellants' process is said to be a product low in sulfate content, notwithstanding the use of waste gas containing relatively large amounts of oxygen, an asserted advantage not challenged by the Patent Office. So far as the disclosures of the references are concerned, we have found nothing to suggest it.

Strickler appears to be the only reference which deals with the problem of preventing the formation of sulfate during sulfite production but appears to solve the problem only by avoiding its cause. Sulfur dioxide gas is passed through a solution rather than waste gas containing oxygen and sulfur dioxide. Appellants' brief states, without refutation by the Patent Office, that "It is well known, of course, that this [Strickler] process would only be successful where atmospheric oxygen is excluded and where heavy metal ions are not present." The Patent Office treats this reference as "cumulative" and places little reliance on it.

The Solicitor devotes most of his short brief to a discussion of Haywood's process which is different in several respects. The argument attempts to show how the claims can almost be read on this reference, distinguishing only—but admittedly—in their references to the use of a "solution" and in naming the alkali metal reactants. Haywood is interested in producing *calcium* sulfite as a paper filler. It is not an alkali metal compound and therefore outside the claims. It is produced from a suspension, not a solution, of lime (CaO) or limestone (calcium carbonate, $CaCO_3$) brought into contact with a gas containing SO_2. No effort at all is made to dry the product or the gas. In fact, the conditions are such that as fast at the sulfite is formed it falls back into the suspension whence came the raw material. The gas treatment takes place in an "absorber" which is a vessel with liquid in the bottom having an agitator which revolves in the liquid and splashes it upwardly from its surface where it is contacted by the gas. Since the gas is exhausted through a stack the Patent Office would have us treat this as an "upwardly directed stream" within claim 8. We will not do so as this would distort the clear meaning of the claim when read in the light of the specification. Besides, gas flow in the absorbers is horizontal. Next, reliance is placed on Haywood's temperature disclosures. Here an obvious attempt is made to drag from its context something to meet claim limitations without regard to the true import of the claims. The argument is that *if* Haywood's gas is at 400° or 550° C., the gas would necessarily be dry gas and the water would necessarily vaporize immediately, as appellants' claims contemplate. But Haywood *teaches* that normally his gas will be about 70° C. This would not necessarily be dry, contrary to what is also contended, being below the boiling point of water. As to the higher temperatures mentioned, all that the patent says is that "There is no objection to introducing the gases into the absorber at a temperature of between 400° and 550° C." What effect this would have by way of vaporizing water is speculative and would depend on how much gas flows into the absorber how fast, how cold the suspension is, contact time between the mist thrown up by the agitator and the gas at whatever temperature it may have reached, heat loss from the absorber, etc. What goes on in the absorbers is a decidedly wet process having nothing to do with drying. What goes into them is aqueous suspension and that is also what comes out of them.

Finally, the Solicitor argues on the basis of Haywood's optional and later dehydration of his sulfite suspension to produce a shippable product that the immediate vaporizing and separation steps of the

claims are met because it makes no difference that Haywood's supposedly dried particles fall back into liquid if *ultimately* they are *again* dried and separated. We think this is not taking the claims to mean what they say when interpreted as they must be, in the light of the specification. *Motion Picture Patents Co.* v. *Universal Film Mfg. Co.*, 243 U.S. 502. The Solicitor's use of Haywood amounts to reading things into the reference that are not there and reading things out of the claims that are there. When this has been done, concededly the claims still do not read on Haywood and since this patent does not teach anything about immediate drying after reaction it does not make the invention obvious when added to Friedrich et al. who teach nothing about reacting solution with gas.

Our view is that one faced with the problem of how to use oxygen-containing waste gases in the production of alkali metal sulfites without undue production of sulfate would receive no suggestion from the references to spray a solution of the alkali metal compound into the gas stream under such conditions of temperature and relative humidity as to cause all water present to be immediately vaporized. This is the claimed invention and in our opinion its basic underlying concept is not to be found in the prior art of record.

[3] The rejection of claims 7 and 8 is reversed.

REVERSED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,432,469, A. E. Charles, TUFTING MACHINE; **2,478,743**, same; **2,989,014**, G. D. Dedmon, same, **filed** Aug. 19, 1966, D.C., N.D. Ga. (Rome), Doc. 1809, *Carolyn Chenilles, Inc.* v. *Brooker Spread Co., et al.*

2,450,462, H. W. Washburn, MASS SPECTROMETRY; **2,569,032**, same, CONSTANT PRESSURE INLET FOR MASS SPECTROMETERS; **2,587,575**, same, MASS SPECTROMETRY; **2,587,647**, G. W. Pallette, ION SOURCE; **2,775,707**, J. R. Benapfl, HEAT COMPENSATING DEVICE; **2,784,318**, Washburn and Berry, MASS SPECTROMETRY; **2,806,956**, Hall and Robinson, same; **Re. 23,464**, same, **filed** Sept. 13, 1966, D.C.N.J. (Newark), Doc. 924–66, *Picker X-Ray Corporation et al.* v. *Consolidated Electrodynamics Corporation.*

2,467,607, L. G. Bates, FILM FASTENING REEL, **filed** Sept. 22, 1966, D.C., S.D.N.Y., Doc. 66/3041, *Union Trust National Bank et al.* v. *De Luxe Laboratories, Inc. et al.*

2,478,743. (See 2,432,469.)

2,494,799, Duvall and Barnard, TRAILER COUPLING, **filed** Dec. 2, 1960, D.C., S.D. Tex. (Houston), Doc. 13,436, *Alfred L. Barnard* v. *Fruehauf Trailer Company (now Fruehauf Corporation)*. Final judgment—claims 1 and 2 of Patent No. 2,494,799 held invalid; complaint dismissed Aug. 16, 1966.

2,513,094, G. O. Hall, CURING OF MEAT TO INHIBIT UNDESIRABLE COLOR CHANGE, **filed** Dec. 2, 1965, D.C., S.D.N.Y., Doc. 65/3670, *Calgon Corp.* v. *Smokemasters, Inc.* Consent order of discontinuance Aug. 9, 1966.

2,515,403, Greenleaf and Webster, BACK PRESSER MOP; **2,667,653**, A. L. Le Febvre, COMBINED MOP AND WRINGER, **filed** Sept. 13, 1966, D.C., W.D. Okla. (Oklahoma City), Doc. 66–337, *The Drackett Company* v. *Ingle Bros. Co.*

2,516,080, B. A. Sobin et al., TERRAMYCIN AND ITS PRODUCTION, **filed** June 24, 1966, D.C. Virgin Islands (Charlotte Amalie), Doc. 84–1966, *Charles Pfizer & Co., Inc.* v. *Pharmusa Corp.*

2,534,342, N. I. Daniel, VIBRATOR MEANS FOR AUDIO AMPLIFIERS, **filed** Feb. 4, 1965, D.C., S.D.N.Y., Doc. 65/357, *The Danelectro Corp. et ano.* v. *The Ampeg Co., Inc.* Order dismissing action Aug. 4, 1966.

2,541,833, E. Saarinen, SHAPED CHAIR, **filed** Apr. 5, 1965, D.C., S.D.N.Y., Doc. 65/1011, *Knoll Associates, Inc.* v. *J.G. Furniture Co., Inc.* Stipulation and order dismissing action Sept. 13, 1966.

2,542,892, J. R. Bayston, MACHINE FOR MANUFACTURING ICE; **2,612,030**, C. E. Ploeger, REFRIGERATION; **2,613,506**, D. R. Cook, ICE-MAKING MACHINE; **2,740,265**, J. R. Bayston, MACHINE FOR MANUFACTURING ICE CUBES; **2,763,993**, same, ICE CUBE MANUFACTURING APPARATUS, **filed** Sept. 29, 1966, D.C., S.D.N.Y., Doc. 66/3140, *Uniflow Manufacturing Company et ano.* v. *Custom Bins, Inc. et al.*

2,546,354, Bacon and Kent, NAILING MACHINE, **filed** Mar. 15, 1965, D.C., S.D. Calif. (Los Angeles), Doc. 65–406–EC, *Mag Nu-Matic Nailer, Inc. et al.* v. *William Bull et al.* Consent judgment—defendants enjoined (notice Oct. 7, 1966).

2,569,032. (See 2,450,462.)

2,571,927, Neumann and Gottesmann, ELECTROLYTIC CELL, AND IN PARTICULAR ALKALINE CELL; **2,636,058**, G. Neumann, GASTIGHT STORAGE BATTERY AND METHOD OF MANUFACTURING SAME, **filed** Mar. 23, 1961, D.C.N.J. (Trenton), Doc. 228–61, *Gould-National Batteries, Inc. et al.* v. *Gulton Industries, Inc.* Judgment holding claim 2 of Patent No. 2,571,927 valid and infringed and claims 1, 3 and 4 of Patent No. 2,571,927 and claims 2, 5, 6, and 9 of Patent No. 2,636,058 invalid Sept. 2, 1964. Both parties appealed, C.C.A., 3rd Cir. Mandate vacating order of District Court dated Sept. 2, 1964; claims 1, 2, 3 and 4 of Patent No. 2,571,927 and claims 2, 5, 6, and 9 of Patent No. 2,636,058 held invalid; complaint dismissed Sept. 21, 1966. **Same, filed** June 12, 1961, D.C., S.D.N.Y., Doc. 61/2077, *Gould-National Batteries, Inc. et ano.* v. *Sonotone Corporation et ano.* Stipulation of dismissal Sept. 27, 1966.

2,583,034, S. E. Wibling, CAN OPENER, **filed** Sept. 16, 1966, D.C. Conn. (New Haven), Doc. 11593, *Strong Appliance Industries, Inc.* v. *General Electric Co., Inc. et al.*

2,587,573. (See 2,450,462.)

2,587,647. (See 2,450,462.)

2,602,323, J. C. Leemhuis, FLOOR STRUCTURE, **filed** Sept. 14, 1966, D.C., W.D. Wis. (Madison), Doc. 66–C–105, *Airfloor Company of California, Inc.* v. *Billmeyer & Sons et al.*

2,602,902, G. L. Haugen, SWEEP AMPLITUDE CONTROL FOR MAGNETICALLY DEFECTED CATHODE-RAY TUBES, **filed** Aug. 2, 1966, D.C. Md. (Baltimore), Doc. 17515, *William R. Blair, Jr.* v. *Montgomery Ward.*

2,604,359, F. L. Zybach, SELF-PROPELLED SPRINKLING IRRIGATING APPARATUS, **filed** Sept. 9, 1966, D.C. Nebr. (Omaha), Doc. 02594, *Valley Mfg. Co. et al.* v. *Glenn Miller.*

2,606,601, E. Saarinen, CHAIR HAVING BACKREST IN THE FORM OF A SHELL-LIKE BODY, **filed** Dec. 7, 1965, D.C., S.D.N.Y., Doc. 65/3713, *Knoll Associates, Inc.* v. *J.G. Furniture Co., Inc.* Stipulation and order dismissing action Sept. 13, 1966.

2,611,813, Sharpless and Eichert, MAGNETIC DATA STORAGE SYSTEM, **filed** Sept. 8, 1966, D.C. Md. (Baltimore), Doc. 17619, *Technitrol, Inc.* v. *Litton Industries, Inc. et al.* **Same, filed** Sept. 19, 1966, D.C. Md. (Baltimore), Doc. 17653, *Technitrol, Inc.* v. *Control Data Corporation.*

2,612,030. (See 2,542,892.)

2,613,506. (See 2,542,892.)

2,617,375, W. J. Peets, ELECTRIC MOTOR DRIVES FOR SEWING MACHINES; **2,832,302**, F. Gegauf, SEWING MACHINE; **Re. 24,370**, C. Harris, EMBROIDERING MECHANISM FOR ZIGZAG SEWING MACHINES, **filed** May 20, 1958, D.C., S.D.N.Y., Doc. 133–350, *The Singer Mfg. Co.* v. *Brother International Corp.* Stipulation and order of discontinuance Sept. 12, 1966.

2,628,568, M. L. Rhine, HIGH PRESSURE PUMP, **filed** Aug. 2, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c1421, *Ellipse Corp.* v. *Ford Motor Co.*

2,636,058. (See 2,571,927.)

2,637,881, E. F. Peterson, CORE-MAKING MACHINE, **filed** Dec. 4, 1964, D.C., E.D. Mich. (Detroit), Doc. 26114, *Edwin F. Peterson et al.* v. *Chrysler Corp. et al.* Stipulation and order of dismissal without prejudice Sept. 26, 1966.

2,641,300, F. Y. Sherbondy, GARMENT FORM RETAINER, **filed** Oct. 5, 1966, D.C.N.J. (Newark), Doc. 992–66, *Frank Y. Sherbondy* v. *Time Savers, Inc.*

2,647,584, Baker and Conrad, WELL PACKER AND BRIDGE PLUG FOR WELL BORES, **filed** Dec. 16, 1965, D.C., S.D. Calif. (Fresno), Doc. 2732–ND, *Baker Oil Tools, Inc.* v. *Schlumberger Well Surveying Corporation.* Stipulation of dismissal with prejudice Sept. 26, 1966.

2,652,975, N. J. Angelo, CENTRIFUGAL COUNTERCURRENT EXCHANGE DEVICE; **2,758,784**, W. J. Podbielniak et al., same; **3,050,238**, Doyle and Costello, LIQUID FEED ARRANGEMENT FOR CENTRIFUGAL DEVICES, **filed** Jan. 22, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c104, *Dresser Industries, Inc.* v. *Liquid Dynamics Corporation et al.* Consent judgment—counts I, II, III and V of the complaint dismissed with prejudice; defendant Liquid Dynamics dismissed as a party to this lawsuit; Patent No. 3,050,238, having been disclaimed, count IV of complaint dismissed with prejudice with respect to said patent; count IV of complaint dismissed without prejudice as to Patent Nos. 2,652,975 and 2,758,784, Sept. 28, 1966.

2,653,844, M. L. Detwiler, FISH GRIPPER, **filed** Oct. 12, 1966, D.C., S.D. Calif. (Los Angeles), Doc. 66–1633–FW, *Gudebrod Bros. Silk Company, Inc.* v. *Commerce-Pacific, Inc.*

2,667,653. (See 2,515,403.)

2,667,775, F. L. Albel, KNITTED FABRIC, **filed** Sept. 5, 1962, D.C., S.D.N.Y., Doc. 62/3019, *Artvale, Inc.* v. *Rugby Fabrics Corp. et ano.* Stipulation and order of dismissal with prejudice Aug. 12, 1966. **Same, filed** Apr. 1, 1963, D.C., S.D.N.Y., Doc. 63/907, *Artvale, Inc.* v. *Howard Textile Mills, Inc.* Stipulation and order of dismissal without prejudice Aug. 12, 1966.

2,672,059, Graetz and McAuley, SPROCKET CHAIN, **filed** Mar. 23, 1965, D.C., E.D. Tenn. (Chattanooga), Doc. 4484, *Big Dutchman, Inc.* v. *Cumberland Case Company.* Stipulation and consent decree; patent held valid and infringed Sept. 13, 1966.

2,678,634, E. J. J. Henriksen, WRITING INSTRUMENT, **filed** Dec. 20, 1962, D.C., S.D. Iowa (Des Moines), Doc. 6–1683–C–1 (originally Doc. 1–297), *Paper Mate Manufacturing Co. et al.* v. *W. A. Sheaffer Pen Company et al.* Stipulation and order dismissing complaint and counterclaim Aug. 16, 1966.

2,699,054, L. H. Conover, TETRACYCLINE, **filed** Mar. 18, 1965, D.C., S.D.N.Y., Doc. 6/809, *Veterinary Corp. of America* v. *Chas. Pfizer & Co.* Order of dismissal Sept. 22, 1966.

2,740,265. (See 2,542,892.)

2,758,784. (See 2,652,975.)

2,763,993. (See 2,542,892.)

2,775,707. (See 2,450,462.)

2,784,318. (See 2,450,462.)

2,800,631, T. E. Suess et al., METHOD OF CARRYING OUT MELTING PROCESSES, **filed** July 19, 1957, D.C., E.D. Mich. (Detroit), Doc. 16900, *Henry J. Kaiser et al.* v. *McLouth Steel Corporation.* Final judgment—plaintiffs' amended and supplemental complaints dismissed; claims 1 and 2 of Patent No. 2,800,631 held invalid July 19, 1966.

2,804,395, S. K. Boyajian, ENVELOPE AND THE LIKE WITH REMOISTENABLE ADHESIVE COMPRISING POLYVINYL ALCOHOL, **filed** Dec. 30, 1957, D.C. Mass. (Boston), Doc. 57–1246–W, *Old Colony Envelope Co., Inc. et al.* v. *Setrak K. Boyajian, doing business as Precision Testing Labs.* Decree holding all claims of patent invalid Sept. 16, 1959. **Appealed,** Nov. 18, 1959, C.C.A., 1st Cir., Doc. 5598, *Setrak K. Boyajian* v. *Old Colony Envelope Co., Inc. et al.* Judgment of District Court vacated and case remanded (notice June 16, 1960). In District Court—plaintiff's motion for summary judgment granted—order holding claims 5 and 10 of said Patent No. 2,804,395 invalid; counterclaims dismissed with prejudice Feb. 6, 1963. **Appealed,** Apr. 15, 1963, C.C.A., 1st Cir., Doc. 6120, *Setrak K. Boyajian* v. *Old Colony Envelope Co., Inc. et al.* District Court judgment of Feb. 6, 1963, affirmed Nov. 5, 1963.

2,806,956. (See 2,450,462.)

2,832,302. (See 2,617,375.)

2,964,083, E. S. Pfau et al., PNEUMATIC TIRES AND TREAD STOCK COMPOSITION, **filed** Mar. 30, 1961, D.C. Md. (Baltimore), Doc. 12932, *Firestone Tire and Rubber Company and McCreary Tire and Rubber Co.* v. *General Tire and Rubber Company.* Final decree—Plaintiff McCreary Tire and Rubber Company dismissed with prejudice and said plaintiff enjoined July 18, 1966.

2,989,014. (See 2,432,469.)

3,050,238. (See 2,652,975.)

3,160,984, J. W. Ryan, MOTOR SIMULATING SOUNDING TOY, **filed** Dec. 8, 1964 (amended Jan. 21, 1965), D.C., S.D. Calif. (Los Angeles), Doc. 64–1703–TC, *Mattel, Inc.* v. *J. J. Newberry Co.* Stipulation and order dismissing action with prejudice June 24, 1966. **Same, filed** Dec. 23, 1964, D.C., S.D.N.Y., Doc. 64/3970, *Mattel, Inc.* v. *Louis Marx & Co., Inc.* Order of dismissal with prejudice June 30, 1966.

Re. 23,464. (See 2,450,462.)

Re. 24,370. (See 2,617,375.)

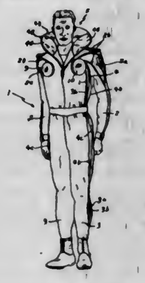
Re. 24,518, B. W. Nickerson, Jr., SIDE WALL FOR TIRES, **filed** Aug. 17, 1966, D.C. Del. (Wilmington), Doc. 3249, *Bryan W. Nickerson, Jr.* v. *Josef Kutschera.*

PATENTS

GRANTED NOVEMBER 15, 1966

GENERAL AND MECHANICAL

3,284,805
COMBINED CABIN UNIFORM AND MECHANICAL PARTIAL PRESSURE SUIT COMPLETE WITH HELMET
Henry W. Seeler, Dayton, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force
Filed Apr. 30, 1964, Ser. No. 364,045
7 Claims. (Cl. 2—2)



1. An improved mechanical partial pressure suit comprising flexible arm, leg, body and head enclosure portions for receiving the arms, legs, body and head of a wearer, frictionless lacings extending longitudinally along the sides of said arm, leg, and body portions of said suit for contracting the suit about the wearer thereof when said lacings are pulled, releasable tensioned spring means carried by said suit and connected to said lacings for pulling said lacings to tension said arm, leg, and body portions on the wearer when said tensioned spring means is released, and ambient pressure reduction responsive means carried by said suit for releasing said releasable tensioned spring means upon a predetermined reduction in ambient pressure exteriorly of said suit.

3,284,806
PROTECTIVE GARMENT
Donald O. Prasser, 1302 Chester Ave., Bakersfield, Calif.
Filed Mar. 6, 1964, Ser. No. 349,960
8 Claims. (Cl. 2—2.1)



1. A protective garment to cover at least a body member of the human anatomy including a layer of a cellular elastomer and a layer of metallic mesh composed of wires bonded thereto and substantially coextensive therewith, the mesh being arranged to have the wires thereof extend diagonally of the body member on which it is placed, said cellular elastomer having a flexibility assuring a snug fit without discomfort to the wearer.

3,284,807
NECKTIE HAVING A PREFORMED KNOT
Carlos Espino, 2308 Westridge Road, Los Angeles, Calif.
Filed Oct. 19, 1965, Ser. No. 497,656
1 Claim. (Cl. 2—153)

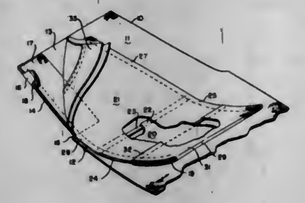


A combination tie clip, tie knot and removable tie flaps comprising: a clip member having a front plate and a spaced, downwardly appending hook member; a fabric member wrapped around said front plate and between said front plate and said hook member with one edge thereof extending below the front plate and covering the front plate to form a knot; a clutch member having an opening adapted to removably receive a pin, said clutch member being affixed to said clip member; tie flaps formed of a single piece of fabric having an upper fold, said folded flaps at their upper end being again folded into overlapping relationship and a pin extending through the overlapping flaps and releasably engageable in said opening in said clutch, the upper end of said flaps, when in position, underlying said one edge of said fabric member of said knot and adjacent said front plate; said clip member including a member offset rearwardly from said front plate; said clutch being mounted on said offset member and said offset member being provided with an opening aligned with said opening in said clutch.

3,284,808
GARMENT POCKETS
Walter F. Evans and Richard H. Hall, both of 508 Sudekum Bldg., Nashville, Tenn.
Original application Dec. 22, 1958, Ser. No. 781,981, now Patent No. 3,137,865, dated June 23, 1964. Divided and this application Jan. 22, 1964, Ser. No. 339,454
2 Claims. (Cl. 2—247)

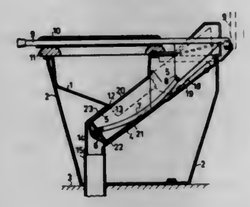
1. In a trouser made of cloth fabric, an exterior front trouser panel having a one-piece cloth panel cooperating with the inner side of said trouser panel to form an inside pocket having a side access opening, said cloth panel being folded onto itself along a horizontal edge to provide a forward pocket wall and a rearward pocket wall overlapping and extending above said forward pocket wall to define with said trouser panel said side access opening,

means joining the upper marginal edge of said forward wall to the inner side of said trouser panel, means joining the portion of said rearward wall extending above said forward wall to the inner side of said trouser panel along the side edges of said pocket, means adhesively joining the portion of said rearward wall extending below said upper marginal edge to said forward wall along the side edges of said pocket, said rearward pocket wall being joined to said trouser panel only above said forward wall and said forward wall being joined to said trouser panel only along said upper marginal edge to provide a pocket bottom that is freely swingable relative to said trouser panel, said means for respectively joining said forward and rearward pocket walls to said trouser



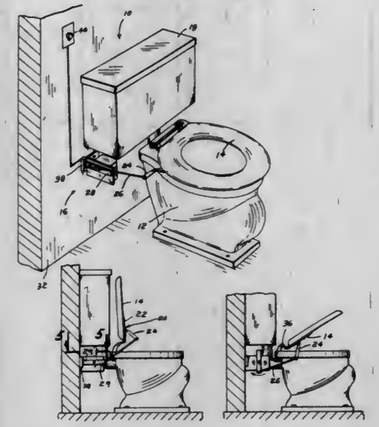
panel consisting only of adhesive means, a reinforcing fabric panel folded over said pocket bottom along a horizontal edge and extending the entire width of said pocket bottom over oppositely facing surfaces of said forward and rearward pocket walls, means adhesively joining said reinforcing panel to said pocket bottom substantially along the entire interfaces between said reinforcing panel and said forward and rearward walls, the marginal edge of said trouser panel extending along one side of said access opening being folded inwardly and adhered to the trouser panel inner side, and a facing strip made of material similar to said trouser panel and being adhesively joined to the inner side of said trouser panel and to said inwardly folded marginal edge in overlapping relation thereto.

3,284,809
EARTH CLOSET
Gustaf Shiro Gadelius, Lidingo, Sweden, assignor to Gadelius & Co., AB, a corporation of Sweden
Filed July 13, 1964, Ser. No. 381,951
Claims priority, application Sweden, July 15, 1963, 7,848/63
10 Claims. (Cl. 4—111)



1. A closet comprising a closet pan having a bottom discharge opening for evacuated matter, a cylinder located below the pan and provided with a plunger which in a retracted position uncovers a receiving chamber formed by said cylinder, the chamber being in direct communication with the discharge opening of the closet pan and the discharge end of the cylinder being adapted to be put into communication with a drain pipe.

3,284,810
TOILET SEAT LIFT
Eugene E. Stokes, 2111 Hickory Lane, Cedar Falls, Iowa
Filed Mar. 2, 1964, Ser. No. 348,342
6 Claims. (Cl. 4—251)



1. In combination with a toilet having a seat hingedly mounted thereon,
a toilet seat lift comprising,
a member extending downwardly from said seat,
a connecting means pivotally connected to one end of said member and extending rearwardly of said seat,
a crank arm having one end pivotally connected to the other end of said connecting means,
an electrical power means for rotating said crank arm,
starter means for energizing said power means to begin the rotation of said crank arm,
means for de-energizing said power means to stop the rotation of said arm after it has moved one half a revolution,
said starter means adapted to be operated repeatedly for energizing said power means to advance the rotation of said crank arm one-half revolution, and
said crank arm being positioned so that at the end of one-half revolution said connecting means has been moved rearwardly of said seat to move said seat to a horizontal position and at the end of another one-half revolution said connecting means is moved forwardly and upwardly for rising said seat to a vertical position.

3,284,811
SOFA FOLDING BED SUPPORTING FIXTURE
Walter Clark Rogers, Jr., High Point, N.C., assignor to General Steel Products, Inc., High Point, N.C., a corporation of North Carolina
Filed Jan. 11, 1965, Ser. No. 424,625
16 Claims. (Cl. 5—13)

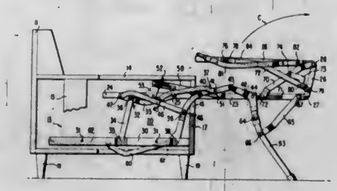
1. In a sofa bed, including a sofa portion having back and side frame members with a fixed front rail extending between the forward lower ends of said side frame members to define therewithin a storage enclosure within the sofa, a fixture supporting the pivotally connected main and rear frame sections of a foldable bed frame for movement over said rail between (1) a retracted position in which the bed frame is contained within said storage enclosure behind said rail with the main frame section generally horizontal and the rear frame section extending vertically upwardly thereto and (2) an extended position in which said bed frame lies above and extends forwardly

of said rail with the main and rear frame sections aligned and substantially horizontally disposed, said fixture comprising:

support means affixable to a side frame member and having a front fixed pivot and rearwardly thereof a rear fixed pivot,

rear support link means pivotally connected between said rear fixed pivot and a rear portion of said main frame section to swing the rear of said frame section forwardly within said enclosure from said retracted position and then lift it upwardly to said extended position,

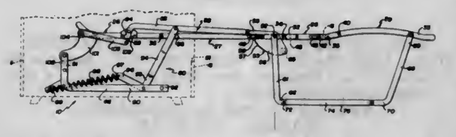
front support link means pivotally connected between said front fixed pivot and said main frame section forwardly of the connection to said rear support link means to lift the forward portion of said main frame



section upwardly above said rail as said main frame section initially pivots from said retracted position and to then pull the frame forwardly over said rail as said bed frame moves to said extended position,

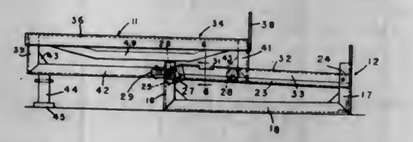
guiding link means pivotally connected between said front support link means and said rear support link means to pivotally swing the portion of said rear support link means immediately supporting the rear of said main frame downwardly and forwardly as the front portion of said main frame section moves between said retracted position and said extended position, and connecting link means pivotally connected between said front support link means and said rear frame section to pivot said rear frame section relative to said main frame section as said bed frame moves between said retracted and extended positions.

3,284,812
BED CHESTERFIELD
Peter Koch, Vancouver, British Columbia, Canada, assignor to Trojan Steel & Wire Ltd., Vancouver, British Columbia, Canada, a corporation
Filed Aug. 2, 1965, Ser. No. 476,243
8 Claims. (Cl. 5—13)



1. A bed chesterfield comprising a stationary frame, a plurality of at least three bed sections pivotally connected together in series from head to foot, constituting in order, from head to foot, an intermediate section, a center section and a foot section, the foot and center sections of said series being pivotally movable relative to each intermediate and to the other section between a linearly extended bed-use position and a folded seat-use position in which latter position the foot section extends in a substantially horizontal plane parallel to and above said intermediate section and the center section of said series extends substantially vertically between said intermediate and foot sections, means swingably mounting the said intermediate section to the frame for swinging lateral movement of the sections in a folded condition into and out of the stationary frame, a first leg member pivotally connected at one end to the intermediate bed section for pivotal movement in a fore and aft direction between a substantially vertically depending bed supporting position to a substantially horizontally extending folded position, actuating means connected to said first leg member operable when the folded bed sections are moved toward the frame for automatically moving the first leg member from its supporting position to its folded position and for returning said leg member to its supporting position upon movement of the folded bed sections away from the frame, a second leg member pivotally connected at one end to the foot bed section for pivotal movement relative thereto in a fore and aft direction and swingably movable therewith when the sections are moved between the folded and extended positions, and an elongated rigid connecting member pivotally connected at each end to the free ends of the leg members to move the second leg member and maintain the latter in a substantially vertically depending supporting position when the sections are moved to their extended position and pivotally movable relative to the first leg member to a position of side by side engagement with said first leg member when the sections are moved into their folded positions, said second leg member maintaining said connecting member in side by side relationship with said first leg member as the latter is rotated to its folded position.

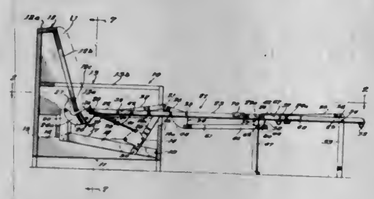
3,284,813
COMBINATION SITTING AND SLEEPING PIECE
John G. Sevcik, Berwyn, Ill., assignor to Burton-Dixie Corporation, Chicago, Ill., a corporation of Delaware
Filed Oct. 7, 1965, Ser. No. 493,717
2 Claims. (Cl. 5—17)



1. In a combination bed and sitting piece capable of being converted from a lounge to a bed and back to a lounge, a stationary frame and a separate frame movably and slidably mounted upon said stationary frame and capable of providing a rearwardly inclined support for a seat when converted to a lounge and a substantially horizontal support for a mattress when converted to a bed, said stationary frame provided with spaced end frames and a substantially C-shaped inwardly opening track joined at its ends to and bridging each end frame, each track being inclined rearwardly and downwardly through the greater portion of its length and inclined downwardly and outwardly adjacent its forward end to provide a well closed at its forward end, said movable frame at its opposite ends having a front leg and rearwardly spaced supporting rollers received in and movable in said adjacent track when the movable frame is extended or retracted, said rearwardly and downwardly inclined portion of the track having an opening in the top thereof adjacent to but spaced rearwardly from the well for insertion or removal of the spaced rollers, a guide roller carried on one of the frames and having contact with the other frame to align and guide the movable frame between its extended and

retracted positions, said legs being elevated as the movable frame is being moved to either of its positions of use and contacting the floor when the forward supporting rollers move into said walls at the fully extended position of the movable frame and the spaced supporting rollers at each end are disposed in substantially horizontal alignment, one of said rollers being positioned forwardly of the opening and in the well of its track and the other roller rearwardly of said opening when the movable frame is fully extended upon the stationary frame to provide a bed, in which position said rollers are retained in the track against removal, and when said movable frame is withdrawn to a position intermediate its fully extended position to provide a bed and its retracted position with the forward supporting roller aligned with the opening of its track the forward supporting roller is removable through the opening upon lifting the forward end of the movable frame, and when the movable frame is then further withdrawn to align the rear supporting roller with said opening, said rear supporting roller and the movable frame are bodily removed.

3,284,814
DAVENPORT BED
Aloysius J. Mikos, Skokie, Ill., assignor to The Seng Company, a corporation of Delaware
Continuation of application Ser. No. 314,113, Oct. 7, 1963. This application Oct. 20, 1965, Ser. No. 506,420
18 Claims. (Cl. 5—31)



1. In a folding davenport bed, in combination: a base;

a folding bed structure including an inner bed section, a hinge bed section, and an outer bed section pivotally connected end to end, said bed sections being adapted to occupy a folded position within the base with the inner section lowermost, the hinge section generally upright at the front, and the outer section inverted above the inner section;

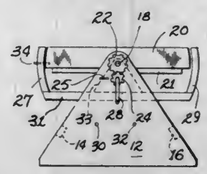
supporting means mounting said bed structure on the base for movement between said folded position within the base and an intermediate position above the base with said inner, hinge, and outer sections occupying substantially the same positions with respect to one another;

means mounting said outer bed section for pivotal movement relative to said hinge bed section when said bed structure is in said intermediate position;

means for pulling the outer section generally into parallelism with the inner section as the bed structure moves toward folded position, said pulling means including a pair of levers pivoted adjacent the connection between the inner section and the hinge section, first linkage means connection said levers to the supporting means to rotate the levers downwardly with reference to the inner section as the bed structure moves toward folded position, and second linkage means connecting the free ends of said levers to the outer bed section so that rotation of the levers pivots said outer bed section relative to said hinge bed section to pull said outer section downwardly, there being a lost motion connection between each of said levers and one of said linkage means;

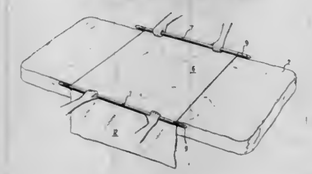
and a pair of folding intermediate legs pivoted at the outer end of the inner section, said levers being pivoted on said legs below the pivotal connection between the legs and the inner section, whereby the first linkage means folds said legs as it pivots said levers.

3,284,815
TILTABLE BEDS
Abraham Grossman, 710 Junior Terrace, Chicago, Ill., and Paul Phillips Connor, Evanston, Ill.; said Connor assignor to said Grossman
Filed Apr. 18, 1963, Ser. No. 274,050
15 Claims. (Cl. 5—62)



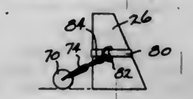
1. A tilting bed comprising a frame, a horizontal shaft supported by said frame, a bed platform rotatably mounted on said shaft, said bed platform having a substantially plane surface for supporting a patient, a pair of side panels, a first support member interconnecting said side panels, and a second support member secured to said first support member and rotatable on said shaft for rotatably supporting said side panels on said shaft independently of said bed platform, whereby said bed platform and said side panels may rotate independently relative to said frame.

3,284,816
SUPPLEMENTAL BED SHEET COMBINATION
Anna Catherine Laubsch, S. Orchard Road, Vineland, N.J.
Filed Jan. 27, 1965, Ser. No. 428,388
8 Claims. (Cl. 5—81)



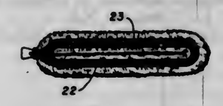
1. A supplemental sheet for the mattress of a patient's bed adapted to facilitate longitudinal shifting of a patient lying on the bed comprising a piece of fabric material having a length substantially less than the length of the mattress and a width greater than the width of the mattress and having the material of the sheet looped and stitched to itself along parallel lengthwise lines spaced apart a distance substantially equal to the distance between the side edges of the mattress so as to form a pair of tubes integral with the sheet and outstanding therefrom and each tube being inset from the adjacent longitudinal edge of the sheet by a portion of sheet area wide enough to be tucked relatively securely beneath a side margin of the mattress with each tube being thereby positioned substantially along an edge of the mattress, in combination with a rigid rod-like member removably disposed in each of each tubes so as to stiffen the tubes for grasping by persons standing at the sides of the bed for lifting the tubes and elevating the sheet to lessen the load of a substantial portion of the length of the patient on the mattress and thereby facilitate shifting the patient longitudinally of the bed.

3,284,817
THERAPEUTIC CUSHION
Charles Landwirth, 214 Kenwood Place, Michigan City, Ind.
Filed Oct. 1, 1963, Ser. No. 313,094
4 Claims. (Cl. 5—327)



1. In combination:
a cushion having a yielding cellular shape-retaining body with a plurality of angularly disposed surfaces,
an elongated substantially cylindrical bolster of a diameter small compared to the vertical dimension of said cushion and formed of yielding cellular shape-retaining material, and
means flexibly connecting said bolster to said cushion in spaced substantially parallel relation to any selected surface of said cushion whereby the feet of a patient may be positioned in contact with the cushion while supported by the bolster in slightly elevated position adjacent to and spaced from the heels when said bolster and any second selected surface of said cushion lie on a common supporting surface and a flexible strap carried by said cushion for positioning the foot of a user in engagement with said first selected surface.

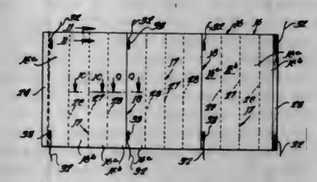
3,284,818
TUFTED FABRIC SLEEPING BAG
Frank B. Lutz, Athens, Ala., assignor to Monsanto Company, a corporation of Delaware
Filed Feb. 24, 1964, Ser. No. 346,766
3 Claims. (Cl. 5—343)



1. A reversible type sleeping-bag comprising a single piece of tufted fabric having a layer of synthetic foam superimposed on the back thereof, said foam being comprised of a cellular portion and a non-cellular portion, said fabric being folded to dispose the foam between layers of tufted fabric, a row of fastener lugs secured to the marginal portions of three edges of the folded fabric, said fastener lugs extending along both longitudinal edges and one end, and a double-pull slide member positioned intermediate the ends of said row of lugs for interlocking and disengaging said lugs when said folded fabric is shaped into a bag-like structure.

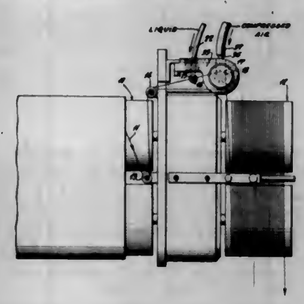
3,284,819
GYMNASTIC FLOOR COVERING
George P. Nissen, Cedar Rapids, Iowa, assignor to Nissen Corporation, Cedar Rapids, Iowa, a corporation of Iowa
Filed July 28, 1964, Ser. No. 385,607
5 Claims. (Cl. 5—344)

1. A gymnastic floor covering of generally flat rectangular shape comprising a plurality of flat rectangular blocks of resilient shock absorbing material, a plurality of top cover sheets each covering an individual block, a plurality of bottom cover sheets each covering a set of two pairs of adjacent blocks, each of said top cover sheets being attached to a bottom cover sheet around the bottom edge of a block to hold the block in position on the bottom cover sheet, one pair of said adjacent blocks on each of said bottom cover sheets being swingable relative to the other pair about the bottom cover sheet and between a first limit position in which the top and bottom surfaces respectively of the blocks lie in the same planes and a second limit position in which the bottom sides of



the blocks are adjacent each other, each set of two pairs of blocks being attached to an adjacent set of two pairs of blocks along the top side edges of adjacent blocks of the two sets for folding into overlapping positions in which the top surfaces of one set lie against top surfaces of adjacent sets.

3,284,820
METHOD FOR THE LIQUID TREATMENT OF YARNS
Jefferson Lyle Claiborne, Chattanooga, Tenn., assignor to Dixie Yarns, Inc., a corporation of Tennessee
Original application Dec. 18, 1963, Ser. No. 331,414, now Patent No. 3,258,943, dated July 5, 1966. Divided and this application Jan. 13, 1966, Ser. No. 539,594
2 Claims. (Cl. 8—151.2)

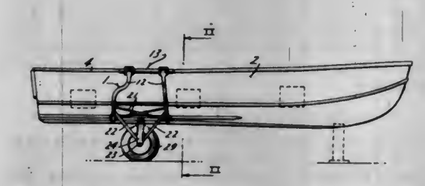


1. A method of applying a liquid to single strand material that comprises passing succeeding lengths of the material through a drop of liquid, immediately thereafter blowing air transversely thereof and thereafter drying and collecting the same.

3,284,821
WHEEL ASSEMBLY FOR A BOAT
Max A. Zoretic, P.O. Box 23, Ely, Minn.
Filed Apr. 13, 1964, Ser. No. 359,207
6 Claims. (Cl. 9—1)

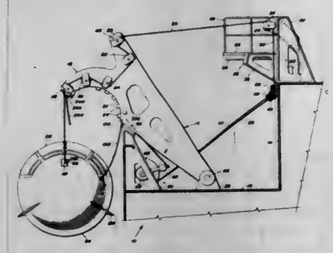
1. A wheel assembly to be attached to a boat to aid in launching, landing and transporting the boat, said boat including a hull and having a keel strip extending longitudinally along the lower external surface of said hull, comprising clamping means removably secured to the gunwale of the boat, a supporting member extending downwardly along the hull of the boat and the lower end of said supporting member extending inwardly beneath the hull toward the longitudinal centerline of the hull, a connecting member having one end pivotally connected to the clamping means and having an opposite

end extending laterally outward of said gunwale, the upper end of said supporting member being pivotally connected to said opposite end of the connecting member, means attached to the lower end of said supporting mem-



ber and having a longitudinally extending notch disposed to receive the keel strip of the boat to removably lock the supporting member to the hull, and wheel means carried by the lower end of the supporting member.

3,284,822
LIFEBOAT SYSTEM
Stafford W. Trexler and Earl A. Belt, Baltimore, Md., assignors of twenty-five percent to James E. Stansbury, Annapolis, Md.
Filed Nov. 30, 1964, Ser. No. 414,576
8 Claims. (Cl. 9—39)



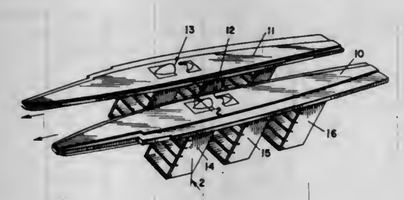
1. In a vessel having a deck and a deckhouse, a pair of spaced davit members pivotally mounted at their lower ends to said deck, each said davit members having a portion upwardly extending from the rear portion thereof and an arc portion outwardly facing from the front thereof, stop means for defining the stowed and launching positions of said davit members, a lifeboat, means for stowing said lifeboat against the arc portion of each said davit members and lowering it therefrom, including a pair of cables releasably engaged with said lifeboat, a plurality of sheave elements positioned along each side of said arc portion and said upwardly extending rear portion, with the sheave elements along one side of each said arc portion being for guiding its corresponding cable to said lifeboat and the sheave elements along the opposite side of each said arc portion being for guiding its respective cable away from said lifeboat, a pair of additional sheave elements positioned along said deckhouse for guiding one end of each said cables therealong, a winch mechanism mounted on said deck for receiving said one end of each said cables to obtain manipulation thereof, and means securing the opposite end of each said cables to said deckhouse.

3,284,823
SKI STABILIZER
Lu Verne G. Steffel, 3380 Texas Ave., Minneapolis, Minn.
Filed Oct. 8, 1964, Ser. No. 402,564
14 Claims. (Cl. 9—310)



14. In combination with a water ski of the type including a narrow elongated body having front and rear ends and a planing undersurface having a generally longitudinally straight rear end portion adapted to plane over the surface of a body of water and terminating at its forward end in an upwardly curving forward end portion, said water ski being adapted to plane over the surface of said water with at least the forward end of said rear end portion disposed immediately adjacent said forward end portion lifted above said surface, an elongated generally trough-shaped member extending longitudinally of said undersurface and including upper edge portions secured to said undersurface, the forward end of said trough-shaped member being disposed at a point adjacent the juncture of said rear and front end portions of the undersurface of said ski and including forwardly and downwardly opening air inlet means, the rear end of said trough-shaped member including rearwardly opening air outlet means.

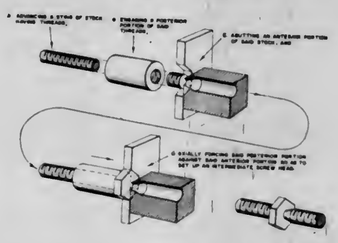
3,284,824
WATER SHOES
Robert M. Chymbur, 1026 Ozone St., Santa Monica, Calif.
Filed Oct. 16, 1964, Ser. No. 404,286
4 Claims. (Cl. 9—310)



1. A pair of water shoes, each of said shoes comprising, in combination: an elongated foot board having foot retaining means on its top surface; and at least one water traction housing coupled to the underside of said board, said housing having side walls defining a water entrance opening lying in a plane angulated with respect to the forward direction of said board and a water exit opening spaced from said entrance opening facing in the rearward direction of said board; and at least one vane member mounted for swinging movement between said side walls adjacent to said entrance opening between an open position in which said vane extends in a plane away from said entrance opening so that water can flow through

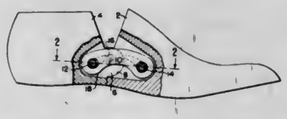
said entrance opening and beyond the end of said vane between said side walls to pass out said exit opening, and a closed position in which said vane swings through an acute angle to lie in the angulated plane of said entrance opening and blocks said entrance opening, said vane being responsive to forward water pressure at said entrance opening to assume said open position and responsive to back pressure of water through said exit opening to assume said closed position whereby forward movement of said foot board through water with said housing submerged is relatively unimpeded compared to backward movement of said foot board, such backward movement impelling the mass of water trapped between said side walls of said housing in a rearward direction.

3,284,825
METHOD OF FORMING SCREW STRIP
Herbert C. Brauchla, P.O. Box 349, Fremont, Ohio
Filed Feb. 25, 1966, Ser. No. 530,132
10 Claims. (Cl. 10—10)



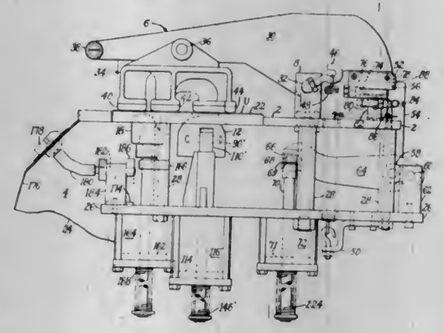
1. Method of forming a co-axially aligned continuous strip of screws from threaded screw stock comprising:
(A) advancing a strip of stock having threads;
(B) grabbing longitudinally spaced portions of said threads and urging at least one spaced portion of thread axially towards the other so as to set up an intermediate screw head.

3,284,826
HINGED LAST
Warren L. McNeill, 20 Johnson Road, and Walter I. McNeill, 3 Richard St., both of Saugus, Mass.
Filed Dec. 16, 1965, Ser. No. 516,834
6 Claims. (Cl. 12—136)



1. A last comprising heel and toe parts having interfitting curved surfaces shaped to permit relative rotation of the parts about a fixed axis from a normally open position to a normally closed position, a last hinge of resilient flat material and being provided with a pair of apertures, one at each end thereof, said hinge being capable of being resiliently strained to increase the distance between said apertures; a link of resilient flat material lying against said hinge and also being provided with a pair of openings, one at each end thereof, each opening being bounded in part by a peripheral end portion of said link, said link also being capable of being resiliently strained to increase the linear distance between said openings; and a pair of anchor pins disposed transversely in said toe and heel parts and passing through said apertures and said openings, said pins being so located that in either of their normal positions a line passing through their centers falls aside the axis of rotation of the last parts, and the inner edge of each of said peripheral end portion rests upon the outermost peripheral portion of its respective pin when a line connecting the centers of said pins intersects said axis during relative rotation of the toe and heel parts of the last, but are free from the said outer peripheral portion of the respective pin when said wheel and toe parts are in their normal closed position, said link being without substantial strain at the position of said intersection.

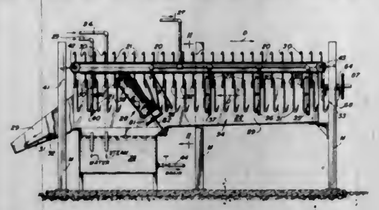
3,284,827
APPARATUS FOR USE IN THE MANUFACTURE OF SHOES
Kingsley J. Tutt and Stanley E. Frampton, Leicester, England, assignors to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed Apr. 13, 1965, Ser. No. 447,723
Claims priority, application Great Britain, Apr. 21, 1964, 16,422/64; Oct. 20, 1964, 42,645/64
17 Claims. (Cl. 12—54.1)



1. Apparatus for deforming portions of a shoe upper in preparation for lasting comprising a supporting member provided with an opening, a work clamping member having work engaging surfaces complemental to said opening for holding a portion of an upper clamped against the supporting member around said opening, a forming member associated with and linearly movable through said opening, a first power operated means for actuating said clamping member, a second power operated means for moving said forming member through said opening, and means for controlling the operation of said two power operated means in predetermined sequence first to cause the clamping member to clamp the upper against the supporting member and then to cause said forming member to move through said opening to stretch and deform that portion of the upper extending across said opening.

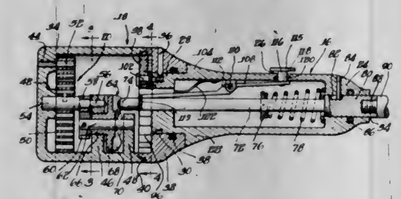
3,284,828
HOOK WASHER
John R. Jennings, Downers Grove, Ill., and Howard E. Hayes, Cedar Rapids, Iowa, assignors to Wilson & Co., Inc., a corporation of Delaware
Filed Feb. 23, 1965, Ser. No. 434,352
11 Claims. (Cl. 15—21)

1. A system for washing hooks having overturned upper ends comprising, conveyor means carrying carrier hooks through a continuous path including a hook-transporting section in which said carrier hooks have their points directed upwardly and a return section in which said carrier hooks have their points directed downwardly, means for hanging the hooks to be washed individually upon said carrier hooks to be carried thereby through said hook-transporting section, means to spray each of said hooks to be washed as they are conveyed with a



cleaning solution, brush means for brushing said hooks with cleaning solution thereon and means including reversal in the direction of the points of said carrier hooks to release the brushed hooks from said carrier hooks.

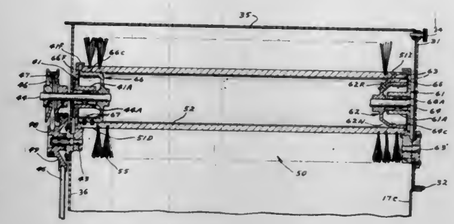
3,284,829
SPRING POWER OPERATED TOOTHBRUSH
Mason E. Allen, 525 Margate Terrace, Deerfield, Ill
Filed Mar. 10, 1965, Ser. No. 438,610
4 Claims. (Cl. 15—22)



2. A device of the character described comprising, in combination, a body, a housing movably connected to the body, a spring mounted in said housing, a pinion drivingly connected to the spring to be driven thereby, a gear meshing with the pinion, a plurality of cams drivingly connected to the gear, means for controlling the operation of said spring, a rod extending through said body and being engageable with the cams for axial displacement relative to the body and means engageable with said rod for controlling said drive spring.

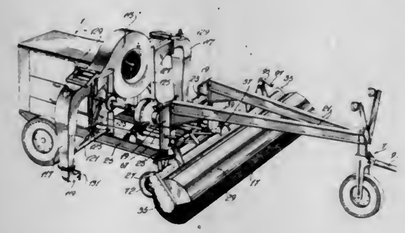
3,284,830
SWEEPING MACHINE BRUSH MOUNTING APPARATUS
Merville O. Kroll, Chaska, Minn., assignor to G. H. Tennant Company, Minneapolis, Minn., a corporation of Minnesota
Original application Jan. 28, 1963, Ser. No. 254,288, now Patent No. 3,233,274, dated Feb. 8, 1966. Divided and this application Oct. 4, 1965, Ser. No. 511,005
9 Claims. (Cl. 15—49)

1. In a floor maintenance machine having a cylindrical floor maintenance tool mounted thereon for rotation on a generally horizontal axis, said tool including a hollow core having generally cylindrical walls at least at the ends thereof, said core including key-notches in the wall adjacent the ends of said core, mandrels rotatably mounted on the machine, said mandrels being engageable into the hollow cylindrical wall ends of the core for rotatably supporting said core, each of said mandrels including a cylindrical surface having a sliding fit into the cylindrical wall ends of the core, and key-means on the mandrels, for fitting into the key-notches of the core, for rotating the core and mandrels together, said key-means on at least one of the mandrels comprising deflectable means fitted into a recess in the cylindrical surface of the mandrel and depressible thereinto, said deflectable key-means being engageable by the cylindrical wall ends of the core for depressing said key-means into the mandrel, said key-



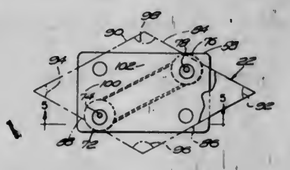
means being such that it will be moved resiliently outwardly into the key-notch of the core when the mandrel rotates relative to the core to a position in which said key-means is in registry with said key-notch.

3,284,831
RUNWAY SWEEPER
Gregory J. Larsen, Roxboro, Quebec, Canada, assignor to Sicard Inc., Ste. Therese, Quebec, Canada
Filed Feb. 1, 1965, Ser. No. 429,407
16 Claims. (Cl. 15—82)



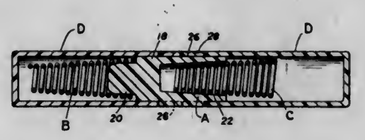
1. In a runway sweeper, for road sweeping, having a rotary brush assembly including a rotary brush and a generally horizontal rigid member fixed to said brush longitudinally thereof, said assembly to be mounted on a vehicle frame by means of a suspension adapted to allow vertical movement of said brush, independently of said frame, caused by imperfections on the road to be swept, the invention in the following new combination comprising:
(a) an upper arm articulated at one end to said frame and mounted at the other end on said rigid member generally centrally thereof to pivot about an axis parallel to said member;
(b) a lower arm articulated at one end to said frame, below the articulation of said upper arm to said frame, and mounted at the other end on said rigid member below the pivot connection of said upper arm to said member to pivot about an axis parallel to said member and
(c) means to apply a lateral thrust on each side of said lower arm, intermediate the ends thereof, to cause swinging of said lower arm and brush assembly about an axis through said articulations of said arms to said frame.

3,284,832
WINDOW CLEANING DEVICE
Clement L. McIver, Wayland, Mass., assignor to Methods Incorporated, Framingham, Mass., a corporation of Massachusetts
Filed Apr. 16, 1964, Ser. No. 360,363
6 Claims. (Cl. 15—103)



4. A window cleaning device comprising a casing and a head, a motor in said casing, a pair of shafts journaled in said casing, the inner end of one of said shafts being driven by said motor, eccentrics on the outer ends of said shafts, journals on said head for receiving said eccentrics, gears affixed to said shafts and a timing belt in mesh with said gears, whereby said motor is adapted to cause oscillatory motion of said head.

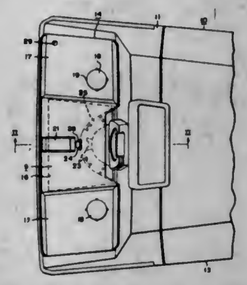
3,284,833
CLEANING TOOL FOR STORAGE BATTERY POSTS AND TERMINALS
Alfred L. von Tersch, Clarinda, and Mack N. Farmer, College Springs, Iowa, assignors to Lisle Corporation, Clarinda, Iowa, a corporation of Iowa
Filed Oct. 29, 1965, Ser. No. 505,629
6 Claims. (Cl. 15—104.02)



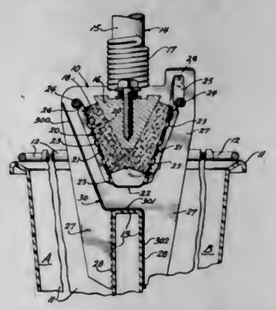
1. In a cleaning tool for storage battery terminal elements, a holder and a cone-shaped coil spring extending from one end of said holder, said coil spring having a roughened surface for engaging a storage battery terminal element and cleaning corrosion therefrom upon rotation of said tool relative to the terminal element.

3,284,834
TOOL HOLDER FOR A VACUUM CLEANER
Robert S. Waters, Lexington, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 8, 1964, Ser. No. 394,757
2 Claims. (Cl. 15—257)

1. A tool holder for use with a vacuum cleaner, said tool holder comprising: a base member adapted to be mounted on one wall of the cleaner and having a configuration to closely conform to said wall, a plurality of opposed fingers depending from the underside of said base member, said fingers being disposed in an arcuate array and being staggered relative to each other, a latch member secured to said base member and extending therethrough with a catch engaging portion disposed below said base member and a manually operable portion disposed above said base member, said catch engaging portion being disposed substantially opposite one of said fingers and being adapted to pivot toward and away from said finger from which it is oppositely disposed for permitting insertion or withdrawal simultaneously of said fingers and said catch engaging portion into and out of an arcuate recess disposed in said one wall.



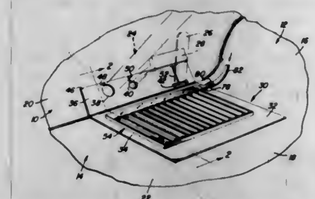
3,284,835
MOP WRINGER AND WATER CONTROL MEANS FOR DUAL COMPARTMENT PAILS
Peter E. Daubenspeck, 151 Ontario Road, Pontiac, Mich.
Filed June 29, 1964, Ser. No. 378,759
4 Claims. (Cl. 15—260)



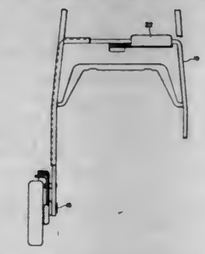
1. A mop wringer for wringing mops in dual compartment pails having a central partition thereacross comprising
a V-wedge type mop wringer element including a transverse bottom and angularly related apertured sides through which dirty water and dirt pass upon pressing a mop therein,
means for supporting said mop wringer element in tiltable relationship on said central partition,
and baffle means disposed in spaced relationship below said wringer element directing dirty water and dirt from said mop wringer element to one of the compartments of said pail.

3,284,836
VEHICLE DUST COLLECTOR AND VENTILATOR
Anthony Ioppolo, 7675 St. John St., Utica, Mich.
Filed Dec. 18, 1964, Ser. No. 419,388
3 Claims. (Cl. 15—313)

1. A vehicle dust collector and ventilator comprising an open top tray-like receptacle including a plurality of upstanding peripheral side walls interconnected by means of a bottom wall, said receptacle including upstanding partitions secured to said bottom wall, extending transversely thereof, and defining elongated chambers between adjacent partitions, said receptacle including a liquid opening in said bottom wall opening into one end of the chamber at one end of said receptacle and adjacent one side of the latter, the ends of said partitions adjacent said one end of said receptacle having openings in the lower portions thereof communicating the corresponding ends of adjacent chambers, said receptacle including a transversely extending elongated hot air header at the other end thereof, said header including hot air outlets opening into and lengthwise of the adjacent ends of said compartments.



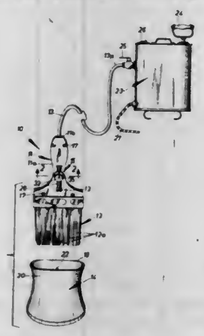
3,284,837
FLOOR CARE APPLIANCE
Robert S. Waters, Lexington, and John W. Gilliom, Mansfield, Ohio, assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 30, 1964, Ser. No. 386,232
2 Claims. (Cl. 15—410)



1. For use with a floor care appliance, in combination, a substantially U-shaped bail member adapted to be pivotally mounted to the appliance for facilitating carrying thereof, an extension member having a substantially U-shaped portion at one end thereof adapted to telescopically receive said bail member in a first and a second position, means for detachably securing said members when said bail member is in said second position, said securing means comprising a cam lever mounted on one of said members and cam means carried by said other member, said cam lever being adapted upon rotation thereof to exert a force on said cam means thereby causing said members to telescope from said first position to said second position, said cam means comprising a pair of opposed cam followers provided in opposed side walls of said cross support intermediate said channel-shaped elements and said lever comprises a pair of cams disposed between said side walls out of contact with said cam followers when said members are in said first position.

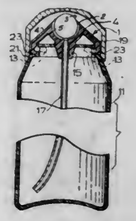
3,284,838
FOUNTAIN BRUSH
Joseph Bieganowski, 5710 Pie IX Blvd., Apt. 1, Montreal, Quebec, Canada
Filed July 9, 1964, Ser. No. 381,429
3 Claims. (Cl. 15—505)

1. In combination with a paint container/pressure pump, a fountain brush including a flexible, resilient tube having an intake end and a discharge end; handle means, said handle means having a centrally located longitudinal tunnel formed therethrough; a bristle head, said bristle head comprising a bristle anchorage and a plurality of bristles embedded therein at their basal extremities; said anchorage having a vertical tunnel formed therethrough and centrally thereof; said bristle head and said handle being detachably attached; said handle tunnel and said anchorage tunnel being of like diameter and joining in axial alignment; said tube being of such a diameter as to permit its insertion within said handle tunnel and said anchorage tunnel; said intake end of said tube being in communication with said paint container/pressure pump, and said discharge end of said tube terminating within said bristles; a metering device, said metering device includes



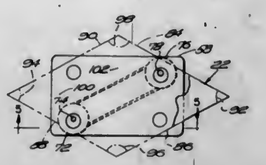
a threaded pin, said pin having a knurled edge knob and a rounded end; said pin being threadably received within said handle means and transversally thereof, said rounded end of said pin entering said handle tunnel and making pressural contact with said tube; advancement of said pin within said handle crimping said tube, said crimping being in proportion to the amount of advancement of said pin; a register plate, said register plate being located immediately subjacent said knob of said pin, said register plate bearing indicia upon its face, said indicia being representative of the rate of paint flow through said tube; and said knob having a datum line marked on its end face, said datum line being radially disposed and relating to said indicia on said register plate.

3,284,839
ROLLER APPLICATOR
Gordon Munro Jordan Cook, 47 Hillsview Road, Ainsdale, Southport, England
Filed Dec. 16, 1965, Ser. No. 514,308
Claims priority, application Great Britain, Aug. 10, 1965, 34,102/65
9 Claims. (Cl. 15—541)



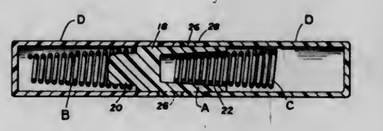
8. A shaving cream applicator comprising:
a head,
a trough formed in said head, said trough being provided with a feed aperture at its bottom,
a roller having a generally cylindrical periphery of diameter smaller than that of said trough,

3,284,832
WINDOW CLEANING DEVICE
Clement L. McIver, Wayland, Mass., assignor to Methods Incorporated, Framingham, Mass., a corporation of Massachusetts
Filed Apr. 16, 1964, Ser. No. 360,363
6 Claims. (Cl. 15—103)



4. A window cleaning device comprising a casing and a head, a motor in said casing, a pair of shafts journaled in said casing, the inner end of one of said shafts being driven by said motor, eccentrics on the outer ends of said shafts, journals on said head for receiving said eccentrics, gears affixed to said shafts and a timing belt in mesh with said gears, whereby said motor is adapted to cause oscillatory motion of said head.

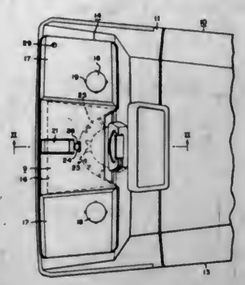
3,284,833
CLEANING TOOL FOR STORAGE BATTERY POSTS AND TERMINALS
Alfred L. von Tersch, Clarinda, and Mack N. Farmer, College Springs, Iowa, assignors to Lisle Corporation, Clarinda, Iowa, a corporation of Iowa
Filed Oct. 29, 1965, Ser. No. 505,629
6 Claims. (Cl. 15—104.02)



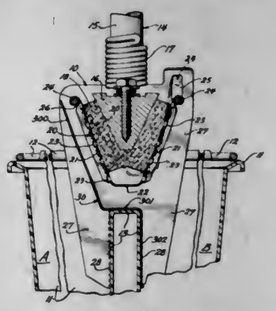
1. In a cleaning tool for storage battery terminal elements, a holder and a cone-shaped coil spring extending from one end of said holder, said coil spring having a roughened surface for engaging a storage battery terminal element and cleaning corrosion therefrom upon rotation of said tool relative to the terminal element.

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Robert S. Waters, Lexington, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
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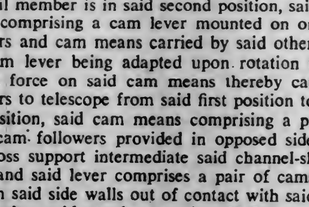
3,284,835
MOP WRINGER AND WATER CONTROL MEANS FOR DUAL COMPARTMENT PAILS
Peter E. Daubenspeck, 151 Ontario Road, Pontiac, Mich.
Filed June 29, 1964, Ser. No. 378,759
4 Claims. (Cl. 15—260)



1. A mop wringer for wringing mops in dual compartment pails having a central partition thereacross comprising
a V-wedge type mop wringer element including a transverse bottom and angularly related apertured sides through which dirty water and dirt pass upon pressing a mop therein,
means for supporting said mop wringer element in tiltable relationship on said central partition,
and baffle means disposed in spaced relationship below said wringer element directing dirty water and dirt from said mop wringer element to one of the compartments of said pail.

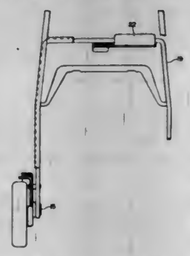
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VEHICLE DUST COLLECTOR AND VENTILATOR
Anthony Ioppolo, 7675 St. John St., Utica, Mich.
Filed Dec. 18, 1964, Ser. No. 419,388
3 Claims. (Cl. 15—313)

1. A vehicle dust collector and ventilator comprising an open top tray-like receptacle including a plurality of upstanding peripheral side walls interconnected by means of a bottom wall, said receptacle including upstanding partitions secured to said bottom wall, extending transversely thereof, and defining elongated chambers between adjacent partitions, said receptacle including a liquid opening in said bottom wall opening into one end of the chamber at one end of said receptacle and adjacent one side of the latter, the ends of said partitions adjacent said one end of said receptacle having openings in the lower portions



thereof communicating the corresponding ends of adjacent chambers, said receptacle including a transversely extending elongated hot air header at the other end thereof, said header including hot air outlets opening into and lengthwise of the adjacent ends of said compartments.

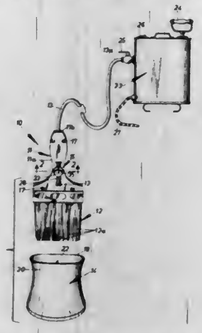
3,284,837
FLOOR CARE APPLIANCE
Robert S. Waters, Lexington, and John W. Gilliom, Mansfield, Ohio, assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 30, 1964, Ser. No. 386,232
2 Claims. (Cl. 15—410)



1. For use with a floor care appliance, in combination, a substantially U-shaped bail member adapted to be pivotally mounted to the appliance for facilitating carrying thereof, an extension member having a substantially U-shaped portion at one end thereof adapted to telescopically receive said bail member in a first and a second position, means for detachably securing said members when said bail member is in said second position, said securing means comprising a cam lever mounted on one of said members and cam means carried by said other member, said cam lever being adapted upon rotation thereof to exert a force on said cam means thereby causing said members to telescope from said first position to said second position, said cam means comprising a pair of opposed cam followers provided in opposed side walls of said cross support intermediate said channel-shaped elements and said lever comprises a pair of cams disposed between said side walls out of contact with said cam followers when said members are in said first position.

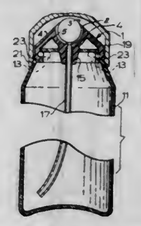
3,284,838
FOUNTAIN BRUSH
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Filed July 9, 1964, Ser. No. 381,429
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1. In combination with a paint container/pressure pump, a fountain brush including a flexible, resilient tube having an intake end and a discharge end; handle means, said handle means having a centrally located longitudinal tunnel formed therethrough; a bristle head, said bristle head comprising a bristle anchorage and a plurality of bristles embedded therein at their basal extremities; said anchorage having a vertical tunnel formed therethrough and centrally thereof; said bristle head and said handle being detachably attached; said handle tunnel and said anchorage tunnel being of like diameter and joining in axial alignment; said tube being of such a diameter as to permit its insertion within said handle tunnel and said anchorage tunnel; said intake end of said tube being in communication with said paint container/pressure pump, and said discharge end of said tube terminating within said bristles; a metering device, said metering device includes



a threaded pin, said pin having a knurled edge knob and a rounded end; said pin being threadably received within said handle means and transversally thereof, said rounded end of said pin entering said handle tunnel and making pressural contact with said tube; advancement of said pin within said handle crimping said tube, said crimping being in proportion to the amount of advancement of said pin; a register plate, said register plate being located immediately subjacent said knob of said pin, said register plate bearing indicia upon its face, said indicia being representative of the rate of paint flow through said tube; and said knob having a datum line marked on its end face, said datum line being radially disposed and relating to said indicia on said register plate.

3,284,839
ROLLER APPLICATOR
Gordon Munro Jordan Cook, 47 Hillsview Road, Ainsdale, Southport, England
Filed Dec. 16, 1965, Ser. No. 514,308
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9 Claims. (Cl. 15—541)



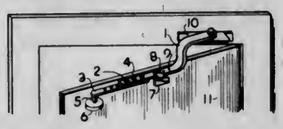
8. A shaving cream applicator comprising:
a head,
a trough formed in said head, said trough being provided with a feed aperture at its bottom,
a roller having a generally cylindrical periphery of diameter smaller than that of said trough,

means for mounting said roller for rotation in said trough with a peripheral portion of said roller protruding out from said trough, said roller being mounted in a position which spaces said roller from the inner surface of said trough and from said feed aperture, whereby said roller is substantially free of any contact of its cylindrical surface by said trough,

a squeezable container having a top end and a bottom end and including means for securing said head to said top end of the container and in sealing engagement therewith, and

a tube means fitted to said head with its interior in communication with said trough through said feed aperture and with an upper end of said tube means being spaced below said roller so that said roller does not seal the communication of said tube means through said feed aperture, said tube means extending downwardly within said container to a point adjacent the bottom end of the container, whereby said tube means feeds cream to said roller periphery when said container is squeezed, and whereby a column of cream is maintained within said tube means when the container is not squeezed for providing an effective sealing of the contents of the container from the atmosphere when the applicator is not in use.

3,284,840
ADAPTOR LEVER ARM ELECTRO-MAGNETIC DOOR CLOSER
Ambrose C. Ulman, San Diego, Calif., assignor to Wesley Heil, El Centro, Calif., and Phillip N. Heil, San Diego, Calif.
Filed Feb. 24, 1964, Ser. No. 346,618
2 Claims. (Cl. 16—48.5)



1. Improvements in a spring operated door closer, comprising:

a spring operated shaft;

an arm fixedly secured at one end thereof to said shaft and having at the other end thereof an anti-friction element for pushing engagement only with one face of a door;

an armature secured to said arm;

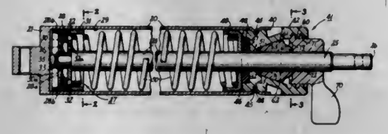
an electromagnet securable to fixed wall structure for engagements with said armature when said arm is in door-open position; and

an electric circuit normally energizing said electromagnet and including heat sensitive circuit opening means connected so that undue rise of temperature will de-energize said electromagnet releasing said armature and permitting said arm to move to a door-closed position, whereby the door is positively closed in the event of fire and at all other times the door is free to be moved to any desired position.

3,284,841
DOOR CLOSER
George P. Patriquin, Gardner, Mass., assignor to Independent Lock Company, Fitchburg, Mass., a corporation of Massachusetts
Filed June 10, 1964, Ser. No. 374,052
2 Claims. (Cl. 16—52)

1. In a hydraulic fluid damped door closer device of the type wherein a piston having a piston rod reciprocates within the bore of a cylinder, with the hydraulic fluid contacting said rod, means for adjusting the closing speed of the door and for holding the door at a selected open position, comprising

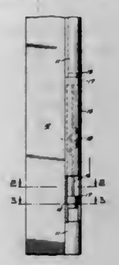
(a) a central apertured end cap member through which said rod slidably extends, said device having yieldable sealing means adjacent said end cap member slidably engaging said rod for preventing leakage of hydraulic fluid from between said rod and sealing means, said aperture of said end cap member being of a generally frusto-conical shape, with the apex of said aperture directed toward said piston, said end cap member including a threaded portion,



(b) a generally frusto-conical stop member nested in said aperture, said stop member being formed of resilient plastic and having a central aperture slidably engaging said rod; and

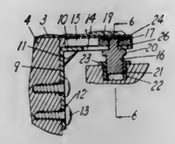
(c) adjustable locking means threadedly connected to said portion of said end cap member for engaging said stop member and shifting said member with variable force axially toward the apex of said aperture, whereby said stop member will be radially pressed about said rod with a compressive force which is a function of the axial force applied to said stop member by the threaded adjustment of said locking means with respect to said end cap member.

3,284,842
RESILIENT PLASTIC PIN AND FILLER STRIP FOR SLOTTED HINGE CONSTRUCTIONS
John T. Jennings, Jr., Canfield, Ohio, assignor to Western Reserve Plastics, Inc., Canfield, Ohio, a corporation of Ohio
Filed May 12, 1964, Ser. No. 366,780
2 Claims. (Cl. 16—128)



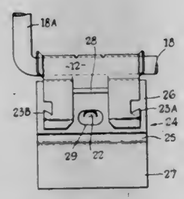
1. As a new article of manufacture, a filler section and mounting member therefor for insertion in a slot in a cross-sectionally circular knuckle portion of a Z-bar storm door mounting frame having spaced longitudinally extending flanges disposed at right angles to one another, said article comprising a split tubular member having spaced parallel longitudinally extending secondary flanges thereon and arranged to engage the inner sides of said first flanges and a resilient mounting pin comprising an elongated member having enlarged shouldered end portions in oppositely disposed relation thereon and an integral intermediate sinuous displaceable portion, positioned in said tubular member with said end portions normally extending out of the ends of said tubular member engaging said knuckle portion.

3,284,843
HINGED CLOSURE ASSEMBLIES
Jack Bury, William J. Korbelic, and Donald Erb, Benton Harbor, Mich., and Mark O. Vendetti, Chicago, Ill., assignors to Kaywood Corporation, Benton Harbor, Mich.
Filed Dec. 19, 1963, Ser. No. 331,818
7 Claims. (Cl. 16—130)



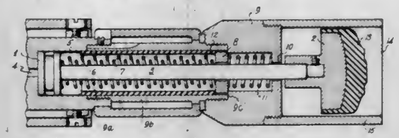
1. In a structure of the class described, the combination with a frame member and a closure member, of hinges for said closure member comprising brackets having spaced transverse slots therein adapted to receive screws for attaching said brackets to said frame member, said slots permitting adjutment of said brackets relative to said frame member, said brackets being provided with arms projecting outwardly from said frame member and having longitudinal slots therein and provided with flanges on their longitudinal edges, journals disposed on the inner sides of said arms to project therefrom and having threaded portions disposed through said slots, nuts nonrotatably disposed between said flanges and with which said threaded portions of said journals are engaged for clampingly securing said journals in their adjusted position on said arms, said closure member having journal receiving sockets in its ends, bearings supportedly disposed in said sockets coacting with said journals, and closures for said outwardly projecting arms of said brackets slidably embracing said flanges thereof and having flanges at their outer end overlapping the outer ends of said arms.

3,284,844
HINGE
Clifford Alexander Seckerson, Iver Heath, England, assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed July 10, 1964, Ser. No. 381,767
Claims priority, application Great Britain, July 16, 1963, 28,175/63
7 Claims. (Cl. 16—171)



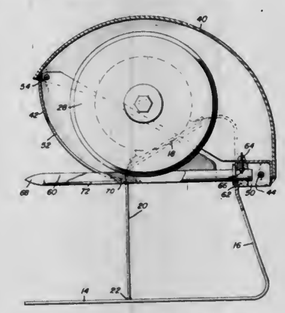
1. A hinge comprising a pin for attachment to one of two parts to be hinged together, a plate for attachment to the other of said two parts, and a resilient clip to which both the pin and plate may be removably attached, the clip being formed from a single piece of resilient material having one portion bent to U-shape so as to have a web and two limbs and another portion bent to substantially part cylindrical shape so as to serve as a bearing for the pin, the pin being rotatably mounted in the bearing portion of the clip and the plate being gripped between the limbs of the clip.

3,284,845
SLAUGHTERING PISTOL FOR ANIMALS FOR FOOD
Pierre Michel Termet, Lyon, France, assignor to Societe dite: Etablissements Termet Pere et Fils, a corporation of France
Filed Aug. 10, 1964, Ser. No. 388,528
Claims priority, application France, Aug. 14, 1963, 944,795, Patent 84,173
4 Claims. (Cl. 17—1)



1. In a slaughtering pistol for small food animals, having a longitudinally displaceable stunning head explosively actuated by gases generated by the detonation of a cartridge, said pistol comprising a rod and piston on which said stunning head is carried, a body defining a chamber in which said rod is slidably mounted, a fixed abutment in said chamber, a movable stop slidable in said chamber, return spring means positioned to simultaneously urge said rod and stunning head in one direction to a retracted position and said movable stop in the opposite direction against said fixed abutment, and compensating spring means positioned in the opposite side of said movable stop from said return spring means and biassing said movable stop away from said fixed abutment with a force insufficient to separate said movable stop from said fixed abutment which said return spring means is new, said return spring means being positioned to be compressed while absorbing the shock when said pistol is fired, but said compensating spring means being protected from such compression by impingement of said movable stop against said fixed abutment so that when the resilience of said return spring decreases due to repeated compression thereof during firing of said pistol, said compensating spring, having been less compressed during said firing, will expand and force said movable stop away from said fixed abutment so as to thereafter absorb a portion of the shock when said pistol is fired.

3,284,846
POULTRY CUTTER
Willard D. Reeves, P.O. Box 1018, Center, Tex.
Filed Sept. 4, 1964, Ser. No. 394,466
5 Claims. (Cl. 17—11)



1. A poultry cutter comprising a base, a power driven rotary knife mounted on said base for rotation about a horizontal axis, a support and guide bar mounted upon said base and disposed horizontally and in the vertical plane of said knife and closely adjacent therebeneath,

said bar being shaped and adapted to impale a fowl when passing the latter beneath said knife, said bar having a longitudinal recess upon its top surface providing clearance for and receiving said rotary knife whereby poultry supported on said bar may be slid therealong and guided beneath said knife for trimming, said base including an upwardly extending vertically disposed portion, a safety guard enclosing said knife, said guard comprising first and second sections, said first guard section begin removably secured to said upwardly extending portion of said base and relatively stationary with respect thereto during operation of the device and enclosing said blade except on its approach side, said second guard section being pivotally and removably secured to said first guard section and adapted under the influence of gravity to approach the support bar so as to completely cover the knife, said movable section being bifurcated for straddling said blade upon upward swinging movement of the movable section under the influence of poultry being slid along said support bar into the path of said knife.

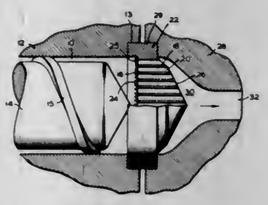
3,284,847
HEADING TOOL
Paul E. Robinson, Coon Rapids, and Raymond W. Shrewsbury, Roseville, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed July 2, 1964, Ser. No. 379,829
1 Claim. (Cl. 18—1)



Apparatus for making elongated controlled craze marks on a crazable translucent sheet member having opposed parallel faces without permanent surface deformation, and without internal cracking thereof, said apparatus comprising:

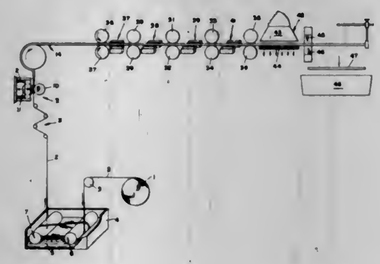
(a) a platen member adapted to register and to support one face of a said sheet member,
(b) said platen member having a resilient surface contacting said one face,
(c) a tool for striking the other face of a said material,
(d) said tool including a head portion adapted for normal impact against a localized situs on said other face,
(e) said head portion terminating in an elongated edge curved both in its lengthwise and in its transverse directions, the arc defining the length of said elongated edge being very much greater than the length of the arc defining the transverse direction,
(f) means for registering said tool and said platen member with respect to each other to cause said head portion to impact normally against said other face at a predetermined situs and for maintaining a predetermined angular relationship between said one surface and an edge portion of a said sheet material, and
(g) means functionally associated with said tool and said registering means for applying a predetermined force to said head portion, thereby to produce in a said sheet material a desired said craze mark.

3,284,848
EXTRUDING APPARATUS
Richard M. Rice, Waynesboro, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Sept. 23, 1964, Ser. No. 398,661
7 Claims. (Cl. 18—12)



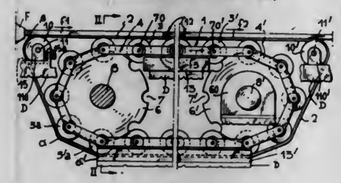
1. Apparatus for extruding plastic material comprising: internal walls defining a transition cavity having over at least a portion of its length a region whose cross-section decreases in the direction of flow of said material to be extruded, a breaker plate extending across said cavity upstream of at least a part of said region with the axis of said breaker plate parallel to said direction of flow, said breaker plate having an upstream surface, a downstream surface protruding at its center downstream into said region, and a plurality of passages extending through said plate from said upstream surface to said downstream surface, the downstream ends of said passages nearer said axis being disposed downstream of the downstream ends of most of the remaining said passages so that all of said material to be extruded can pass smoothly through said region without being retained in said region.

3,284,849
APPARATUS FOR THE CONTINUOUS IMPREGNATION AND FORMING OF TUBING
Curtis U. Coleman, Cranston, R.I., and George E. Davis, Hatboro, and James P. Malloy, Cheltenham, Pa., assignors to The Electric Storage Battery Company, a corporation of New Jersey
Filed Mar. 26, 1963, Ser. No. 268,067
8 Claims. (Cl. 18—4)



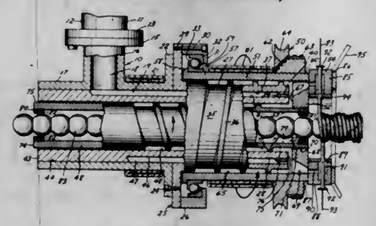
1. An apparatus for producing heat cured resin impregnated fabric tubing comprising, in combination, means for impregnating the tubing with the heat curable resin, a stationary mandrel having areas of reduced cross-section and an area with the cross-section desired in the impregnated tubing, feed drive means situated between the impregnating means and the mandrel and being adapted to place the impregnated tube on the mandrel, first driving means adapted to feed the tubing along the mandrel, first heating means adjacent to the mandrel at the areas of reduced cross-section, second driving means adapted to draw the tubing to that area of the mandrel having the cross-section desired in the impregnated tubing, and second heating means situated adjacent the portion of the mandrel having the cross-section desired in the impregnated tubing.

3,284,850
CONVEYING DEVICE
Maurice Joseph Ghislain Verly, Mol, Belgium, assignor to Johns-Manville Corporation, Societe Anonyme, Mol, Belgium
Filed Feb. 11, 1964, Ser. No. 344,091
Claims priority, application Belgium, Feb. 15, 1963, 628,490; Nov. 26, 1963, 640,430
11 Claims. (Cl. 18—12)



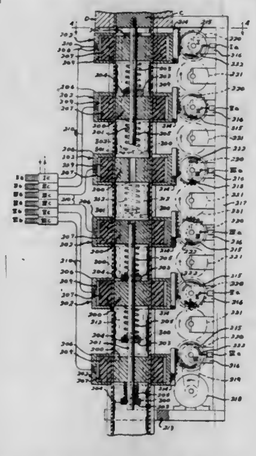
1. Apparatus for conveying material comprising:
(a) a first conveyor comprising a plurality of freely rotatable rollers,
(b) means for driving said conveyor in a predetermined direction,
(c) a second conveyor in contact with at least some of said plurality of rollers,
(d) means for applying a force to said second conveyor to move said second conveyor in the same direction as said first conveyor, and
(e) means for regulating the amount of said force acting on said second conveyor.

3,284,851
EXTRUDING MEANS HAVING ROTARY HEAD
Henry James Zernay, 37—38 83rd St., Jackson Heights, N.Y.
Filed Feb. 3, 1964, Ser. No. 342,019
5 Claims. (Cl. 18—13)



1. A device for extruding a helically formed tubing on a core for attachment to a source of extrudate at high pressures comprising attachment means for securing said device to said source, a first member having means thereon for rigid attachment to said source, said first member including a first cylindrical section having relatively smooth walls and defining an internal core material passageway and a second cylindrical section concentric thereto having extrusion threads formed on its outer surface, said first and second cylindrical sections being spaced from each other defining an extrudate bore therebetween, a second member mounted coaxialy to said first member and including a first cylindrical section positioned coaxial to and internally of said first section of said first member and having extrusion threads formed on its outer surface in cooperating relationship to the inner surface of said first section of said first member, said second member further including a second cylindrical section positioned concentric to said first member and about said second section of said first member and having relatively smooth internal walls in cooperating relationship to the extrusion threads formed on the outer surface of said second cylindrical section of said first member, said second member further including end plate means joining said first and second sections of said second member together, bearing means mounting said second member on said attachment means, drive means mounted on said second member for rotating said second member with respect to said first member, said end plate having formed therein at least one extrudate passageway and means providing an extrusion orifice secured to said end plate and rotatable therewith and in communication with said extrudate passageway for extruding extrudate which has flowed through said extrudate passageways and for depositing said extrudate in a helical array as said second member rotates with respect to said first member, said extrudate being deposited on a core material passing through said internal core material passageway formed in said first cylindrical section of said first member, said extrusion threads formed on the outer surface of said second cylindrical section of said first member and on said first cylindrical section of said second member cooperating respectively with said second cylindrical section of said second member and said first cylindrical section of said first member to provide sealing to thereby prevent the flow of said extrudate away from said extrusion orifice.

3,284,852
EQUIPMENT FOR MAKING PLASTIC ARTICLES
Le Roy R. Boggs, Bristol, Tenn., assignor to Universal Moulded Fiber Glass Corp., Bristol, Va., a corporation of Delaware
Original application July 20, 1960, Ser. No. 44,050, now Patent No. 3,185,603, dated May 25, 1965. Divided and this application Jan. 22, 1965, Ser. No. 427,244
8 Claims. (Cl. 18—14)



1. Apparatus for forming hollow tube-like members from hardenable resin material comprising a forming die having a passage therethrough and a die core positioned therein to define with the die passage an annular generally straight forming passage in which resin material is shaped and solidified to form a tube-like member, said forming passage having an entrance end through which unformed resin material is fed for forming and hardening and an exit end through which a formed tube-like member

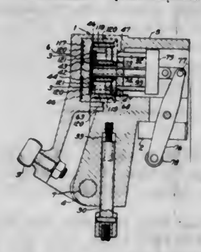
is withdrawn, and withdrawing means comprising a gripping device mounted adjacent the exit end of said forming machine for movement through a pulling stroke in the direction of withdrawal of the formed elongated member from said exit end, said gripping device comprising an annular gripper element of pliable material surrounding the member being withdrawn, said gripper having a hole therethrough generally conforming to the cross-sectional shape of the member being formed, a slug movably mounted on said core, said slug being sized and positioned to fit inside the member being formed adjacent said gripper element, means for compressing said gripper element to tightly engage the member being withdrawn, and means for moving said gripper element in the direction of withdrawal.

3,284,853

APPARATUS FOR MOLDING HOLLOW ARTICLES WITH RECESS IN INNER WALL

Elton G. Moneymaker, Willoughby, and Arthur J. Marx, Cleveland Heights, Ohio, assignors to General Electric Company, a corporation of New York

Filed Nov. 14, 1963, Ser. No. 323,825
7 Claims. (Cl. 18—20)



1. An injection molding apparatus for forming hollow articles having an inwardly opening recess in a side wall comprising a pair of separable mold sections and a composite core member including a primary and a secondary core defining with said mold sections in the closed position of the latter a cavity of the shape of the desired article, one of said mold sections accommodating and surrounding laterally the composite core member and defining therewith a cavity of the shape of the side wall of the hollow article, the primary core being fixedly mounted on the composite core member accommodating mold section, the secondary core having a laterally projecting molding surface for forming the side wall recess and being mounted for longitudinal movement with respect to the primary core on separation of said mold sections from a retracted position wherein the molded article is locked on the composite core by the laterally projecting molding surface of the secondary core into a forward position to strip the molded article from the primary core and support the article in front of the mold section carrying the primary core for facilitating separation of the article from the laterally projecting molding surface of the secondary core.

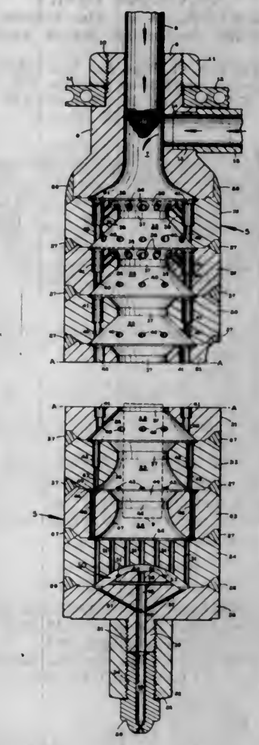
3,284,854

PROGRESSIVE PLASTIC INJECTION SYSTEM

Louis F. Kutik, Fort Lauderdale, Fla., assignor of one-half to Erich W. Gronemeyer, Fort Lauderdale, Fla.

Filed Jan. 29, 1964, Ser. No. 341,017
4 Claims. (Cl. 18—30)

1. A plastic injection device comprising, a cylinder, a plurality of connected annular stacked segments forming an axial extension of the cylinder, a plurality of said segments each being provided with a substantially frustoconical cavity, each cavity having a flared extension at its top, a plurality of vertical ports arranged around each cavity, the ports in each segment being in communication with those in the segment located below it, the flared extensions of some of the cavities having angular ports establishing communication with the vertical ports, a cap member provided on the lower end of the stack of segments, the segment above the said cap member being a



dispersion plate and being recessed in its lower surface and having ports passing through it to communicate with the cavity that is located directly above it, the cap member having a raised central part fitting in and spaced from the recess, the cap member having an outlet port, and ports extending through a wall defining the recess and communicating with the outlet, and the outlet terminating in a nozzle.

3,284,855

SEED COTTON CLEANING AND GINNING

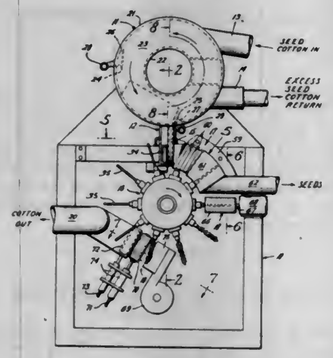
Lawrence E. Steimen and Bertram A. Fulton, Cambridge, Mass., assignors, by mesne assignments, to Anderson, Clayton & Co., Houston, Tex., a corporation of Delaware

Filed Jan. 9, 1963, Ser. No. 250,388
14 Claims. (Cl. 19—48)

9. Apparatus for removing seed from seed cotton comprising,

(a) a body,
(b) a cylindrical drum rotatably mounted on the body,
(c) a plurality of spindles rotatable about their axes circumferentially disposed on the drum,
(d) means for feeding seed cotton to the spindles during a portion of their travel for wrapping the seed cotton about the spindles,

(e) a plurality of stationary seed abutments provided with flexible lip portions of generally progressive stiffness and arranged so that the spindles with the cotton wrapped about them pass the lip portions in close proximity thereto so that the seeds strike the progressively stiffer flexible lip portions while subject to centrifugal force and become loosened from the seed cotton,



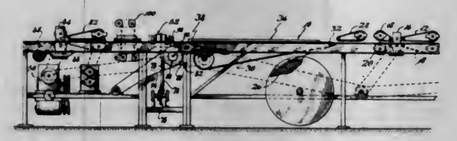
(f) a fiber loosener on the body arranged to engage the fibers on the spindle after the spindles travel past the seed abutments for loosening the fibers, and
(g) doffing means on the body arranged to engage the fibers on the spindles and to doff them from the spindles after the fibers are loosened by the fiber loosener.

3,284,856

MANUFACTURE OF CELLULOSIC PRODUCTS

Anthony S. Hubin, Appleton, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware

Filed Aug. 20, 1962, Ser. No. 217,923
2 Claims. (Cl. 19—145)



1. Apparatus for the continuous fabrication of sanitary napkins or the like including in combination, means for forming an assembly of spaced absorbent pads enclosed in an elongate wrapper, means for continuously drawing said pad assembly through a linear path, means positioned within said path for rotating individual wrapper enclosed pads, said pad rotating means comprising a rotatably mounted member provided with an aperture generally complementing the cross-sectional configuration of the pads of said assembly, and positioned for the passage of said assembly therethrough, and drive means synchronized with said pad assembly drawing means for rotating said member through a half revolution during passage of a wrapper enclosed pad therethrough and for rotating said member in a reverse direction through a half revolution during passage therethrough of the second trailing pad of said assembly.

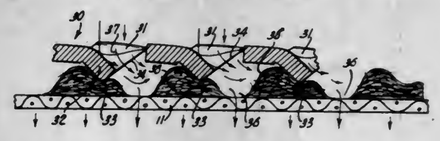
3,284,857

APPARATUS FOR PRODUCING APERTURED NON-WOVEN FABRICS

Walter J. Hynek, East Brunswick, N.J., assignor, by mesne assignments, to Johnson & Johnson, New Brunswick, N.J., a corporation of New Jersey

Original application Mar. 2, 1961, Ser. No. 92,986. Divided and this application Jan. 7, 1965, Ser. No. 434,158

3 Claims. (Cl. 19—161)



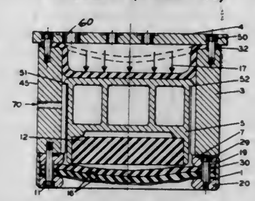
1. Apparatus for rearranging the fibers in a unitary web of fibrous starting material having individual fibers capable of relative movement within the web under the influence of applied fluid forces, which comprises a member having opposed first and second faces, one of said faces presenting a pattern of protuberances having ends defining a common plane and regions surrounding the individual proturberances recessed inwardly from said plane, side walls in said protuberances, passageways communicating through the side walls of said protuberances interconnecting the second face of said member with the recessed regions of said member, fluid pervious means for supporting a web of such fibrous material in contact with the ends of said protuberances, and means for directing fluid through said passageways from said second face toward said first face at an acute angle with respect to said plane and at velocities such that fiber segments in the web thus supported and in areas thereof opposite the recessed regions of the member are rearranged into a pattern of more closely compacted groups of fiber segments whose contour, in part at least, is determined by the contour of the first face of said member.

3,284,858

MOLDING MACHINE AND HEAD WITH PRESSURE COMPENSATING PROVISION

Russell W. Taccone, Erie, Pa., assignor to Taccone Corporation, Erie, Pa., a corporation of Pennsylvania

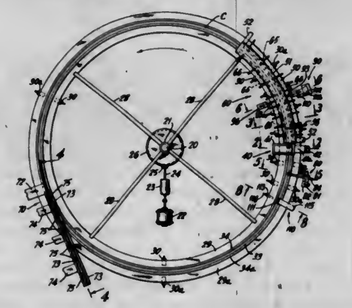
Filed Feb. 18, 1964, Ser. No. 345,707
9 Claims. (Cl. 22—46)



2. A molding machine comprising, in combination,
a frame, a flask support, a flask adapted to be supported on said flask support, a head on said frame, and means to move said head and flask support relative to each other,
said head comprising a head box closed at the top,
an upper diaphragm made of flexible material supported inside said head and defining with said closed top a closed chamber adapted to contain fluid under pressure,
a lower diaphragm disposed on the lower end of said open head and forming a closed chamber adapted to contain gas or liquid under pressure,
a compensating plunger in said head between said diaphragms,

said plunger being freely slidable up and down in said head and engaging said lower diaphragm and adapted to engage said upper diaphragm,
and a resilient pad on the lower end of said plunger, said pad engaging said lower diaphragm.

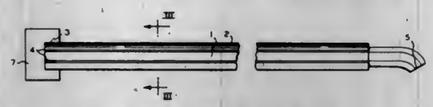
3,284,859
CIRCULAR TROUGH CASTING APPARATUS
John J. Conlon, Westfield, and Douglas C. Yearley, Scotch Plains, N.J., assignors to Phelps Dodge Copper Products Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 14, 1963, Ser. No. 315,754
8 Claims. (Cl. 22—57.3)



1. Continuous casting apparatus comprising a generally horizontal annular trough rotatable about a generally vertical axis and forming an endless mold open at the top, a supply station including a container for molten metal having an outlet overlying the trough for delivering molten metal thereto, means for rotating the trough about said axis in one direction relative to said outlet for moving the delivered molten metal in said one direction from the supply station, a dam relative to which the trough is movable by said rotating means, the dam being disposed in the trough adjacent the region where the molten metal is delivered from said outlet and being operable to limit flow of the metal in the trough in the direction opposite to said one direction, a cooling station extending along the trough in said one direction from a point adjacent the supply station and relative to which the trough is movable by said rotating means, the cooling station including cooling means located below the level of the upper part of the trough for directly cooling the lower part of the trough and said molten metal delivered thereto, a gas-applying station overlying at least part of said cooling station and relative to which the trough is movable by said rotating means, the gas-applying station including means for maintaining a non-oxidizing atmosphere at said open top of the mold, and a discharge station located adjacent the trough in said one direction from the cooling station and in said opposite direction from the supply station, said discharge station including means for continuously removing solidified metal from the trough as the latter is rotated about said axis.

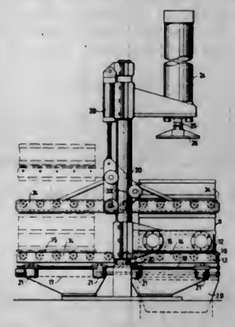
3,284,860
POURING TROUGH FOR CENTRIFUGAL CASTING MACHINE
Stanley Gurak, Birmingham, Ala., assignor to United States Pipe and Foundry Company, Birmingham, Ala., a corporation of New Jersey
Filed Jan. 29, 1964, Ser. No. 341,056
2 Claims. (Cl. 22—65)

1. A pouring trough for a centrifugal pipe casting machine comprising an elongated outer channel having a longitudinal opening and an inner surface which is greater than a semicircle in transverse cross-section, and an elongated inner channel having a longitudinal opening and an outer surface which is greater than a semicircle in traverse cross-section, the inner channel being telescoped within the outer channel with its longitudinal opening aligned with the longitudinal opening in the outer channel, a sliding clearance being provided between



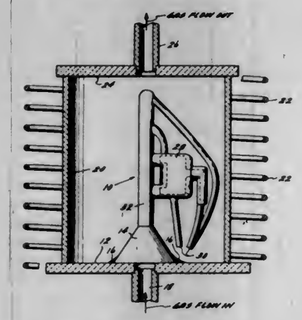
the outer surface of the inner channel and the inner surface of the outer channel, whereby each channel is permitted to expand longitudinally independently of the other, the two channels being welded together adjacent one end thereof, and at the end opposite the welded connection, the inner channel extends beyond the outer channel and the extended portion is shaped to give the desired spout configuration.

3,284,861
JOLT DE-SANDING MACHINE FOR MOULD FLASKS
Erik Ivarsson, Halmstad, Sweden, assignor to Aktiebolaget Malcus Holmquist, Halmstad, Sweden, a corporation of Sweden
Filed May 8, 1964, Ser. No. 366,009
Claims priority, application Sweden, May 24, 1963, 5,795/63
2 Claims. (Cl. 22—95.5)



1. A jolt de-sanding machine for a mould flask supported by a transport plate, comprising a conveyor, a transport plate support for generally horizontal movement on the conveyor, said transport plate carrying the flask at opposite sides of the latter, a clamping device for vertically supporting the flask in de-sanding position, a device for separating the transport plate and the flask from each other in a vertical direction, a device for removing said transport plate generally horizontally from beneath the mould flask and for returning said transport plate to its operative position beneath said flask after completion of the de-sanding operation, and a de-sanding means supported for downward movement through the mould flask while same is supported by the clamping device and while the transport plate is removed from beneath the mould flask, the said device for separating the transport and the mould flask from each other in a vertical direction comprising an elevating mechanism for moving the conveyor and the transport plate thereon toward and away from the lower side of the mould flask while the flask is supported in a stationary vertical position, and a second conveyor above the first-mentioned conveyor, said second conveyor being arranged for cooperation with opposite sides of the upper part of said mould flask, and means for raising and lowering said second conveyor in order to raise the said upper flask part from the lower flask part after completion of the de-sanding operation, said second conveyor extending to one side of the de-sanding station for transporting the upper flask part in a path above the path pursued by the first said conveyor and the lower flask part supported by the transport plate on said first conveyor.

3,284,862
PYROLYTIC GRAPHITE COATED CASTING MOLD AND METHOD OF MAKING SAME
Wilbur H. Schweikert, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed May 6, 1964, Ser. No. 365,255
7 Claims. (Cl. 22—192)

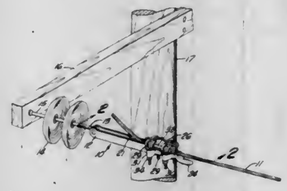


1. An investment casting mold including:
porous inner walls defining a hollow interior into which metal is cast;
the inner walls including a continuous coating of pyrolytic graphite adjacent the hollow interior.

4. In a method of making a precision casting mold, comprising a shell including inner walls enclosing a hollow interior into which metal is cast, the steps of:
making an investment shell mold of a refractory material;
heating the mold in a vacuum at a temperature between 1300–2200° F. while at the same time
passing through the interior of the mold at a pressure of 1–10 mm. Hg a hydrocarbon gas which will dissociate at that temperature and will deposit pyrolytic graphite on the inner walls of the mold,
the refractory material being one which will not weaken at the heating temperature sufficient to render the mold unusable for casting.

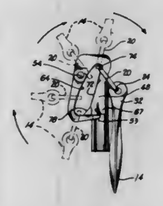
3,284,863
DEAD END CLAMP ASSEMBLY
L. E. Lindsey, 222 Vista Ave., Pasadena, Calif.
Filed Nov. 10, 1964, Ser. No. 410,105
10 Claims. (Cl. 24—125)

1. A unitary clamping assembly for a cable, said assembly having an elongated main body member provided with means for attaching the same to a support, said main body member having a long open-topped open-ended cable seating channel therein, a cable clamping member overlying the open top of said channel, lost-motion hinge means interconnecting one lateral edge of said member to the adjacent edge of said main body member, keeper means including adjustable clamping means therefor operatively interconnecting the opposite lateral edges of said main body member and said jaw member, said assembly being characterized in that all components thereof are adjustable as necessary to permit a cable to be inserted in said seating channel, clamped in place and released for servicing while all components of said clamping assembly remain captively assembled thereto, said adjustable means for said keeper means including a plurality of eye bolts having their eye portions pivotally connected to said jaw member by pivot pin means, the long threaded



shanks of said eye bolt passing through and being bridged by said keeper means and being held movably assembled therealong by clamping nuts, and seating means on said main body member positioned to provide stops engageable by said keeper means and cooperating with the latter in holding said jaw member clamped closed when said clamping nuts are tightened along the shanks of said eye bolts.

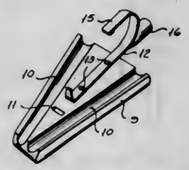
3,284,864
SLIDER
Robert B. Howell, 2115 Madrona Point Drive, Bremerton, Wash.
Filed Apr. 26, 1965, Ser. No. 450,893
4 Claims. (Cl. 24—205.14)



1. In a concealed slide fastener, a slider having a stem end portion of lipped channel form, a branched end portion of lipped channel form including an island separator and a pair of lipped branch channels extending away from said stem channel along divergent paths on opposite sides of the separator, said separator including a generally hook shaped end portion that projects outwardly beyond the free ends of the branch channels, then extends forwardly, and then back towards the slider proper, thereby defining an inner hook area that lies beyond the free ends of said branch channels, a locking pawl pivotally connected to the separator, closely adjacent the free terminus of said hook portion, and extending thence inwardly in spaced juxtaposed relationship with said separator, and then turning inwardly and somewhat normally towards the slider, a connecting ring normally encircling said pawl and of a size large enough to clear the said hook portion of the slider, with the said inner hook area extending a sufficient distance outwardly beyond the free ends of the branch channels, so that the ring can be moved around the said hook portion and set into a substantially concealed attitude wherein a portion of it is engaged in said inner hook area and a diametrically opposed portion

is positioned rearwardly of the slider; and a pull tab pivotally connected to said ring and positionable rearwardly of the slider in juxtaposition with the back side thereof, when said ring is set into the said substantially concealed attitude.

3,284,865
SLIDE FASTENER ACTUATORS
Clyde W. Burnham, Passaic, N.J., assignor of forty-nine percent to Muriel H. Cavanagh, Passaic, N.J.
Filed Nov. 23, 1964, Ser. No. 412,985
4 Claims. (Cl. 24—205.15)

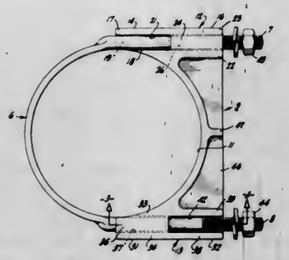


1. A tool for operating a slide fastener of the type having a slide member with an apertured tab hinged connected thereto and connecting together series of complementary locking elements, said tool comprising an elongated body adapted to be disposed beneath the complementary locking elements, said body having converging grooves in the upper face thereof in positions to receive therein the respective series of complementary locking elements, and a rigid prong fixed on the body and spaced from the converging ends of the grooves for engaging in the apertured tab to move the slide member while the locking elements are disposed in the grooves.

ERRATUM

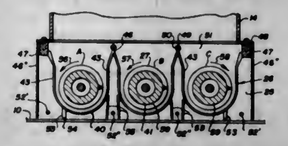
For Class 24—230 see:
Patent No. 3,285,700

3,284,866
PIPE CLAMP
Joseph C. Zimmerman, San Francisco, Calif., assignor to Western Piping & Engineering Co. Inc.
Filed Sept. 18, 1964, Ser. No. 397,467
3 Claims. (Cl. 24—277)



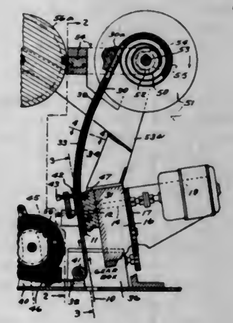
3. An article of manufacture for use in a pipe clamp comprising a clamp body having a central arcuate portion and a pair of side housings, each of said housings having an inner portion defined by a back wall and two opposite side walls to leave an open inner end and an open front and having an outer portion defined by a front wall and two opposite side walls to leave an open outer end and an open back, said open front and said open back terminating substantially in the same plane, and one of said side walls of each of said inner portions merging with said central arcuate portion.

3,284,867
MACHINES FOR FORMING HOLLOW CORED CONCRETE PRODUCTS
Glen Booth, Winnipeg, Manitoba, Canada, assignor to Spiroll Corporation Ltd., Winnipeg, Manitoba, Canada
Filed Jan. 23, 1964, Ser. No. 339,780
4 Claims. (Cl. 25—32)



1. In a machine for forming hollow cored reinforced concrete products which includes an elongated pallet, supporting framework, said framework adapted to support product reinforcing cables on said pallet around which said product is formed, a product forming material hopper, a feed chamber communicating with said hopper, a plurality of longitudinally spaced and parallel auger assemblies extending through said feed chamber, said auger assemblies having a trowelling portion on the distal ends thereof, and a source of power on said framework for driving said auger assemblies whereby the formed product is retruded from said machine; a shield assembly for said auger assemblies and said reinforcing cables, said shield assembly being secured below said hopper and extending into said feed chamber, said shield assembly comprising in combination a semi-cylindrical shield portion for each of said auger assemblies, and enclosing substantially the lower segment of each auger, said semi-cylindrical shield portion being in spaced and parallel relationship from said auger assembly and in spaced and parallel relationship from the base of said feed chamber, substantially vertically situated shield sides extending upwardly from each side edge of said shield portion, the upper edges of said shield sides adapted to mount said shield assembly in position, the rear vertical edge of each of said shield sides terminating spaced from the rear end of said shield portion, and elongated reinforcing-cable shield strips secured to and extending downwardly from adjacent the sides of said shield portion, said reinforcing-cable shield ships being spaced from said reinforcing-cable.

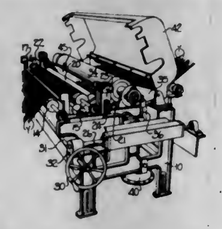
3,284,868
YARN CRIMPING APPARATUS
Paul W. Langway, Claymont, and Ewart H. Shattuck, Wilmington, Del., assignors to Joseph Bancroft & Sons Co., Wilmington, Del., a corporation of Delaware
Filed May 4, 1962, Ser. No. 192,532
10 Claims. (Cl. 28—1)



1. Apparatus for crimping yarn comprising a fixed plate adapted to support and guide a core of crimped yarn along an arcuate path between inlet and discharge points

with at least a portion of the sides of the core exposed above the surface of said plate, a flexible tape engaging the core and extending along said path to hold the core compacted against the surface of said plate, guide means mounting said tape to envelop at least a portion of the exposed sides of said core on said plate whereby the tape and plate together substantially enclose said core as it advances in said arcuate path along said plate, a pair of feed rolls having a bite disposed to feed a yarn into a crimping chamber between said tape and said plate at said inlet point to be folded over and crimped against the mass of previously crimped yarn in said core and means advancing said tape with said core along said arcuate path to said discharge point.

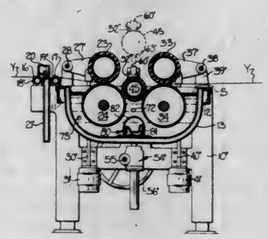
3,284,869
YARN SIZING APPARATUS
Ira L. Griffin, Charlotte, N.C., assignor to Ira L. Griffin & Sons, Inc., Charlotte, N.C., a corporation of North Carolina
Filed Sept. 3, 1964, Ser. No. 394,119
4 Claims. (Cl. 28—28)



1. In a size box having a tank for containing size solution, an immersion roll at least partially submerged in the size solution, squeeze roll means, and means for directing a sheet of yarns into the size box and successively beneath said immersion roll and through said squeeze roll means; the combination therewith of a doctor roll, means supporting said doctor roll for rotation in engagement with said immersion roll and above the level of the size solution, said doctor roll having a non-smooth peripheral surface comprising a pattern of uniformly arranged protrusions and depressions therebetween, said pattern extending around and throughout the length of at least that portion of said doctor roll which is in engagement with said immersion roll, said protrusions being maintained in tractional engagement with the surface of said immersion roll to insure continued driven rotation of said doctor roll, and the depressions permitting a predetermined amount of size solution to pass beneath said doctor roll and to remain on the surface of said imersion roll after it passes said doctor roll.

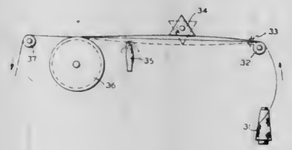
3,284,870
SIZE APPLICATOR
Ira L. Griffin, Charlotte, N.C., assignor to Ira L. Griffin & Sons, Inc., Charlotte, N.C., a corporation of North Carolina
Filed Dec. 7, 1964, Ser. No. 416,301
34 Claims. (Cl. 28—28)

1. A size applicator for uniformly applying size to a sheet of yarns normally traveling therethrough at high speeds and comprising
(a) a tank adapted to contain size solution at a predetermined level,
(b) first and second spaced apart pairs of squeeze rolls, each pair of squeeze rolls including
(1) a lower squeeze roll at least partially submerged in the size solution, and
(2) an upper squeeze roll engageable with said lower squeeze roll,
(c) means creating pressure engagement between the upper and lower squeeze rolls to form yarn squeezing nips therebetween,
(d) a combination immersion and squeeze roll positioned between said lower squeeze rolls,
(e) means for creating pressure engagement between said combination roll and said lower squeeze roll to form a pair of yarn squeezing nips therebetween, and



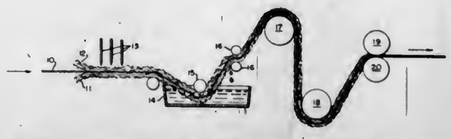
(f) means for directing the sheet of yarns into the size box and through the nip of said first pair of squeeze rolls to successively pass through the nip of said combination roll with the first lower squeeze roll, beneath said combination roll, through the nip of said combination roll with the second lower squeeze roll, and then through the nip of said second pair of squeeze rolls to provide four squeezing actions on the sheet of yarns.

3,284,871
INTERMITTENTLY-CRIMPED FILAMENT AND THE METHOD FOR THE PRODUCTION THEREOF
Shiro Yano, Yamashina, Higashiyama-ku, Kyoto, Eizaburo Kawarabayashi, Kitashirakawa, Sakyo-ku, Kyoto, Shoichi Takura, Shichihonmatsudori, Kamikyo-ku, Kyoto, and Takuji Morokawa, Ukyo-ku, Kyoto, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan, and Eizaburo Kawarabayashi, Kitashirakawa, Sakyo-ku, Kyoto, Japan
Filed Dec. 19, 1962, Ser. No. 245,860
Claims priority, application Japan, Dec. 28, 1961, 36/47,770
5 Claims. (Cl. 28—72)



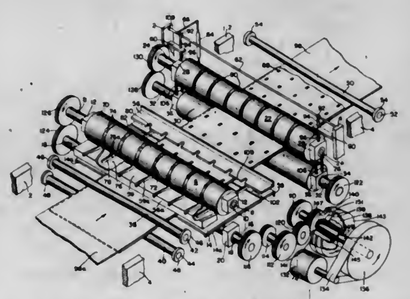
1. A method for producing an intermittently crimped multi-filament yarn which is characterized by steps of continuously running under tension a crimped multi-filament yarn formed of a thermoplastic resin, intermittently applying to said yarn along its longitudinal direction a treatment liquor containing a compound capable of manifesting at least a swelling action in said thermoplastic filaments, passing the thus-treated yarn under tension through a heating zone, and thereby releasing the crimp in the treated part of said yarn.

3,284,872
METHOD OF MAKING NEEDLED SHOE STIFFENING MATERIAL
Addison W. Closson, Jr., Cambridge, Mass., assignor to Beckwith-Arden Inc., Watertown, Mass., a corporation of New Hampshire
Filed Feb. 12, 1963, Ser. No. 257,931
2 Claims. (Cl. 28—72.2)



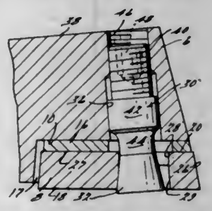
1. The process of making stiffening material for box toes and counters, comprising the steps of needling a batt of staple rayon fibers to a sheet of loosely woven osnaburg to form a bibulous ply of high tensile strength, saturating the needled composite sheet in a bath of polystyrene latex, drying the saturated sheet, and thereby bonding the rayon fibers together, and then compacting and severely compressing the dried sheet, thus forming a thin dry product carrying a charge of polystyrene amounting in weight to about 80% of the weight of the woven fabric base.

3,284,873
WEB JOINER
George R. Noel, North Wales, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Feb. 24, 1964, Ser. No. 346,858
13 Claims. (Cl. 29—21.1)



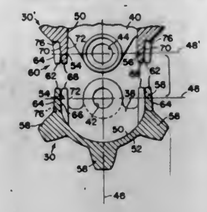
1. In a machine for joining in overlapping relationship a plurality of overlapped webs of foldable material, at least one of said webs initially being substantially stationary and at least one of said webs initially moving linearly through said machine at high speed relative to the bed of the machine, comprising
tab cutting means for producing in said overlapped webs a plurality of partial perforations with projecting tabs retained adjacent said perforations at the rear of said perforations relative to the direction of movement of the webs;
tab folding means for acting upon said projecting tabs to fold them rearward from said direction of movement;
tab pressing means for pressing said tabs against said webs;
the improvement wherein said tab cutting means consists essentially of
a punch roll supported at its ends by the frame of said machine and adjacent to one of the flat surfaces of the webs and having a plurality of substantially hexahedral teeth projecting from its surface and spaced in staggered rows extending along the roll and spaced in aligned peripheral rows in a toothed section extending part away around the periphery of the roll,
with an essentially non-toothed section in the remaining part of the periphery of each peripheral row,
said non-toothed sections essentially being aligned relative to each other along the roll so that no tooth in the roll contacts the webs when the center line along the roll of the composite arcuate surface of said sections is opposite said webs,
said teeth each having forward and side cutting edges and a non-cutting rearward edge; and
a die plate substantially coplanar with the flat surfaces of said webs and adjacent thereto on the opposite side of said webs and opposite said punch roll and having parallel alternating slots and ribs running from front to rear of said plate with cutting edges along the sides of said ribs opposite the side cutting edges of said teeth,
said slots corresponding in widths, number and positions to the widths, number and positions of corresponding peripheral rows of said teeth and providing openings through said die plate, said slots being positioned to permit said peripheral rows of teeth to pass into and out of said slots from rear to front in shearing relationship with the cutting edges of said ribs when said punch roll rotates and to permit the die plate at the rear of the slots to support the rearward portion of the tabs in non-shearing relationship with said teeth;
said machine including drive means for turning said punch roll codirectionally with said moving web and for providing said roll with an instantaneous tangential velocity equal to the lineal velocity of the moving web, and means for stopping the rotation of the punch roll at the end of a predetermined number of revolutions when the non-toothed section is opposite a flat surface of the joined webs with no tooth contacting said surface.

3,284,874
CUTTING TOOL WITH REMOVAL CUTTER ELEMENT
George C. Green, Royal Oak, and Robert M. Ortlieb, Southfield, Mich., assignors to De Vlieg Machine Company, Royal Oak, Mich., a corporation of Michigan
Filed Nov. 22, 1965, Ser. No. 509,037
5 Claims. (Cl. 29—96)



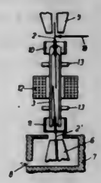
1. A cutting tool including a supporting member having a flat seat and a pair of convergingly related shoulders adjacent to said seat; a cutter supported on said seat and having an opening portion of tapering diameter, and a locking wedge having a head of tapering diameter disposed in said opening portion, said locking wedge being threadably connected to said supporting member and being advanceable along a thread axis which is inclined with respect to a line perpendicular to said seat, said head having a rate of taper greater than the rate of taper of said opening and being engageable with the wall of said opening to bias said cutter against said seat and against said shoulders and positively secure said cutter in a fixed position on said supporting member.

3,284,875
ROLL CONSTRUCTION
William R. Wood, Ottumwa, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Mar. 30, 1965, Ser. No. 443,989
11 Claims. (Cl. 29—121)



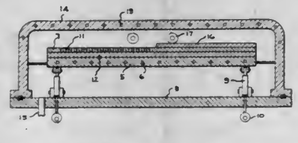
1. A roll half for a roll of the class described comprising: a hollow, semi-cylindrical roll half having first and second opposite ends, a plurality of longitudinal ribs extending between said ends along its outer periphery, and first and second radial members having axial bores, the first and second radial members being spaced different distances from their respective ends, said roll half also having a plurality of diametrally opposed, longitudinally extending tabs projecting approximately tangentially from the longitudinal terminal edges of the roll half, said tabs being divided between outer and inner tabs arranged in an adjacent, alternating relationship between said first and second ends along each terminal edge, the outer face of each inner tab being substantially alined with the inner face of each outer tab on the same terminal edge.

3,284,876
METHOD OF SEALING CONTACT REEDS IN A GLASS TUBE
Helmut Büttel, Korntal, Wurttemberg, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 12, 1962, Ser. No. 223,068
Claims priority, application Switzerland, Sept. 21, 1961, 10,982/61
2 Claims. (Cl. 29—155.5)



1. A method of sealing contact reeds in a glass tube comprising the steps of:
supporting the glass tube and reeds at opposite ends of said tube in a vertical position,
aligning the tube and reeds with a heating fixture positioned between the reeds,
releasing the tube to fall into the fixture at a predetermined position with the ends of the tube enclosed by respective heating elements of the fixture.
clamping the tube in the fixture,
inserting the aligned reeds into the respective tube ends to form a predetermined overlap at the inner portion,
establishing a magnetic field about the tube at the overlapping portion to maintain the reeds in a contacting position,
heating one end of the glass tube to seal one reed therein while maintaining said reeds in said contacting position until the seal is completed,
releasing the reed at the sealed end and turning off the heat thereat,
heating the other end of the glass tube,
removing the magnetic field after heating the other end of the tube,
rotating the other reed inside the tube about a center within the other heated end to establish a predetermined gap between the overlapped reeds before completing the other seal,
re-establishing the field after establishing said predetermined gap,
turning off the heat at the other end,
rotating said other reed further to reset the gap to the position at which the magnetic field closes the contacts,
reheating to complete the seal at the other end,
removing the field during reheating, and
turning off the heat after sealing the other end.

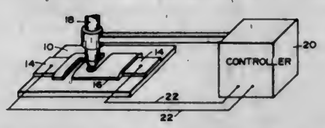
3,284,877
METHOD OF MANUFACTURING THERMOELECTRIC MODULES
Hans J. Naake, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Oct. 7, 1964, Ser. No. 402,123
3 Claims. (Cl. 29—155.5)



2. The method of manufacturing thermoelectric modules including alternate p-type and n-type elements series connected by junction forming means which comprises the steps of:
providing a form plate of a thickness equal to the length of said elements and including a plurality of holes therein of the same cross-section of said elements and extending between the top and bottom faces of said plate,
supporting said plate in a horizontal position on a platen with the bottom face of said plate in intimate contact with said platen,
introducing powdered thermoelectric material into said holes in an amount such that when melted, said material will completely fill said holes and provide a cap of molten material extending a short distance above the top surface of each of said holes,
enclosing said plate and platen in housing containing an inert atmosphere,
supplying sufficient heat to said form plate to melt said powdered material,
establishing a temperature gradient between the top and bottom faces of said form plate such that the top face is warmer than the bottom face,
simultaneously lowering the temperatures of both faces while maintaining said gradient until solidification of said material progresses to a point spaced from but adjacent the top face of said form plate,
sliding a skimming plate over the top face of said form plate to remove excess molten material from each hole and to square the upper surfaces of the elements,
cooling said form plate,

partially removing the solid elements from said holes, soldering junction forming means to the exposed ends, and thereafter removing the soldered assembly from said form plate.

3,284,878
METHOD OF FORMING THIN FILM RESISTORS
Gary R. Best, Raleigh, N.C., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Dec. 9, 1963, Ser. No. 329,046
3 Claims. (Cl. 29—155.7)



1. In the process of adjusting the resistance of a thin film resistor comprising the steps of applying an electroconductive film having a resistance less than a predetermined desired value on a dielectric substrate, and thereafter removing a portion of said film to increase the length to width ratio thereof, the improvement comprising applying a resist material over said film, simultaneously removing a portion of both said film and said resist material by sandblasting thereby increasing the resistance of said film to said value, and thereafter removing the balance of said resist material.

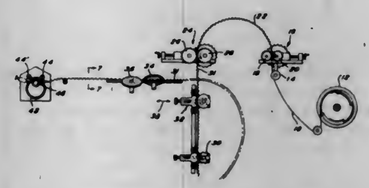
3,284,879
PROCESS FOR ENSURING NON-CORROSIVE CONTACTS ON HEATING RODS
Pierre Jean Victor Negre, Paris, France, assignor to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a company of France
Filed Apr. 8, 1960, Ser. No. 21,031
Claims priority, application France, Apr. 10, 1959, 791,725
7 Claims. (Cl. 29—155.71)



1. A process permitting of ensuring a durable electrical contact between a refractory material intended to be brought to high temperature and electrical current input and output elements, to which this material is connected, the said process consisting in disposing between the refractory material and the connection elements a paste constituted by a mixture of a fatty substance and a solvent with a powder of an electrically conductive metal having a melting point appreciably lower than that of the material constituting the connection elements, and then heating the assembly thus constituted above a temperature higher than the melting point of said metal wherein the paste is constituted by 97% aluminum powder, 2% of dammar gum and 1% of turpentine oil.

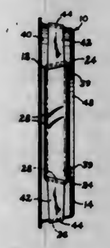
7. A process for ensuring a durable non-corrosive contact between a heating rod member made of an electrically conductive and refractory material of the class including silican carbide and electrical current connection elements affixed thereto, said process comprising the steps of fashioning said connection elements of a refractory metal not substantially oxidizable at the temperatures encountered during processing and use selected from a class including certain grades of steel, fashioning said connection elements as cylindrical metallic tips having a blind bore with a diameter greater than that of the rod and into which fits the two ends of the rod, disposing between the member and said elements a paste constituted by a mixture of a fatty substance and a solvent with a powder of an electrically conductive metal having a melting point appreciably lower than that of the refracting metal selected from a class including aluminum, and rapidly and progressively increasing passage of electric current through said connection elements to bring said rod to incandescence by the Joule effect at a temperature exceeding the melting point of said conductive metal and below the corrosion point of said refractory metal whereby a connection is made free of the formation of insulating oxides on the contracting surfaces.

3,284,880
METHOD OF MAKING AN EXPANDER
Harry K. Meyer, Swarthmore, Pa., assignor, by mesne assignments, to Gould-National Batteries, Inc., St. Paul, Minn., a corporation of Delaware
Filed July 29, 1963, Ser. No. 298,205
9 Claims. (Cl. 29—156.6)



1. A method of making a piston ring expander comprising the steps of feeding metallic ribbon to a pre-form device, rough forming the ribbon by bending it into a sinusoidal shape, feeding the rough-formed ribbon to a finishing device, finish-forming the thusly formed ribbon to a desired sinusoidal shape, coiling the finish-formed sinusoidally shaped wire into a cylindrical coil of ribbon, cutting the ribbon to separate the ribbon from the cylindrical coil of ribbon, aligning the tiers on said cylindrical coil so that all valleys are aligned, heat treating the thusly shaped cylindrical coil of ribbon to relieve stresses, establish shape, and temper the sinusoidally shaped ribbon, and then cutting the cylindrical coil of ribbon in an axial direction to define a plurality of ring shaped expanders.

3,284,881
BLADED STATORS
Daniel J. Clarke, Bay City, Mich., assignor to The Stalker Corporation, Essexville, Mich., a corporation of Michigan
Filed Apr. 16, 1963, Ser. No. 273,455
12 Claims. (Cl. 29—156.8)



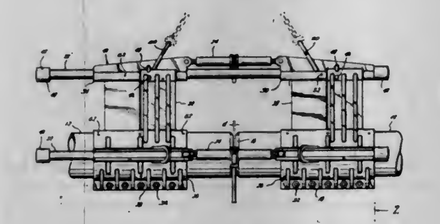
1. The method of fabricating a stator assembly comprising the steps of forming an outer pan with a generally radially extending bottom and a generally axially extending rim, forming an inner pan with a generally radially extending bottom and a generally axially extending rim of smaller diameter than the rim of said outer pan, mounting said pans in interfitting coaxial contiguous relation one within the other with said inner pan opening into said outer pan and defining an annular clearance space between the rims thereof, fixing a plurality of vanes in extending relation between said rims of said pans in said clearance space, furnace bonding said vanes in said rims, and removing the bottoms of each of said pans leaving said pan rims attached to said vanes forming the inner and outer shrouds of said stator assembly.

3,284,882
PROCESS OF EMBODYING CHAPLETS WITH BEADS MADE OF COCONUT HUSK MATERIAL OR THE LIKE FIXED ON A CONTINUOUS CHAIN
Virgilio Marchesan, Rome, Italy, assignor to Comunita Del Cisterciensi Riformati (Trappisti), Rome, Italy
Filed May 11, 1964, Ser. No. 366,375
Claims priority, application Italy, May 13, 1963, 9,674/63
5 Claims. (Cl. 29—160.6)



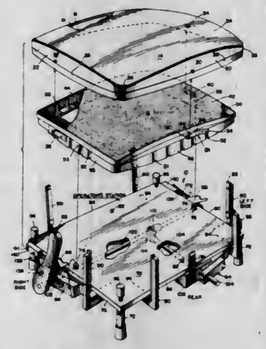
1. A process for making chaplets of coconut husk or the like beads fastened on a continuous chain, characterized in: softening the beads by soaking in water, boring the beads when in their softened state, gliding the beads on the chain so as to locate said beads at their desired positions and submitting the unit to a drying treatment so that the beads by shrinking will be steadily fastened to the chain.

3,284,883
LINE UP CLAMP
Fern Boyd Haverfield and Vincent Raymond McGehee, both of P.O. Box 1396, Houston, Tex.
Filed June 8, 1964, Ser. No. 373,204
4 Claims. (Cl. 29—200)



1. A line up clamp for axially aligning and spacing two sections of pipe including:
first and second pipe engaging yokes,
each yoke including a pair of pivotally mounted semi-cylindrical jaws,
clamping means engageable with the jaws to secure the jaws to the pipes,
the length of each jaw being at least twice the diameter of the pipe,
three alignment bars interconnecting and maintaining the yokes in substantial coaxial alignment,
each alignment bar slideably journaled in an arm extending radially from the pipe,
one alignment bar pivotally mounting the jaws, and
three positive displacement screw connectors interconnecting the yokes adjacent each alignment bar.

3,284,884
ASSEMBLY JIG FOR POSITIONING PHOTOGRAPHIC SHADOW MASKS IN COLOR TELEVISION PICTURE TUBE FACE PLATES
Charles J. Prazak III, Elmhurst, Ill., assignor to National Video Corporation, Chicago, Ill., a corporation of Illinois
Filed Feb. 1, 1965, Ser. No. 429,517
16 Claims. (Cl. 29—200)

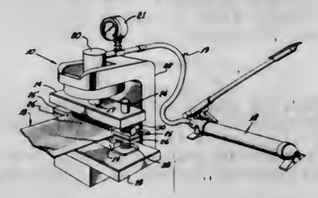


1. An assembly jig for effecting application of a shadow mask to a color television picture tube face plate during an assembly operation, and subsequent removal of such shadow mask from the face plate during a subsequent disassembly operation, the shadow mask and face plate being provided with walls which remain spaced from each other when the application is effected, the wall of the face plate being provided with a plurality of inwardly projecting fixed detent pins thereon, the wall of the shadow mask being provided with a corresponding number of spring-biased cooperating locking detent arms movable when the shadow mask is disposed on the face plate between normal operative locking positions wherein they engage the detent pins in locking relationship and inoperative out-of-the-way positions wherein they release the detent pins, said assembly jig comprising: means for positioning and supporting the shadow mask, and thereafter positioning and supporting the face plate when the latter is received over the shadow mask during the assembly operation, a plurality of detent actuators, one for each detent arm on the shadow mask, and movable between retracted positions wherein they are out of engagement with the detent arms on the shadow mask, and advanced positions wherein they engage the detent arms and move them to their out-of-the-way positions to allow the face plate to be telescoped over the shadow mask during the assembly operation and removed from the shadow mask during the subsequent disassembly operation, and means for moving said detent actuators between their retracted and their advanced positions.

3,284,885
TOOL FOR CRIMPING TERMINATION ELEMENTS TO FLAT ELECTRICAL CABLES

Robert N. Fisher, Los Angeles, and Paul K. Parkinson, Monterey Park, Calif., assignors, by mesne assignments, to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland

Filed Nov. 15, 1963, Ser. No. 232,939
18 Claims. (Cl. 29—203)



1. A tool for crimping termination elements to the electrical conductors of a flat electrical cable wherein said cable has a plurality of parallel flat electrical conductors, said tool comprising:

means within said tool for mounting a flat electrical cable having a plurality of flat electrical conductors;

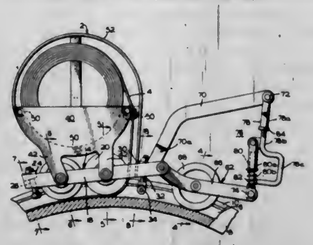
means for mounting a plurality of termination elements in concurrent alignment with respective electrical conductors of the flat electrical cable; and

movable means for simultaneously crimping the plurality of termination elements to respective aligned electrical conductors of the flat electrical cable, each termination element being securely crimped to a respective aligned flat electrical conductor so as to thereby establish a firm electrical connection between the flat electrical conductor and the termination element crimped thereto.

3,284,886
TOOL FOR INSTALLING GROOVE LINERS

Alphonse J. Provencher, 119 Brooklyn St., Barre, Vt.

Filed Sept. 25, 1964, Ser. No. 399,296
12 Claims. (Cl. 29—235)



1. Apparatus for inserting a flexible liner within a groove contained in a body, the side walls of said groove including laterally-inwardly directed opposed shoulders, comprising

a frame;

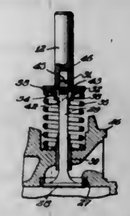
pressing roller means connected with said frame for pressing the liner downwardly into the groove; and

means for connecting said frame with said body for relative movement longitudinally of said groove, said frame connecting means including mounting roller means connected with said frame and adapted for insertion in the groove beneath and in rolling contact with the shoulders, whereby when said liner is supplied rearwardly between said pressing roller means and the bottom surface of the groove, forward movement of said frame longitudinally of the groove causes progressive insertion of said liner in said groove.

3,284,887
VALVE STEM LOCK TOOL

Max J. Tauschek, South Euclid, Ohio, assignor to TWR Inc., a corporation of Ohio

Filed Dec. 26, 1963, Ser. No. 333,483
2 Claims. (Cl. 29—249)

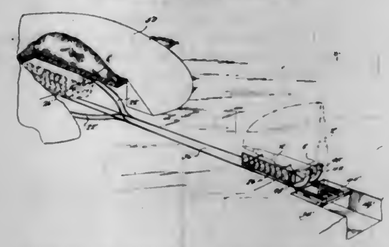


2. A one-piece valve stem retainer lock tool adapted for removing from a grooved valve stem, a spring retainer having a conical bore wedging a stem lock having internally beaded fingers embracing a valve stem with the beads seated in the groove of the stem which comprises a rod-like member having a recessed end adapted to freely receive a valve stem, said end having portions for depressing the retainer out of wedged engagement with the stem lock, and circumferentially spaced teeth projecting from said portions terminating in blunt ends and having converging sides for engaging the fingers of the lock to spread the fingers sufficiently for removal of the beads thereon from the stem groove, whereby the retainer and lock assembly can be retracted from the valve stem.

3,284,888
METHOD AND APPARATUS FOR ASSEMBLING AND ERECTING A ROCKET OR MISSILE

Walter J. McClain and George S. Jenkins, Tampa, Fla., assignors to Edward J. Donnelly, Charles B. Allen, John J. Jenkins, Jr., and George S. Jenkins, a partnership, doing business as J. E. Greiner Company, Baltimore, Md.

Filed May 9, 1963, Ser. No. 279,105
33 Claims. (Cl. 29—407)



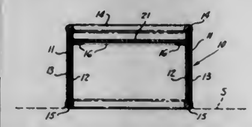
1. A method of assembly of an elongated rocket or missile and of positioning of the same on a launch pad comprising the steps of: assembling the rocket or missile in a horizontal position from component parts on a mobile carrier at a site remote from the launch pad; moving the carrier with the assembled rocket or missile supported thereon in a horizontal position from the site of assembly to the launch pad; then rolling the carrier upwardly about one end thereof with the rocket or missile supported thereon until the rocket or missile has moved from a horizontal to a substantially vertical position; and removing the rocket or missile from the carrier onto the launch pad.

17. In a system for erecting and launching rockets or missiles from a launch pad, the combination comprising: an elongated carrier for supporting the rocket or missile in a horizontal position at a site remote from the launch pad; means for moving the carrier to the launch pad with the rocket or missile supported therein in a horizontal position; means for rolling the carrier about one end thereof at the launch pad whereby the rocket or missile is moved from a horizontal position to a vertical position; and means to transfer the rocket or missile from the carrier to the launch pad for firing.

3,284,889
METHOD OF MAKING SIGNS

Harry A. Flitman, 1779 Walker Ave., Irvington, N.J., and Robert J. De Salvo, 299 S. 6th St., Newark, N.J.

Filed July 30, 1963, Ser. No. 298,698
10 Claims. (Cl. 29—411)

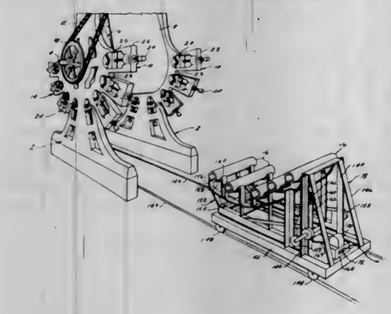


1. A method of making a sign or the like which comprises the steps of passing an elongated strip of thin sheet metal through a continuous extrusion machine to coat both sides of the strip with plastic and simultaneously forming plastic beads on the opposite edges of said strip and forming a continuous flange extending perpendicularly of the strip on one side thereof, cutting the coated strip to a desired length, bending the strip to form the perimeter of a letter or the like, with the flange interiorly thereof, adhering a cut-out flat letter to the flange, applying a solvent to the inner plastic bead and adhering the letter to a plastic backing sheet.

3,284,890
METHOD OF ASSEMBLING TEXTILE PRINTING APPARATUS

Robert J. Verlik, West Stafford, Conn., assignor to Stafford Printers, Inc., Stafford Springs, Conn., a corporation of New York

Original application Aug. 10, 1962, Ser. No. 216,160, now Patent No. 3,174,724, dated Mar. 23, 1965. Divided and this application Dec. 9, 1963, Ser. No. 328,896
7 Claims. (Cl. 29—434)



1. In the printing of textiles and the like using apparatus having a frame with a backing cylinder and a plurality of axially aligned pairs of bearing supports spaced outwardly of the backing cylinder along the lower periphery thereof, the steps comprising locating in a predetermined arrangement a plurality of printing rolls of generally cylindrical configuration with generally cylindrically bores extending therethrough; simultaneously elevating said plurality of rolls in said predetermined arrangement into axial alignment with the bearing supports of a printing apparatus; and rotatably mounting said plurality of rolls upon the printing apparatus while in said simultaneously elevated position.

3,284,891
METHOD OF BONDING SHEETS OF METAL

John B. Whitney, Wichita, Kans., assignor to The Boeing Company, a corporation of Delaware

Original application Sept. 12, 1960, Ser. No. 55,292, now Patent No. 3,222,775, dated Dec. 14, 1965. Divided and this application May 3, 1965, Ser. No. 464,592
9 Claims. (Cl. 29—470)



1. The method of bonding a steel honeycomb member between steel sheet backings comprising the steps of, cleaning the members to be bonded by vapor degreasing with a chlorohydrocarbon and further cleaning the members with an alkaline cleaner, grinding a frit composed of boric acid, sodium nitrate and powdered quartz to a minus 200 mesh size, said boric acid and said sodium nitrate being present in an amount sufficient to permit bonding to the members, grinding a brazing alloy consisting of silicon, boron, carbon and nickel to a minus 325 mesh size, mixing the resulting ground frit with the ground brazing alloy in the ratio of 3.5:1 to 4.5:1 of said brazing alloy to frit by weight, making a slurry of the resulting mixture and a brazing alloy cement, coating the contacting faces of the members with the resulting slurry, placing the members into contact under a pressure of from one to three atmospheres, and firing the structure at 1900 to 2100 degrees F. in air for 5 to 15 minutes.

3. The method of bonding two metallic members together comprising the steps of, cleaning the members to be bonded, grinding a frit and a brazing alloy to a relatively small size, said frit including an alkaline borosilicate in an amount to permit bonding to the members, said brazing alloy having a major ingredient selected from a group consisting of noble metals and nickel and having a minor ingredient capable of wetting and bonding to said ground frit, mixing the ground frit and the ground brazing alloy together, placing the mixed powders in a liquid carrier, coating at least one of the contacting faces of the members with the mixture, placing them into contact and firing the structure in air at a temperature of 1600 to 2100 degrees F. for a sufficient time to mature the frit and brazing materials.

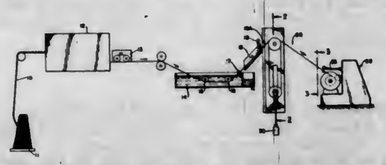
3,284,892
WIRE PROCESSING

Robert J. Wade, Hamden, Conn., assignor to The Anaconda American Brass Company, a corporation of Connecticut

Filed Sept. 25, 1963, Ser. No. 311,533
1 Claim. (Cl. 29—527)

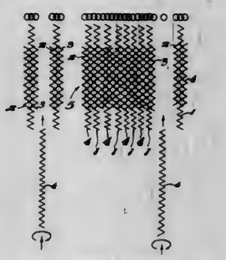
A method of processing a wire strand in a continuous operation which comprises feeding a copper wire through a series of dies to draw the wire to a size below .015 inch in diameter, drawing the wire from the dies at speeds up to 2500 f.p.m. immediately passing the wire strand through about 24 inches of molten tin bath at a temperature of about 380° C. to coat the surface of the wire with a thin tin coating, passing the wire through a wiping die to fix the size of the tin coating, annealing the wire while

coating, controlling the tension on the wire to maintain a substantially fixed tension on the moving wire, controlling the speed of the wire in relation to the tension, and



spooling the wire at said fixed tension to form a wire spool with each of the turns of the winding at substantially the same tension.

3,284,893
METHOD OF MAKING A WIRE PLEXUS
Robert B. Reid, Stratham, N.H., and Theodore J. Pricenski, Ipswich, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Original application May 8, 1961, Ser. No. 108,391. Divided and this application June 10, 1965, Ser. No. 462,946
5 Claims. (Cl. 29—527)



1. The process of making a wire plexus, comprising the steps of: making a plurality of subassemblies, each subassembly being made by threading a first helical coil of wire of a first length through two shorter coils of a second length to link them together with the first coil protruding at both ends; arranging the subassemblies side by side and linking the adjacent shorter coils of adjacent subassemblies by threading a coil of the first length through them; wrapping the plexus so formed around a mandrel; linking the shorter coils at the ends of the plexus by threading a coil of the first length through them; wrapping a strand of wire around the mandrel and between the turns of the protruding ends of the first coils; and securing the transverse strands to the first coils by threading a coil of wire through each first coil.

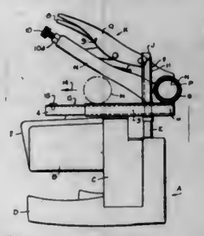
3,284,894
RAZOR HAVING HAIR TRIMMING MEANS
Joseph J. Ryan, P.O. Box 474, Montclair, N.J.
Filed June 21, 1965, Ser. No. 465,383
1 Claim. (Cl. 30—29.5)

An electric razor comprising a hollow vertical cylindrical handle, a hollow vertical cylindrical tip of much smaller diameter, a truncated hollow cone connecting said handle to said tip, the cylindrical surface of said tip being perforated, a vertical rotatable shaft rotatably mounted within said tip in axial alignment therewith, cutting blades secured to said shaft, retaining means on said shaft adapted to removably and adjustably hold said cutting blades in close agency within the hollow tip, an electric motor in said handle, said motor having a vertical shaft gearing means interconnecting said shafts and coupling means to connect said motor to a source of electric power, to rotate said shafts whereby said cutting means rotate in close proximity with the hollow tip to cause cutting to occur at the perforations, wherein the said retaining means comprise a pair of axially displaced parallel members, each adapted to receive a cutting blade on either side



of the shaft in planar alignment, in further combination with retainer means pivotally mounted on opposite sides of said blades, and having arm extensions adapted to engage oppositely protruding pins from the said shaft located between the said members.

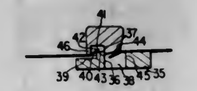
3,284,895
PORTABLE CLAMP AND CUTTER FOR ELECTRICAL FLEXIBLE TUBING
Edsel S. Selander, 4821 Yellowstone Park Drive, and Gerald E. Carmack, 4839 Yellowstone Park Drive, both of Fremont, Calif.
Filed Mar. 29, 1965, Ser. No. 443,311
2 Claims. (Cl. 30—90.2)



1. In combination:
(a) a portable housing enclosing a motor;
(b) a bracket carried by said housing;
(c) a reciprocating saw blade having one end operatively connected to said motor, said saw blade having a portion slidable in a blade guide that is carried by said housing;
(d) an arm swingably carried by said bracket and being swingable in a plane that is parallel to the blade of said saw blade; and
(e) flexible conduit gripping pliers carried by said arm; the two jaws of said pliers being semi-cylindrical in cross section with their concave faces being disposed opposite each other, said jaws when closed having a common axis that extends at right angles to said plane defined by said swingable arm;
(f) said jaws being sufficiently long to grip a length of the flexible conduit and prevent the gripped portion from flexing;
(g) one end of each jaw lying in a plane that lies flush with the side of said reciprocating saw blade that is disposed nearest to said jaw ends;

(h) said arm permitting the pliers to be swung for causing the jaws to move the gripped conduit portion with respect to said reciprocating saw blade so that the latter will cut the conduit in a plane at right angles to the axis of the gripped conduit portion and adjacent to the jaw ends disposed nearest to said saw blade.

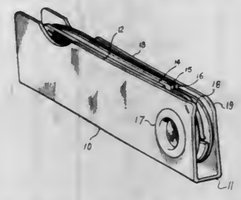
3,284,896
BAND CUTTER AND GRIPPER
Per Reichborn-Kjennerud, New York, N.Y., assignor to Goodway Tools Corporation, New York, N.Y., a corporation of New York
Filed Jan. 29, 1965, Ser. No. 428,973
1 Claim. (Cl. 30—134)



In a metal band cutter, a first handle having an integral anvil portion at one end thereof, said anvil portion having a substantially flat upper face, a centrally arranged elongated slot extending through said anvil portion and forming spaced parallel bars, said bars being joined at both ends; a pin extending across said slot; a second handle having an integral cutting and gripping blade on one end thereof, said blade being offset relative to the longitudinal axis of said handle, a rectangular recess formed in the lower surface of and adjacent to one side of said blade so as to be offset relative to the slot in said anvil, the recess in said blade forming a relatively narrow band gripping flange thereon to one side thereof and a relatively wide portion on the other side thereof, said wide portion being chamfered and relieved; said blade being pivoted on said pin; an upstanding relatively narrow flange on one of said anvil bars, a single cutting surface on one side of said upstanding flange, said anvil bar being offset adjacent said upstanding flange to provide a flat face therebelow, said upstanding flange being narrower in width than the recess in said blade and having a single cutting surface at one side thereof, and a single cutting surface on one side of said recess, the slot in said anvil being wider than the wide portion of said blade so as to be movable thereinto whereby when said blade progressively cuts across a metal band one portion of the severed band is progressively bent downwardly by the wide portion of said blade so that the severed end freely projects into said slot, and another portion of the severed band is progressively gripped between the narrow flange on said anvil and the inset face of said anvil so that the severed end freely projects upwardly into said recess.

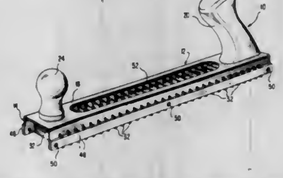
3,284,897
POCKET KNIFE WITH BLADE LOCKING MEANS
Harvey N. Bliss, Windsor, Conn., assignor to The Britton Corporation, Newington, Conn., a corporation of Connecticut
Filed Oct. 8, 1964, Ser. No. 402,409
6 Claims. (Cl. 30—161)

1. A combination implement assembly comprising a folded handle of resilient sheet material having a base portion joining two opposed side walls of generally elongate shape, at least one flat blade having a shank portion, means pivotably mounting said shank portion of said blade between said side walls adjacent one end thereof, said blade mounting means being supported by said side walls to permit outward displacement of said side walls along the pivotal axis of said blade, said blade member being pivotable about said mounting means from a closed position between said side walls to an open position in general alignment with the elongate axis of said side walls, and means resiliently bearing upon the shank of said blade parallel to its pivotal axis including opposed camming surfaces formed by inwardly bent corners of said opposed side walls adjacent said blade mounting means and a transversely deformed portion on one of said shank portion and said two opposed side walls providing resilient



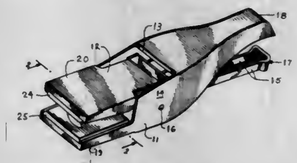
sliding bearing pressure therebetween in all positions of said blade, said blade and said side walls and said camming surfaces thereof being cooperatively dimensioned and configured with at least one of said camming surfaces resiliently bearing against the shank of said blade in sliding frictional engagement when said blade is being opened and resiliently retaining said blade in its open position.

3,284,898
HAND SCRAPER
Evan L. Hopkins, 428 Peyton, Emporia, Kans.
Filed May 21, 1964, Ser. No. 369,105
6 Claims. (Cl. 30—172)



1. A hand tool comprising an elongated frame having an underside and vertical and longitudinal axes, a series of blades fixedly connected to said underside of said frame to extend transversely of said longitudinal axis in a vertically inclined manner, each of said blades including at least four distinct cutting edges fixed at different elevations relative to said vertical axis.

3,284,899
CUTTER
Pasquale A. Mercorelli, 441 Summer Ave., Newark, N.J.
Filed Jan. 8, 1965, Ser. No. 424,231
4 Claims. (Cl. 30—229)



1. A cutter comprising:
(a) pivotally connected, intersecting arms;
(b) handles at one end of the arms at one side of the connection, whereby the opposite end of the arms move toward each other as the handles are compressed;

(c) die channels on the other ends of the arms, at the other side of the connection from the handles;
(d) overhanging edges on the die channels;
(e) removable, opposed, male and female dies located in the channels in registration with each other;
(f) a plurality of parallel, elongated ribs defining a design on the male die;
(g) an opening on the female die corresponding to, and dimensioned to receive the design on the male die.

3,284,900
PLANT CUTTING TOOLS
Emil E. Knittel, 6 St. James Place, Hempstead, N.Y.
Filed June 29, 1964, Ser. No. 378,605
9 Claims. (Cl. 30—318)



1. A weed cutting tool comprising, in combination, a shaft, one end of the shaft being a handle portion, the other end of the shaft being a mounting portion; and a cutter secured to the mounting portion, the cutter being a tubular element the opposite ends of which are sharpened to provide oppositely facing cutting edges extending around 360 degrees of the circumference thereof, the central axis of the cutter being transverse to the shaft, the length of the tool being substantially equal to that of a golf club, and the mounting portion extending in contact with the cutter periphery for a portion of the cutter circumference.

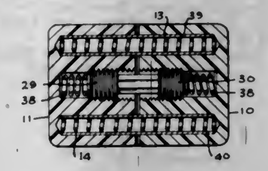
3,284,901
DENTURE RETAINERS FOR UPPER DENTURES
Edward W. Town, 320 Chester Pike, Norwood, Pa.
Filed June 24, 1964, Ser. No. 377,734
5 Claims. (Cl. 32—2)



1. A denture retainer for artificial dentures comprising sheet material with a stiffening additive which will soften but not melt at body temperature having a post dam strip with a rear marginal edge for disposition within a denture along the rear margin thereof and having end terminal edges and a retaining portion therefor extending forwardly therefrom and connected thereto inwardly of the end terminal edges about one third of the distance in wardly therefrom to the center.

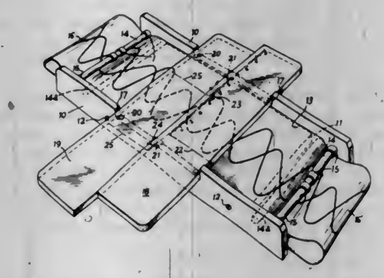
3,284,902
ORTHODONTIC EXPANDER
Raymond E. Dillberg, Temple City, and Frank R. Miller, Bradbury, Calif., assignors to Orthodontists' Research & Manufacturing Corporation, Covina, Calif., a corporation of California
Filed Sept. 30, 1963, Ser. No. 312,634
1 Claim. (Cl. 32—14)

An orthodontic appliance, comprising:
first and second body members;
each body member having a recess bore, and said bodies placed with the said bores thereof in axial alignment;
each bore having a mouth entrance opposed to a like mouth entrance of the other, each bore having a threaded wall beginning at said mouth entrance;
a first and second nut threadibly engaged in a bore of said first and second body member respectively;
each nut having a noncircular central axial through opening;



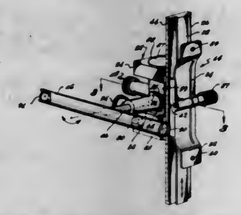
a noncircular rod engaged in said central axial through opening of both nuts with a longitudinally slideable and non-rotatable fit, stop means on the opposite ends of said rods within the respective bores to prevent said rods from pulling out through the nut; and
resilient means urging said bodies apart.

3,284,903
INSTRUMENTS FOR MEASURING RECORDED TRACES
Dennis C. Flack, Aldwick, Bognor Regis, England, assignor to Sangamo Weston Limited, Enfield, England, a British company
Filed Feb. 13, 1964, Ser. No. 344,780
Claims priority, application Great Britain, Nov. 22, 1963, 46,252/63
21 Claims. (Cl. 33—1)



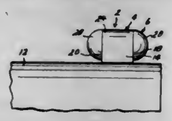
1. An instrument for measuring traces recorded in strip form which comprises two parallel side members defining a record strip receiving channel, the transverse extent of said channel being equal to the width of a record strip arranged to pass therethrough, means for guiding said record strip through said channel, and measuring scale means constituted by two contacting transparent scale plates arranged side-by-side, said scale plates being supported by scale plate support means when said scale plates are in a first position movable in a direction parallel to the longitudinal axis of said record strip and being movable in a slot formed in the upper surface of each of said side members when said scale plates are in a second position movable in a direction perpendicular to the longitudinal axis of said record strip.

3,284,904
ARCHERY SIGHT
Douglas B. Rade, Gardena, Calif., assignor of one-half to Richard J. Knox, Woodland Hills, Calif.
Filed Dec. 9, 1963, Ser. No. 329,163
3 Claims. (Cl. 33—46)



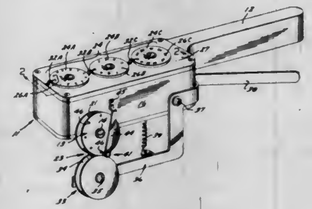
1. In an archery sight, the combination comprising:
a bow mounting bracket;
a plate member;
means for slidably coupling said mounting bracket to said plate member for relative vertical translation therebetween;
first calibration means for indicating the relative position of said plate member and said mounting bracket;
means for selectively locking said mounting bracket against movement relative to said plate member;
a main body integral with said plate member and having upper and lower blocks and a space therebetween;
a substantially cylindrical rotor having its ends journaled within said upper and lower blocks for rotation about a vertical axis;
first worm gear means for selectively rotating said rotor relative to said main body about said vertical axis;
second calibration means for indicating the degree of rotation of said rotor about said vertical axis;
a sight tube;
means for selectively mounting said sight tube to said rotor in either of two positions 180° apart;
second worm gear means for selectively rotating said sight tube relative to said rotor about a substantially horizontal axis;
third calibration means for indicating the degree of rotation of said sight tube relative to said rotor about horizontal axis;
means for horizontally translating said sight tube relative to said rotor;
and means for selectively locking said sight tube against horizontal translation relative to said rotor.

3,284,905
SIGHT FOR SHOTGUNS
Ernest P. Simmons, 2510 Lafayette, Kansas City, Kans.
Filed Mar. 4, 1964, Ser. No. 349,447
3 Claims. (Cl. 33—47)



1. A front sight for shotguns and the like comprising:
(a) a mounting body member,
(b) means for affixing said body member to the upper side of the barrel of a shotgun adjacent the forward end thereof, said body member having an aperture formed therethrough so as to be parallel to the axis of said barrel, and
(c) a bead member constituting a pair of enlarged heads connected by a shank of reduced diameter, said shank being contained in said aperture with said beads disposed respectively forwardly and rearwardly of said body member, the diameter of said aperture being slightly greater than the diameter of said shank, and the length of said shank being slightly greater than the thickness of said body member in a direction parallel to the axis of said aperture.

3,284,906
MANUALLY OPERABLE APPARATUS FOR MEASURING, AND VISIBLY INDICATING THE LENGTH OF A LONGITUDINAL MEMBER
Leendert Holleman, 4261 Long Beach Blvd., Long Beach, Calif.
Filed Dec. 30, 1963, Ser. No. 334,662
9 Claims. (Cl. 33—134)

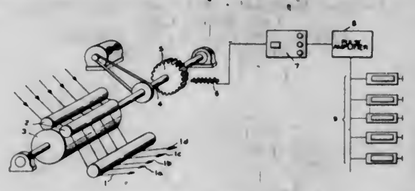


1. Portable manually operable apparatus for measuring, and visibly indicating the length of a longitudinal member, comprising: portable base means provided with rotatably mounted measuring wheel means having an exterior measuring periphery therearound with at least a portion thereof projecting into a measuring position for rolling contact with a length of a longitudinal member which is to be measured, and marking means positioned adjacent to the measuring periphery of said measuring wheel means in a normally inoperative relationship with respect to said measuring wheel means and the longitudinal member adapted to be measured thereby but controllably operable for movement from said inoperative position into an operative position in marking contact with said longitudinal member to indicate an end point thereof, said marking means comprising a laterally directed cutting element provided with, and carried by, resilient mounting means connected to said base means, said measuring wheel means being provided with a plurality of laterally directed entry apertures, each at a different location substantially aligned with an inner edge of the measuring periphery of said measuring wheel and positioned for the reception of said cutting element in a position such as to very slightly cut the inner edge of a measured longitudinal member adapted to be engaged by said measuring periphery of said measuring wheel means, said base means being provided with exteriorly visible counting, totalizing, and indicating means for indicating the length of rotary movement of said measuring wheel means along said longitudinal member, said counting, totalizing, and indicating means including coupling means carried by said base means and effectively connected with respect to said measuring wheel means in driven relationship relative thereto.

3,284,907
WINDING APPARATUS
John R. Frost, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Feb. 18, 1965, Ser. No. 433,732
2 Claims. (Cl. 33—136)

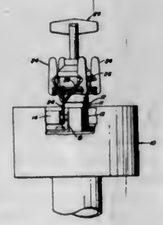
2. In a multiple spindle winding machine for winding filaments, the winding machine operating in combination with a common snubber roll over which the filaments

pass without significant slippage, the improvement which comprises a toothed gear mounted on and affixed to the shaft turning said snubber roll, an electrical sensing mechanism in operative proximity to said gear and adapted to release an output electrical pulse each time a tooth of said gear passes by, an adjustable totalizing counter operatively connected to said sensing mechanism which furnishes one output pulse, for a given number of input pulses from the sensing mechanism, to an amplifier of sufficient magnitude so that the resultant amplified output pulse drives a separate electrical counting device for each strand of filament, each of said electrical



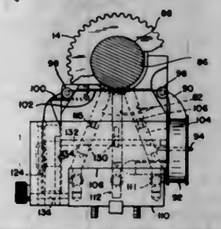
counting devices mounted in operative relationship with a winding panel, each said electrical counting device being operatively connected to a switch which is activated by said counting device to, in turn, actuate a signal after reception of a given number of pulses, a compensator arm mounted on each winding panel and adapted to be held up by filament passing around it from the said snubber roll and passing to a winding spindle, said compensator arm being adapted, upon failure of said filament to hold it up, to move to a position such that it will actuate a switch which, in turn, is adapted upon such actuation to disable said electrical counting device, and to actuate an alarm signal.

3,284,908
DISTRIBUTOR BREAKER POINT GAUGE
Odis B. Smothers, Rte. 2, Paragould, Ark.
Filed Nov. 27, 1964, Ser. No. 414,335
9 Claims. (Cl. 33—168)



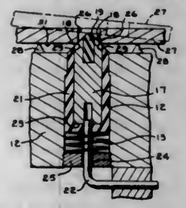
9. A distributor breaker point gauge for use on a distributor having a shaft, a cam on said shaft, a rotor receiving portion on the end of said shaft, an adjustable fixed breaker point, and a movable breaker point actuated by said cam, said gauge comprising an elongated stem, a cap fixed to one end of said stem, a head freely rotatable on said stem, a feeler gauge pivotally mounted at one end on said head, resilient means engaging said feeler gauge, said resilient means normally biasing said feeler gauage to a retracted inoperative position, whereby with said cap received on the end of said shaft said head may be rotated to bring said feeler gauge into alignment with the space between said breaker points, said feeler gauge being pivoted against the action of said resilient means to position a portion of said feeler gauge between said points, said adjustable point being adjusted to engage said feeler gauge and retain the same between said points, adjustment of said adjustable point in the opposite direction serving to release said feeler gauge at the proper setting of said points, said resilient means serving to retract said feeler gauge to inoperative position.

3,284,909
GEAR CHECKING APPARATUS
Russel W. Anthony, Detroit, Mich., assignor to National Broach & Machine Company, Detroit, Mich., a corporation of Michigan
Filed May 18, 1964, Ser. No. 368,184
11 Claims. (Cl. 33—179.5)



1. A gear checker comprising means for rotating a work gear, means for rolling the gear in tight mesh with a master gear, means for sensing abrupt spacing errors such as caused by nicks by relative radial displacement between said gears, and marking means actuated by the sensing means to mark the gear at a position dependent on the circumferential location of the error, said marking means comprising a printing ribbon, and an impact printing element movable to impinge the ribbon against a surface of the gear.

3,284,910
TEST PROBE FOR DETECTING MISALIGNMENT OF METAL WORKPIECES
Frank A. Klasek, La Grange Park, Ill., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Jan. 20, 1964, Ser. No. 338,655
2 Claims. (Cl. 33—180)



2. A device for use in conjunction with an electrical circuit for detecting misalignment within a machine of a metal workpiece having a pilot aperture therein, which comprises:

an electrically conductive member having a cross-sectional area greater than that of the pilot aperture in the workpiece and having an end portion;

a dielectric element mounted centrally on and projecting from said end portion of said member and having a cross-sectional area conforming to that of the pilot aperture and of a size which fits into the aperture and which leaves marginal surfaces of said end portion of said member engageable with the workpiece; and

resilient means for supporting said member yieldably in a predetermined position in the machine and in insulated relation thereto and for limited movement relative thereto and transversely of a work supporting surface of the machine for engagement with a workpiece placed in the machine, so that with the placement of a properly aligned workpiece in the machine the dielectric element fits within the aperture of the workpiece and said end of said member engages the workpiece and establishes an electrical circuit therethrough, and with the placement of a misaligned workpiece in the machine said dielectric element engages the workpiece and maintains said member in spaced and insulated relation thereto.

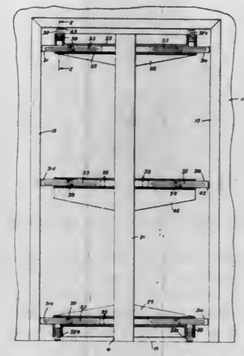
3,284,911
LAY-OUT TOOL
Curtis Clark, 120 S. Redfield St., Philadelphia, Pa.
Filed Sept. 28, 1964, Ser. No. 399,764
8 Claims. (Cl. 33—189)



1. A lay-out tool adapted to be locked upon the straight edges of a measuring instrument in a clamping action, comprising a body member including a central area defined by a fixed shoulder, and a movable shoulder formed on a movable plate, said clamping action being exerted upon said straight edges when said movable shoulder is moved toward said fixed shoulder, said movable shoulder being actuated by a locking mechanism including a slide for urging said movable plate towards and away from said fixed shoulder, said slide being biased by a slide spring, said slide also acting upon an actuator having an actuator spring, said slide spring being compressed when said actuator spring is extended and said slide spring being extended when said actuator spring is compressed to give positive clamping and unclamping actions, whereby when said locking mechanism is actuated to advance said movable shoulder away from said fixed shoulder, the lay-out tool may be slid to a new location and then reclamped by reversed movement of said slide.

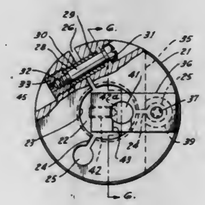
3,284,912
DOOR TEMPLATE
Jacob J. Hoven, 75 Meigs St., Rochester, N.Y.
Filed Apr. 30, 1965, Ser. No. 452,078
11 Claims. (Cl. 33—194)

1. A door template comprising a central upright strip of wood adapted to rest on the floor, a first crossarm of plywood having its front face fixed to the rear face of said upright strip near the top thereof, a second crossarm of plywood having its front face fixed to the rear face of said upright strip near the bottom thereof and spaced slightly above the bottom thereof so as to be elevated above the floor when the bottom of said strip rests on the floor, guiding strips fixed to and projecting forwardly from the front face of each of said crossarms to form guide channels between pairs of parallel guiding strips, feeler strips movable lengthwise along the respective guide channels so as to project one end of each strip to a variable extent beyond the crossarm on which it is mounted, and a clamping screw for clamping each feeler strip in a position in which it is adjusted in its channel, said channels and feeler strips being so placed that one feeler strip may project laterally beyond each end of each crossarm, two feeler strips may project upwardly beyond the upper edge



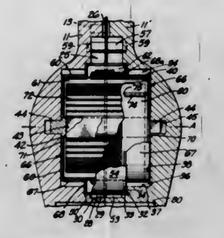
of the upper crossarm, one near each end thereof, and two feeler strips may project downwardly beyond the lower edge of the lower crossarm, one near each end thereof.

3,284,913
THREAD RING GAUGE WITH FLUSH PIN
Donald M. Satava, Wickliffe, Ohio, assignor to The Pipe Machinery Company, Wickliffe, Ohio, a corporation of Ohio
Filed Feb. 24, 1964, Ser. No. 346,849
6 Claims. (Cl. 33—199)



1. A thread ring gauge comprising an annular body having a central internally threaded gauging bore extending endwise through the body, slots extending through the body endwise and from the bore outwardly, at least one of the slots terminating at its outer end in a bore extending endwise through the body and offset from the central bore, another of the slots extending through the outer periphery of the body, adjusting means in the body and operable to expand and contract the body by stressing the body in directions transversely of the length of said other slot, a rigid supporting member, connecting means detachably connecting the member in fixed position relation to the body against opposite ends of the body, selectively, with a portion of the member overhanging that end of the central bore which is at that end of the body at which the member is disposed, and a flush pin mounted in said portion for movement endwise of its axis and of the central bore and having a portion extending axially into said bore at the end of said bore at which the member is disposed.

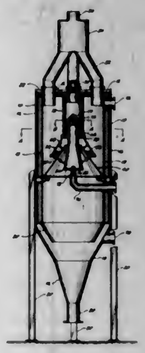
3,284,914
LINE-RETRIEVING PLUMB BOB
Melvin S. Kruse, 9525 Holbrook, Pico Rivera, Calif.
Filed May 18, 1964, Ser. No. 368,017
4 Claims. (Cl. 33—217)



1. A line-retrieving plumb bob including in combination:
- a housing made up of mated housing elements engaged in a longitudinal plane and cooperating with each other in providing a reel chamber having a pivot axis transverse to said longitudinal plane, said housing having a line-receiving opening communicating with said reel chamber through a line-receiving zone,
- each housing element providing a line socket opening on said longitudinal plane, a friction-band socket axially outward of and of smaller diameter than such line socket, and a reel socket of still smaller diameter axially outward of said friction-band socket, each of said sockets being concentric with said pivot axis, said friction-band socket providing circumferential and radial walls;
- a friction band confined in said friction-band sockets forming with said line sockets an open-ended line-receiving passage around said friction band bounded inwardly by a circular friction surface provided by the outer surface of said friction band;
- a reel having a line wound thereon, said reel having axially-spaced ends of smaller diameter than said reel sockets and extending therein, said reel having axially-spaced outwardly-extending flanges extending outwardly into said friction-band socket respectively adjacent and along said radial walls thereof, the space between said outwardly-extending flanges forming a line space, said reel providing a spring space radially inward of said line space; and
- a spiral spring in said spring space having its inner end anchored to said housing and its outer end connected to said reel, said spring biasing said reel to turn about said axis in a line-retrieving direction, said line extending from said line-receiving opening along said line-receiving passage from end to end thereof in frictional engagement with said circular friction surface and thence into said line space of said reel.

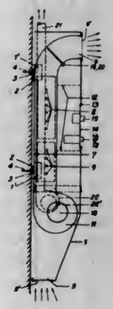
3,284,915
PROCESS AND APPARATUS FOR THE TREATMENT OF SOLIDS IN VERTICAL KILNS
Clyde H. O. Berg, 5 Euclid Ave., Long Beach, Calif.
Filed Dec. 18, 1963, Ser. No. 331,421
17 Claims. (Cl. 34—10)

1. A process for treating solids with gases which comprises:
- passing solids downwardly in the form of a dense bed from a solids feed zone successively through a solids preheating first countercurrent gas-solid contacting zone, a solids heating cocurrent gas-solid contacting zone, and a solids cooling and first treating fluid preheating second countercurrent gas-solid contacting zone;
- passing a first treating fluid upwardly through said second countercurrent gas-solid contacting zone;
- generating a hot flue gas;
- mixing said stream of hot gas with a recycle fluid stream out of contact with said solids to form a mixed treating fluid;
- passing a recycle portion of said mixed treating fluid stream cocurrently with said solids in said cocurrent gas-solid contacting zone;
- passing a withdrawal portion of said mixed treating fluid stream upwardly from said cocurrent gas-solid contacting zone through said first countercurrent gas-solid contacting zone;



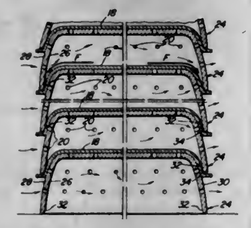
- mixing said first treating fluid after passage through said second countercurrent gas-solid contacting zone with said recycle portion of said mixed treating fluid after passage through said cocurrent gas-solid contacting zone to form said recycle fluid stream;
- circulating said recycle fluid stream toward said stream of hot flue gas out of contact with said solids;
- removing said withdrawal portion of said mixed treating fluid from the top of said first countercurrent gas-solid contacting zone; and
- withdrawing treated solids from the bottom of said second countercurrent gas-solid contacting zone.

3,284,916
APPARATUS FOR DRYING LAUNDRY
Benjamin Dall'O, Lessingstrasse 9, Zurich, Switzerland
Filed Mar. 31, 1965, Ser. No. 444,335
9 Claims. (Cl. 34—15)



1. An installation for drying laundry comprising in combination a wallchest-like housing, a timer-controlled recirculation fan disposed in said housing in a duct provided with heating means, the air-inlet of said duct being situated on the housing underside and the air-outlet being situated on the housing topside above the laundry to be dried, further comprising a waste-air fan in said housing having an air-inlet on its underside and an air-outlet leading outside, electric circuit means including said recirculation and said waste-air fans, and a switching apparatus adapted to automatically control the switching operations.

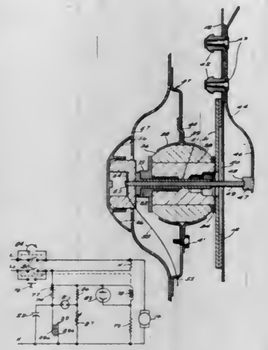
3,284,917
WARPAGE CONTROL IN MOLDED PULP ARTICLES
James E. Foote, Westport, Conn., assignor to Diamond International Corporation, a corporation of Delaware
Filed June 12, 1963, Ser. No. 287,378
12 Claims. (Cl. 34—21)



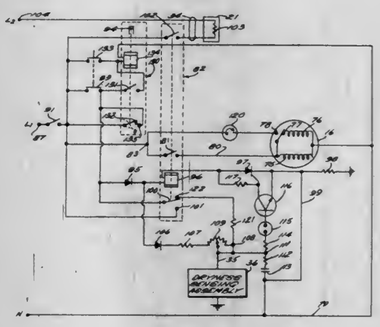
1. A method of assembling free dried pulp molded articles and drying forms for the form drying of the pulp molded articles to prevent warping comprising placing the concave surface of a pulp molded article adjacent the complementary convex surface of a thin perforated drying form, placing a second drying form over the article to contact and apply a pinching force to the article along only a small area of the convex surface of the article adjacent its extreme end to exert a stretching force along the surface of the article, and assembling in a stack a plurality of forms and articles in alternating relationship.

3,284,918
SENSING BANDS AND COMMUTATOR SYSTEM FOR DRYERS
Ronald J. Malecki and Douglas J. Walker, St. Joseph, and Donald E. Janke, Benton Harbor, Mich., assignors to Whirlpool Corporation, Benton Harbor, Mich., a corporation of Delaware
Filed Feb. 12, 1964, Ser. No. 344,501
3 Claims. (Cl. 34—45)

1. A dryer comprising, a casing having a rear bulkhead, a hub connected to said bulkhead, said hub having an insulated interior surface defining an aperture through said hub, a drum journaled for rotation on said hub, said drum having a peripheral wall for confining materials to be dried in the drum, insulator means in the wall of the drum, at least two circumferentially continuous sensing bands carried on said insulator means in said drum in spaced relationship to one another, conductor means connecting one of said bands to ground, said conductor means comprising a rod connected to the other of said sensing bands and said rod being disposed at the axis of said drum and extending through said aperture of said hub and through said bulkhead, a spring arm having a contact member engaging said rod, thereby to form a commutator, insulator means for mounting said spring arm on said bulkhead, and circuit control means including a first circuit for energizing the heaters and the drive motor of the dryer, a second circuit including said sensing bands, a resistor, a capacitor, and a neon light, a third circuit including relay-operated switch means for controlling said first circuit, and a fourth circuit including a thermostat and said drive motor and control means responsive to said neon light for controlling the energization of said relay-operated switch, said sensing bands and the resistor operating as a voltage divider so that the voltage stored in said capacitor that is applied to the neon light increases as the clothes dry and become less conductive, said control means operating said relay-operated switch means in response to firing of said neon light for opening said first circuit, whereupon said drive motor will continue to operate through said thermostat until a predetermined cool-down temperature is obtained.

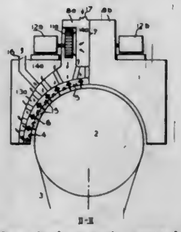


3,284,919
DRYNESS CONTROL FOR DRYER
William H. Gartley, St. Joseph, and Donald E. Janke, Benton Harbor, Mich., assignors to Whirlpool Corporation, Benton Harbor, Mich., a corporation of Delaware
Filed Feb. 28, 1964, Ser. No. 348,238
5 Claims. (Cl. 34—48)



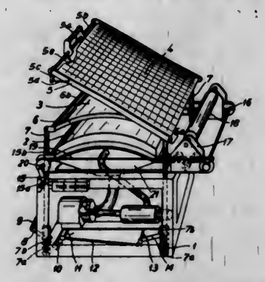
1. In a dryness control circuit for a dryer having heating means and including a dryness measuring and timing circuit arranged to produce a first output signal following a cycle determined by a time dependent on the dryness of the materials being dried,
- means responsive to said first output signal for recycling said circuit at least once,
- and means responsive to a second output signal from said circuit subsequent to the first output signal therefrom for reactivating said heating means.

3,284,920
APPARATUS FOR DRYING WEB MATERIAL
Raimo Ilmari Häyrinen and Lauri Jokihaara, Pirkkala, Haikka, Finland, assignors to Valmet Oy, Helsinki, Finland
Filed Jan. 21, 1964, Ser. No. 339,169
3 Claims. (Cl. 34—122)



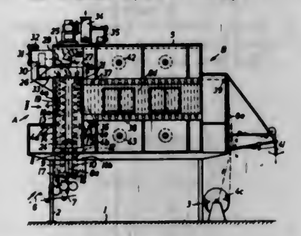
1. Apparatus for drying web material comprising, in combination, means for feeding a web of a given width in a given direction; a hood having an open outlet end arranged closely adjacent to and facing one surface of the web fed in said given direction, said open outlet end of said hood having a width substantially equal to that of said web and said outlet end extending longitudinally in said given direction; a first partition extending longitudinally through said hood and dividing the latter into two longitudinally extending halves; a plurality of additional partitions arranged spaced from each other in said longitudinally direction and extendling transverse to said first partition and dividing each of said halves in a plurality of sections; and a plurality of blower means each cooperating with one of said sections for individually blowing a drying medium through the respective section on to said surface of said web while the latter is fed in said given direction, the rotational speed of each of said blower means being individually adjustable so that the amount of drying medium passing through each section on to said web is adjustable independent of the amount passing through the other sections.

3,284,921
PRINT DRIER
Heinrich Gerster, Industriestrasse 4, Bruchsal-Karlsdorf, Germany
Filed Mar. 13, 1963, Ser. No. 264,857
10 Claims. (Cl. 34—143)



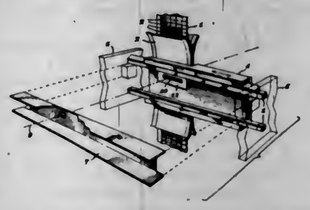
1. A print drier comprising heating means having a stationary upper heating surface, a dry-plate for drying photographic prints and the like thereon, a clamping frame pivotably connected to said dry-plate so as to be pivotable relative thereto, a drying cloth connected to said clamping frame, and means for raising and lowering said dry-plate together with said clamping frame and said drying cloth as a unit relative to said heating surface.

3,284,922
APPARATUS FOR DRYING WEBS OF TEXTILE MATERIAL
Rolf Goldenberg, Remscheid-Lennep, Horst Kaubke, Wuppertal-Ronsdorf, and Erich Hilgeroth, Remscheid-Luttringhausen, Germany, assignors to Maschinenfabrik Friedrich Haas G.m.b.H. & Co., Remscheid-Lennep, Germany
Filed Sept. 21, 1964, Ser. No. 397,895
Claims priority, application Germany, Sept. 21, 1963, M 58,295
18 Claims. (Cl. 34—156)



18. An apparatus for drying textile materials, particularly for drying webs of thermosol dyed materials, comprising a drier housing defining an elongated shaft having a lower end and an upper end; conveyor means for advancing a web of textile material through said shaft; first heating means provided in said housing for subjecting the travelling web to the action of radiated heat; blower means for introducing a flow of air at least into the lower end of said housing; and second heating means provided in said housing for heating said air whereby to cause a thermal convection effect resulting in flow of air toward said upper end and thereby subjecting the travelling web to the action of convection heat.

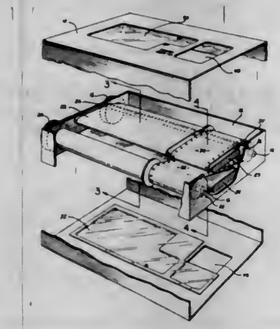
3,284,923
TEACHING MACHINE WITH PROGRAMMED MULTIPLE TRACK FILM
John C. L. Leslie, Albuquerque, N. Mex., assignor to Educational Research Associates, Inc., Albuquerque, N. Mex., a corporation of New Mexico
Filed July 16, 1964, Ser. No. 383,070
3 Claims. (Cl. 35—8)



1. In a teaching device deriving from a film strip differing sequences of images responsive to selection of desired subject matter by individual students, apparatus adapted to present a longitudinal film strip divided into a plurality of side-by-side channels, each channel disposed along the length of the film strip with a plurality of sequential frames occupying adjacent frame positions sequentially presented along its length, the film strip being subdivided along its length into a plurality of segments with a plurality of frames therein, in which each channel presents in the plurality of frames within the segment an instructive program differing in content from the plurality of frames within the segments of the other corresponding channels, comprising in combination, selective control means for advancing said film strip frame

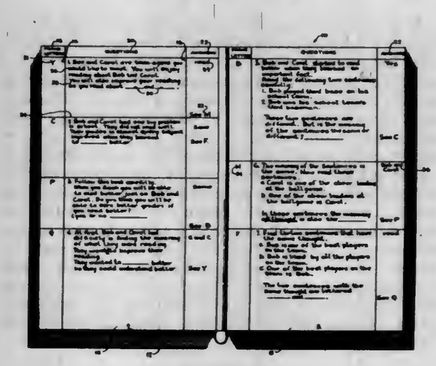
by frame in a single direction for viewing all sequential frame positions in sequence along the length of the film, channel selecting means comprising a movable shuttle with a single channel viewing aperture operable to move between said channels to uniquely select at each frame position a single one of said channels, manual position selection means for operating the movable shuttle at the end of each of said segments to that unique one of the channels in which the frames within the next one of the film segments are to be sequentially presented, whereby a complete variable instruction program is presented in sequential frame by frame order from a viewing path which can move from channel to channel under operator control at the end of each said film segment.

3,284,924
TEACHING AID
Morgan D. Parmenter, 56 Glencairn Ave., Toronto, Ontario, Canada
Filed Mar. 8, 1965, Ser. No. 437,816
2 Claims. (Cl. 35—9)



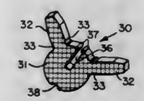
1. An educational device comprising a housing, a program roll having questions and answers in serial arrangement thereon, a first guide means for said program roll, continuous answer belt means upon which answers to questions on said program roll can be written, a second guide means for said continuous answer belt means, operating means for moving said program roll over said first guide means, said first guide means and said second guide means being operatively inter-connected whereby said operating means as it moves said program roll over said first guide means simultaneously moves said answer belt means over said second guide means, a first window opening in said housing to serially expose questions and answers on said program roll, a second window opening in said housing through which answers to questions appearing on said program roll can be written on said answer belt means and compared for correctness, and erasure means on said second guide means intermediate said second window for erasing answers written on said answer belt means through said second window, said answer belt means including a composite belt comprised of a first sheet having a non-drying, light-tack, coloured adhesive coating and a translucent writing screen, said first sheet being adapted to adhere to said writing screen where the two layers are in overlying relation to each other and where scribing pressure is applied to the screen, said coloured adhesive being visible through said screen where it is caused to adhere to said screen whereby one can make a scribed line visible through said screen, said screen being adapted to break adhesive contact with said first sheet whereby to erase said scribed line from view through said screen and in which said erasure means comprises means for temporarily separating said first sheet and said screen to break any adhesive contact that may exist between them and erase any scribed lines apparent from such adhesive contact.

3,284,925
PROGRAMMED SELF-INSTRUCTION AND QUIZ APPARATUS
Bernard E. Leventhal and Lawrence H. Feigenbaum, New York, N.Y., assignors to Globe Book Company, Inc., a corporation of New York
Filed June 24, 1964, Ser. No. 377,559
6 Claims. (Cl. 35—9)



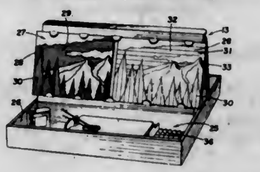
5. Programmed self-instruction apparatus comprising, in combination, at least one page having a plurality of individual frame sections, each of said frame sections having identifying frame indicia, a question, an answer reference note to another frame section on said page, and an answer in another frame section on said page applying to said question, and said reference note in said frame section on said page referring to said other frame section.

3,284,926
MODEL SET FOR REPRESENTING STRUCTURES OF CHEMICALS
John C. Godfrey, East Syracuse, N.Y., assignor to Bronwill Scientific Division of Will Scientific, Inc., Rochester, N.Y., a corporation of New York
Filed Nov. 14, 1963, Ser. No. 323,803
14 Claims. (Cl. 35—18)



1. A set for making models of molecular structures comprising a plurality of pieces, each of which is flat and has plane parallel sides, and each of which has at least one circular arcuate portion and at least one peg projecting radially therefrom, certain pieces having slots therein which extend radially of the axis of said arcuate portion, and which have parallel plane sides and a width equal to the thickness of other pieces, and which extend to said axis, to interfit with other like pieces to represent molecules composed of a plurality of like atoms.

3,284,927
PICTURE PAINTING KIT
Gilbert Alexander Milne, 32 Kingsway Crescent, Toronto, Ontario, Canada
Filed July 31, 1963, Ser. No. 298,991
2 Claims. (Cl. 35—26)



1. A full colour painting kit for the untrained production of a fully coloured painting of one or more subjects with artistic license and comprising in combination: a paint box structure and a moveable easel panel therein; at least two colour reproductions of the same image of each of said subjects, one of said reproductions being fully colour saturated in all areas thereof, the other of said reproductions being substantially unsaturated as to colour in each of the corresponding colour areas thereof; separate painting media consisting of at least the primary colours, white and black, adapted to be mixed to form any of the colours of said colour areas; discrete instruction means for each subject image describing a preferred manner for mixing and applying said painting media to said unsaturated reproduction; and means on said easel panel for holding a saturated and an unsaturated colour reproduction of the same subject in side by side relationship thereof.

3,284,928
POSITIONAL COMPUTER FOR BOWLING
Jerry O. Kelley, Lake Ozark, Mo., assignor of one-third to Marlin Elecctric Company, Horicon, Wis., a corporation of Illinois, and one-third to Donald J. Moloney, Wilmette, Ill.
Filed May 18, 1964, Ser. No. 368,165
8 Claims. (Cl. 35—29)

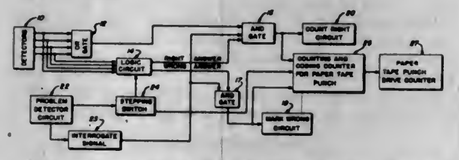


7. In a position indicating computer for bowling, the combination with means depicting a representation of a pin array and a linear array of ball-delivery spotting marks guidingly aligned with said pin array, of a foot-position indicator movable in parallelism with said array of spotting marks; a ball-entry index movable in an arcuate path before the pin array, and manually-operable actuating means for simultaneously moving said index and said foot-position indicator.

3,284,929
TEST GRADING MACHINE
Leo L. Azure, Jr., Richland, Wash., assignor, by mesne assignments, to Automata Corporation, a corporation of Washington
Continuation of application Ser. No. 368,612, May 19, 1964. This application Apr. 6, 1966, Ser. No. 540,711
16 Claims. (Cl. 35—48)

1. An apparatus for grading answers to problems of the multiple choice type, wherein the answer to each problem is indicated on a test sheet having answer indication areas for each problem, the number of indication areas for each problem corresponding to the number of answer choices for the problem, said apparatus comprising in commbination:

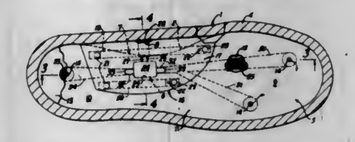
storage means for storing the correct answers to the problems,



means for comparing each answer indicated on a test sheet with the corresponding correct answer in said storage means, and

means responsive to said comparing means for marking the test sheet in the proximity of the indication area corresponding to the correct answer for each problem only when said comparing means determines that an incorrect answer to the problem is indicated on the test sheet.

3,284,930
FOOTWEAR VENTILATING DEVICE
Gerald L. Baldwin, 606 E. State St., Milwaukee, Wis.
Filed Oct. 23, 1963, Ser. No. 318,253
4 Claims. (Cl. 36—3)



1. A ventilating structure for footwear having a sole and an upper foot enclosing body, comprising

(a) a pump and air distributing enclosure forming a portion of the sole construction and having an air pump means disposed to the inner side edge of the sole and restricted to alignment with the inner shank portion thereof,

(b) an air inlet means secured to the innermost edge of the air pump means and having valve means limiting air flow into the pump means only,

(c) air discharge passageways formed in the enclosure and extending longitudinally from the pump means and terminating in upwardly directed openings in the enclosure and having valve means permitting air flow from the pump means,

(d) resilient means located in the inner shank portion and overlying said pump chamber and operable to actuate said pump means in response to the movement of the arch of the user, and

(e) a self-supporting mesh filling said air discharge passageways to prevent collapse of said enclosure into said passageways.

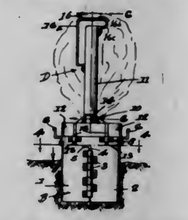
3,284,931
SPORT SHOE
Adolf Dassler, am Bahnhof, Herzogenaurach, near Nurnberg, Germany
Filed Oct. 18, 1963, Ser. No. 317,314
Claims priority, application Germany, Aug. 14, 1963, D 27,379
1 Claim. (Cl. 36—54)

In a shoe, particularly in a soccer shoe, an upper having an elongated lacing aperture bounded by two facing edges and having a closed lower end, said upper having adjacent said facing edges lacing regions; an elongated tongue composed of an elongated padded central portion having a lower end and opposite edges and a substantially U-shaped unpadded portion secured to said elongated padded central portion along said lower end and said opposite edges thereof and being substantially thinner than said padded central portion of said tongue; and means



for securing said unpadded U-shaped portion in the region of said lower end of said padded central portion to the inner face of the upper in the region of said closed lower end of said lacing aperture so that said padded central portion of said tongue underlies said lacing aperture and said unpadded U-shaped portion underlies mainly said lacing regions of said upper.

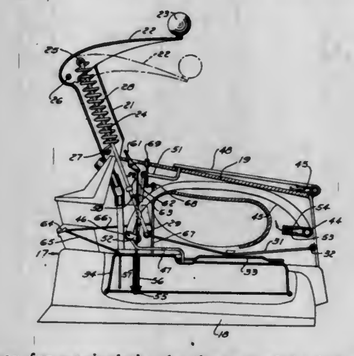
3,284,932
SHRUB AND TREE BALLING AND TRANSPLANTING IMPLEMENT
Edwin A. Wendlandt, P.O. Box 184, Randolph, Wis.
Filed Dec. 7, 1964, Ser. No. 416,209
11 Claims. (Cl. 37—2)



1. A shrub and tree balling and transplanting implement, comprising an elongate, tubular body having open top and bottom ends and divided longitudinally into sections, means coupling said sections together for ready separation thereof, the body sections having sharp bottom edges for facilitating forcing the body into the earth in encasing relation to a plant, a driving means, means coupling said driving means with the top of the body, a root cutter mechanism, and means for removably mounting said mechanism on the side of said body for operation in a plane across the bottom end of the body and about an axis substantially parallel to said tubular body and means for securing said mounting means including an operator extending from the top of said body for engaging or disengaging said mounting means from said body.

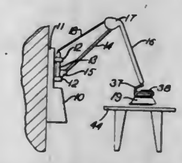
3,284,933
IRON LIFTER
Edwin E. Foster, Austin, Tex., assignor to Majik-Ironers, Inc., Austin, Tex., a corporation of Texas
Filed Feb. 10, 1964, Ser. No. 343,884
11 Claims. (Cl. 38—30)

1. An iron lifter comprising, in combination with an iron having a hollow handle and a support, means suspending the iron from the support for vertical movement of the iron relative to the support, a spring acting on the connecting means to raise the iron relative to the support, pressure responsive means connected to the connecting means to oppose the spring thereby to lower the iron, a compressed air supply conduit connected to the pressure responsive means to supply air under pressure thereto for actuating the same, a control valve in the conduit, an operating member for the valve mounted on



the iron for manipulation by the user of the iron, and a discharge connection from the conduit opening into the interior of the iron handle for circulating air through the iron handle to cool it.

3,284,934
IRONING APPARATUS
Edwin E. Foster, Austin, Tex., assignor to Majik-Ironers, Inc., Austin, Tex., a corporation of Texas
Filed Aug. 9, 1965, Ser. No. 478,343
5 Claims. (Cl. 38—30)

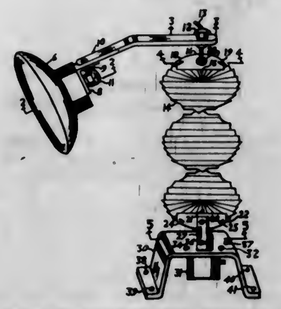


1. Iron lift apparatus comprising a vertically elongated support means, a rigid arm pivoted to the support means below the top thereof on a horizontal axis, a rigid forearm pivoted to the free end of the arm on a horizontal axis, the forearm including an elongated main portion extending in one direction from its pivotal connection to the arm and a head portion projecting a relatively short distance in the other direction from said pivotal connection, a tension element connecting the head portion to the upper part of the support means above the pivotal connection of the arm thereto, and connecting means at the free end of the forearm main portion for supporting an iron.

3,284,935
SPIRAL DISPLAY APPARATUS
Ralph Kutschmende, 30 Stagg St., Brooklyn, N.Y.
Filed Oct. 21, 1964, Ser. No. 405,499
10 Claims. (Cl. 40—33)

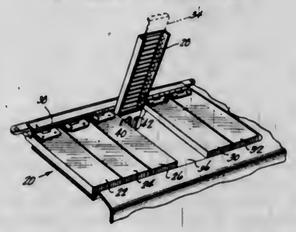
1. In spiral display forming and applying apparatus, a companion pair of upper support frame comprising a swivel support frame and a fastening to window means support member disposed for coaction with said upper support frame having a conical confronting surface disposed in substantially parallel relation for coaction with a surface of an upstanding glass window therebetween, the base surface of the other said companion member being disposed in substantially parallel relation with said upper support frame for setting one arm of a spiral display in support position and connecting the lower arm of said spiral in drive position as the latter advances be-

tween said upper and lower coacting members, said fastening to window means having its lower peripheral edge in a plane disposed at an oblique angle with respect to the confronting surface of said fastening means for coaction therewith and said formed swivel support frame on a horizontal plane relation for setting the arm of adjacent folded spiral to a support hook, said plane of



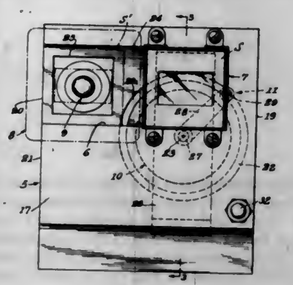
the peripheral edge of said window fastening means and the main drive base defining therebetween spacing providing for the extensive stretch fitting of said pleated spiral and rapidly fastening the toe portion of formed spiral arms lower extremity to fastening means of the main drive base disposed downwardly of said spiral at substantially a common level therewith to said upper support frame for setting said spiral into coacting unison.

3,284,936
CHECK LIST HOLDER
Dean B. Baumunk, Palos Verdes Estates, Calif., assignor to Douglas Aircraft Company, Inc., Santa Monica, Calif.
Filed Feb. 11, 1966, Ser. No. 526,739
10 Claims. (Cl. 40—61)



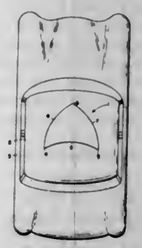
1. A check list holder device comprising:
a housing-plate structure including
a plate member having a plurality of cam receiving notches,
a plurality of spring elements, and
cam retaining means cooperating with said spring elements, said spring elements being respectively aligned with said notches; and
a plurality of cam-flap elements each including
a two-position cam, and
a cover flap, said cam-flap elements being positioned with said flaps normally adjacent a viewing surface of said plate member,
said plate member, spring elements, cam retaining means and cam-flap elements being assembled whereby said cams of said cam-flap elements are respectively positioned in said notches for operation between said cam retaining means and a corresponding one of said spring elements.

3,284,937
SLIDE VIEWER
John H. Weggeland, Los Angeles, Calif., assignor to Better Engineering, Inc., Hollywood, Calif.
Filed Aug. 10, 1964, Ser. No. 388,544
6 Claims. (Cl. 40—78)



1. A slide viewer comprising:
(a) a top having a slideway with a bottom wall adapted to support a stack of transparency slides at one end thereof,
(b) a viewing station being provided at the other end of the slideway, and
(c) motor-driven means to push the bottom slide of said stack along the slideway to the viewing station and leave the slide thus moved,
(d) said means comprising a member that is moved by the motor in a closed, continuously circular path, the slide being engaged and pushed by said member during part of said movement and the member, during the remainder of its movement, moving toward the next bottom slide of the stack to push the same, while the slide at the viewing station is at rest.

3,284,938
DISPLAY ADVERTISING DEVICE COMBINED WITH AUTOMOTIVE VEHICLE BODIES
John M. Diehl, 5729 Elder Place, and Rudolph J. Kamenick, 1710 Kenneth St., both of Madison, Wis., and Russell Lee Johnson, 837 Lynch Ave., Appleton, Wis.
Filed Aug. 25, 1965, Ser. No. 482,551
14 Claims. (Cl. 40—129)



1. An advertising display device for attachment to the top of an automotive vehicle comprising:
three substantially rectangular panels, each panel having two vertical edges,
vertical edges of each of two adjacent panels adjoining at each corner of the device,
two of said panels disposed to face outwardly and forwardly at about an average general angle of 60° to the longitudinal axis of the vehicle,

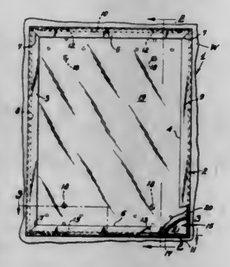
the third of said panels disposed at the rear of the device to extend transversely with respect to the vehicle,
each of said panels being curved throughout its length to intersect a horizontal plane in a curved line.

3,284,939
MOUNTING FOR RECEIVING OBJECTS TO BE FRAMED
Arnold Perrot, Martiweg 4, Nidau, near Biel, Switzerland
Filed July 7, 1964, Ser. No. 380,772
Claims priority, application Switzerland, July 12, 1963, 8,723/63
4 Claims. (Cl. 40—152)



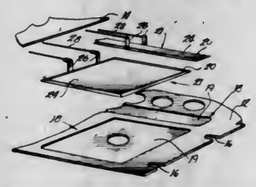
1. In a collapsible, hinged two-part mounting for receiving flat objects to be framed, a first mounting part comprising hinge-pins, a second mounting part comprising hinge-bearing pans supporting said hinge-pins, said hinge-bearing pans being oblong in a direction across the hinge-axis of said hinge-pins to allow movement of said mounting parts relatively to each other in the mounting plane in their collapsed position.

3,284,940
THEFTPROOF FRAME
Bill W. Putman, Fort Smith, Ark., assignor to Meek Manufacturing Company, Inc., a corporation of Arkansas
Filed May 18, 1964, Ser. No. 368,050
5 Claims. (Cl. 40—152.1)



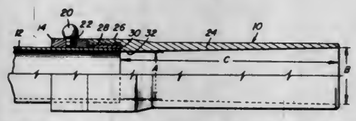
1. A frame comprising: a frame member having a flange portion extending rearwardly from the outer edges thereof; a mounting plate substantially filling the cross-sectional area within said frame, and having forwardly extending resilient flange means thereon terminating at the forward end thereof in outwardly projecting hook means; latch means disposed on the inner surface of and completely concealed by said flange portion for resilient cooperation with said hook means, said hook means being engageable behind said latch means when said frame member is mounted on said mounting plate, and the interengaged portions of said hook means and said latch means being shaped so that said frame member cannot be moved forwardly away from said mounting plate after said hook means and said hatch means are engaged, whereby said hook means and said latch means cooperate to permanently lock said frame member and said mounting plate in assembled relation; and means operable from the front of said mounting plate to secure said mounting plate in flush relationship against a supporting surface.

3,284,941
ILLUMINATED PANEL AND METHOD FOR MAKING SAME
John J. Kaup, Chicago, Ill., assignor to Felsenthal Instruments, Inc., Chicago, Ill., a corporation of Illinois
Filed Sept. 19, 1963, Ser. No. 309,977
4 Claims. (Cl. 40—130)



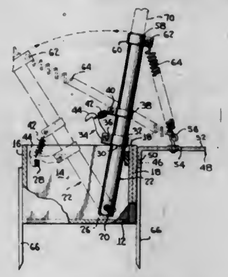
4. An illuminated instrument panel comprising, in combination, a plastic light transmitting front plate, translucent indicia on the front plate for back lighting, means defining a plurality of elongate recesses in the rear of the front plate and behind translucent indicia, a plurality of elongate electroluminescent lamps proportioned to nest within the recesses, electrical leads extending from said lamps, a coating of red phosphorous between said lamps and the indicia, circuit wires in electrical connection with the lamp leads, potting resin embedding the circuit wires and lamps in the recesses, and a back plate interfacially secured to and coextensive with the front plate, thereby sealingly embedding the electroluminescent lamps for backlighting the instrument panel indicia.

3,284,942
SHOTGUN PATTERN CONTROL TUBE
William W. Moseley, 913 N. 11th Ave., Pensacola, Fla.
Filed Aug. 26, 1965, Ser. No. 482,742
4 Claims. (Cl. 42—79)



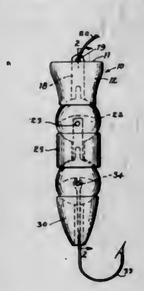
1. An attachment for a shotgun barrel having a muzzle end comprising a tubular member adapted to be attached to the shotgun in alignment with and as an extension of the muzzle end of the barrel, said tubular member having an internal bore extending throughout the length thereof with the end of the bore adjacent the muzzle end of the shotgun barrel having a diameter substantially equal thereto and the internal diameter of the bore of the tubular member uniformly increasing throughout the length thereof with the cross-sectional configuration of the internal bore being identical throughout its length, a cylindrical adapter adapted to be attached to the muzzle end of the shotgun barrel, said adapter having a threaded portion of reduced diameter, said tubular member having an internally threaded portion of increased diameter as compared with the internal bore thereof for screw-threaded engagement with the adapter, said tubular member having a length within the range of three-quarter inch to six inches and uniformly increases in diameter from .001 inch per linear inch to .01 inch per linear inch.

3,284,943
FISH SNAGGING FISH HOLDER
William Wedel, 405 S. 18th St., Fort Pierce, Fla.
Filed Oct. 1, 1964, Ser. No. 400,773
3 Claims. (Cl. 43—15)



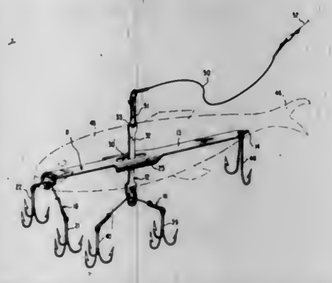
1. A fishing pole holder comprising a box having an open top, a transversely disposed shaft secured in opposed walls of said box inwardly of and spaced below the open top of said box, an upright tube disposed within said box and having the portion adjacent the lower end connected to said shaft for arcuate swinging movement of said tube perpendicularly of said shaft, said tube being adapted to receive through the open upper end thereof the butt end portion of a fishing rod for support of said rod in said tube, a keeper bar disposed above said shaft and in spaced relation with respect to said tube and supported by said box, a latch element carried by said tube and engageable with said keeper bar upon execution of swinging movement of said tube in one direction, spring means operable to effect swinging movement of said tube in the opposite direction and other spring means operable to release said latch element from said keeper bar upon execution of further movement of said tube in said one direction responsive to a pulling movement on the line of said fishing rod supported in said tube.

3,284,944
FISHING LURE
Clayton C. Settle, Columbus, Ind.
(2250 Leonard Springs Road, Bloomington, Ind. 47401)
Filed Aug. 7, 1964, Ser. No. 388,125
4 Claims. (Cl. 43—42.15)



1. A fishing lure, comprising, a head, a spherical segment, a tongue protruding from the spherical segment through a concentric bore formed in the head, a cylindrical segment having concave ends to embrace one end of said spherical segment and one end of a successive similar spherical segment, a tongue protruding from said successive spherical segment through a bore formed through the cylindrical segment into a slot formed in said first spherical segment, eyelets formed on the end of the tongues, pins passing through the spherical segments transversely through the slots to engage through and retain the eyelets, and a tail having a bore therethrough to receive the shank of a fish hook, said shank having an eyelet pinned within the slot formed in said successive spherical segment.

3,284,945
BAIT HOLDER
Louis A. Kurtis, 8573 Pinehurst, Detroit, Mich.
Filed Nov. 9, 1964, Ser. No. 409,764
2 Claims. (Cl. 43—44.2)

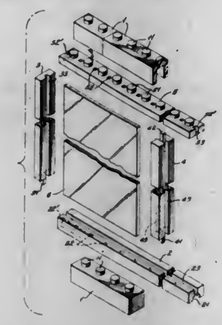


1. A natural bait holder for holding bait fish such as smelt or the like while still fishing, said holder comprising a first rigid, elongated pin having a sharpened end for insertion through the bait fish in a longitudinal direction, a second rigid, elongated pin for insertion through the bait fish in an upright transverse direction, one of said pins having a hole through an intermediate portion thereof receiving the other pin at a point adjacent the center of gravity of the bait fish, said second pin having upper and lower ends, said upper end including a sharpened portion, hook means connected to at least one end of said first pin and to said lower end of said second pin, and said upper end of said second pin including aperture means for receiving fish line connection means whereby said second pin is retained in the bait fish and the bait fish is supported above its center of gravity in a horizontal position while still fishing.

3,284,946
TOY BUILDING STRUCTURE INCLUDING A FRAMED WINDOW
Godtfred Kirk Christiansen, Billund, Denmark, assignor to Interlego A.G., Zug, Switzerland
Filed Mar. 23, 1964, Ser. No. 354,011
Claims priority, application Denmark, Mar. 26, 1963, 1,365/63
3 Claims. (Cl. 46—19)

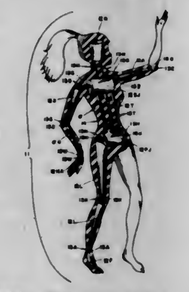
1. In a toy building set of the type including a plurality of hollow open-faced building elements comprising blocks, each said block having on the upper face projections proportioned for frictional engagement with the open faces of other superimposed ones of said building elements, a window structure comprising a lower frame member having a groove means extending longitudinally thereof for engaging projections of subjacent ones of said building elements and with end and intermediate recesses spaced longitudinally along said member, adjacent ones of said intermediate recesses being spaced from each other by the same distance as the said projections of the building elements, an upper frame member provided with projections corresponding to the said projections of the building elements, a pair of posts adapted to form the side elements of said frame, each of said posts having a projection means on at least one of its ends for engagement in said recesses

of the other frame members, the said lower and upper frame members and posts being provided with longitudinal groove means for engaging the edges of a plate whereby



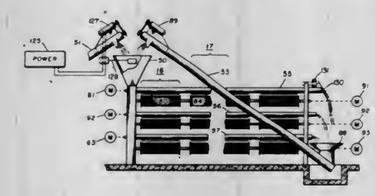
said plate forms a window pane framed by the upper frame member, the lower frame member and the two posts.

3,284,947
ADJUSTABLE DOLL HAVING DEGASSED MALLEABLE CORE
Frank L. Dahl, 5248 W. 119th Place, Inglewood, Calif.
Filed May 17, 1965, Ser. No. 456,222
13 Claims. (Cl. 46—156)



1. An adjustable doll comprising: interior skeleton-simulating structural supporting framework means; a flesh-simulating outer-body-defining means effectively enclosing, enrobing, and being carried by and around said interior skeleton-simulating structural supporting framework means in an exterior doll configuration simulating a desired appearance, said skeleton-simulating supporting framework means being provided with at least one relatively yieldably manually deformable and bendable integral limb-joint-simulating means connected to the remainder of said framework means at a desired limb-joint-simulating location, said integral limb-joint-simulating means being deflectable in a manner simulating articulation or movement of a real limb joint in response to the external application of manual force thereto in excess of a predetermined magnitude; said skeleton-simulating supporting framework means being also provided with a neck-joint-simulating means and a spine-simulating means, each comprising a plurality of laterally spaced, longitudinal, relatively yieldably manually deformable and bendable members having longitudinal directional components which are substantially parallel, said neck-joint-simulating means being provided at the upper end thereof with and terminally connecting to a first relatively rigid skeleton-simulating portion simulating the rigid head bone portion of a skeleton and being provided at the bottom with and terminally connecting to a second relatively rigid skeleton-simulating portion simulating the rigid bony shoulder portion of a skeleton, said spine-simulating means being connected at the top thereof to said second relatively rigid skeleton-simulating portion and said spine-simulating means being provided at the bottom with and connecting to a third relatively rigid skeleton-simulating portion simulating the rigid pelvis portion of a skeleton, said neck-joint-simulating means and said spine-simulating means being effectively bendable, respectively, between said first and second rigid skeleton-simulating portions and said second and third rigid skeleton-simulating portions, in two different manners simulating normal neck bending movement and normal spine bending movement, respectively, and, in addition, being effectively torsionally deformable therebetween for simulating head and neck twisting movements, and spine-twisting movements of a skeleton in a manner involving substantial relative bending of said plurality of deformable members rather than pure torsion thereof.

3,284,948
CONTINUOUS HYDROPONIC SYSTEM
Leslie B. Kyle, Indianapolis, Ind., assignor to Hydroponics, Inc., Indianapolis, Ind., a corporation of Indiana
Filed Aug. 24, 1964, Ser. No. 391,660
4 Claims. (Cl. 47—1.2)

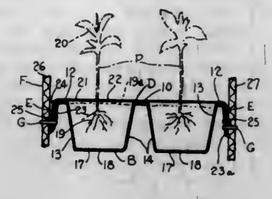


3. A tiered hydroponic system which comprises:
(a) a plurality of flexible grain-supporting belts supported for movement over elongated paths one above the other,
(b) a grain hopper at one side and at one end of said belts,
(c) a plurality of feed screws communicating with said hopper and each extending laterally from said hopper above one of said belts, each said feed screw having a metering slot therein extending the width of the adjacent belt with the lips of said slot a predetermined distance from the belt surface and having a mouth directed downward toward said belt, and
(d) means to energize each said screw when an adjacent belt is moved along its path.

3,284,949
PLANT SHIPPING CONTAINER
George B. Park, Cokesbury Road, Greenwood, S.C.
Filed July 13, 1964, Ser. No. 382,097
4 Claims. (Cl. 47—34.11)

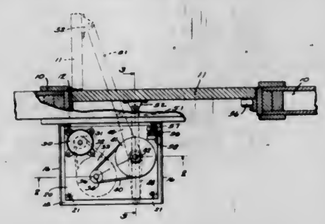
1. A shipping container for growing plants, seedlings and the like including, a tray having a plurality of spaced open compartments therein for accommodating a suitable medium for carrying the root system of the plants, a cover for said tray having a plurality of spaced openings therein for allowing the remainder of the plant to project therethrough, but positively positioning each plant within the tray, said tray and said cover having overlapping marginal portions on each side of the tray and cover, a container constructed of cardboard and the like having a pair of spaced walls on each side of said tray and said cover, means fastening said tray and said cover together forming

a tray cover assembly and fastening said assembly to the walls on each side of the assembly, said tray and said cover being constructed from thin flexible resilient material, and said openings for the remainder of said plant



extend to one side of the assembly, whereby the cover may be cut along one side opening the side of said openings for bending the cover toward the other side to unpack the tray.

3,284,950
DOOR OPERATOR
Harry Gute, 8200 Rockway Place, Wauwatosa, Wis.
Filed Dec. 14, 1964, Ser. No. 419,287
1 Claim. (Cl. 49—28)



In a unitary power driven device for moving a door in opening and in closing directions relative to a fixed frame and in the absence of an obstruction to door movement, a base fixed on the door frame, a plurality of cylindrical resilient bodies, each said body having one end fixed to said base, a plate secured to the respective free ends of said resilient cylindrical bodies for movement laterally in a plane substantially parallel with the base, an electric current supply circuit, a door opening and closing drive comprising an electric motor mounted on the plate and operable in one direction only, the motor reacting on the plate for movement thereof upon obstruction of door movement in either direction, speed reducer means mounted on the plate and driven by the motor, linkage pivotally connecting the speed reducer with the door for successive opening and closing thereof during energization of the motor, switch means for connecting the supply circuit to the motor upon beginning of voluntary opening of the door and for automatically disconnecting the supply circuit to the motor upon closure of the door, and motor control means mounted on the plate for opening the motor supply circuit upon movement of the plate due to motor torque acting on the linkage during obstruction of door movement, said motor control means comprising a pair of switches in series with said electric current supply circuit and provided with opposed actuating means, and an arm extending from said base between said switch actuating means, said switches being normally closed and said actuating means being effective to open said switches upon contact with said arm whereby said electric current supply circuit will be opened upon obstruction of door movement in either direction, the motor control means reclosing the motor supply circuit upon return movement of the plate to initial position following removal of the door obstruction.

3,284,951
LOUVERED STRUCTURE
Clarence M. Shapiro, 410 S. Michigan Ave., Chicago, Ill.
Filed Oct. 30, 1963, Ser. No. 320,054
9 Claims. (Cl. 49—75)

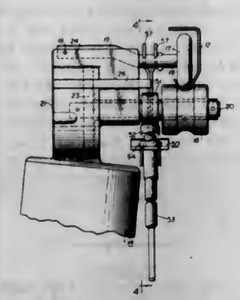


1. A louver structure comprising a pair of support members, one of said support members having a plurality of apertures formed therein, the other of said support members having a plurality of slots formed therein, a retaining member disposed adjacent said other support member, said retaining member having apertures formed therein, a plurality of elongated louvers extending between said support members, each of said louvers having pivoting means at the one ends of said louvers being receivable in said apertures in said one support member, said pivoting means at the other ends of said louvers being receivable in salt slots in said other support member and in said apertures in said retaining member, and said retaining member being movable away from said other support member for disengaging at least one of the apertures therein from the adjacent pivoting means whereby the latter may be withdrawn through said slot in said other support member so as to permit removal of the associated louver from its mounted position between said members.

3,284,952
AUTOMATIC DOOR OPERATOR
Edward E. Lodge, 2881 Plymouth Road, Cleveland, Ohio
Original application Mar. 22, 1962, Ser. No. 181,647, now Patent No. 3,202,415, dated Aug. 24, 1965. Divided and this application Nov. 27, 1964, Ser. No. 414,115
7 Claims. (Cl. 49—360)

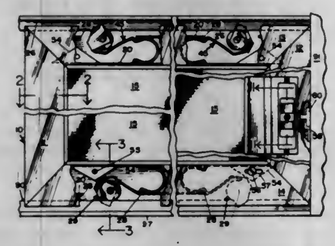
1. In a door operating device for use with a motor operated vertically slidable door mounted on track means and wherein the motor means is connected to the door; a pair of rollers mounted on spaced apart axle means one a pinch roller and the other a drive roller, at least one of which is made of resilient rubber-like material and at least one of which is driven by said motor means, one of said rollers engaging one side of said track means and the other engaging the opposite side of said track means at a location opposite said first roller; toggle action pinching means located between said motor and said rollers for squeezing said rollers together on opposite sides of said track including a hook engaging one of said axles and bushing means engaging the other axle; pivot means for connecting the motor to the door for pivoting motion about an axis parallel to the axes of said pinch rollers

and rigid against other motions; and a connector rigidly connected to said pivot means and rigidly connected to said motor means; said pivot means, said connector and



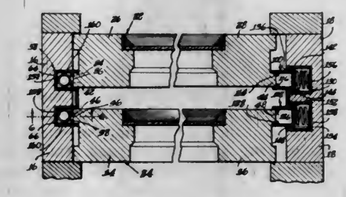
said pinch rollers in said track forming a rigid connection, except for said pivoting motion, which holds the door against cocking motion in respect to the track means.

3,284,953
SLIDING PANEL STRUCTURE
Morton S. Rifkin, Miami, Fla., assignor to Florida Aluminum Enterprises, Inc., Miami, Fla.
Filed Jan. 25, 1965, Ser. No. 427,729
2 Claims. (Cl. 49—420)



1. In a sliding panel having a substantially rectangularly shaped frame, said frame comprising elongated elements each having a pair of spaced apart side walls and an end wall and recessed end wall joining said side walls to form a slotted portion at said recessed end wall and a plurality of openings in said recessed end walls, the combination comprising a plurality of roller means, said roller means each having a pair of side walls in substantially spaced and parallel relation, said roller side walls having upper and lower edge portions and end portions, an end wall joining said roller side walls at one of said end portions, said roller side walls having aligned openings in proximity of the other of said end portions and said upper edge portion, shoulder means mounted on an inner surface of said roller side walls adjacent said end wall to form a slotted portion, a leaf spring supporting said roller means and having an end portion received by said slotted portion, said leaf spring having an arcuate portion engaging said end walls of said frame, and shoulder means engaging an edge portion of said openings in said recessed end walls for securing said leaf spring in said frame with said roller means extending through said openings and a cam mounted for slidable movement between said side walls of said frame, elongated openings positioned on said side walls and a fastener extending through said elongated openings and said cam whereby said cam may be positioned in contact relation with said roller means to support said roller means and render said leaf spring ineffectual.

3,284,954
WINDOW STRUCTURE
George C. Hayman, Denver, Colo., assignor to Leslie Welding Co., Inc., Franklin Park, Ill., a corporation of Delaware
Filed Dec. 11, 1963, Ser. No. 329,770
5 Claims. (Cl. 49—423)



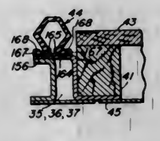
3. An elongated track member for a window structure of the type described, comprising a channel portion having a generally U-shaped transverse cross-section, said channel portion being formed of resilient tough plastic material and including opposite spaced apart side sections for embracing a marginal portion of a window sash, at least one of said side sections having an outer free terminal edge and being free for resilient flexing movement laterally relative to the other side section, and sealing and bearing flanges respectively integral with and extending toward each other from said spaced apart sections and terminating short of each other for engaging laterally outwardly facing surfaces of a window sash, said sealing and bearing flanges being spaced inwardly from outer edges of said side sections.

3,284,955
MOTOR VEHICLE SEAL
Raymond A. Schroth, Pawling, N.Y., assignor to The Presray Corporation, Pawling, N.Y., a corporation of New York
Filed June 1, 1964, Ser. No. 371,565
2 Claims. (Cl. 49—477)



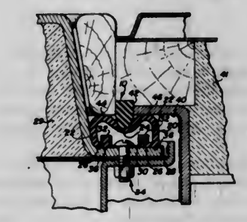
1. An elastomeric sealing strip, comprising
(a) an elongate tubular body having a predetermined mechanically flexible bellows wall spacedly supported from a flat base wall of a first predetermined, uniform thickness and defining a pressure chamber therebetween,
(b) said bellows wall comprising spaced convex portions and a concave portion therebetween,
(c) said bellows wall being of non-uniform thickness, said convex portions being no greater than said first predetermined thickness and the areas of junction of said concave portion and said convex portions having a thickness less than said convex portions, and
(d) a sealing lip extending from said bellows wall.

3,284,956
FREIGHT VEHICLE DOOR SEALING ARRANGEMENT
John D. Bailey, Chicago, Ill., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Original application Mar. 17, 1961, Ser. No. 96,562, now Patent No. 3,179,984, dated Apr. 27, 1965. Divided and this application Feb. 28, 1964, Ser. No. 348,199
1 Claim. (Cl. 49—493)



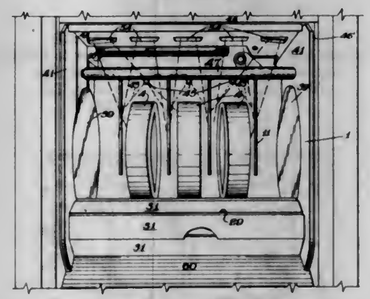
In a sealing arrangement for a laterally movable door adapted to fit into a vertical freight vehicle door opening having an abutment surface extending continuously along the top, bottom and sides thereof, said arrangement including a sealing member extending about the sides, top and bottom of said door adapted to fit into said door opening, said sealing member comprising a resilient flexible material having a tubular body of generally polygonal contour in cross section, said tubular body including an upper substantially flat side, serrations extending upwardly from said flat side, a pair of outwardly inclined sides of substantially constant thickness extending integrally from the respective ends of said flat side, a pair of inwardly and downwardly inclined sides extending integrally from the respective ends of said outwardly inclined sides, said outwardly inclined sides and said inwardly and downwardly inclined sides being joined to form apices defining longitudinally extending fold lines about which said body is compressed, said inwardly inclined sides each being tapered to a gradually increasing thickness adjacent their other ends which are detached and transversely spaced from each other, and outwardly extending attaching flanges extending from the other ends of the said inwardly inclined sides; and means securing said sealing member to said door in opposing relationship to said abutment surface comprising a strip including a base, a pair of laterally spaced outer flanges along each side of said base and defining clamping grooves into which said laterally extending attaching flanges are clamped, and a pair of upstanding clip members fixed to said base and spaced to engage the inner other ends of said inwardly inclined sides to which said laterally extending attaching flanges are secured.

3,284,957
SEALING GASKETS
Robert L. Landis, 25538 Adobe Lane, Los Altos, Calif.
Filed June 22, 1964, Ser. No. 376,922
4 Claims. (Cl. 49—495)



1. A sealing means for sealing the space between a pair of laterally movable, parallel surfaces comprising:
a deformable gasket member having two substantially flat sides joined by a flexible rib member whose thickness is less than the thickness of said sides, said sides making an angle of greater than 90 degrees with said rib member and being mounted to one of the surfaces that is to be sealed; and
a deforming seal member having a width narrower than the distance between said sides and a rounded end portion, said deforming seal member being mounted on the other surface to be sealed so that its rounded end portion sealingly engages said rib member and collapses said gasket member when the surfaces to be sealed are moved towards one another, said gasket member and said seal member being dimensioned and disposed so that, upon sealing engagement, said gasket member is deformed into sealing engagement with the other surface having said seal member mounted thereon.

3,284,958
METHOD AND APPARATUS FOR DEFLASHING PNEUMATIC TIRES
William A. McCormick, Jr., Hagerstown, Md., assignor to The Pangborn Corporation, Hagerstown, Md., a corporation of Delaware
Filed Apr. 27, 1964, Ser. No. 362,911
5 Claims. (Cl. 51—14)

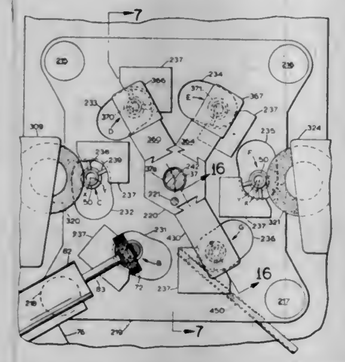


1. Apparatus for deflashing vent tips from molded tires comprising a dehumidifying housing, means supported within said housing for simultaneously supporting and turning said tires, a freezing medium applicator within said housing adjacent said tire supporting and turning means for applying freezing medium to said tires to lower the temperature of said tires, positioning means in said housing for maintaining said tires substantially upright and spaced from each other with a portion of the tread and sidewalls near said freezing applicator means whereby all of the tread and sidewalls is moved close to said freezing medium applicator as said tires are rotated by said supporting and turning means, and abrasive blasting means supported in said housing adjacent said tire supporting and turning means for propelling abrasives against the tread and sidewalls of said tires to remove the vent tips therefrom.

3,284,959
MULTI-STATION GRINDING MACHINE
William B. Seidel, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed May 25, 1964, Ser. No. 369,835
20 Claims. (Cl. 51—108)

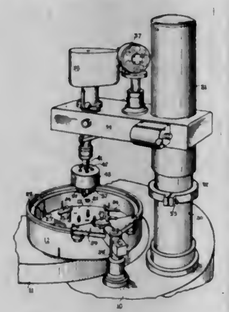
1. A grinding machine comprising in combination:
(a) a plurality of workpiece supports to define fixed operating positions for workpieces received therein, said operating positions lying in a circle about a central axis,

(b) a carrier rotatable about said axis and having a plurality of predetermined angular index positions, said carrier having a circular array of rotatable driving faces positioned thereon for location at said operating positions when the carrier is in an index position,



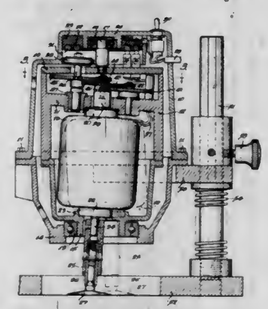
(c) means to urge a workpiece against each driving face for driving rotation of the workpiece on rotation of the driving face and for conveyance of the workpiece on rotation of the carrier,
(d) a rotating grinding wheel at some of said supports for abrading engagement with workpieces in operating positions,
(e) and means perioidically to rotate said carrier from successive index positions and having a plurality of workpieces between operating positions.

3,284,960
LAPPING MACHINES
Lawrence O. Day and Joseph Dobrick, Chicago, and Arthur Kay, Evanston, Ill., assignors to Spitfire Tool & Machine Co., Inc., Chicago, Ill., a corporation of Illinois
Filed Jan. 6, 1964, Ser. No. 335,823
6 Claims. (Cl. 51—120)



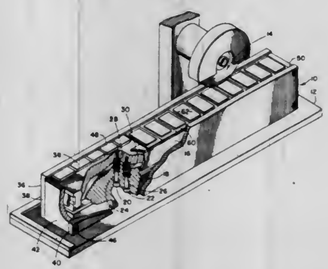
1. A lapping machine for lapping the recessed surface of a workpiece, comprising
(a) a table rotatable about a vertical axis,
(b) a ring supported on the surface of the table for rotation relative to the table about a vertical axis spaced from the vertical axis of said table,
(c) means for retaining said ring against rotation about said table axis but not about said ring axis,
(d) a disc arranged in said ring for rotation therewith,
(e) means provided by said disc for holding the workpiece thereon,
(f) a plurality of concentrically arranged lapping heads engaging said recessed surface for lapping the same,
(g) and means for rotating the lapping heads concentrically over and in contact with said recessed surface.

3,284,961
POLISHING DEVICE
George W. Graves, Glenview, Ill., assignor to Buehler Ltd., Evanston, Ill., a corporation of Illinois
Filed May 25, 1964, Ser. No. 369,995
4 Claims. (Cl. 51—170)



1. A portable spot polisher comprising an outer housing adapted to be supported adjacent to a surface to be polished, an inner concentric housing rotatably mounted within said outer housing, a motor fixedly secured to and within said inner housing and at an angle to the longitudinal axis of said inner housing, means for rotating said inner housing and motor operatively associated with one end of the motor shaft and disposed within said outer housing and a spindle carrying a resilient flexible polisher head engaged to the opposed end of the motor shaft and projecting outwardly through aligned apertures formed in said housings.

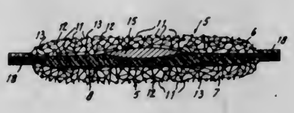
3,284,962
HOLDING TOOL
Albert C. Hott, Northridge, and Vinton C. Davis, Van Nuys, Calif., assignors to North American Aviation, Inc.
Filed Nov. 15, 1963, Ser. No. 324,095
2 Claims. (Cl. 51—217)



1. A holding tool for thin sectioning comprising:
(a) first and second movable members having opposed surfaces in a spaced-apart relationship,
(b) connector means joining said first and second members and limiting the spaced-apart relationship of said first and second members,

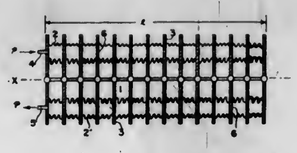
(c) spring means associated with said first and second members,
(d) said spring means moving at least one of said first and second members with respect to the other,
(e) resilient means carried by an exposed surface of said first member to receive at least one specimen slide,
(f) a movable shell member generally surrounding said first and second members,
(g) said shell member suitably formed from a magnetic material, and
(h) clamp means associated with said shell member to bear upon the specimen slide so that a magnetic means cooperating with the holding tool attracts said shell member and said clamp means to substantially overcome said spring means and depress the slide and said resilient means.

3,284,963
CLEANSING AID
Samuel E. Lanham, Hazel Crest, and Robert J. Lamczyk, Roselle, Ill., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware
Filed Mar. 26, 1964, Ser. No. 354,929
14 Claims. (Cl. 51—400)



1. A cleansing aid comprising a laminated pad of which the two opposed outer laminae each are in the form of an abrasive resilient web composed of individual randomly oriented nonwoven fibers held together by a binder to define a three-dimensional open lofty structure having a network of relatively large intercommunicating voids, the inner lamina of said pad being a web of compressible and water-absorbent thermoplastic foam material, said inner lamina serving as a heat sealing medium for adhering thereto said outer laminae to bind said outer and inner laminae together into an integral pad structure.

3,284,964
FLEXIBLE BEAM STRUCTURES
Norio Saito, 88 Kirisato-machi, Ota-ku, Tokyo, Japan
Filed Mar. 26, 1964, Ser. No. 355,119
6 Claims. (Cl. 52—2)



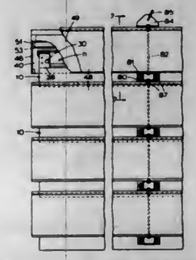
1. A flexible beam structure comprising a central, longitudinally extending, flexible core member, a plurality of longitudinally spaced, radially extending members fixed to said core member, at least three longitudinally expansible and contractable fluid pressure elements between each pair of radially extending members spaced circumferentially about said core member, and fluid pressure means for selectively controlling the fluid pressure in said fluid pressure elements to expand or contract said elements selectively.

3,284,965
BEACH SHELTER WITH INFLATABLE RIBS
Erich P. Michenfelder, 160 W. Hamilton Ave., Apt. 12, Campbell, Calif.
Filed Feb. 15, 1965, Ser. No. 432,522
8 Claims. (Cl. 52—2)



1. A beach shelter comprising:
a wall portion of flexible sheet material of a size to partially enclose a ground area having a person seated thereon,
a plurality of inflatable stiffening ribs formed integrally with the wall portion and extending in an up-and-down direction thereon to support the wall portion in erected condition,
a ground apron on the lower edge of the wall, and shaped to rest on the ground when the wall portion is erected to partially enclose such area,
a shelter top portion of flexible sheet material having an outline of a desired shape for the upper edge of the shelter wall portion when the latter is erected to enclose such ground area, and to project forwardly beyond the upper edge of the so-erected wall portion in the nature of an awning,
means for releasably attaching the upper edge of the shelter wall portion to a marginal portion of the shelter top portion, and
an inflatable rib formed marginally of, and integral with, the shelter top portion to support, when firmly inflated, the portion of the shelter top portion which projects in the nature of an awning forwardly from the upper edge of the shelter wall portion.

3,284,966
COLLAPSIBLE BUILDINGS
Harry Collett Bolt, London, England, assignor to Terrapin (Overseas) Limited, London, England
Continuation of application Ser. No. 827,516, July 16, 1959. This application Dec. 5, 1963, Ser. No. 328,389
12 Claims. (Cl. 52—16)



6. A building structure capable of being collapsed into a readily transportable condition and into a readily erected condition comprising a floor member of greater length than width, a roof member of slightly greater length and width than said floor member, rigid post members having a length less than half the length of said floor member so that said post members lie on said floor member end-to-end and parallel with the long sides of said floor member without overlapping in said collapsed condition, and means to vertically dispose said rigid post members with respect to and at the corners of said roof member and said floor member when in said erected condition, said roof member having vertical walls surrounding a rectangular space which is closed at the upper part thereof by a substantially flat rigid roof, said rectangular space being open at the bottom and having a depth and internal area just large enough to receive said rigid post members and at least the upper part of said floor member in said collapsed condition, said vertical walls of said roof member having edges protruding above said flat rigid roof defining a rectangular recess for receiving the lower part of the floor member of another building structure stacked thereupon.

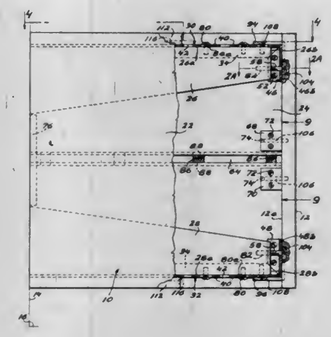
3,284,967
LAMINATED COVER ELEMENTS AND FLASHING AND SEALING MEANS THEREFOR
Richard I. Elliott and Frederick R. Ashby, Carmel, N.Y., assignors to United States Plywood Corporation, New York, N.Y., a corporation of New York
Filed Mar. 18, 1964, Ser. No. 352,863
16 Claims. (Cl. 52—58)



12. A weatherproof lightweight roof structure which comprises in combination; (1) a plurality of ligno-cellulose panels, said panels characterized by having the top edges beveled downwardly toward the back surface of said panels; (2) thin impervious plastic films laminated to the face surface of said panels; (3) alignment strips affixed to the back surfaces of said panels near the bottom edges thereof and substantially parallel to said bottom edges, said alignment strips characterized by the bottom edges thereof beveled upwardly toward the back surfaces of said panel, and wherein said structure is characterized by the upper beveled edge of a first panel seating securely behind the back surface of a second panel and the lower side of the alignment strip attached to said second panel, whereby the lower area of said second panel will overlap the upper area of said first panel; (4) a flexible gasket positioned between said beveled edge of said first panel and the alignment strip of said second panel; (5) a first L configuration flashing element having one side thereof positioned along the top surface of said first panel and under extending said second panel, the other side of said first flashing element extending along the end of said first panel; and (6) a second L configuration flashing element having one side thereof positioned along the top surface of said second panel and the other side thereof positioned along the end of said first flashing element associated with said first panel.

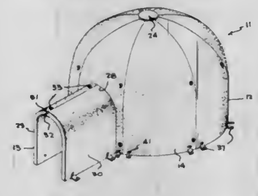
3,284,968
CANTILEVER PANEL PARTITION CONSTRUCTION AND BRACKET ARM SUPPORT ASSEMBLY
Jerome P. Schooler, Roslyn Heights, N.Y. (% Flush-Metal Partition Corp., 46—10 11th St., Long Island City, N.Y.)
Filed Apr. 28, 1964, Ser. No. 363,209
34 Claims. (Cl. 52—73)

1. A cantilever partition and bracket arm support assembly comprising:
(a) a pair of separate cantilever bracket arm structures projecting outwardly from a wall surface and having free terminal ends,
(b) a partition comprising a pair of opposed panels,
(c) means on the inner side of each panel for mounting the same on said bracket arm structures,
(d) means interiorly of said partition securing said mounting means to said bracket arm structures,
(e) lateral bracing means between said panels,
(f) adjustable means within said partition connecting said partition to said bracket arm structures and located remote from said wall surface whereby to



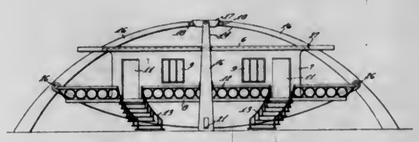
move said partition into pressure engagement with said wall surface prior to the final securing of the panel mounting means to said bracket arm structures, and
(g) separate closure means at each of the exposed edges of said partition secured in place and concealing said securing and mounting means.

3,284,969
PREFABRICATED IGLOO
John William Walters and Dorothy D. Walters, both of 6103 Dunleer Court, Bethesda, Md.
Filed Nov. 27, 1963, Ser. No. 326,418
4 Claims. (Cl. 52—80)



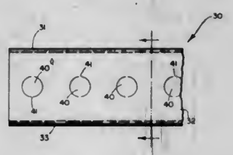
1. A prefabricated shelter comprising a plurality of arcuately curved sheet-like rigid wall segments having top portions in the form of spherical segments, said wall segments having reduced side marginal edge portions interfitting in overlapping relationship along their length, said edge portions of the top portions converging towards a common vertex, means fastening said side marginal edge portions together in overlapping relationship, a cover cap overlying the common vertex and having a stem portion depending through said vertex, a washer on said stem portion underlying the convergent top portions of the wall segments, a clamping nut on the stem portion below and bearing against said washer, one of the wall segments being formed with a doorway, a pair of rigid tunnel segments having interfitting overlapping top marginal portions, and means securing said top marginal portions together in overlapping relationship to define a tunnel structure, said tunnel structure fitting slidably in said doorway, said wall segments and tunnel segments being formed of rigid moulded plastic foam material.

3,284,970
UNITARY BUILDING CONSTRUCTION
George J. Stowasser, Waukesha, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Mar. 23, 1964, Ser. No. 353,950
4 Claims. (Cl. 52—80)



1. In a unitary building structure the combination comprising: a plurality of overlying arches having opposite ends rigidly connected to support piers; a plurality of underlying arches having opposite ends connected to said upright arches; and an enclosure having spaced roof and floor portions connected by vertical side walls positioned within the space defined by said arches, said roof resting on said overlying arches and said floor resting on said underlying arches.

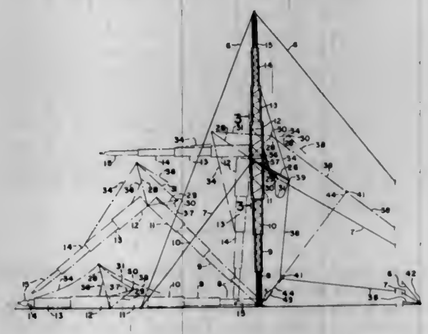
3,284,971
STRUCTURAL ELEMENTS FOR METAL FRAMING SYSTEMS
Warren R. Attwood, 42005 North Drive, Wayne, Mich.
Filed Aug. 11, 1959, Ser. No. 833,023
7 Claims. (Cl. 52—100)



1. In an elongated unitary load-supporting metal frame member for an adjustable metal framing construction, said frame member having one or more flat sides, a plurality of spaced removable knock-outs provided in at least one of said sides and forming a hole therein when removed, each of said knock-outs being completely severed from said member for at least the major portion of the common periphery of the knock-out and the associated hole, said knock-out being substantially coplanar with said side and the edge of said knock-out closely contacting the side of said hole whereby said frame member presents a substantially smooth surface and each said knock-out when retained contributes to the strength and rigidity of the frame member, said knock-outs when removed providing optional holes for the attachment of additional frame members to said frame member.

3,284,972
PORTABLE TOWER
William L. Werner, Sunnyvale, Calif., assignor to Granger Associates, Palo Alto, Calif., a corporation of California
Filed May 15, 1964, Ser. No. 367,850
8 Claims. (Cl. 52—118)

1. A portable tower comprising multi-section upper and lower tower halves, each tower half comprising a plurality of telescoping sections of progressively larger transverse dimensions going from the bottom of the tower toward the middle height thereof and from the top of the tower also toward the middle height thereof, the sections of the tower halves being adapted to be telescoped into two compact packages for carrying from place to place.

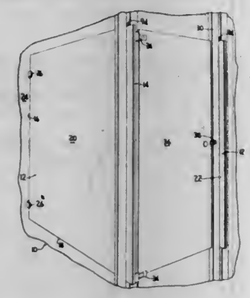


3,284,973
CEMENT FINISHING APPARATUS
Wilford C. Ames, 649 San Lorenzo St., P.O. Box 3, Santa Monica, Calif., and Richard W. Wallen, Littlerock, Calif.; said Wallen assignor to said Ames
Filed Apr. 10, 1964, Ser. No. 358,840
2 Claims. (Cl. 52—155)



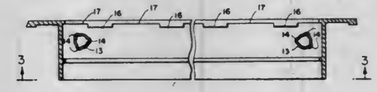
1. A post adapted to be fixed in a base medium, for use in plurality to support a screed, comprising: an elongated, generally-cylindrical member including an externally-threaded section thereon, a generally-tapered section below said externally-threaded section terminating in an internally-threaded end, and a wrench-engaging section to facilitate revolving said member; a screed hook internally-threaded to receive said threaded section of said elongated member and extend perpendicularly therefrom to provide a hook to support said screed; set means for locking said screed hook in various positions relative to said elongated member against relative rotation therebetween; an internally-threaded support plate affixed on said threaded section of said elongated member below said screed hook, to engage said base medium and support said post; and a partially externally-threaded pointed stud having a smooth shank threadably engaged in the internally-threaded end of said elongated member whereby to facilitate placing said post in said base medium.

3,284,974
COMPARTMENT OF AN ASSEMBLY OF STRUCTURAL GLASS PLATES
Edward H. Stein, Wexford, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 11, 1963, Ser. No. 250,909
3 Claims. (Cl. 52—204)



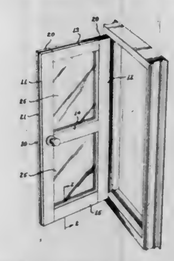
1. In a partition assembly extending outwardly from a vertical wall, the combination comprising,
a vertically disposed panel of a generally rectangular configuration having a pair of substantially planar surfaces and front and rear edge portions,
a vertical panel supporting post extending across said panel adjacent said front edge portion,
said panel supporting post comprising a pair of elongated U-shaped channel members, each having a web portion and a pair of spaced flanges,
said web portions being in opposed, spaced relation to each other and in juxtaposition with opposed planar surfaces of said panel for clamping engagement therewith,
fastening means interconnecting said elongated channel members and located outside said panel to urge said elongated channel members toward each other and clamp the panel therebetween,
enclosure means mounted on each of said channel members and concealing the space between each of said pair of spaced flanges,
fastening means securing said panel supporting post in a fixed vertical position,
a clamp secured to said vertical wall and extending outwardly therefrom and having a first section and a second section,
said clamp first section and said clamp second section being in opposed, spaced relation to each other,
said clamp first section having a flanged end portion secured by fastening means to said vertical wall with said first section extending outwardly therefrom,
said clamp second section having a portion intermediate its extremities extending inwardly toward said first section,
and means connecting said clamp first section and said intermediate portion of said clamp second section and located outside said panel to urge said sections toward each other and clampingly engage and support said rear end portion of said panel therebetween.

3,284,975
GRILLWORK WITH ORNAMENTAL RELIEF OF FACE
Eugene F. Averill, Waterloo, Iowa, assignor to Titus Manufacturing Corporation, Waterloo, Iowa, a corporation of Iowa
Filed Apr. 17, 1963, Ser. No. 273,714
9 Claims. (Cl. 52—316)



1. A grillwork structure comprising a series of spaced, aluminum bars, an edge of said bars having alternating recesses and raised portions thereon, said edge of said bars being anodized and dyed with a dye which contrasts with the silver color of the aluminum metal, and the raised portions of said edge being exposed aluminum to provide raised surfaces along said edge having the color of the aluminum metal alternating with recesses along said edge having the color of said dye.

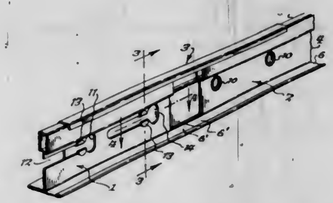
3,284,976
DOOR CONSTRUCTION
Frank Kadish, 5321 E. Washington St., Phoenix, Ariz.
Filed Feb. 27, 1964, Ser. No. 347,797
1 Claim. (Cl. 52—455)



A door structure comprising:
(a) a plurality of vertical frame members,
(b) a plurality of cross brace members extending between said vertical members to define openings bordered by said cross brace and vertical members,
(c) said vertical frame members and said cross braces having the same cross-sectional configuration and each comprising:
(1) an elongated channel including oppositely disposed sides separated by a top member and a bottom member,
(2) said top member joined to said sides, longitudinally extending recessed portions at the joints between said top member and said sides to form stops,
(3) a rib protruding from said top and extending along said top adjacent to one of said stops,
(4) a dovetail slot in said rib,
(5) a keyed slip with a mating configuration to extend into said dovetail slot and having a clip portion extending therefrom urged into contact with said top,
(6) means defining a shaft guiding slot in said top opening to the inside of said channel to guide a fastening shaft,
(7) means defining a slot in said bottom opening to the outside of said channel to provide support for weather stripping,
(d) each vertical frame member secured to a cross brace member to form a joint,

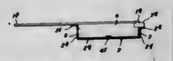
(e) one of the members of said joint having a notch in its rib to receive the end of the rib of the other member,
(f) said other member of said joint having the sides thereof extending longitudinally beyond the top and bottom thereof, the extended sides of said other member seated in the stops of said one member,
(g) the members of said joint held together by a fastening shaft extending through the shaft guiding slot of said other member and extending through holes provided therefor in said one member, and
(h) panels positioned in the openings defined by said vertical frame members and cross brace members, and retaining means for holding said panels in said openings.

3,284,977
EXPANSION SPLICE
Robert P. Lickliter, 113 Buffalo St., and Earl Abbott, 81 Dudley Ave., both of Hamburg, N.Y., and John F. Reeves, Tonawanda, N.Y.; said Reeves assignor to said Lickliter and said Abbott
Filed Apr. 8, 1965, Ser. No. 446,680
5 Claims. (Cl. 52—573)



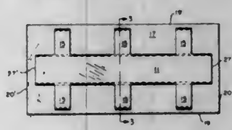
1. An expansion splice for supporting grid systems and the like comprising a pair of beams alined in abutting end to end relation and each having a web and a lateral flange, said webs being recessed longitudinally of said beams relative to said flanges at the abutting ends of said beams to provide an expansion joint between said beam ends, and a splice member spanning said joint, said splice member having interlocking engagement with said web of one of said beams on one side only of said joint and having interlocking engagement with said web of the other of said beams on the other side only of said joint, the interlock between said splice member and one of said beams enabling relative expansion movement of said beams toward one another, said flanges abutting at said ends to prevent such expansion movement under normal temperature conditions while yielding at said ends to permit such movement under elevated temperature conditions.

3,284,978
COMPOSITE FLOOR PANEL
Gerald M. Roeder, Pittsburgh, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Apr. 16, 1964, Ser. No. 360,238
3 Claims. (Cl. 52—589)



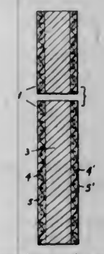
1. A composite floor panel comprising
(a) a top surface member;
(b) a panel joining strip running lengthwise on the underside of said top surface member and protruding along an edge thereof to receive means for joining an additional panel;
(c) a generally U-shaped member running the length of the underside of said panel, said U-shaped member having one leg tip bearing on the underside of said panel joining strip and the other leg tip bearing on the underside of said top surface member, the leg lengths being unequal to compensate for the thickness of said panel joining strip;
(d) transverse members extending between the legs of said U-shaped member and bearing on the underside of said joint nailer strip and the underside of said top surface member, at least one of said transverse members protruding beyond the top surface member to receive means for joining an additional panel, said transverse members being adapted to promote stiffening of said U-shaped member.

3,284,979
REFRACTORY SHAPE WITH EMBEDDED CHANNEL SHAPE REINFORCEMENT
Robert A. Edwards, Columbiana, Ohio, assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed Nov. 6, 1963, Ser. No. 321,897
5 Claims. (Cl. 52—600)



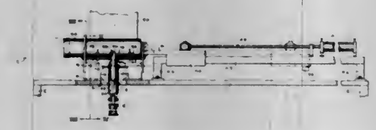
1. A nonacid refractory shape having a flat surface and a metal reinforcement comprising:
(a) a generally U-shaped channel having
(b) a flat web and
(c) two side flanges, and
(d) a plurality of arms extending outwardly from said web and struck from said flanges, each of said arms having
(e) a flat base lying in the plane of the web, and
(f) a shoulder disposed in the same direction as the flanges,
the plane of the web of the metal reinforcement lying in the plane of the flat surface of the refractory shape, and the flanges of the U-shaped channel and the shoulders of the arms being embedded in the refractory shape.

3,284,980
HYDRAULIC CEMENT PANEL WITH LOW DENSITY CORE AND FIBER REINFORCED HIGH DENSITY SURFACE LAYERS
Paul E. Dinkel, 459 N. D St., Hamilton, Ohio
Filed July 15, 1964, Ser. No. 384,043
10 Claims. (Cl. 52—600)



1. A nailable, structural panel particularly adapted for use in areas of exposure to moisture, said panel comprising a central core of substantial length and width comprised throughout its thickness of inorganic lightweight aggregate and hydraulic cement, said core being characterized by the presence of a multiplicity of voids and cells which confer on the core an average unit weight not substantially exceeding 130 pounds per cubic foot.
a layer of high tensile strength fibrous material disposed closely adjacent the core at the two opposed faces thereof
and a layer of bonding material consisting of at least 50% hydraulic cement, said layer being substantially thinner than said core, relatively low in voids and of high unit weight relative to said core and at least partially penetrating the voids and filling the surface irregularities at the face of said core thereby bonding the respective fibrous layers to the opposed surfaces of the core to form an integral structure.

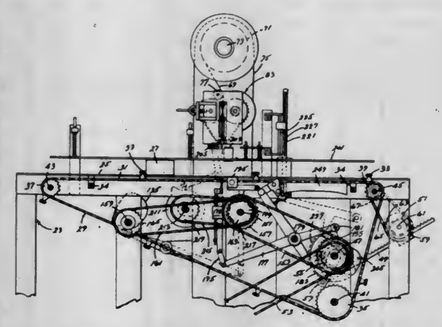
3,284,981
PACKING MACHINE FOR NURSERY STOCK
Robert J. Broersma, Spring Lake Township, Ottawa County, Mich., assignor to B & B Engineering Company, Grand Haven, Mich., a partnership
Filed Dec. 7, 1962, Ser. No. 243,044
15 Claims. (Cl. 53—124)



1. A packaging device, primarily for nursery stock, comprising in combination:
a pair of substantially horizontal hemicylindrical casing halves and hinge means hingedly connecting said casing halves for pivotal movement toward and away from each other about a substantially horizontal hinge axis which extends lengthwise of said casing halves and which is located adjacent the lower lengthwise edges of said casing halves;
closure control means for effecting pivotal movement of said casing halves between an open position in which said casing halves open upwardly and a closed position in which said halves face each other and define a generally cylindrical packing space;
reciprocable ram means positioned adjacent one longitudinal end of said casing halves and aligned with the packing space defined by said casing halves when they are in said closed position and means for effecting reciprocation of said ram means into and out of said packing space so that when the casing halves are in their open position packing material can be deposited therein and then said casing halves can be moved to their closed position in order to shape said packing material into a generally cylindrical shape, following which said ram means may be moved lengthwise through said packing space to discharge the packing material therefrom.

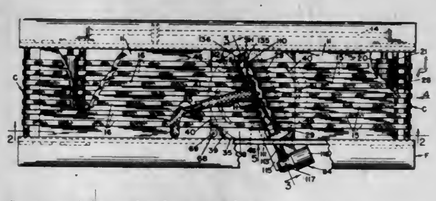
3,284,982
BANDING APPARATUS
John D. Conti, Elkins Park, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Aug. 28, 1963, Ser. No. 305,118
9 Claims. (Cl. 53—137)

1. Apparatus for banding a carton or like article including tape supply means, means for feeding a heat sealable tape from said supply means, means for nipping the tape with a predetermined force, means for moving said nipping means whereby the leading end of the tape may be drawn away from said feeding means, means for advancing a carton against the tape to pull the same from said nipping means, a heated shoe for sealing only the leading end of the tape to the carton, means operative



after the leading end of the tape has been sealed to the carton for severing the tape from said supply means, and means including a heated shoe for sealing the trailing end of the severed tape to the carton.

3,284,983
ARTICLE ENCLOSING APPARATUS
Marvin E. Wallis, 1643 Woodland Drive, San Luis Obispo, Calif.
Original application Dec. 14, 1961, Ser. No. 159,355, now Patent No. 3,178,866, dated Apr. 20, 1965. Divided and this application Dec. 13, 1962, Ser. No. 244,417
1 Claim. (Cl. 53—140)

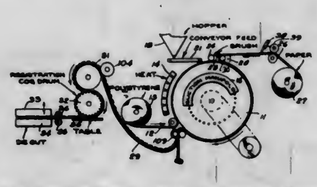


In an article packaging machine,
(a) conveyor means comprising two aligned conveyors separated by a space transverse relative to the means,
(b) means to project a sheet of molten thermoplastic resin from above said conveyor means through said space,
(c) means effective to move said conveyors to cause an article carried by one of them to pass at least partway through said sheet and be transferred to the other conveyor,
(d) a ring rotatable on the machine in part supporting said conveyors and operative upon rotation of the ring to change the angle of separation between the aligned conveyors in the vicinity of said space with respect to the direction of article movement, and
(e) shields supported by said ring protecting said conveyors from contact with said sheet.

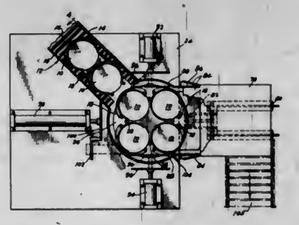
3,284,984
MAKING INDIVIDUAL CONDIMENT PACKAGES
Charles E. Cloud, 150 Prairie Ave., Wilmette, Ill.
Original application Jan. 19, 1960, Ser. No. 3,463. Divided and this application Mar. 6, 1963, Ser. No. 268,509
9 Claims. (Cl. 53—180)

1. Package-forming and filling apparatus including means for moving past a filling station a sheet having pockets formed therein, with the pockets opening up-

wardly as they pass the filling station, means for applying a second sheet over the pockets and sealing it to the portions of the first sheet surrounding the pockets, and means for filling the pockets prior to the application of the second sheet comprising a conveyor belt, a hopper over the conveyor belt having a spout terminating slightly above the conveyor belt to apply a windrow of material from the hopper along the conveyor belt as the belt moves, said belt moving the window to the filling station and doubling back therefrom to dump the windrow, and means for moving the belt intermittently with momentary interruptions in the movement, successive movements being in timed relation with the movement of the successive pockets past the dumping position to advance the belt only when a pocket will be in a position to receive the material from the belt, and a clean off roll positioned between the filling station and the position where the two sheets are brought together and rotated in a direction to brush back toward the filling station any material on the surfaces of the pocketed sheet surrounding the pockets to present clean surfaces to the second sheet.

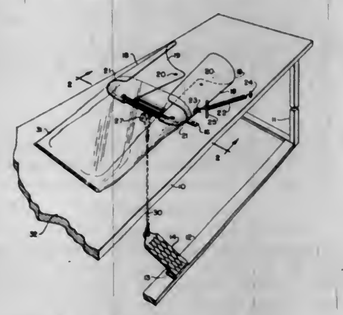


3,284,985
CONTAINER ARRANGING MECHANISM
William F. Roth, Hanover, Pa., assignor to Chisholm-Ryder Company of Pennsylvania, Hanover, Pa., a corporation of Pennsylvania
Filed June 10, 1963, Ser. No. 286,600
14 Claims. (Cl. 53—247)



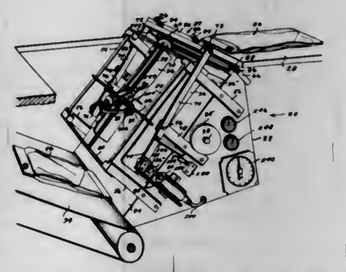
1. Mechanism to arrange a group of containers in a predetermined relationship for feeding the same to an open face of a carton, said mechanism comprising conveyor means to move containers having bail-type handles hanging along one side thereof successively along a path, container collecting and arranging means mounted for rotation and operable to receive containers from said conveyor and arrange sequentially a predetermined number of successive containers in a cluster with the hanging handles thereon extending along one side of each container in a direction out of contact with adjacent containers in said cluster, and separate transfer means operable to engage said arranged cluster of containers and move the same from said collecting and arranging means into an open face of a carton to dispose the cluster within said carton in said arranged condition and thereby prevent the handle on any container from contacting an adjacent container while stored or transported in said carton.

3,284,986
MANUALLY FED BAGGING MACHINES
Daniel Duchin, 1374 Blue Spruce Lane, Wantagh, Long Island, N.Y.
Filed Jan. 24, 1964, Ser. No. 340,077
5 Claims. (Cl. 53—261)



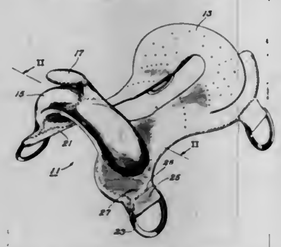
1. A manually fed bagging machine comprising, in combination, a table top, said table top containing a central aperture, a clearance bar disposed transversely on said table top adjacent to said aperture, two inwardly facing U-shaped horn members having ends disposed on said clearance bar and having opposite ends pivotally fixed to said table top, tension springs fixed to said U-shaped members and said table top pivotally urging said U-shaped members outward, belts having one end fixed to the end of each of said U-shaped members disposed on said clearance bar, said belts extending through the aperture in said table top, and a foot pedal, said belts being connected to said foot pedal so that depression of said foot pedal draws said belts through the aperture in said table top pivoting said U-shaped members inward against the urging of said tension springs.

3,284,987
SEALING DEVICE
Carl L. Sigmon, Hickory, N.C., assignor, by mesne assignments, to Hickory Foundry and Machine Company, Hickory, N.C., a corporation of North Carolina
Filed Mar. 18, 1963, Ser. No. 265,726
10 Claims. (Cl. 53—373)



4. An automatic sealing machine for heat sealing and trimming ends of thermoplastic bags comprising an inclined bag supporting slideway, a heat sealing and trimming element acting transversely of said slideway and movable between a bag sealing and trimming position at said slideway for sealing and trimming the ends of bags and an inoperative position spaced from said slideway, an additional heat sealing element associated for movement with said heat sealing and trimming element for additionally sealing said bags inwardly of their trimmed ends, automatic means for moving said heat sealing and trimming element and said additional heat sealing element between said sealing position and said inoperative position, gate means associated with said slideway at a spacing from said heat sealing and trimming element to retain bags in position for sealing and being openable to allow sealed bags to continue down said slideway, and gate operating means for opening and closing said gate means.

3,284,988
METHOD OF MANUFACTURE OF SADDLETREES
Ben G. Veach, Fort Worth, Tex., assignor to Rodeo Shop of Fort Worth, Inc., Fort Worth, Tex.
Filed Feb. 1, 1965, Ser. No. 429,448
2 Claims. (Cl. 54—44)



1. An improved method of attaching rigging D's to a saddle of the type having a saddle tree formed by covering a frame with rawhide, said method comprising the steps of:
(a) pivotally mounting a segment of each rigging D to a looped portion of a strip of metal that provides a bearing and positioning means;
(b) securing the metal strip to said frame of said saddle tree;
(c) folding a moistened and stretched strip of the rawhide on the frame around each looped portion of the metal strip to which each rigging D is pivotally received;
(d) attaching the folded strip of the rawhide such as by sewing to an adjoining portion of the rawhide; and
(e) drying and thus shrinking the rawhide to its finished contour on said frame and around each looped portion.

3,284,989
RACING BOOTS FOR HORSES
Rheta M. H. Code, Box 161, Moosomin, Saskatchewan, Canada, and Joseph B. Lindecher, 8100 Keystone Ave., Skokie, Ill.
Original application May 19, 1964, Ser. No. 368,677. Divided and this application Sept. 13, 1965, Ser. No. 496,220
5 Claims. (Cl. 54—82)

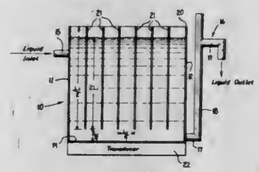


4. A bell boot for horses' feet comprising a hollow substantially globular body portion made of molded rubber material and having a circular bottom opening and a top neck portion with a top circular opening smaller in diameter than that of the said bottom opening, exterior vertical ribs integral with the body portion and extending from the bottom of said body portion to said top neck portion, said ribs being of greater thickness midway between the ends thereof and tapering to a thin edge at each end thereof, said ribs arranged vertically and spaced horizontally from each other symmetrically around the body and dense fibrous reinforcing members encased within the rubber wall of said body portion between said ribs.

3,284,990
ELECTRICAL SEPARATION OF DUST
Nils Örne, 81 Banergatan, Stockholm No, Sweden
No Drawing. Filed Nov. 7, 1963, Ser. No. 322,055
4 Claims. (Cl. 55—5)

1. In a method for the electrical separation of dust from a gas stream between emission and precipitation electrodes in order to avoid a corona-effect on the precipitation electrodes, the improvement which comprises coating the dust particles with an electrically conducting film containing phosphorus pentoxide in order to improve the electrical conductivity of the precipitated dust to enable a direct current of gas ions from the emission electrode to pass through the precipitated dust on the precipitation electrodes and to reach the surface of the said electrodes.

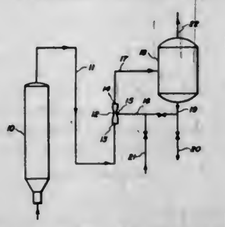
3,284,991
ULTRASONIC DEGASSING OF LIQUIDS
Raymond L. Ploeger, Decatur, Ala., and Theodore Melot, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Dec. 19, 1963, Ser. No. 331,783
11 Claims. (Cl. 55—15)



11. The method of degassing a stream of liquid containing gas bubbles which comprises:
(a) continuously passing a stream of liquid containing gas bubbles into a tank having the inlet slightly below the dynamic liquid level in the tank and having the outlet near the bottom of the tank while applying ultrasonic vibrations to the liquid in the tank by means of a transducer positioned below said liquid;
(b) flowing the liquid in an unrestricted stream along the bottom of the tank from the inlet to the outlet at a depth which is an odd number of quarter wavelengths of the ultrasonic vibrations imparted to the liquid by the transducer while maintaining a plurality of portions of the liquid in a series of relatively quiescent zones above the flowing stream and in contact therewith;
(c) limiting and defining the dimensional limits of the respective quiescent zones by means of the side walls of the tank, the flowing unrestricted stream and a plurality of substantially vertically disposed spaced apart baffles, said baffles being positioned above the bottom of the tank a distance which is an odd number of quarter wavelengths of the ultrasonic vibrations imparted to the liquid by the transducer, said baffles having a vertical length equal to the sum of an even number of quarter wavelengths of the ultrasonic vibrations imparted to the baffles and said baffles extending slightly above the dynamic liquid level in the tank;

(d) said dynamic liquid level being maintained at a height equal to the sum of an odd number of quarter wavelengths of the ultrasonic vibrations imparted to the liquid;
(e) and continuously exiting the stream from the tank opposite the inlet and near the bottom of the tank.

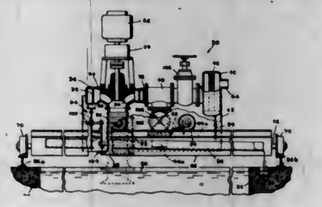
3,284,992
HYDROGEN CHLORIDE SEPARATION
Andrew O. Wikman, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
Filed Sept. 30, 1963, Ser. No. 312,736
6 Claims. (Cl. 55—48)



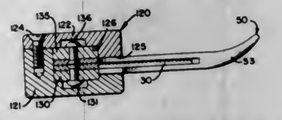
1. A process for rapidly effecting separation between hydrogen chloride and a substantially water insoluble component, both contained in a pressurized gaseous stream, which process comprises:
(1) passing said stream through a Venturi tube means;
(a) said Venturi tube means having a gaseous stream entry port, a dispersion outlet port, and an aqueous liquid entry port substantially at the throat of said Venturi tube means;
(b) passing an aqueous liquid into the liquid entry port at the throat of the Venturi so as to form a two-phase liquid-gas dispersion of said effluent and said aqueous liquid; the passing of said aqueous liquid into said throat being effected by the pressure drop of the effluent at said throat;
(2) passing the so formed two-phase dispersion from said dispersion outlet port into a vessel wherein the two phases separate to form a body of settling liquid at a level above the Venturi throat to enable the settling liquid to flow down to said throat, the hydrogen chloride being substantially contained in the liquid phase and the gaseous phase being substantially free from hydrogen chloride, and
(3) recovering the gaseous phase from said vessel.

3,284,993
FOAM COLLECTION AND DISPOSAL SYSTEM
Joseph F. Sebald, Bloomfield, Igor J. Karassik and Hunt Davis, Maplewood, and Arthur E. Carter, Summit, N.J., assignors to Worthington Corporation, Harrison, N.J., a corporation of Delaware
Filed June 28, 1963, Ser. No. 291,556
16 Claims. (Cl. 55—178)

1. A system for the collection and disposal of foam from the surface of a liquid comprising:
(a) a foam evacuating means having a suction inlet and an outlet;
(b) the suction inlet so constructed and arranged that the position thereof is adjustable with relationship to the surface of the liquid to draw foam and air into the foam evacuating means, wherein the foam will be collapsed and discharged from the outlet thereof;
(c) a separating tank connected to the outlet and having separate discharge outlets for air and liquid to separate the air and collapsed foam before discharge therefrom; and
(d) control means operatively associated with the suction inlet to selectively adjust and position the suction inlet with relationship to the surface of the liquid.



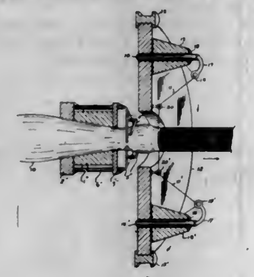
3,284,994
SICKLE
William E. Hamel, Box 1036, Dos Palos, Calif.
Continuation of application Ser. No. 295,856, June 3, 1963. This application Oct. 28, 1963, Ser. No. 319,404
11 Claims. (Cl. 56—298)



1. A sickle comprising an elongated support arm; an elongated mounting bar borne by the support arm and being longitudinally reciprocable relative thereto from a power source remotely of the sickle; a plurality of sickle guards rigidly connected to said mounting bar having a plurality of longitudinally equally spaced fingers laterally outwardly extended therefrom, said fingers individually providing opposite upper and lower material guiding segments having opposite upper leading edges and spaced substantially parallel lower trailing edges defining a slot therebetween through the fingers; and a plurality of teeth rigidly connected to the support arm in slidable relation within said slot of the fingers and having laterally outwardly convergent side portions, said side portions being beveled to provide opposite upper leading cutting edges and lower trailing cutting edges in shearing engagement with said leading and trailing cutting edges of the fingers respectively so that during reciprocation of the guards the leading edges of the teeth and fingers co-act in shearing engagement to sever encountered material prior to engagement of their respective trailing edges with the latter displaced from each other to exhaust such material from the slot to minimize clogging of the sickle.

3,284,995
SELF-SIZING TORSION BAR ORIFICE ASSEMBLY
Nicholas J. Haight, Waterloo Township, Jefferson County, Wis., assignor to the United States of America as represented by the Secretary of the Air Force
Filed June 9, 1964, Ser. No. 373,896
6 Claims. (Cl. 57—3)

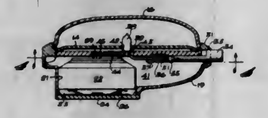
4. A device for maintaining a group of strands in compact relationship as they are moved through the device comprising a tubular member having an entrance end and an exit end through which said strands are passed, at least three torsion bars, each of said bars having first and second sections that form an angle with respect to each other, the first sections of said bars extending across the exit end of said tubular member to define an orifice through which said strands are passed upon leaving said tubular member, said first sections being adapted to lie in tangentially engaging relationship with said strands as the strands pass through said orifice, said second sections of said bars being resilient and extending generally longitudinally of said tubular member, and means for anchoring the second sections of said bars to said tubualr member at points remote form said first sections of said bars whereby rotations of said first sections in directions that enlarge said orifice produce torques in said second sections which oppose said rotations.



3,284,996
METHOD OF PRODUCING CRIMPED YARN
Hanjiro Fujii, 37 Hiranotorilimae-cho, Kita-ku, Kyoto, Japan
No Drawing. Filed June 6, 1962, Ser. No. 200,346
Claims priority, application Japan, July 7, 1961, 36/24,475
4 Claims. (Cl. 57—157)

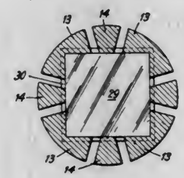
1. A method of producing an undistorted bulky yarn having a high stretchability which comprises (a) imparting to separate thermoplastic synthetic multifilaments a preliminary twist at 300 to 800 t./m. in the S direction, associating 2 or more ends of the twisted multifilaments, imparting to the associated multifilaments a high twist at more than 800 t./m. in the S direction, setting the resulting high twisted filament bundle, untwisting the set filament bundle and separating the untwisted bundle into the original multifilaments to obtain filaments S, (b) imparting to separate thermoplastic synthetic multifilaments a preliminary twist at 300 to 800 t./m. in the Z direction. associating 2 or more ends of the twisted multifilaments, imparting to the associated multifilaments a high twist at more than 800 t./m. in the Z direction, setting the resulting high twisted filament bundle, untwisting the set filament bundle and separating the untwisted bundle into the original multifilaments to obtain filaments Z, and (c) thereafter combining filaments S with filaments Z.

3,284,997
ILLUMINATED WRISTWATCH
Lawrence V. Money, Jr., Miami, Fla., assignor to Howard Ornstein, Miami Beach, Fla.
Filed Aug. 31, 1964, Ser. No. 393,205
1 Claim. (Cl. 58—50)



A wristwatch including; a metal casing comprising mating back and front plates in casing-defining relation with said back plate having a well defined therein, a removable cover plate to cover the well, and said front plate having a circular opening, a crystal spanning the opening and captivated in said casing, a watch face having a central opening therethrough in the casing to divide the casing interior into a mechanism chamber and a time indicator chamber, a time piece mechanism in the mechanism chamber with a portion of said mechanism extending into the time indicator chamber and a pair of hands operatively connected to the portion, said casing having a first and a second opening communicating with the mechanism chamber, a watch stem means seated in the first opening and operatively connected to the time piece mechanism and operable exteriorly of the casing, said watch face having a through recess adjacent the periphery thereof; and an electrical illumination system including a battery in said well, a light bulb in said through recess and electrical conductor means to connect the battery and the bulb in series to light the watch face; spring means on the interior face of the cover plate to urge the battery into a predetermined position in the well, to maintain the battery and said light source electrically in series and to electrically connect the battery to said casing; and switch means in the casing including a first arm insulated from said casing and a second arm electrically in contact with said casing, said first arm including a conductor wire to connect the first arm electrically in series with said light source, and insulator means on said first arm and wire to insulate the first arm and the casing; said second arm being disposed in said second casing opening, means electrically connecting said second arm and said casing at all times with the second arm being movable between a first and a second position with a portion of said second arm at all times exterior of said casing and said second arm being electrically conductive and including a terminal adapted to engage the first switch arm when in one position, resilient means comprising a bent leaf spring anchored at one end to the casing and at the other end to the second arm to normally urge said second arm away from the first arm, so that the second arm may be moved by said portion exteriorly of the casing into engagement with the first arm to close the circuit and to permit current to flow to light the bulb.

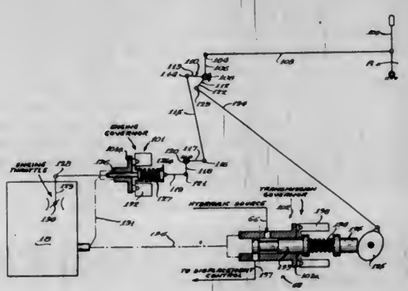
3,284,998
CLOSING MEANS OF CASINGS FOR APPARATUS SUCH AS MEASURING INSTRUMENTS, WATCH MOVEMENTS OR THE LIKE
Pierre-Antoine Nardin, Rue Beau-Site 13, Le Locle, Switzerland
Filed Feb. 3, 1964, Ser. No. 341,931
Claims priority, application Switzerland, Feb. 8, 1963, 1,555/63; Jan. 24, 1964, 898/64
7 Claims. (Cl. 58—90)



1. A casing for enclosing an apparatus such as a measuring instrument, a time movement, etc., comprising: a case member which includes a side wall portion extending axially from a radial wall portion, said wall portions defining a space for receiving said apparatus, one axial end of said side wall portion being connected to said radial wall portion and the other axial end of said side wall portion defining an access opening for said apparatus, a

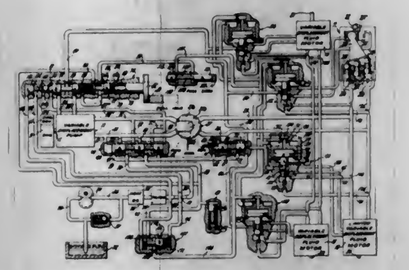
removable closure member for sealing said access opening, said other end including releasable gripping means for holding said removable closure member, said gripping means being comprised of a pair of radially inwardly projecting shoulders axially spaced apart from each other and defining therebetween a peripheral recess, said closure member comprising an axially extending side wall connected at one end to the periphery of a radially extending wall, the other end of said side wall being free and comprising a radially outwardly extending rim, said rim being received within said recess and being radially overlapped by said shoulders and thereby confined against axial movement by said shoulders, said closure member side wall extending axially externally of said case member side wall portion to an extent whereby it is adapted to be circumferentially gripped by a tool, said closure member side wall being resiliently displaceable in an inwardly radial direction to an extent whereby said rim may be displaced out of overlapping relationship with said shoulders so that said shoulders will not obstruct movement of said rim in an axial direction.

3,284,999
HYDROSTATIC TRANSMISSION
Robert J. Lease, La Salle, Ill., assignor to Sundstrand Corporation, a corporation of Illinois
Continuation of application Ser. No. 437,652, Mar. 8, 1965. This application Feb. 1, 1966, Ser. No. 533,742
3 Claims. (Cl. 60—19)



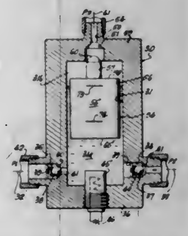
1. In a drive system, a pump, means for varying the displacement of the pump, a motor, means for varying the displacement of the motor, conduit means connecting the pump outlet with the motor inlet and the motor outlet with the pump inlet so that the pump delivers fluid under pressure to drive the motor and the motor returns fluid to the pump, manually operable means connected for controlling the pump and motor displacement varying means to increase the displacement of the pump while holding the motor near maximum displacement and then reducing the displacement of the motor while holding the pump near maximum displacement thereby to bring the transmission up to speed, an engine for driving the pump including an engine throttle for controlling engine speed, a rotary engine governor responsive to engine speed and controlling the engine throttle to maintain engine speed at a predetermined value including means for adjusting the setting of the governor to vary said predetermined value, a rotary transmission governor responsive to engine speed and operable to increase the displacement of the motor upon a drop in engine speed to a value below the set predetermined value including means for adjusting the setting of the governor to vary said lower speed value and manually operable means controlling said adjusting means for simultaneously varying the governor settings.

3,285,000
TRANSMISSION
Howard W. Christenson and James J. Mooney, Jr., Indianapolis, and Robert H. Schaefer, Westfield, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Continuation of application Ser. No. 293,619, July 9, 1963. This application June 4, 1965, Ser. No. 461,461
45 Claims. (Cl. 60—19)



1. In a hydrostatic transmission;
(a) a fluid pump and motor combination having drive means, a plurality of driven means, pump means driven by said drive means, a plurality of motor means each driving one of said driven means and power circuit means connecting said pump and motor means to supply fluid from said pump means to each of said motor means and return fluid from each of said motor means to said pump means, and each of said motor means having motor displacement varying means to vary the displacement of said motor means;
(b) and means connected to said power circuit means and said motor displacement varying means operative in response to increased flow in said power circuit means to a motor to reduce the displacement of a motor receiving increased flow.

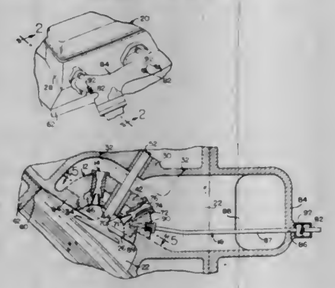
3,285,001
THERMAL FLUID MOVING APPARATUS
Richard C. Turnblade, Northridge, Calif., assignor to Conductron Corporation, Northridge, Calif., a corporation of Delaware
Filed Mar. 4, 1965, Ser. No. 437,319
19 Claims. (Cl. 60—25)



1. A device for moving fluid under pressure comprising:
a housing defining a fluid chamber;
means for vaporizing liquid within said chamber;
a liquid inlet to said chamber;
a fluid outlet from said chamber;
a depressurizing vapor outlet from said chamber;
liquid level dependent means movable between a second predetermined position and a first predetermined position in response to the liquid level within said chamber;

means in combination with said liquid level dependent means for closing said depressurizing outlet at said first predetermined position, said depressurizing outlet being open at said second position;
means in said liquid inlet for opening said inlet at said second position and closing said inlet at said first position; and,
means in said fluid outlet for opening said outlet at said first position and closing said outlet at said second position.

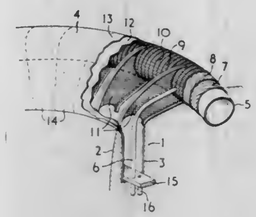
3,285,002
AFTERBURNER COMBUSTION STRUCTURE
Eugene W. Hines, 4292 Esta Drive, Flint, Mich.
Filed Nov. 12, 1964, Ser. No. 410,505
13 Claims. (Cl. 60—30)

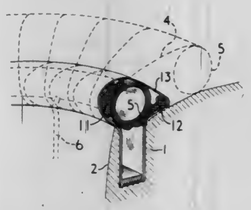


1. In an afterburner structure for an engine having a valved and chambered cylinder head and a communicating exhaust manifold to receive and conduct therethrough quanta of exhaust gases containing unburned fuel as the products and by-products of combustion in said engine,
an insert body in the exhaust chamber of said cylinder heat disposed in relatively adjacent surmounting relationship over and about an exhaust valve port,
said insert body having
an inner shell defining an exhaust gas receiving chamber over said exhaust valve port and adjacent the valve seat,
an outer shell conjoined to said inner shell at their peripheral portions and spaced apart from said inner shell medially to define an air passageway therebetween,
at least one exhaust gas eductor disposed transversely of said insert through said inner and outer shells and communicating with said air passageway therebetween,
and an opening through said outer shell communicating with said air passageway,
and an air supply conduit to serve said eductor having an air discharge portion disposed in said outer shell opening and communicating with said air passageway and an air intake portion disposed outwardly of said manifold.

3,285,003
INFLATABLE STRUCTURE
Erwin Herbert Erhard Martin, Coventry, Richard Noel Thomson, Markfield, near Leicester, and Donald Norbury, Birmingham, England, assignors to Dunlop Rubber Company, Limited, Erdington, England, a corporation of Great Britain
Filed Jan. 26, 1965, Ser. No. 428,170
Claims priority, application Great Britain, Feb. 1, 1964, 4,366/64
17 Claims. (Cl. 138—45)

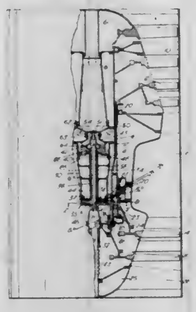
1. An inflatable device for defining the intake contour surrounding an opening or the like, comprising: an inflatable envelope in surrounding relation with said opening and expandable to a dimension greater than said opening to form a contoured profile intake in combination with such opening, means for retaining said envelope at its inner edge in adjacent relation with the edge of said opening, circumferentially expandable means disposed within





said envelope and extendable to effect radially outward movement of said envelope, and relatively inextensible web means for limiting the outward movement of said circumferentially extendable means to define the finished contour of said envelope in its expanded position.

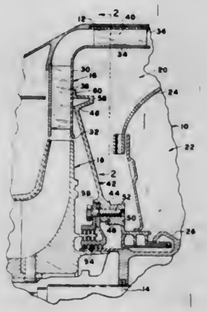
3,285,004
BEARING ASSEMBLY
Eric T. Hopley, Allestree, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a company of Great Britain
Filed Mar. 19, 1965, Ser. No. 441,032
14 Claims. (Cl. 60—39.08)



8. A gas turbine engine comprising an engine casing, compressor means, combustion equipment, and turbine means arranged in flow series within said engine casing, shafting on which the compressor means and turbine means are drivingly mounted, a bearing within which the shafting is mounted, a rotor member mounted internally of the bearing, the rotor member being mounted within and driven by the shafting and having a passage there-

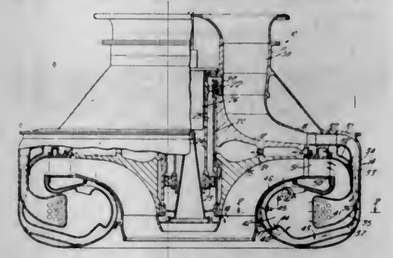
through, said passage having a lubricant inlet and a lubricant outlet which is disposed radially outwardly of the lubricant inlet, ducting, by means of which the lubricant outlet may communicate with the bearing, a stationary lubricant reservoir mounted within said shafting and means including said passage permitting lubricant to pass from the lubricant reservoir to the ducting only when the rotor member is in at least one predetermined angular position, whereby a quantity of lubricant is centrifugally forced through the said passage and passes to the bearing at each revolution of the rotor member.

3,285,005
TURBINE ENGINE CONSTRUCTION
Harrison William Morris, Detroit, Mich., assignor to Continental Aviation and Engineering Corporation, Detroit, Mich., a corporation of Virginia
Filed May 28, 1964, Ser. No. 370,796
3 Claims. (Cl. 60—39.32)



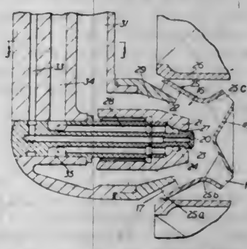
1. In combination with a turbine engine having a drive shaft, a combustion chamber disposed about said drive shaft, a compressed air reservoir disposed adjacent said combustion chamber, a compressor driven by said shaft and having a rotating annular outlet and delivering compressed air substantially radially inwardly through said outlet, a fixed diffuser structure having an inlet to receive the compressed air from said compressor outlet and delivering it annularly in an axial direction into said compressed air reservoir, means for sealing said compressed air reservoir from said compressor outlet and said diffuser inlet comprising a separating member being substantially conical in shape, said separating member having an inner peripheral edge, means securing said inner peripheral edge of said separating member about said shaft in sealing relation thereto, said separating member further comprising a medial portion extending conically from said inner peripheral edge to an area adjacent said diffuser structure, a thermal and pressure compensating portion provided at the outer edge of said medial portion and comprising an annular bent portion being substantially U-shaped in cross-section in planes containing the axis of said shaft, said U-shaped portion forming a relatively small portion of said separating member in relation to said medial portion, said separating member further comprising a radially extending outer edge portion fixed to a radially extending surface of said diffuser structure intermediate said inlet and said diffuser structure outlet whereby said separating member separates and seals said compressed air reservoir from said compressor outlet and forces caused by pressure and thermal differentials existing in said compressed air reservoir and at said compressor outlet and acting upon said separating member are taken up by said U-shaped portion.

3,285,006
CAS TURBINE VERTICAL LIFT ENGINE
Frederick Freeman, Derby, and Herbert Frank Smith, Allenton, Derby, England, assignors to Rolls-Royce Limited, Derby, England, a company of Great Britain
Filed Jan. 9, 1964, Ser. No. 336,792
Claims priority, application Great Britain, Jan. 31, 1963, 4,126/63
11 Claims. (Cl. 60—39.36)



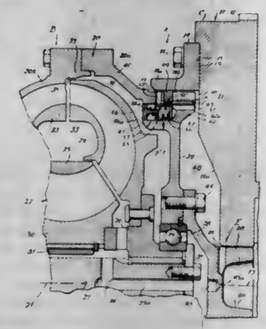
1. A gas turbine vertical lift engine comprising a centrifugal compressor, an inward radial flow turbine which drives the compressor and which is disposed back to back therewith, an annular inlet passage which receives air flowing in a radially outward direction from the compressor, an annular combustion chamber having a combustion zone therein, a plurality of perforated angularly spaced dilution air chutes which extend into the inlet passage and extend radially inwardly into the combustion chamber downstream of the combustion zone therein, means ensuring that one portion of the air supplied to the inlet passage passes via the chutes and into the combustion chamber so as to dilute the combustion gases therein, while another portion of the said air passes between said chutes and is supplied to the combustion zone so as to support combustion thereat, and an annular outlet passage which delivers combustion gases in a radially inward direction from the combustion chamber to the turbine.

3,285,007
FUEL INJECTOR FOR A GAS TURBINE ENGINE
Denis Richard Carlisle, Risley, England, Robert Gani, Chadstone, Melbourne, Victoria, Australia, and Albert Ernest Weldon, Ilkeston, England, assignors to Rolls-Royce Limited, Derby, England, a company of Great Britain
Filed Oct. 26, 1964, Ser. No. 408,455
Claims priority, application Great Britain, Nov. 11, 1963, 44,479/63
5 Claims. (Cl. 60—39.74)



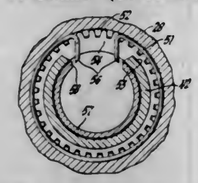
1. A gas turbine engine fuel injector comprising a plurality of concentric nozzles, means supplying fuel to each of said nozzles, a shroud having a convergent upstream portion concentrically spaced from the outermost of said nozzles, and a divergent downstream portion extending downstream of said nozzles, and baffle means supported radially inwardly of the downstream portion of said shroud and spaced downstream of said nozzles, the arrangement being such that, in operation of the injector, the fuel emitted by said nozzles passes through said shroud simultaneously with air drawn through the upstream portion thereof and passes between said shroud and said baffle means.

3,285,008
SPLINED DRIVE CONNECTION FOR HYDRODYNAMIC TORQUE CONVERTER AND LUBRICATION MEANS THEREFOR
Eugene S. Murphy, Rockford, Ill., assignor to Borg-Warner Corporation, a corporation of Illinois
Filed Dec. 31, 1964, Ser. No. 422,589
4 Claims. (Cl. 60—54)



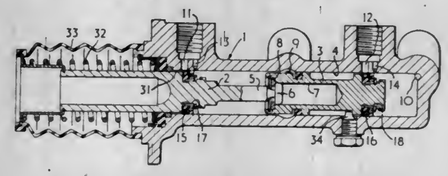
1. A transmission mechanism comprising: a rotative driving member carrying a plurality of teeth; a hydrodynamic transmitting means to which fluid pressure is supplied to maintain an operative filling, said hydrodynamic transmitting means being journaled independently of said rotative driving member and having teeth arranged adjacent the outer periphery thereof and in mesh with the teeth of said driving member for receiving rotative power therefrom, said hydrodynamic transmitting means and driving member being associated to define a chamber adjacent said outer periphery and within which said teeth are disposed; and means contained by said hydrodynamic transmitting means for supplying fluid at a controlled rate therefrom to said chamber and including pressure responsive means for exhausting fluid from said chamber upon attainment of a predetermined pressure condition therein while maintaining said teeth continuously bathed in fluid.

3,285,009
TRANSMISSION
John E. Storer, Jr., Harry Fackenthal, and Ronald J. Deal, Indianapolis, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 1, 1965, Ser. No. 460,225
10 Claims. (Cl. 60—54)



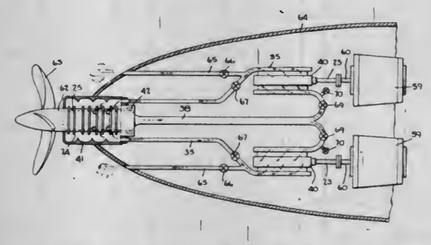
1. In apparatus of the character described, a sleeve shaft, an annular member mounted on said sleeve shaft, a locking ring, a shallow groove in the internal surface of said annular member having a depth from the outer diameter of the sleeve shaft less than the radial thickness of the locking ring, a deep groove in the outer surface of the sleeve shaft having a depth from the inner diameter of the annular member at least as large as the radial thickness of said locking ring, a slot extending from the base of said deep groove through said sleeve shaft, said locking ring having spaced ends having inwardly bent tang portions extending through said slot to the interior of said sleeve shaft.

3,285,010
MASTER CYLINDER ASSEMBLIES
John Walter Davis, Birmingham, England, assignor to Dunlop Rubber Company Limited, London and Erdington, Birmingham, England, a corporation of Great Britain
Filed Jan. 5, 1965, Ser. No. 423,419
Claims priority, application Great Britain, Jan. 8, 1964, 809/64
13 Claims. (Cl. 60—54.6)



1. A master cylinder assembly for a hydraulic system comprising a piston and cylinder, said cylinder having a fluid outlet on the forward side thereof, and an inlet for fluid on the other side thereof, said piston being provided with a resilient sealing ring for engagement with said cylinder and axially slidably mounted thereon, two axially spaced radially extending abutments on said piston limiting the slidable movement of said ring, said sealing ring having at least one axially extending channel formed on its inner peripheral surface to provide on the return stroke of the piston a passage for hydraulic fluid between the inlet and the part of the interior of the cylinder forward of the piston, said ring being engageable with a rear abutment face on the piston during the forward stroke of the piston to seal the said passage for hydraulic fluid.

3,285,011
HYDRAULIC TORQUE CONVERSION APPARATUS
Leonard Meyerhoff, Brooklyn, N.Y., assignor to Eastern Research Group, a partnership
Filed Feb. 25, 1960, Ser. No. 11,057
7 Claims. (Cl. 60—221)



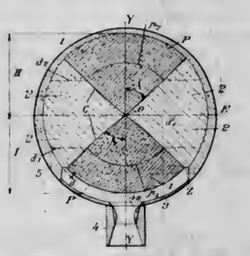
1. Hydraulic transmission apparatus for transmitting high power within a ship from a plurality of drive shafts each having extremely high rotational speed to a driven

shaft, said apparatus comprising a plurality of comparatively high volume output type single stage axial flow pumps each having an impeller shaft adapted to engage a different drive shaft and each having a transmission fluid outlet opening, said pump fluid outlet openings arranged in parallel relationship with respect to the transmission fluid output of each of them, a turbine adapted to engage said driven shaft and having a transmission fluid inlet opening, said fluid inlet opening of the turbine comparatively spaced apart from said fluid outlet openings of the pumps, duct means between said fluid inlet opening of the turbine and said fluid outlet openings of the pumps providing passageway for transmission fluid for interconnecting the pumps and the turbine, means for supplying said fluid to said pumps, said turbine being conditioned to rotate in response to a predetermined flow of fluid at a speed different than the speed of the pumps providing said predetermined flow thereto, additional duct means, means connected to said additional duct means for producing a fluid jet extending without said ship, means for selectively delivering sea water from without said ship to at least one of said pumps, and means for selectively bypassing the flow of sea water of at least one of said pumps from said turbine to said additional duct means, said apparatus so arranged and constructed that when said apparatus is transmitting said power the speed of rotation of said turbine and said driven shaft is substantially different from that of said drive shaft.

3,285,012
SOLID PROPELLANT ROCKET MOTORS

Pierre Larue, Chatenay-Malabry, France, assignor to Office National d'Etudes et de Recherches Aerospatiales (O.N.E.R.A.), Seine, France, a society of France

Filed Mar. 4, 1964, Ser. No. 349,502
Claims priority, application France, Mar. 5, 1963, 926,906
18 Claims. (Cl. 60—253)

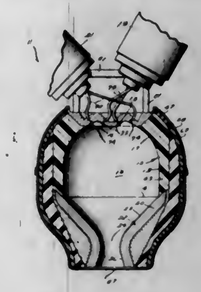


1. A rocket motor which comprises, in combination, a shell of semi-spherical shape having an axis of symmetry, nozzle means carried by said shell and starting from a point located on said axis, and a semi-spherical mass of solid propellant fitting, at least approximately, in said shell, said solid propellant mass consisting of two different portions both of revolution about said axis, one of said portions, made of a propellant burning faster than that of the other portion, being in the form of a spherical sector of revolution about said axis, the other portion occupying the remainder of the semi-spherical volume of said mass, said two propellant portions being in intimate contact with each other, the apex angle 2A of said fast burning propellant portion and the ratio k of the velocity of combustion of the fast burning propellant to the velocity of combustion of the other propellant being linked together by the relation $k=1/\cos A$, the end of said solid propellant mass on the side of which said nozzle means is located having an ignition free surface symmetrical about said axis.

3,285,013
ABLATIVELY COOLED ROCKET WITH NON-ERODING THROAT

Leo R. Bell, Sherman Oaks, Calif., assignor to TRW Inc., a corporation of Ohio

Filed July 16, 1962, Ser. No. 210,146
3 Claims. (Cl. 60—258)

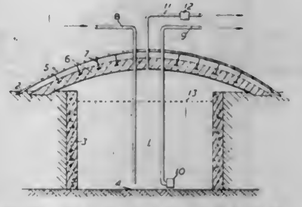


1. An ablatively cooled rocket motor comprising an open ended ablative body converging toward one end and defining a combustion chamber, a head spanning and closing the convergent end of the body, means carried by said head for injecting fuel and oxidizer through the head for burning in the combustion chamber, a tubular nozzle at the opposite open end of the body converging to a reduced diameter throat beyond the body and then diverging from the throat to define an outwardly flaring exit portion, said tubular nozzle having a uniform thickness throughout its length to minimize thermal shock and being composed of a high temperature substantially erosion resistant metal alloy, an insulating cover surrounding said tubular nozzle minimizing heat conduction therethrough, and a multi-piece housing including a first portion enveloping said cover and a second portion enveloping a part of the first portion and surrounding said body and head.

3,285,014
GROUND RESERVOIR FOR THE STORAGE OF A LIQUEFIED GAS

Maurice Nachshen, London, England, assignor to Conch International Methane Limited, Nassau, Bahamas, a company of the Bahamas

Filed Aug. 17, 1962, Ser. No. 217,652
Claims priority, application Great Britain, May 24, 1962, 20,017/62
5 Claims. (Cl. 61—.5)

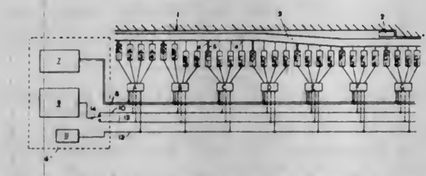


1. A reservoir for the storage of liquefied gas, at a temperature far below ambient temperature, comprising a fluid-impervious fabricated enclosure wall which is structurally rigid at all ambient temperatures completely lining the sides of a hole in the ground and extending down substantially from the surface of the ground into fluid-tight sealing engagement with a fluid-impervious natural ground stratum, constituting the bottom of the reservoir for direct retaining and supporting engagement with liquid gas to be stored in said reservoir; said wall defining with said stratum a fluid-impervious, water-free storage reservoir; a fluid-and-vapor tight roof, substantially at the surface of the earth, completely covering the storage reservoir and sealing the interior thereof from the ambient atmosphere, a gas vent in fluid communication with said storage reservoir having a pressure control device therein for controlling the vapor pressure within the storage reservoir, and conduit means in fluid communication with said storage reservoir for charging into and discharging from the storage reservoir a liquefied gas.

3,285,015
MINING APPARATUS

James Carnegie, 15, Copt Elm Close, Charlton Kings, England, and David Gurney Arnold Thomas, The Cottage, Deerhurst Walton, England

Filed Nov. 19, 1962, Ser. No. 238,587
Claims priority, application Great Britain, Nov. 21, 1961, 41,622/61
10 Claims. (Cl. 61—45)

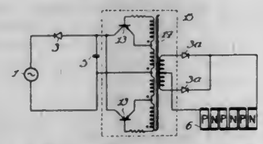


1. Roof support control apparatus adapted to control a roof support assembly which includes a series of advanceable roof supports at least some of which have associated therewith conveyor advancing means, the control apparatus comprising: selecting means coupled with said supports and operable to sequentially select the roof supports for an advancing operation and to simultaneously with each roof support selection select for operation a conveyor advancing means associated with a non-selected roof support, whereby the conveyor is automatically advanced at a position further along the working face from a roof support which is being advanced.

3,285,016
THERMOELEMENT TYPE ELECTRIC POWER SOURCE CIRCUIT

Minoru Nagata, Kodaira-shi, Japan, assignor to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan

Filed Apr. 22, 1963, Ser. No. 274,499
Claims priority, application Japan, Apr. 25, 1962, 37/15,915
1 Claim. (Cl. 62—3)



A thermoelectric cooling device comprising, in combination,

a thermoelement for cooling miniature semiconductor components at high response speed; an alternating power source; semiconductor rectifying means for rectifying the voltage of said power source; a semiconductor rectangular wave oscillator wherein the rectified voltage is the operating voltage for said rectangular wave oscillator means for full-wave rectifying output of said rectangular wave oscillator; said thermoelement being directly connected to the full-wave rectifying output.

3,285,017
TWO-PHASE THERMOELECTRIC BODY COMPRISING A SILICON-GERMANIUM MATRIX

Courtland M. Henderson, Xenia, and Emil R. Beaver, Jr., Tipp City, Ohio, assignors to Monsanto Company, a corporation of Delaware

Filed May 27, 1963, Ser. No. 283,195
11 Claims. (Cl. 62—3)

1. As an article of manufacture, a shaped, semiconductor two-phase body comprising a matrix of consolidated germanium and silicon in the proportion of between 20 mole percent to 75 mole percent germanium, and 80 mole percent to 25 mole percent silicon, the said matrix having dispersed therein a particulate material selected from the group consisting of the stable binary sulfides, oxides, borides, carbides, nitrides, silicides, and phosphides of boron, thorium, aluminum, magnesium, calcium, titanium, zirconium, tantalum, silicon, vanadium, hafnium, columbium, tungsten, iron, cobalt, nickel, rhenium, molybdenum, beryllium, barium and rare earths of the lanthanide and actinide series, the said dispersant being present in the range of from 0.001 mole percent to 29 mole percent of the matrix, and having an absolute melting point of at least 105% of the melting point of the said matrix material, the said dispersant also having a solubility in the matrix of less than 10 mole percent at a temperature which is 60% of the absolute melting point of the matrix, the said dispersant also being characterized by a percent cubic thermal expansion which differs arithmetically from that of the matrix by a deviation of from 1.03% to 4.00% over the range of 0° C. to 1000° C.

2. A thermoelectric unit comprising at least one shaped, semiconductor two-phase body, and electrical leads at opposed portions of the said body, the said body comprising a matrix of a combination of between 20 mole percent to 75 mole percent of germanium, and 80 mole percent to 25 mole percent of silicon and having dispersed within the said matrix, particles of calcium oxide present at from 0.001 mole percent to 29 mole percent of the matrix, the said calcium oxide dispersant being characterized by a solubility in the matrix of less than 10 mole percent at a temperature which is 60% of the absolute melting point of the matrix, and a percent cubic thermal expansion which differs arithmetically from that of the matrix by a deviation of from 1.03% to 4.00%, over the range of from 0° C. to 1000° C.

3,285,018
TWO-PHASE THERMOELECTRIC BODY COMPRISING A SILICON-CARBON MATRIX

Courtland M. Henderson, Xenia, and Emil R. Beaver, Jr., Tipp City, Ohio, assignors to Monsanto Company

Filed May 27, 1963, Ser. No. 283,196
10 Claims. (Cl. 62—3)

1. As an article of manufacture, a shaped, semiconductor two-phase body comprising a matrix of consolidated silicon and carbon in the proportion of between 20 mole percent to 80 mole percent silicon, and 80 mole percent to 20 mole percent carbon the said matrix having dispersed therein a particulate material selected from the group consisting of the stable binary sulfides, oxides, borides, carbides, nitrides, silicides, and phosphides of boron, thorium, aluminum, magnesium, calcium, titanium, zirconium, tantalum, silicon, vanadium, hafnium, columbium, tungsten, iron, cobalt, nickel, rhenium, molybdenum, beryllium, barium and rare earths of the lanthanide and actinide series, the said dispersant being present in the range of from 0.001 mole percent to 29 mole percent of the matrix, and having an absolute melting point of at least 105% of the melting point of the said matrix material, the said dispersant also having a solubility in the matrix of less than 10 mole percent at a temperature which is 60% of the

absolute melting point of the matrix, and said dispersant also being characterized by a percent cubic thermal expansion which differs arithmetically from that of the matrix by a deviation of from 1.50% to 6.00% over the range of 0° C. to 1500° C.

3,285,019
TWO-PHASE THERMOELECTRIC BODY COMPRISING A LEAD-TELLURIUM MATRIX

Courtland M. Henderson, Xenia, and Emil R. Beaver, Jr., Tipp City, Ohio, assignors to Monsanto Company

Filed May 27, 1963, Ser. No. 283,197
13 Claims. (Cl. 62—3)

1. As an article of manufacture, a shaped, semiconductor lead-tellurium two-phase body comprising a matrix of consolidated lead and tellurium in the proportion of between 43 mole percent to 54 mole percent lead, and 57 mole percent to 46 mole percent tellurium, the said matrix having uniformly dispersed therein a particulate material selected from the group consisting of the oxides of magnesium, aluminum, zirconium, beryllium, chromium, hafnium, vanadium; the nitrides of boron and rare earth elements of lanthanide and actinide series; the sulphides of the rare earth elements of lanthanide and actinide series; the phosphides of boron, aluminum; the carbides of boron, silicon, magnesium, titanium; the silicides of carbon; the fluorides of calcium, magnesium, sodium; the said dispersant being present in the range of from 0.001 mole percent to 29 mole percent of the matrix, and having an absolute melting point of at least 105% of the melting point of the said matrix material, the said dispersant also having a solubility in the matrix of less than 10 mole percent at a temperature which is 60% of the absolute melting point of the matrix, the said dispersant also being characterized by a percent cubic thermal expansion which differs arithmetically from that of the matrix by a deviation of from 0.50% to 2.00% over the range of 0° C. to 500° C.

2. A thermoelectric unit comprising at least one shaped, semiconductor two-phase body, and electrical leads at opposed portions of the said body, the said body comprising a matrix of a combination of between 43 mole percent to 54 mole percent of lead, and 57 mole percent to 46 mole percent of tellurium, and having dispersed within the said matrix, particles of boron nitride present at from 0.001 mole percent to 29 mole percent of the matrix, the said boron nitride dispersant being characterized by a solubility in the matrix of less than 10 mole percent at a temperature which is 60% of the absolute melting point of the matrix, and a percent cubic thermal expansion which differs arithmetically from that of the matrix by a deviation of from 0.50% to 2.00% over the range of from 0° C. to 500° C.

3,285,020
AUTOMATIC POWER SUPPLY FOR THERMOELECTRIC COOLER

Donald B. Steen, Baltimore, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed May 28, 1965, Ser. No. 459,958
12 Claims. (Cl. 62—3)

1. A power supply for delivering a controlled amount of power to a load in response to a physical condition comprising:

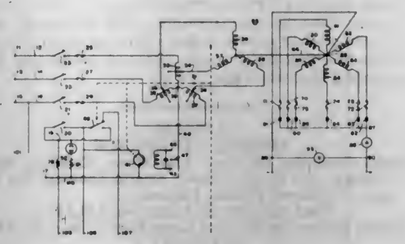
means for sensing a physical condition;

variable transformer means for delivering a controlled amount of electrical power having an input and an output;

means responsive to said sensing means for varying said variable transformer;

switch means connected between a source of alternating current power and said variable transformer input means;

means responsive to said transformer varying means for actuating said switch means whereby the amount of power delivered to the load is dependent on said sensed physical condition;

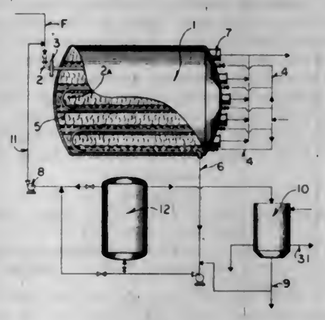


and rectifying means, said rectifying means being coupled to the output of said variable transformer means.

3,285,021
CONCENTRATION OF EXTRACTS BY FREEZING WITH RESIDENCE CRYSTAL GROWTH

Hans Svanoe, Warren, Pa., assignor to Struthers Scientific and International Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 5, 1962, Ser. No. 235,355
9 Claims. (Cl. 62—58)



1. In a process for concentrating aqueous products by removing ice therefrom the steps comprising:

(a) cooling an aqueous product in the presence of ice forming nuclei in indirect heat exchange with a volatile refrigerant by passing said aqueous product through tubular parallel flow paths, in a folded zig-zag pattern, submerged in a pool of said refrigerant, to form an ice slurry, each flow path comprising at least three connected horizontal legs;

(b) maintaining each leg in a pool of liquid refrigerant, supplied thereto in parallel paths;

(c) withdrawing refrigerant vapor from each pool of refrigerant in parallel paths to cool the refrigerant pool;

(d) withdrawing the ice slurry from the heat exchanger;

(e) passing a portion of the ice slurry to a retention zone for growth of crystals;

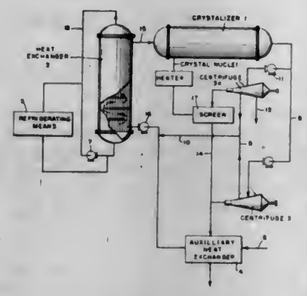
(f) returning the remaining portion of the ice slurry containing nuclei to the cooling step (a); and

(g) separating ice slurry into ice and concentrated aqueous product by centrifuging.

3,285,022
CONCENTRATION OF EXTRACTS BY FREEZING

John W. Pike, 80 Broadview Ave., New Rochelle, N.Y.

Filed Jan. 8, 1963, Ser. No. 250,190
5 Claims. (Cl. 62—58)



1. In a process for the concentration of an aqueous product by freezing, wherein water is removed from the product as ice crystals, the steps which comprise:

(a) cooling an original aqueous fluid product to a metastable state, in which the product is undercooled in a monophase environment to a temperature below the normal freezing point of the product, said cooling being conducted by indirect heat exchange with a recirculating refrigeration medium, the aqueous product flowing in a horizontal path upwardly in baffled flow;

(b) transferring the monophase product while in the undercooled and metastable state to a stabilizing environment that reverts the product to a stable state;

(c) releasing the undercooling as heat of fusion of ice in the stabilizing environment to form an ice slurry of larger and smaller ice crystals in liquid;

(d) centrifuging the liquid from the ice slurry;

(e) washing the ice crystals and separating the washings from the crystals;

(f) recirculating the centrifuged liquid and the washings from the ice crystals to said original product of step (a);

(g) centrifuging and screening the washed ice crystals of step (e) to divide the crystals into smaller and larger crystals;

(h) transferring the smaller ice crystals from step (g) to the stabilizing environment of step (b); and

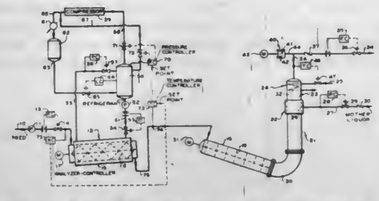
(i) recovering the larger crystals of step (g) separate from the original product of step (a).

3,285,023
CONTROLLING CRYSTALLIZER COOLING RESPONSIVE TO TEMPERATURE AND FREEZING POINT OF THE MATERIAL

Daniel M. Vesper, Bartlesville, Okla., and Glenn A. Jackson, Ann Arbor, Mich., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Oct. 24, 1963, Ser. No. 318,593
6 Claims. (Cl. 62—58)

1. In a process wherein a feed mixture is cooled to crystallize a portion thereof to form a slurry; the method of regulating the process to produce a slurry having a substantially constant solids content which comprises measuring the temperature of the slurry and establishing a first signal representative of such temperature, measuring a property of the feed mixture which is representative of the freezing point thereof and establishing a second signal representative of such measured property, comparing said first and second signals, and regulating the amount of

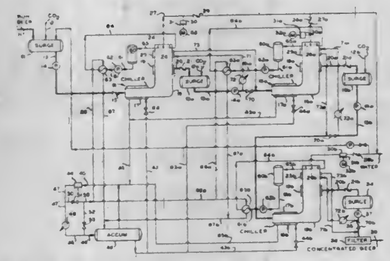


cooling to which the feed mixture is subjected to maintain a predetermined relationship between said first and second signals.

3,285,024
CRYSTAL MELTING WITH HEAT PUMP AND HEATED MOTHER LIQUID

Robert O. Dunn and John J. Moon, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Dec. 16, 1963, Ser. No. 330,986
4 Claims. (Cl. 62—58)



1. In a process for separating a fluid mixture wherein the mixture is cooled to crystallize a portion thereof to form crystals and uncrystallized mother liquor, the crystals and mother liquor are passed through a filtration zone to remove mother liquor, the remaining crystals are passed through a purification zone to a melting zone wherein crystals are melted, a portion of the resulting melt is removed, and the remainder of the crystal melt is passed back into the crystals in the purification zone; a combined cooling and heating process which comprises passing a volatile liquid refrigerant in heat exchange relationship with the fluid mixture to provide cooling of the mixture, passing at least a portion of the spent refrigerant in heat exchange relationship with a heating fluid to warm the heating fluid and cool the refrigerant, passing the resulting warmed heating fluid in heat exchange relationship with crystals in the melting zone to provide heat to melt crystals, heating a portion of the mother liquor removed from the filtration zone, and passing the thus heated mother liquor in heat exchange relationship with crystals in the melting zone to provide additional heat to melt crystals.

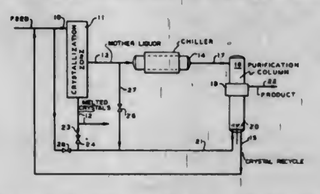
3,285,025
MULTI-STAGE CRYSTALLIZATION PROCESS

Duane D. Shaul, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Dec. 20, 1963, Ser. No. 332,081
8 Claims. (Cl. 62—58)

1. In a multi-stage crystallization process which comprises passing a liquid multi-component mixture to a first crystallization zone, forming a slurry comprising mother liquor and crystals within said first crystallization zone

and following crystallization zones, the final crystallization zone comprising a chilling zone and a purification zone, and separating said mother liquor from said crystals in said first and following crystallization zones, the liquid feed to each of said following crystallization zones comprising the mother liquor withdrawn from the adjacent upstream crystallization zone; the improvement which comprises refluxing the crystals by flowing a liquid counter-current to said crystals in said purification zone of said final crystallization zone, the liquid comprising at least one of said liquid multi-component mixture, a liquid melt product obtained from an upstream crystallization zone, and said mother liquor from an upstream crystallization zone, and recycling the refluxed crystals, separated from the mother liquor in the purification zone of the final downstream crystallization zone, to a crystallization zone upstream of said final crystallization zone.

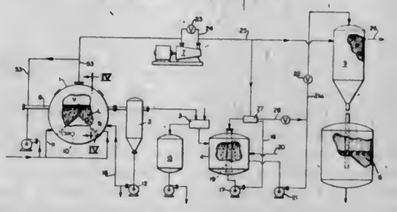


3,285,026

FREEZE CRYSTALLIZATION OF SALINE WATER BY INJECTING AN AQUEOUS EMULSION OF ORGANIC REFRIGERANT AND SULFONATED SURFACTANT

Hans Svanoe, Warren, Pa., assignor to Struthers Scientific and International Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 24, 1964, Ser. No. 391,782
6 Claims. (Cl. 62—58)



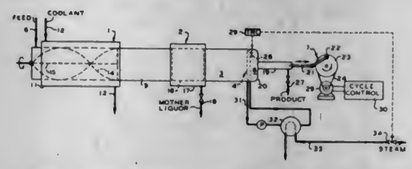
1. In a process for the conversion of saline water to practically saline-free water by a process in which dense, compact ice crystals are formed by nucleation, crystallization and crystal growth in a saline water-ice slurry by the heat of evaporation of a liquid organic refrigerant in a heat exchange relationship with and in direct contact with the saline water, the practically saline-free water being produced by separating the ice from the resulting saline water-ice slurry and melting the separated ice, the steps which comprise injecting an aqueous emulsion of a liquid organic refrigerant into a slurry of saline water, containing ice crystals and saline water, under a hydraulic head 36" to 36" of saline water and having a temperature and pressure at which the liquid refrigerant vaporizes, passing the refrigerant during said injection through an orifice having an internal diameter between 0.1 mm. and 1.5 mm., whereby the liquid refrigerant emulsion enters the slurry as a filamentary shape with the internal diameter of the orifice and collapses to form droplets of the refrigerant, growing dense compact ice crystals by the latent heat of evaporation of the refrigerant droplets as they pass through the slurry, and separating the ice crystals thus formed from the slurry.

3,285,027

PULSED CRYSTAL REFLUX WITH A MINIMAL MELT

Dwight L. McKay, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Nov. 25, 1964, Ser. No. 416,188
6 Claims. (Cl. 62—58)



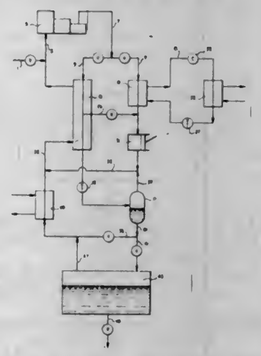
1. In a process comprising passing a mass of crystals and mother liquor through a crystallization column having a liquid removal zone, a reflux zone, and a melt zone, removing said mother liquor from said liquid removal zone, countercurrently contacting said crystals in said reflux zone with a pulsating stream comprising a melt of said crystals, the crystals in said reflux zone and said melt of said crystals being distributed over substantially the same cross-sectional area of said column, melting said crystals in said melting zone, applying a pulsating pressure against said melt at a constant rate, and withdrawing a part of said melt from said column as the product of the process, the improvement comprising passing said melt from said melting zone into a melt surge zone to which said pulsating pressure is applied and from which said product is withdrawn and maintaining said volume of said melt surge zone at a minimum so as to minimize channeling but at a large enough value so that effective refluxing occurs, said volume of said melt surge zone available for refluxing being maintained at a value of plus or minus 10 percent of the volume defined by $V=0.033D^{1.98}$, where V is equal to the volume in gallons of said melt surge zone and D is the diameter in inches of said column in said reflux zone and in said melt zone.

3,285,028

REFRIGERATION METHOD

Charles L. Newton, Emmaus, Pa., assignor to Air Products and Chemicals, Inc., a corporation of Delaware

Filed Jan. 6, 1964, Ser. No. 335,877
16 Claims. (Cl. 62—87)



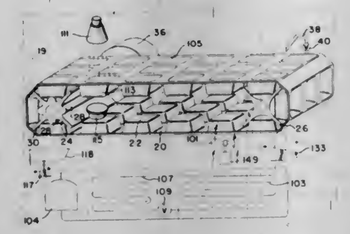
1. Refrigeration method comprising passing compressed normally gaseous fluid through a first heat exchange zone and a second heat exchange zone, cooling said first heat exchange zone and said second heat exchange zone by heat exchange with relatively cold different fluids, adiabatically expanding said compressed normally gaseous fluid from the first heat exchange zone, expanding with the production of work at least a portion of said compressed normally gaseous fluid from the second heat exchange zone, and recovering refrigeration from said work expanded fluid in the first heat exchange zone.

3,285,029

LIGHT CONTROL FOR BELT TYPE ICE MAKER

Nelson J. Pansing, Clayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Mar. 28, 1966, Ser. No. 537,767
5 Claims. (Cl. 62—135)



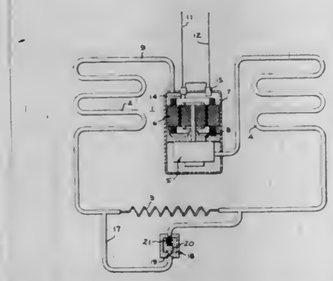
1. A liquid freezer including a translucent mold adapted to receive a liquid to be frozen, means for supplying the liquid to be frozen to said mold, means for freezing the liquid in said mold, means for ejecting the frozen liquid from said mold, means for directing light rays through said mold and said liquid, and light sensing means responsive to the difference in light transmission between the unfrozen and the frozen liquid for controlling the operation of said ejecting means.

3,285,030

REFRIGERATION SYSTEM INCLUDING HIGH PRESSURE LIMIT CONTROL MEANS

Gerard G. Coyne, Louisville, Ky., assignor to General Electric Company, a corporation of New York

Filed Nov. 2, 1964, Ser. No. 408,166
3 Claims. (Cl. 62—197)



1. A refrigeration system comprising a compressor, a condenser, a normal flow control means and an evaporator connected in closed refrigerant circuit,

an electric motor for driving said compressor,

a supply circuit for energizing said motor including a motor overload protector for opening said supply circuit upon a substantial increase in the load on said motor,

a bypass including a normally closed valve means bypassing said flow control means,

said valve means opening upon an abnormal increase in the differential between the refrigerant pressures in said condenser and said eveporator to increase substantially the flow of refrigerant to said compressor and thereby load said motor and cause said overload protector to open said supply circuit,

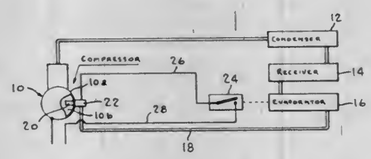
said valve means constituting the sole means for limiting abnormal pressure conditions in said condenser.

3,285,031

ELECTRICALLY-OPERATED SLEEVE VALVE AND AIR CONDITIONING SYSTEM

Alan Arthur Matthies, Milwaukee, Wis., assignor to Controls Company of America, Melrose Park, Ill., a corporation of Delaware

Filed Oct. 26, 1964, Ser. No. 406,322
17 Claims. (Cl. 62—217)



17. In a refrigeration system including an evaporator, a compressor and a condenser the improvement of a sleeve valve disposed in the path of flow and controlling flow through said system, said sleeve valve comprising, in combination,

a first valve member disposed in said system flow characterized by a cylindrical wall portion, means defining a plurality of valve ports in said wall portion and means defining an inlet flow passage through said valve member opening to said system flow and communicating with said valve ports,

a sleeve member having a cylindrical wall portion concentrically arranged with and disposed in telescoping relationship over said cylindrical wall portion of said valve member,

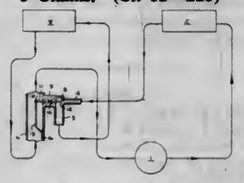
means supporting said sleeve member and said valve member for relative movement therebetween in opposite directions to move said sleeve member between a first position overlapping and closing said valve ports and a second position out of overlapping relationship with and opening said valve ports,

means connected between and operative to provide relative movement of said sleeve member and said valve member in one of said directions,

electrically energized means connected between and operative to provide said relative movement of said sleeve member and said valve member in the opposite direction, the cylindrical wall portions of said valve and sleeve members disposed in opposed relationship and arranged so that, in operation, said opposed wall portions are separated by a film of the medium being controlled, which medium provides a bearing between said opposed wall portions, and said sleeve member wall portion is maintained in concentric relationship with said valve member wall portion,

and condition responsive control means exposed to and responsive to a condition of said refrigeration system indicative of the operational state of said refrigeration system and operative to actuate said electrically energized means in accordance with said condition and move said sleeve to close said first valve ports in response to a predetermined operational state of said system.

3,285,032
REFRIGERANT FLOW CONTROL
Harold G. Vanderlee, Tyler, Tex., assignor to General Electric Company, a corporation of New York
Filed Dec. 14, 1964, Ser. No. 418,152
3 Claims. (Cl. 62—225)

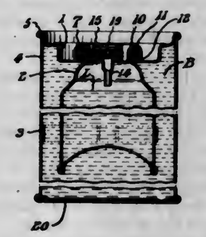


1. A refrigeration system including a compressor, a condenser, fixed flow restrictor means, an evaporator and a suction line connected in closed series flow refrigerant circuit, said fixed flow restrictor means providing the desired refrigerant flow under normal system operating conditions,

one end of said flow restrictor means being disposed adjacent a portion of said suction line,

and means for regulating the flow of refrigerant through said flow restrictor means to compensate for abnormal system operating conditions comprising a valve portion disposed adjacent said one end and a thermal portion disposed in said suction line for movement of said valve portion relative to said one end in response to changes in the temperature of the refrigerant in said suction line portion for varying the flow of refrigerant through said flow restrictor means.

3,285,033
SELF-CONTAINED REFRIGERATING SYSTEM
John M. Warner, 603 W. Hartwell Lane, Philadelphia, Pa.
Original application Nov. 6, 1963, Ser. No. 321,792. Divided and this application Jan. 7, 1966, Ser. No. 519,275
2 Claims. (Cl. 62—371)



1. A self-cooling beverage container comprising an outer container containing a beverage to be cooled, an inner container substantially completely surrounded within and substantially completely spaced from said outer container, said inner container being a pressure container of substantially stronger pressure resistant construction than said outer container, said inner container containing a charge of liquid refrigerant under pressure and forming a liquid level therein, said inner and outer containers having sheet metal extensions which are sealed to one another inwardly of the periphery of the outer container in such manner that even if leakage in the seal should occur, neither container can leak into the other through such leaking seal, said seal being formed of parallel upper sealing extension of said sheet metal inner and outer containers positioned against one another, and including an inner axial portion disposed generally axially with respect to the container, an end portion disposed in an outwardly extending arc, an outer axial portion arranged generally axially outwardly of said inner axial portion, said extension of said inner container having an end portion which is curled inwardly and upwardly within the end of the sealing extension of the outer container.

3,285,034
INDIVIDUALLY ACCESSIBLE MULTI-COMPARTMENT REFRIGERATOR UNIT
Pat H. Booth, Dallas, Tex., assignor to Zero Plate Company, Inc., a corporation of Texas
Filed Aug. 9, 1965, Ser. No. 478,188
4 Claims. (Cl. 62—414)



1. In a multicompartment forced-air refrigerator having a refrigerator coil and a blower for producing and driving a stream of cold air in an insulated box having insulated side, top, bottom and rear walls, the combination which comprises:

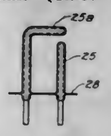
(a) a plurality of vertically-spaced sets of access doors in a front wall of said box,

(b) interior side wall baffles spaced inwardly of the inner face of the insulated side walls to form side ducts extending from bottom to top and from front to back of the interior of said box,

(c) a plurality of solid shelves, one extending between said baffles at the bottom of each of said sets of said doors, said baffles being perforated on each side of said box at the top of each compartment above each of said shelves for flow of air to and from said ducts, and

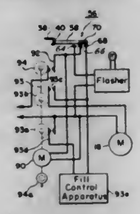
(d) vertical baffles, at least one extending from front to back of said box and upwardly from the top surface of each of said shelves to a level below the perforations in the adjacent side baffles for minimizing temperature variations in said box when any one of said doors is opened.

3,285,035
FLASH LAMP
Robert M. Anderson, Euclid, Ohio, assignor to General Electric Company, a corporation of New York
Filed June 19, 1964, Ser. No. 376,377
2 Claims. (Cl. 67—31)



1. A flash lamp comprising a sealed envelope having an oxidizing atmosphere therein, a quantity of readily combustible filamentary material loosely arranged within said envelope and ignition means disposed in said envelope within effective ignition range of said combustible material, said ignition means comprising a filament connected across a pair of lead-in wires and coatings of a fulminating substance on said lead-in wires and embedding portions of said filament, wherein: an end of at least one of said lead-in wires is bent at substantially right angles to the lead-in wire in a direction such that it is generally parallel to and disposed over the filament to cover the filament relative to said combustible material, forming a protective cap over the filament to prevent contact of said combustible material with said filament.

3,285,036
CLOTHES WASHER
Clifford E. Erickson, Chicago, Ill., assignor to General Electric Company, a corporation of New York
Filed Apr. 22, 1965, Ser. No. 450,008
4 Claims. (Cl. 68—12)



1. In an automatic electric clothes washing machine comprising a housing provided with an access door for gaining access to a clothes basket within the housing:

(a) apparatus for providing the functions required for a washing cycle within said washing machine;

(b) a circuit for enabling connection of said apparatus across a source of power;

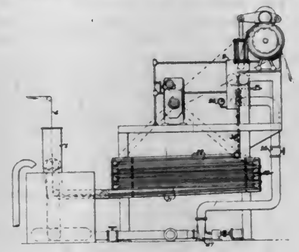
(c) program control means for causing energization through said circuit of said apparatus within a predetermined period of time and in a predetermined manner to provide a washing operation, said means including a first switch connected in series with said circuit, said first switch when closed being effective to initiate said predetermined period of time and being opened to end said predetermined period of time;

(d) a second switch including a switch actuator disposed adjacent the door so as to be actuated by the door, said second switch moving from a first position when the door is closed to a second position when the door is open; and

(e) an electric indicating device of the audio-visual type connected in series with said first switch and with said second position of said second switch, whereby when said first switch is closed and said second switch is in its second position said indicating device is energized, but when said second switch is in its first position, said indicating device is not energized.

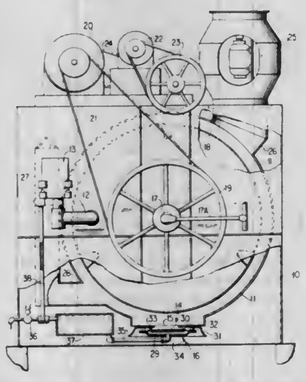
3,285,037
APPARATUS FOR TREATING TEXTILE MATERIALS WITH A FLUID BATH
Conrado Valls, 401 Consejo de Ciento, Barcelona, Spain
Filed Aug. 27, 1963, Ser. No. 304,757
Claims priority, application Spain, Aug. 30, 1962, 280,564
8 Claims. (Cl. 68—15)

1. Apparatus for treating a textile material, said apparatus comprising a plurality of chambers in superposed relationship, said chambers including extremities coupled such that the chambers constitute a zig-zag path, textile material input and output means coupled to respective of said chambers at opposite ends of said path, guide means in the extremities of said chambers for guiding said material along said path, means for supplying said material to said input means, said material extending through said input means, path and output means, means for withdrawing said material from said output means, supply means for supplying a bath fluid to one of said input and output means and to said chambers, means for regulating the velocity at which said material travels through said path and the bath fluid therein, to provide relative velocity between the fluid and the material all



along said path, and detachable inspection covers in the extremities of said chambers adapted for providing access thereinto.

3,285,038
LAUNDRY MACHINES
Kenneth H. Wolverton, Moline, Ill., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 27, 1964, Ser. No. 414,277
10 Claims. (Cl. 68—19)



1. In a washer-extractor, a stationary shell having a water inlet and a water outlet at its bottom; a basket rotatably mounted in said shell; a stack connected to said shell for admitting noncontaminated air into said shell; an exhaust fan connected to said shell for drawing air through said stack into said shell; a dump valve for closing said water outlet in said shell; and means for opening said dump valve to remove substantially all of the water from said shell, said means closing said dump valve in response to the water level falling below the lowest point of the rotatable basket to prevent the admission of air to said shell through said dump valve.

3,285,039
APPARATUS FOR TREATING WEB MATERIAL WITH A TREATING FLUID
Wistar Wright Macomson, Charlotte, N.C., assignor of fifty percent to C. Dan Page, Jr., Gastonia, N.C.
Filed Mar. 12, 1964, Ser. No. 351,364
10 Claims. (Cl. 68—62)

1. Apparatus for treating web material with a treating fluid comprising

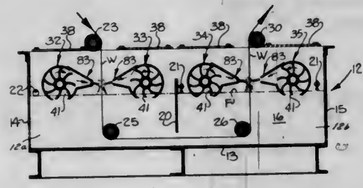
(a) a tank adapted to contain a supply of treating fluid therein up to a predetermined level,

(b) means operatively associated with said tank for directing the web material in a predetermined path of travel into, through, and out of said tank and any treating fluid therein, and

(c) spraying means disposed within said tank for spraying said treating fluid upon the web material, said spraying means comprising

(1) a housing mounted within said tank at a predetermined height above the bottom thereof and having inlet and outlet openings therein, said housing being adapted to be partially disposed within the treating fluid in the tank with the inlet opening thereof below said predetermined level and with the outlet opening disposed above said predetermined level,

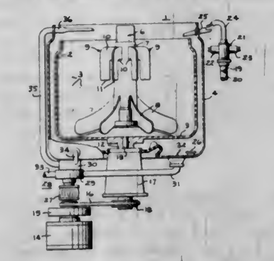
(2) impeller means disposed within said housing for directing fluid from said housing through said outlet opening,



(3) nozzle means carried by said housing at said outlet opening and comprising upper and lower elongate wall portions disposed on opposite sides of said outlet opening and defining therebetween an elongate, uninterrupted, constricted, discharge opening directed toward said predetermined path of travel of the web material through said tank and of a length corresponding to the width of the web material to be treated to provide a continuous and uniform flow of treating fluid across the web material, and

(4) means mounting said nozzle wall portions for relative adjustment to vary the width of said discharge opening to thereby vary the velocity of the fluid being discharged through said discharge opening.

3,285,040
AGITATOR FOR FABRIC CLEANING MACHINE
John Bochan, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Sept. 20, 1965, Ser. No. 488,351
6 Claims. (Cl. 68—134)



1. An agitator adapted to effect cleaning of fabrics in a washing machine or similar device having a liquid and fabric receiving container and a drive mechanism; said agitator comprising:

(a) a center post for mounting generally vertically in the container, said center post being adapted for connection to the drive mechanism;

(b) a plurality of primary vanes mounted on the lower portion of said post and extending outwardly therefrom to deliver power to liquid and fabrics in the container;

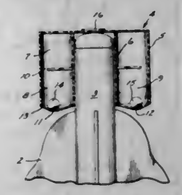
(c) and a plurality of secondary vanes mounted on said post above said primary vanes and being flexible in a generally vertical plane to force liquid and fabrics downwardly toward said primary vanes.

3,285,041
TEXTILE TREATING CHAMBERS
Conrado Valls, Consejo de Ciento 401, 3º, 2ª, Barcelona, Spain
Filed Mar. 13, 1964, Ser. No. 351,815
Claims priority, application Spain, Mar. 26, 1963, 286,764
8 Claims. (Cl. 68—181)



1. Apparatus for treating a textile article comprising means defining a treating chamber through which the textile article is adapted to be advanced simultaneously with the passage of a treating fluid in countercurrent through said chamber, and stationary means fixed in said chamber defining a space through which the textile article may be advanced and also defining a plurality of branches for the isolated passage of treating fluid on opposite sides of the textile article first away from the textile article via a smooth transition zone and then back into contact wih the textile article at an oblique angle with respect to said article.

3,285,042
LIQUID BLEACH DISTRIBUTOR FOR A WASHING MACHINE
Leendert Holleman, 5276 Linden Ave., Long Beach, Calif.
Filed Aug. 3, 1964, Ser. No. 386,937
4 Claims. (Cl. 68—207)



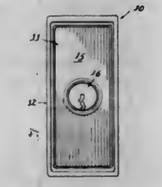
1. A liquid bleach distributor for a washing machine comprising,

a housing having a reservoir therein, and a pair of oppositely arranged distributor chambers communicating with the reservoir,

each of said distributor chambers having an outlet hole therein,

a free rolling ball in each of the distributor chambers adapted to rest in the outlet hole in one position of the parts.

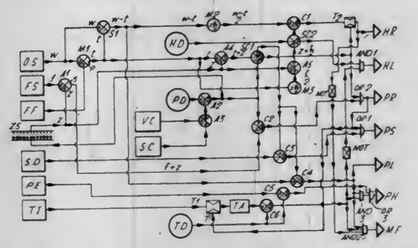
3,285,043
POP-OUT HANDLE AND LOCK CONSTRUCTION
Robert L. Dauenbaugh, Rockford, and Robert K. Unter, Roscoe, Ill., assignors to National Lock Co., Rockford, Ill., a corporation of Delaware
Filed June 19, 1964, Ser. No. 376,524
3 Claims. (Cl. 70—208)



1. A pop-out handle and lock assembly comprising a handle pocket including a cylindrical housing and an escutcheon having a recess therein for receiving the handle when retracted, a rear wall on said housing having a central opening therein, a longitudinally reciprocable and rotatable handle mounted in said handle pocket for movement between a retracted position and a projected position and a hub conformably received in said housing and having a hollow chamber therein, a radially inwardly extending flange defining the rear wall of the chamber, said flange defining a central opening and having at least one pair of radial opposed slots in the periphery of said opening, spring-biasing means in said housing urging said hub and handle to projected position, a lock bolt in said handle engaging said housing to retain the handle in retracted position, a cylinder lock in said handle for actuation of the lock bolt, a drive spindle extending through the opening in the rear wall of the housing and terminating at its forward end in a flat blade, said flat blade extending through the opposed slots and central opening defined by said flange into the chamber and provided with a lock washer at the forward end to retain the spindle against removal through the flange at the rear end of the hub, said flat blade cooperating with said slots in the flange to allow longitudinal movement of the handle and hub relative to the flat blade, but causing simultaneous rotation of the spindle and handle, means on said drive spindle cooperating with said housing to prevent longitudinal movement of the spindle, and latching means secured to the rear end of said drive spindle.

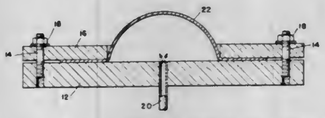
3,285,044
SYSTEM FOR THE CONTROL OF THE OPERATION OF INDUSTRIAL MACHINES
William Gregson, Newton, England, Geoffrey Cooper, Marford, Wales, and Bernard Charles Wilkins, Rodley, near Leeds, England, assignors to Towler Brothers (Patents) Limited, Rodley, England
Filed Apr. 24, 1961, Ser. No. 105,177
18 Claims. (Cl. 72—8)

1. Apparatus for automatically controlling the operation of a forging press and manipulator according to programmed information concerning initial and final sizes of the forging and the permissible forging factor, comprising in combination first means wherein the programmed information may be inserted on a digital basis for providing outputs representative thereof, second means wherein information specifying increments of movement and total movement to be imparted to said manipulator may be inserted on a digital basis for providing outputs representative thereof, a manipulator hoist associated with said manipulator, and third means responsive to the outputs of



said first and second means for combining the outputs thereof in a desired manner and for controlling the movement of said manipulator hoist and the forging press.

3,285,045
TWO STAGE FORMING WITH EXPANDING SKIRT STEP
John W. Berg, La Mesa, Calif., assignor, by mesne assignments, to The Bendix Corporation, a corporation of Delaware
Filed Apr. 13, 1964, Ser. No. 359,290
3 Claims. (Cl. 72—54)



1. A method of forming deep-drawn sheet material parts from generally flat sheet material blanks comprising the steps of:

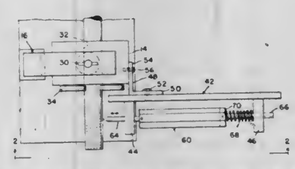
clamping a peripheral area of said blank to prevent movement of said peripheral area;

producing a drawing fluid pressure on one surface of said blank to partially extend the material and produce a central bowed portion in said blank;

clamping a reduced peripheral area of said blank to prevent movement of said reduced peripheral area and to expose an area of unworked material; and

producing a further drawing fluid pressure on said one surface to extend the newly exposed area while said bulged portion is free to move under said further drawing fluid pressure.

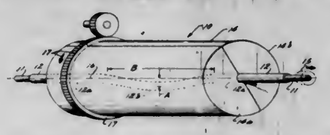
3,285,046
TUBE INDENTING APPARATUS
David M. Mellen, Ann Arbor, and David A. Singer, Harper Woods, Mich., assignors to Calumet & Hecla, Inc., Allen Park, Mich., a corporation of Michigan
Filed Sept. 4, 1963, Ser. No. 306,495
8 Claims. (Cl. 72—76)



1. A tube indenting apparatus for placing a predetermined pattern on the outer periphery of an elongated tube as it is advanced axially comprising a stationary tube support through which the tube is helically advanced,

means for helically advancing the tube through said support, a tool having an end opposite the outer periphery of the tube, and means for reciprocating said tool in a direction transverse to the axis of the tube, said reciprocating tool being effective to impart its end configuration to the helically advancing tube to form a pattern thereon.

3,285,047
TUBE STRAIGHTENING METHOD
Joseph Howard Crawford, Winnebago, Ill., assignor to General Electric Company, a corporation of New York
Continuation of application Ser. No. 98,542, Mar. 27, 1961. This application Dec. 18, 1964, Ser. No. 421,748
1 Claim. (Cl. 72—79)



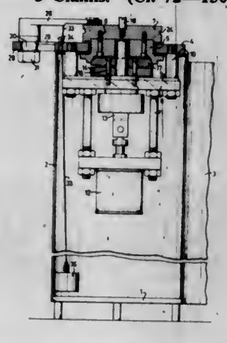
A method for straightening coated metal tubing of about 0.1" or less outside diameter, comprising the steps of:

passing the tubing at a rate of about 0.003" per minute axially through a bending member having smooth, continuous walls; and, concurrently,

bending the tubing during passage through the bending member to provide a bending stress in the tubing to slightly exceed the elastic limit of the tubing; while,

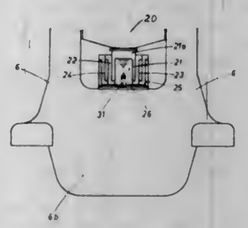
applying relative rotation between the tubing and the bending member.

3,285,048
MACHINES FOR BENDING PIPES, RODS AND BARS
Sture Viking Eskilson, Hasslebolm, Sweden, assignor to Backer Elektro-Värme Aktiebolag, Sosdala, Sweden, a corporation of Sweden
Filed Dec. 16, 1963, Ser. No. 330,921
Claims priority, application Sweden, Jan. 18, 1963, 550/63
3 Claims. (Cl. 72—150)



1. A machine for bending a pipe, rod and bar, comprising a rotatably mounted motor-driven bending head having on its end surface an exchangeable mandrel coaxial with the axis of rotation of the head, a dog which can be fixed at different distances from the mandrel and serves to take along a length of the pipe or rod placed between the mandrel and the dog, a sector-shaped abutment for the length of the pipe or rod, a machine frame with said abutment being pivotally mounted on a shaft parallel to the axis of the bending head and fixedly arranged in relation to said machine frame at a radial distance from the axis of the bending head larger than that of the dog from said axis, said radial distance being so adapted relative to the radius of the sector-shaped abutment that the sector edge surface thereof constitutes a direct extension of the surface of application of the dog for the length of pipe or rod in the position occupied by said bending head at the start of the bending operation in order that said abutment may be carried along by the length of pipe or rod at the application of said length against said abutment during the bending operation and said distance being adjustable to permit retaining the lateral edge surface of said abutment as an extension of the surface of application of said dog at various distances of said dog from said mandrel, and stop means in said head for limiting the turning angle of said head from a rest position to realize bending angles of desired size in the length of pipe, rod or bar.

3,285,049
ROLLING MILL WITH CLOSED FRAMES AND WITH A CONTROL SYSTEM FOR CONTINUOUSLY AND RAPIDLY ADJUSTING THE ROLL GAP
Karl J. Neumann, 2 Wallerfeldstrasse, St. Ingbert-Saar, Germany
Filed Feb. 13, 1963, Ser. No. 258,674
Claims priority, application Germany, Feb. 15, 1962, V 22,039
4 Claims. (Cl. 72—246)

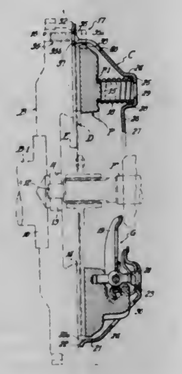


1. In a rolling mill comprising two solid, stiff frames consisting of an upper and a lower traverse connected by upright columns, a pair of chocks mounted in the frames and rolls rotatably mounted in the chocks and spaced from each other to form a suitable roll gap, in combination an elastic metallic member disposed in each frame between at least one chock and a traverse of the frame, means for hydraulically pre-stressing the frames and said elastic members to a pre-determined stressing force prior to a rolling operation, a measuring device for detecting and signalling the actual axial length of at least one of said members, and a control system for adjusting said hydraulic stressing force in each frame in response to the signals of said measuring device to keep the axial length of said members constant.

3,285,050
METHOD OF FORMING A CLUTCH COVER PLATE
Leo W. Cook, Chicago, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Original application May 16, 1962, Ser. No. 195,265, now Patent No. 3,213,987, dated Oct. 26, 1965. Divided and this application Sept. 29, 1964, Ser. No. 403,432
4 Claims. (Cl. 72—379)

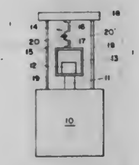
1. A method of constructing a cover plate for a clutch device of the frictional disc type, comprising the following steps: forming a cover plate having a generally cylindrical side wall and carrying a plurality of lips extending radially outwardly from an edge of said cylindrical

portion, said lips lying in a common plane; pushing a portion of said cylindrical side wall adjacent each lip radially inwardly; shearing away substantially all the pushed



portion of said side wall except for a lowermost tongue; and stamping the tongue into the plane of said lips in a manner to lie radially inwardly of said cylindrical side wall.

3,285,051
DYNAMIC DISPLACEMENT TRANSDUCER
Jay R. Reed, Mantua, N.J., assignor to the United States of America as represented by the Secretary of the Navy
Filed Oct. 28, 1964, Ser. No. 407,264
6 Claims. (Cl. 73—1)



1. Apparatus for calibrating vibration transducers which comprises,

(a) a base mounting a vibrating head for vertical movement,

(b) a test transducer supported by the vibrating head,

(c) a fixed brace disposed above and in spaced relation with the test transducer,

(d) a resilient mounting disposed between said brace and said transducer,

(e) said mounting having opposed surfaces which are flexed during movement of said head,

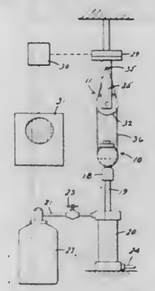
(f) a first strain gage secured to one opposed surface and a second strain gage secured to the other opposed surface,

(g) electrical voltage developing means in circuit with said strain gages providing a first votage output in accordance with movement of said vibrating head,

(b) said test transducer developing a second voltage in accordance with movement of the vibrating head and

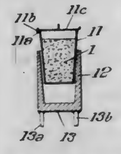
(i) electrical indicating circuitry and switch means for alternately transmitting the first and second voltages thereto from the voltage developing means and the test transducer.

3,285,052
IMPACT TESTING APPARATUS
Everett W. Lothrop, Jr., Media, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware
Filed May 13, 1964, Ser. No. 367,054
4 Claims. (Cl. 73—12)



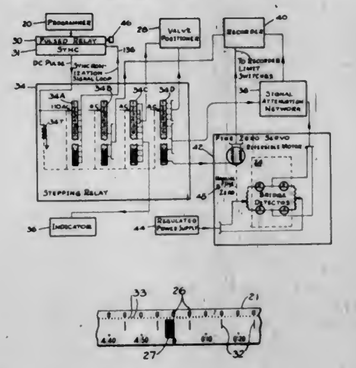
3. Apparatus for impact testing of flexible strand material comprising a first device for gripping the ends of a test specimen so as to provide a loop in the specimen, said device having a normal position, means for rapidly moving said device vertically downward from its normal position, a stationarily mounted means for holding the loop of the test specimen above said device with the specimen under light tension when said device is in its normal position, a second device having an impact receiving member located within the loop of the specimen below said stationarily mounted means whereby when said first device moves as aforesaid the loop of the test specimen lands on said impact receiving member, and a force sensing element supporting said second device.

3,285,053
DIFFERENTIAL THERMAL MICRO-ANALYSIS APPARATUS
Charles Mazieres, Paris, France, assignor to Centre National de la Recherche Scientifique (French Government Administration)
Filed Apr. 17, 1964, Ser. No. 361,309
Claims priority, application France, Apr. 18, 1963, 931,921
5 Claims. (Cl. 73—15)



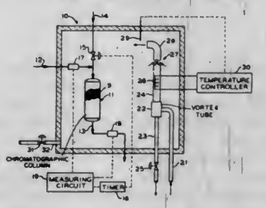
1. In an apparatus for performing differential thermal microanalysis, which apparatus comprises an enclosure having a small volume within which a constant accurately determined temperature is maintained, said enclosure being disposed within a volume which is in turn surrounded by the heating elements of an electric furnace, the improvement comprising: a test sample holder associated with said apparatus, said holder comprising: a removable micro-cup into which the substance to be analyzed will be placed, said micro-cup having a low heat capacity; and a thermocuple element comprising a junction which is shaped so as to be in the form of a receptacle which mates with the outer surface of said micro-cup.

3,285,054
PROGRAMMER FOR FLUID ANALYSIS
Herbert Heller and Henry J. Then, Pittsburgh, Clayton J. Bossart, Monroeville, Alexander C. McInnes, Export, and Earl M. Becker, Pittsburgh, Pa., assignors to Mine Safety Appliances Company, Pittsburgh, Pa., a corporation of Pennsylvania
Original application May 24, 1961, Ser. No. 112,446, now Patent No. 3,199,338, dated Aug. 10, 1965. Divided and this application Dec. 24, 1964, Ser. No. 420,910
3 Claims. (Cl. 73—23.1)



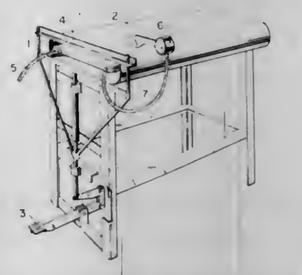
1. In a device for fluid analysis having at least one chromatographic column adapted to contain sample and carrier fluid, valve means operatively associated with said column and selectively processing the sample and carrier fluids relative to each other for the separation thereof, a programmer comprising a flexible tape having marks thereon representative of a desired chromatographic program, means to move said tape past means responsive to said marks for producing output signals, means for receiving said signals and including relay means, a stepping relay means for sequentially actuating said valve means and including a power source, said relay means connected in series with said power source and actuated in response to said signals to open and close said power source for actuating said stepping relay means, and synchonization means connected to said stepping relay means for resetting it to its starting position in response to certain of said signals.

3,285,055
TEMPERATURE CONTROL SYSTEM
Marvin E. Reinecke, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Original application Apr. 18, 1962, Ser. No. 188,462, now Patent No. 3,224,499, dated Dec. 21, 1965. Divided and this application May 19, 1965, Ser. No. 469,360
9 Claims. (Cl. 73—23.1)



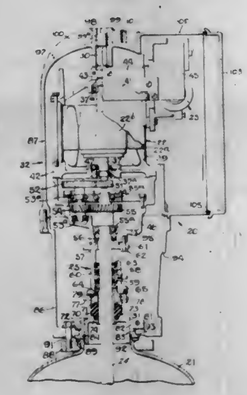
7. A temperature control system for maintaining the temperature of a chromatographic analyzer at a substantially constant value within the normal range of ambient temperature comprising a housing; a chromatographic column positioned within said housing, said column being filled with a packing material that selectively retards passage therethrough of constituents of the fluid mixture to be analyzed; first conduit means passing through said housing and communicating between a source of carrier gas and the inlet of said column; a first sensing element disposed within said housing and in said first conduit means to detect a property of the carrier gas flowing through said first conduit means; second conduit means passing through said housing and communicating with said first conduit means downstream of said first sensing element for introducing a sample of the fluid mixture to be analyzed into said first conduit means; third conduit means passing through said housing and communicating with the outlet of said column; a second sensing element disposed within said housing and in said third conduit means to detect a property of the fluid flowing through said hird conduit means; means for comparing the outputs of said first and second sensing elements; a source of air at ambient temperature; a vortex tube having an inlet, a hot fluid outlet and a cold fluid outlet; means for passing air from said source of air into said inlet of said vortex tube; fourth conduit means connected between said cold fluid outlet and the interior of said housing; heating means positioned in heat exchanging relationship with the contents of said fourth conduit means to heat the cold fluid passing into said fourth conduit means from said cold fluid outlet; means for venting air from said housing; and means responsive to the temperature to the air in said housing for controlling said heating means to regulate the amount of heat transferred to said cold fluid.

3,285,056
SEAM TESTING METHOD
Clifford John Mattivi, Pittsburg, Kans., assignor, by mesne assignments, to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 12, 1963, Ser. No. 322,791
1 Claim. (Cl. 73—37)



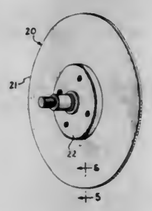
A method of testing the strength of the bond in the heat-sealed bottom seam of a plastic bag comprising the steps:
(a) inserting in the mouth of the bag a gas inlet,
(b) temporarily closing the mouth of the bag sufficiently so that internal gas pressure can be exerted on the bag through the gas inlet,
(c) confining the sidewalls of the bag within an enveloping structure so that the internal gas pressure is able to exert a deforming force against the end of the bag containing the seam, while limiting sidewall expansion of the bag,
(d) subjecting the bag to a controlled, specific measured internal pressure for a specified period of time, and
(e) measuring the width of the portion of the seam which has opened under the force exerted by internal gas pressure.

3,285,057
APPARATUS FOR OBTAINING TORQUE MEASUREMENTS
Raymond R. De Zurik, St. Cloud, Minn., assignor to De Zurik Corporation, Sartell, Minn., a corporation of Minnesota
Filed Aug. 19, 1963, Ser. No. 302,961
4 Claims. (Cl. 73—59)



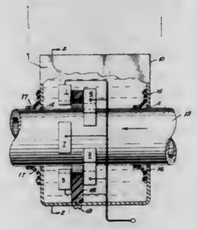
1. In a consistency sensing device including torque measuring apparatus, the combination comprising, a vessel for enclosing a fluid medium, a rotatable shaft projecting into said vessel and carrying a sensing element disposed in contact with said fluid, a motor having a stator and a rotor with the rotor drivingly coupled to said shaft, said stator including a seal housing enclosing a rotary seal in which said shaft is journalled for preventing the passage of said fluid into said motor, said shaft being journalled and supported from said stator and said rotary seal without other frictional contact with said vessel, and a flexure element having determinable deflection characteristics supporting said stator for limited angular movement with respect to said vessel and without other frictional engagement with said vessel so that all of the rotating friction generated by said apparatus when said shaft is rotated is internally cancelled within said motor and the deflection of said flexure element is an accurate proportional measure of the true torsional resistance of said fluid to rotation of said sensing element.

3,285,058
CONSISTENCY SENSING ELEMENT
Gerald F. Ostroot, St. Cloud, Minn., assignor to De Zurik Corporation, Sartell, Minn., a corporation of Minnesota
Filed Jan. 28, 1964, Ser. No. 340,688
8 Claims. (Cl. 73—59)



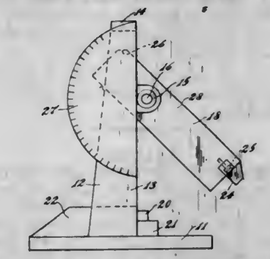
1. A sensing element for a torque type consistency measuring device adapted for rotation in a fluid medium comprising, in combination, a hub, a thin circular disc concentrically mounted on said hub and having substantially smooth opposite surfaces, and a plurality of sensor segments carried by said disc and disposed so that respective portions of said segments project equally from said opposite surfaces, the exposed area of said surfaces between said segments being substantially greater than the area thereof occupied by said segments whereby said disc serves to hydraulically divide the relative fluid flow over said opposite surfaces thereof and said segments serve to change the said fluid flow and the development of the boundary layer phenomenon over said opposite surfaces.

3,285,059
ULTRASONIC TESTING APPARATUS
Tommy G. Bogle, Houston, Tex., assignor, by mesne assignments, to American Machine & Foundry Company, New York, N.Y., a corporation of New Jersey
Continuation of application Ser. No. 207,588, July 5, 1962. This application Oct. 21, 1965, Ser. No. 506,434
11 Claims. (Cl. 73—67.9)



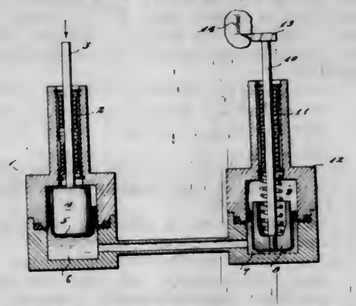
1. In ultrasonic inspection apparatus for examining the interior of a hollow member, the combination comprising
a plurality of acoustical energy transducers positioned substantially in a plane and juxtaposed to at least partially surround the member being inspected, at least two of said transducers being disposed facing each other on opposite sides of the member and a third transducer intermediately disposed between said two transducers, each of said transducers being operative
to transmit an acoustic energy pulse into the member substantially normally to its outer surface when said each transducer is electrically energized, and
to provide an electrical output signal in response to reflected acoustic energy pulses received from the member;
pulse generating means for energizing said plurality of transducers,
said oppositely disposed transducers being energized simultaneously and said intermediate transducer being subsequently energized after a time sufficient to preclude any substantial interference of reflected acoustic energy from a previously applied energizing pulse;
separate output circuit means connected each to a different transducer; and
separate gating means connected between said pulse generating means and said output circuit means connected to each transducer,
whereby each of said gating means conditions each of said output circuit means to be responsive to electrical signals derived from reflections of acoustic energy caused by the echoes from previous energization of the associated one of said transducers connected thereto.

3,285,060
PENDULUM IMPACT TESTER
David W. Pessen, Philadelphia, Pa., assignor, by mesne assignments, to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio
Filed Dec. 3, 1963, Ser. No. 327,771
5 Claims. (Cl. 73—101)



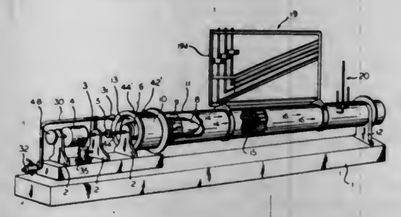
1. An impact testing machine comprising in combination, supporting structure, means adapted to support a specimen which means is rigidly attached to said supporting structure, a pendulum comprising a solid stem having a striking edge rigidly attached to the lower end of said stem, the mass of said striking edge being relatively negligible with respect to the mass of the pendulum and substantially remote from the center of mass of the pendulum, a pivotal mounting for said pendulum on said supporting structure having a pivot axis for bringing said striking edge into impact contact with said specimen, said solid stem being extended above the pivot axis by an amount sufficient to make the center of percussion of said pendulum fall approximately at the center of the striking edge.

3,285,061
HYDRAULIC TELETRANSMISSION SYSTEM, COMPRISING TRANSMITTER AND RECEIVER
Horst Hegenbart, 27 Ketteler Str., Heppenheim, Hesse, Germany
Filed Dec. 9, 1963, Ser. No. 329,180
2 Claims. (Cl. 73—141)



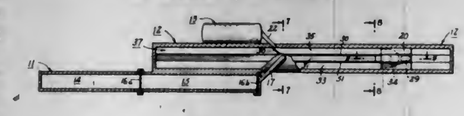
1. A hydraulic teletransmission system for analogous no-loss transmission of measuring forces and analogous playfree transmission of measured positions comprising: a transmitter and a receiver each including means defining a cylinder having a piston freely received therein for movement axially within the respective cylinder, a piston rod fixed to each piston and protruding axially therefrom through bearing means in the transmitter and receiver; said bearing means each essentially comprising axial spherical guides, a roller diaphragm fitted over one end of each piston opposite the respective piston rod and secured to the wall of the respective cylinder circumferentially thereof intermediate the ends of the respective cylinder; conduit means extending between and communicating with the transmitter cylinder and the receiver cylinder in communication with the opposite side of each roller diaphragm from that which faces each piston one end; an hydraulic pressure transmission medium filling said conduit means and the transmitter cylinder and receiver cylinder portions in communication with said conduit means; and a spring on said receiver constructed and arranged to urge movement of the receiver piston in a sense to tend to force hydraulic pressure transmission medium from the receiver toward the transmitter to thereby keep the hydraulic pressure transmission medium continuously under pressure.

3,285,062
EDUCATIONAL TURBOFAN PRESSURE AND ENERGY MEASURING APPARATUS
Fredric E. Flader, Boca Raton, Fla., assignor to Scott Aviation Corporation, Lancaster, N.Y., a corporation of New York
Filed Aug. 5, 1963, Ser. No. 299,922
6 Claims. (Cl. 73—147)



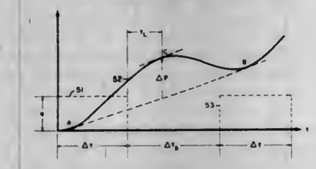
1. In an educational apparatus for selectively measuring forces, a turbofan, an air flow duct receiving the output of said turbofan, measuring tubes in communication at spaced intervals with the air flow in said duct, a multiple of manometer tubes connected to said measuring tubes for measuring and affording a visual indication of different air pressures existent in said duct, said manometer tubes including at least two with parallel upwardly inclined legs with calibrations thereon and having their lower ends connected to vertical legs which are open to atmospheric pressure and a third angled manometer tube with an inclined leg and a vertical leg interconnected with the inputs to the other manometer tubes for the measuring of velocity pressure, and air jet means for selectively driving said turbofan, said air jet means comprising an air jet tube with a Venturi and a throat measuring orifice at said Venturi and an orifice tube upstream from said throat orifice adapted for connection to said manometer tubes for the measuring of differential pressures in said air jet tube.

3,285,063
GAS ACCELERATING SYSTEM
Antonio Ferri, Rockville Centre, N.Y., assignor to General Applied Science Laboratories, Inc., Westbury, N.Y., a corporation of New York
Filed June 10, 1964, Ser. No. 373,924
17 Claims. (Cl. 73—147)



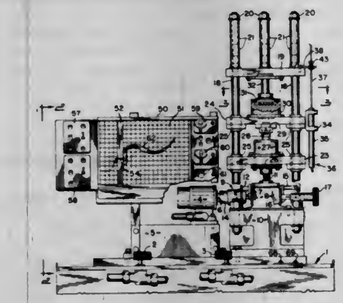
7. A system for the acceleration of a flow of high velocity gas, said system including a cylinder and a piston therefor, said piston having an elongated projecting member extending into said cylinder to define, together with interior walls of said cylinder, a plurality of gas channels in said cylinder, said piston further having at least one aperture therein through which at least a first and a second of said gas channels are in communication, said first and second gas channels also being in communication respectively with a source of flow of high velocity gas and means for receiving an accelerated flow of gas from said system; and means for accelerating said piston in said cylinder in a direction opposite the direction of flow of high velocity gas in said first gas channel.

3,285,064
METHOD FOR DEFINING RESERVOIR HETEROGENEITIES
Robert A. Greenkorn, West Lafayette, Ind., and Carlton R. Johnson, Houston, Tex., assignors to Esso Production Research Company, a corporation of Delaware
Filed Nov. 3, 1965, Ser. No. 506,240
18 Claims. (Cl. 73—155)



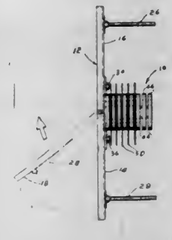
17. A method for evaluating a fluid-bearing subterranean formation penetrated by a plurality of wells which comprises generating a pressure transient within the formation by introducing a sequence of fluid flow-rate changes at one of said wells, and measuring pressure changes caused by said sequence at another of said wells, with a sensitivity of at least 0.01 p.s.i., as a function of time.

3,285,065
SPRING TESTING MACHINE
Robert W. Ragen, Inglewood, and Keith S. Rodaway, Sherman Oaks, Calif., assignors to Parker Aircraft Co., division of Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed July 8, 1964, Ser. No. 381,095
2 Claims. (Cl. 73—161)



1. A spring tester for visually graphing the load vs. deflection characteristics of a compression spring comprising:
a base structure having thereon a plurality of members relatively movable to apply force to a spring under test, said members comprising an upper plate fixed on said base structure and engaging one side of said spring, a middle plate movable relative to said base structure and engaging the other side of said spring, a lower plate movable relative to said middle plate and to said base structure, and a force producing ram mechanism on said base structure engaging said lower plate thus to move the latter;
a force transducer engaging said middle plate and said lower plate, operative to transmit force from said ram mechanism and said lower plate to said middle plate and to provide a first electrical signal proportional to the relative movement between said middle and lower plates,
a movement transducer engaged with said middle and upper plates to provide a second electrical signal therefrom proportional to the amount of deflection of the spring by said force; and
an electrically responsive X-Y recorder having a recording pen moved in the coordinate directions by said first and second electrical signals from said transducers to graph the load vs. deflection characteristics of the spring under test.

3,285,066
FIREARMS TARGET DEVICE FOR INDICATING THE SHOT VELOCITY AND PATTERN
Frederick A. Lage, Gladbrook, Iowa
Filed Aug. 6, 1963, Ser. No. 300,280
4 Claims. (Cl. 73—167)

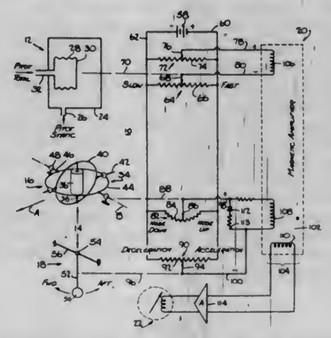


1. In a target device for indicating the pattern and velocity of shot from firearms, comprising,
a target of metal material having a flat target face;
a film of viscous material covering the target face and having a consistency which will smear upon impact from a shot, said film including a visible pigment;
an elongated hollow member secured at one end to said target and being exposed at one end on the target face side of said target, said hollow member being perpendicular to said target face, said hollow member having a plurality of spaced parallel transverse slots formed through substantially the entire peripheral wall thereof; and
individual target members adapted to be recived in said slots and held in spaced parallel relationship to each other, each of said target members adapted to substantially close said hollow member in the plane of the respective receiving slot.

3,285,067
AIRPLANE INSTRUMENT FOR FURNISHING A DECELERATION-MODIFIED DIRECTOR SIGNAL TO INDICATE OR CONTROL CORRECTIVE ACTION FOR OFFSETTING DECREASE IN HEAD WIND DURING LANDING APPROACH
Leonard M. Greene, Chappaqua, N.Y., assignor to Safe Flight Instrument Corporation, White Plains, N.Y., a corporation of New York
Filed Oct. 16, 1963, Ser. No. 316,759
10 Claims. (Cl. 73—178)

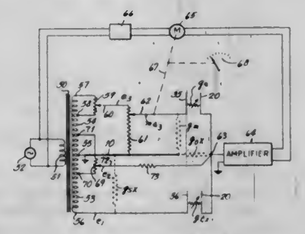
1. An airplane instrument for furnishing a director signal to indicate or control corrective action for offsetting decrease in head wind during landing approach, said in-

strument comprising means having an output which varies as a function of the indicated air speed of an airplane, and



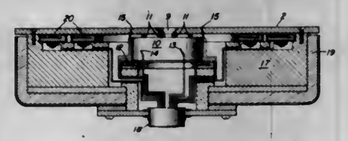
means to modify said output as a function of the forward inertial deceleration of the airplane to the substantial exclusion of positive forward inertial acceleration.

3,285,068
ELECTRICAL FLUID LEVEL GAUGE
Richard L. Morris, Bellerose, N.Y., assignor to The Liquidometer Corporation, Long Island City, N.Y., a corporation of Delaware
Filed Apr. 17, 1964, Ser. No. 360,680
9 Claims. (Cl. 73—304)



1. An electrical fluid level gauge for conductive fluids comprising means providing two alternating voltages having opposed phases and control means for controlling the amplitude of one thereof, a measuring unit included with one of said voltages in an arm of an alternating current bridge and having spaced electrically conductive electrodes adapted to be supported in a fluid container to provide a value of inter-electrode electrical conductance varying both with the level of fluid in said container and the value of conductivity of said fluid, a reference-compensating unit included with the other of said voltages in a second arm of said bridge and having at least one electrically conductive electrode spaced from said measuring unit electrodes and adapted to be supported in said container to be continuously fully immersed in said fluid and provide a value of electrode electrical conductance varying with the conductivity of said fluid and independent of the level thereof, a source of adjustable-amplitude alternating voltage of selectable phase and an electrically resistive unit included in a third arm of said bridge to effect balance thereof at a preselected level of fluid in said container correspondng to the empty level thereof, means responsive to unbalance of said bridge with change of the fluid-level in said container for controlling said control means to maintain a substantially balanced state of said bridge, and means controlled by said last named means for providing an indication of the prevailing fluid-level in said container substantially independently of the prevailing value of fluid electrical conductivity.

3,285,069
INSTRUMENT FOR MEASURING TEMPERATURE OF EXTENDED SURFACES
Morris Weiss, Stamford, Conn., assignor to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware
Filed Mar. 12, 1965, Ser. No. 444,899
2 Claims. (Cl. 73—355)



1. In an instrument for determining the temperature of a material to be measured as compared to the temperature of an extended reference plate which has linear dimensions large in comparison to the spacing between the plate and the material to be measured, the improvement which comprises:

(a) a reference plate having dimensions at least an order of magnitude greater than the spacing from the material the temperature of which is to be measured,

(b) heating means for maintaining the surface of the reference plate at a predetermined temperature,

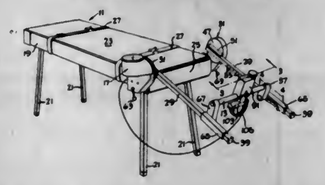
(c) temperature sensing means embedded in the surface of the reference plate, said sensing means controlling the operation of the heating means,

(d) a differential radiation detector having elements exposed to radiation and reference elements shielded therefrom, said differential detector being substantially centrally located in the reference plate,

(e) means for maintaining the reference elements of the differential detector at reference plate surface temperature whereby the elements of the detector receiving radiation from the material the temperature of which is to be measured produced a differential signal which is zero when the temperature of the surface to be measured is the same as that of the surface of the reference plate, and

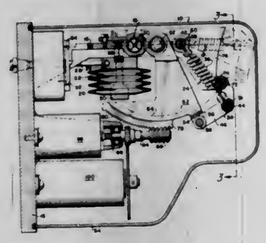
(f) electronic processing means for the differential detector output producing a signal which is a function of temperature difference between the reference plate surface and the surface to be measured.

3,285,070
MUSCULAR EVALUATION AND EXERCISING APPARATUS
Henry Wilmot McDonough, Dundee, Ill., assignor to Elgin Elmac Enterprises, Inc., a corporation of Illinois
Filed June 26, 1963, Ser. No. 291,234
3 Claims. (Cl. 73—379)



3. A strength-evaluation and exercising apparatus comprising a platform for supporting the body of a user, at least one arm member extending outwardly from one edge of said platform and adapted to resist a force exerted thereon by a user, said arm member being adjustable to a plurality of angular positions relative to the body-supporting surface of said platform, means for locking said arm member in any one of the plurality of angular positions, a rigid cross arm slidably carried by said arm member and maintainable at various fixed positions therealong, sensing means mounted on said cross arm and engageable by a portion of the body of a user, said sensing means being responsive to a force exerted thereon by the user, and means connected to said sensing means for indicating the amount of force exerted on said arm member and cross arm by the user.

3,285,071
PRESSURE ALTITUDE VECTOR BALANCED TRANSDUCER
William C. Plunk, San Pedro, and Alexander Silver, Tarzana, Calif., assignors to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed June 13, 1963, Ser. No. 287,685
15 Claims. (Cl. 73—407)



3. A force balance instrument, comprising:

a pivoted balance beam;

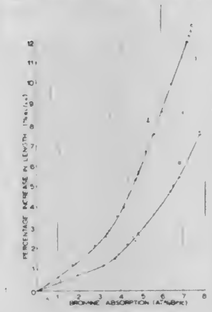
first force applying means operatively connected to said beam for exerting on the latter a first force which produces a first moment on one direction on the beam;

second force applying means operatively connected to said beam for exerting on the latter a second force which produces a second moment on the beam opposing said first moment; and

means for adjusting the angle between the longitudinal axis of said beam and the line of action of only one of said forces, said adjusting means including means for adjusting the magnitude of one of said forces according to a predetermined function in response to adjustment of said angle.

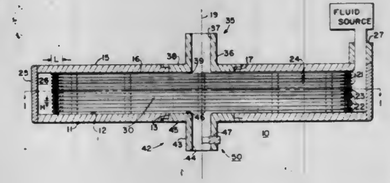
3,285,072
METHOD OF TESTING GRAPHITE
James Ernest Brocklehurst, Southport, England, assignor to United Kingdom Atomic Energy Authority, London, England
Filed July 22, 1963, Ser. No. 296,769
Claims priority, application Great Britain, July 26, 1962, 28,695/62
7 Claims. (Cl. 73—432)

1. For predicting, without recourse to neutron irradiation facilities, the dimension-determining properties of polycrystalline graphite under irradiation by neutrons, a testing method which comprises exposing a sample of the graphite to bromine vapour such that bromine is absorbed progressively in the sample, performing measurements on the sample to ascertain bulk dimensional change as a function of the amount of bromine absorbed, and deducing from such change the extent to which



changes in the graphite crystal dimensions are reflected in the bulk material.

3,285,073
COUPLING MEANS FOR VORTEX APPARATUS
Werner H. Egli, Minneapolis, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Apr. 15, 1964, Ser. No. 359,890
4 Claims. (Cl. 73—505)



1. A vortex rate sensor which is subject to an angular velocity about an axis of a body on which it is mounted comprising:

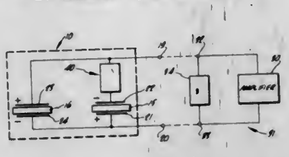
a first element having a first passage therethrough;

a second element having a second passage therethrough;

coupling means, said coupling means including a plurality of annular discs, said discs being maintained in a spaced, parallel relationship by a plurality of spacer elements, said discs being maintained in a substantially coaxial relationship by a plurality of fasteners, said coupling means providing a plurality of annular elongated apertures, said coupling means positioned between said first and said second elements so as to form a cylindrical chamber, the axis of said first passage and the axis of said second passage being substantially coaxial with the axis of said coupling means, the sensor being adapted to be connected to a fluid source whereby a fluid flows from said fluid source through said annular apertures in said coupling means, and is viscously coupled to the angular velocity of said sensor through said coupling means, and said fluid exhausting through said first and said second passages; and

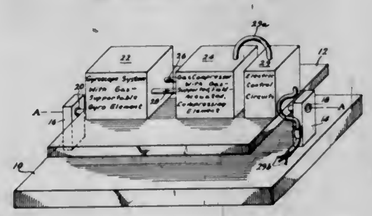
readout means located in at least one of said passages operable to provide an output signal indicative of the angular velocity applied to said sensor.

3,285,074
AMPLITUDE DAMPED TRANSDUCER
Shmuel Elazar, El Monte, Calif., assignor to Consolidated Electrodynamics Corporation, Pasadena, Calif., a corporation of California
Filed Sept. 8, 1964, Ser. No. 394,963
17 Claims. (Cl. 73—517)



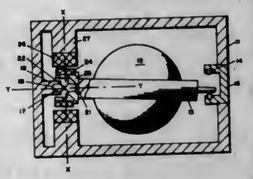
5. An amplitude damped transducer comprising a member mounted for movement in response to variations in a selected physical phenomenon to be measured by the transducer, signal generating means coupled to the member and responsive to the movement thereof for generating first and second charges having substantially equal values proportional to the movement of the member, transducer output terminal means, means for coupling the signal generating means to the terminal means so that the charges oppose each other at the terminal means, signal controlling means to which the charges are applied for applying the second charge to oppose the first charge when and to the extent that the first charge has a value exceeding a predetermined value, whereby the value of the total signal presented to the terminal means is limited to the predetermined value.

3,285,075
GAS PUMP APPARATUS AND GYROSCOPE SYSTEM EMPLOYING SAME
Walter L. Schneider, Levittown, and Dominick P. Scotto, Plainview, N.Y., assignors to American Bosch Arma Corporation, Garden City, N.Y., a corporation of New York
Filed Feb. 28, 1964, Ser. No. 348,108
13 Claims. (Cl. 74—5)



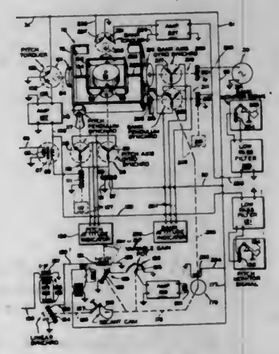
1. A gyroscope system, comprising:
a supporting base member;
a platform mounted on said base member and movable with respect to said base member;
a gyroscope on said platform, said gyroscope having a rotatable gyro element operatively supportable by gas under pressure;
a gas compressor supported on said plaform for producing pressurized gas substantially free of contaminants by said compressor; and
means for supplying said pressurized gas to said gyroscope to support said gyro element;
said gas compressor comprising a cylinder, a piston element in said cylinder, electric motor means for rotating said piston element in said cylinder and about the axis of said cylinder to provide hydrodynamic mounting of said piston element, and solenoid means for reciprocating said piston element in said cylinder during said rotation thereof for pressurizing gas in said cylinder.

3,285,076
RATE GYRO NULL SHIFT ELIMINATOR
Howard W. Boothroyd, Amherst, N.H., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed Sept. 15, 1961, Ser. No. 138,318
5 Claims. (Cl. 74—5.6)



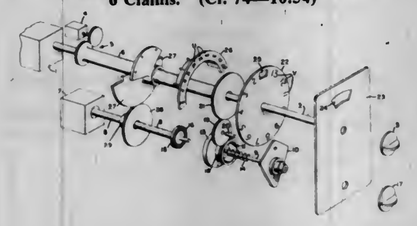
1. A gyroscope comprising,
a rotor,
a gimbal having bearing means for said rotor coincident with its axis of spin,
a housing for said gimbal pivotally supporting it for motion about an axis,
a pickoff stator mounted in said housing,
a pickoff rotor,
said pickoff rotor having a geometrical center about which it rotates,
said pickoff rotor being connected to said gimbal,
a torsion rod,
said torsion rod having its ends respectively connected to said housing and said gimbal and having a central point of flexure,
said central point of flexure being positioned coincident with the geometrical center of said pickoff rotor and within the pickoff rotor.

3,285,077
VERTICAL GYRO ERECTION SYSTEM
Christopher A. Rafferty, Palisade, N.J., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed June 24, 1963, Ser. No. 290,049
15 Claims. (Cl. 74—5.41)



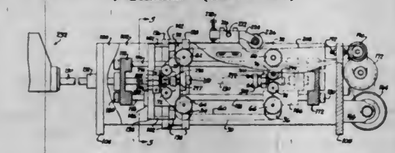
1. In an aircraft having a vertical gyroscope generating a pitch signal, a control system for the vertical gyroscope including means for producing erection of the gyroscope about a pitch axis during flight of the aircraft, said control system comprising first means for generating a signal proportional to rate of change in airspeed of the aircraft, second means for sensing a dynamic vertical error in the pitch signal of the gyroscope, and third means for adding the rate of change signal and the vertical error signal to obtain a resultant control signal, and a torque motor controlled by said resultant signal for erecting the gyroscope about the pitch axis.

3,285,078
UHF-VHF TUNER
Donald J. Siebold, North Syracuse, N.Y., assignor to General Electric Company, a corporation of New York
Filed Oct. 30, 1964, Ser. No. 407,784
6 Claims. (Cl. 74—10.54)



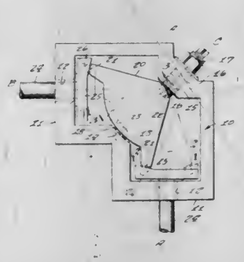
1. A combined UHF-VHF frequency selector and channel indicator mechanism comprising:
(a) a frequency band selector shaft for positioning an incremental frequency band selector to receive a plurality of VHF frequency bands and a UHF frequency band,
(b) a master fine tune shaft for operating a VHF and a UHF fine tune mechanism for tuning to selected frequencies in said VHF and said UHF frequency bands,
(c) means for selectively engaging said master fine tune shaft with said VHF fine tune mechanism and said UHF fine tune mechanism,
(d) a VHF channel indicator disc having a plurality of VHF channel numbers thereon and arranged for selectively aligning with a single viewer window one of the VHF channel numbers in response to positioning of said frequency band selector for receiving each of said VHF frequency bands, said VHF channel indicator disc being provided with a window portion thereon, and
(e) a UHF channel indicator disc having a plurality of UHF channel numbers thereon and arranged for selectively aligning with the window portion of said VHF channel indicator disc and the single viewer window one of the UHF channel numbers in response to movement of said UHF fine tune mechanism when said frequency band selector is positioned for receiving said UHF frequency band.

3,285,079
METHOD AND APPARATUS FOR TRANSFERRING ARTICLES
George Homanick, Livonia, Mich., assignor to The Leyman Corporation, Cincinnati, Ohio
Filed Apr. 11, 1963, Ser. No. 272,315
7 Claims. (Cl. 74—37)



1. Apparatus for driving a work element in compound cyclic motion comprising a first endless chain operatively trained about a first series of rotatable sprockets for movement along a first endless path determined by the location of the first sprockets relative to each other, a second endless chain operatively trained about a second series of rotatable sprockets for movement along a second endless path determined by the location of said second sprockets relative to each other, said first and said second endless paths lying in parallel general planes, a first element mounted for sliding movement along a predetermined third path, first means coupling said first element to a selected point on said first endless chain for transmitting from said first chain to said first element that component of movement of said point on said first chain along said first path which is parallel to said third path, a work element mounted upon said first element for movement relative to said first element along a fourth path extending transversely to said third path, second means coupling said work element to a selected point on said second chain for transmitting from said second chain to said work element movement of said point on said second chain relative to said point on said first chain to drive said work element along said fourth path in movement proportionate to the movement of the points on the respective chains relative to each other, and means for driving said chains along their respective paths.

3,285,080
COUPLING FOR ANGULARLY DISPOSED SHAFTS
Samuel N. Klavir, Brooklyn, N.Y., assignor of fifty percent to Roth Seymour, Brooklyn, N.Y.
Filed Sept. 14, 1964, Ser. No. 396,305
5 Claims. (Cl. 74—66)



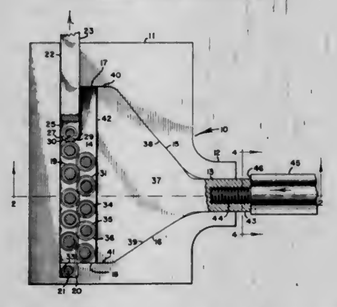
1. In combination with a pair of rotatable shafts angularly disposed relative to one another, a coupling for transmitting rotation from one shaft to the other, comprising a casing fixed with respect to the rotation of the shaft; a pair of end walls on said casing each disposed normal to the axis of rotation of one of the shafts; each of the end walls having an opening therethrough and an end of one of the shafts extending through each of the openings into the casing; an arm fixed to the end of each shaft for rotation therewith; the casing having a pair of spaced walls between the end walls each having a seat therein alined with the seat of the other wall on an axis that substantially bisects an angle formed by the axes of rotation of the shafts; and link means pivotally supported in the seats and having end portions each pivotally connected to one of the arms spaced from the axis of rotation of the shaft connected to the arm, each of said arms having a recess axially alined with a common intersection of the axes of both shafts and the seats; and the link means comprising a substantially triangular member having an end portion at two apexes each disposed in the recess of one of the arms, a slot therebetween, and a seat at its third apex; and a pair of ball members one disposed in one of the seats of one spaced wall and in the slot, and the other disposed in the seats of the other spaced wall and link to pivotally connect the link to the casing.

3,285,081
WELL-PUMPING APPARATUS
John P. Kuhns, Fort Worth, and Michael L. Rizzone, Dallas, Tex., assignors to United States Steel Corporation, a corporation of Delaware
Filed Apr. 13, 1965, Ser. No. 447,740
5 Claims. (Cl. 74—89.22)



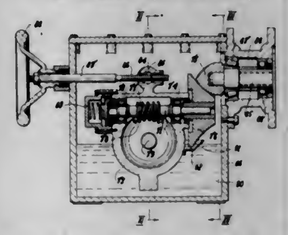
1. A pumping unit comprising a tower, rotatable means on said tower, flexible transmitting means connected to said rotatable means, a rod string and a counterbalance suspended from said rotatable means by said flexible transmitting means for movement in opposite directions through upstrokes and downstrokes, said rotatable means applying force to both said rod string and said counterbalance through equal moment arms during most of each stroke but providing a shorter moment arm for the rod string near the end of a downstroke thereof and a shorter moment arm for the counterbalance near the end of an upstroke of the rod string, reversible drive means operatively connected with said rotatable means, and means for disconnecting said drive means near the end of each stroke and reapplying the drive means in the reverse direction after the next stroke is underway, whereby each stroke is finished by momentum of the parts, and weight distribution starts the next stroke.

3,285,082
MECHANICAL ACTUATOR
Gert F. Schmitz, Huntsville, Ala., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Aug. 12, 1964, Ser. No. 389,132
2 Claims. (Cl. 74—110)



1. A mechanical actuator comprising a housing having a cavity therein, a piston mounted for reciprocating movement within said cavity, an actuating rod mounted in said housing in perpendicular relation to the path of movement of said piston with one end thereof extending into said cavity, a plurality of rollers, each having an annular groove therein, mounted in said housing and confronting said piston, a coiled biasing spring mounted in said housing, each coil of said spring engaging the annular groove in each of said rollers, said rollers adapted to be moved into columnar relation to each other by said piston whereby said rollers are moved from a rest position into an active position to engage and actuate said rod outwardly of said housing, and whereby upon release of said piston from engagement with said rollers, said spring will return said rollers to their rest position.

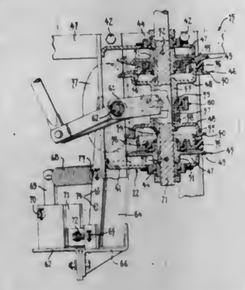
3,285,083
INFINITELY VARIABLE SPEED TRANSMISSION APPARATUS
Otto Singer, East Malvern, Victoria, Australia, assignor to Silentbloc (Australia) Proprietary Limited, Victoria, Australia, a corporation of Victoria
Filed July 9, 1964, Ser. No. 381,483
22 Claims. (Cl. 74—191)



1. Infinitely variable speed transmission apparatus comprising a drive shaft, a driven shaft located in operable relationship to the drive shaft, means keyed to said shafts for operatively connecting the drive shaft to the driven shaft and including at least one pair of disc like elements, each element of a pair including a portion of gradually decreasing radius with the radius of the portion on one element decreasing in the opposite direction to the portion on the other element so as to form a circumferentia! edge portion on one element of convex curvature and a circumferential edge portion on the other element of concave curvature with a radius of curvature greater than that of the first mentioned element, force developing means for forcing the circumferential edge portions of the elements into operative engagement with each other so that one element will rotate the other and a substantially circular path will be described on each circumferential edge portion as the elements rotate, means for changing the positions of the shafts with respect to each other so as to change the location of the engaging positions on the circumferential edge portions of the elements to lengthen and shorten the contact paths thereon thereby to vary the relative speeds of rotation of the driving shaft and driven shaft, and means for providing a film of oil of predetermined viscosity and thickness between the circumferential edge portions on the elements to operatively connect the elements so as to transmit power from one element to the other element through the film of oil.

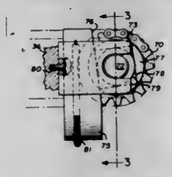
3,285,084
DRIVE AND STEERING MECHANISM FOR WHEELED VEHICLES OR IMPLEMENTS
Edward James Allport, Penetanguishene, Ontario, Canada, assignor to Massey-Ferguson Limited, Toronto, Ontario, Canada, a corporation of Canada
Original application Apr. 12, 1961, Ser. No. 102,517, now Patent No. 3,190,385, dated June 22, 1965. Divided and this application May 22, 1964, Ser. No. 369,363
1 Claim. (Cl. 74—218)

A reversible, variable speed transmission comprising, in combination, a power shaft, a pair of controllable pulleys spaced axially on said power shaft, each of said controllable pulleys having a first conically flanged member fixed to said shaft, each of said controllable pulleys also having a second conically flanged member keyed to, but axially slidable on said power shaft between said first flanged members, means for shifting said second flanged members axially on said shaft in unison so that the conical flanges on said first and second member of each controllable pulley move toward and away from one another and define variable diameter pulleys, each of said



controllable pulleys having a substantially cylindrical support pulley freely journalled on said power shaft and positioned between the respective first and second members of the controllable pulleys, a power pulley, an idler pulley, a V-belt extended about and between said power pulley and said idler pulley with the intermediate belt runs being trained respectively about said controllable pulleys, and means for movably supporting and biasing said idler pulley for maintaining said V-belt in tension while compensating for changes in the diameter in either of said controllable pulleys.

3,285,085
CHAIN TENSIONING DEVICE
Charles H. Graham, Mountain View, Calif., assignor to Graham Engineering Company, Inc., Palo Alto, Calif., a corporation of California
Original application Feb. 26, 1963, Ser. No. 260,995, now Patent No. 3,217,612, dated Nov. 16, 1965. Divided and this application Jan. 12, 1965, Ser. No. 425,000
3 Claims. (Cl. 74—242.14)



1. Means for adjustably supporting a rotatable driven member for bodily motion in one direction along a path normal to its axis so as to provide for tensioning of a flexible element by which said driven member can be drivingly connected with a rotatable driving member, comprising:

A. means connected with said rotatable driven member defining an axle therefor with end portions projecting from opposite sides of the driven member;

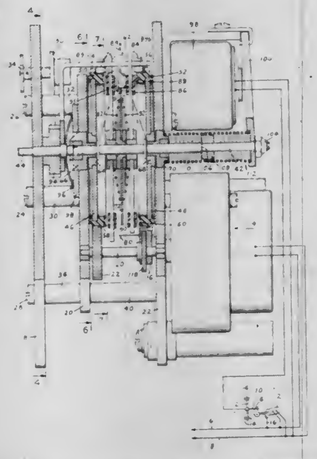
B. a bracket adapted to be fixed to a stationary support;

C. means which includes said axle, mounting said driven member on the bracket for rotation on its axis and for bodily motion relative to the bracket in said direction along said path;

D. wedge means having opposite legs wedgingly confined between portions on the bracket and the end portions on said axle, to effect movement of the rotatable driven member bodily along said path and in said direction in consequence of movement of the wedge means relative to the bracket in one direction crosswise of said path; and

E. spring means reacting between the bracket and said wedge means to at all times exert biasing force on the wedge means tending to move it in said one direction.

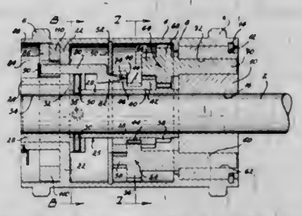
3,285,086
REVERSING GEAR DRIVE FOR A TELEMETRIC RECEIVER
Wilbur H. Frazel, East Providence, R.I., assignor to The New York Air Brake Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 9, 1963, Ser. No. 315,063
6 Claims. (Cl. 74—319)



1. An indicator adapted to be controlled by impulses from a point remote from the indicator, said indicator comprising, a scale, a pointer movable across said scale, means for maintaining said pointer positioned on said scale, a positioning member operatively connected to said pointer and movable between two predetermined points for positioning said pointer, a first arm for moving said positioning member from the first of said points toward the second of said points, a collar on said first arm, teeth on said collar, a second arm for moving said positioning member from the second of said points toward the first of said points, a collar on said second arm, teeth on said collar, a first toothed driving means adjacent said first arm for driving said first arm from the first of said points toward the second of said points, a second toothed driving means adjacent said second arm for driving said second arm from the second of said points toward the first of said points, a motor connected to said first and second driving means for driving said first and second driving means at a substantially constant speed in opposite directions, and means intermediate said first and second arms for alternately engaging and disengaging the teeth of the collar of said first arm with the teeth on said first toothed driving means and the teeth on the collar of said second arm with the teeth on said second toothed driving means, said first and second toothed driving means each containing, in the arc traveled by each of said toothed driving

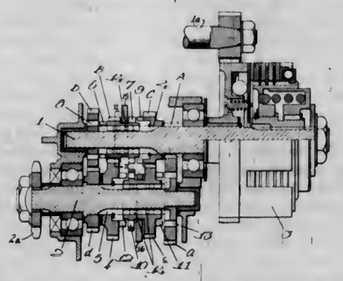
means during one complete cycle of engagement of said teeth on said first and second collars with the teeth on said first and second driving means, a whole number of teeth plus a pre-selected fraction of a tooth.

3,285,087
VARIABLE SPEED DRIVE SPROCKET
Leon W. Wells, Cloister, N.J., assignor to Panopix Research, Inc., New York, N.Y., a corporation of New York
Filed July 24, 1963, Ser. No. 297,457
11 Claims. (Cl. 74—330)



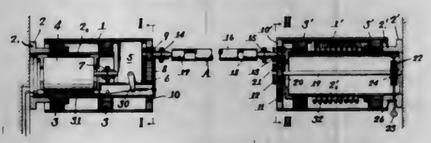
1. A film driving sprocket for a motion picture projector, comprising: a fixed base member having an outer cylindrical surface and a concentric bore; a hollow cylindrical drum journalled at one end on the outer cylindrical surface of said base member and having film driving sprocket teeth on its outer periphery; a driving shaft extending through the bore of said base member; at least one drive member disposed concentrically between said drum and said driving shaft and rotatable with respect to both said drum and said driving shaft; gearing in said drum interconnecting said base member, driving shaft and drive member whereby, when said driving shaft rotates relative to said base member, said drive member is rotated at a speed different from that of said driving shaft; and clutch means carried by said drum and accessible from the end of said drum opposite from said base member for selectively clutching said drum to said drive member or to said driving shaft.

3,285,088
MULTI-STAGE SPEED CHANGE GEAR
Kunio Atsumi and Minoru Ishida, Hamamatsu-shi, Japan, assignors to Suzuki Motor Co., Ltd., Shizuoka-ken, Japan, a corporation of Japan
Filed Sept. 24, 1963, Ser. No. 311,115
Claims priority, application Japan, Oct. 8, 1962, 37/44,496
3 Claims. (Cl. 74—359)



1. A change speed transmission, comprising: a driving shaft and a driven shaft fixedly spaced from and parallel to said driving shaft; a first pair of continuously meshing gears, one gear of said first pair being fast on said driving shaft and the other gear of said first pair being freely revoluble on said driven shaft; a second pair of continuously meshing gears, one gear of said second pair being freely revoluble on said driving shaft and the other gear of said second pair being fast on said driven shaft; a third pair of continuously meshing gears, one gear of said third pair being splined on said driving shaft, the other gear of said third pair being freely revoluble on said driven shaft; a fourth pair of continuously meshing gears, one gear of said fourth pair being freely revoluble on said driving shaft and the other gear of said fourth pair being splined to said driven shaft; said four pairs of gears providing four different speed ratios between the gears on said driving shaft and the gears on said driven shaft; first fork means for selectively shifting the splined one of said third pair of gears axially from a neutral position into lateral driving engagement either with said one gear of said second pair or said one gear of said fourth pair; and second fork means for selectively shifting the splined one of said fourth pair of gears axially from a neutral position into lateral driving engagement either with the other gear of said first pair or the other gear of said third pair, said driving shaft being drivingly disconnected from said driven shaft when both of said splined gears are in their neutral positions, each of said four speed ratios being obtainable between said driving and driven shafts by separate axial displacement of a single one of said splined gears in one direction or the other from its neutral position.

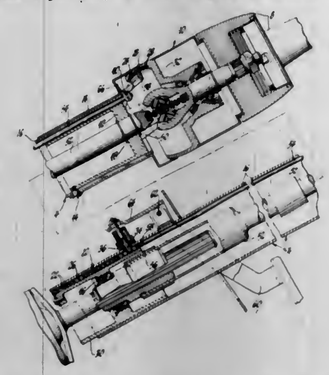
3,285,089
DRIVE MECHANISM FOR A SHUTTER WINDING DEVICE
Keizo Tsugawa, Tokyo, Japan, assignor to Nihon Bunka Roller Shutter Company, Limited, Tokyo, Japan
Filed Apr. 13, 1964, Ser. No. 359,264
6 Claims. (Cl. 74—421)



1. A shutter winding device comprising, in combination, a pair of coaxial, axially spaced, relatively large and substantially equal diameter drums arranged to have a curtain wound thereon and unwound therefrom and having a combined axial length less than the width of the curtain to be operated thereby; support base means, including bearing means rotatably supporting each of said drums; a motor mounted within one of said drums on the associated base means and in driving connection with said one drum; coupling means, each secured to a respective drum for rotation thereby and extending toward the other drum; and a relatively small diameter shaft connected at opposite ends to both coupling means to interconnect said drums for conjoint and synchronized rotation, the length of said shaft being selected in correspondence with the width of curtain to be secured to said drums.

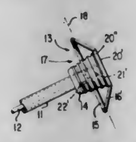
3,285,090
ADJUSTABLE STEERING COLUMN
Arthur R. Cranbury, Royal Oak, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 20, 1965, Ser. No. 457,283
6 Claims. (Cl. 74—493)

1. In an adjustable steering column assembly including a first portion disposed in a fixed position, a second portion telescopingly movable relative to said first portion, and a third portion angularly movable relative to said second portion, first incremental latching means operative to establish a plurality of fixed axial positions of adjustment of said second portion relative to said first portion, second incremental latching means operative to establish a plurality of fixed angular positions of adjust-



ment of said third portion relative to said second portion, latch operating means mounted on said fixed portion, and means responsive to operation of said first incremental latching means for imparting corresponding operation to said second incremental latching means.

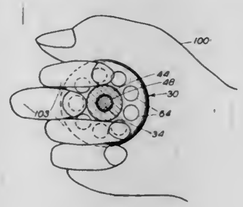
3,285,091
STEERING WHEEL ARRANGEMENT
Ernst J. H. Fiala, Sindelfingen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Jan. 9, 1963, Ser. No. 250,405
1 Claim. (Cl. 74—552)



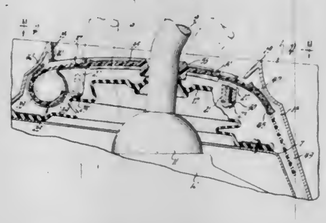
A steering wheel arrangement for motor vehicles having a longitudinally extending steering spindle, comprising:
a steering wheel rim having spoke means,
means forming a hollow deformable body capable of absorbing energy, impact plate means closing the hollow body and forming an impact surface, and hub means supporting thereon said hollow body,
said impact surface being disposed above said steering wheel rim,
and said spoke means being supported on said plate means
and guide means within said hollow body including two guide members having means providing for conjoint rotation and for sliding one within the other, one of said guide members being connected with said impact plate means and the other guide member being connected with said steering spindle.

3,285,092
STEERING KNOB
Leo Sokol, Duncan, Nebr.
Filed Nov. 12, 1963, Ser. No. 322,698
2 Claims. (Cl. 74—557)

1. A steering knob for a vehicle having a hand grip portion and means for attaching said hand grip portion to a vehicle steering wheel, said attaching means comprising a knob axle, and means provided in the remainder of said knob and surrounding said knob axle for rotatably receiving said knob axle for rotation of said hand grip portion around said axle, said hand grip portion being further characterized as being for long continuous manual use periods by having exterior outer peripheral portions which are sufficiently smooth and convexly curved as to be comfortable to an operator's hand during steering, said hand grip portion having an annular outer section projecting outwardly away from said axis a greater distance than the remaining portions of said knob, the peripheral edge portions of said projecting section being of progressively greater thickness inwardly of the periphery thereof for comfort in long manual use periods, said annular projecting section of said knob having a plurality of ventilation openings therethrough from the forward to the rearward side thereof, said openings being of a size and number sufficient for substantially assisting the cooling of said hand grip portion by means of circulation of air into said openings for conducting heat away from the wall surfaces of said openings, the thickness of said projecting portion of said hand grip as measured in a direction parallel to said axis being substantially uniform in substantial portions on all sides of each knob opening with the exception of the said peripheral edge portions.



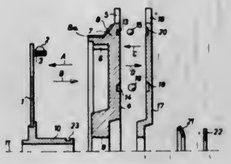
3,285,093
COVER SEAL FOR SHIFT CONSOLE
Daniel J. Sellmeyer, Royal Oak, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 15, 1964, Ser. No. 374,987
4 Claims. (Cl. 74—566)



1. In a console having an upper panel formed with a generally rectangular opening therein to accommodate the longitudinal and lateral movements of a transmission shift lever projecting therethrough, a one-piece support frame having elongated sides and front and rear end portions cooperating to form a generally rectangular opening therebetween, fastener means removably mounting said one-piece support frame in the console closely adjacent the opening therein, said elongated sides being formed with opposing inwardly facing track portions, said

front end portion being formed by a wall portion curved to define a cylindrical container, said container having an elongated opening therein, an elongated flexible cover seal having free end portions and outwardly extending tongue portions on opposite sides thereof for slidably mounting said seal in said track portions, one end of said cover seal projecting through said opening into said container, said cover seal forming a closure for the opening in said panel and said support frame, said cover seal being formed with a lateral slot therein to permit lateral movement of the shift lever projecting therethrough without movement of said cover seal, an enlarged bearing collar formed on said cover seal bounding said slot, said collar being contacted by the transmission shift lever thereby permitting said shift lever to move said cover seal as a unit, said cover seal being coiled in said container on movement of said cover seal toward said container in response to predetermined movement of said shift lever, guide means on the rear end portion of said frame for directing the opposite end portion of said cover seal downwardly into said console in response to movement of the lever in an opposite direction.

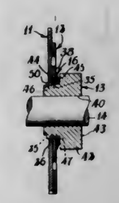
3,285,094
DISC CAM DEVICE
Oskar Aschwanden, Zurich, Switzerland, assignor to Micro-Electric A.G., Zurich, Switzerland
Filed Aug. 25, 1964, Ser. No. 391,889
Claims priority, application Switzerland, Sept. 2, 1963, 10,910/63
9 Claims. (Cl. 74—568)



1. A disc cam device comprising a member, at least one cam disc rotatably adjustable on the member, a member mounted coaxially on said member and non-rotatable thereon, at least one positive ratchet device provided between the cam disc and the non-rotatable member, said ratchet device including a row of teeth and a spring-biased projection co-operating with said teeth for locking the cam disc in the desired position, said cam disc having an outer rim a portion of which is axially projecting towards and surrounding at least partially the non-rotatable member, said rim having a frusto-conical outer surface carrying a dial-like scale, and at least one cam arranged at the periphery of said rim and protruding radially from the edge of larger diameter of the frusto-conical surface, and said row of teeth being of approximately equal diameter as the axially projecting portion of said rim.

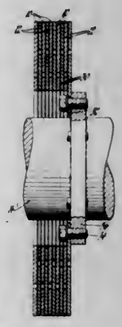
3,285,095
CAM MEANS
David C. Rockola, Chicago, Ill., assignor to Rock-Ola Manufacturing Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 11, 1964, Ser. No. 417,727
5 Claims. (Cl. 74—568)

1. In combination, a hub member adapted to be rotatably driven, plural cam plates adjacently mounted on said hub member for coaxial rotation therewith, each of said plates having fixed peripheral cam profile portions, means affixing one of said cam plate to said hub member, means rotatably mounting another of said cam plates on said hub member whereby the same may be rotatably moved thereabout and relative to said one cam plate, unitary clutch means operative to normally interlock said cam plate and selectively release said another cam plate upon rotation of the latter about said hub member



whereby the said fixed peripheral cam profile portions of said cam plates may be selectively related and arranged to provide a plurality of selected composite profiles for said cam means, and means for coupling torque applying means to said other cam plate to effect said rotation thereof.

3,285,096
TORSIONAL VIBRATION DAMPER
Bernard E. O'Connor, 8904 Rindge, Playa Del Rey, Calif.
Filed July 29, 1964, Ser. No. 385,950
29 Claims. (Cl. 74—574)

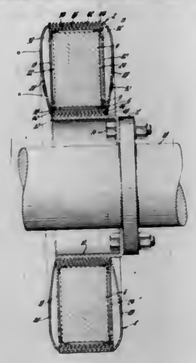


1. A torsional vibration damper comprising at least two elements extending radially outwardly from a member subject to the torsional vibration, said elements being secured to said member for rotary movement therewith and being non-rotatable with respect to said member and with respect to each other, each of said elements undergoing vibratory movement relative to the other of said elements upon occurrence of the torsional vibration, and a coupling between said elements for absorbing and dissipating the energy of the vibratory movement therebetween.

3,285,097
TORSIONAL VIBRATION DAMPER
Bernard E. O'Connor, 8904 Rindge, Playa Del Rey, Calif.
Filed July 29, 1964, Ser. No. 385,951
12 Claims. (Cl. 74—574)

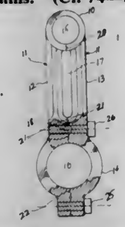
1. A torsional vibration damper comprising an annular casing containing a liquid and having side walls which

are bowed outwardly with a substantially smooth continuously curved cross section, and an annular inertia



member rotatably supported in concentric relationship within said casing.

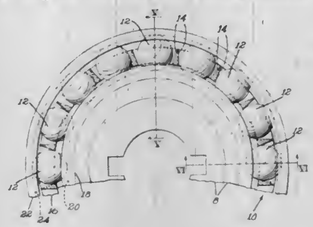
3,285,098
CONNECTING ROD FOR RECIPROCATING PISTON MACHINE
John Herbert Beveridge, P.O. Box 7091, Perkins, Calif.
Filed Mar. 22, 1965, Ser. No. 445,836
18 Claims. (Cl. 74—579)



7. Connecting rod for a reciprocating piston machine having a piston pin and a crank pin connected by the connecting rod;
said rod having a piston pin bore formed and encircled by a piston pin ring portion at one end;
a crank pin bore formed and encircled by a crank pin ring portion at the other end;
and an integral shank connecting said ring portions; and characterized as follows:
said connecting rod being bifurcated generally along a central longitudinal plane through said shank from said crank pin bore at least to said piston ring portion, said bifurcation also extending through a portion of said crank pin ring portion spaced from said shank;
thereby to bifurcate the rod into two branches joined by an integral portion of said piston pin ring portion, maintaining in said rod a unitary integral structure.

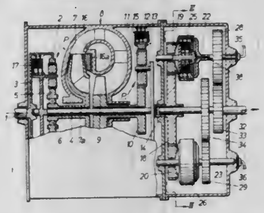
3,285,099
HARMONIC DRIVE BEARINGS
George U. Parks, Jr., Portland, Solon C. Shuford, Cromwell, and Peter T. Heyl, Durham, Conn., assignors, by mesne assignments, to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed Oct. 21, 1963, Ser. No. 317,647
5 Claims. (Cl. 74—640)

1. A bearing for use in a harmonic drive transmission of the type including an internal elliptoidal wave generator, comprising an inner shaped ring fitted on the wave generator, a rigidly circular separator having circumferentially spaced pockets respectively provided with walls converging toward the wave generator, rolling-elements in the respective pockets, and a radially deflectable outer ring for retaining the rolling-element in their



pockets and between the rings, the separator nad rings being concentric with the wave generator and at least one of the rings having a shoulder configuration in relation to the bore of the separator to provide guidance for the separator in the zones of one axis of the wave generator.

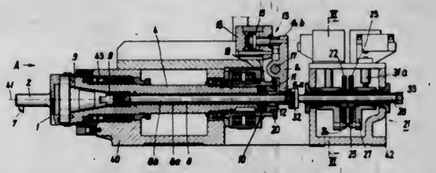
3,285,100
SHIFTABLE MULTI-SPEED TRANSMISSION
Johannes Peltner, Sontheim, Stubental, and Helmut Weinrich, Heidenheim (Brenz), Germany, assignors to Voith-Getriebe-KG., Heidenheim (Brenz), Germany
Filed July 15, 1963, Ser. No. 294,846
Claims priority, application Germany, July 21, 1962, V 22,815
4 Claims. (Cl. 74—688)



1. In combination: a differential torque converter transmission having an input shaft, first planetary gear transmission means having one member connected to said input shaft, a hydrodynamic torque converter comprising a pump wheel drivingly connected to another member of said first planetary gear transmission means and also comprising a turbine wheel, a second planetary gear transmission means having a sun-wheel drivingly connected to said turbine wheel, said second planetary gear transmission means also comprising a planetary gear carrier carrying a plurality of planetary gears meshing with said sun-wheel and being drivingly connected to a third member of said first planetary transmission means, said second planetary gear transmission means furthermore comprising a ring gear in meshing engagement with said planetary gears, said ring gear being freely rotatable about its axis, frictional disc brake means arranged adjacent said ring gear and being operable selectively to brake said ring gear for holding it stationary; a shiftable gear transmission comprising input shaft means fixedly connected to said planetary gear carrier for rotation therewith, output shaft means arranged in axial alignment with said input shaft means, an input gear connected to said input shaft means for rotation therewith, a plurality of countershaft means spaced from and substantially parallel to said input and output shaft means and corresponding in number to the

number of velocity ranges of said gear transmission, said countershaft means being arranged around the aligned axes of said input and output shaft means, a pair of countershaft gears respectively mounted on each of said countershaft means, output shaft gear means connected to said output shaft means for rotation therewith, one countershaft gear of each of said pairs being drivingly connected to and being smaller in diameter than said input shaft gear and the other gear of each of said pairs being drivingly connected to said output shaft gear means, one of said countershaft gears of each of said pairs being rotatably mounted on its respective countershaft, and a shiftable, clutch means respectively mounted on each of said countershaft means for connecting one of said rotatably mounted gears to its shaft, each of said clutch means being operable selectively to establish and interrupt driving connection between said input and output shaft means through the respective countershaft means on which the respective clutch means is mounted.

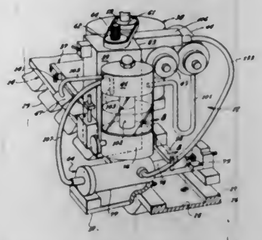
3,285,101
ADJUSTING DEVICE FOR TOOL CARRIERS
Hans Klingel, Stuttgart-Weilimdorf, Germany, assignor to Karl Huller G.m.b.H., Ludwigsburg, Germany
Filed Apr. 15, 1965, Ser. No. 448,391
Claims priority, application Germany, Apr. 17, 1964, H 52,393
31 Claims. (Cl. 77—3)



1. An adjusting device for tool carriers, especially for boring bars of fine-boring machines, which includes: a spindle head, a boring spindle rotatably journalled in said spindle head and held therein against axial movement, said boring spindle being provided with a hollow conical section at one end, a tool carrier supported by said boring spindle at said one end of the spindle and provided with a conical portion seated in said conical section, said conical section and conical portion tapering outwardly toward said tool carrier, said tool carrier being eccentrically arranged with regard to the axis of said boring spindle, said tool carrier and said boring spindle being rotatably adjustable with regard to each other, and means connected to said spindle head and to said tool carrier selectively operable for axially adjusting said tool carrier in said boring spindle in a direction to unseat said conical portion from said conical section.

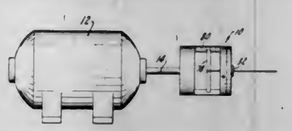
3,285,102
DRILLING ASSEMBLY
Edwin A. de Voss, Torrance, Calif., assignor to Northrop Corporation, Beverly Hills, Calif., a corporation of California
Filed May 4, 1964, Ser. No. 364,579
6 Claims. (Cl. 77—13)

1. In a drilling assembly adapted to drill spaced holes in a panel-like structure, the combination comprising: an elongated flexible track member having parallel opposed side surfaces; said track member being secured to a side surface of a panel-like structure so that the side surfaces thereof have a parallel relation with respect to the side surface of such structure; a drilling unit including a bit member; means mounting said drilling unit on said track member in a manner allowing sliding movement thereof on said track member and insuring a normal relation of said bit member with respect to the side surfaces of said track member; a taught sprocket chain extending throughout the length of said track member; and said drilling unit



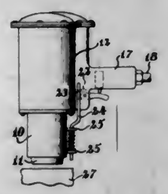
including mechanical means cooperating with said chain and functioning to advance said drilling unit a predetermined distance along said track member when activated.

3,285,103
ROTARY BENCH STRIPPER
Dean Oehlerking, Sycamore, Ill., assignor to Ideal Industries, Inc., Sycamore, Ill., a corporation of Delaware
Continuation of application Ser. No. 344,170, Feb. 10, 1964. This application Oct. 11, 1965, Ser. No. 500,469
6 Claims. (Cl. 81—9.51)



1. In a rotary wire stripper, a blade holder and means for rotating it, a blade structure including a wire stripping cutting edge, a generally flat spring mounting the blade structure to said blade holder for back and forth movement, means on the blade holder and cooperating means on the blade structure for causing the wire stripping cutting edge to be deflected to one angle for cutting and to a second angle for stripping when moved by a wire to be stripped, a wire guide attached to the blade holder and positioned to support a wire to be stripped, and an opening in the blade holder in alignment with the cutting edge and wire guide for receiving a wire to be stripped.

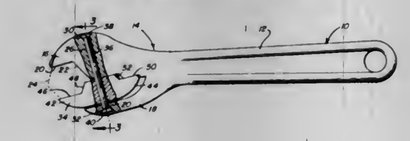
3,285,104
BUNG DRIVING APPARATUS
Otto K. T. Baumann, 8656 Picture Ridge, Peoria, Ill.
Filed May 20, 1965, Ser. No. 457,375
6 Claims. (Cl. 81—52.35)



1. Bung driving apparatus comprising a tubular guide sleeve formed at one end with a recess to receive the larger end of a tapered bung, stop means in the sleeve

spaced from said one end to engage and limit insertion of a bung thereinto a position with the smaller end of the bung projecting beyond the end of the sleeve, a head movable lengthwise in the sleeve from a position spaced from said one end thereof to a position substantially flush with said one end thereof, and power means to move the head in the sleeve whereby the head will strike a bung in said recess and drive it from the sleeve into a bung hole in a container.

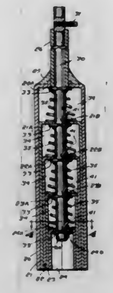
3,285,105
END WRENCH WITH ROTATABLE JAW INSERT
Wilbur A. Davis, R.R. 1, Mahomet, Ill.
Filed Mar. 4, 1965, Ser. No. 437,046
11 Claims. (Cl. 81—178)



1. An end wrench with a rotatable jaw insert, said wrench including a body portion and a first jaw member in predetermined position relative to said body portion and defining a first jaw surface, a second jaw member defining a second jaw surface opposing said first jaw surface, said second jaw member being pivotally supported from said body portion for rotation about an axis disposed generally normal to a plane containing said first jaw surface and including means defining a third jaw surface, said second jaw being selectively rotatable between two positions alternately positioning said second and third jaw surfaces in operative positions opposing said first jaw surface, said second and third jaw surfaces being disposed in generally parallel planes passing through said axis at points spaced longitudinally therealong, said first jaw member being also pivotally supported from said body portion for rotation about an axis disposed generally normal to said plane and including means defining a fourth jaw surface selectively interchangeable in approximate operative position with said first jaw surface upon rotation of said first jaw member relative to said body portion, said first and fourth jaw surfaces being disposed in generally parallel planes passing through said axis at points spaced longitudinally therealong.

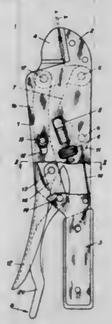
3,285,106
SELF-ADJUSTING SOCKET WRENCH
Fred D. Svenson, R.F.D. 1, Box 175, Sanbornton, N.H.
Filed June 30, 1965, Ser. No. 468,309
7 Claims. (Cl. 81—185)

1. A tool for use in tightening and releasing any one of a series of fastener parts of the same equilateral shape but of different sizes, said tool comprising a set of closed end sockets of said equilateral shape slidably nested one within the other, each socket being for a particular one of said different sizes and being substantially longer than any socket slidable within it, a tool holding member to which the closed end of the outermost socket is anchored, a stem rotatable in said member and extending through the closed ends of the other sockets in slidable support thereof, a plurality of seats spaced lengthwise of said stem, one for each socket and engageable by the end wall thereof to limit its movement towards the free end of said anchored socket, compression springs, one for each socket for yieldably maintaining each socket against its seat, each spring engaging the closed end of that socket and backed by the seat of the next larger socket, the difference in length of said sockets being such that the free ends of said slidable sockets, when seated, are substantially in the plane of the free end of the anchored socket, and said stem and each of said



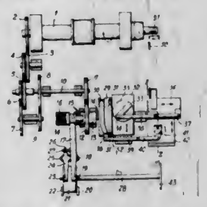
slidable sockets including portions interengaging to hold said socket, when unseated, against the seating action of its spring, when said stem has been turned relative to said holding member to a predetermined extent.

3,285,107
WRENCH HAVING TOGGLE ACTUATED MOVABLE JAW AND TOGGLE RELEASE LEVER
Otto Kasper, Neumattstrasse 703, Buchs, Switzerland
Filed Mar. 18, 1965, Ser. No. 440,784
1 Claim. (Cl. 81—368)



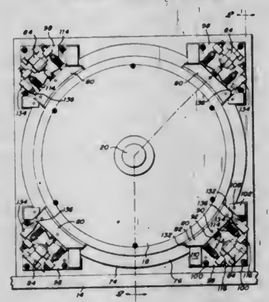
A toggle-type wrench comprising in combination a handle member having a fixed jaw at one end, a movable jaw, a toggle lever system connected to said movable jaw and said handle, said system including a toggle lever and a toggle link pivotally connected together, a pivot pin mounting said toggle link on said handle, a release lever mounted on said pivot pin, said toggle lever on closing said jaws and slightly surpassing toggle alignment approximately abuts against said release lever and through actuation of the latter is restorable to the open position, said release lever comprising two arms of which in the closed position of the toggle lever the longer arm approximately abuts against the toggle lever, while the shorter arm approximately abuts against the toggle lever at a toggle joint, said release lever projecting rearwardly beyond the end of the toggle lever and may readily be used on its projecting end for releasing the clamping position, the center section of the longer arm of said release lever being curved and engaging partially loosely the toggle lever which is of U-shaped cross section.

3,285,108
DRIVING ARRANGEMENT FOR THE THREADING TOOL OF AUTOMATIC LATHES
Albert Thevenet, 8 Rue Jean Baptiste Schacre, Mulhouse, Haut-Rhin, France
Filed Feb. 7, 1966, Ser. No. 525,400
Claims priority, application France, July 12, 1963, 941,260
3 Claims. (Cl. 82—5)



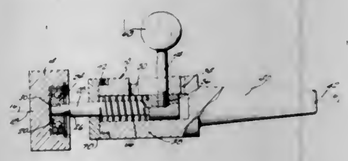
1. In an automatic lathe having a work spindle to carry a workpiece to be screw-threaded, a driving shaft, an auxiliary shaft, an interchangeable gear train, transmission means, a tool carrier and first and second control grooves in operating relation with said tool carrier, said auxiliary shaft being rotated by said work spindle through said interchangeable gear train, and rotating said driving shaft through said transmission means, said first and second control grooves rotating simultaneously with said driving shaft, said first control groove corresponding to back and forth motion of said tool carrier in a direction which is radial to said workpiece, said second control groove corresponding to to-and-fro movement of said tool carrier in a direction which is parallel to said workpiece, a screw-threading arrangement comprising a universal control cam bearing said first and second grooves, said first control groove being located on the periphery of said universal control cam for radial movement of said tool carrier, said second control groove being closed partially spiral-shaped, and located on the front end of said universal control cam, a roller, a carriage, a rotatable guiding disc on said carriage, a guiding groove on said guiding disc, a guiding piston, a thimble fixed on said piston, a connecting rod coupled to said piston, said roller engaging said second partially spiral-shaped control groove, said thimble being guided by said guiding groove of said disc on said carriage, said connecting rod being articulated on said tool carrier.

3,285,109
HEAVY DUTY AUTOMATIC BRAKING MEANS
Roger G. Heaton, Amelia, Ohio, assignor to Jack N. Binns, Cincinnati, Ohio
Filed May 14, 1964, Ser. No. 367,529
15 Claims. (Cl. 82—28)



1. Apparatus for turning and shaping a heavy workpiece by means of a cutting tool applied thereto, and comprising in combination: a workpiece driving member; a prime mover including means for selectively starting and stopping rotation of said driving member and a workpiece fixed thereto; and releasable braking means operative upon the workpiece driving member during each stopping period, for immobilizing the workpiece relative to the cutting tool pending a re-starting of the driving member rotation; and means precluding sustained resumption of the driving member rotation upon failure of the braking means to release the driving member.

3,285,110
ENGINE LATHE LENGTH STOP
Stefan Lenkei, 472 Cliff Road, Sewaren, N.J.
Filed Sept. 22, 1965, Ser. No. 489,346
3 Claims. (Cl. 82—34)

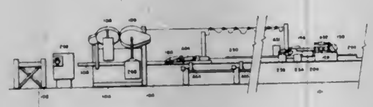


1. An engine lathe length stop comprising a stop head having an axis through its center, a mounting recess on one end and in alignment with the axis, and a substantial recess on the other end thereof also in alignment with the axis, a radially disposed recess in the stop head for providing grease to the recess from the periphery thereof, a ball bearing mounted in the recess from its outer diameter and having an inner diameter defining an opening, a shaft of generally uniform diameter but having a section at one end thereof of reduced diameter substantially common to the inner diameter of the ball bearing, and adapted to fit therein, a threaded aperture of uniform diameter and diametrically extending through the shaft, a hollow housing open at one end and closed at the other by a tapered shank and having a longitudinal axis throughout, the distal end of the shank having a mounting recess in alignment with said axis, said housing having a U-shaped aperture communicating with the hollow inside of the housing and including further an extension of the base of the U-shaped aperture to form generally a U-shape, an arm threadedly engaging the threaded aperture of the shaft and extending through the U-shaped aperture, and a spring for biasing the shaft from the housing when it is disposed therein.

3,285,111
AUTOMATIC PUNCHING APPARATUS
Robert W. Creamer, Fort Worth, Tex., assignor, by mesne assignments, to Numeric Systems of Texas, Inc., Fort Worth, Tex., a corporation of Texas
Filed Apr. 24, 1963, Ser. No. 275,433
16 Claims. (Cl. 83—71)

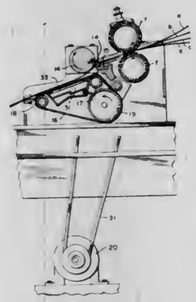
1. An automatic system for moving a work piece a predetermined longitudinal distance through and beyond a work station comprising a work station, a longitudinally extending support means mounted on opposite sides of said work station, a longitudinally extending track mounted on one side of said longitudinal support means, a carriage mounted on said track and movably therealong for drawing a work piece longitudinally through said work station, a clamp means on one end of said carriage for engaging the forward end of said work piece, a carriage drive motor for moving said carriage, speed control means associated with said carriage drive motor for determining the speed and direction of movement of said carriage, said speed control means including a forward

solenoid for causing movement of said carriage in a direction away from said work station at full speed, a reverse solenoid for causing movement of said carriage towards said work station at full speed and a slow solenoid for causing movement of said carriage at slow speed in either dierction of movement, a plurality of foot stops mounted at evenly spaced intervals along said carriage, a measuring station located along said longitudinally extending support means at a fixed distance from said work station, a fraction drum mounted on said measuring station for rotation on an axis substantially parallel to the longitudinal direction of movement of said carriage, a plurality of longitudinally extending fraction cams secured to the outer surface of said fraction drum at evenly spaced intervals around the periphery thereof, the ends of said fraction cams terminating longitudinally at different distances with respect to said work station by differing amounts representing the lowest desired fraction of an inch to be employed in stopping the carriage, an inch drum support mounted on said measuring station but movable longitudinally relative thereto, a fixed stop on said inch drum support adapted to engage one end of a fraction cam on said fraction drum, a retracting solenoid adapted to move said inch drum support so that said fixed stop engages the end of an appropriate fraction cam when said fraction drum has moved to its desired position, an inch drum mounted for rotation on said inch drum support on an axis substantially parallel to the rotational axis of said fraction drum, a plurality of longitudinally extending inch cams mounted at evenly spaced intervals on the periphery of said inch drum, the ends of said inch cams facing said work station terminating at different distances relative to said work station and at one inch intervals with respect



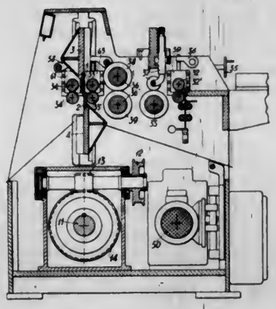
to each other, a dropping solenoid associated with said inch drum support for droping said inch drum support downwardly when said drums have been turned to their desired positions for interposing the appropriate inch cam in the path of movement of the appropriate foot stop on said carriage when said carriage has reached its proper position of movement away from said work station, a plurality of reset cams mounted on the side of said carriage, one reset cam being provided for each foot stop, a plurality of count cams mounted on the side of the carriage, one count cam being provided for each foot stop, an advanced reset microswitch mounted on said measuring station and adapted to be contacted by said reset cams in succession upon movement of said carriage, a retarded reset microswitch mounted on said measuring station and adapted to be contacted by said reset cams in succession but subsequent in time to the contacting of said advanced reset microswitch as said carriage moves outwardly away from said work station, an advanced count microswitch mounted on said measuring station and adapted to be contacted by said count cams in succession as said carriage moves outwardly away from said work station, said advanced count microswitch being contacted by each count cam after the associated reset cam passes beyond said advanced reset microswitch but prior to the time that the carriage has moved to the foot corresponding to that intended to be counted by the advanced count microswitch, a retarded count microswitch mounted on said measuring station and adapted to be contacted by said count cams in succession subsequent to the contacting of said advanced count microswitch by the same count cam and after the associated advanced reset cam has passed beyond said retarded reset microswitch, said advanced microswitches being operative when it is desired to stop said carriage in the first part of a given foot, said retarded microswitches being operative when it is desired to stop said carriage in the latter part of a given foot, means for rotating said fraction drum until it reaches a desired position, means responsive to the rotation of said fraction drum to the desired position for energizing said retracting solenoid, means for rotating said inch drum until it reaches a desired position, means responsive to the rotation of both drums to their desired positions for energizing said forward solenoid to initiate movement of said carriage in a direction away from said work station at full speed, means responsive to the actuation of said reset and count microswitches by a predetermined number of cams for energizing said slow solenoid and for energizing said dropping solenoid and means responsive to the contact of said appropriate inch cam with said appropriate foot stop for de-energizing said forward solenoid and said slow solenoid so as to stop movement of said carriage.

3,285,112
VACUUM CONTROLLING OF SHEET DELIVERY
Ingvald Dale and John W. Caswell, Hoquiam, Wash., assignors to Lamb-Grays Harbor Co., Inc., Hoquiam, Wash.
Filed Aug. 3, 1964, Ser. No. 387,089
2 Claims. (Cl. 83—152)



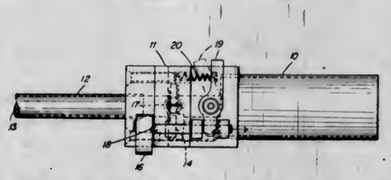
1. In combination, a paper cutter comprising a fixed cutter bar and a fly knife operable to coact therewith for paper sheet cutting, means for feeding continuous paper strips into said cutter across said fixed bar for their cutting into pieces of predetermined length, a continuously driven conveyor belt having a downwardly inclined portion extending from a point immediately adjacent and substantially beneath said cutter to a discharge point to receive the cut pieces successively thereon from the cutter for conveyance toward said discharge point, a vacuum chamber on and across which the conveyor belt operates; said chamber including a downwardly sloping top wall, a longitudinal slot formed through said top wall and extending throughout the major extent of said inclined portion, said belt being formed throughout its length with a row of perforations that, in travel of the belt, coincide with said longitudinal slot for application of suction through said slot and perforations to the conveyed sheets whereby the sheets will be drawn against the belt and held thereon in its travel toward the discharge point.

3,285,113
MACHINE FOR AUTOMATICALLY CUTTING STRIPS OF ADJUSTABLE LENGTH AND WIDTH STARTING FROM A SHEET OR FROM A ROLL
Guido Bertoglio, Viganello, Switzerland, assignor to Brevetex Anstalt, Eschen, Liechtenstein
Filed Feb. 10, 1965, Ser. No. 433,252
Claims priority, application Switzerland, May 4, 1962, 5,409/62
1 Claim. (Cl. 83—255)



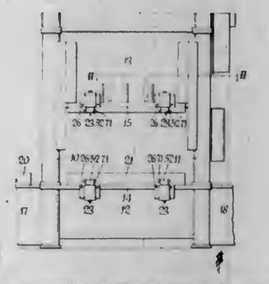
Apparatus for cutting pieces from a strip, comprising a pair of guillotine blades, means for intermittently moving strip material along a plane between the blades, the blades having cutting edges disposed at opposite acute angles with respect to said plane, means for reciprocating both of the blades toward and away from each other so that the cutting edges of the blades intersect in said plane throughout the cutting operation in synchronism with said intermittent moving means to cut pieces from the strip when the strip is stationary between periods of movement of the strip, means for continuously moving said strip along said plane, a further cutting blade for forming at least one cut through the strip extending lengthwise of the strip, and means for selectively simultaneously actuating said intermittent moving means and said guillotine blades and for deactuating said continuous moving means and further cutting blade, or for deactuating said intermittent moving means and said guillotine blades and actuating said continuous moving means and said further cutting blade.

3,285,114
DOFFING DEVICE WITH TRIGGER ACTUATED CUTTER MEANS
Elisha Johnson, Jr., Charlotte, N.C., assignor to Fiber Industries, Inc., a corporation of Delaware
Filed June 21, 1965, Ser. No. 465,604
2 Claims. (Cl. 83—402)



1. An apparatus for doffing or stringing-up of yarn comprising in combination a vacuum hose and a cutting device attached to the extremity of said vacuum hose, said cutting device containing an aperture for the passage of yarn and means to provide an air opening to a vacuum source through said vacuum hose comprising a knife blade of sufficient size located in said cutting device so that said blade can completely cover said aperture, a lever pivotally attached to said knife blade for moving said blade to expose said aperture, resilient means located in such position to place said knife blade under tension when said blade is in a position exposing said aperture to the atmosphere, a cocking mechanism for said lever to maintain said knife blade in a position for exposure of said aperture, and a trigger mechanism which releases said cocking mechanism which in turn releases said lever permitting said resilient means to force said knife blade to cut said yarn passing through said aperture and cover said aperture to close off the vacuum source to the atmosphere.

3,285,115
AUTOMATIC DIE CLAMPING MECHANISM FOR POWER PRESSES
Robert H. Cederleaf, 133 Findlay St., Tonawanda, N.Y.
Continuation of application Ser. No. 247,787, Dec. 6, 1962. This application Dec. 28, 1965, Ser. No. 516,954
4 Claims. (Cl. 83—698)

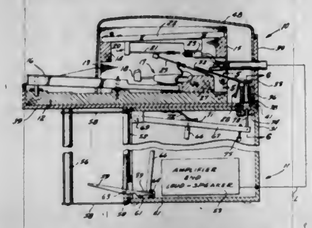


1. Means for clamping a die member to a power press, said means including a relatively stationary body portion, a rotatable shaft journaled therein and retained against relative axial movement and having a threaded portion, a clamp member threaded thereon and having a laterally projecting clamping portion, said clamp member being rotatable with said shaft in opposite directions between clamping and unclamping positions, a torsion spring having radially projecting terminal portions biased toward each other, said shaft and said clamp member each having an abutment disposed between said torsion spring terminal portions whereby said abutments are resiliently urged to a position of radial alignment by said terminal portions, whereby said shaft is arranged for resilient overtravel in opposite directions relative to the clamp member.

3,285,116
PORTABLE PIANO-TYPE INSTRUMENT INCORPORATING A SUSTAINING PEDAL
Harold B. Rhodes, Anahelm, Calif., assignor, by mesne assignments, to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York
Filed June 15, 1964, Ser. No. 375,230
11 Claims. (Cl. 84—176)

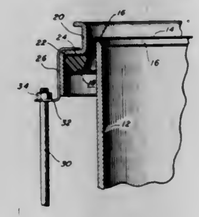
1. A portable electrical musical instrument of the piano type, which comprises:
a portable upper section including a multiplicity of piano keys, piano actions, tone generators, and mechanical-electrical transducers,
said elements in said upper section being so constructed and arranged that striking of any piano key operates the related piano action, tone generator, and transducer to generate an electrical signal,
portable lower-section means adapted when disposed on a supporting surface to support said upper section,

said lower-section means having a vertical dimension such that when said upper section is supported thereon said piano keys will be at a conventional elevation for playing by an adult pianist when such pianist is seated on a conventional chair disposed on the same supporting surface as said lower-section means,
the horizontal dimension of said lower-section means in a direction parallel to each individual piano key being much less than said corresponding dimension of said upper section,



means to position said upper section on said lower-section means in such manner that the keyboard portion of said upper section overhangs the forward portion of said lower-section means,
loudspeaker means incorporated in said lower-section means, and
electric-circuit means to connect said transducers to said loudspeaker means.

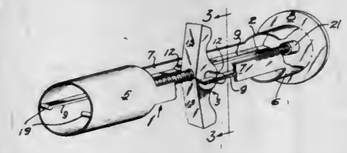
3,285,117
DRUM HEAD
Ernest Cheslow, Glencoe, Ill., assignor to David Wexler & Co., a corporation of Illinois
Filed Apr. 5, 1965, Ser. No. 445,344
7 Claims. (Cl. 84—414)



1. A drum head which comprises: a synthetic plastic vibratory diaphragm adapted to fit over the open portion defined by a drum barrel, the periphery of said diaphragm forming a channel; and a solid composition filling said channel, said solid composition being chemically bonded with the inner surface of said channel.

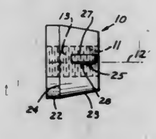
3,285,118
ANCHOR BOLT WITH SPRING ACTUATED TOGGLE HEAD
Edward L. Elkins, East St. Louis, Ill.
(9 Kingston Drive, Caseyville, Ill.)
Filed Jan. 8, 1965, Ser. No. 424,295
2 Claims. (Cl. 85—3)

1. A wall clamping anchor comprising an elongated tube-like body with similarly elongated slots in its side,
a wall-engaging flange at one end of the body and of larger diameter than the remainder of the body,
similarly elongated guides projecting inwardly from the side of the body intermediate said slots, substantially throughout the length of the latter,
a threaded nut having radially projecting cylindrical trunnions with transverse slots receiving said guides and held thereby against rotation in said body,
a pair of diametrically opposite locking wings each pivoted at their inner ends on said nut to swing to positions parallel to and normal to the axis of said nut by projecting through said slots,
there being radially projecting stops at the ends of the guides remote from said rim,
spring means anchored on said nut and engaging said wings to urge them to said normal positions,



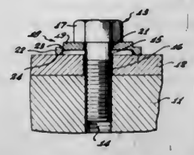
and an elongated headed bolt threaded into said nut and long enough to extend into the inner end of the body, said nut being adjustable along the bolt to the inner end of the bolt by rotation of said bolt in one direction and being movable along the body by axial shifting of the bolt toward the inner end of the body to thereby move the inner ends of said wings into said annular portion of the body and thereby swing said wings on their pivots into positions parallel to said shank.

3,285,119
TORQUE-LIMITING FASTENER
John F. Dean, Dallas, Tex., and Ronald W. Batten, Torrance, Calif., assignors to Hi-Shear Corporation, Torrance, Calif., a corporation of California
Filed May 5, 1964, Ser. No. 368,758
1 Claim. (Cl. 85—61)



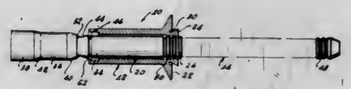
A torque-limiting fastener adapted to be driven to a predetermined, inherently limited, torque level, comprising: a head having a central axis and an axial thread thereon; an outer peripheral surface on said head, said surface being a substantially frusto-conical surface centered on said central axis; and a pair of longitudinally disposed driving lugs integral with the head, on and interrupting said frusto-conical surface and being circumferentially spaced apart approximately 180°, said driving lugs being defined by a pair of parallel tool-engaging side surfaces and an outer end surface lying radially within the maximum diameter of the head, each of said driving lugs lying entirely on opposite sides of the diametral line passing through the central axis with one side surface of each lug being substantially aligned with said diametral line to provide a substantially direct, tangential drive between the driver and the lugs, each of said driving lugs forming near their intersection with the frusto-conical surface, a shear plane whose shear strength defines the upper limit of torque applicable to the nut by tangential forces exerted on the driving lugs, shearing of the lugs at that plane destroying the capability of the head to be driven, said shear planes defining the minimum cross-sectional areas of the fastener subject to direct shear.

3,285,120
PRELOAD BOLT JOINT
Tauno F. Kartiala, 15836 Lahey St., Granada Hills, Calif.
Filed Apr. 30, 1965, Ser. No. 453,566
8 Claims. (Cl. 85—62)



1. In combination in a joint to be preloaded to a predetermined value, a headed bolt, and a calibrating washer beneath the head of said bolt, said washer comprising: two concentric rings being axially offset from one another and being integrally connected by a continuous wall of frangible material defining the smallest cross-section of the washer, the head of said bolt engaging the smaller of the two rings with the maximum transverse dimension of the head being less than the outer diameter of said smaller ring.

3,285,121
BLIND RIVET
George Siebol, 2877 Shady Glen Lane, Orange, Calif.
Continuation of application Ser. No. 162,791, Dec. 28, 1961. This application May 19, 1965, Ser. No. 459,523
8 Claims. (Cl. 85—72)



1. A blind rivet adapted to be inserted from the top side and set in the aligned apertures in a plurality of work pieces, comprising:

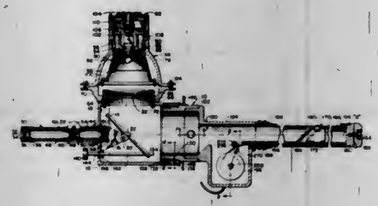
a tubular sleeve including a shank with a radially enlarged head at one end and an axial passageway extending therethrough from end to end, said sleeve being adapted to be inserted into the aligned apertures in the work pieces with said head abutting the top side of the same and with the shank projecting from the opposite blind side of the work pieces;

a pin including, in series, a pulling section initially disposed in said passageway with a gripping end projecting from the headed end of said sleeve, an expanding section of a cross-section greater than that of said passageway and initially projecting from the shank end of the sleeve, and a blind head outward of, and larger in diameter than said expanding section so as to provide an annular tapered second shoulder at the juncture of the blind head and expanding section, said expanding section being adapted upon an axial pulling force being applied to said pulling section and a reactive force opposite to said radially enlarged head to be drawn into said passageway to expand the projecting portion of said shank and, thereafter, the portion thereof disposed within the aligned apertures in said work pieces, said blind head being adapted upon the continued application of such forces to be drawn into the projecting portion of said shank to further expand the same;

first shoulder means on the exterior of said pin axially spaced from said second shoulder toward said pulling section, which is of a unit hardness greater than that of at least said expanding section and said second shoulder, and stop shoulder on the interior of said sleeve adjacent said radially enlarged head engageable to stop pin movement, said expanding section being adapted to be pulled into the blind end of said shank to expand the same and to wiredraw down in diameter and, thereafter, said blind head being adapted to be pulled into said shank to further expand the same with said second shoulder being drawn up adjacent the blind side of the work pieces and deformed to expand the axially aligned portion of the shank into engagement with the blind side of the work pieces, the extent to which said expanding section and blind head are pulled into said shank and said second shoulder is deformed being limited by the leading edge of said first shoulder abutting said stop shoulder in said sleeve; and

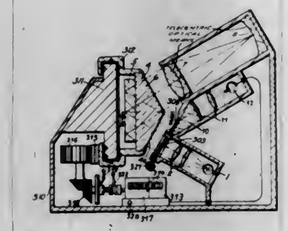
means adjacent said radially enlarged head for locking said pin against movement relative to said sleeve, and means located on said pin adjacent said first shoulder and between said first shoulder and said pulling section for receiving said locking means.

3,285,122
DEVICE FOR INSPECTION OF THE INTERIOR OF HOLLOW BODIES
Albert J. Buchbinder, West Covina, and Terry E. Walsh, Fullerton, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Filed July 17, 1961, Ser. No. 124,429
5 Claims. (Cl. 88—14)



1. An inspection instrument for insertion into a hollow body to enable viewing of the interior thereof, said inspection instrument comprising: a housing having a longitudinal axis, a source of light attached to said housing and positioned at an angle to the longitudinal axis of said housing, a first reflector positioned within said housing at an angle to said source of light and in alignment therewith for projecting light from the said source of light as a beam extending along the longitudinal axis of said housing, a telescope attached to said housing in coaxial relation to the longitudinal axis of said housing, a head rotatably mounted on said housing in oppositely disposed relation to said telescope, an elongated tube attached to said head and having a longitudinal axis coaxial with the longitudinal axis of said housing, said tube having an extended slot therein, a carriage positioned within said tube, a second reflector mounted on said carriage in angular relation to the longitudinal axis of said tube and directed toward the extended slot in said tube in opposing relation to said first reflector, and means for moving said carriage and said second reflector mounted thereon axially within said tube through a distance traversing the entire length of the extended slot in said tube, the beam of light projected from said first reflector being directed against said second reflector so that said second reflector transmits light through the extended slot in said tube to illuminate the region outside of said tube and adjacent the extended slot therein, whereby said telescope can be focused for observing the illuminated region with light reflected from said second reflector.

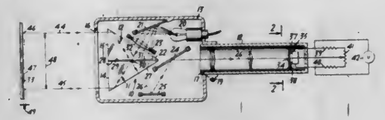
3,285,123
SCALE READING APPARATUS
Kurt Räntsch and Adolf Weyrauch, Wetzlar (Lahn), Germany, assignors to M. Hensoldt & Sohne, Optische Werke AG, Wetzlar (Lahn), Germany
Filed Nov. 30, 1962, Ser. No. 241,425
Claims priority, application Germany, Dec. 4, 1961, H 44,311; Sept. 22, 1962, H 46,987
21 Claims. (Cl. 88—14)



1. In an apparatus for the measurement of the displacement of an object displaceable in a predetermined direction, a scale on said displaceable object and having a series of intersecting reflecting surfaces with the lines of intersection arranged normally to said direction with successive reflecting surfaces being at right angles to each other, a transparent plate having an opaque area thereon varying periodically parallel to said direction of displacement, optical means comprising a gap positioned perpendicularly to said direction of displacement, a first optical system including a light source and light collimating means and passing a collimated beam of light through said transparent plate to project a light pattern from said transparent plate onto one of said reflecting surfaces and then onto an adjoining reflecting surface. a second optical system including collector lens and a curved reflecting surface receiving the light pattern of said transparent plate reflected from said adjoining reflecting surface to reflect said light pattern back onto said scale reflecting surfaces and onto said optical means, the reflected light pattern of said transparent plate moving across the gap of said optical means in a direction coinciding with the direction of displacement of said object so that the amount of light received by said gap varies as a function of said displacement, and photoelectric receiver means positioned adjacent to said gap for receiving the light pattern of said transparent plate traveling across said gap during the displacement of the object to detect the displacement of the object.

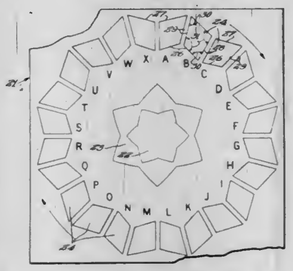
3,285,124
HIGH PRECISION POINTING INTERFEROMETER WITH MODIFIED KOSTERS PRISM
Gerald H. Lovins, Amherst, Mass., assignor to Kollmorgan Corporation, Garden City, N.Y., a corporation of New York
Filed Oct. 26, 1964, Ser. No. 406,974
2 Claims. (Cl. 88—14)

1. An interferometer for measuring very small angles of displacement of a reflecting element comprising interference prism means having first and second side surfaces inclined at an angle, a base surface, and an internal semireflecting surface positioned so that two light beams which are produced by a beam which enters one side surface and is divided by the semireflecting surface along a selected line extending parallel to all the prism surfaces, and which emerge in parallel rays from the base surface so as to be incident perpendicularly on the reflecting element, have the same effective path length between the selected line of intersection with the semireffecting surface and the reflecting element, thereby producing a zero order fringe of maximum contrast and higher order fringes of reduced contrast with white light illumination, light source means illuminating the prism through the first side surface with parallel rays which pass through the selected line, detecting means for detecting an interference condition positioned to receive light rays from the second side surface which have passed through the selected line, a



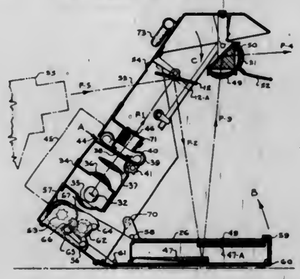
first glass plate element positioned perpendicular to and in the path of one of the two light beams between the prism and the reflecting element, and a second glass plate element similarly positioned in the path of the other light beam between the prism and the reflecting element, said second glass plate element being divided into two portions in side by side relationship, one of the portions being rotatable about an axis perpendicular to the plane of the two light beams for effectively shifting the phase of fringes presented to the detecting means.

3,285,125
TEST NEGATIVE AND PHOTOGRAPHIC METHODS
Robert W. Mitchell, St. Joseph, Mich, assignor, by mesne assignments, to Heath Company, St. Joseph, Mich., a corporation of Delaware
Filed Oct. 16, 1963, Ser. No. 316,649
12 Claims. (Cl. 88—24)



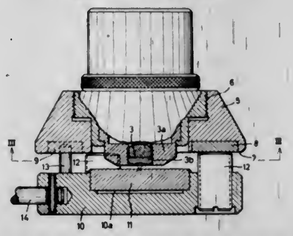
1. The method of rating a photographic printing paper which comprises exposing a test negative onto a paper to be rated, said test negative having a substantially clear light transmitting area, at least one area adjoining said substantially clear area which is slightly opaque, and a series of individual panels of varying degrees of density, varying the time of exposure until a positive print is produced on said paper in which the difference in shade between the areas printed from said substantially clear and substantially opaque areas of the negative is just discernible to the naked eye, and then selecting which of said individual panels has been printed onto said paper as to be barely discernible.

3,285,126
DESK LEVEL OVERHEAD PROJECTOR
James W. Lucas, 1480 N. Doheny Drive, Los Angeles, Calif.
Application Apr. 18, 1966, Ser. No. 543,000, which is a continuation of application Ser. No. 463,464, May 27, 1965, which is a continuation of application Ser. No. 214,784, July 25, 1962, which in turn is a substitute of Ser. No. 16,017, Mar. 18, 1960. Divided and this application May 6, 1966, Ser. No. 548,214
19 Claims. (Cl. 88—24)



1. An overhead projector comprising: a case, light source means affixed interiorly of and rigid with said case, a planar reflector effective to direct the beam from said light source downwardly through a picture aperture in said case, a planar reflector and projection lens movably supported by said case above said aperture and adapted to project images from said aperture along an angular light path onto a viewing screen, and a converging reflector behind said picture aperture effective to redirect said light beam back through said aperture and into said projection lens.

3,285,127
MAGNETICALLY ATTACHED MICROSCOPE ACCESSORY FOR SUPPORTING COMPARISON OBJECTS
Horst Piller, Aalen, Wurttemberg, Germany, assignor to Carl Zeiss-Stiftung, doing business as Carl Zeiss, Heidenheim (Brenz), Wurttemberg, Germany, a corporation of Germany
Filed Sept. 28, 1964, Ser. No. 399,528
Claims priority, application Germany, Oct. 18, 1963, Z 10,419
1 Claim. (Cl. 88—40)



A device for use with a microscope having a stage and an objective mount with an objective, an annular support threadedly connected to said objective mount so as to allow relative movement of the two members axially of the microscope, said annular support having a plurality of circular ferromagnetic inserts situated along its lower face, the inserts all lying within a single plane perpendicular to the axis of said objective and being equi-angularly spaced around the annular support at the same radial distance from the axis of the objective, said annular support also having a plurality of equi-angularly spaced keyhole slots situated within the annular support and at the same radial distance from the axis of said objective, a holder for supporting comparison objects, a plurality of magnetic rods corresponding in number and relative position to the ferromagnetic inserts of the annular support, the magnetic rods having end faces lying in a common plane perpendicular to an optical axis of the holder which coincides with the axis of the microscope when the holder is mounted on the microscope, and a plurality of fixed pins on the holder corresponding in a number and position to the keyhole slots of the support so that rotation of the holder in one direction engages the magnets of the holder with the inserts of the support and at the same time brings the holder into alignment with the optical axis of the microscope, and a rotation of the holder in a reverse direction disengages the magnets.

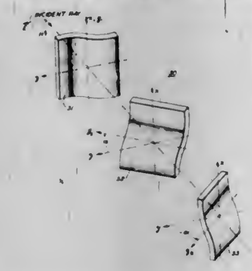
3,285,128
CATADIOPTRIC OBJECTIVE
Franz Schlegel, Munich, Germany, assignor to Optische Werke G. Rodenstock, Munich, Germany
Filed Nov. 16, 1962, Ser. No. 238,217
Claims priority, application Germany, Dec. 23, 1961, O 8,448
3 Claims. (Cl. 88—57)



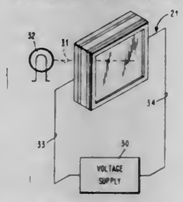
1. A specular objective comprising a plano-convex front lens, the plane surface of which faces outwardly, said front lens having a focal length more than twice the focal length of the objective, a master mirror disposed approximately a distance one-half the focal length behind said front lens, a deflection mirror between the front lens and the master mirror in the shape of a dispersing meniscus and having a mirror coated convex surface to constitute a collecting lens having a focal length of at least three times the focal length of the objective, said master mirror having a central bore therein wherethrough light rays are reflected by the deflection mirror, and a biconvex correctional lens in said central bore of the master mirror having a focal length approximately equal to that of the objective, all of said lenses being constituted of the same material, the distance from the correcting lens to the image plane of the objective being no greater than 20% of the focal length thereof.

3,285,129
TRIPLE ELEMENT S-LENS FOCUSING SYSTEM
Rudolf Kompfner, Middletown, and Enrique A. J. Marcatill, Fair Haven, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 12, 1963, Ser. No. 287,420
10 Claims. (Cl. 88—57)

1. Focusing means for electromagnetic wave energy comprising,
a first transparent dielectric sheet of constant thickness having first and second surfaces conforming to a portion of a substantially sinusoidal cylinder having a surface generator normal to a first plane,
a second transparent dielectric sheet of constant thickness having first and second surfaces conforming to a portion of a substantially sinusoidal cylinder having a surface generator normal to a plane intersecting said first plane,
and a third transparent dielectric sheet of constant thickness having first and second surfaces conforming to a portion of a substantially sinusoidal cylinder having a surface generator normal to a third plane intersecting said first plane,
said first, second, and third sheets being disposed in the path of wave energy incident upon said first sheet,
said sheets being spaced apart from one another along said path distances negligible with respect to the focal length of the focusing means.

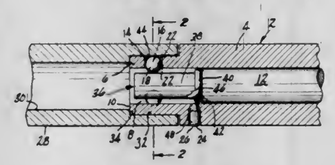


3,285,130
LIGHT SWITCHING MEANS FOR SELECTIVELY CONTROLLING THE INTENSITY OF A LIGHT BEAM
Ubert Cocca, Apalachin, and Raymond Pecoraro, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Original application July 5, 1961, Ser. No. 121,954, now Patent No. 3,247,765, dated Apr. 26, 1966. Divided and this application Sept. 27, 1965, Ser. No. 508,613
4 Claims. (Cl. 88—61)



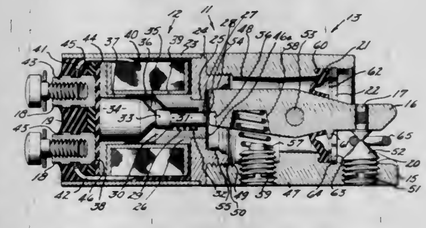
1. Apparatus for light switching of a narrow bandpass light beam, comprising: a composite modulating sheet composed of P- and N-type layers in face contacting relation with a diffusion junction therebetween arranged in the path of said light beam such that the light beam impinges onto the P-type layer, said P- and N-type layers having first and second opposite outer faces, respectively, with said junction disposed between said outer faces, said outer face of said P-type layer comprising a low recombination surface upon which said light beam impinges, and said outer face of said N-type layer comprising a high recombination surface; transparent electrically conductive coatings disposed on the outer faces of said modulating sheet and electrically isolated from each other; and selectively variable voltage means connected to said transparent coatings establishing an electric field across said composite sheet whereby controlled carrier concentration within said body is provided corresponding to the magnitude of the impressed electric field and selectively variable transmission of the light beam is effected.

3,285,131
POWER TOOL
Oliver Nelson Lewis, Woodbridge, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Mar. 31, 1965, Ser. No. 444,257
7 Claims. (Cl. 89—1)



1. In a tool powered by a cartridge having a rim portion and a body portion of reduced diameter, said tool including a breech member and a barrel, said barrel and said breech member being movable from a firing position wherein a portion of said breech member is engaged with the barrel to a loading position wherein the breech member and the barrel are disengaged, a chamber in said breech member open at an end extending toward said barrel, said chamber having a diameter substantially equal to the diameter of said rim to receive said cartridge rim first, cartridge supporting means movably mounted in said breech member, said cartridge supporting means being engageable with said body portion and said barrel in said firing position to support said cartridge aligned in said chamber, said cartridge supporting means being movable out of engagement with said cartridge in said loading position to allow the cartridge rim to move past the supporting means.

3,285,132
ARMING UNIT
Donald L. McCurdy, Grand Rapids, Mich., assignor to Jervis Corporation, Grandville, Mich., a corporation of Michigan
Filed Jan. 8, 1964, Ser. No. 336,508
3 Claims. (Cl. 89—1.5)

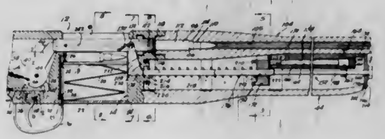


1. In an arming unit, the combination comprising:
(a) a solenoid including a coil and an axially movable armature;
(b) a spring biased pin in following engagement with said armature of said solenoid;
(c) a lever structure provided on one end with a jaw piece and at the other end defining a recess in normal register with the axis of said pin;
(d) a housing about said lever structure including a fixed adjustable jaw piece in register with said lever mounted jaw piece and said housing providing a fulcrum in tilting support of said lever;

(e) a lever bias applied to said lever intermediate said recess end and said fulcrum position biasing said jaws toward each other; and

(f) a connector coaxially supporting said solenoid and said lever housing and providing a shoulder stop limiting movement of said lever in one direction and axially registering said pin with said recess in said lever.

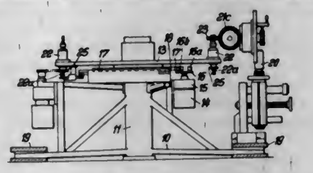
3,285,133
GAS OPERATED SEMI-AUTOMATIC FIREARM
Walter E. Fowler, 8560 Culfor Crescent, Norfolk, Va.
Filed Sept. 15, 1964, Ser. No. 396,676
8 Claims. (Cl. 89—191)



4. A firearm comprising a receiver, an open-top magazine located intermediate the ends of said receiver and dividing the receiver into forward and rear parts, a gun barrel secured at its rear end to the forward part of the receiver and extending forwardly therefrom, said barrel being formed with a chambered bore, said forward and rear parts of the receiver being formed with aligned forward and rear bores which are aligned with the barrel bore, a bolt working in the receiver bores and adapted to be positioned in the rear bore in the retracted position of the bolt with its forward end at the rear end of the magazine, a hollow stock forepart provided with a closed end disposed beneath the barrel and extending forwardly from the forward part of the receiver, said stock including an elongated cylindrical block provided with a bore extending axially therethrough and having an elongated piston working in said bore, and a combustion gas-operated action arranged within said stock in cooperative relation with respect to said cylinder block, there being a gas duct providing communication between the barrel bore and the block bore forwardly of the piston, gas-exhaust duct means leading out of the block bore at a location between the ends of the piston, said action embodying a slide rod extending longitudinally ofsaid stock forepart and located beneath said cylindrical block and having one end fixedly-supported in the closed end of said forepart stock and having the other end fixedly-supported in the forward part of the receiver, a slide slidable on the slide rod and freely-engaging the adjacent end of said piston, and means operatively-connecting said slide to said bolt for retractile movement of said bolt responsive to the backward movement of said piston.

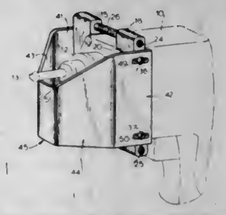
3,285,134
APPARATUS FOR THE FINAL MACHINING OF GEARS
Günter Kehr, Bremen, Germany
(Barssel, Oldenburg, Germany)
Filed Sept. 2, 1964, Ser. No. 393,960
Claims priority, application Germany, Sept. 7, 1963, K 50,761
11 Claims. (Cl. 90—9)

1. An apparatus for the final machining of gears which comprises a rotatable work-supporting table, means for mounting a plurality of gears on the table, and means for indexing the table and gears to a plurality of working stations, the stations including means for removing rough burrs from the gears, means for milling the gear teeth and means for removing fine burrs from the gears, the means for milling the gear teeth including a plurality of milling cutters each of which mills at least one area between two adjacent teeth and the means for milling the gear teeth further including means for automatically engaging the



milling cutters with a gear to be machined and means for preventing movement of the gear during machining.

3,285,135
ELECTRIC DRILL ATTACHMENT FOR ROUTING
Harold M. Shaw, 205 Mozart Ave., Winston-Salem, N.C.
Filed Aug. 26, 1965, Ser. No. 482,668
3 Claims. (Cl. 90—12)



1. In combination with a portable hand drill having a housing, a chuck and a cutting drill mounted in said chuck, a detachable gauge for controlling the angle and depth of cut by said bit and adapting said drill to serve as a routing device for routing groove lines in flat surfaces and at the intersection of perpendicular surfaces, said gauge comprising:

(A) a rigid integral sheet member bent to comprise,

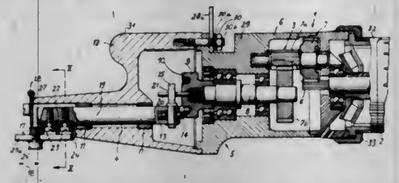
(1) a front flat plate section positioned in a plane perpendicular to the axis of said bit and at a predetermined distance behind the tip, said bit extending beyond and being free to rotate in said front plate section and said distance controlling the depth of cut of said bit,

(2) a pair of oppositely disposed side flat plate sections each extending rearwardly from parallel edges of said front plate and each forming angles of 135 degrees therewith such that the projected planes of said side sections intersect in front of said front section and form an angle of 90 degrees, and

(B) mounting means detachably secured to said housing and connected to support said sheet member thereby enabling said gauge to be detachably mounted on said hand drill.

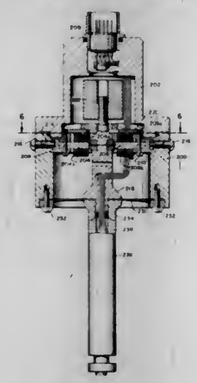
3,285,136
PORTABLE GOUGING TOOL
Walter Wezel, Maulbronn, Wurttemberg, Germany, assignor to Schmid & Wezel, Maulbronn, Wurttemberg, Germany
Filed Feb. 16, 1965, Ser. No. 433,024
Claims priority, application Germany, Feb. 21, 1964, Sch 35,428
16 Claims. (Cl. 90—24)

1. In a portable gouging tool, a housing provided with a motor; a drive shaft rotatably and axially movably mounted in said housing; a gouge secured to said drive shaft and comprising a cutter located externally of said housing, said cutter having a cutting edge adapted to be pressed against a surface to be gouged and to thereby move said drive shaft in one axial direction; and transmission means operatively connected with said motor and with said shaft for oscillating said shaft about the axis thereof and for intermittently moving said shaft along



said axis thereof in the other axial direction when the motor is running and the cutting edge of said gouge is pressed against a surface whereby said shaft reciprocates with the gouge.

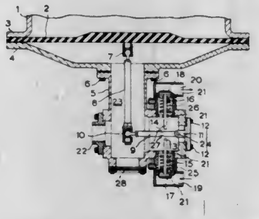
3,285,137
TRACER HEAD
Roger Gettys Hill, 5000 Windpoint Drive, and George A. Hoffman, 2606 Westwood Drive, both of Racine, Wis.
Filed June 11, 1965, Ser. No. 463,280
7 Claims. (Cl. 90—62)



1. A tracer head for producing electrical signals representative of the deflection of a stylus from an initial position with respect to three mutually perpendicular axes, comprising a mounting member, means supporting said mounting member for relative movement with respect to two of said axes, said mounting member including means for holding said stylus so as to permit movement of the stylus with respect to said mounting member along the third of said axes, first transducer means for producing electrical signals representative of stylus deflection with respect to said two axes, and second transducer means within said mounting member for producing electrical signals representative of the movement of said stylus with respect to said third axis.

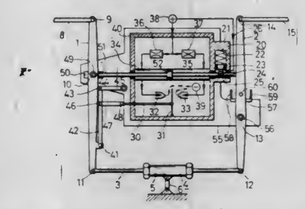
3,285,138
APPARATUS FOR IMPARTING PULSATIONS TO A LIQUID WITHIN A CONTAINER
Harry M. M. Otten, Geleen, Netherlands, assignor to Stamicarbon N.V., Heerlen, Netherlands
Filed July 22, 1964, Ser. No. 384,461
Claims priority, application Netherlands, Feb. 17, 1964, 64/01432
6 Claims. (Cl. 91—1)

1. Apparatus for imparting pulsations to a fluid within a container comprising: a container having a fluid therein; means defining a resilient diaphragm in a wall of the container, said diaphragm being arranged to communicate on one side thereof with said fluid and having the opposite side thereof presented exteriorly of the container; wall means defining a fluid-tight chamber adjacent said container and communicating with said diaphragm opposite side; rod means operatively connected to said diaphragm and extending therefrom into said chamber; first conduit means arranged for communicating pressurized fluid to said chamber; second conduit means arranged for discharging pressurized fluid from said chamber; a first normally closed valve interposed



in said first conduit means; a second normally closed valve interposed in said second conduit means and means connected to said rod and being alternately engageable with said valves to successively communicate said chamber with said first and second conduits; said fluid, before pulsations have been established therein, exerting sufficient pressure on said diaphragm one side to distend said diaphragm outwardly of said container and to urge said alternately engageable means, via said rod, into engagement with said first normally closed valve thereby opening said first normally closed valve.

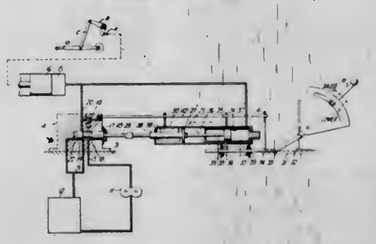
3,285,139
FLUID LINKAGE AND SERVO SYSTEM
Werner Hunth, Munich, Germany, assignor to Bolkow Gesellschaft mit beschrankter Haftung, Ottobrunn, near Munich, Germany
Filed July 21, 1964, Ser. No. 384,141
Claims priority, application Germany, July 23, 1963, B 72,798
18 Claims. (Cl. 91—51)



1. A control aid comprising, in combination, a lever chain including an input lever having first and second ends and pivoted, intermediate its ends, at a shiftable first fulcrum, an output lever having first and second ends and pivoted, intermediate its ends, at a fixed second fulcrum, and a link interconnecting the first ends of said levers; whereby, upon application of a velocity-dependent input impulse to the second end of said input lever, the second end of said output lever will be shifted to provide a velocity-dependent output impulse; and a servo system including a control member shifted by pivoting of said input lever about its fulcrum, and an output member connected to the fulcrum of said input lever; said output member, responsive to shifting of said control member by movement of said second end of said input lever, shifting said first fulcrum, about said second end of said input lever as a fixed pivot, to convert the velocity-dependent

output impulse of the second end of said output lever into an acceleration-dependent output impulse corresponding to the velocity-dependent input impulse applied to said second end of said first lever.

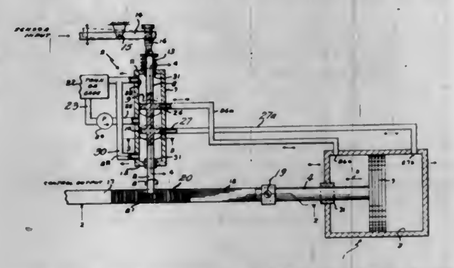
3,285,140
HYDRAULIC ACTUATOR AND SENSING MECHANISM
Robert Buchanan Annat, Kenilworth, and John Stanley Pedrick, Coventry, England, assignors to Massey-Ferguson Services N.V., Curacao, Netherlands Antilles
Filed Aug. 20, 1964, Ser. No. 390,924
Claims priority, application Great Britain, Aug. 27, 1963, 33,799/63
3 Claims. (Cl. 91—217)



1. In a tractor having draft links pivotally anchored to the tractor body, a hydraulic ram mechanically connected to raise and lower the draft links, a fluid source for supplying hydraulic medium to the ram, and a control valve for connecting and disconnecting the ram with the source and exhaust, pressure sensing means in the form of a piston displaceable in a cylinder in accordance with variations in hydraulic pressure, the cylinder being hydraulically connected to the ram to sense the hydraulic pressure therein, an operative connection between the piston and the control valve whereby movement of the piston as a result of a pressure change imparts movement to the control valve in a manner tending to return the ram pressure to a predetermined value, means resiliently interconnecting said piston and said cylinder, selector means adapted selectively to vary the predetermined value at which the hydraulic pressure in the ram is maintained, and said piston being displaceable in either of two directions to move the control valve through said operative connection, and said cylinder being adapted to be positioned at varied positions in either of said two directions under the influence of the selector to vary said predetermined pressure.

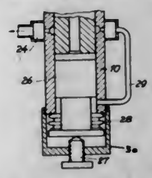
3,285,141
ROTARY NULL PILOT VALVE CONTROLLED DEVICE
Raymond C. Palmer, Jr., Cincinnati, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force
Filed July 7, 1964, Ser. No. 380,964
11 Claims. (Cl. 91—368)

1. A servomotor control device comprising a closed elongated cylindrical pilot valve casing having a pressure fluid delivery port in the side wall thereof intermediate the opposite ends thereof, a canted pilot valve disk rotatably and axially adjustable in said casing having a port closure rim in sliding contact with the inner wall of the casing, said canted valve disk having a null position covering and closing said delivery port, means exteriorly of said casing operatively connected to said canted valve disk for adjusting the same axially to predetermined positions in said casing to uncover and open said delivery port conduit means from said delivery port, adapted to connect the interior of the one end of a servomotor cylinder having a piston therein, a second fluid port in the wall of said casing displaced axially beyond the portion traversed by said rim, said second port being adapted to be connected to a source of fluid under pressure, valve actuating means adapted to connect the servomotor piston to said canted valve disk for rotating said canted valve disk in its canted position on the central axis of said



casing to bring a predetermined different portion of said closure rim over the first mentioned port to cover and close the same, following predetermined axial adjustment of said canted valve disk in said casing by predetermined relatively greater axial movement of the servomotor piston, whereby to close said conduit to the servomotor cylinder.

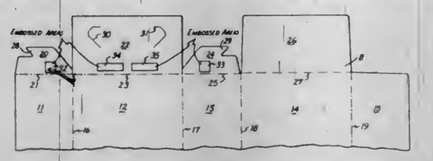
3,285,142
PISTON TYPE CRYOGENIC APPARATUS
Robert Doll, Mettinghstrasse 1, and Franz Xaver Eder, Wadlerstrasse 21, both of Munich, Germany
Filed Apr. 6, 1964, Ser. No. 357,401
Claims priority, application Germany, Apr. 10, 1963, D 41,347
18 Claims. (Cl. 91—401)



1. In a machine which includes a piston reciprocating in a cylinder, and in which a gas under high pressure flows through the clearance space between the piston and the inner surface of the cylinder; means for effecting a self-centering action of the piston to maintain the same concentric with the cylinder without contact with the cylinder walls during reciprocation, comprising a plurality of annular grooves formed in one of the piston and cylinder surfaces, axially spaced along the length thereof, the intervening clearance space defined by the piston and cylinder surfaces between adjacent grooves varying axially in radial dimension.

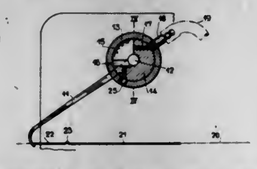
3,285,143
METHOD OF BONDING PANEL PORTIONS OF A FOLDING BOX HAVING A COATING OF A THERMOPLASTIC MATERIAL ON BOTH SURFACES
Thomas R. Baker, Los Altos, Calif., assignor to Kliklok Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 25, 1965, Ser. No. 435,189
4 Claims. (Cl. 93—36)

1. In the method of bonding the cover flap panel of a hinge cover folding box of paperboard to a box body panel by means of a thermoplastic coating covering substantially all of the front and back surface of the board, the method involving the steps of (1) applying while the panels are separated, heat to both panels by a short blast of air of a temperature exceeding the char point of the board of a duration less than sufficient to melt the coating on the opposite side of the board by heat penetrating the



board as a result of said blast followed by (2) moving the panels into bonding contact within a span of time from the last moment of exposure to hot air, shorter than the time of exposure of any one surface element to the hot air, the step of raising by pre-embossing at least one board area portion to which a bond is to be effected.

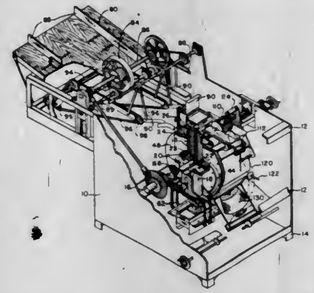
3,285,144
HOOKS USED FOR FOLDING BACK FLAPS IN FOLDING-GLUEING MACHINES
Arthur Frei, St. Sulpice, Switzerland, assignor to J. Bobst and Son S.A., Prilly, near Lausanne, Switzerland
Filed Jan. 20, 1964, Ser. No. 338,661
Claims priority, application Switzerland, Apr. 23, 1963, 5,174/63
4 Claims. (Cl. 93—49)



1. A hook adapted for being pivotally mounted in the path of advancement of a carton blank to effect folding of a flap of the blank, said hook comprising a shank with a terminal hook portion, a shaft rotatably supporting said shank, a housing having a recess receiving said shaft, and a blade disposed in said recess and secured with said shaft for rotation therewith, said recess being adapted for containing a compressible pressure fluid which is subjected to pressure upon rotation of the blade in said recess, thereby urging the blade to return to its original position.

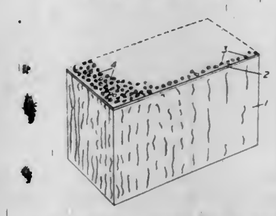
3,285,145
CARTON SETTING UP MACHINE
Buddy Lieberman, Montreal, Quebec, Canada, assignor to Somerville Industries Limited, London, Ontario, Canada
Filed Nov. 18, 1963, Ser. No. 324,562
4 Claims. (Cl. 93—51)

1. An apparatus for forming cartons from paperboard or the like blanks, said blanks having bottom, side and end wall forming portions, the end wall forming portions consisting of extensions of said bottom and side wall forming portions, the two bottom wall extensions further including additional extensions forming lock flaps which are folded over and fixed to the inside surfaces of the side wall extensions in the finished cartons, said apparatus comprising a pair of rotatable arms, means for rotating said arms about a common centre, a die forming assembly carried at the outer end of each of said rotatable arms, each of said die assemblies consisting of a male die member and a pair of female die forming members, means for feeding carton blanks in succession on to said male die member with the bottom wall forming portions positioned on the face of the male die member, means for folding said side wall extensions into mutually parallel positions at right angles to said side wall forming portions, means for moving said female die forming members into female die forming position adjacent said male die member following each delivery of a carton blank to said male die member, means for advancing said male die member into said formed female die as to fold said end wall forming portions into mutually parallel positions at right angles to the bottom wall forming portions, means for applying adhesive to the undersides of said bottom wall extensions including the undersides of said lock flaps, means for folding said bottom wall extensions into mutually parallel positions at right angles to both said bottom wall forming portions and said side wall



forming portions, means for folding said lock flaps into positions parallel with said bottom wall forming portions, means carried by said male die member for folding said lock flaps against the inside surfaces of the formed end walls and means for pressing said lock flaps and the formed end walls together as to set the adhesive carried by said bottom wall extensions and said lock flaps, means for moving said female die forming members away to their positions adjacent said male die member, means for ejecting the formed cartons from said male die member, said means for folding said side wall extensions, for applying said adhesive, for folding said bottom wall extensions and for folding said lock flaps into position parallel with said bottom wall all being positioned adjacent the path followed by the outer ends of said arms as they are caused to rotate.

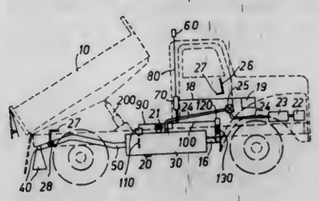
3,285,146
WOOD PAVING ELEMENTS AND SURFACES PAVED THEREWITH
Henry Miller, London, England, assignor to Acmefloor-ing Limited, Barking, England, a British company
Filed Jan. 20, 1964, Ser. No. 338,774
10 Claims. (Cl. 94—15)



1. A paving element comprising a wood body part, said body part having a substantially plane face, a hard, strongly adhesive layer comprising cured hard synthetic epoxide resin adhered to said face and a quantity of stones comprising relatively spaced chippings of calcined bauxite

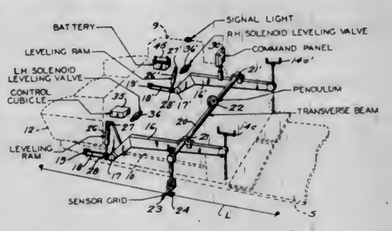
embedded in the layer for substantially the full thickness thereof, the stones having a height greater than the thickness of the layer so that the upper part of each stone projects from the layer, the projecting parts of the relatively spaced stones and the top surface of the said layer defining intercommunicating channels.

3,285,147
APPARATUS FOR SPREADING ROAD MATERIALS
Anders Gruvris, Box 21, Karvsasen, Sweden
Filed Nov. 22, 1963, Ser. No. 325,556
7 Claims. (Cl. 94—44)



1. In a motor vehicle for applying a fluid material to a roadway or the like and including fluid spreading means adapted to receive a fluid, store the fluid and apply the fluid to said roadway, the improvement comprising heat exchanger means connected between the exhaust system of said motor vehicle and said fluid spreading means to heat the fluid therein, first temperature responsive means attached to said motor vehicle to sense the ambient temperature, and temperature control means for varying the level of heat applied to said fluid in response to changes in the ambient temperature.

3,285,148
GRADE CONTROL SYSTEM ON BITUMINOUS PAVERS
Julian Marland Munyon, Big Rock, Ill., assignor to Barber-Greene Company, Aurora, Ill., a corporation of Illinois
Filed Mar. 1, 1963, Ser. No. 262,145
14 Claims. (Cl. 94—46)



1. In combination with a paving machine that is moving forwardly over the ground and that comprises two draft arms pivotally mounted at opposite sides of the machine on transverse pivot axes and extending rearwardly therefrom,

a screed and tamper unit with the screed having portions mounted on the respective draft arms adjacent their rearward ends,

means for depositing paving material adjacent a forward edge of said screed to form a mat surface on which the screed rides,

a transverse beam supported on said draft arms adjacent said unit,

a transverse slope angle sensing means supported on said transverse beam immediately adjacent and forwardly of said screed and tamper unit for emitting an electrical signal to a control means,

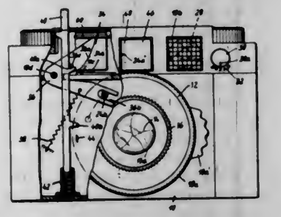
grade sensing means supported on said transverse beam immediately adjacent and forwardly of said screed and tamper unit at one side of said machine for emitting an electrical signal to a control means,

control means for receiving electrical signals from said slope angle sensing means and from said grade sensing means and for emitting amplified electrical signals,

a pair of cylinders having leveling rams connected with and supporting said draft arms on said machine adjacent said transverse pivot axes for raising and lowering the pivot axes of said arms, and

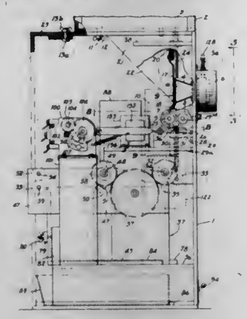
electrically operated valves each operatively associated with one of said leveling rams and being operatively associated with said control means for receiving amplified electrical signals therefrom for causing independent controlled movement of said rams to move said transverse pivot axes and said screed to correct deviations from a grade line and/or to correct deviations in the transverse slope angle to form a mat surface having a desired transverse slope.

3,285,149
PHOTOGRAPHIC CAMERA
Paul Fahlenberg, Baierbrunn, Franz Singer, Munich, and Rudolf Lang, Nettelkofen, near Grafing, Germany, assignors to Compur-Werk Gesellschaft mit beschrankter Haftung & Co., Munich, Germany, a German firm
Filed Dec. 8, 1964, Ser. No. 416,846
Claims priority, application Germany, Dec. 12, 1963, C 31,666; Mar. 6, 1964, C 32,342; Apr. 21, 1964, C 32,700
18 Claims. (Cl. 95—10)



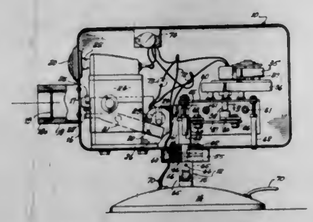
1. A photographic camera comprising an exposure setting member movable through one range to set the camera for a daylight exposure and movable through a different range to set the camera for a flash light exposure, a photoelectric exposure meter including a body rotatable as a unit and a movable member mounted on and movable with respect to said body, and diaphragm aperture setting means responsive to said movable member of said exposure meter for setting a diaphragm at an aperture determined by the position of said movable member, characterized by cam means operatively connected to said exposure setting member for causing rotation of said exposure meter body in accordance with changes in the setting of said exposure setting member, said cam means including two different ranges for causing rotation of said meter body during setting of said exposure setting member in its daylight exposure range and its flash light exposure range, respectively, the parts being so arranged that the position of said movable member of said exposure meter determines the diaphragm aperture setting during flash light exposures as well as during daylight exposures.

3,285,150
COMBINED PHOTOGRAPHIC AND DEVELOPMENT APPARATUS
Robert C. Wunderle, Brooklyn, Ohio, assignor to Wunder-Phot, Inc., a corporation of Ohio
Filed May 16, 1961, Ser. No. 110,411
5 Claims. (Cl. 95—14)



1. Photographic apparatus including a substantially closed box having a front wall, means providing an opening in the front wall of said box, means whereby a strip of sensitized film may be arranged in said box opposite to said opening, a shutter for closing said opening which shutter is movable to an open position, a bracket secured to the front wall of the box for holding identification data or a check that has been tendered to a cashier for payment, said bracket being composed of sections pivotally connected together and movable inwardly toward the front wall of the box and outwardly to an extended position relative thereto, light producing means associated with the box for illuminating the person and the check or identification data, a switch, means responsive to the actuation of said switch for opening the shutter and simultaneously activating the light producing means to form latent images of the person and the check or identification data upon said film, means arranged within the box for first developing the latent images and then fixing them on said film, and means which is also responsive to the actuation of said switch for first exposing the strip of film with the latent images thereon to said development means and then to said fixing means.

3,285,151
AREA SURVEILLANCE DEVICE
James H. Black, 140 Sheldon St., El Segundo, Calif.
Filed May 15, 1964, Ser. No. 367,733
2 Claims. (Cl. 95—15)



1. A surveillance device comprising in combination:

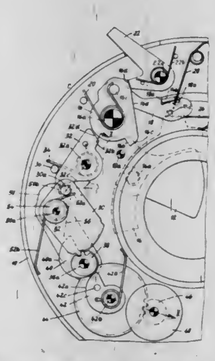
a camera having a shutter;

support means pivotally mounting the camera for movement over an arc;

drive means oscillating the camera back and forth over said arc;

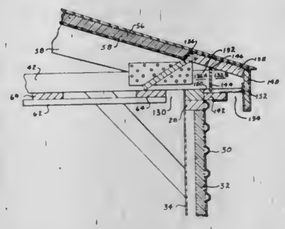
and means other than said drive means to actuate the camera shutter intermittently, said last-mentioned means being separate from and actuating the shutter independently of the oscillating movement of the camera, and a signal light and circuit means energizing the signal light intermittently at a frequency unrelated to the frequency of camera oscillation or camera shutter operation.

3,285,152
PHOTOGRAPHIC SHUTTER
Paul Fahlenberg, Baierbrunn, near Munich, and Rudolf Lang, Nettelkofen, near Grafing, Germany, assignors to Compur-Werk Gesellschaft mit beschrankter Haftung & Co., Munich, Germany, a German firm
Filed July 9, 1964, Ser. No. 381,383
Claims priority, application Germany, July 19, 1963, C 30,483
3 Claims. (Cl. 95—63)



1. A photographic shutter including a retarding train of rotary members successively driving each other, characterized by the fact that two successive members of said retarding train are in the form of cam plates in driving contact with each other at their peripheries, the peripheral pitch of each of said cam plates increasing and decreasing smoothly and continuously, the rotary axes of the two cam plates being at a variable axial spacing from each other.

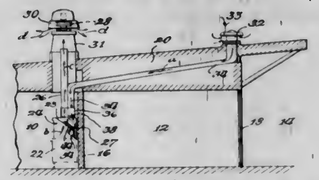
3,285,153
BUILDING VENTILATING SYSTEM
Russell E. Hartsough, % Hartsough Mfg. Co., Walkerton, Ind.
Filed Sept. 8, 1964, Ser. No. 394,981
7 Claims. (Cl. 98—33)



6. In a ventilating system for a building having a roof and walls and a living space: an air outlet structure disposed along the upper edge of said walls and having an inlet opening disposed along the upper inside edge of said

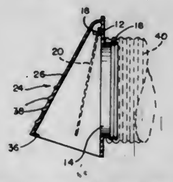
walls and an outlet opening disposed along the upper outside edge of said walls, means forming a passage connecting said openings, a valve means in said passage for preventing backflow of air through said passage, and an air inlet structure having a power means for forcing air downwardly into said living space and therefrom outward through said air outlet structure.

3,285,154
POSITIVE DIRECT RELIEF MEANS FOR EXHAUST SYSTEMS
Anthony S. De Rosa, Oak Park, Ill., assignor to Henry's Drive-In, Inc., Chicago, Ill., a corporation of Illinois
Filed Feb. 24, 1964, Ser. No. 346,949
1 Claim. (Cl. 98—115)



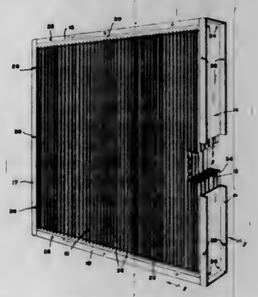
In a direct relief means for exhaust systems, the combination with a ventilating hood for a cooking unit or the like within a building, an exhaust duct leading therefrom to the exterior of the building and an exhaust fan for withdrawing air and fumes from said ventilating hood through said exhaust duct; of means for supplying air from the exterior of the building to said ventilating hood to be drawn into said exhaust duct along with fumes from said cooking unit, means to confine the discharge of the supplied air to a location between the top of the cooking unit and the air intake of said exhaust duct, said hood being open at its front only to the room in which the cooking unit is located for operational access to the cooking unit, the supplied air entering said hood adjacent the back thereof, and the air intake of said exhaust duct being at the top of said hood, said means for supplying air comprising a roof ventilator, an intake duct leading therefrom directly into said hood, and louver means at the discharge area of said intake duct to deflect the supplied air upwardly over the cooking unit and toward the air intake of said exhaust duct, said intake duct extending a substantial distance inside the building and having a portion separated from said exhaust duct by a heat conducting wall whereby the incoming air in said intake duct is tempered by the outgoing air in said exhaust duct.

3,285,155
MOLDED VENT HOOD INCLUDING A MOVABLE CLOSURE THEREIN
Martin S. Maltenfort, Glen Farms, Md., assignor to Alexandria Silberman, Media, Pa.
Filed Jan. 14, 1965, Ser. No. 425,532
3 Claims. (Cl. 98—119)



1. A vent hood including in a single unitary blow molded resin product:
a vent hood;
a mounting plate integral with and extending around the perimeter of the vent hood;
a threaded extension extending rearwardly from a centrally located opening in said mounting plate adapted to threadedly engage a hose to be attached thereto;
and means to support a moveable closure for said centrally located opening, said last named means being pin shaped extensions extending from and integral with said mounting plate, each extension having a knob at its outer extremity.

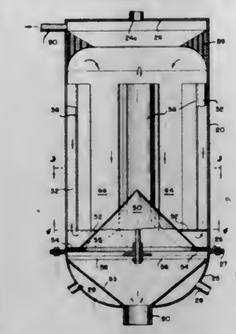
3,285,156
LIGHT TRAP
Hoy R. Bohanon, Muskogee, Okla., assignor to Acme Engineering and Manufacturing Corporation, Muskogee, Okla., a corporation of Oklahoma
Filed Oct. 16, 1964, Ser. No. 404,442
1 Claim. (Cl. 98—121)



A light trap for use with low pressure fans, comprising:
(A) top and bottom supports;
(B) vertically positioned side supports attached to and holding said top and bottom supports in spaced relationship, said supports defining the plane of said light trap;
(C) supporting members for containing blades attached to the lower and upper portions of said top and bottom supports respectively, said supporting members containing pluralities of laterally spaced vertically aligned slots;
(D) a plurality of blades having top and bottom portions inserted within said slots of said supporting members, said blades defining two complete corrugations consisting of two consecutive curvilinear portions, each of said portions having generally diverging and converging sections, said corrugations terminating in leading and trailing edges, said trailing edges being perpendicular to said plane of said light trap, said blades being spaced apart a distance equal to the radius of curvature defining said corrugations.

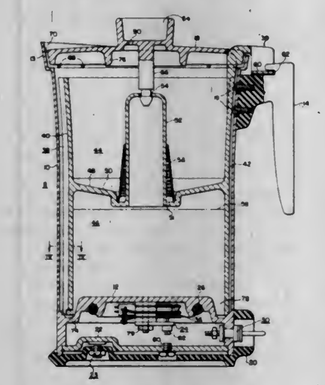
3,285,157
ROASTING AND HEATING APPARATUS
Horace L. Smith, Jr., Richmond, Va., assignor to Hupp Corporation, Cleveland, Ohio, a corporation of Virginia
Original application Oct. 4, 1962, Ser. No. 228,429, now Patent No. 3,189,460, dated June 15, 1965. Divided and this application May 10, 1965, Ser. No. 454,425
8 Claims. (Cl. 99—236)

1. An apparatus for roasting coffee beans and the like, comprising: a vessel having spaced outer peripheral and inner wall members defining a roasting chamber; means in said chamber defining annularly spaced, upwardly directed channels for the product being roasted, all of said channels communicating at their upper ends with the space between them and said inner wall member; an annular nozzle member in the space between said outer peripheral and inner wall members adjacent their lower ends and having annularly and radially spaced nozzles surrounding said inner wall member for directing heated



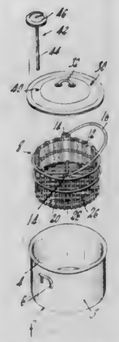
roasting fluid upwardly at a sufficiently high velocity to entrain the product being roasted; means for delivering heated roasting fluid simultaneously to all of said nozzles under substantially uniform pressure, the nozzles in said nozzle member being too small to permit the passage therethrough of the articles being roasted.

3,285,158
AUTOMATIC BEVERAGE MAKER
David B. Price, Washington Township, Mausfield, Ohio, assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 14, 1963, Ser. No. 323,721
8 Claims. (Cl. 99—281)



7. In an automatic drip-type beverage maker of the character in which a generally cylindrical inner vessel having an upper infusion chamber and a lower pressure chamber is nested substantially concentrically in a generally cylindrical outer vessel having a spout at its upper edge, and with an annular space defined between the circumferential walls of said inner and outer vessels for water to pass from said lower to said upper chamber during brewing, the improvement comprising:
at least one of said vessels includes an indented wall portion extending for the height of said inner vessel and vertically aligned with said spout to define, with the facing wall of the other vessel, a pouring passage having a dimension, measured radially with respect to said vessels, substantially greater than the spacing between said inner and outer vessels in other portions of said annular space.

3,285,159
COOKING APPARATUS
John H. Greene, Box 353, Frankfort, Mich.
Filed Aug. 27, 1965, Ser. No. 483,091
1 Claim. (Cl. 99—343)

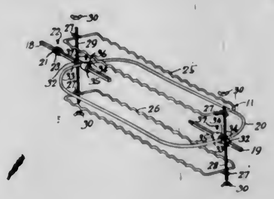


A chicken cooking unit comprising an open topped cylindrical pot of one-piece aluminum having handles attached on opposite sides thereof, an outwardly and downwardly curled lip at its upper edge, and a baked enamel coating on its outer surface only, a removable open topped basket adapted to be received within the pot formed from nickel-plated metal wires connected together and arranged and disposed to provide a foraminous cylindrical side wall and a foraminous bottom, a nickel-plated metal handle pivoted on said basket adjacent its upper edge, the wires providing said side wall including vertically extending wires connected at their tops to a first wire ring and at their bottoms to a second wire ring, and a third wire ring connected to said vertically-extending wires intermediate said first and second wire rings, and a fourth wire ring connected to and disposed inside said vertical wires above and closely adjacent to said second ring, the wires forming said bottom being connected to said fourth wire ring, a relatively heavy lid adapted to close the open top of said pot, having an opening therethrough and having a handle on its upper outside surface, and a readily removable thermometer having a temperature sensing stem adapted to pass freely through said opening in the lid and a temperature indicating dial visible from outside said lid when said stem is in position in said opening.

3,285,160
ROTARY ROAST RACK
Mahlon J. Smith, Niles, Mich., assignor to The Washburn Company, Worcester, Mass., a corporation of Massachusetts
Filed Mar. 2, 1964, Ser. No. 348,587
8 Claims. (Cl. 99—427)

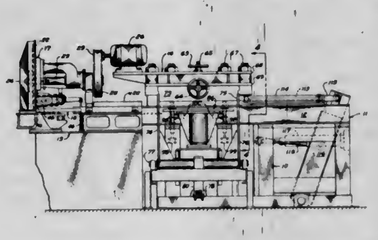
1. In a rotary roast rack comprising a substantially horizontal generally rectangular open main frame, a pair of substantially vertical threaded studs disposed on the longitudinal center line of said main frame at opposite ends thereof, a pair of substantially horizontal meat clamping frames of generally rectangular form having stud encircling loops projecting outwardly horizontally from their opposite ends on their longitudinal center lines and loosely slidably engaged on the studs to mount said

frames thereon above and below the main frame for movement inwardly toward one another to clamp meat or other food therebetween, and nuts threaded on said studs against said stud encircling loops to apply the clamping pressure on said meat clamping frames, the improvement which consists in the provision of a pair of collars rigidly secured to the opposite ends of the main frame on the center line thereof in coaxial relationship to one another,



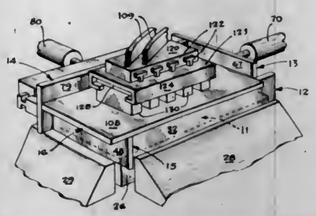
a pair of shafts removable from the slidably adjustable endwise in said collars in coaxial relationship to one another, one of said shafts being adapted to be connected with rack drive means while both shafts are adapted to support said rack for rotation on a horizontal axis, and sleeves rigidly secured to said studs intermediate their ends and supported by telescoping engagement with said shafts.

3,285,161
METHOD AND APPARATUS FOR PRESSING AND SLICING
Ogden A. Clemens, Chicago, and Bernard T. Hensgen, Highland Park, Ill., assignors to Swift & Company, Chicago, Ill., a corporation of Illinois
Continuation of application Ser. No. 288,358, June 17, 1963. This application Dec. 24, 1964, Ser. No. 440,968
16 Claims. (Cl. 100—39)



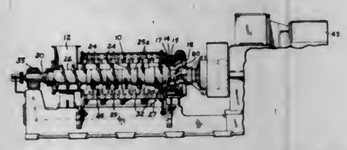
1. An improved method for pressing and slicing food product, said method comprising the steps of confining a unit of product having a major longitudinal dimension within a pressing zone having given cross-sectional dimensions defined by four contiguous side walls and an end wall, by inserting the unit therein in a lateral direction; applying a force against the unit of product longitudinally of said product and said zone walls toward said end to conform the product to the shape of said zone; removing said end wall of said zone and thereafter ejecting the product from said zone in the longitudinal direction beyond said end; immediately advancing said ejected product in said longitudinal direction toward a slicing means; continuing to advance said ejected product in said direction until it is in abutment with the immediately preceding ejected item of product; thereafter continuously feeding said abutted items of product by separate means in said direction into said slicing means, and repeating the preceding steps upon successive items of product.

3,285,162
BACON PRESSING
Ronald E. Schneider, Garden City, Mich., and Ogden A. Clemens, Chicago, Ill., assignors to Swift & Company, Chicago, Ill., a corporation of Illinois
Filed Mar. 2, 1965, Ser. No. 436,431
5 Claims. (Cl. 100—42)



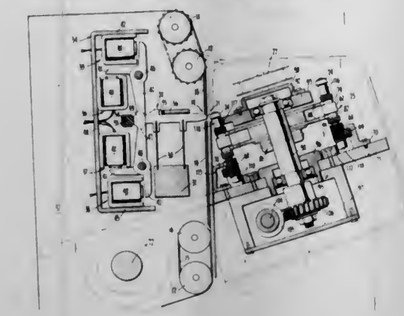
1. An improved method for pressing a body of food material wherein said material is roughly of rectangular form having vertical, lateral and longitudinal dimensions, said method comprising; receiving a body of material in a pressing zone; reducing the size of said zone to compress the body of material in each of vertical, lateral and longitudinal directions; partially expanding said zone under the influence of the compressed body of material; further compressing the body of material in one of said dimensions; fully releasing the compression on said body of material; and finally removing said body from said zone.

3,285,163
SCREW PRESS AND SHREDDER APPARATUS
Andre H. Burner, Piqua, Ohio, assignor to The French Oil Mill Machinery Company, Piqua, Ohio, a corporation of Ohio
Filed Nov. 12, 1964, Ser. No. 410,458
6 Claims. (Cl. 100—98)



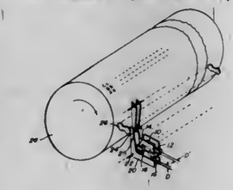
1. An improved screw press for expressing fluids from solid materials which tend to form into large chunks when subjected to mechanical pressure and adapted to shred the compacted chunks of material into smaller pieces at the discharge end of the press, said press comprising, a press cage, a rotatable shaft extending through said cage, first drive means for said shaft, screw flight means on said shaft arranged to convey material through said cage, means for progressively reducing the volumetric space between said flight means towards the discharge end of the press causing a compression of the material, ring means defining a discharge opening at one end of said cage through which said flight means forces the material, a sleeve on said shaft and cooperating with said means defining said discharge opening to form an annular restricted discharge orifice of reduced area therebetween, means for adjusting said ring means axially to vary the size of said discharge orifices, lug means carried by said sleeve for rotation therewith, a shredder member mounted at the exterior of said cage and coaxially with said shaft, a plurality of blades on said shredder member extending towards said restricted orifice to receive material directly from said orifice, and second drive means connected to said shredder member for rotating said shredder member to sweep said blades past said lug means and thereby to shred the chunks of material discharged through said orifice into relatively small pieces.

3,285,164
HIGH SPEED PRINTING APPARATUS
Arthur J. Malavazos, Hayward, Calif., assignor to Friden, Inc., a corporation of California
Filed Aug. 26, 1964, Ser. No. 392,149
11 Claims. (Cl. 101—91)



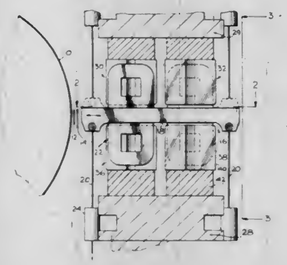
1. In a high speed printing device controlled by a storage unit to print multiple columns on a record medium comprising, in combination, a plurality of normally inactive printing anvils extending across the width of the total number of columns to be printed and at a right angle to the record medium, one of said anvils for each column, an endless type carrier supporting a plurality of type character wheels bearing sequentially a separate type character, a drive means for effecting cyclic movement of said type carrier, one run of said carrier moving in a plane parallel to said printing anvils, means for supporting said record medium for line by line movement between said printing anvils and the parallel plane of said one run of said type carrier for the printing of a text line thereon, means operable to selectively move said anvils, dependent upon control by said storage unit, from the inactive to the active position to move said record medium into the plane of travel of said endless carrier, and means for causing rotation of said type character wheels during operation of said drive means whereby a predetermined type character wheel rolls over said record medium and the actively positioned printing anvil to cause the printing of the type character on the record medium.

3,285,165
PRINT HAMMER CONTROL APPARATUS
Eugene G. Richter, Lexington, Mass., assignor to Honeywell Inc., a corporation of Delaware
Filed Nov. 14, 1963, Ser. No. 323,726
13 Claims. (Cl. 101—93)



1. An on-the-fly printer comprising a print roll having rows of characters columnarly adapted to rotate past a plurality of adjacently positioned, aligned print hammers, a like plurality of correspondingly positioned print hammer actuators each including a magnetic core carrying a winding and a movable armature adapted to propel a print hammer against said print roll upon the application of an energizing signal of a predetermined sense to said winding, said armature being normally spaced from said core a distance comparable to the spacing between adjacently positioned actuators, and means corresponding to each of said actuators and responsive to the signal applied thereto for energizing the adjacently flanking pair of actuators with signals of substantially the opposite sense.

3,285,166
HIGH SPEED PRINT HAMMER AND BAR MAGNET MEANS
Clifford J. Helms, Woodland Hills, and Leo J. Emenaker, Playa Del Rey, Calif., assignors to Data Products Corporation, Culver City, Calif., a corporation of Delaware
Filed Dec. 18, 1964, Ser. No. 419,509
2 Claims. (Cl. 101—93)

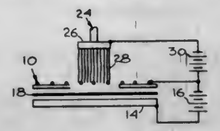


1. In a high speed printing apparatus including a plurality of impact devices, each device having means thereon for selectively generating a magnetic field, an assembly for providing a permanent magnetic field adapted to interact with said selectively generated magnetic field, said assembly comprising a base formed of a nonmagnetic material and having an inverted T-shaped cross-section defining an upwardly extending central bar and first and second shoulders extending substantially perpendicularly therefrom;
- a plurality of equally spaced slots defined in said central bar extending substantially perpendicularly thereto;
- a plurality of permanent bar magnets each having first and second substantially perpendicular surfaces;
- means securing said bar magnets to said base in physical alignment and in series magnetically with said first and second surfaces of each of said bar magnets respectively engaging said central bar and one of said shoulders;
- space defined between each pair of adjacent bar magnets in alignment with a different one of said slots;
- each of said means for selectively generating a magnetic field extending into a different one of said spaces and the slot aligned therewith.

3,285,167
ELECTROSTATIC PRINTING SYSTEM WITH CONTROLLED POWDER FEED
Clyde O. Childress, Palo Alto, and Richard W. Melmon, San Francisco, Calif., assignors, by mesne assignments, to Crocker-Citizens National Bank, as trustee
Filed July 14, 1964, Ser. No. 384,032
16 Claims. (Cl. 101—114)

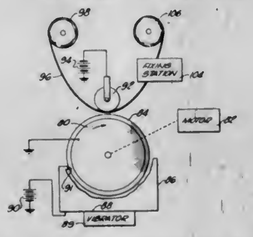
1. In an electrostatic printing system of the type wherein printing is done using electroscopic powder particles, the improvement comprising an image forming electrode, said image forming electrode being made of a screen having a plurality of apertures therethrough arranged to form the pattern of the image desired to be printed, a conductive opposite electrode spaced from said image forming

electrode, a first source of potential connected between said image forming electrode and said opposite electrode for establishing an electric field therebetween, brush means for brushing electroscopic powder particles through the apertures in said screen, said brush means having fibers for contacting the screen in the region of



said apertures, a variable potential source, means connecting said variable potential source between said screen and said brush means for applying potential across said brush fibers, and means for varying said variable potential source for controlling the density of the powder image being printed.

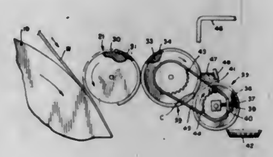
3,285,168
POWDER IMAGE TRANSFER SYSTEM
Clyde O. Childress, Palo Alto, Calif., assignor, by mesne assignments, to Crocker-Citizens National Bank, as trustee
Filed May 7, 1963, Ser. No. 278,549
6 Claims. (Cl. 101—150)



1. In an electrostatic powder image transfer system wherein an electric field is established between two spaced apart members, one of which is an image forming member for electroscopic powder particles which are transferred therefrom in the desired image pattern toward said other of said two members, the improvement comprising a continuously movable conductive image forming member having a plurality of apertures which are open to only one surface thereof, said plurality of apertures being arranged to provide the desired image, means for loading said apertures with electroscopic powder particles at a first position, an image receiving member located at a second position means for moving said conductive image forming member with its apertures loaded with said electroscopic powder particles from said first position to another position which is opposite and spaced apart from said image receiving member and thereafter back to said first position, means for moving said conductive image forming member for establishing an electric field between said image forming and image receiving member to transfer the electroscopic powder particles to said image receiving member while said image forming member is at said another position.

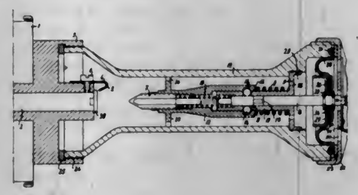
3,285,169
APPARATUS AND METHOD FOR FLEXOGRAPHIC PRINTING WITH DOCTOR ROLL INK CONTROL
Hans H. Hartwig, P.O. Box 723, Appleton, Wis.
Filed May 28, 1965, Ser. No. 459,814
9 Claims. (Cl. 101—207)

1. An apparatus for flexographic printing comprising a frame, an impression cylinder rotatably mounted in said frame, means for traveling a web to be printed on said impression cylinder in partial wrapping engagement therewith, a plate cylinder rotatably mounted on said frame and in contact with said web for printing the same, an ink applying unit comprising a rigid cellular surface transfer roll rotatably mounted on said frame for transferring controlled quantities of ink to said plate cylinder, a resilient surface-equipped doctor roll rotatably mounted on said frame in substantial line contact with said transfer roll for controlling the amount of ink on said transfer



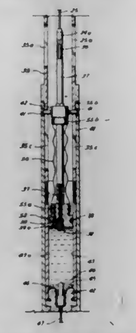
roll just prior to the transfer thereof to said plate cylinder, doctor blade means associated with said doctor roll for removing excess ink therefrom, means for rotating both of said cylinders and rolls, said rotating means being operative to rotate the surface of said doctor roll in the area of said line contact in the direction opposite to the direction of travel of said transfer roll, means for urging said doctor roll against said transfer roll in light, but positive contact, and means for applying ink to said transfer roll for control by said doctor roll.

3,285,170
IGNITION-DEVICE FOR A BOMB
Theodorus Adrianus Fletelaars, The Hague, Netherlands, assignor to Fijn Mechanische Industrie Becker's Sons N.V., Brummen, Netherlands
Filed Aug. 6, 1964, Ser. No. 387,957
Claims priority, application Netherlands, Aug. 6, 1963, 296,285
5 Claims. (Cl. 102—7)



1. An ignition device for a bomb comprising a casing to be attached to a charge having a detonator, a hydraulic pressure responsive membrane attached to one end of said casing, a firing pin located within said casing, a firing pin holder enclosing said pin, an activating rod connected to said membrane for activating said firing pin, an adjustable depth regulating spring located in said firing pin holder coacting with said firing pin and said activating rod maintaining said activating rod inoperative until a predetermined depth of water has been obtained, an enclosing socket surrounding said activating rod fixed to said casing, a firing spring coacting with said socket and said pin holder, means for locking said firing pin holder to said enclosing socket and means upon said activating rod when moved by a pressure on said membrane greater than the pressure of said regulating spring for releasing said locking means whereby said firing pin holder and pin are moved by said firing spring to detonate said detonator.

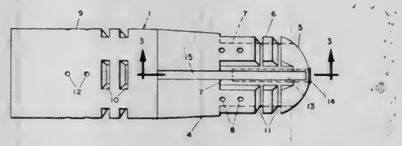
3,285,171
WIRE-LINE ACTUATED DETONATOR DEVICE
Lawrence K. Moore, 3716 Ingold St., Houston, Tex.
Filed Apr. 16, 1965, Ser. No. 448,652
8 Claims. (Cl. 102—20)



1. A detonator apparatus adapted to be used in a well, comprising:
(a) a body having a pipe and a sleeve longitudinally movable relative to each other,
(b) a first electrical contact on said pipe,
(c) a second electrical contact on said sleeve,
(d) a battery case having a battery therein and a first electrical wire leading therefrom,
(e) means connecting said first electrical wire to one of said electrical contacts,
(f) an explosive suspended from said body,
(g) a second electrical wire connecting the other of said electrical contacts with said explosive so that electricity is supplied from the battery to the explosive upon the engagement of the contacts and
(h) means for severing said first electrical wire while the apparatus is in a well to cut off electricity from the battery to the explosive so as to avoid any subsequent firing of the explosive until the severed wire has been re-connected.

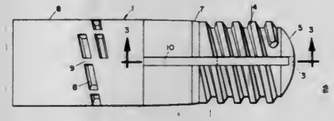
3,285,172
BOOSTER DEVICE
Stephen F. Foster, Hopatcong, N.J., assignor to Hercules Incorporated, a corporation of Delaware
Filed May 20, 1965, Ser. No. 457,262
The portion of the term of the patent subsequent to June 1, 1982, has been disclaimed
5 Claims. (Cl. 102—24)

1. A cap-sensitive booster device which is designed to be interconnected with compatible cap-insensitive explosive cartridges having protrusion means and yieldable seals to form a compressed explosive column assembly, said device comprising:
(a) a thin-wall substantially cylindrical plastic container having a male coupling and end closure on one end thereof and having a female coupling on the other end thereof, said male coupling having at least one peripheral bead interrupted by a plurality of longitudinal interlocking slots extending a substantial length of the male coupling, said female coupling having a plurality of interrupted peripheral grooves compatible with the bead and the interlocking slots of the male coupling,
(b) a longitudinal slot for leg wires extending from the end closure along one of the interlocking slots and along the male coupling to adjacent the female coupling, said longitudinal slot being tapered along the length of the male coupling to become flush adjacent the female coupling,
(c) a cap-sensitive explosive charge disposed within the container from the end closure to adjacent the female coupling,
(d) a coaxially positioned cap well extending through the end closure and into the explosive charge, said cap well adapted to fully accommodate an electric blasting cap and said longitudinal slot for leg wires adapted to accommodate the leg wires thereof,



(e) locking indentations associated with the male coupling and the female coupling, and
(f) the end closure of said male coupling having protrusion means to contact and to force the yieldable seal of a compatible cap-insensitive explosive cartridge into the explosive adjacent thereto.

3,285,173
BOOSTER DEVICE
John F. Hamilton, San Antonio, Tex., assignor to Hercules Incorporated, a corporation of Delaware
Filed May 20, 1965, Ser. No. 457,263
The portion of the term of the patent subsequent to May 25, 1982, has been disclaimed
5 Claims. (Cl. 102—24)



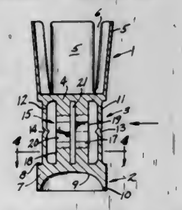
1. A cap-sensitive booster device which is designed to be interconnected with compatible cap-insensitive explosive cartridges having protrusion means and yieldable seals to form a compressed explosive column assembly, said device comprising:
(a) a thin-wall substantially cylindrical plastic container having an externally threaded male coupling and end closure on one end thereof and having an internally threaded female coupling on the other end thereof,

(b) a longitudinal slot extending along the length of the male coupling to adjacent the female coupling, said longitudinal slot being tapered along the length of the male coupling to become flush adjacent the female coupling,
(c) a cap-sensitive explosive charge disposed within the container from the end closure to adjacent the female coupling,
(d) a coaxially positioned cap well extending through the end closure and into the explosive charge, said cap well being adapted to fully accommodate an electric blasting cap and said longitudinal slot being adapted to accommodate the leg wires thereof, and
(e) the end closure of said male coupling having protrusion means to contact and to force the yieldable seal of a compatible cap-insensitive explosive cartridge into the explosive adjacent thereto.

3,285,174
WAD AND SHOT PROTECTOR DEVICE

Vernon C. Moehlman, St. Louis, and Robert J. Klein, Florissant, Mo., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

Filed May 28, 1965, Ser. No. 459,598
7 Claims. (Cl. 102—42)



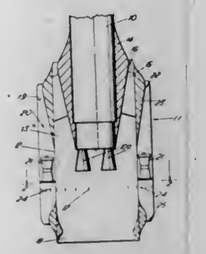
1. A wad structure for use in shotshells and the like, said wad including first and second spaced circular transverse wall members, a pair of substantially parallel outer supports connecting said wall members in spaced vertical alignment, a pair of inner supports positioned between said outer supports, first hinge means formed intermediate the ends of each of said outer supports, said outer supports being foldabe inwardly toward each other about said first hinge means, second hinge means formed intermediate the ends of each of said inner supports, said inner supports being foldable outwardly away from each other about said second hinge means, said first hinge means being operable in a direction at right angles to the direction of operation of said second hinge means to allow a shortening of the spacing between said wall members and a cushioned controlled collapse of said wad when compressive pressure is applied to said wall members.

3,285,175
VEHICLE FOR LAUNCHING ROCKET PROPELLED VEHICLES

John Gregory Keenan, Derby, England, assignor to Rolls-Royce Limited, Derby, England

Filed Nov. 30, 1964, Ser. No. 414,591
Claims priority, application Great Britain, Dec. 6, 1963, 48,385/63
7 Claims. (Cl. 102—49)

1. A wingless vehicle for substantially vertical flight comprising:
an annular shaped body member having an outer wall and an inner wall spaced from each other by an annulus, the annulus defining an annular air duct with an intake at one end thereof and a propulsion nozzle at the other end thereof;
a plurality of thrust-producing engines positioned within said annular air duct;
a center body member;
a plurality of struts supporting said center body member on the axis of said annular body member in spaced relationship to the inner wall of the annular body member thereby defining an annular ram air duct having an intake at one end thereof and a propulsion nozzle at the other end thereof; and

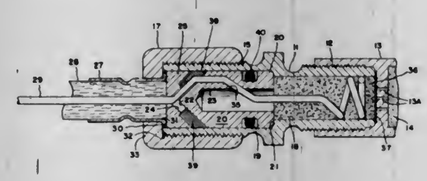


fuel injectors positioned within the annular ram air duck and spaced radially around the same for supplying fuel to be mixed with and burned with ram air.

3,285,176
PRESSURE TIGHT IGNITER FITTING

Stanley J. Kent, Philadelphia, Pa., assignor to the United States of America as represented by the Secretary of the Army

Filed May 27, 1964, Ser. No. 370,744
3 Claims. (Cl. 102—70)

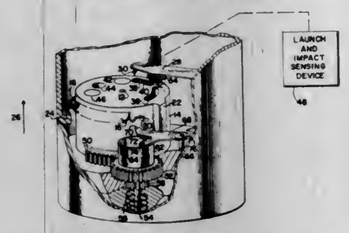


1. An igniter fitting for propellant actuated devices and the like, comprising
a body member having one end securable to a propellant means and its other end carrying releasable retaining means,
means within said one end for generating gas pressure within said body member,
means within said other end for cooperating with said retaining means to secure thereto a fuze core for initiating said gas generating means,
self-sealing piston means intermediate said cooperating means and gas generating means,
said core extending through said piston and into said gas generating means, and
flexible seal means positioned at the entrance of said core into said piston with said flexible seal normally under partial compression and with said core having a portion embedded between said piston and a portion of said partially compressed seal,
so constructed and arranged that upon burning of said core embedded portion said flexible seal portion will assume its normally partially compressed condition and seal said piston core entrance and that gas pressure will be entrapped within said body member upon subsequent ignition of said gas generating means.

3,285,177
DUAL FUNCTION FUZES

Arthur M. Lohmann, Hopkins, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed July 10, 1964, Ser. No. 381,725
9 Claims. (Cl. 102—74)

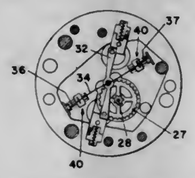


9. A munition fuze subject to first and second events, comprising: a housing; a firing pin movably mounted in said housing; a carrier member mounted in said housing having first and second detonators mounted therein; said detonators being out of line with said firing pin prior to the occurrence of said first and second events; means for aligning said first detonator with said firing pin upon the occurrence of said first event; means for thereafter holding said first detonator aligned with said firing pin for a preselected time period; means for aligning said second detonator with said firing pin upon the termination of said time period; and means for driving said firing pin into said carrier member upon the occurrence of said second event.

3,285,178
CONSTANT FREQUENCY ESCAPEMENT MECHANISM

George S. Westerman, Cinnaminson, N.J., assignor to the United States of America as represented by the Secretary of the Army

Filed Sept. 29, 1964, Ser. No. 400,281
1 Claim. (Cl. 102—84)

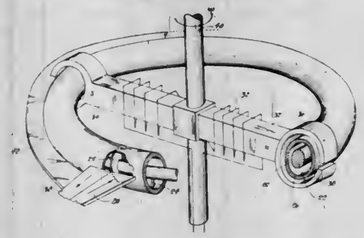


In a high speed rotatable projectile fuse timing mechanism having an oscillatory escapement lever for metering timer power output, a hairspring having a central portion connected to a central portion of said lever and controlling the oscillation of said lever, and means supporting end portions of said hairspring, said support means including a pair of blocks each slidably mounted in a passageway substantially symmetrically positioned about a common center line passing through said lever and hairspring connection, means for biasing one end of each block towards said connection, and means connected to each block and slidingly receiving a respective hairspring end portion, so arranged that each block may be moved against its biasing means for adjusting the effective lengths of said hairspring to maintain a substantially constant predetermined beat frequency in the timing mechanism when the latter is subjected to high speed rotation, the improvement comprising separate means slidably receiving a respective one of said blocks and carrying a respective one of said biasing means, each of said biasing means including a compression spring and means adjustable along the corresponding carrying means for varying the respective spring rate, and said separate means including independently basic adjusting means along said common center line, by virtue of which precise compensating adjustments may be available to overcome even the slightest deviations in the spring characteristics.

3,285,179
MAGNETIC INDUCTION MACHINE

Edwin L. Resler, Jr., Ithaca, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Oct. 12, 1964, Ser. No. 403,420
9 Claims. (Cl. 103—1)

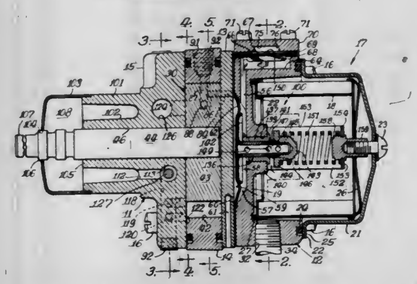


1. A magnetic induction machine comprising, in combination:
a hollow ring of nonmagnetic material formed with an inlet and an outlet port;
a circular core of ferromagnetic material located within said ring, said ring concentrically surrounding said core to form an annular flow channel therebetween;
a diaphragm placed transversely across said flow channel between said inlet and outlet ports;
inlet and outlet conduits coupled respectively with said inlet and outlet ports;
an electrically conductive fluid filling said flow channel and said inlet and outlet conduits; and
rotatable magnetic means for establishing a radial magnetic field in said fluid in said annular flow channel.

3,285,180
OIL BURNER PUMP

Robert A. McCallum, Normal, Ill., assignor to National Union Electric Corporation, Stamford, Conn., a corporation of Delaware

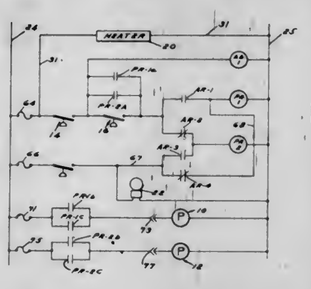
Filed Dec. 20, 1963, Ser. No. 332,107
11 Claims. (Cl. 103—7)



1. In a fluid pump adapted for use with an oil burner or the like, the combination of a housing having an inlet and an outlet and a cavity therein, pump means in said cavity, inlet passage means connecting said inlet with said cavity, outlet passage means connecting said cavity with said outlet, and flow control means including valve

means responsive to the difference between suction pressure in said inlet passage means and atmospheric pressure for varying the position of said valve means, said flow control means also including spring means acting on said valve means in opposition to the force resulting from the difference between suction and atmospheric pressure, and a plate extending transversely of said inlet passage means and having an opening therein having a side wall tapering inwardly toward the downstream side of said plate, said opening defining a metering orifice cooperating with said valve means to control fluid flow to said pump means.

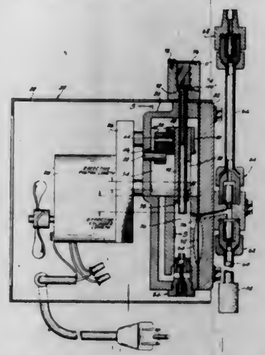
3,285,181
AUTOMATIC PUMP ALTERNATOR
William F. Howard, Bloomfield Hills, Mich., assignor to Howard Electric Company, Detroit, Mich., a corporation of Michigan
Filed Jan. 16, 1964, Ser. No. 338,197
16 Claims. (Cl. 103—11)



1. An alternator system for multiple motorized pump units, or other alternated units of an installation, comprising a pair of switch devices both operable in response to a changing condition of said installation in any alternating cycle of operation of the respective units, an electrical alternator relay, means electrically connecting said relay with a first of said switch devices to electrically energize the relay in said cycle upon closure of said first switch device in response to the changing condition, and a pair of electrical power relays, said alternator relay having at least one pair of normally open and closed contacts, the power relays being electrically connected respectively in circuit with a second of said switch devices and said alternator relay contact pair for energization, respectively, upon actuation of open and closed contacts of said contact pair and closure of said second switch device in said same cycle in response to the changing condition, said first switch device opening in said same cycle in response to the changing condition to deenergize the alternator relay and the system, said power relays having further contacts electrically connected with the respective alternated units to electrically energize the latter in alternation in successive cycles upon energizations of the respective power relays in response to actuation of said alternator relay contact pair.

3,285,182
DIAPHRAGM METERING PUMP
Harry E. Pinkerton, Mill Neck, N.Y.
(P.O. Box 387, Oyster Bay, Long Island, N.Y.)
Filed Dec. 17, 1964, Ser. No. 419,122
24 Claims. (Cl. 103—44)

1. A hydraulically actuated diaphragm pump comprising: a pump housing including a diaphragm chamber, an interconnected piston cylinder chamber and a pump liquid reservoir adapted to be connected with both of the chambers, a pumping head coupled with the diphragm chamber, a flexible diaphragm extended across the diaphragm chamber and adapted to be flexed in a pumping direction to pump a solution from the pumping head and in a suction direction to such the solution into the pumping head, a piston assembly extending into the pump liquid reservoir reciprocally mounted in the piston cylinder and adapted to be reciprocated in a forward direction



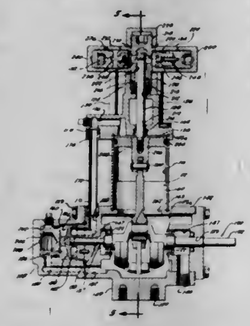
into the cylinder to flex the diaphragm in its pumping direction and in a retracted direction to flex the diaphragm in its suction direction through interposed pump liquid, said piston assembly comprising a stator adjustment means and a piston cooperating with the stator, the piston assembly having surface interruption means operable upon reciprocation of the piston assembly to interconnect the chambers and reservoir with one another, and drive means for reciprocating the piston assembly.

3,285,183
CONTROL ASSEMBLY FOR OIL WELL PUMP
Oscar O. Hembree, Owensboro, Ky., and Clyde E. Yost, Evansville, Ind., assignors to Haganhem Company, Inc., a corporation of Kentucky
Filed Dec. 1, 1964, Ser. No. 415,038
9 Claims. (Cl. 103—25)



1. A device for controlling operation of a pump motor for automatically activating a pump when a fluid level reaches a predetermined high point and automatically deactivating the pump when the fluid level reaches a low point comprising a tubular casing having a passageway in the bottom thereof for communicating with a fluid supply, the upper end of said casing being communicated with upper inlet means for communication with fluid when the fluid reaches a predetermined high level, a normally closed valve in said passageway in the casing to preclude inlet of fluid through the passageway so that fluid will have to enter the inlet means, and switch means in said casing responsive to inflow of fluid into the upper inlet means for closing a circuit to operate a pump motor for pumping the fluid, and means opening said valve in the passageway in the casing in response to operation of the pump motor for opening the valve in the casing whereby fluid in the casing will drain out through the passageway as the fluid level lowers to a predetermined point thereby opening the switch means for stopping the pump motor and closing the valve in the passageway in the casing.

3,285,184
MOTOR ACTUATED PUMPS
Henry T. Dinkelkamp, Mount Prospect, Ill., assignor to Stewart Warner Corporation, Chicago, Ill., a corporation of Virginia
Original application Apr. 9, 1962, Ser. No. 186,188. Divided and this application Apr. 14, 1965, Ser. No. 448,070
2 Claims. (Cl. 103—49)



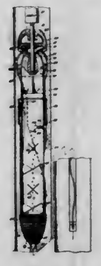
1. A combination for use with compressed air comprising a plurality of pumps for pumping either a liquid or viscous mass with each pump having a pumping chamber with a pump piston therein formed with a rigid elongate rod extending from the respective pumping chamber, a seal between each rod and the respective pumping chamber for preventing leakage from said pumping chamber, an air motor cylinder for each pump, a motor piston for each cylinder with each motor piston dividing the respective cylinder into a pair of variable volume opposed chambers and rigidly interconnected with a respective rod passing through a respective one of said opposed chambers, a common crankshaft for said motor pistons, means interconnecting said motor pistons and said crankshaft for reciprocating sequentially said motor pistons towards and away from the axis of said shaft whereby the respective pump pistons are reciprocated in accordance with the reciprocation of the respective motor piston to cause said pumps to pump in sequence, means defining a closed chamber about said shaft in common communication with the other of each pair of opposed chambers with an opening in said sealed chamber for admitting said compressed air and an opening in said sealed chamber through which said crankshaft projects, a valve member external to said chamber and rotated by the projecting end of said crankshaft, and a plurality of passageways in said valve member for communicating sequentially the one of said opposed chambers with said crankshaft opening and with atmosphere, respectively.

3,285,185
SUBMERSIBLE PUMP
Henry James Feltus, Seneca Falls, N.Y., assignor to Goulds Pumps Incorporated, Seneca Falls, N.Y.
Filed Dec. 10, 1964, Ser. No. 417,269
6 Claims. (Cl. 103—87)



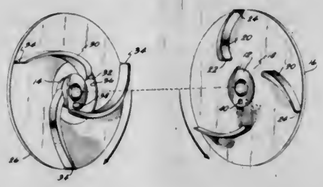
1. In a deep well pump assembly, in combination,
a string of pump modules adapted to be suspended from a conduit leading to a well head,
an auxiliary support device interposed in said string of pump modules,
drive means connected to the lower end of said string and including means for assuming axial loads from the impellers of only said pump modules lying between said drive means and said auxiliary support device,
and said auxiliary support device including means connected to said conduit for assuming the axial load of at least some of said pump impellers lying above said auxiliary support device.

3,285,186
SAND AND GAS SEPARATOR
Herbert E. Tracy, Alhambra, and Theodore D. Matula, Fresno, Calif., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Apr. 26, 1965, Ser. No. 450,588
14 Claims. (Cl. 103—113)



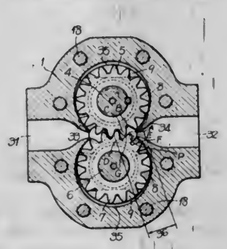
1. A device for removing sand and gas from sand and gas laden well water before the latter enters a pump inlet, comprising:
a housing for connecting to the inlet of the pump and for directing water into the pump inlet,
means in said housing for separating the lighter gas laden water from the heavier sand laden water as it flows through the housing toward the pump inlet,
means for removing the gas laden water from the housing and discharging the same back under the influence of high pressure water into the well, and
means for removing the sand laden water from the housing and discharging the same back under the influence of high pressure water into the well so that sand and gas free water will continue to flow on into the pump inlet.

3,285,187
IMPELLER FOR USE IN CENTRIFUGAL PUMP OR BLOWER AND A METHOD OF MANUFACTURE THEREOF
Gordon R. Anderson, Jr., Racine, Wis., assignor to MSL Industries, Inc., Racine, Wis., a corporation of Minnesota
Filed Nov. 5, 1965, Ser. No. 506,454
3 Claims. (Cl. 103—115)



1. An impeller wheel comprising two separately cast parts in detachable assembly, said wheel including as one of said parts a rear disk, an integral hub section and integral blades spaced from said hub section; and including as its other cast part an annular plate having a central inlet port, and a hub section complementary to the hub section first mentioned and disposed within said port, the two said hub sections together constituting a driving hub and blades alternating with the blades first mentioned and greater in radial extent to project as spokes across said port and integrally connected with the annular plate and with the second hub section; each such blade element extending from the plate with which it is integral into substantial contact with the other plate to span the entire distance between said plates, means for defining the proper positions of the respective hub sections to locate the blades of the respective parts in their desired relative positions; and means for holding the parts in assembly by clamping the respective hub sections together.

3,285,188
HYDRAULIC GEAR MOTOR OR HYDRAULIC GEAR PUMP
Yasuo Kita, Kyoto, Japan, assignor to Shimadzu Seisakusho Ltd., Kyoto, Japan, a corporation of Japan
Filed June 15, 1964, Ser. No. 375,081
Claims priority, application Japan, June 17, 1963, 38/32,020
2 Claims. (Cl. 103—126)



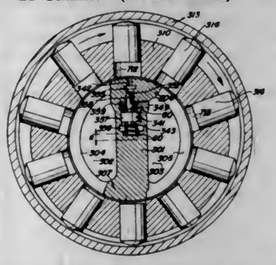
1. A hydraulic gear motor having a pair of meshing gears and a gear case with a recession for receiving said meshing gears in which the delivery opening of said gear gear receiving recession is limited to the extent of the opening of a tooth space partly closed by a tooth which is about to advance into it, said gear recession being further recessed so as to contact the peripheries of the gears only just around the adjacent part of said delivery opening.

3,285,189
MOTOR, PUMP OR COMPRESSOR WITH A PISTON ROTATABLE WITHIN A HOUSING
Cornelis Doyer, Wladimirlaan 6A, Bussum, Netherlands
Filed July 9, 1964, Ser. No. 381,484
Claims priority application Netherlands, July 15, 1963, 295,310
7 Claims. (Cl. 103—130)



1. Motor, pump or compressor comprising a piston rotatable within a housing, said housing being bounded by two parallel side walls and in cross section having the shape of an equiangular triangle with convex outwardly curved sides which are connected by rounded apices, said piston being an oval disc located between the parallel walls and having long sides corresponding substantially to the shape of the sides of said triangle and short sides corresponding substantially to the shape of said rounded apices, sealing means disposed in the short sides of said piston subtsantially in the major axis thereof, and means for rotating the piston within the housing such that as the piston makes a complete revolution turning from a position in which one long side abuts a side of the housing triangle through subsequent positions in which each short side alternately passes along a side of the triangle while the opposite short side turns in the opposite rounded apex so as to slidingly engage said sealing means against the triangle sides and apices substantially perpendicularly at all times during said complete rotation.

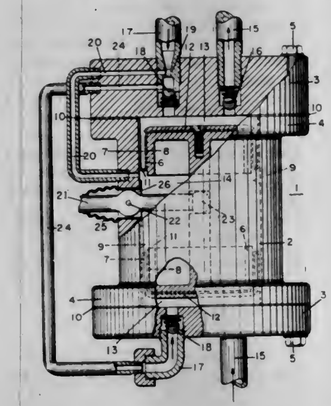
3,285,190
PISTON MEANS FOR DAMPING NOISE AND/OR VIBRATIONS IN ROTARY FLUID MACHINES
Karl Eickmann, 2420 Isshiki Hayama-machi, Kanagawa-ken, Japan
Filed Aug. 14, 1963, Ser. No. 302,121
22 Claims. (Cl. 103—136)



1. A rotary machine having a casing, a rotor means rotatably mounted in said casing and including a plurality of working chambers periodically increasing and decreasing their volume, thereby intaking and expelling fluid, during operation of the machine under power, a substantially stationary control body having a stationary control face for cooperable with a complementary rotary control face on said rotor means, rotor passage means extending from said working chambers through said rotor into and through said complementary rotary control face, at least a pair of spaced control ports formed in said stationary control face, and working

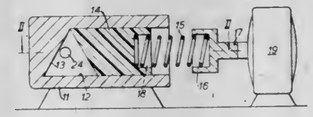
chamber closing arc faces located on said stationary control face between said control ports, said closing faces periodically closing at least one rotor passage of said rotor passage means during rotation of said rotor means, fluid passages extending from respective entrance and exit ports through said control body into respective control ports of said control port pair, cylinder means in said machine, piston means reciprocable in said cylinder means, communication-passage means extending from said cylinder means to and through at least one of said closing arc faces, and at least another communication-passage means extending from another part of said cylinder means into a respective space in said rotary machine, the surface of one of said cylinder means and piston means being formed with recess means extending longitudinally thereof for restricted fluid flow longitudinally between said cylinder means and said piston means.

3,285,191
PISTON PUMP HAVING NON-COLLAPSIBLE ROLLING DIAPHRAGM
John F. Taplin, 15 Sewall St., West Newton, Mass.
Filed June 30, 1964, Ser. No. 379,143
2 Claims. (Cl. 103—150)



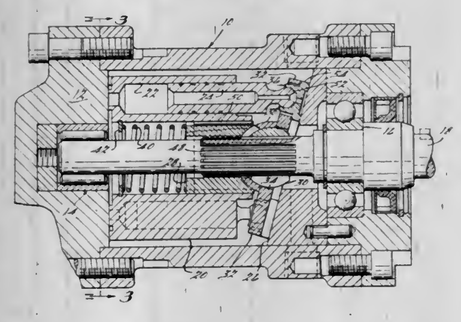
1. A piston pump comprising in combination:
(a) a cylinder body having a valve-controlled suction inlet at each end surface thereof and having a valve-controlled compression outlet at each end surface thereof, said suction inlet at one end surface of said cylinder body including a zone of restricted cross-sectional area wherein flow velocity is relatively high and pressure relatively low, said zone of restricted cross-sectional area being arranged between an upstream zone of larger cross-sectional area and a downstream zone of larger cross-sectional area;
(b) duct means connecting said suction inlet at the other end surface of said cylinder body to said downstream zone of larger cross-sectional area of said suction inlet at said one end surface of said cylinder body;
(c) an integral pair of reciprocating tandem pistons inside said cylinder body, each of said pair of pistons defining a gap between the radially outer lateral surface thereof and the radially inner lateral surface of said cylinder body;
(d) a pair of rolling diaphragms each having a radially outer flange portion secured to said cylinder body, a radially inner flange portion secured to one of said pair of pistons and a rolling wall intermediate said radially outer flange portion and said radially inner flange portion arranged in said gap defined by one of said pair of pistons, said pair of diaphragms subdividing said cylinder body into a pair of axially outer pump chambers and an axially inner inactive chamber; and
(e) duct means connecting said zone of restricted cross-sectional area of said suction inlet at one end surface of said cylinder body with said inactive chamber to limit the pressure prevailing inside of said inactive chamber.

3,285,192
PUMPS
Janusz Gutkowski, 7 Rufus Close, Lewes, England
Filed Oct. 29, 1964, Ser. No. 407,359
Claims priority, application Great Britain, Oct. 30, 1963, 42,777/63
23 Claims. (Cl. 103—157)



1. A pump including:
(a) a cylinder closed at one end by a face which is generally inclined at an acute angle to the axis of the cylinder;
(b) a piston within the cylinder adapted to be a sliding and rotating fit therein;
(c) a piston crown on the piston generally inclined at an angle corresponding to the inclination of said face;
(d) resilient drive means operatively connected to the piston for urging the piston crown into contact with said face and for rotating the piston relatively to the cylinder; and
(e) an inlet port and an outlet port communicating with the interior of the cylinder through the walls thereof and arranged to be opened and closed by rotational and translational movement of the piston within the cylinder.

3,285,193
FLUID PRESSURE ENERGY TRANSLATING DEVICE
John F. Jeannin, 19326 Braile, Detroit, Mich.
Filed July 13, 1964, Ser. No. 382,093
4 Claims. (Cl. 103—162)



1. A fluid pressure energy translating device comprising: a housing having a valve plate, a drive shaft, a rotatable cylinder barrel in abutment with said valve plate and having a plurality of axial cylinder bores open to

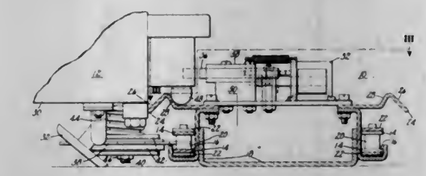
said valve plate, pistons reciprocable in the bores, an inclined thrust plate mounted in the housing in driving relation with the pistons, inlet and outlet ports alternately connectable through the valve plate to said cylinder bores by rotation of the cylinder barrel, a drive collar splined on said shaft and positioned between said shaft and barrel for locating the barrel as to lateral position and having a splined driving connection with said barrel, a guide having a free sliding fit on said drive shaft adjacent said collar and having a spherical outer surface, the center of said spherical surface lying on the drive shaft axis, a retractor plate having a central cylindrical recess slightly larger in diameter than the spherical outer surface of said guide, said plate being disposed with said guide freely disposed in said recess for radially locating said plate relative to said shaft, said plate being arranged so as to have a driving connection with said pistons, an equalizer swivelled on said guide and disposed between said collar and said plate, said equalizer having radially disposed thrust surfaces which abut against said plate around said recess therein, and a coil spring around said shaft and confined between the cylinder barrel and said collar whereby the cylinder barrel is biased against the valve plate and the collar biases said equalizer against said retractor plate for biasing the pistons against the thrust plate.

3,285,194
COMBINATION RAILWAY AND PASSENGER AUTOMOBILE TRANSPORTATION SYSTEMS
Deodat Clejan, Chicago, Ill., assignor to General American Transportation Corporation, Chicago, Ill., a corporation of New York
Filed Oct. 8, 1963, Ser. No. 314,779
13 Claims. (Cl. 104—27)



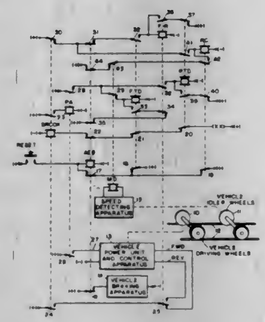
1. A combination railway and passenger automobile transportation system comprising: a stretch of railway track having a wide gauge of at least 10 feet; a railway motor car adapted to run on said stretch of railway track and including an elongated longitudinally extending underframe supported adjacent to the opposite ends thereof by a pair of motor driven running gears having said wide track gauge named and engaging the rails of said track, a body carried by said underframe and having a substantially box-like configuration and including a substantially horizontal floor and a generally horizontal roof and a pair of upstanding end walls, the horizontal plane of said floor being disposed at least 40 inches above the rail heads of said track, said floor having a length of at least 100 feet and a width of at least 20 feet, a first plurality of longitudinally spaced-apart upstanding posts arranged at one open side of said body and joining said floor and said roof, a second plurality of longitudinally spaced-apart upstanding posts arranged at the other open side of said body and joining said floor and said roof, said posts being arranged in coordinate laterally aligned pairs so as to provide a plurality of coordinate laterally aligned confronting doorways in the opposite sides of said body, whereby a passenger automobile may be driven onto or off of said floor through either of the two laterally aligned confronting doorways of any coordinate pair, each of said doorways having a width between the adjacent pair of said posts to accommodate the simultaneous loading or unloading therethrough of at least two passenger automobiles disposed in side-by-side relation with each other, the dimensions of said floor accommodating the simultaneous support and storage thereupon of a substantial number of passenger automobiles extending laterally thereof and disposed in side-by-side relation with each other, a plurality of doors respectively associated with said doorways and selectively movable between open and closed positions with respect thereto, and motor means for selectively moving said doors between their open and closed positions; and a toll plaza including a pair of platforms respectively disposed on opposite sides of a section of said track and positioned substantially in the horizontal plane of said floor when said railway motor car occupies a coordinate stop position in said section of said track, the confronting edges of said platforms being disposed substantially parallel to each other and spaced-apart by a distance that is only slightly greater than the width of said floor, whereby a passenger automobile on either one of said platforms may be driven directly onto said floor when said railway motor car occupies its coordinate stop position at said toll plaza, and whereby a passenger automobile occupying a loaded position on said floor may be driven directly onto either one of said platforms when said railway motor car occupies its coordinate stop position at said toll plaza.

3,285,195
CONVEYOR SYSTEM CONTROL APPARATUS
Edward S. Babson, Ipswich, Mass., assignor to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
Filed May 29, 1964, Ser. No. 371,194
5 Claims. (Cl. 104—252)



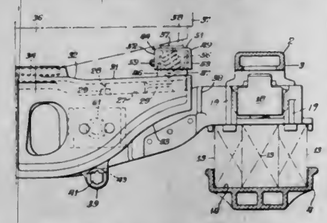
1. A stop mechanism for use with a conveyor of the type in which article carrying racks are moved between stations, means mounting said stop mechanism adjacent to the conveyor in a position to enable the mechanism to selectively inhibit the progress of the racks carried by the conveyor, said stop mechanism comprising a stop member movable between pass and stop positions, means biasing the stop member to a pass position, first and second latch means for inhibiting movement of the stop member into the pass position, means for biasing the stop member into engagement with the first latch means, means mounting said stop member for movement, in response to engagement thereof by a rack, out of engagement with the first latch means and into engagement with the second latch means, said latch means being so located with respect to each other that upon removal of the rack from engagement with the stop member, the last named biasing means moves the stop member out of engagement with the second named latch means into a position in which the first named biasing means moves the stop member into a pass position, and means for returning the stop member into stop position in engagement with the first latch means.

3,285,196
APPARATUS FOR CONTROLLING A VEHICLE WHEN GETTING UNDER WAY
Waltrus L. Livingston, Rochester, N.Y., assignor to General Signal Corporation, Rochester, N.Y., a corporation of New York
Filed June 17, 1964, Ser. No. 375,900
17 Claims. (Cl. 105—61)



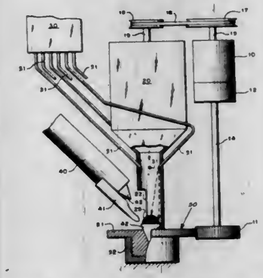
1. In combination,
(a) a reversible vehicle power unit effective when in an initial condition to produce driving power intended to start a vehicle under way in a first direction of travel, and
(b) cycling means responsive to the motional status of said vehicle for cycling said power unit if said vehicle fails to get under way in said first direction in response to said initial driving power, said cycling involving the conditioning of said power unit to temporarily produce driving power for the opposite direction of travel followed by the reconditioning of said power unit to reproduce driving power for said first direction.

3,285,197
RESILIENTLY MOUNTED CAR TRUCK BOLSTER
Carl E. Tack, Elmhurst, Ill., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey
Filed Dec. 5, 1963, Ser. No. 328,408
6 Claims. (Cl. 105—197.2)



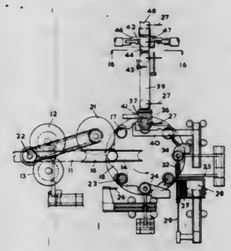
1. In a self-aligning spring plankless railway car truck having spaced side frames supported at their ends upon wheel and axle assemblies, each side frame comprising tension and compression members interconnected by spaced vertical columns to define windows, spring groups seated on said tension members, a truck bolster interconnecting said side frames and resiliently supported on said spring groups, resilient pads mounted on the bolster, an auxiliary bolster supported adjacent its ends upon said pads for longitudinal and vertical movements relative to the truck bolster, said auxiliary bolster having a top wall and depending side walls straddling the truck bolster and extending therebelow, limit lugs on the truck bolster to engage the ends of and to limit longitudinal movement of the auxiliary bolster relative to the truck bolster, and bolts extending between said side walls below and immediately adjacent said truck bolster to limit upward vertical movement of the auxiliary bolster relative to the truck bolster.

3,285,198
FLAVORED SHAVED ICE MACHINE
Herbert L. Hornstein, Philadelphia, Pa.
(314 Cranford Road, Woodcrest, N.J.)
Filed Oct. 3, 1963, Ser. No. 313,531
4 Claims. (Cl. 107—1)



1. A flavored shaved ice maker and dispenser comprising an ice maker and shaver, a supply of liquid flavoring agent, a cup dispenser, a cup holder, means to actuate said cup dispenser to discharge a cup into said cup holder, said cup holder being positioned directly centered below said ice maker and shaver, said flavoring agent supply being connected to a dispensing line, said dispensing line terminating above said cup, and means to rotate said cup holder only around its own vertical axis and continuously while said dispensing line and said ice shaver are operating, said cup holder comprising a base, a turntable mounted for rotation in said base, said turntable having a recess at the center thereof to receive a cup, and said turntable having an edge, and said means to rotate said cup holder comprising a friction wheel bearing against said edge, and means to rotate said friction wheel.

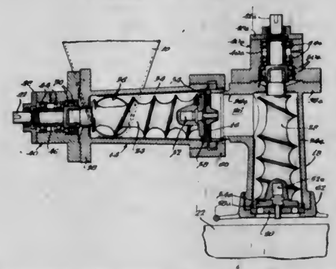
3,285,199
PRODUCTION OF LOLLIPOPS OR LIKE SWEETS
Leonard William Waite and Arthur William Stamp, Gainsborough, England, assignors to Rose Brothers (Gainsborough) Limited, Gainsborough, England, a British company
Filed Sept. 19, 1963, Ser. No. 310,050
Claims priority, application Great Britain, Sept. 22, 1962, 36,128/62; Feb. 4, 1963, 4,437/63
8 Claims. (Cl. 107—4)



3. Apparatus for producing lollipops or like sweets, comprising a pair of feeding and forming rollers for forwarding a rope or toffee, a pocketed feed wheel rotatable

about a vertical axis, means for driving the feed wheel intermittently, means for driving said rollers intermittently in timed relationship with the feed wheel for a leading portion of the rope to be received by each pocket of the feed wheel in turn, a driving shaft, an arm pivotally mounted for movement about the axis of said driving shaft, a disc knife rotatably mounted in said arm, means for oscillating said arm to cause the knife repeatedly to move transversely of the rope to sever such portions successively as they are received by the successive pockets, the severing action taking place during a dwell in the movement of the apparatus, means for timing said oscillating means with respect to the feeding and forming roller driving means as to cause the knife to sever alternate lengths of rope on oscillating movements in opposite directions, means for inserting sticks successively into the sweets thus formed at a subsequent station and means for transferring the sweets from the pockets in succession at a delivery station, the stick-inserting means being so constructed and arranged that the sticks are inserted in a direction substantially tangential to the pitch circle of the pockets of the feed wheel.

3,285,200
PROCESSING EQUIPMENT
Lyle Slaybaugh, Battle Creek, Mich., and Paul A. Humiston, Jr., Springs, Transvaal, Republic of South Africa, assignors to Kellogg Company, Battle Creek, Mich., a corporation of Delaware
Filed June 29, 1964, Ser. No. 378,743
3 Claims. (Cl. 107—14)

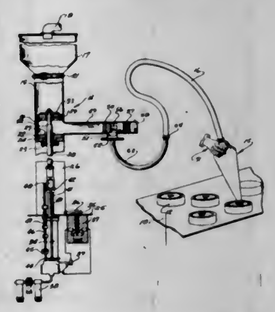


1. Processing equipment comprising a first generally horizontally disposed extruder housing having a radially open inlet adjacent one end and an axially open outlet at its other end, variable speed feed means for feeding material into said inlet, a second generally upright extruder housing having a radially open inlet adjacent its upper end and an axially open outlet at its lower end, means detachably coupling the inlet of said second housing to the outlet of said first housing, movable means in said first housing for grinding material received in the inlet of said first housing and for conveying it to the outlet of said first housing, movable means in said second housing for kneading material received in the inlet of the second housing and for conveying the material to the outlet of said second housing, a variable speed drive assembly on the inlet end of each of said housings, each including drive means detachably coupled to the movable means in the respective housing, a masticating die in the outlet of said first housing, said coupling means retaining the respective movable means and said masticating die in said first housing, an extrusion die in the outlet of said second housing, means on the outlet end of said second housing retaining the respective movable means and said extrusion die therein, said movable means, said dies and said housing being separable from one another upon detachment of said coupling means and the last-named means, and means for independently varying the speed of each said variable speed means.

3,285,201
METHODS AND COMPOSITIONS USING A PETROLEUM OIL FRACTION
Kenneth E. Maxwell, Campbell, Calif., assignor to Moyer Chemical Company, San Jose, Calif., a corporation of California
No Drawing. Filed July 3, 1963, Ser. No. 292,753
10 Claims. (Cl. 107—27)

7. A method of killing pests of the order Insecta and Acarina comprising: applying to the pest habitat a petroleum oil fraction characterized in that it has a minimum unsulfonated residue of not less than about 90 percent and about 90 weight percent thereof boils within the range of about 550° F.–650° F. under a vacuum of 10 mm. Hg.

3,285,202
METHOD AND APPARATUS FOR DECORATING PASTRY AND THE LIKE
John MacManus, 143—16 23rd Ave., Whitestone, Long Island, N.Y.
Filed Sept. 15, 1964, Ser. No. 396,606
14 Claims. (Cl. 107—54)



1. The method of decorating a succession of units of pastry or the like with flowable decorating material including the steps of continuously supplying decorating material to a collapsible pastry bag of the type having a supply connection adjacent one end and an open decorating tip adjacent the opposite end, moving the tip over one pastry unit to deposit decorating material thereon in a prescribed pattern, manually compressing the bag to collapse the same while so moving the tip to temporarily reduce the capacity of the bag, at least partially releasing the compression on the bag to interrupt flow of material from the tip, and moving the tip from one location to another upon release of pressure and interruption of flow.

3,285,203
SHADE UMBRELLA
Carl R. Meyer, 2512 E. Vine St., West Covina, Calif.
Filed Oct. 24, 1965, Ser. No. 504,304
6 Claims. (Cl. 108—50)

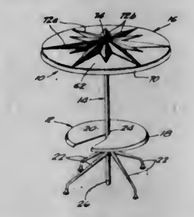
1. In an umbrella of the type used for shade control, the combination comprising,

a supporting staff of tubular configuration having first and second opened ends;

anchor means adapted to be attached to the earth and including a sleeve for receiving said first opened end to hold said staff in upright configuration;

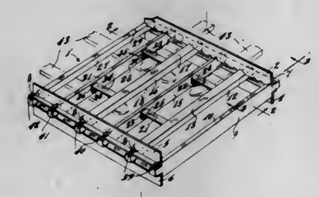
frame means including a circular canopy of fiber glass material for shading a predetermined area, said frame means including a downwardly extending post disposed at a predetermined angle relative to the underside of said canopy, said post including a recessed annular groove disposed near the outer end thereof;

connecting means for mounting said frame means to said support means in rotatable disposition, said connecting means having a curved member having an open end to receive said post and an extension at the other end, said extension being receivable in said second opened end of said staff and including a recessed annular groove disposed near the outer end thereof; and



lock means associated with said staff near said first opened end and with said curved member near said open end, each said lock means including a fastener threadably received in said staff and in said curved member, respectively, near the end thereof, said fasteners being engageable with said grooves in said extension and said post, respectively, in force transmitting relationship, so as to restrain relative rotation of the associated pair of relatively rotatable members.

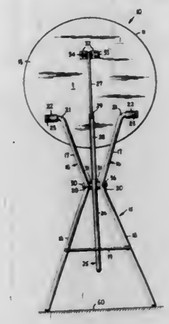
3,285,204
PALLET FOR STACKING, STORING AND TRANSPORTING AUTOMOBILE WHEELS
Leo F. Schweitzer, Jr., 1726 Wagner Ave., Philadelphia, Pa.
Filed Oct. 8, 1965, Ser. No. 494,105
4 Claims. (Cl. 108—55)



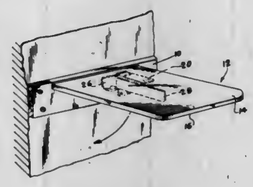
1. A pallet for stacking, storing and transporting automobile wheels comprising an outer frame having side bars and spaced angles connected to the end of said bars, a plurality of spaced pairs of bars connected with said angles with the bars of each pair having their inner faces faces off to provide diverging seats to receive the rims of vehicle wheels, the spacing between said angles providing openings to receive the forks of a fork lift truck.

3,285,205
COLLAPSIBLE TABLE
William Loebner, 220 W. 98th St., New York, N.Y.
Filed June 25, 1965, Ser. No. 467,016
4 Claims. (Cl. 108—119)

1. A collapsible table comprising, a table top, a plurality of rigid support legs pivotally secured to said table top, pivot means pivotally securing said support legs at spaced positions on said table top for selective movement of said legs to a first stable position supporting said table top in a substantially horizontal position in readiness for use and a second collapsed position in which said legs and said table top are relatively positionable in substantially contiguous planes, and said plurality of legs comprising an extendable and shortenable telescopic leg automatically extendable and shortenable when the table top is positioned in said horizontal position and said collapsed position respectively, and means connecting said legs for causing said legs to assume said two positions jointly.



3,285,206
COLLAPSIBLE SHELF
Louis Hoffman, Jamaica, N.Y. (% Ra-Ce Tool & Metal Stamping Co. Inc., 70—32 84th St., Glendale, N.Y.)
Filed Aug. 16, 1965, Ser. No. 479,883
2 Claims. (Cl. 108—134)

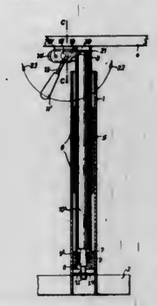


1. A collapsible shelf comprising a planar member having an upper and under surface and adapted to normally assume a vertical position adjacent a wall and to be brought into a horizontal position in substantially abutting relationship with said wall comprising hinge means comprising first and second plates and on first pintle on which end edge extensions of each of said plates is pivotedly mounted, said first and second plates being affixed to said undersurface and said wall respectively at locations whereby said pintle is located at the abutting junction of said shelf and said wall, a support leaf, a second pintle, a side edge extension of said support leaf and a side edge of said first plate being pivotedly mounted on said second pintle to adapt said leaf to be rotatably moved about a horizontal axis, stop means provided on said second plate for preventing movement of said support leaf about beyond the point where said leaf attains a position perpendicular to said undersurface and said wall, tensioning means jointly operatively associated with said second pintle and said support leaf for urging said leaf into said perpendicular position, an extension piece affixed to said wall adjacent said second plate and substantially covering at least the path swept out by the end edge of said leaf adjacent said wall as said leaf is rotated between its horizontal and vertical positions, and a ramp on said extension piece adjacent said second plate bearing against said end edge of said leaf.

3,285,207
EXTENSIBLE SUPPORT COLUMN

Heinz-Günther Müller Vom Hagen, Uslar, Hannover, Germany, assignor to Ilse-Werke KG, Uslar, Hannover, Germany

Filed Jan. 19, 1965, Ser. No. 426,629
Claims priority, application Germany, Dec. 22, 1964, J 27,191
11 Claims. (Cl. 108—144)



1. An extensible furniture leg consisting of a support column having a vertically extending axis and comprising

(a) two coaxially telescoping elongated members one of which members is a tubular member and the other one is slidably guided in the tubular member,

(1) each of said members having a plurality of flat surfaces extending rectilinearly in the direction of the column axis, said surfaces defining, respectively, inner walls of said one member and outer walls of said other member, the walls of at least one of said members being elastically deformable associated ones of the surfaces of the two members defining rectilinearly extending spaces therebetween, and said spaces being arranged in pairs of diametrically opposed spaces;

(b) a furniture part carried by the other member at an adjustable distance from the tubular member;

(c) anti-friction roller bearing means arranged in the spaces between the flat surfaces of the two telescoping members and making line contact therewith,

(2) the rollers of the anti-friction bearing means being mounted in the opposed spaces of said pairs in axially staggered relationship and one space of each of said pairs of spaces having one bearing roller less than the other one of the spaces of each of said pairs,

(3) each of said rollers being pre-stressed;

(d) brake means mounted in said column for temporarily fixing the slidably guided column member in said tubular column member and including brake shoe means mounted on said other member and frictionally engageable with the inner walls of said one tubular member; and

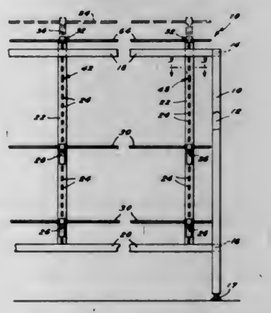
(e) means for actuating the brake means from outside the extensible column.

3,285,208
ADJUSTABLE SUPPORT ASSEMBLY

Maurice Cohen, 3580 NW. 52nd St., Miami, Fla.

Filed Feb. 8, 1965, Ser. No. 430,977
12 Claims. (Cl. 108—146)

1. In a display rack, an adjustable shelf assembly including a fixed tubular, vertical post that is square shaped in cross-sectional configuration, a plurality of slots formed in a surface of said vertical post and extending substantially the length thereof in spaced vertical relation for accommodating a shelf supporting knife bracket therein, an inner member located within said vertical post in telescoping relation and slidably movable with respect thereto, said inner member including at least one longitudinally extending channel that is located adjacent to the surface of said post in which the spaced slots are formed, said longitudinal channel being defined by spaced side walls and a rear wall, said rear wall having a plurality of vertically spaced slots formed therein, a lock element pivotally mounted in one of the slots formed in said post and including an arm having a notch formed in an outer end thereof that is engageable with an edge of a slot in said

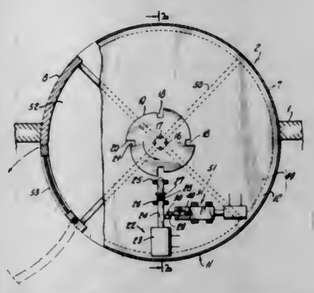


channel rear wall, means for resiliently urging said arm into a channel slot for locking the inner member to said vertical post, said lock element including an actuating finger that extends outwardly of the slot in the vertical post in which the lock element is located and that is engageable for retracting the arm from the channel slot in which it extends for releasing said inner member from said vertical post to enable said inner member to have slidable movement with respect to said post, and a display shelf mounted on the uppermost end of said inner member and movable therewith for displaying merchandise at a required height.

3,285,209
REVOLVING DOOR SAFETY SYSTEM

Thomas Pace, 253 W. 73rd St., New York, N.Y.

Filed Feb. 12, 1965, Ser. No. 432,115
5 Claims. (Cl. 109—8)



1. In an enclosure having a revolving door for the entrance and exit of the general public, a remote control door lock and release system comprising,

(a) a revolving door including a central supporting column,

(b) an enclosure above said door and disposed to receive and support the column at the upper extremity thereof,

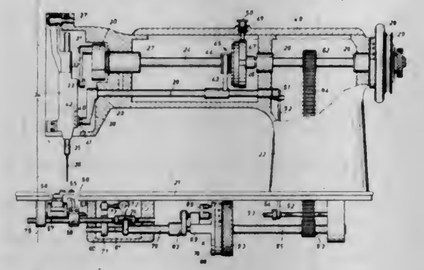
(c) a slotted cam plate within said enclosure and supported by said column and disposed to rotate therewith in a predetermined position,

(d) means including a pair of solenoidally remotely operated interacting elongated plunger mechanisms each supported by said enclosure, one of said mechanisms intercepting said cam plate along the slotted portion thereof in response to said door lock remote control actuating the other solenoid operated mechanism to lock the door in a predetermined position, said other plunger mechanism being disposed to interact with the first plunger mechanism in response to the door release control for actuating the solenoid of said first plunger to permit the release of said first plunger from the slotted cam plate and thereby unlock the door to permit another cycle of operation.

3,285,210
LOOPER DRIVE FOR CHAIN STITCH SEWING MACHINES

Werner Tretow, Kaiserslautern, Pfalz, and Hans Orth, Alsenborn-Pfalz, Germany, assignors to G. M. Pfaff A.G., Kaiserslautern, Pfalz, Germany

Filed Oct. 8, 1963, Ser. No. 314,707
Claims priority, application Germany, Oct. 13, 1962, P 30,353
8 Claims. (Cl. 112—199)

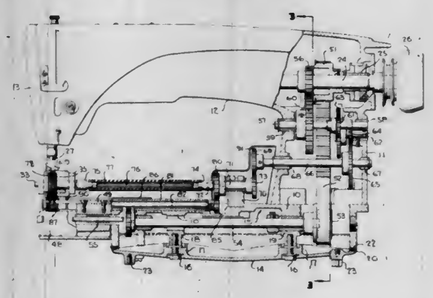


1. In a chain stitch sewing machine having a machine arm, a base plate and adjustable bottom and needle feed means of the type in which the looper effects longitudinal thread seizing and dropping movements and lateral needle deflecting movements derived from eccentrics, a looper drive mechanism including synchronizing means and setting means for imparting adjustable movements to the looper to synchronize the looper with the needle, said synchronizing means comprising an arm shaft journalled in said machine arm, a needle bar supporting a needle disposed endwise of said arm shaft, a rocker for guiding said needle bar, a rocking shaft, means operatively linking said rocking shaft to said arm shaft and to said rocker, a looper drive shaft disposed below the base plate, means operatively connecting said looper drive shaft to said arm shaft, a looper shaft, a looper connected to said looper shaft and disposed below said needle and linkage means including a first adjustable eccentric mounted on said looper drive shaft for effecting longitudinal thread seizing and dropping movements, said first eccentric linking said looper shaft to said looper drive shaft, and a second eccentric mounted on said looper drive shaft and operatively associated with said looper shaft for controlling deflecting movements of said looper, and said setting means including adjustable means mounted concentrically with said looper drive shaft, said adjustable means being operatively interconnected with the first adjustable eccentric operative to change the angular position of said first eccentric for coordinating the longitudinal movements and the deflecting movement of said looper to establish coincidence of looper movements with respect to the adjustable needle feed means for different stitch lengths.

3,285,211
CONTINUOUS FEED LOCKSTITCH SEWING MACHINE

Robert A. Hayes, Franklin Park, and Roy W. Fletcher, Riverdale, Ill., assignors to Union Special Machine Company, Chicago, Ill., a corporation of Illinois

Filed Dec. 23, 1963, Ser. No. 332,622
10 Claims. (Cl. 112—214)

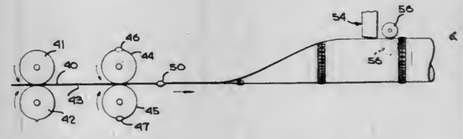


1. In a sewing machine having a base, a throat plate, a vertical standard and an overhanging arm, a needle head on the arm with an oscillating needle feed, a presser bar, a main drive shaft for the needle head, a driven shaft journaled in the standard and extending horizontally outwardly therefrom and geared to the drive shaft, a connecting shaft journaled on the base adjacent the standard, drive connections between said driven shaft and connecting shaft, an upper feed roller journaled on the presser bar, a flexible shaft connecting said roller with the connecting shaft, a lower shaft journaled in the base with its axis disposed well below the level of the throat plate and operatively connected with the connecting shaft, and a lower feed roller on the lower shaft in engagement with the upper feed roller.

3,285,212
FLANGING CAN BODIES HAVING PRESTRETCHED CIRCUMFERENTIAL EDGES

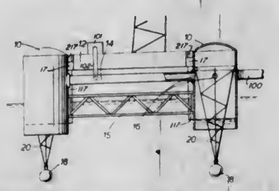
Edmond J. Obidowski, Nimes (Gard), France, assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed May 27, 1963, Ser. No. 283,332
8 Claims. (Cl. 113—120)



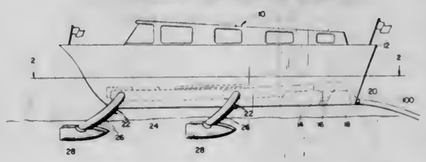
1. The method of forming a plurality of flanged can bodies from a strip of sheet plate having a length sufficient to provide a plurality of can bodies comprising the steps of prestretching said sheet plate along at least one area thereof transversely of said length which area corresponds to a portion of the area laying adjacent an end of a completed can body, forming said sheet plate into a plurality of can bodies and flanging at least one end of each can body.

3,285,213
FLOATING STRUCTURES
Frank Whittle, Walland Hill, Chagford, Devon, England
Filed Nov. 6, 1964, Ser. No. 409,417
Claims priority, application Great Britain, Nov. 8, 1963, 44,160/63
21 Claims. (Cl. 114—.5)



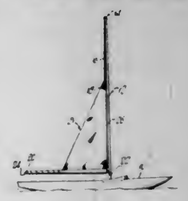
1. A buoyant structure comprising a platform, a plurality of spaced tubular flotation chambers disposed relative to each other and to the platform such that, in plan, the centre of area of the structure and the mean plan position of the centre of gravity of the structure substantially coincide, each flotation chamber comprising a tubular element of substantially uniform internal cross-section with its longitudinal axis disposed substantially in a vertical plane, each flotation chamber being generally devoid of surfaces against which vertical components of hydrostatic pressure can act, each flotation chamber having an open lower end portion, means closing an upper end portion of each flotation chamber, conduit means connecting together all of the plurality of flotation chambers, said flotation chambers and conduit means together at all times defining a continuous and uninterrupted air space whereby the pressure of air contained in any one chamber is at all times maintained substantially equal to the pressure of air in the remaining chambers, said flotation chambers being devoid of buoyancy means in the form of closed chambers and the sole means for imparting the total buoyant support for said structure is the air entrapped in said flotation chambers and conduit means, said structure being intrinsically unstable buoyancy-wise, and non-buoyant stabilizing means for insuring positive stability of the structure when afloat whereby the structure is unresponsive to wave motion and does not give rise to stabilizing forces due to buoyancy.

3,285,214
MECHANISM FOR USE IN CONJUNCTION WITH THE INTAKE OPENING OF A WATER JET PROPELLED HYDROFOIL VEHICLE
Roy A. Patton, Jr., 6030 N. Shore Drive, Grabill, Ind.
Filed Sept. 10, 1965, Ser. No. 486,344
7 Claims. (Cl. 114—66.5)



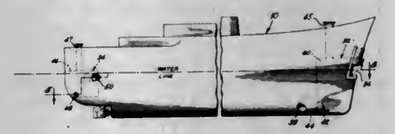
1. In combination, a hull having a longitudinal axis and a bottom, an engine mounted in said hull, a pump mounted in said hull and having inlet and exhaust ducts, said pump being operatively connected to said engine, means including said exhaust duct for propelling said hull in response to operation of said engine and pump, a plurality of hydrofoil members secured to said hull and depending below said bottom, each hydrofoil member having an enlarged portion at the distal end thereof and a neck portion extending between said enlarged portion and said hull, said enlarged portions and neck portions each being hollow, said enlarged portions each having an open end facing in a direction opposite that which said exhaust duct faces thereby forming an intake port, a manifold device mounted in said hull and connected to said pump inlet duct, said manifold device extending between the respective neck portions of said hydrofoil members and interconnecting each of the same with said inlet duct of said pump, each of said hydrofoil members and said manifold device being a continuous and smoothly shaped conduit extending between the respective intake ports and said pump inlet duct, and means within each of said enlarged portions of said hydrofoil members for selectively controlling the size of the respective intake ports whereby laminar flow of water to said pump may be emphasized over turbulent flow.

3,285,215
ROLLER REEFER
John T. Potter, 151 Sunnyside Blvd., Plainview, N.Y.
Filed Dec. 31, 1964, Ser. No. 422,640
7 Claims. (Cl. 114—102)



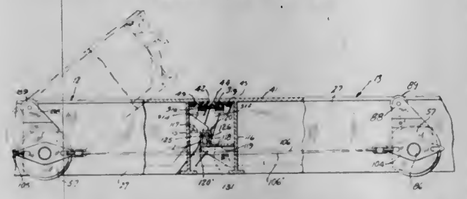
1. A rigging arrangement for a sail plan comprising:
a mast having means so that it may be supported vertically,
a track running vertically along the aft-facing side of said mast,
said track having flanges extending in an encircling manner and terminating in edges to define a channel,
the terminating edges of said flanges being separated to define a narrow slot opening externally from said channel, and
a rod,
means for mounting said rod in said channel so that a sleeve of a diameter to encircle said rod and extending along the luff of a sail can pass over one end of said rod and along said rod,
whereby the diameter of said rod and the encircling sleeve of the sail securely affixes the luff of said sail to said mast.

3,285,216
PITCH STABILIZATION SYSTEM FOR WATER GOING VESSELS
Sheldon B. Field, Floral Park, and Thomas F. Bridges, Port Washington, N.Y., and Martin Fleit, Falls Church, Va., assignors to John J. McMullen Associates, Inc., New York, N.Y., a corporation of New York
Filed Sept. 22, 1964, Ser. No. 398,220
7 Claims. (Cl. 114—122)



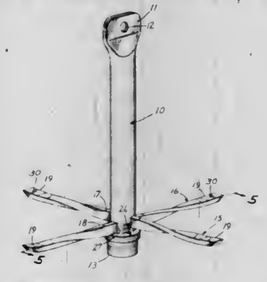
4. A pitch stabilization system for water going vessels comprising a tank mounted at one end of the bow and stern sections of the vessel, inlet means extending through said vessel to enable the liquid ambient to enter the tank, said inlet means positioned vertically near the expected calm waterline and said tank having a large capacity below said inlet means so that water entering the tank through said inlet means need not overcome the static pressure head of the major portion of the water already in the tank, and outlet means for establishing communication from said tank to the liquid ambient at a vertical position well below said inlet means.

3,285,217
HATCH COVER ASSEMBLY
Philip Richter, Bethlehem, Francis J. Luipersbeck, Northampton, and William A. Czarnecki, Coopersburg, Pa., assignors to Fuller Company, Catasauqua, Pa., a corporation of Delaware
Filed Feb. 18, 1965, Ser. No. 433,574
7 Claims. (Cl. 114—202)



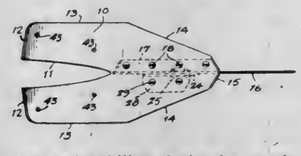
1. A cover assembly for a hatchway comprising a plurality of substantially rectangular panels adapted to be positioned in side by side relation in substantially a horizontal plane over said hatchway when in closed position, each of the adjacent edges of adjacent panels having a sealing gasket extending the length thereof and protruding beyond said edges, a storage area at one end of the hatchway adapted to accommodate all of the panels in substantially vertical position, said panels being movable toward said stowage area to be pivoted to substantially a vertical position when in open stowed position, a track extending along each side of said hatchway, a roller rotatably mounted on each end of each panel adjacent the edge of the associated panel that is adjacent the end of the hatchway toward which the panels are moved to open position, the ends of the panel most remote from the end of the hatchway toward which the panels are moved to open position having an additional roller adjacent the other edge thereof, said rollers being adapted to ride on said tracks, means to pivot said panels from horizontal to vertical position, and complementary means carried respectively by said panels on the adjacent edges thereof adapted to engage when said panels are pivoted to closed horizontal position to retain said adjacent edges together, and releasably supporting the edge of a preceding panel in fixed position with respect to the edge of the next adjacent panel, said complementary means comprising a rigid member secured respectively to each of the adjacent edges of said panels, each rigid member having an arm extending outwardly toward the other rigid member, said arms overlapping and being vertically spaced when said panels are in closed position, the arm carried by the panel adjacent the stowage area having a depending arm engaging the top surface of the other arm when the panels are in closed position, and the arms carried by the next successive panel having an upstanding arm engaging the undersurface of the outwardly extending arm of the preceding panel, said depending and upstanding arms being in spaced parallel relation to each other, complementary beveled surfaces carried by said depending and upstanding arms adapted to engage when said panels are in closed position to move said sealing gaskets into engagement, and means carried by the ends of adjacent panels to limit the minimum spacing between the edges of adjacent panels to prevent abutment of said edges with resultant crushing of the gasket portions extending along said edges, flexible means interconnecting said panels, said means comprising a plurality of elongated chains, each affixed at its ends to adjacent panels, said chains being taut when said panels are moved toward closed position and being of length such that when said complementary beveled portions engage they will slacken slightly.

3,285,218
ANCHOR
Marvin L. Gilbertson, 1709 3rd Ave. S., and George R. Maidl, 830 Adams St., both of Anoka, Minn.
Filed Apr. 13, 1965, Ser. No. 447,790
4 Claims. (Cl. 114—207)



1. A boat anchor comprising:
(a) a cylindrical shank one end having means for securing a boat thereto and the other end threaded with a locking member threadedly received thereon;
(b) a plurality of arms having matching grooves substantially centrally located for fitting said arms together with the ends radiating from a central axis substantially perpendicular to said arms; and
(c) openings in said shank adjacent the threaded end approximately equally spaced radially about the circumference for receiving said arms therethrough in the fitted together position said locking member maintaining said arms in said openings when threaded on said other end and the radially protruding ends of said arms forming earth engaging fingers.

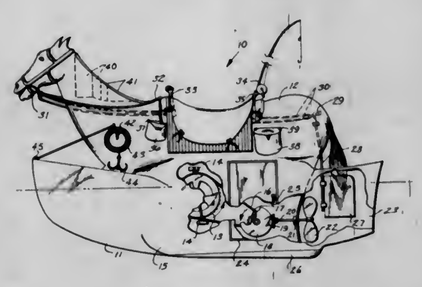
3,285,219
RUDDER AND STABILIZER ATTACHMENT FOR OUTBOARD MOTORS
Douglas F. Linsley, P.O. Box 324, Westport, Conn.
Filed Apr. 6, 1965, Ser. No. 445,886
4 Claims. (Cl. 115—18)



1. A rudder and stabilizer device for attachment to an outboard motor provided with a central housing, a pair of stabilizing fins extending laterally at each side of said housing, a housing extension extending below said housing, and a propeller carried by said housing extension below said stabilizer fins having its axis of rotation substantially horizontal and coinciding in parallel relation with the central longitudinal vertical plane of said motor; said device comprising a horizontal top plate part of symmetrical outline at each side of its longitudinal center line and having forward and rearward co-planar portions, said forward portion having a central longitudinal slot opening to its forward edge whereby said forward portion is

adapted to engage the upper sides of said fins at each side of said housing with said housing disposed within said slot and with the longitudinal center line of said slot coinciding in parallel relation with said central longitudinal vertical plane of said motor, means carried by said forward portion for effecting attachment to said fins, a rudder part in the form of a relatively thin vertical plate secured to the underside of said rearward portion of said top plate and disposed edgewise with its central vertical plane in parallel aligned relation with said longitudinal center line of said slot whereby in the attached relation of the device said vertical plate is in centralized parallel relation with said propeller axis with its forward edge in rearwardly opposed relation to said propeller, and whereby the propeller slip-stream is substantially equally divided by said vertical plate and exerts substantially equally balanced pressures upon the side surfaces of said vertical plate and upon the under surface of said top plate at each side of said vertical plate.

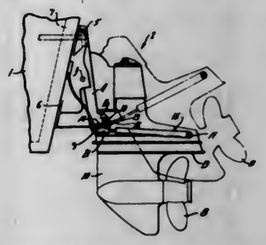
3,285,220
WATER VEHICLE
William Clyde Wright, P.O. Box 586, Robertsdale, Ala.
Filed June 28, 1965, Ser. No. 467,306
2 Claims. (Cl. 115—25)



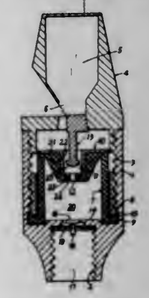
1. A hollow water vehicle comprising a hollow hull lower portion and an animated hollow upper body portion, a manually driven propelling mechanism carried within the vehicle, a pair of reins and lines providing steering means for the vehicle and hollow saddle horns providing holding means for a fishing rod, said hull having a tapered ballast along its central underside area, thus lowering the center of gravity of said vehicle to prevent it from tipping over and spilling its rider and the rudder of said vehicle is pivotable within an opening in the rear of the hull portion of said vehicle.

3,285,221
OUTBOARD PROPULSION UNIT POWER TILT MECHANISM
Irving W. North, Fond du Lac, Wis., assignor to Kiekhaefer Corporation, Fond du Lac, Wis., a corporation of Delaware
Filed Sept. 14, 1964, Ser. No. 396,147
11 Claims. (Cl. 115—41)

1. In combination with an outboard propulsion unit pivotally supported upon a generally horizontal axis from a support member to provide for tilt movement of the unit in a generally vertical plane and said unit being releasably secured against tilting to said member in the normal operating position of the unit, power means to tilt the unit upwardly about said axis and comprising extendable cylinder-piston means disposed between the drive unit and the support member, a source of fluid at a given pressure, and means connecting the pressure source and the cylinder-piston means and including pressure boosting means to initially provide fluid to the cylinder-piston means at a pressure higher than said given pressure to initially extend the cylinder-piston means with a force adequate to tilt the drive unit and overcome the releasable securement between the drive unit and the support member, and thereafter said pressure booster means being rendered ineffective and being adapted to pass fluid at the given pressure to extend the cylinder-piston means and further tilt the drive unit.

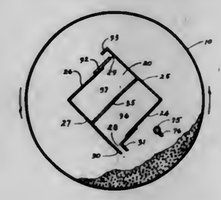


3,285,222
GAS PRESSURE WARNING VALVE
Jacques Artur du Plessis, Marcel Hugues, Rene Saubal-Bayard, Jean Loupiac, Roland Couverture, and Georges Taillefer, all of 43 Rue St. Ferreol, Marseille, France
Filed May 17, 1965, Ser. No. 456,340
Claims priority, application France, May 19, 1964, 20,579
3 Claims. (Cl. 116—34)



1. A gas pressure responsive device comprising:
(1) a hollow axially symmetrical valve body said valve body having a threaded inlet for connection with a source of gas pressure to be supervised at one end and an outlet at the other end;
(2) a resilient axially extensible chamber anchored within said valve body and having a first opening juxtaposed said valve body inlet, the interior of said extensible chamber connected to means communicating pneumatically with said valve body inlet, and having a second opening to said valve body outlet;
(3) said resilient chamber comprising: a radial wall and an axially deflectable perforate end wall remote from said inlet, said perforate end wall being reinforced by an integral rigid perforate member having perforation in register with the perforation of said chamber end wall to form a gas passage therethrough and to restrict elastic deformation of said end wall under gas pressure change;
(4) a plug member connected to the outlet of said valve body, said plug member supporting a rigid valve seat projecting into said valve body in axial alignment with said perforation in said end wall of said resilient chamber, said valve seat being of larger diameter than said perforation and being shaped to engage and form a gas tight seal thereagainst when said perforation moves axially against said seat by axial extension of the radial wall of said resilient chamber; and
(5) a gas pressure responsive signal device connected to the outlet of said valve body.

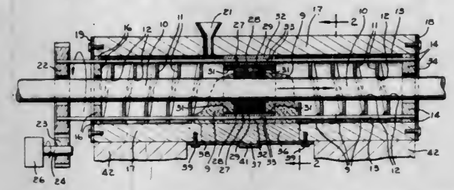
3,285,223
APPARATUS FOR COATING GRANULES
Le Roy B. Sahlin, Minneapolis, Minn., assignor to Archer-Daniels-Midland Company, Minneapolis, Minn., a corporation of Delaware
Filed Dec. 9, 1963, Ser. No. 328,995
2 Claims. (Cl. 118—64)



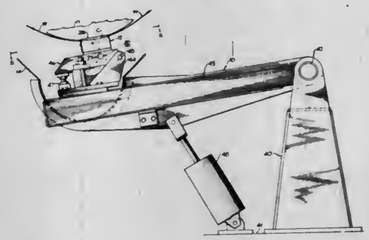
1. Apparatus for coating granules, said apparatus comprising
(a) a horizontal rotatable cylindrical drum adapted to hold granules and mounted for rotation about a horizontal axis;
(b) means for rotating said drum;
(c) means positioned in said drum for spraying liquid coatings onto granules being tumbled within said drum;
(d) a nonrotatable air duct centrally mounted within said drum and extending the length thereof; said air duct being divided diagonally along its length into first and second chambers;
(e) air inlet means communicating with said first chamber;
(f) air outlet means communicating with said second chamber;
(g) said first chamber having a single slot opening extending along its length and being adapted to deliver air to the interior of said drum at an equal volume, constant temperature and pressure through said opening along a guided path in a generally downward direction onto granules being tumbled within said drum;
(h) said second chamber having a single slot opening extending along its length adapted to receive air from the interior of said drum; and
(i) guard means for said slot opening of said second chamber for preventing falling granules from entering said second chamber through said slots opening.

3,285,224
APPARATUS FOR APPLYING A COATING MATERIAL TO AN ELONGATED LONGITUDINALLY ADVANCING ARTICLE
Donald E. Reser, Omaha, Nebr., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed July 9, 1963, Ser. No. 293,707
6 Claims. (Cl. 118—405)

1. Apparatus for applying a coating of material to an elongated longitudinally advancing article, which comprises:
container means extending adjacent the path of movement of the article for holding the material;
helical screw means for conveying the material along said container means and maintaining the material in a pile through which the article passes during the advancement thereof, said helical screw means having a passage which extends longitudinally therethrough and through which the article advances; and
means movable through the pile of material and around the advancing article for continuously agitating the material and distributing the material about the entire periphery of the article.



3,285,225
COATING APPLICATOR
Clifford R. Recor, Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed May 2, 1963, Ser. No. 277,627
4 Claims. (Cl. 118—410)



1. A coating device for a web travelling longitudinally, comprising a rotary support roll substantially transversely coextensive with and moving with the web supported thereby; means defining a shallow coating chamber spaced from said roll and having a first surface portion conforming generally with said roll toward an on-coming edge defining a narrow transverse slot with the roll to receive the web at the on-coming side and having a second surface portion conforming generally with said roll toward an off-running edge defining a narrow transverse slot for metering coating onto the web passing therethrough, and means defining a multiplicity of passageways in said chamber intermediate said surface portions aimed toward said roll for urging coating under pressure against the web on the roll, and means for tilting said chamber about a transverse axis for selectively moving said off-running edge toward and away from said roll to control metering of the coating and means for swinging said transverse axis about a second transverse axis remote from the roll surface for selectively moving said chamber toward and away from said roll to control pressure loading of the coating against the web on the roll.

3,285,226
ANIMAL WATERING DEVICE
William Schuler, Rte. 1, Box 235, Twain Harte, Calif.
Filed Feb. 23, 1965, Ser. No. 434,539
14 Claims. (Cl. 119—18)

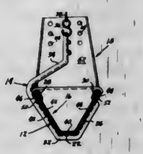
1. In combination, a feeder reservoir and means for continually circulating water through said reservoir, said feeder reservoir comprising

means for feeding water into said reservoir,
means for feeding water out of said reservoir,
standpipe means for establishing the water in said reservoir at a predetermined level,
capillary feeder tube means for supplying water at a gradual rate from said reservoir, said feeder tube means including a thick-walled tube member having a narrow channel formed therein, said tube member having two leg portions angulated with respect to each other, and



means for mounting said tube member on the wall of said reservoir with one leg portion thereof extending into said reservoir below said water level and the other leg portion thereof extending outside of said reservoir at a point above said water level,
whereby water rises in said feeder tube by capillary action out to the end of the outwardly extending part thereof and is held at said end by surface tension, available to be drawn off on demand.

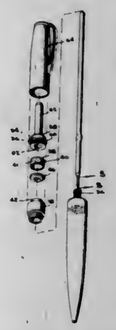
3,285,227
LINER FOR POULTRY WATERING TROUGH
George F. Mitchell, Sidney, Ohio, assignor to Everyday Manufacturing Company, Sidney, Ohio, a corporation of Ohio
Filed Oct. 12, 1965, Ser. No. 495,057
8 Claims. (Cl. 119—61)



5. An elongate strip of deformable water impermeable material adapted to be utilized as a liner for a watering trough comprising an elongate main body portion adapted to be conformed to the inner walls of a poultry trough and having a pair of lateral edges each of said lateral edges, having an outwardly reverted end portion adapted to overlie the adjacent trough edge and an offset flange extending from a point on the outer side of said main body portion toward the apex of said reverted end portion and adapted to extend between the edge of the trough and an inwardly extending reverted flange thereon.

3,285,228
ANTI-GRAVITY PEN
Paul C. Fisher, 14226 W. Greenleaf St., Sherman Oaks, Calif.
Filed May 19, 1965, Ser. No. 456,986
12 Claims. (Cl. 120—42.03)

1. A ball pointed pen comprising:
a barrel housing,
a plunger operating within said barrel,
an ink cartridge containing an ink supply, said cartridge being slidably positioned within said barrel, and having an open end,
a rotating ball and a socket retaining said ball point being positioned at the other end of said cartridge,
a passageway communicating the seat and ball with the interior of said cartridge,
a piston operable by said plunger for sliding movement within said barrel,
said piston having an annular groove open in cross section on the side facing the barrel and substantially closed on the other sides,
a first annular sealing ring positioned within said groove,
said piston having abutting means for contacting the upper end of said cartridge for effecting downward movement of said cartridge and said ball point into writing position,

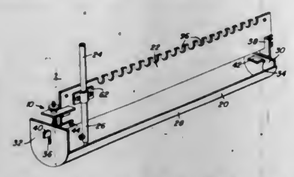


air passage means positioned between said piston and said cartridge for conducting air into and out of said cartridge,
a second annular sealing ring in sliding contact with said cartridge,
a stationary enclosure for said second sealing ring forming the bottom of said chamber, said enclosure being open in cross section on a side facing said cartridge,
an enclosed airtight chamber formed between said sealing rings, said compartment being in communication with the interior of said cartridge through said air passage means,
an air vent in said barrel, said air vent providing communication between the atmosphere and said chamber when said piston is positioned above said air vent,
whereby when said piston is moved downwardly said air vent is closed to pressurize said chamber and said ink cartridge and at the same time said ball point is moved into writing position.

3,285,229
VERTICALLY SUSPENDED AUTOMATICALLY SUPPLIED WATERING TROUGH
Ralph E. Ashby, P. O. Box 52, Downsville, La.
Filed Oct. 9, 1964, Ser. No. 402,889
8 Claims. (Cl. 119—81)

6. An automatic poultry watering device comprising a horizontally extending vertically orientated substantially flat plate, suspension means engaged with the plate toward the opposite ends thereof near the upper edge of the plate for suspension of the plate from an overhead support, support brackets fixed to the opposite end portions of said plate, an elongated trough paralleling said plate immediately therebelow, said support brackets releasably engaging the opposite ends of said trough and

supporting said trough below said plate, a mounting bracket fixed to one side of said plate, and a water conduit releasably fixed to said plate by said mounting



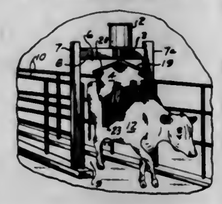
bracket, said conduit having a discharge end directed downwardly into said trough and including a valve means in water control contact with the trough.

3,285,230
RECIPROCATING CHICK GUARD FOR CONVEYOR-FEEDER CORNER
Robert L. Van Huis, Zeeland, Mich., and Jerome M. Essink, Holland, Mich., assignors to Big Dutchman, Inc. a corporation of Michigan
Filed May 13, 1963, Ser. No. 279,973
5 Claims. (Cl. 119—52)



1. A guard mechanism for a conveyor feeder for animals having a conveying chain longitudinally movable through a feed trough and into a housing, comprising: a member mounted for reciprocal, generally vertical movement in said feed trough adjacent said housing for pushing said animals away from said chain adjacent said housing; and separate actuating means movable relative to said member and operated by said chain to reciprocate said member whenever said chain is moving.

3,285,231
LIVESTOCK INSECTICIDE APPLICATOR
Bill Johnson, 613 N. Central Ave., Phoenix, Ariz.
Filed June 28, 1965, Ser. No. 467,487
4 Claims. (Cl. 119—157)

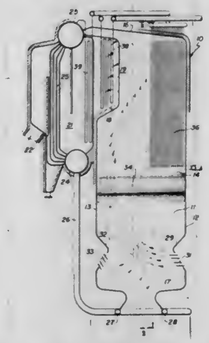


1. An insecticide applicator mechanism for applying fluid insecticide to the backs of animals progressing through a passageway, comprising an insecticide tank, having a bottom and a valve centrally positioned therein with a shutoff valve stem operating axially and vertically therein, arranged to open when lifted, an applicator means having inclined laterally extending radial arms joined at their apex and slanting downwardly from the point of juncture, a cup centrally supported on said arms and disposed below said valve, said applicator means including a pliant applicator having two canvas side pieces constituting shrouds depending from said arms and attached at the bottom to a mop type brush consisting of a plurality of wicking cotton strings extending along the lower edges of said shrouds, the lower ends of the strings of said mop being cut to form a curved edge conforming to the shape of the back of the animal passing therebeneath.

ERRATUM

For Class 120—42.3 see:
Patent No. 3,285,228

3,285,232
STEAM GENERATING UNIT
Louis E. Griffith, Worcester, Mass., assignor to Riley Stoker Corporation, Worcester, Mass., a corporation of Massachusetts
Filed Mar. 22, 1965, Ser. No. 441,524
1 Claim. (Cl. 122—481)

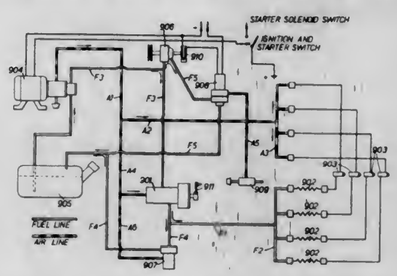


A stream generating unit, comprising
(a) front, rear, and side walls forming a vertically-elongated combustion chamber, the chamber having a gas offtake located in the rear wall at the upper end of the chamber and having a horizontal nose extending forwardlly from the rear wall immediately under the gas offtake,
(b) a horizontal primary abutment extending inwardly from both the front and rear walls adjacent the lower end of the chamber,
(c) burners mounted beneath the abutments, each burner including the vanes which are adjustable about horizontal axes perpendicular to the side walls to permit the regulation of the flame direction,
(d) a horizontal secondary abutment extending inwardly from the side walls at a level located a substantial distance above the primary abutments, and
(e) a radiant vapor heater located on each side wall with the major portion of its heating surface closer to the front wall than to the rear wall.

3,285,233
FUEL INJECTION SYSTEMS
Harold Ernest Jackson, Plympton St. Mary, Devon, England, assignor of one-half to Petrol Injection Limited, Plymouth, Devon, England, a British company
Filed Aug. 10, 1965, Ser. No. 482,994
Claims priority, application Great Britain, Dec. 21, 1962, 48,479/62; Feb. 25, 1964, 7,895/64; June 24, 1964, 26,173/64
49 Claims. (Cl. 123—139)

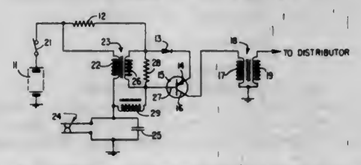
1. A low pressure continuous fuel injection system for an internal combustion engine, including a fuel circulation conduit system having supply and return branches; a plurality of open air-atomising injection devices, each of said injector devices including a chamber communicating

with an open outlet orifice; means connecting the said supply branch to the injector devices for delivery of fuel to the said chambers of the respective injector devices; the said fuel conduit system including fuel metering means responsive to engine operating parameters including engine operating speed and engine air intake to supply fuel to said injector devices in dependence on said operating parameters; said fuel metering means including a fuel pressurising device adapted to be driven by said engine to pressurise fuel flow through said supply branch in dependence on engine operating speed, and fuel metering valve means the position of which is dependent upon said engine air intake parameter, said fuel pressurising device and fuel metering means being associated to conjointly meter the flow of fuel to said injector devices in



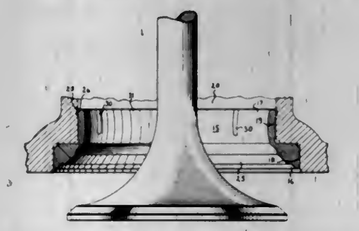
dependence on both said engine speed and said engine air intake parameter; a fluid pressure responsive balance valve connected in said return branch and provided with an air receiving chamber closed against communication with said return branch; air pumping means for supplying low positive pressure atomising air to said chambers of the injector devices for entraining fuel therein and discharge thereof through said outlet orifices at low pressure, and to the air receiving chamber of said fluid pressure responsive balance valve for control thereof such that fuel flow through said return branch is opposed by said atomising air pressure in compensation for said atomising air pressure supplied to said injector devices whereby fuel flows to said injector devices and in said return branch are equally opposed by said atomising air pressure.

3,285,234
IGNITION SYSTEM WITH INDUCTOR CONNECTED BETWEEN BREAKER POINTS AND SEMICONDUCTOR DEVICE
Robert C. McLaughlin, Bloomingdale, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Nov. 12, 1963, Ser. No. 322,786
5 Claims. (Cl. 123—148)



1. A transformer coupled ignition system for use with a vehicular electrical system for an internal combustion engine, which electrical system incorporates a D.C. voltage source and intermittently operable breaker means, said ignition system including in combination, an ignition coil for supplynig high voltage pulses to the internal combustion engine, semiconductor switching means adapted for connection in series with said ignition coil across the voltage source to interrupt the current in said ignition coil and cause the same to produce high voltage pulses, transformer means having a primary winding connected between the voltage source and the breaker means and a secondary winding connected to said semiconductor switching means and supplying control pulses thereto in response to the operation of the breaker means, and inductance means connecting said semiconductor switching means to the breaker means in shunt with the coupling therebetween through said transformer means, said inductance means providing direct coupling of said semiconductor switching means across the voltage source through the breaker points at relatively low speeds of operation of the breaker means.

3,285,235
VALVE SEAT INSERT
Hubert J. Ueberschaer, Erie, Pa., assignor to General Electric Company, a corporation of New York
Filed Dec. 24, 1964, Ser. No. 421,164
4 Claims. (Cl. 123—188)

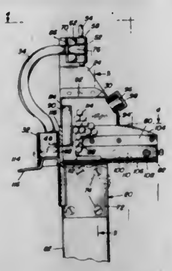


1. A valve seat insert for an internal combustion engine comprising: a cylindrical metal ring having a valve seat formed in one end thereof, said cylindrical metal ring being adapted to be seated into a counterbore of an engine valve port with at least a line-to-line and no greater than a light interference fit; and an integral annular flange proximate the end of said ring remote from said valve seat and having an outside diameter greater than the inside diameter of said counterbore with which it is associated so that said flange after being forced through said counterbore is adapted to engage an annular groove in the base of said counterbore to prevent said ring from falling out of its position while allowing for the non-destructive removal thereof from said counterbore.

3,285,236
SLINGSHOT
Ira Shafer, 3815 Wilson Ave., San Diego, Calif.
Filed Oct. 26, 1964, Ser. No. 406,614
4 Claims. (Cl. 124—20)

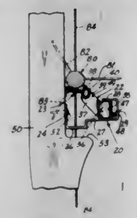
1. A slingshot comprising in combination:
(A) means forming:
  (1) a lower handle;
  (2) two prongs diverging outwardly and upwardly from the upper part of the handle, said handle and prongs forming a crotch at the junction thereof;
(B) a magazine for pellets carried by said means above the crotch, said magazine having an outlet for pellets;
(C) a horizontally extending guide below the magazine, said guide being disposed in the handle below the crotch;
(D) a carriage guided by said guide and movable to a position for receiving a pellet from the outlet of the magazine and movable to a second position from which latter position the pellet can be manually removed;
(E) elastic means connected with the upper ends of the prongs;

(F) and means forming a sling-pocket connected with the elastic means midway of the latter;



(G) manually actuated means for moving the carriage horizontally to the second mentioned position thereof;
(H) and resilient means for returning the carriage from the first mentioned position to the second mentioned position.

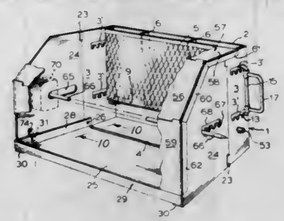
3,285,237
LATERALLY DISPLACEABLE ARROW REST
William A. Wolfe, 9918 Halls Ferry Road, St. Louis, Mo.
Filed Feb. 24, 1964, Ser. No. 346,620
3 Claims. (Cl. 124—41)



1. An arrow rest comprising a support, means for fastening the support to the side of a bow, means defining an arrow rest surface movably attached to the support for movement toward and away from the side of the bow, the support having an arm spaced below the arrow rest for receiving the fastening means, the space between the support and the arrow rest being sufficient to permit the unobstructed passage of an arrow feather past the support, means for biasing the arrow rest surface defining means toward the side of the bow, and a projection on the arrow rest surface defining means in the lateral path of an arrow moving across the arrow rest, the arrow rest surface being between the projection and the fastening means, the biasing means being yieldable when a lateral force is applied by an arrow against the projection to permit the arrow rest to swing away from the bow, whereby movement of the arrow rest away from the bow creates a space through which an arrow feather can pass while the arrow rest continues to support the arrow.

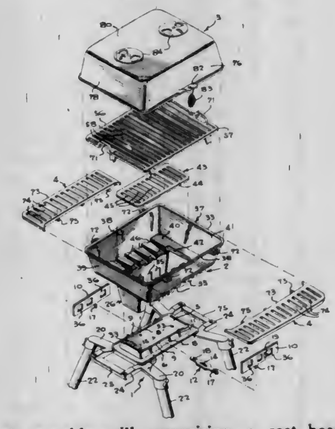
3,285,238
BARBECUE UNIT
Robert N. Norlie, Chico, Calif., assignor to Norfield Manufacturing Co., Chico, Calif.
Filed Aug. 4, 1964, Ser. No. 387,400
7 Claims. (Cl. 126—9)

1. A portable barbecue unit comprising:
(a) a horizontally disposed firebox having a horizontal bottom wall on which solid fuel for cooking is adapted to be supported, a pair of upstanding end walls and an upstanding sidewall along the edges of said bottom wall rigidly secured to the latter;
(b) a horizontal grill in a position between said end walls in spaced, opposed, substantially parallel relation to said bottom wall on which food to be cooked is adapted to be positioned, said grill having end edges adjacent to said end walls and a side edge adjacent to said side wall and the side of said firebox opposite to said side wall being open for lateral access to the upper side of said grill and to the space between said grill and said bottom wall;
(c) said firebox being movable to a vertically disposed position in which said side wall is lowermost and said bottom wall and grill are vertical and in which position the space between said bottom wall and said grill opens upwardly and grill holding means



respectively on said grill and said firebox movable relatively from a released position for movement of said grill in directions toward and away from said bottom wall to different distances from the latter, to a holding position at each of said different distances, holding said grill against movement toward and away from said bottom wall, and vice versa;
(d) a horizontally extending, vertical, perforated wall rigid with said grill along said side edge thereof extending from said grill toward said bottom wall in spaced opposed relation to said side wall when said firebox is horizontally disposed and which perforated wall is at the lower end of said grill when said firebox is vertical to support coals between said grill and said bottom wall spaced above said side walls.

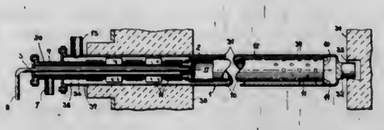
3,285,239
GRILL
William H. Drake, 116 Presley St., Rome, Ga.
Filed Oct. 22, 1964, Ser. No. 405,712
3 Claims. (Cl. 126—25)



1. A portable grill comprising, a cast base, a cast combined ash basin and fire bowl in superimposed rela-

tion removably attached to the base, a grate at the horizontal plane of juncture of the ash basin and fire bowl, a grid and cooperating means on the fire bowl and grid to support the grid at the top of the fire bowl, the ash basin having an open top and the fire bowl having a partial bottom forming a horizontal rim about the top of the ash basin, said grate bridging the top of the ash basin to complete the fire bowl bottom, the horizontal rim having grooves therein opening to the ash basin below the grate, whereby grease and condensate in the fire bowl may drain to the ash basin, a channel in the base about the lower end of the ash basin, openings in the ash basin through which grease and condensate may flow from the ash basin to the channel, and at least one drain outlet from the channel.

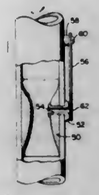
3,285,240
INDUSTRIAL GAS BURNER
Theodor Schmidt, Essen, Germany, assignor to Indugas, Gesellschaft fur Industrielle Gasverwendung m.b.H., Essen, Germany, a corporation of Germany
Filed July 10, 1964, Ser. No. 381,875
Claims priority, application Germany, July 10, 1963, J 24,029
3 Claims. (Cl. 126—91)



1. An industrial burner comprising a radiation tube constituted by an inner tube portion and an outer tube portion, said outer tube portion coxially surrounding said inner tube portion with intervening clearance; a nozzle extending transversely across said inner tube portion; first inlet means for admitting a fuel stream to a central region of said nozzle; second inlet means for admitting a combustion-sustaining gas to an annular region of said nozzle surrounding said central region, said nozzle having a central aperture for the passage of said fuel stream and at least one circular array of orifices for the passage of said gas, the axes of said orifices being skew to the tube axis and representing straight-line generatrices of a hyperboloid of revolution centered on the tube axis, said inner tube portion extending forwardly from said nozzle for several diameters thereof and communicating with said outer tube portion at a location beyond the geometrical center of said hyperboloid whereby exhaust gases from the combustion of a mixture of said fuel stream with said combustion-sustaining gas can reach said clearance; and an outlet for said exhaust gases connected with said outer tube portion at a point rearwardly of said nozzle whereby said exhaust gases stream past said nozzle toward said outlet.

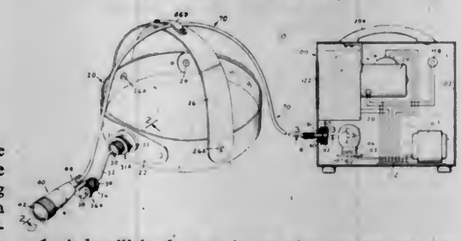
3,285,241
WATER HEATER DIP TUBE CONSTRUCTION
Jean Bordeaux, Santa Ana, Calif., assignor to Robertshaw Controls Company, a corporation of Delaware
Filed Dec. 5, 1960, Ser. No. 73,648
4 Claims. (Cl. 126—362)

1. In a water heater having a thermostatically controlled burner, the combination including a tank, a cold water inlet in the top of said tank, a hot water outlet in the top of said tank, a dip tube attached to said tank at said cold water inlet extending to the lower portion of said tank, means including a venturi insert in said tube for mixing the water at the top of said tank with the incoming cold water to prevent excessively high temperatures at the top of said tank, and fastener means mounting said venturi insert in said tube and having an opening therein connecting the interior of said tube with the surrounding water



in said tank whereby incoming cold water passing through said venturi insert will cause the water surrounding said tube at said opening to enter said opening and mix with said incoming cold water.

3,285,242
SURGICAL HEADLIGHT AND LIGHT SOURCE
Frederick J. Wallace, New York, N.Y., assignor to American Cystoscope Makers, Inc., Pelham Manor, N.Y., a corporation of New York
Filed July 1, 1963, Ser. No. 291,619
4 Claims. (Cl. 128—23)

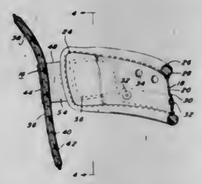


1. A headlight for use in carrying out surgical procedures, comprising means for attachment to the body of the user including a headband adapted for encircling the head of the user, an elongated arm member, first adjustable ball and socket joint means connecting one end of said arm member to said headband, connected to and extending forwardly from said headband, a lens housing, second adjustable ball and socket joint means connecting said housing to the other end of said arm member, an elongated light-conducting flexible bundle of a large number of extremely fine glass-coated glass fibers having one end thereof extending in and connected to said housing, a high intensity light source having a sharply focused light beam, means removably receiving and anchoring the other end of said light-conducting bundle substantially at the focus of said light beam, cooling means including an array of radiator fins in good thermally conductive relation with said other end of said light-conducting bundle, a cross band connected adjacent to the opposite ends thereof to the opposite sides of said headband, means connecting said light-conducting bundle to said cross band, and lens means mounted in said housing for directing and focusing light from said one end of said light-conducting bundle onto an area to be illuminated.

3,285,243
CERVICAL COLLAR
Louis Yellin, 242 S. 17th St., Philadelphia, Pa.
Filed Jan. 2, 1964, Ser. No. 335,011
3 Claims. (Cl. 128—75)

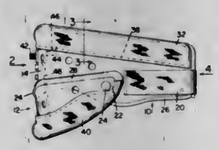
1. A cervical collar comprising a neck piece, said neck piece being substantially rigid and being of a substantial height thereby adapted to support the chin of a wearer, a posterior bar adapted to be connected to said neck

piece, said posterior bar including a rigid curvilinear support having a height greater than the height of said neck piece, said rigid curvilinear support being curved thereby adapted to fit the neck of a wearer, said rigid curvilinear support having a flared curved upward end thereby adapted to engage the base of the skull of a wearer to prevent rotation of the head of the wearer, selectively securable connecting means integral with the center of said posterior bar for selectively securing said posterior bar at the center portion thereof to side surfaces of said neck piece, said selectively securable connecting means including flexible connecting arms integral with and extending outwardly from opposite side edges of the center



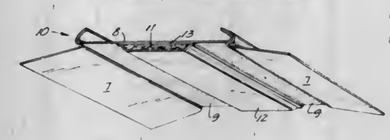
of said posterior bar, said flexible connecting arms and said neck piece side surfaces having means on mating surfaces for selectively securing said posterior bar to said neck piece, said neck piece being U-shaped in plan view, the front central portion of said U-shaped neck piece being reinforced to be rigid, the ends of said U-shaped neck piece being flexible, said U-shaped neck piece front central portion being in a lower plane than the ends of said U-shaped neck piece, said neck piece front central portion including a resilient foam cushion along the edges thereof, said posterior bar including a rigid metal sheet running the length thereof, and a flexible foam cover integral with the surface of said metal sheet facing said neck piece.

3,285,244
CERVICAL COLLAR
George W. Cottrell, 2254 NW. Lovejoy St., Portland, Oreg.
Filed June 8, 1964, Ser. No. 373,302
1 Claim. (Cl. 128—75)



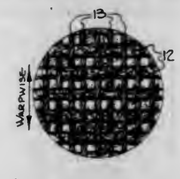
A cervical collar comprising a pair of adjustable members, the first of which is adapted to encircle the neck of the wearer, the second member being pivotally secured thereto substantially diametrically thereof, the second member being adjustable about its pivot axis, said first member having an upper edge, portions of which are adapted to contact the person of the wearer, and the second member having a lower edge, portions of which are adapted to contact the person of the wearer, inflatable pneumatic casings substantially covering said edges at the portions thereof adapted to contact the person of the wearer, air hoses in communication with both casings, a fitting communicating with said hoses, and a hand-operated air pressure bulb removably attachable with respect to said fitting for inflating said casings.

3,285,245
ABSORBENT WOUND DRESSING
Charles L. Eldredge, St. Paul, and Karl J. Petters, White Bear Lake, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed July 6, 1964, Ser. No. 380,580
9 Claims. (Cl. 128—156)



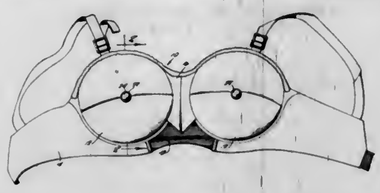
6. An absorbent wound dressing capable of absorbing wound exudate without sticking to the wound comprising an absorbent backing for absorbing wound exudate and a thin, highly and naturally porous thermoplastic facing, inert to wound exudate, and through which wound exudate may readily pass, said facing comprising a thin self-sustaining, film of inert, hydrophobic, and nonabsorbent thermoplastic fibers fused and coalesced with one another to form a discontinuous film facing said backing and containing numerous, irregularly shaped tiny openings for facilitating the passage of exudate therethrough from a wound to said absorbent backing.

3,285,246
WOVEN DIAPER
Dale W. Kern, Ware Shoals, S.C., assignor to Riegel Textile Corporation, a corporation of Delaware
Filed Apr. 2, 1965, Ser. No. 445,019
4 Claims. (Cl. 128—284)



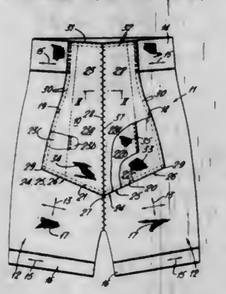
1. A prefolded diaper formed from an unfolded diaper having selvage edges and cut edges, said unfolded diaper comprising a single ply having warp yarns and filling yarns therein, said warp yarns having a cotton count of approximately 400–800% of the cotton count of said filling yarns and said filling yarns having a twist multiple of approxiamtely 75% of the twist multiple of said warp yarns whereby said filling yarns are heavier and bulkier than said warp yarns to reduce the required number of picks per inch for said filling yarns and the required number of ends per inch for said warp yarns in said diaper to reduce the cost thereof, said unfolded diaper having napped surfaces on each side thereof to increase the absorbency and bulk of said prefolded diaper, said prefolded diaper being folded to form an absorbent center panel comprising a plurality of layers of said unfolded diaper and side panels comprising a single layer of said unfolded diaper and extending transversely outwardly from said center panel and having outer longitudinal edges, said prefolded diaper being permanently secured together in the prefolded condition, and said prefolded diaper being folded with a multiple reverse fold so that said outer longitudinal edges thereof are formed by said selvage edges to resist wear along said outer longitudinal edges and so that a conventional size prefolded diaper with a wider than normal center panel may be formed from a smaller than normal unfolded diaper.

3,285,247
BRASSIERE
Henry Morin, 406 Harbor City Blvd., Eau Gallie, Fla.
Filed Dec. 11, 1964, Ser. No. 417,751
5 Claims. (Cl. 128—479)



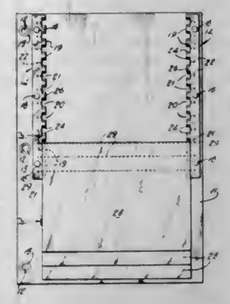
1. In a brassiere having a pair of cups serially disposed and positioned along the length of a brassiere band, said cups having a polyether foam insert each being of generally hollow conical configuration, a layer of cloth material overlaying each of the cups, a layer of cloth material disposed and extending within each of the cups, an opening in the central portion of the overlayer material and proximate to the apex of the respective cups, a simulated nipple of rubber and a flanged portion surrounding said nipple, said cups and said layers forming embroidered material at the juncture of peripheral portions of the overlayer, the layer of cloth material, the flanged portion, and the nipple.

3,285,248
CORSETS, GIRDLES AND LIKE GAMENTS
Betty May Williams, Slough, England, assignor to Berlei (U.K.) Limited, Slough, England, a British company
Filed July 28, 1964, Ser. No. 385,599
Claims priority, application Great Britain, Aug. 9, 1963, 31,602/63
4 Claims. (Cl. 128—546)



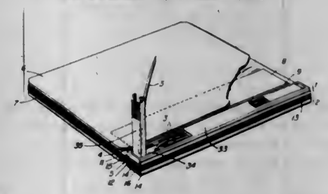
1. A corset, girdle, pantie girdle or other body-encircling garment for women, which includes a front abdomen-supporting panel comprising symmetrical left- and right-hand sections each comprising at least two overlapping layers of fabric joined to each other and to the opposite section along a central vertical seaming line, each of the layers of each section being joined to the adjacent forward side edges of the remainder of the garment and each of the layers of each of the left- and right-hand sections being formed of fabric which is inextensible in both warp and weft directions and so cut that the warp and weft directions of one layer of each of the left- and right-hand sections are positioned skew to the warp and weft directions of the other layer of the respective section, the respective lower edges of the layers of each section being superposed and generally upwardly inclined from the central seaming line.

3,285,249
DISPLAY MANIFOLD
Sol Rael, 141—34 73rd Terrace, Flushing, N.Y.
Filed July 9, 1965, Ser. No. 470,710
5 Claims. (Cl. 129—20)



1. A display device comprising a backing sheet, a pair of parallel, longitudinally-extending laterally-spaced support strips mounted on said backing sheet, each of said support strips having longitudinally-spaced, parallel, laterally-extending sockets formed in the inner face thereof, said sockets in said opposite strips being in lateral alignment to define respective pairs thereof, inwardly laterally projecting lugs disposed along and integrally formed with said strips between successive of said sockets, hinge rods having opposite ends engaging respective pairs of said sockets, a plurality of overlapping longitudinally offset open-ended envelopes, each of said envelopes including a sheet folded along a transverse line delineating a traversely extending hinge edge and a pair of superimposed panels extending longitudinally from said hinge edge, and joined along lateral edges remote from said hinge edge, one of said hinge rods extending transversely through each of said envelopes along a corresponding hinge edge and being normally freely longitudinally movable between said respective panels, opposite ends of said envelope hinge edges being disposed between successive of said lugs to restrict the longitudinal movement of said hinge edges.

3,285,250
LOOSE LEAF BINDER
Henry V. Ivory, Chatham, N.J., and Joseph Wilfred MacDonald, Marcellus, and John A. Steele, Fayetteville, N.Y., assignors to Boorum & Pease Company, Brooklyn, N.Y., a corporation of New York
Filed Feb. 24, 1965, Ser. No. 434,922
6 Claims. (Cl. 129—25)



1. In a loose leaf binder having a pair of binding elements with aligned apertures for connecting prongs, flexible binding prongs secured to one of said binding elements and housing means for the free end of said prongs on the second binding element, the housing comprising a receptacle having a ceiling, floor, end wall, and side walls with a slot near the end of the binder, a door in the ceiling adjacent the end wall, an aligned aperture for a prong passing through the floor under the door; a tooth

extending downward from the lower surface of the ceiling near the inner end of the door and the floor having a downward slanting ramp near the inner end of the door, said ramp and tooth forming an inclined passage to direct and hold the free end of the prong under the ceiling, a cover for the door, the outer surface of the cover when closed being substantially flush with the outer surface of the ceiling, a depending flange on each edge of the cover, a pair of lateral lugs near the outer end of the cover to ride in the slots in the side walls, latch means on the inner end of said cover to cooperate with the tooth on the under side of the ceiling, the combined length of said latch means and lug being substantially the length of the slot.

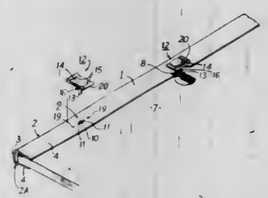
3,285,251
LOOSE LEAF BINDER
Henry V. Ivory, Chatham, N.J., and Kurt Vogl, Stoney Point, N.Y., assignors to Boorum & Pease, Brooklyn, N.Y., a corporation of New York
Filed July 6, 1965, Ser. No. 469,545
2 Claims. (Cl. 129—25)



1. A loose leaf binder having binding means connected by flexible plastic posts removably secured by their heads to one of the binding means and a sliding latch in the other binding means to retain the free ends of the posts, said binding means comprising a channel having a floor and side walls, each side wall having an inwardly extending flange, wherein the improvement comprises said flange being U-shaped and having a median surface spaced inwardly from the adjoining side wall and a free edge spaced horizontally from said side wall and vertically from the floor, in combination with the removable post having a head with a shorter dimension which is less than the distance between the flanges, and a longer dimension substantially equal in length to the distance between the side walls of the channel adjacent the free edge of the flange, said longer dimension having a tongue at each end and having a pair of vertical walls above the tongue spaced apart by a distance substantially equal to that between the median walls of the flanges, whereby when the head is lengthwise of the channel the post head can readily be placed in or removed from the channel, and when the head lies crosswise of the channel said vertical walls above the tongue cooperate with the median surfaces of the U-shaped flanges, and the ends of the tongue lie between the floor and free edges of the U-shaped flanges and contact said free edges, thereby locking the post in the binding element.

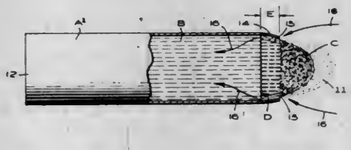
3,285,252
BINDING DEVICES
Leslie Joe Morris, 225 Ash Road, Aldershot, England
Filed May 8, 1964, Ser. No. 366,090
Claims priority, application Great Britain, Dec. 6, 1963, 48,241/63
4 Claims. (Cl. 129—37)

1. A binding device for edge perforated sheets, comprising in combination a channelled member for receiving the perforated sheet edges, said member being made of strip material which is inherently resilient and flexible and sufficiently springy substantially to grip the sheets tightly between the edges of the strip flanges, the channelled member in the condition in which there are no sheets gripped by it having the free edges of the flanges biased against each other, and said channelled member having at least one aperture in at least one flange of said channelled member with which perforations in the sheets are adapted to be aligned, the portion of the other flange opposite said aperture being unapertured, said aperture being elongated in one direction, and at least one headed locking stud having a shank for entering said flange aperture and at least one lateral projection on said shank spaced beneath the stud head at a distance therefrom not substantially less than the thickness of said flange and having a length such that it will pass through said aperture when it is aligned in the said one direction and will not pass through said aperture when it is turned to at least one other direction different from said one direction, said stud head having at least one locating projection on



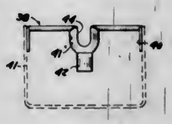
its underside and the adjacent flange having at least one depression therein engageable by said locating projection for retaining said stud in said at least one other direction, so that by turning said stud the shank projection engages the inner surface of the channel flange to retain the stud in position in with its shank engaging perforations in at least some of the sheets, and said shank having a length such that it at least presses against the opposite flange when the edges of the flange are biased against each other and said strip material of the other flange opposite said aperture distorts outwardly only in the immediate area of the free end of the shank, whereby when only a relatively few sheets of paper are gripped by the binding device, at the most only short portions of the edges of the flanges adjacent the stud are separated and the remainder of the edges of the flanges will grip the sheets of paper.

3,285,253
CIGARETTE WITH PAPER WRAPPER TREATED FOR EMBER-CHARRING ACTION TO PREVENT FORMATION OF HIGH TEMPERATURE SMOKE FRACTIONS IN BURNING TOBACCO
Herbert A. Lebert, 8 Corte Dorado, Millbrae, Calif.
Filed Mar. 13, 1964, Ser. No. 351,616
2 Claims. (Cl. 131—15)



1. A cigarette paper wrapper treated with an oxidizing agent to lower the burning point of the paper, whereby the latter will char from heat of an adjacent glowing ember, with the charred portion of the paper being impervious to the passage of air therethrough, the oxidizing agent consisting of a solution of at least 10% strength ammonium nitrate that will decompose into nitrogen and water vapor at approximately 410° Fahrenheit, a point below the charring temperature of the paper.

3,285,254
COMBINATION CIGARETTE HOLDER AND SNUFFER
Joseph H. Danielak, Detroit, Mich., assignor of forty-nine percent to Witold T. Danielak, Detroit, Mich.
Filed Apr. 20, 1964, Ser. No. 361,153
3 Claims. (Cl. 131—235)



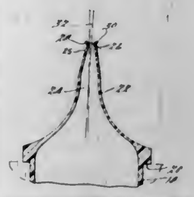
1. A cigarette holder and snuffer comprising an elongated body;
said body including an upright upwardly opening first cylindrical portion having a wall having opposed upwardly opening U-shaped cut-outs defining a slotted portion of a width to frictionally and horizontally support a cigarette intermediate its ends;
a co-axial second cylindrical portion of a relatively reduced diameter upon the lower end of and communicating with said first cylindrical portion defining an upwardly opening aperture to frictionally support and enclose the burning end of a cigarette;
said slotted portion and said aperture having right angularly related intersecting axes;
an ash receptacle including opposed side walls;
and support means interconnecting said body and a wall of said receptacle for supporting the same therewithin.

3,285,255
POLYOLEFIN FILTER
George Patrick Touey and Robert Chester Mumpower II, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed June 7, 1965, Ser. No. 462,049
4 Claims. (Cl. 131—267)

1. A tobacco smoke filter consisting of a rod-shaped bundle of crimped continuous polyolefin filaments having deposited on and between the surfaces of said filaments in substantially permanent form a substantially nonpenetrating surface layer capable of dissolving phenol vapors and at least monomolecular in thickness of 4 percent to 10 percent by weight of said filter of a water-insoluble acylate ester of 2 to 12 carbon atoms having a phenol removal capability which lasts for at least about eight weeks, said acylate ester being easily sprayable at 25–100 C.° and having a boiling point above about 200° C.

3,285,256
FLEXIBLE DISPENSING NOZZLE HAVING A FLARED FEATHER-LIKE EDGE FOR MECHANICALLY SHAPING THE NAIL CUTICLE
Richard B. Despard, 1930 Washington, Birmingham, Mich.
Continuation of application Ser. No. 257,982, Feb. 12, 1963. This application June 7, 1965, Ser. No. 461,881
4 Claims. (Cl. 132—74.5)

1. A dispensing nozzle for a container of cuticle softening liquid for use in manicuring a nail and cuticle, said nozzle comprising a base adapted for attachment to said container, a relatively long, thin, hollow and flexible neck portion extending upwardly from said base, said neck portion having the end thereof remote from the base flattened so as to form a tip of convex profile, an elongate discharge orifice in the tip through which said cuticle softening liquid is discharged onto the base of said nail and along said cuticle, a relatively thin, outwardly flared lip extending along at least a major portion of the profile edge of said tip and along at least one side of the orifice over which the liquid spills providing a feather edge for use in manipulating and pushing back the softened cuticle,



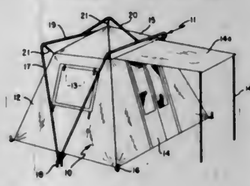
said flexible neck portion yielding readily in use under manual pressure to control and regulate the maximum force normally imposed on the nail during manipulation of the cuticle by said feather edge.

ERRATA

For Class 134—44 see:
Patent No. 3,285,779

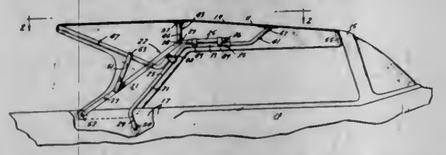
For Class 134—102 see:
Patent No. 3,285,780

3,285,257
OUTSIDE FRAMES FOR UMBRELLA TYPE TENTS
Aldo L. Tombari and Jack P. Simpson, Statesville, N.C., assignors to The Hettrick Manufacturing Company, Statesville, N.C., a corporation of Delaware
Filed Nov. 8, 1963, Ser. No. 322,360
1 Claim. (Cl. 135—3)



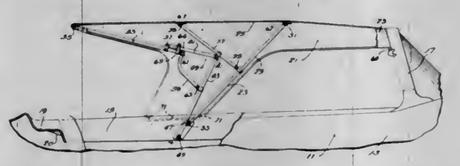
A pyramidal tent comprising:
a tent fabric body, said fabric body being generally pyramidal in shape including side walls and a peaked top portion;
a supporting frame for said tent fabric body, said frame comprising a rigid top frame portion having dimensions substantially greater than the corresponding peaked top portion of the pyramidal shape of said tent fabric body so as to be spaced from the peaked top portion at all points;
a pair of laterally spaced elongated primary support members having one of their end portions rigidly attached to said top frame portion, said primary support members having length dimensions substantially greater than the height of the corresponding side walls of said tent fabric body and being aligned one with the other, the opposite end portion of each of said primary support members having a ground engaging pivot means; and
resilient spring members extending between the apeces of the peaked top portion of said tent fabric body and the corresponding portions of said rigid top frame portion,
whereby said tent fabric body is arranged wholly within and spaced from said supporting frame, the arrangement being such that said supporting frame can be laid on its side, said tent fabric body attached to the inside of said frame by said resilient spring members, and the assembly rocked about said ground engaging pivot means of said primary support members to a vertical position of use.

3,285,258
FOLDING SOFT TOP
Stanislas H. Hage, Lake Bluff, and Gordon B. Hale, Waukegan, Ill., assignors to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed May 1, 1962, Ser. No. 191,628
19 Claims. (Cl. 135—6)



18. The combination of a boat hull and a convertible top including a cover and a supporting frame mounted on said hull for movement between an erected condition and a storage condition, and including a forward link pivotally attached to said hull, a rearward link pivotally mounted to said hull at a point spaced rearwardly from the connection of said forward link with said hull, a connecting link pivotally connected to said forward link and pivotally connected to said rearward link, and releasably engageable means on said forward link and on said connecting link for limiting angular movement between said forward link and said connecting link about their pivotal connection to establish said frame in its erected condition.

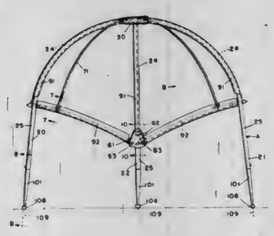
3,285,259
FOLDING SOFT TOP
Gordon B. Hale, Waukegan, Ill., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed Nov. 29, 1963, Ser. No. 326,887
19 Claims. (Cl. 135—6)



9. The combination of a boat hull, a soft top including a cover and a frame supporting said cover, said frame including a first link, means pivotally connecting one end of said first link to said boat hull, a second link pivotally connected at one end to said first link intermediate the ends thereof, a third link pivotally connected at one end to said second link at a point spaced from said one end of said second link, and means pivotally connecting the other end of said third link to said boat hull, and means for establishing said frame in an erected condition including a surface supported by and fixed relative to said boat hulls and means on one of said first and said third links for engagement with said surface.

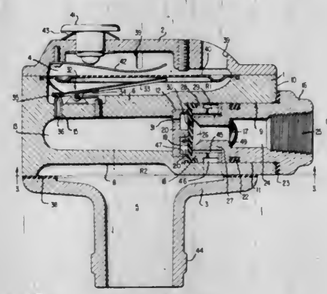
3,285,260
SUN SHADE
Blaine F. Rowe, 5031 Oliver Ave. So., Minneapolis, Minn.
Filed Nov. 12, 1964, Ser. No. 410,567
7 Claims. (Cl. 135—7.1)

1. A sun shade comprising:
(a) a frame including,
(b) a hinge structure,
(c) a number of elongated arcuate frame members arranged in vertical planes with their upper ends hingedly connected to said hinge structure,
(d) ground-engaging means on the lower ends of said frame members,
(e) spreaders between said frame members arcuate in form and constructed in two sections,
(f) hinge means between the adjoining ends of said sections,



(g) other hinge means between the outer ends of said sections and said frame members and
(h) arcuate stays pivoted to said hinge structure at their upper ends and connected to said spreaders at their lower ends and
(i) a cover overlying certain of said frame members and said stays and secured to certain of said frame members and spreaders.

3,285,261
BREATHING DEMAND REGULATOR
Gerald Chaney, Anaheim, Calif., assignor to Robertshaw Controls Company, a corporation of Delaware
Filed Dec. 21, 1962, Ser. No. 246,425
6 Claims. (Cl. 137—64)



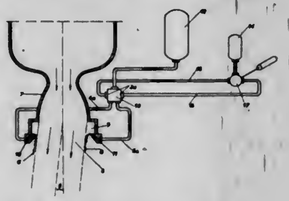
1. A breathing demand apparatus comprising a housing having an inlet passage and an outlet passage; normally closed pressure responsive valve means operable when open to place said inlet in communication with said outlet, said valve means including a movable sealing member extending across said inlet and a backup plate spaced from said sealing member; a surge chamber in said housing separated from said inlet by said pressure responsive valve means; restricted orifices in said member and said backup plate for passage of gas from said inlet to said surge chamber, said backup plate having a generally centrally located projection engageable with said sealing member and urging said sealing member towards a position closing said passage, said valve means being responsive to the pressure differential between said inlet and said surge chamber to open when the pressure in said inlet exceeds the pressure in said surge chamber; and means responsive to a reduction in pressure at said outlet for reducing the pressure in

said surge chamber to open said valve means and connect said inlet and outlet.

3,285,262
AERODYNAMIC OR HYDRODYNAMIC SERVO-VALVE, ESPECIALLY FOR USE FOR THE GUIDANCE AND STABILISATION OF ROCKETS

Adolphe Otton Gontier Ernst, Bois-le-Roi, Jean Paul Joseph Jardinier, Vitry-sur-Seine, and Janos Rona, Dammarie-les-Lys, France, assignors to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, Seine, France, a company of France

Filed Aug. 2, 1963, Ser. No. 299,495
Claims priority, application France, Aug. 7, 1962, 906,350
2 Claims. (Cl. 137—81.5)



1. A jet deflecting device comprising:

(a) a pure fluid valve comprising a deflection chamber having two outlet conduits, an inlet conduit opening into the chamber opposite the two outlet conduits, two auxiliary nozzles opening into the chamber on either sides of the inlet conduit, a sonic throat followed by a divergent nozzle in the inlet conduit and means for establishing a flow of fluid in the inlet conduit in order to form an incident jet of at least sonic speed issuing from the inlet conduit in the deflection chamber, and means for supplying the auxiliary nozzles selectively with fluid in order to form at least one auxiliary jet in the chamber to deflect the incident jet between the two outlet conduits;

(b) a convergent-divergent nozzle in each outlet conduit adjacent the deflection chamber;

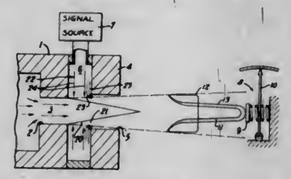
(c) a jet deflecting restricted nozzle at the end of each outlet conduit; and

(d) bends in the outlet conduits downstream of the convergent-divergent nozzles to fit the said conduits to the jet deflecting nozzles.

3,285,263
INPUT FLUID CONTROL APPARATUS

Bjorn G. Bjornsen, Milwaukee, and Thomas J. Lechner, Jr., Menomonee Falls, Wis., assignors to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin

Filed Nov. 1, 1963, Ser. No. 320,681
11 Claims. (Cl. 137—81.5)



1. In a fluid control system,

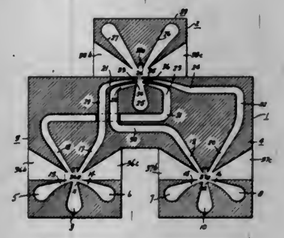
(a) means to establish a power stream having an axial flow path, said power stream having a single boundary filled with fluid to form a continuous stream, and

(b) means to establish a control signal uniformly and symmetrically impressed upon the power stream to control the momentum flux thereof without deflection of the power stream from the axial path as a result of said control signal.

3,285,264
FLUID-OPERATED DETECTORS

Willis A. Boothe, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

Filed Mar. 31, 1964, Ser. No. 356,103
18 Claims. (Cl. 137—81.5)



1. A fluid-operated beat frequency detector comprising:

a fluid control system including first and second stages of fluid control devices,

said fluid control system further including inlet means communicating with said first stage and outlet means communicating with said second stage,

means for applying to said inlet means first and second input fluid waves of first and second frequencies, respectively,

said first stage generating a flow of power fluid controlled in accordance with the concurrent presence of predetermined characteristics in said first and second input fluid waves,

interconnecting means for applying the controlled flow of power fluid from said first stage in accordance with a desired logic function as a flow of control fluid in said second stage,

said second stage generating a flow of power fluid controlled in accordance with the flow of control fluid so provided in said second stage, and

said outlet means receiving the controlled flow of power fluid from said second stage to provide output fluid waves having as frequency components the sum-frequency and difference frequency of the first and second input fluid waves.

3,285,265
FLUID AMPLIFIER DEVICES

Willis A. Boothe, Scotia, and Bert J. Czwakiel, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

Filed Apr. 17, 1964, Ser. No. 360,553
10 Claims. (Cl. 137—81.5)

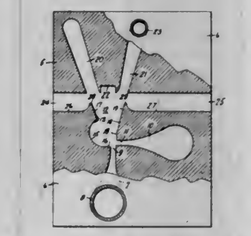
1. A fluid-operated control device comprising

a chamber defined by a pair of side walls, a first of said side walls having a first surface thereof parallel to the centerline axis of said device and a downstream second surface disposed in diverging relationship to the centerline axis at a relatively small angle, a second of said side walls disposed on the opposite side of the centerline axis from said first side wall and having a curved first surface and a downstream second surface disposed in diverging relationship to the centerline axis at a relatively large angle,

a first fluid passage terminating in a first fluid flow restrictor in communication with said first side wall for generating a first jet of fluid in a direction along the downstream surface of the first side wall,

a second fluid passage terminating in a second fluid flow restrictor in communication with said second side wall for generating a second jet of fluid in a direction generally perpendicular to the direction of the first jet and along the curved surface of said second side wall, the side walls of said chamber establishing regions which effect attachment of a jet of fluid to the downstream surface of said first side wall in the presence of a single one of the first and second jets to provide stable operation of the device, and impingement upon the downstream surface of said second side wall in the concurrent presence of the first and second jets wherein the greater angle of divergence of the downstream second surface of said second side wall insures that the jets will not be attached thereto and thereby permit switching of the fluid flow upon a subsequent absence of one of the two jets,

a pair of spaced fluid-receiving passages downstream from said side walls for selectively receiving mutually exclusive fluid signals from the generated jets of fluid,



a pair of oppositely disposed vent passages open at areas intermediate the side walls and receiving passages for relieving fluid pressure in said receiving passages, each vent passage defined by an upstream and downstream side wall wherein the upstream sidewall is provided with a surface extending in a downstream direction to form a lip member which provides sufficient length to the side walls of the chamber and aids in venting of any fluid tending to flow to a non-selected receiving passage thereby insuring exclusive flow within the selected of the receiving passages, and

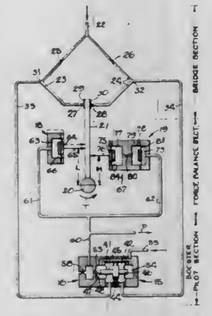
a barrier downstream from said chamber with an end face confronting said chamber, said barrier disposed symmetrically about the centerline axis of said device intermediate said fluid-receiving passages and comprising an indentation for receiving fluid from the generated jets and creating a vortex of the received fluid flowing in a direction to maintain attachment of a jet of fluid to said first side wall of said chamber in the presence of a single one of the first and second jets and maintain impingement of a jet to said second side wall in the presence of both jets said indentation being dimensioned such that at least a portion of fluid leaving the indentation enters the adjacent vent passages without becoming part of the vortex.

3,285,266
PNEUMATIC BRIDGE FORCE TRANSDUCER

Raymond R. de Zurik, St. Cloud, Minn., assignor to de Zurik Corporation, Sartell, Minn., a corporation of Minnesota

Filed Aug. 19, 1963, Ser. No. 303,055
4 Claims. (Cl. 137—86)

1. A force-to-pneumatic pressure transducer including a swingable input arm having a portion thereof mounted between a pair of opposed air discharge nozzles so that movement of said arm relative to said nozzles affects both the discharge of air therefrom and the pneumatic pressure upstream from said respective nozzles due to the application of an external force on said arm, comprising, in combination, means for amplifying the resulting differential pneumatic pressure upstream from said nozzles, negative feedback means for utilizing said amplified pressure to oppose said external force on said arm, positive feedback means for utilizing said amplified pressure to aid said external force on said arm, said negative feedback means exerting a force on said arm through a greater effective lever arm than said positive

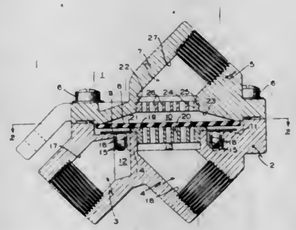


feedback means, damping means associated with said positive feedback means for delaying the application of the force on said arm from said position feedback means with respect to said negative feedback means, and for damping movements of said arm, said delayed force application being integral to provide a reset function when applied to said positive feedback means and derivative to provide a rate function when applied to said negative feedback means, and other means for utilizing said amplified pressure as a linear indication of the external force applied to said input arm.

3,285,267
QUICK RELEASE VALVE DEVICE

John A. Groth, Jeannette, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania

Filed Mar. 13, 1964, Ser. No. 351,781
3 Claims. (Cl. 137—102)



1. A quick release valve device, comprising:

(a) a body member having a valve chamber therein,

(b) an exhaust port and a delivery port coaxially disposed in one side of said chamber, said exhaust port disposed concentrically within said delivery port,

(c) a supply port disposed in the opposite side of said chamber,

(d) an exhaust valve seat associated with said exhaust port, a delivery valve seat associated with said delivery port, and a supply valve seat associated with said supply port,

(e) groove means radially disposed in said delivery valve seat communicating the surface of said delivery valve seat with the interior of said delivery port,

(f) a flexible disc valve disposed within said chamber and floatingly movable from a first position on said one side of said chamber simultaneously engaging both said exhaust valve seat and said delivery valve seat to a second position on said opposite side of said chamber engaging said supply valve seat, said disc valve member having a diameter greater than said delivery valve port but less than the diameter of said chamber,

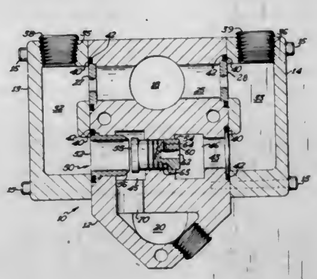
(g) rigid means associated with said delivery valve seat for preventnig extrusion of the disc valve member into said grooves when a preponderance of pressure in said supply port over that in said delivery port forces said disc valve member to seat upon said exhaust valve seat and said delivery port seat whereby free flow of fluid is permitted around the disc valve member through said grooves into said delivery port.

3,285,268

FLOW DIVIDER VALVE

Samuel B. McClocklin, Owatonna, Minn., assignor to The Owatonna Tool Company, Owatonna, Minn., a corporation of Minnesota

Filed Apr. 22, 1964, Ser. No. 361,778
18 Claims. (Cl. 137—115)



1. A flow divider valve, comprising:

(a) a valve body having an inlet port and a pair of outlet ports therein;

(b) a pair of equal sized passages positioned in said body and connected to said inlet port;

(c) a pair of orifice means positioned respectively in said passages;

(d) valve means including a valve seat and a valve closure member having an exposed surface to said valve seat equal to the surface on said valve closure member remote from said valve seat;

(e) one of said passages in said valve body being connected to one of said outlet ports and including said valve means positioned intermediate the orifice means therein and said one of said outlet ports to control flow therethrough;

(f) the other of said passages being connected to the other of said outlet ports and including said surface on said valve closure member remote from said valve seat;

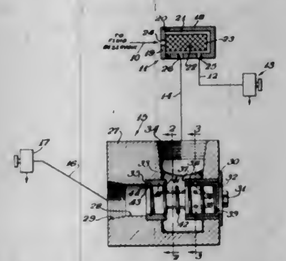
(g) said valve means being positioned by the flow pressure of each of said passages to maintain equal pressures in said passages.

3,285,269

FLOW RESTRICTING VALVE SAFETY DEVICE FOR FLUID FILTER

David A. Harper, Bridgeview, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of New Jersey

Filed Oct. 7, 1963, Ser. No. 314,166
7 Claims. (Cl. 137—118)



7. A flow-restricting device for controlling the flow of fluid to a hydraulic lift pump, comprising: a casing having a bore fashioned therethrough, and having a first port opening therein communicating with said bore and adapted for connection a reservoir source of fluid, and a second port opening formed at one end of and in communication with said bore and adapted for connection to a hydraulic lift pump; a tubular sleeve member disposed in said bore and fashioned with a plurality of circumferentially spaced and axially extending apertures therein arranged to accommodate full flow of fluid therethrough between said port openings; a hollow piston having one open and one closed end thereof and being disposed for slidable movement within said sleeve to close said sleeve apertures, and having an outwardly facing surface on said closed end exposed to atmospheric pressure and normally aligned with an outer end edge of said bore; means providing a closure abutment on said casing at one end of said bore to prevent movement of said sleeve and said piston outwardly beyond the end of said bore; said piston having a plurality of circumferentially spaced, radially extending small-diametered openings axially spaced intermediate the ends thereof; means forming an abutment on the interior of said sleeve proximate said apertures therein; spring means disposed with one end thereof seated against said sleeve abutment and having another end at said spring extending into said hollow piston and abutting an interior surface of said closed end portion and being reactive for normally maintaining said piston in position such that said sleeve apertures remain unobstructed and open to full fluid flow therethrough while the small-diametered openings of said piston are closed to the passage of fluid; said piston being operable responsive to an increase in vacuum in said first port opening for slidable axial movement within said sleeve for interrupting the flow of fluid through said sleeve apertures and concomitant therewith opening said small-diametered fluid openings to the passage of a limited flow of fluid therethrough to said second port opening.

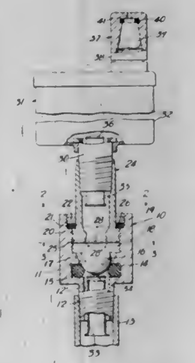
3,285,270

ADAPTOR FOR HEATING SYSTEM AIR VALVES

Glenn B. Klinefelter, Mountainside, N.J., assignor to Gorton Heating Corporation, Cranford, N.J., a corporation of New York

Filed Dec. 11, 1963, Ser. No. 329,693
5 Claims. (Cl. 137—202)

1. An adaptor for positioning between the tubular discharge of a radiator and an air valve controlling said radiator discharge, said adaptor comprising a casing having a threaded nipple at one end for coupling with the tubular radiator discharge, a buoyant ball valve mounted and movable in a chamber of said casing, a sleeve in threaded engagement with the casing and movable in the chamber for movement of the ball valve into seated position in said casing, said sleeve having an internal thread at an upper reduced outer end thereof for detachably coupling an air valve with said sleeve, the inner end portion of the sleeve opening directly into the



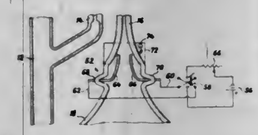
chamber of said casing in an elliptical seat for checking movement of the ball valve into open position in one normal position of said sleeve in said casing in retaining communication between said chamber and a passage extending through said sleeve, an O-ring seat for said ball valve in the lower portion of the chamber of said casing, and a liquid feed tube supported in said chamber and arranged in said nipple, said liquid tube projecting beyond the lower end of said nipple.

3,285,271

LOW PRESSURE GAUGE

Wallace Samuel Kreisman, Malden, Mass., assignor to GCA Corporation, a corporation of Delaware

Original application Dec. 5, 1962, Ser. No. 242,543, now Patent No. 3,217,545, dated Nov. 16, 1965. Divided and this application Apr. 23, 1965, Ser. No. 459,971
3 Claims. (Cl. 137—251)



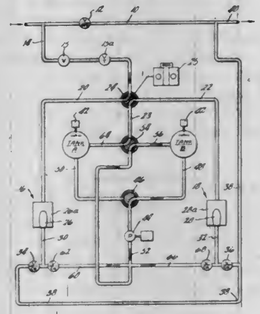
1. A valve comprising a conduit for a first fluid, a pair of electrodes extending into said conduit for establishing an electric field transverse to and within said conduit, an electromagnetic means adjacent said electrodes for establishing a magnetic field perpendicular to said electric field and to the axis of said conduit, a pool of conductive fluid communicating with said conduit adjacent said electrodes and electromagnetic means, means comprising at least a source of direct current for energizing said electrodes and said electromagnetic means to draw a plug of conductive fluid from said pool into said conduit adjacent the electrodes and electromagnetic means to plug said conduit to flow of said first fluid therethrough.

3,285,272

CONTAMINATION SYSTEM

Harold R. Messenger, Hazardville, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Feb. 23, 1965, Ser. No. 434,580
16 Claims. (Cl. 137—256)



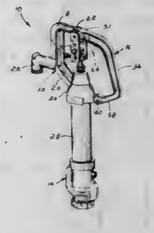
1. Mechanism for introducing contamination into a high pressure fuel line comprising a pressure reducing orifice in said line, two accumulators, each having an outer cylinder and an inner expansible bag, conduit means connecting each bag to said fuel line downstream of said orifice, a check valve between each bag and said fuel line preventing the flow of high pressure fuel from said line into said bags, conduit means including a two-position valve for alternately connecting the cylinders of said accumulators with said fuel line upstream of said orifice, means including a timer for operating said valve between its two positions, a first tank adapted to contain a slurry of fuel and contaminates, a slurry pump having an inlet and an outlet, conduit means connecting said pump inlet and said pump outlet to said slurry tank, conduit means connecting said pump outlet to the interiors of said bags, check valves in the conduit means between said pump outlet and each bag preventing slurry from flowing back toward said pump, a second tank, and conduit means including manually operative valve means for disconnecting said first tank and connecting said second tank to said pump inlet and said pump outlet.

3,285,273

LEVER ACTUATING ASSEMBLY FOR A HYDRANT

Wayne B. Noland, Avon Lake, Iowa, assignor to Woodford Manufacturing Company, Des Moines, Iowa, a corporation of Iowa

Filed Aug. 20, 1963, Ser. No. 303,342
6 Claims. (Cl. 137—272)



1. A hydrant, comprising,

an outlet head including a body portion with arms spaced apart in a common plane and extending outwardly therefrom in a common direction;

a valve stem operatively connected to a valve means, said stem being in moveable engagement with one

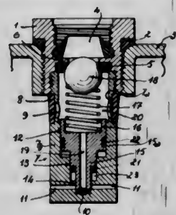
of said arms and a portion of said stem extending into the space between said arms;

a handle member having one end pivotally connected to the other arm, said one end having a portion extending towards said first arm when said handle is in a closed position;

a pair of link plates having one end positioned on opposite sides of said handle portion and pivotally connected thereto, the other end of said plates being pivotally connected to said valve stem portion; and

locking means adapted to extend between said plates to limit pivotal movement of said handle by said handle portion abutting against said locking means upon said handle being pivoted towards an open position.

3,285,274
VALVE UNIT FOR LIQUEFIED GAS CONTAINERS
Daniel Bouvier, Lyon, France, assignor to Application des Gaz, Paris, France, a French joint-stock company
Filed May 26, 1964, Ser. No. 370,248
Claims priority, application France, June 10, 1963, 43,720
3 Claims. (Cl. 137—322)



1. In a valve unit for liquefied gas-cartridges having an obturating ball urged against a seat by the simultaneous action of gas pressure in the cartridge and a helical return spring. the combination of an axially perforated differential piston slidably mounted within a socket adapted to gas-tightly cooperate with a small-diameter-end of said differential piston by means of a seal closure means, the big-diameter-end of said differential piston being permanently connected to the inner space adjacent said obturating ball, and receiving gas from the inner space of said gas-cartridge only after displacement of the said obdurating ball from its seat and the gas from the inner space of the cartridge displacing said piston away from said closure for discharging the gas from said cartridge.

3,285,275
LIQUID LEVEL DETECTOR
Robert W. Couffer, Jr., Deerfield, and Joseph M. Algino, Chicago, Ill., assignors to The Dale Valve Company, Morton Grove, Ill., a corporation of Illinois
Filed Jan. 15, 1964, Ser. No. 337,929
5 Claims. (Cl. 137—392)

1. A washing machine in combination with a thermistor water level control system for detecting and controlling water level in a water chamber comprising:

a plurality of negative thermistors mounted at different levels within a water chamber in the washing machine,

a selector having a plurality of switches,

each selector switch being connected to one thermistor and being normally open,

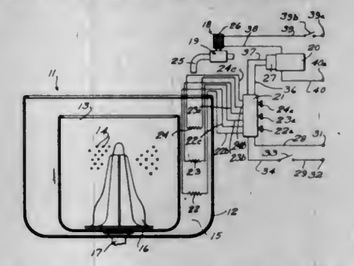
a normally closed mixing valve connected to a water supply and adapted to supply water to the washing machine water chamber,

a solenoid to open and close said mixing valve,

said solenoid being connected to the thermistors,

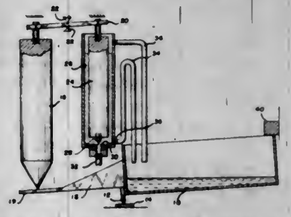
means to supply power to the thermistors through the selector switches.

an electric circuit including one only of said thermistors as selected by the said selector to transmit current to the said solenoid as a function of ambient temperature of the said selected thermistor



whereby a decrease in ambient temperature of the selected thermistor, which occurs when the water within the water chamber attains such a level as to surround the said selected thermistor, results in decreased current flow in the circuit causing the normally closed mixing valve to shut off the water supply to the water chamber.

3,285,276
NON-MODULATING VALVE
Pieter W. Schipper, Elm Grove, Wis., assignor to Atwater-General Corp., Watertown, Wis., a corporation of Wisconsin
Filed Feb. 14, 1964, Ser. No. 345,010
8 Claims. (Cl. 137—408)



1. A non-modulating valve system comprising a chamber having

an inlet

a float positioned in said chamber and controlling the flow of water through said inlet,

said float having a different effective weight depending on the amount of water in the chamber,

a siphon tube connected to said chamber to drain water from said chamber after it is filled and to empty the chamber of water whenever the inlet is closed,

a container positioned to receive the water from said siphon,

a pivot member,

a lever arm connected to said container and lying on said pivot member,

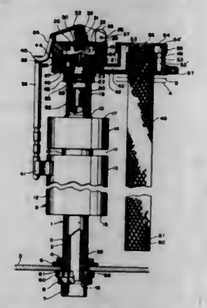
a counterweight mounted on said lever arm to tilt the container from a first to a second position,

a second pivot member,

a second lever arm pivoted on said second pivot member and connecting said counterweight and said float to provide an opposite motion to said float,

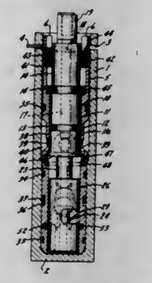
whereby on removal of water from said container, the counterweight will tip the container and pull the float away from the inlet allowing water to enter the chamber, reducing the effective weight of the float on the counterweight causing the counterweight to pull the float to a full open position, the float being pushed to a closed position when the weight of the water in the container is sufficient to move the container from the second to a first position in opposition to the weight of the counterweight, the siphon tube draining the water from the chamber after the inlet has been closed.

3,285,277
TOILET TANK SUPPLY VALVE ASSEMBLY
Charley L. Goldtrap, Englewood, Colo., assignor to Twentieth Century Products Corp., Englewood, Colo.
Filed Nov. 15, 1963, Ser. No. 327,863
8 Claims. (Cl. 137—414)



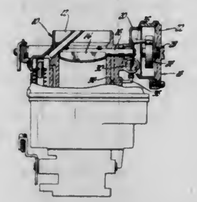
1. A toilet tank supply valve assembly comprising, in combination with a toilet tank having a bottom wall, a tubular tank filling casing of open mesh wall form open at the opposite ends thereof, means mounting said casing in said tank in a generally upright attitude with the lower end of said casing in closely spaced relation to said bottom wall, and means for delivering water to the upper end of said casing, said casing comprising threads of material wound in opposite directions to each other.

3,285,278
R CARTRIDGE SEAL DESIGN AND ARRANGEMENT
Webster D. Corlett, River Forest, Ill., assignor to Standard Screw Company, Bellwood, Ill., a corporation of Illinois
Filed Jan. 20, 1964, Ser. No. 338,800
3 Claims. (Cl. 137—454.2)



3. In combination in a valve assembly comprising a valve housing, a cylindrical sleeve member mounted within said housing, fluid inlet and an outlet means providing for fluid flow through said housing and sleeve, said sleeve having an annular groove in its inner surface and a pair of spaced valve members mounted within said sleeve for rotation and reciprocation, a sealing member mounted in said groove, said sealing member being generally cylindrical and formed of flexible material, said sealing member being shaped to define adjacent one end thereof an internal retaining portion of substantially the same diameter as the inner diameter of said sleeve and being provided adjacent its other end with an inwardly directed flange defining a terminal valve seat; said valves being spaced apart such distance that only one of said valves is in position to cooperate with said sealing member at a time, of said valves one being within said retaining portion in retaining relation therewith and out of contact with said flange in one position of valve adjustment, the other of said valves being seated against said flange in another position of adjustment and out of contact with said retaining portion.

3,285,279
MEANS TO PREVENT GUMMING AND STICKING OF AUTOMATIC CHOKE MECHANISM
Gifford F. Rosbrook, Rochester, N.Y., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 19, 1963, Ser. No. 324,705
3 Claims. (Cl. 137—483)



1. An automatic choke mechanism for an internal combustion engine having a wall defining an air induction passage, said choke mechanism including a housing mounted on said wall exterior of said passage and enclosed by a portion of said wall, a shaft journal passage in said portion of said wall extending from said housing to said induction passage, a shaft journaled in said journal passage, a choke valve disposed in said induction passage and secured to said shaft for rotational movement therewith, choke operating mechanism disposed within said housing and including a piston disposed in a cylinder, said piston being operatively connected to said shaft, means connecting said cylinder to a source of engine vacuum for operating said piston and shaft, said piston being loosely disposed in said cylinder whereby said housing is subjected to subatmospheric pressures tending to create a potential for fluid flow along said shaft from said induction passage to said housing, and means reducing said potential comprising a by-pass passage extending from an intermediate portion of said journal passage, said by-pass passage being connected to a source of vacuum whereby a potential for fluid flow along said shaft is created from said induction passage only to said by-pass passage.

3,285,280
FLUID PRESSURE REGULATOR
Austin U. Bryant, Walnut Creek, Calif., assignor to Grove Valve and Regulator Company, Oakland, Calif., a corporation of California
Filed Dec. 18, 1964, Ser. No. 419,368
10 Claims. (Cl. 137—484.8)

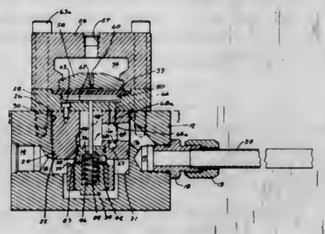
1. A fluid pressure regulator comprising:

a valve body,

means forming axially spaced inlet and outlet flow passages in said body,

means adapting said outlet flow passage for connection to a pipe line for fluid to be regulated,

means forming a valve chamber in said body communicating transversely with said flow passages,
a valve seat in said valve chamber in a plane intermediate said inlet and outlet flow passages,
a valve member movable in said body into and out of engagement with said valve seat,
a pressure-responsive member in said valve body,
means driven by said pressure-responsive member when it is moved in one direction to move said valve member out of engagement with said valve seat,

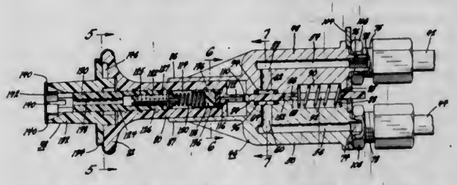


means applying a fixed force against one side of said pressure-responsive member to urge it in said one direction, and
a sensing duct through said valve body opening into the wall of said outlet passage which is closest to said valve seat, plug means closing off said sensing duct at the surface of said valve body, and
second duct means connected between said sensing duct and the other side of said pressure-responsive member.

3,285,281
PLURAL POSITION CONTROL VALVE WITH BUILT-IN RELIEF VALVE

John F. Pribonic and George W. Jackson, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed July 29, 1963, Ser. No. 298,310
4 Claims. (Cl. 137—596)

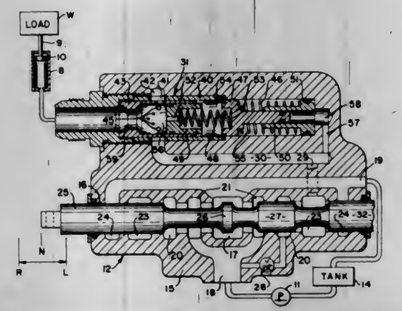


1. In a fluid control valve, body means including first and second housing portions having an interface, said first and second housing portions forming an inlet passageway and an outlet passageway respectively, said inlet passageway and said outlet passageway intercommunicating at a common connection, said housing portions forming an exhaust passageway at the interface thereof, a slide valve element supported by said housing portions for reciprocable movement relative thereto, seal means supported by said housing portions in sealing engagement with opposite sides of said valve element, resilient means urging said slide valve element into an equilibrium position within said housing portions where it cooperates with said seal means to block fluid flow through said passageways and fluid leakage outwardly of said body means, an actuator element supported by said housing portions for reciprocation relative thereto operatively associated with said slide valve element for moving it into first and second unbalanced positions in opposition to said resilient means, said slide valve element including means for communicating said inlet and outlet passageways therein for inflow of pressurized fluid from said inlet passageway through said outlet passageway and means for communicating said outlet passageway and said exhaust passageway for outflow of pressurized fluid from said outlet passageway through said exhaust passageway upon movement thereof into said first and second unbalanced portions respectively.

3,285,282
FLOW CONTROL VALVE FOR FLUID MOTORS AND THE LIKE

George J. Martin, Lyndhurst, Ohio, assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Oct. 22, 1964, Ser. No. 405,675
11 Claims. (Cl. 137—596)



1. A flow control valve comprising a housing having a passage therethrough, a flow control sleeve means having an aperture through the wall thereof disposed in said housing for movement in one direction from a position whereat said aperture is in direct open alignment with said passage to effect a progressive closing of said aperture as said aperture is moved out of alignment with said passage, means within said housing defining a chamber having restricted fluid communication with fluid pressure upstream of said aperture, a fluid pressure actuated plunger in said housing having its respective ends exposed to fluid pressure downstream of said aperture via a branch passage leading to one end of said plunger and to fluid pressure in said chamber, and spring means biasing said plunger and sleeve means in a direction maintaining said aperture in such direct open alignment with said passage, said chamber constituting a cushioning chamber to resist sudden changes in fluid pressure therein.

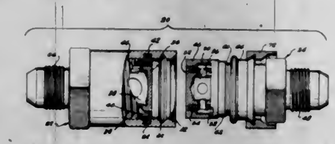
3,285,283
QUICK DISCONNECT COUPLINGS

John H. Calvin, 2919 Nebraska Ave., Montecito, Calif.

Filed Feb. 10, 1964, Ser. No. 343,555
16 Claims. (Cl. 137—614.03)

1. A quick disconnect coupling comprising:
a male coupling part having a generally cylindrical forward end,
a female coupling part having a generally circular opening through its forward end receiving the forward end of said male part,
said male part having a circumferential groove in its external surface opening radially toward said female part, and said female part having a circumferential groove in its internal surface opening radially toward said male part,
the groove in one of said parts comprising a locking groove and the groove in the other part comprising a stepped lock ring containing groove having a relatively shallow forward end and a relatively deep rear end and an annular rearwardly presented thrust shoulder at the forward end of said containing groove

disposed in a transverse plane of said other part, the shallow end of said containing groove defining a coaxial, cylindrical, radially presented locking shoulder having an axial length approximating the axial width of said locking groove,
a radially yieldable lock sleeve extending circumferentially of said other part within said containing groove and having a radially projecting locking bead at its forward end engaging in said locking groove, the rear end of said lock sleeve being located externally of said female part,
said coupling parts being relatively axially movable toward one another to unlocked positions, wherein the deep end of said containing groove is radially aligned with said locking groove, and said coupling parts being relatively axially movable away from one another to locked positions, wherein said locking shoulder is radially aligned with said locking groove,
the radial depth of the shallow end of said containing groove being less than the radial cross-sectional dimension of the forward end of said lock sleeve at said locking bead and the radial depth of the deep end of said containing groove being greater than said radial cross-sectional dimension,



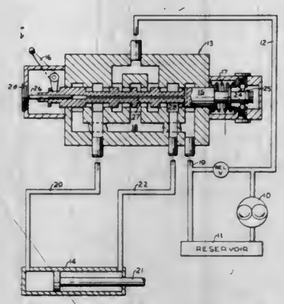
said locking bead having a normal diameter to snap into said locking groove when said coupling parts are assembled to said unlocked positions and said locking bead is radially aligned with said locking groove,
the forward wall of said locking groove and the rear surface of said locking bead comprising first coacting camming surfaces which are effective to cam said locking bead radially to a given diameter and out of said locking groove upon axial thrust of said coacting surfaces against one another, and the forward end surface of said one coupling part and the forward surface of said locking bead comprising second coacting camming surfaces which are effective to cam said locking bead radially to said given diameter upon axial thrust of said second coacting camming surfaces against one another, and
means coacting between said other coupling part and the rear end of said lock sleeve to limit rearward movement of said lock sleeve relative to said other coupling part to a retracted position wherein said locking bead is located in the deep end of said containing groove.

3,285,284
HYDRAULIC VALVE NEUTRALIZER

John A. Junck and Joseph Kokaly, Joliet, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed Sept. 16, 1964, Ser. No. 396,985
1 Claim. (Cl. 137—624.27)

In a spool valve having resilient detent mechanism for holding the spool in an open position, means to effect release of said detent when the pressure in the valve exceeds a predetermined value, comprising an axial passageway in said spool extending inwardly from one end of the spool to a point adjacent the other end of the spool, a valve housing enclosing said one end, the portion of said passageway adjacent said one end being enlarged and slidably receiving a piston therein, said passageway at said point being joined by a radial passageway which is in communication with fluid under pressure only when the valve is in open position, an opening in said housing in alignment with said piston and a removable plug closing said opening, said resilient detent mechanism being at said other end of the spool and a lever for operating the valve being at said one end of said spool, said slidable piston being arranged to project from one end of said

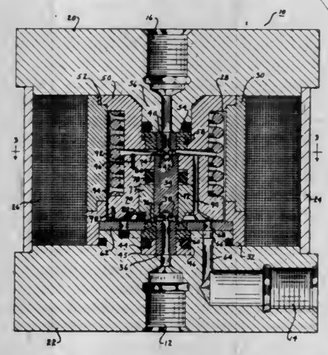


spool into engagement with said plug to effect release of said detent when pressure is communicated to the end of the piston in the spool, said valve controlling the flow of fluid to a piston operated device, and the pressure for releasing the detent is communicated from the device when the piston thereof reaches the end of its stroke and pressure builds up as a result thereof.

3,285,285
VALVE

Rolf Bielefeld, St. Joseph, Mich., assignor to Koontz-Wagner Electric Company, Inc., South Bend, Ind., a corporation of Indiana

Filed Feb. 27, 1964, Ser. No. 347,870
8 Claims. (Cl. 137—625.65)



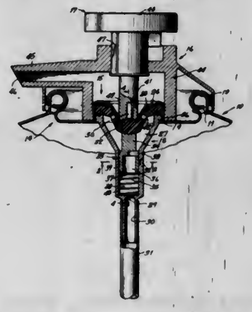
1. A three-way solenoid valve, comprising two end plates with fluid passages therethrough parallel to and in alignment with one another, a coil between said end plates, a shroud between said end plates surrounding said coil, a hollow cylinder of non-magnetic material within said coil and forming a valve chamber, a shaft means extending through said chamber from one end plate to the other, each end of said shaft having a passage connecting the passage in the respective end plate with said chamber, an annular valve seat of resilient material around each end of said shaft adjacent the respective end plate, an annular valve element mounted on said shaft and operable in one direction by energization of said coil for axial movement to and from said valve seats, an annular lip on each end of said element for seating on said valve seats, passage means through said element connecting the chamber at opposite

ends of said element whereby the opposite ends of said element are subjected to substantially the same fluid pressures, a coil spring around said shaft operatively connected to said valve element for moving said element in the direction opposite to the action of said coil on said element, an annular recess in one of said end plates, a retainer plate between said chamber and said recess having a plurality of ports therethrough, and a passage connected to said recess and extending through the respective end plate.

3,285,286
DISPENSING VALVE WITH CONSISTENCY CONTROL

Theodore P. Jakubowski, Clifton, N.J., assignor to Shulton, Inc., Passaic, N.J., a corporation of New Jersey

Filed Nov. 8, 1963, Ser. No. 322,370
4 Claims. (Cl. 137—628)



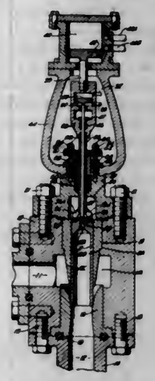
1. A valve for a receptable containing a fluid to be dispensed therefrom by a gaseous medium under pressure confined within the receptacle, which valve comprises a body having an upper chamber portion, a tubular lower chamber portion extending downwardly from said upper portion and formed with a first inlet at its lower end for the fluid and with a second inlet in its side wall at its upper end for the gaseous medium, and a valve seat extending across said upper chamber portion formed with an outlet facing said lower chamber portion; a movable valve member positioned between said upper chamber portion and said valve seat for engaging said valve seat and having a formation for closing said valve seat outlet; a piston slidably mounted in said lower chamber portion having passageway means including a lower inlet and an upper outlet for establishing fluid flow communication between said upper chamber portion and said first valve body inlet when said piston is in upper and lower valve opening positions and for establishing fluid flow communication between said second valve body inlet and said upper chamber portion only when said piston is in a lower valve opening position; a spring for urging the upper end of said piston against the underside of said valve member; and valve operating means for unseating said valve member and effecting downward movement of said piston.

3,285,287
PRESSURE EQUALIZING PLURAL VALVE STRUCTURE

John R. Curran, North Scituate, R.I., assignor, by mesne assignments, to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland

Filed July 17, 1963, Ser. No. 295,703
14 Claims. (Cl. 137—630)

1. In a valve construction, a valve housing having an inlet chamber, an outlet chamber, a pilot chamber and a first valve seat between said inlet and outlet chambers; a movable valve element seatable on said first seat; said valve element having a portion thereof defining a wall portion of said pilot chamber and having a portion thereof defining a pilot valve seat for communicating said pilot chamber with said outlet chamber; a pilot valve element in said pilot chamber seatable on said pilot valve seat; first means defining a restricted passageway communicating said inlet chamber to said pilot chamber; second

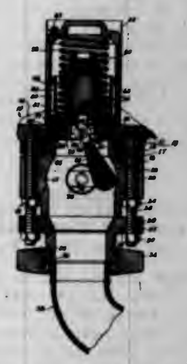


means mounted on said housing for operating said pilot valve element independent of the pressure of the fluid controlled by said valve construction; and third means mounted on said housing for operating said movable valve element to any desired position from fully open to fully closed, said third means being operable independently of said second means and independently of the pressure of the fluid controlled by said valve construction.

3,285,288
SAFETY SHUT-OFF VALVE

Donald W. Irwin and Philip L. Johnson, both of Marshalltown, Iowa, assignors to Fisher Governor Company, a corporation of Iowa

Filed May 5, 1964, Ser. No. 364,956
5 Claims. (Cl. 137—630.15)



1. A high capacity shut-off valve for a large volume liquefied gas tank comprising a valve body adapted to be affixed in an opening in said tank; a tubular valve cage affixed to said body and extending into said tank, there being a flow path formed in said valve body and valve cage communicating with the interior of said tank; means defining an annular main valve seat between said valve

body and said valve cage; a valve plug reciprocably disposed in said valve cage and having a main valve element thereon for seating against said valve seat to terminate fluid flow through said flow path; spring means biasing said valve element into engagement with said valve seat; equalizing valve means carried in said valve plug, comprising means defining a bleed passage in said valve plug, a bleed valve for closing said bleed passage and resilient means biasing said bleed valve to the closed position; actuating means including a crank arm operatively connected to said equalizing valve means for opening the bleed valve prior to moving the main valve element from engagement with said valve seat to equalize pressures on both sides of the main valve element, and thereby permit opening of the main valve element against only the force of said spring means, thereby facilitating opening of the main valve element; a sleeve-like ring disposed about the valve plug in close proximity to said main valve element for protecting the main valve element from erosion in use, and means for biasing said sleeve-like ring toward said valve seat, whereby said sleeve-like ring will seal against said valve seat.

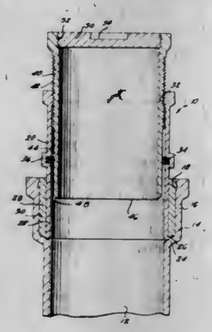
ERRATUM

For Class 138—45 see:
Patent No. 3,285,003

3,285,289
ADJUSTABLE CLEAN-OUT MEANS

Paul L. Titus, Garden Grove, Calif.
(14081 Magnolia—Space-25, Westminster, Calif.)

Filed Apr. 20, 1964, Ser. No. 360,975
3 Claims. (Cl. 138—89)

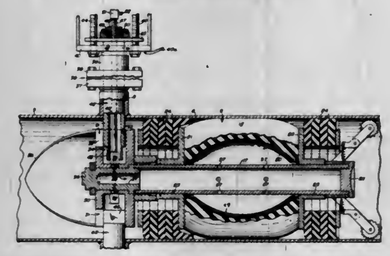


2. Adjustable clean-out means for use in a sanitary plumbing system comprising in combination, a stationary tubular pipe section having a lower end portion to be contiguously connected to the plumbing system, said pipe section also having an upper end portion formed with internal fastening threads and an intermediate portion formed with an internal annular recess having a generally square cross-section, a tubular clean-out member inserted within the upper end portion of said pipe section to extend thereabove having a generally uniform external surface at the lower end portion and formed with external fastening threads thereabove for engagement with the threads in said pipe section, a removable clean-out plug in the upper end of said clean-out member and an O-ring positioned in said annular recess of said pipe section having a portion formed complementally of said generally square cross-section of said recess, said O-ring being formed of resilient material and engageable by said clean-out member to effect a hermetic seal between said pipe section and the uniform surface of said clean-out member, said clean-out member being further formed with a beveled lower end for sliding engagement into said O-ring upon insertion of said clean-out member in said pipe section.

3,285,290
METHOD AND APPARATUS FOR PLUGGING PIPELINES

Bill Morrison, Tulsa, Okla., assignor to Benson Electric Company, Superior, Wis., a corporation of Wisconsin

Filed Apr. 23, 1962, Ser. No. 189,506
15 Claims. (Cl. 138—97)



1. A method of isolating and simultaneously evacuating a section of pipeline, comprising installing externally controlled plug stopping devices in the wall of said pipeline at points defining the upstream and downstream extremities of said section, installing an auxiliary, externally controlled plug stopping device in the wall of said pipeline at a point adjacent to but spaced downstream from said upstream stopping device, independently introducing first and second portable, radially expandible plugs into said pipeline anterior to said upstream extremity, sequentially transporting said plugs through said pipeline by means of the fluid flowing therein, stopping said first plug by actuating said auxiliary plug stopping device, stopping and expanding said second plug at the upstream extremity of said section, releasing said first plug from said auxiliary stopping device, introducing into said section behind said first plug, an inert pressure fluid, transporting said first plug through said second under the force of said inert fluid to thereby evacuate the fluid in advance thereof, stopping and expanding said first plug at the downstream extremity of said section, and releasing the inert fluid from the isolated section.

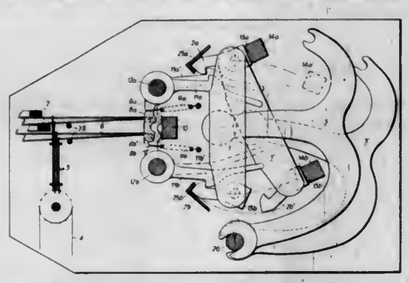
3,285,291
DRIVE-MECHANISM IN DOUBLE LIFT DOBBIES

Marcel Favre, Faverges, France, assignor to Gebr. Staubli & Co., Horgen, Zurich, Switzerland, a corporation of Switzerland

Continuation of application Ser. No. 256,894, Feb. 7, 1963. This application Oct. 1, 1965, Ser. No. 498,192
7 Claims. (Cl. 139—68)

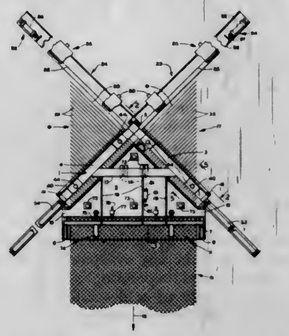
1. For use in a loom having pattern means comprising instructions to control a top shed position and a bottom shed position, a double lift dobby comprising jack levers operable to a first and a second operative position corresponding to positions for effecting control of a top shed position and a bottom shed position, a baulk for each jack lever for actuating a respective jack lever to said two operative positions alternately and having two opposite end portions each operable to two operative positions, rail means having flat surfaces cyclically actuated between two positions for pushing on the opposite end portions alternately for actuating each baulk between said two operative positions, means for driving said rail means in operation, paired arrester hooks pivotally mounted for engaging

other pivoted hook means mounted on said baulk means for holding a respective end portion of said baulk to hold it in one of said positions, and for freeing said end portions to allow said baulk to move to the other of said



positions and said other pivoted hook means on said baulk presenting substantially flat engagement surfaces for said rail means flat surfaces to eliminate sliding frictional contact between the engaging surfaces.

3,285,292
MACHINE FOR WEAVING DIAMOND MESH WIRE FENCING AND PARTITION PANELS
Marshall J. Crouch, 353 Crestlake Drive, San Francisco, Calif.
Filed Jan. 7, 1964, Ser. No. 336,283
4 Claims. (Cl. 140—9)



1. In a machine for weaving diamond mesh wire fabric of the kind described in which shed-wires project from a prewoven portion of such fabric in a pair of rows extending along a pair of horizontally extending lines disposed at substantially a right angle to each other, within which angle said woven portion is positioned, and alternate pairs of which shed wires are adapted to be sprung oppositely from points along said lines for forming a pair of sheds extending parallel to said lines;
(a) a support for supporting said woven portion in a substantially horizontal plane with said shed wires projecting substantially horizontally outwardly of said portion;
(b) shed-forming means respectively above and below said plane and said rows of shed wires supported for movement from inoperative positions spaced above and below said shed-wires toward and past each other to shed forming positions in engagement with alternate pairs of said shed-wires for springing said alternate pairs of shed wires oppositely to form said sheds and back to said inoperative positions;
(c) a pair of wire-engaging means respectively supported at different levels at the adjacent ends of the sheds adapted to be formed by said shed-forming means for simultaneous movement through said sheds into holding engagement with one of the ends of a pair of horizontally disposed weft wires adapted to be supported in positions projecting from the opposite ends of said sheds and back to said adjacent ends of said sheds for drawing and weft wires into said sheds from one of their ends; and
(d) means for simultaneously so moving said wire engaging means;
(e) said support including stationary means on which said portion of said fabric is adapted to be supported for horizontal movement thereof in one direction in which said shed-wires are in trailing positions;
(f) fabric-engaging means supported for movement into mesh openings in said portion of said fabric when said portion is on said stationary means and during movement of said shed-forming means to said shed-forming positions and for movement to said inoperative positions after said weft wires have been drawn into said sheds by said wire-engaging means, and means supporting said fabric-engaging means for said movement;
(g) means connected with said fabric-engaging means for so moving the latter into and out of said mesh openings;
(h) means supporting said fabric-engaging means for horizontal movement in said one direction in which said shed-wires are in said trailing position when said fabric-engaging means are in said mesh openings and after said weft wires have been drawn into said sheds by said wire-engaging means, for thereby moving said shed-wires to position for forming sheds for an additional pair of weft wires, and
(i) reciprocably movable fluid pressure actuatable means operatively connected with said fabric-engaging means for moving them horizontally in said one direction when in said mesh openings, and for moving them in the opposite direction when said fabric-engaging means are in position out of said mesh openings.

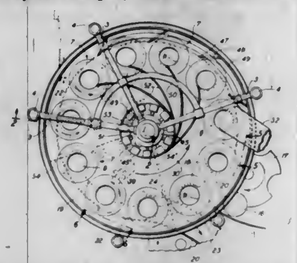
3,285,293
FILAMENT FORMING
Wilfrid G. Matheson, Marblehead, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Continuation of abandoned applications Ser. No. 674,364, July 26, 1957, and Ser. No. 257,207, Feb. 8, 1963. This application Jan. 3, 1966, Ser. No. 520,036
8 Claims. (Cl. 140—71.5)



1. The method of fixing the shape of a tungsten wire coil having ends disposed therein, the steps which comprise: placing said coil on a tightly fitting refractory metal mandrel with the ends of said coil being free, heating said coil to a temperature between about 2200° K. and 2800° K. while on said mandrel, cooling said coil, and thereafter removing said refractory mandrel and mounting the coil in a lamp bulb to form a sealed lamp.

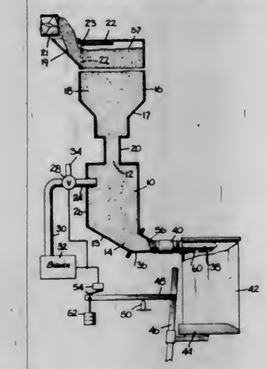
3,285,294
CAN FILLING MACHINE AND METHOD
Salvador A. Minera, 1500 Judah St., San Francisco, Calif.
Filed Aug. 1, 1963, Ser. No. 299,382
16 Claims. (Cl. 141—1)

1. The method of filling a receptacle having an upper open end with discrete objects that comprises the steps of:
(a) filling said receptacle through said upper open end with said objects to a level above that of said open end; then,
(b) removing from said receptacle substantially only said objects that project above the level of said upper



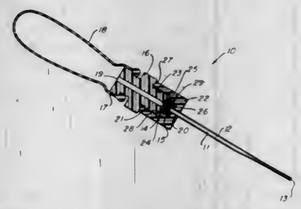
open end solely by centrifugal force by rapidly rotating said receptacle about a vertical axis, leaving said receptacle substantially filled with said objects to said level.

3,285,295
METHOD AND APPARATUS FOR FILLING CONTAINERS WITH POWDERED OR GRANULAR MATERIALS
Oliver R. Titchenal, Upper Saddle River, and Louis L. Legg, Woodcliff Lake, N.J., Ivar H. Stockel, New City, N.Y., Harry D. O'Neal, Sunnyvale, Calif., Robert B. Wheeler, Bellaire, Tex., and Stephen F. Chalpin, Leawood, Kans., assignors to St. Regis Paper Company, New York, N.Y., a corporation of New York
Filed June 14, 1965, Ser. No. 463,543
12 Claims. (Cl. 141—10)



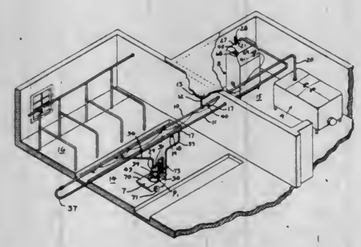
1. A method of packaging dry, divided solid material, comprising: introducing said material from a supply bin into an infeed duct having reduced passage area, passing said material from said infeed duct into a closed dispensing bin having increased passage area, passing said material from said dispensing bin into a dispensing duct of reduced passage area and forming a releasable material barrier in said dispensing duct, thence simultaneously injecting air under pressure into at least an upper portion of said dispensing bin, forming a releasable material barrier in said inlet duct, and releasing said material barrier in said dispensing duct, passing said material from said dispensing bin through said dispensing duct into a packaging container to a preselected weight, and prior to attainment of said weight, terminating the injected air flow to dribble-feed said material into said packaging container until said preselected weight is attained, and repeating said method for the filling of additional containers.

3,285,296
PIPETTE APPARATUS
Kenzo Ishimaru and Robert C. Myers, San Jose, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed Apr. 24, 1964, Ser. No. 362,217
6 Claims. (Cl. 141—26)



1. Pipette apparatus comprising an elongated pipette element having a fluid transfer end, a mounting end, and a hollow bore therebetween to define a predetermined volume of liquid therein, a resilient squeeze bulb at said mounting end for selectively supplying either positive or negative pressure to the bore at the mounting end of the element to respectively expel or draw liquid into the bore via the fluid transfer end, a semi-permeable member, impervious to liquid and pervious to gas, disposed to block the bore at the mounting end of said pipette element to limit the further intake of liquid while permitting liquid to be expelled from the bore by applying air under pressure thereto by said squeeze bulb, and means forming an air vent connecting the interior of the squeeze bulb to the outside surroundings via said member to automatically relieve vacuum within the squeeze bulb and to permit such bulb to return to a relaxed position following release thereof.

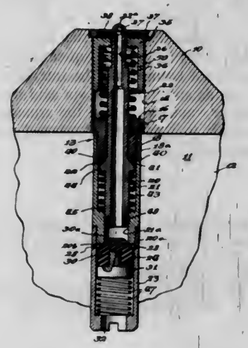
3,285,297
MILK TRANSFER SYSTEM AND APPARATUS
William J. Duft, Lena, Ill., and George L. Congdon, Fort Atkinson, Wis., assignors to Milk-Line Corp., Lena, Ill., a corporation of Illinois
Filed Aug. 31, 1964, Ser. No. 393,438
20 Claims. (Cl. 141—54)



1. In a system wherein milk may be flushed by compressed air from conventional type milk pails, the combination with a pair of substantially parallel elevated pipe lines, the first pipe being adapted to deliver milk into a bulk tank for storage and cooling, the second pipe being adapted to deliver compressed air to the first pipe, both pipes having normally closed nipples communicating therewith and projecting therefrom at longitudinally spaced intervals, a portable carrier movable along a floor under said pipe lines and on which milk pails may be

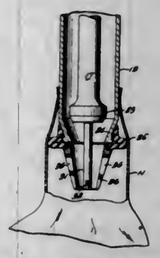
placed for support during milk transfer therefrom through said first pipe to the bulk tank, a closure mounted on and operable to and fro relative to said carrier adapted to fit interchangeably atop and temporarily close each of a plurality of milk pails placed in succession on said carrier for milk transfer therefrom, means for operating said closure relative to said carrier to and from closed position on a milk pail, an air hose connected to and extending from said closure for communication at one end with the inside of a milk pail at the top thereof and detachably connectible at the other end with a selected nipple on the second pipe, a milk discharging conduit connected with said closure and adapted to depend therefrom into a milk pail to the bottom thereof, a milk hose connected at one end with said closure in communication with said milk discharging conduit and detachably connectible at its other end with a selected nipple on the first pipe, means for supplying compressed air, and manually controlled means on said carrier for setting into operation said means for supplying compressed air to said second pipe long enough to displace the milk from a milk pail into the bulk tank.

3,285,298
FILLER VALVE
Allen B. Gellman, Glencoe, Ill., assignor to Elgin American International, Inc., a corporation of Illinois
Filed Sept. 11, 1963, Ser. No. 308,259
7 Claims. (Cl. 141—293)



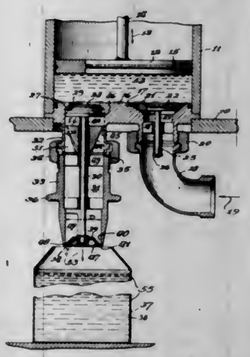
1. In a filler valve assembly for a liquified gas fueled apparatus having a fuel chamber including a mounting block with a bore therethrough, for filling the fuel chamber from a source under pressure, the improvement comprising: a collar in said bore; a tubular member extending inwardly of said chamber from said collar, the inner end of said tubular member forming an inwardly facing valve seat; a valve carrier extending inwardly of the chamber from the inner end of the tubular member; an inlet valve in said carrier; a spring in said carrier holding said valve against said seat; a movable plunger in said tubular member extending outwardly through said collar, the inner end of said plunger being sealed with the inner end of said tubular member, said plunger having an axial inlet passage therethrough; a spring urging said plunger outwardly against a stop; a member having an annular portion surrounding said plunger and slidable in the bore of said block outside said collar; a spring urging said last mentioned member outwardly of said bore; a surface on said plunger engageable by the annular portion of said member upon inward movement thereof, to move said plunger inwardly; and a vent valve for said chamber opened on inward movement of said plunger.

3,285,299
CONTAINER SEALING AND FILLING MEANS
Walter N. Henry, Groveport, and John N. Sramcik, Columbus, Ohio, assignors to National Industrial Products Company, Columbus, Ohio, a corporation of Ohio
Filed Apr. 30, 1964, Ser. No. 363,737
7 Claims. (Cl. 141—312)



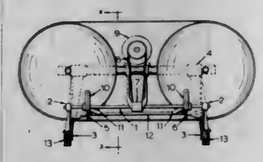
1. A nozzle for use in filling a container having a neck adapted to be slipped over the nozzle during filling, said nozzle including a flexible tubular member, and mechanical means mounted for movement axially of said nozzle and connected to said flexible tubular member for subjecting said member to axial pressure to expand it outwardly into sealing engagement with the container neck so as to cause it and the neck to have complemental sealing contours.

3,285,300
FILLING VALVE
Robert J. Mistarz, Northbrook, Ill., assignor to Chicago Stainless Equipment Corporation, a corporation of Illinois
Filed Aug. 23, 1963, Ser. No. 303,990
2 Claims. (Cl. 141—392)



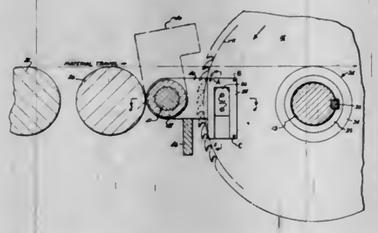
1. Nozzle apparatus for flowing a foamable liquid without excessive foaming, comprising: means forming a cylindrical discharge chamber having an entrance end, an exit end and a cylindrical wall therebetween; a closure for said entrance; a closure for said exit; means connecting said entrance closure and said exit closure for simultaneous movement between open and closed positions; resilient means urging both said closures toward closed position; means for forcing said liquid under pressure into said chamber to provide a high energy jet of said liquid at said entrance along said wall, said forcing means operating through said liquid to open both said closures against the urging of said resilient means; means in said chamber at said entrance for providing an annular chamber portion with diverging walls of continuously increasing cross sectional area adjacent to and extending from said entrance to absorb a portion of said high energy to retard foaming; and means forming an atmospheric bleed opening into said chamber at said exit closure for maintaining said chamber at approximately atmospheric pressure when not in use.

3,285,301
LUMBER EDGER SAW ASSEMBLY INCORPORATED INTO A HORIZONTAL TRAVERSING BANDSAW MACHINE
Charles E. McManama, Potlatch, Idaho
Filed Nov. 15, 1963, Ser. No. 324,015
3 Claims. (Cl. 143—1)



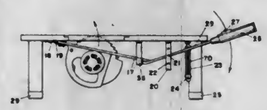
1. In a traversing saw carriage slidably mounted upon side rails straddling a workpiece, carrying both a horizontal bandsaw and a horizontal assembly of circular saws thereon, the bandsaw pulleys thereof spaced apart over the workpiece and defining a throat for said workpiece therebetween, the horizontal assembly of circular saws individually and slidably mounted upon a powered splined shaft and installed in front of the bandsaw throat in such a manner that cuts made by the circular saws extend to the plate of cutting assumed by the bandsaw, an improvement comprising: said circular saws having upon each saw thereof a shroud over its top half to which a handle is rigidly connected, said handles extending between the bandsaw pulleys to the rear conveniently accessible to the operator, and each said shroud rotatably mounted to its saw's hub upon a low friction bearing.

3,285,302
CIRCULAR SAW MACHINE
Elbridge W. Thrasher, 19541 Red Berry Drive, Los Gatos, Calif.
Continuation of application Ser. No. 257,628, Feb. 11, 1963. This application Apr. 30, 1965, Ser. No. 456,881
9 Claims. (Cl. 143—37)



1. An edger machine comprising: a rotatable arbor; a circular saw blade; means for mounting said blade to said arbor while allowing the blade to be moved axially thereon with a floating looseness during use; and a saw guide located on the leading side of said saw blade and having points of contact that define a limiting control plane, said saw guide providing points of contact on opposite sides of said blade and locating proximate to the gullet line of the saw blade; whereby said saw guide holds the peripheral cutting edge of said blade on line while said means for mounting said blades to said arbor allows the saw collar to move axially and follow the cutting plane of said cutting edge.

3,285,303
MITER TABLE AND SAW
Rudolph J. Kwiatkowski, 816 W. 3rd St., Erie, Pa.
Filed Sept. 25, 1964, Ser. No. 399,307
5 Claims. (Cl. 143—132)



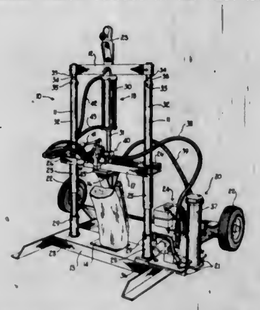
1. A saw and table combination comprising,
a table top,
a portable electric saw having a motor base with a first and second side and a first and second end, a motor supported on said base on a first side thereof and a saw blade connected to said motor and extending to said second side of said base opposite said first side,
means swingably connecting a first end of said base to said table with said second side of said base upward,
an opening in said table top,
said saw blade being adapted to extend through said opening,
a handle rod having a first and second end, said first end of said handle rod being connected to the second end of said base opposite said first end of said base,
a fulcrum bracket fixed at its upper end to said table and extending downwardly therefrom,
said bracket having two laterally spaced legs,
said handle rod being disposed between said legs of said fulcrum bracket,
said handle rod being pivotally intermediate its ends to said fulcrum bracket,
a handle support bracket fixed at one of its ends to said table and extending downwardly therefrom,
and means to fix a second end of said handle rod opposite said first end to said handle support bracket at predetermined positions thereon whereby said saw is supported with its cutting edge a predetemined amount above said table.

3,285,304
LOG SPLITTING AND CUTTING MACHINE
Oliver C. Fuller, Milwaukee, Wis., assignor to Clyde H. Fuller, Milwaukee, Wis.
Filed Nov. 18, 1963, Ser. No. 324,422
12 Claims. (Cl. 144—193)

1. In a wood splitting machine having
(1) a rigid frame comprising a pair of parallel rails and cross members connecting the opposite end portions of the rails,
(2) anvil means on one of said cross members to support a log or piece of wood to be split,
(3) a cross head slideably mounted on said rails between the cross members,
(4) a splitting knife on said cross head with the edge thereof facing the anvil means to engage a log or piece of wood supported by the anvil means, and
(5) a hydraulic ram connected between the cross head and the other cross member to force the cross head and the splitting knife thereon toward the anvil means,

the hydraulic ram having a fixed maximum stroke and comprising a cylinder member and a piston member, one of said members being connected to the cross head and the other being connected to said other cross member, so that the position of the knife when spaced its maximum distance from the anvil means is dependent upon the spacing between the cross members,

the improvement which resides in the fact that:

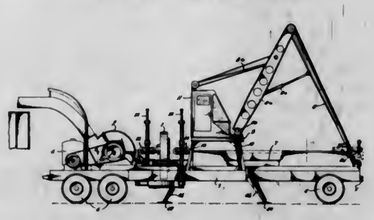


(A) the longitudinal rails comprise longitudinally slideably connected elements to enable the spacing between the cross members to be adjusted; and

(B) means for releasably securing said slideably connected elements of the rails against relative movement out of positions at which the cross members are at a selected spacing,

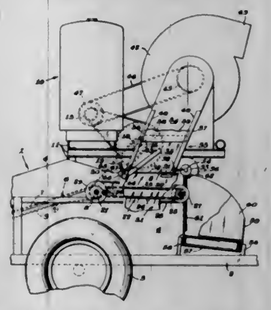
so that the machine may be adjusted to accommodate logs or pieces of wood of different lengths, despite the fact that the hydraulic ram has a fixed maximum stroke.

3,285,305
MOBILE LOG-PROCESSING APPARATUS
Thomas W. Nicholson, 3670 East Marginal Way South, Seattle, Wash.
Original application Oct. 8, 1962, Ser. No. 229,064, now Patent No. 3,223,129, dated Dec. 14, 1965. Divided and this application Mar. 24, 1965, Ser. No. 442,452
1 Claim. (Cl. 144—208)



Mobile log-barking apparatus comprising an elongated chassis, a log-feed conveyor extending longitudinally of said chassis and having a feed end, a ring-type log-barking device mounted on said chassis at a location spaced from the feed end of said conveyor for receiving through the barking ring thereof a log fed endwise thereto by said conveyor, a crane-supporting platform having spaced legs mounted on opposite sides of said chassis, respectively, to dispose said platform in a position straddling said conveyor at a location spaced from the feed end of said conveyor toward said log-barking device and located between such conveyor feed end and said log-barking device, and a log-hoisting crane supported by said platform and including an upright crane arm, an upright boom having its lower end mounted pivotally on said platform and guiding said boom for swinging and the upper end of said boom pivotally supporting the upper end of said crane arm, a log-engaging grapple mounted on the lower end of said crane arm and means for swinging said crane arm relative to said boom to move lengthwise a log grasped by said grapple for placing the log on said conveyor.

3,285,306
VEGETABLE TOPPING MACHINE
Clifford C. Wetzel, Rte. 1, Ithaca, Mich.
Filed Oct. 28, 1963, Ser. No. 319,308
9 Claims. (Cl. 146—83)



1. Apparatus for cutting off the tops of vegetables, said apparatus comprising perforate, vegetable supporting, movable conveyor means for delivering vegetables rearwardly along a path leading to and beyond a tops cutting zone; upwardly and rearwardly inclined conduit means having an inlet opening; means mounting said conduit means at said cutting zone in a position such that said inlet opening is located above said conveyor means in communication with said zone; blower means mounted in said conduit means; means connected to said blower means for driving the latter at such speed as to establish an airstream flowing upwardly from below and through said conveyor means into said inlet opening and at sufficient velocity to erect said vegetables on said conveyor means and position them with their tops uppermost; deflector means movably mounted in said conduit means adjacent the inlet opening thereof and operable to vary the size of said inlet opening and the velocity of air passing therethrough; and cutting means mounted at said cutting zone in said airstream and above said conveyor means in the path of rearward movement of the tops of said vegetables, said cutting means being operable to severe the tops from said vegetables.

3,285,307
COMBINATION CURLER BAG AND CAP
Ruth M. Dormaier, Hartline, Wash.
Filed Oct. 19, 1964, Ser. No. 404,729
3 Claims. (Cl. 150—1)



1. A combination curler bag and cap comprising a tubular fabric body, having a strip of fabric secured thereon and encircling the body at each end:

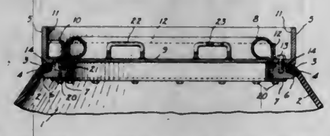
an elastic band encircling the body and secured thereto at one end of the body;

the other end of the body being provided with an annular channel with two opposite openings leading from the channel to the exterior of the body;

a draw string extending through each opening and around the body; and

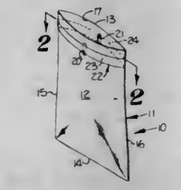
a rigid ring surrrounding the the body between the two fabric strips, said ring being smaller than the combined strip and body cross section at either end of the body whereby to confine the ring on the body between said strips.

3,285,308
PNEUMATIC CLOSURE
George W. Stambaugh, Akron, Ohio, assignor to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Feb. 6, 1964, Ser. No. 342,936
11 Claims. (Cl. 150—8)



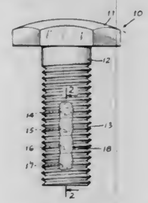
1. A pneumatic closure for a single compartment receptacle having an upper opening therein comprising, in combination, a frame having an upwardly facing seat surrounding said opening, a removable closure plate having a marginal portion adapted to rest on said seat to close said receptacle, an inflatable pneumatic bag carried by said frame adjacent said seat and surrounding the seat for sealingly engaging the periphery of said marginal portion at the periphery of said seat and for engaging the top of said marginal portion above said seat when inflated, said bag having a deflated position which permits movement of said closure plate upwardly away from said seat to open said receptacle, and means for preventing radial outward movement of said inflatable bag during inflation thereof to cause the inflated bag to move radially inwardly over said top of said marginal portion throughout the periphery of said closure plate to hold the plate in its fully closed position while tightly sealing said opening.

3,285,309
BAG WITH ATTACHED DRAW-STRING
Thomas V. Northcott, Davidson, N.C., assignor to Package Products Company, Inc., Charlotte, N.C., a corporation of North Carolina
Filed Sept. 30, 1964, Ser. No. 400,467
3 Claims. (Cl. 150—11)



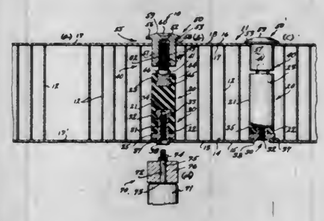
1. A bag having an open end comprising a body portion defined by opposing walls of pliable material, each of said walls being of a single thickness of material and having a pair of openings in opposite sides thereof adjacent but spaced from the open end of the bag and communicating with the interior thereof, and a draw-string member of pliable material surrounding said body portion adjacent the open end of the bag and in overlying relation to said openings therein, said draw-string member being fixedly secured to the outer surface of said side walls and at the opposite side edges of said walls to provide free unattached portions of said draw-string member adjacent and in juxtaposed relation to said openings, said unattached portions of said draw-string member being adapted to be inserted through said openings in said body portion and to be pulled upwardly through the open end of said bag to gather the open end portion of the bag to at least partially close the open end thereof.

3,285,310
SELF-LOCKING MALE THREADED FASTENERS
Edmund R. Boots, New York, and Howard I. Podell, Larchmont, N.Y., assignors, by mesne assignments, to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed Aug. 11, 1964, Ser. No. 388,797
2 Claims. (Cl. 151—7)



1. A self-locking fastening device comprising a member having a shank, threads on said shank, at least three separate, generally axially aligned recesses intersecting threads on said shank and extending radially inwardly slightly beyond the roots of said threads and spaced apart lengthwise of said shank by at least two intervening portions having at least one thread thereon, each of said recesses having an axial dimension greater than the pitch of said threads, and a single strip of resilient, deformable synthetic plastic material extending lengthwise of said shank and spanning said recesses and said intervening portions and being embedded in said recesses and impaled on said at least two threads on said intervening portions, said material extending radially outwardly beyond the crests of said threads and laterally beyond the edges of said recesses.

3,285,311
THERMO-BARRIER FASTENER
Kenneth Vantine Cushman, 2138 Salta St., Santa Ana, Calif.
Filed June 4, 1964, Ser. No. 372,640
11 Claims. (Cl. 151—21)



1. An adjustable, easily installed fastener adapted to be mounted in a cored panel and to insulate against both heat and electrical transfer and radio frequency interference, comprising:

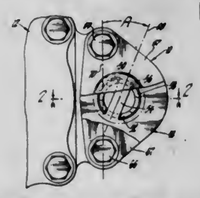
a high-strength substantially rigid plastic block means having high thermal and electrical resistance;

connecting nut means embedded in the first end of said block means, said connecting nut means having spaced portions at least one of which is adapted to be deformed toward the other to clamp onto and resist lateral, rotational and axial movement with respect to a first cover sheet of said cored panel;

stud means embedded in the second opposite end of said block means; and

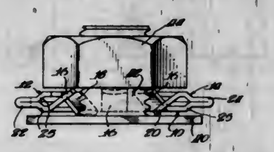
metal head nut means adjustably mounted on said stud means and having high radio frequency resistance, said head nut means having a laterally extending face adapted to abut and frictionally engage a second opposed cover sheet of said cored panel.

3,285,312
LOCKING DEVICE FOR ROTATABLE MEMBERS
James R. Dison, Indianapolis, and Frank W. Janneck, Danville, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 25, 1964, Ser. No. 369,856
4 Claims. (Cl. 151—28)



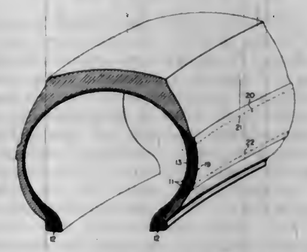
1. In a lock device, a rotatable member having an even number of angularly disposed and equally spaced slots, a stationary member, a lock plate, said stationary member and said lock plate having a pair of corresponding locating means, said lock plate having a tongue located at a selected angle greater than zero measured from a reference line which passes through the centers of said locating means on said lock plate securing means cooperating with said locking means to detachably secure said lock plate to said stationary member in a first position and in a second position inverted from said first position, said tongue cooperating with said slots to locate and lock said rotatable member in different selected angular settings as determined by selected alignment of said slots with said tongue when said lock plate is in either of said positions and said selected angle being determined by dividing the angular spacing between adjacent slots by the numeral four (4).

3,285,313
DOUBLE LOCKWASHER CONSTRUCTION
Roland F. Blakesley, Bloomfield Hills, Mich., assignor to Essex Wire Corporation, Fort Wayne, Ind., a corporation of Michigan
Filed Aug. 10, 1964, Ser. No. 388,363
2 Claims. (Cl. 151—35)



1. In a one-piece double lockwasher construction, a pair of dished washer-like elements integrally connected together in face-to-face relationship with the concave surfaces facing each other, each of said washer-like elements having a central opening with a plurality of substantially radially inwardly directed locking teeth extending from the periphery thereof, the teeth of each washer-like element being inclined toward the other washer-like element and being circumferentially staggered relative to the teeth on said other element so as to project between said teeth to a position beyond the outer surface of said other elements to lockingly impinge adjacent work piece surfaces when clamped thereagainst, the terminal ends of said locking teeth being arcuate in the transverse direction with the concavity thereof facing away from said surfaces whereby the corners of said terminal ends define relatively sharp points, said washer-like elements comprising a first washer-like element of complete circular form having a pair of diametrically opposite arms extending from the other periphery thereof and folded to U-shape and each terminating in a half washer-like element, the two of which together form the second washer-like element.

3,285,314
METHOD OF MAKING A LIGHT COLORED SIDEWALL TIRE AND ARTICLE PRODUCED THEREBY
Donald L. Roberts, Cuyahoga Falls, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Feb. 4, 1963, Ser. No. 255,852
7 Claims. (Cl. 152—353)

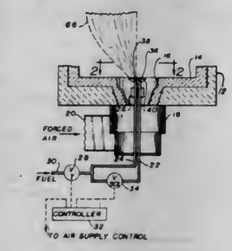


1. A method of making a sidewall of a tire from a relatively dark colored rubber stock and a lighter colored rubber stock comprising, applying the two stocks in unvulcanized condition to the sidewall of the carcass with at least a part of said lighter colored stock forming an externally exposed and visible area in the sidewall, covering said area with a protective strip of stretchable material which will not permanently adhere to the rubber of the sidewall under the conditions of cure, placing said tire in a curing mold and subjecting the tire to curing conditions.

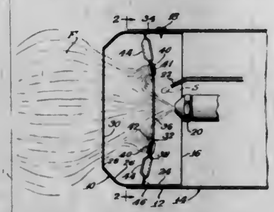
5. A tire having a sidewall made of relatively dark colored rubber stock and a lighter colored stock permanently fixed to said tire with an area of said lighter colored stock normally externally visible, said area of light colored stock being covered with an elongated protective strip of stretchable material longitudinally extending circumferentially of the tire and which is removable and not permanently bonded to said sidewall.

3,285,315
OIL BURNER WITH WIDELY VARIABLE OPERATING RANGE
Temple S. Voorheis, Palo Alto, Calif., assignor to Coen Company, Burlingame, Calif., a corporation of California
Filed Apr. 15, 1965, Ser. No. 448,303
7 Claims. (Cl. 158—28)

1. In combination with a combustion chamber having a wall defining a burner throat therein and means for providing combustion air to said chamber through said throat, an improved fuel oil supply system comprising a plurality of fuel lines extending through said throat into said combustion chamber, each said fuel line having on the inner end thereof a cap, each said cap having at least one obliquely oriented fuel passage therein for divergently directing fuel into a discrete sector of said combustion chamber, the totality of said caps and said fuel passageways being oriented so that all sectors of the combustion chamber are supplied with fuel when fuel is supplied from all said caps, means for controlling the amount of combustion air and fuel supplied to said combustion chamber over a range in accordance with the load demand of said combustion chamber, and means operable at the low end of the range of fuel flow to arrest fuel flow through at least one of said fuel lines and less than all said fuel lines so that less than all sectors of said combustion chamber are fired at the low end of the range.

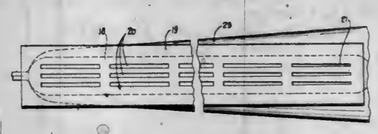


3,285,316
OIL BURNING COMBUSTION HEAD
William E. Gustafson and Frank L. Foster, Des Moines, Iowa, assignors to Delavan Manufacturing Company, a corporation of Iowa
Filed Jan. 27, 1964, Ser. No. 340,419
4 Claims. (Cl. 158—76)



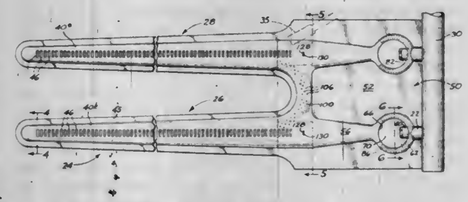
1. An oil burner combustion head wherein said combustion head is mounted on an air supply tube and an oil spray nozzle is centrally located within said air tube and having ignition means adjacent the spray nozzle, said combustion head comprising a substantially cylindrical housing, an outer end portion on said housing, a disc mounted interior of said housing intermediate said outer end portion and said nozzle and transverse to the axis of said housing, said outer end and said disc defining a chamber within said housing, said disc having a central opening defining an inner rim and an annular portion, a first set of openings in said annular portion defined by convolute protuberances, said first set of openings being spaced inwardly from said central opening for creating air currents flowing generally tangentially into said chamber for drawing some of the fine oil spray from said nozzle to a zone of low velocity opposite said rim whereby the burner flame is maintained in close proximity to said rim and to said first set of openings, and a second set of openings in said annular portion intermediate said first set of openings and the inner surface of said housing, said second set of openings being defined by convolute protuberances for tangentially directing air into said chamber for creating air turbulence to provide a substantially brush-shaped flame and also assisting said first set of openings in creating air currents for maintaining said flame in close proximity to said disc.

3,285,317
MULTI-PORT GAS BURNER
Louis P. Hine, Jr., and Richard J. Vales, Elyria, Ohio, assignors to The C. A. Olsen Mfg. Company, Elyria, Ohio, a corporation
Filed Oct. 9, 1963, Ser. No. 314,996
8 Claims. (Cl. 158—99)



1. A gas burner comprising a mixing tube having a gas inlet opening and a longitudinal outlet opening, and a burner strip across said outlet opening composed of sheet material and having elongated parallel slots therein no wider than the depth of the slots, the slots being approximately ten percent narrower at the end near the gas inlet opening and of such an order of magnitude as ordinarily to preclude flash back.

3,285,318
FURNACE AND BURNER UNIT
Frank W. Keinonen, Portland, and Robert E. Nagler, Tigard, Oreg., assignors, by mesne assignments, to Pioneer Manufacturing Co., City of Industry, Calif., a corporation of California
Filed Dec. 30, 1963, Ser. No. 334,456
4 Claims. (Cl. 158—114)



1. In a burner unit,

a body with an elongated burner passage defined therein and a jet opening in said body connecting with said burner passage accommodating the flow for ignition purposes of a fuel mixture from said burner passage,

a fuel mixing cavity defined in said body where fuel is mixed with air, said cavity being spaced from one end of said burner passage,

a fuel transfer passage defined within said body extending from said fuel mixing cavity to said one end of said burner passage,

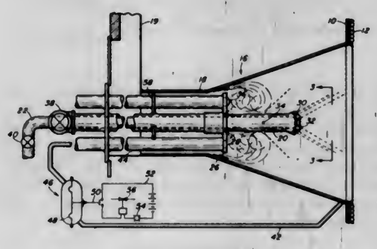
a bleed passage defined in said body extending laterally of said fuel transfer passage, communicating at one end with said fuel transfer passage,

an aperture in said body connecting said bleed passage with the atmosphere and accommodating the flow of a fuel mixture from said bleed passage to the atmosphere, and

a substantially cylindrically shaped hollow baffle element mounted within said fuel transfer passage, with

the axis thereof substantially paralleling the longitudinal axis of said burner passage and with the inside thereof forming a path between said fuel mixing cavity and said burner passage, said baffle element being mounted in said fuel transfer passage adjacent where the bleed passage connects with the transfer passage and including means on the outside thereof blocking the flow of the fuel mixture whereby such is directed on flowing over the outside of the baffle element into said bleed passage.

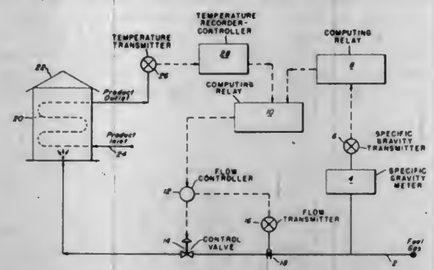
3,285,319
IGNITOR BURNER OF DUAL FUEL FLOW DESIGN UTILIZING AN EDDY PLATE
R. Acton Hartline, Thompsonville, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Dec. 30, 1963, Ser. No. 334,512
5 Claims. (Cl. 158—115)



1. In an ignitor burner where a combustion supporting medium and fuel are burned, a first pipe having an inlet end, to which a combustion supporting medium is supplied and an outlet end for discharging products of combustion, an eddy plate positioned within said first pipe, there being a restricted annular space between said eddy plate and the first pipe, a second pipe, to which fuel is supplied, positioned within said first pipe and extending through the eddy plate, said second pipe having an outlet positioned within said first pipe downstream of and adjacent to said eddy plate, ignition means positioned downstream of said eddy plate for igniting the fuel and combustion supporting medium adjacent the eddy plate, a third pipe, to which fuel is supplied, positioned within said second pipe, said third pipe having an outlet downstream of the outlet of said second pipe, whereby a portion of the combustion supporting medium combines with the fuel being emitted through the outlet of the second pipe to establish a stable flame, and the remaining portion of the combustion supporting medium combines with the fuel being emitted through the outlet of the third pipe, the flame issuing from the second pipe maintaining combustion of the fuel discharged from the third pipe, first flow control means positioned in said second pipe and second flow control means positioned in said third pipe, whereby the amount of fuel being discharged from the outlets of the second and third pipes can be separately and independently regulated.

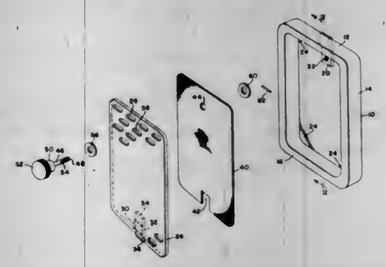
3,285,320
METHOD AND APPARATUS FOR CONTROLLING FLOW OF FUEL GAS
John B. Clark, East Chicago, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
Filed Dec. 10, 1965, Ser. No. 513,047
5 Claims. (Cl. 158—117.5)

1. The method of automatically and continually controlling heat input to a gas-fired furnace utilizing fuel gas of varying heat content, which method comprises the steps of continually determining the specific gravity of said input fuel gas, said specific gravity determinations



providing a measure of the heat content of said gas and in response to said determinations controlling the input flow of said gas to said furnace.

3,285,321
RADIATOR GRILLE AND REMOVABLE SCREEN
John G. Johnson, Waterloo, and Richard D. Obadal, Cedar Falls, Iowa, assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed July 27, 1964, Ser. No. 385,434
7 Claims. (Cl. 160—104)



1. A radiator grille and screen assembly comprising: a grille forming a plurality of apertures and having at least one restraining member secured to and extending from one edge on one side, a perforated screen covering said apertures and inserted between said restraining member and said grille, a pin having a shoulder seating against the grille and inserted through a grille aperture and a matching hole in said screen, and detachable locking means for locking the screen onto the pin.

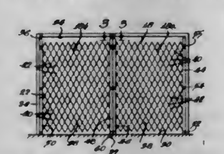
3,285,322
FARM GATE
Francis J. Moore, 4248 Drew Ave. S., Minneapolis, Minn.
Continuation of application Ser. No. 272,115, Apr. 10, 1963. This application Feb. 8, 1965, Ser. No. 431,224
2 Claims. (Cl. 160—144)



1. A gate structure including:
(a) a plurality of normally vertically arranged linkage members;

(b) a plurality of normally horizontal members having at least the ends thereof pivotally attached to said linkage members to permit shifting of the joined members from a normally rectangular structure to a parallelogram structure;
(b1) the uppermost one of said horizontal members being of greater length than the other of said members and arranged to extend outwardly beyond one of said support members to provide a counterbalance arm;
(c) a pair of spaced post members establishing a plane of closure, one of said post members having gate hanging means thereon arranged offset to said closure plane, the other of said post members provided with means for holding the gate in closed position;
(d) means on one of said linkage members which linkage member is adjacent the end of the gate underlying the longest of said horizontal members, said means arranged for hanging engagement with said gate hanging means for support of said gate; and
(e) a spring member arranged on the outwardly extending end of said counterbalance arm and secured to the lowermost end of the mounting post at a point arcuately spaced around the post from the engaging elements to produce a control balance effect on said gate to facilitate lifting thereof.

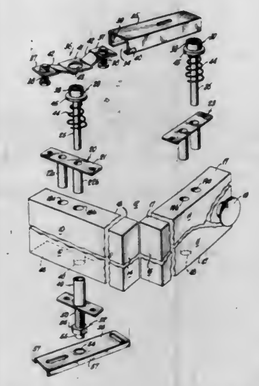
3,285,323
FOLDING GATE WITH SHOVE BOLT
Joseph Catalano, 1218 W. Grand Ave., Chicago, Ill.
Filed May 14, 1964, Ser. No. 367,318
14 Claims. (Cl. 160—152)



1. A folding gate of the character disclosed for use in spanning a doorway having a first and second defining side member, said folding gate including a plurality of sections secured together, each section including mesh made up of strips pivoted together, means for securing an inner end of a first of such sections to said first side member of the doorway in position for extension of that first section and outward movement of the second section, rail means between the sections, a shove bolt mounted in said rail means for vertical reciprocation therein, and means connecting said shove bolt to said folding gate being operative in response to extension of the second section of the gate for lowering the shove bolt and operative upon contraction thereof for raising the shove bolt, the shove bolt being so reciprocable between an upper limit in which its lower end is adjacent the lower end of the rail means and a lower limit in which it extends appreciably below the rail means.

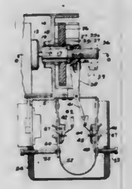
3,285,324
BI-FOLD HARDWARE FOR FOLDABLE DOORS
Robert R. Stein, Mamaroneck, and Stanley H. Coe, Sloatsburg, N.Y., assignors to Grant Pulley and Hardware Corporation, West Nyack, N.Y., a corporation of New York
Filed Oct. 18, 1965, Ser. No. 496,923
6 Claims. (Cl. 160—206)

1. Apparatus for operably mounting interconnected foldable and consimilar door panels to open and close along a longitudinal door track comprising, two pin-retaining means along an outer edge of each door panel juxtaposed the door track, first and second pin members each operatively seated in a selected one of said two pin-retaining means along said outer edge of respective ones of said door panels, biased means for operatively extending said pin members into the region of said door track, said first pin member engaging said track for slidable movement therealong, and means secured to said track for pivotally seating said second pin member, said first pin member serving as a lead guide for opening and



closing said foldable door and said second pin member serving as a foldable door pivot, the location of said two pin-retaining means of each door panel being similarly positioned along said outer edge of the respective door panels for enabling said foldable door to swing open more than 90 degrees when said lead guide functioning pin member and said pivot functioning pin member are seated in complementary ones of the pin-retaining means of the respective door panels.

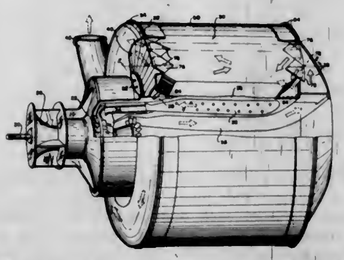
3,285,325
ACTUATOR FOR RETRACTABLE WALL
Le Roy H. Easton, Cuyahoga Falls, Ohio, assignor to Ametek, Inc., a corporation of Delaware
Filed Mar. 19, 1964, Ser. No. 353,211
2 Claims. (Cl. 160—310)



2. For use in raising and lowering a flexible retractable wall that is wound and unwound from a roller, the combination comprising
an output shaft,
means for journalling the output shaft in position adjacent one end of the roller for a driving engagement with the roller,
a plastic gear rotatably mounted on said output shaft,
a reversible electric motor,
means interengaging said electric motor and said gear,
clutch means between said output shaft and said gear,
a traveling nut on said output shaft,
a switch arm pivoted for engagement and swinging motion with the movement of said traveling nut,
a pair of contacts,

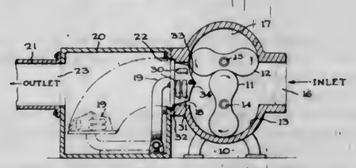
said contacts being alternately actuated by said switch arm to alternately control the movement of the electric motor in the two directions of drive,
each of said pair of contacts being adjustable independently of the other,
said clutch means comprising a diametral pin in said output shaft having a non-circular cross-section and radial slots in said gear,
and a spring arm engaging and yieldingly urging said cross pin into engagement with said gear,
said spring being adapted to be manually untensioned and to be manually tensioned and thereby remove the yielding force on said pin.

3,285,326
RECUPERATIVE TYPE HEAT EXCHANGER
Leon R. Wosika, San Diego, Calif., assignor to International Harvester Company, San Diego, Calif., a corporation of New Jersey
Filed Sept. 18, 1964, Ser. No. 397,564
6 Claims. (Cl. 165—4)



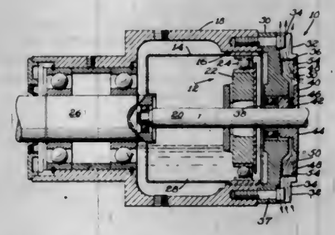
5. A recuperator for a power plant having an air inlet passage and a combustion products outlet passage, said recuperator comprising an annular body comprising a pair of spirally wound corrugated sheets, and a pair of spirally wound uncorrugated sheets separating said corrugated sheets, said corrugated sheets providing passages extending helically from end to end of said body, means connecting the opposite ends of the helical passages of alternate sheets to said air inlet passages, and means connecting the opposite ends of the helical passages of the remaining sheets to said combustion products outlet passages.

3,285,327
DISCHARGE COOLER FOR ROTARY POSITIVE DISPLACEMENT VACUUM PUMP
David B. Herrick, Connersville, Ind., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Aug. 5, 1964, Ser. No. 387,577
3 Claims. (Cl. 165—47)



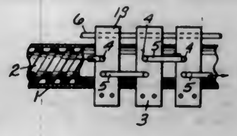
1. A vacuum pump of the rotary positive displacement type comprising a casing having a gas inlet and a gas outlet, a pair of multilobe impellers rotatably mounted in said casing and adapted to displace gas from said gas inlet to said gas outlet, a housing integral with said casing and having an inlet opening and an outlet opening, said inlet opening of said housing being aligned with said gas outlet, a heat exchanger movably supported within said housing and means operatively connected to said heat exchanger and adapted to be hydraulically actuated for moving said heat exchanger into and out of the path of the gas discharge from said gas outlet, said means upon actuation to move said heat exchanger into the path of the gas discharge from said gas outlet serving to position the heat exchanger in said gas outlet in close proximity to the maximum extent of travel of the lobes of the impellers as they rotate past the gas outlet and to positively hold said heat exchanger in position to prevent vibration due to gas pulsation.

3,285,328
COOLING COVER ASSEMBLIES
Walter R. Woodward, Carlisle, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed Dec. 30, 1964, Ser. No. 422,323
6 Claims. (Cl. 165—47)



1. Means for cooling a lubricated heat-generating mechanism within a housing, the mechanism having a rotating member extending into the housing, comprising a heat conductive, generally imperforate, stationary cover bored to receive said member and secured to the outside of the housing adjacent to said mechanism, said cover having an external face an inner portion of which is formed with a recess and an outer portion of which is formed with spaced ribs and ducts extending from the recess, and a one-piece rotary fan mounted in the external cover recess and having operative connection with the member, the fan being axially vented and having its exterior extending evenly with the outer portion of said external cover face and the inside of the fan including radial blades for circulating cooling fluid through said ducts.

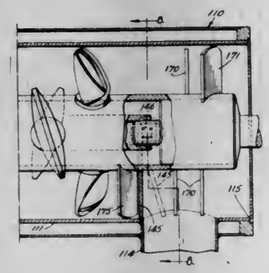
3,285,329
HEATING AND COOLING UNIT FOR EXTRUDERS AND THE LIKE
John J. Finn, Erie, Pa., assignor of one-half to Glenn Electric Heater Corporation, Erie, Pa., a corporation of Pennsylvania
Filed Sept. 24, 1964, Ser. No. 398,854
5 Claims. (Cl. 165—61)



1. A heating and cooling member having arcuate segmental metal parts arranged end to end, a clamping band encircling said parts to clamp the same against a cylindrical surface, said parts having internal cylindrical surfaces and having external surfaces with at least two outwardly

open circumferentially extending grooves spaced from each other, a sheathed electric heating element in one of the grooves, and a cooling coil in the other of said grooves.

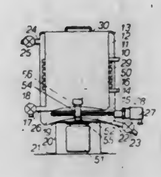
3,285,330
ROTARY PROCESSOR
William L. Root 3rd, Bethlehem, Pa., assignor to The Bethlehem Corporation, Bethlehem, Pa., a corporation of Pennsylvania
Filed July 9, 1964, Ser. No. 381,475
12 Claims. (Cl. 165—86)



1. A heat exchanger-mixer for indirectly treating material comprising an elongated trough having an inlet for charging the trough with material to be treated and an outlet for discharging treated material from said trough, a double hollow shaft assembly comprising a hollow shaft extending longitudinally of said trough and rotatably supported therein, another hollow shaft mounted within said first shaft to define an annular space between said shafts, a plurality of heat transfer assemblies each comprising a radially extending hollow blade connected to one of said shafts and in communication with the interior thereof and a hollow quill shaft extending into said hollow blade, connected to the other of said shafts and in communication with the interior thereof, said assemblies providing thereby parallel heat-transfer fluid paths connecting the interiors of said shafts through said assemblies, each of said blades being permanently and fixedly secured perpendicular to said shafts and angularly set with respect to a plane perpendicular to the longitudinal axis of said shafts so as to form a discontinuous screw between said charging inlet and said discharging outlet, a weir having a substantially arcuate lower portion fittable in said trough transverse to said shafts, adjacent said discharge outlet and mounted with respect to said discharge outlet to cause said material being processed to form a continuously agitated bed of material in heat exchange relationship with the fluid in said hollow blades.

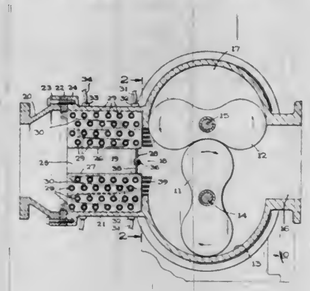
3,285,331
COMBINED MIXING AND HOMOGENISING APPARATUS
Arthur Bratland, Konnerudgaten 3, Drammen, Norway
Filed May 19, 1965, Ser. No. 456,916
Claims priority, application Norway, May 21, 1964, 153,329; Mar. 9, 1965, 157,115
10 Claims. (Cl. 165—109)

1. A combined mixing and homogenising apparatus which comprises an inner container for the reception of material which is to be treated, a heat-exchange chamber at least partially surrounding said inner container and having conduit means for the supply and discharge of a heat-exchange medium, a stirring and homogenising arrangement received within said inner container, a prime mover for driving said arrangement, the arrangement comprising a stationary part having through-passages for said material and a rotatable part having means for subjecting the material to rapid movement through said through-passages, said rotatable and stationary parts having mutually parallel sealing surfaces, the rotatable part while at rest being sealed



against the stationary part by means of said surfaces and on rotation being axially displaceable a predetermined distance relative to said stationary part to break the seal by forming a space between said surfaces, a branch passage connecting said space to said through-passages so that the flow of material through said passages exerts an ejector effect towards said branch passage thereby providing a substitute for the seal.

3,285,332
DISCHARGE COOLER ARRANGEMENT FOR ROTARY POSITIVE DISPLACEMENT VACUUM PUMP
David H. Silvern, North Hollywood, Calif., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Oct. 15, 1964, Ser. No. 404,140
7 Claims. (Cl. 165—122)

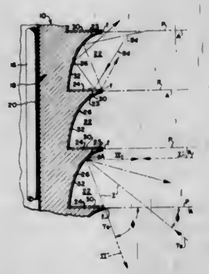


1. A gas pump of the rotary positive displacement type adapted for operation at inlet pressures above and below the range of 1 to 20 torr comprising a casing having a gas inlet and a gas outlet, a pair of multilobed impellers rotatably mounted in said casing and adapted to displace gas from said gas inlet to said gas outlet, cooling means mounted in said gas outlet, said gas outlet including a passage free of said cooling means to allow unrestricted flow of discharge gas past said cooling means, valve means disposed in said passage for actuation to a first position at a predetermined inlet pressure within the range of 1 to 20 torr to close said passage and thereby cause the discharge gas to flow through the cooling means when said pump is operating at inlet pressures above said predetermined inlet pressure and to a second position when said pump is operating at inlet pressures below said predetermined inlet pressure within the range of 1 to 20 torr to open said passage and thereby cause the discharge gas to bypass said cooling means.

3,285,333
GEOMETRICALLY-SPECTRALLY SELECTIVE RADIATOR

Alfred L. Johnson, Jr., Hermosa Beach, Calif., assignor to The Garrett Corporation, Los Angeles, Calif., a corporation of California

Filed Oct. 17, 1962, Ser. No. 231,210
8 Claims. (Cl. 165—133)



1. A heat exchanger, comprising:

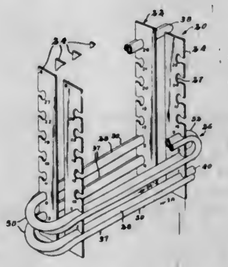
a thermally conductive body having a set of first exposed surfaces oriented in one direction relative to said body and a set of second exposed surfaces alternating with said first surfaces and oriented in another direction with respect to said body; and

one of said sets of surfaces being spectrally selective and having relatively low absorptivity over the range of high temperature solar radiation only and the other set of surfaces being substantially to tally reflective over the entire range from relatively low temperature thermal radiation to high temperature solar radiation.

3,285,334
INTEGRAL DUAL-PASSAGE HEAT EXCHANGE TUBING WITH REVERSE BENDS

Stephen F. Pasternak, River Grove, Ill., assignor to Peerless of America, Inc., Chicago, Ill., a corporation of Illinois

Original application Dec. 11, 1961, Ser. No. 158,274, now Patent No. 3,208,261, dated Sept. 28, 1965. Divided and this application Aug. 5, 1965, Ser. No. 477,394
4 Claims. (Cl. 165—172)

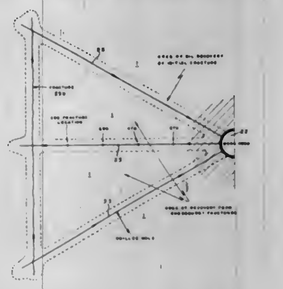


1. In a heat exchange unit of the character described, an elongated strip of dual-passage heat exchange tubing including a pair of closely parallel tubes integrally connected together by a narrow web which extends radially of each tube and which lies in the general plane of the tube axes, said strip of tubing including parallel reach sections connected together by reverse bends, the tubes of said reach sections having their axes extending in coplanar relationship, the web in at least one of said reverse bends being ruptured throughout substantially the entire extent of the bend and the portions of the tubes embodied by said bend being laterally displaced from each other with respect to said general plane of the tube axes.

3,285,335
IN SITU PYROLYSIS OF OIL SHALE FORMATIONS

Carl E. Reistle, Jr., Houston, Tex., assignor, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware

Filed Dec. 11, 1963, Ser. No. 329,828
7 Claims. (Cl. 166—2)



1. An in situ method of recovering shale oil from a subsurface oil shale formation, comprising:

(a) drilling a substantially vertical shaft into said oil shale formation;

(b) from said vertical shaft, drilling a plurality of substantially horizontal shafts into the formation;

(c) from at least one of said horizontal shafts, hydraulically fracturing said formation so that the plane of the resulting fracture is vertically disposed to open fluid communication between said at least one horizontal shaft and at least one adjacent shaft;

(d) introducing a fluid into the formation along the parted fractured plane, said fluid being at a temperature sufficient to pyrolyze the oil shale, whereby the sensible heat of the fluid is transferred to the surrounding oil shale formation and pyrolysis and vaporization of the kerogen content of the oil shale occur;

(e) recovering the fluid with products of pyrolysis entrained therein; and

(f) after the portion of the oil shale around said resulting fracture is depleted of hydrocarbons, successively repeating steps (c), (d), and (e), each fracture initiated as the result of repetition of step (c) being at a different distance from said vertical shaft in said at least one horizontal shaft.

3,285,336
METHOD OF THERMAL STIMULATION OF OIL FIELDS

Gerald H. F. Gardner, Pittsburgh, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

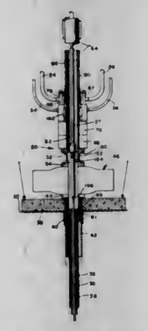
No Drawing. Filed Sept. 15, 1964, Ser. No. 396,708
6 Claims. (Cl. 166—2)

1. An in situ combustion process for recovering oil from an underground oil-bearing formation penetrated by at least one well bore characterized by the broad distribution of heat in the interior regions of the reservoir which comprises the steps, injecting a slug of a low viscosity, oil-miscible liquid into the formation from an input well, said oil-miscible liquid being not self-ignitable in the presence of oxygen, injecting an oxidizing gas into the well at a sufficiently high pressure that it will drive the miscible liquid and the oil ahead of it to form a great multiple of fingers projecting deeply into the formation with the miscible liquid forming a separating layer between the oxidizing gas and the oil, injecting additional oxidizing gas under high pressure to cause the miscible liquid layer to move further from the well, whereby said layer is thinned out and dissipated and whereby the oil in the formation contacts said gas to cause the oil to be ignited along the peripheries of the fingers, maintaining the injection of oxidizing gas at a high rate to cause the concurrent combustion of the ignited oil over a wide radial front to heat a substantial volume of the reservoir, and producing the mobilized oil from said formation at least partially through said fingers.

3,285,337
WELL DRILLING METHOD

Robert D. Johnstone, Anchorage, Alaska, and David C. Kofahl, Bakersfield, Calif., assignors to Richfield Oil Corporation, Los Angeles, Calif., a corporation of Delaware

Original application July 10, 1961, Ser. No. 122,919, now Patent No. 3,219,117, dated Nov. 23, 1965. Divided and this application Oct. 21, 1965, Ser. No. 499,908
4 Claims. (Cl. 166—.5)



1. In a method for completing a well drilled into a formation underlying a body of water from a vessel floating on said body of water wherein an apertured landing base is positioned over said well, the steps comprising:

connecting at said vessel, a surface pipe, casing landing mandrel, blowout preventer, drilling and production mandrel, and casing riser, said connected assemblage having a central bore extending therethrough,

lowering said connected assemblage from said vessel to said formation on said casing riser over a drill string extending into said well whereby said surface pipe extends into said well and the remainder of said assemblage rests on said landing base,

cementing said surface pipe into said formation,

lowering and guiding a water shut-off casing through said central bore of said assemblage into said surface pipe whereby said casing is landed on said landing mandrel,

attaching a bypass pipe to a section of said drill string whereby a bypass annulus is provided between said drill string and said assemblage above said water casing,

cementing said water casing into said surface pipe and said formation,

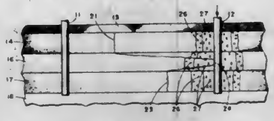
circulating said bypass annulus clean, and

guiding a tubing string into said water casing and hanging said tubing string in said drilling and production mandrel, whereby said tubing communicates with an outlet in said drilling and production head.

3,285,338
METHOD FOR OIL RECOVERY

William G. Boston, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York

Filed Aug. 23, 1963, Ser. No. 304,174
18 Claims. (Cl. 166—9)



1. In the recovery of oil from a reservoir having a high permeability zone by injecting a driving fluid containing a material into a first well to displace oil toward a second well, said material capable of converting a solution of a substance to a plugging material by their reaction within the reservoir, and the method comprising the steps of:

(a) producing oil from the second well until the driving fluid containing the described material breaks through into the second well at the high permeability zone in the reservoir,

(b) terminating the injection of fluids into the first well,

(c) introducing into the reservoir from the second well a solution of a substance convertible to a plugging material upon reaction with the described material in the driving fluid in the reservoir, and

(d) resuming the steps of introducing the driving fluid containing the described material into the first well and producing oil from the second well.

3,285,339
METHOD FOR CONSOLIDATING INCOMPETENT EARTH FORMATIONS

Herbert C. Walther, Ponca City, Okla., David A. Kuhn, Wyckoff, N.J., and Derry D. Sparlin, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

No Drawing. Filed Jan. 18, 1966, Ser. No. 521,426
7 Claims. (Cl. 166—33)

1. The method of consolidating incompetent formations which comprises the steps of:

(a) mixing together siliceous sand, an organic, age hardenable resinous composition, and a coupling agent to form a slurry, said coupling agent comprising a chemical compound containing a first functional group which reacts with the particles of the sand and a second functional group which reacts with the resinous composition; and

(b) positioning said slurry in contact with a portion of said formation.

3,285,340
ACIDIZING PROPPED FRACTURES

Jimmie L. Huitt, Glenshaw, and John Papaila, Apollo, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed July 19, 1963, Ser. No. 296,398
13 Claims. (Cl. 166—42)

1. A method of increasing the productive capacity of a subterranean formation penetrated by a well, said formation being susceptible to dissolution by acid, comprising displacing a liquid down the well into contact with the formation, said liquid containing porous deformable propping particles impregnated with a surfactant capable of rendering the formation resistant to acid, increasing pressure on the liquid to create and extend a fracture from the well into the formation, displacing the liquid and propping particles into the fracture, reducing the pressure on the liquid whereby the fracture tends to compress the propping particles and squeeze the surfactant from

the particles onto the formation surfaces adjacent the particles, thus rendering the surfactant-treated surfaces resistant to acid, and thereafter displacing acid down the well and into the fracture.

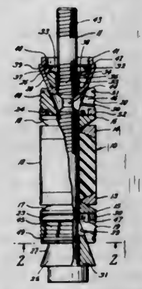
3,285,341
REMOVAL OF WATER BLOCKS FROM OIL AND GAS WELLS
Harry W. Parker, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Dec. 2, 1963, Ser. No. 327,513
7 Claims. (Cl. 166—42)

1. A process for removing water block around a producing well in a hydrocarbon-bearing stratum and producing hydrocarbons from said well, comprising the steps of:
(1) fracturing said stratum outwardly from said well by injecting a water-miscible solvent free of propping agent into said stratum at fracturing pressure so as to fracture said stratum to an area behind said water block;
(2) continuing injection of said solvent thru the fracture resulting from step (1) so as to deposit a substantial pore volume of same in the permeable stratum behind said water block;
(3) thereafter, reducing the injection pressure so as to allow the formed fractures to close and trap said solvent in the stratum behind said water block; and
(4) thereafter, opening said well to production and producing hydrocarbons therefrom so as to cause said solvent to flush water of said block into said well.

3,285,342
WELL FRACTURING
Luther C. Cronberger, Sanford, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Jan. 8, 1964, Ser. No. 336,382
7 Claims. (Cl. 166—42)

1. A process for hydraulically fracturing a subterranean formation penetrated by a well and propping apart the resulting fractures comprising forcing a liquid suspension of granules of oil shale down said well and into said formation under sufficient pressure to fracture said formation.

3,285,343
PERMANENTLY SET BRIDGE PLUG
Harold J. Urbanosky, Houston, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas
Filed Mar. 11, 1964, Ser. No. 351,079
7 Claims. (Cl. 166—134)



7. In a well tool having a body, slip and expander means on said body operable in response to longitudinally directed setting forces applied thereto for anchoring the tool in a well conduit, said slip means being movable outwardly of said body, and a packing means on said body expandable in response to said setting forces for packing off the well conduit, the improvement comprising, in combination, annular restraining means encircling and engaging said slip means, said restraining means being constructed of a ductile, stretchable material with a predetermined yield strength such that the operation of said slip and expander means can be delayed until said packing means can be substantially expanded and, after yielding, said restraining means can function to control outward movement of said slip means.

3,285,344
DRILL STEM TESTING APPARATUS
Lloyd I. Jensen, Calgary, Alberta, Canada, assignor to Johnston Testers, Ltd., Calgary, Alberta, Canada, a corporation of Canada
Original application Nov. 13, 1963, Ser. No. 323,490, now Patent No. 3,254,710, dated June 7, 1966. Divided and this application Dec. 20, 1965, Ser. No. 515,038
8 Claims. (Cl. 166—149)

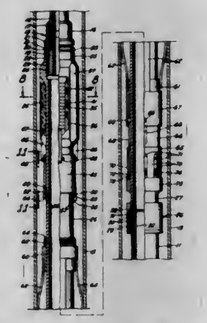


1. Apparatus for use in a string of drillstem testing tools comprising: a sub having short length and having ends arranged for interconnection in a string of pipe; said sub having a first longitudinal passage extending therethrough; a first valve means for selectively opening and closing said first passage; said first valve means having a control portion thereof exposed to the exterior of said sub, said control portion being adapted for exterior control of operation of said first valve means; said sub having a second passage extending transversely through said sub to provide fluid communcation between said first passage extending longitudinally through said sub and the exterior of said sub and string of tools; second valve means for selectively opening and closing said second passage; said second valve means having a control portion thereof exposed to the exterior of said sub, said control portion being adapted for exterior control of operation of said second valve means.

3,285,345
LINER HANGER
James R. Solum, Los Angeles, Calif., assignor to B & W Incorporated, Torrance, Calif., a corporation of California
Filed Jan. 8, 1964, Ser. No. 336,443
15 Claims. (Cl. 166—208)

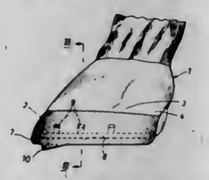
1. In a liner hanger for supporting a depending liner pipe within a well casing, the combination of: a tubular mandrel, casing-engaging means mounted on said mandrel for longitudinal movement between a retracted position and a casing-engaging position, frictional-drag means rotatably and slidably mounted on said mandrel for frictionally engaging the inside of the well casing, interconnecting thread means mounted on said mandrel and said frictional-drag means with one of said thread means split longitudinally and expandable-collapsible radially for being axially forced into said threaded interconnection and

the said mounting of one of said thread means causing free lost-motion longitudinal movement during unthreading of said thread means whereby said mandrel and said frictional-drag means are releasable upon substantial



relative rotation and engageable upon simple relative axial movement, and means for longitudinally moving said casing-engaging means from said retracted position into the casing-engaging position after releasing rotation of said interconnecting thread means and axial movement of said frictional-drag means to a second position toward said casing-engaging means.

3,285,346
METHOD OF FORMING A HOOF-COVERING
Jacques Jenny, Green Valley Farm, Unionsville, Pa.; John Teti, 3323 Heritage Drive, Wilmington, Del.; and Jack P. Anderson, R.D. 1, Kennett Square, Pa.
Filed Aug. 27, 1965, Ser. No. 483,191
Claims priority, application Switzerland, Aug. 27, 1964, 11,239/64
6 Claims. (Cl. 168—4)



1. A method of producing an elastic animal hoof covering, comprising the steps of inserting the animal's hoof into a casting mold leaving a clearance between the mold walls and the surface of the hoof, and filling the mold cavity formed by said clearance with a plastic material capable of solidifying, hardening said plastic material and removing the mold after the hardening of the plastic material.

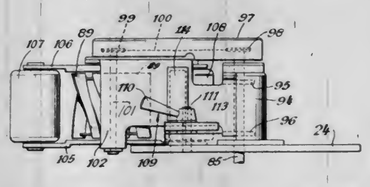
3,285,347
COLLAPSIBLE TUBE FOR FIGHTING FIRE WITH HIGH EXPANSION FOAM
Will B. Jamison, Wychoff, and Robert W. Barnes, Scotch Plains, N.J., assignors, by mesne assignments, to Specialties Development Corporation, Belleville, N.J., a corporation of New Jersey
Original application Aug. 8, 1961, Ser. No. 130,167, now Patent No. 3,186,490, dated June 1, 1965. Divided and this application Mar. 30, 1965, Ser. No. 444,946
The portion of the term of the patent subsequent to June 1, 1982, has been disclaimed
1 Claim. (Cl. 169—15)

Fire-fighting apparatus for use in an enclosure having an entry opening leading into the enclosure, said apparatus comprising a collapsible tube having an intake end and having a flexible discharge end constructed for insertion into the entry opening and of a material having the ability to be wetted by a foam plug moving therethrough and to absorb moisture so as to protect said tube from the heat of a fire, and means for creating a foam plug having an expansion rate as high as 1500 to 1 and forcing the foam plug under air pressure into said intake end and through said tube to cause said tube to become inflated



and expanded at its discharge end and fill the cross section of the entry opening with said tube to provide a seal around the entry opening said tube including disconnectable sections coupled to each other to vary the length of said tube, said tube section at the discharge end of said tube having a larger cross-sectional area than that of any other section of said tube to accommodate a larger entry opening.

3,285,348
CUTTING MACHINES, MORE PARTICULARLY FOR TRIMMING THE EDGES OF LAWNS
Victor Taylor Legge, 3 Blandford Road, St. Albans, England
Filed Aug. 24, 1964, Ser. No. 391,403
8 Claims. (Cl. 172—14)

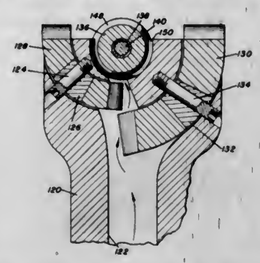


1. A lawn cutting machine comprising a main frame, a main driving shaft mounted on said frame, power means mounted on said frame for driving said shaft, at least one support frame pivotally mounted on said main frame, a vertical cutter assembly connected to and driven by said shaft, said assembly extending externally of said main frame and being pivotable between an upper inoperative position and a lower operative position about said shaft, a horizontal cutter asssembly pivotally mounted on said vertical cutter assembly so as to permit the horizontal cutter assembly to find its correct level irrespective of vertical movements of the vertical cutter assembly, and at least one rolling member rotatably mounted on said support frame and on each of said cutter assemblies.

3,285,349
METHOD AND APPARATUS FOR VIBRATORY DRILLINGS
Clarence W. Brandon, Tallahassee, Fla., assignor of twelve and one-half percent to Orpha B. Brandon, Birmingham, Ala., five percent to Harvey B. Jacobson, Washington, D.C., and fifty percent to N. A. Hardin, Catherine H. Newton, and Hazel H. Wright, jointly, all of Forsyth, Ga.
Original application June 24, 1954, Ser. No. 438,371, now Patent No. 3,138,213, dated June 28, 1964. Divided and this application June 1, 1964, Ser. No. 392,361
7 Claims. (Cl. 175—55)

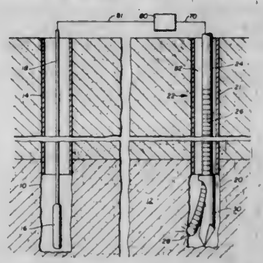
1. A drill comprising a head, a plurality of toothed roller cutters, journals on said head, an eccentric bearing

rotatable on each of said journals, said roller cutters being each freely rotatable upon one of said eccentric



bearings, said roller cutters being of different diameters and disposed in overlapping relation.

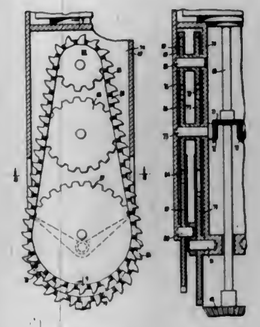
3,285,350
METHOD AND APPARATUS FOR CONTROLLABLY DRILLING OFF-VERTICAL HOLES
John Keller Henderson, 4012 E. 41st Place, Tulsa, Okla.
Filed Apr. 23, 1964, Ser. No. 362,100
9 Claims. (Cl. 175—57)



1. A method of drilling a laterally extending hole from a first well into communication with a second well spaced from said first well, said method comprising the steps of:
drilling laterally from said first well with a drilling device;
emitting a signal from adjacent said drilling device during the drilling of said laterally extending hole;
receiving said emitted signal at a point in said second well where communication between said first well and said second well is desired;
indicating said received emitted signal at the surface;
changing the direction of drilling with said drilling device until said drilling device is advancing toward said second well as indicated by the signal received in said second well; and
continuing drilling of said hole until said hole enters said second well.

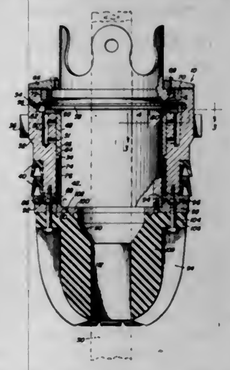
3,285,351
DRILLING APPARATUS
Michael R. Caro, 32200 Seneca St., Hayward, Calif.
Original application Aug. 6, 1962, Ser. No. 215,000, now Patent No. 3,215,214, dated Nov. 2, 1965. Divided and this application July 9, 1965, Ser. No. 482,008
3 Claims. (Cl. 175—89)

1. Drilling apparatus of the character described comprising, in combination, a main shaft adapted for powered rotation, a housing rotatably mounted axially about said shaft, gearing connecting said housing to said shaft for rotation of said housing by said shaft in a direction oppositely of the direction of rotation of said shaft, a drive sprocket mounted on said housing and connected to said shaft for rotation relative to said housing about an axis generally normal to said shaft, an idling sprocket mounted on said housing for rotation relative to said housing about an axis generally normal to said shaft, a cutting chain



mounted on said sprockets for rotation therearound, said chain having cutting teeth disposed along the length thereof, and a boring drill bit mounted on the lower end of said main shaft for rotation thereby in the same direction as the rotation of said shaft.

3,285,352
ROTARY AIR DRILLING HEAD
Joseph M. Hunter, 1505 Indian Springs Road, Indiana, Pa.
Filed Dec. 3, 1964, Ser. No. 415,604
8 Claims. (Cl. 175—214)



1. In the combination of a well casing head having therein a seat, a casing head retaining means, a drilling fluid outlet below said seat and a drill string including a kelly bar, the improvement comprising; a drilling head adapted to be received within said casing head and releasably secured upon said seat by said retaining means, said drilling head including sealing means for slidably and sealingly embracing said kelly bar, said sealing means including a drilling fluid deflector positioned in said casing above and adjacent said drilling fluid outlet for directing into said outlet drilling fluid and solid particles carried thereby and ascending said well casing, said drilling head comprising a hollow body with a central opening therethrough, a guide body movably received in said central opening, said guide body having an axial guide bore therethrough slidably receiving said kelly bar, said sealing means being aligned with said axial guide bore, means

retaining said guide body in said hollow body and restraining said guide body from axial movement while affording rotatable movement, means for supplying lubricant to the surface of said guide body, said guide bore and kelly bar having cross sectional areas of similar size and configuration whereby said kelly bar imparts rotation to said guide body, said guide body and said guide body retaining means having cooperating elements comprising a pumping means constituting part of said lubricant supplying means.

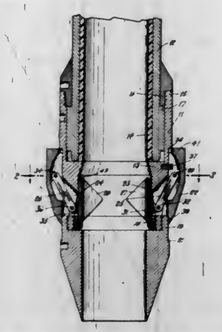
3,285,353
HYDRAULIC JARRING TOOL
David E. Young, Bellaire, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas
Filed Mar. 11, 1964, Ser. No. 351,159
12 Claims. (Cl. 175—297)



1. A well jar for use in a well bore comprising;
telescopically arranged members,
a tubular housing slidably positioned over said telescoping members,
means arranged between said housing and one of said members for releasably holding said housing from substantial longitudinal movement relative to said one member,
means arranged between the other of said members and said housing for transmitting a large upwardly directed force applied to said other member from said other member to said housing, and
means responsive to a much lessor force generated by said large force for releasing said holding means after a time delay to permit relative movement between said housing and said one member.

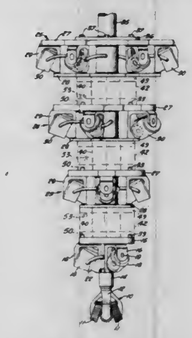
3,285,354
CORE RETAINER HAVING CURVED GATES
John E. Sanders, West Haven, Adrian A. Disco, New Haven, and Anthony L. Massini and Donald Johnson, North Haven, Conn., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Dec. 26, 1963, Ser. No. 333,775
5 Claims. (Cl. 175—242)

1. A core retainer comprising
a cutting head having an upper end,
a collar having a lower end,
a hollow body having an upper and lower open end,
said upper end of said body secured to said lower end of said collar and said lower end of said body secured to said upper end of said cutting head,
said body having a lower end portion provided with two opposed openings,
a pair of opposed curved gates pivotally secured to said lower end of body adjacent said openings,
a sleeve slidably fitted around said body and over said openings, and
a pair of elongated levers,



each of said levers passing through one of said openings and being pivotally secured to said sleeve and one of said separate curved gates,
whereby said levers open and close said curved gates within said body in response to movement of said sleeve.

3,285,355
LARGE DIAMETER WELL-DRILLING BIT
William J. Neilson and Robert L. Dixon, Whittier, Calif., assignors to Smith Industries International, Inc., Compton, Calif., a corporation of California
Filed Feb. 17, 1964, Ser. No. 345,310
5 Claims. (Cl. 175—334)

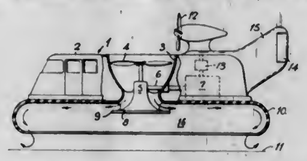


1. A large diameter drilling bit having a plurality of stages, roller cutters rotatably mounted on each stage arranged so that the cutters on the successive stages cut on annuli of progressively increasing diameters, and weight container means interposed between two or more stages and detachably connecting adjacent stages to each other.

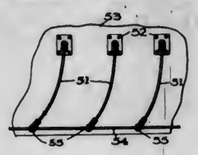
3,285,356
VEHICLES FOR TRAVELLING OVER LAND AND/OR WATER
Christopher Sydney Cockerell, Bassett, Southampton, England, assignor to Hovercraft Development Limited, London, England, a company of Great Britain and Northern Ireland
Filed May 6, 1965, Ser. No. 453,687
Claims priority, application Great Britain, Sept. 1, 1958, 27,978/58
3 Claims. (Cl. 180—7)

1. A vehicle of the type adapted for travelling or hovering over the surface of land or water comprising a

structure including a main body, means carried by said body for forming and maintaining a pressurised cushion of gas between the structure of the vehicle and the surface over which the vehicle is travelling or hovering, capable of at least partially supporting the vehicle above said surface, a flexible wall structure constituting at least part of the peripheral boundary within which said pressurised cushion is formed, said wall structure depending below said main body and having a concave inwardly extending surface exposed to the pressure of said cushion so as to be urged by said pressure towards a fully extended configuration and restored to said configuration by said pressure after deflection by contact with an obstacle or irregularity on said surface.



3,285,357
AIR CUSHION VEHICLES WITH MANEUVERING AND FORWARD PROPULSION CONTROLS
Melville W. Beardsley, Severna Park, Md., assignor, by mesne assignments, to A. Fred Starobin, Washington, D.C.
Filed Sept. 29, 1960, Ser. No. 59,348
4 Claims. (Cl. 180—7)



4. Controls for an air cushion vehicle of the type having a body with a hollow portion and a peripheral nozzle portion on the lower side of said body with an air flow emitted from said nozzle portion comprising

a plurality of longitudinally spaced vanes positioned in and disposed widthwise of said nozzle portion, each vane being of a rigid material but having sufficient flexibility to be bent to form a surface of smooth uniform curvature located in the path of the air emitted from the peripheral nozzle portion with the entire surface of each vane tangent to said path of air flow adjacent said surface,

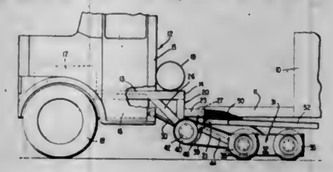
each of said vanes having an upper edge portion rigidly fixed to said vehicle and a freely movable lower portion,

control means attached to said freely movable lower portion of said plurality of said vanes,

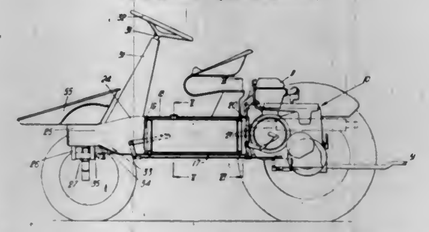
whereby movement of said control means simultaneously changes the curvature of each of said vanes in said plurality of vanes.

3,285,358
TOWING VEHICLE FOR TRAILERS
John Alexander Neely, Jr., P.O. Box 273, Anderson, S.C.
Filed Oct. 30, 1963, Ser. No. 320,103
10 Claims. (Cl. 180—11)

10. A towing veracle for large type mobile homes comprising a chassis having a frame, a depressed extension on the rear end of said chassis frame, a weight-supporting swivel-type hitch device on said depressed extension near the transverse center of the vehicle, a pair of distinct and laterally separated supporting wheel units pivotally connected with and trailing from said depressed extension on opposite sides of the hitch device and spaced bodily rearwardly of the hitch device so that weight borne by said hitch device is concentrated forwardly of and substantially midway between said wheel units, there being an unobstructed passage between said wheel units extending from the hitch device rearwardly through the rear end of said vehicle, and resilient means interconnecting each wheel unit with said frame.



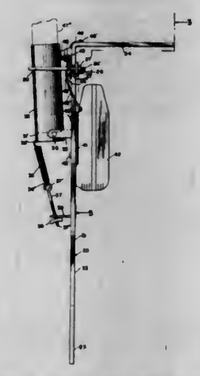
3,285,359
TRACTOR
Harold E. Weeks, Stoke, Coventry, and Eric I. Watson, Solihull, England, assignors to Massey-Ferguson (United Kingdom) Limited, London, England, a British company
Filed Apr. 23, 1964, Ser. No. 362,089
Claims priority, application Great Britain, May 1, 1963, 17,186/63
4 Claims. (Cl. 180—54)



3. A tractor having a rear engine and transmission assembly, drive wheels mounted on said rear engine and transmission assembly, a chassis member connected to the front portion of the rear engine and transmission assembly and extending forwardly therefrom with the longitudinal axis of said chassis member defining the longitudinal axis of the tractor, said chassis member being of inverted U-shape in cross-section with a top horizontal member and depending side members, a lower cover plate connected with and extending between said side members to form an enclosure therewith, a fuel tank supported within said enclosure intermediate the ends of the chassis member, and a steerable wheel assembly mounted on said chassis member at the front end thereof.

3,285,360
FISHING ALARM DEVICE
Clemens A. Wetsch, 1401 6th St., SW., Minot, N. Dak.
Filed Oct. 12, 1964, Ser. No. 403,016
1 Claim. (Cl. 43—17)

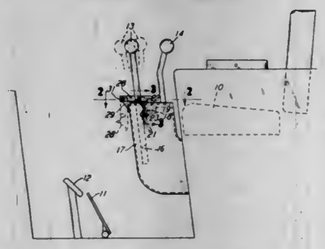
A fishing alarm device, comprising an inverted L-shaped support, one leg of said L-shaped support having a tapered lower end and adapted to be introduced vertically into the ground, the other leg of said support projecting laterally from said first leg and adapted to serve as a handle for carrying such device, a plate mounted to said one leg, a U-shaped rod secured to said plate at the outer ends of its legs, a cylindrical sleeve adapted to move within the confines of said U-shaped rod, the U-shaped portion of said U-shaped rod providing an arcuate surface corresponding to the curvature of the cylindrical sleeve, a bracket below said U-shaped rod, said sleeve at its lower end being pivotally mounted to said bracket, a horizontally projecting ledge beneath said bracket, a coil spring hooked at one end to the outer lower edge of said sleeve and at the other end to the eyelet of a screw, said screw having its threaded end passing through a bore in said horizontally projecting ledge, a nut beneath said ledge to draw said screw downward so as to draw said spring downward thereby urging said sleeve outward against the U-shaped portion of said rod, a button mounted to said one leg adjacent the inner upper edge of said sleeve, a battery operated horn mounted to said vertical rod portion adapted to be actuated by said button, said sleeve being adapted to receive a fishing pole, whereby when a fish strikes the hook at the end of the line of the fishing pole it will pivot the pole and sleeve toward the button and engage the button with the button activating the horn, said spring acting to urge said sleeve movably away from said button.



ERRATUM

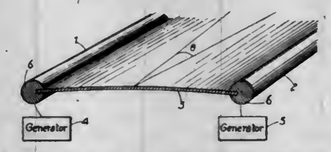
For Class 180—82 see:
Patent No. 3,285,368

3,285,361
NEUTRAL LOCKING AND SAFETY STARTING MEANS FOR VEHICLES
Donald C. Baker, Burlington, Iowa, assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Apr. 15, 1965, Ser. No. 448,450
6 Claims. (Cl. 180—82)



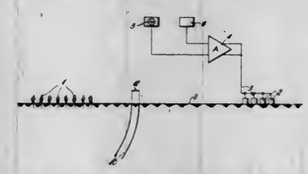
1. A safety device for use with a powered vehicle, comprising a starter button, a movable shift member for controlling transmission of power to the vehicle traction drive and being movable between a neutral position and a traction drive position, a cover adjacent said starter button and disposed to conceal said starter button while having a small opening therethrough aligned with said starter button, a member movably mounted and being operatively associated with said shift member for retaining the latter in said neutral position in one position of said member, and means on said member projecting through said small opening to be operatively associated with said starter button for actuating the latter only when said member is in said one position.

3,285,362
SOUND WAVE RADIATOR DEVICES
Jacques Ducuing and Jean Claude Simon, Paris, France, assignors to Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed June 29, 1960, Ser. No. 39,729
Claims priority, application France, July 20, 1959, 800,519/59
5 Claims. (Cl. 181—.5)



1. A device for radiating a sound wave having a predetermined frequency comprising: a strip, the thickness of which is small compared to the wavelength in the ambient medium of the energy to be radiated, said strip having two edges extending in a predetermined direction; two bars, respectively coupled to said two edges; means for exciting in said two bars torsional vibrations at said frequency, in phase opposition with respect to each other.

3,285,363
METHOD OF GENERATING SEISMIC WAVES
Theodor Krey, Wissmannstrasse 14, Hannover, Germany
Filed Sept. 9, 1963, Ser. No. 307,683
Claims priority, application Germany, Sept. 8, 1962, S 81,369
6 Claims. (Cl. 181—.5)



1. The method of seismic surveying, which comprises distributing a pluralityof detectors in spaced relation in a linear array on the ground surface in a certain direction, each of said detectors being in contact with the ground for detecting seismic waves traveling therethrough and being connected to a recording system, creating in the ground surface seismic disturbances as origins of seismic waves, said disturbances being created at points which form a pattern having a longitudinal extension in the same direction as said linear array, each disturbance comprising a particular spectrum of frequencies, controlling each one of said spectra so that for each frequency the spacing between said sources of said pattern is at most equal to one half the wave length of a seismic signal wave of said frequency, said wave length being measured in the direction of said linear array, whereby disturbances created at the

end portions of the longitudinal extension of said pattern comprise spectra of lower frequencies and disturbances created at the central portion of the longitudinal extension of said pattern comprise spectra of higher frequencies, and recording the energization of said detectors produced by the detected seismic waves.

3,285,364
LOUDSPEAKER CONSTRUCTION

Abraham B. Cohen, Oklahoma City, Okla., assignor to Ling-Temco-Vought, Inc., Dallas, Tex., a corporation of Delaware

Filed June 1, 1965, Ser. No. 460,241
6 Claims. (Cl. 181—31)

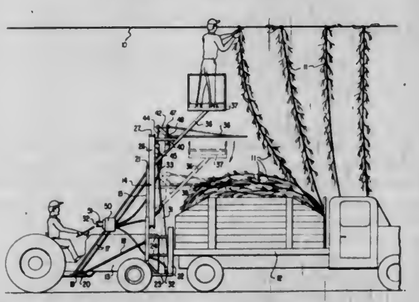


1. A unitary molded loudspeaker diaphragm comprising a shaped continuous sheet of compliant, open-celled, foamed plastic material and a vibratile surface portion molded thereon, said sheet having a peripheral mounting area free from coverage by said vibratile surface portion and said diaphragm being adapted to be mounted within a speaker mounting frame by having the periphery of said sheet secured to said frame, said vibratile surface portion having a portion adapted for mounting a voice coil and having a face substantially completely covered by said compliant, foamed plastic material, said vibratile surface portion being lightweight, stiff, closed-celled, foamed plastic material that is molded in situ onto surface portions of said sheet of compliant, foamed plastic material intermediate its peripheral mounting area and said portion adapted for mounting a voice coil to cause mechanical interlocking of material of said vibratile portion with cells of said compliant material, whereby said sheet of compliant material serves to damp undesired vibrations arising in and provides means for compliant support of said vibratile surface portion.

3,285,365
APPARATUS PARTICULARLY FOR USE IN HARVESTING HOPS

Le Roy T. Longton, Yakima, Wash., assignor to Johnny Hester, Yakima, Wash.

Filed Dec. 14, 1964, Ser. No. 417,872
6 Claims. (Cl. 182—63)

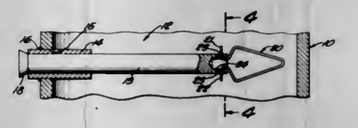


3. An apparatus for use in harvesting hop vines which hang from overhead trellis wires comprising a motor vehicle, a supporting frame on the motor vehicle including a substantially vertical track means extending above the vehicle, a carriage engaging the track means and movable upwardly and downwardly thereon, power means controlled from the vehicle and connected with the carriage to raise and lower the same, a worker supporting platform secured to the carriage to move therewith and adapted to position the worker close to said vines, a vine packing rack pivoted to the carriage and being vertically swingable and adapted in one position to project substantially vertically above the carriage and in another position to project substantially horizontally forwardly of the carriage and vehicle, and separate power means controlled from the vehicle and connected with said rack to control the movement thereof upon the carriage.

3,285,366
RETRACTABLE STEP FOR UTILITY POLES AND THE LIKE

L. E. Lindsey, 222 Vista Ave., Pasadena, Calif.

Filed May 24, 1965, Ser. No. 457,916
3 Claims. (Cl. 182—92)

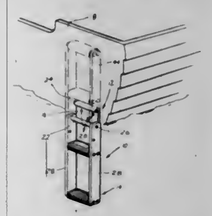


1. A metallic utility pole or the like having an upright tubular body, an opening through the side of said tubular body, a metal sleeve projecting radially through said opening and welded thereto, a rigid step slidably supported in said metal sleeve for movement between an extended position forming a workman support and a retracted position substantially interiorly of said tubular body, and spring keeper means on the inner end of said rigid step having converging legs located outwardly of the inner end of said step and having aligned free ends extending in opposite directions outwardly through diametric openings at the inner end of said step, and said converging legs being engageable with the interior of said metal sleeve to cam said legs together as said keeper means is forced axially along said sleeve thereby to retract the aligned ends of said legs inwardly of the outer ends of said diametric openings during the assembly operation, and said spring keeper means thereafter expanding to extend said aligned legs and lock said step against disassembly from said sleeve while leaving the step free for limited movement axially of said sleeve.

3,285,367
EMERGENCY BOAT LADDER

Isidore Robert Brodie, New London, Conn., assignor to The All-Time Manufacturing Company, Incorporated, Montville, Conn., a corporation of Connecticut

Filed Feb. 12, 1965, Ser. No. 432,240
9 Claims. (Cl. 182—97)

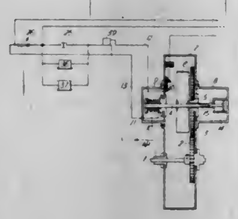


1. An emergency boat ladder assembly comprising a mounting bracket having a flat base portion adapted for attachment at a lower portion of a boat transom above water level, said bracket also including lower and upper outwardly generally horizontally projecting portions, said lower projecting portion including pivot support means adapted for connection with an upper end portion of a ladder to provide for swinging movement of the ladder in a vertical plane to a lower operative substantially vertically position and through approximately 180° to an upper storage position adjacent and substantially parallel with the transom, and said upper projecting portion including latch means adapted for releasable connection with a ladder in its upper storage position, and a ladder having a pair of vertical side rails and at least one horizontal rung connected therebetween at lower portions thereof, said ladder side rails being so spaced apart laterally as to receive said lower projecting portion at all times and to receive both said lower and said upper projecting portions of said mounting bracket therebetween when the ladder is swung to its upper storage position, the upper end portions of said side rails being pivotally connected with said lower projecting portion on said bracket, and the said ladder being of such length that the rung thereon is disposed substantially beneath water level with the ladder in its lower operative position, the ladder being disposed beneath the upper edge of the transom and above the lower edge thereof when the ladder is in its upper or storage position.

3,285,368
VIGILANCE CONTROL DEVICE FOR DIESEL AND ELECTRIC LOCOMOTIVES AND AUTOMOBILE TRUCKS

Inder Kumar Puri, Rail Bhavan, New Delhi, India

Filed June 19, 1964, Ser. No. 376,431
7 Claims. (Cl. 180—82)

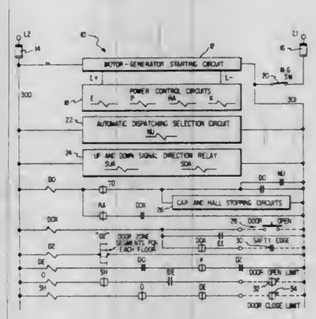


1. A vigilance control device for locomotives and road vehicles comprising a cam, a driving gear wheel means to drive said gear wheel, said cam being driven by the said gear wheel, the cam having sequentially at least three sectors, one a free sector, second a warning signal sector and third a motive power cut off and braking sector, a first spring loaded contact rod and a second spring loaded contact rod, both said rods being disposed in operative relationship with respect to the said cam, an audio-visual warning system and a motive power cut off and braking device, said first contact rod being capable of operating the audio-visual warning system and said second contact rod being capable of operating the motive power cut off and braking device when operated respectively by the cam, through the rotational movement of the cam, a solenoid in an electrical circuit, a vigilance control switch also in said circuit, said solenoid on the closing of the said switch causing the cam to disengage from the gear wheel whereby the cam is moved to non-operative position, with respect to the said two contact rods, an auxiliary contact also controlling said motive power cut off and braking device, said auxiliary contact being operated by the said cam when the latter is displaced by permanent closing of the vigilance control switch.

3,285,369
DOOR CONTROL MECHANISM

Stephen A. Hornung and Paul Duckwall III, both of Louisville, Ky., assignors to K. M. White Company, Louisville, Ky., a corporation of Kentucky

Filed Apr. 17, 1964, Ser. No. 360,558
8 Claims. (Cl. 187—52)

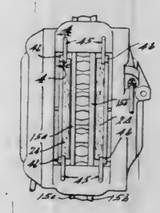


1. An elevator door control mechanism comprising sensing means responsive to contact with an object in the path of the closing door to initiate a reopening of the door, means to initiate the reclosure of the door after only a partial reopening, and means to render the sensing means inoperative from the time the door has begun to reopen until after it has started to reclose, and then to again render the sensing means operative.

3,285,370
DISK BRAKES

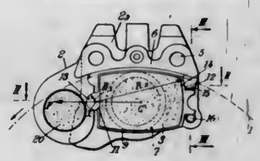
Harvey C. Swift, Birmingham, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware

Filed Oct. 28, 1964, Ser. No. 407,000
5 Claims. (Cl. 188—73)



1. In a disk brake for wheels having a brake disk rotatable with the wheel, a caliper-like member secured to a stationary part of the wheel axle, a brake shoe carried by said caliper-like member, and a spring-biased brake actuating piston supported by said caliper-like member, that improvement which comprises, a brake shoe positioning arm carried by said caliper-like member and abuttable by but not positively fixed to said brake shoe to provide an abutment against which said brake shoe is normally held by said piston, said arm having an adjustable connection with said caliper-like member whereby excessive movement of said brake shoe due to wear on the brake lining will adjust said arm to a new position to maintain a desired normal position of the brake shoe with respect to said brake disk when the brakes are released and said arm will absorb at least a part of the spring biased force of said piston in the released condition of the brakes.

3,285,371
SPOT TYPE DISC BRAKES
Jean Cadiou, Paris, France, assignor to Societe Anonyme Andre Citroën, Paris, France, a society of France
Filed Jan. 6, 1965, Ser. No. 423,697
Claims priority, application France, Jan. 13, 1964, 960,159
6 Claims. (Cl. 188—73)



1. A disc brake for a vehicle which comprises, in combination,

a disc rotatable about an axis perpendicular thereto and passing through the center thereof,

a stationary brake frame disposed astride a portion of the periphery of said disc,

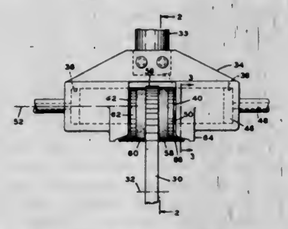
two friction members parallel to said disc and located on opposed sides thereof opposite each other, said friction members being carried by said brake frame and at least one of them being slidable with respect to said frame parallelly to said axis to permit movements of said friction members toward each other parallel to said axis to clamp said disc tightly between them,

each of said friction members including two cylindrical bearing surfaces the generatrices of which are parallel to said axis and the respective directrices of which are circular arcs having a common center and transverse to the periphery of said disc,

said frame including cylindrical holding surfaces of the same shape as said bearing surfaces, respectively, and adapted to cooperate therewith,

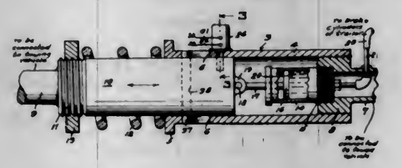
said frame further including at least one retractable abutment adapted to prevent pivoting of said friction members about an axis parallel to said disc axis and passing through said last mentioned center, in such manner that, once said abutment is retracted, said friction members can be disengaged from said frame by a pivoting about said second mentioned axis followed by a sliding in a direction parallel to said disc.

3,285,372
SELF-ENERGIZATION SPOT TYPE BRAKE SYSTEMS
Peter F. Rossmann, Irvine, Pa.
(134 Merriweather Road, Grosse Pointe Farms, Mich.)
Filed Mar. 24, 1965, Ser. No. 442,438
19 Claims. (Cl. 188—73)



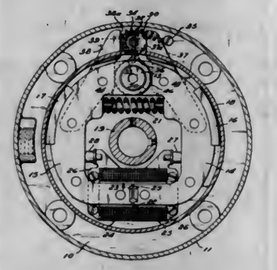
1. A disc brake mechanism for use with a disc fixed to rotatable structure to be braked, said disc brake mechanism comprising a housing adapted to be fixed to structure adapted to resist rotation of said disc with said housing positioned adjacent but spaced from the disc, said housing having a cylinder therein comprising a cylindrical bore oriented with its axis generally parallel to and offset from the axis of rotation of the disc between said disc axis and the periphery of the disc, a piston mounted in said cylinder bore for reciprocable movement along and rotational movement about the axis of said cylinder, said piston having one end projecting from said cylinder toward the disc, friction means on said one end of said piston adapted for face-to-face frictional contact with said disc and adapted to develop a resultant frictional force when in said contact tending to rotate said piston about said cylinder axis, means for moving said piston axially of said cylinder for urging said friction means into said frictional contact with the disc and cam means on said piston and housing cooperable in response to said frictionally induced rotation of said piston to develop an axial component of force on said piston urging the same toward the disc.

3,285,373
HITCH BRAKE
Curtis L. Wilson, Box 1094, Sierra Vista, Ariz.
Filed Dec. 10, 1964, Ser. No. 417,522
1 Claim. (Cl. 188—112)



A combined hitch brake between a towing and a towed vehicle comprising, in combination, a tubular sleeve having a flange at one of its ends and a pair of diametrically disposed, elongated slots in its wall; a first shaft having an enlarged, externally threaded head portion engaged in the other end of said tubular sleeve, said first shaft serving as a linking member to the towed vehicle; a second shaft having an enlarged piston portion at one of its ends, its other end serving as a connecting member to the towing vehicle, said piston portion being slidable in said tubular sleeve and having external threads along a portion of its outer end and a pair of axially disposed ears integral with its inner end; a collar threadably engaged on said external threads on said piston; a buffer spring encircling said piston between said collar and said flange on said tubular sleeve for preventing full application of the brakes of the towed vehicle while in transit, its tension being preset by adjustment of said collar; a hydraulic brake housing threadably engaged axially in said head portion of said first shaft and being in fluid connection with the brakes of the towed vehicle, there being a rod and piston assembly slidable in said housing, the rod being pivoted to said ears on the piston of said second shaft whereby axial movement thereof will move said rod and piston assembly to effect application or release of the brakes of the towed vehicle; a solenoid fixed on said tubular sleeve and having an armature and a spring loaded plunger slidable therein, there being a radial bore in said piston on said second shaft and being adapted to receive said plunger, and a switch in electrical connection with said armature whereby when said switch is closed, said armature is energized and said plunger will move into said bore when said second shaft is in a position to cause release of the brakes of said towed vehicle to render its brakes inoperative; and a pin diametrically fixed in said piston on said second shaft, its ends extending into said elongated slots in said tubular sleeve to regulate axial movement of said piston within said tubular sleeve.

3,285,374
MAGNETIC BRAKE WITH MANUAL RELEASE
James A. Mason, Shaker Heights, Ohio, assignor to Fawick Corporation, a corporation of Michigan
Filed Oct. 23, 1964, Ser. No. 406,125
11 Claims. (Cl. 188—171)



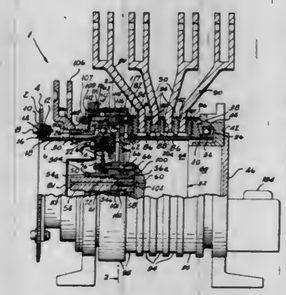
1. A magnetic brake comprising a brake drum, a pair of ferromagnetic brake shoes inside said brake drum, pivot means pivotally supporting said brake shoes, said brake shoes presenting confronting pole tips at one side of said pivot means, electrically energizable coil means inductively associated with said brake shoes for drawing their pole tips together in response to energization of the coil means so as to retract the brake shoes inwardly from the brake drum, main spring means urging the brake shoes outwardly for braking engagement with the brake drum, and a manually operable release for retracting said brake shoes inwardly from the brake drum against the urging of said main spring means, said release comprising manually rotatable cam means at the opposite side of said pivot means from said pole tips, and cam follower means coupled to said brake shoes and extending on said opposite side of said pivot means for engagement by said cam means, said cam means being rotatable in one direction to move said cam follower means in a direction effective to retract said brake shoes inwardly from the brake drum.

3,285,375
SLACK ADJUSTER
Erik Mauritz Jeppsson and Nils Börje Lennart Sander, Malmo, Sweden, assignors to Svenska Aktiebolaget Bromsregulator, Malmo, Sweden, a Swedish company
Filed Sept. 17, 1964, Ser. No. 397,141
9 Claims. (Cl. 188—196)



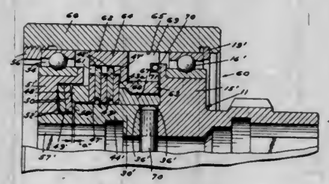
2. An automatic slack adjuster for brakes comprising an elongated housing, a front rod part extending into said housing through the front end thereof, a rear rod part extending into said housing through the rear end thereof, said rear rod part being constructed with a nonself-locking screw thread, both of said rod parts being slidably mounted with respect to said housing, a feeding nut and a locking nut carried by said screw thread of said rear rod part, spring influenced sliding means in said housing for rearwardly clutchably engaging said locking nut up to a certain value of the braking force transmitted through the slack adjuster and forwardly clutchably engaging said locking nut at braking forces above said certain value, and for locking said housing against rotation relative to said front rod part at braking forces below a certain value at least as high as said first mentioned value, said spring influenced sliding means having a limited axial play relative to said front rod part, tooth means clutchably connecting said feeding nut and said housing in the neutral position of the slack adjuster, a telescopically compressible sleeve mounted between said feeding nut and said locking nut, a biased spring in said telescopically compressible sleeve, the latter having an axial play relative to a shoulder of said housing slightly greater than the overlapping of said tooth means, and means for detaining said housing upon a certain travel thereof from its neutral position.

3,285,376
CLUTCH MECHANISM FOR USE IN AN AUTOMATIC CONTROL SYSTEM
Charles G. Starrantino, Fair Lawn, N.J., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed Jan. 28, 1965, Ser. No. 428,680
19 Claims. (Cl. 192—.02)



18. A system for actuating aircraft controls comprising a power source, a shaft rotatably connected to the power source, a plurality of control levers rotatably mounted to the shaft, displaceable friction means rotatable with said shaft and interposed between the control levers, means to displace the friction means to exert a friction force on the control levers to drivingly connect said control levers to the power source, means to limit the rotation of said control levers, and means to connect said control levers to the aircraft controls.

3,285,377
TORQUE RELEASED ONE WAY BRAKE
Ralph J. Rasmussen, New Baltimore, Mich., assignor to Formsprag Company, Warren, Mich., a corporation of Michigan
Filed Feb. 20, 1964, Ser. No. 346,176
2 Claims. (Cl. 192—8)



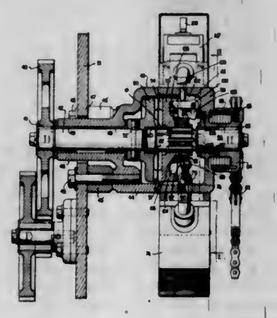
1. A torque transmitting mechanism having coaxial power input and output members, and means to prevent or limit rotative overrun of the loaded output member

of the mechanism in the direction of rotation of the input member, comprising roller and ramp type drive means having elements fixedly connected respectively to said input and output members and operable in response to relative rotative shift of said members attending said overrun to cause axial shift of the members in one direction toward one another, said members being shifted away from one another during a power transmitting phase, a fixed brake member, a brake disc set having means to releasably connect the same in operative braking relation between said output and braking members, said connecting means comprising an intermediate member with which said brake disc set has braking engagement, and sprag means disposed between said intermediate and brake members to releasably and wedgingly lock the same to one another, said output member being operatively engageable with said brake disc set upon movement of said output member in said one axial direction to cause said brake set to lock the output member in relation to said fixed brake member during said overrun.

3,285,378
RING RAIL WIND-DOWN UNIT FOR SPINNING MACHINE

Joe Kent Garrison, Greenville, S.C., and Walter Engels, Tryon, N.C., assignors to Southern Machinery Company, Greer, S.C., a corporation of South Carolina

Filed Oct. 5, 1964, Ser. No. 401,575
4 Claims. (Cl. 192—12)

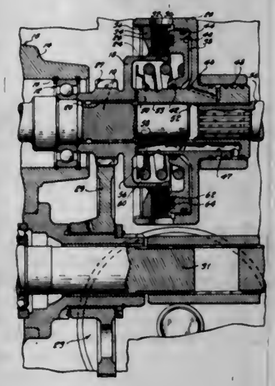


1. A ring rail lowering unit for textile spinning frames comprising a casing adapted to be mounted on spinning frame head end structure, an input rotary shaft journaled on said casing and adapted to be turned continuously by spinning frame gearing, a first clutch head on the input shaft to turn therewith, a rotary output shaft journaled upon said casing and being substantially coaxial with the input shaft and extending exteriorly of the casing, ring rail lowering pulley means on the output shaft exteriorly of the casing, a second clutch head on the output shaft in said casing in opposed relation to the first clutch head and turning with the output shaft and shiftable axially thereon toward and away from coupling engagement with the first clutch head, a spring tending to maintain said clutch heads separated, a solenoid on one side of said casing including a plunger which projects generally tangentially into the casing when the solenoid is energized, an oscillatable axially shiftable cam within the casing adjacent the second clutch head and having a thrust-receiving abutment in the path of movement of said plunger, a spring connected with said cam to resist turning thereof by said plunger, and reaction roller means in said casing near one side of said cam and engageable with high and low step portions of the cam upon turning of the cam by said plunger and last-named spring, said cam when turned by said plunger shifting the second clutch head into coupling engagement with the first clutch head.

3,285,379
FLUID PRESSURE CLUTCH WITH SPRING CUSHION

Carl A. Helquist, Birmingham, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Oct. 21, 1964, Ser. No. 405,357
4 Claims. (Cl. 192—85)



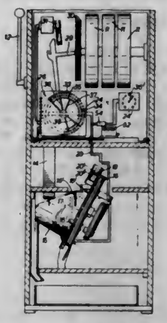
1. A multiple disc clutch assembly comprising a driving element, a driven element, a first set of friction discs carried by one element, a second set of friction discs carried by the other element, said discs being situated in interdigital relationship, a reaction disc carried by said one element on one axial side of said discs, an annular cylinder defined by one of said elements, an annular piston situated with said cylinder and cooperating therewith to define a pressure chamber, said annular piston including a disc engaging surface proximate to but axially spaced from said discs, an annular groove formed in said piston surface, a circular piston spring situated in said annular groove, said spring being formed with undulations that extend axially with respect to the axis of said clutch disc assembly, the depth of said groove being substantially greater than the axial thickness of said spring.

3,285,380
COIN OPERATING MECHANISM

Maurice Sykes, London, England, assignor to Mar-Matic Sales Limited, London, England, a company of Great Britain

Filed Jan. 26, 1965, Ser. No. 428,144
Claims priority, application Great Britain, Jan. 27, 1964, 3,461/64
7 Claims. (Cl. 194—2)

1. In a coin operated mechanism including independently movable mechanical components to indicate a predetermined condition, the improvement of an electrical coin counter comprising a trough for storing a supply of coins, a coin carrier device for carrying the coins sequentially from the trough, a coin delivery passage for receiving the coins from said carrier device, means for sensing the passage of individual coins in said delivery passage, a setting device responsive to the position of said movable members to set a predetermined number of coins to be delivered to said passage, stepping means responsive to said sensing means to reset said setting device with the passage of each coin, and means for terminating the

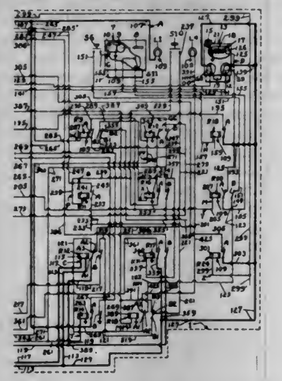


delivery of said coins when said setting device reaches a predetermined position thereby indicating said predetermined number of coins have been delivered.

3,285,381
CURRENCY CONTROLLED GASOLINE DISPENSER

Elmer A. Robbins, Fort Wayne, Ind., assignor to Tokheim Corporation, Fort Wayne, Ind., a corporation of Indiana

Filed Dec. 21, 1964, Ser. No. 419,931
28 Claims. (Cl. 194—5)

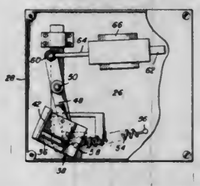


9. In a liquid vending system, the combination of
(1) currency accepting means having a plurality of individually operated credit input devices each adapted to produce a separate, different value pulse for each denomination of currency accepted, the values of said pulses comprising at least one unit value of currency and at least two successive binary multiples thereof,
(2) a binary credit accumulator, comprising a plurality of binary order mechanisms, adjacent ones of which represent successive binary values and each of which has a zero and a credit posted condition,
  (a) transfer means connecting adjacent order mechanisms,
(3) means connecting each input device to feed its value pulses directly to the covalent binary order mechanism,
  (a) said binary order mechanisms and transfer means serving to accumulate the total value of the pulses, each time a pulse occurs,
(4) dispensing means having a liquid line,
  (a) a meter in said line,
(5) cost registering means driven by said meter,
(6) a control device movable between on and off positions,
(7) means responsive to said control device, when it is in the on position and a second device conditioned by the credit accumulator when credit is accumulated thereon for resetting said registering means to zero,
(8) means operable by said resetting means, when said registering means is reset to zero, for activating said dispensing means,
(9) a pulse generator operated by said registering means, so as to produce one pulse per unit value of liquid dispensed,
(10) means connecting said pulse generator to actuate said credit accumulator to reduce the total credit on said credit accumulator by one, lowest order, binary unit value for each pulse, and
(11) means operable when the credit is reduced to zero for deactivating said dispensing means.

3,285,382
ANTI-CHEATING DEVICE FOR COIN CHANGING MACHINES

Grover C. Williams III, 238 Columbia Turnpike, Rensselaer, N.Y.

Filed May 4, 1965, Ser. No. 452,971
8 Claims. (Cl. 194—10)

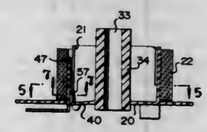


7. In combination with a coin operated machine including a coin passage having an inlet end and a coin switch actuated in response to deposit of coins into the passage, an anti-cheating device comprising, closure means responsive to actuation of the coin switch following deposit of a coin for closing the inlet end of the coin passage, and cutter means mounted by the closure means for displacement across the inlet end of the coin passage in response to said closing thereof, whereby anything attached to the deposited coin and extending outwardly through the inlet of the coin passage will be severed.

3,285,383
RIBBON SPOOL REVERSING MECHANISM

Walter David Landgraf, 4808 W. 96th Place, Oak Lawn, Ill.

Filed Jan. 21, 1965, Ser. No. 426,803
3 Claims. (Cl. 197—175)



1. A molded plastic ribbon spool comprising a substantially circular flange having a central axis, a tubular hub projecting axially from said flange, a longitudinal gap in the wall of said tubular hub, said flange including a resilient element formed by a cutout region in said flange adjacent and in alignment with said longitudinal

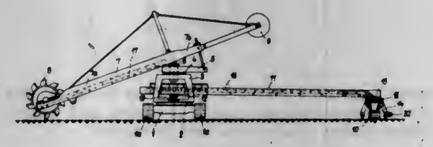
gap, said resilient element being positioned normally in the plane of said flange and projecting radially within said cutout region from a point adjacent the axis of said flange toward the longitudinal gap in the wall of said hub; and a ribbon reversing lever having a pair of substantially perpendicular arms, one of said arms being dimensioned to permit passage through said longitudinal gap, said one of said arms including a projecting tongue arranged to contact and to depress said resilient element when said reversing lever is installed in position in said spool via said cutout region and last-named arm is confined within said gap by ribbon wound about said hub, said resilient element thereby biasing said lever to pivot outwardly of said hub and cooperating with said tongue to retain said lever in coupled pivotal relationship with said spool in the installed position.

3,285,384
SYSTEM FOR DETECTING IRREGULARITIES IN TYPING TECHNIQUE
Walter M. Sharp, Jr., Columbus, Ohio, assignor to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware
Filed Dec. 18, 1963, Ser. No. 331,441
3 Claims. (Cl. 197—187)



1. In combination in a typewriter having a base, a platen mounted on said base with a central, horizontally disposed axis extending transversely thereof, said platen having a peripheral surface extending around said axis, a set of type cooperating with said peripheral surface of the platen, said platen and said type being mounted on said base for relative movement in the direction of the axis of the platen from an initial starting position at the left of said base to a final stopping position at the right of said base, a set of keys on said base located in front of said platen operatively connected to the set of type for actuating the type and producing said relative axial movement of said platen surface and said set of keys toward the final stopping position at the right of said base, means for supporting a sheet of paper in association with the platen surface in a position fixed axially thereof but free to advance forwardly and upwardly thereover at a right angle to the axis of the platen and so as to be engaged by the type when actuated by the keys, said platen and keys being mounted on said base for relative return movement from said final stopping position at the right of said base to said initial starting position at the left of said base; sheet-advancing means independent of the actuation of the keys and said return movement for moving the sheet continuously at a constant predetermined rate upwardly over the platen surface in engagement therewith and at said right angle relative to the axis of the platen so that as the keys are actuated during such advancing and axial movement and as the platen and keys are returned to their initial relative starting position, a combination relative movement of the sheet and type is produced both horizontally in the direction of said platen axis and upwardly at a right angle thereto, thereby resulting in the typing of a variable angular line on the sheet which slants at an inclined angle from left to right and which has characteristics dependent on the skill of the typist actuating the typewriter by said keys and controlling said returns movement to said initial starting position.

3,285,385
TRANSLOADING DEVICE
Alexander Langner, Rheinhausen, Germany, assignor to Beteiligungs- und Patentverwaltungsgesellschaft mit beschrankter Haftung, Essen, Germany
Filed Oct. 22, 1964, Ser. No. 405,791
Claims priority, application Germany, Oct. 25, 1963, B 74,012
8 Claims. (Cl. 198—9)



1. In an arrangement for picking up pourable material from a storage place and conveying the picked-up material: a movable loader including first conveying means and pick-up means at one portion of said conveying means and also including movable carriage means having frame means supporting said first conveying means, first turntable means interposed between said carriage means and said frame means to permit relative turning movement therebetween, second turntable means interposed between said frame means and said first conveying means for permitting relative turning movement therebetween, second conveying means normally being arranged in spaced relationship to said carriage means for receiving picked-up goods from said first conveying means, and third conveying means having one portion below said first conveying means for receiving picked-up goods therefrom and having another portion above said second conveying means for unloading thereonto material received from said first conveying means, movable supporting means including pivot means arranged above said second conveying means and pivotally supporting said other portion of said third conveying means, said carriage means being movable relative and substantially parallel to said second conveying means while during this movement for a certain distance that portion of said third conveying means which is above said second conveying means merely turns about said pivot means, and means operable automatically in response to a certain angular position of said third conveying means relative to said second conveying means to displace said supporting means and thereby the said other portion of said third conveying means which is above said second conveying means so as to again increase the angle between said second and third conveying means.

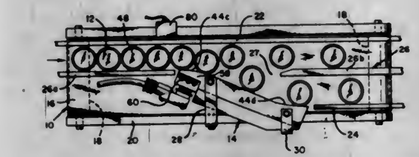
3,285,386
CAN DIVIDER
Edmond B. Gorman, Campbell, Calif., assignor to Peco Corporation, Mountain View, Calif., a corporation of California
Filed May 26, 1965, Ser. No. 458,888
15 Claims. (Cl. 198—31)

1. A diverter for dividing a traveling row of magnetic articles comprising,

a rail having an upstream and adjacent said row of articles and a downstream end spaced therefrom,

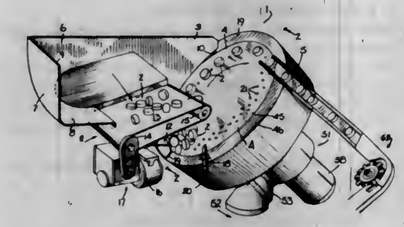
first magnetizing means for magnetizing said rail to produce a first magnetic flux field,

a low reluctance flux path at the upstream end of said rail for reducing the external magnetic flux field thereat, and



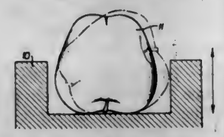
second magnetizing means for intermittently magnetizing said low reluctance flux path for intermittent generation of an external magnetic flux field thereat for attraction of selected magnetic articles thereto.

3,285,387
VACUUM HOPPER
Charles S. Ochs, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware
Filed Mar. 30, 1965, Ser. No. 443,896
2 Claims. (Cl. 198—33)



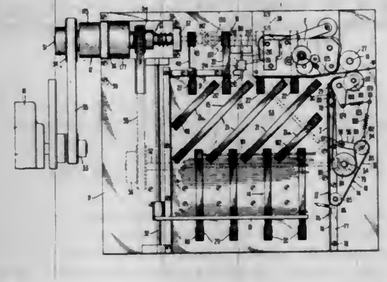
1. A hoppering apparatus for closure caps comprising a generally cup-shaped housing providing a vacuum chamber, a perforate wheel rotatably mounted in said housing at substantially the rim thereof, a face plate detachably secured to said wheel covering said chamber and provided with a series of perforations about its margin, motor means for rotating said wheel and face plate, a blower connected to said housing for exhausting air from said chamber, means for feeding caps to said face plate for adherence to the margin thereof by air entering the chamber through the perforations in the face plate and wheel, and cap removing means having a surface engageable by caps adhering to said margin for directing said caps successively off the face plate.

3,285,388
FRUIT CORING MACHINE
Theodore Armstrong, Torrance, Calif., assignor to Pacific Preserving Co., Gardena, Calif., a corporation of California
Original application Sept. 3, 1963, Ser. No. 305,991. Divided and this application Oct. 22, 1965, Ser. No. 502,068
1 Claim. (Cl. 198—33)



The process of orienting the stem-blossom axis of substantially spherical fruit such as apples having characteristic depressions at the stem and blossom ends, which comprises: placing the whole fruit upon a substantially flat and substantially horizontal surface; vibrating the supporting surface so that the edges about the stem or blossom end of the fruit ultimately contact the said surface to form a relatively stable base for the fruit thus vertically orienting the fruit core, slowly feeding the fruit in a direction substantially parallel to the surface while the surface is being vibrated; and then transporting the fruit from the supporting surface while maintaining its orientation.

3,285,389
ITEM HANDLING APPARATUS
Donald E. Kaplan, Philadelphia, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Aug. 3, 1964, Ser. No. 386,967
5 Claims. (Cl. 198—34)

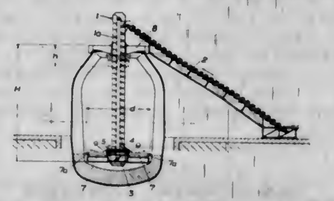


1. Apparatus for aligning and increasing the distance between adjacent workpieces in a stack, while advancing the same toward a feeding device, comprising in combination, first conveyor means for advancing said workpieces toward said feeder, guide means for aligning said workpieces along a side edge of said apparatus, second conveyor means mounted between said first conveyor means and said feeding device and disposed at an angle toward said guide means for advancing said workpieces toward the feeder and guide means, means mounted for movement by said first and second conveyor means for engaging the rear of said stack to support the workpieces in edgewise relationship relative to said first and second conveyor means, means for driving said first conveyor means, and means for driving said second conveyor means at a greater velocity than said first conveyor means to thereby increase the distance between adjacent workpieces in said stack while advancing the same toward said feeder.

3,285,390
APPARATUS FOR LINING METALLURGICAL VESSELS, SUCH AS CONVERTERS
Peter Puxkandl and Helmut Smejkal, Linz, Austria, assignors to Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft, Linz, Austria, a company of Austria
Filed Dec. 17, 1964, Ser. No. 419,060
Claims priority, application Austria, Dec. 23, 1963, A 10,375
5 Claims. (Cl. 198—103)

1. Apparatus for lining metallurgical vessels with refractory bricks, comprising a conveyor feeding said refractory bricks from an operating level to the charging device of a paternoster elevator adapted to be introduced into the interior of said vessel from one of the top and bottom sides thereof and carrying a working platform provided with a device for distributing said bricks, said

distributing device comprising at least one rotating annular plate to which said bricks are supplied after being



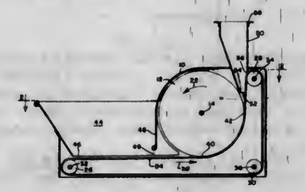
removed from said paternoster elevator by finger-like means and on which said bricks are distributed, and a device for feeding said bricks to working position.

3,285,391
ACCUMULATION CONVEYOR
Hollis W. Fix, Whittier, Calif., assignor to Fruehauf Corporation, Detroit, Mich., a corporation of Michigan
Filed Oct. 14, 1965, Ser. No. 496,075
4 Claims. (Cl. 198—127)



1. An accumulation conveyor comprising
a plurality of load supporting driven rolls,
a continuously rotating power roll underlying said drive rolls extending generally parallel thereto in spaced relation,
a continuously moving belt drivably engaged with said power roll,
a drive roll coaxially aligned with said power roll,
a releasable clutch between said power and drive rolls comprising a helical coil spring, one end of said coil spring drivably coiled about said drive roll and the other end being drivably coiled about said power roll, and
means engageable with the other end of said spring to effect uncoiling thereof and release of its driving engagement with said power roll.

3,285,392
CROP ELEVATING MACHINE
Keith E. Wood, Ottumwa, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Dec. 3, 1964, Ser. No. 415,759
3 Claims. (Cl. 198—128)



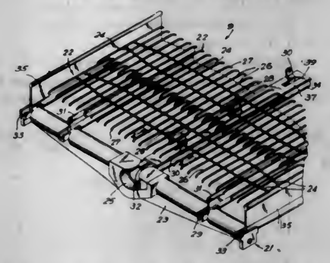
1. A material handling device comprising a support, a drum journaled in the support and rotating about a horizontal axis, a plurality of horizontal rollers journaled in said support, an endless belt moving around the rollers, partially extending around the periphery of the drum, and separating from the drum at a point where the belt is moving in a generally upwardly direction, a hopper having an outlet above the drum-contacting surface of the belt for feeding the crop material thereto before the belt engages the drum, an upwardly extending discharge spout having an inlet opening between the belt and the drum proximately above the point where the belt separates from the drum, one edge of the inlet adjacently extending the width of the belt and the opposite edge being adjacent the periphery of the drum, the crop material passing between the drum and the belt and receiving an angular velocity whereby its momentum carries it tangentially upwardly through the discharge spout.

3,285,393
SUSPENDED FLEXIBLE STRAND CONVEYOR
Paul A. Johnson, Fairmont, W. Va., assignor, by mesne assignments, to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 27, 1957, Ser. No. 686,716
9 Claims. (Cl. 198—192)



1. In a rope frame conveyor having
a frame comprising a pair of generally parallel ropes trained along a course,
at least an intermediate portion of said ropes being supported from a plurality of substantially regularly spaced elevated support locations which enables said ropes to be longitudinally shiftable along the course, and
troughing idler means connected to said ropes and supported by them,
the improvement comprising
elongated return roller means, and
means suspending the elongated return roller means by its end portions from the ropes,
said suspending means being connected to the ropes at locations spaced from, and independent of, the points of connection of the troughing idler means to the ropes.

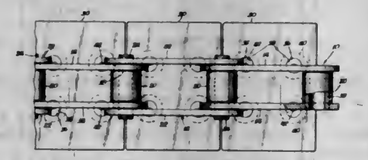
3,285,394
CONVEYING SYSTEM
William E. Lanham, 3456 Woods Drive; Gene C. Miller, 3540 Woods Drive; and William E. Lanham, Jr., 3044 Katherine Valley Road, all of Decatur, Ga.
Filed Apr. 16, 1965, Ser. No. 448,732
8 Claims. (Cl. 198—154)



1. In a conveyor of the character described, the combination of, a frame construction, a conveyor tube assembly extending along a continuous conveying and return path from a receiving zone to a discharge zone, an endless conveyor chain extending along said path within said tube assembly, said conveyor chain comprising interconnected unit assemblies, each of which is adapted to move freely

through said tube assembly and each of which has means forming driving shoulder means, said shoulder means being spaced a predetermined distance apart throughout the extent of said conveyor chain, a plurality of product supporting racks corresponding in number to said unit assemblies and mechanically connected respectively thereto, whereby each of said racks is connected to one of said unit assemblies, each of said racks presenting a horizontal product supporting area with each of said areas being substantially contiguous with those of the next adjacent racks whereby said racks form a substantially continuous conveying area, track means providing support for said racks throughout said conveying area, and driving means for said conveyor chain comprising an endless driving chain having spaced driving lugs which move into engagement with said shoulder means and means moving said driving chain along a path, a portion of which is substantially parallel with and adjacent the path of said conveyor chain, said driving lugs being spaced from each other along said driving chain at a distance slightly less than the spacing between said shoulder means on said conveyor chain.

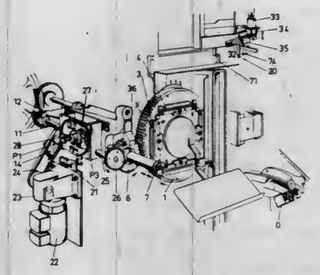
3,285,395
CONVEYOR CHAIN
Baird E. Resener, Indianapolis, Ind., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey
Filed Sept. 14, 1964, Ser. No. 396,019
2 Claims. (Cl. 198—189)



1. A conveyor chain of the type including alternating pairs of elongated metallic roller and pin link plates pivotally interconnected in adjoining and overlapping series by means of cross pins, each pair of link plates having a top plate extending across and beyond the top edges thereof, said top plates including at least one aperture registering with each of the lower link plates, the axes of said apertures being substantially aligned with the inner faces of said pin link plates and with the outer faces of said roller link plates, and a metallic weldable stud extending through each of said apertures, said weldable studs being formed at one end with a head seated against said top plate and welded at the other end to the respective link plate, whereby said top plate is held in a fixed position with respect to said link plates.

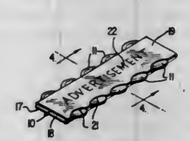
3,285,396
MOLD WHEEL INDEXING AND MAGAZINE SELECTOR APPARATUS
Karl Debus, Bad Homburg vor der Hohe, Germany, assignor to Linotype G.m.b.H., Frankfurt am Main, Germany
Filed Oct. 8, 1965, Ser. No. 494,222
22 Claims. (Cl. 199—11)

1. In a line casting machine, in combination, mold wheel means having angularly spaced molds and mounted for indexing movement between a plurality of positions in which different molds are operative; main drive means; motor means; means for selectively driving said mold wheel means either only from said drive means or only from said motor means; first selector means connected with said last mentioned means and said motor means, and including a plurality of manually operated switches respectively associated with said positions of said mold wheel means and being selectively operable for causing indexing of said mold wheel means by said motor means to corresponding positions, said manually operated switches being located remote from said mold wheel means; a plurality of magazines respectively associated with different sets of matrices and with corresponding positions of said mold wheel means; second selector means



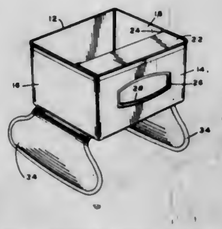
including a plurality of selector switches respectively associated with different magazines, and means controlled by said selector switches to render a selected magazine operative, said selector switches being connected with said first selector means for causing indexing of said mold wheel means by said motor means to a position associated with the respective selected magazine and with a corresponding mold.

3,285,397
PACKAGE FOR TRANSIT TOKENS AND THE LIKE
Louis M. Silverman, Brooklyn, N.Y., assignor to Transitoke, Inc., Newark, N.J., a corporation of New Jersey
Filed Sept. 24, 1964, Ser. No. 399,021
2 Claims. (Cl. 206—.83)



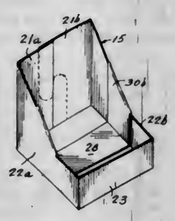
1. A package for circular disc elements comprising a sheet of single thickness relatively stiff material having a first and second body portion and having a fold line substantially at its transverse center, said first body portion being readily foldable over onto said second body portion in superposed covering relation thereto, said first body portion having a plurality of spaced openings formed therethrough along said fold line, a filler strip fixedly mounted upon said second body portion and being substantially coextensive therewith and having one edge near and extending along said fold line, said filler strip having a plurality of spaced pockets provided in one of its edges for receiving said disc elements, said pockets having circularly curved margins and mouths smaller than the diameters of the disc elements to be positioned therein, said openings in said first body portion being adjacently aligned with the pockets in the edge of the filler strip, a pressure-sensitive adhesive on the upper face of the filler strip, and said first body portion folded onto said second body portion having the filler strip mounted thereon to secure the parts in folded relation with the pockets substantially covered and wherein portions of the disc elements will be adapted to project beyond the edge of the package for grasping by the user.

3,285,398
LITTER AND TISSUE BOX CONTAINER
Daniel Charles Larkin, 3134 Woodstock Drive, Detroit, Mich.
Filed Feb. 25, 1965, Ser. No. 435,134
3 Claims. (Cl. 206—19.5)



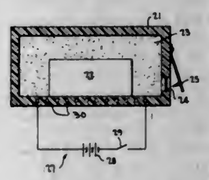
1. A litter and cleansing tissue container for use in the interior of a motor vehicle comprising, in combination, a container having a bottom and four sides and open at the top, an elongate saddle-like pad secured intermediate its ends to the bottom of the container and having opposed end portions extending sufficiently beyond opposite sides of the container and being flexible and weighted so as to drape downwardly away from the bottom of the container over the top and opposite sides of the tunnel hump of an automobile body when the container is seated upon said hump, said saddle pad provided on its underside with a material of a sponge rubber-like frictional character, the interior of the container divided into two compartments, a litter containing compartment and a tissue containing compartment, by an upright integral partition spaced from one side wall of the container which side wall is provided with a finger opening therethrough, said tissue compartment adjacent to the side wall having the finger opening receiving and supporting a tissue containing box therein, which box has a finger opening through its side wall disposed to communicate with the finger opening through the side wall of the container.

3,285,399
STRIP BOTTOM TRAY
Randolph Bernard Snow, Chomedey, Quebec, Canada, assignor to J. C. Wilson, Limited, Montreal, Quebec, Canada
Filed Aug. 12, 1964, Ser. No. 389,048
6 Claims. (Cl. 206—44)



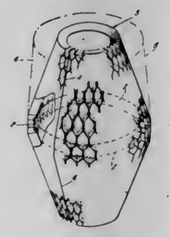
3. A collapsible display tray construction, folded from paperboard and comprising a rectangular enclosure having a pair of opposed centrally interconnected back wall portions constituting a back wall, side walls joined at folds to the back wall portions and a front wall joined at folds to the side walls, the front wall being substantially lower than the back wall so as to leave the upper front corner of the enclosure open and exposed to view, parallel portions on each side wall extending diagonally downwards, the diagonal portions being integrally connected by a panel which is folded flat down and against the inner sides of the side walls and across the bottom of the enclosure so as to form a bottom panel, the tray construction being formed from the one piece blank of flexible material, the blank having an overall substantially elongated rectangular outline and having a longitudinal margin which is straight for at least most of its length and spaced therefrom by the height of the side and back walls, a second longitudinal margin defining the upper extremity of the said side and back walls, the blank being creased and scored transversely of and at spaced intervals along its length to define said front, back and side walls with terminal portions of said blank defining said back wall being shaped to provide oposed interconnecting tabs, a central portion of said blank hearing at least one longitudinally extending cut running parallel to the straight region of said lower margin and defining the upper extremity of the front wall of the tray, and spaced diagonal fold lines extending from the upper margin of the blank to meet the terminal ends of said cut, said cut extending beyond the fold lines defining the side edges of the front wall on each side by a distance equal to the distance between the cut and the said lower margin, whereby when the blank is erected, the portion between the cut and the upper margin is adapted to be bent downwards at the diagonal fold lines and across at the transverse fold lines to form a bottom panel for the enclosure, the diagonal fold lines forming a side wall top edge portion which slopes from the said high back wall towards the said low front wall.

3,285,400
PROTECTIVE PACKAGING OF DELICATE MECHANISMS
Roy F. High, Washington, D.C., assignor to the United States of America as represented by the Secretary of the Army
Filed May 7, 1965, Ser. No. 456,895
5 Claims. (Cl. 206—46)



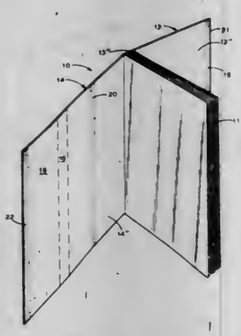
1. Apparatus for protecting a delicate mechanism against adverse environmental conditions, comprising:
(a) rigid casing means enclosing said mechanism for transporting said mechanism to its operating site,
(b) said casing being provided with means for sealing the interior of said casing from the ambient atmosphere before transportation,
(c) seal-breaking means secured to said casing,
(d) heating means secured to said casing,
(e) a sublimable solid potting compound completely occupying the space within said casing not taken by said mechanism and by said seal-breaking means and by said heating means,
(f) said mechanism being held rigidly in an inoperable position by said potting compound, and
(g) means for activating said seal-breaking means and said heating means, thereby causing said potting compound to sublime and rendering said mechanism operable.

3,285,401
SHOCK PROTECTIVE MATERIAL
George May, Wembley, England, assignor, by mesne assignments, to Hexcel Products Inc., Berkeley, Calif., a corporation of California
Original application Oct. 31, 1962, Ser. No. 234,348. Divided and this application June 28, 1965, Ser. No. 483,384
3 Claims. (Cl. 206—46)



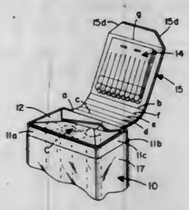
1. A shock protective material for protecting articles by envelopment which comprises a straight slice of structural honeycomb material formed in at least one face which is formed by edges of the constituent sheet material with at least one notch positioned and dimensioned to permit the slice to be expanded and formed into enveloping relationship with the article, said sheet edges at said one face being free for positioning substantially radially outwardly of the longitudinal axis within the expanded slice with the edges on opposite sides of said notch arranged at a substantial angle to one another when said slice is in enveloping relationship.

3,285,402
BOOK AND GREETING CARD COMBINATION
Jack H. Gordun, New York, N.Y., assignor to Bookem Corp., New York, N.Y., a corporation of New York
Filed Mar. 7, 1966, Ser. No. 532,410
2 Claims. (Cl. 206—46)



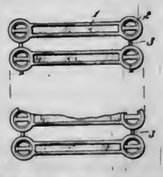
1. A book having a plurality of leaves and a cover for same used as a mailing envelope,
(a) said cover comprising a sheet divided into five connected panels,
(b) two of said panels being wide and of approximately the same size and acting as the front and back cover portions of said book,
(c) said back cover portion having a free edge,
(d) two of said panels being narrow and of approximately the same size and acting as the spine and protective portions of the back and front edges, respectively, of the leaves of said book,
(e) the fifth panel being a flap portion,
(f) a line of separable adhesive along the free edge of the inside of said back cover portion,
(g) a line of separable adhesive along the connected edge of the outside of said flap portion,
(h) whereby when said lines of separable adhesive are pressed and adhered together said cover forms a sealed envelope for mailing said book,
(i) a line of adhesive along the inside free edge of said flap portion,
(j) a line of adhesive on the inside of said front cover portion spaced from its edges to coincide with said line of adhesive on the inside of the free edge of said flap portion when said protective and flap portions are flattened against the inside of said front cover portion for putting said book in condition for reading,
(k) said leaves acting as a separator between said back cover portion and said protective and flap portions.

3,285,403
PACKAGE FOR CIGARETTES AND THE LIKE
Doris B. Kennard, 7130 33rd St. N., St. Petersburg, Fla.
Filed Oct. 29, 1964, Ser. No. 407,330
1 Claim. (Cl. 206—48)



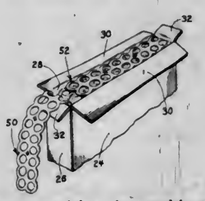
A pack for cigarettes or the like comprising a soft paper sheet or the like folded to form a rectangular container for receiving cigarettes longitudinally therein and having relatively wide opposed front and rear walls interconnected by relatively narrow side walls, a cardboard like strip having an end section attached to the inside at the rear wall and having an intermediate section extending from the top of said rear wall and adapted to overlie and substantially close the top of said pack, said intermediate section having a first fold at one end parallel to and adjacent the top edge of said back wall and a second fold at the other end and adapted to coextend with the top edge of said front wall, a free end section extending from said second fold, said free end section adapted to extend into said pack between said front wall and the cigarettes in said pack and, a block of cardboard matches attached to said free end section on the side thereof facing the inside of said pack when said free end section is inside said pack between said front wall and said cigarettes, said matches having a common base section attached to said free end section so that the matches project towards but short of said second fold line, and a match striker attached to said free end section on the side opposite the side to which said matches are attached and adjacent the outer end of said end section, whereby said matches and striker may be inserted inside said pack and retain said intermediate portion over the top of said pack to form a substantial closer for said pack, said intermediate portion having a plurality of scores extending transversely thereof and lying parallel to and between said first and second fold whereby said intermediate portion may be arched.

3,285,404
MATTRESS HANDLES
Clayton S. Spinney, Greenland, N.H., assignor to The Morley Company, Portsmouth, N.H., a corporation of Maine
Filed Dec. 5, 1963, Ser. No. 328,253
1 Claim. (Cl. 206—56)



A set of mattress handles comprising a plurality of parallel straps having their opposite sides in parallel planes and having spaces between their opposed edges, each strap having enlarged ends for attachment to mattresses and an intermediate hand-grip section of lesser width, and severable necks bridging said spaces between said planes, said necks being disposed between said enlarged ends so as not to project from the hand-grip section when severed.

3,285,405
PACKAGE FOR STORING AND DISPENSING ARTICLES
Herbert J. Wanderer, Elmhurst, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Oct. 26, 1964, Ser. No. 406,427
5 Claims. (Cl. 206—56)



1. A package comprising, in combination, a container having a bottom wall, side and end walls extending upwardly therefrom and terminating in an open upper end, and a removable cover associated with said container adjacent to its open upper end, said container having an elongated flexible strip of interconnected articles folded back and forth in alternating opposite directions therewithin in stacked relation, the opposite ends of said strip positioned in overlapping relationship adjacent the open upper end of said container and being supported by said stack of articles whereby to permit disposition of said opposite ends above the open upper end of said container for subsequent dispensing of said strip from one end while said other end is disposed for attachment to a second strip, and means within said container positioned between the inner wall surface of the container and the folded portions of said strip for restraining upward movement of said strip as it is withdrawn from said container.

3,285,406
BAG DISPENSER
Frank P. Winesett, 653 Via Mirabel, San Lorenzo, Calif.
Filed July 13, 1964, Ser. No. 382,282
9 Claims. (Cl. 206—57)

2. A bag dispenser comprising, a back strip; a front strip spaced from and superimposed upon said back strip; a plurality of bags mounted in a stack each having front and back opposed sheets connected adjacent their side edges, said back sheet having an end portion extending beyond a free edge of said front sheet disposed between said strips; fastening means joining said back and front strips for releasably retaining said bags for one at a time dispensing; said front strip having a pair of laterally spaced depending ears extending downwardly over and releasably



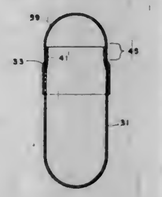
holding a portion of said free edge, said spaced ears providing a finger slot extending above said free edge enabling said front sheet to be grasped and moved downwardly and outwardly by finger pressure free of said ears while said back sheet is held by said fastening means and ears to provide a wide mouth opening during filling of said bags.

3,285,407
PROTECTIVE CONTAINERS AND MOUNTING MEANS THEREFOR
Elmer D. Abramson, Creve Coeur, Mo., assignor to Central States Paper & Bag Company, St. Louis, Mo., a corporation of Missouri
Filed Mar. 4, 1965, Ser. No. 437,165
3 Claims. (Cl. 206—57)



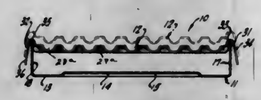
1. A packet of protective containers including a plurality of bags each having a rear wall, a front wall provided with an upper margin, and a flap disposed to the rear of said rear wall in juxaposition thereto, said flap having a lower margin in downwardly spaced relation to the upper margin of said front wall so that when said flap is turned inside out it will cover a portion of said front wall, said flap and rear wall being provided with a line of perforations extending from one side to the other of the bag, the flap and rear wall being joined by a seam below the line of perforations so that the seam will form the top margin of the bag when the bag is severed at the line of perforations and the flap is turned inside out, and a hanger-board adapted to receive a hook-like wall support, said bags being fastened to said hanger-board so as to depend therefrom.

3,285,408
CAPSULE WITH INTEGRAL LOCKING BAND
Angelo J. Carnaghi and Ivy Logsdon, Jr., Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana
Filed Oct. 16, 1964, Ser. No. 404,449
5 Claims. (Cl. 206—63.2)



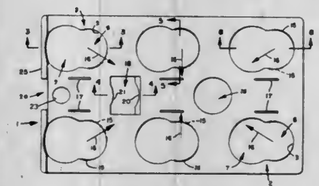
1. A separation-resistant capsule comprising a body telescopically engaged in a cap, said body having a closed end wall and a side wall having a generally cylindrical open-end portion, said cap having an end wall and a generally cylindrical side wall with means for selectively maintaining said body in first and second positively defined telescoped positions, said means comprising a substantially circumferential internal recessed portion of said cap side wall connected between said cap end wall and by a shoulder to the remainder of said cap side wall, said recessed portion being parallel to the axis of said capsule, the inner surfaces of said cap having a diameter as measured progressively toward said open-end portion always being at least as great as the diameter at a preceding point to permit the cap to be readily separated axially from a conforming internal support, said body in its first position having its open-end portion butted against the recessed portion of said cap wall and in close contact with said cap side wall, said body in its second position having its open-end portion compressed to a decreased diameter and butted against said cap end wall in compressed engagement with the recessed portion of said cap side wall.

3,285,409
INSTRUMENT TRAY
William Loran, 112 Janes St., Mill Valley, Calif.
Filed July 8, 1964, Ser. No. 381,062
5 Claims. (Cl. 206—63.5)



1. A set-up tray for dental instruments and the like, comprising first and second dissimilar and separable tray sections each having a bottom wall provided with spaced apart support elements for receiving and supporting elongated dental implements and the like of various configuration and dimension and provided also with relatively unobstructed areas intermediate said support elements to facilitate dental implement retrieval, and support structure for removably supporting said second tray section and including an upwardly extending perimetric lip provided by said first tray section and enlarging upwardly along the longitudinal edges thereof to provide side walls of greater height than the end walls whereby dental implement retrieval over said end walls is facilitated, said support structure also including a pair of downwardly opening longitudinally extending channels provided by said second tray section and being respectively adapted to removably receive said side walls therein and being longitudinally movable therealong to afford adjustment of the relative longitudinal position of said tray sections, said side walls and channels being cooperatively interrelated to dispose the bottom walls of said tray sections in spaced apart relation to provide a predetermined clearance therebetween for accommodating dental implements supported upon the bottom walls of said first tray section, said channels being defined at least in part by wall portions that extend upwardly from the bottom wall of said second tray section to a location above the support elements associated therewith.

3,285,410
BOTTLE PACKAGE AND CARRIER
Jon P. Brunsing, 345 Golden Gate Ave., Belvedere, Calif.
Filed Oct. 8, 1964, Ser. No. 402,456
10 Claims. (Cl. 206—65)



1. A connector for bottles of the type having necks of outside circular cross-sectional contour and an annular radially outwardly projecting enlargement at the upper end of each neck, comprising:

(a) a horizontal, rigid sheet of relatively resilient material formed with a plurality of keyhole openings respectively providing large and small opposite end portions and a restrictive passageway communicating between them;

(b) said passageway having opposed sides spaced apart a distance slightly less than the diameter of said small end portion and the outside diameter of the neck of each bottle at a point below and adjacent said annular enlargement;

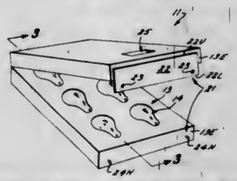
(c) said small end portion of each opening having edges terminating at said passageway adapted to tightly engage more than one half of the outer surface of said neck circumferentially thereof at said point;

(d) said large end portion of each opening having edges terminating at said passageway and said large end portion being sufficiently large to freely pass said enlargement on each neck therethrough, axially of said bottle and insufficient to pass the body of said bottle below said neck whereby said horizontal sheet may be positioned over a plurality of said bottles when the latter are upright with said necks thereof extending through said large end portions of said openings;

(e) the material of said sheet being sufficiently resilient at each passageway to be flexed and pass the neck of each of said bottles at said point laterally from said large portion into said small portion of each opening, whereby such neck will be yieldably held in said small portion by said material at said passageway.

3,285,411
RECEIVING, STORING, AND RIPENING DEVICE FOR ONE OR MORE PERISHABLE FOOD OBJECTS

Edgar English, Jr., Edwards, Calif.
(P.O. Box 169, Rossmond, Calif.)
Filed Nov. 17, 1964, Ser. No. 411,735
5 Claims. (Cl. 206—65)

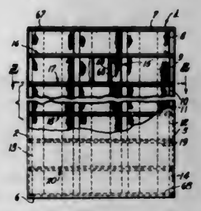


1. A receiving, storing, and ripening device for one or more perishable food objects, comprising: container means taking the form of a pair of closely adjacent area-coextensive compressible and thermally insulating pad means having a plurality of opposed mating aligned recess means half portions formed therein, each of said opposed mating recess means half portions cooperating with the similar adjacent aligned recess means half portions whereby to define a corresponding plurality of complete substantially fully enclosed recess means adapted to receive and physically protectively and thermally isolatingly support a corresponding plurality of substantially similarly shaped and sized perishable food objects therein with said mating recess means half portions being in surface contact with substantial surface areas of said perishable food objects whereby to firmly resiliently protectively support same within said recess means in nested thermally isolated and insulated relationship with respect to the exterior of said container means, a first one of said pair of compressible pad means comprising a corresponding wall portion of said container means, a second one of said pair of compressible pad means comprising a corresponding oppositely positioned wall portion of said container means and together therewith comprising said container means, said compressible pad means being formed of a compressible expanded-cell type of foam material comprising a high-efficiency thermal insulating means, said pair of compressible pad means, comprising said container means, being provided, adjacent similar ends thereof, with effective hinge means hingedly interconnecting same whereby to mount said two compressible pad means for hinged relatively rotatable opening and closing movement thereof; and controllably engageable and disengageable fastening and locking means including first and second cooperable locking means portions carried respectively by different ones of said two compressible pad means adjacent to opposite ends thereof from said effective hinge means for effectively but controllably releasably and openably locking said two compressible pad means into said closely adjacent relationship defining said plurality of recess means therebetween.

3,285,412
TUBE YARN SHIPPER

Noble A. Knight and Robert H. Francis, Richmond, Va., assignors to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware
Filed Aug. 23, 1965, Ser. No. 481,595
7 Claims. (Cl. 206—65)

1. In a container for yarn wound on tubes, the combination comprising
a container comprised of
a first pair of upright parallel side walls,
a second pair of upright parallel side walls connected to said first pair of side walls to provide a generally rectangular side wall structure, and
first and second end walls adjacent the opposite ends of said side wall structure;
a plurality of tiers of yarn tubes within said container;
a plurality of horizontal support pads in said container in close fitting relation to said side walls and forming separation for a plurality of tiers of yarn wound on tubes, each of said support pads comprised of
a first sheet of multi-layer paperboard, and
a second sheet of multi-layer paperboard,
each of said sheets comprising
a first surface layer at one side of the sheet,
a second surface layer at the other side of the sheet,
an inside corrugated layer sandwiched between said first and second layers, and
an annular depression in each sheet formed by deforming said first surface layer into the material of said corrugated layer to define a cylindrical member within each depression
said inside corrugated layer of each sheet comprising
a first corrugated layer,
a second corrugated layer, and
an uncorrugated sheet sandwiched therebetween;

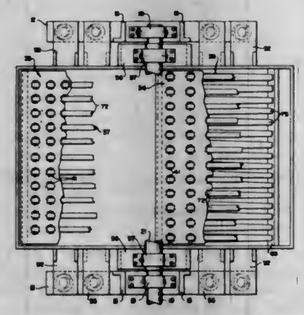


one of said sheets of each support pad being inverted relative to the other so said cylindrical members face outwardly in opposite directions;
said cylindrical members being close fitting in the ends of said yarn tubes, and said annular depressions being of a width greater than the wall thickness of said tubes to receive said tube ends therein;
at least one of said sheets of each support pad being unperforated to prevent sifting of dust and dirt from one tier onto the yarn of another tier;
said support pads being so arranged and oriented that a support pad for each tier of yarn tubes has the corrugations of a corrugated layer extending transverse to the corrugations of a corrugated layer of the support pads immediately above and below, whereby the compressive strength of said container is approximately equal in a transverse direction perpendicular to said first pair of side walls and in a transverse direction perpendicular to said second pair of side walls.

3,285,413
SCREEN APPARATUS

Ernest J. Taylor-Smith, Vancouver, British Columbia, Canada, assignor to Selector's Aggregates Co. Ltd., Vancouver, British Columbia, Canada, a corporation of British Columbia, Canada
Filed Mar. 23, 1964, Ser. No. 354,036
11 Claims. (Cl. 209—315)

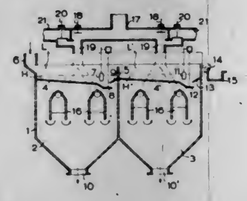
1. A screening apparatus for separating, from an agglomerate mass of material having a percentage of shards, particles having a uniform size and shape comprising an inclined vibratory screen arranged to receive the material at its upper end, said screen having particle passing apertures of uniform dimension, ejector means having a plurality of spaced particle engaging surfaces arranged below the screen so that each of said surfaces lies vertically adjacent to a corresponding aperture below said screen and in a plane parallel thereto a distance substantially equal to the aperture dimension to thereby prevent the passage through the apertures of shards having one dimension substantially greater than the aperture dimension, said particle engaging surfaces being spaced apart to permit the passage downwardly of particles passing through the first screen, means to move the ejector means in a direction normal to the plane of the screen to thereby eject



said shards upwardly out of said apertures, and a second inclined vibratory screen arranged below the ejector means to receive material passed by the first-mentioned vibratory screen, said second screen having apertures of smaller dimension taken transversely to the direction of flow of material than said apertures of the first-mentioned screen.

3,285,414
METHOD AND APPARATUS FOR CONTROLLING PULSING OF JIG WASHER SEPARATING LIQUID

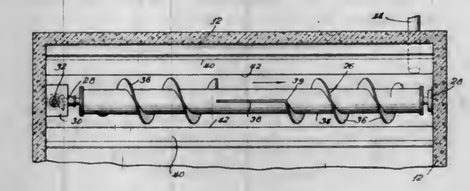
Machiel Bosman, Heerlen, Netherlands, assignor to Stamicarbon N.V., Heerlen, Netherlands
Filed Mar. 6, 1964, Ser. No. 350,049
Claims priority, application Netherlands, Mar. 6, 1963, 289,890
14 Claims. (Cl. 209—457)



7. A jig washer comprising:
at least one washing compartment adapted to contain a separating liquid;
an air chamber with an open, downwardly facing end disposed therein with the separating liquid extending into the air chamber;
a compressed air source operatively connected to the air chamber;
inlet valve means disposed between the compressed air source and the air chamber for admitting air into the air chamber, the air chamber being so constructed that the air therein is in free, direct contact with the separating liquid;
exhaust valve means operatively connected to the air chamber for exhausting air therefrom; and
means for controlling the opening and closing of the inlet and exhaust valve means by sensing variations in the levels of the separating liquid in the air chamber.

3,285,415
SLUDGE COLLECTOR METHOD AND APPARATUS

James Donald Walker, Aurora, Ill., assignor to Walker Process Equipment, Inc., Wilmington, Del., a corporation of Delaware
Filed Aug. 1, 1963, Ser. No. 299,245
9 Claims. (Cl. 210—66)

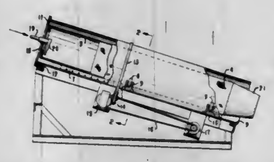


4. In a sludge thickening apparatus, a trough for receiving sludge and having a discharge opening therefrom, a collector rotatable in the trough about an axis lengthwise of the trough and having helical flight portions on one side of the discharge opening for propelling the sludge in one direction to the discharge opening, with a thickening flight extending in an axial plane between the helical flight portions and space from the discharge opening.

6. A method of sludge thickening by continuous sedimentation in a rectangular tank with a deeper cross trough at one end having a sludge discharge opening leading therefrom, and raking blades movable along the tank bottom to discharge sludge into the full length of the trough, which method comprises the steps of collecting the sludge in said trough, propelling the sludge to give it movement longitudinally of the trough in the direction of the discharge opening; kneading the sludge through a substantial length of the trough and substantially without causing propulsion thereof, to thicken and concentrate the sludge, while continuing said longitudinal movement through said length toward the discharge opening, and discharging the sludge through said discharge opening.

3,285,416
ROTARY SEPARATION OF VISCOUS PSEUDO-PLASTICS

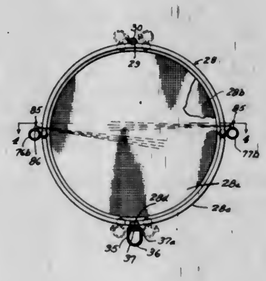
George C. Eltenton, Spital, Wirral, England, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed May 23, 1963, Ser. No. 282,737
Claims priority, application Great Britain, May 30, 1962, 20,840/62
5 Claims. (Cl. 210—77)



1. A process for separating a mixture of liquid phases within a separator container having a multitude of small perforations each between 0.0001 and 0.0025 square inch in area, one of said phases being a pseudo-plastic adapted to form a cohesive mass and wetting the surface of said container less than another liquid phase of the mixture, the other liquid phase being a Newtonian liquid, comprising the steps of:
(a) slowly rotating said container about an axis inclined at between 5° and 60° to the horizontal,

(b) admitting said mixture to the upper end of said container,
(c) rotating said container about said axis at relatively slow speeds so that the major part of said pseudoplastic forms a concentrated cohesive mass within the container while discharging the other liquid through said small perforations, and
(d) discharging said concentrated cohesive mass from the container at a lower part thereof.

3,285,417
FILTER SLUICING METHOD AND APPARATUS
Henry Schmidt, Jr., Hinsdale, and James F. Zievers, La Grange, Ill., assignors to Industrial Filter & Pump Mfg. Co., Cicero, Ill., a corporation of Illinois
Filed Jan. 16, 1964, Ser. No. 338,181
10 Claims. (Cl. 210—81)

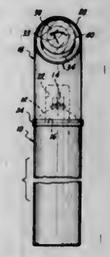


5. In a filter, the combination of a filter leaf assembly comprising an outlet manifold and a plurality of circular filter leaves mounted thereon, a sluicing assembly comprising a pair of tubular headers extending parallel to said manifold on opposite sides of said leaves, means for oscillating said headers about said leaves, said headers each having a plurality of aligned apertures therein, all of said apertures being disposed at the top of the associated headers when said header assembly is in a predetermined position, means for supplying sluicing liquid to said headers, and means for moving said header assembly into said predetermined position prior to interrupting the supply of sluicing liquid to said headers.

7. A method of operating a filter of the type including a filter element located in a filter chamber and an apertured sluice header located in said chamber for directing a sluicing liquid onto the filter element, comprising
filling said sluice header with a sluicing liquid prior to a succeeding operating cycle of the filter,
and maintaining said sluice header filled with said sluicing liquid during said succeeding operating cycle to prevent the flow of liquid through said apertures into said sluice header during the succeeding operating cycle.

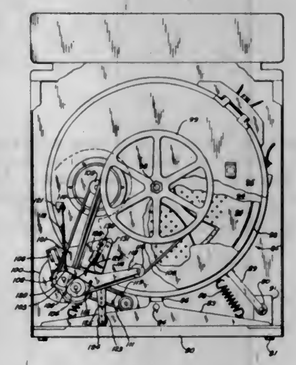
3,285,418
TANK COVER
Omer E. Miller, 2316 Linden Ave., South Plainfield, N.J.
Filed Feb. 19, 1963, Ser. No. 259,601
19 Claims. (Cl. 210—140)

1. A cover adapted to fit over the top of a tank, comprising: a hollow housing having a bottom end corresponding in configuration substantially to the configuration of the periphery of said tank top and a top end cut off at an angle to the horizontal; a plate having a shape substantially as defined by the opening in the angled end of said housing, said plate being of such dimensions as to slidably fit into the angled end of said housing; and means for retaining said plate at a spaced distance from said angled end within said housing, said plate providing



means for mounting tank control devices and display devices.

3,285,419
EXTRACTOR APPARATUS DRIVE CONTROL
Thomas R. Smith, Newton, Iowa, assignor to The Maytag Company, Newton, Iowa, a corporation of Delaware
Filed June 4, 1963, Ser. No. 285,411
9 Claims. (Cl. 210—144)

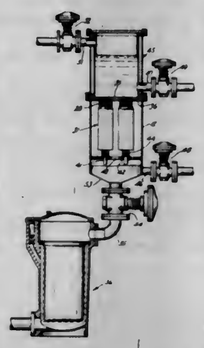


4. In a centrifugal extractor, the combination comprising: a revoluble container provided with an access opening; a frame member; means for supporting said container on said frame member to permit relative movement thereto; drive means including motor means and belt means, said drive means also including biasing means for maintaining a predetermined belt tension to transmit torque for rotating said revoluble container at extraction speeds; means responsive to movements of said container due to unbalanced loading therein for decreasing said belt tension and maintaining the tension at less than said predetermined tension to limit transmission of said driving torque and to effect rotation of said container at a speed commensurate with said movements.

3,285,420
FILTERING EQUIPMENT
Jacques Muller, La Garenne-Colombes, France, assignor to Rellumit Inter, S.a.r.L., La Garenne-Colombes, France, a corporation of France
Filed Oct. 15, 1963, Ser. No. 316,348
1 Claim. (Cl. 210—262)

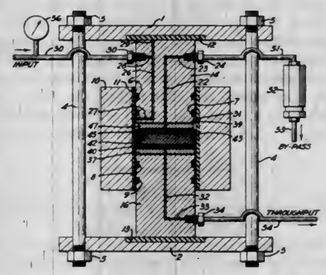
Equipment for filtering particles from fluids, comprising a container having an inlet adjacent its lower end for unfiltered fluids, and an outlet at its lower end, a first

chamber positioned above the container to receive filtered fluid, said chamber having an outlet, a first pair of valves controlling said container inlet and chamber outlet respectively, said container having a pair of spaced transverse walls, one of said walls being adjacent said first chamber, said walls having aligned openings, a filter column in said container having a central bore, said filter column comprising a plurality of stacked discs of impervious material each having a central opening defining the bore of said column, each of said discs being provided on at least one surface with substantially radial grooves extending from the outer periphery thereof to the central opening, each of said grooves being of a width to permit flow of fluid therethrough but to restrain passage of such particles, a perforated guide tube extending through the bore of said column defined by the central openings in said discs, one end of said tube extending into the opening in said one wall, a sleeve encompassing said tube beneath said one wall, a cup shaped member encompassing the other end of said tube and having an axial rod extending through the aligned opening in said other wall, a coil spring encompassing said rod and compressed between said other wall and said cup shaped member and resiliently retaining said discs in juxtaposed position, a filter sleeve of porous material encompassing said filter column, said filter sleeve being secured at its ends to said



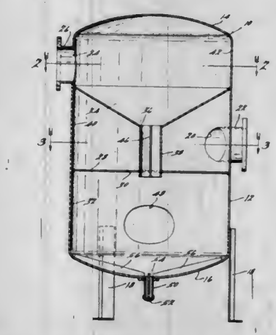
tube sleeve and said cup shaped member respectively, and being normally of diameter greater than that of said filter column, the pore size of said filter sleeve being reduced when said filter sleeve snugly engages said filter column, a valve controlling said container outlet, a particle collecting chamber beneath said container, said other transverse wall having passage means therethrough to provide communication between said container and said particle collecting chamber, through said container outlet, and valve controlled means to apply gas under pressure to react against the contents of said first chamber, whereby in normal operation of said equipment with said first pair of valves in open position and said container outlet valve and said valve controlled means in closed position, fluid forced under pressure into said container will be filtered by said filter column and filter sleeve and the filtered fluid will be discharged through said first chamber outlet and with said first pair of valves in closed position and said container outlet valve and said valve controlled means in open position, the gas under pressure reacting against the contents of said first chamber will force the fluid in said first chamber in reverse direction through said filter column and said filter sleeve to dislodge the particles clogging the outer surfaces thereof for discharge through said open container outlet valve into said collecting chamber.

3,285,421
MEMBRANE SUPPORT
James G. McKelvey, Jr., West Deer Township, Allegheny County, Ivan H. Milne, Monroeville, and Robert P. Trump, Middlesex Township, Butler County, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed Nov. 22, 1963, Ser. No. 325,615
9 Claims. (Cl. 210—409)



1. Apparatus for flushing the input surface of an ultrafiltration membrane to which input solution is applied under pressure which comprises
a porous member contacting the input surface of the membrane,
means providing solution access other than by communication through any portion of said porous member to at least two non-intersecting regions located on the same side of said porous member, one of said regions having a plurality of points,
means flowing input solution from one of said regions through said porous member to the other of said regions, and
said regions being located so as to provide a substantially equal minimum length flow path from substantially every point of one of said regions through said porous member to the other of said regions.

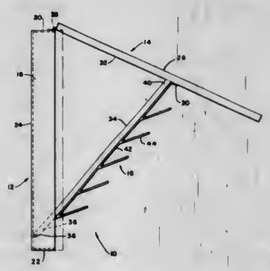
3,285,422
SAND TRAP
William R. Wiley, 915 W. Dunlap Ave., Phoenix, Ariz.
Continuation of application Ser. No. 249,280, Jan. 3, 1963. This application Aug. 10, 1965, Ser. No. 482,995
4 Claims. (Cl. 210—512)



1. A device for separating sand from water, including a casing having a generally cylindrical enclosing side wall formed about a substantially vertical central axis, a bottom wall and a top wall, an inlet in said side wall arranged

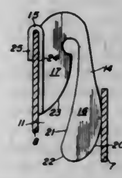
to direct sand bearing water therefrom into said casing along a path offset from said axis and spaced from said side wall and thereby produce rotation of water about said axis, a baffle extending radially inwardly from said wall substantially perpendicularly to said axis and located above said bottom wall and beneath said inlet, a sand storage chamber in said casing between said baffle and said bottom wall, means including rib means in said storage chamber for retarding the rotation of sand and water therein, said baffle having a central opening for the passage of sand from a location above said baffle to said storage chamber, said baffle being otherwise substantially imperforate, and a water outlet in said side wall located above said inlet and baffle means disposed between said inlet and said outlet for preventing the direct flow of water from said inlet to said outlet without preventing the direct flow of sand from said inlet to said central opening.

3,285,423
COLLAPSIBLE WALL BRACKET FOR HANGING CLOTHES
Amnon Bar-Giora, Jerusalem, Israel, assignor to Yissum Research Development Company, Jerusalem, Israel, a company of Israel
Filed Apr. 2, 1965, Ser. No. 445,137
4 Claims. (Cl. 211—1.3)



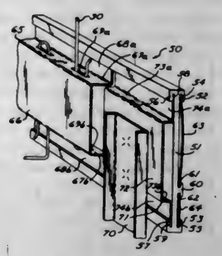
1. A collapsible wall bracket for supporting garments and the like comprising:
- a combined base and container member adapted to be mounted in a substantially vertical position on a supporting surface, said base and container member including two extended side walls and a top wall and a bottom wall joining said side walls;
- a cover for said container member hingedly attached to said top wall and adapted to close over said container when said wall bracket is collapsed, said cover including retaining means along its length adapted for use when said bracket is open for use; and
- a garment supporting member including an extended rigid support board swingably attached at its lower end to the inside of said base and container member in the area of said bottom wall, said support board being of a size to fit within said container when said cover is closed over said container when said bracket is collapsed, the top of said support board being adapted to rest against said retaining means to dispose said support board at a predetermined position of inclination to said base and container when said bracket is in operative position, said garment supporting member further including a plurality of hook-like members projecting from the lower surface of said support board when said bracket is in operative position.

3,285,424
DISPLAY DEVICES
Byron C. Emery, Grand Haven, Mich., assignor to Harbor Industries, Inc., Grand Haven, Mich., a corporation of Michigan
Filed Dec. 28, 1964, Ser. No. 421,550
7 Claims. (Cl. 211—55)



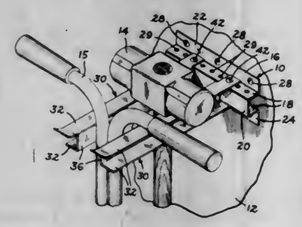
2. A divider for card display racks of the type having front and rear walls defining respective opposite sides of a compartment, said divider comprising
- (a) a body portion having a front portion and a rear portion
  - (1) hingedly connected together at their top edge portions,
  - (2) projecting downwardly from said top edge portions in horizontally spaced relation to each other, and
  - (3) rotatable toward and away from each other, and
- (b) means on one of said first-mentioned portions for removably supporting said body portion from one wall with
  - (1) said rear portion disposed in abutting engagement with a rear wall, and
  - (2) said front portion disposed in abutting engagement with a front wall,
- (c) said front and rear portions horizontally overlapping each other below said top edge portions.

3,285,425
DISPLAY DEVICES
Charles H. Nervig, North Olmsted, and George Theodore, Parma, Ohio, assignors to American Greetings Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 5, 1965, Ser. No. 423,512
9 Claims. (Cl. 211—59)



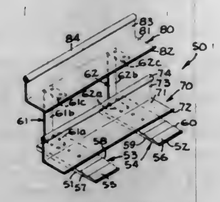
5. A display device comprising a generally upright sign holder having a front face and a rear face; said holder having means for retaining a sign on said front face; means providing a pair of vertically spaced, horizontally disposed flanges projecting outwardly from said rear face; means defining at least one pair of vertically aligned slots in said flanges; a continuous wire support element having a horizontal support portion disposed beyond said holder in one vertical direction; said support element having means for connecting said support portion to said flanges including a U-shaped connector portion for inserting through said pair of aligned apertures; said connector portion having a free leg biased outwardly against an edge of one of said slots and being notched to engage said edge to releasably retain said support element attached to said holder.

3,285,426
HOLDER FOR STORING TOOLS AND THE LIKE
Carl Wilcke, 200 W. Thurston Blvd., Dayton, Ohio
Filed Apr. 11, 1966, Ser. No. 541,803
7 Claims. (Cl. 211—60)



1. An improved holder adapted to be mounted on an upright surface for storing tools and other articles which may have substantial weight, and further adapted to provide maximum strength and rigidity at minimum cost, comprising an elongated support member having longitudinal extending and spaced apart flange sections integrally connected along their lengths by a web section to define generally a U-shaped cross-sectional configuration, means for attaching said support member to the surface so that said flange sections extend horizontally, a pair of elongated arms each having longitudinally extending and spaced apart flange sections integrally connected along their length by a web section to define generally a U-shaped cross-section configuration, and means for cantileveredly mounting said arms on said support member so that said arms project generally horizontally in parallel spaced relationship from said support member for storing one or more articles resting thereon.

3,285,427
TOOL HOLDER
Victor W. Dando, 948 Planetree Place, and John C. Bickford, 661 Santa Coleta Court, both of Sunnyvale, Calif.
Filed Feb. 15, 1965, Ser. No. 432,694
1 Claim. (Cl. 211—60)

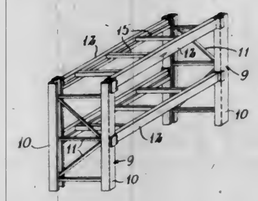


A tool holder comprising a pair of legs, a forwardly projecting tray for each of said legs, said forwardly projecting trays being integrally formed with its associated leg, a lower tray mounted by said legs, an upper tray, and means interconnecting said legs and said upper tray.

ERRATUM

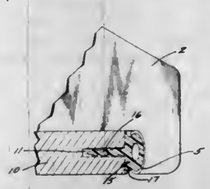
For Class 211—148 see:
Patent No. 3,285,444

3,285,428
STORAGE RACK
Roy S. Scheck, Itasca, Ill., assignor to Unarco Industries, Inc., Chicago, Ill., a corporation of Illinois
Filed Dec. 21, 1964, Ser. No. 420,007
4 Claims. (Cl. 211—148)



1. A storage rack comprising a plurality of pairs of connected spaced upright posts, a pair of rails supported by the posts in horizontally spaced parallel relationship, each of the rails being formed on its inner side surface with an inwardly extending ledge, a vertically extending wedge member secured to the inner surface of each rail and projecting vertically above the ledge thereon and formed with a downwardly facing latching shoulder, and a cross bar of resilient material and inverted channel section having an inwardly extending lip on at least one of its lower edges, the cross bar spanning the space between the rails with its end portions resting on the ledges and the wedge members fitting into the inverted channel with the lips underlying the shoulders on the wedge members to prevent accidental removal of the cross bar.

3,285,429
SHELF ORGANIZER
Robert L. Propst, Ann Arbor, Mich., assignor to Herman Miller, Inc., Zeeland, Mich., a corporation of Michigan
Filed May 25, 1964, Ser. No. 369,963
2 Claims. (Cl. 211—184)

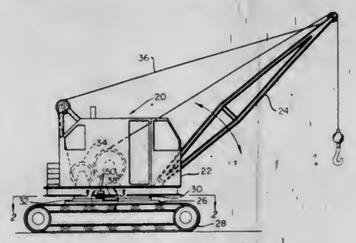


1. A shelf organizer system, comprising: an elongated, thin divider member; a C-shaped element rigidly secured adjacent an end of said member and extending generally perpendicularly from each side of the plane passing therethrough; a shelf; a generally oval-shaped rail secured along an edge of said shelf; said rail having a contour corresponding with that of said element, said rail and said element frictionally matable with one another; and said oval-shaped rail forming a groove along the lower portion of said shelf, the lower edge of said C-shaped element extending into said groove.

ERRATUM

For Class 212—38 see:
Patent No. 3,285,445

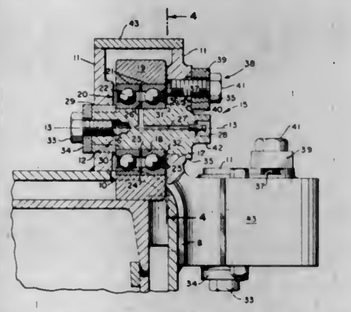
3,285,430
BOOM SAFETY CONTROL SYSTEM FOR CRANES
William A. Whitmire, Castro Valley, Calif., assignor to Bigge Drayage Co., San Leandro, Calif.
Filed Sept. 17, 1965, Ser. No. 488,178
12 Claims. (Cl. 212—39)



1. In combination with a crane, including a cab rotatably mounted on a chassis and a boom pivotally attached to said cab, manually controllable left and right drive means for swinging said cab in both directions in a horizontal plane and swing brake means for opposing the swing of said cab, drive means and brake means for controlling the boom up and down movement, a safety control system for automatically controlling the movement of the boom within predetermined angular limits in the horizontal plane, said system comprising:
azimuth control means secured to said chassis at preselected spaced apart locations beneath said cab;
an electrical circuit including a first switch means on said cab actuated by a said azimuth control means when said cab swings beyond a predetermined safe limit position with respect to the crane chassis;
means for actuating said swing brake means to stop said cab in response to actuation of said switch means;
means also responsive to actuation of said switch means for simultaneously disengaging the drive means tending to swing the cab and its boom outside its safe operating area.

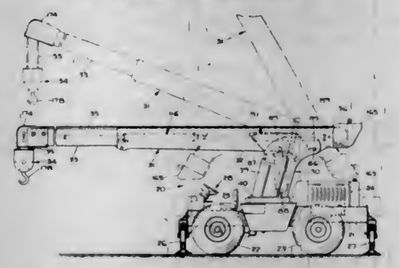
3,285,431
GUIDE ROLL ASSEMBLY FOR TELESCOPIC BOOM
Charles H. Butcher, Jr., Marion, Ohio, assignor to Universal Marion Corporation, Jacksonville, Fla., a corporation of Florida
Filed Apr. 30, 1965, Ser. No. 452,150
8 Claims. (Cl. 212—55)

3. A telescopic boom assembly comprising:
(a) an outer boom member;
(b) an inner boom member telescopically positioned within said outer member; and
(c) guide means fixed to said outer boom member at spaced points about its periphery and along its length for slidably engaging said inner boom member as the latter is moved longitudinally of said outer boom member, at least one of said guide means comprising:
(1) a pair of spaced support members fixed to said outer boom member and extending outwardly therefrom and having aligned journal openings therethrough,
(2) a crank pin rotatably positioned in said journal openings for rotation about a predetermined axis and having a cylindrical bearing support surface disposed between said spaced support members on an axis parallel to and offset from said predetermined axis,
(3) a roller bearing rotatably positioned on said bearing support surface and extending inwardly of said outer boom member in a direction transverse to a plane passing through the longitudinal axis of said outer boom member for bearing engagement with said inner boom member,



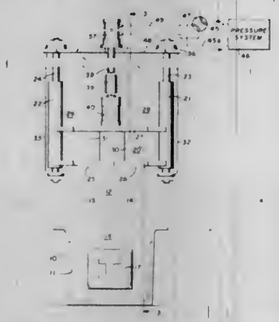
(4) a radially projecting flange fixed to one end of said crank pin and having a surface facing one surface of one of said support members, and
(5) selectively operable clamping means for frictionally securing said flange to said one surface of said one support member in various positions of rotation of said roller bearing about said predetermined axis.

3,285,432
HYDRAULIC SYSTEM FOR OPERATING A CRANE WINCH
Robert E. Stauffer, Galion, Ohio, assignor to Jeffrey Galion Manufacturing Company, a corporation of Ohio
Original application Dec. 26, 1963, Ser. No. 333,322. Divided and this application May 13, 1965, Ser. No. 455,535
2 Claims. (Cl. 212—55)



1. In a crane, a hydraulic operating system for operating the several mechanisms of the crane comprising, a first pump for operating certain of said mechanisms including a winch, first control means for controlling the supply of hydraulic fluid under pressure from the first pump to the winch, means for operating said first control means by hydraulic fluid under pressure, a second pump for supplying hydraulic fluid under pressure for operating other of said mechanisms including said winch and said first contol means, second control means for controlling the supply of hydraulic fluid under pressure from the second pump to said winch, means connecting said second pump to said operating means to supply hydraulic fluid under pressure for operating the first control means, whereby the first control means and the second control means are selectively operable for the supply of hydraulic fluid under pressure to the winch from either the first pump or the second pump to operate the winch at speeds that are commensurate with the rates at which hydraulic fluid under pressure is supplied from the first pump and from the second pump, respectively, or from both the first pump and the second pump to operate the winch at a speed that is greater than the speed of the winch when it is operated by hydraulic fluid from either the first hydraulic pump or the second hydraulic pump alone.

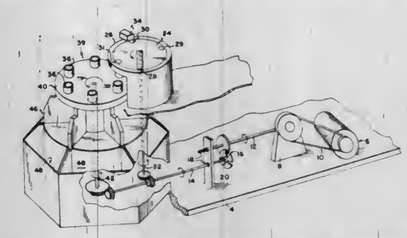
3,285,433
UNLOADER FOR GREEN CERAMIC WARE
Jene A. Beneke, Cornelius J. Kelleher, and Samuel G. Maguire, Dallas, Tex., assignors to Verson Manufacturing Co., a corporation of Texas
Filed Oct. 30, 1964, Ser. No. 407,721
2 Claims. (Cl. 214—1)



1. In an unloader for a green ceramic tank which adheres to the walls of a mold having:
(a) an unloading head having a pair of oppositely facing vacuum plates,
(b) a frame having oppositely directed pneumatic cylinders,
(c) pistons secured to confronting surfaces of said plates and operating in said cylinders,
(d) means for applying compressed air to said cylinders to move said plates apart to contact opposite walls of said tank, and
(e) means for applying a vacuum to said opposite walls through said plates, the combination which comprises:
(f) resiliently biased stop means for limiting separation of said plates and for returning said plates to a retracted position when said cylinders are vented with said resilient means exerting forces on said plates adequate to break the seal between said walls of said mold and said walls of said tank, and
(g) means for lifting said head out of said mold while maintaining said vacuum.

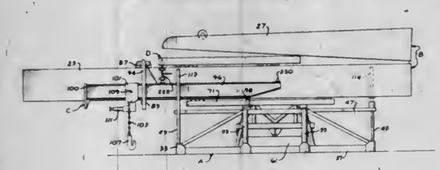
3,285,434
CLASSIFYING SYSTEM
Charles Landy, 17 Ave. du Colonel Bonnet, Paris, France
Filed Oct. 28, 1965, Ser. No. 505,498
Claims priority, application France, Sept. 7, 1962, 908,826, Patent 1,340,320
19 Claims. (Cl. 214—11)

19. A moving mechanical classifying device of the kind intended for classifying objects in accordance with their respective characteristics, said device comprising a movable indexing device and a plurality of control units mounted on said movable device, each of said control units having a shaft and a toothed member mounted thereon and possessing two degrees of freedom of movement, namely: a longitudinally slidable movement of said



toothed member which is adapted to permit the registration of value; and means providing rotational movement of said shaft and enabling the object to be distributed as predetermined by said value.

3,285,435
PORTABLE SHIP'S WING FOR CARGO TRANSFER BY HELICOPTER
Richard W. Black, Alexandria, and Robert E. Bendl, Grafton Court, Va., assignors to the United States of America as represented by the Secretary of the Army
Filed Nov. 19, 1964, Ser. No. 412,576
11 Claims. (Cl. 214—15)

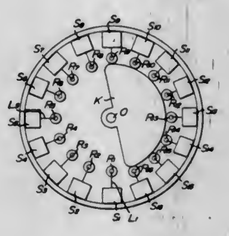


1. A wing structure mountable on a cargo ship to project laterally therefrom for moving cargo from the ship's hold to a location spaced from the ship to permit safe cargo pick up by helicopters comprising a mounting structure adapted to be detachably mounted on a ship's deck and including a turntable whereby the wing can be moved between a stored position in which it extends along the deck of the associated ship and an operative position in which it projects laterally from the side of the ship, a cantilever beam structure mounted on said mounting structure, a load carrying dolly mounted on said beam structure for movement back and forth between the ends of said beam structure when said beam structure is in its laterally projecting position, and power means carried by one of said structures and operatively connected to said dolly to move said dolly back and forth along said beam structure.

3,285,436
DIRECTIONAL CONTROL DEVICE FOR ENDLESS CIRCULATION SYSTEM
Isao Inuzuka and Takeo Yuminaka, Katsuta-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Mar. 31, 1964, Ser. No. 356,284
Claims priority, application Japan, Apr. 2, 1963, 38/16,273
4 Claims. (Cl. 214—16.1)

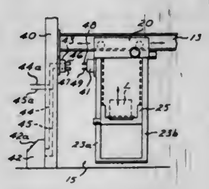
2. In a conveyor system, a plurality of load movers movable in an endless path successively past a station, motive means for effecting movement of said load movers, calling means for energizing said motive means to cause a particular one of said load movers to be transferred to

said station, and direction selecting means responsive to said calling means for determining the shortest route of movement of said one load mover to said station, said direction selecting means comprising a plurality of relaying elements each corresponding respectively to one of said load movers and being disposed in a circular configuration facing a central axis in the order of position of



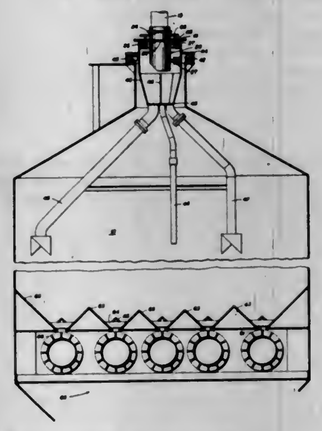
said load movers, a cam element arranged to rotate about said central axis at a reduced rate proportional to the movement of said load movers, said cam element being operative to actuate at any one time only half of the circularly disposed relaying elements whereby a selected one of said load movers can be brought to said station by the shortest route.

3,285,437
PROGRAM CONSOLE COUPLING FOR AN AUTOMATIC WAREHOUSE SYSTEM
Jerome H. Lemelson, Metuchen, N.J., assignor to The Triax Company, Cleveland, Ohio, a corporation of Ohio
Continuation of application Ser. No. 422,356, Dec. 30, 1964. This application Jan. 28, 1966, Ser. No. 523,713
6 Claims. (Cl. 214—16.4)



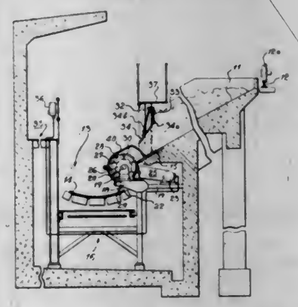
6. An automatic warehousing system having a load handling carrier for delivering and picking up loads at a plurality of load storage locations arranged in a rack having bays spaced horizontally along an aisle and at different levels in each bay; means for moving said carrier horizontally and vertically to a selected storage location and into and out of the rack to deposit and pick up loads; guide means for said carrier; means defining a home position from which said carrier starts and to which said carrier returns; electric power means for actuating said carrier; control means mounted on said carrier and connected to said power means and including means at a position on said carrier for receiving command messages and subsequently determining movements of said carrier to a selected storage location through actuation of said power means; command transmitting means including an electrical contact member mounted at one of said positions and a contact completing member mounted at the other of said positions and immediately adjacent and in coacting relationship with said contact member only when said carrier is at said home position.

3,285,438
PARTICLE STORAGE BIN
Robert Clyde Howell and Charles Alton Lawler, Houston, Tex., assignors to Bovay Engineers, Inc., Houston, Tex., a corporation of Texas
Filed Sept. 11, 1964, Ser. No. 395,751
8 Claims. (Cl. 214—17)



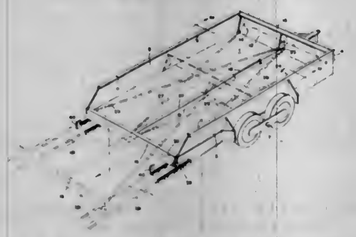
1. A particle storage bin comprising:
a central non compartmented storage vessel;
means for providing solid particles in bulk to the interior of said storage vessel;
a plurality of spaced draw-off areas in the lower portion of said storage vessel;
spaced prismatic beam means intermediate each of said areas for directing the flow of said particles toward spaced deflector beams above each of said draw-off areas;
and roller means for drawing off said particles positioned adjacent to and below each of said draw-off areas.

3,285,439
COKE OVEN WHARVES
Donald B. Harverson, Ruscombe, Twyford, near Reading, England, assignor to Simon-Carves Limited, Stockport, Cheshire, England, a British Company
Filed Jan. 25, 1965, Ser. No. 427,886
Claims priority, application Great Britain, Dec. 20, 1961, 45,643/61
8 Claims. (Cl. 214—18)



1. A coke wharf installation comprising a series of feed rolls mounted on a common axis, each of said feed rolls having open pockets arranged about the axis of said feed rolls, a coke supporting structure having a plane surface sloping downwardly toward said feed rolls, means for supporting each of said feed rolls and allowing for easy replacement of any of said rolls comprising a pair of supporting elements at the ends of each of said rolls, and a spindle extending axially of said roll on which said roll is mounted and resting by gravity on said supporting elements to permit removal of each roll independently of the other rolls, means to rotate each said roll independently of the other rolls to deliver coke, and a conveyor to receive coke delivered by each of said rolls.

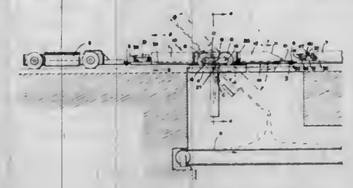
3,285,440
UNLOADING APPARATUS FOR CARS AND TRUCKS
Frank N. Kersey, John L. Kersey, Jr., and Trent H. Kemp, Bluefield, Va., assignors to "Automatic" Sprinkler Corporation of America, Youngstown, Ohio, a corporation of Ohio
Filed July 28, 1964, Ser. No. 385,736
11 Claims. (Cl. 214—44)



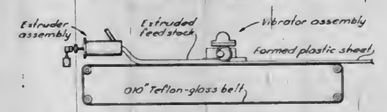
1. In a dump truck assembly comprising a body including sidewalls and a floor, spaced wheels at each side of said truck for mounting said body, said wheels being rockably supported on torque rods extending beneath the truck floor, an end wall structure for one end of the body, said end wall being adapted for sliding movement longitudinally of the floor structure, a bumper member at the opposite end of the truck, a rigid connecting member fixed to the center portion of the sliding end wall structure and connected at its opposite end portion to said bumper member, said bumper member extending transversely of the truck body with its upper and lower marginal edges above and below the truck floor, guide means projecting from the longitudinal medial center of the floor for engaging the sidewalls of the longitudinally extending connecting element to prevent the lateral displacement of the same during sliding movement of the end structure and the bumper, power means engaging the inner face of the bumper member for moving the bumper and the end structure outwardly to discharge lading from said truck, and additional power means for engaging the outer face of the bumper for returning the end structure and the bumper to their normal positions at the respective ends of the truck.

3,285,441
DUMP CAR ASSEMBLIES
Frank N. Kersey, John L. Kersey, Jr., and Trent H. Kemp, Bluefield, Va., assignors to "Automatic" Sprinkler Corporation of America, Youngstown, Ohio, a corporation of Ohio
Filed July 28, 1964, Ser. No. 385,737
9 Claims. (Cl. 214—47)

1. In a pivoted dump car assembly, a car body having medially arranged pivots at a transverse axis and having a floor, side walls and one end wall, said car body being open at one end for discharge of lading, mounting means for said body comprising a pair of wheels at each side of said car, each pair of wheels being mounted on a supporting structure and the supporting structure being fixed to the end of a torque rod extending transversely beneath the car body medially of the length thereof, whereby said wheels will compensate for irregular track surfaces, front and rear draft bars for said car, each bar being pivoted at its inner end to the car body adjacent said transverse axis, one of said draft bars being positioned beneath said car body and projecting outwardly therefrom and including a platform and a coupler, locking means mounted on said platform, means urging said locking means into position to engage a projecting part of said car body to secure the same in horizontal position upon said draft bar, said other draft bar being positioned out of the path of movement of the tilting car body, and means for supporting and tilting said car body for discharging the lading out of its open end.



3,285,442
METHOD FOR THE EXTRUSION OF PLASTICS
Reuben A. Tigner, Pinconning, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed May 18, 1964, Ser. No. 367,986
5 Claims. (Cl. 264—70)



1. A method for extruding plastic material which comprises;
(a) providing an extruder having a die plate defining an orifice, a reservoir for a plastic feed stock material and a reciprocating piston-type pulsator positioned in said reservoir, the piston of said pulsator having a flat face and being parallel to the die plate of said extruder and centered with respect to the center axis of the orifice in said die plate of said extruder, said piston being maintained at close position such that the distance between the face of said piston and said die plate is of the same order of magnitude as the amplitude of said pulsating piston,
(b) introducing into said reservoir a feedstock supply of a liquid, flowable, viscous plastic,
(c) maintaining said plastic feed stock supply in said reservoir as a viscous liquid at substantially atmospheric pressure, said liquid plastic feed stock also being in contact with the die plate of said extruder,
(d) accelerating the face of said piston through the body of said viscous, liquid material in the reservoir of said extruder thereby subjecting only that volume of said liquid plastic material directly between the flat face of said piston and said die plate to rapid, reciprocating linear pressure pulses of at least 1 pulse per second and of amplitude of from about 0.005 to about 0.100 inch from said pulsating piston thereby inducing corresponding large momentary high pressure forces in said volume of said liquid plastic directly between the flat face of said piston and said die plate while maintaining the remainder of said liquid feed stock supply in said reservoir at sub-

stantially atmospheric pressure, said high pressure force in said liquid balancing the force required to accelerate the face of the piston against the resistance of said viscous liquid plastic, said force being sufficient to provide flow in said viscous liquid plastic,

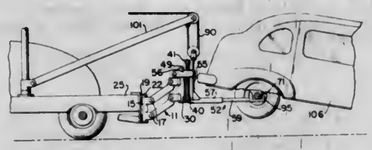
(e) bearing said force required to produce said viscous flow in said volume of liquid directly between the flat face of said piston and said die plate by a portion of die plate directly in line with the accelerating piston face thereby inducing viscous flow in said volume of said liquid plastic feed stock subjected to said induced high pressure forces,

(f) flowing said volume of viscous liquid directly between the flat face of said piston and said die plate substantially unidirectionally toward the orifice of said die plate,

(g) forcing said liquid plastic feed stock through said die orifice in a substantially continuous manner by action of said induced high pressure forces on said volume of liquid subjected to said pressure pulses, and

(h) recovering a formed extruded product.

3,285,443
TOWING DEVICE
Richard J. Gaumont, 7906 Bleriot Ave., Los Angeles, Calif.
Filed Sept. 9, 1964, Ser. No. 395,151
16 Claims. (Cl. 214—86)



1. In a device for connecting a vehicle to be towed to the lift mechanism of a tow truck,

a support unit connected to said tow truck for pivotal motion about a substantially vertical axis and about a substantially horizontal axis,

a cradle unit connected to said support unit, said cradle unit including a pair of arm means, pivot support means for each of said arm means, and means for attaching each of said cradle arm means to said pivot support means for pivotal motion about a horizontal axis each of said pivot support means being mounted on said support unit for pivotal motion about a vertical axis,

pull means for lifting said arm means vertically, the center portion of said pull means being attached to said lift mechanism, the ends of said pull means being attached to said vehicle to be towed, said pull means running along substantially the entire longitudinal extent of both of said arm means, and

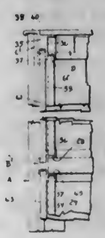
means for slidably holding said pull means to said arm means for motion along the longitudinal axes thereof and otherwise constrained relative to said arm means along substantially the entire longitudinal extent thereof.

3,285,444
EXTRUDED FRAME MEMBER
Frederick William Reilly, Islington, Ontario, Canada, assignor to Beautiline Limited, Weston, Ontario, Canada
Filed Mar. 1, 1965, Ser. No. 436,124
2 Claims. (Cl. 211—148)

1. For a prefabricated knock-down skeletal structure formed of a plurality of separate prefabricated components including upright posts and horizontal girders connectable to the posts to form an unitary rigid skeletal frame, said girders comprising an elongated rigid main body of substantially H-shaped cross section having:

(i) an inner wall having at least two flanges extending at right angles to said wall and forming therewith one inwardly facing U-channel;

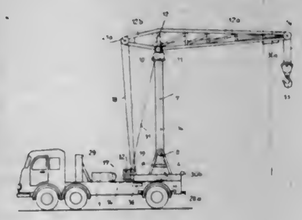
(ii) a substantially thin and narrow outer wall parallel to and spaced from the substantially wide inner wall;



(iii) a substantially thick load carrying web spacing said walls and connected thereto centrally between the upper and lower edges of said walls, said web being formed integrally with said walls;

(iv) an upwardly facing U-channel and a downwardly facing U-channel defined by said walls and said web.

3,285,445
MOBILE CRANE HAVING A DOUBLE-ARMED JIB
Horst Broziat, Radolfzeller Strasse 44, Allensbach (Bodensee), Germany
Filed Apr. 23, 1965, Ser. No. 450,291
Claims priority, application Germany, Apr. 27, 1964, B 76,530
5 Claims. (Cl. 212—38)



1. A mobile crane comprising

a truck chassis,

support means movably secured to said truck chassis,

a tiltable crane column carried at its bottom end by said support means,

a circular rim surrounding coaxially said column, when in its vertical position, and a windlass moving on said rim,

a double-armed jib rotatably and swingingly secured to the top end of said crane column,

one arm of said double-armed jib being a load-bearing arm,

means for selectively erecting said column into an upright position, and into a tilting-down position, respectively, the latter position being substantially parallel with said truck chassis,

said load-bearing arm of said jib being longer than said crane column, so as to protrude therebeyond in said tilting-down position,

said support means includes stationary stay means at a location of said truck chassis spaced apart from said crane column, for supporting the latter in said tilting-down position,

locking means disposed between said stay means and said crane column for immobilizing the latter and preventing its unwanted erecting movement,

said selective erecting and tilting means includes winch means acting on a cable guided through said column and said load-bearing arm,

a load hook being attached to said cable beyond said load-bearing arm, and further comprising,

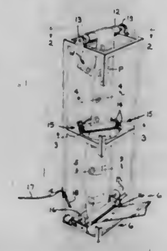
eye means attached to a peripheral portion of said truck chassis,

said cable serving for the selective raising and lowering of loads applicable to said load hook, on the one hand, and for the erecting and tilting of said column, on the other hand, when said load hook is engaged in said eye means,

slide roller means attached to a peripheral portion of said truck chassis for preventing said cable and said load hook from damaging said support means in said tilting-down position, and

slide rail means attached to the free end of said load-bearing arm for abutting with a portion of said crane column in said tilting-down position.

3,285,446
METHOD AND APPARATUS FOR PROCESSING A TUBULAR WEB
John B. Strickland, Valdosta, Ga., assignor to Owens-Illinois Glass Company, a corporation of Ohio
Filed Feb. 15, 1965, Ser. No. 432,560
8 Claims. (Cl. 214—338)



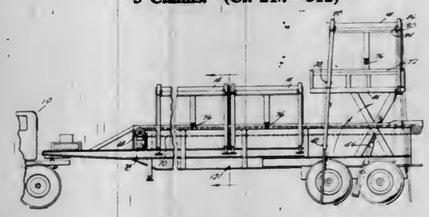
1. Apparatus for processing a web comprising two thin elongate layers of material connected to one another adjacent their side edges to form a film which is endless in a direction generally transversely of the web apparatus comprising, in combination: means for advancing said web longitudinally of itself; first pinch means for pinching the moving web along opposed lines of contact disposed generally transversely of the direction of motion of the web; second pinch means longitudinally spaced from the first means in the direction of motion of the web for pinching the moving web along second opposed lines of contact disposed generally transversely of the direction of motion of the web, said second pinch means being so disposed with respect to the first pinch means that the second opposed lines of contact are angularly displaced from said first opposed lines of contact about an axis extending generally longitudinally of the direction of motion of the web; and means for introducing fluid between the layers of the web intermediate the first and second opposed lines of contact to inflate the portion of the web therebetween, whereby the side edges of the web will be circumferentially relocated with respect to the location of the side edges prior to the passage of the web through said first and second pinch means.

3,285,447
SHOP TRUCK
Melville E. Junion, 823 N. State St., Appleton, Wis.
Filed Apr. 17, 1964, Ser. No. 360,657
5 Claims. (Cl. 214—506)



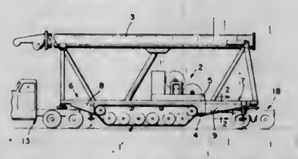
3. A platform truck, comprising: an elongated support platform having a transverse arcuate recess in the top side, disposed centrally thereof, and extending across said platform, said arcuate recess forming a pair of spaced parallel arrises at the intersection of the arcuate recess surface with the top side surface of the platform, and inclined ramps at the end of said platform, respectively, leading from said arrises downwardly to the ends of said platform; a pair spaced rows of casters secured to said platform for rollably supporting said platform, said rows being disposed transversely of said elongated platform and symmetrically about the transverse axis of said elongated platform and spaced inwardly of said arrises.

3,285,448
HOPPER AND TRAILER LIFT MECHANISM
Richard H. Palm, Sr., and Daniel E. Palm, Reading, Pa., and Louis J. Vasile, Charles Frier, and Robert M. Matthews, Jr., Okeechobee, Fla., assignors to Ranch Fertilizer Co., Inc., Okeechobee, Fla.
Filed Nov. 16, 1964, Ser. No. 411,295
5 Claims. (Cl. 214—512)



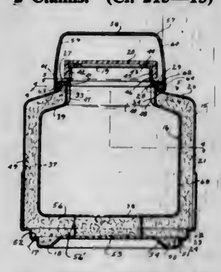
1. A trailer-hopper arrangement having means for transporting hoppers and for erecting a hopper upon a mounting means comprising an elongated trailer having a pair of tracks longitudinally disposed thereon for mounting a plurality of hoppers thereon, a drivable chain means to displace the hoppers along said track, a lift mechanism mounted on the trailer to move a hopper with respect to the trailer along a vertical path with respect to the plane of the trailer, each of said hoppers having telescopically constructed leg arrangements to distend into a supporting arrangement for holding the hopper in an upper location after the lift mechanism has displaced the hopper to said position and said legs holding the hopper in said position when the lift mechanism has been removed therefrom, the telescopic sections engaging each other in a bayonet and pin arrangement for facilitating the erection of the supporting arrangement, and each of the hoppers being provided at the corners thereof with a trunnion mounting and brace mechanism for supporting the legs in a relatively inclined supporting position, said trunnion mounting including a pivotal connection for allowing the telescopic legs to hang in a generally vertical position when in their collapsed position.

3,285,449
CARRIER VEHICLE TRANSPORT SYSTEM
Douglas P. Hand, 1258 W. Pender, Vancouver, British Columbia, Canada
Filed Feb. 19, 1965, Ser. No. 433,867
5 Claims. (Cl. 214—515)



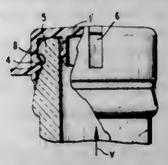
1. In a carrier vehicle having a body and ground support means unsuitable for road travel, mechanism for adapting said vehicle for transport by a tractor-trailer combination comprising; front and rear extensions connected to the vehicle body, a fluid operated lift jack mounted on the front end of the body and first and second fluid operated lift jacks carried on opposite sides of said rear extension for elevating the body, a transversely extending rib fixed to the underside of the front extension for engaging a bunk on a tractor and a transversely extending rib fixed to the underside of the rear extension for engaging a bunk on a trailer, and means for connecting the tongue of a trailer to the vehicle body, whereby said ribs are adapted to be received by channels in the tractor and trailer bunks respectively for securing the ends of the vehicle between the tractor and trailer for transport.

3,285,450
INSULATED CONTAINER
Herbert M. Piker, Wyoming, Ohio, assignor to The Hamilton-Skotch Corporation, Hamilton, Ohio, a corporation of Ohio
Filed Jan. 25, 1962, Ser. No. 168,789
2 Claims. (Cl. 215—13)



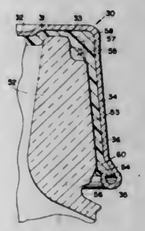
1. In a container of the class described the combination of an enclosing member substantially rectangular in plan comprising a bottom, a wall upstanding from each side of the bottom, a top, and a neck upstanding from the top, said neck including an inwardly projecting radial flange having a central aperture of a given diameter, said enclosing member bottom including an inwardly projecting radial flange having an aperture centrally thereof, an inner container circular in plan of a diameter to pass through the enclosing member bottom aperture to be within the said enclosing member and with said inner container having a bottom, a wall upstanding from the periphery of said bottom, a top, and a sleeve above said top with said sleeve having an external diameter substantially equal to the given diameter of the enclosing neck aperture and with said sleeve projecting upwardly of the enclosing member neck flange, means on said projecting portion of the inner container sleeve cooperating with said enclosing member neck flange suspending said inner container within the enclosing member, closure means cooperating with the outer container bottom inwardly projecting flange closing said enclosing member bottom opening, cooperating means on said enclosing member neck and inner container sleeve keying said inner container and enclosing member against relative angular displacement comprising outwardly projecting hollow lugs from diametrically opposite points on said enclosing member neck, and cooperating lugs from diametrically opposite points on said inner container sleeve projecting into the outer container hollow lugs.

3,285,451
PRESSURE CLOSURE
Erich Golde, Tattenkofener Strasse 4, Geretsried 8192, Upper Bavaria, Germany
Filed Mar. 18, 1965, Ser. No. 440,889
Claims priority, application Germany, Nov. 12, 1964, G 41,998
5 Claims. (Cl. 215—40)



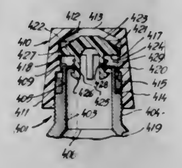
2. A resilient thermoplastic cap adapted for use on a bottle having an outwardly projecting bead near its mouth, which cap comprises a substantially flat circular deck member, a cylindrical skirt member attached to said deck member at the periphery thereof, a retention bead projecting from said skirt member radially inwardly, a sealing member adapted to extend into the mouth of a bottle, and a lift tab attached to the cap near the periphery thereof, said deck and skirt members having in their outer peripheral portions at least two groove portions located opposite each other along a diameter of said deck member and extending from said deck member downwardly into said skirt member to approximately the location of the retention bead thereon.

3,285,452
CONTAINER FINISH AND CLOSURE CAP CONSTRUCTION
John J. Moloney, Chicago, and Charles N. Foster, Oak Park, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Sept. 27, 1965, Ser. No. 490,311
13 Claims. (Cl. 215—40)



1. A closure assembly comprising a closure cap including a top panel and skirt, a gasket compound lining the skirt and at least a portion of the underside of said top panel, a container having a finish adapted to receive said closure cap, said container finish terminating at its upper margin in a container mouth, a radially extending uninterrupted ring-like surface portion adjacent said mouth, cam-like means opening upwardly adjacent said ring-like surface portion, and cam follower means of a generally complementary configuration formed in said gasket compound in said closure cap and co-operating with said cam-like means adjacent said radially extending ring-like surface portion whereby relative rotation of said closure cap relative to said container results in relative axial movement between said container finish and said closure cap.

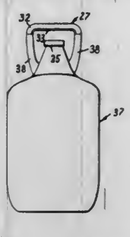
3,285,453
CLOSURE CAP DEVICE
Arnaldo E. Wagner, 615 Sargento Cabral St., Godoy Cruz, Mendoza, Argentina
Filed Oct. 5, 1964, Ser. No. 401,493
1 Claim. (Cl. 215—77)



A closure cap device for a container, comprising a tubular spout member having a socket portion defining a first open end, said socket portion being at least partially externally screw threaded, a side wall member integral with said socket portion and having a cross-sectional area smaller than said socket portion, said side wall member defining a second opening, a valve member slidably anchored in said side wall member and capable of closing said second opening, said valve member including a tapered head portion, a perforated cap screwed onto said socket member and surrounding said side wall member and at least part of said tapered head portion and a sealing lip surrounding said side wall member and being integral with said sealing cap and in sealing contact with said side wall member, said valve member having a valve head including a frustoconical top portion and a flat bottom rim, the maximum cross-sectional area of said valve heading being smaller than the cross-sectional area of said side wall member, said side wall member having a flat top portion defining said second opening, said flat bottom rim being adapted to enter in sealing contact with said flat top portion, at least a pair of spaced apart anchoring legs projecting from said flat bottom rim into said tubular spout member through said second opening, said anchoring legs including foot portions adapted to enter in abutting relationship with said flat top portion, said spaced apart anchoring legs having projecting spaced apart resilient teeth adapted to mesh with said top portion.

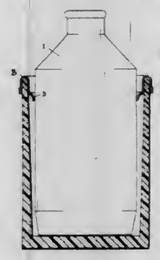
3,285,454
PLASTIC BOTTLE
Robert L. Bailey, Spokane, Wash., assignor, by mesne assignments, to National Distillers and Chemical Corporation, a corporation of Virginia
Filed Nov. 9, 1964, Ser. No. 411,670
7 Claims. (Cl. 215—100)

1. A plastic bottle having an integral handle comprising:
a hollow body;
a reduced neck on said body having an axial opening at the outer end thereof, the inner surface of said neck being continuous and uninterrupted; and a semi-rigid arched handle of integral one-piece homogeneous construction with said neck extending



outwardly from said neck and over said axial opening.

3,285,455
INSULATED COASTER FOR GLASSES, CANS, BOTTLES OR THE LIKE
Bernard B. Pewitt, Bexar County, Tex. (Rte. 1, Box 16A, Wetmore, Tex.)
Filed Nov. 2, 1964, Ser. No. 408,171
3 Claims. (Cl. 215—100.5)

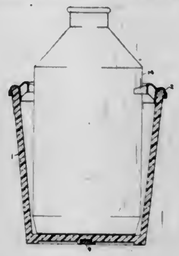


1. An insulated cup or coaster, of somewhat greater height than diameter, formed from expandable polystyrene or other insulation material, and with a plastic rim and inner horizontal flange or vane assembly fitted thereto with a ratchet type locking ring formed by inclining the lower portion of the inside vertical wall of said rim slightly away from the vertical and toward the outer wall of said rim, then bringing the line abruptly back to the vertical to form a sharp and narrow horizontal ledge, so that said outer plastic rim when forced over said insulated cup rim is resisted from being removed by said sharp and narrow horizontal ledge and also by the reinforced ledge on the external surface of the lower and outer portion of the rim which exerts pressure through the material of the insulated coaster as a tensile ring.

3,285,456
INSULATED COASTER FOR GLASSES, CANS, BOTTLES, OR THE LIKE
Bernard B. Pewitt, Bexar County, Tex. (Rte. 1, Box 16A, Wetmore, Tex.)
Filed Feb. 15, 1965, Ser. No. 432,553
15 Claims. (Cl. 215—100.5)

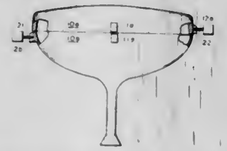
5. A holder for a bottle or the like comprising a cup having a beaded top edge, a cap comprising an outer rim fitted to the top of the aforesaid cup, said outer rim having an inner wall, a top wall and an outer side wall with an inwardly turned edge at the periphery thereof for resiliently engaging and locking said rim over the beaded edge of the cup, an inner ring attached to the aforesaid outer rim, said inner ring formed by a wall rising inward and then downward to form an inner wall, said inner wall

defining an opening and forming a liquid retaining chamber when the holder is positioned in degrees of inversion, means on the inner wall for engaging and gripping a



bottle or the like upon insertion thereof through the circular opening in the cap member to retain the bottle or the like therein.

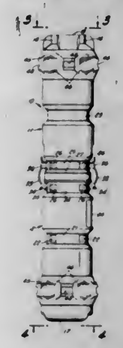
3,285,457
TELEVISION PICTURE TUBE ENVELOPES AND METHOD OF ASSEMBLING THE ENVELOPE PARTS
Gerald D. Peterson, Addison, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Feb. 26, 1964, Ser. No. 347,467
7 Claims. (Cl. 220—2.1)



5. As an article of manufacture, a rectangular viewing panel intended to be used in the fabrication of a glass television picture tube and having a sealing edge for sealing the panel to a corresponding sealing edge on the funnel portion of such a tube; said panel having a V groove on one sidewall thereof and adjacent said sealing edge, the vertex of such groove coinciding with a centerline extending through the center of such sidewall and the center of the opposite sidewall; said panel also having a projection thereon at the center of another sidewall and adjacent said sealing edge, such other sidewall being adjacent said one sidewall and such projection having a summit precisely ground thereon a predetermined distance from said centerline; said summit of said projection and said vertex of said groove being provided for optimumly aligning the sealing edge of such panel with the sealing edge of a television picture tube funnel portion prior to the sealing thereof, such funnel portion being similarly provided with a similar projection and groove.

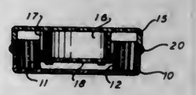
3,285,458
PLASTIC CONTAINER FOR ELECTRONIC DEVICES
Francis X. Wojciechowski, Garden Grove, Calif., assignor to Hoffman Electronics, El monte, Calif., a corporation of California
Filed May 22, 1964, Ser. No. 369,501
7 Claims. (Cl. 220—4)

1. A vapor-tight container for a generally cylindrical radiosonic buoy comprising first and second generally cylindrical blow-molded plastic sections, each of said sections having a closed end and an open end, said first section having an annular sealing member positioned on its periphery adjacent the open end thereof, the inner surface of said second member having an outwardly tapering portion adjacent the open end thereof, said tapered portion receiving said sealing member; a plurality of spring clips rotatably mounted on one of said sections, each of said spring clips having a looped portion at the outer end thereof, a plurality of lugs mounted on the other of said sections, the looped portion of each of said spring



clips cooperating with one of said lugs to force the open end of said first section into the open end of said second section whereby the tapered portion of said second section compresses the sealing member of said first section to form a vapor-tight connection between said sections; each of said sections having a plurality of internal support bosses integrally formed therein.

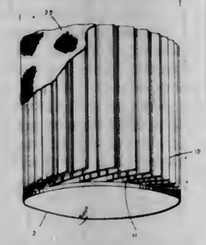
3,285,459
COLLAPSIBLE CONTAINER
Wilbert J. Gahm, Newark, N.J., assignor to Plura Plastics, Inc., Maplewood, N.J., a corporation of New Jersey
Filed May 22, 1964, Ser. No. 369,415
1 Claim. (Cl. 220—8)



In a collapsible multicompartment container, the combination comprising: a base member, a vertically oriented circumferential wall extending upwardly from said base at right angles thereto to define a cup-shaped portion, a second wall attached to said base within said circumferential wall and coaxial therewith, said second wall extending angularly upwardly and outwardly from said base and defining a second cup-shaped portion, a plurality of rings of progressively larger diameter than said second wall at its point of interconnection with said base which may be elevated progressively to engage each other and said second wall to define a receptacle of increasing diameter, a complementary cover for said container including a top portion and downwardly extending side wall portions, frictionally cooperable with said circumferential wall on said base to define a container therewith, said cover portion further including a second wall extending vertically downwardly from said top in parallel relation to said side wall portions to define an inverted container within said cover, a closure member for said cover container including an upwardly directed side wall portion adapted to frictionally embrace said second wall of said cover container, said closure member having a diameter greater than the inner diameter of said second cup-shaped portion in said base at the point of interconnection of said

second wall and said base but lesser than the inner diameter of said second cup-shaped portion at its uppermost extremity, whereby said closure member will be retained in position on said wall of said cover container by said wall of said second cup-shaped portion in said base when said cover and said base are interconnected, and indicating indicia on said closure member and said wall of said cover container to indicate times for use of materials contained within said cover container.

3,285,460
SPACE VEHICLE INSULATION
Richard T. Parmley, San Jose, Calif., assignor to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware
Filed Dec. 12, 1962, Ser. No. 244,186
6 Claims. (Cl. 220—9)



6. A space vehicle cryogenic fluid tank insulation comprising an inner plastic film adjacent the outer wall of said cryogenic fluid tank, an outer fabric layer pervious to gases, and heat reflecting means between said inner plastic layer and said outer fabric layer, said heat reflecting means including a multiplicity of independent rectangular plastic films each having one edge fastened to said inner plastic film parallel to the longitudinal axis of said cryogenic fluid tank in overlapping relationship to adjacent independent plastic films, each of said independent plastic films having a discontinuous aluminum heat reflecting surface subdivided parallel to the longitudinal axis of said cryogenic fluid tank.

3,285,461
COMPOSITE RECEPTACLE
Thomas R. Santelli, Sylvania, Ohio, assignor to Owens-Illinois Inc., a corporation of Ohio
Continuation of application Ser. No. 223,698, Sept. 14, 1962. This application Apr. 6, 1964, Ser. No. 357,683
4 Claims. (Cl. 220—17)



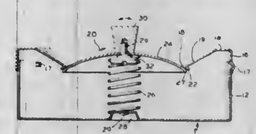
1. A package containing a commodity and comprising a rigid external shell having a bottom and a cylinder-like body rising and flaring from said bottom to a relatively wide mouth, an annular internal bead at the mouth end of the package, an initially collapsed thin-wall bag-like inner container formed of a thermoplastic material, said container distended into intimate contact with the shell by the packaged commodity and a relatively thick collar-like element forming an integral part of the container for releasable holding engagement with said bead, said element having a vent-channel for the escape of air from within the shell concurrently with distension of the bag-like container.

3,285,462
SANITARY DISPOSABLE CONTAINER
Kurt Bulmer and Robert S. Foltz, Lockport, N.Y., assignors to Carl W. Blackley, Niagara County, N.Y.
Filed Aug. 26, 1963, Ser. No. 304,449
10 Claims. (Cl. 220—20.5)



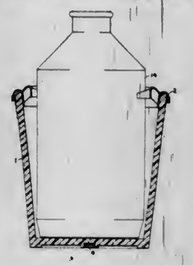
1. A sanitary disposable container of a burnable material comprising in combination a tubular receptacle closed at its bottom and open at its top, a closure member snap fitted on the open end of said receptacle, said top end of said receptacle and said closure member having cooperating fastener means thereon for securing the members in a non-removable relationship, said closure member having an article receiving aperature therethrough and having trap means attached below said closure member and in alignment with said aperture for receiving articles to be deposited in said receptacle, said trap means having inner and outer interacting closure means, whereby positioning said outer closure means to receive an article into said trap means closes said inner closure means, and positioning said inner closure means to deposit said article to the interior of said receptacle closes said outer closure means, thereby closing off communication to within said receptacle from without when said trap means receives said article as well as when depositing said article into said receptacle and positions intermediate thereof, whereby said container with collected articles may be disposed of as a unit.

3,285,463
SMOKERS' ASH RECEPTACLE
Martin Berliner, Forest Hills, N.Y.
(100 Water St., Brooklyn, N.Y.)
Filed May 14, 1965, Ser. No. 455,933
3 Claims. (Cl. 220—20.5)



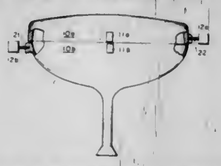
1. A self-closing ash receptacle including a bowl provided with base and with a top plate having a wide circular opening therein, and a self-centering closure plate of dome-shaped contour snugly fitted within the opening

defining an opening and forming a liquid retaining chamber when the holder is positioned in degrees of inversion, means on the inner wall for engaging and gripping a



bottle or the like upon insertion thereof through the circular opening in the cap member to retain the bottle or the like therein.

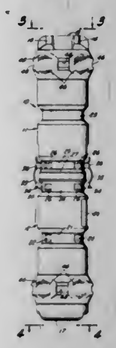
3,285,457
TELEVISION PICTURE TUBE ENVELOPES AND METHOD OF ASSEMBLING THE ENVELOPE PARTS
Gerald D. Peterson, Addison, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Feb. 26, 1964, Ser. No. 347,467
7 Claims. (Cl. 220—2.1)



5. As an article of manufacture, a rectangular viewing panel intended to be used in the fabrication of a glass television picture tube and having a sealing edge for sealing the panel to a corresponding sealing edge on the funnel portion of such a tube; said panel having a V groove on one sidewall thereof and adjacent said sealing edge, the vertex of such groove coinciding with a centerline extending through the center of such sidewall and the center of the opposite sidewall; said panel also having a projection thereon at the center of another sidewall and adjacent said sealing edge, such other sidewall being adjacent said one sidewall and such projection having a summit precisely ground thereon a predetermined distance from said centerline; said summit of said projection and said vertex of said groove being provided for optimumly aligning the sealing edge of such panel with the sealing edge of a television picture tube funnel portion prior to the sealing thereof, such funnel portion being similarly provided with a similar projection and groove.

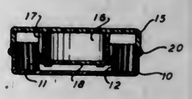
3,285,458
PLASTIC CONTAINER FOR ELECTRONIC DEVICES
Francis X. Wojciechowski, Garden Grove, Calif., assignor to Hoffman Electronics, El monte, Calif., a corporation of California
Filed May 22, 1964, Ser. No. 369,501
7 Claims. (Cl. 220—4)

1. A vapor-tight container for a generally cylindrical radiosonic buoy comprising first and second generally cylindrical blow-molded plastic sections, each of said sections having a closed end and an open end, said first section having an annular sealing member positioned on its periphery adjacent the open end thereof, the inner surface of said second member having an outwardly tapering portion adjacent the open end thereof, said tapered portion receiving said sealing member; a plurality of spring clips rotatably mounted on one of said sections, each of said spring clips having a looped portion at the outer end thereof, a plurality of lugs mounted on the other of said sections, the looped portion of each of said spring



clips cooperating with one of said lugs to force the open end of said first section into the open end of said second section whereby the tapered portion of said second section compresses the sealing member of said first section to form a vapor-tight connection between said sections; each of said sections having a plurality of internal support bosses integrally formed therein.

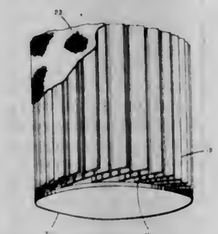
3,285,459
COLLAPSIBLE CONTAINER
Wilbert J. Gahm, Newark, N.J., assignor to Plura Plastics, Inc., Maplewood, N.J., a corporation of New Jersey
Filed May 22, 1964, Ser. No. 369,415
1 Claim. (Cl. 220—8)



In a collapsible multicompartment container, the combination comprising: a base member, a vertically oriented circumferential wall extending upwardly from said base at right angles thereto to define a cup-shaped portion, a second wall attached to said base within said circumferential wall and coaxial therewith, said second wall extending angularly upwardly and outwardly from said base and defining a second cup-shaped portion, a plurality of rings of progressively larger diameter than said second wall at its point of interconnection with said base which may be elevated progressively to engage each other and said second wall to define a receptacle of increasing diameter, a complementary cover for said container including a top portion and downwardly extending side wall portions, frictionally cooperable with said circumferential wall on said base to define a container therewith, said cover portion further including a second wall extending vertically downwardly from said top in parallel relation to said side wall portions to define an inverted container within said cover, a closure member for said cover container including an upwardly directed side wall portion adapted to frictionally embrace said second wall of said cover container, said closure member having a diameter greater than the inner diameter of said second cup-shaped portion in said base at the point of interconnection of said

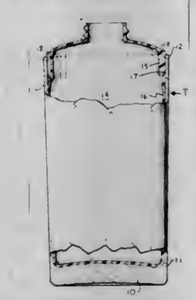
second wall and said base but lesser than the inner diameter of said second cup-shaped portion at its uppermost extremity, whereby said closure member will be retained in position on said wall of said cover container by said wall of said second cup-shaped portion in said base when said cover and said base are interconnected, and indicating indicia on said closure member and said wall of said cover container to indicate times for use of materials contained within said cover container.

3,285,460
SPACE VEHICLE INSULATION
Richard T. Parmley, San Jose, Calif., assignor to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware
Filed Dec. 12, 1962, Ser. No. 244,186
6 Claims. (Cl. 220—9)



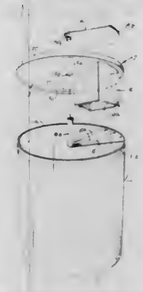
6. A space vehicle cryogenic fluid tank insulation comprising an inner plastic film adjacent the outer wall of said cryogenic fluid tank, an outer fabric layer pervious to gases, and heat reflecting means between said inner plastic layer and said outer fabric layer, said heat reflecting means including a multiplicity of independent rectangular plastic films each having one edge fastened to said inner plastic film parallel to the longitudinal axis of said cryogenic fluid tank in overlapping relationship to adjacent independent plastic films, each of said independent plastic films having a discontinuous aluminum heat reflecting surface subdivided parallel to the longitudinal axis of said cryogenic fluid tank.

3,285,461
COMPOSITE RECEPTACLE
Thomas R. Santelli, Sylvania, Ohio, assignor to Owens-Illinois Inc., a corporation of Ohio
Continuation of application Ser. No. 223,698, Sept. 14, 1962. This application Apr. 6, 1964, Ser. No. 357,683
4 Claims. (Cl. 220—17)



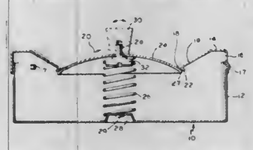
1. A package containing a commodity and comprising a rigid external shell having a bottom and a cylinder-like body rising and flaring from said bottom to a relatively wide mouth, an annular internal bead at the mouth end of the package, an initially collapsed thin-wall bag-like inner container formed of a thermoplastic material, said container distended into intimate contact with the shell by the packaged commodity and a relatively thick collar-like element forming an integral part of the container for releasable holding engagement with said bead, said element having a vent-channel for the escape of air from within the shell concurrently with distension of the bag-like container.

3,285,462
SANITARY DISPOSABLE CONTAINER
Kurt Bulmer and Robert S. Foltz, Lockport, N.Y., assignors to Carl W. Blackley, Niagara County, N.Y.
Filed Aug. 26, 1963, Ser. No. 304,449
10 Claims. (Cl. 220—20.5)



1. A sanitary disposable container of a burnable material comprising in combination a tubular receptacle closed at its bottom and open at its top, a closure member snap fitted on the open end of said receptacle, said top end of said receptacle and said closure member having cooperating fastener means thereon for securing the members in a non-removable relationship, said closure member having an article receiving aperature therethrough and having trap means attached below said closure member and in alignment with said aperture for receiving articles to be deposited in said receptacle, said trap means having inner and outer interacting closure means, whereby positioning said outer closure means to receive an article into said trap means closes said inner closure means, and positioning said inner closure means to deposit said article to the interior of said receptacle closes said outer closure means, thereby closing off communication to within said receptacle from without when said trap means receives said article as well as when depositing said article into said receptacle and positions intermediate thereof, whereby said container with collected articles may be disposed of as a unit.

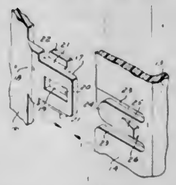
3,285,463
SMOKERS' ASH RECEPTACLE
Martin Berliner, Forest Hills, N.Y.
(100 Water St., Brooklyn, N.Y.)
Filed May 14, 1965, Ser. No. 455,933
3 Claims. (Cl. 220—20.5)



1. A self-closing ash receptacle including a bowl provided with base and with a top plate having a wide circular opening therein, and a self-centering closure plate of dome-shaped contour snugly fitted within the opening

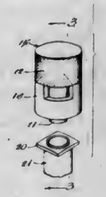
and normally positioned therein in closed relation, a vertical spring laid up in a spiral and mounted centrally of the base of the bowl, and means for mounting the closure plate at the top of the spring, the spiral spring being of sufficient rigidity to retain the closure plate substantially centered with respect to the top plate opening, the spring providing the sole support for said closure plate and providing all of its self-centering action for the plate.

3,285,464
DISPLAY BOX COMPRISING HINGEDLY CONNECTED SECTIONS
Hyman P. Boydman, Springfield, N.J., assignor to De Luxe Reading Corporation, Elizabeth, N.J., a corporation of New Jersey
Filed May 24, 1965, Ser. No. 458,162
5 Claims. (Cl. 220—31)



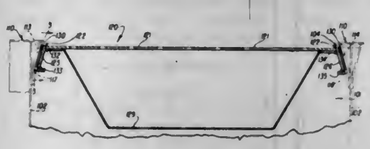
1. A hinge construction connecting two walls of a box in edge-to-edge relation, comprising a tongue formed as an integral part of the first wall and joined to it along a flexible area defining the hinge axis, a pair of wings integral with the tongue and extending from its side edges along directions transverse to the hinge axis, a pair of slots in the second wall perpendicular to its edge and spaced to receive said wings, each wing having a hooked end that engages the slot margin to hold the tongue flat against the area between the slots, said area bearing a wedge-shaped boss whose blunt end defines a shoulder facing away from the hinge axis, and the tongue being provided with an oppositely facing complementary shoulder, said tongue and the area between the slots being resiliently deflectable so that the tongue can be forced over said boss to bring said shoulders into interlocked relation.

3,285,465
SEALING PLUGS
Richard F. Karuhn, Chicago, Ill., assignor to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois
Filed Sept. 24, 1964, Ser. No. 399,031
4 Claims. (Cl. 220—39)



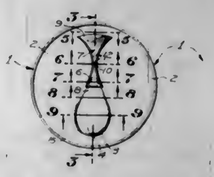
1. A friction-fit male sealing and locking plug comprising a solid corrosion-resistant metal tapered shaft; a solid corrosion-resistant metal cylindrical body portion secured to the end of the shaft having the largest diameter and aligned with the shaft; and an internally threaded tubular skirt about a substantial portion of the shaft, said skirt secured to and extending from the body portion adjacent the junction of the body portion and the shaft.

3,285,466
WASHING CYLINDER AND DOOR THEREFOR
Hubert C. Ellis, Evanston, Ill., assignor to The Ellis Drier Company, Chicago, Ill., a corporation of Illinois
Filed July 25, 1963, Ser. No. 297,624
5 Claims. (Cl. 220—41)



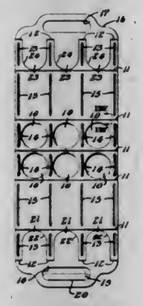
1. In a commercial washing machine, the combination comprising an elongated horizontally disposed washing cylinder having an access opening therein, a first frame of stainless steel surrounding said access opening and including a first abutment surface, a door for closing said access opening, a second frame of stainless steel extending around the periphery of said door and including a second abutment surface, said second abutment surface being shaped substantially complementary to said first abutment surface so that said door closes said access opening when said abutment surfaces are in juxtaposition, and a plurality of wear members spaced-apart along at least some of said abutment surfaces and disposed therebetween and mounted on one of said frames, said wear members being formed of a metal alloy providing good sliding contact with the stainless steel forming said other frame.

3,285,467
RIP TAB OPENER FOR SEALED CONTAINERS
James G. Moran, 122 N. Rose St., Burbank, Calif.
Filed May 14, 1964, Ser. No. 367,422
9 Claims. (Cl. 220—54)



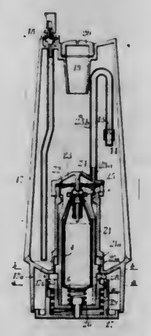
1. A rip tab opener for containers, comprising:
(a) a container wall having a score line forming a closed loop having an apex, the material of said wall within said loop forming a stripable closure;
(b) a rip tab overlying said container wall in contiguous relation therewith and having a flared fulcrum end, a flared handle end and a necked portion between said ends, said fulcrum end traversing said closure adjacent its apex and said handle end disposed beyond said apex;
(c) said rip tab including stiffener side flanges extending along its side edges between said ends;
(d) and means joining said closure and said rip tab between and contiguous to said apex and said fulcrum;
(e) the handle end of said rip tab being arcuately movable about said fulcrum to sever the apex end of said closure from said container wall;
(f) said flared handle end being manually gripable between fingers of the user to permit and outward pull on said closure for removal of said closure from the container wall.

3,285,468
PLASTIC BOTTLE CARRIER
John S. Troth, Box 3877, Greenville, Del.
Filed Mar. 29, 1965, Ser. No. 443,486
2 Claims. (Cl. 220—115)



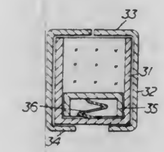
1. A carrier for articles made up of an elongated, generally rectangular sheet of thermoplastic material which is hot-pressed to form lateral fold lines about which the carrier may be folded, the lines defining a base portion, side walls and top extensions of the side walls the extensions being cut and folded so as to be configured with registering handle portions and article receiving voids and having depending therefrom partitions for separating articles in the carrier, reinforcing ridges, omega-shaped in cross section formed in the side walls and in the top extensions of the side walls, omega-shaped ridges disposed on the base portion positioned to be received in the omega-shaped ridges in the side walls when the carrier is folded flat for retaining the carrier in a folded flat condition for shipment and storage.

3,285,469
SAFETY PRESSURE-REDUCING DEVICE FOR GAS CYLINDERS UNDER PRESSURE AND ITS APPLICATION TO A SPRAY APPARATUS
Pierre Perisse, Rieumes, Haute-Garonne, France
Filed Oct. 26, 1964, Ser. No. 406,620
Claims priority, application France, Oct. 26, 1963, 951,922, Patent 1,390,963; Feb. 26, 1964, 965,214, Patent 85,290; Mar. 25, 1964, 968,712, Patent 85,712
3 Claims. (Cl. 222—3)



1. An apparatus utilizing gas at low pressure supplied from a cylinder of gas under pressure, comprising: a chamber in which the gas under low pressure is stored; a housing contiguous with said chamber; an elastic diaphragm separating said housing from said chamber; a hole in the center of said diaphragm; a receptacle in said housing and adapted to receive a cylinder of compressed gas having valve means, a spring arranged between the bottom of said cylinder and the bottom of said receptacle, an orifice in said receptacle in which is engaged a neck of the cylinder, sealing means interposed between said neck and the wall of said orifice, a fixed abutment disposed opposite said orifice; a sheath externally surrounds the bottom of said receptacle and projecting out of said housing, a compression spring interposed between the sheath and the bottom of said receptacle, the sheath being adapted to slide on said bottom over a predetermined distance and to cause compression of said spring, resulting in the displacement of said receptacle by deformation of said diaphragm, said fixed abutment then opening the valve means of the cylinder to allow the flow of gas therefrom.

3,285,470
THERMALLY ACTUATED DEVICES
Ephraim Heinrich Frei, Rehovoth, Saul Leibinzohn, Rishon-Lezion, and Shmuel Shtrikman, Rehovoth, Israel; said Frei and Leibinzohn assignors to Yeda Research and Development Co., Ltd., Rehovoth, Israel, a company of Israel
Filed July 3, 1964, Ser. No. 380,150
Claims priority, application Great Britain, July 5, 1963, 26,841/63
14 Claims. (Cl. 222—54)



1. A method for preparing a ferro-elastic element for use in or as a thermally actuated device, said element being constituted of a body of a ferro-elastic material consisting essentially of gold-cadmium alloy containing substantially equal proportions by weight of gold and cadmium and possessing a predetermined operative shape in its β phase at temperatures above its transition temperature and a non-operative shape in its β' phase at temperatures below its transition temperature, and said material returning to said operative shape whenever heated to its β phase, which comprises heating said body above its transition temperature, pre-shaping the body into said operative shape, permitting the pre-shaped material to cool below its transition temperature, and placing the cooled body in said non-operative shape.

5. A thermally actuated device including:
at least one ferro-elastic element constituted of a body of a ferro-elastic material consisting essentially of a gold-cadmium alloy containing substantially equal proportions by weight of gold and cadmium and possessing a predetermined operative shape in its β phase at temperatures above its transition temperature and a non-operative shape in its β' phase at temperatures below its transition temperature, said material returning to said operative shape whenever heated to its β phase, which element has been formed by
heating said body above its transition temperature, pre-shaping the body into said operative shape, permitting the pre-shaped material to cool below

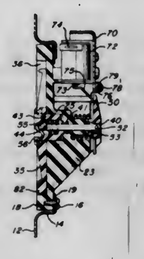
its transition temperature, and placing the cooled body in said non-operative shape; and

spring means tending to bias said element into its non-operative shape, the elastic force produced by said spring means being insufficient to bias said element into its non-operative shape when the ferro-elastic material thereof is in its β phase but being sufficient to bias said element into its non-operative shape when the ferro-elastic material is in its β' phase.

3,285,471
DISPENSER FOR GRANULAR MATERIALS AND THE LIKE

Paul B. Geiger and Russell C. Geiger, Troy, Ohio, assignors to The Hobart Manufacturing Company, Troy, Ohio, a corporation of Ohio

Filed July 26, 1965, Ser. No. 474,645
4 Claims. (Cl. 222—70)



1. A device for dispensing a quantity of cleansing detergent or the like comprising, a body having formed therein at least one cavity with an opening to said cavity being formed by an arcuate outer edge and at least two other edges defining the opening as a segment of a circle, a cover dimensioned to fit over said opening and close said cavity, means mounting said cover for movement about a pivot axis at the focal point of said arcuate edge and arranged to move between an open position uncovering said cavity and a closed position overlying said cavity, an operating shaft extending along an axis intersecting said focal point and attached to said cover, stop means defining the open position of said cover, driving means acting on said shaft tending to move said cover into engagement with said stop means, a latch member carried by said shaft and movable therewith along an arcuate path in relation to opening and closing movements of said cover, stop means mounted along said path at the position of said latch member corresponding to the closed position of said cover, latch spring means acting on said latch member to engage said latch member with said stop means for holding said cover in its closed position, and a releasing mechanism selectively engageable with said latch member to move said latch member away from said stop means and to allow said driving means to open said cover.

3,285,472
CARTON HOLDING AND POURING DEVICE

Verlyn D. Olson, 304 NW. 4th St., Brainerd, Minn.

Filed Jan. 21, 1966, Ser. No. 522,135
3 Claims. (Cl. 222—86)

1. A holding and dispensing device for a liquid containing carton comprising

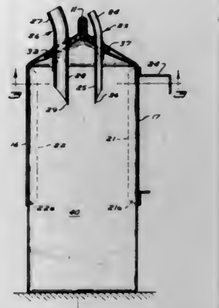
an open framework

an upper portion of said framework adapted to overlay the upper end portions of said carton,

a pair of opposed side walls depending from said upper portion of said framework,

flange portions at the edges of said side walls angled inwardly thereof for frictional engagement with adjacent underlying wall portions of said carton,

a dispensing tube carried by said upper portion of said framework, and

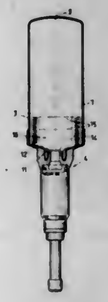


said dispensing tube having a depending portion having a tapered free end portion to rupture said carton.

3,285,473
TUBE FOR RECEIVING PASTY SUBSTANCES

Heinrich Ernst Johann Fuhrmann, Eschersheimer Landstrasse 68, Frankfurt am Main, Germany

Filed Nov. 2, 1964, Ser. No. 408,067
6 Claims. (Cl. 222—107)

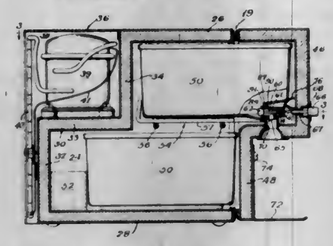


1. A tube having folded wall surfaces, comprising a closed bottom portion, a top portion having an outlet opening therein, and a tubular intermediate portion extending between said bottom portion and said top portion, said intermediate portion having folds and deformation-resistant means, the resistance offered by said deformation-resistant means to radial deformation by pressure being at its maximum adjacent said top portion and at its minimum adjacent said bottom portion, said bottom and top portions as well as said folded intermediate portion being walls, the walls forming said bottom portion and the bottom end of said folded intermediate portion being thinner than the walls forming the top end of said folded intermediate portion, the thinner walls of said bottom portion and said bottom end of said folded intermediate portion forming a tube portion extending upside down into the interior of said tube upon application of pressure on said thinner walls.

3,285,474
POSITIONER FOR REFRIGERATED LIQUID DISPENSER CONTAINER

Carl A. Gran, Arlington Heights, Ill., assignor to Magi-Pak Corporation, a corporation of Delaware

Filed Apr. 29, 1965, Ser. No. 451,883
6 Claims. (Cl. 222—131)

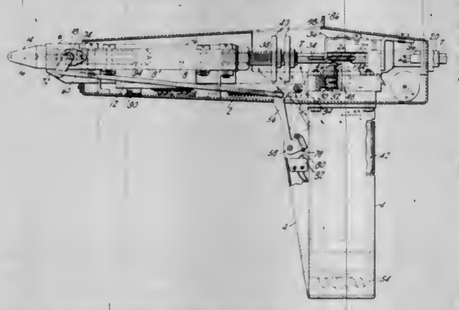


2. A dispenser for cooled liquid comestibles comprising, in combination: cabinet means defining an open-sided cooling chamber and a selectively openable access door closing off said chamber, said cabinet means having a discharge opening therethrough; a liquid container removably positioned in said cooling chamber at an attitude adapted to have liquid selectively drained therefrom and through said discharge opening in the cabinet means, said liquid container providing a recessed wall adjacent the side of the cabinet means closed by said access door; discharge valve means for the container including a housing affixed to said recessed wall of the container and having a discharge spout defined therein, and a valve element carried in said housing; actuator means movably carried in said access door and adapted for selectively actuating said valve element from exteriorly of the dispenser when the access door is closed and the actuator means are aligned with said valve element; and positioning means on said door arranged to cooperate with the recessed wall of the container as the access door is closed to cause said container to be aligned relative to said actuator means so that when said door is closed, said actuator means are accurately aligned with said valve element and the discharge spout is accurately aligned with said discharge opening.

3,285,475
CEMENT EXTRUDERS

Harry Phillips, Hamilton, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey

Filed Feb. 8, 1965, Ser. No. 430,874
4 Claims. (Cl. 222—146)

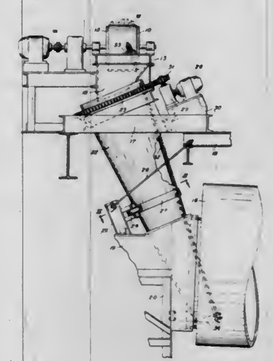


1. A thermoplastic cement extruder comprising a frame, a barrel member attached to said frame for receiving thermoplastic material in solid rod form at a first end thereof, said frame having a passage for the rod of thermoplastic material aligned with said barrel member, means for heating said barrel member for melting the thermoplastic therein, a nozzle at a second end of said barrel member through which molten thermoplastic material may be discharged, a grip for manipulating the device during use, a trigger connected to said grip and adapted to be moved by an operator's finger, feed means arranged in said frame for feeding the thermoplastic rod to first end of the barrel member, power means in said grip responsive to the movement of said trigger for operating said feed means, and cooling means operable by said power means for cooling the first end of the barrel member and for cooling the thermoplastic rod prior to its entrance into said barrel.

3,285,476
ROTATABLE INCLINED CHUTE FOR HANDLING STICKY BULK MATERIAL

Wilbur J. Pellow and Lawrence C. Rosenquist, Duluth, Minn., assignors to United States Steel Corporation, a corporation of Delaware

Filed Aug. 20, 1965, Ser. No. 481,289
2 Claims. (Cl. 222—168)



1. A chute construction comprising a hollow truncated cone, means supporting said cone for rotation about its central axis, with the smaller end of the cone directed downwardly, and with the central axis of the cone sloping from the vertical, drive means operatively connected with said cone for effecting rotation thereof, fixed support means outside said cone at opposite ends thereof, and a tensioned wire rope attached at its ends to said fixed support means and contacting the inside surface of said cone along the uppermost line of its circumference, said rope acting as a scraper to remove material clinging to the inside surface of the cone and allowing such material to drop gravitationally toward the central axis of the cone.

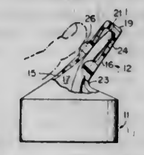
3,285,477
LIQUID METERING DISPENSER

Robert N. Marona, Scarsdale, and Philip H. Huepenbecker, White Plains, N.Y., assignors to General Foods Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 1, 1965, Ser. No. 444,610
17 Claims. (Cl. 222—213)

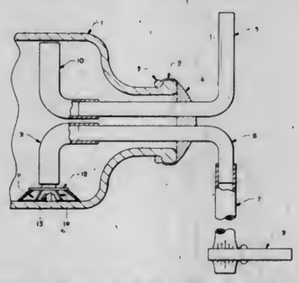
1. A metering device for dispensing a liquid from a container in predetermined amounts, said device being formed of a semi-rigid resilient material rendering the device flexible under a force manually applied thereto, said device comprising an annular base portion adapted to engage in a liquid-tight seal with the finish of said

container, the walls of said base portion merging into respective top, bottom, and side walls of a nozzle portion substantially rectangular in cross section, said bottom wall merging with said annular base portion through a sharp curve providing a flexure axis for said nozzle portion, said nozzle portion including an end wall formed with a dispensing orifice communicating with the interior area of said nozzle, and a stopper member disposed interiorally of said nozzle portion in bearing engagement with a portion of said top wall and in yieldable seal-



ing engagement with said orifice, said stopper member being displaced out of sealing engagement with said orifice through inward flexure of said top wall by a relatively light force applied to said top wall, said nozzle portion being yieldably bendable a predetermined extent about said flexure axis upon application of a greater force applied to said top wall, said nozzle when thus bent discharging a predetermined portion of the liquid filling the interior area of said nozzle portion.

3,285,478
FLUID DRAWING SIPHON FOR BOTTLES
Alexander M. Gordon, Broward County, Fla., assignor to Sun Industries, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Feb. 7, 1964, Ser. No. 343,382
14 Claims. (Cl. 222—416)

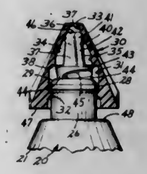


1. A siphon device adapted for dispensing fluid material from a container comprising, a closure means adapted to be detachably connected to an open end of said container, a first tube means disposed through said closure means adapted to provide a vent for said container, a second tube means disposed through said closure means adapted to provide a discharge passageway for fluid material from said container, and a low residual intake foot operably connected to said second tube means, said foot including a flange portion and a flexible membrane portion attached to said flange portion.

3,285,479
DISPENSING DEVICE WITH CAMMED STOPPER
Alvin J. Porter and Anthony W. Merchlewitz, Minneapolis, Minn., assignors to Product Design & Engineering, Inc., Minneapolis, Minn.
Filed Aug. 31, 1965, Ser. No. 484,063
4 Claims. (Cl. 222—521)

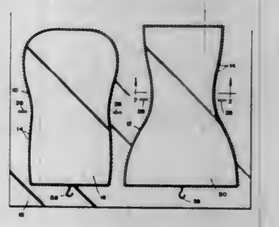
1. In a dispensing device for semi-liquid substances having a receptacle provided with an outlet opening and means for ejecting the substance outwardly from the receptacle and through said opening, the combination of,

(a) a cap having a body mounted on said receptacle over said outlet opening,
(b) a journal on said cap extending outwardly of said body,
(c) said journal having a longitudinal passageway therethrough communicating at its inner end with the interior of said receptacle and being open at its outer end,
(d) a spout mounted on said journal and formed with a bore rotatably receiving said journal and supporting the spout and cap for relative rotational and axial movement,



(e) said spout having a cavity therein terminating in a discharge orifice having a non-circular outline and communicating with the passageway in said journal,
(f) a stopper having a non-circular cross-section and carried by said journal at the outer end thereof and adapted at one axial position of said spout relative to said cap to enter and close said discharge orifice and at another axial position to open said dicharge orifice, and
(g) cam means on the cavity surface of said spout engageable with said stopper and withdrawing said stopper from said outlet upon relative rotation between said stopper and said spout.

3,285,480
METHOD OF AND APPARATUS FOR PREPARING PIECES OF FABRIC FOR THE APPLICATION OF ORNAMENTAL DESIGNS
Estephan Der Estephanian, Pasadena, Calif., assignor to Estebar, Inc., Manchester, N.H., a corporation of New Hampshire
Filed June 8, 1965, Ser. No. 462,218
3 Claims. (Cl. 223—61)



1. A method of preparing a piece of fabric for the application of ornamental designs thereto, which comprises placing an outline frame about a template fitted to give it inner support, stretching the fabric over the frame to a flat condition with the prescribed contour, transferring the frame and fabric to a table having a slot therein shaped to the contour of the frame, and lowering the frame into said slot whereby the stretched fabric is disposed directly on the table surface and the frame is supported in the prescribed shape.

3,285,481
INTERLOCKING COAT HANGER COVER
Clarence C. Zintel, 840 SE. 22nd Ave., Apt. C, Pompano Beach, Fla.
Filed Dec. 9, 1963, Ser. No. 328,875
9 Claims. (Cl. 223—87)

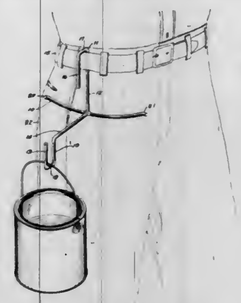


1. A cover for a wire coat hanger having a pair of garment-supporting arms extending downward and outward from inwardly-extending and generally horizontal shoulder portions connected to a hanger support, comprising

a blank of stiff foldable material such as cardboard and the like, said blank being cut and scored to provide
a first main cover panel joined at its upper-outer borders by shoulder portions marked by a pair of angularly disposed groups of score lines at which the blank is adapted to be folded to overlie the arms of the hanger and provide downwardly-sloping, rounded garment-supporting shoulders over such arms,
half-panels at the opposite sides of said groups of score lines and including flap portions at their inner ends adapted to be overlapped and connected to position said half panels as a second main cover panel,
severing cuts separating the flap portions of said half panels from each other and from the central portion of said first panel,
the cut separating the half-panel flap portions from the first-panel having
end portions transverse to the score lines and forming openings which in the operative position of the cover on a hanger will lie adjacent the upper ends of the hanger arms below the connections thereof with the hanger shoulder portions,
intermediate portions extending obliquely inward and upward from the end portions to form edges on the flap portions which in the operative position of the cover on a hanger will lie generally parallel with the shoulder portions of the hanger and are adapted to cross through the plane of the hanger beneath such shoulder portions, and
central portions extending inward from the intermediate portions to form tongues on the flap portions which project from said flap-portion edges and are adapted to hook against the opposite face of the hanger to hold said edges in crossing relation with the shoulder portions of the hanger.

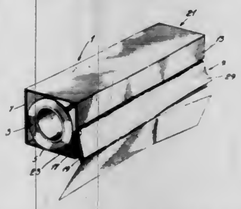
3,285,482
MULTI-PURPOSE HIP HOOK
James David Bedsaul, Sr., Oldsmar, Fla., assignor of one-half to Walter B. Poff, Tampa, Fla.
Filed May 17, 1965, Ser. No. 456,368
3 Claims. (Cl. 224—25)

1. In a support, the combination which comprises an arcuate horizontally disposed bar having outwardly curved ends, an upper hook extended upwardly from the intermediate portion of said arcuate bar and mounted in an inverted position, a horizontally disposed bar also extended from the intermediate portion of said arcuate



bar, and an open hook carried by said horizontally disposed bar depending from the outer end thereof and spaced from said arcuate bar.

3,285,483
DISPENSING CONTAINER FOR SHEET WRAPPING MATERIAL
Julien Hebert, 1651 Sherbrooke St. W., Montreal, Quebec, Canada
Filed June 21, 1965, Ser. No. 465,576
5 Claims. (Cl. 225—48)



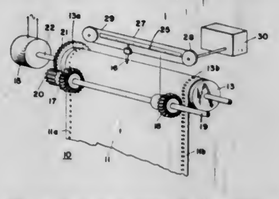
1. A dispensing container intended to receive a roll of sheet-wrapping material, said container comprising: an elongated hollow body adapted to receive said roll; said body having a front dispensing wall provided with a slit-like outlet for the discharge of said sheet material; an elongated flap hinged along a lower edge of said slit-like outlet and capable of being bent outwardly downwardly against said front dispensing wall; cutting means along the free edge of said flap whereby since the cutting means is distant from the outlet, a strip of paper from said roll is constantly available for subsequent use; said body having a bottom wall contiguous to said side wall and said flap having such a depth that when folded against said side wall, said cutting means extends past said bottom wall.

3,285,484
TENSIONING DEVICE FOR RECORDER CHART PAPER
Curtis R. A. Johnson, Flourtown, Pa., assignor to Leeds & Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 11, 1964, Ser. No. 417,683
10 Claims. (Cl. 226—85)

1. In a recorder having a chart paper drive roll, chart paper disposed on a portion of said drive roll, means on said drive roll for engaging said chart paper and a device

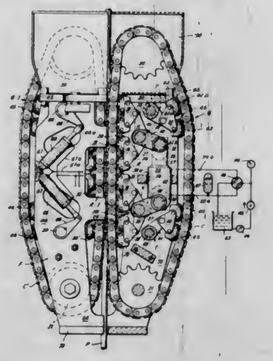
for maintaining said chart paper in tension, the improvement in said device for maintaining said chart paper in tension comprising:

a plurality of tension-developing members disposed adjacent said paper drive roll and having a plurality of resilient and deformable fingers extending therefrom, a portion of which fingers interferingly engages said chart paper disposed on said chart paper roll, and



means for positively moving said fingers in the normal direction of said chart paper movement at a rate greater than said chart paper whereby said resilient and deformable fingers will, due to said interfering engagement, exert and maintain themselves in pressure engagement with said chart paper while they frictionally engage and pass over said chart paper to maintain said chart paper in controlled tension.

3,285,485
APPARATUS FOR HANDLING TUBING OR OTHER ELONGATE OBJECTS
Damon T. Slator, Houston, Tex., assignor to Bowen Tools, Inc., a corporation of Texas
Filed Jan. 23, 1964, Ser. No. 339,719
8 Claims. (Cl. 226—172)



1. An apparatus for handling an elongate object during longitudinal movement thereof, comprising:

(a) a support frame,

(b) a pair of endless gripping assemblies mounted on said support frame for endless movement relative to each other for engaging an elongate object longitudinally therebetween,

(c) each of said gripping assemblies including an endless loop of gripping elements,

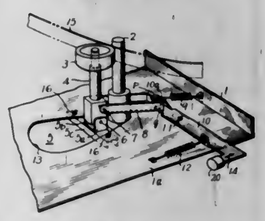
(d) a floating piston and cylinder mounted on said support frame for relative movement with respect thereto,

(e) back-up means connected to said piston and engageable with the inner surfaces of a portion of said gripping elements in said reach of one of said gripping assemblies for maintaining said gripping elements in contact with the elongate object,

(f) additional back-up means connected to said cylinder and engageable with the inner surfaces of another portion of said gripping elements in said reach of said one of said gripping assemblies, and

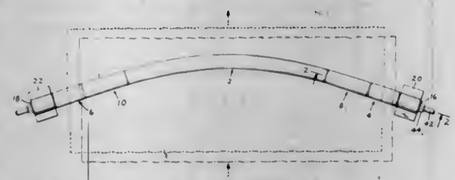
(g) fluid means operably connected with said piston and cylinder for moving same relative to each other and relative to said frame for causing both of said back-up means to press against their respective portions with a resilient force.

3,285,486
PINCH ROLLER OPERATING DEVICE FOR MAGNETIC RECORDER
Naoji Tamura, Tokyo, and Masaharu Horiuchi, Kawasaki-shi, Japan, assignors to Kabushikikaisha Taiko Denki Seisakusho (Taiko Electric Works Ltd.), Tokyo, Japan, a corporation of Japan
Filed Aug. 7, 1964, Ser. No. 388,055
Claims priority, application Japan, Aug. 15, 1963, 38/61,296
4 Claims. (Cl. 226—180)



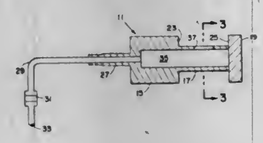
1. A pinch roller operating device for magnetic recorders comprising a capstan rotating at a predetermined speed, a pinch roller cooperating with said capstan to drive a magnetic medium therebetween a pinch roller shaft carrying said pinch roller and pivoted rotatably at a stationary part to stand and fall with respect to said capstan, an operating arm attached to said pinch roller shaft at a position different from said pivot and rotating said pinch roller shaft about said pivot, a spring pressing said pinch roller against said capstan, and means for pushing alternately the upper and lower sides of the free end of said operating arm so that said pinch roller shaft can repeat the stand and fall operations alternately in accordance with every reciprocal movement of said operating arm due to the pushing forces effected alternately upon said upper and lower sides of said free end of said operating arm.

3,285,487
SPREADER BAR HAVING ROLLERS THEREON
Warren R. Furbeck, Knoxville, and Philip H. Murphy, Moshelm, Tenn., assignors to Huyck Corporation, Stamford, Conn., a corporation of New York
Filed Jan. 19, 1965, Ser. No. 426,640
13 Claims. (Cl. 226—190)



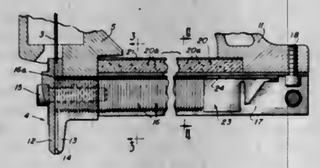
1. A bar for applying opposing forces transverse to the path of travel of a sheet of material passed over said bar, said bar comprising an arcuate, stationary center member, outer straight stationary members mounted in axial alignment with the ends of said arcuate member at the opposite ends thereof, and rotatable members mounted intermediate said arcuate member and each of said stationary members, said rotatable members being in axial alignment with the end of said arcuate, stationary member and said outer stationary member and being mounted for rotation about said axis, said axis being angularly disposed to the path of travel of a sheet of material passed over said bar.

3,285,488
MAGNETIC TAPE HANDLER WITH VACUUM PRESSURE PAD
Larry J. Campbell, St. Paul, Minn., assignor, by mesne assignments, to The United States of America as represented by the Secretary of the Army
Filed Oct. 7, 1964, Ser. No. 402,368
1 Claim. (Cl. 226—196)



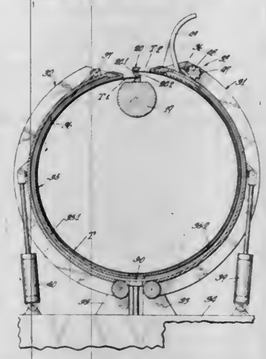
A vacuum pressure pad for use on a tape handler including: a body portion defining a base section, an intermediate section and a top section; said base section and top section defining surfaces for guiding the outer periphery of a tape, said intermediate section having a slightly flattened wall that merges into curved surfaces and a single slot in said flattened wall, said slot communicating with a chamber in said body portion; a screw threaded mounting stud integral with said base section for mounting said vacuum pressure pad on said tape handler device and a passage in said stud in communication with said chamber, and means in communication with said chamber and passage for creating a vacuum in said chamber.

3,285,489
FASTENER MAGAZINE
Harrison C. Lingle, Wilmette, Ill., assignor to Signode Corporation, a corporation of Delaware
Filed Aug. 24, 1964, Ser. No. 391,604
7 Claims. (Cl. 227—113)



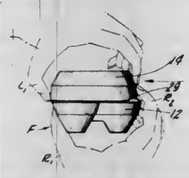
1. A magazine assembly for a stapler comprising a longitudinally extending guide member defining a recess for receiving an adhered row of staples, a magnet disposed above said member for retaining said staples within said member, a follower assembly disposed within said guide and adapted to engage and bias the row of staples into position to be driven, and means connected to the follower for biasing the follower into engagement with the end of the row of staples.

3,285,490
APPARATUS FOR MAKING TUBULAR MEMBERS
Ralph E. Roper, Indianapolis, Ind., assignor to Wallace Expanding Machines, Inc., Indianapolis, Ind.
Filed June 25, 1963, Ser. No. 290,469
6 Claims. (Cl. 228—15)



1. Apparatus for supporting a longitudinally split, tubular body preparatory to joining the body edges defining the body split, comprising a first loop of sheet material embracing the split body and generally corresponding to the size and shape of body desired, said first loop being formed of two, flexible sheet member pieces in overlapping relation, a transversely flexible second loop underlying and supporting said first loop, and means for varying the effective length of said second loop to vary the amount of overlap of said sheet member pieces thus varying the size of said first loop to provide for accommodation of bodies of different transverse sizes.

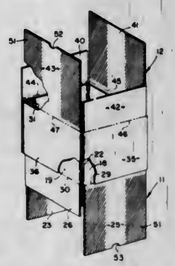
3,285,491
MOLDED CARTON
Clifford Harold Bessett, South Holland, Ill., assignor, by mesne assignments, to Packaging Corporation of America, a corporation of Delaware
Filed Jan. 21, 1965, Ser. No. 427,002
6 Claims. (Cl. 229—2.5)



1. A packaging carton for articles comprising a cellular bottom section; a cover section having a front wall provided with a first locking means; a double hinge integral with and interconnecting a rear wall of said bottom section with a rear wall of said cover section so that said cover section can assume a closed superimposed position with respect to said bottom section, said double hinge resiliently retaining said cover section in superimposed aligned relation with said bottom section when said cover section is in said closed position; and a locking flap hingedly connected to the front wall of said bottom section, said locking flap including a second locking means complemental with said first locking means and for interlocking therewith when said cover section is in said closed position and said locking flap has assumed a position of hinged adjustment behind the front surface of said closed cover section; said double hinge being provided with a wide intermediate portion so that said cover section, when

in said closed position, is shiftable laterally forward relative to said bottom section and said locking flap when said flap is in said position of hinged adjustment, to effect relative movement of first and second locking means to an unlocking position.

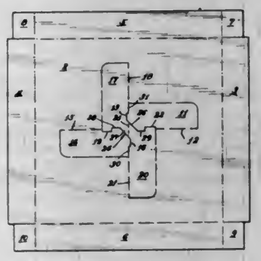
3,285,492
SHIPPING CARTON
Raymond E. Demby and Edmund J. Demboske, Berea, Ohio, assignors to Ohio Rod Products Company, Inc., Berea, Ohio, a corporation of Ohio
Filed Feb. 18, 1965, Ser. No. 433,596
2 Claims. (Cl. 229—23)



1. A shipping carton formed of two substantially complementary blank sections, each of which comprises four side panel sections hingedly connected together, a connecting flap hingedly connected to one of said side panel sections, four closure flap sections each of which is hingedly connected to a respective side panel section and all of which extend from the side panel sections in the same direction, with said closure flaps comprising a pair of relatively short and a pair of relatively long flaps, means for adhesively securing together in overlying position the respective side panel sections of each blank section thereby to form a unitary carton having a side panel construction of double wall thickness, with the closure flaps when the side panel sections are so positioned and bonded extending to opposite sides of the double wall side panel construction to provide when folded top and bottom carton sections, means for connecting the thus overlying side connecting flaps to the side panels remote therefrom to form a carton having a generally rectangular shaped opening when unfolded, adhesive means carried on the surface of certain of said closure flaps in a manner to provide face-to-face adhesive bonding of the respective certain closure flaps when folded about their hinged connections with the side panel sections, with the closure flaps being constructed and arranged when folded to provide a bottom wall of triple thickness and a top wall of similarly triple thickness, with the adhesive bonding of the closure flaps thus forming the top and bottom wall of the carton being the only means for sealing the same and retaining the carton in its thus folded condition.

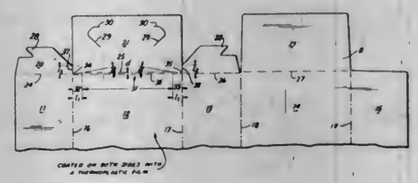
3,285,493
COMPARTMENTED TRAY STRUCTURE
Merrill J. Coe and Curtis D. Rice, both of Kalamazoo, Mich., assignors, by mesne assignments, to Brown Company, a corporation of Delaware
Filed June 10, 1964, Ser. No. 374,102
10 Claims. (Cl. 229—27)

1. A container comprising a bottom suitably cut and scored to provide a radial partition structure, said structure comprising a first pair of vertically arranged partition members hingedly connected to said bottom at substantially colinear score lines, and a second pair of vertically oriented partition members hingedly connected to said bottom at substantially colinear score lines substantially perpendicular to the score lines of said first pair of partitions, both said first pair of partition members and said second pair of partition members being provided with tabs and recesses at their proximal ends, the recesses of said first partition members cooperating to define a slot



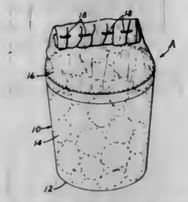
retaining therein the tabs of said second pair of partition members, and the recesses of said second pair of partition members cooperating to define a slot retaining therein the tabs of said first partition members, whereby said partition members are interlocked to form a structure defining four compartments.

3,285,494
FOLDING BOXES AND BLANKS, PARTICULARLY IN REGARD TO SEALING BY MEANS OF A THERMOPLASTIC COATING PREAPPLIED TO BOTH SIDES THEREOF
Thomas R. Baker, Los Altos, Calif., assignor to Kliklok Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 25, 1965, Ser. No. 435,212
5 Claims. (Cl. 229—36)



1. The end construction of a folding box of paperboard comprising a bottom panel; a pair of side panels articulated to opposite sides of the bottom panel, an end panel articulated to one end of the bottom panel along a bottom end fold line and a pair of corner lock flaps articulated to said side panels along corner fold lines and folded over the end panel; a cover panel; and a cover flap articulated to said cover panel in a position to overlie said end panel and said corner flaps at least partially, in which said bottom end fold line comprises three portions, viz., a central portion and two terminal portions, said central portion being offset toward the outside of the box with respect to an imaginary chord connecting the far ends of the terminal portions, a curvature resulting in the end panel when folded at said bottom end fold line with respect to the bottom panel, said curvature being convex as viewed from the box outside which curvature brings the central portion of the wall panel into substantially the same plane as the corner lock flaps which overlie the end portions of the wall panel adjacent said corner fold lines.

3,285,495
REUSABLE FOOD PACKAGE WITH INTEGRAL ADJUSTABLE CLOSURE
Albert E. Colato, Tujunga, Calif., assignor to Plastics, Inc., St. Paul, Minn.
Filed Aug. 18, 1965, Ser. No. 480,592
1 Claim. (Cl. 229—43)



In a package having a rigid non-collapsible receptacle portion provided with a bottom and an upwardly flaring lateral wall structure integral therewith; said receptacle portion being open at the top and the wall structure having a marginal portion encircling the open end, the combination of,

(a) a seamless tubular closure portion having a substantially constant diameter of flexible material open at its ends and having upper and lower marginal portions,

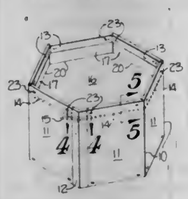
(b) said lower marginal portion of said closure portion being of a dimension to cause said closure to fit about the marginal portion of said receptacle portion,

(c) an adhesive detachably securing the lower marginal portion of said closure portion to said marginal portion of the receptacle portion to allow removal of the closure portion and allow separate use of the receptacle portion as a receptacle,

(d) means for closing the upper end of said closure portion to enclose a volume of the material packaged greater than the volume of the receptacle portion,

(e) said closure portion being flexible and of a thickness substantially from one mil to four mils to allow the closure to be confined within the interior of the receptacle and permit nesting of the packages or to be disposed outwardly therefrom to form an adjustable closable extension of said receptacle portion.

3,285,496
POLYGONAL TUBULAR CONTAINER WITH RECLOSABLE END
Jacob C. Barnhardt, Sr., and William T. Shea, Charlotte, N.C., assignors to Barnhardt Manufacturing Co., Charlotte, N.C., a corporation of North Carolina
Filed Jan. 13, 1965, Ser. No. 425,194
1 Claim. (Cl. 229—51)



In combination with a polygonal tubular container having a body free of any internal protruding obstructions and formed by a series of interconnecting planar body panels, a reclosable structure for one end of the body comprising:

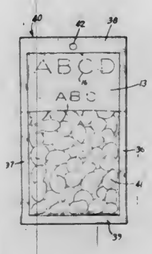
a correspondingly polygonal closure member telescopically positioned within said body and comprising a lid portion recessed inwardly from said one end of said body and lid flaps carried by said lid portion and corresponding in number and being in engagement with said body panels and extending outwardly from said lid portion and terminating adjacent said one end of said body,

said body panels having inturned body flaps each engaging a lid flap and sandwiching the lid flaps between the body flaps and the body panels,

means connecting the lid flaps to the body flaps and body panels, and

tear strip means for separating said closure member from the body and to permit telescopic replacement of the closure member within the body without any exposed gap in the body, said tear strip means comprising a strip of pliable material of less width than the height of the lid flaps and encircling all the lid flaps medially thereof and being sandwiched between the lip flaps and the body panels and having a manually engageable tab projecting through and outside the body whereby upon applying sufficient outward pulling force to the tab the surrounding body is ruptured to separate the closure member from the body to permit access to the interior of the container and the closure member may thereafter be replaced on the body in deeper telescopic relation thereto to compensate for any reduced height of the body caused by the rupture thereof by the tear strip and thus present a reclosable container devoid of the presence of a gap in the body.

3,285,497
PACKAGING SHEET MATERIAL
Nathan Stillman, Lafayette, Gerard R. Van Koersel, Concord, and Carl E. Lindroos, Oakland, Calif., assignors to Rap Industries Inc., Minneapolis, Minn., a corporation of Ohio
Filed May 3, 1965, Ser. No. 452,586
8 Claims. (Cl. 229—55)

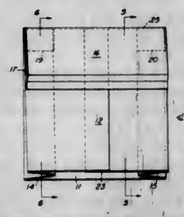


4. A package for enclosing a product comprising a front wall and a rear wall on opposite sides of the product, each wall having an opaque top section and a transparent bottom section, reverse print on adjacent surfaces of the top sections of the walls, said walls including a thin film of thermoplastic material coating the entire adjacent surfaces of the walls, a single sheet of thermoplastic material having a color which contrasts with the color of the print forming a background therefor bonded by the film of thermoplastic material to the top sections of the walls, said front and rear walls peripherally interconnected by a continuous welded union of the peripheral portions of the film of thermoplastic material and the sheet of thermoplastic material and the front and rear walls being further interconnected along the top edge of the package along a common fold line, said welded top edge forming an integral header for said package and having means for supporting said package.

3,285,498
LEAKPROOF BOTTOM CLOSURE FOR SINGLE WALL BAG

Frederick R. Becker III, New Orleans, La., assignor to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware

Filed June 3, 1964, Ser. No. 372,173
4 Claims. (Cl. 229—57)



1. A leak-proof single-wall bag formed from paper with a heat-sealable inner surface, said bag having a front face, a back face, and inwardly-folded gussets when in flattened tubular form and having a folded bottom formed without use of binding strips or stitching, said folded bottom comprising:

(a) a bottom fold in both front and back faces and in both gussets which extend transversely across the bag,

(b) as an extension of the back face beyond the bottom fold, a back flap,

(c) as an extension of the front face beyond the bottom fold, a front flap which extends longitudinally a shorter distance beyond the bottom fold than the back flap,

(d) gussets extending longitudinally a shorter distance beyond the bottom fold than the front flap,

(e) an internal primary leakage barrier, formed by heat-sealing along a transverse path across the back flap, front flap, and gussets, which coheres the back flap to the front flap and both flaps to the gussets, and

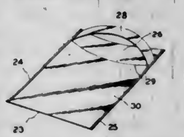
(f) an internal secondary leakage barrier, formed by applying a transverse seal strip of a quick-setting adhesive between the front and back flaps and in contact with the gusset terminal edges,

(g) a strip of a quick-setting adhesive which seals the bag bottom and adheres the back flap and the front flap to the front face.

3,285,499
BAG CLOSURE DEVICE

John P. Repko, Beaverton, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Dec. 30, 1964, Ser. No. 422,205
6 Claims. (Cl. 229—62)

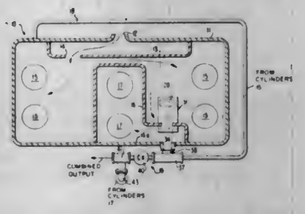


1. A generally rectangular container comprising two superimposed sheets, said sheets having at least one heat-sealable thermoplastic resin surface forming the inner walls of said container, said sheets being joined at three of the four edges, said container having an opening extending the length of one of the edges of said sheets, one of said sheets extending beyond the other sheet and forming a lip for said opening, said lip having attached to its opposite edges a thermoplastic resin tape parallel to the opening of the container, said tape otherwise being unattached, the length of said tape being substantially the distance between the opposite edges of said lip.

3,285,500
COMBINATION SINGLE AND DUAL STAGE COMPRESSOR

Knute Sahle and Alwin B. Newton, York, Pa., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed May 25, 1964, Ser. No. 369,731
5 Claims. (Cl. 230—40)



1. A compressor comprising first and second fluid compression means each having suction and discharge sides; means defining first and second suction plenums associated with the suction sides respectively of both said compression means, said plenum defining means including a septum dividing the respective plenums, said septum having a first aperture therein to provide fluid communication between said first and second plenums, said plenum defining means further including a wall section of said second suction plenum having a second aperture formed therein; first conduit means interconnecting the discharge side of said first fluid compression means to a fluid outlet; second conduit means interconnecting the discharge side of said second compression means with said first conduit means at a juncture where the discharge from both compression means are combined; third conduit means defining a fluid passage interconnecting said second aperture with said first conduit means upstream from the juncture of said first and second conduits; a one-way check valve upstream from said juncture and downstream from said third conduit means; valve means movable from a first position wherein said first aperture is open and said second aperture is closed, thereby permitting communication between said first and second suction plenums, to a second position wherein said first aperture is closed and said second aperture is open, thereby permitting the discharge from said first compression means to flow into said second plenum; and valve actuating means operatively associated with said valve means responsive to the pressure differential between the suction side of said first compression means and the discharge side of said second compression means.

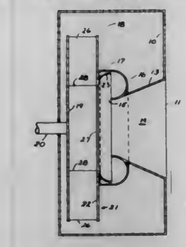
3,285,501
CENTRIFUGAL FANS

John E. McDonald, 67 Colbert Road, Newton, Mass.

Filed Dec. 7, 1964, Ser. No. 416,216
12 Claims. (Cl. 230—127)

1. A centrifugal fan comprising a casing; a fan wheel supported for rotation within said casing, said wheel having a circular axial inlet, and having a side plate around said inlet; said casing having an inlet concentric with said inlet, and having a relatively long annular wall extending from said inlet of said casing towards said inlet of said wheel, said wall having an axially inner end in a circle concentric with said inlets and in a plane normal to the axis of said wheel, said end being spaced axially outwardly from said inlet of said wheel; generally parti-toroidal, fixed wall means extending partially around a circular

axis, and having a radially inner portion formed by a relatively short portion of said wall extending from said end towards said inlet of said casing, said circular axis having a smaller diameter than that of said wheel, said wall means having a radially outer portion with an axially inner end closely adjacent to said side plate, said wall means having a curved, in section, intermediate portion

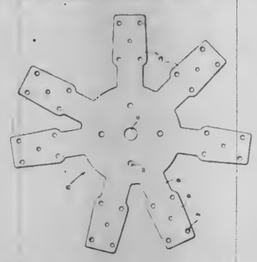


extending around said inner portion and bulging towards but terminating short of said inlet of said casing, said wall means being open between said inner end and said inlet of said wheel; and means for supplying high pressure air from the interior of said casing tangentially into the space bounded by said wall means, said wall means being shaped to cause the high pressure supplied into said space to spin around said circular axis.

3,285,502
BALANCED FAN CONSTRUCTION

John A. Wooden, Indianapolis, Ind., assignor to Brookside Corporation, McCordsville, Ind., a corporation of Indiana

Filed Jan. 25, 1965, Ser. No. 427,735
2 Claims. (Cl. 230—132)



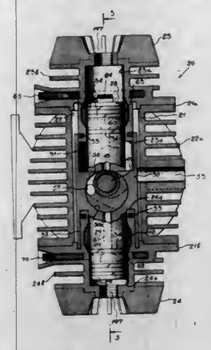
1. A fan spider having a plurality of radially extending legs, said legs each being adapted to have identical fan blades secured thereto, the angle between the longitudinal axes of any two of said legs differing in magnitude from the angle between the longitudinal axes of any other two of said legs, the center of gravity of each of said legs being equidistant from the center of said spider, the angular spacing of said legs being such as to dynamically balance said spider about its center without the addition or subtraction of mass to or from said legs.

3,285,503
FLUID DISPLACEMENT DEVICE

Charles Bancroft, 178 Ferris Hill Road, New Canaan, Conn.

Filed Mar. 18, 1965, Ser. No. 444,913
49 Claims. (Cl. 230—187)

2. A fluid displacement device comprising a crankshaft having one or more crankpins, a corresponding number of pairs of pistons, cylinders rotatably mounted on the crankpins of said crankshaft, means for causing said crankshaft to revolve in an orbit around a fixed axis while, at the same time, rotating on its own axis in the opposite direction, and means disposed within said crank-

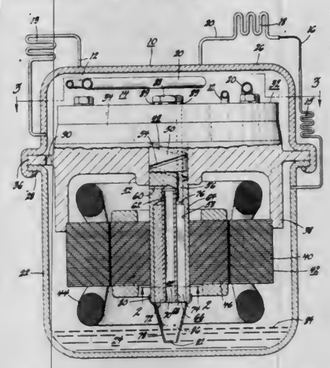


pins for controlling the flow of fluid with respect to said cylinder adjacent thereto in response to the movement of said crankshaft.

3,285,504
REFRIGERANT APPARATUS

Robert Smith, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 10, 1964, Ser. No. 417,267
10 Claims. (Cl. 230—207)



1. In refrigerant apparatus, the combination of, a hermetically sealed shell including a lower liquid sump region and an upper gas space, a compressor including an outer housing located within said gas space for muffling noises, motor means for driving said compressor including a stator and a rotor, a shaft having a portion thereon rotatably supported by said compressor housing and a portion thereof secured to said rotor for driving the compressor upon energization of said motor means, means forming an internal cooling surface in said shaft portion adjacent said rotor located in direct heat transfer relationship therewith, pumping means for drawing liquid from said sump region and passing it across said internal cooling surface for removing heat from said rotor, said pumping means including means for separating gas from the liquid means including an elongated insert element in said shaft having a tubular portion arranged concentrically of said cooling surface in spaced relationship therewith for separately directing said gas through said shaft to a point interiorly of the gas space above said motor means, and means for collecting and directing a portion of the liquid

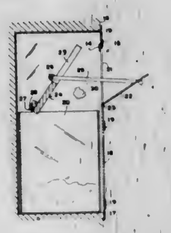
across the portion of said shaft rotatably supported by said compressor housing for preventing frictional wear therebetween.

3,285,505

WASTE PAPER RECEPTACLE WITH AUTOMATIC TAMPING MEANS

Jacob M. Katz, 225 E. 57th St., New York, N.Y.

Filed Aug. 5, 1965, Ser. No. 477,550
3 Claims. (Cl. 232—43.3)



1. In an article of the character described, the combination of a waste paper basket within an outer cabinet; said cabinet having an opening in its front wall at a position above said basket, a door across said opening, hinged along its lower edge so that the door opens forwardly downwardly, means to maintain said door from entering said cabinet, a tamping plate positioned horizontally within said basket at a predetermined distance from the mouth of said basket, an arm fixed to said door and extending from its rear to said tamping plate; said plate being swingably mounted about an axis substantially through its center of gravity, to said arm, an element extending upwardly from said plate along the edge thereof which is at the rear of said cabinet; the axes of swing of said tamping plate and door being substantially parallel, and a camming element fixed near the mouth of said basket, adapted to intercept said element extending from the plate, when said door is being opened, whereupon opening said door, said plate will rise and leave said basket and be swung within the cabinet to a position opposite said opening, at which time the underside of said plate faces said opening; there being clearance for said arm to allow such plate movement.

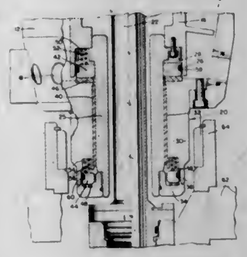
3,285,506

CENTRIFUGE HAVING SELF-LUBRICATING BEARING

Karl G. Reed, Wayne, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

Filed May 4, 1964, Ser. No. 364,716
5 Claims. (Cl. 233—1)

1. In a centrifuge comprising a hollow rotor mounted for rotation about a vertical axis, the rotor having an imperforate peripheral wall with ports for discharge of separated solids and liquid, respectively, a helical conveyor mounted for rotation in bearing means within the rotor and adapted to move solids toward the solids discharge port, means to deliver a feed slurry into the rotor, means to drive the rotor and the conveyor at different speeds; the improvement wherein the bearing means includes a lower bearing assembly comprising a downwardly extending spindle secured to the lower end of the conveyor, a hub portion secured to the lower end of the rotor and having a central opening with a circular wall, the opening receiving the spindle, an outward annular projection mounted on the spindle below the opening, a bushing of resilient plastic surrounding and engaging about the spindle inside the opening and engaging the circular wall of the opening, upper and lower washers surrounding the spindle above and below the bushing, respectively, an upper annular seal of resilient plastic disposed intermediate the upper washer and the hub and a lower annular seal of resilient plastic disposed intermediate the lower washer and the annular outward projection, upper spring means on the conveyor urging the upper washer downward toward the hub to effect a seal between the upper washer and the hub with the upper annular seal inbetween, lower spring means on the hub and urging the lower washer downward toward the outward annular projection, to effect a seal between the lower washer and the outward annular projection with the lower annular seal inbetween, upper sealing means sealingly disposed between the upper washer and conveyor and lower sealing means sealingly disposed below the lower washer and the hub.

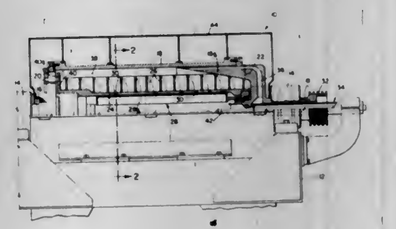


3,285,507

SCREW-TYPE SOLIDS DISCHARGE CENTRIFUGE HAVING MEANS TO DISCHARGE LIGHT SOLIDS

Leonard Shapiro, Upper Darby, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

Filed Dec. 2, 1964, Ser. No. 415,435
6 Claims. (Cl. 233—7)



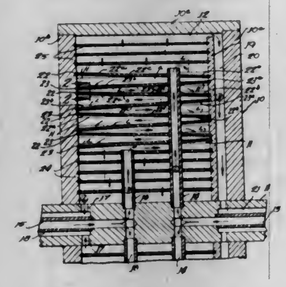
1. A centrifuge comprising a solid bowl having discharge openings at opposite ends for liquid and solids, respectively, the liquid discharge opening being disposed at a level spaced inward from the periphery of the bowl, the solids discharge opening being spaced inward from the liquid discharge opening, a screw conveyor within the bowl for moving solids to the solids discharge opening, flights on the screw conveyor extending outward to a level in the bowl just inward of the first-mentioned level, and ribs secured to the peripbery of the bowl and extending inward approximately to said first-mentioned level along a substantial portion of their length.

3,285,508

FLOW DIRECTING CENTRIFUGAL CONTACTING APPARATUS WITH JET MIXING ACTION

Walter J. Podbielniak, Chicago, and William D. Koblins, Glen Ellyn, Ill., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware

Filed Aug. 22, 1963, Ser. No. 303,792
10 Claims. (Cl. 233—15)



1. In an apparatus for centrifugal contacting of two at least partially immiscible liquid phases of different densities, said apparatus being of the kind having a rotor adapted for rotation about a horizontal axis and providing a cylindrical chamber therein extending radially outward from said axis, the radially innermost and outermost portions of said chamber providing respectively light and heavy phase clarifying zones and the intermediate portion of said chamber providing a countercurrent contacting zone,

a group of rings disposed in radially spaced-apart relation within said contacting zone to provide a plurality of annular axially-extending passageways therebetween,

each of said rings being provided with at least two perforated plate sections for radial phase flow with a relatively imperforate area of said ring extending therebetween,

one of said plate sections of each ring being for the flow of the heavier phase to the next outer one of said passageways,

the other of said plate sections being for the flow of the lighter phase to the next inner one of said passageways,

said one plate sections being positioned in radially-opposed relation to said other plate sections for adjacent rings to provide at least two pairs of opposed plate sections for each of said passageways,

the imperforate areas of adjacent rings also being in radially-opposed relation,

one of said pairs of plate sections serving as phase entrance ports for each of said passageways and the other pair serving as phase exit ports,

within each of said rings said one plate section being located at a greater radial distance from said axis than said other plate section and the said imperforate section which extends therebetween being inclined at an acute angle with respect to the horizontal at the intersection of the said imperforate section with an imaginary vertical plane through the axis of said rotor,

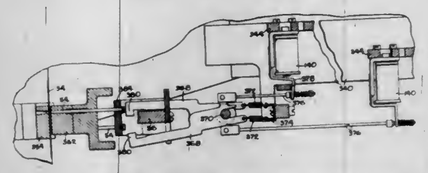
whereby said phases are forced through the pairs of plate sections serving as said entrance ports for thorough intermixing in the portions of said passageways between said entrance ports, passed co-currently through the portions of the passageways between said imperforate areas, and separated in the portions of the passageways between said exit ports.

3,285,509

MULTIPLE PUNCHING MECHANISM FOR PAPER TAPE

William F. Galey, Saxonburg, and George W. Misson, Pittsburgh, Pa., assignors to Pittsburgh Plate Glass Company, Allegheny County, Pa., a corporation of Pennsylvania

Original application Nov. 2, 1959, Ser. No. 850,460, now Patent No. 3,191,857, dated June 29, 1965. Divided and this application May 6, 1965, Ser. No. 468,661
3 Claims. (Cl. 234—115)



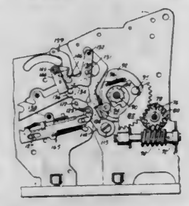
1. In a punch mechanism for making perforations in a paper sheet, the combination comprising a frame, a die mounted to said frame adjacent one side of the paper, a punch positioned facing said die on the opposite side of the paper, a reciprocable power bar aligned with and spaced from said punch, a rocker member interposable between said power bar and said punch to form a motion-transmitting connection therebetween, said rocker member being yieldably and slidably carried by said frame from a support overlying said punch for movement by said bar to operate said punch, and interposing means including a solenoid for selectively moving said rocker member into interposing position.

3,285,510

DIVISION CONTROL FOR CALCULATING MACHINE

Harold J. Chall, Castro Valley, and Cecil G. Olson, San Francisco, Calif., assignors to Friden, Inc., a corporation of Delaware

Filed May 22, 1964, Ser. No. 369,488
4 Claims. (Cl. 235—60)



1. In a printing calculator for performing division having:

(1) division calculation means,

(2) cam means operable through a division preparatory sequence,

(3) third means responsive to said cam means for stopping said cam means at the end of said preparatory sequence and causing operation of said division calculation means, and

(4) fourth means responsive to said division calculation means for stopping said division calculation means and causing operation of said cam means through a print-out sequence;

the improvement wherein

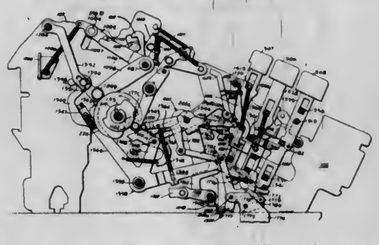
(5) said third means includes a first member set by said cam means to a division calculation position, and wherein,

(6) said fourth means includes a second member actuated by said division calculation means for returning said first member to its home position.

3,285,511
CALCULATING MACHINE

Teresio Canevari, deceased, late of Torino, Italy, by Anita Gianotti, sole heiress and legal representative, Turin, Italy, assignor, by mesne assignments, to Friden, Inc., San Leandro, Calif., a corporation of Delaware

Original application July 3, 1961, Ser. No. 123,085, now Patent No. 3,181,786, dated May 4, 1965. Divided and this application Jan. 2, 1964, Ser. No. 343,175
2 Claims. (Cl. 235—60.25)

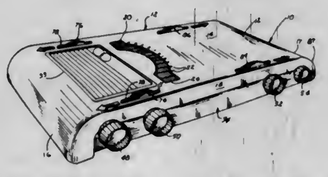


1. In a calculator, drive means for operating said calculator in cycles, a printing register movable for printing, means for transferring values thereto for printing, impression means operable for moving said register relative to a support in timed relation to each machine cycle for making a printing impression, normally-inactive print-stop means for making said impression means inactive, means operable by said drive means at a time in the machine cycle subsequent to a printing movement of said register for making said print stop means active, initiating means for initiating a plural-cycle operation of the calculator for causing said register to print during the first cycle and for moving said print-stop means to an active position, holding means made effective by operation of said initiating means for holding said print-stop means in said active position and thereby keeping said impression means inactive during succeeding machine cycles of said plural-cycle operation, and means operable on said holding means at the end of said plural-cycle operation for releasing said print-stop means, whereby during said plural-cycle operation, said register prints only in the first cycle thereof, and at the end of said plural-cycle operation is reconditioned for printing.

3,285,512
GRAPHICAL CORNEAL CONTACT LENS COMPUTER

Alvin E. Reynolds, Tulsa, Okla., assignor to The Plastic Contact Lens Company, Chicago, Ill., a corporation of Illinois

Filed Nov. 6, 1961, Ser. No. 150,314
2 Claims. (Cl. 235—61)



1. A graphical corneal contact lens computer comprising an elongated housing having a transverse viewing area, a plurality of elongated sheets mounted in said housing in superposed relationship, external means on said housing coupled to said sheets for individually moving each sheet longitudinally of said housing and said viewing area, a co-ordinate gride member mounted in alignment with said viewing area, a first one of said sheets having marked thereon in spaced apart position a plurality of curves each representing a different central corneal radius of curvature, a second pair of said sheets having marked thereon in spaced apart positions a plurality of curves with each curve of a respective sheet representing a different peripheral corneal radius of curvature, said first sheet and said second pair of said sheets being positioned in said housing so that the central curves are in edge abutting relationship to the peripheral curves, to construct a composite curve representing the corneal topography of a person to be fitted with a corneal lens, a third one of said sheets having marked thereon in spaced apart position a plurality of curves each representing an interior corneal lens curve, said sheets being transparent, and all of said curves and the co-ordinate grid being drawn to the same scale, whereby superposition of selected composite corneal curves and interior corneal lens curve in alignment with the grid member and the viewing area enables determination of central and peripheral corneal lens clearance.

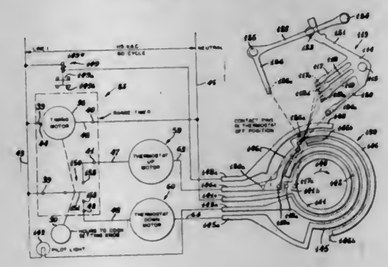
ERRATUM

For Class 235—201 see:
Patent No. 3,286,086

3,285,513
TIMER ADJUSTED OVEN TEMPERATURE CONTROL

Jeno D. Banathy, Chicago, and Edward F. Condon, Jr., Oak Park, Ill., assignors to International Register Company, Chicago, Ill., a corporation of Illinois

Filed Sept. 21, 1964, Ser. No. 397,821
12 Claims. (Cl. 236—46)

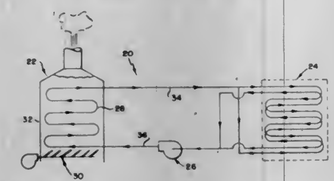


1. In a system for controlling the temperature of an oven, such as a domestic oven, having an adjustable thermostat responsive to the oven temperature to control the heat supplied thereto for maintaining said temperature at a preset value, and a thermostat setting member movable from an initial position to an operating position in which heat is supplied to said oven to maintain a cooking temperature corresponding to said operating position and movable to a holding position in which heat is supplied to said oven to maintain a holding temperature that is substantially less than said cooking temperature, means for moving said thermostat setting member comprising: an up motor adapted to drive said thermostat setting member from said initial position to said operating position, a down motor adapted to drive said thermostat setting member from said operating position to said holding position, timing mechanism including manually settable cooking hours means, means operated by setting of said cooking hours means for closing a circuit to energize said up motor to drive said thermostat setting member as aforesaid, and means operated by said cooking hours means at a time determined by the cooking period for which said cooking hours means is set for closing a circuit to energize said down motor to drive said thermostat setting member as aforesaid.

3,285,514
HEAT EXCHANGERS

Horace L. Smith, Jr., Richmond, Va., assignor to Hupp Corporation, Cleveland, Ohio, a corporation of Virginia

Original application Nov. 14, 1963, Ser. No. 323,848. Divided and this application Mar. 25, 1966, Ser. No. 537,510
14 Claims. (Cl. 237—63)

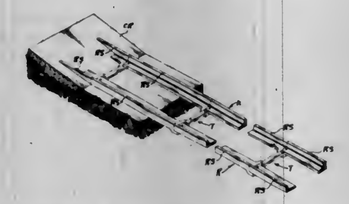


13. A radiant heating installation, comprising:
(a) a liquid heating unit;
(b) at least one radiator having plural independent flow circuits provided by plural sinuous internested tube assemblies each having an inlet and an outlet, a plurality of spaced tube runs, T-sectioned conductive webs extending between and substantially the length of adjacent ones of said runs, and a highly emissive and absorptive coating on one side of the assemblage formed by said tube runs and said conductive webs;
(c) a branched supply conduit and a branched return conduit connecting said heating unit and said radiator into a closed circulation system, the branches of said supply conduit being connected in parallel to the inlets of said tube assemblies and the branches of said return conduit being connected in parallel to the outlets of the tube assemblies and the inlet of each of said tube assemblies being adjacent the outlet of another of said tube assemblies to provide counterflow in the radiator circuits; and
(d) a high boiling point liquid heat transfer medium in said closed system.

3,285,515
PORTABLE MARINE RAILWAY

John W. Dickinson, 3404 4th Ave. S., Seattle, Wash.

Filed Nov. 18, 1963, Ser. No. 324,436
13 Claims. (Cl. 238—121)

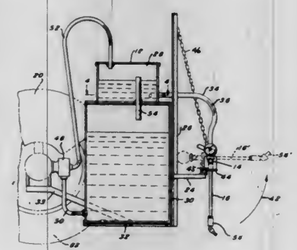


1. In a marine railway, a pair of substantially parallel, sectional rails and a plurality of precast concrete crossties, each sectional rail comprising a plurality of successively interconnected precast concrete rail sections, with at least some of the rail sections including shelf means at one end thereof, said shelf means extending below and supporting the adjacent end portion of the next rail section, each such shelf means also extending below and supporting an end portion of a crosstie, each such shelf means having first and second dowels embedded therein, with the first dowel extending upwardly into an opening in the rail section end portion supported by the shelf means, and with the second dowel extending upwardly into an opening in the crosstie end portion supported by such shelf means.

3,285,516
VIBRATING SPRAY DEVICE

John E. Waldrum, Ambler, Pa., assignor to Amchem Products, Inc., Ambler, Pa., a corporation of Delaware

Filed Aug. 10, 1964, Ser. No. 388,532
5 Claims. (Cl. 239—102)

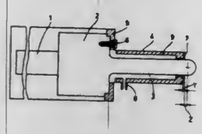


1. A vibrating spray device comprising a source of liquid supply and a pipe boom with at least one nozzle assembly extending therefrom, connecting means permitting liquid supply to be conveyed to said pipe boom, thereafter to be discharged through said nozzle assembly, and vibrating means operatively associated with said pipe boom whereby said pipe boom will be caused to vibrate to an extent sufficient that the droplets emerging from said nozzle assembly will be essentially of a uniform size, said nozzle being a drop nozzle which in one position will lie generally in a horizontal plane and which in another position will lie generally in a vertical plane.

3,285,517
ULTRASONIC ATOMISER

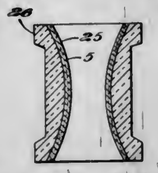
Harold Millman Butterworth, Crawley, and Ernest Arthur Neppiras, Reigate, England, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Mar. 12, 1965, Ser. No. 439,358
Claims priority, application Great Britain, Mar. 25, 1964, 12,611/64
2 Claims. (Cl. 239—102)



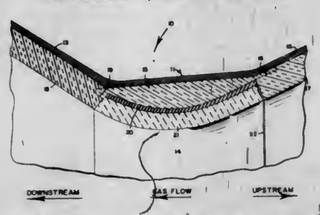
1. An ultrasonic liquid atomizer comprising an electromechanical energy transducer means, a velocity transformer having one end coupled with said transducer means, said transformer having an output limb defining a free end face, a sleeve member, means supporting said sleeve member for surrounding said output limb and defining a clearance space there between, means in said sleeve remote from the free end face of said output limb for admitting a liquid to be atomized into said clearance space, said sleeve member having an acoustical absorbing material defining said clearance space with said output limb, and said free end face of said output limb projecting beyond said sleeve member.

3,285,518
SUBSTRATE FOR THERMAL BOUNDARY CONSTRUCTION AND METHOD OF MAKING THE SAME
Robert B. Reid, Beverly, and Theodore J. Pricenski, Ipswich, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed May 8, 1961, Ser. No. 108,391
4 Claims. (Cl. 239—265.15)



4. A reinforced rocket nozzle throat comprising: a cylindrical series of parallel, helical coils of refractory metal wires, each of the coils in the series having adjacent turns interlinked; an annular ring of refractory metal; said cylindrical series of parallel helical coils of wire being embedded in said annular ring of refractory metal.

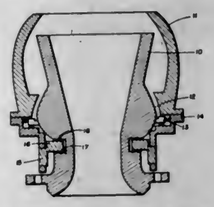
3,285,519
FREE EXPANDING DISPLACEABLE THROAT INSERT FOR A NOZZLE ASSEMBLY OF A SOLID PROPELLANT ROCKET MOTOR
Elbert L. McKague, Jr., St. Simons Island, Ga., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Oct. 5, 1964, Ser. No. 401,299
10 Claims. (Cl. 239—265.15)



3. A nozzle assembly for the exhaust stream of a rocket motor comprising a structural shell having converging and diverging portions and a throat portion intermediate of said first two portions, a layer of insulating material on said throat portion, liners on said converging and diverging portions, a metal support means that will melt under the influence of the heat generated by the exhaust stream on said layer of insulating material, and a throat insert on said support means having one edge thereof spaced from one edge of one of said liners to provide a vent therebetween, whereby when said support means has melted and said throat insert has expanded under the influence of the heat generated by the exhaust stream, the expansion of said throat insert will force said melted support means outwardly of said vent into the exhaust stream flowing through said nozzle.

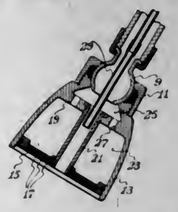
3,285,520
ECCENTRICALLY PIVOTED JETEVATOR WITH CONFORMABLE SEAL
Glenn A. Johnson, Kingsville, Md., assignor, by mense assignments, to the United States of America as represented by the Secretary of the Navy
Filed Nov. 10, 1964, Ser. No. 410,334
6 Claims. (Cl. 239—265.35)

1. A thrust vectoring control device for a missile comprising a body portion having a tapered bore terminating in a nozzle opening at one end thereof and an exterior spherical surface formed thereon adjacent said one end,
a jetevator mounted on said spherical surface of said body portion for limited pivotal movement thereon,
a conformable sealing means positioned on said spheri-



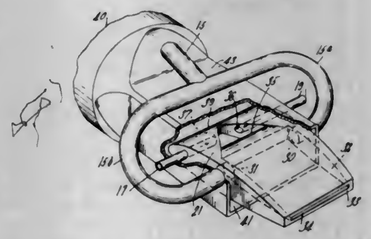
cal surface of said body portion, and resilient means positioned between said jetevator and said conformable sealing means for constantly urging said sealing means against the spherical surface of said body portion.

3,285,521
SHOWER HEAD
Claude A. Coakley, 1515 S. Utica Ave., Tulsa, Okla.
Filed Oct. 23, 1964, Ser. No. 406,126
6 Claims. (Cl. 239—318)



1. A shower head comprising a water conduit, a spray head mounted for lateral swinging movement on the conduit, the water conduit and the spray head defining a continuous water passageway therethrough, and a flexible conduit extending through the water conduit and through the joint between said water conduit and said spray head and terminating within said spray head, the flexible conduit being disposed in said passageway and having an outside diameter substantially smaller than the inside diameter of said passageway.

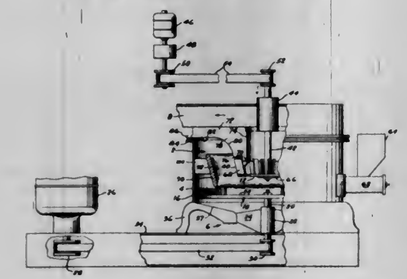
3,285,522
APPARATUS FOR COMBINING FLUIDS
Mack L. Salisbury, St. Paul, Minn., assignor to Sprayfoil Industrial Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Aug. 24, 1964, Ser. No. 391,527
10 Claims. (Cl. 239—429)



1. Apparatus for combining a plurality of fluids, comprising:
a fluid conduit, and

a fluid foil positioned at least partly within said conduit, said fluid foil having
a leading edge and a trailing edge,
at least one recess between said edges the downstream boundary of which forms a second leading edge,
at least one passage communicating with said recess to conduct fluid thereinto to form a mixture with a fluid passing through said conduit, and
at least one other passage having an opening at said trailing edge to conduct fluid thereto for mixing with said mixture.

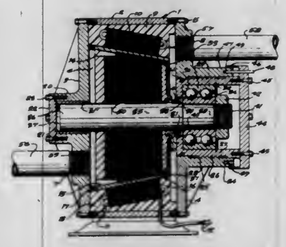
3,285,523
COMMINUTING APPARATUS
Robert W. Duyckinck, New Providence, and Peter Darroch, Elizabeth, N.J., assignors to Slick Industrial Company, Summit, N.J., a corporation of Delaware
Filed Feb. 17, 1964, Ser. No. 345,169
11 Claims. (Cl. 241—53)



1. In comminuting apparatus wherein a gaseous carrier is employed to transport particulate matter comminuted therein, a generally cylindrical grinding chamber bounded at one end by planar rotatable comminuting means disposed perpendicular to the longitudinal axis of said chamber and terminating at the other end thereof in a generally annular configuration, said annular configuration formed in part by rotatable radial flow classifying means having an apex dependently disposed in coaxial proximity with said comminuting means and carrier transport path defining means including an arcuately shaped intermediate segment smoothly connecting the upper terminus of said grinding chamber with the periphery of said classifying means. annular isolating baffle means disposed intermediate said classifying means and the grinding chamber wall and intermediate said grinding chamber ends and a plurality of axial baffle members disposed intermediate said annular isolating baffle means and said grinding chamber walls for changing the velocity and direction of displacement of said carrier from a generally circular path in planes substantially perpendicular to the longitudinal axis of said chamber adjacent to said rotatable comminuting means to a substantially lineal path parallel to said axis at locations remote therefrom.

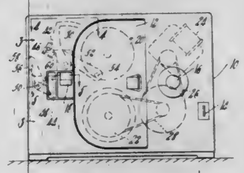
3,285,524
MOTOR MILL
Herbert W. Stratford, deceased, late of Leawood, Kans., by Clarence H. Dicus, administrator, 1001 Dwight Bldg., Kansas City, Mo.
Filed Jan. 13, 1964, Ser. No. 337,993
7 Claims. (Cl. 241—256)

1. A motor mill comprising, a shell having opposite open ends, a first and a second cap secured to said shell opposite ends forming an enclosed chamber, said first cap having an intake passageway communicating therethrough into said chamber, an electric motor stator assembly mounted in said chamber between said first and second caps and including a magnetic core carrying a field winding, said core being encapsulated in non-magnetic protective material and defining an interior annular surface, a relatively thin mill sleeve of non-magnetic material and having an outside surface engaging said stator assembly interior surface, said mill sleeve having an interior surface with a plurality of closely spaced milling grooves thereon, said first cap having a central housing, a bearing supported in said first cap housing coaxially of said chamber, said second cap having a central housing, a bearing supported in said second cap housing coaxially of said



chamber, a shaft rotatably mounted at one end thereof in said first cap bearing and at the other end thereof in said second cap bearing, said shaft extending coaxially through said chamber and having a squirrel cage type electric motor rotor carried thereon within said chamber, said rotor having an outside surface with a plurality of closely spaced milling grooves thereon, said rotor outside surface and said sleeve interior surface being located in closely spaced apart relation forming an annular flow passageway therebetween having opposite end portions opening into said chamber and communicating respectively with said intake passageway and said discharge passageway, and means for supplying electrical power to said stator field winding for rotating said rotor with respect to said mill sleeve.

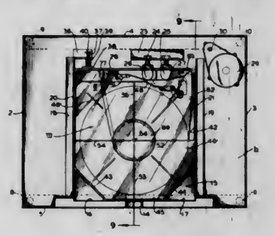
3,285,525
REELING CONTROL MECHANISM
Benjamin Buckler, Milton, Mass., assignor, by mesne assignments, to Keystone Mfg. Corp., Boston, Mass., a corporation of Massachusetts
Filed Nov. 23, 1964, Ser. No. 412,902
13 Claims. (Cl. 242—55.12)



1. A reeling control mechanism comprising means for supporting a reel for rotation,
a follower mounted for movement towards and away from said reel,
a latch structure including first and second latch members adapted to be engaged in latching relation,
biasing means coupled between said latch structure and said follower for biasing said follower into engagement with material on said reel when said latch members are engaged,

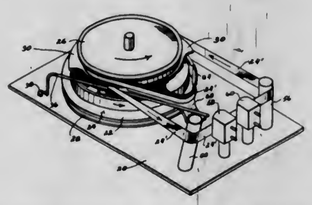
and latch release means operative in response to a predetermined position of said follower to release said latch members from one another and concurrently release the biasing force applied by said biasing means to said follower so that said follower moves out of contact with material on said reel.

3,285,526
MAGNETIC TAPE PLAY-BACK EQUIPMENT
Fred F. Moore, Irving, Tex., assignor to Music & Sound, Inc., Dallas, Tex., a corporation of Texas
Filed Aug. 23, 1963, Ser. No. 304,049
4 Claims. (Cl. 242—55.19)



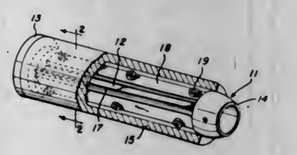
1. A tape play-back machine comprising an outer housing having an elongated opening in one wall thereof, a tape driving roller operatively mounted within the housing in juxtaposition to the opening, a tape magazine having a spool of magnetic tape operatively disposed therein, said tape magazine being sized to fit loosely within said opening so as to be capable of being manually pushed into the interior of the housing through the opening, retention means associated with the housing for retaining the magazine therein after it has been inserted, first and second spring biased means for exerting two symmetrically directed forces against said magazine thereby urging it into engagement with the retention means, said first spring biased means being located in and carried by the tape magazine for pressing a section of magnetic tape tightly against the tape driving roller, said second spring biased means being located in said housing and braking means adapted for engagement with the spool and being yieldably urged into spool-engaging position by the first spring biased means.

3,285,527
ENDLESS TAPE WINDING DEVICES
Howard W. Cole, Jr., 12 Vale Drive, Mountain Lakes, N.J.
Filed Nov. 21, 1963, Ser. No. 325,301
16 Claims. (Cl. 242—55.19)



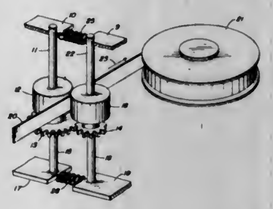
6. A film cartridge comprising a support having a flange with an annular surface, a spiral coil of film supported entirely by said annular surface and that rests on said flange, guide means through which film is withdrawn from the inner convolution of the coil, a part of the guide means being surrounded by the inner convolution of the coil, a drum at the upper part of the cartridge and connected to the support to rotate as a unit therewith, the drum diameter being correlated with the diameter of the coil of film at the point of contact of the inner convolution of the coil with the part of the guide means that is surrounded by said inner convolution to rotate the flange at different lineal speed from that of most of the convolutions of the coil of film that is resting on said flange, said guide means leading a loop of film to said drum, and another guide means around which the film loop is led from the drum and downwardly to the outside of the coil on said support.

3,285,528
MANDREL
Lucien J. Beindorf, Springfield, Mo., assignor to Dayco Corporation, Dayton, Ohio, a corporation of Ohio
Filed Aug. 30, 1965, Ser. No. 483,770
4 Claims. (Cl. 242—68)



1. A mandrel for supporting a textile spool having a resilient hollow tubular core, comprising a longitudinally extending support member, a plurality of radially spaced flexible members mounted on said support member, and backing plates mounted on said flexible members, said plates and said flexible members extending beyond said support member in a radial direction.

3,285,529
TAPE TENSIONING DEVICE
Melvin L. Campbell, Marion, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed June 29, 1964, Ser. No. 378,828
3 Claims. (Cl. 242—75.2)



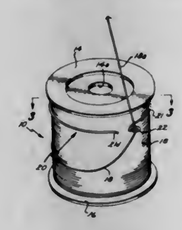
1. Tape tensioning means comprising:
first and second unpowered roller means positioned side by side with their axes of rotation parallel to one another,
means for pressing the circumferential perimeters of said rollers together to grip a tape positioned therebetween,
coupling means constructed to maintain a fixed ratio, other than unity, of the circumferential velocities of said first and second rollers, when either of said rollers is caused to rotate by a tape being pulled therethrough,
and means for pulling said tape between said rollers.

3,285,530
TRANSFER TAIL RETAINER
Carl E. Kirchner, Jr., Taylors, S.C., and Elisha Johnson, Jr., Charlotte, N.C., assignors to Fiber Industries, Inc., a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 501,883
3 Claims. (Cl. 242—125.1)



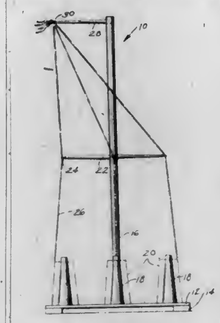
1. An apparatus for retaining yarn transfer tails on a bobbin during yarn windup comprising, in combination, a straight cylindrical tube yarn bobbin and a detachable cylindrical cap having an indentation on one end of said cap, resilient means on the indentation of said cap to maintain said cap on to said straight cylindrical tube and the combination of said indentation and resilient means fits within the inner surface of said straight cylindrical tube yarn bobbin wherein the remaining outer surface of said detachable cylindrical cap is a smooth continuation of the outer surface of the straight cylindrical tube yarn bobbin, said detachable cylindrical cap capable of being retained on one end of said straight cylindrical tube yarn bobbin while the yarn is being wound onto said bobbin and said detachable cap being of such size to provide at least a minimum space for a transfer tail of said yarn to be wound onto said detachable cap prior to the windup of said yarn on said straight cylindrical tube yarn bobbin.

3,285,531
DE-SPOOLING DEVICES
James D. Gillison, Orange, Calif., assignor to Babcock Electronics Corporation, Costa Mesa, Calif., a corporation of California
Filed Jan. 22, 1965, Ser. No. 427,254
2 Claims. (Cl. 242—128)



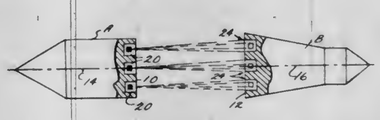
1. A de-spooling device for use on a spool of continuous strand material comprising a length of wire arcuately shaped substantially throughout its length to conform to and at least partially encircle said spool of continuous strand material, one end of said element being formed with a 360 degree continuous bend to provide an annulus for slidably receiving said strand, whereby as said strand is pulled through said annulus said element is caused to move on said spool to thereby create tension on said strand for preventing entanglement thereof.

3,285,532
YARN HOLDER
Paul H. King, 2985 S. Sherman, Englewood, Colo.
Filed July 24, 1964, Ser. No. 384,983
6 Claims. (Cl. 242—139)



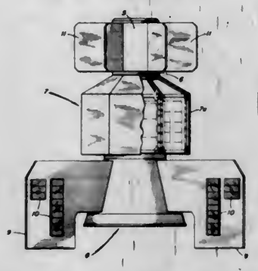
1. A yarn holder comprising, in combination, a base of rectangular configuration, a plurality of rectangular blocks carried by said base for providing support means to said base, a plurality of radially spaced apart conical members carried by said base for providing means for receiving tapered spools of yarn, a vertical dowel member carried by said base, a plurality of radially spaced apart bars of tapered configuration affixed to said dowel member, an eye member secured to the outermost extremity of each of said bars, said eye member adapted to receive said yarn from said tapered spool and space it apart from said dowel member, an upper tapered configurated bar affixed to the top portion of said dowel member capable of providing means for dispensing a plurality of leaders of yarn from said spools of yarn, and a cup adaptor providing means for supporting a ball of yarn upon said conical members of said holder.

3,285,533
RENDEZVOUS AND DOCKING OF SPACE SHIPS
Ernest D. Jernigan, Jr., Columbus, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio
Filed June 10, 1963, Ser. No. 286,576
18 Claims. (Cl. 244—1)



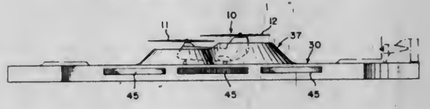
1. In apparatus for determining the space relationships of two space ships or the like comprising at least four nucleonic sources of beam radiation spaced substantially diametrically opposite both vertically and horizontally on one of said ships for directing four discrete beams of radiation outwardly from the docking end of said one ship, four detector means disposed on the other ship substantially diametrically opposite both vertically and horizontally, and means responsive to the outputs of said detector means for determining the pitch and yaw relationship between said ships.

3,285,534
SATELLITE HEATING BY ATOMIC ENERGY
Theodore Wyatt, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Aug. 14, 1964, Ser. No. 390,279
2 Claims. (Cl. 244—1)



1. A temperature stabilized satellite including:
a metallic frame,
a thermoelectric generator having heat radiating means thereon, and
means connecting the frame to the thermoelectric generator,
said means transferring a predetermined amount of waste heat produced by the generator to said frame for heating the interior of the satellite.

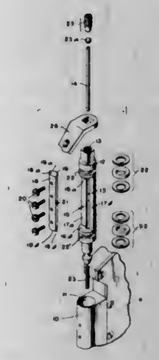
3,285,535
GROUND EFFECT MACHINE
Walter A. Crowley, 9710 45th NE., Seattle, Wash.
Filed Aug. 26, 1964, Ser. No. 392,100
10 Claims. (Cl. 244—2)



1. In combination, an air cushion platform having an air intake diffuser with its smaller end at the top of the platform, said platform being adapted to be lifted by the ground reaction of air forced downwardly through said diffuser, a helicopter having a body of a size adapted to enter said diffuser through the top thereof and having lifting rotor means for said body adapted to drive a stream of air downwardly, said helicopter being adapted to fly independently of said platform, and means for positioning the body of said helicopter in said diffuser with said lifting rotor means surmounting the top of said diffuser so that the air stream from the lifting rotor means enters said diffuser whereby said platform and helicopter collectively can become air borne as a ground effect machine.

3,285,536
PIE ROTARY DAMPER
Earl J. Donaldson and James W. Oestreich, China Lake, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed June 10, 1964, Ser. No. 374,217
5 Claims. (Cl. 244—3.21)

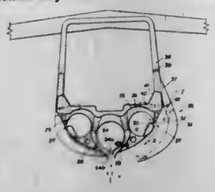
1. A hydraulic rotary damper comprising, in combination:
a damper housing including cylinder walls defining a damper cylinder;
a rotatable cylindrical shaft mounted within said cylinder and adapted to extend longitudinally therethrough in sliding contact with said walls;
means defining a concentric bore extending substantially through said shaft;
means defining a shaft cleavage communicating with said concentric bore and being so arranged as to extend longitudinally along said shaft between points of termination disposed within said cylinder for establishing a unitary hydraulic chamber within said cylinder;
an elongated sealing rod concentrically arranged within said bore in a substantially sealed relationship with the wall of said bore;
rod mounting means including means for retaining said rod within said bore and for establishing a hydraulic seal at either end thereof;
an elongated vane having a cross-section in the shape of a sector fitted into said unitary chamber in juxtaposition with said sealing rod including sealing means adapted to divide said unitary chamber into a pair of displaced and substantially sealed pressure chambers;



means defining a hydraulic passage extending laterally through said vane adapted to establish hydraulic communication between said pressure chambers;
vane retaining means fixedly securing said vane to said cylinder walls;
hydraulic fluid disposed within each of said pressure chambers for substantially filling the volume defined thereby; and
means for operatively coupling said shaft and said housing with respective counter-rotating force applying means whereby the shaft may be rotated relative to said cylinder for forcing said fluid through said hydraulic passage.

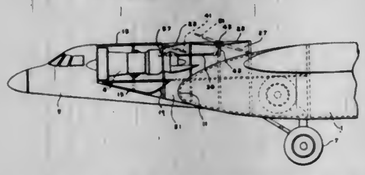
3,285,537
VERTICAL TAKE OFF AND LANDING AIRCRAFT
Donald Charles Whittley, Islington, Ontario, Canada, assignor to The De Havilland Aircraft of Canada, Limited
Filed Mar. 22, 1966, Ser. No. 536,351
7 Claims. (Cl. 244—12)

1. A vertical take off and landing aircraft comprising: a fuselage; wing structure adapted to sustain said fuselage in flight at a forward cruising speed; a first jet engine and a rearwardly extending jet tube in said fuselage adapted to propel said aircraft at cruising speed; at least one other jet engine in said fuselage; two side plenums extending longitudinally in the lower forward regions at least of said fuselage and each having a longitudinal slot for the tangentially downward escape of gases therefrom over under surfaces of said fuselage; means connecting said other engine to said plenums and retractable shroud flap means for each plenum defining when closed therewith substantially conventional fuselage contours



for crusing flight under the propulsion of said first engine and when open a control for the induction of excess air augmenting the thrust from said slots.

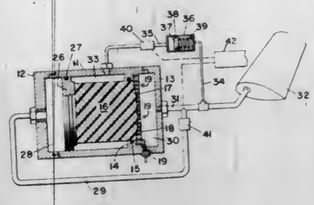
3,285,538
ADVANCED JET ENGINE INSTALLATION
Vincent J. Burnelli, Silver Spring, Md.; Hazel G. Burnelli, executrix of said Vincent J. Burnelli, deceased
Filed Mar. 23, 1964, Ser. No. 353,720
2 Claims. (Cl. 244—36)



1. An airplane including, in combination, a body of airfoil contour, multiple jet fan engines supported from said body in position above the forward center line thereof, and in position forwardly spaced with respect thereto, each of said jet fan engines being mounted and enclosed in a housing and each housing having an open forward end and an open rear end, and said housing provided with an air inlet between the bottom rearward edge of said housing and the forward edge of said body, said open rear end of said housing forming an outlet for expulsion of air from said inlet combined with the hot gases from said engines to increase the volume of expanding exhaust gas with reduced velocity of the outlet thrust generating gas, and said outlet being disposed to direct said combined air and hot gas over the upper body surface of said body of airfoil contour for life reaction.

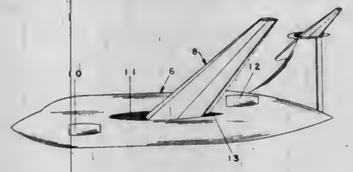
3,285,539
GAS GENERATING SYSTEM
Charles J. Litz, Jr., Philadelphia, Pa., assignor to the United States of America as represented by the Secretary of the Army
Filed July 8, 1965, Ser. No. 470,643
6 Claims. (Cl. 244—42)

1. A controlled variable gas generating system for improving safe flight characteristics of aircraft, comprising
a substantially tubular housing having closed end walls,
a solid propellant slidable in said housing,
a gate of porous heat reflective metallic material secured to said housing rearwardly of a forward one of said end walls to define therebetween a forward high pressure chamber,
means proximate said gate for igniting a forward surface of said propellant rearwardly adjacent said gate,
a piston sealingly movable within said housing and secured to a rearward surface of said propellant, said piston being spaced from the other of said end walls to define therebetween a rearward low pressure chamber,
an annular flange extending inwardly of the housing and having seal means thereon slidably engaging a forward lateral surface of said propellant, an annular control chamber surrounding said propellant between said piston and flange,



means including a control valve for inter-communicating said high and low pressure chambers, and
means including a second control valve for inter-communicating said control chamber with said high pressure chamber.

3,285,540
SHIFTABLE VARIABLE AREA WING CONSTRUCTION
Shao-tang Lee, 25 Chi-kuang St., Taichung, Taiwan, Republic of China
Filed June 15, 1964, Ser. No. 375,391
6 Claims. (Cl. 244—43)

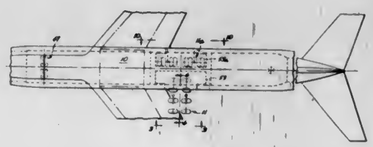


2. In an aircraft, a fuselage and an expansible wing projecting laterally therefrom, said wing comprising three substantially full length segments, said segments constituting a leading segment, an intermediate segment, and a following segment, both the leading segment and the following segment being telescopically and slidably engaged with the intermediate segment, means for simultaneously extending and retracting the leading and following segments relative to the intermediate segment, means for selectively locking both the leading and following segments to the fuselage, and means for effecting a movement of the entire wing as a unit along the fuselage.

3,285,541
CANTED AXIS RETRACTABLE DOUBLE STRUT LANDING GEAR
Wendell B. Fehring, Issaquah, and Dnard S. Jacobson and Lloyd E. Shuman, Seattle, Wash., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Apr. 4, 1966, Ser. No. 539,971
30 Claims. (Cl. 244—50)

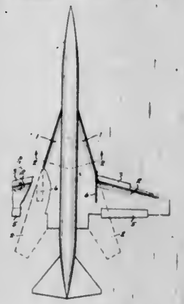
1. An aircraft having two sides,
(a) retractable allochiral landing gears on both sides of the aircraft, the landing gear on one side comprising,
(b) first axle means for carrying a plurality of landing wheels,
(c) second axle means for carrying a plurality of landing wheels,

(d) first actuator means for retracting said first axle means to a position parallel to the aircraft longitudinal axis, and



(e) second actuator means for retracting said second axle means to a position collinear with said retracted second axle means for requiring less wheel well width storage space.

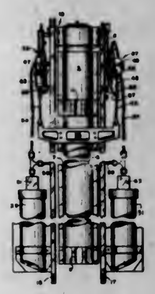
3,285,542
PITCH-STABILIZED, VARYING-SWEEP WING
Wayne N. Holmquist, Seattle, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Jan. 15, 1965, Ser. No. 425,884
8 Claims. (Cl. 244—91)



7. In an airplane, a planform-cranked wing including an inboard panel having a relatively high-sweep leading edge and an outboard panel having a relatively low-sweep leading edge, the leading edge of said inboard panel being blunt and rounded, and a fence at the transition break between the high-sweep leading edge of said inboard panel and the low-sweep leading edge of said outboard panel.

3,285,543
ROCKET PROPULSION SYSTEM FOR EJECTION SEATS
Chris T. Koochembere, Glendora, N.J., assignor to the United States of America as represented by the Secretary of the Navy
Filed Nov. 23, 1964, Ser. No. 413,382
1 Claim. (Cl. 244—122)

In an aircraft seat ejection system:
(a) a catapult mechanism which includes inner and outer telescoping tubes;
(b) means securing the outer tube of the catapult mechanism to the aircraft;
(c) a seat frame which is secured to the inner tube of the catapult mechanism;
(d) a pair of rocket motors mounted behind the seat on opposite sides of the seat frame, the nozzles of said rocket motors being oriented such that their lines of thrust extend substantially through the center of gravity of the seat and the pilot that occupies said seat;
(e) a seat slidably mounted on the seat frame;
(f) means for adjustably controlling the position of the seat on its frame;
(g) a drogue chute which is normally secured to the frame;
(h) a drogue gun which deploys the drogue chute from the seat;
(i) a linkage mechanism which is disposed between the outer tube of the catapult mechanism and the drogue gun and which actuates the drogue gun when the telescoping tubes are extended a predetermined amount;

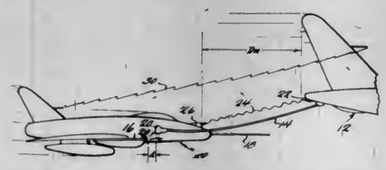


(j) means including a normally closed shackle for securing the pilot in the seat;
(k) a mechanism for opening the shackle and allowing the seat and pilot to separate;
(l) a linkage mechanism which is disposed between the outer tube of the catapult mechanism and the shackle opening mechanism and which actuates the shackle opening mechanism when the telescoping tubes are extended a predetermined amount;
(m) a pair of rocket motors mounted on the seat;
(n) a gas operated rocket igniter for each rocket motor;
(o) a pair of gas generators secured to the seat, each said generator having a sear pin which, when withdrawn, initiates the generation of gas;
(p) means connecting the sear pin of one gas generator to the linkage mechanism that actuates the drogue chute;
(q) means connecting the sear pin of the other gas generator to the linkage mechanism that unshackles the pilot from the seat;
(r) and means connecting the gas generators to the gas operated rocket igniters.

3,285,544
MID-AIR REFUELING SYSTEM
Wilbert E. Chope and Henry R. Chope, Columbus, Ohio, assignors to The Industrial Nucleonics Corporation, a corporation of Ohio
Filed Feb. 26, 1964, Ser. No. 347,442
18 Claims. (Cl. 244—135)

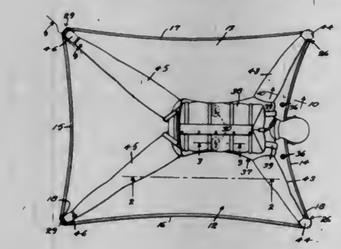
1. A mid-air refueling system comprising:
a tanker having a drogue-tipped refueling line extending rearwardly thereof,

an aircraft to be refueled having a probe extending to the front of said aircraft for engaging said refueling drogue,
nuclear radiation generating and detecting means mounted on said tanker and said aircraft respectively for generating a first signal indicative of the position of



said tanker relative to said aircraft and a second signal indicative of the position of said refueling drogue relative to said probe, and
means for displaying said signals to the operators of said aircraft and said refueling line to facilitate said probe engaging function.

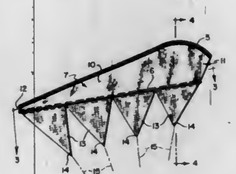
3,285,545
GLIDING SAIL
William C. Bolt, Burbank, Calif.
(11335 El Merrie Dell Drive., San Fernando, Calif.)
Filed Feb. 5, 1965, Ser. No. 430,580
5 Claims. (Cl. 244—138)



1. A gliding sail for supporting a flyer in flight through the air comprising, a rectangular sheet of flexible material having a leading edge, a trailing edge and side edges, said sail having forward corners adapted to be grasped by the hands of the flyer with the arms extended outwardly and forwardly and rear corners adapted to be engaged by the feet of the flyer with the legs extended and spread, and said sail being of a length and width such that the sail will be held taut by the tensile strains exerted against the corners thereof by the hands and feet, said leading edge being inwardly bowed sufficiently so that the head of the flyer will be disposed therebeyond, said sail including a strong flexible line extending around said sheet and secured to each of the edges thereof.

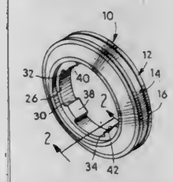
3,285,546
MULTI-CELL WING TYPE AERIAL DEVICE
Domina C. Jalbert, Boca Raton, Fla., assignor to Space Recovery Research Center, Inc., Palm Beach, Fla.
Filed Oct. 1, 1964, Ser. No. 400,734
8 Claims. (Cl. 244—145)

1. An aerial wing of airfoil shape, the wing having a canopy and a bottom closure for the wing, the wing being generally rectangular in shape, having a leading edge and a trailing edge, ribs disposed within the wing and conforming to the shape of the wing and with the ribs being equidistantly spaced and connected to the canopy and the bottom, the leading edge of the wing having an opening for its full length and the wing at its trailing edge being provided with a restricted opening for its full length, the ribs forming air flow channels whereby air flowing through the opening of a leading edge will pressurize the



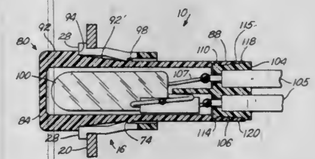
canopy and a plurality of wedge-shaped members attached to the bottom and along the chord lines of the ribs for connection to weight supporting shroud lines.

3,285,547
MOTOR MOUNTING DEVICE
Robert L. Henry, 928 Straford Road, New Haven, Ind.
Filed Dec. 23, 1964, Ser. No. 420,555
3 Claims. (Cl. 248—26)



1. A mounting bracket for motors and the like comprising a relatively rigid ring having a recess in its outer periphery and an annular and inwardly projecting rib on its inner periphery forming a strengthening means to provide rigidity for said ring, said annular rib having openings therein; and a molded rubber ring bonded to the inner periphery of said rigid ring to said rib and said rib openings, said rubber ring including spaced projections extending radially inwardly to form grip connections resisting circumferential movement of the mounted member engaged thereby.

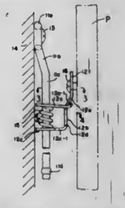
3,285,548
HOUSING FOR COMPONENT
Victor G. Matto, 54 Jefferson Ave., Tenafly, N.J., and Emil W. Riegel, 1709 Bergenline Ave., Union City, N.J.
Filed Dec. 31, 1964, Ser. No. 422,733
10 Claims. (Cl. 248—27)



1. A housing for a component including
a generally cylindrical sleeve including means in its wall for permitting the sleeve to expand and contract in diameter to accommodate other apparatus with which it is mated,
said sleeve having an open front end defined by an annular surface,
said sleeve having a wall having an inner surface,

an annular lip formed in said inner surface of the wall of said sleeve and spaced from said open front end,
a generally cylindrical insert adapted to be inserted in said sleeve and having a wall having inner and outer surfaces,
first and second annular lips formed spaced apart in the outer surface of the wall of said insert,
the wall of said insert between said first and second lips being tapered in thickness so that when the insert is inserted in the sleeve, it tends to expand the sleeve, and when the insert is fully inserted in the sleeve, said first lip engages the front end surface of said insert and said second lip engages the annular lip in the inner surface of the wall of said sleeve and mutually interacting locking forces are applied by the sleeve and insert on each other, these forces also tending to lock the insert securely in place when it is mounted in an opening in a panel.

3,285,549
HANGER FOR PAINTINGS AND THE LIKE
Roger Allen Cook, 105 Magnolia Drive, San Antonio, Tex.
Filed Dec. 1, 1964, Ser. No. 415,062
4 Claims. (Cl. 248—31)



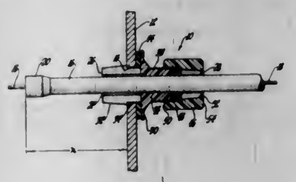
1. A device for hanging framed paintings or the like upon a supporting structure comprising a rod, an eye in the upper end of said rod and stop means in the lower end of said rod, an adjustable member slidably mounted on said rod, said adjustable member consisting of an essentially L-shaped piece and an arm, said L-shaped piece including a base and an upstanding front portion, said arm pivotally connected to said upstanding front portion, a coil spring carried by said rod and interposed between said base and said arm, and bifurcated means in the upstanding front portion for attaching a painting thereto.

3,285,550
SUPPORT FOR FUSEES
Earle A. Smith, Brookfield, Wis., assignor to Gleason Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Nov. 5, 1964, Ser. No. 409,202
7 Claims. (Cl. 248—46)



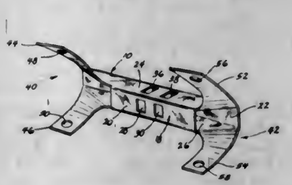
1. A support for an elongated, cylindrical fusee, comprising: a tab member secured to said fusee at a point spaced above the lower end thereof; a brace member hingedly connected to said tab and swingable to a position extending downwardly and outwardly therefrom; a first leg hingedly connected to and along the outer edge of said brace member and swingable to a position extending upwardly and inwardly therebeneath, said leg having an aperture through which the lower end of said fusee can be removably slidably projected; and a second leg member hingedly connected to and along the inner edge of said first leg and swingable to a position extending downwardly and outwardly therebeneath, said second leg having an aperture therethrough also adapted to removably receive the lower end of said fusee.

3,285,551
CONDUIT SUPPORT ASSEMBLY
August E. Tschanz, Chalfont, Pa., assignor to Teleflex Incorporated, North Wales, Pa., a corporation of Delaware
Filed May 13, 1965, Ser. No. 455,534
21 Claims. (Cl. 248—56)



1. An assembly for supporting a conduit or the like in an aperture comprising; an elongated body having a bore therethrough and first and second ends, a flange disposed radially about said body, a first tapered portion of increasing diameter extending from said second end of said body a predetermined distance therealong, a member having a second tapered portion therein to match said first tapered portion as said member is placed on said second end of said body, and said member and said body having coacting means for drawing said member onto said body so that said second tapered portion reduces the diameter of said first tapered portion as said member is drawn onto said body thereby to reduce the diameter of the bore passing through said first tapered portion so that a conduit disposed in said bore is prevented from moving longitudinally therein.

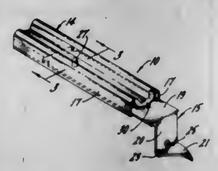
3,285,552
PIPE SUPPORT
Arnold E. Becker, 214 Julie Court, Waterloo, Iowa
Filed Feb. 8, 1965, Ser. No. 430,820
9 Claims. (Cl. 248—68)



1. In a support for pipes,
an elongated member having a first pipe gripping means at one of its ends and a second pipe gripping means at its other end,
a means on said elongated member for detachably securing said elongated member to a first pipe,

said first and second pipe gripping means for gripping second and third pipes respectively to prevent movement of said second and third pipes with respect to said first pipe.

3,285,553
ADJUSTABLE HANGER BAR
Andrew M. Hexdall, 309 Goold Park Drive, Morris, Ill.
Filed Jan. 17, 1966, Ser. No. 521,173
10 Claims. (Cl. 248—71)



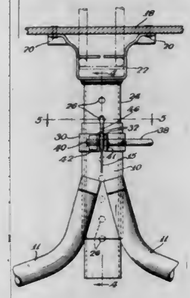
1. A hanger bar for supporting building components between wooden structural members such as studs, joists, rafters and the like, comprising, in combination, an elongated body member longitudinally dimensioned to fit between two of said structural members, said body being formed with a generally channel-shaped cross section having a medial back portion merging into a pair of laterally spaced upright side members each of which includes an inwardly directed marginal lip portion, and a pair of slidable end pieces each formed with an elongated leg portion carrying at one end a relatively short substantially perpendicular foot portion having front and back faces which merge into an outwardly directed pointed toe terminating in a sharp tip, said leg portions being laterally dimensioned for close fitting insertion between said upright sides at opposite ends of said body and having a thickness greater than the thickness of said sides but substantially less than the height of said sides, said medial back, sides and marginal lips being so formed and arranged to cooperatively receive and snugly sandwich said legs of said thickness between at least a portion of said medial back and said marginal lips, said toe portion being interconnected with said foot portion adjacent said back face thereof by a heel segment formed to define an acute angle between said toe and said front face of said foot portion, and said toe also being formed with a generally upwardly concave curvature from said heel to said tip with said tip being substantially at right angles to said foot and elevated from said heel segment so that when said toe is progressively driven into one of said wooden structural members said toe curls away from the original point of entry thereof and draws said heel toward said original point of entry.

3,285,554
SUPPORT DEVICE
Frank J. Voelkerding, 230 S. Woodlawn, Lake City, Iowa
Filed Aug. 12, 1964, Ser. No. 389,080
1 Claim. (Cl. 248—121)

A ground engaging support for a lantern or the like comprising a first tubular section and a second tubular section of lesser diameter telescopically mounted in said first section, an eccentric collar carried by the top of said first section for locking said second section in a selected position of telescopic adjustment, a cap having a top portion of a diameter in excess of the internal diameter of said second section and a bottom portion of less diameter than the internal diameter of said second section, said bottom portion seating and being secured in the top of said second section, a transverse rod having a lantern supporting hook formed at one end, fixedly secured at its other end to said top portion of said cap, a ground engaging point of a diameter less than the internal diameter of said first section inserted and fixedly secured in the bottom of said first section, and a pair of wings having sharpened inclined lower edges extending from diametrically opposed points on the exterior of said lower section immediately above said point.



3,285,555
CHAIR CONSTRUCTION
Kenneth A. Bevington, 2755 Broadway, Evanston, Ill.
Filed Aug. 26, 1963, Ser. No. 304,319
2 Claims. (Cl. 248—188.7)

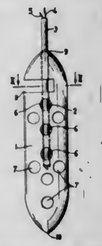


1. A chair construction comprising a base having an upstanding supporting tube, a seat, a depending guide tube connected at its upper end to the underside of the seat, said tubes being dimensioned for and telescopically fitted one within the other, the free end portion of the outer tube being formed with an open ended longitudinally extending slot, a split friction band surrounding the slotted portion of the outer tube, and clamping means associated with the ends of the friction band for causing said band to squeeze said slotted portion of the outer tube into firm gripping relation to the inner tube with said tubes in a predetermined position of telescopic adjustment for firmly supporting said seat at a desired height relative to said base, the free ends of said friction band terminating in a pair of spaced ears, said clamping means comprising a handle having a threaded stem for extending through aligned apertures in said ears and a shoulder for abutting the outer surface of one of said ears and a nut threaded on the free end of said stem for abutting the outer surface of the other ear, said nut being formed with a surface adapted to impinge against said band to preclude turning of the nut incident to rotation of the handle and stem.

3,285,556
DEVICE FOR ATTACHING A THERMOCOUPLE PROBE TO A WALL

Robert Le Polles, Cormeilles-en-Parisis, and Robert Schley, Orly, France, assignors to Commissariat a l'Energie Atomique, Paris, France

Filed Apr. 13, 1966, Ser. No. 542,306
Claims priority, application France, Apr. 30, 1965, 15,444
5 Claims. (Cl. 248—205)

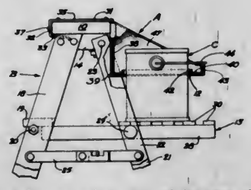


1. Device for attaching a thermocouple probe to a metallic wall, characterized in that it comprises a metallic terminal connector in which is formed a substantially axial blind-end bore for the purpose of positioning the thermocouple probe therein with slight play, said terminal connector being provided with a first series of holes which terminate at right angles in said bore and a second series of holes which traverse said terminal connector outside said bore, both series of holes being intended to permit the introduction of a brazing compound for forming a bond on the one hand between the probe and the terminal connector and on the other hand between said terminal connector and the metallic wall.

3,285,557
PAINT CAN HOLDER FOR STEP LADDER

Ernie Reda, 550 Troy Drive, San Jose, Calif.

Filed Jan. 4, 1965, Ser. No. 423,119
2 Claims. (Cl. 248—210)



1. A holder for a paint can of known diameter and height for mounting on a step ladder having a top step and having also a foldable rear support shelf spaced downwardly a known distance from the top step; said holder comprising

a top portion of a width to span the top step of such ladder,

hook means formed on the forward edge of the top portion for hooked engagement with the forward edge of the top ladder step,

an upright portion extending downwardly from the rear edge of the top portion and terminating at a height above the shelf less than the height of such can when the latter is supported on the ladder shelf,

a flat, horizontal portion of sheet material connected to the lower edge of the upright portion and extending rearwardly therefrom, said rearwardly extending portion having a can-receiving hole therein slightly larger than, and of the same general shape as, the cross sectional configuration of such can,

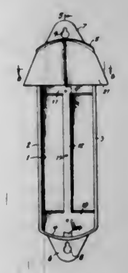
first upwardly extending paint retaining means marginally surrounding the opening in the flat horizontal portion, and

second upwardly extending paint retaining means marginally surrounding the flat horizontal portion itself.

3,285,558
THERMOMETER SUPPORT

Edward P. Dobrin, Massapequa Park, N.Y., assignor to Weksler Instruments Corp., Freeport, N.Y., a corporation of New York

Filed Feb. 25, 1965, Ser. No. 435,180
6 Claims. (Cl. 248—309)

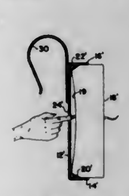


1. A support for instruments comprising a body having a flat, elongated vertical back, forwardly projecting lateral flanges thereon, a transverse slot at the top of said body, a longitudinal integral central support on said body for holding an instrument, a substantially rigid vizor having a transverse top and an integral substantially rigid depending latch member, said top fitting into said slot, a complementary latch member at the top of said body below said slot for reception of said latch member.

3,285,559
DISPENSER HOLDERS

Edward J. Simon, 709 Maple Lane, Sewickley, Pa.

Filed Mar. 3, 1965, Ser. No. 436,809
10 Claims. (Cl. 248—313)



1. A dispenser holder for mounting a pasteboard dispenser onto a fixed structure comprising:

(a) a dispenser receiving body portion having a bottom wall and at least two parallel end walls extending perpendicularly therefrom to snugly receive a pasteboard dispenser so that said bottom wall and said two end walls are each in snug contact with walls of said dispenser;

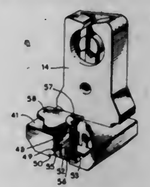
(b) flanges formed on the dispenser-contacting surfaces of each of said end walls and extending inwardly toward each other and downwardly toward said bottom wall, said flanges terminating less than one-fourth of an inch from said bottom wall and being so positioned that they prevent said dispenser from being removed from said body portion; and

(c) mounting means on said body portion to secure said body portion to a supporting structure.

3,285,560
MOUNTING ARRANGEMENT FOR A FLUORESCENT LAMPHOLDER ASSEMBLY

John M. Pistey, Fairfield, Conn., assignor to General Electric Company, a corporation of New York

Original application Apr. 6, 1964, Ser. No. 357,578. Divided and this application Sept. 22, 1965, Ser. No. 489,305
2 Claims. (Cl. 248—342)

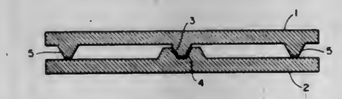


1. A lampholder assembly comprising a housing having a section with a slot therethrough, a pair of catch means formed on two opposed walls of said slot, and a mounting nut having a base portion and upstanding legs, a catch means on each of said legs, said nut being mounted on said housing with said catch means on said legs engaged with said catch means in said slot and with said base portion bridging said slot, and an aperture through the bight portion of said nut whereby a bolt can be received to secure said lampholder to a lighting fixture.

3,285,561
HOUSE PLANTS TURNTABLE

Joseph D. George, 1263 Royal York Road, Islington, Ontario, Canada

Filed Apr. 23, 1964, Ser. No. 362,207
2 Claims. (Cl. 248—349)



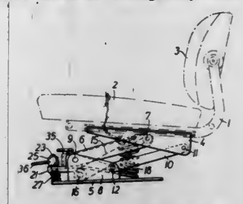
1. A manually operated turntable comprising a top plate with a plurality of peripherally spaced low friction sliding projection means and a central projection means on its lower face and a bottom plate continguous therewith and provided with a central recess to receive said central projection means of the upper plate.

3,285,562
ADJUSTABLE ELASTIC SUPPORT FOR SEATS, PARTICULARLY IN VEHICLES

Alfred Langer, Solingen, Germany, assignor to Bremshey & Co., Solingen-Ohligs, Germany, a partnership firm of Germany

Filed Jan. 12, 1965, Ser. No. 424,939
Claims priority, application Germany, Jan. 28, 1964, B 56,112
3 Claims. (Cl. 248—399)

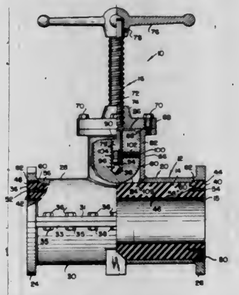
1. Adjustable elastic support for a seat frame, particularly in automotive vehicles comprising in combination a base; a seat frame; a parallelogram linkage articulately connecting said base and the seat frame to support the latter in different elevational positions; a rearwardly extending control lever having a longer rearward and a shorter forward arm tiltably mounted in said base into adjustable angular positions relative thereto; suspension spring means operatively interposed between the rearward arm of said control lever and said seat frame; adjusting means associated with the base to control the inclination of the control lever relative to the base and thus to adjust the elevation of the seat frame when the same is unloaded; and stop means associated with the parallelogram linkage and for adjustable cooperation with said control lever to changeably limit the upward movement of the seat frame and thus to control the prestress of the spring means while the seat is not loaded.



3,285,563
SCREW ACTUATED PINCH VALVE

John Robert Clarkson, Palo Alto, Calif., assignor to The J. R. Clarkson Company, Palo Alto, Calif., a corporation of California

Filed Nov. 8, 1962, Ser. No. 236,214
7 Claims. (Cl. 251—8)



1. A valve comprising:

(a) a rigid body,

(b) an elastic tubular constrictor element encirclingly confined by said body and providing an unobstructed fluid passage therethrough,

(c) means for transversely constricting said element intermediate the ends thereof to selectively vary the cross-section of said fluid passage, and

(d) means securing the end region of said element in substantially axially fixed and fluid tight relation to said body comprising:

(e) a rigid annulus removably mounted in each of said end regions substantially concentric with the longitudinal axis of said element to flare each end region radially outwardly, and

(f) a plurality of radially inwardly directed closely axially spaced apart annular ridges formed on said body radially outwardly of each end region for grippingly engaging each of said end regions when flared by said annulus.

3,285,564
NOZZLE STRUCTURE WITH LEVER ADJUSTING INSERT

Meredith D. Mansfield, Muskegon, Mich., assignor to Enterprise Brass Works, Muskegon, Mich., a corporation of Michigan

Filed Dec. 16, 1964, Ser. No. 418,698
5 Claims. (Cl. 251—240)

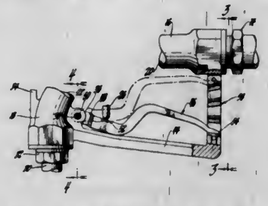
1. A nozzle structure comprising:

a frame having a flow passage formed therethrough;

valve means in said frame for opening and closing said passage;

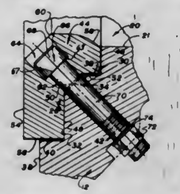
a lever pivotally mounted at one end on said frame and operatively engaging said valve means;

and an insert formed of unbendable material having lower wear characteristics than the material of said lever and being secured in said frame adjacent the other end of said lever, said insert having a plurality of steps extending outwardly therefrom;



said other end of said lever being selectively engageable with any one of said steps to maintain said valve means in a correspondingly open position.

3,285,565
REMOVABLE VALVE SEAT
Douglas J. Barnier, Fontana, and Thomas H. Steger, Crestline, Calif., assignors to Kaiser Steel Corporation, Oakland, Calif., a corporation of Nevada
Filed Feb. 26, 1964, Ser. No. 347,575
5 Claims. (Cl. 251—328)



4. In a valve device of the type described, the combination of a valve body provided with spaced openings in flow communication, a valve seat removably disposed adjacent one of said openings and a valve means selectively positionable to block the flow of material passing through the valve device, said valve seat being provided with a pair of spaced yet convergent wall portions connected by a beveled portion, a seating face engageable with said valve means and a plurality of spaced bores extending therethrough and at said beveled portion, the bores being disposed adjacent and at an acute angle to the seating face in such a fashion that one end of each bore is located adjacent the seating face and the other end is located adjacent said one of said valve body openings, said valve body also having a plurality of bores extending therethrough adjacent said one of said valve body openings and each of said last-mentioned bores being axially aligned with a bore in said valve seat, an externally adjustable fastener element extending through each pair of aligned bores for locking said valve seat to said valve body and said bores and fastening elements all being disposed at an acute angle relative to the axes of said valve seat, said one of said openings in said valve body and said valve means.

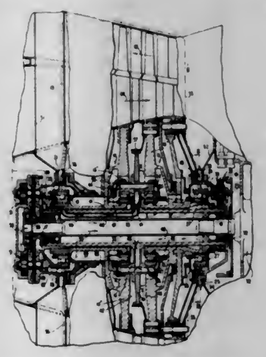
3,285,566
FLOW MACHINE
Christian Schmitz, Engelberg Post Schorndorf, and Werner A. Bruder, Neckarrems, Germany, assignors to Daimler-Benz Aktiengesellschaft, Unterturkheim, Germany
Filed June 11, 1964, Ser. No. 374,457
24 Claims. (Cl. 253—39)

1. A flow machine, especially gas turbine drive unit, having a relatively stationary housing means provided with outer walls and rotor means within said housing means and provided with hub means radially inwardly thereof, comprising:

relatively fixed bearing shaft means for supporting thereon the rotor means,

substantially radial strut means operatively connecting said bearing shaft means with the outer walls,

said bearing shaft means having in the center region thereof a cylindrical extension of substantially double-T-shape in cross section,

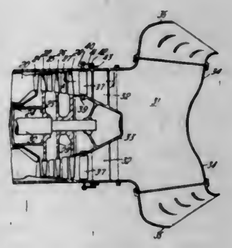


bearing means for rotatably supporting said hub means within said extension with said hub means extending into said extension on both sides thereof,

and means including a plurality of detachably connected parts for supporting the two ends of said bearing shaft means in the radial strut means of said housing means,

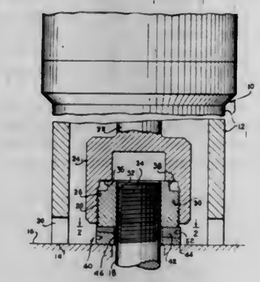
said parts also carrying the outer bearing means for the rotor means.

3,285,567
AXIAL FLOW TURBINES AND COMPRESSORS
Paul Ernest Colin Richardson, Bristol, England, assignor to Bristol Siddeley Engines Limited, Bristol, England, a British company
Filed Nov. 16, 1964, Ser. No. 411,196
Claims priority, application Great Britain, Nov. 29, 1963, 47,274/63
3 Claims. (Cl. 253—59)



1. A turbine having a rotor with rotor blades, a stator with stator blades which co-operate with the rotor blades, and outlet ducting defined at least partly by a surface which is non-coaxial with respect to the axis of the machine, the last ring of rotor blades being followed immediately downstream by a ring of stator blades of which at least some of the blades forming a row are individually adjustable.

3,285,568
TENSIONING APPARATUS
John L. Biach, Cranford, N.J., assignor to Biach Industries, Inc., Cranford, N.J., a corporation of New Jersey
Filed Mar. 17, 1965, Ser. No. 440,386
11 Claims. (Cl. 254—29)



1. A stud tensioning system comprising:

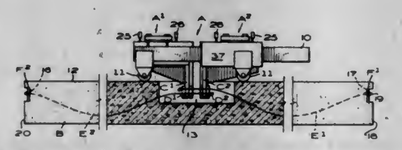
a bolt;

tensioner engaging means on said bolt for cooperating with a tensioning apparatus for tensioning the bolt;

a bolt tensioning apparatus including a housing having one end adapted to thrust against the surface from which the bolt and tensioner engaging means extends, a puller bar having an end within said housing, the puller bar end and the tensioner engaging means having cooperating and releasable interengaging surfaces, and tensioning means coupled with the puller rod for tensioning the bolt by means of the tensioner engaging means;

and means for interposition between the tensioner engaging means and said surface for maintaining the bolt under tension upon deactivation of the tensioning means and release of the puller bar from the tensioner engaging means.

3,285,569
APPARATUS FOR POST-TENSIONING CONCRETE STRUCTURES
Robert R. La Marr, Redwood City, and Charles E. Newins, Lafayette, Calif.; said Newins assignor to The Prescon Corporation, a corporation of Texas
Filed May 10, 1965, Ser. No. 454,500
11 Claims. (Cl. 254—29)

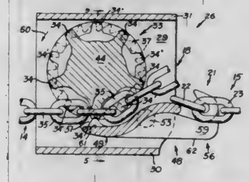


1. In an apparatus for post-tensioning concrete structures wherein a pair of tensioning plates are provided, one tensioning plate being secured to inboard ends of each of two sets of tendons, with these sets of tendons extending in opposite directions through a concrete structure relative to one another, the outboard ends of both sets of the tendons being anchored to the concrete structure, the combination of:

(a) a pair of jaws engageable with these tensioning plates;

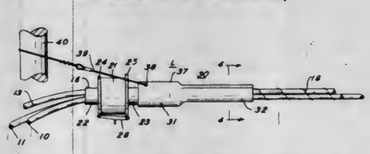
(b) and means connected to the jaws and being operable to move the tensioning plates, simultaneously relative to one another so as to post-tension all of the tendons at one time.

3,285,570
CHAIN TENSIONING MEANS COMPRISING A COMBINED SPROCKET AND RATCHET WHEEL AND A PAWL THEREFOR HAVING A FORCE APPLIED THERETO CORRESPONDING TO THE TENSION ON THE CHAIN
Theodore J. Sweger, Naperville, Ill., assignor to Illinois Railway Equipment Company, Chicago, Ill., a corporation of Illinois
Filed Aug. 20, 1965, Ser. No. 481,277
10 Claims. (Cl. 254—74)



1. Means for tensioning a chain comprising: a frame, a chain take up wheel journaled in said frame for driving engagement with said chain, ratchet teeth on said wheel, a pawl rotatably mounted on said frame for engaging said ratchet teeth to prevent reverse rotation of said wheel, means for forwardly rotating said wheel to tighten said chain, an anchor means on said pawl having a force applied thereto corresponding to the tension applied by said chain for maintaining said pawl in ratcheting engagement with said ratchet teeth as said wheel is rotated forwardly.

3,285,571
CABLE LASHING DEVICE
Charles J. Weiler, 6839 Oakley St., Philadelphia, Pa.
Filed Sept. 6, 1963, Ser. No. 307,067
5 Claims. (Cl. 254—134.3)



1. In apparatus for winding lashing material about at least partially insulated conductive material, said apparatus including a support for a coil of lashing material, a coil of lashing material in said support, a guide for directing said conductive material through said coil, means for effecting longitudinal relative translation between said conductive material and said coil, said support for said coil passing around the exterior thereof, and an elastomeric elongated sleeve member disposed rearwardly of said coil and fixed with respect thereto and adapted to have passed therethrough in enclosing and snugly contained relationship the conductive material with said lashing material helically applied thereto.

3,285,572
DECK BUTTON
Walter L. Blackburn, 6105 England St., Houston, Tex.,
Filed June 28, 1965, Ser. No. 467,600
4 Claims. (Cl. 254—150)

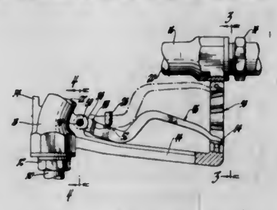
1. A rotatable button-type deck fitting including:

a spindle comprising a right cylindrical upstanding journal bearing with a base extending radially from the bottom thereof,

said spindle having a core extending from the base to within the journal bearing,

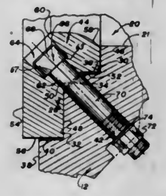
a retainer recess on the spindle extending about the periphery of the journal bearing,

and an insert formed of unbendable material having lower wear characteristics than the material of said lever and being secured in said frame adjacent the other end of said lever, said insert having a plurality of steps extending outwardly therefrom;



said other end of said lever being selectively engageable with any one of said steps to maintain said valve means in a correspondingly open position.

3,285,565
REMOVABLE VALVE SEAT
Douglas J. Barnier, Fontana, and Thomas H. Steger, Crestline, Calif., assignors to Kaiser Steel Corporation, Oakland, Calif., a corporation of Nevada
Filed Feb. 26, 1964, Ser. No. 347,575
5 Claims. (Cl. 251—328)



4. In a valve device of the type described, the combination of a valve body provided with spaced openings in flow communication, a valve seat removably disposed adjacent one of said openings and a valve means selectively positionable to block the flow of material passing through the valve device, said valve seat being provided with a pair of spaced yet convergent wall portions connected by a beveled portion, a seating face engageable with said valve means and a plurality of spaced bores extending therethrough and at said beveled portion, the bores being disposed adjacent and at an acute angle to the seating face in such a fashion that one end of each bore is located adjacent the seating face and the other end is located adjacent said one of said valve body openings, said valve body also having a plurality of bores extending therethrough adjacent said one of said valve body openings and each of said last-mentioned bores being axially aligned with a bore in said valve seat, an externally adjustable fastener element extending through each pair of aligned bores for locking said valve seat to said valve body and said bores and fastening elements all being disposed at an acute angle relative to the axes of said valve seat, said one of said openings in said valve body and said valve means.

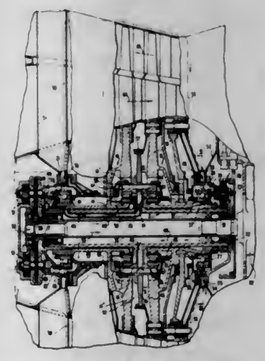
3,285,566
FLOW MACHINE
Christian Schmitz, Engelberg Post Schorndorf, and Werner A. Bruder, Neckarrems, Germany, assignors to Daimler-Benz Aktiengesellschaft, Unterturkheim, Germany
Filed June 11, 1964, Ser. No. 374,457
24 Claims. (Cl. 253—39)

1. A flow machine, especially gas turbine drive unit, having a relatively stationary housing means provided with outer walls and rotor means within said housing means and provided with hub means radially inwardly thereof, comprising:

relatively fixed bearing shaft means for supporting thereon the rotor means,

substantially radial strut means operatively connecting said bearing shaft means with the outer walls,

said bearing shaft means having in the center region thereof a cylindrical extension of substantially double-T-shape in cross section,

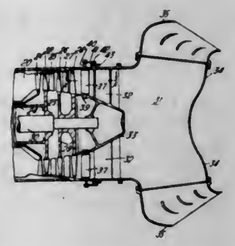


bearing means for rotatably supporting said hub means within said extension with said hub means extending into said extension on both sides thereof,

and means including a plurality of detachably connected parts for supporting the two ends of said bearing shaft means in the radial strut means of said housing means,

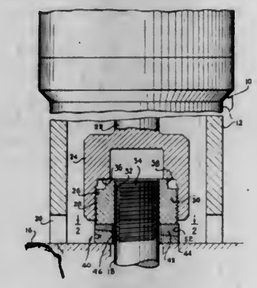
said parts also carrying the outer bearing means for the rotor means.

3,285,567
AXIAL FLOW TURBINES AND COMPRESSORS
Paul Ernest Colin Richardson, Bristol, England, assignor to Bristol Siddeley Engines Limited, Bristol, England, a British company
Filed Nov. 16, 1964, Ser. No. 411,196
Claims priority, application Great Britain, Nov. 29, 1963, 47,274/63
3 Claims. (Cl. 253—59)



1. A turbine having a rotor with rotor blades, a stator with stator blades which co-operate with the rotor blades, and outlet ducting defined at least partly by a surface which is non-coaxial with respect to the axis of the machine, the last ring of rotor blades being followed immediately downstream by a ring of stator blades of which at least some of the blades forming a row are individually adjustable.

3,285,568
TENSIONING APPARATUS
John L. Biach, Cranford, N.J., assignor to Biach Industries, Inc., Cranford, N.J., a corporation of New Jersey
Filed Mar. 17, 1965, Ser. No. 440,386
11 Claims. (Cl. 254—29)



1. A stud tensioning system comprising:

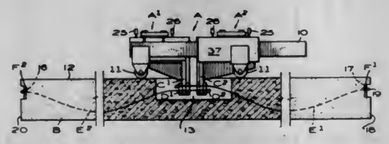
a bolt;

tensioner engaging means on said bolt for cooperating with a tensioning apparatus for tensioning the bolt;

a bolt tensioning apparatus including a housing having one end adapted to thrust against the surface from which the bolt and tensioner engaging means extends, a puller bar having an end within said housing, the puller bar end and the tensioner engaging means having cooperating and releasable interengaging surfaces, and tensioning means coupled with the puller rod for tensioning the bolt by means of the tensioner engaging means;

and means for interposition between the tensioner engaging means and said surface for maintaining the bolt under tension upon deactivation of the tensioning means and release of the puller bar from the tensioner engaging means.

3,285,569
APPARATUS FOR POST-TENSIONING CONCRETE STRUCTURES
Robert R. La Marr, Redwood City, and Charles E. Newins, Lafayette, Calif.; said Newins assignor to The Prescon Corporation, a corporation of Texas
Filed May 10, 1965, Ser. No. 454,500
11 Claims. (Cl. 254—29)

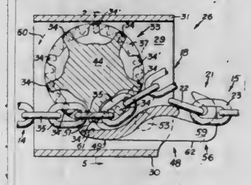


1. In an apparatus for post-tensioning concrete structures wherein a pair of tensioning plates are provided, one tensioning plate being secured to inboard ends of each of two sets of tendons, with these sets of tendons extending in opposite directions through a concrete structure relative to one another, the outboard ends of both sets of the tendons being anchored to the concrete structure, the combination of:

(a) a pair of jaws engageable with these tensioning plates;

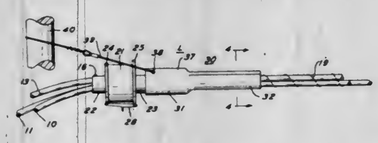
(b) and means connected to the jaws and being operable to move the tensioning plates simultaneously relative to one another so as to post-tension all of the tendons at one time.

3,285,570
CHAIN TENSIONING MEANS COMPRISING A COMBINED SPROCKET AND RATCHET WHEEL AND A PAWL THEREFOR HAVING A FORCE APPLIED THERETO CORRESPONDING TO THE TENSION ON THE CHAIN
Theodore J. Sweger, Naperville, Ill., assignor to Illinois Railway Equipment Company, Chicago, Ill., a corporation of Illinois
Filed Aug. 20, 1965, Ser. No. 481,277
10 Claims. (Cl. 254—74)



1. Means for tensioning a chain comprising: a frame, a chain take up wheel journaled in said frame for driving engagement with said chain, ratchet teeth on said wheel, a pawl rotatably mounted on said frame for engaging said ratchet teeth to prevent reverse rotation of said wheel, means for forwardly rotating said wheel to tighten said chain, an anchor means on said pawl having a force applied thereto corresponding to the tension applied by said chain for maintaining said pawl in ratcheting engagement with said ratchet teeth as said wheel is rotated forwardly.

3,285,571
CABLE LASHING DEVICE
Charles J. Weiler, 6839 Oakley St., Philadelphia, Pa.
Filed Sept. 6, 1963, Ser. No. 307,067
5 Claims. (Cl. 254—134.3)



1. In apparatus for winding lashing material about at least partially insulated conductive material, said apparatus including a support for a coil of lashing material, a coil of lashing material in said support, a guide for directing said conductive material through said coil, means for effecting longitudinal relative translation between said conductive material and said coil, said support for said coil passing around the exterior thereof, and an elastomeric elongated sleeve member disposed rearwardly of said coil and fixed with respect thereto and adapted to have passed therethrough in enclosing and snugly contained relationship the conductive material with said lashing material helically applied thereto.

3,285,572
DECK BUTTON
Walter L. Blackburn, 6105 England St., Houston, Tex.,
Filed June 28, 1965, Ser. No. 467,600
4 Claims. (Cl. 254—150)

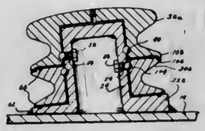
1. A rotatable button-type deck fitting including:

a spindle comprising a right cylindrical upstanding journal bearing with a base extending radially from the bottom thereof,

said spindle having a core extending from the base to within the journal bearing,

a retainer recess on the spindle extending about the periphery of the journal bearing,

a pulley having a smooth top whose diameter is substantially that of the spindle base,
said pulley including an inset journal bearing providing a sliding fit with the upstanding journal bearing of the spindle,
a retainer recess in the pulley journal bearing mating with the spindle retainer recess when the pulley is mounted on the spindle, the mating retainer recesses forming a retainer race,
said pulley including a wire rope groove about its periphery and adjacent the journal bearing,
either said pulley or spindle having an access hole extending to the retainer race,
rotatable retainer means insertable through said access hole and rollable in said retainer race,
a plug insertable in said access hole,
a second pulley mounted beneath said first mentioned pulley,
said second pulley having a diameter substantially that of the spindle base,

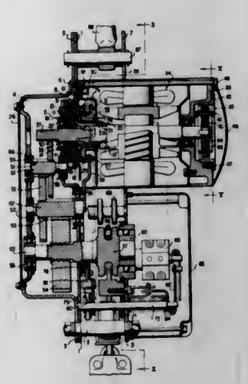


said second pulley including a journal bearing providing a sliding fit with the upstanding journal bearing of the spindle,
a second retainer recess on the spindle journal bearing,
a second retainer recess in the second pulley journal bearing mating with the second spindle retainer recess when the second pulley is mounted on the spindle, the mating second retainer recesses forming a second retainer race,
said second pulley including a wire rope groove about its periphery and adjacent the journal bearing,
said second pulley having an access hole extending from the core to the second retainer race,
second rotatable retainer means insertable through said second access hole and rollable in said second retainer race, and
a second plug insertable in said second access hole,
thereby providing a double deck button with rotatable pulleys.

3,285,573
MOTOR BLOCK

Toshio Hanawa and Takeshi Tokunaga, Hitachi-shi, and Yasuhiro Iwata, Mishima-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Aug. 26, 1963, Ser. No. 304,343
Claims priority, application Japan, Aug. 29, 1962, 37/36,087, 37/36,088
4 Claims. (Cl. 254—168)

1. A motor block for lifting goods by means of a link chain operated by a sprocket means connected to a driving motor comprising
a chain, sprocket means for engaging said chain, and a driving motor,
first and second base plates secured to one another in closely spaced parallel relationship, said second base plate having an aperture therein,
said driving motor being securely mounted on said first base plate and having a housing portion extending through said aperture in said second base plate,
gear case means including a reduction gear device secured to said first base plate in driven engagement with said driving motor,
a rotatable shaft mounted between said first and second base plates and connected to said reduction gear device so as to be driven by said motor, said sprocket means being mounted on said rotatable shaft,
and actuating means for selectively energizing said driving motor,
bearing means mounted in said first base plate, said driving motor having a drive shaft supported within said bearing means with one end of said housing means being fastened to said first base plate and the other end thereof extending through said aperture in said second base plate,
said gear case means further including support means for said reduction gear device including a plurality of intersecting ribs, said gear reduction device including bearing means mounted on said intersecting ribs,

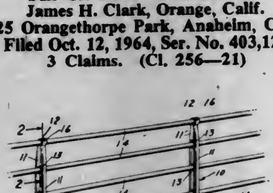


disc brake means for normally preventing rotation of said drive shaft of said driving motor, said disc brake means being disengaged only by said actuating means,
said disc brake means including disc means connected to the drive shaft of said driving motor for rotation therewith, a movable plate and a brake collar engaged by said movable plate, a stationary brake plate located on one side of said disc means opposite said movable plate, a rotatable operating ring in engagement with said movable plate for pressing said disc means against said stationary brake plate with braking force upon rotation thereof, said actuating means including lever means for rotating said operating ring.

3,285,574
WEIGHT REGULATING APPARATUS FOR SUBMARINE DRILLING

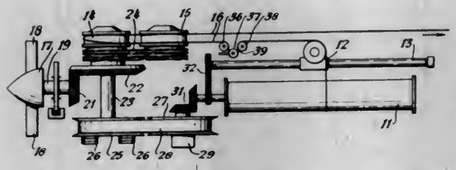
Jean Berne, Vernouillet, Pierre Moulin, Montesson, and Jean Casteran, Sainte-Adresse, France, assignors to Institut Francais du Pétrole, des Carburants & Lubrifiants, Rueil-Malmaison, France
Filed Apr. 10, 1964, Ser. No. 358,765
Claims priority, application France, Apr. 13, 1963, 931,562
7 Claims. (Cl. 254—172)

1. An apparatus for regulating the weight that is exerted on an underwater drilling tool suspended from a floating installation by a flexible conduit which passes, on this installation, from a return pulley to a means for maneuvering said conduit, said apparatus comprising at least one jack sustaining the axis of the pulley and articulated on the floating installation, said jack being inclined to the vertical plane of the axis of the pulley and communicating with at least one reservoir containing fluid under pressure.



3,285,575
AERIAL TARGET TOWING INSTALLATIONS

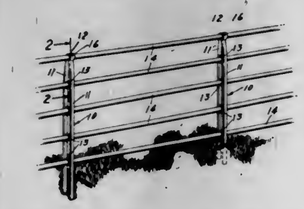
Frank K. Griffiths, Ferndown, Dorset, England, assignor to Flight Refuelling Limited, London, England, a British company
Filed May 28, 1964, Ser. No. 370,805
5 Claims. (Cl. 254—172)



1. An aerial target towing installation comprising a reel drivable in opposite directions for paying out and winding in a towing cable attached to a target, at least one capstan around which said towing cable is wound, an air driven member operatively connected to said capstan and said reel to drive the latter, said capstan supporting the tension load applied to the cable by the drag of the target, a variable speed drive mechanism connected between said reel and said air driven member and said capstan, said variable speed drive mechanism comprising a V-belt arranged between a pair of expandable and contractable pulleys to enable the drive ratio from one to the other to be varied and means responsive to changes in the tension of the towing cable at a point between the capstan and the reel to vary the drive ratio of said variable speed mechanism.

3,285,576
FENCE POST AND FENCE

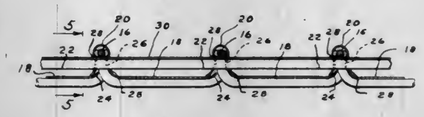
James H. Clark, Orange, Calif.
(925 Orangethorpe Park, Anaheim, Calif.)
Filed Oct. 12, 1964, Ser. No. 403,123
3 Claims. (Cl. 256—21)



3. A fence comprising at least one fence post, said fence post comprising a length of galvanized tubular steel bent back upon itself at its center to form a pair of substantially parallel spaced legs, a plurality of transversely directed rings mounted in vertically spaced relationship between the legs of said post, one side of each of said rings being welded to each of said legs, each of said rings comprising a section of galvanized steel tubing, a plurality of parallel galvanized tubular steel rails extending transversely to said post, each of said rings slidably receiving and supporting one of said rails, each of said rings having a pre-punched opening in the upper portion thereof, and a self-piercing nail extending through each of said rings and through one wall of the adjacent rail to secure said rails to said post.

3,285,577
FENCE CONSTRUCTION

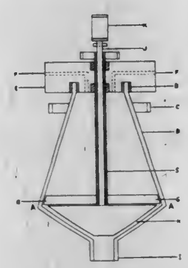
Alton Z. Pinson, 2869 N. Greenfield Road, Phoenix, Ariz.
Filed May 7, 1964, Ser. No. 365,834
14 Claims. (Cl. 256—34)



1. In a fence construction the combination of: a wire mesh structure having rows of interlocking mesh corners; slat means disposed between said rows of interlocking corners; and channel structure covering said rows of interlocking corners of said wire mesh and overlapping an edge of one of said slats.

3,285,578
MIXING APPARATUS

Harry Edwards and George Woods, Manchester, England, assignors to Imperial Chemical Industries Limited, London England, a corporation of Great Britain
Filed Feb. 7, 1964, Ser. No. 343,376
Claims priority, application Great Britain, Feb. 8, 1963, 5,267/63
4 Claims. (Cl. 259—3)

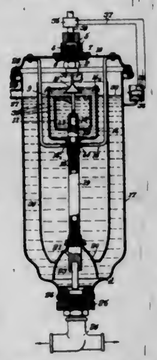


1. Mixing apparatus suitable for mixing the ingredients used during manufacture of polyurethane foam comprising a rotatable mixing chamber that is rotatable about a vertical axis, said mixing chamber having a plurality of inlets and a closable outlet fed from the internal periphery of the chamber, at least one baffle being disposed inside said mixing chamber, said baffle being rotatable about a vertical axis independently of the mixing chamber, the lower portion of said chamber being in the shape of a truncated cone, and the outlet fed from the base of the cone.

3,285,579
DEVICES FOR HOMOGENIZING A MIXTURE BY ULTRA-SOUND VIBRATIONS

Robert Guérin, 2 Rue des Marais, Viroflay, France

Filed May 5, 1964, Ser. No. 364,958
Claims priority, application France, May 9, 1963, 934,259
9 Claims. (Cl. 259—4)

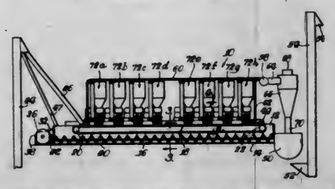


1. A device for homogenizing a mixture of a liquid with at least one other fluid which comprises, in combination, a metal element having a free upper end capable of vibrating at ultra-sound frequency, means for projecting a jet of said liquid and said other fluid downwardly toward said metal element so as to impinge onto said free upper end thereof, a bell opposite said projecting means having a closed lower end fixed to said metal element at a point thereof located at a distance below said free upper end thereof, said bell having a top open end with a free edge surrounding said metal element upper end, the natural frequency of vibration of said bell having one of its harmonics substantially equal to the ultrasound frequency of the system consisting of said liquid jet and said metal element, whereby said bell vibrates in resonance with said system, at least most of the annular space between said metal element and said bell being filled during operation with the mixture to be homogenized.

3,285,580
APPARATUS FOR FEEDING AND MIXING MATERIALS

Silas R. Renaudette, Melrose, Mass., assignor to Corn Products Company, New York, N.Y., a corporation of Delaware

Filed July 1, 1964, Ser. No. 379,474
13 Claims. (Cl. 259—11)

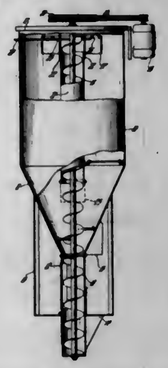


1. Apparatus for feeding and mixing materials, comprising first horizontal conveyor means, second horizontal conveyor means underlying said first conveyor means, means for introducing material at the one ends of said first and second conveyor means, means for feeding additives to the material being carried by said first conveyor means, and means for receiving and blending the material and additives discharged from the other ends of said first and second conveyor means.

3,285,581
LIVESTOCK FEED MIXER

Robert A. Moore, 203 Lewis Ave., Salem, Va.

Filed Dec. 3, 1964, Ser. No. 415,620
9 Claims. (Cl. 259—23)

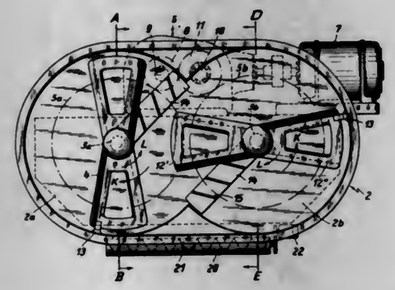


1. In an apparatus for mixing livestock feeds and molasses which includes a vertical casing having a cylindrical upper portion, a top closure thereon, a vertical conveyor tube extending centrally within said casing portion and terminating at its upper end in spaced relation below the top closure, conveyor means in the tube operative to elevate feed materials therethrough to discharge radially from and over the top end of the tube, and a molasses supply pipe extending into the casing: a ring manifold on said pipe in the space between the top of the conveyor tube and the top of the casing concentric with and spaced radially outward relative to the conveyor tube, a circumferential series of molasses discharge nozzles on said manifold, and a substantially circular baffle enveloping and surrounding said manifold concentric therewith and spaced radially outward therefrom.

3,285,582
MACHINE FOR TREATING, ESPECIALLY DRY-CONCHING AND EMULSIFYING CHOCOLATE MASSES OR THE LIKE

Gerhard Hübner, Hamburg-Blankenese, Germany, assignor to Hermann Bauermeister Maschinenfabrik und Mühlenbau G.m.b.H., Hamburg-Altona, Germany

Filed Feb. 24, 1964, Ser. No. 346,861
Claims priority, application Germany, Feb. 26, 1963, B 70,882
16 Claims. (Cl. 259—41)

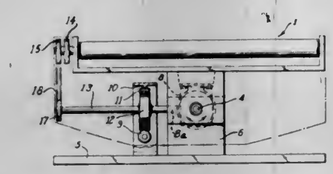


1. A machine for treating powdery and pasty masses, especially for dry-conching and emulsifying chocolate masses, comprising a machine-frame, an open-topped twin trough mounted on said machine-frame and formed of two cylindrical and substantially parallel halves intersecting each other in the plan view, a rotatable shaft in each half of said twin trough, said shafts being directed substantially in parallel to the axes of said cylindrical halves, driving means for said shafts, each shaft having at least one protruding vane, said halves of said twin trough and said rotatable shafts being arranged obliquely with respect to the vertical, said vanes each radially extending from the associated shaft and having a substantially planar end portion, said vanes end portions being obliquely related to the associated shaft so that said end portions are disposed in a substantially horizontal position in the region between said shafts.

3,285,583
FLUID BLENDER

Denis C. Luckham, London, England, assignor to Luckham Limited, London, England, a British company

Filed Mar. 1, 1965, Ser. No. 436,165
Claims priority, application Great Britain, Mar. 6, 1964, 9,568/64
7 Claims. (Cl. 259—55)



1. A fluid blender for use with a cylindrical container holding fluid to be blended comprising a stationary base, a table pivotally mounted on said base, a plurality of horizontally disposed and mutually parallel rollers mounted on said table for supporting said container on its side, the pivot axis of said table being laterally disposed with respect to the longitudinal axes of said rollers, continuous drive means for rotating at least one of said rollers to continuously rotate said container, and means for rocking said table about said pivot axis, whereby said container is rocked in a vertical plane to effect blending of said fluid while said container remains parallel to said longitudinal axes of said rollers.

3,285,584
ANIMATED MIXER AND DRINKING TUMBLER COMBINATION FOR CHILDREN

Adolph E. Goldfarb, 7427 Varna St., North Hollywood, Calif.

Filed June 11, 1964, Ser. No. 374,374
6 Claims. (Cl. 259—108)

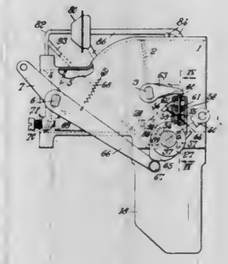


1. An animated toy food mixer comprising:
a mixer head having an encompassing side wall, an open bottom, and a closed top wall, said top wall having a first aperture provided therein;
a mixer shaft rotatably mounted in said mixer head, said mixer shaft having one upper end extending through said first aperture and another lower mixing end extending through said open bottom of said mixer head;
crank means mounted in said mixer head in operative engagement with said mixer shaft for rotating said mixer shaft upon actuation of said crank means; and
means that simulates the appearance of a recognizable object fixedly mounted on said one upper end of said mixer shaft for engagement with said top wall to maintain said mixer shaft in assembled relation with the said mixer head and to rotate incident to the rotation of said mixer shaft to provide animation incident to the mixing of food by said mixing shaft.

3,285,585
CARBURETTING DEVICES FOR INTERNAL COMBUSTION ENGINES

André Louis Mennesson, Neuilly-sur-Seine, France, assignor to Societe Industrielle de Brevets et d'Etudes S.I.B.E., Neuilly-sur-Seine, Seine, France, a society of France

Filed Dec. 29, 1964, Ser. No. 421,871
Claims priority, application France, Jan. 3, 1964, 959,339
5 Claims. (Cl. 261—39)

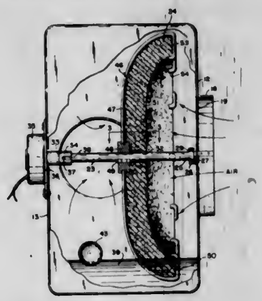


1. A carburetting device for an internal combustion engine which comprises, in combination:
an air intake pipe,
a main throttle valve in said pipe,
an auxiliary throttle valve in said pipe upstream of said main throttle valve, means to bias said auxiliary throttle valve towards a closed position, said auxiliary throttle valve being mounted to open automatically, in response to the flow of air through said intake pipe, gradually more and more as the air flow rate through said intake pipe increases,
a constant level fuel chamber,
normal fuel feed means for leading fuel from said constant level fuel chamber to said intake pipe downstream of said auxiliary throttle valve,
means operatively connected with said auxiliary throttle valve for metering the flow of fuel through said fuel feed means so that the cross section of flow afforded to air by said auxiliary throttle valve through said intake pipe and the cross section afforded to fuel through said fuel feed means remain substantially proportional to each other,
starting and cold running fuel feed conduit means for feeding supplementary fuel to said intake pipe, said last mentioned means opening into a space in communication with said intake pipe, where the pressure is the same as that in the portion of said intake pipe located between said two throttle valves,

a distributing member including a first valve means for opening said starting and cold running fuel feed conduit means,

and second valve means operatively connected with said auxiliary throttle valve for gradually throttling said starting and cold running fuel feed conduit means in response to the opening of said auxiliary throttle valve.

3,285,586
HUMIDIFIER
Milton A. Powers, Grosse Pointe Park, Mich., assignor to Skuttle Manufacturing Company, Milford, Mich., a corporation of Michigan
Filed Nov. 29, 1963, Ser. No. 327,026
10 Claims. (Cl. 261—92)

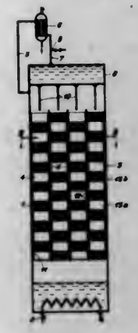


1. In a humidifier comprising a housing having a reservoir of water and means for directing air to be humidified therethrough, a rotor comprising a disc-like body of open-pore synthetic plastic material mounted for rotation on a horizontal axis within said housing with its lower periphery area immersed in said water during rotation of said rotor, means providing a water retaining layer of flocking material comprising relatively short water absorbent fibres attached substantially uniformly over the pore walls in said body, water from said peripheral area being continually distributed through the remaining area of said body during rotation of the rotor whereby substantially all of the rotor area in the path of said air is maintained wet during rotation of the rotor.

6. In a humidifier having a reservoir of water to be evaporated and means for directing air therethrough, a rotor mounted on a horizontal axis and comprising a dish-shaped skeletal frame lined with a conformingly shaped layer of flexible open-pore synthetic plastic material, the outer edge of said layer facing substantially axially and being immersed in said water during rotation of the rotor and a portion of said frame extending substantially axially adjacent said outer edge.

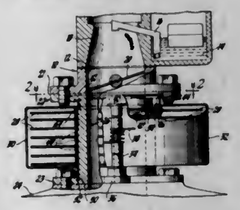
3,285,587
EXCHANGE TOWER
Max Huber, Winterthur, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a Swiss company
Filed Mar. 16, 1964, Ser. No. 351,976
Claims priority, application Switzerland, Mar. 22, 1963, 3,675/63
3 Claims. (Cl. 261—96)

1. An exchange tower comprising a housing, apertured partition means in said housing defining a plurality of parallel conduits having apertured walls, and plural packing bodies disposed in each of said conduits, said packing bodies substantially filling the cross-section of said conduits respectively and comprising each at least in part corrugated plates with the corrugations of adjacent plates inclined to each other and with corrugations of at least one of two adjacent plates being inclined to the axis



of the tower, said bodies being of two classes differing in their resistance to flow of a gaseous medium but having substantially the same theoretical plate height.

3,285,588
CARBURETOR TEMPERATURE CONTROL
Carl F. Huddle, Pleasant Ridge, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 29, 1965, Ser. No. 491,315
4 Claims. (Cl. 261—130)



1. Carburetion means adapted for mounting on an internal combustion engine comprising a mixture conduit, a fuel supply system including a fuel bowl and fuel passage means connecting said fuel bowl and said mixture conduit, a plurality of fins extending outwardly from said mixture conduit below said fuel supply system, said fins being adapted to radiate heat into the surrounding air and reduce heat transfer from the engine to said fuel supply system, a cover surrounding said fins to reduce heat radiation and promote fuel vaporization during low temperature conditions, and thermostatic means connected to open said cover and expose said fins during high temperature conditions.

3,285,589
TEMPERATURE CONTROL SYSTEM FOR A GAS HEATED CLOTHES DRYING MACHINE
Joseph C. Worst, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed May 6, 1964, Ser. No. 365,385
7 Claims. (Cl. 263—10)

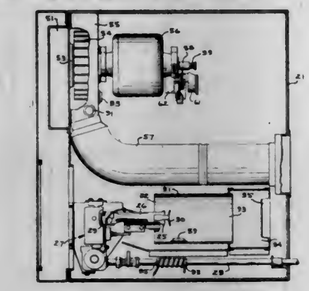
2. In a clothes drying machine:

(a) a container for clothes to be dried,

(b) means for effecting tumbling of clothes in said container,

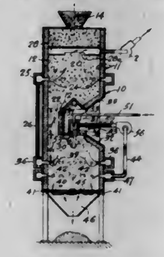
(c) a gas burner positioned to supply heat to clothes in said container,

(d) a heater adapted to heat the gas supplied to said burner for varying the energy content per unit volume of gas supplied to said burner,



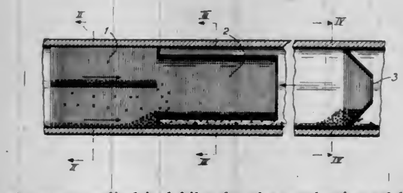
(e) control means for controlling said heater so as to provide a predetermined energy content in the gas supplied to said burner, whereby the heat to which the clothes in said container are subjected is predetermined.

3,285,590
DOWN DRAFT VERTICAL KILN SYSTEM
Marshall F. Parsons, St. Bruno, Quebec, Canada (4805 Falstone St., Somerset, Chevy Chase, Md.)
Filed June 11, 1964, Ser. No. 374,298
9 Claims. (Cl. 263—29)



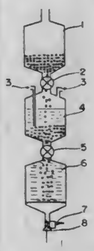
1. A system for continuously calcining materials comprising vertically-disposed kiln means, supply means communicating with said kiln means for charging said kiln means with material to be calcined, said kiln means comprising, in series, pre-heating-chamber means, restricted-passage means, calcining-chamber means, and cooling-chamber means for progressively receiving therethrough said materials introduced by said supply means, said pre-heat-chamber means including upper, exhaust-gas, outlet port means and lower, inlet, pre-heat port means, said kiln means including downwardly-directed burner means at the upper portion of said calcining-chamber means and forming a combustion chamber portion at the upper portion of said calcining-chamber means and substantially adjacent the lower portion of said restricted-passage means, said cooling-chamber means including fluid-inlet means for permitting cooling and combustion-supporting fluid to move upwardly through said cooling-chamber means, said cooling-chamber means including combustion-fluid, outlet-port means communicating with said burner means for causing optimum and substantially complete combustion of fuel in said combustion-chamber portion prior to cocurrent passage of hot combustion gases contacting said material passing through said calcining-chamber means, said calcining-chamber means including combustion-gas, outlet-port means above said combustion-fluid, outlet-port means communicating with said inlet-port means of said pre-heat-chamber means, said restricted-passage means including a configuration above said burner means substantially inhibiting the passage of combustion gases therethrough and yet permitting gravitation of material therebelow, said restricted-passage means configuration causing hot combustion gases to flow from said combustion-chamber portion through said calcining-chamber means cocurrently with the material to said combustion-gas outlet-port means whereby no supplemental draft-creating means is required.

3,285,591
ROTARY KILNS
Harry Kamstrup-Larsen, Vestergade 16, Copenhagen, Denmark
Filed July 5, 1963, Ser. No. 295,277
1 Claim. (Cl. 263—33)



A rotary, cylindrical kiln, for the production of lightweight material in the form of rounded grains of honeycombed structure, through heating of wet, plastic clay to incipient melting, which has a drying zone having in its entry portion screens which are radially arranged, dividing the zone into sectors, then a cylinder forming a cylindrical screen, and finally a cone of circular rings, its point facing the exit of the drying zone.

3,285,592
METHOD AND APPARATUS FOR DEHYDRATING AND MELTING THERMOPLASTIC POLYMERS FOR SPINNING OR MOLDING
Keizo Ueda, Nishinomiya-shi, Hyogo-ken, and Satoshi Ando and Yusaku Tanaka, Osaka-shi, and Kiyoiti Fujimura, Ibaragi-shi, Osaka-fu, Japan, assignors to Kanegafuchi Boseki Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
Filed May 19, 1964, Ser. No. 368,518
Claims priority, application Japan, May 27, 1963, 38/27,420
11 Claims. (Cl. 263—36)



1. A method of dehydrating and melting thermoplastic polymers having a softening point higher than the boiling point of water, which comprises:

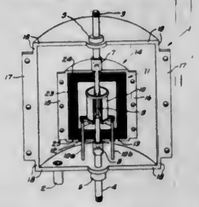
placing solid particles of a thermoplastic polymer containing water in a body of a liquid which is inert to and insoluble with the polymer, said polymer having a softening point higher than the boiling point of water, maintaining said liquid at a temperature below the softening point of the polymer but above

the boiling point of water so that the water will be vaporized and the polymer will be in an unsoftened condition;

removing the vaporized water from the polymer and the liquid; and

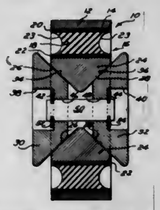
then melting the polymer and subjecting it to a molding operation.

3,285,593
FURNACE HEAT SHIELD
Joseph F. Tavernelli, Euclid, and Richard A. Piepsny, Willoughby, Ohio, assignors to General Electric Company, a corporation of New York
Filed Sept. 4, 1964, Ser. No. 394,434
3 Claims. (Cl. 263—50)



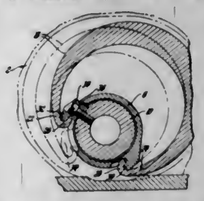
1. A multi-layered heat shield assembly for a vacuum or non-oxidizing atmosphere type furnace comprising a plurality of metal sheet members adapted to substantially enclose a hot zone of said furnace, said members being arranged in multi-layered fashion so that outwardly directed thermal radiation from the hot zone is reflected back into the hot zone by the innermost member of said heat shield and so that outwardly successive members reflect back towards the hot zone thermal radiation from the next innermost member, said members being removably located adjacent one another, said members having affixed to at least some of their surfaces undulating wire in a manner to hold said members apart and prevent warpage of such a degree as to allow members to touch one another, and minimize conductive heat transfer through said heat shield.

3,285,594
SHOCK ABSORBER
Laurence T. La Belle, Westchester, Ill., assignor to W. H. Miner, Inc., Chicago, Ill., a corporation of Delaware
Filed June 1, 1964, Ser. No. 371,434
2 Claims. (Cl. 267—9)



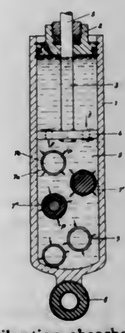
1. A shock absorber comprising a casing having an annular inner surface, a resilient annular pad unit comprised of an intermediate annular resilient ring mounted between an outer annular liner and inner arcuate liner segments, said outer liner of said pad unit engaging said inner surface of said casing, a plurality of circumferentially arranged arcuate shoe members having outer peripheries engaging said inner liner segments of said pad unit, said shoe members each having opposed axially facing arcuate bevelled surfaces, a pair of axially spaced movable wedge members having axially facing conical surfaces engaging said opposed axially facing bevelled surfaces of each of said shoe members and causing radial expansion only of said shoe members relative to said inner liner segments upon relative axial movement of said wedge members toward each other in response to axial forces imposed on at least one of said wedge members, and said resilient ring being radially compressible upon said radial expansion of said shoe members for absorbing forces imposed on the latter.

3,285,595
COMPACT LEAF SPRING SUSPENSION ASSEMBLY
Stanley L. Buckay, Santa Barbara, Calif., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 13, 1964, Ser. No. 389,368
8 Claims. (Cl. 267—19)



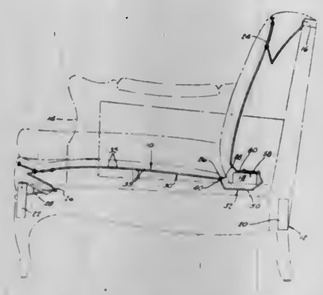
1. A spring assembly comprising, a support, a rotatable member mounted on said support, a plurality of axially spaced tapered curvilinear leaf springs encircling said member, stop means on said support engaging one end of each of said springs, and actuating means on said rotatable member operatively engaging the other end of each of said springs.

3,285,596
SHOCK AND VIBRATION ABSORBER
Herbert A. Burgert, Porza, Ticino, Switzerland, assignor to Unitechnik Aktiengesellschaft, Chur, Switzerland
Filed May 21, 1964, Ser. No. 369,221
Claims priority, application Germany, May 21, 1963, U 9,826
10 Claims. (Cl. 207—64)



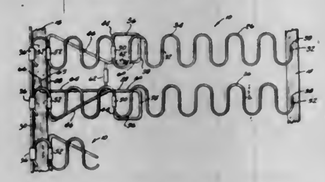
1. A shock and vibration absorber for motor vehicles comprising: a closed cylinder completely filled with a substantially incompressible fluid medium, a piston element mounted for reciprocation within said cylinder, throttle means in said piston element for allowing flow of said incompressible fluid medium therethrough in a throttled manner, a plurality of resilient compressible ball-shaped elements freely movably suspended within said incompressible fluid which otherwise fills said cylinder completely, at least one of said compressible elements consisting of resilient rubberlike materials of different composition.

3,285,597
SUSPENDED SEAT SPRING
Walter V. Slominski and George F. Janko, both of Lexington, Ky., assignors to Hoover Ball and Bearing Company, Saline, Mich., a corporation of Michigan
Filed May 7, 1965, Ser. No. 454,101
14 Claims. (Cl. 267—102)



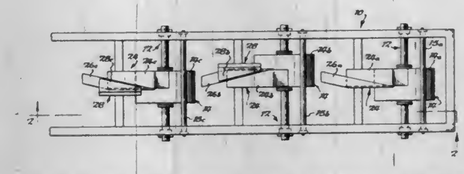
1. In a seating structure having upper and lower back rails, a front rail and back springs mounted on and extending between said upper and lower back rails, a seat spring mounted on and extending between said front and lower back rails, said seat spring including a main load supporting portion and a rear portion which extends rearwardly below said lower back rail thence upwardly adjacent the rear side thereof and is suspended therefrom.

3,285,598
WIRE SPRING ASSEMBLY FOR SEAT STRUCTURES
Edward H. Gutzman, Georgetown, Ky., assignor to Hoover Ball and Bearing Company, Saline, Mich., a corporation of Michigan
Filed Sept. 21, 1964, Ser. No. 397,810
10 Claims. (Cl. 267—107)



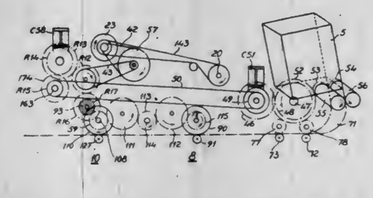
1. In a spring assembly for seating structures, a spring unit having a pair of ends one of which constitutes a mounting end, an inner side and an outer side, said unit comprising a plurality of longitudinally extending transversely spaced zigzag face springs and a single support spring for said face springs positioned on the inner side of said face springs, each of said face springs having a plurality of transversely extending cross wire portions and connecting wire portions extending therebetween, said support spring having a connecting section comprised of a pair of legs spaced in a direction transversely of said face springs, each of said legs having a pair of cross wire portions arranged adjacent a pair of face springs cross wire portions, means connecting longitudinally spaced cross wire portions of each face spring to a pair of adjacent cross wire portions in one of said legs, a V-shape mounting section integral with said connection section, and a border wire section formed integral with said support spring and extending in a direction transversely of said face springs, said border wire being positioned longitudinally outwardly of said face springs at the end of said unit opposite said one end.

3,285,599
WEB FOLDING MACHINE
Perry O. Pherson, Rexdale, Ontario, and James A. Murphy and Cecil H. Watkins, Toronto, Ontario, Canada, assignors to Canadian International Paper Company, Montreal, Quebec, Canada, a corporation of Canada
Filed Mar. 7, 1963, Ser. No. 265,303
27 Claims. (Cl. 270—40)



1. In a machine for interfolding a succession of webs in stacked relation, means for moving a stack of webs, a plurality of devices for feeding successive webs into the stack, conveyor means for moving the said devices in a closed loop path at least a part of which is parallel and countercurrent to the movement of the stack while the devices are feeding successive webs into the stack, and web roll supports carried by the conveyor means for supplying at least one web to each said folding device.

3,285,600
CARD PUNCHING AND REPRODUCING MACHINE
André Emile Godin, Choisy-le-Roi, France, assignor to Compagnie des Machines Bull (Societe Anonyme), Paris, France
Filed Oct. 14, 1964, Ser. No. 403,822
Claims priority, application France, Oct. 24, 1963, 951,653
5 Claims. (Cl. 271—10)

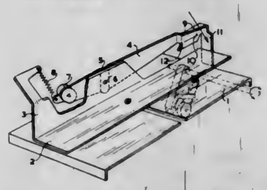


1. In a machine for punching record cards, a card supply magazine, a first card track portion situated close to an outlet card throat passage of the said magazine, a punching station, a second card track portion arranged to conduct cards to the said punching station, the planes of the said first and second card track portions being substantially inclined at the same angle but in opposite directions in relation to a common reference plane and being disposed substantially at a right angle in relation to one another, a curvilinear connecting portion providing a helical card path and disposed between the said first and second card track portions in order that the latter may form a single continuous track, motor driving means, card extraction means which may be coupled to the said driving means in order to advance a card from the said magazine one at a time, so that the leading edge of the said card is stopped close to the said connecting portion in a first intermediate stopping position and card advance means situated at the beginning of the said second track portion and adapted to be coupled to the said driving means in order continuously to advance a card from the first intermediate stopping position to a second intermediate stopping position situated in front of the said punching station.

3,285,601
SHEET SEPARATING MECHANISM PARTICULARLY FOR PRINTING MACHINES AND DUPLICATORS

Karl Gustav Zeuthen, Gentofte, Denmark, assignor to Zeuthen & Aagaard A/S, Glostrup, Denmark, a company of Denmark

Filed Feb. 1, 1965, Ser. No. 429,435
Claims priority, application Denmark, Sept. 19, 1964, 4,622/64
15 Claims. (Cl. 271—17)

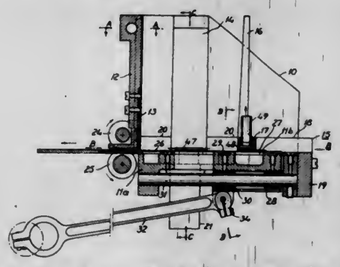


1. A sheet separating mechanism comprising a feed table for supporting a stack of sheets, a pair of laterally adjustable side rails for limiting the space available for the stack of sheets in the lateral direction, means for feeding the topmost sheet from said stack, a front stop to be engaged by the front edge of a corner of an advanced sheet, at least one angular finger having a top angle part for resting upon the front corner of the topmost sheet and a side angle part for engaging the upper part of the side of the stack of sheets, means for supporting said angular finger movably in relation to said side rails in the vertical direction as well as in a direction substantially perpendicular to said side rails and means for pressing said side angle part against the side of the stack of sheets.

3,285,602
RECORD CARD FEED MECHANISM

Pieter Hendrik Hartel, Amsterdam Oost, Netherlands, assignor to Bull Nederland (Administratie-en Statistiekmachine, MIJ., N.V.), Amsterdam, Netherlands

Filed Feb. 15, 1965, Ser. No. 432,650
Claims priority, application France, Feb. 26, 1964, 965,154, Patent 1,394,934
7 Claims. (Cl. 271—32)



1. A feed mechanism for feeding rectangular record cards in a direction transverse to their length into the feed throat of a machine comprising:

a card hopper for containing cards in stacked relation,

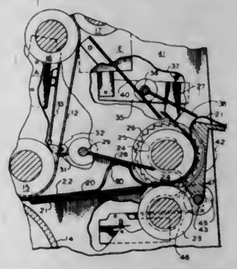
a stationary suction chamber located at the bottom of said hopper, coupled to a source of partial vacuum and having an upper plate formed with a plurality of apertures in the form of slots parallel to the card feed direction, and

a reciprocating card feed carriage adapted to be reciprocated toward and away from the feed throat of the machine, this carriage comprising a carriage plate thinner than said upper plate and longer than the card width and which is arranged to be displaced rectilinearly below the bottom of the card stack and upon the upper plate of said suction chamber, said carriage plate having several series of holes through it, each series of holes being located in alignment with a slot of the upper plate of said suction chamber in order to apply suction to the lower face of the lowermost card of the stack, said carriage plate also bearing card picker means arranged to be at the rear side of the trailing edge of a card when said carriage is in its rearmost position.

3,285,603
TRACING SEPARATOR

Robert L. Boston and Robert C. Goodman, Vestal, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

Filed July 15, 1964, Ser. No. 382,900
6 Claims. (Cl. 271—36)

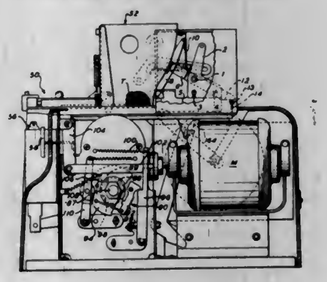


6. The method of separating the original tracing from the sensitized copy material after exposure which comprises, passing both said material toward co-engaging surfaces of a pair of rollers, applying a hold for stopping the rotation of one of said rollers upon engaging said materials while continuing rotation of the other of said rollers, thereby constraining said material in contact with said driven roller to slip by said material held by said stopped roller, releasing the hold on said stopped roller and causing passage of said separated material into divergent directions.

3,285,604
TAG SEPARATING DEVICES HAVING EDGE RIFFLING MEANS

Charles A. Parker, East Orange, N.J., assignor to Kimball Systems, Inc., Farmingdale, N.Y., a corporation of New York

Filed Oct. 26, 1964, Ser. No. 406,481
20 Claims. (Cl. 271—44)

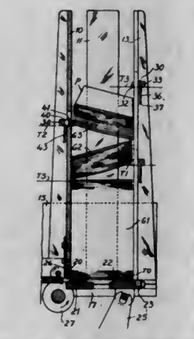


1. In a tag feeding and separating device comprising a hopper for holding a stack of tags;
support means for said tags; and
means operable for advancing tags from said hopper seriatim along said support means: the combination therewith of tag separating means including a member operable in one direction of its movement to riffle the trailing edges of the tag stack for separating tags; and
operable in a reverse movement thereto for entering as a wedge between tags so riffled whereby to effect further separation thereof.

3,285,605
CARD SUPPLY MAGAZINES

Jacques Vasse, Paris, France, assignor to Compagnie des Machines Bull (Société Anonyme), Paris, France

Filed Dec. 1, 1964, Ser. No. 415,070
Claims priority, application France, Dec. 16, 1963, 957,255, Patent 1,387,198
2 Claims. (Cl. 271—61)



1. A magazine for the supply of record cards, wherein a stack of cards is guided by a front guide means and a rear guide means, these means being substantially vertical above the base of the magazine, which comprises an extraction mechanism for advancing the cards one at a time in the direction of their smallest dimension or width, and comprising in addition at least two lug devices, each comprising one or more lugs projecting into the interior of the magazine, a first one of these lug devices being situated in one of the said guide means on a retaining line parallel to the said base and above a chosen upper level to limit a lower stack of cards, and the second one of the said lug devices being disposed in the other one of the said guide means above the first lug device so as to retain an approximately predetermined quantity of cards, said magazine being characterized in that each lug of each lug device is urged by a spring against a fixed bearing member to project into the interior of the magazine in such manner that an action exerted upwardly on that portion of the said lug which projects into the magazine, by cards manually lifted in the said magazine in order to be extracted therefrom, forces out of the magazine the said portion of the lug normally projecting into the magazine, which portion is thereafter returned to its normal position under the action of the said spring.

3,285,606
BAG FEEDING APPARATUS

Allie Johnson and Roy D. Choate, Pulaski, Paul J. Zimmerman, Nashville, and Eldon E. Johnson, Madison, Tenn.; said Zimmerman and said Eldon E. Johnson assignors to Seco, Inc., Goodlettsville, Tenn., a corporation of Tennessee

Filed July 29, 1964, Ser. No. 385,897
6 Claims. (Cl. 271—62)

1. An apparatus for feeding stacked articles of uniform size comprising:

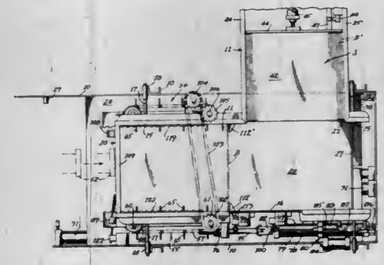
(a) a first receptacle for receiving said articles in upright position having first and second elongated guide members spaced apart substantially the width of said articles and forming a discharge end,

(b) a second receptacle having third and fourth elongated guide members spaced apart to receive a stack of said articles in upright position, stacked substantially parallel between said third and fourth guide members,

(c) said third and fourth guide members extending normal to said first guide member outside said first receptacle to form an opening in said first guide member spaced from said discharge end,

(d) a first pusher member in said first receptacle,

(e) means for reciprocably moving said first pusher member longitudinally of said first receptacle from a retracted position on the opposite side of said opening from said discharge end to a position between said opening and said discharge end,



(f) a second pusher member in said second receptacle,

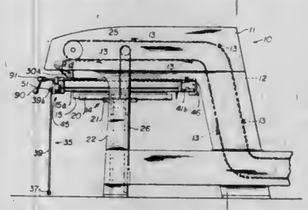
(g) means for reciprocably moving said second pusher member longitudinally within said second receptacle between a position occupying said opening and a retracted position spaced from said opening at least the width of said stack, and

(h) means mounted in said first and second guide members adjacent said discharge end for moving the top portions of said articles toward said discharge end independently of said first pusher means to position each article at said discharge end substantially vertically.

3,285,607
SHEET DELIVERY MECHANISM HAVING AN AUXILIARY PILE SUPPORT

Robert E. Lindemann, Medina, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware

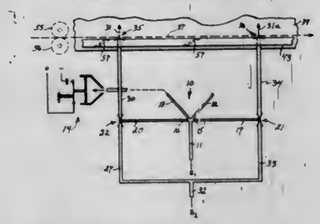
Filed Oct. 14, 1964, Ser. No. 403,735
15 Claims. (Cl. 271—68)



1. A sheet delivery mechanism comprising a main pile hoist for supporting a pile of sheets thereon, means for raising and lowering said main pile hoist, a sheet delivery conveyor for moving sheets to a position over said main pile hoist and at which the sheets are released by said delivery conveyor and dropped onto said main pile hoist, an auxiliary pile support movable to a location above said main pile hoist to receive sheets dropped from said

delivery conveyor, support means for receiving and supporting said auxiliary pile support in a first position above said main pile hoist at a first distance from said conveyor and in a second position above said main pile hoist at a second distance from said conveyor greater than said first distance and for movement between said positions, manually operated means to vertically move said support means between first and second positions only so as to move said auxiliary pile support between its first and second positions only, and said auxiliary pile support having support portions insertable into supporting relation with said support means when said support means is in its first position and removable from said support means when said support means is in its second position to transfer the pile on said auxiliary pile support to the main hoist thereunder and including pile receiving portions.

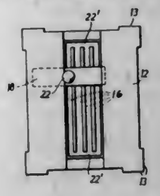
3,285,608
PNEUMATIC SHEET DETECTING CONTROL MEANS
Brooks Lyman, Pound Ridge, N.Y., assignor to Pitney-Bowes, Inc., Stamford, Conn., a corporation of Delaware
Filed Oct. 5, 1964, Ser. No. 401,420
7 Claims. (Cl. 271—74)



5. In a sheet handling device;
means for transporting a sheet along a predetermined sheet feed path;
a fluid amplifier adapted to be coupled to an air pressure source and having a pair of output lines and a pair of control lines;
a first aerodynamic sheet sensing means adapted to direct a jet of air across said feed path;
means for coupling said first aerodynamic sheet sensing means to one of said control lines of said fluid amplifier;
a second aerodynamic sheet sensing means adapted to direct a jet of air across said feed path; and
means for coupling said second aerodynamic sheet sensing means to the other control line of said fluid amplifier whereby a sensing operation of either of said aerodynamic sheet sensing means can cause said fluid amplifier to alter its mode of operation.

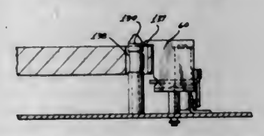
3,285,609
SPEECH AND SOUND REPRODUCING DEVICE IN DOLLS, FIGURES AND OTHER OBJECTS
Waldemar Hiller, Mastricherstr. 26, Cologne, Germany
Filed Nov. 25, 1964, Ser. No. 414,025
Claims priority, application Germany, Dec. 6, 1963, H 51,059
7 Claims. (Cl. 274—1)

1. For dolls, figures and other articles such as advertising boxes and savings banks, a speech and sound reproducing device having a sound record and a sound pick-up stylus guided in grooves of said record, said device comprising: a housing inset in an opening of and secured to the article; a stationary elongated record secured on the bottom of and within said housing and having a plurality of straight grooves thereon extending longitudinally of said record and parallel to each other and to said bottom; at least some of said grooves being sound grooves having respective sound tracks therein; a said stylus; a slide carrying said stylus and shiftably mounted and guided in parallel slots at the top of the housing for movement parallel to said bottom; the mounting of said stylus on the housing through said slide affording stylus displaceability both



longitudinally and transversely of said record; the ends of adjacent said grooves interconnected through switching grooves; an outwardly extending hand grip connected to the slide; whereby said sound pick-up stylus is movable by hand while guided and remaining in engagement in the said grooves with forward, switching and backward stylus movement for sound production at said sound grooves.

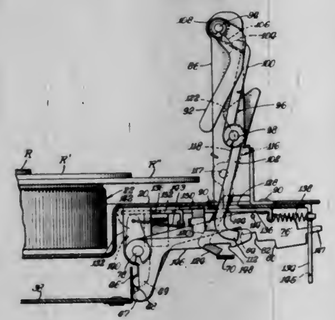
3,285,610
MAGNETIC RECORDER CARTRIDGE LOCK DOWN MECHANISM
George B. Shields, Columbus, Ohio, assignor, by mesne assignments, to Dage-Bell Corporation, a corporation of Delaware
Filed Sept. 9, 1960, Ser. No. 54,986
4 Claims. (Cl. 274—4)



1. In a magnetic tape recorder, a deck plate, a capstan extending from said deck plate, a pinch roller supported on said deck plate for movement between an inactive position and an active position in which it is pressed against said capstan, and a lock down mechanism for receiving and supporting a magnetic tape cartridge on said deck plate to position magnetic tape therein between said capstan and said pinch roller, comprising: a shaft mounted on said deck plate and adapted to extend into a slot in one side portion of said cartridge, an enlarged head on said shaft adapted to hold said one side portion of said cartridge against movement away from said deck plate, releasable hook means mounted on said deck plate and arranged for movement between an inactive position and an active position in which it is operative to extend over an opposite edge portion of said cartridge to hold said opposite edge portion of said cartridge against movement way from said deck plate, and means mechanically interconnecting said hook means and said pinch roller for conjoint movement between said inactive and active positions thereof.

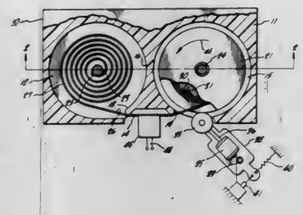
3,285,611
INTERMIX SELECTOR MECHANISM FOR RECORD CHANGERS
Ralph E. Freathy, Stevensville, Mich., assignor to V-M Corporation, Benton Harbor, Mich., a corporation of Michigan
Filed Sept. 12, 1963, Ser. No. 308,592
12 Claims. (Cl. 274—10)

1. In a record changer of the type adapted to handle a plurality of intermixed records of at least three different sizes and having a tone arm adapted during a record change cycle to be raised to an elevated position and moved first radially outwardly to permit a new record to be dropped from a spindle to a turntable associated therewith and then radially inwardly to set down in playing position on the new record, the improvement comprising, in combination, a tone arm, and positioning means for interrupting inward swinging movement of said tone arm to stop the latter in proper set down position for playing a record on the turntable, said positioning means including engagement means and vertically adjustable stop means normally disposed at a height where it is adapted to engage said engagement means and stop said tone arm in proper set down position for playing a small size record, first movable selector means positioned for engagement and movement by records of predetermined sizes as they drop to the turntable, said first movable selector means being positioned out of the drop path of small size records and in the drop path of both intermediate and large size records, means responsive to movement of said first movable selector means which shift said stop means to an intermediate height where it is adapted to engage said engagement means for stopping said tone arm in proper set down position for playing an intermediate size record, second movable selector means positioned for engagement and movement by records of a predetermined size as they drop to the turntable, said second movable selector means being positioned out of the drop path of both small and intermediate size records and in the drop path of large size records, and means responsive to movement of said second movable selector means which shift said stop means to a further height where it is adapted to engage said engagement means for stopping said tone arm in proper set down position for playing a large size record, whereby said tone arm will be set down in a playing position corresponding to the size of the record to be played.



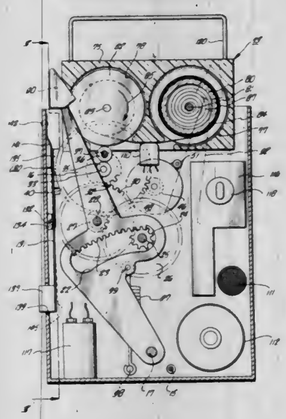
3,285,612
RECORDING AND PLAYBACK APPARATUS
Barry K. Hallamore, Westminster, Calif., assignor, by mesne assignments, of thirty-seven and one-half percent to Audio Slide Company, a partnership
Filed Apr. 9, 1965, Ser. No. 446,842
12 Claims. (Cl. 274—11)

1. Recording and playback apparatus comprising a support defining a recording medium storage region and a recording medium receiving region, a recording medium comprising an elongated resilient member forming in said storage region a coil spring having a preshaped initial configuration and having the property of rewinding itself into said initial configuration when a portion of said elongated resilient member has been pulled from the coil spring and is released to permit the coil spring to rewind itself, means for enabling a recording operation and selectively a playback operation by pulling from said coil spring, and moving to said receiving region, a portion of said elongated resilient member, and means



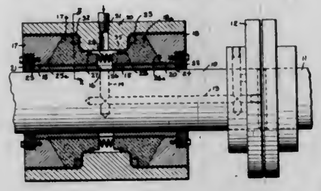
for releasing after a recording operation and after a playback operation the portion of said elongated resilient member pulled from said coil spring to permit said coil spring to rewind itself into said initial configuration.

3,285,613
RECORDING AND PLAYBACK APPARATUS
Barry K. Hallamore, Westminster, Calif., assignor, by mesne assignments, of thirty-seven and one-half percent to Audio Slide Company, Arcadia, Calif., a partnership
Filed Sept. 15, 1965, Ser. No. 487,362
25 Claims. (Cl. 274—11)



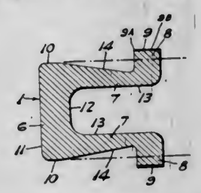
15. In a recording and playback apparatus, a manually operable lever means mounted to be movable from an initial to an advanced position and coupled to a recording medium to move the recording medium to a first position during movement of the lever means from the initial to the advanced position, a first spring means coupled to the lever means to return the lever means from the advanced to the initial position, a second spring means coupled to the recording medium to drive the recording medium to a second position during said return of the lever means to the initial position, and a governor means coupled to the recording medium and the lever means, whereby the movements of the recording medium to the second position and the return of the lever means to the initial position are speed-controlled and synchronized.

3,285,614
INTERMEDIATE SHAFT PNEUMATIC SEAL
John A. McClenathan, Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Aug. 13, 1963, Ser. No. 301,747
5 Claims. (Cl. 277—62)



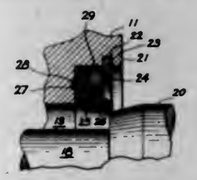
1. A rotary seal for directing fluids radially inwardly toward a shaft having a radial passage comprising, a sleeve member for concentrically surrounding the shaft having a radial passage for communicating with the passage of the shaft, end seals sealing the sleeve member to the shaft, axially spaced rotary sealing rings carried on the sleeve member having axially inwardly facing annular continuous sealing faces, axially spaced stationary sealing rings having a fluid flow space therebetween communicating with said sleeve passage and having sealing surfaces in continuous sealing engagement with said sealing faces, an annular housing surrounding said stationary sealing rings, said rotary sealing faces and said stationary sealing surfaces being at an angle between the axis of the shaft and a radial line, said sealing faces and sealing surfaces extending from said annular housing surrounding said stationary sealing rings to said sleeve member with substantially no open space between said sealing faces and sealing surfaces, and annular sliding seals between said housing and said stationary sealing rings.

3,285,615
SEAL
Nicholas D. Trbovich, 59 Fieldcrest Court, West Seneca, N.Y.
Filed Sept. 20, 1963, Ser. No. 310,223
5 Claims. (Cl. 277—180)



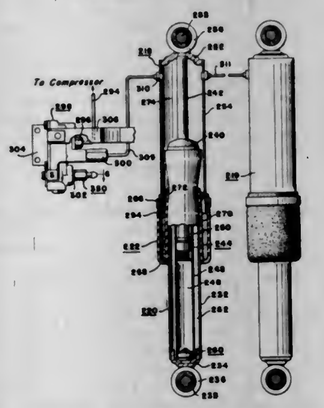
1. A seal comprising an annular unitary metallic member of generally U-shaped, radially facing transverse section having a base and opposite side walls extending from one side thereof, said side walls terminating at their outer ends in laterally outwardly projecting flanges, the opposite ends of said base comprising stops against overcompression of said seal, the inner surfaces of said side walls being flat and substantially parallel when said member is unstressed, and the outer surfaces of said walls converging toward said outer ends thereof from said base, the thickness of said side walls adjacent said outer ends thereof being no more than substantially one-half the thickness thereof adjacent said base, said base being thicker than said side walls at any point therealong, said flanges projecting beyond said opposite ends of said base and terminating in flat surface engaging sealing end portions, said surface engaging end portions being substantially parallel when said member is unstressed and having a coating of ductile material which will cold flow into irregularities of the surfaces being sealed.

3,285,616
CUSHION SEAL FOR PISTON AND CYLINDER ASSEMBLIES
Kingsley A. Doutt, 115 Maple St., Alpena, Mich.
Filed Apr. 14, 1964, Ser. No. 359,677
1 Claim. (Cl. 277—181)



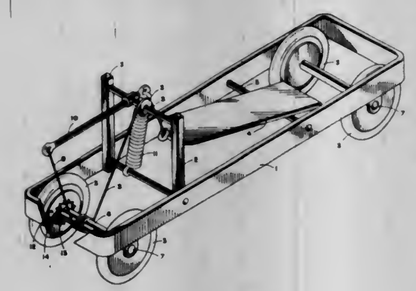
In combination, a piston and cylinder assembly including a cylinder head having an annular recess, a piston rod, an enlarged portion on said piston rod, said enlarged portion having a tapered end portion, a cushion seal therefor positioned in said annular recess, said cushion seal comprising a flexible annular homogenous body member substantially rectangular in cross section, an annular recess in the front face thereof; an annular rigid member rectangular in cross section secured in position in said recess, the front face of said rigid member being planar and in the plane of the front face of the outer peripheral portion of said flexible annular body, an annular groove in the wall of said annular recess, a snap key ring positioned in said groove and contacting the outer front face of said rigid member and annular body and holding them in place, the inner annular portion of said flexible body projecting forwardly beyond the said plane in the form of an outwardly tapering annular lip for initial sealing engagement with the said tapered end portion of said enlarged portion on said piston rod.

3,285,617
VEHICLE SUSPENSION SYSTEM
George W. Jackson, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 28, 1965, Ser. No. 467,412
2 Claims. (Cl. 280—6)



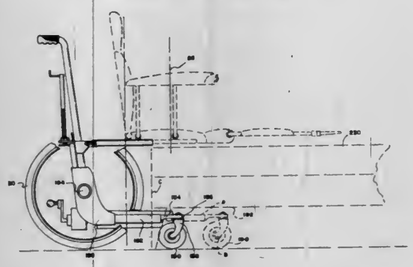
1. An automatic and manual air supply system for supplying pressure to an air actuated spring of an automatic leveling rear suspension system for automatically leveling a sprung mass with respect to an unsprung mass, comprising a pressure receiver having an open end, an air compressor having a housing portion forming an outlet opening therefrom, said housing portion serving to close said open end of said receiver and to locate said outlet opening interiorly of said receiver, means forming an outlet opening in said housing portion for directing pressurized fluid exteriorly of said receiver, a regulator housing having a first tubular portion supportingly received by said housing portion for receiving fluid from said outlet opening therein, a second tubular portion formed coaxially of said first tubular portion forming a pressurizable control chamber, a third tubular portion serving as an outlet from said pressurizable control chamber, a fourth tubular portion formed coaxially of said third tubular portion, means for communicating the interior of said first and fourth tubular portions, first valve means in said first tubular portion for controlling fluid flow from said receiver into said pressurized control chamber, said first valve means including an actuatable stem for opening and closing communication between the interior of said first tubular portion and said pressurizable control chamber, means within said third tubular portion including a reciprocal piston member having a portion thereof in engagement with said stem, and spring means for biasing said piston means into engagement with said stem for effecting a predetermined opening movement thereof opposed by a predetermined pressure build-up in the pressurizable control chamber, a second valving element supported within said fourth tubular member for manually directing pressurized fluid into said pressurizable control chamber of said regulator independently of pressure buildup in said pressure receiver produced by said air compressor.

3,285,618
WHEELED SKIS
Herman L. Welch, 1929 N. New Hampshire Ave., Los Angeles, Calif.
Filed May 13, 1964, Ser. No. 366,998
1 Claim. (Cl. 280—11.11)



A vehicle, designed to be worn upon the foot as one of a pair, consisting of a frame having horizontal elements supported by wheels; upright elements constituting a derrick supporting a sheave axle, in combination with a propulsion system comprised of a treadle hinged to the frame; a freely rotating drum, mounted on an axle in the frame; a clutch attached to the drum and adapted to intermittently engage the frame wheels; an arm, pivoted in the derrick head and held in tension by a spring and a cable, coiled around the periphery of the drum with one end thereof attached to the end of the tension arm and the opposite end attached to the toe of the treadle over the sheave in the derrick head.

3,285,619
WHEEL CHAIR
John V. Kitrell, Lincoln, Nebr., and Robert R. Wickes, Scottsdale, Ariz., assignors to Lincoln Carriage Corporation, Tempe, Ariz., a corporation of Arizona
Filed Feb. 11, 1965, Ser. No. 431,956
5 Claims. (Cl. 280—34)

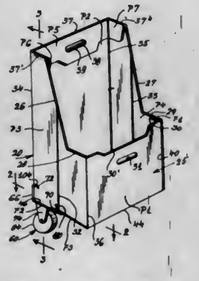


1. In a wheel chair the combination of: a main frame; a cantilever frame portion of said main frame; first wheels disposed to support said cantilever frame portion, said first wheels of small enough diameter to pass under a bed; first axle means for rotatably mounting said first wheels relative to said cantilever frame portion; second relatively larger wheels supporting said frame and disposed to support said wheel chair at a side of a bed, second axle means for said second wheels for rotatably coupling them to said frame, said relatively larger wheels having peripheries disposed and adapted to be operated by a patient in said chair; a seat frame pivotally mounted on said main frame on a substantially vertical axis, said seat frame cantilevered from said main frame and disposed in vertically spaced relation with and above said cantilevered frame portion and thereby adapted to be projected over a bed when said first supporting wheels are disposed under a bed; and means supported on said frame for holding said first and second axle means and said first and second wheels in various relative forward and rearward spaced positions on said frame to permit variations of operating positions of said first and second wheels in order to clear the peripheries of said second wheels relative to the side of a bed when said first supporting wheels are under a bed and forward relative to said frame and a patient supported on said seat frame above the bed; said means supported on said frame comprising extendable means in connection with said first wheels for extending them forwardly and rearwardly relative to said wheel chair frame.

3,285,620
SHOPPING CART WITH SLIDE IN WHEEL BRACKETS
Sol Mitty, Neil Mitty, and Jerald Mitty, all of 144—45 78th Ave., Flushing, N.Y.
Filed Feb. 19, 1965, Ser. No. 433,922
8 Claims. (Cl. 280—47.26)

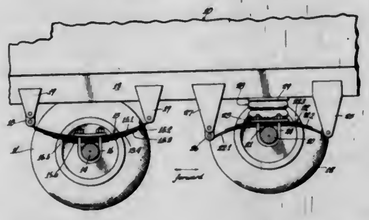
1. A shopping cart having a set-up cart body and quickly attached wheel units, said cart body being formed from a one-piece blank made of foldable cardboard, said body having vertical front, rear and side panels defining a rectangular tube; a first flap attached by a fold to one end of the rear panel; a second flap attached by a fold to one end of the front panel; third and fourth flaps attached by folds to one end of the side panels respectively, all of the flaps being located at one end of said body, said side panels third and fourth flaps having center folds so that the cart body can be folded flat with portions of the side panels and third and fourth flaps turned inwardly between the front and rear panels, said rear and side panels and said first, third and fourth flaps

having slots and adjacent holes formed therein; each of said slots having curved portions in the side panels and straight portions in the first, third and fourth flaps, each of the wheel units including an L-shaped bracket having curved flanges at ends of mutually perpendicular flat plates, so that the wheel brackets are slidable laterally



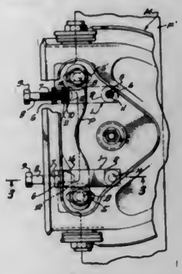
in said slots to engage with the rear panel, first, third and fourth flaps, each of said flat plates having holes therein registering with other holes in the rear panel, first, third and fourth flaps; and double prong fasteners engaged in the registered holes and holding the wheel units on the cart body.

3,285,621
WHEELED VEHICLE SUSPENSION
Stephen Turner, Jr., 6611 Belmont Ave., Girard, Ohio
Filed Jan. 12, 1965, Ser. No. 424,933
3 Claims. (Cl. 280—81)



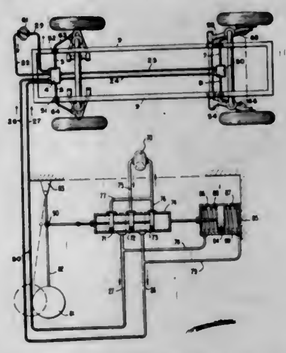
1. A wheeled vehicle having longitudinally extending frame members in side-by-side relation and each frame member being disposed adjacent a respective side of said vehicle, first and second axles underlying said frame members and extending transversely thereof, said axles being spaced from each other longitudinally of said vehicle and each mounting wheels along which the vehicle may travel, means connecting said first axle to said frame members whereby said first axle provides a primary means of vehicle support, a leaf spring on each side of said vehicle adjacent respective frame members and extending longitudinally thereof, each leaf spring having its end portions secured to respective frame members and having its intermediate portion overlying and secured to said second axle, said leaf springs cooperating to normally bias said second axle upwardly to raise the wheels mounted thereon above the surface along which the vehicle travels, vertically flexible pneumatic chambers extending between respective frame members and said second axle, and means for selectively applying pneumatic pressure to said chambers to cause vertical elongation thereof thus biasing said second axle downwardly against the force exerted by said springs to lower the wheels mounted thereon to forceable engagement with the vehicle travel surface.

3,285,622
CASTER AND CAMBER ADJUSTING CLAMP MEANS
John H. Castoe, 6718 Shady Grove St., Tujunga, Calif.
Filed Oct. 19, 1964, Ser. No. 404,618
4 Claims. (Cl. 280—96.2)



1. An adjusting means for setting the camber and caster adjustment of the mounting means for the independently sprung wheels of a motor vehicle chassis and in which an elongated pivot member constituting the pivot means for the upper arm of the mounting means for each front wheel extends parallel to the length of the vehicle and is securable in adjusted positions transversely of its length in a horizontal plane relative to the vehicle chassis by separate means adjacent the respective ends of said pivot member; said adjusting means comprising a pair of identical, quick detachable clamp devices, each of said devices including an anchoring means detachably interengageable with a portion of the vehicle chassis at the outboard side of the pivot member and a screw threaded component adjustably movable toward and away from said anchoring means and engageable with the inboard side of the pivot member.

3,285,623
ANTI-TILTING SYSTEM FOR VEHICLES
Friedrich H. van Winsen, Kirchheim-Teck, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Sept. 8, 1964, Ser. No. 394,802
4 Claims. (Cl. 280—112)

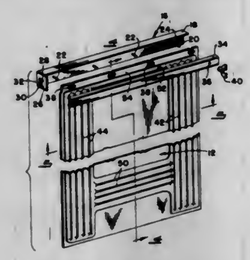


1. A system for cross-stabilizing the vehicle body in motor vehicles, in which the wheel suspension means of each axle are coupled with one another by an interrupted torsion rod stabilizer whose two parts are operatively connected with each other by a hydraulic adjusting motor operable to rotate the torsion rod ends with respect to each other by the working fluid in case of tilting of the vehicle body, and in which the working fluid is controlled by the control fluid of a hydraulic control circuit adapted to be influenced by the cross tilting forces, comprising:

working fluid circuit means operatively connected with the adjusting motor, and control circuit means operatively connected with said working circuit means for controlling the latter in dependence on the transverse tilting forces including slide valve means and sensing means constructed as pendulum and operatively connected with said control slide valve means in such a manner that the control slide valve means is displaced upon change of the vehicle body from the horizontal,

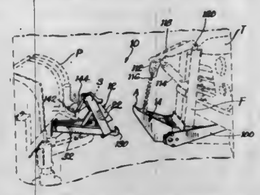
said slide valve means including valve housing means, a slide valve member in said valve housing means, and means including spring force storage means for loading said valve housing means by the control fluid and by the spring force storage means in such a manner that in case of deflection said pendulum from the center position thereof said valve housing means is displaced by the pressure present at the slide valve means against the spring force of said spring force storage means and in the same direction as said slide valve member.

3,285,624
SPLASH GUARD AND MOUNTING ASSEMBLY THEREFOR
Henry S. Aber, 4033 W. 140th St., Cleveland, Ohio 44135, and Frank T. Goetz, 31565 Lake Road, Bay Village, Ohio 44140
Filed Oct. 19, 1964, Ser. No. 404,699
16 Claims. (Cl. 280—154.5)



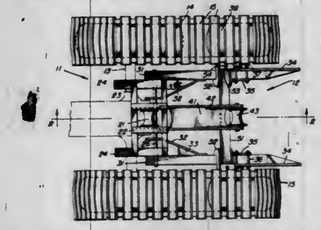
1. A splash guard mounting assembly adapted to be mounted on a wheeled vehicle comprising, a mounting bracket generally L-shaped in cross section, with one leg of such L-shaped bracket being adapted to be mounted on the underframe of the vehicle, the other leg of said L-shaped bracket being provided with a plurality of studs extending from the surface thereof, with at least one of said studs being threaded, said bracket further including an end section rigidly secured to at least one of said legs and extending in the same direction as the said one leg, said end section being formed with a generally I-shaped opening, a channel-shaped clamp member adapted to overlie said other leg of said bracket and being provided with at least one opening in the base thereof adapted to be aligned with said threaded stud, one end of said clamp member extending through said generally I-shaped opening in said end section of said bracket when said clamp member is mounted in position with said opening thereof receiving said threaded stud, said I-shaped opening being shaped to receive said channel-shaped clamp member in reversed positions thereof thereby to vary the distance between said other leg and the effective clamping surface of said clamp member, and means engaging said threaded stud for holding said clamp member in position on said bracket.

3,285,625
QUICK COUPLER
Leonard R. Krueger, Wausau, Wis., assignor to Wausau Iron Works, Wausau, Wis., a corporation of Wisconsin
Filed Dec. 29, 1964, Ser. No. 421,882
7 Claims. (Cl. 280—479)



1. A quick coupling means for automatically releasably connecting an implement to a prime mover comprising a first coupling member adapted to be connected to an implement, said first coupling including an elongated front guide means, a spaced rear plate, and upwardly converging spacer means for spacing said front guide means and rear plate and for defining with said front guide means and said rear plate a generally vertical open-bottomed cavity, a second coupling member adapted to be connected to a prime mover for movement into and out of engagement with said first coupling member, said second coupling member including an upper projection and a front guide plate engageable with said front guide means for slidably guiding said projection into confining reception by said cavity, and means secured to said quick coupling means remote from said cavity and said projection for automatically releasably interlocking said cavity and projection when said projection is moved into confining reception within said cavity.

3,285,626
ARCHED TOWING MACHINE FOR STABILIZING TRACTORS
Joseph E. Blonsky, Summerville, S.C., assignor to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware
Filed July 27, 1964, Ser. No. 385,410
3 Claims. (Cl. 280—480)



1. An arched towing machine which is movably attached to the rear of a light tractor used in heavy towing, comprising:

(a) a pair of idler wheel assemblies, each assembly comprising:

(1) a torsion beam which is movably attached to the rear of the tractor,

(2) an adjustably-mounted spindle, projecting perpendicularly therefrom,

(3) an idler wheel rotatably mounted on the spindle,

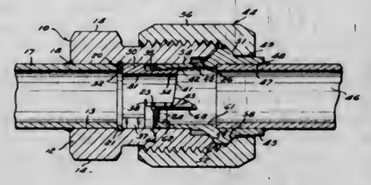
(b) a lever beam assembly, comprising:

(1) a mounting means rigidly attached to each torsion beam and

(2) a lever beam pivotably suspended at each end from a mounting means, and

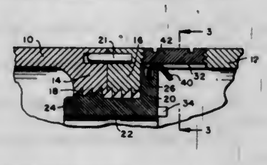
(c) a shock roller assembly which comprises:
(1) a shock-absorbing means attached to and resting upon the lever beam,
(2) a rigid shock roller beam which is above said idler wheel assembly, centrally aligned therewith, and in hinged relationship thereto, said roller beam being attached to and resting upon said shock-absorbing means, and
(3) a shock roller which is rotatably attached to the rear end of the roller beam.

3,285,627
PIPE COUPLING
Robert E. Kozulla, Willowick, Basil S. Segro, Cleveland, and Louis B. Courtot, Euclid, Ohio, assignors to The Weatherhead Company, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 10, 1964, Ser. No. 343,546
9 Claims. (Cl. 285—3)



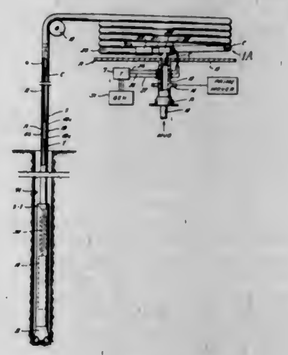
1. A coupling comprising first and second coupling members, each of said coupling members having an axial bore therein, means to move said coupling members toward each other into coupled position with their respective bores in axial alignment, a diaphragm on one of said coupling members normally extending across the bore of said coupling member in sealing relationship, a cutter member carried by one of said coupling members, and arranged to cut through said diaphragm to permit fluid flow through said bores when said coupling members are secured together in said coupled position, a substantially rigid, nondeformable, circular surface on said first member, a deformable nose on said second member adapted to telescope with said circular surface with an interference fit as said coupling members move to said coupled position, said telescoping causing said circular surface to progressively deform said nose providing a metal-to-metal sliding seal between said coupling members prior to the cutting of said diaphragm and maintaining said metal-to-metal sliding seal as said coupling members move to said coupled position to prevent leakage of fluid within said coupling from between said coupling members.

3,285,628
TUBE JOINT
Gerrit De Vries, 2902 N. Stonehill Drive, Altadena, Calif.
Filed June 16, 1964, Ser. No. 375,677
6 Claims. (Cl. 285—27)



1. A tube joint comprising:
(a) a first cylindrical tube having a first internal thread adjacent one end thereof,
(b) a second cylindrical tube having a second internal thread adjacent one end thereof,
(c) said tubes being disposed in axial alignment with an end of one tube admitting an end of the other tube and in a plane transverse to the axis of the tubes, the tubes being the same external diameter at their junction, whereby the outer surface of one tube forms a smooth continuation of the outer surface of the other tube,
(d) said second tube having an annular radially extending abutment surface spaced from its end and extending from said second internal thread to the inside surface of said second tube,
(e) a ring for securing said tubes together,
(f) said ring having a radially outwardly extending annular flange adjacent one end thereof with a surface thereon for engaging said annular abutment surface,
(g) said ring having external threads extending from its other end to a transverse plane spaced from said surface on the flange and so proportion that its threads engage only said second threads when the tubes are disassembled, engages both said first and second threads when said ring is rotated during assembly, and engages only said first threads during final assembly, and when said surface on the flange engages said annular abutment surface,
(h) an aperture extending through said second tube at a position spaced from its end to provide access to said ring, whereby it may be rotated from a position adjacent the outside of said second tube,
(i) means for indexing the tubes together and against relative rotation in a position such that when the ends of the tubes are in abutting relation said first and second internal threads form a continuous thread to thereby permit said external threads to move into engagement with one or the other of the internal threads when it is rotated during assembly or disassembly, and
(j) means for closing said aperture.

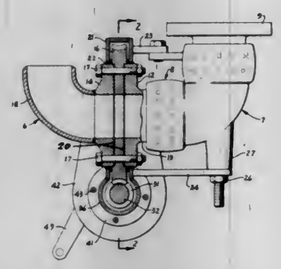
3,285,629
METHODS AND APPARATUS FOR MOUNTING ELECTRICAL CABLE IN FLEXIBLE DRILLING HOSE
Roy H. Cullen, Jimmie R. Aker, and Charles H. Elliott, Houston, Tex.; said Aker and said Elliott assignors to Roy H. Cullen, Houston, Tex.
Filed Dec. 11, 1963, Ser. No. 329,734
2 Claims. (Cl. 285—119)



1. In a deep well boring installation, comprising:
(a) a hollow flexible hose member for conducting drilling mud therethrough,

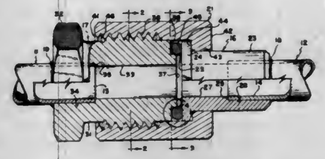
(b) an electrical cable disposed in said hose and of such a diameter that the bore of the hose is open at all times for the flow of the drilling mud therethrough,
(c) a reel for supporting the combined hose member and cable for feeding same to a well bore,
(d) means for maintaining said electrical cable connected to said hose member at longitudinally spaced points throughout the length of the hose member and with the bore of the hose open at all times for the flow of drilling mud therethrough as the combined hose member and cable are fed from the reel to a well bore and also after disposed in a substantially vertical position in a well bore,
(e) means for flowing drilling mud into the hose member for conducting such mud therethrough, and
(f) said means to maintain said electrical cable connected to said hose member and with the bore thereof open at all times, including:
(1) means to successively force predetermined lengths of said electrical cable into the flexible hose member when in the reeled condition to provide an adequate amount of electrical cable in the hose member when it is straightened out in the well bore to prevent rupture or disconnection of the cable from the hose member,
(2) means to limit the extent of each of said predetermined lengths of said electrical cable to prevent such an accumulation of said cable at any point in said hose member as would cause a substantial reduction in the flow of the drilling mud through the hose member, and
(3) means connecting each of said predetermined lengths of said cable to said hose member.

3,285,630
TORQUE ARM SWIVEL UNIT
Benjamin W. Brundage, Piedmont, Calif. (98 Westminster Drive, Oakland, Calif.)
Filed Nov. 14, 1963, Ser. No. 328,771
3 Claims. (Cl. 285—181)



1. In a swivel joint joining sections of conduit for the transport of fluid, at least one of said sections having an elbow therein adjacent said joint, and having means permitting rotation of said elbow relative to a portion of another section, the improvements comprising:
(a) adjacent spaced flanges on the section having an elbow therein;
(b) a gear housing encircling the said flanges and bridging the distance therebetween;
(c) means for fixing said another section of conduit against rotation relative to the said housing, said another section and said elbow containing section being relatively rotatable and having a fluid tight seal therebetween;
(d) a worm wheel within said housing and in the space between the said flanges mounted concentrically about one of said sections of conduit and fixed to each of said flanges, said worm wheel and flanges having a fluid tight seal therebetween, said sections, elbow, housing, flanges and worm wheel all having concentric communicating bores therethrough;
(e) bearings between the said housing and each side of said worm wheel permitting relative rotation thereof;
(f) a worm journaled in said housing and in engagement with said worm wheel; and
(g) a means for rotating said worm.

3,285,631
INDIUM COATED O-RING SEAL
James R. Stolpmann, 1853 West Ave., Miami Beach, Fla.
Filed June 5, 1963, Ser. No. 285,825
3 Claims. (Cl. 285—354)



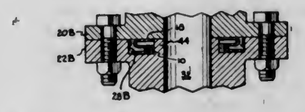
1. A leak-proof connector assembly for joining confronting ends of two pieces of tubing comprising:
a first nut member having a longitudinal bore therethrough and a counter-bore forming a first chamber in one end thereof and a second larger chamber in the other end thereof with an interiorally disposed shoulder formed between said chambers, said first member being adapted to be mounted to an end of a first piece of tubing, the interior peripheral area of the second chamber of said nut member being shaped for receiving the exterior peripheral wall of said first piece of tubing with the end thereof therein with the end face of the tubing being in abutting engagement with the shoulder, said first nut member having an exteriorally disposed and radially extending terminal flange having a flat, radial, annular sealing surface at the one end thereof and an annular shoulder rearwardly of said sealing surface;
a second nut member having a longitudinal bore therethrough and a counter-bore forming a first chamber in one end thereof and a second larger chamber in the other end thereof with an interiorally disposed shoulder formed between said chambers, said second nut member being adapted to be mounted to an end of the other piece of tubing, the interior peripheral area of the second chamber being shaped for receiving the wall of the end of the other piece of tubing the end thereof therein with the end face being in abutting engagement with the shoulder, said second nut member having a flange adjacent its other end, the periphery of the flange having a surface for being grasped by a tool and the exterior periphery of the main body of the second member being exteriorally threaded there-along and the said one end thereof having an annular peripheral recess in the end face and forming an axially projecting seat portion, said annular peripheral recess forming a rear, radial, flat sealing surface normal to said axially projecting seat portion, said axially projecting seat portion having a uniform cross section and a peripheral sealing edge at the terminal edge of said seat portion;

an indium coated O-ring disposed on said seat and projecting beyond said peripheral sealing edge and adapted to normally abut the flange of said first member, said O-ring including an inner core relatively harder than the outer indium coating of said O-ring and said coating comprising a relatively deformable surface for flowing when subjected to sealing pressures; and

a third cup-shaped nut member having an open end and an opposite end with a central bore therethrough slideably receiving said first nut member therein, the interior wall of said cup-shaped member being complementally threaded with respect to the exteriorally disposed threads of said second member, the exterior walls of said third member being adapted for manipulation by a tool, the interior surface of said opposite end being shaped for abutting the exteriorally disposed flange of said first nut member when the first nut member is drawn toward abutting and confronting engagement with said second member with the O-ring disposed therebetween, said first member flange and second member radial sealing surfaces having relatively broad, opposed annular surface portions clampingly engaging opposed annular surfaces of said O-ring therebetween and said seat portion sealing edge engaging said O-ring inwardly of said relatively broad opposed sealing surfaces when said O-ring is deformed annularly inwardly;

whereby said first nut member, said second nut member, said indium-coated O-ring and said third nut member comprise a unitary device for joining confronting ends of two pieces of tubing when said flange and said opposite end of the third nut member co-operate upon threading of said third nut member to said second nut member to draw the two said one ends tightly against said indium-coated O-ring deforming it and forming a pressure-tight seal therebetween effective at both normal and cryogenic pressures and temperatures.

3,285,632
CONDUIT JOINT CONSTRUCTION
Heber H. Dunkle, Scarsdale, N.Y., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Mar. 9, 1964, Ser. No. 350,234
6 Claims. (Cl. 285—363)



1. A fluid joint comprising in combination:

(a) a pair of opposed flange members, at least one of said flange members having a recessed portion co-operating with other of said flange members to provide radial and axial wall portions of a chamber for receiving a gasket;

(b) an annular metallic gasket having a generally S-shaped configuration when viewed in cross-section from an axile plane and including:

convex and concave portions, in respect to the central axis of said joint, said concave and convex portions having their axially remote outer curved portions each lying in a separate plane normal to said central axis and tangent to the respective concave and convex portions, said planes defining the free expanded axial width of said gasket,

with a first end leg extending radially inward from said convex portion and being within said axial width of said gasket such that initial contact, of said first leg with its respective radial wall portion of said chamber, is at least at the axially remote outer curved portion of said convex portion,

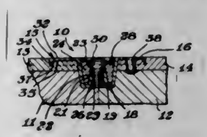
with a second end leg extending radially outward from said concave portion and being within said axial width of said gasket such that initial contact, of said second leg with its respective radial wall portion of said chamber, is at least at the axially remote outer curved portion of said convex portion;

(c) a central portion joining and radially spacing said concave and said convex portions;

(d) positioning means for positioning said convex and said concave portions of said gasket in spaced relation with the axial extending surfaces of said wall portions; and

(e) securing means for securing said flange members in mutually face-to-face axial relation.

3,285,633
FASTENER
Irving S. Houvener, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Oct. 30, 1963, Ser. No. 320,164
5 Claims. (Cl. 287—20.92)



1. A fastener comprising two portions each portion having a skin engaging side and each portion of the fastener being so constructed and arranged that when placed in edge to edge mating relationship the portions define a recess,

said recess having disposed therein a protrusion, the protrusion being formed by a part of each of the fastener portions,

said protrusion having an exterior tapering surface, the surface tapering toward a location remote from and opposite to the skin engaging side of the fastener,

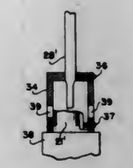
a collar having an internal tapering surface mating with at least a portion of the tapering surface of the protrusion, the collar entering the recess, and

means to secure and maintain the collar in mating engagement with the protrusion.

3,285,634
MEANS FOR THE REPAIR OF HAND-OPERATED VENT REGULATOR ASSEMBLIES
Louis Boyar, Brooklyn, N.Y., assignor to Tru-Seal Pump, Inc., New York, N.Y., a corporation of New York
Filed May 15, 1964, Ser. No. 367,838
1 Claim. (Cl. 287—108)

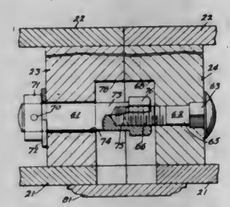
Means for the repair of a hand-operated vent regulator assembly of the type including a capstan member having an axial socket in which originally a non-circular shank member was engaged, either or both of which members have a part broken off therefrom, comprising a tubular structure adapted to receive what is left of said members into the ends thereof respectively; said tubular structure being a cup having an opening through its bottom wall; said cup receiving the remains of said capstan member into its mouth end and said opening being adapted to receive what is left of the shank member, and

screw means on said cup, adapted to be tightened to maintain the assembly of said cap and said members, comprising one set screw threadedly engaged through the bottom wall of said cup in a threaded hole extending radially from the outer peripheral surface of said cup to said open-



ing and a second set screw threadedly engaged through the peripheral side wall of said cup near the mouth of said cup; said cup having a hole through its peripheral side wall, in alignment with a threaded hole portion through the capstan member.

3,285,635
PREFABRICATED STRUCTURE
Joseph A. Whelan, Grubb Road, P.O. Box 114, Paoli, Pa.
Filed Oct. 16, 1964, Ser. No. 404,220
10 Claims. (Cl. 287—20.92)



10. A fastener comprising a male and female member, the male member consisting of a shank, externally threaded at the connecting end and having means for securely positioning said member at the other end, the female member being rotatable and axially displaceable and consisting of an elongated shank having at one connecting end an internally threaded hollow connecting end portion and an enlarged polygonal tool-grip portion, said shank of the female member having at its opposite end a separate bearing portion and means to adjust said portion on said shank to determine the extent of axial displacement.

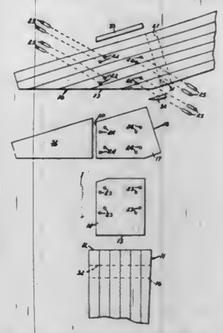
3,285,636
JOINT IN TIMBERS
Robert J. Hoyle, Jr., Lewiston, Idaho, assignor to Potlatch Forests, Inc., Lewiston, Idaho, a corporation of Delaware
Filed June 4, 1964, Ser. No. 372,636
6 Claims. (Cl. 287—20.92)

1. A joint in adjacent wooden timbers, comprising:

a first metal plate embedded and secured in one timber and projecting outwardly from a surface thereof;

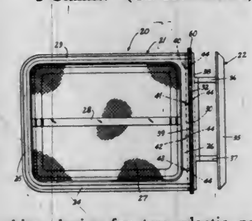
a second metal plate embedded and secured in a second timber having a complementary surface adjacent to said surface of said one timber, said second metal plate being recessed beyond said complementary surface at a location adapted to be located directly adjacent to said first plate, said second timber being recessed adjacent said second plate so as to receive therein said first plate;

and means joining said plates adapted to fix said plates relative to one another after positioning said timbers



with said complementary surfaces adjacent to one another.

3,285,637
SNAP LOCK DEVICE FOR PLASTIC PARTS
Frederick Taussig, St. Louis, Mo., assignor to Arundale Manufacturers, Inc., St. Louis, Mo., a corporation of Missouri
Filed Mar. 6, 1964, Ser. No. 349,882
3 Claims. (Cl. 287—20.92)

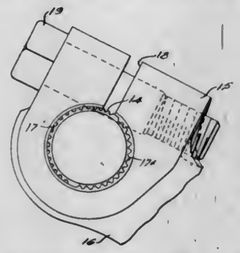


1. A locking device for two plastic parts comprising a pair of hook members on one part, a wall on the other part, a pair of holes through the wall positioned complementary to the positions of the hook members, the hook members each having a shank portion for extending through a hole far enough to position an end of the shank beyond the wall, each hook member having a laterally projecting hook portion on the last-named end of the shank portion, the hook portions being oppositely facing and being positioned for contacting the surfaces of the wall beyond the holes, the portions of the wall which define the sides of the holes opposite the hook portions being formed as tabs extending at substantially right angles to the shank portions, the tabs being yieldable when the hooks are passed through the hole, the parts being molded plastic, the oppositely directed hook portions preventing the parts from sliding laterally to free the hook portions from the holes.

3,285,638
SPLINE SHAFT
Walter E. Folkerts, Hazel Park, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Mar. 30, 1964, Ser. No. 355,682
4 Claims. (Cl. 287—52.02)

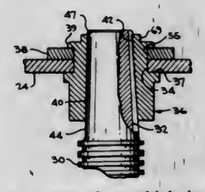
2. In combination, a shaft having a serrate portion comprising a plurality of axially extending serrations arranged around the circumference of said shaft, a hub having a bore therethrough adapted to receive said serrate portion snugly therein, a slot extending radially through said hub into said bore and also extending axially the length of

said hub, a portion of approximately one-half of said bore measured circumferentially in one direction from said slot being serrate to interfit with the serrate portion of said



shaft, the remainder of said bore being smooth, and means for clamping opposite sides of said slot toward each other to grip said shaft tightly within said bore.

3,285,639
CHAIR CONSTRUCTION
Joseph J. Galla and Philip J. Williams, Fairfield, Conn., assignors to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Continuation of application Ser. No. 292,268, July 2, 1963. This application Aug. 27, 1965, Ser. No. 483,145
2 Claims. (Cl. 287—53)



1. In a chair of the class which includes a base rotatably supporting a vertical post having a conically tapered upper free end portion concentric to its rotational axis, and a post support member fixed against axial and rotary movement on said post, said post support member having a similarly tapered conical bore receiving said free end portion of the post, said post being formed with a keyway of uniform width extending axially from its free upper end toward its medial portion, the inner periphery of said post support member around said bore having an axially extending eccentric key portion equal in width to and spanning said keyway, said key portion presenting a surface which is displaced radially inwardly with respect to the rest of said inner periphery and is located radially between an imaginary extension of said inner periphery and a plane common to the opposite edges of said keyway.

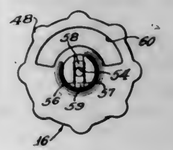
3,285,640
THREADED JOINT AND SEAL THEREFOR
Harold A. Storch, Birmingham, Mich., assignor to Federal Screw Works, Detroit, Mich., a corporation of Michigan
Filed Mar. 16, 1964, Ser. No. 352,037
7 Claims. (Cl. 287—125)

3. In combination, a female threaded member, a male threaded member threaded into said female threaded member and a protector for a joint between said member, said protector comprising a hollow elongated body of resilient synthetic resinous material having a first end portion provided with an opening defined by an inner cylindrical wall into which said male threaded member is rotatably inserted to thereby form threads in said wall whereby said first end portion is operable to sealingly but adjustably grip said male threaded member, and a second end portion nonrotatably receiving said female threaded member and provided with a radially inwardly facing seal-



ing surface, said female threaded member having a surface on the outer periphery thereof engageable by said sealing surface of said second end portion to form a compressively tight seal therebetween.

3,285,641
HANDWHEEL CONNECTING MEANS FOR CYLINDER VALVE
Donald D. Hockett, Villa Park, Ill., assignor to Fisher Governor Company, a corporation of Iowa
Filed Nov. 30, 1964, Ser. No. 414,640
2 Claims. (Cl. 287—53)

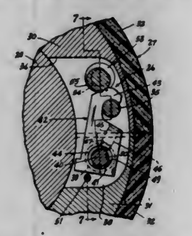


1. In combination, a valve member having a valve stem including an elongated rod-like, non-circular portion, a reduced portion adjacent said non-circular portion, and an enlarged rim at the extremity of the valve stem adjacent said reduced portion and being of greater radial extent than the said reduced portion, and a handwheel made from plastic material adapted to be received permanently upon said valve stem and removable therefrom only upon breakage of said handwheel, said handwheel including a top and a depending annular rim having an opening therethrough, said opening being defined by wall means including a first non-circular portion complementary to the rod-like, non-circular portion on said valve stem, and a second portion of reduced diameter complementary to the reduced portion on said valve stem, there being a shoulder defined between said first portion and said second portion for engaging with a corresponding shoulder formed on said valve stem between said non-circular portion and said reduced portion, said second portion being less in axial extent than said rod-like, non-circular portion, said top of said handwheel having a pair of opposed finger extensions formed integrally therewith and spaced apart a distance at least equal to the width of said reduced portion on said stem and greater than the width of said enlarged rim, said finger extensions being movable outwardly from said top to permit passage of said enlarged rim through said opening in said handwheel beyond the upper surface of said handwheel and being engaged beneath said enlarged rim to prevent removal of said handwheel from said valve stem after assembly thereto.

3,285,642
SPLIT ROTARY ANVIL, HEAD, AND THE LIKE
Louis E. Sauer, St. Louis, Mo., assignor to L. E. Sauer Machine Company, St. Louis, Mo., a corporation of Missouri
Filed Sept. 17, 1962, Ser. No. 224,003
10 Claims. (Cl. 287—189.36)

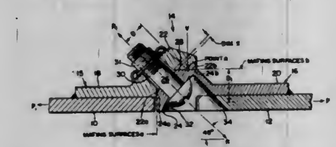
1. Locking mechanism for a split rotary anvil including two separable parts, or the like, comprising in combination a fixed member mounted on one part, a movable member mounted on the other part having a portion for

engaging said fixed member and having an annular surface, and means for moving said movable member into engagement with said fixed member, said means including a substantial camming surface of substantially the same radius as that of said annular surface movable into



frictional-camming locking position short of overcenter with said annular surface to maintain said engagement to draw said parts into locked relation, said movable member being in floating relation with said camming surface and having the annular surface thereof disposed about said camming surface of said moving means.

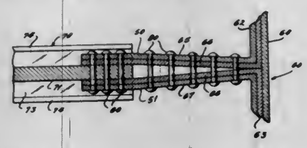
3,285,643
INTERCHANGEABLE STRUCTURAL JOINT
Jesse T. Ferguson, Jr., Nagoya, Japan, assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Apr. 13, 1964, Ser. No. 359,531
7 Claims. (Cl. 287—189.36)



1. A joint for connecting together two elongated spaced-apart elements that are subject to a load force comprising:
a pair of lugs respectively associated with said elements, each of said lugs being a separate and distinct component from the element with which it is associated;
each lug of each pair having one leg adapted to be secured to its associated element, one lug of said pair having an additional leg projecting into the space between said elements;
each of said lugs having at least one bearing surface, the said bearing surfaces of the two lugs being complementary and adapted to mate with each other;
a fastening device connecting said lugs, said fastening device lying at least in part in the space between said elements;
said fastening device being inclined with respect to the load and said bearing surfaces to provide a vector component forcing said bearing surfaces into engagement;
whereby an additional force is created to resist the load force and thereby increase the joint strength.

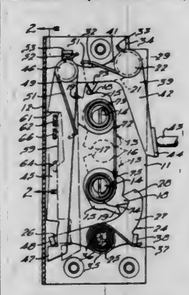
3,285,644
COMPOSITE PANEL AND SUPPORT WITH INCREASED RUPTURE RESISTANT CONNECTION
Harry F. Tomek, 4524 Tennessee, St. Louis, Mo.
Filed Sept. 23, 1964, Ser. No. 400,633
3 Claims. (Cl. 287—189.36)

1. A structure comprising a panel made up of a multiplicity of sheets at least two of which have a section integral therewith bent to form connecting multi-ply flange members, a beam connected at one of its ends to said flange members with said end spaced from the said panel a distance to accommodate substantial relative movement of the panel and beam toward one another, shearable securing means securing said beam to said flange



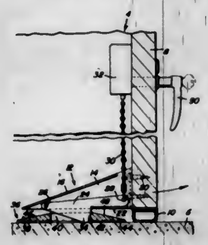
members and means for maintaining said flange members and beam in tight frictional engagement after securing means are sheared and while said beam and panel are moving toward one another in response to the application to the said panel of excessive force.

3,285,645
DOOR LOCK
John H. Roethel, 5455 SW. 87th St., South Miami, Fla.
Filed Aug. 14, 1964, Ser. No. 389,578
4 Claims. (Cl. 292—30)



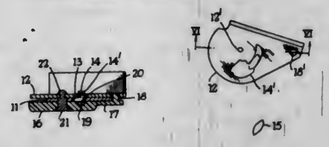
1. In a latch mechanism for a swinging door,
a support having a plate portion for disposition at a free edge wall of the door,
a pair of jaw elements pivotally mounted on one side of said plate portion for counter-swinging movement from an unlatched position toward each other to a latched position in which said jaw elements are adapted to engage a striker pin therebetween,
a pair of control plates mounted on the opposite side of said plate portion each of which is fixedly coupled to one of said jaw elements for pivotal movement therewith,
a pair of detent means each pivotally mounted on said plate portion and engageable with detent engageable portions on the respective control plates to restrain said jaw elements in door latched position,
spring means biasing said jaw elements toward unlatched position,
said spring means comprising a pair of counterwound spiral springs,
each of said springs being coupled to one of said control plates, respectively, to urge the same in counterclockwise direction of rotation,
said spring means being coupled to each other through a common link portion,
said link portion providing a reaction means against which said springs react to urge said control plates and thereby said jaw elements in unlatched direction,
and manually operable means engageable with said pair of detent means to simultaneously disengage the latter from the respective control plates to permit movement of said detent means restrained jaw elements to unlatched position.

3,285,646
OVERHEAD GARAGE DOOR LATCH
George W. Foss, 7122 Stansbury Ave., Van Nuys, Calif.
Filed June 30, 1964, Ser. No. 379,327
5 Claims. (Cl. 292—133)



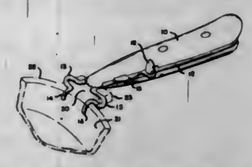
1. A latch for a vertically swinging overhead door, said latch including a keeper plate for securing on a floor adjacent a door, a bracket for mounting on the door, said bracket tapering to a point and adapted to project over the plate when the door is closed, and a vertically swingable latch member pivotally mounted in the bracket and having a part engageable with the keeper plate for anchoring the door in closed position, said bracket including a pair of side plates pivotally supporting the latch member therebetween, said bracket further including top and bottom plates mounted on the side plates, said bottom plate operative position and being spaced from the pointed end of the bracket for providing an opening for the passage supporting the free end of the latch member when in an of the latch member part, and means for raising the latch member.

3,285,647
HINGE STAY MECHANISM
Douglas William Birmingham, Ickenham, Paul Carl Roger Fernberg, Farnham Common, and Clifford Alexander Seckerson, Iver Heath, England, assignors to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed Oct. 1, 1964, Ser. No. 400,832
Claims priority, application Great Britain, Oct. 9, 1963, 39,832/63
5 Claims. (Cl. 292—263)



1. A locking stay comprising a first member and a second member connected together by connecting means which permits, between the members, a defined relative movement in a forward and a reverse direction, each member being formed with a surface overlying a surface of the other member and movable thereover during said relative movement of the members, the said surface of at least one of the members being one side of a sheet-like portion of that member, and each of the said surfaces being formed with a slot partially overlying and in register with the slot of the other surface, the slot formed in the said surface of the said one member being formed by punching out a piece of the material of the said sheet-like portion and the said piece being incompletely punched out and being peripherally integral with the remainder of the sheet-like portion, thereby constituting a cover for the slot of the said one member, there being provided, yieldingly constrained to maintain its instantaneous position but otherwise floating, a double-ended pawl having its thickness accommodated partly in one slot and partly in the other slot, the slots being formed with bounding walls so shaped that on successive relative movements of the members alternately in the forward direction and in the reverse direction the pawl is cammed by the walls successively into progressively rotated positions, the pawl being engaged by the walls of the two slots, in a first and a third of said rotated positions, to prevent further relative movement of the members in the forward direction and, in the second of said rotated positions, to prevent further relative movement in the reverse direction, and the pawl, in the fourth of its said rotated positions, being generally aligned with the permitted direction of relative movement and with an extension in that direction of at least least one of the slots, said extension permitting movement of the extended slot and of the associated member relative to the aligned pawl and the other member, in the reverse direction to a relative position of the members which is substantially displaced, in the reverse direction of relative movement, from their relative position as limited, in that direction, by the pawl in its said second rotated position.

3,285,648
DETACHABLE HANDLES
Vaughn K. Pryce, 417 4th St., Derry, Pa.
Filed Jan. 18, 1965, Ser. No. 426,311
3 Claims. (Cl. 294—16)



1. A detachable handle for cooking vessels having a horizontally extending lug comprising a hand gripping portion including spaced members, a pair of gripping jaws each jaw being integral with one end of a respective spaced member of the hand gripping portion, said gripping jaws having opposed elongated U-shaped members opening toward one another and adapted to be moved toward each other over the edges of the horizontally extending lug of the cooking vessel, cam means pivoted on one spaced member, a cam slot in said cam means, a cam engaging member on the other spaced member engaging the cam slot, said cam means having a portion extending between said spaced members, a finger piece on said cam for operating said cam, said cam adapted to be moved relatively to said spaced members to move the spaced members toward each other and the gripping jaws from a first position in which said jaws are adapted to pass over the vessel lug to a second position in which the gripping jaws engage the lug under pressure, and cam locking means in the cam slot including a recess into which the cam engaging member snaps to lock the spaced members under pressure.

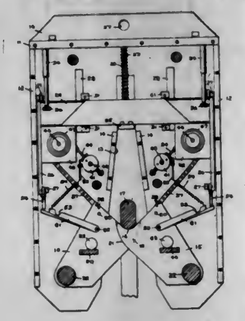
3,285,649
GRASPING DEVICE FOR JUTE BAGS AND THE LIKE PIECES OF FABRIC
Daniel Harton, Black Lake, Quebec, Canada, assignor of fifty percent to Paul M. Pidcock, Westmount, Quebec, Canada
Filed July 31, 1964, Ser. No. 386,496
8 Claims. (Cl. 294—61)

1. A fabric grasping device comprising a first element having spaced substantially flat and substantially flush fabric-contacting surface portions, a second element having spaced substantially flat fabric-contacting surface portions extending between the surface portions of said first element and substantially flush therewith, a plurality of spaced points carried by each of said elements protruding from said surface portions and distributed over substantially the entire area of said surface portions, said elements being reciprocable relative to one another in planes parallel to said surface portions so that the points of one



element will intersect lines passing through the points of the other element, and means to reciprocate one element relative to the other, said points being inclined with respect to said surface portions, the points carried by said first element being oppositely inclined with respect to the points carried by said second element.

3,285,650
HOOK
Perry L. Dukes, Goldendale, Wash., assignor, by mesne assignments, to SoMaeCo-D-Inc., Kennewick, Wash., a corporation of Washington
Filed Jan. 18, 1965, Ser. No. 426,081
7 Claims. (Cl. 294—83)



1. A hook for a hoist adapted to carry an article having an upstanding bail comprising:

a pair of upright side plates fixed relative to one another in a spaced relation, each of said plates being provided with a vertically disposed slot extending from the lower end thereof and terminating short of the upper end of said plate, the slots being in registry with one another and providing an open throat to receive a bail of an article to be lifted;

a pair of movable jaws pivotally mounted between said plates about parallel transverse horizontal axes, said jaws being located adjacent the lower ends of said plates at each side of the slots forming said throat, said jaws each being biased to a first position protruding into the throat and being each movable to a second position fully recessed beyond said throat;

a vertically reciprocable abutment member mounted on said plates above said jaw, said abutment member being in a location bridging said throat;

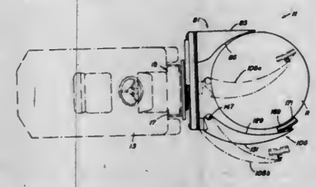
motion limiting means operatively connected between said abutment means and said plate to limit the extent of downward motion of said abutment member relative to said plates;

lifting means operatively connected between said abutment member and said jaws to cause said jaws to be moved to their second positions in response to predetermined upward motion of said abutment member relative to said plates;

latch means on said jaws and said plates engageable when said jaws attain their second positions to selectively prevent motion of said jaws relative to said plates;

and means on said abutment member operatively engageable with said latch means to release said latch means when said abutment member is in its lowermost position relative to said plates and allow said jaws to return to their first positions.

3,285,651
CLAMP FOR PAPER ROLLS AND THE LIKE
William R. Ellis, Memphis, Tenn., assignor to Long Reach Manufacturing, Houston, Tex., a corporation of Delaware
Original application July 10, 1963, Ser. No. 294,029, now Patent No. 3,252,609, dated May 24, 1966. Divided and this application Nov. 13, 1964, Ser. No. 411,051
1 Claim. (Cl. 294—104)

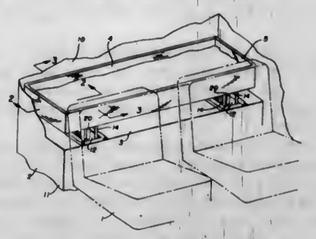


A roll clamp mechanism comprising a first clamp arm, a second clamp arm, means movably supporting said second clamp arm for rectilinear movement in a direction towards said first clamp arm and towards a roll of paper located between said first and second clamp arms and for swinging movement in a direction towards said first clamp arm and towards the roll of paper, actuating means for causing said rectilinear movement of said second clamp arm, additional actuating means for causing said inward swing of said second clamp arm, and means for operably initiating said additional actuating means responsive to contact of the roll of paper by said second clamp arm.

3,285,652
BERTH WITH SPRING SUSPENSION
Paul W. Coup, Akron, Ohio, assignor of one-half to Floyd M. Snyder, Akron, Ohio
Filed May 3, 1965, Ser. No. 452,676
1 Claim. (Cl. 296—24)

In combination with the cab of a truck, the pallet of a berth inside of the cab and fastened thereto with its head toward one side of the cab and its foot toward the other side, the pallet being stiff and flat so that an occupant positioned near the longitudinal center thereof is moved forward on the pallet when the cab comes to a sudden stop, the pallet being resiliently supported for vertical movement and slight horizontal movement, there being two elements in the combination which cooperate to absorb some of the horizontal movement of the pallet when the pallet is occupied and the truck comes to a sudden stop and the occupant is moved to the forward edge of the pallet by the sudden stopping of the truck and the

forward edge of the pallet is directed downwardly against the resilient support of the pallet, tipping the pallet forward, one of said two elements being secured to move with the pallet and the other being secured to move with



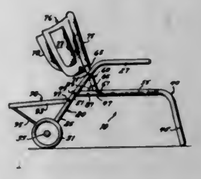
the cab, one of said elements forming a substantially vertical guide and the other forming means for cooperating with the guide to direct the forward edge of the pallet down as aforesaid..

3,285,653
SELF-SUPPORTING VEHICLE BODY
Erwin Komenda, Stuttgart, Germany, assignor to Firma Dr. Ing, h.c. F. Porsche KG., Stuttgart-Zuffenhausen, Germany
Filed July 6, 1964, Ser. No. 380,500
Claims priority, application Germany, July 18, 1963, P 32,221
9 Claims. (Cl. 296—28)



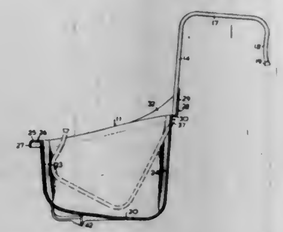
9. A self-supporting vehicle body for motor vehicles, especially passenger motor vehicles, comprising:
an end unit formed by a plurality of body parts including longitudinal bearer means and support means extending at an angle to the longitudinal bearer means,
a vehicle body center section having body wall means including floor means and end-face closure wall means forming a dashboard,
said longitudinal bearer means extending underneath the center section and said support means extending underneath said closure wall means,
said longitudinal bearer means and said support means of a respective vehicle side and said center section comprising wall means forming a single hollow bearer structure,
said wall means completing the longitudinal bearer means extending under the center section and the box-like bearer structure of the end unit into closed bodies upon connection thereof with the center section,
said floor means being offset in the longitudinal direction of the vehicle in a step-like manner at the end of the longitudinal bearer means of the end unit,
each of said longitudinal bearer means having longitudinal rim portions and an end face, said longitudinal bearer means being of U-shaped construction, open in the direction toward said floor means, and said longitudinal rim portions as well as said end face being provided with flanges which are connected with the floor means with the stepped portions thereof and with the offset portion of the floor means,
the step-like portion of the floor means corresponding to the height of the longitudinal bearer means,
an approximately vertical cross wall arranged at a distance from said closure wall means and interconnecting the box-like bearer structures of the end unit to form a luggage space and a section for the accommodation of auxiliary units,
said end unit including lateral wall means, said cross wall extending substantially over the width and height of the end unit of the vehicle body and including flange means for connecting the cross wall with the longitudinal bearer means as well as with said lateral wall means,
and further structural parts for supporting parts of the vehicle spring system, said further structural parts being supported by said cross wall,
support plate means in the end unit extending generally horizontally, said cross wall forming a transfer joint within the area of the further structural parts and of the lateral wall means of the end unit as well as with the support plate means,
said cross wall also adjoining a bearer at the height of said support plate means which is connected with said support plate means,
and a floor plate extending over the section of the vehicle body end unit serving as luggage space, said floor plate being connected with said longitudinal bearer means and with said cross wall, extending beyond the forward ends of said longitudinal bearer means and being connected in the forward area at at a vehicle end wall forming part of the end unit.

3,285,654
FOLDING BEACH CHAIR
William H. Cramer, 2169 Kirk Ave., Abington, Pa.
Filed July 16, 1965, Ser. No. 472,621
10 Claims. (Cl. 297—35)



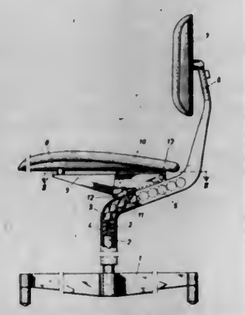
1. A folding chair comprising a U-shaped base frame including vertical members bent to form horizontal arms at the open-end of said U-shape, a U-shaped leg frame bent to form horizontal support members at the open end of said leg frame, said support members having ends pivoted on said base frame between said vertical members and below said arms, a seat on said leg frame connected between said support members, an inverted U-shaped back frame pivoted on said base frame between said vertical members above said ends of said support members, said back frame having ends in abutting relationship against apposed portions of said support members, a back connected on said back frame, link means pivotably connecting said abutting ends of said back frame to said leg frame for securing said frames in a rigid unfolded chair and selectively enabling said leg and back frames to be separated from said abutting relationship and pivoted together in a parallel relationship extending above said arms in a folded chair, and bracket means on said base frame to stand said folded chair at an upright position with said arms providing carrying racks thereon.

3,285,655
BABY CAR SEAT
Robert T. Silenius, Toronto, Ontario, Edwin W. Binkley, Georgetown, Ontario, and Andrew G. Baird, Brampton, Ontario, Canada, assignors to Smith & Stone Limited, Toronto, Ontario, Canada
Filed Dec. 14, 1964, Ser. No. 418,143
Claims priority, application Canada, June 2, 1964, 904,208
12 Claims. (Cl. 297—254)



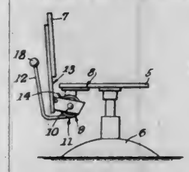
1. A baby seat comprising:
(a) a molded body member having a bottom, side, front and rear walls, a pair of apertures in said front walls for the legs of an occupant of the seat, said rear wall having an offset portion and a pair of apertures disposed therein, and
(b) a hanger assembly pivotally secured to said rear wall, said hanger assembly including a pair of spaced, substantially parallel arms each terminating at one end in a hook portion and being interconnected at the other end by a common bar, said common bar bearing against the offset portion of the rear wall and having the arms projecting upwardly away from the body through respective ones of the pair of apertures in an operative position.

3,285,656
HEIGHT ADJUSTING DEVICES FOR CHAIRS, TABLES, AND THE LIKE
Lars R. Elfstrom, Goteborg, Sweden, assignor to System Communica Aktiebolag, Goteborg, Sweden
Filed July 26, 1965, Ser. No. 474,841
2 Claims. (Cl. 297—337)



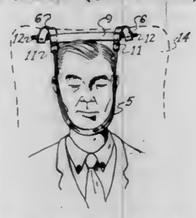
1. Height adjustable furniture support comprising a column, means for vertically supporting said column on a horizontal surface when in use, a tube telescopically connected at one end to said column, a spring mounted on said column, a series of balls freely moveable and individually rotatable in said tube with adjacent balls bearing against one another and having one of said balls bearing against said spring, said tube having a side opening, a support pivotally mounted on said tube, and a blocking member carried by said support for being inserted at times through said tube side opening and between an adjacent pair of said balls when said support is in its load supporting position.

3,285,657
CHAIR BACK ADJUSTING MECHANISM
Raoul H. de Gaston, Lynwood, Calif., assignor to Henri L. Valette, Inglewood, Calif.
Continuation of abandoned application Ser. No. 355,546, Mar. 30, 1964. This application Aug. 9, 1965, Ser. No. 478,392
3 Claims. (Cl. 297—374)



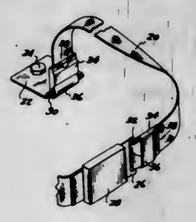
1. Adjusting mechanism for a chair having a seat and a separate back, said mechanism comprising:
(a) a drum fixedly secured to the seat and on a horizontal axis transverse to the seat,
(b) a bracket carrying the chair back and freely pivotally mounted on said axis,
(c) a coil spring wound with its coils in friction tight engagement with the cylindrical surface of the drum,
(d) one end of said spring affixed to the mentioned bracket adjacent to the spring coils, and
(e) the opposite end being extended first rearwardly beneath the chair back and then upwardly and rearwardly behind the chair back, to form a handle that, when flexed in a rearward direction to cause enlargement of the convolutions of the spring, causes release of the friction grip between the spring and the drum, thereby releasing the back for adjustment to a desired angle on the mentioned axis.

3,285,658
HEAD SUPPORT DEVICE
Lucretia Cleveland, 806 Myrtle Ave., Inglewood, Calif.
Filed Oct. 1, 1965, Ser. No. 491,960
5 Claims. (Cl. 297—395)



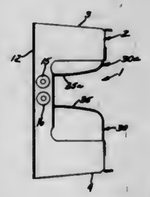
1. In combination with a seat having a back-rest, a head support for a person occupying said seat comprising:
(a) a chin support formed of an elongated flexible pad of open mesh fabric material,
(b) elongated strap means joined with the ends of said chin support and fastened at the free ends thereof to said back-rest with said chin support suspended therefrom and assuming the shape of a U-shaped loop, the chin of said person being supported in the bight of said loop, said strap means gently biasing said chin angularly upwardly and rearwardly urging the back of the head into comfortably firm contact with said back-rest whereby the weight of the head is substantially removed from the neck, shoulder and back muscles of the wearer.

3,285,659
SEAT BELT ESCUTCHEON
James M. Robbins, Royal Oak, Mich., assignor, by mesne assignments, to Jim Robbins Seat Belt Co., Royal Oak, Mich., a corporation of Delaware
Filed Dec. 4, 1964, Ser. No. 416,014
5 Claims. (Cl. 297—385)



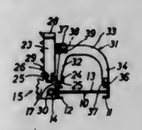
1. A protective cover for the attachment between the end of a looped seat belt webbing and a hardware member having the loop passing through an aperture therein, said protective cover including a tubular section adapted to surround the webbing at the joinder of the loop and a flexible tongue, integral with and extending from one edge of the tubular section and operative to be passed over the belt loop, through the aperture in the hardware member, and to have its extreme end tucked between the tubular section and the webbing, said tongue member having a lip on its extreme end which extends transversely across the tongue end and a wing member attached to said lip and extending parallel to the extension of the tongue, said wing being adapted to engage the tubular section when the cover is in a closed position in such a manner whereby it is necessary to first extend the end of the tongue member beyond the end of the tubular section and then move the end of the tongue member normally to the plane of the tubular section before withdrawing the tongue end from the tubular section.

3,285,660
SEATING
Ronald Beckman, 27 Bank St., New York, N.Y., and Howard Yarme, 93 Sanford St., Yonkers, N.Y.
Filed Apr. 12 ,1965, Ser. No. 447,420
14 Claims. (Cl. 297—445)



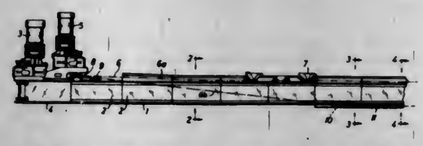
1. A chair formed from a first sheet of material characterized by having the interior removed therefrom and folded into a generally channel shape to include a pair of upstanding sides and a top and bottom of generally U-shape extending rearwardly from said sides and a second sheet of material characterized by being folded into generally a U-shaped configuration positioned between said sides of said first sheet, the bight portion of said second sheet lying between said sides of said first sheet and the legs of said second sheet secured to said top and bottom of said first sheet.

3,285,661
PLANER AND REINFORCEMENT GUIDE FOLLOWER ARRANGEMENT
Armin Löbbe, Oberaden Post Kamen, Germany, assignor to Gewerkschaft Eisenhutte Westphalia, Wethmar, near Lunen, Westphalia, Germany
Filed Aug. 20, 1963, Ser. No. 303,376
Claims priority, application Germany, Aug. 30, 1962, G 35,816
5 Claims. (Cl. 299—34)



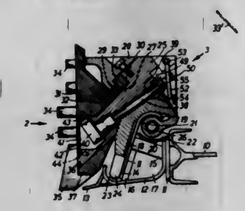
1. Planer and reinforcement guide arrangement which comprises a pair of spaced apart resiliently interconnected planer base means, a corresponding pair of planer strut members, each strut member being pivotally connected to a respective base means at one end and pivotally connected to the other strut member at the other end whereby to form an upstanding triangular planer variable in height in dependence upon the longitudinal displacement of said resiliently interconnected base means with respect to each other, a longitudinally extending conveyor adapted to be placed adjacent a mine face for the removal of mineral extracted by said planer, said planer being mounted slidably on one side of the conveyor for longitudinal movement thereon back and forth along the mine face with said strut members extending upwardly substantially beyond the upper portion of said conveyor, a pair of forward arm members and reduced friction rearward support means together forming a gantry spanning such conveyor, said forward arm members being linkably connected at their lower ends to such base means respectively and being in displaceable abutment with such strut members at the upper ends of said arm members respectively and with said rearward support means riding along the opposite side of said conveyor in reduced friction contact therewith, whereby said gantry laterally supports and reinforces such triangular planer in any position of variable height thereof to prevent transverse displacement of said planer with respect to the longitudinal direction of travel thereof.

3,285,662
PLANER ARRANGEMENT FOR EXTRACTION OF MINERAL
Armin Löbbe, Oberaden Post Kamen, Germany, assignor to Gewerkschaft Eisenhutte Westphalia, Wethmar near Lunen, Westphalia, Germany, a corporation of Germany
Filed Dec. 13, 1963, Ser. No. 330,505
Claims priority, application Germany, Dec. 14, 1962, G 36,628
21 Claims. (Cl. 299—34)



1. Planer guide adapted to rest on a mine floor for guiding planer means longitudinally back and forth along a mine face for the extraction of mineral from the mine face, which comprises elongated support means adapted to extend longitudinally along a mine face, first traction cable guide means extending along one longitudinal side of said support means for guidingly retaining the forward section of an endless traction cable used to conduct the planer means along the mine face, second traction cable guide means extending along the other longitudinal side of said support means for guidingly retaining the return section of such endless traction cable, and directing means for directing at one end of the path of the cable the return cable section across said support means from said one longitudinal side thereof to said other longitudinal side thereof and in turn for directing at the other end of the path of the cable in return cable section back across said support means from said other longitudinal side of said support means to said one longitudinal side thereof as well as third and fourth traction cable guide means extending along said other longitudinal side of said support means in addition to said second traction cable guide means, for guidingly retaining respectively the forward and return cable sections of another endless traction cable used to conduct another planer means along the mine face independently of the first-mentioned planer means.

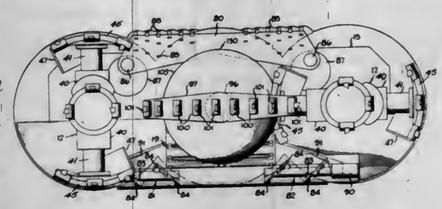
3,285,663
PIVOTAL PLANER CUTTER WITH ADJUSTABLE ECCENTRIC STOP
Alois Hauschopp, Langern, Germany, assignor to Gewerkschaft Eisenhutte Westphalia, Westphalia, Germany
Filed May 5, 1964, Ser. No. 364,909
Claims priority, application Germany, May 16, 1963, G 37,761
9 Claims. (Cl. 299—34)



1. Planer for extracting mineral from a mine face which comprises base means longitudinally movable back and forth along the mine face, cutting means, said base means and cutting means having coacting means including surface portions for slidably mounting said cutting means on one lateral side of said base means for limited arcuate pivoting of said cutting means on said base means in sliding surface contact therewith, spaced apart edge means defined in the surface portion of said cutting means, eccentric stop means extending through said base means from said one lateral side of said base means to the other lateral side thereof and projecting between said edge means at said one lateral side, and releasable locking means on the other lateral side of said base means for adjusting the eccentricity of said stop means with respect to said edge means and in turn the range of arcuate pivoting of said cutting means with respect to said base means.

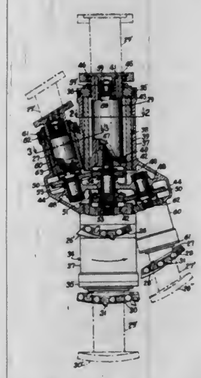
3,285,664
CONTINUOUS MINING MACHINE
Joseph Gonski, Chicago, Ill., assignor, by mesne assignments, to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 22, 1964, Ser. No. 361,729
6 Claims. (Cl. 299—57)

3. In a continuous mining machine, a main frame, a cutter frame mounted on said main frame, a central rotary boring head mounted on said main frame and extending in advance thereof, for cutting at floor level, to produce a substantial floor-carved trough, a conveyor extending along said main frame and having a receiving end disposed beneath said cutter frame in alignment with said central boring head, a scroll extending behind said central boring head and carrying the cuttings in said trough back to said conveyor, two laterally spaced side boring heads



mounted on said cutter frame on opposite sides of said central boring head and transferring the cuttings transversely into said trough, for backward removal by said scroll, and means spaced behind said boring heads for cutting at floor level and thereby eliminating the temporary floor-carved trough.

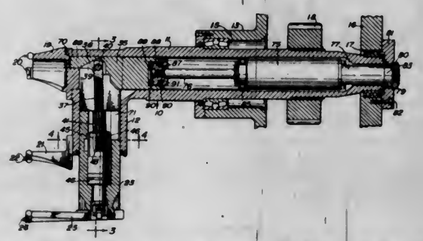
3,285,665
BORING HEAD ARMS EXPANSIBLE IN FIXED RATIO
Amos P. Brown, Mercer, Pa., assignor to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 11, 1963, Ser. No. 315,656
3 Claims. (Cl. 299—80)



1. A mining machine boring arm comprising: a hub portion, at least one radially extending main arm having an elongated guideway therein, said main arm having a bit carrying outer end portion remote from said hub portion, said end portion being radially movable with respect to said hub portion along said guideway, an elongated auxiliary arm extending outwardly from said hub portion at an acute angle to said main arm, said auxiliary arm having an elongated longitudinal guideway therein, said auxiliary arm having a bit carrying end portion remote from said hub portion, said auxiliary arm end portion being movable along said auxiliary arm guideway with respect to said hub portion, selectively operable first actuating means to provide a given amount of said radial motion to said outer end portion of said main arm, second actuating means to provide an amount of said radial motion less than said given amount to said end portion of said auxiliary arm, ratio fixing means connecting said first actuating means to said second actuating means to

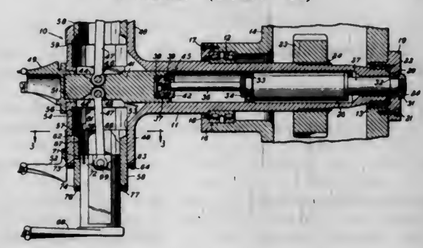
maintain the said radial motion of said main arm outer end portion in a predetermined fixed ratio to the said radial motion of said auxiliary arm end portion.

3,285,666
ADJUSTABLE BORING HEAD FOR CONTINUOUS MINING MACHINE
Stephen M. Christian, Harvey, Ill., assignor, by mesne assignments, to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 26, 1963, Ser. No. 333,308
6 Claims. (Cl. 299—80)



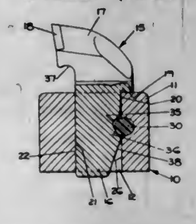
4. An adjustable boring head particularly adapted for continuous mining machines and the like comprising, a hollow shaft journalled for rotation about a horizontal axis, a hollow boring arm projecting radially of said shaft and having communication wtih the hollow interior portion of said shaft, a telescopic arm telescopically mounted in said hollow boring arm, a slide movable along said shaft for extensibly and retractibly moving said telescopic arm with respect to said boring arm, power means for moving said slide along said shaft, and an adjustable linkage connection between said slide and telescopic arm comprising a threaded link and nut, one being transversely pivoted to said slide and the other being transversely pivoted to said telescopic arm, and a shaft turnable from the outside of said telescopic arm for turning said nut relative to said shaft when said slide is in extended relation along said hollow shaft and varying the position of said telescopic arm with respect to said boring arm.

3,285,667
RETRACTIBLE BORING HEAD FOR MINING MACHINE
Joseph Gonski, Chicago, Ill., assignor, by mesne assignments, to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 29, 1964, Ser. No. 340,952
5 Claims. (Cl. 299—80)



1. In a mining machine;
a boring head mounted for rotation about an axis;
power means disposed along said axis;
at least one arm extending radially outwardly from said head;
a first stop means on said arm having a first stop surface facing radially inwardly;
a sleeve mounted for sliding telescopic movement relative to said arm having a radially outwardly facing second stop surface in alignment with said first stop surface and effective to limit the outward radial movement of said sleeve;
a cutter member mounted for sliding telescopic movement with respect to said arm and said sleeve effective, when extended radially outwardly, to move said sleeve radially outward; and
link means connected between said power means and said cutter member effective to move said cutter member outwardly while concurrently moving said sleeve outwardly to an extent determined by said stop surfaces.

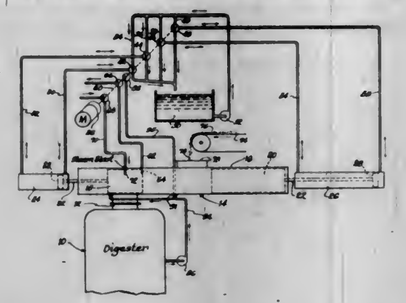
3,285,668
CUTTER BIT HOLDER
William W. Fearon, Columbus, Ohio, assignor to Jeffrey Galion Manufacturing Company, a corporation of Ohio
Filed Nov. 20, 1963, Ser. No. 325,059
6 Claims. (Cl. 299—92)



1. A cutter bit holder for a cutter bit formed with a shank, said holder having a socket for the reception of the cutter bit shank, a yieldable solid plug of hard-wearing material for retaining the cutter bit in the holder, a complemental bore in the body of the holder which, is of substantially the same cross-sectional size as said solid plug for the reception of the plug, said bore being intersected by the socket and a minor portion of the plug extending into the socket to engage the cutter bit shank with a major portion of said solid plug being disposed in said complemental bore, said holder being recessed at least beyond one end of said plug, the cutter bit being received in the holder by application of a force pressing the cutter bit shank into the socket and being removable from the holder by application of a force to withdraw the cutter bit shank from the socket, and the plug being yieldably deformed into the recess beyond the end of the plug to permit the cutter bit to be received in or removed from the bit holder.

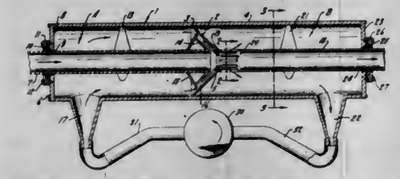
3,285,669
FEEDING AND EXTRACTING APPARATUS AND METHOD
James d'A. Clark, Chuckanut Point, Bellingham, Wash.
Filed May 20, 1964, Ser. No. 368,915
10 Claims. (Cl. 302—14)

1. A method for transferring fibrous material and the like from one location to another, said method comprising the steps of providing a cylindrical member having an inlet opening and an outlet opening, said cylindrical member providing a passage for the movement of first and second separately operated pistons, moving said first piston to close off the passage from said outlet opening to said second piston and moving said second piston to open said inlet opening whereby said inlet openings is situated between said pistons introducing said material into said cylindrical member through said inlet opening, moving said second piston toward said first piston to close off said inlet opening with said material being disposed between said pistons, slightly compacting said material between said pistons and removing excess fluids from said material during said compacting operation, moving each of said pistons to open said outlet opening and to effect passage of said material from be-



tween said pistons through said outlet opening, and moving said first piston toward said second piston to displace substantially all substances from the space between said pistons.

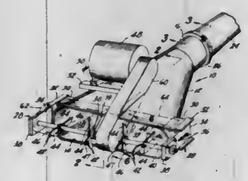
3,285,670
CONVEYING DEVICE AND METHOD
Elbert G. Hubbard, Maywood, Ill., assignor, by mesne assignments, to Pneumatic Conveying Systems Co., Maywood, Ill., a corporation of Illinois
Filed Mar. 10, 1965, Ser. No. 438,602
5 Claims. (Cl. 302—23)



1. Conveying means including a housing, a first chamber in said housing, a second chamber in said housing, air pressure generating means communicating with said first and second chambers to deliver air under pressure to said first chamber and to withdraw air from said second chamber in a substantially closed system, a conveying conduit extending through said housing, nozzle means communicating with said first chamber and positioned to direct air from said first chamber into said conduit, screen means in said second chamber and positioned adjacent said nozzle means, said screen means communicating said conduit with said second chamber, said nozzle means including a frusto-conical baffle, said baffle having a central aperture of a diameter corresponding to and axially aligned with that of said conduit, a frusto-conical flange carried by said conduit and extending in spaced, parallel relationship with said baffle to form a conical nozzle passage communicating said first chamber with the area within said conduit.

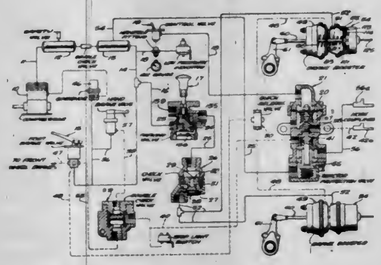
3,285,671
BULK MATERIAL TRANSFER APPARATUS
Salvador M. Moreno, 903 Marine Ave., Wilmington, Calif.
Filed June 26, 1964, Ser. No. 378,366
2 Claims. (Cl. 302—58)

1. Bulk material transfer apparatus comprising:
receiver means adapted to receive chopped bulk material and operative to transfer said material to an unloading point;
blade mounting means secured to said receiver means and including a rotatable blade shaft;
a plurality of cutting blades mounted to said shaft in radially extending relation for rotation therewith, each said blade including a sharpened leading edge and a trailing edge which is pitched relative to said leading edge;
a plurality of shear blades mounted to said receiver means and located adjacent the paths of rotation of



the leading edges of said cutting blades, respectively, whereby the bulk material is sheared therebetween upon rotation of said cutting blades relative to said shear blades;
and drive means coupled to said shaft and operative to rotate said shaft and said cutting blades whereby bulk material is cut by said leading edges and scattered toward said receiver means by said trailing edges for transfer to said unloading point.

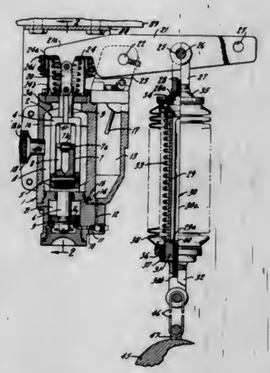
3,285,672
FLUID OPERATED BRAKING SYSTEM
Walter C. Avrea, Placentia, Calif., assignor, by mesne assignments, to Royal Industries, Inc., a corporation of California
Continuation of application Ser. No. 97,368, Mar. 21, 1961. This application June 18, 1965, Ser. No. 467,189
2 Claims. (Cl. 303—9)



1. In a vehicle braking system of the type employing separate braking assemblies for each of a plurality of wheels, each adapted to be activated to braking position by a pneumatically operated booster assembly and to be energized with pressurized air under the control of the vehicle driver; that improvement which comprises mechanically powered alternate brake setting means effective to set the vehicle brakes upon failure of said pressurized air, said mechanically powered brake setting means including means for holding said brake setting means deactivated normally by use of pressurized air, manually controlled valve means readily accessible to the vehicle driver from his normal driving position to vent pressurized air from said mechanically powered brake setting means thereby activating the latter to set and hold the brakes positively set until pressurized air

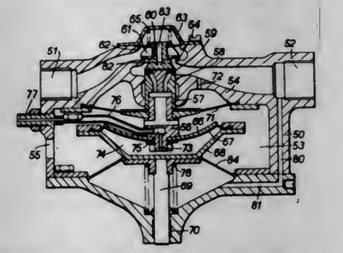
is again admitted to said mechanically powered brake setting means, and pressure differential responsive check valve means in the pressurized fluid supply to said means for holding the brake setting means deactivated, said pressure differential responsive check valve being positioned downstream from said manually controlled valve whereby the opening of said check valve to vent air to the atmosphere causes an abrupt pressure drop on the downstream side of said manual valve, said check valve means including means operable to pass pressurized air to said holding means and to hold such air captive against reverse flow until the system pressure falls below a predetermined minimum operating pressure whereupon said captive air is automatically vented to the atmosphere thereby allowing said mechanically powered brake setting means to set the vehicle brakes, and pressure responsive means operatively connected with said manual valve operable by said abrupt pressure drop to close said manual valve to prevent air loss from the braking system as a whole.

3,285,673
LOAD MODULATION AND RELAY STRUCTURE
Harold L. Dobrikin, Highland, Ill., assignor, by mesne assignments, to Berg Mfg. & Sales Co., Des Plaines, Ill., a corporation of Illinois
Filed Nov. 23, 1964, Ser. No. 413,168
14 Claims. (Cl. 303—22)



1. A load-modulation structure for vehicle brake systems including a housing, a movable fulcrum in said housing, a fulcrum lever structure positioned in said housing for engagement with said fulcrum, means in said housing responsive to delivery of fluid pressure for moving said fulcrum lever structure, a fluid pressure inlet in said housing, a fluid pressure outlet in said housing formed and adapted for communication with the brakes of a vehicle, a valve between said inlet and said outlet, means responsive to movement of said fulcrum lever structure for opening said valve, a lever arm pivotally mounted externally of said housing and having an end portion pivotally connected with said fulcrum, yielding means urging said fulcrum and lever arm in one direction, and a sensing structure secured to said arm and said vehicle, said sensing structure including a pair of separable elements connected to said vehicle for separation in response to lightening of said vehicle, said sensing structure including a yielding means formed and positioned to urge said separable elements together, said last-named yielding means being preloaded at all positions of said separable elements, at a force greater than that of said first yielding means and the friction within said housing.

3,285,674
CONTROL VALVES FOR AIR BRAKING SYSTEMS
Maurice Barry Eaton, Birmingham, England, assignor to Girling Limited, Birmingham, England, a British company
Filed July 10, 1964, Ser. No. 381,843
Claims priority, application Great Britain, July 17, 1963, 25,335/63
2 Claims. (Cl. 303—40)

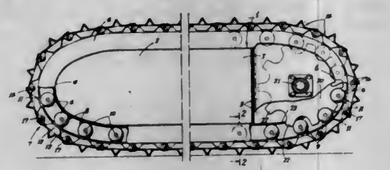


1. A fluid control valve for fluid pressure actuated vehicle braking systems incorporating at least one brake cylinder, a supply source of fluid at constant pressure, a control fluid pressure source and brake applying means controlling control fluid pressure comprising a valve body in which is formed an inlet passage for connection to said fluid pressure source, an outlet passage for connection to said brake cylinder, a valve seating in the valve body between said inlet passage and said outlet passage, a piston located in a chamber in said valve body, an exhaust passage in said valve body connecting said chamber to atmosphere, a valve member adapted to cooperate with said valve seating to control communication between said inlet passage and said outlet passage, a first diaphragm of fixed area connected between said piston and said valve body and subjected on one side to pressure in said outlet passage and on an opposite side to pressure in said chamber, a control member in said chamber adapted to be movable into an operating position dictated by vehicle loading, a second diaphragm of variable area connected at its inner and outer edges between the lower end of the piston and said control member, the effective area of said second diaphragm being variable in accordance with the position of the control member, the second diaphragm and the control member defining between themselves a compartment subjected to said control fluid pressure which is controlled by said brake applying means, a stem on said piston co-operating with said valve member controlling communication between said inlet passage and said outlet passage, a first diacontrol fluid pressure being supplied to said compartment said valve member is moved away from said valve seating to provide communication between said inlet passage and said outlet passage, the movement of the valve member being controlled in accordance with differential pressure between the control fluid pressure and outlet pressure of which said outlet pressure is at all times proportional to the loading on the vehicle, and a further flexible diaphragm cooperating with said control member of which the diaphragm on one side is subjected to pressure in said outlet passage.

3,285,675
ENDLESS TRACK UNIT
Emmitt M. Tucker, Jr., P.O. Box 431, Ashland, Oreg.
Filed Nov. 30, 1964, Ser. No. 414,765
1 Claim. (Cl. 305—18)

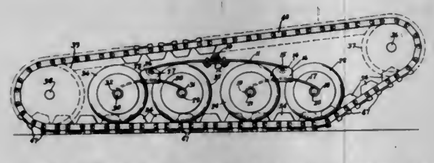
An endless track unit comprising a rigid elongated body having rounded ends, an endless rigid tube extending about and following the contour of the periphery of the body and secured thereto, an endless ground engaging

track symmetrically surrounding the tube, and means supporting the track from the tube for movement lengthwise relative thereto; said means including spaced rollers in and substantially fitting the tube, and a bracket supported by and projecting from each roller, the tube having an outer endless longitudinal slot through which the



brackets project to connection with the track, the interior of the tube being of circular form in cross section, each roller comprising a pair of oppositely facing substantially semi-spherical members spaced apart in a vertical plane, and an axial horizontal pin connecting said members; the related bracket projecting between said members and being mounted on the pin.

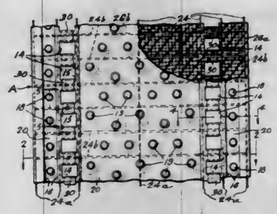
3,285,676
RUBBER TRACK
Allan E. Hetteen, Roseau, Minn., assignor to Polaris Industries, Inc., Roseau, Minn., a corporation of Minnesota
Filed Oct. 28, 1964, Ser. No. 407,026
16 Claims. (Cl. 305—27)



1. An endless track comprising: a pair of spaced apart corresponding roller type chains for use with sprockets having links, rubber tread bars positioned between said roller type means, said roller type chains having apertures extended through the ends of their links, said rubber tread bars having passageways extended longitudinally therethrough and spaced the same distance as the apertures in said roller type chain links, rods extended through and secured in the apertures of said roller type link chains and said longitudinal passageways in said tread bars whereby said roller type chains are secured together and said tread bars are supported therebetween, said rubber tread bars having at least one longitudinal opening therein positioned intermediate of said passageways and a stiffening member inserted in said longitudinal opening in each of said rubber tread bars and held therein by links of said roller type chains at both ends.

3,285,677
REINFORCED ENDLESS RUBBER BELT
Gaston Marier, 2780 Langelier Blvd., Montreal, Quebec, Canada
Filed Sept. 21, 1964, Ser. No. 397,841
1 Claim. (Cl. 305—38)

An endless driving track for use on a snow-traveling vehicle or the like including direct-driving sprockets, comprising an endless belt having a flat inner surface and an outer surface, said belt including mutually parallel rows of spaced openings disposed inwardly along each side marginal edge of said belt, said belt including a plurality of integral studs depending from the outer surface of said belt, said studs being disposed intermediately of said belt side margins and the respective rows of openings and between said rows of openings, said rows of studs being disposed in a pattern minimizing impaction of material therebetween and maximizing traction over the surface over which the track will travel, said belt comprising a composite construction having outer layers of a resilient material having intimately embedded therebetween an inner central layer metallic mesh and upper and lower layers of non-metallic mesh, said metallic mesh including outer, flexible longitudinally disposed web members positioned immediately adjacent the side margins of said belt and inner pairs of flexible, longitudinal web members



respectively immediately flanking said respective rows of openings, said metallic mesh including transverse web members integrally connected to said longitudinal web members and positioned in intervening belt portions between adjacent openings in said belt, said transverse web members having a cross sectional modulus greater than that of said longitudinal web members, and rigid clips circumposed about said intervening belt portions between adjacent belt openings and clampingly engaging the resilient material thereat whereby forces applied by the direct-driving sprockets at said openings are substantially distributed throughout the composite belt.

3,285,678
DRILL COLLAR STABILIZER
William R. Garrett and Samuel T. Crews, Jr., Midland, Tex., assignors to Drilco Oil Tool, Inc., Midland, Tex., a corporation of Texas
Filed Jan. 13, 1964, Ser. No. 337,393
5 Claims. (Cl. 308—4)



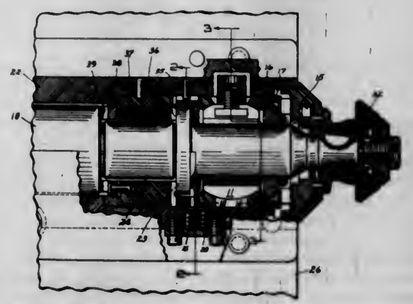
1. A drill collar stabilizer comprising
a generally tubular body,
means at each end of the body for connecting the body in a drill string,
a plurality of helical blades integral with the outer periphery of said body extending radially ouwardly therefrom,
each of said blades having a plurality of beds of deep hard facing in the outer peripheral surface thereof extending transversely thereacross,

said beds being formed by a plurality of grooves in the outer peripheries of the blades extending longitudinally relative to the stabilizer body and circumferentially spaced apart,

each groove extending longitudinally beyond the upper end of the adjacent groove at one side thereof and the lower end of the adjacent groove at the other side thereof,

each said groove being filled flush with a plurality of contiguous tungsten carbide pellets held in place by brazing material.

3,285,679
PRECISION SPINDLE MOUNTING
Harold E. Balsiger, Waynesboro, Pa., assignor to Landis Tool Company, Waynesboro, Pa.
Filed Aug. 16, 1965, Ser. No. 480,053
7 Claims. (Cl. 308—121)



1. A bearing system comprising

(a) at least one bearing member,

(b) a journal rotatably supported in said bearing member,

(c) peripherally spaced pre-formed grooves in said bearing member defining rigid peripherally spaced bearing pads,

(d) said bearing member having means adjusting the same radially to form between each bearing pad and said journal an oil film of substantially uniform and irreducible thinness entirely across the periphery of the pad for the full range of operating conditions of said bearing member and journal whereby to prevent radial displacement of said journal by the external radial forces acting on said journal for the full range,

(e) a supply of oil having flow through said grooves from one end to the other in excess of that needed for lubrication, a minor part of which passes between each of said pads and said journal and forms said oil film in response to rotation of said journal,

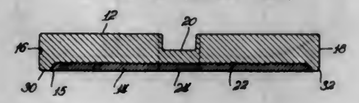
(f) the volume of said oil film between each bearing pad and said journal being limited due to the fit between said pads and said journal and, therefore, subject to rapid increase in temperature.

(g) means to control the temperature rise in said oil film regardless of the thinness of said oil film,

(h) which consists in the circumferential dimension of each paid being limited in accordance with the limited oil film thickness, to a length wherein each oil film is discharged to one of said grooves while its temperature is well below the vapor point of the oil in the oil film,

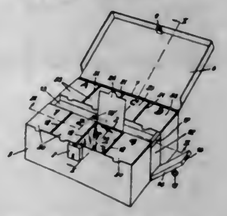
(i) the volume of the oil flowing through each groove being sufficient to quench the respective heated oil film as it is discharged from the adjacent pad, whereby the discharging of the heated oil film into the groove produces substantially no temperature rise in the oil supplied to the next adjacent pad from the same groove.

3,285,680
BEARING
Joseph J. Dailey, deceased, late of East Peoria, Ill., by Helen G. Dailey, legal representative, 312 Brookview Road, East Peoria, Ill.
Filed June 26, 1963, Ser. No. 321,990
11 Claims. (Cl. 308—237)



1. A light weight bearing made of aluminum alloy and a circumferential reinforcing back formed thereon of a material relatively heavier than aluminum alloy, said circumferential portion being intimately bonded to an unoxidized surface of the material of the bearing within the circumference thereof by a metal whose melting point is above the boiling point of aluminum and an intermetallic compound of said alloy and heavier material in that an oxidized surface of the aluminum alloy has been vaporized away by applied particles of the higher melting point metal that are embedded in the unoxidized aluminum alloy at said unoxidized surface.

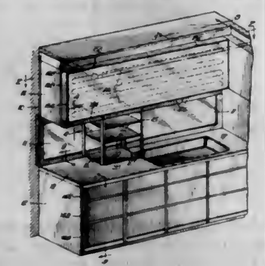
3,285,681
HOUSEHOLD CASH-BOX
Kurt Niederer, Eichfeldstrasse 8, Rapperswil, Switzerland
Filed May 25, 1965, Ser. No. 458,677
2 Claims. (Cl. 312—204)



1. A household cash-box for allotting and keeping household money, comprising a lockable box sub-divided in a plurality of separate compartments of which four are adapted to receive equal amounts as weekly allotments and further compartments are adapted to receive allocations of the monthly household money for separate uses. and a secret space independent of said compartments and slotted on its top for the insertion of coins and folded bills, said compartments being arranged in rows parallel to the front wall of the box, the latter being marked by digits for weekly-allotment compartments and respectively by letters for special expenses, spaced partitions separating the rows of compartments and defining therebetween the secret space and a closure lid for each compartment and access means to the secret space.

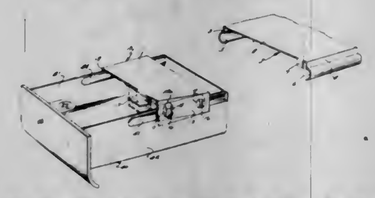
3,285,682
KITCHEN CABINET STRUCTURE
William R. Nelson, Des Plaines, Ill., assignor to Kranel Mfg. Co., Elmhurst, Ill., a partnership
Filed July 8, 1964, Ser. No. 381,267
17 Claims. (Cl. 312—223)

1. In combination, a kitchen having a wall provided with a window, a cabinet structure having a lower section with an upper surface and disposed below said window, said cabinet structure having an upper section disposed above said window, said upper cabinet section having compartments movable in a vertical direction and normally disposed in elevated position above said window, means for lowering said compartments to accessible position in front of said window and for raising said com-



partments to position above said window, power operating means for raising said compartments, and latch means for holding the compartments in raised position, said latch means being released by slight upward movement of the compartment from their raised positions for lowering of said compartments by the weight thereof.

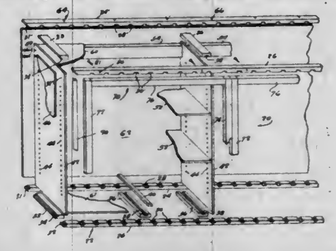
3,285,683
ASH TRAY
Forest L. Middleton, Middleville, and Harold D. Wind, Grand Rapids, Mich., assignors to Lescoa, Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Dec. 9, 1964, Ser. No. 417,147
10 Claims. (Cl. 312—246)



1. An ash tray adapted to be mounted in the interior of an automobile and the like, comprising: a mounting member; an ash box; a carriage element; means slidably interconnecting said member, said ash box and said carriage element; a twist in said carriage element biasing one side of said element from a symmetrical position to lie above the other; a stop on said mounting member lying in the path of said carriage element and determining the outward extent of its movement with respect to said member; and said stop of a size such that biasing of said carriage element toward its symmetrical position disengages said element from said stop for removal from said member.

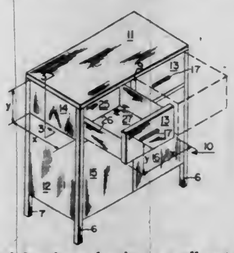
3,285,684
CABINET CONSTRUCTION
John V. Duncan, 475 E. 1st St., Akron, Colo.
Filed Aug. 6, 1965, Ser. No. 477,785
10 Claims. (Cl. 312—257)

1. A cabinet comprising an open substantially-rectangular top and bottom frame, said top and bottom frames each including, respectively, a pair of laterally-spaced, elongated, substantially-rectangular and parallel front and back side frame members with the front and back side frame members of each frame being disposed, respectively, in vertically-spaced and parallel relationship, said front and back side frame members each having grooves extending transversely thereacross with the grooves on one of said side frame members aligned with a groove of any other of said side frame members, said grooves of said top and bottom frames, respectively, being disposed in confronting relationship, a plurality of vertically-extending, substantially-rectangular partition walls, said partition walls having their respective corners engaged and secured in pre-



selected ones of said aligned grooves, a closure wall extending between each adjacent pair of partition walls and fixedly secured to said side frame members at said top and bottom frames, and a back wall extending across and being fixedly secured to each adjacent pair of partition walls.

3,285,685
FURNITURE
Frank W. Hewett, P.O. Box 818, Parker, Fla.
Filed July 30, 1964, Ser. No. 386,208
2 Claims. (Cl. 312—287)

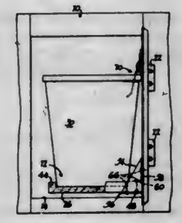


1. A piece of furniture having a pull-out drawer, said piece of furniture being provided with a drawer-receiving opening to interior drawer space therein in each of the front and an end thereof, said openings having the same dimensions and said dimensions being the same as those of the front of said drawer whereby said drawer may be selectively mounted in either one of said openings for pull-out operation therethrough and when so mounted the front thereof serves as a closure for said opening, and a panel physically separate from said piece of furniture and drawer and also having the same dimensions as said opening whereby it may be inserted in an opening not occupied by a drawer, and coacting means on the opposite edges of the panel and on corresponding edges of said openings for detachably retaining said panel in opening-closing position in the opening in which it is inserted as aforesaid.

3,285,686
BASKET SUPPORT
Edward L. Beaver, 4842 Middlesex Ave., Dearborn, Mich.
Filed Oct. 12, 1964, Ser. No. 403,270
2 Claims. (Cl. 312—329)

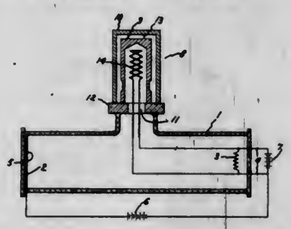
1. The combination of a basket support structure with a vertically hinged door of a cabinet having a hollow body open on one side, and wherein the vertically hinged door closes said opening, the basket support structure comprising a horizontally positioned support for a basket adapted to be secured to and to be movable with said door

and having spaced apart vertically extending brace members secured to the inner surface of said door and generally parallel spaced apart side portions extending substantially at right angles from said door and an arcuate portion spaced from said door and extending into said hollow body of the cabinet and joining said side portions



and having a ledge thereabout to retain the lower portion of a basket, and a snap-acting clamp adapted to be secured on the inner surface of said door above said support and having an angular downwardly extending portion for engaging an inner surface of the upper edge of the basket to hold same in a locked but releasable position.

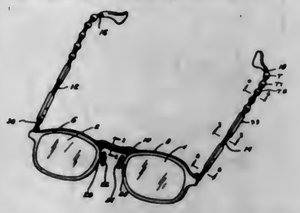
3,285,687
GETTERING APPARATUS
Virgil L. Stout, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 30, 1963, Ser. No. 334,372
13 Claims. (Cl. 316—30)



1. A gettering device for removing gases from a first chamber comprising a second at least partially evacuated chamber, closure means separating said chambers including a thickness of first gettering material communicating between said chambers, means for heating said first gettering material to a temperature for sorbing gases in said first chamber and passing hydrogen into said second chamber, and second gettering material located in said second chamber and generally spaced from said closure for sorbing the hydrogen passing through said first gettering material.

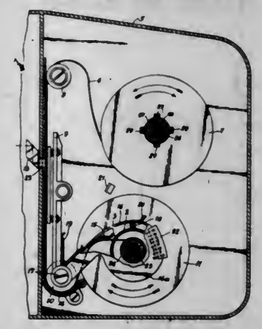
3,285,688
EYEGLASS FRAME WITH BIMETALLIC STRIP MEANS TO AUTOMATICALLY ADJUST FIT ON WEARER
Emil S. Wleszeck, Box 175, Salem, N.H.
Filed Dec. 22, 1961, Ser. No. 161,688
6 Claims. (Cl. 351—41)

1. An eye glass frame which automatically adjusts the fit on the wearer to compensate for changing temperature, comprising:
(a) a front support piece containing two spaced and planar disposed lens retaining members;
(b) a central nose piece rigidly connected to the inner adjacent portion of each of said lens retaining members;
(c) a lens in each of said lens retaining members;
(d) a temple bar and ear engaging member which is hingedly connected to the outer disposed portion of each of said lens retaining members;
(e) said temple bar and ear engaging member extending rearwardly and generally perpendicular to the planar disposed lens retaining members;



(f) a length of said temple bar and ear engaging member being a bimetallic strip means for automatically bending said temple bar and ear engaging member to more firmly grip the wearer when temperature rises, said bimetallic strip means consisting of an elongated section of two thin laminated strips of different metals having different coefficients of thermal expansion.

3,285,689
MOTION PICTURE CAMERA
Heinz Küppenbender, Wurttemberg, Germany, assignor to Carl-Zeiss-Stiftung, doing business as Carl Zeiss, Wurttemberg, Germany, a corporation of Germany
Filed Oct. 26, 1964, Ser. No. 406,527
Claims priority, application Germany, Oct. 25, 1963, Z 10,429
6 Claims. (Cl. 352—83)



1. A motion picture camera employing a film of double picture width provided on both edges with perforations and having means for exposing each half of said film one after the other to two rows of pictures which will appear one next to the other on said film, including in said camera a film advancing means and two film spool bodies of which one comprises a conventional spool body, while the other one comprises a cylindrical core provided with only one film engaging flange, said last named spool body being rotatable about a fixed axis in said camera, the other flange of said one film spool body comprising a guide plate which is pivotally mounted about an axis arranged spaced from the axis of rotation of said spool body in said camera, said guide plate including means for automatically stopping said film advancing means and for operating said means for exposing said film to two adjacent rows of pictures one after the other and for reversing the rotation of said two film spool bodies after the film has been exposed to one row of said pictures so that the other half of the film may be exposed to said second row of pictures without interruption.

CHEMICAL

3,285,690
METHOD OF IMPROVING THE DIMENSIONAL STABILITY AND ELASTIC RECOVERY OF ALL-COTTON STRETCHABLE FABRICS AND PRODUCTS THEREOF
Albert S. Cooper, Jr., Metairie, Alton L. Murphy, New Orleans, and William G. Sloan and Wilson A. Reeves, Metairie, La., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Dec. 14, 1962, Ser. No. 244,838
2 Claims. (Cl. 8—116.3)

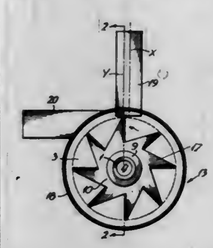
1. A process for the production of a dimensionally stabilized creaseproof, and stretchable cotton fabric comprising
(a) slack mercerizing a cotton fabric with an aqueous solution containing about from 13 to 45 parts by weight of sodium hydroxide to produce an essentially completely-shrunken cotton fabric;
(b) hot water-washing and acid-souring the thus-shrunken cotton fabric to remove all excess sodium hydroxide;
(c) resin-treating the shrunken cotton fabric, under minimum processing tensions to avoid restretching the shrunken cotton fabric and to a wet-pickup of about from 60 to 100 weight percent, with an aqueous solution containing about from 0.7 to 3.0 weight percent of an acid-type catalyst and about from 5 to 15 weight percent of dimethylol ethylene urea; and
(d) while maintaining said minimum processing tensions to avoid restretching the shrunken cotton fabric, heating the resin-treated shrunken fabric at a temperature of about from 25° to 160° C. for about from 15 minutes to 3 minutes, the longer times being employed with the lower temperatures, to dry cure the dimethylol ethylene urea, thereby to produce a dimensionally stabilized, creaseproof, and stretchable cotton fabric.

3,285,691
EPICHLOROHYDRIN AND ACID ANHYDRIDE TREATMENT OF WOOL
Nathan H. Koenig, Berkeley, Calif., assignor to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Oct. 28, 1963, Ser. No. 319,613
5 Claims. (Cl. 8—128)

1. A process for chemically modifying wool which comprises reacting wool under essentially anhydrous conditions with a mixture containing:
(a) 10 to 98% by weight of epichlorohydrin and
(b) 90 to 2% by weight of an acid anhydride selected from the group consisting of aromatic cyclic anhydrides and aliphatic cyclic anhydrides.

3,285,692
APPARATUS FOR DISTRIBUTING MATERIAL TO REDUCE EVAPORATION FROM WATER STORAGES
Colin Scott Robertson, P.O. Box 369, Broken Hill, New South Wales, Australia
Filed May 24, 1960, Ser. No. 56,076
Claims priority, application Australia, May 26, 1959, 49,197/59
3 Claims. (Cl. 21—61)

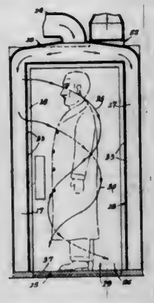
1. Apparatus for producing a stream of fine particles from a block of amphipathic material comprising a hollow spindle rotatable about a substantially horizontal axis, said spindle being open at one end and having spaced apart radial openings, a cylindrical brush assembly secured on said spindle and made up of spaced bundles of stiff bristles between which said radial openings of the spindle are located, a casing disposed about said brush assembly and having air inlet openings adjacent the opposed ends of said spindle, which air inlet openings are coaxial with said spindle, a feed hopper extending from the upper portion of said casing and communicating at its base with the interior of said casing above the upper portion of said brush assembly, the axis of said hopper being substantially parallel to a radial plane extending from said axis of the spindle, an outlet tube extending from said casing substantially at right angles to said hopper and having an opening communicating with said interior of the casing adjacent said base of the hopper, the axes of said hopper and outlet tube lying substantially in a common plane which is perpendicular to said axis of the spindle, means coupled to said spindle at the end thereof remote from said one open end and being operative in use to rotate said spindle and brush assembly in the direction moving the ends of said bristles at the upper portion of the brush assembly past said base of the hopper toward said opening of the outlet tube to abrade fine particles from the lower end of a block of amphipathic material pressed in said hopper toward said brush assembly and to propel said fine particles tangentially from said brush assembly through said outlet tube, and fan elements secured on each end of said spindle and operative upon rotation of the latter to draw air into said interior of said casing through said inlet openings, causing the air to move inwardly towards the center of the brush assembly from each end of the spindle and further inducing the movement of air into said open end of the spindle and out of the latter through said radial openings past said bristles for discharge through said outlet tube along with said fine particles.



3,285,693
APPARATUS FOR DECONTAMINATING PERSONNEL
Joseph Madl, Jr., 990 Volante Drive, Arcadia, Calif.
Filed Sept. 17, 1962, Ser. No. 224,127
3 Claims. (Cl. 21—61)

1. In decontaminating apparatus,
(a) an enclosure having a rectangular cross-sectional form with opposite outer walls,
(b) two substantially vertical orifice walls spaced from each other and inwardly from each of two opposite outer walls, said orifice walls having each a plurality of orifices therethrough,
(c) an inlet-air passage between each said outer and orifice wall, said passages being independent of each other, the orifices of the orifice walls opening said passages to the interior space between the orifice walls to direct opposed masses of air against the outer surfaces of a person disposed in said interior space,

(d) air-moving means including outlet conduit means connecting said air-moving means with said passages to conduct inlet-air to the upper portions of said passages,

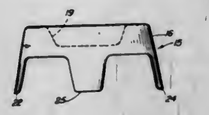


(e) air outlets at the corners of the enclosure flanking the lower portion of each orifice wall for imparting rotational and downward movement to said air masses and for exiting air from said interior space,

(f) conduit means connecting said air outlets with the inlet of said air-moving means, and

(g) filter means in at least one of said conduit means.

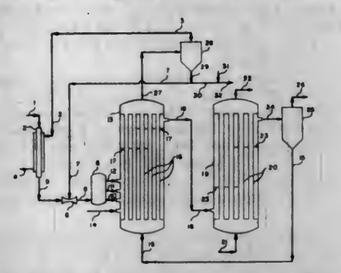
3,285,694
CITRONELLA CANDLE AND STAND
Ferdinand Marchi, Staten Island, N.Y., assignor to Louis Marchi & Co., Inc., Staten Island, N.Y., a corporation of New York
Filed Dec. 9, 1964, Ser. No. 417,129
9 Claims. (Cl. 21—116)



1. An insect repellant candle assembly comprising a vessel having tapered walls converging toward an opening, an insect repellant candle within said vessel, and a combination cover-stand, said cover-stand being adapted to fit closely over said opening to suppress vaporization of repellant from said candle during storage, and having means for supporting said vessel in an elevated position, when said candle is in use.

3,285,695
PRODUCTION OF AMMONIUM NITRATE
Lucien H. Cook, Port Washington, and Ivo Mavrovic, New York, N.Y., assignors to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 13, 1963, Ser. No. 330,371
13 Claims. (Cl. 23—103)

1. Process for the production of concentrated ammonium nitrate solution and process steam which comprises reacting aqueous nitric acid solution with a gas stream comprising ammonia vapor, thereby producing a mixed process stream comprising ammonium nitrate solution and steam, said reaction taking place while the process stream is in heat exchange with dilute ammonium nitrate solution, cooling said mixed process stream by heat exchange with liquid water whereby said liquid water is vaporized to form process steam and at least a portion of the steam in said mived process stream is condensed into the liquid ammonium nitrate solution to form said dilute ammonium nitrate solution, heating said dilute ammonium nitrate



solution by said heat exchange with reacting nitric acid and ammonia whereby a portion of the water content of said solution is vaporized to form steam at low pressure, and separating said low pressure steam from product concentrated ammonium nitrate solution.

3,285,696
METHOD FOR THE PREPARATION OF FLEXIBLE CARBON FIBRE
Yasugoro Tsunoda, Kumamoto-ken, Japan, assignor to Tokai Denkyoku Seizo Kabushiki Kaisha, Tokyo, Japan
No Drawing. Filed Apr. 5, 1963, Ser. No. 270,807
Claims priority, application Japan, Aug. 25, 1960, 35/36,145
3 Claims. (Cl. 23—209.1)

1. A method for the preparation of flexible heat resistant and corrosion resistant fibre, comprising pretreating a fibre, which is to be carbonized and which is selected from the group consisting of acrylonitrile homopolymer and acrylonitrile copolymer prepared from not less than 85 mol percent of acrylonitrile and not more than 15 mol percent of a monovinyl compound, by heating the fibre at a temperature of from 180° to 550° C. in an oxygen containing atmosphere for a time sufficient to blacken the fibre, and then carbonizing the blackened fibre at a temperature between 700° and 1200° C. for not less than one hour in an inert atmosphere to form a carbonized fibre.

3,285,697
METHOD FOR MAKING SINGLE CRYSTAL GRAPHITE SHEETS
Pei-Ching Li, Burlington, Mass., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
No Drawing. Filed Apr. 3, 1963, Ser. No. 270,479
2 Claims. (Cl. 23—209.3)

1. A process for producing an improved single crystal pyrolytic graphite sheet comprising:

(a) covering the surface of a carbon article with a layer of powdered titanium boride;

(b) placing the said carbon article in an induction furnace;

(c) heating the carbon article to a maximum temperature of 2500° C. in an inert gaseous atmosphere while maintaining the pressure inside the furnace below 40 mm. of mercury to effect the dissolving of the carbon into the titanium boride layer wherein the said titanium boride becomes super-saturated with carbon;

(d) lowering the temperature of the titanium boride-carbon solution whereby the carbon separates from the said solution to form a single-crystal sheet of pyrolytic graphite on the titanium boride layer.

3,285,698
GEOCHEMICAL METHOD
Dirk Richard Clews, Downsview, Ontario, Canada, assignor to Barringer Research Limited, Rexdale, Ontario, Canada
No Drawing. Filed Apr. 26, 1962, Ser. No. 191,682
8 Claims. (Cl. 23—230)

1. The method of detecting the presence of oil, gas and bituminous deposits by sampling from the surface of the earth and comprising:

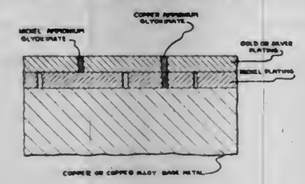
(a) obtaining a series of earth surface samples from spaced locations;

(b) treating said samples to separate therefrom any organo-metallic compounds of said deposits;

(c) determining the proportions of said compounds present in said sample;

(d) and plotting said proportions in relation to said locations.

3,285,699
POROSITY TEST METHOD
Theodore Joseph Dulski, Hummelstown, and Kermit Winston Holler, Camp Hill, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed May 7, 1964, Ser. No. 365,644
4 Claims. (Cl. 23—230)



1. The method of testing a plated article for plating imperfections, said article being of a metal selected from the group consisting of copper and copper alloys and being plated with a layer of nickel and a layer of metal selected from the group consisting of gold and silver over said layer of nickel, said method comprising the steps of contacting said article with dimethylglyoxime vapor and subsequently contacting said article with ammonia whereby copper and nickel glyoximates are formed in any imperfections in said gold plating, and said glyoximates are converted by said ammonia to copper and nickel ammonium glyoximates having a characteristic color.

3,285,700
BELT BUCKLE
Ernest J. Prisbe, Hayward, Calif., assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed July 13, 1965, Ser. No. 471,535
6 Claims. (Cl. 24—230)



1. In an assembly of the type utilized to releasably connect separate sections of a belt wherein an apertured tongue member is attached to one belt section and a buckle to the other belt section,

a buckle comprising

(a) a body portion, said body portion including a base portion having a shallow latch-receiving well formed therein and spaced, upwardly-extending sides, portions of which overlie said base portion and co-operate therewith to provide a channel for receipt of the tongue member in said body portion, the upper edges of said side portions being arced to provide a pivotal support for a cover member;

(b) a rod, fixed to and extending between the side portions of said body in spaced parallel relation to said base;

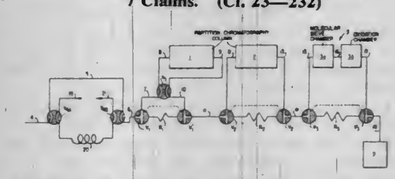
(c) a latch pivotally connected to said rod, said latch including a plurality of vertically-extending, spaced side flanges connected by a cross member, and a hook portion extending forwardly from said cross member in the direction of said side flanges, portions of said flanges being notched to provide a plurality of latch dogs and the edges of said flanges being contoured to act as camming surfaces for independent pivotal movement of said latch responsive to insertion of the tongue member into said channel;

(d) means normally urging said latch member toward said base whereby said hook is disposed in the shallow well in said base portion to lock the tongue member in said buckle; and

(e) a cover member connected to said body portion in spaced relation to said base, said cover member including a top portion, an arced flange pivotally supported by the arced edges of the side portions of said body member, said flange extending toward said base and having portions of an edge thereof engaging said latch dogs, and an integral spring clip in snapped engagement with said rod to secure said cover to said body portion;

whereby pivotal movement of said cover away from said body portion causes a corresponding pivotal movement of said latch away from said base to permit retraction of the tongue member from said buckle.

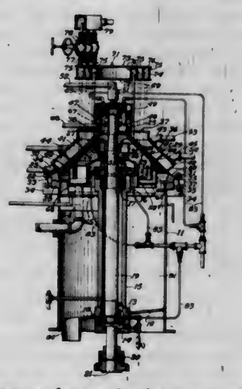
3,285,701
PROCESS AND APPARATUS FOR SEPARATING AND ANALYZING A FLUID MIXTURE
Thomas D. Robertson, Schererville, Ind., assignor, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 18, 1963, Ser. No. 252,426
7 Claims. (Cl. 23—232)



5. A method for analyzing and separating into a plurality of constituents a fluid mixture consisting essentially of a first component containing hydrogen and at least one of a member selected from the group consisting of oxygen, nitrogen, carbon monoxide and methane with at least one other component selected from the group consisting of a first member and a second member, said first member selected from the group consisting of carbon dioxide and hydrocarbons having two carbon atoms, said second member being a hydrocarbon containing from 3 to 5 carbon atoms, which comprises passing a helium carrier gas charged with said fluid mixture through a plurality of zones consisting essentially of a first zone comprised of at least one partition chromatographic column which selectively retards passage of said other component of said fluid mixture passed thereto in said carrier gas, discontinuing passage of said carrier gas charged with said fluid mixture to said partition column on the release of a predetermined constituent of said first component to retain in said column said other component, passing said carrier gas charged with said first component to a second

zone consisting essentially of a molecular sieve and an oxidizing region, selectively absorbing said first component in said molecular sieve, oxidizing hydrogen effluent from said molecular sieve in said oxidizing region, analyzing said first component, discontinuing passage of said carrier gas to said second zone, resuming flow of said carrier gas to said first zone and analyzing said other component released therefrom.

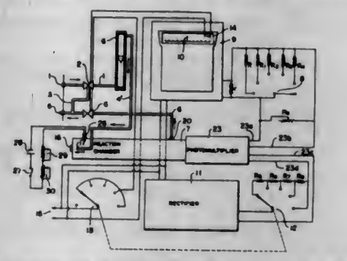
3,285,702
APPARATUS FOR CONDITIONING MATERIAL
Raymond J. Lamb, 390 Highland Ave., Ridgewood, N.J., and Roger T. Kiley, 28 Van Reypen St., Jersey City, N.J.
Filed Dec. 3, 1962, Ser. No. 241,707
11 Claims. (Cl. 23—252)



1. An apparatus for conducting reactions comprising,
(a) a generally vertical truncated conical stator defining a generally vertical truncated conical cavity,
(b) a heat exchange jacket on the wall of the stator opposite the cavity,
(c) a generally vertical truncated conical rotor mounted for rotation in the cavity defining a relatively thin conical wall,
(d) a vessel attached to the bottom of the stator defining a collection chamber communicating with the cavity in the stator,
(e) means for passing a heat exchange fluid over the conical wall of the rotor opposite the cavity,
(f) means for separating the said heat exchange fluid from the said cavity and collection chamber,
(g) means for collecting the said heat exchange fluid after passing over the rotor and discharging the same without the vessel, and
(h) means for introducing reactants into the cavity.

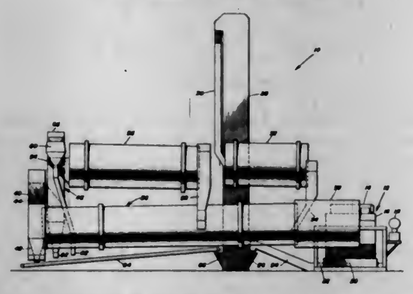
3,285,703
PHOTOSENSITIVE MEANS FOR DETERMINING TRACE OXYGEN BY MEASURING CHEMILUMINESCENCE
Yoshio Narita and Busuke Uzuki, Minato-ku, Tokyo, and Akio Tomimoto, Chigasaki, Kanagawa, Japan, assignors to Nippon Sanso Kabushiki Kaisha, Minato-ku, Tokyo, Japan, a corporation of Japan
Filed May 31, 1963, Ser. No. 284,639
5 Claims. (Cl. 23—254)

1. Analyzer apparatus for quantitatively measuring trace oxygen comprising, controllable inlet means for selectively supplying a gas sample including trace oxygen, a reaction chamber connected to said inlet means, outlet means for exhausting said chamber, phosphorus source means for releasing phosphorus vapor into said chamber to contact the gas sample and chemically react therewith to release light emissions, photomultiplier means disposed adjacent to said chamber to receive the light emissions from the chemical reaction, said photomultiplier



means converting the light emissions into an electrical output signal, electrical indicator means connected to said photomultiplier means to produce an indication related to the intensity of the light emissions within said chamber.

3,285,704
AMMONIATED FERTILIZER MANUFACTURING APPARATUS AND SYSTEM
Walter J. Sackett, Sr., 3700 Echodale Ave., Baltimore, Md.
Filed Aug. 14, 1964, Ser. No. 389,606
15 Claims. (Cl. 23—259.1)

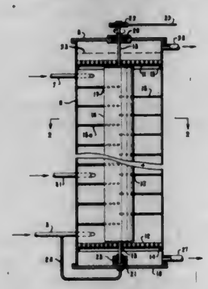


1. A continuous manufacturing plant for the manufacture of plant food material, comprising inclined ammoniator-granulator means for receiving plant food material and ammoniating and granulating it, dryer means inclined in the opposite direction from said ammoniator-granulator means for receiving the discharge therefrom and drying it, first upwardly moving inclined screen means for receiving the dried material from said dryer means, second upwardly moving screen means inclined in the opposite direction from said first screen means for receiving the oversize dried material therefrom, and cooler means inclined in the opposite direction from said dryer means for cooling the acceptable product from said second screen means.

3,285,705
CONTACTOR WITH ROTOR AND SECTOR STATORS
Frederik J. Zuiderweg and Steven Stemerding, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed May 22, 1963, Ser. No. 282,251
Claims priority, application Netherlands, May 30, 1962, 279,113
10 Claims. (Cl. 23—270.5)

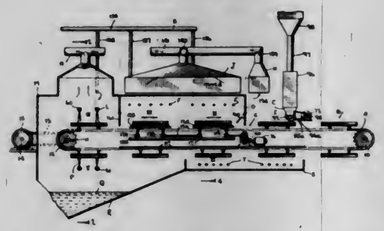
1. A rotor contactor for contacting at least two flowable phases which comprises:
an upright, elongated vessel having vertically spaced inlet and outlet means;

upright rotor means centrally mounted within said vessel so as to define an annular region between said rotor means and the interior surface of said vessel;
a series of stationary, flat ring sectors affixed to the interior surface of said vessel in substantially horizontal planes at vertically spaced positions between said inlet and outlet means within said annular region, each of said sectors having a sector arc of not more than 225°, each of said sectors being in positions that are angularly displaced one from another in vertically displaced horizontal sector planes;



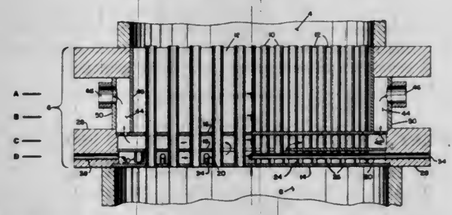
the portion of said annular region between vertically displaced ring sectors forming compartments, said compartments communicating within said annular region along radial boundaries of said compartments, said radial boundaries extending between said vessel interior surface and said rotor means;
said rotor means extending adjacent each of said compartments; and
means for driving said rotor means.

3,285,706
CONTINUOUS FUSION APPARATUS
William R. Cake, Glen Rock, N.J., assignor to Alliance Color and Chemical Corporation, Newark, N.J., a corporation of New Jersey
Filed Sept. 26, 1960, Ser. No. 58,541
6 Claims. (Cl. 23—277)



1. A continuous fusion reactor comprising a chain carrying a plurality of spaced apart trays, timed means to spread a reaction mixture in a thin layer on said trays, enclosures in which said trays are subjected to an elevated temperature to cause fusion, means to quench the reaction and means to dump the quenched reaction mass from the trays, said trays each having a base wall and side walls and each having downwardly extending connections from said base bottom wall to said chain, said chain having an upper horizontal reach moving in one direction and a lower horizontal reach moving in an opposite direction, said trays being positioned above the chain in horizontal upright position on said upper reach during the operation thereon of the means to spread and means to quench and while passing through said enclosures and said trays being positioned below said chain and in inverted horizontal position during the operation of said means to dump, said trays at all times being separate from although carried by said chain and timing means associated with movement of the chain and trays to operate the quench means only when a tray is positioned relative thereto to be quenched and to operate the means to spread when a tray is properly positioned relative thereto.

3,285,707
COOLING CHAMBER DESIGN
John Edward Loeffler, Jr., Lyndhurst, Ohio, and H. P. McAlister, Houston, and Paul Revere Prokish, La Porte, Tex., assignors to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware
Filed Dec. 27, 1963, Ser. No. 333,896
3 Claims. (Cl. 23—277)



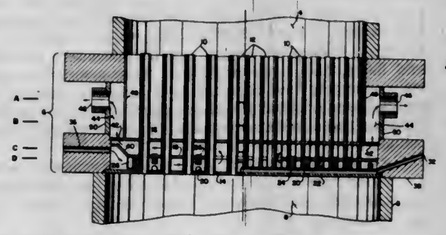
1. In an apparatus for the production of unsaturated hydrocarbons by incomplete oxidation of more saturated hydrocarbons with oxygen in a flame reaction, such apparatus having a mixing chamber for said hydrocarbons and oxygen, a flame chamber into which a plurality of auxiliary streams of oxygen are introduced to stabilize said flame; and a gas-distributor, flame-arrester, section interconnecting said chambers and having a plurality of parallel rows of tubular channels opening into said mixing chamber and said flame chamber, the improvement which includes:
(1) a double pass shell-and-tube heat exchanger interposed between said mixing chamber and said flame chamber, said heat exchanger having a shell surrounding,
(a) a first metal tube sheet forming one boundary of said flame chamber,
(b) an intermediate baffle coextensive with said first tube sheet and spaced apart therefrom, said baffle having a centrally located perforation therethrough, and
(c) a second metal tube sheet spaced apart from said baffle so as to form adjacently fluidly connected cooling chambers, the tubes of said heat exchanger constituting at least a portion of said tubular channels interconnecting said mixing chamber and said flame chamber,
(d) means for introducing coolant into one of said cooling chambers, means for withdrawing coolant from the other of said cooling chambers,
(2) said mixing chamber, said flame chamber, and said shell-and-tube heat exchanger being positioned coaxially and vertically,
(3) a plurality of conduits mounted within said cooling chamber, between said first tube sheet and said baffle and spaced apart therefrom, said conduits being positioned between adjacent groups of said tubular channels,
(a) a plurality of hollow support members for said conduits mounted on said first tube sheet and regularly spaced along said conduits in supporting relation thereto,
(b) said first tube sheet and said conduits having orifices opening into said hollow support mem-

bers, the orifices in said first tube sheet being directed between the openings of adjacent tubular channels into said flame chamber, means for introducing oxygen through said conduits, said hollow support members, and said orifices into said flame chamber,

(c) said tubular channels being arranged in parallel rows such that their centers fall on a line parallel to a diameter of said heat exchanger and the line at an angle of 60° to such diameter,

(4) coolant deflecting members mounted within said cooling chamber formed by said first tube sheet and said baffle so as to form with said tubular channels and said hollow support members a plurality of labyrinthine passageways of substantially equal length extending across said cooling chamber to said centrally located perforation in said baffle, said hollow support members together with said cooling deflecting members being positioned on said first wall of said cooling chamber in such a manner as to retain the symmetry of said groups of tubular channels.

3,285,708
HEAT EXCHANGER FOR APPARATUS FOR COMBUSTION OF GASES WITH OXYGEN
John Edward Loeffler, Jr., Lyndhurst, Ohio, and H. P. McAlister, Houston, and Paul R. Prokish, La Porte, Tex., assignors to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware
Filed Dec. 27, 1963, Ser. No. 333,929
3 Claims. (Cl. 23—277)



1. In an apparatus for the production of unsaturated hydrocarbons by incomplete oxidation of more saturated hydrocarbons with oxygen in a flame reaction, such apparatus having a mixing chamber for said hydrocarbons and oxygen, a flame chamber into which a plurality of auxiliary streams of oxygen are introduced to stabilize said flame, and a gas-distributor, flame-arrester, section interconnecting said chambers and having a plurality of regularly spaced groups of symmetrically arranged tubular channels of substantially uniform length and cross-section opening into said mixing chamber and said flame chamber, the improvement which includes:

(1) a double pass, shell-and-tube heat exchanger interposed between said mixing chamber and said flame chamber, said heat exchanger having a shell surrounding

(a) a first metal wall forming one boundary of said flame chamber,

(b) an intermediate baffle plate coextensive with said first wall and spaced apart therefrom, said baffle plate having a centrally located perforation therethrough, and

(c) a second metal wall spaced apart from said baffle so as to form adjacent fluidly connected cooling chambers, the tubes of said heat exchanger constituting a portion of said tubular channels interconnecting said mixing chamber and said flame chamber,

(d) means for introducing coolant into one of cooling chamber means for withdrawing coolant from the other of said chambers,

(e) a plurality of metal conduits mounted on said first wall of said heat exchanger between adjacent groups of said symmetrically arranged tubular channels, said first wall having orifices therein directed toward the space between the openings of adjacent tubular channels into said flame chamber, said orifices fluidly communicating with said conduits,

(f) means for introducing oxygen through said conduits to said orifices,

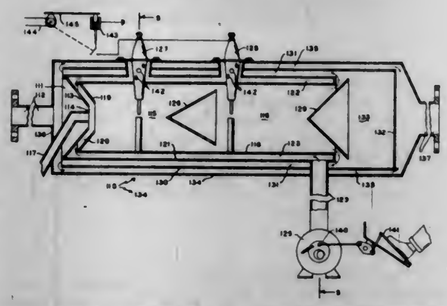
(2) coolant deflecting metallic members mounted within the cooling chamber formed by said first wall and said baffle, including

(a) a first group of deflecting members symmetrically positioned above said conduits substantially in register with the symmetrical arrangement of said tubular channels,

(b) and a second group of deflecting members in the chamber bounded by said first wall and said baffle, positioned so as to retain the symmetry of said groups of tubular channels in the outer reaches thereof away from said centrally located perforation in said baffle wall,

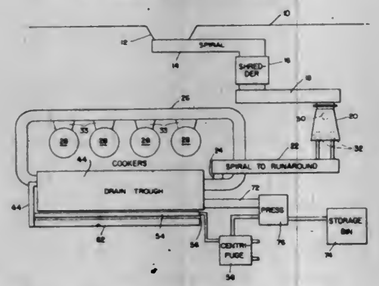
whereby coolant circulating in chamber is afforded labyrinthine paths of generally equal length across said chamber.

3,285,709
APPARATUS FOR THE TREATMENT OF EXHAUST GASES
Joseph M. Eannarino, 610 Highland Ave., Michael S. Granieri, Jr., 1805 N. James St., and Anthony J. Comis, 910 McKinley Ave., all of Rome, N.Y., and Frederic E. Stynler, deceased, late of Rome, N.Y., by John J. Ehrman, executor, New York, N.Y. (199—14 22nd Ave., Whitestone, N.Y.)
Filed Aug. 14, 1964, Ser. No. 391,065
11 Claims. (Cl. 23—277)



1. Apparatus for the treatment of combustion exhaust gases comprising an intake conduit for receiving the exhaust gas stream of a previous combustion in an internal combustion engine, flow constricting means in said intake conduit to provide a low pressure area therein, an opening communicating with said intake conduit at said low pressure area for introducing preheated outside air into the exhaust gas stream, means forming a first enclosed insulated combustion area connected to said intake conduit at the downstream side thereof, said combustion area including baffle means, electric ignition means adjacent the upstream side of said combustion area for igniting the mixture of air and exhaust gases entering the area, means surrounding said combustion area forming means and forming therewith a heat exchanger passage for preheating the air introduced at said opening, said passage communicating with said opening, means for supplying air under pressure to said passage, means forming a second combustion area communicating with the downstream side of said first combustion area, electric ignition means in said second combustion area, and an outlet conduit communicating with the downstream side of said second combustion area for permitting escape of the combustion gases therefrom.

3,285,710
APPARATUS FOR AUTOMATED RENDERING
Joseph Corrigan, Newton Center, Mass., assignor to J. C. Corrigan Company, Inc., Boston, Mass., a corporation of Massachusetts
Filed May 9, 1963, Ser. No. 279,099
6 Claims. (Cl. 23—280)



1. Apparatus for rendering tallow and the like comprising, in combination:

(a) at least one cooker having an opening at the top and adapted to heat the tallow-containing raw material to a temperature sufficient to liquefy the tallow therein;

(b) a continuous, enclosed, power-driven conveyor which passes over, under and around said cooker;

(c) means for introducing said raw material into said conveyor;

(d) gate means selectively operable to provide communication between said conveyor and said opening whereby the material carried by said conveyor may be dropped through said opening into said cooker;

(e) a container having a plurality of perforations therein;

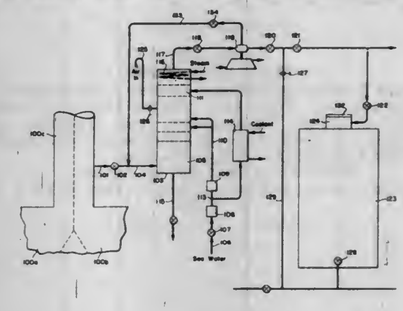
(f) means for discharging the contents of said cooker into said container;

(g) means for receiving the tallow which passes through said perforations; and

(h) power-driven means adapted to discharge from said container the material remaining therein.

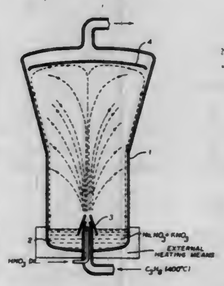
3,285,711
INERT FLUE GAS SYSTEM
Alfred E. Stanford, Glen Rock, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Apr. 24, 1963, Ser. No. 275,249
2 Claims. (Cl. 23—281)

1. A system for the preparation of inert flue gases comprising in combination, means for producing flue gases and means for treating said flue gases and removing oxides of sulfur therefrom and for inerting a cargo tank at ambient temperature, said flue gas treating means including a scrubber first stage having an inlet adapted to be connected to a source of flue gas, a conduit arranged to be connected to a supply of water, means connected to said conduit for introducing an aqueous solution of an alkaline inorganic compound into said scrubber first stage, means for intimately contacting said flue gases with said solution; a dehumidifier second stage connected and arranged to receive the scrubbed flue gases from said first stage for removing water vapor from said flue gases, said dehumidifier second stage including separate means connected to said conduit and having cooling means therein for placing cooled water from said conduit into direct



contact with the scrubbed flue gases, and means for directing the spent dehumidifying cooled water from said dehumidifier second stage into said scrubber first stage, means separate from said dehumidifier second stage for raising the temperature of the dehumidified flue gases after they leave said dehumidifier second stage thereby lowering the relative humidity of said gas, and means for directing said flue gases from the discharge of said treating means to said cargo tank.

3,285,712
APPARATUS FOR THE NITRATION OF ORGANIC COMPOUNDS IN GASEOUS PHASE
Claudiu G. Matasa, Iosif I. Drimus, and Marcel Klang, Bucharest, Rumania, assignors to Ministerul Industriei Petrolului si Chimiei, Bucharest, Rumania
Original application Oct. 25, 1960, Ser. No. 64,900, now Patent No. 3,115,527, dated Dec. 24, 1963. Divided and this application July 31, 1963, Ser. No. 298,876
Claims priority, application Rumania, Oct. 28, 1959, 43,015
7 Claims. (Cl. 23—285)



1. An apparatus for the vapor phase nitration of hydrocarbons, comprising a reaction chamber, said reaction chamber having top exit means and bottom inlet means, the bottom region of said reaction chamber defining a basin for storing a molten salt medium at a predetermined level, first and second nozzle means coaxially arranged with respect to each other and extending via said inlet means above said predetermined level of

said molten salt medium and third nozzle means arranged over said first and second nozzle means, the bottom portion of said third nozzle extending below said predetermined level of said molten salt medium, whereby a fluid stream comprising hydrocarbon gas, liquid nitric acid and said molten salt medium which exit respectively from said first, second and third nozzle means is atomized within said reaction chamber favoring thereby the nitration of said hydrocarbon gas.

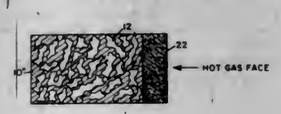
3,285,713
TUBE REACTORS
Guenter Poehler, Ludwigshafen (Rhine), Anton Wegerich, Limburgerhof, Pfalz, Otto Goehre, Heidelberg, and Hellmut Glehne, Limburgerhof, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
Filed Dec. 13, 1963, Ser. No. 330,366
Claims priority, application Germany, Dec. 18, 1962, B 70,019
8 Claims. (Cl. 23—288)



1. A tube reactor useful for the catalytic dehydrogenation of alcohols comprising a plurality of tubes in which the ratio of tube diameter to tube length is from 12:1000 to 17:1000 and the tube diameter is from 70 to 120 mm., said tubes being distributed over the cross-section of the reactor so that a central space is left free from tubes, the cross-sectional area of said central space being from 7 to 25% of the total cross-sectional area of the reactor, a plurality of baffle plates substantially perpendicular to said tubes and located alternately against the reactor wall and in the center of the cross-section of the reactor to deflect a gaseous heating medium, said central baffle plates having a surface area of 25 to 60% of the total cross-sectional area of said reactor and said baffle plates along the wall having a surface area of 50 to 75% of the total cross-sectional area of said reactor, and annular ducts arranged one at each end of said reactor and having openings communicating with the interior of said reactor for the supply and withdrawal of said gaseous heating medium.

3,285,714
REFRACTORY METAL COMPOSITE
Gail F. Davies, Mentor Township, and Walter E. Smith, South Euclid, Ohio, assignors to Clevite Corporation, a corporation of Ohio
Filed Apr. 2, 1963, Ser. No. 270,111
13 Claims. (Cl. 29—182.1)

1. A refractory composite structure, comprising: a first permeable matrix of a given refractory metal having uniformly distributed pores of a size ranging between 1/10 to 10 microns and a predetermined degree of permeability; a second permeable matrix of a given refractory metal having uniformly distributed pores of a size ranging from 20 to 100 microns and a comparatively lower degree of permeability; said first and said second matrix being metallurgically bonded together; infiltrants in a solid state composed of materials selected from the group consisting of lithium, copper, silver, manganese and tetrafluoroethylene, at least said second matrix being infiltrated with one of said infiltrants; said first matrix having a permeability effective to establish a control valve to permit the efflux of the solid infiltrants in vapor form only upon exposure of the composite to a predetermined temperature; and a plurality of discontinuous fibers of a refractory material uniformly distributed through said second matrix and substantially individually bonded to said matrix.



13. A method of forming an infiltrated refractory structure, comprising: preparing a first powder having a relatively fine particle size and preparing a second powder having a comparatively coarse particle size, said powders being of a metal selected from a group of refractory metals consisting of tungsten, hafnium, titanium, zirconium, chromium, molybdenum, columbium and tantalum; placing each powder sequentially in a suitable die; hot pressing said powder simultaneously and in a direction perpendicular to the interface of said matrices to effect a composite matrix with a permeability of a comparatively different value in each matrix which changes abruptly at the interface between the matrices; placing an infiltrant selected from a group of metals consisting of lithium, copper, silver, manganese and Teflon in contact with said composite matrix; evacuating said matrix; thereafter heating said matrix to a temperature above the melting point of said infiltrant to permeate the matrix therewith.

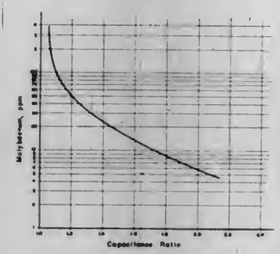
3,285,715
STRIP OF FLEXIBLE MATERIAL HAVING A PLURALITY OF SEPARATE METAL ELEMENTS MOUNTED THEREON IN ADJACENT PARALLEL RELATIONSHIP
William H. Burkhart, Jr., 29 Dryden Terrace, Short Hills, N.J.
Filed June 11, 1963, Ser. No. 287,150
11 Claims. (Cl. 29—183)



1. An article for the manufacture of shearing tools comprising a strip of flexible material and a plurality of separate metal elements mounted on said strip in adjacent parallel relationship, the flexibility of the strip providing hinges for the elements at their areas of adjacency, each of the elements providing a substantially flat face adjacent the strip terminating in a shearing edge extending parallel to the length of the strip, the elements' said shearing edges being contiguous and extending in substantially the same plane, the elements being

formed to allow the strip to be bent to conform said faces to a desired curvature.

3,285,716
ETCHED TANTALUM FOIL
Claude E. Contant, Bechtelsville, Pa., assignor to Kawecki Chemical Company, Boyertown, Pa., a corporation of Pennsylvania
Filed July 20, 1964, Ser. No. 383,694
2 Claims. (Cl. 29—183)



1. Tantalum foil characterized, when surface etched, by a ratio of electrical capacitance at 125° C. to capacitance at 25° C. of less than 2 and comprising high purity tantalum in which there is incorporated between about 35 and 300 parts per million of extraneous molybdenum.

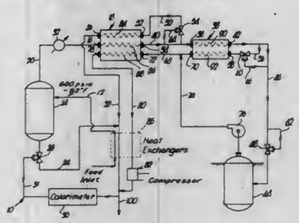
3,285,717
COMPOSITE ALUMINUM ARTICLE AND ALUMINUM ALLOYS
Edward F. Fischer, Cleveland, Ohio, assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Aug. 10, 1964, Ser. No. 388,674
11 Claims. (Cl. 29—197.5)

1. An aluminum alloy consisting essentially of aluminum, 12% to 30% silicon, 10% to 30% copper, 2% to 6% manganese, up to 6% iron, the total amount of said iron and manganese being 3% to 8% and the combined total amount of said silicon, copper, manganese and iron being at least 35%, the said aluminum alloy beng characterized by high resistance to wear at room and elevated temperatures and an initial room temperature Brinell hardness of at least 150.

3,285,718
METHOD OF SOLIDIFYING LIQUID FUEL AND PRODUCT THEREBY OBTAINED
Marion A. Whitfield, Dallas, and James B. Dobbs, Irving, Tex., assignors to The Western Company of North America, Fort Worth, Tex., a corporation of Delaware
Filed Mar. 11, 1963, Ser. No. 264,379
12 Claims. (Cl. 44—7)

3. A rapidly gelled solid fuel comprising a relatively minor proportion of the salt of an organic acid material having at least one carboxylic acid group attached to a hydrocarbon group with at least six carbon atoms and a base selected from the group consisting of alkali metal hydroxides, ammonium hydroxide, calcium hydroxide, barium hydroxide, triethylenetramine, tetraethylenepentamine, and aminoethanol, and a relatively major proportion of a fuel selected from the group consisting of normally liquid hydrocarbons and alcohols, said fuel being dispersed throughout and bound into said salt, which serves as a matrix for said fuel said organic acid material comprising an effective proportion, no less than about one-eighth of one percent based on the total original volume of constituents of which said gelled fuel is made, on a liquid basis, of a polybasic fatty acid polymer, at least dimer.

3,285,719
METHOD AND APPARATUS FOR CONTROLLING B.t.u. CONTENT OF GAS OUTPUT FROM LIQUEFIED GAS STORAGE FACILITY
William W. Bodle, Deerfield, Ill., and Alexander Russell Young, Kansas City, Mo., assignors to Conch International Methane Limited, Nassau, Bahama Islands, a corporation of Bahama Islands
Filed May 23, 1963, Ser. No. 282,727
8 Claims. (Cl. 48—190)



1. In a process of maintaining inlet and outlet natural gas streams at substantially equal B.t.u. values in a natural gas stream transmission system having a liquefied natural gas storage facility and wherein the inlet gas contains nitrogen, a major proportion of methane, and higher hydrocarbons of C_2 and above, the improved steps of: cooling the inlet gas stream to a first temperature level to effect liquefaction of a certain proportion of the higher hydrocarbons therein without effecting liquefaction of the bulk of the methane in the same; removing the liquefied higher hydrocarbons from the said inlet gas stream; then cooling the remainder of the inlet gas stream to a second temperature level to effect liquefaction thereof and producing a liquefied gas product; confining said liquefied gas product in a storage area under conditions permitting a certain proportion of said liquefied gas product to vaporize; directing the vaporized natural gas out of said storage area to form at least a portion of said outlet gas stream; and adding higher hydrocarbons from said certain proportion thereof to the outlet gas stream at a rate to maintain the B.t.u. value of the outlet gas stream in predetermined relative relationship to the B.t.u. value of the inlet gas stream.

3,285,720
APPARATUS FOR PRODUCING GLASS FIBERS
Warren Wendell Drummond, Allison Park, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 29, 1963, Ser. No. 298,337
3 Claims. (Cl. 65—1)

1. In apparatus for producing glass fibers by attenuating streams of glass flowing through orifices in a bushing, the improvement which comprises:

an enclosure having upper and bottom walls of a heat radiating material,

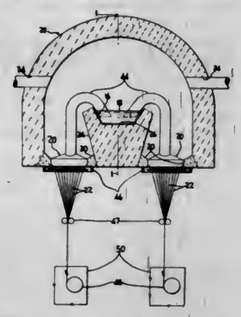
said enclosure having an opening in the bottom wall thereof,

a bushing unit mounted in and extending from said radiant heat enclosure into said opening to provide for the transfer of heat from said enclosure to said bushing unit,

means for heating said heat radiating enclosure to maintain the interior thereof and its contents at a substantially uniform temperature,

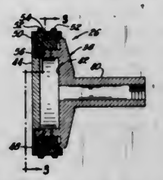
a container having an opening therein positioned in said enclosure and containing a pool of molten glass, and

a heat conductive tube connected to said bushing unit and extending from a point beneath the surface of said molten glass through the opening in said con-



tainer to said bushing unit, said tube being exposed both to said heating means and said heat radiating enclosure throughout the length thereof.

3,285,721
METHOD AND APPARATUS FOR PRODUCING STRAND PACKAGE
William H. Ewing, Newark, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Nov. 9, 1962, Ser. No. 236,504
6 Claims. (Cl. 65—2)

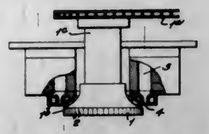


1. A method of collecting a strand of filaments comprising moving a strand in a predetermined path, deflecting the strand to opposite sides of the path to cause each sequential portion of the strand to form a horizontal figure eight pattern, collecting the strand on a surface, providing relative movement between the strand path and the surface, and repeating the same relative movement to build the strand up on the surface to a predetermined thickness.

3. An oscillator for producing loops in a strand comprising a generally circular body having two faces, each of which has a plurality of recesses disposed peripherally around generally circular edges thereof, the recesses at each face being uniformly spaced from each other and from the nearest recesses on the opposite face.

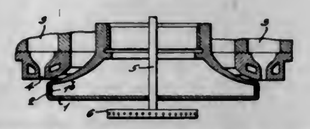
3,285,722
APPARATUS FOR PRODUCING FIBERS FROM THERMOPLASTIC MATERIAL
Marcel Levecque, Saint-Gratein, Marcel Mabru, Paris, and Maurice Charpentier, Rantigny, France, assignors to Compagnie de Saint-Gobain, Paris, France, a corporation of France
Original application Feb. 21, 1956, Ser. No. 567,023, now Patent No. 3,114,618. Divided and this application Oct. 25, 1963, Ser. No. 318,857
Claims priority, application France, Feb. 28, 1955, 686,481
8 Claims. (Cl. 65—15)

1. In apparatus for producing glass fibers from thermoplastic vitreous material, the combination of a centrifugal body having a peripheral wall provided with a plurality of superposed rows of orifices therein and adapted to receive at its interior portion a supply of the thermoplastic material in the viscous state, said body being rotatable at a speed sufficient to project the viscous material outwardly and uniformly through said orifices in the form of streamlets, a combustion chamber surrounding said body and provided with discharge means having walls shaped to direct the discharge of gases from said chamber at high temperature and high velocity in a ring-like blast



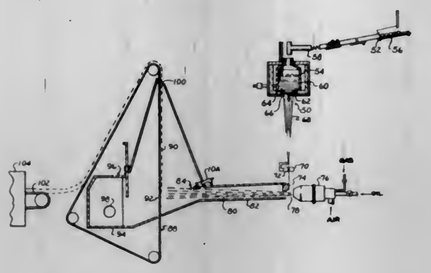
across said rows of orifices close to and in light contact with the peripheral wall of said body, said gases travelling transversely to the planes of projection of said streamlets whereby said streamlets of viscous material issuing from the orifices of the rotating body are turned, entrained and drawn out into an annular curtain of fine fibers by said gases, and means for controlling said discharge means in said combustion chamber relative to said peripheral wall to divert said annular curtain of fine fibers subsequent to their formation and initial attenuation from below said centrifugal body.

3,285,723
APPARATUS FOR PRODUCING FIBERS FROM THERMOPLASTIC MATERIAL
Marcel Levecque, Saint-Gratein, Marcel Mabru, Paris, and Maurice Charpentier, Rantigny, France, assignors to Compagnie de Saint-Gobain, Paris, France, a corporation of France
Original application Feb. 21, 1956, Ser. No. 567,023, now Patent No. 3,114,618. Divided and this application Oct. 25, 1963, Ser. No. 318,858
Claims priority, application France, Feb. 28, 1955, 686,481
5 Claims. (Cl. 65—15)



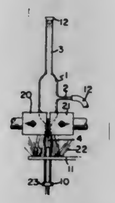
1. In apparatus for producing glass fibers from thermoplastic vitreous material, the combination of a centrifugal body having a peripheral wall provided with a plurality of superposed rows of orifices therein and adapted to receive at its interior portion a supply of the thermoplastic material in the viscous state, said body being rotatable at a speed sufficient to project the viscous material outwardly and uniformly through said orifices, a combustion chamber located adjacent said body and provided with a discharge opening having walls shaped to direct the discharge of gases from said chamber at high temperature and high velocity in a ring-like blast across said rows of orifices close to and in light contact with the peripheral wall of said body, said gases travelling at an angle to the plane of rotation of said body whereby said streamlets of viscous material issuing from the orifices of the rotating body are turned, entrained and drawn out into an annular curtain of fine fibers by said gases, and blowing means having radially disposed openings therein positioned below said centrifugal body, for directing outwardly a gaseous medium at sufficient velocity to act upon said fibers subsequent to their formation and initial attenuation, to divert said annular curtain of fibers from below the center of said centrifugal body.

3,285,724
APPARATUS FOR PRODUCING GLASS FIBERS
Dominick Labino, Grand Rapids, Ohio, assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Dec. 5, 1962, Ser. No. 242,585
7 Claims. (Cl. 65—16)



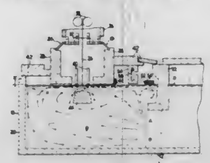
1. In an air to liquid atomizer, an air supply pipe; a liquid supply pipe extending through an air supply pipe and terminating in an elongated open end of substantially rectangular cross section, the delivery ends of said air pipe and said liquid pipe terminating at substantially the same point; an end orifice plate at the delivery end of said air supply pipe defining an orifice corresponding substantially to the rectangular cross section of the open end of said liquid supply pipe, said orifice having its longitudinal sides tapering from a relatively large height to a relatively small height in a direction extending from the interior side toward the exterior side of said orifice plate and in a direction toward said liquid supply pipe.

3,285,725
PROCESS FOR FABRICATING ARC TUBES
Frederick A. Loughridge, Manchester, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Feb. 4, 1963, Ser. No. 256,049
10 Claims. (Cl. 65—32)



1. In the process of manufacturing an iodine containing arc tube for use in a high pressure discharge device, the steps which comprise: forming an arc tube assembly of an arc tube cylinder with an extension disposed at either end thereof said arc tube and extension being formed of a high silica content glass; placing an electrode supported by a lead-in wire within said arc tube assembly and introducing a purge gas which is nondeleterious to the metal components of said device; heating said arc tube assembly to softening with flames from a burner at a point adjacent the joint of said extension and said arc tube cylinder, substantially excluding combustion gases, including any hydrogen contained therein, by deflecting said combustion gases away from the interior of said arc tube cylinder; press sealing the softened glass of said arc tube about said lead-in wire.

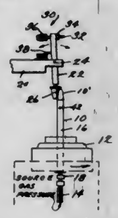
3,285,726
MANUFACTURE OF GLASS
Cecil R. Ward, Gibsonia, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 3, 1963, Ser. No. 292,605
4 Claims. (Cl. 65—83)



1. A process for manufacturing glass which comprises
melting glass batch materials to form a source of supply of molten glass,
flowing glass from said source of supply to a zone from which glass is withdrawn in ribbon form to form a single spring zone adjacent the zone of glass withdrawal and said source of supply of molten glass so that glass emanates from said spring zone along one path to said zone of withdrawal and a second path towards said source of supply of molten glass,
flowing a portion of said molten glass from said spring zone toward said zone of glass withdrawal,
flowing the remaining portion of said molten glass away from said spring zone and said zone of glass withdrawal, and
cooling a portion of the molten glass in said second path flowing away from said spring zone to change the direction of the flow thereof toward said source of supply of molten glass.

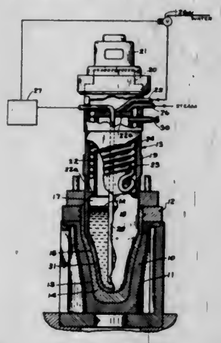
3. In an apparatus for drawing sheet glass,
a melting tank in which glass batch materials are melted to provide a source of supply of molten glass,
a drawing kiln having bottom and side walls, said melting tank and drawing kiln having aligned openings and being interconnected thereat so that molten glass is free to pass from said source of supply thereof in said melting tank into said drawing kiln to maintain a predetermined level of molten glass in said tank and said kiln,
means mounted above said drawing kiln for withdrawing glass in ribbon form from the molten glass at a gathering point therein in said drawing kiln,
a refractory shut-off member supported between said melting tank and said drawing kiln, and extending across a portion of the opening in the connection therebetween and downwardly to a point below the level of the molten glass maintained in said drawing kiln, the remainder of said opening below said shut-off member being adapted to permit the flow of molten glass from the source of supply thereof in said melting tank into said drawing kiln and to form a spring zone between said point of gather and said shut-off member, from which spring zone glass emanates along one path to said gathering point and a second path towards said source of supply of molten glass, and
at least one cooling means mounted above the level of the molten glass in said drawing kiln in the region where said second path of molten glass flows toward said source of supply,
said cooling means extending only a short distance from the adjacent side wall of said drawing kiln over said molten glass.

3,285,727
METHOD OF THERMOMETER BULB FABRICATION
William H. McGill, 905 9th Ave. N., Nashville, Tenn.
Filed Apr. 22, 1963, Ser. No. 274,762
7 Claims. (Cl. 65—109)



1. A method of forming thermometer having a thermometer bulb unitary with a thermometer stem which comprises; sealing one end of a capillary thermometer tube by heating the same to the softening point thereof, rotating said heated and sealed tube so that the capillary in said tube is maintained substantially intact, introducing a gas under pressure into the capillary of said rotating tube through the unsealed end thereof in amounts sufficient to expand said sealed end thereby providing the thermometer bulb unitary with the thermometer stem, contacting said heated and expanded sealed end, while continuing rotating said tube and introducing gas thereto, with a bulb shaping surface and urging said contacting surface into pressure engagement with said sealed end of said tube thereby shaping said thermometer bulb.

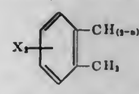
3,285,728
GLASS SHAPING PLUNGER WITH A MERCURY MASS CONDENSER COOLING MEANS
Julius J. Torok, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Apr. 21, 1965, Ser. No. 451,683
6 Claims. (Cl. 65—162)



1. A press forming element
having a wall with a glass forming surface and defining a hermetically sealed chamber,
a wetting alloy of mercury partially filling said chamber and having the properties of boiling at the operating temperatures of the press forming element,
said mercury having an upper level when the press forming element is in pressing position substantially at the peripheral edge of the article being formed,
a liquid cooled closed condenser positioned in said chamber in overlying relation to said wetting alloy of mercury,
said condenser having an inlet and an outlet extending from said condenser to the exterior of said element,
and means including sensing means within said chamber response to the temperature of the wetting alloy of mercury for controlling the flow of liquid coolant through said condenser and thereby controlling the rate of condensation of the vapor of said wetting alloy of mercury.

3,285,729
HERBICIDAL SOIL FUMIGATION
Edward D. Weil, Lewiston, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed Nov. 30, 1962, Ser. No. 241,166
8 Claims. (Cl. 71—2.3)

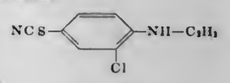
1. A method for the control of sub-surface vegetation which comprises applying a phytotoxic amount of a halogenated aromatic compound of the formula:



where X is a halogen selected from the group consisting of chlorine and bromine and *n* is zero to 1, to the sub-surface locus to be treated.

3,285,730
METHOD FOR CONTROLLING PLANT GROWTH
Konrad Weis, Willi Hahn, and Ludwig Eue, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
No Drawing. Filed Mar. 11, 1963, Ser. No. 264,067
Claims priority, application Germany, Mar. 15, 1962, F 36,281
9 Claims. (Cl. 71—2.3)

1. Method for controlling plant growth which comprises applying to a plant an active amount of a compound of the formula



3,285,731
MAGNESIUM POTASSIUM PHOSPHATE-CONTAINING FERTILIZER AND PROCESS
Murrell L. Salutsky, Silver Spring, and James M. Sanborn, Dayton, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed July 22, 1963, Ser. No. 296,445
14 Claims. (Cl. 71—33)

1. A complete non-burning particulate solid fertilizer consisting essentially of magnesium ammonium phosphate having intimately blended therewith from 1 to 99% magnesium potassium phosphate.

13. The method of preparing a complete non-burning fertilizer composition comprising granulating magnesium ammonium phosphate with 1 to 99% by weight of magnesium potassium phosphate.

3,285,732
CONTINUOUS SINGLE-ZONE THERMOPHILIC PHASE COMPOSTING PROCESS
Karl Ludwig Schulze, 148 Spartan Ave., East Lansing, Mich.
Filed Dec. 5, 1963, Ser. No. 329,608
3 Claims. (Cl. 71—9)

1. A continuous single phase process for aerobic decomposition of organic material operated continuously in the thermophilic phase which includes the steps of:
(a) introducing undecomposed organic material at ambient temperature directly into a composting vessel containing a mass of decomposing material all of which decomposing material in said composting vessel is continuously maintained in the thermophilic phase at a temperature range between about 130 degrees and about 160 degrees Fahrenheit,
(b) agitating said decomposing mass in said composting vessel so that said introduced undecomposed organic material is thoroughly intermixed with said decomposing mass in said composting vessel,
(c) withdrawing product at a temperature range between about 130 and 160 degrees Fahrenheit directly from said mass of decomposing material maintained in said thermophilic phase so that the introduction of said undecomposed organic material into said composting vessel and the withdrawal of said product from said composting vessel is balanced to maintain said thermophilic temperature range in said decomposing mass and to maintain a preset operating level of said decomposing mass in said composting vessel, so that substantially every particle removed from said vessel has been subjected to said thermophilic temperature range for a minimum of 24 hours, and
(d) supplying oxygen containing gas to said decomposing mass in said composting vessel at a rate such that the exhaust gas from said decomposing mass contains residual oxygen.

3,285,733
SLOW RELEASE FERTILIZER COMPRISING UREA, WAX, AND NATURAL RESIN
James E. Hess, Springfield, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
No Drawing. Filed Dec. 13, 1963, Ser. No. 330,229
11 Claims. (Cl. 71—64)

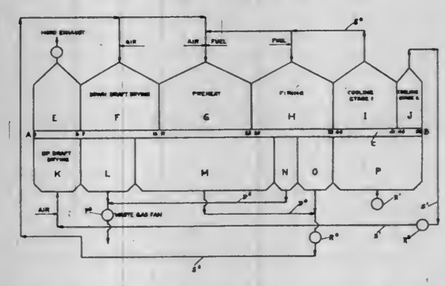
1. A slow release fertilizer composition which comprises a dispersion of solid urea in solid petroleum wax, said wax having dissolved therein an East India resin selected from the group consisting of pale, batu, and black, said dispersion being characterized in that substantially all the particles of said solid urea in said dispersion are surrounded by and completely encased in said petroleum wax, the amount of said East India resin being 0.5–40% by weight of said petroleum wax.

7. Method of forming a slow release fertilizer comprising a dispersion of solid urea in a solid paraffin wax which when in molten state normally reacts with solid urea to form a urea-paraffin wax adduct which comprises (1) heating said paraffin wax to above its melting point whereby molten paraffin wax normally susceptible to adduction is obtained, (2) dissolving in said molten paraffin wax as an adduct inhibitor 0.5–40%, by weight of said molten paraffin wax, of a resin selected from the group consisting of damars, East Indias, copals, elemi, and mastic, (3) dispersing solid urea in the molten paraffin wax containing said adduct inhibitor dissolved therein, and (4) cooling the resulting dispersion to below the melting point of said paraffin wax, whereby a slow release fertilizer comprising a dispersion of solid urea in solid paraffin wax is obtained.

3,285,734
METHOD OF PRODUCING HOMOGENEOUS METAL-CONTAINING SOLID MIXTURES
Arthur Adler, % C. K. Williams & Co., Inc., Easton, Pa.
No Drawing. Filed Oct. 1, 1963, Ser. No. 312,881
18 Claims. (Cl. 75—.5)

1. A process for producing a homogeneous metal-containing product which comprises the steps of:
intimately mixing a paste comprising a polyhydroxy organic compound, a liquid vehicle for said compound, and at least two particulate metalliferous substances at least one of which is a reducible compound of oxygen and a metal melting above 250° C.;
drying said paste to a homogeneous residue;
heating said residue in a reducing atmosphere at a temperature sufficient to decompose said organic compound;
and continuing said heating until at least one said reducible compound is reduced to elemental metal.

3,285,735
REMOVAL OF CONTAMINANTS SUCH AS ARSENIC FROM IRON ORE AND APPARATUS THEREFOR
Donald D. Phelps, Coraopolis, Pa., assignor to Dravo Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 2, 1963, Ser. No. 327,476
7 Claims. (Cl. 75—6)



1. In the method of operating a sintering strand having a traveling grate onto which ore to be processed at high temperature is continuously charged and which moves the ore over a succession of windboxes through a preliminary zone followed by a firing zone and then a cooling zone and wherein the gases that pass through the ore in the firing zone into the windboxes are recycled to the preliminary zone to pass through the freshly charged material, the ore being one containing a contaminant that is vaporized in the firing zone and which will condense on the freshly charged ore, the steps which comprise separately removing from the windboxes under the firing zone those combustion gases in which the vaporized contaminant is most concentrated at a rate such that the contaminant in the gases so removed closely approximates and is not less than the rate at which the contaminant is supplied to the strand by the feed material, wasting the gases so separately removed to atmosphere, and recycling remaining gases from the firing zone which also carry some contaminant to the preliminary zone where it passes through the bed of ore, whereby the contaminant is exhausted by the gases so removed and vented to atmosphere at about the same rate that it is supplied by the incoming ore with the recuperation of heat from the gases which are recycled.

3,285,736
POWDER METALLURGICAL ALLOY
Walter K. Brinn, Euclid, and Ronald L. Barto, Wickliffe, Ohio, assignors to General Electric Company, a corporation of New York
No Drawing. Filed Aug. 27, 1964, Ser. No. 392,649
3 Claims. (Cl. 75—122.5)

1. A molybdenum-base powder-metallurgical alloy workable at room temperature consisting essentially of by weight from about 0.1% to about 1% ThO_2, from about 5% to about 30% tungsten, and the balance molybdenum, the powder-metallurgical alloy structurally consisting of particles of ThO_2 dispersed in a substantially homogeneous tungsten-molybdenum matrix phase.

3,285,737
NUCLEAR FUEL MATERIALS

Roy Graham Bellamy, Newbury, England, assignor to United Kingdom Atomic Energy Authority, London, England

No Drawing. Filed Dec. 10, 1964, Ser. No. 417,493
Claims priority, application Great Britain, Dec. 17, 1963, 49,729/63
7 Claims. (Cl. 75—122.7)

1. An alloy of uranium containing 100–1500 p.p.m. of aluminium and a corresponding addition of at least one grain refining element to give a grain size not exceeding 0.5 mm., the rest being uranium and incidental impurities.

2. The alloy of claim 1 wherein the grain refining element is selected to be at least one of the group consisting of chromium, molybdenum, rhodium, cobalt, iridium, osmium, rhenium, ruthenium, nickel, platinum, tungsten, vanadium and manganese.

7. A fuel element for a nuclear reactor comprising an alloy of uranium containing 100–1500 p.p.m. of aluminium and a corresponding addition of at least one grain refining element to give a grain size not exceeding 0.5 mm., the rest being uranium and incidental impurities.

3,285,738
FERROUS-BASE, HARDENABLE, CORROSION-RESISTANT, HIGH-STRENGTH, HIGH-DUCTILITY ALLOY

Thomas E. Johnson, Milwaukee, Wis., assignor to Stainless Foundry & Engineering, Inc., Milwaukee, Wis., a corporation of Wisconsin

No Drawing. Filed May 22, 1964, Ser. No. 369,625
3 Claims. (Cl. 75—128)

1. An alloy in percent by weight consisting essentially of:

Carbon	0.03– 0.12
Chromium	24.00–28.00
Nickel	4.00– 6.50
Cobalt	0.95–12.00
Molybdenum	1.75– 3.00
Silicon	0– 1.00
Manganese	0– 1.50
Copper	0– 0.50

Iron, balance and incidental impurities.

3,285,739
PROCESS FOR PRODUCING NODULAR CAST IRON

Henning J. Christensen, Addison, Ill., assignor to Petrocarb, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 6, 1964, Ser. No. 336,063
8 Claims. (Cl. 75—130)

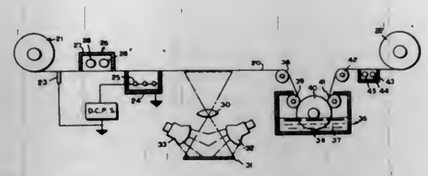
1. In the process of producing nodular cast iron by treating molten cast iron with magnesium, the improvement which comprises injecting under the surface of the molten iron by means of a pressurized inert gas a free-flowing mixture comprising between no more than about 9 parts by weight and not less than about 0.5 part by weight of predominantly elemental carbon, which will pass, substantially in toto, through no larger than a six Tyler mesh sieve, and about one part by weight of elemental magnesium.

3,285,740
ELECTROPHOTOGRAPHIC PROCESS

John W. Weigl and Alan B. Amidon, Binghamton, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 25, 1961, Ser. No. 147,538
8 Claims. (Cl. 96—1)

1. In a process of producing an electrostatic latent image on electrophotographic material of the type consisting of a photoconductive layer on a translucent insulating support wherein are employed the steps of applying a uniform electrostatic charge to a receptive surface of the photoconductive layer of said material, of exposing said layer to a light-image pattern, and of finally developing and fixing said image; the improvement which comprises pre-illuminating the surface opposite said receptive surface of said photoconductive layer prior to the application of said charge, to the extent of producing a semiconductive layer at said opposite surface, said last mentioned layer forming effectively a conductive base.



3,285,741
PROCESS FOR DEVELOPING ELECTROSTATIC LATENT IMAGES

Wolf Gesierich, Edith Weyde, and Hildegard Haydn, all of Leverkusen, Germany, assignors, by mesne assignments, to Gevaert-Agfa N.V., Mortsel, Belgium, a Belgian company and Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany, a German company

No Drawing. Filed Apr. 3, 1962, Ser. No. 184,681
Claims priority, application Germany, Apr. 19, 1961, A 37,219; Dec. 5, 1961, A 38,942; Feb. 3, 1962, A 39,365
7 Claims. (Cl. 96—1)

1. In a method of producing electrophotographic images which comprises charging a photoconductive layer, exposing the charged photoconductive layer to an object to form a latent electrostatic image of the object, and developing the exposed photoconductive layer, the improvement comprising developing the photoconductive layer bearing the latent electrostatic image by uniformly contacting the entire layer with an aqueous composition having electric and wetting properties sufficient to wet the charged areas of the photoconductive layer while being repelled from the uncharged areas of the photoconductive layer, and said aqueous developer composition having a relaxation time which is small compared with the developing time and having a resistivity smaller than 10^6 ohm-cm. and having wetting properties wherein the wetting angle measured on the photographic layer of the aqueous developer is greater than 90 degrees at the uncharged areas and smaller than 90 degrees at the charged areas.

3,285,742
LITHOGRAPHIC PRINTING PLATE AND PROCESS OF MAKING

Richard L. Wagner, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Oct. 4, 1963, Ser. No. 313,748
11 Claims. (Cl. 96—33)

1. The process of preparing a lithographic printing plate comprising the steps of

(1) coating a polyolefin substrate with a mixture of a polymer of ethylene oxide having a molecular weight of from about 5,000 to about 10,000,000 and an aromatic polyazide,

(2) exposing the coated plate to light through a transparency until the exposed regions of the polymer of ethylene oxide coating become insoluble, and

(3) removing from the unexposed regions the soluble polymer of ethylene oxide.

9. A printing plate in which the oleophilic regions comprise a grained polyolefin surface and the hydrophilic regions comprise an insolubilized polymer of ethylene oxide.

3,285,743
HETEROCYCLIC COMPOUNDS IN ADMIXTURE WITH A TRIPHENYLMETHANE LEUCOCYANIDE DYE FORMER SYSTEM

Meyer S. Agruss, 2849 W. Sherwin Ave., Chicago, Ill.

No Drawing. Filed Mar. 14, 1962, Ser. No. 179,803
27 Claims. (Cl. 96—90)

1. A photosensitive paper, sensitive to short wave length radiation having a wave length up to 3600 Angstrom units comprising triphenylmethane leucocyanide dye and organic heterocyclic compound selected from the class consisting of lactones, lactams, compounds containing at least one epoxy group, and mixtures thereof.

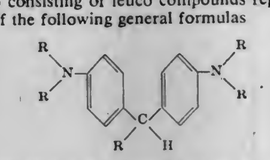
3,285,744
PHOTOGRAPHY

Robert H. Sprague, Chagrin Falls, John A. Stewart, Parma, and James M. Lewis, Cleveland, Ohio, assignors to Horizons Incorporated, Cleveland, Ohio, a corporation of New Jersey

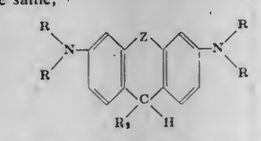
No Drawing. Filed Apr. 4, 1963, Ser. No. 270,551
11 Claims. (Cl. 96—90)

1. A composition which prints out a visible image directly as a result of exposure to visible light said composition consisting essentially of an intimate mixture of

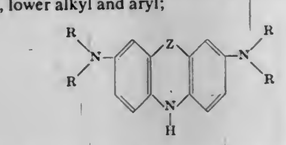
(1) at least one leuco compound selected from the group consisting of leuco compounds represented by one of the following general formulas



wherein each R is selected from the group consisting of H, lower alkyl and aryl and not all of the R's need be the same;



wherein each R has the same meaning as indicated above and R_2 is selected from the group consisting of H, lower alkyl and aryl;



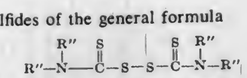
and wherein each R has the same meaning as indicated above and Z represents a member selected from the group consisting of O, S, Se and —NH; and

(2) at least one colorless non-toxic sulfur containing organic compound selected from the group consisting of

(*a*) mercapto compounds represented by the formula R′—SH wherein R′ is a heterocyclic nucleus of the type commonly used in cyanine dye chemistry;

(*b*) disulfides represented by the general formula R′—S—S—R′ wherein each R′ has the same meaning as in (*a*);

(*c*) disulfides of the general formula



wherein R″ represents H, alkyl and aryl;

(*d*) thiourea compounds;

(*e*) acyclic thioacetanilides;

said compounds being present in said mixture in proportions ranging between 10:1 and 1:10 relative to each other, by weight.

3,285,745
LAMINATED PLANOGRAPHIC PRINTING PLATES

Julius L. Silver, Somerset, and Victor Auerbach, North Plainfield, N.J., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed July 1, 1963, Ser. No. 292,141
9 Claims. (Cl. 96—90)

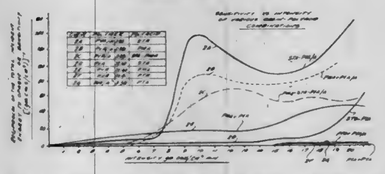
1. A laminate comprising a first layer containing in intimate mixture a phenolic resin and a normally solid ethylene oxide resin having a molecular weight of at least 30,000 and a second layer comprising a thermoplastic polyhydroxyether resin.

2. The laminate of claim 1 wherein the phenolic resin ethylene oxide polymer lamina contains a photosensitizing agent.

3,285,746
IRREVERSIBLE PHOTOTHERMOTROPIC COMPOSITIONS

Alvin M. Marks, 153—16 10th Ave., and Mortimer M. Marks, 166—25 Cryders Lane, both of Whitestone, N.Y.

Filed July 23, 1964, Ser. No. 384,750
7 Claims. (Cl. 96—90)



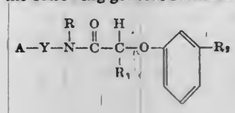
1. An irreversible photothermotropic composition comprising a solid solution of an inorganic polyacid selected from the group consisting of phosphomolybdic, and, phosphovanadomolybdic acids and mixtures thereof, and a polymer selected from the group consisting of polyvinyl butyral, polyvinyl alcohol acetate copolymers and mixtures thereof, said inorganic polyacid being present in amount from about 25 to about 80 percent and said polymer being present in amount from about 20 to about 75 percent, said percentages being by weight based on the combined weights of said polyacid and said polymer.

3,285,747
COLOR FORMERS CONTAINING A m-ALKYLPHENOXYACYL GROUP

Robert F. Coles, North St. Paul, Minn., assignor to General Analine & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 26, 1964, Ser. No. 392,330
3 Claims. (Cl. 96—100)

1. A silver halide emulsion containing a coupler compound selected from the class consisting of compounds having one of the following general formula:



wherein R is selected from the class consisting of hydrogen and alkyl radicals, R_2 is an alkyl group containing 10 to 20 carbon atoms, R_3 is selected from the class consisting of hydrogen and alkyl radicals, A is a color-forming coupling radical containing a group selected from the class consisting of reactive methylene and phenolic hydroxy groups, and Y is



3,285,748

PROCESS OF PREPARING AND FEEDING A FEED CONTAINING *B. THURINGIENSIS*

Carl H. Koonz, Downers Grove, and Richard A. Greenberg, Chicago, Ill., assignors to Swift & Company, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Dec. 1, 1960, Ser. No. 72,847
The portion of the term of the patent subsequent to Sept. 22, 1981, has been disclaimed
3 Claims. (Cl. 99—2)

1. A process for preparing an animal feed composition which is protected against insect infestation and contains an insect pathogen which is unaffected by the animal body processes comprising: embodying in a balanced feed ration a small amount of the fermentation liquor obtained from the sporulation and prolifieration of *Bacillus thuringiensis* Berliner microorganisms.

3,285,749

METHOD FOR PRODUCING AN EGG PRODUCT

Frank Shires, London, England, assignor to Emsway Limited, London, England

Filed Feb. 28, 1964, Ser. No. 348,246
5 Claims. (Cl. 99—113)

1. A method for producing an egg product from natural egg yolk and egg white, comprising the steps of: separating the raw egg yolk and egg white, heating the egg yolk within its natural membrane until cooked firm, moulding the cooked egg yolk into the form of an elongated body, locating the egg yolk body substantially concentrically within an annular body of raw egg white, and heating the concentrically arranged egg yolk body and egg white until the egg white is cooked firm.

3,285,750

CHEWING GUM COMPOSITIONS HAVING LOW ADHERENCE WHEN DISCARDED AND METHODS OF PREPARATION THEREOF

Haruo Ishida, Hirakata-shi, Japan, assignor to Daiwa Chemical Industries, Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed Mar. 9, 1964, Ser. No. 350,534
15 Claims. (Cl. 99—135)

1. A chewing gum composition which comprises a resinous base composition and at least one adhesion resistant agent in powder form homogeneously mixed in said base composition and selected from the group consisting of polyolefin and fluorine-containing resin, the said agent being present in an amount of between 2 to 50 parts by weight per 100 parts by weight of the resinous base.

3,285,751

ARTIFICIAL SWEETENER COMPOSITION

Paul Kracauer, New York, N.Y., assignor to Cumberland Packing Company, Brooklyn, N.Y., a New York company

No Drawing. Filed Apr. 27, 1964, Ser. No. 362,974
4 Claims. (Cl. 99—141)

1. A sweetening composition, comprising at least one artificial sweetener selected from the group consisting of saccharine artificial sweeteners and cyclamate artificial sweeteners, the sweetening power of said artificial sweetener being a known predetermined multiple of the sweetening power of sugar, between about 0.3 g. and 1 g. of glucono delta lactone per each amount of said artificial sweetener equivalent in sweetening power to 10 grams of sugar, and between about 0.3 g. and 1 g. of at least one compound selected from the group consisting of sodium citrate and potassium citrate per each amount of said artificial sweetener equivalent in sweetening power to 10 grams of sugar.

3,285,752

METHOD OF PREPARING A POULTRY PRODUCT

Leo J. Hansen, Clarendon Hills, and Donald V. Schwall and Jay T. Colburn, Glen Ellyn, Ill., assignors to Armour and Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Mar. 16, 1964, Ser. No. 352,325
7 Claims. (Cl. 99—107)

1. A method of preparing a poultry product comprising the steps of slaughtering and aging poultry, applying to the surface of raw pieces of said aged poultry edible metallic salt which can form, with the natural moisture in the poultry meat, a solution capable of extracting salt soluble proteins from said meat to provide a surface coating thereof, said edible metallic salt being applied in a concentration within the range of .1 and 2.0% based on the weight of said poultry pieces, agitating said pieces at a temperature within the range of 25 to 70° F. until a concentration of salt soluble protein is formed on the surface thereof, and pressing said pieces together to form a unitary body characterized by its improved resistance to water cook-out and its retention of intact sliceability after cooking.

3,285,753

METHOD OF PREPARING A POULTRY PRODUCT

Donald V. Schwall, Glen Ellyn, and Alan B. Rogers, Palos Park, Ill., assignors to Armour and Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Mar. 23, 1964, Ser. No. 354,118
5 Claims. (Cl. 99—107)

1. A method of preparing a poultry product, comprising the steps of slaughtering and dressing poultry, skinning and boning said poultry, applying to the surfaces of raw pieces of said boned poultry edible metallic salt which can form, with the natural moisture in the poultry meat, a solution capable of extracting salt-soluble proteins from said meat to provide a surface coating thereof, said edible metallic salt being applied in a concentration within the range of .1 and 2.0% based on the final weight of the product, agitating said pieces at a temperature within the range of 25 to 70° F. until a concentration of salt-soluble protein is formed on the surfaces thereof, thereafter mixing into said coated pieces a paste prepared by grinding poultry skin and small poultry pieces, said paste being incorporated in a proportion within the range of 10 to 35% of paste based on the total weight of the mixture, further agitating the mixture, and pressing said mixture together to form a unitary body characterized by its improved resistance to water cook-out and its retention of intact sliceability after cooking.

3,285,754

DEPOSITION OF PALLADIUM

Norman Maynard Hopkin, London, England, assignor to Johnson, Matthey & Company Limited, London, England, a British company

No Drawing. Filed June 14, 1963, Ser. No. 287,773
Claims priority, application Great Britain, July 5, 1962, 25,789/62
24 Claims. (Cl. 106—1)

1. A plating bath for the immersion or electroless deposition of palladium on a metal base, said bath consisting essentially of an aqueous solution of a complex

nitrito-palladite compound having a general formula selected from the group:

$$A_2[Pd(NO_2)_aR'_{4-a}] \quad \text{and} \quad A_2\left[Pd(NO_2)_aR''_{\frac{4-a}{2}}\right]$$

wherein:

A_2 represents a cation selected from the group consisting of alkali metal and hydrogen cations;
R' represents a monovalent acid radicle;
R'' represents a divalent acid radicle, and
a is a number selected from the group of numbers 1, 2 and 3, said solution containing from 1 to 30 grams per liter of palladium,
and said solution also containing a buffering agent comprising an alkali metal salt of a weak acid in sufficient amount to give said solution a pH within the range of from 2 to 5.

3,285,755

CORROSION INHIBITING MATERIAL

Ellis John Airola, Lynn, Mass., assignor to General Electric Company, a corporation of New York

No Drawing. Filed July 3, 1963, Ser. No. 292,757
4 Claims. (Cl. 106—14)

2. A corrosion inhibiting liquid of low residue and having improved corrosion and film forming characteristics, consisting essentially of, by weight:
10–30% of a solvent extracted oil selected from the group consisting of petroleum oil and mineral oil and having a viscosity of about 180–220 SSU at 100° F.;
8–15% of a polyoxyethylene fatty acid ester low residue emulsifier for solvent extracted oils;
5–15% of a glycol fatty acid ester water repellent selected from the group consisting of coconates, oleates, rincinoleates and stearates;
0.25–0.5% cyclohexylamine carbonate;
up to about 2% hexylene glycol coupling agent;
with the balance a petroleum distillate having a minimum initial boiling point of about 300° F.

3,285,756

MOLD OR CORE COMPOSITION FOR METAL CASTING PURPOSES

Rolf Erhard Morén, Alfredshem, Sweden, assignor to Mo Och Domsjo A.-B., Ornskoldsvik, Sweden, a corporation of Sweden

No Drawing. Filed Apr. 29, 1963, Ser. No. 276,211
Claims priority, application Sweden, Jan. 2, 1961, 21/61; May 9, 1962, 5,211/62; Great Britain, Nov. 21, 1960, 40,003/60
19 Claims. (Cl. 106—38.5)

1. A binder composition for use in forming mold members for metal casting, and based upon a glucose as the binder, consisting essentially of glucose and calcium compound selected from the group consisting of calcium oxide, calcium hydroxide, and mixtures of calcium salt and an alkali metal hydroxide forming calcium hydroxide in water in an amount to provide from about 5% to about 25% calcium hydroxide by weight of the glucose, the calcium compound being in an amount to react with the glucose to harden the composition in the presence of water and sand.

13. A mold member composition based upon a glucose as a binder, consisting essentially of sand, water, from about 0.1 to about 8% of a glucose, and a calcium compound selected from the group consisting of calcium oxide, calcium hydroxide, and mixtures of calcium salt and an alkali metal hydroxide forming calcium hydroxide in water in an amount to provide from about 10% to about 25% calcium hydroxide by weight of the glucose, the amount of calcium compound being sufficient to react with the glucose to harden the composition and bond the sand to form the mold member.

14. A method of making mold members for use for metal castings and bonded together by a binder based upon a glucose, which comprises forming into the desired mold shape a mix consisting essentially of sand, water, from about 0.1 to about 8% by weight of the sand of a glucose, and an amount of calcium compound to provide from about 10% to 25% calcium hydroxide by weight of the glucose to harden the composition in the presence of the water; and reacting said glucose with the calcium hydroxide in situ to form a calcium hydroxide-glucose reaction product in an amount sufficient to bond the sand and form the mold member.

3,285,757

CEMENT COMPOSITION

Kurt W. Cornely, Syosset, N.Y., assignor to American Thermocatalytic Corporation, Mineola, N.Y., a corporation of New York

No Drawing. Continuation of application Ser. No. 83,623, Jan. 19, 1961. This application May 19, 1964, Ser. No. 368,746
4 Claims. (Cl. 106—57)

1. A refractory cement adapted to be mixed with water for use for services involving temperatures in excess of about 4000° F. consisting essentially of particles of a zirconium-containing composition selected from the group consisting of zirconia, zircon and mixtures of the foregoing, and a water-soluble binder precursor selected from the group consisting of (1) a water-soluble sodium silicate in an amount of at least 8% by weight of the zirconium-containing composition and having an $Na_2O:SiO_2$ ratio in the range of 1:3.22–1:3.85, and (2) a water-soluble phosphate compound in an amount equivalent to 13 to 13.6 wt. percent P_2O_5 of the zirconium-containing composition.

3,285,758

BASIC REFRACTORY COMPOSITIONS FOR INTERMEDIATE TEMPERATURE ZONES

Robert W. Limes and David Ponzani, Cleveland, Ohio, assignors to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey

No Drawing. Filed May 5, 1965, Ser. No. 453,469
22 Claims. (Cl. 106—58)

1. A process of preparing a refractory composition comprising the steps of
(a) mixing 100 parts of a refractory aggregate containing at least 1% by weight of magnesia with an aqueous solution of ammonium phosphates in the approximate proportions based on total ammonium phosphates of 35–40% orthophosphate, 45–50% pyrophosphate, 9–11% tripolyphosphate and 2–5% as higher polyphosphates, the amount of said total ammonium phosphates being approximately 1.35–8.55 parts by weight of P_2O_5 content per 100 parts by weight of aggregate, the ammonium phosphate content being equivalent to about 10 percent by weight ammoniacal nitrogen and about 34 percent by weight P_2O_5, said solution having approximately 50 percent by weight of water therein;
(b) shaping the resultant mixture into a desired form and allowing said shaped mixture to set; and
(c) thereafter drying the resultant shaped aggregate at a temperature of at least 250° F.

3,285,759

REFRACTORY METALLURGIC COMPOSITION AND PRODUCTS, AND METHOD OF OBTAINING SAME

Giovanni Crespi, Via Tranquillo Cremona 29, Milan, Italy

No Drawing. Filed Sept. 2, 1965, Ser. No. 484,765
Claims priority, application Italy, Mar. 26, 1962, 21,795, Patent 685,116
12 Claims. (Cl. 106—58)

1. A refractory metallurgical composition essentially consisting of dolomite, and from about 10% to 30% based on the dry weight of the dolomite of at least one

nitrate selected from the group consisting of calcium, magnesium, and aluminum nitrates.

3,285,760
REFRACTORY
William M. Hildinger, Campbell, William H. Boyer, San Jose, and Merton L. Van Dreser, Campbell, Calif., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
No Drawing. Filed Sept. 27, 1965, Ser. No. 490,694
5 Claims. (Cl. 106—58)

1. A refractory composition capable of being rammed and remaining in flowable particulate form after an extended period of storage at a temperature of 40° F., said composition consisting essentially of nonacid refractory particles, from 1.0% to 12% by weight of a solid, particulate pitch having a softening point of from about 300° F. to about 400° F., and from 0.5% to 5% by weight of anthracene oil.

3,285,761
ABRASION RESISTANT REFRACTORY MATERIAL
Weston Andrew Hare and Walter Edwin Jordan, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed June 26, 1964, Ser. No. 378,459
2 Claims. (Cl. 106—59)

1. A refractory body consisting essentially of (A) from about 44–78% by weight of fused essentially void-free refractory grains of about 0.9–19 mm. in diameter, said grains comprising by analysis a major amount of MgO and a minor amount of a mixture of iron oxide and chromium oxide, each of said latter oxides being present in an amount constituting at least about 5% by weight of said fused grains, and (B) from about 22–56% of a porous substantially homogeneous bonding phase having a porosity of between about 15 and 40% and containing, by analysis, 35–65% magnesium aluminate spinel, the remainder being constituted by from 0–65% magnesia and 0–55% by weight of chromia.

3,285,762
REFRACTORY MORTAR COMPOSITION
Oscar M. Wicken, Pittsburgh, Pa., assignor to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania
Original application Nov. 20, 1963, Ser. No. 325,019. Divided and this application Oct. 14, 1965, Ser. No. 496,118
2 Claims. (Cl. 106—60)

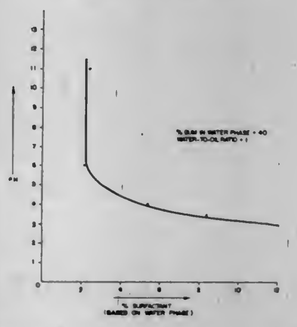
1. An adhesive composition for laying up basic refractory brick consisting essentially of a mixture of from 45 to about 50%, by weight, of −65 mesh iron oxide, 20 to 50%, by weight, of ball mill fine dead burned magnesite, 0 to 10%, by weight, of finely divided ball clay plasticizer, about 5 to 15%, by weight, of powder sodium silicate having a sodium oxide to silicon dioxide weight ratio between 1:1 to 1:3.2, and an effective amount of an organic plasticizer to provide plasticity.

3,285,763
PLASTIC REFRACTORY COMPOSITIONS
Louis J. Jacobs, Chicago, Ill., assignor to The S. Obermayer Co., Chicago, Ill., a corporation of Ohio
No Drawing. Filed Nov. 5, 1964, Ser. No. 409,297
11 Claims. (Cl. 106—67)

1. A plastic refractory composition consisting essentially of a homogeneous mixture of alumina-coated flint clay, kyanite, bond clay, and water typified by the following approximate proportions in parts by weight:

Alumina-coated flint clay	50.5–75.6
Kyanite	5–15
Bond clay	12–27
Water	7¾–11

3,285,764
REMOISTENABLE GUMMED SHEET MATERIAL AND COMPOSITION FOR MAKING THE SAME
George R. Nelson, Holliston, and Gregory Botsaris, Cambridge, Mass., assignors to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada
Filed May 25, 1962, Ser. No. 197,696
18 Claims. (Cl. 106—129)



1. A coating composition for preparing water remoistenable gummed sheet material comprising a dispersion of a water solution of a water-activatable gum as the discontinuous phase dispersed in a liquid carrier as the continuous phase which is sufficiently immiscible with water to keep the water solution in dispersion, said dispersion containing a non-volatile surface active agent soluble in said liquid carrier and having a hydrophilic portion and a hydrophobic portion, said agent having a limited water solubility less than its solubility in said carrier, said agent being present in an amount effective to maintain a water-in-oil emulsion between said liquid phases and to limit coalescence of particles of said gum when dried, said carrier being substantially free from dissolved resinous binder material.

3,285,765
CELLULOSE ACETATE REVERSE OSMOSIS DESALINATION MEMBRANES CAST FROM NON-AQUEOUS SOLUTIONS AND A METHOD OF MAKING THE SAME
Charles R. Cannon, Baldwin Park, Calif., assignor to the United States of America as represented by the Secretary of the Interior
Filed Oct. 18, 1965, Ser. No. 497,566
7 Claims. (Cl. 106—187)

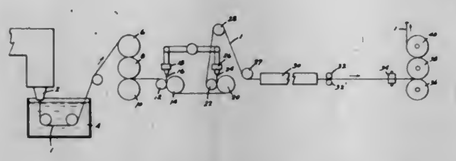


1. A method for preparing a membrane suitable for use in reverse osmosis demineralization processes comprising

casting a non-aqueous solution comprising cellulosic ester, organic solvent, swelling agent, and an alcohol,
evaporating a portion of said organic solvent,
immersing the cast material in water, to remove the organic solvent and the swelling agent, and
heating the material in water.

7. A reverse osmosis membrane made by the process of claim 1.

3,285,766
BIAXIALLY ORIENTED ETHYLENE POLYMER COATED POLYPROPYLENE SHEET AND METHOD FOR MAKING SAME
Edward Barkis, Philadelphia, Pa., and James C. Chu, Wilmington, Del., assignors to Avisun Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Mar. 28, 1963, Ser. No. 268,622
8 Claims. (Cl. 117—7)



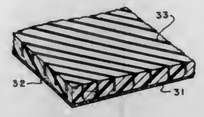
1. A method of preparing a heat-sealable, biaxially oriented composite sheet which comprises melt extruding a coating consisting essentially of a resinous film-forming polymer of at least 65% of ethylene onto at least one side of an extruded sheet of isotactic polypropylene, heating the coated sheet to a temperature in the range of from about 20 to about 40° C. below the crystalline melting point of the polypropylene sheet, stretching the composite sheet at said temperature to at least three times its original dimensions in each of two mutually perpendicular directions, and then cooling the biaxially oriented composite sheet while restraining it to substantially its stretched dimensions.

3,285,767
COATING PERFORATE ARTICLES
Richard F. Farkas, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
No Drawing. Filed Sept. 16, 1963, Ser. No. 309,294
10 Claims. (Cl. 117—8)

9. The method of selectively coating at least one surface of a perforate substrate which comprises, filling the perforations with a powdered abrasive material, applying a coating to the entire surface to be coated, and subjecting the substrate to an ultrasonically vibrated bath to cause said material to disrupt and abrade away that part of the coating applied over the filled perforations and be ejected therefrom.

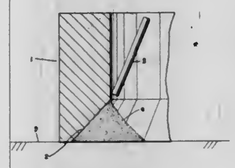
3,285,768
FABRIC COATED WITH SURFACE DEFORMED FOAM
Emile E. Habib, Spartanburg, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware
Filed July 18, 1962, Ser. No. 210,803
9 Claims. (Cl. 117—11)

1. A foam backed apparel fabric of enhanced drape and flexibility consisting of a fabric having warp and fill yarns coated with a foam layer of substantially uniform density wherein the continuity of said foam is broken substantially along the direction of the warp yarns of said



fabric to a depth sufficient to increase the flexibility of said foam backed fabric.

3,285,769
METHOD OF APPLYING METAL COATING TO VALVES
Arthur T. Cape, Monterey, Calif., assignor to Coast Metals, Inc., Little Ferry, N.J., a corporation of Delaware
Filed July 20, 1962, Ser. No. 211,228
3 Claims. (Cl. 117—22)

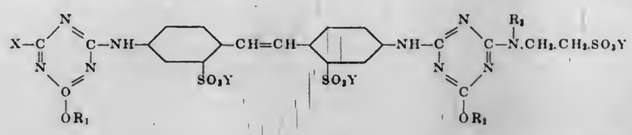


1. The method of applying a metal coating to a valve seat, said method comprising the steps of positioning the valve seat with the surface to be coated facing in a downward direction and inclined to a solid support surface on which said valve seat is positioned, placing a predetermined quantity of a metal powder adjacent to and contacting said valve seat surface, said powder being of a mesh size such that not more than about 5% of the powder will pass through a 100-mesh screen, said powder being heaped in the angle defined by said inclined surface and said support surface, applying over said powder a layer consisting of a material selected from the group consisting of silica powder, organic chemical compounds which decompose under heat to form silica, and organic compounds which, when heated, react with oxygen to form silica, and heating the valve seat, and the powder to a high temperature sufficient to decompose said organic chemical compound when present, sufficient for oxygen to react with said organic compound when present and sufficient to cause the power to become melted and to become bonded, as a layer of approximately the desired cross-sectional form, to said valve seat surface.

3,285,770
PROCESS FOR THE TREATMENT OF CELLULOSE TEXTILE MATERIALS WITH HARDENABLE RESIN PRECONDENSATION PRODUCTS AND BRIGHTENING AGENTS
Josef Hegemann, Leverkusen, and Walter Scholermann, Cologne, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Aug. 22, 1961, Ser. No. 133,054
Claims priority, application Germany, Aug. 30, 1960, F 32,006
4 Claims. (Cl. 117—33.5)

2. A process for treating cellulose textile material comprising contacting said material with a treating bath con-

taining a hardenable resin precondensation product selected from the group consisting of an amid-formaldehyde and an amine-formaldehyde and a brightening amount of a compound having the formula

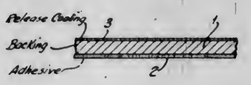


wherein R_1 and R_2 denote lower alkyl; R_3 is a member selected from the group consisting of hydrogen and methyl; X is a member selected from the group consisting of aliphatic amine and cycloaliphatic amine; and Y is a member selected from the group consisting of hydrogen and a salt forming ion.

3,285,771
PERMANENT ATTACHMENT PRESSURE SENSITIVE ADHESIVE TAPE

Winifred C. Dabroski, East Brunswick, N.J., assignor to Johnson & Johnson, a corporation of New Jersey

Filed Dec. 21, 1962, Ser. No. 246,592
2 Claims. (Cl. 117—68.5)



1. A paper-backed, normally tacky and pressure-sensitive adhesive tape having improved delamination resistance, and capable of being unwound in roll form without splitting, consisting essentially of a non-unified paper sheet having a delamination resistance of at least 15 oz./in. width and not above about 30 oz./in. width and having on one side a coating of a normally tacky and pressure-sensitive adhesive giving an adhesion to steel of at least about 10 oz./in. width, and having on the side opposite the adhesive side, a coating of a release agent which possesses release properties with respect to said adhesive whereby said tape in roll form has an unwind adhesion less than 20 oz./in. width at an unwind speed of 150'/min., said non-unified paper sheet being formed from a cellulosic fibrous paper web having an elongated web body, and two opposed web faces, by (1) subjecting said paper web, while plasticized with moisture and heated to a temperature sufficient to generate moisture vapor, simultaneously to (a) sufficient confining pressure, acting perpendicularly with respect to said web faces, to prevent substantial crinkling of the web body, and (b) sufficient compacting force, acting longitudinally with respect to the length of said web and in a direction parallel to said web faces (i) to cause the web fibers to be longitudinally distorted and forced closer together in changed orientation lengthwise within the web body and (ii) to cause the web body thereby to contract in length by a substantial amount and (2) drying said compacted web, to set the distorted fibers in their changed orientation, the cohesive strength of said compacted backing being

(a) greater than the adhesion of the adhesive layer to the release coating, and

(b) less than the adhesion of the adhesive layer to a smooth steel surface and to the surface of the compacted backing on which the adhesive is coated.

3,285,772
METHOD OF PRIMING A METAL SURFACE WITH A TERPOLYMER SOLUTION CONTAINING A POLYHYDROXY COMPOUND

Ulrich Rietz and Peter Schmitz, Munich, Germany, and Hermann Unterguggenberger, deceased, late of Munich, Germany, by Louise Unterguggenberger, Roland Unterguggenberger, and Christa Unterguggenberger, heirs, all of Munich, Germany, assignors to Wacker-Chemie G.m.b.H., Munich, Germany, a firm of Germany

No Drawing. Original application Nov. 10, 1960, Ser. No. 68,367. Divided and this application Dec. 16, 1964, Ser. No. 419,629
Claims priority, application Germany, Dec. 30, 1959, W 26,981
6 Claims. (Cl. 117—75)

1. A method of coating zinc and zinc-alloy surfaces which comprises priming said zinc and zinc-alloy surfaces with a solution in a volatile solvent medium of a film-forming terpolymer of vinyl chloride, vinyl acetate and an ethylenically unsaturated aliphatic dicarboxylic acid, said terpolymer solution also containing from 20% to 200% by weight, based on the weight of said terpolymer, of a polyhydroxy compound having at least four available hydroxy groups and selected from the group consisting of polyvinyl alcohol, pentaerythritol and hydroxyethylcellulose, evaporating the volatile solvent medium to leave a primer coating of the polyhydroxy compound modified film-forming terpolymer on the zinc and zinc-alloy surface, coating the primed surface with a resin selected from the group consisting of polyvinyl chloride, chlorinated rubber, nitrocellulose and alkyd resins, and then baking.

3,285,773
VITREOUS ENAMELS FOR HOT WATER TANKS

Lester M. Dunning, Parma, Ohio, assignor to Ferro Corporation, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed May 10, 1965, Ser. No. 454,634
6 Claims. (Cl. 117—129)

1. As an article of manufacture a metallic substrate having fused thereon an amorphous vitreous coating with a crystalline phase of alpha quartz dispersed therethrough, said coating being the product of an enamel slip applied to and fused on said metallic substrate, said slip having had contained a milled frit, said frit having had contained therein at least 4.6% by weight ZrO_2, said slip having had added thereto prior to application to said substrate from about 20% to about 70% quartz, based on the weight of said frit within said slip, a portion of said quartz having been taken into solution in the fused coating, the remainder of said quartz comprising the aforementioned crystalline phase dispersed throughout said enamel coating.

3,285,774
METHOD OF TREATING WOOD WITH AN ORGANIC SOLVENT-SOLUBLE FIRE RETARDANT

Irving S. Goldstein, Pittsburgh, and William J. Oberley, Pitcairn, Pa., assignors to Koppers Company, Inc., a corporation of Delaware

No Drawing. Filed Dec. 18, 1961, Ser. No. 160,322
6 Claims. (Cl. 117—136)

1. A method of treating wood with an organic solvent-soluble fire retardant in an organic solution without alter-

ing the dimensions of the wood comprising impregnating the wood, under wood impregnating pressure and at a temperature below the boiling point of the solvent at said pressure, with a solution consisting essentially of a solute selected from the group consisting of a compound having the formula:

wherein R is a chlorinated lower alkyl radical, X is a hydroxy radical and n is an integer having a value of from 1 to 2, and an organic solvent having a boiling point below about 80° C. selected from the group consisting of methylene chloride, chloroform, carbon tetrachloride, ether, benzene and mixtures thereof with low boiling alkane cosolvents, whereby the amount of solute retained by said wood is in a range of 10–20 percent by weight of said wood.

3,285,775
PENETRATION OF COLLAGEN FIBERS THROUGH INCLUSION OF PROTECTIVE COLLOID

Shu-Tung Tu, Ipswich, and Janet Appleton, Beverly, Mass., assignors to United Shoe Machinery Corporation, Flemington, N.J., and Boston, Mass., a corporation of New Jersey

No Drawing. Filed June 14, 1965, Ser. No. 463,922
11 Claims. (Cl. 117—140)

1. The process of forming a tough, flexible material which comprises the steps of applying to intermeshed open fiber mass in penetrating relation an aqueous suspension containing from about 1% to about 5% by weight based on the weight of the suspension of swollen distinct, fine, collagen fibers of microscopic size to carry said collagen fibers into the interstitial spaces of said intermeshed fiber mass, said suspension containing at least about 1% by weight of a hydrophilic protective colloid based on the weight of collagen fibers in said suspension, said protective colloid cooperating with said collagen fibers to resist packing together of said collagen fibers, and removing the swelling water from collagen fibers within said intermeshed fiber mass to reaggregate them into a larger collagen fiber structure within the interstitial spaces throughout said mass of intermeshed fibers to reinforce said intermeshed fibers against displacement.

3,285,776
HIGH D.E. SYRUP AND METHOD OF MAKING SAME

Barrett L. Scallet, Clayton, and Irving Ehrenthal, University City, Mo., assignors to Anheuser-Busch, Incorporated, St. Louis, Mo., a corporation of Missouri

No Drawing. Filed Apr. 2, 1962, Ser. No. 184,506
9 Claims. (Cl. 127—30)

1. A non-crystallizing starch conversion syrup having a D.E. of from about 70 to about 85, from about 15% to about 33% ketoses, at least 10% of said ketoses comprising fructose, and glucose in the range of about 33.5 to 45.0% by weight on a dry substance basis, said syrup being essentially free of organic acids and ash.

3,285,777
OXYGENIZING SYSTEMS USEFUL FOR CLEANING PURPOSES

Henry Kahn, Grafton, and Lazar Popa, Sheffield Lake, Ohio, assignors to Goodrich-Gulf Chemicals, Inc., Cleveland, Ohio, a corporation of Delaware

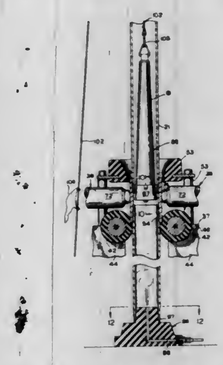
No Drawing. Filed Dec. 23, 1963, Ser. No. 332,874
2 Claims. (Cl. 134—2)

1. A process for removing contaminants consisting of films and deposits formed in chemical processing equipment during polymerization reactions employed in the manufacture of organic polymers, comprising contacting the surfaces of the equipment to be cleaned with a mixture comprising (1) an organic hydroperoxide of the formula RCOOH wherein R is an alkyl, aryl or arylalkyl radical; (2) a metallic decomposition catalyst selected from the group consisting of salts and complexes of iron, vanadium or chromium; and (3) a substantially inert organic solvent having substantial solubility for said organic hydroperoxide and said metallic decomposition catalyst, said organic hydroperoxide constituting at least about 3% by weight of the mixture of said organic solvent, metallic decomposition catalyst, and organic hydroperoxide, and said metallic decomposition catalyst constituting at least about 0.025% by weight of said mixture, and heating the mixture until said contaminants have been substantially dissolved.

3,285,778
APPARATUS AND METHOD FOR REMOVING SCALE AND WAX FROM OILWELL TUBING

Ernest D. Hauk, 1315 E. 23rd St., Signal Hill, Calif.

Filed Jan. 22, 1963, Ser. No. 254,040
11 Claims. (Cl. 134—8)



1. Apparatus for removing scale and wax from the interior of a pipe, which comprises a scale-cutting means disposed interiorly of said pipe at a predetermined point therealong, the length of said scale-cutting means being only a small fraction of the length of said pipe, automatic hammer means disposed exteriorly of said pipe in the general vicinity of said scale-cutting means for imparting high-frequency high-power hammer blows to the exterior of said pipe in said vicinity, and means to effect conjoint progressive movement of said scale-cutting means and said hammer means along the length of said pipe.

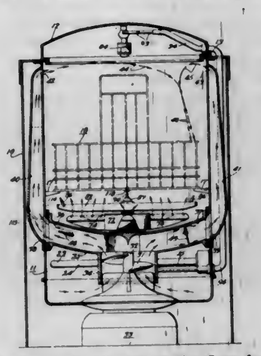
3,285,779
DISHWASHING APPARATUS

Ansel W. Dunham, Napa, Calif., assignor to King Fifth Wheel Company, Mountaintop, Pa., a corporation of Pennsylvania

Filed Nov. 17, 1964, Ser. No. 411,741
4 Claims. (Cl. 134—44)

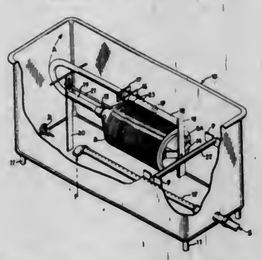
1. In a dishwasher having a tank having coextensive orifices in opposite side walls adjacent the top and disposed along the length thereof, means in said tank to support a rack for tableware therein below said orifices, a manifold, impeller means operable to circulate wash water from the bottom of said tank into said manifold, duct means connecting said manifold to each of said orifices whereby upon operation of said impeller means said wash water is expelled from said orifices in confronting streams coextensive with said orifices, said streams merging along a line into a cascading sheet of wash water intermediate said opposite side walls, flow

control means to determine the line of merger of said streams, and actuating means for said flow control means to cause said line of merger and therefore said cascading sheet to traverse the space intermediate said side walls; the improvement wherein said flow control means com-



prises baffles mounted to intercept the flow from said impeller and through said orifices, one baffle for each side wall, means interconnecting said baffles for countermovement, and drive means to catuate said baffles to cause said cascading sheet to traverse back and forth between said opposite side walls.

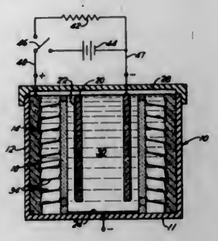
3,285,780
AIR AGITATED DISC WASHER
Thomas E. Lockerbie, 68 East St., Edmeston, N.Y.
Filed Aug. 19, 1964, Ser. No. 390,665
2 Claims. (Cl. 134—102)



2. Washing apparatus comprising a tank adapted to contain a washing solution, a transverse pivot bar carried by said tank, a fixture base including a positioning post fastened to said pivot bar for rotation about the axis of said bar, a detachable adapter plate carried by said base adapted to receive a disc stack, a disc carrier extension detachably locked to the positioning post and engaged with a disc stack on said adapter plate for holding a disc stack, and an air manifold disposed along the bottom of said tank for introducing large volumes of low-pressure air into the wash solution.

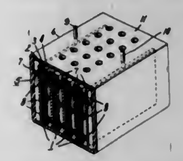
3,285,781
STORAGE BATTERY HAVING BROMINE POSITIVE ACTIVE MATERIAL
Ralph Zito, Jr., Newtown Square, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 21, 1963, Ser. No. 317,507
4 Claims. (Cl. 136—14)

1. A sealed storage battery cell structure comprising elemental bromine as the positive active material, zinc as the negative active material and a zinc bromide electrolyte, the cell comprising two electrically conducting vertically extending, horizontally spaced electrodes, one of the electrodes being a positive electrode and the other a negative electrode having the zinc thereon, a non-conducting porous member vertically extending between and



horizontally spaced from the spaced electrodes, and a plurality of vertically spaced, horizontally extending shelf members adapted to retain elemental bromine thereon extending between and in contact with the positive electrode and the said non-conducting porous member.

3,285,782
WATER ACTIVATED PRIMARY BATTERY HAVING A MERCURY-MAGNESIUM ALLOY ANODE
William N. Carson, Jr., Schenectady, N.Y., and William H. Fischer, Boulder, Colo., assignors to General Electric Company, a corporation of New York
Filed July 23, 1963, Ser. No. 296,996
2 Claims. (Cl. 136—100)

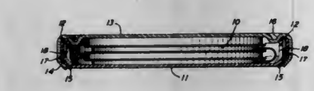


1. A water-activated battery which comprises perforated liquid container means housing a plurality of serially connected laminated electrode sheets, each sheet having a first outer layer of mercury-magnesium alloy containing approximately 0.5–5.0 parts by weight mercury per 99.5–95.0 parts by weight magnesium as the sole active anode material in contact with one major surface of an electrically conducting inner layer and a second perforated outer layer of a metal chloride compound having a reduced surface of metal in contact with the opposing major surface of the inner layer, the chloride compound being selected from the class consisting of silver chloride and cuprous chloride, and dielectric spacer means for separating the individual electrode sheets whereby the magnesium alloy layer of one sheet faces the chloride compound layer of the next adjoining sheet.

3,285,783
CORROSION INHIBITOR IN DRY CELL BATTERIES
Lawrence P. Gould, Syracuse, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Sept. 10, 1964, Ser. No. 395,582
5 Claims. (Cl. 136—107)

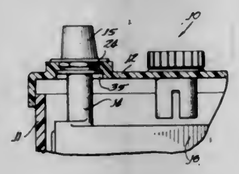
1. A method of reducing corrosion of zinc in an ammonium chloride dry cell battery electrolyte which comprises incorporating in said electrolyte an additive having the formula $RNH(OR_1)PO(ONH_3R_2)$ wherein R is an aliphatic hydrocarbon radical containing 12–18 carbon atoms inclusive, R_1 is an aliphatic hydrocarbon radical containing 1–10 carbon atoms inclusive and R_2 is an aliphatic hydrocarbon radical containing 12–18 carbon atoms inclusive.

3,285,784
NICKEL-CADMIUM BATTERY RECEPTACLE
Louis D. Babusci, Orange, and David O. Feder, Madison, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 5, 1964, Ser. No. 409,239
5 Claims. (Cl. 136—133)



1. A battery case assembly for a sealed alkaline storage battery comprising a bottom member and a lid member fitted one into the other, said bottom member having a side wall with holes through the side wall spaced around its periphery, an inverted substantially U-sectioned insulating bushing mounted on said side wall with its U-bend positioned on the rim of said wall, said lid member having its rim portion turned down against said bottom member to compress the bushing and seal the interior of the cell.

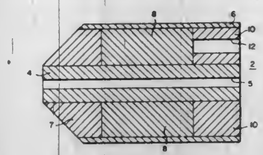
3,285,785
STORAGE BATTERY AND METHOD FOR MAKING SAME
John K. Shannon, 6504 43rd Ave., Kenosha, Wis.
Filed Oct. 4, 1963, Ser. No. 314,008
8 Claims. (Cl. 136—168)



1. A metallic weldable seal or use in storage battery terminal assembly comprising a single piece sealing element, said sealing element being characterized by a flat top washer portion, said washer portion terminating in a central aperture, a sleeve depending from said washer portion, said sleeve defining an interior tubular portion and a locking portion depending from said washer portion and radially outwardly from said sleeve portion, the locking portion having rectilinear faces on its periphery to lockingly mate with a pre-formed complementary portion on an associated storage battery lid.

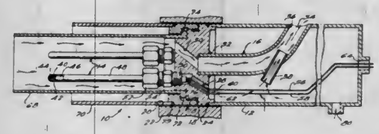
3,285,786
COEXTRUDED THERMOELECTRIC MEMBERS
Kurt Katz, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 5, 1961, Ser. No. 80,914
12 Claims. (Cl. 136—205)

1. An extruded thermoelectric element comprising a highly consolidated dense body of a telluride thermoelectric material and metal members metallurgically joined thereto by coextrusion therewith so that the metal members are in firm and intimate contact with the surfaces of the body of the thermoelectric material to provide good electrical contact therewith, the metal being selected from



at least one of the group consisting of aluminum, copper, iron, and zirconium base alloys.

3,285,787
EDUCTION-THERMOCOUPLE WITH ASPIRATED CONDUCTORS
Robert F. Ehrler, Lancaster, Ohio, assignor to Diamond Power Specialty Corporation, Lancaster, Ohio, a corporation of Ohio
Filed Aug. 16, 1962, Ser. No. 217,467
8 Claims. (Cl. 136—231)



1. In a temperature measuring device having at least one thermocouple, housing means receiving electrical conductor portions of said thermocouple and providing cooling passage means therefor, and conduit means communicating with said passage means and said thermocouple for receiving aspirating fluid from said passage means to draw hot gases past said thermocouple, said conduit means including an eduction conduit for hot gases leading from said thermocouple and an aspirating conduit leading from said cooling passage means to the interior of said eduction conduit and in eductive relation therewith.

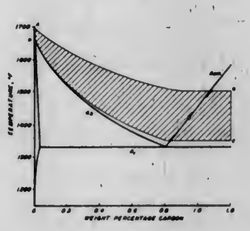
3,285,788
ANHYDROUS CHROMIC ACID SOLUTION AND PROCESS OF TREATING METAL THEREWITH
Rudolf Eldo Svadlenak, Lewiston, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed June 14, 1963, Ser. No. 287,774
15 Claims. (Cl. 148—6.2)

1. A metal treating solution consisting essentially of a chlorinated hydrocarbon containing 0.02% up to the saturation point of chromic acid, from about 2% to about 15% of tertiary alcohol, soluble in the chlorinated hydrocarbon, containing 4 to 20 carbon atoms and between approximately 0.002% to the saturation point of a zinc compound taken from the group consisting of zinc fluoride and zinc oxide.

3,285,789
METHOD OF SOFTENING STEEL
Raymond A. Grange, Washington Township, Westmoreland County, and James B. Mitchell, Monroeville Borough, Pa., assignors to United States Steel Corporation, a corporation of Delaware
Filed June 12, 1963, Ser. No. 287,434
4 Claims. (Cl. 148—12)

4. A method of producing spheroidize annealed steel comprising hot rolling steel to at least about 25% above

the final guage desired, cooling to room temperature, reheating said steel at a temperature within the range of the area ABCD of FIGURE 5 for the indicated carbon content, reducing the thickness of said steel sufficiently to deform the center grains thereof while at said temperature

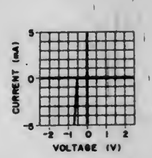


and then spheroidize annealing it at temperature below but no more than 50° F. below its A_1 temperature for about 2 to 4 hours.

3,285,790
PROCESS FOR PRODUCTION OF TIN PLATE
William B. Lockwood, Poland, Ohio (% The Youngstown Research and Development Co., P.O. Box 1378, Youngstown, Ohio)
Filed June 4, 1964, Ser. No. 372,620
14 Claims. (Cl. 148—12.1)

1. In a process for production of tin plate in which steel strip is plated with a coating of tin to form tin plate, the invention comprising cold rolling said tin plate which has not been heat treated following formation thereof to reduce its thickness at least 40% and obtain a thickness between substantially about 0.0088" and 0.001", heating said cold rolled tin plate in a non-oxidizing atmosphere to and maintaining same at a temperature of substantially 1200° F. to substantially 1800° F. to effect heat treating of said tin plate.

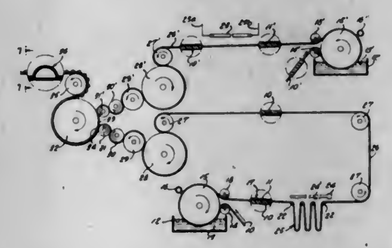
3,285,791
METHOD OF MANUFACTURING SILICON DIODES OR SILICON TRANSISTORS BY ALLOYING INDIUM WITH P-TYPE SILICON TO PRODUCE A P-N JUNCTION
Masatoshi Migitaka and Takashi Tokuyama, both of Kitatama-gun, Tokyo-to, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Chiyoda-ku, Tokyo-to, Japan, a joint-stock company of Japan
Filed Sept. 30, 1963, Ser. No. 312,739
Claims priority, application Japan, Oct. 4, 1962, 37/42,934
4 Claims. (Cl. 148—177)



1. A method of producting a silicon diode which comprises alloying indium with a p-type silicon substrate at a temperature below the melting point of silicon, thereby obtaining a p-n junction.

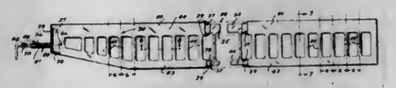
3,282,792
WITHDRAWN

3,285,793
METHOD OF MANUFACTURING A COMPOSITE CELLULAR MATERIAL
Marc A. Chavannes, Brooklyn, N.Y., assignor to Sealed Air Corporation, Hawthorne, N.J., a corporation of New Jersey
Filed July 19, 1962, Ser. No. 210,902
8 Claims. (Cl. 156—210)



1. The method of manufacturing a composite cellular material comprising the steps of heating a first thermoplastic laminate having one laminae with a melting point above that of the other laminae, said other laminae being heated to bring its outer surface to a temperature in the vicinity of the melting point thereof, embossing said heated laminate by feeding it onto an embossing roller having a plurality of discrete recesses therein, said other laminae facing outwardly, heating a second laminate having one laminae with a melting point above the melting point of the other laminae, the outer surface of the other laminae of said second laminate being heated to a temperature in the vicinity of the melting point thereof, then feeding the said outer surface of the last said laminate into contact with the first said laminate while on the embossing roller to form a unitary structure with the embossed portions of the first said laminate being sealed, and then removing the composite structure from the embossing roller.

3,285,794
INFLATABLE TOOL FOR APPLYING BONDING PRESSURE TO PATTERNED AREAS
Winston E. Brownlee, Suttons Bay, and Jack L. Ritchey, Traverse City, Mich., assignors to Parsons Corporation, Detroit, Mich., a corporation of Michigan
Filed Feb. 25, 1963, Ser. No. 260,590
4 Claims. (Cl. 156—581)



1. For use in applying pressure to a patterned surface area during adhesive bonding and the like,
an inflatable tool comprising
a rigid planar template defining such pattern, and
a flat pressure bag enclosing said template and formed of flexible material impervious to the passage of air and which does not elongate when distended by air pressure,
the bag having a pressure-applying side and a pressure-resisting side meeting at bag edges closely outward of the edges of the template,

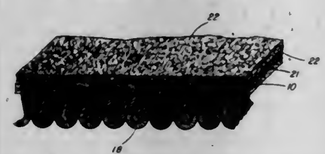
whereby, as the bag is distended from flatness by inflation, the template makes pattern-retaining contact with the bag edges, thus preventing shifting of the bag pressure-applying surface away from such patterned surface area.

3,285,795
HEAT CURABLE PLASTIC SHEETS AND LAMINATES
Stefan M. Stein, 6150 N. Winthrop, Chicago, Ill.
Filed June 18, 1962, Ser. No. 203,238
5 Claims. (Cl. 161—7)



1. Ornamental polymeric sheet material formed solely of expandable pelleted polymeric substance wherein one side of said sheet has a fused web-like structure and the second side has a discrete pebble structure capable of expansion greater than the side with the fused web-like structure so that upon heating the sheet will curl due to the difference of expansion of each side.

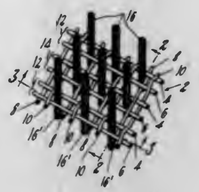
3,285,796
INTEGRAL CUSHION BACKING FOR TUFTED RUGS AND PROCESS FOR MAKING SAME
Douglas H. McElhinney, Dalton, Ga., assignor to Cabin Crafts, Inc., Dalton, Ga., a corporation of Georgia
Filed Oct. 28, 1963, Ser. No. 319,113
8 Claims. (Cl. 161—66)



1. A tufted pile floor covering, comprising a foundation sheet, a plurality of yarn ends inserted at spaced points through said sheet transversely and successively forming a succession of transverse rows of tufts on one side of said sheet, the yarns in the successive rows being continuous over the surface of the other side of said sheet connecting the tufts in successive rows, said connecting yarn being napped and forming a continuous napped layer over said opposite surface of the sheet, and a coating of an adhesive and binding material on said napped layer penetrating said layer, the interstices of said napped layer being open, said napped layer and coating providing a cushion integral with said floor covering.

3,285,797
AXMINSTER CARPET
Wayne T. Harrison, Enfield, and Raymond J. Carrigan, Thompsonville, Conn., assignors to Bigelow-Sanford, Inc., Thompsonville, Conn.
Filed May 4, 1964, Ser. No. 364,701
3 Claims. (Cl. 161—67)

1. A pile fabric floor covering comprising a backing of wefts and binder warp threads, the wefts being distributed warpwise of the fabric in spaced pairs and lying substantially in a single plane, and the binder warp threads being under substantially equal tension and spaced weftwise of the fabric in pairs, one binder warp thread of each pair being woven under alternate pairs of wefts and above the intermediate pairs of wefts and the other binder warp thread of each pair being woven above said alternate pairs of wefts and under said intermediate pairs of wefts, and a pile face formed of pile tufts bound in said backing, each tuft consisting of a single leg extending through the backing between two adjacent pairs of binder warp threads and between the two wefts of a said pair of wefts.

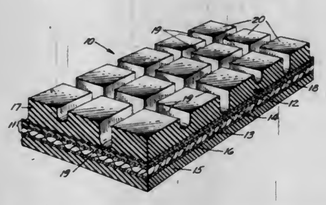


2. The pile fabric floor covering of claim 1 wherein said pile tufts comprise fusible fibers and the fibers of the ends of the pile tufts on one side of the backing are fused together.

3,285,798
CHEMICAL COMPOSITION, PROCESS USING SAME AND RESULTING PRODUCT
Giuliana C. Tesoro, Dobbs Ferry, N.Y., assignor to J. P. Stevens & Co., Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed June 6, 1962, Ser. No. 200,351
15 Claims. (Cl. 161—92)

8. A laminated article comprising a textile structure consisting essentially of hydrophobic fibers, a continuous heat sealable vinyl film coating layer and an anchoring coating layer therebetween, said anchoring coating formed from an aqueous dispersion consisting essentially of a vinyl resin, a plasticizer therefor and an aziridine having at least two aziridinyl groups per molecule, said plasticizer being present in an amount of from 5 to 50 percent by weight of said vinyl resin, said aziridine being present in an amount of from 2 to 20% by weight of said vinyl resin.

3,285,799
SMASH-RESISTANT OFFSET PRINTING BLANKET
Stanley G. Peterson, Minneapolis, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Sept. 22, 1964, Ser. No. 398,215
10 Claims. (Cl. 161—93)



1. A thin, strong printing blanket especially suitable for use in offset lithography, where it can be subjected to localized pressures caused by misfeeds or accidental debris, under which conditions it compresses to avoid damaging the blanket or the press itself but upon the removal of the compressive force regains substantially all of its original thickness, said printing blanket comprising in combination: a strong thin tough synthetic foundation sheet sandwiched between and firmly adhered to an oil-resistant continuous rubber ink transfer layer and a resilient compressible support layer, said support layer being formed from rubber, the rubber of said support layer hav-

ing a Shore A–2 hardness of at least about 60, when void-free said support layer having up to 40% uniformly distributed voids into which the rubber in said support layer can distort when said blanket is subjected to force normal to its surface, said support layer containing at least about 5×10^{-3} cubic inches of voids per square inch of blanket, said support layer when formed per se compressing on the order of 1–5 mils under the first 100 lbs./square inch pressure applied and at least an additional 3 mils under an additional 900 lbs. of pressure, said foundation sheet having a tensile strength of at least 175 lbs. per inch of width in the machine direction and an elongation of no more than about 2% under a tension of 50 lbs. per inch of width.

3. The product of claim 1 wherein the foundation sheet essentially comprises a strong woven synthetic fabric.

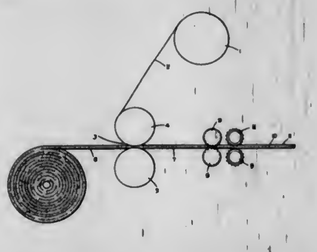
5. The product of claim 3 wherein the fabric is formed from glass fibers.

3,285,800

CUSHIONING AND WRAPPING LAMINATE

Robert P. Bartell, Manor Township, Lancaster County, Charles F. Gilbo, Lancaster, and John P. Sawyer, West Lampeter Township, Lancaster County, Pa., assignors to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania

Filed Feb. 25, 1963, Ser. No. 260,570
4 Claims. (Cl. 161—123)



1. A flexible cushioning and wrapping laminate consisting of a facing sheet having a thickness in the range of 0.003–0.015 inch and a minimum bursting strength of 3 pounds per square inch laminated to a sheet of cellular polystyrene having a thickness in the range of 1/16–1 inch and a density in the range of 0.4–1 pound per cubic foot, said facing sheet being adhered to said cellular polystyrene sheet by means of polystyrene interspersed among the fibers of said facing sheet and being continuous with the polystyrene in said cellular polystyrene sheet, the laminate having creases in the body thereof in both the machine direction and the cross-machine direction of the sheet, and being capable of being bent and rolled in a direction away from said facing sheet.

3,285,801

LIGNIN CONTAINING RESIN BINDER

Peter T. Sarjeant, Charleston Heights, S.C., assignor to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 21, 1961, Ser. No. 154,041
9 Claims. (Cl. 161—170)

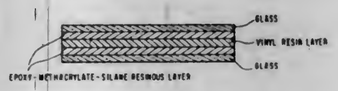
9. A mat of mineral fibers comprising a plurality of mineral fibers bound together at their points of contact with a heat cured thermoset resin which consists essentially of the product of the reaction of between 20 and 50 parts of an alkaline catalyzed phenol formaldehyde resin, 28 to 50 parts alkali lignin and sufficient urea equal to between 25 and 80% of the lignin to make 100 parts.

3,285,802

GLASS AEROSOL BOTTLES AND METHOD FOR MAKING SAME

Robert M. Smith and Lowell J. Wells, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio

Original application Mar. 1, 1962, Ser. No. 176,821. Divided and this application Oct. 23, 1965, Ser. No. 504,234
2 Claims. (Cl. 161—185)



1. The process of laminating glass surfaces comprising applying a primer to said surfaces, said primer comprising a mixture of (a) a silane selected from the group consisting of gamma-aminopropyltriethoxy silane and delta-aminobutylmethyldiethoxy silane and (b) a mixture of an unesterified epoxy resin and methyl methacrylate polymer in an organic solvent, the ratio of methacrylate polymer to epoxy resin being between approximately 25:75 and 97:3, volatilizing said solvent and applying a vinyl resin dispersion to at least one of said primed surfaces, placing another of said primed surfaces in contact with said vinyl dispersion and applying heat to the two surfaces to fuse said dispersion.

2. A laminated article comprising a pair of glass surfaces, each of said surfaces having disposed thereon and bonded thereto, an organic resinous layer comprising a mixture of (a) a silane selected from the group consisting of gamma-aminopropyltriethoxysilane and delta-aminobutylmethyldiethoxysilane and (b) a mixture of an unesterified epoxy resin and methyl methacrylate polymer, the ratio of methyl methacrylate polymer to epoxy resin being between approximately 25:75 and 97:3, each of said organic resinous layers being bonded to a fused vinyl resinous layer disposed between said organic resinous layers.

3,285,803

COMPOSITE LAMINATES AND MOLDED ARTICLES AND METHOD OF MAKING SAME

John H. Baldwin, Watchung, Paul J. Paetzold, Somerville, and Frank Starr, New Brunswick, N.J., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Oct. 3, 1962, Ser. No. 228,031
1 Claim. (Cl. 161—205)

A phenol-silicone resin composite laminate comprising thermoset phenol formaldehyde impregnated high bulk asbestos paper integrated and laminated in intimate contact with thermoset silicone resin impregnated high bulk asbestos paper, each of said asbestos papers having a bulk greater than 0.3, wherein the resin in both papers is present in amount equal to about 35% to 45% by weight of the paper, strips of phenolic resin saturated asbestos paper adhered to the phenolic resin asbestos paper at spaced intervals, insulation contained within the spaces between said strips selected from the group consisting of silica aerogel, pyrogenic silica, and mixtures thereof, and an outer sheet material adhered to said strips and covering said insulation therebetween.

3,285,804

COVULCANIZABLE POLYETHER AND SULFUR-CURABLE RUBBER LAMINATE

Anderson E. Robinson, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Apr. 11, 1963, Ser. No. 272,229
12 Claims. (Cl. 161—239)

12. A covulcanized laminate comprising at least two strongly bonded plies, at least one ply comprising a vulcanized copolymer derived from an ethylenically unsaturated glycidyl ether and at least one other monomer selected from the group consisting of alkylene oxides containing at least 3 carbon atoms and monomeric oxetanes and at least one other ply comprising a vulcanized sulfur-curable rubber, said laminate having been covulcanized with a curing agent comprising sulfur and an organic accelerator.

3,285,805

POLYVALENT METAL CARBONATE-EXTENDED PHENOLIC RESINS

Fred Bryner, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Sept. 24, 1964, Ser. No. 399,059
24 Claims. (Cl. 161—262)

1. A liquid adhesive composition comprising:

(a) one part by weight of a water-soluble, thermosetting phenol-aldehyde resin,

(b) from about 0.01 to about 2 parts by weight of a water-dispersible carbonaceous extender-thickener,

(c) at least about 0.5 part up to about 6 parts by weight of a finely divided, solid polyvalent metal carbonate and

(d) sufficient aqueous dispersing medium such that the total solids of the liquid adhesive composition is within the range from about 20 to about 60 percent by weight of the total composition.

16. A method for the production of a liquid, phenolic resin adhesive composition which comprises mixing together in any order:

(1) one part by weight of a water-soluble, thermosetting phenol-aldehyde,

(2) from about 0.01 to about 2 parts by weight of a water-dispersible carbonaceous extender-thickener,

(3) at least about 0.5 part up to about 6 parts by weight of a finely divided, solid polyvalent metal carbonate, and

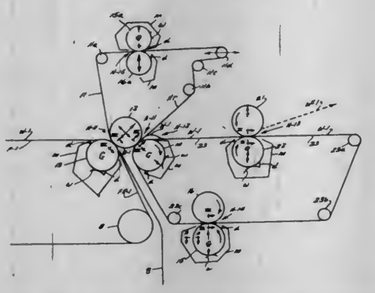
(4) sufficient aqueous dispersing medium such that the total solids of the liquid adhesive composition is within the range from about 20 to about 60 percent by weight of the total composition.

3,285,806

WEB TRANSFER ASSEMBLY FOR A PAPERMAKING MACHINE

Edgar J. Justus and Dennis C. Cronin, Beloit, Wis., assignors to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin

Filed Oct. 17, 1963, Ser. No. 317,024
7 Claims. (Cl. 162—306)



1. In a paper machine couch assembly, in combination, a couch roll within a forming wire loop, a looped pickup felt outside the forming wire loop, a plurality of aligned suction boxes with their suction areas covered by a porous solid elastomer traveling loop within the pickup felt loop and urging the pickup felt against the couch roll to pickup a moist web traveling on the wire over the couch roll at a couch nip, said couch roll being a grooved roll having an imperforate shell presenting to the wire a peripheral surface portion having a plurality of alternating generally circumferentially aligned grooves and ridges, said ridges presenting to such wire smooth generally cylindrical closely axially spaced land areas for supporting the wire to bridge the grooves, and said grooves being vented to ambient atmosphere at the oncoming and off-running sides of the couch nip.

3,285,807

METHOD FOR CONTROLLING PLANT FUNGI WITH ZINC-MANGANESE 1,2-PROPYLENE-BIS-DI-THIOCARBAMATE MIXED SALT

Hellmuth Lehmann, Wuppertal-Elberfeld, Ferdinand Grewe, Burscheid, and Walter Lautenschlager, Wuppertal-Vohwinkel, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Feb. 6, 1963, Ser. No. 256,511
Claims priority, application Germany, Feb. 7, 1962, F 35,960
7 Claims. (Cl. 167—22)

1. A method for controlling fungal infection of a plant, comprising contacting said plant with an active amount of a mixed zinc manganese salt of 1,2-propylene-bis-dithiocarbamic acid.

3,285,808

CONTROL OF PLANT PATHOGENIC FUNGI WITH ALKYL ESTERS OF 4-HALO-ACETOACETIC ACID

Daniel J. McCaustland, Leawood, Kans., assignor to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed June 8, 1964, Ser. No. 373,492
3 Claims. (Cl. 167—22)

1. A method for controlling plant pathogenic fungi in soil comprising applying to soil an effective amount of an alkyl ester of a compound selected from the group consisting of 4-chloroacetoacetic acid and 4-bromoacetoacetic acid.

3,285,809

PROCESS OF CONTROLLING MICROBIAL ACTIVITY

Robert R. Mod, Evald L. Skau, Sara P. Fore, and Frank C. Magne, New Orleans, Arthur F. Novak, Baton Rouge, and Harold P. Dupuy, Jesse R. Ortego, and Mary J. Fisher, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Continuation of application Ser. No. 197,545, May 24, 1962. This application June 8, 1965, Ser. No. 462,455
7 Claims. (Cl. 167—22)

1. A process of controlling microbial activity comprising contacting the microbe with an antimicrobial composition containing as its active ingredient a member selected from the group consisting of N-n-butyldecanamide, N-isoamyldecanamide, N-cyclohexyldecanamide, N,N-bis(2-decanoyloxyethyl)decanamide, N,N-bis(2-decanoyloxyethyl)lauramide, and N-tert-butyloleamide.

3,285,810

METHOD FOR PREVENTING TERMITE INFESTATION IN STRUCTURES

Virginia L. Hart, Box 291, Clearlake Highlands, Calif.

No Drawing. Filed Nov. 4, 1964, Ser. No. 408,742
5 Claims. (Cl. 167—24)

1. A method for preventing termite infestation in structures having exposed earth surfaces therebeneath comprising placing a layer of redwood bark wool over said

exposed earth surfaces whereby termites are repelled from said structures.

3,285,811

1,1-DICHLORO-2,2-BIS (4'-CHLOROPHENYL) CYCLOPROPANE INSECTICIDE

Robert A. Wiles, Syracuse, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Original application Oct. 29, 1962, Ser. No. 233,895. Divided and this application June 30, 1965, Ser. No. 478,009

2 Claims. (Cl. 167—30)

2. The method of combatting insects which comprises subjecting the insects to the action of a toxic quantity of 1,1-dchloro-2,2-bis(4'chlorophenyl)cyclopropane.

3,285,812

PROCESS OF CONTROLLING MICROBIAL ACTIVITY

Robert R. Mod, Evald L. Skau, Sara P. Fore, and Frank C. Magne, New Orleans, Arthur F. Novak, Baton Rouge, and Harold P. Dupuy, Jesse R. Ortego, and Mary J. Fisher, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Continuation of application Ser. No. 353,012, Nov. 4, 1963. This application June 8, 1965, Ser. No. 462,456

6 Claims. (Cl. 167—33)

1. A process of controlling microbial activity comprising contacting the microbe with an antimicrobial composition containing as its essential active ingredient a member selected from the group consisting of 4-(6-hydroxycaproyl)morpholine, 4 - decanoyl - 2,6 - dimethylmorpholine, 4 - oleoyl - 2,6 - dimethylmorpholine, 4 - petroselinoylmorpholine, and the morpholides of parsely seed oil fatty acids.

3,285,813

COMPLEX POLYNUCLEAR CARBOXYLIC ACID STABILIZATION OF HALOGENATED AROMATIC HYDROCARBON INSECTICIDES IN PETROLEUM HYDROCARBON SOLVENT

Louis A. Joo and John B. Braunwarth, Crystal Lake, Ill., assignors, by mesne assignments, to The Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed July 13, 1962, Ser. No. 209,750

3 Claims. (Cl. 167—42)

1. An insecticidal composition consisting essentially of from about 20 to 90 weight percent of a petroleum hydrocarbon solvent containing a sufficient amount of a halogenated aromatic hydrocarbon insecticide to form a saturated to supersaturated solution therein and from 0.5 to 10 weight percent of a stabilizer for said solution, said stabilizer comprising a complex polynuclear carboxylic acid prepared by:

solvent extraction of mineral lubricating oils with a solvent selected for aromatic compounds to obtain an extract having an average molecular weight above 300 and containing from 75 to 98 percent aromatic and heterocyclic compounds;

reaction of said extract with nitrogen dioxide at reaction conditions comprising a reaction period in excess of about two hours and a temperature of about 100° to 200° C., sufficient to oxidize said extract and form said complex polynuclear carboxylic acid having from 1 to about 5 nitro groups per molecule and from 1 to about 5 carboxylic acid groups per molecule.

3,285,814

ANTIBIOTIC COMPLEX BA-180265(AB) AND PROCESS FOR MAKING SAME

Koppaka V. Rao, Pine Brook, William S. Marsh, Wanaque, and Wen-Chih Liu, Maywood, N.J., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

Filed Apr. 7, 1964, Ser. No. 359,544

7 Claims. (Cl. 167—65)

4. An antibiotic product which in purified form crystallizes from acetone as orange rectangular plates which soften and decompose at 265–268° C.; which produces a dark green color with alcoholic ferric chloride, a purplish red color with concentrated nitric acid and a deep green color in admixture with concentrated sulfuric and gallic acids; which substance has substantially the following analysis: 61.7% carbon, 4.6% hydrogen, 5.3% nitrogen, oxygen (by difference) 28.4%, and a methoxyl content of 5.7%, ultraviolet absorption maxima at 253, 300 and 370 with

$E^{1\%}_{1cm}$ values of 688, 273, and 460

respectively, an optical rotation, $[\alpha]_D$ of $-634°$ in chloroform solution, and which in solid form (KBr pellet) exhibits characteristic absorption in the infrared region of the spectrum at the following frequencies expressed in reciprocal centimeters: 3450 strong, 2850 strong, 2700 strong, 1640 very strong, 1575 strong, 1525 medium, 1460 strong, 1340 medium, 1285 strong, 1265 very strong, 1210 medium, 1185 strong, 1125 medium, 1100 strong, 1085 strong, 1040 medium, 1030 medium, 1020 medium, 1005 strong, 995 strong (shoulder), 976 medium, 955 strong, 935 medium, 912 weak, 865 strong, 850 medium, 822 medium and 813 medium; and which crystallizes from chloroform in the form of lemon yellow hexagonal prisms which soften and decompose at 265–268° C.; which substance has substantially the following analysis: 57.8% carbon, 4.6% hydrogen, and 4.8% nitrogen, a methoxyl content of about 5.1%, a chlorine content of about 6.7%, an optical rotation $[\alpha]_D$ of $-585°$ in chloroform solution and which in solid form (KBr pellet) exhibits characteristic absorption in the infrared region of the spectrum at the following frequencies expressed in reciprocal centimeters: 3450 medium, 2950 medium, 1640 strong, 1580 strong, 1525 medium, 1460 strong, 1430 strong, 1360 medium, 1280 strong, 1260 strong, 1210 medium, 1180 strong, 1100 medium, 1080 strong, 1005 strong, 955 strong, 875 medium, 855 medium, 818 strong and 750 strong and broad.

3,285,815

METHOD OF TRANQUILIZATION EMPLOYING 10-CHLORO DESERPIDINE

Leon Velluz, Paris, Robert Jequier, Saint-Maur, Michel Peterfalvi, Paris, and Georges Muller, Nogent-sur-Marne, France, assignors, by mesne assignments, to Roussel-Uclaf, S.A., Paris, France, a corporation of France

Filed Mar. 20, 1959, Ser. No. 800,384

Claims priority, application France, June 24, 1957, 741,644

2 Claims. (Cl. 167—65)

1. The process of tranquilizing persons and animals without exerting a substantial depressing effect upon the central nervous system, said process consisting in administering to persons and animals a compound selected from the group consisting of 10-chloro deserpidine and its therapeutically active acid addition salts in an amount between about 0.1 mg./kg. and about 0.5 mg./kg per day.

3,285,816

PROCESS OF PREPARING IODOPHORS OF NON-IONIC SYNTHETIC SURFACTANTS

Harry Kaplan, Westfield, and Winfred C. Craig, West Long Branch, N.J., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 23, 1963, Ser. No. 282,814

6 Claims. (Cl. 167—70)

1. In the process of preparing a non-ionic iodophor by heating a non-ionic synthetic surfactant with 10 to 40% by weight thereof of elemental iodine at a temperature range of 40° to 80° C., the improvement of obtaining said iodophor in stable form and having a higher ratio of available iodine to total iodine employed in said preparation which comprises first halogenating a non-ionic synthetic surfactant selected from the group consisting of those of the general formulae:

$$R{-}O(CH_2CHO)_n{-}H \quad (R' \text{ on the } CH)$$

and

$$HO(C_2H_4O)_x(C_3H_6O)_y(C_2H_4O)_{x'}{-}H$$

wherein R represents a member selected from the class consisting of alkyl radicals of 6 to 27 carbon atoms and aryl radicals of 6 to 24 carbon atoms, R' represents a member selected from the class consisting of hydrogen, methyl and ethyl, n represents an integer of from 6 to 100, y represents an integer of at least 15 and $x+x'$ represents 20 to 90% of the total weight of said non-ionic, with 2 to 8% by weight thereof of a halogen selected from the class consisting of bromine and chlorine at a temperature ranging from ambient to 120° C., and then heating the halogenated surfactant with the said weight of elemental iodine within said temperature range.

3,285,817

METHOD OF PROTECTING DOGS AT BIRTH AGAINST CANINE DISTEMPER

Eben A. Slater, St. Joseph, Mo., assignor to Philips Roxane, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 17, 1965, Ser. No. 480,483

13 Claims. (Cl. 167—78)

1. A method of protecting a new born dog against canine distemper disease, which comprises parenterally administering to said dog, during the time period within which said dog possesses a sufficiently high level of maternally transferred canine distemper antibodies to render said dog naturally non-susceptible to canine distemper disease and prior to the time it becomes about one month of age, from about 1.0 to about 2.0 milliliters of a live attenuated measles virus vaccine having a titer greater than $10^{2.5}$ $TCID_{50}$ per milliliter.

3,285,818

HAIR AND SKIN COMPOSITIONS CONTAINING PANTETHINE

Genkichi Obta, Bunkyo-ku, Tokyo-to, Osamu Nagase, Katsushika-ku, Tokyo-to, and Masao Shimizu, Bunkyo-ku, Tokyo-to, Japan, assignors to Daiichi Seiyaku Kabushiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan

No Drawing. Filed May 7, 1964, Ser. No. 365,783

3 Claims. (Cl. 167—87)

1. A hair tonic comprising an aqueous alcoholic solution of 5 to 30% of pantethine represented by the formula

$$(HO{\cdot}CH_2{-}\underset{CH_3}{\overset{CH_3}{C}}{-}\underset{OH}{CH}{-}CONH{\cdot}CH_2{\cdot}CH_2{\cdot}CONH{\cdot}CH_2{\cdot}CH_2{-}S{-})_2$$

said solution containing an antiseptic and a perfume as additives.

3,285,819

POLY(N-PROPYL-N-VINYLACETAMIDE) IN HAIR SETTING COMPOSITIONS

Robert B. Blance and Saul M. Cohen, Springfield, Mass., assignors, by mesne assignments, to Monsanto Company, a corporation of Delaware

No Drawing. Filed Oct. 18, 1963, Ser. No. 317,127

2 Claims. (Cl. 167—87.1)

1. A hair lacquer composition, comprising a homopolymer of N-propyl-N-vinylacetamide having an intrinsic viscosity within the range of 0.15 to 0.35 dl./g. in benzene at 25° C., which is dissolved in a quick-drying subsantially anhydrous alkyl alcohol to give a lacquer composition having a homopolymer content of 4 to 12% by weight based on the total weight of homopolymer and alcohol.

3,285,820

NUCLEAR REACTORS

Louis H. J. Tollet and Pierre E. J. M. Maldague, Brussels, Belgium, assignors to Societe Anglo-Belge Vulcain S.A., Brussels, Belgium

Filed Aug. 2, 1965, Ser. No. 476,637

8 Claims. (Cl. 176—28)



1. An assembly of reactor elements, comprising: a support tube having an upper end and a lower end with tapering sides for supporting and centering the tube within a reactor vessel, a moderator fluid inlet in said tube at said lower end, fuel elements carried by said tube above said lower end, a moderator fluid outlet in said tube above said fuel elements, a drive mechanism carried in said tube at the upper end thereof, a tubular reactivity control member carried by said tube in concentric relationship therewith and connected with said driving mechanism for actuation thereby, said support tube and the fuel elements, driving mechanism and reactivity control member carried by said support tube being characterized by the ability to be handled as a united assembly, whereby the dismantling and the remounting of a reactor equipped with such an assembly can be accomplished without separately removing therefrom the fuel, driving mechanism and reactivity control means.

3,285,821

NUCLEAR FUEL MODULE

James E. Brubaker, Pittsburgh, Pa., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Filed Sept. 16, 1965, Ser. No. 487,941

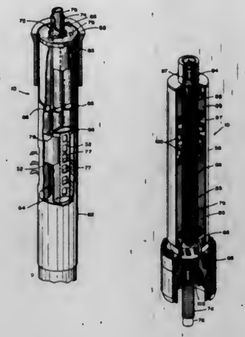
5 Claims. (Cl. 176—29)

1. A nuclear fuel module comprising:

(a) a movable fuel portion surrounded by a stationary fuel portion and forming spaces therebetween;

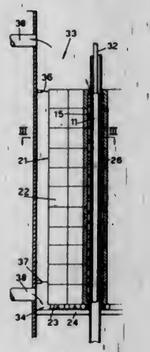
(b) scabbards extending into said spaces for accommodating shutdown poison rods and protecting the latter from side forces acting thereon; and

(c) a compact assembly directly above said movable fuel portion containing separate means for selectively and independently adjusting (1) the position of said movable fuel portion to affect the reactivity of said



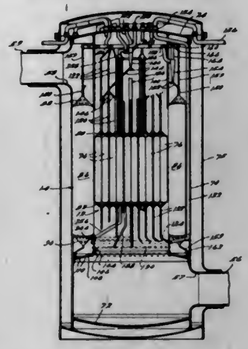
module and (2) the positions of said shutdown poison rods, each of said means including a low friction nut and threaded drive tube in cooperation with each other and means for inductively effecting the rotation of each said nut.

3,285,822
NUCLEAR REACTOR
Ronald Tunstall Ackroyd, Upton by Chester, England, assignor to United Kingdom Atomic Energy Authority, London, England
Filed Mar. 30, 1964, Ser. No. 355,798
8 Claims. (Cl. 176—42)



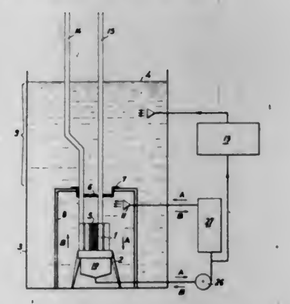
1. In a nuclear reactor having a reactor core wherein nuclear fuel is subject to fission by neutrons with generation of heat, a system for variable neutron moderation in the core comprising a gaseous neutron moderator, a flowpath for circulation of the moderator through the core, sorbent material in the flowpath within the core whereby the moderator is retained in the core by sorption, and means to vary the moderator content of the core by variation of the sorption conditions.

3,285,823
NUCLEAR REACTOR
Weymouth N. McDaniel, Baltimore, Md., and Charles E. Klotz, Milwaukee, Wis., assignors to Atomic Power Development Associates, Inc., Detroit, Mich., a corporation of New York
Filed Jan. 18, 1965, Ser. No. 426,178
13 Claims. (Cl. 176—47)



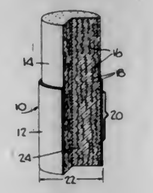
1. A mobile fuel, nuclear reactor, comprising: a hollow core member having an upper charging inlet and at least one restricted aperture, lower discharging outlet for said fuel, means for continuously supplying to said inlet, a thin slurry comprising discrete particles of material useful in carrying out a controlled nuclear fission chain reaction and a liquid carrier for said particles, means adjacent said inlet for concentrating said slurry by partial deliquefaction thereof to substantially the thickness of a paste, means for introducing said paste into said core member through said inlet, means including said restricted aperture outlet for causing said paste to move through said core member at the settled density of said particles in said liquid carrier with said particles unsuspended in said liquid and resting upon one another, means adjacent said outlet for re-slurrying the paste effluent from said core member by additions of said liquid carrier thereto, and means for recirculating said slurry to said inlet.

3,285,824
SWIMMING-POOL REACTOR
Paul Ageron, Grenoble, France, assignor to Commissariat a l'Energie Atomique, Paris, France
Filed Mar. 3, 1964, Ser. No. 348,966
Claims priority, application France, Mar. 16, 1963, 928,241
3 Claims. (Cl. 176—62)



1. A swimming-pool reactor comprising a body of water, a reactor core in a bottom portion of said body of water, a plurality of vertically removable fuel assemblies located in parallel relationship in said core, a horizontal partition wall separating said bottom portion from a top portion of said body of water, said partition wall comprising a plurality of individually removable members, each of said members being associated with at least one of said fuel assemblies and providing when removed a passage for said fuel assembly through said partition wall, means for withdrawing a flow of water from said bottom portion, means connected to said withdrawing means for cooling the greater part of said flow, means connected to said cooling means for returning said greater part of said flow into said bottom portion and means connected to said withdrawing means for directing the remainder of said flow into said top portion whereby water leakages through said partition wall are compensated by said remainder of said flow.

3,285,825
REINFORCED CERAMIC FUEL ELEMENTS
Wayne H. Jens, Grosse Pointe Park, Mich., assignor to Atomic Power Development Associates, Inc., Detroit, Mich., a corporation of New York
Filed Sept. 16, 1964, Ser. No. 396,943
23 Claims. (Cl. 176—68)



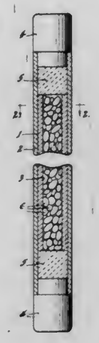
1. A fuel element for a nuclear reactor comprising ceramic fuel material, a plurality of elongated reinforcing metallic fibers embedded within and disposed predominantly in an axial direction with respect to said ceramic fuel material whereby a substantially reproducible and positive coefficient of thermal expansion is obtained.

13. A fuel element for a nuclear reactor comprising ceramic fuel material, a metallic rod for integrating and strengthening said ceramic fuel material, said metallic rod being disposed predominantly in an axial direction with respect to said ceramic fuel material whereby said fuel element is reinforced in the axial direction.

15. A fuel element for a nuclear reactor comprising ceramic fuel particles, a metallic bar for integrating and strengthening said ceramic fuel material, said metallic bar being disposed centrally and predominantly in an axial direction with respect to said ceramic fuel material, a plurality of transversely extending trays fixedly connected to said bar at longitudinally spaced locations, whereby each of said trays is adapted to support a portion of said ceramic fuel particles.

22. A fuel element for a nuclear reactor comprising a plurality of particles of ceramic fuel material of a first particle size, a plurality of metallic material of a second particle size intermixed with said ceramic fuel material, said second particle size being substantially smaller than said first particle size whereby upon fabrication said metallic particles form a honeycomb-like bonding agent for said ceramic fuel material and thereby provide an integrated and strengthened ceramic fuel element.

3,285,826
FUEL ELEMENT CONTAINING A MECHANICALLY COMPRESSIBLE MANDRIL
James E. Lang, Schenectady, Richard A. Proebstle, Scotia, and Leonard G. Wisnyi, Schenectady, N.Y., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed May 20, 1966, Ser. No. 551,786
6 Claims. (Cl. 176—68)



1. A fuel element for a nuclear reactor comprising an annular core consisting of a ceramic fissionable material having a central opening therein, metallic cladding surrounding the core, and a mechanically compressible mandril disposed within the central opening to prevent dislocated fragments of fuel from falling into the central opening while permitting the fuel to swell inwardly.

3,285,827
PROCESS FOR PRODUCING GLUTAMIC ACID
Fred C. Arzberger and Winfred N. McCutchan, both of Terre Haute, Ind., assignors to Commercial Solvents Corporation, a corporation of Maryland
No Drawing. Filed May 28, 1964, Ser. No. 371,100
6 Claims. (Cl. 195—29)

1. A process for production of L-glutamic acid which comprises cultivating *Brevibacterium divaricatum* NRRL B–2620 in an aqueous nutrient medium containing an assimilable carbohydrate source and an assimilable nitrogen source in the presence of growth promoting amounts of a growth promoter selected from the group consisting of biotin and desthiobiotin until a substantial amount of L-glutamic acid is produced.

3,285,828
PROCESS FOR PRODUCTION OF CITRIC ACID BY FERMENTATION
William Gold, Spring Valley, N.Y., and Robert J. Kieber, Rumson, N.J., assignors to Stepan Fermentation Chemicals, Inc., Keyport, N.J., a corporation of Delaware
No Drawing. Filed Dec. 16, 1964, Ser. No. 418,887
31 Claims. (Cl. 195—36)

1. The method of producing citric acid by fermentation of a fermentable carbon source, which comprises adding to a cool, sterile fermentation medium including the fermentable carbon source, sterile salt selected from the group consisting of ferrocyanide and ferricyanide salts, and a citric acid producing and accumulating organism for the production of citric acid from the carbon source, to provide a cool fermentation medium containing said salt and said organism, providing the cool fermentation medium containing said organism at a pH of about

6.5–9 and maintaining it for a time and at conditions for production of citric acid by fermentation of the carbon source.

3,285,829
PROCESS FOR PRODUCING 16α-HYDROXY-STEROIDS USING *NOCARDIA ITALICA*
Alba Maria Amici, Maria Luisa Bianchi, Renato Modelli, Celestino Spalla, Aurelio Di Marco, and Marcello Gaetani, all of Milan, Italy, assignors to Società Farmaceutici Italia, Milan, Italy, a corporation of Italy
No Drawing. Original application July 13, 1962, Ser. No. 209,784, now Patent No. 3,188,325, dated June 8, 1965. Divided and this application Aug. 26, 1964, Ser. No. 398,140
Claims priority, application Italy, July 17, 1961, 13,227/61; Mar. 14, 1962, 5,088/62
13 Claims. (Cl. 195—51)

1. A process for producing a 16α-hydroxy-steroid which comprises treating a 16-desoxy-steroid selected from the pregnane and androstane series with the micro-oragnism *Nocardia italica* n. sp. under aerobic and submerged conditions.

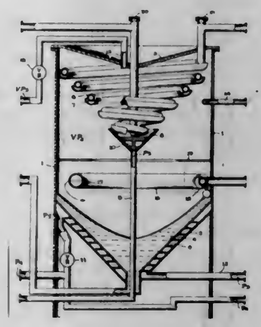
3,285,830
16-OXYGENATION OF STEROIDS BY STAGONOSPORA SPECIES
Jan de Flines and Willem Frederik van der Waard, Delft, Netherlands, assignors, by mesne assignments, to Koninklijke Nederlandse Gist & Spiritusfabrieken, a corporation of the Netherlands
No Drawing. Filed Oct. 15, 1963, Ser. No. 316,433
Claims priority, application Netherlands, Oct. 16, 1962, 284,411
9 Claims. (Cl. 195—51)

1. A method of converting a steroid into a 16α hydroxy derivative thereof which comprises subjecting a steroid selected from the group consisting of steroids of the pregnane and androstane series containing at least one carbon to carbon double bond at the position 1, 2, 3, 4, 5, 6, 14 and 17(20) and free of hydroxy at the 17α position, to the action of enzymes of a microorganism of the genus Stagonospora under oxidizing conditions and recovering the resultant 16α hydroxy steroid.

3,285,831
CITRIC ACID PRODUCTION
Earl Jack Swarthout, Edwardsburg, Mich., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana
No Drawing. Filed Mar. 27, 1964, Ser. No. 355,499
3 Claims. (Cl. 195—36)

1. A process for producing citric acid which comprises subjecting a mixture of water and crude starch-containing material, wherein the mixture contains about 1.3 to about 1.6 lb. of water per pound of crude starch material dry solids, to the action of an amylase at a temperature of about 160° F. to about 195° F. and at a pH of about 6.5 to about 7.7 for at least about 20 minutes to liquefy substantially all the starch in said crude material, cooling the liquefied starch solution to a temperature of about 130° F. to about 145° F., adjusting the pH of said solution to a value of about 4.0 to about 5.5, adding to said solution an amyloglucosidase which is substantially free from protease, lipase and transglucosidase activity, maintaining the resulting mixture at a temperature of about 130° F. to about 145° F. for about 15 to about 96 hours to convert the liquefied starch to desired sugars, removing insoluble material from the solution, and subjecting the resulting solution to the action of a citric acid producing strain of a fungus in the presence of nutrients for said fungus under conditions conductive to fermentation until a predetermined amount of citric acid is produced.

3,285,832
FLASH EVAPORATION AND CONDENSATION APPARATUS
Hugo H. Sephton, La Jolla, Calif. (35 Anson Way, Berkeley, Calif.)
Filed Apr. 22, 1963, Ser. No. 274,468
7 Claims. (Cl. 202—187)



1. A flash evaporator comprising a vertical cylindrical outer shell with a conical bottom and a removable conical top, means for maintaining partial vacuum in the body of the evaporator, a base heat exchanger consisting in general of an inner cone concentric with the conical bottom and separated from it by a conical spiral strip draped over said inner cone and welded to it for the purpose of guiding the hot distillate collected from evaporator stages operating at higher temperatures in a spiral course between the two concentric cones of the base heat exchanger to ensure an effective heat transfer to the residual liquid in the body of the flash evaporator, a condenser suspended just below the conical top and consisting of a metal pipe bent in the shape of a conical spiral having its inlet and outlet ends extended through said conical top, open spiral-shaped through means disposed beneath the conical spiral-shaped condenser pipe for collecting distillate, a funnel-shaped means arranged beneath said condenser and communicating with said trough for the removal of collected distillate from the evaporator, a flash tube through which hot liquid is introduced into the body of the evaporator under force of the relative vacuum maintained in the flash evaporator and designed to utilize the fall in vapor pressure of the hot liquid together with the expansion under vacuum of its vapor both effective over the length of the flash tube to impart momentum to the vapor and its entrained residual liquid with the purpose of setting up and sustaining a swirling motion in both the vapor phase and the residual liquid in the body of the flash evaporator.

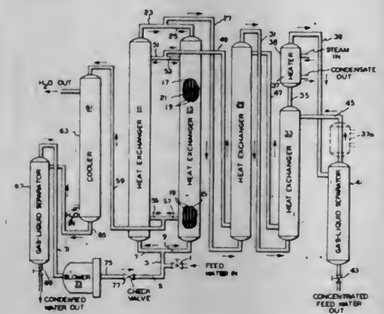
3,285,833
WATER VOLATILIZATION-CONDENSATION PURIFICATION PROCESS USING INERT GAS
Frederick J. Zimmermann, Wausau, Wis., assignor to Sterling Drug, Inc., New York, N.Y., a corporation of Delaware
Filed June 19, 1964, Ser. No. 376,534
11 Claims. (Cl. 203—11)

1. A continuous process for obtaining purified water from feed water containing non-volatile material conducted at a substantially constant total pressure of at least 150 pounds per square inch gauge and comprising the steps of

(a) continuously mixing the feed water with at least an amount of a non-condensable gas according to the formula

$$NCG = \frac{3}{14 \log (P10^{-2})}$$

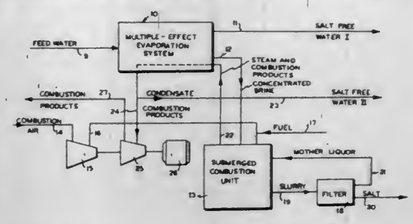
wherein NCG is the moles of non-condensable gas per mole of feed water and P is the selected total pressure of the system in pounds per square inch gauge, to form a mixture having a liquid and a gaseous phase,
(b) continuously passing the liquid and gaseous phase at substantially the same velocity as a concurrently flowing intimate mixture through a heat exchange zone,
(c) thereafter continuously passing the gaseous phase of the heated mixture obtained from the heat exchange zone, after separation from the residual liquid phase, in countercurrent separated heat exchange relationship with the mixture in the heat exchange zone,



(d) continuously supplying energy to at least the gaseous phase of the heated mixture obtained from the heat exchange zone, prior to returning the gaseous phase to the heat exchange zone, so as to raise the temperature of the gaseous phase to a temperature of at least 225° F. which by heat exchange with the heated separated gaseous phase volatilizes at least a 20 percent portion of the water in the liquid phase of the mixture passing through the heat exchange zone but less than all so as to maintaing a liquid phase containing the non-volatile material, thereby providing a continuously progressive temperature gradient of at least 150° F. between the temperature of the feed water and that of the heated gaseous phase and producing a continuously progressive volatilization of water from the heated liquid phase in the heat exchange zone and a continuously progressive condensation of purified water from the cooled gaseous phase,
(e) recovering the condensed purified water,
(f) collecting the cooled gaseous phase, increasing the pressure thereof sufficiently to compensate for any pressure drop in the system, and returning the gaseous phase to the first step of the process.

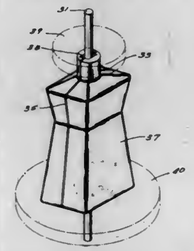
3,285,834
MULTIPLE-EFFECT EVAPORATION UTILIZING SUBMERGED COMBUSTION HEAT
Salvatore A. Guerrieri, Rowayton, and Marcel J. P. Bogart, Stamford, Conn., assignors to The Lummus Company, New York, N.Y., a corporation of Delaware
Filed Dec. 10, 1962, Ser. No. 243,319
8 Claims. (Cl. 203—25)

1. A process for producing a substantially salt-free water from saline water, comprising the steps of subjecting said saline water to multiple-effect evaporation to yield a salt-free water product and a concentrated brine, further concentrating said concentrated brine to a slurry by direct contact with combustion products in a submerged combustion unit, separating said slurry into a solid residue



and a mother liquor, recycling said mother liquor to said submerged combustion unit, and utilizing said combustion products and steam produced by the evaporation of water from said concentrated brine in said submerged combustion unit to supply heat for the evaporation step for the production of said salt-free water product.

3,285,835
METHOD AND APPARATUS FOR ELECTROFORMING SPLIT GLASSWARE MOLDS
Tom Jay Farrow, Toledo, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio
Filed Apr. 29, 1963, Ser. No. 276,502
13 Claims. (Cl. 204—6)



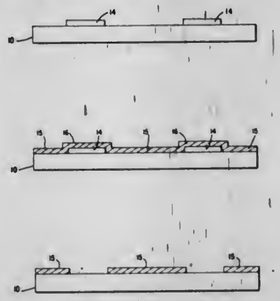
1. In the method of electroforming a split, glass forming mold from a master having the external shape of the articles to be formed in the mold but with added material coincident with the parting line making the master wider than the mold cavity of the glass forming mold, the steps including making a pair of matching female epoxy mold halves from the master with precisely formed slots in the ends thereof, placing a conductive member along the axis of one of said female epoxy mold halves, placing a conductive sheet having a contour similar to the diametrical cavity contour over the cavity opening, connecting the sheet to the conductive member, placing the other epoxy mold half over the one mold half thereby forming a cavity, forming a mandrel within the cavity of the female epoxy mold, removing the mandrel from the mold, exposing the edge of the sheet at the surface of the mandrel, and placing non-conducting disks over the conducting member with the disks abutting the ends of the mandrel.

8. A mandrel for use in electroforming split molds comprising, a plastic member having the external shape of the mold to be formed, said member being slightly wider than the split mold whose cavity it is to form, a conductive member extending axially through said plastic member, a conductive sheet connected to said conductive member and extending through and to the surface of the plastic member to expose the edges of said conductive sheet.

3,285,836
METHOD FOR ANODIZING

Leon I. Maissel and Charles L. Standley, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed June 28, 1963, Ser. No. 291,347
10 Claims. (Cl. 204—15)



1. A method for anodizing selected areas of the metal surface of a valve metal leaving other areas of the surface unanodized and precisely controlling the dimensions of the unanodized area comprising,

depositing a layer of masking metal on selected portions of the surface of a base metal, said masking metal and said base metal being different metals and said masking metal being a valve metal,

anodizing both the surface of said base metal where exposed and the surface of said layer of masking metal to deposit a film of base metal oxide on said base metal where exposed and a film of masking metal oxide on said layer of masking metal, and

selectively removing said masking metal and said film of masking metal oxide from the surface of said base metal to expose unanodized areas on the surface of said base metal, said unanodized areas having dimensions corresponding to the dimensions of said layer of masking metal.

3,285,837
ELECTROLYTIC DEVELOPMENT PROCESS FOR PHOTOCONDUCTIVE COPYSHEETS

Byron W. Neher, Hudson, Wis., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Jan. 9, 1963, Ser. No. 250,226
15 Claims. (Cl. 204—18)

1. An electrolytic development process for developing an exposed copysheet having a photoconductive layer on a contiguous electrically conductive backing which comprises contacting the exposed surface of said copysheet with an electrolytically conductive developer solution having dissolved therein an ionizable anionic dye providing a negatively charged chromophore and a polyvalent metal cation selected from the group consisting of nickel, magnesium, zinc and calcium, and electrolyzing said developer solution, the electrically conductive backing of said copysheet being connected to serve as the cathode.

3,285,838
PRODUCTION OF ELECTROLYTIC TINPLATE

Eric R. Morgan, Irwin I. Bessen, Walter Batz, and George K. Notman, Pittsburgh, Pa., assignors to Jones & Laughlin Steel Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Sept. 17, 1962, Ser. No. 224,185
3 Claims. (Cl. 204—37)

1. The process of producing electro-tinned strip of improved corrosion resistance comprising plating the steel in an acid electro-plating bath with a flash coating of tin to a weight between about .02 and about .10 pound per base box of tinplate, reflowing the flash coating at a temperature sufficient to convert it into a flat plate-like iron-tin alloy, that temperature being between about 490° F. and about 850° F., electro-plating the reflowed electro-tinned steel in an acid electro-plating bath with an additional coating of tin and reflowing that additional coating of tin.

3,285,839
METHOD AND BATH FOR ELECTROPLATING RHENIUM

Eldridge K. Camp, Watertown, Conn., assignor to American Chemical & Refining Company, Incorporated, Waterbury, Conn., a corporation of Connecticut

No Drawing. Filed Dec. 16, 1963, Ser. No. 330,569
14 Claims. (Cl. 204—47)

1. In the method of electroplating rhenium, the steps comprising immersing a conductive article in an aqueous bath consisting essentially of soluble rhenium ion, phosphate ion and a non-interfering cation selected from the group consisting of ammonium ions, alkali metal ions and the combination thereof, said bath having a pH of about 4.0 to 6.8 and a temperature above about 50° centigrade; and passing current through said bath at a current density of about 15 to 75 amperes per square decimeter of surface area of said article.

3,285,840
PROCESS AND COMPOSITION FOR ZINC ELECTRODEPOSITION

Karl H. Lindemann, Richmond Heights, Ohio, assignor, by mesne assignments, to Enthone, Incorporated, West Haven, Conn., a corporation of Connecticut

No Drawing. Filed May 21, 1963, Ser. No. 282,138
21 Claims. (Cl. 204—55)

1. In the process for electrodepositing zinc upon a cathode from an acidic aqueous electrolyte, the improvement which comprises having present in said electrolyte as brightener an effective amount of an enzyme-degraded hydrolyzed meat protein and of an aldehyde selected from the group consisting of veratraldehyde, anisic aldehyde, piperonal, vanillin, 2,4-dichlorobenzaldehyde, and 2-methyl 2-ethyl 3-hydroxy propionaldehyde.

3,285,841
ZINC CATHODE STRIPPINGS

Thomas I. Moore, Webster Groves, and Robert K. Carpenter, Arnold, Mo., assignors to American Zinc, Lead & Smelting Company, St. Louis, Mo., a corporation of Maine

No Drawing. Original application Nov. 13, 1961, Ser. No. 152,035, now Patent No. 3,245,779, dated Apr. 12, 1966. Divided and this application Aug. 30, 1965, Ser. No. 483,816
The portion of the term of the patent subsequent to Apr. 12, 1983, has been disclaimed
1 Claim. (Cl. 204—115)

Solid zinc cathode strippings having a dry coating of solid zinc flux material.

3,285,842
PROCESS OF MAKING DIOXYGEN CHLORINE TRIFLUORIDE

Aristid V. Grosse and Alex G. Streng, Philadelphia, Pa., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed Mar. 22, 1963, Ser. No. 267,370
6 Claims. (Cl. 204—157.1)

1. A process of synthesizing dioxygen chlorine trifluoride comprising

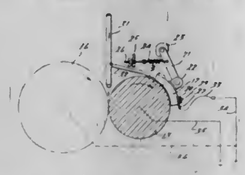
irradiating chlorine trifluoride with ultraviolet light having an intensity between 4.5 to 9.5 microwatts per square centimeter,

said chlorine trifluoride being maintained at a temperature between about 195° K. to 200° K. in contact with an oxygen atmosphere under a pressure above 1.5 atmospheres.

3,285,843
APPARATUS FOR ELECTROLYTIC MACHINING

Kenneth R. Blake, Huntington, Ind., assignor, by mesne assignments, to Micromatic Hone Corporation, Detroit, Mich., a corporation of Michigan

Filed Aug. 15, 1962, Ser. No. 217,084
1 Claim. (Cl. 204—224)

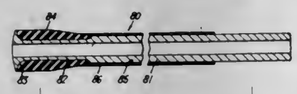


In a machining device for a workpiece, means for rotating a workpiece, a conducting shoe having a face substantially matable with the face of the workpiece, insulating means on the face of the shoe spacing said shoe from the workpiece surface, conducting means for passing a flow of current from said workpiece to said shoe, means for delivering an electrolyte between the shoe face and adjacent workpiece surface, means for abrading said workpiece surface, said abrading means having a conducting body, means for conducting current from the workpiece to said abrading means, and means for delivering an electrolyte to said abrading means at the point of engagement with the workpiece, said shoe performing a deplating operation in an area spaced from the area in which the abrading operation occurs, said area being deplated and said area being abraded being located in an annular surface area which is coaxial with said workpiece axis so that the operation in one area follows that in the other area.

3,285,844
ELECTROLYTIC HOLE FORMING CATHODE ELECTRODE

Raymond Thomas Hallsworth, Earby, and Irvin Holroyd, Barnoldswick, England, assignors to Rolls-Royce Limited, Derby, Derbyshire, England, a company of Great Britain

Original application May 31, 1962, Ser. No. 199,092. Divided and this application Nov. 19, 1962, Ser. No. 238,387
Claims priority, application Great Britain, June 5, 1961, 20,259/61
3 Claims. (Cl. 204—284)



1. An electrode for use as a cathode electrode in apparauts for forming holes electrolytically in a metallic anode workpiece, comprising a hollow elongate metallic member having an uninsulated forward working tip, an intermediate portion adjacent said working tip, and a rear portion, the intermediate portion having a first external insulating coating extending rearwardly from said working tip, and said rear portion having a second external insulating coating forming a continuation of said first coating, said second coating comprising a non-porous composite coating of polyvinylchloride bonded to the external surface of said rear portion, and said first coating being made of strong, durable epoxy resin material.

3,285,845
HYDROGENATION OF WAXES

Jacques Demeester, Courbevoie, Seine, France, assignor to The British Petroleum Company Limited, London, England, a British joint-stock corporation

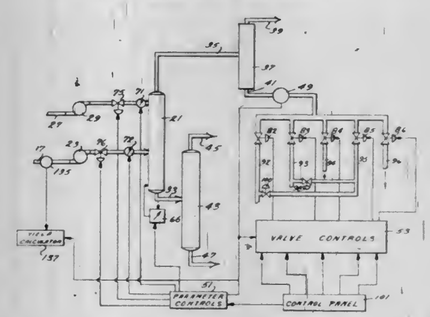
No Drawing. Filed Feb. 5, 1964, Ser. No. 342,801
Claims priority, application France, Feb. 12, 1963, 924,549
10 Claims. (Cl. 208—27)

1. A process for improving the odour and colour of wax comprising contacting the wax at elevated temperature and pressure, the temperature being from about 250 to 340° C., and in admixture with hydrogen, the pressure of hydrogen being at least 35 kg./cm.^{2}, with a catalyst comprising from 1 to 25% by weight of rhenium oxide on a support.

3,285,846
AUTOMATED LUBRICATING OIL REFINING

William H. King, Woodbury, Robert A. Trimble, Pitman, and William G. Franz, Woodbury, N.J., assignors to Mobil Oil Corporation, a corporation of New York

Filed Sept. 18, 1963, Ser. No. 309,667
6 Claims. (Cl. 208—28)



1. In a process for producing lubricating oil including an extraction process for producing waxy reaffinate which is dewaxed to provide the lubricating oil, the improvement comprising detecting the specific gravity of said waxy reaffinate, and controlling at least one parameter of said extraction process to obtain a wax reaffinate of a predetermined specific gravity whereby said extraction process is controlled in response to the specific gravity of the waxy reaffinate to control the viscosity index of the dewaxed lubricating oil.

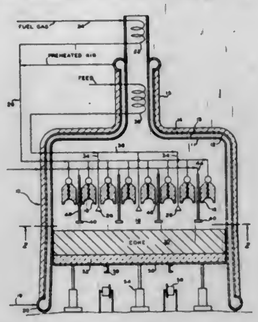
3,285,847
FAST THERMAL CRACKING OF HEAVY CARBONACEOUS MATERIALS

Raymond C. Scofield and Reagan T. Wilson, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed May 6, 1963, Ser. No. 278,292
15 Claims. (Cl. 208—46)

1. A furnace for cracking hydrocarbons which comprises an enclosed heating chamber having an outlet for cracked gaseous products in its upper section and an impervious flat bottom for supporting a bed of coke during operation; a plurality of downwardly directed radiant burners spaced substantially above the bottom of said chamber connected with an air-fuel supply line, each burner being constructed with a ceramic concave face for burning a premix of air and fuel thereon; spray means among said burners connected with a hydrocarbon feed line for spray-

ing a liquid hydrocarbon feed downwardly toward the bottom of said chamber; and quenching means connected

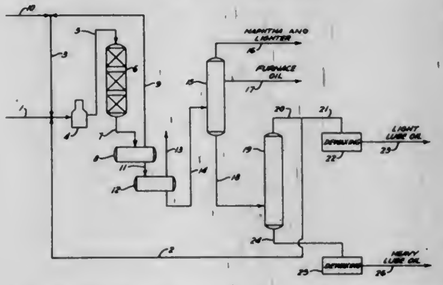


with a quench feed line for quenching hot cracked products at a level intermediate said burners and the bottom of said chamber.

3,285,848
PREPARING DISSIMILAR OILS BY HYDROCRACKING

Robert E. Donaldson, Penn Hills Township, Allegheny County, and Robert F. Mansfield, New Kensington, Pa., and Theodore Rice, Beaumont, Tex., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed Sept. 3, 1963, Ser. No. 306,247
12 Claims. (Cl. 208—110)



1. The process for simultaneously producing a lubricating oil and a hydrocarbon fraction selected from the group consisting of furnace oil and lower boiling hydrocarbons by hydrogen treatment of a feed stock selected from the group consisting of a distillate hydrocarbon fraction which boils above about furnace oil (i.e., above about 650° F.) and which contains components boiling in the lubricating oil range and gas oil range and mixtures thereof with deasphalted residuum, said process being carried out by contacting the feed stock with hydrogen in the presence of a two-component catalyst comprising essentially a hydrogenating component composited with a cracking base having an activity above 25 on the Kellogg scale at a temperature between about 650° and 850° F., at a hydrogen partial pressure above about 1500 p.s.i., at a space velocity between about 0.2 and 10, thereby producing a hydrogen treated stock having substantial components boiling in the range of furnace oil and lower boiling hydrocarbons (i.e., below about 650° F.) and boiling above the furnace oil range (i.e., above about 650° F.), fractionating this hydrogen treated stock to obtain a fraction boiling below about 650° F. and another fraction boiling above about 650° F., which fraction contains lubricating oil components, recycling a portion of the fraction boiling above about 650° F. to the hydrogen treatment, recovering another portion of the fraction boiling above about 650° F. as lubricating oil base stock product and recovering the fraction boiling below about 650° F. as furnace oil and lower boiling hydrocarbon product.

3,285,849
PROCESS FOR COAGULATING AQUEOUS SUSPENSIONS AND COMPOSITION FOR USE THEREIN

Hiroshi Watanabe, Hideo Matsunaga, and Masao Inoue, all of Kamakura, Kanagawa, Japan, assignors to Toyo Koatsu Industries, Inc., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Aug. 10, 1962, Ser. No. 216,065
11 Claims. (Cl. 210—52)

1. Process for coagulating the suspended minute particles of an aqueous suspension comprising adding to said suspension (1) the reaction product of a compound from the closs consisting of substituted and unsubstituted polysaccharides and an N-containing resin from the class consisting of urea-formaldehyde resins, melamine-formaldehyde resins and mixtures thereof, and (2) an inorganic salt in respective amounts sufficient to coagulate said particles.

3,285,850
SOLID FILM LUBRICANTS

John P. Graham, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Feb. 13, 1964, Ser. No. 344,554
5 Claims. (Cl. 252—28)

1. A lubricating composition suitable for use under extreme environmental conditions which comprises a dispersion of a minor amount, sufficient to impart lubricity of arylene sulfide polymer in a major amount of alkali metal silicate.

3,285,851
LUBRICANT

Robert Harris Dyer, Big Spring, Tex., assignor to Cosden Oil & Chemical Company, Big Spring, Tex., a corporation of Delaware

No Drawing. Filed Aug. 13, 1963, Ser. No. 301,886
3 Claims. (Cl. 252—32.5)

1. A lubricant base comprising a polyisobutylene of narrow molecular weight range formed by polymerizing isobutylene with a Friedel-Crafts catalyst while maintaining the isobutylene in a highly dilute solution, said polyisobutylene being hydrogenated to substantially colorless, odorless and stable form, and having a viscosity in the range of 30 to 400 SSU at 210° F. and a molecular weight in the range of 125 to 700, said lubricant base containing an additive selected from the group consisting of alkali, alkali earth and heavy metal organic compounds of carboxylic and sulfonic acids, sulfurized oils, halogenated organic compounds, methacrylate polymers and phosphate esters, and having dispersed therein from 5 to 75% of water, the water being in the internal phase.

3,285,852
CYCLOHEXYLAMINE SALT OF PETROLEUM SULFONIC ACID CORROSION INHIBITOR FOR FUELS AND LUBRICANTS, COMPOSITIONS AND METHOD OF PREPARATION

James T. Gragson, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Aug. 22, 1963, Ser. No. 303,954
10 Claims. (Cl. 252—33)

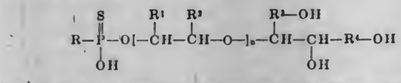
1. A lubricant composition containing as a corrosion inhibitor a cyclohexylamine salt of a petroleum sulfonic acid obtained by carbonating a mixture of a calcium petroleum sulfonate and cyclohexylamine.

3,285,853
HYDROCARBONTHIOPHOSPHONATES AND LUBRICANT COMPOSITIONS THEREOF

Roger G. Lacoste, Hopewell Junction, N.Y., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 9, 1963, Ser. No. 314,885
9 Claims. (Cl. 252—46.6)

5. A lubricating oil composition comprising a lubricating base oil and between 0.2 and 10 wt. percent of a product selected from the group consisting of polyhydroxy polyalkenethiophosphonate and a mixture of a major portion of polyhydroxy polyalkenethiophosphonate and a minor portion of the corresponding polyhydroxy polyalkenephosphonate, said polyhydroxy polyalkene thiophosphonate of the formula:



where R is a polyalkene derived radical having an average molecular weight of between about 250 and 50,000, R^1 and R^2 are radicals selected from the group consisting of hydrogen and alkyl of from 1 to 6 carbons, R^3 and R^4 are alkylene radicals of from 1 to 6 carbons and n is a whole integer of from 0 to 1 inclusively.

3,285,854
LUBRICATING OIL COMPOSITION

Bobby W. Malone, East Alton, Ill., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 15, 1963, Ser. No. 295,240
2 Claims. (Cl. 252—46.7)

1. A lubricating oil composition comprising a major amount of mineral lubricating oil and from about 1% to about 10% of an oil-soluble copolymer of 2-methyl-5-vinylpyridine and a mixture of lauryl and stearyl methacrylates having an average molecular weight of from 5×10^4 to 2.5×10^6 and from 0.1% to about 1% of 1,1′-thio-bis(3-methyl-5-tertbutylphenol).

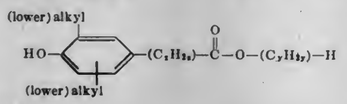
2. The composition of claim 1 containing about 0.05–1% each of dicresyl phosphate and tricresyl phosphate.

3,285,855
STABILIZATION OF ORGANIC MATERIAL WITH ESTERS CONTAINING AN ALKYLHYDROXYPHENYL GROUP

Martin Dexter, Briarcliff Manor, John D. Spivack, Spring Valley, and David H. Steinberg, Bronx, N.Y., assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 11, 1965, Ser. No. 439,076.
15 Claims. (Cl. 252—57)

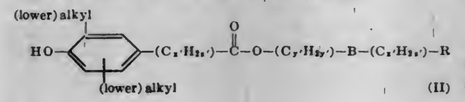
1. A stabilized composition of matter stabilized against deterioration which comprises organic material normally subject thereto and from about 0.005% to about 10% by weight of an esterified hindered phenol substituted acid stabilizer compound selected from the group consisting of those of the formulae:



(I)

in which

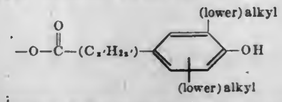
x has a value of from 0 to 6, inclusively, and
y has a value of from 6 to 30, inclusively;



(II)

wherein

x' has a value of from 0 to 6, inclusively,
each of y' and z' has a value of from 2 to 20, inclusively,
R is a member selected from the group consisting of hydrogen, hydroxy, alkanoyloxy, and

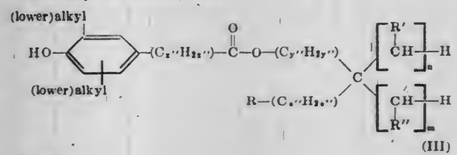


B is a member selected from the group consisting of a divalent sulfur atom, a divalent oxygen atom and the group



in which

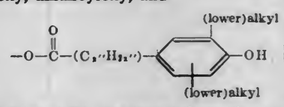
A is alkyl or alkanoyl; and



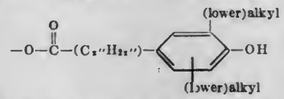
(III)

in which

R is selected from the group consisting of hydrogen, hydroxy, alkanoyloxy, and



each of R′ and R″ is selected from the group consisting of hydroxy, alkanoyloxy, and



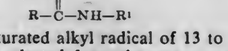
x'' has a value of from 1 to 6 inclusively,
each of y'', z'', n and m independently has a value of from 0 to 6 inclusively, at least one of y'', z'', n and m having a value other than 0 and the sum of n and m being no greater than 6 and being at least 1 when R is hydrogen and the sum of y'' and z'' being at least 1 when R is other than hydrogen.

3,285,856
LOW FOAMING COMPOSITIONS HAVING GOOD DETERSIVE PROPERTIES

Henry Y. Lew, El Cerrito, Calif., assignor to Chevron Research Company, a corporation of Delaware

No Drawing. Filed Mar. 18, 1964, Ser. No. 352,974
10 Claims. (Cl. 252—152)

1. A detergent composition having good detersive properties and characterized by a low degree of foaming in agitated dilute aqueous solutions thereof consisting essentially of a nonionic surfactant, a normally high foaming anionic detergent component selected from the group consisting of water-soluble salts of organic sulfonic acids and water-soluble salts of sulfuric acid alkyl esters, and to suppress foaming of said detergent component about 2 to 35%, by weight, of said detergent of a foam-suppressing agent of the formula:



wherein R is a saturated alkyl radical of 13 to 21 carbon atoms, and R^1 is selected from the group consisting of

hydrogen, a hydrocarbyl radical of 1 to 22 carbon atoms, and N-methyleneamide radicals, the alkyl group in the last-mentioned amide radical having 13 to 21 carbon atoms, the nonionic surfactant being present in an amount of 5 to 75% by weight based on it and anionic detergent component.

3,285,857
STABILIZED METHYL CHLOROFORM COMPOSITION

Peter Rathbone and Charles Walter Suckling, Widnes, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Oct. 26, 1962, Ser. No. 233,422
Claims priority, application Great Britain, Oct. 30, 1961, 38,708/61; June 7, 1962, 22,081/62
12 Claims. (Cl. 252—171)

12. A stabilized solvent composition consisting essentially of methyl chloroform containing from about 2 to 5% of an alkanone having a normal boiling point not exceeding 130° C., 0.5 to 2% by weight of a nitroalkane selected from the group consisting of nitromethane, nitroethane, 1-nitropropane, 2-nitropropane and mixtures thereof, and about 0.2 to 5% by weight of an epoxide selected from the group consisting of epichlorhydrin, butene oxides, styrene oxide and α-pinene oxide.

3,285,858
DRY CLEANING SOLVENT

Alfred Hirsch, Mentor, Francis Huba, Painesville, and Roland J. Horvath, South Euclid, Ohio, assignors to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed Aug. 7, 1964, Ser. No. 388,277
6 Claims. (Cl. 252—171)

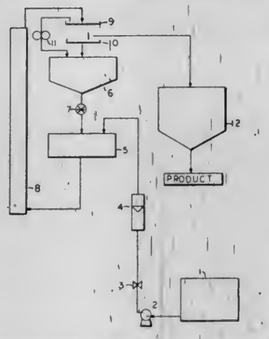
1. A cleaning solvent consisting essentially of a substantially constant-boiling mixture of about 70–85% by weight of at least one tetrachlorodifluoroethane and about 15–30% by weight of 1,1,2-trichloro-1-fluoroethane.

4. A dry cleaning composition comprising the composition of claim 1 in combination with up to about 2% by weight of an emulsifying agent selected from the group consisting of anionic, cationic and nonionic types.

3,285,859
ALKALI METAL SILICATES AND METHOD FOR PRODUCING THE SAME

Frederic C. Jelen, Beaumont, Tex., assignor to Cowles Chemical Company, Cleveland, Ohio, a corporation of Ohio

Filed Mar. 25, 1963, Ser. No. 267,568
14 Claims. (Cl. 252—385)



1. In the manufacture of dust-free, substantially spherical particles of hydrated alkali metal silicates of substantially uniform size, the steps of crystallizing particles of a hydrated alkali metal silicate, feeding said alakali metal silicate crystal to a mixer, then adding one part of a molten alkali metal silicate hydrate to at least three parts of solid crystalline hydrated alkali metal silicate hydrate, of a size smaller than the desired product, with good mechanical agitation, while maintaining the temperature of the mix at crystallizing temperature, screening the resultant dust-free spherical particles, and withdrawing the product, while feeding in an amount of alkali metal silicate hydrate equal to the amount of final product withdrawn.

3,285,860
METHOD OF PREPARING NICKEL-MOLYBDENUM-ALUMINA CATALYSTS

Ryden L. Richardson, Fullerton, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Dec. 9, 1963, Ser. No. 329,314
11 Claims. (Cl. 252—465)

1. A composition having catalyst activity for desulfurization and denitrification of hydrocarbons with hydrogen that comprises: a carrier comprising alumina that has been impregnated, in separate steps, with an amount sufficient to impart said catalytic activity of a Group VIII metal and of a Group VI metal, each of said impregnation steps having been followed by drying of the impregnated carrier and calcining of the dried composite to a temperature between about 800° F. and 1200° F., wherein said Group VI metal is deposited on said carrier in an initial and final impregnation and said Group VIII metal is deposited on said carrier by at least two intervening impregnation steps.

3,285,861
CRYSTALLINE POLY(EPOXIDE)S

Edwin J. Vandenberg, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Dec. 27, 1962, Ser. No. 247,544
4 Claims. (Cl. 260—2)

1. A crystalline linear homopolymer of an epoxide selected from the group consisting of 1,2-epoxy-3-methylbutane, 1,2-epoxy-3,3-dimethylbutane, and 1,2-epoxy-4,4-dimethylpentane, said polymers being characterized by exhibiting a crystalline-type X-ray diffraction powder pattern and having a melting point between about 38° C. and about 166° C.

3,285,862
PHENYL GLYCIDYL ETHER-EPICHLOROHYDRIN COPOLYMER

Edwin J. Vandenberg, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Mar. 19, 1964, Ser. No. 353,251
1 Claim. (Cl. 260—2)

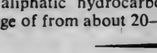
As a new composition of matter a crystalline copolymer of from about 90 to about 99 percent by weight of phenyl glycidyl ether and from about 1 to about 10 percent by weight of epichlorohydrin, said copolymer having a melting point of about 176° C.

3,285,863
POLYMERS FROM PHOSPHONITES AND DIOLS

Richard L. McConnell and Harry W. Coover, Jr., Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 21, 1964, Ser. No. 405,566
16 Claims. (Cl. 260—2)

1. A solid highly polymeric linear organophosphorus polymer having antioxidant properties, a softening temperature above 0° C., being flame resistant, resistant to hydrolysis and having a polymer chain consisting essentially of recurring structural units having the following formula:



wherein Q represents a monovalent organic radical selected from the group consisting of aliphatic hydrocarbon radicals containing from 1 to 12 carbon atoms, aromatic hydrocarbon radicals containing from 6 to 12 carbon atoms and aralkyl hydrocarbon radicals containing from 7 to 12 carbon atoms, and Q' represents a bivalent organic radical selected from the group consisting of alkylene radicals containing from 4 to 20 carbon atoms, polyoxyalkylene radicals containing from 4 to 900 carbon atoms, cycloalkylene radicals containing from 6 to 20 carbon atoms and bisphenylalkane radicals containing from 13 to 25 carbon atoms.

3,285,864
PERMEABLE MICROPOROUS PLASTIC SHEET AND THE METHOD OF MAKING THE SAME

Jerrold J. Abell, Putnam, and Kenneth J. Virkus, Willimantic, Conn., assignors to Rogers Corporation, Rogers, Conn., a corporation of Massachusetts

No Drawing. Filed May 8, 1963, Ser. No. 279,014
5 Claims. (Cl. 260—2.5)

1. A permeable microporous sheet of sintered, nonplasticized granular resin, said resin being a copolymer essentially of 97% to 98% by weight of vinyl chloride and 2% to 3% by weight vinyl acetate, said sheet having its mechanical strength improved by the addition of an ethyl silicate to said resin.

3,285,865
EXPANDABLE POLYMERS

Sam J. Del Bene, Ambridge, and Alan J. Fox, Sewickley, Pa., assignors to Koppers Company, Inc., a corporation of Delaware

No Drawing. Filed July 11, 1963, Ser. No. 294,244
4 Claims. (Cl. 260—2.5)

1. An expandable thermoplastic composition capable of being molded into foam structures having smooth, uniform surfaces, a water vapor transmission not greater than 1.4 perms, and a solvent resistance time of at least 2 minutes for a foam thickness of 115 mils, comprising polystyrene particles in combination with a minor amount of from 3 to 10 percent by weight of said composition of powdered polyethylene, said polystyrene particles having homogeneously incorporated therein a normally liquid aliphatic hydrocarbon blowing agent, boiling in the range of from about 20–100° C.

3,285,866
PROCESS FOR MAKING POLYURETHANE FOAMS USING TRIMETHYLAMINE AS A CATALYST AND BLOWING AGENT

George T. Gmitter, Akron, Ohio, assignor to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Feb. 7, 1964, Ser. No. 343,221
6 Claims. (Cl. 260—2.5)

1. A method of preparing a polyurethane foam comprising:

(I) reacting
  (a) an organic polyisocyanate with
  (b) a polyhydric organic compound,
(II) in the presence of a catalyst and blowing agent consisting of:
  (i) trimethylamine, or
  (ii) mixtures of trimethylamine and a halogenated alkane wherein trimethylamine is present in an amount equal to at least 70% of the mixture

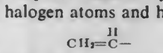
wherein, (i) and (ii) are present in an amount equal to from 2 to 15% by weight of (a) and (b); and wherein, said organic polyisocyanate is present in amounts such that there is one equivalent weight of said polyhydric organic compound for from about 0.8 to 6 equivalent weights of said organic polyisocyanate.

3,285,867
TRIETHYLENE-TETRAMINE-BENZOTHIAZYL DISULFIDE VULCANIZATE OF AN ACRYLIC ACID ESTER-NEUTRAL HALOALKYL VINYL COMPOUND INTERPOLYMER STABILIZED WITH A COPPER SALT OF A SATURATED STRAIGHT CHAIN FATTY ACID

Harold A. Tucker, Parma Heights, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

No Drawing. Filed Aug. 29, 1963, Ser. No. 305,506
4 Claims. (Cl. 260—23)

1. An improved triethylene tetramine-benzothiazyl disulfide vulcanizate of an interpolymer comprising 80% to 98% by weight of an acrylic acid ester and 2% to 20% by weight of a halogen containing derivative consisting of a compound composed exclusively of carbon, hydrogen, oxygen and halogen atoms and having a single vinyl



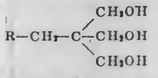
group separated from a haloalkyl group by an intervening oxygen-containing structure, said vulcanizate containing from 0.1 to 0.4 part per 100 parts of interpolymer of a copper carboxylate, said carboxylate being selected from the group consisting of copper acetate and copper stearate.

3,285,868
POLYVINYL CHLORIDE STABILIZED WITH MIXTURES COMPRISING POLYOLS, PHENOLS AND SALTS OF MONOCARBOXYLIC ACIDS

Arthur C. Hecker, Forest Hills, and Seymour Cohen, Brooklyn, N.Y., assignors to Argus Chemical Corporation, Brooklyn, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 4, 1966, Ser. No. 539,646
16 Claims. (Cl. 260—23)

1. A polyvinyl chloride resin stabilizer composition capable of improving the resistance of the resin to discoloration when heated at 350° F. comprising from about 1 to about 60% of a hydrocarbon substituted phenol having from one to about thirty carbon atoms per hydrocarbon substituent, from about 90 to about 35% of a polyvalent metal salt of an organic non-nitrogenous monocarboxylic acid containing from about six to about eighteen carbon atoms, or a mixture of polyvalent metal salts of organic non-nitrogenous monocarboxylic acids containing from about six to about eighteen carbon atoms, and from about 5 to about 60% of a polyol having the structure



in which R is selected from the group consisting of hydrogen and an organic radical selected from the group consisting of alkyl, alkoxy, hydroxyalkyl and alkoxy hydroxyalkyl groups having from one to about thirty carbon atoms.

3,285,869
EMULSIONS AND LATICES OF CIS 1,4-POLYISOPRENE

Geza S. Ronay, Oakland, and Webster M. Sawyer, Jr., Orinda, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Mar. 5, 1962, Ser. No. 183,688
10 Claims. (Cl. 260—23.7)

1. Compositions comprising oil-in-water emulsions of synthetic, substantially gel-free cis 1,4-polyisoprene, an inert hydrocarbon solvent, an emulsifying agent, and water, the said polyisoprene being wholly soluble in the said hydrocarbon and having an intrinsic viscosity ranging from 1.0 to 13.0 measured in toluene at 25° C., and

being present in an amount between 5% and 15% by weight of the inert hydrocarbon solvent having up to eight carbon atoms, the emulsifying agent being present in an amount in excess of 0.25% by weight, based on the weight of the polyisoprene, the said emulsion being stable and having a volumetric phase ratio of the polyisoprene solution to water ranging from 3:1 to 1:10 and the liquid particles of the emulsion having the following characteristics:

	Microns
Number average	0.5 to 3.0
Surface area	0.5 to 4.0
Volume average	0.5 to 5.0
Surface to volume ratio	0.5 to 10.0
Volume median diameter	0.5 to 10.0

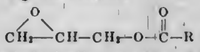
3,285,870

COPOLYMERS OF EPIHALOHYDRINS AND GLYCIDYL ESTERS OF ETHYLENICALLY UNSATURATED ACIDS

Edwin J. Vandenberg, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Sept. 17, 1964, Ser. No. 397,314
9 Claims. (Cl. 260—24)

1. A solid copolymer of an epihalohydrin and at least one other epoxide, at least one of which other epoxides is a glycidyl ester of an ethylenically unsaturated carboxylic acid having the formula



where R is an ethylenically unsaturated group, said copolymer being essentially a linear polyether wherein polymerization is through the epoxide groups and containing at least about 5% by weight of repeating units derived from epihalohydrin and at least about 0.5% by weight of repeating units derived from said glycidyl ester, said copolymer having a reduced specific viscosity of at least 0.1 as measured on a 0.1% solution in α-chloronaphthalene at 100° C.

9. A solid copolymer of epichlorohydrin, ethylene oxide and the glycidyl ester of rosin acid, said copolymer being a linear polyether wherein polymerization is through the epoxide groups, and containing at least about 40% epichlorohydrin and at least about 2% of said glycidyl ester and having a reduced specific viscosity of at least 0.1 as measured on a 0.1% solution in α-chloronaphthalene at 100° C.

3,285,871

DISPERSIONS OF RUBBER AND A POLYHYDRIC ALCOHOL, WITH AND WITHOUT BITUMEN, AND THE PRODUCTION THEREOF

Harold V. Carlson, Hudson, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed Mar. 23, 1961, Ser. No. 97,877
7 Claims. (Cl. 260—28.5)

1. A dispersion blend of 85 to 99 parts of bitumen with a penetration of 40 to 300, 15 to 1 parts of a rubber, and a polyhydric alcohol with a boiling point greater than water which is present in an amount equal to 20 to 80 parts by weight per 80 to 20 parts of the rubber present.

3,285,872

ADHESIVES COMPRISING CARBOXYL-CONTAINING DIENE POLYMER, POLYESTER POLYMER, AND A POLYISOCYANATE

George E. Faber, White Bear Lake, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Sept. 1, 1965, Ser. No. 484,423
18 Claims. (Cl. 260—30.4)

2. A cured composition comprising an admixture of between 30 and 70 weight percent of a carboxyl containing conjugated diene polymer containing an average of 0.1 percent to 10 percent by weight carboxyl groups, and between 30 and 70 weight percent of a solid polyfunctional polyester polymer containing active hydrogen functional groups selected from the group consisting of hydroxyl groups and carboxyl groups cured with an organic polyisocyanate, the weight ratio of polyisocyanate to the total of diene polymer and polyester polymer being between 0.2:1 and 0.5:1.

7. An organic solution comprising an admixture of between 30 and 70 weight percent of a conjugated carboxyl containing diene rubber containing on the average of about 0.1 percent to about 10 percent carboxyl groups by weight and having a molecular weight greater than 20,000, and between 30 and 70 weight percent of a solid polyester polymer terminated with hydroxyl groups and having a molecular weight not greater than 10,000 dissolved in an organic solvent.

3,285,873

MOULDING CERAMIC COMPOSITION

Desmond Frank Bailey, New Haw, near Addlestone, England, assignor to Doulton & Co. Limited, London, England, a corporation of the United Kingdom

No Drawing. Filed Sept. 30, 1965, Ser. No. 491,836
Claims priority, application Great Britain, Mar. 21, 1963, 11,309/63
18 Claims. (Cl. 260—30.6)

1. A mouldable material containing a ceramic composition in particle form mixed with a binder; said binder comprising a polyethylene glycol and at least one polyolefin, with the volume of said binder being at least 102% of the ceramic material void volume at moulding temperatures.

13. A method of moulding ceramic articles which comprises shaping a body from mouldable material containing a ceramic composition in particle form mixed with a binder; said binder comprising a polyethylene glycol and at least one polyolefin, with the volume of binder being at least 102% of the ceramic material void volume at moulding temperature, and heating the shaped body to fire the ceramic composition and drive off the binder.

3,285,874

SATURATED HYDROCARBON POLYMERS STABILIZED WITH 4,4-METHYLENEBIS(2-METHYL-6-TERTIARY BUTYL)PHENOL

Thomas H. Coffield, Farmington, Mich., and Allen H. Filbey, Baton Rouge, La., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Continuation of application Ser. No. 738,014, May 27, 1958, now Patent No. 3,250,741, dated May 10, 1966. This application Jan. 19, 1966, Ser. No. 521,537
3 Claims. (Cl. 260—45.95)

1. A polyolefin derived from the polymerization of a monoolefin containing four carbon atoms, said polyolefin containing a small antioxidant quantity, up to 5 weight percent, of 4,4'-methylenebis(2-methyl-6-tert-butylphenol).

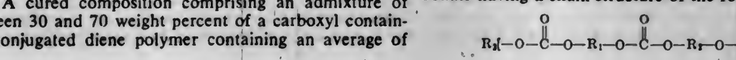
3,285,875

CURABLE AND CURED HIGH MOLECULAR WEIGHT POLYCARBONATES AND PROCESS FOR THE PRODUCTION THEREOF

Ludwig Bottenbruch, Krefeld-Bockum, and Hermann Schnell, Krefeld-Urdingen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Jan. 12, 1960, Ser. No. 1,865
Claims priority, application Germany, Jan. 15, 1959, F 27,474
16 Claims. (Cl. 260—47)

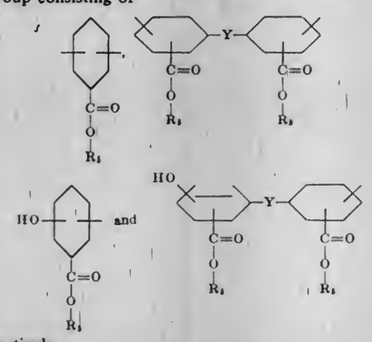
1. A curable, linear, high molecular weight polycarbonate having a chain structure of the formula



wherein

R_1 and R_2 are divalent radicals selected from the group consisting of alkylene, cycloalkylene, bis-alkylene phenyl, bis-(alkyleneoxy)-phenyl, and arylene;

R_3 and R_4 are monovalent radicals selected from the group consisting of alkyl, cycloalkyl, aralkyl, aryl, alkaryl, hydroxy alkyl, hydroxy cycloalkyl, hydroxy aralkyl, mono-oxalkylated hydroxy aryl, hydroxy aryl, and hydroxy alkaryl, at least part of (a) R_1 and R_2 and (b) R_3 and R_4 being one of the radicals selected from the group consisting of



respectively

wherein R_5 is a monovalent radical selected from the group consisting of methyl, ethyl, propyl, isopropyl, butyl, isobutyl, pentyl, and phenyl;

Y is lower alkylidene,

the ester groups forming side-chains, and n is a whole number greater than 5.

3,285,876

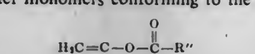
PROCESS FOR COPOLYMERIZATION OF DIVERSE POLAR MONOMERS

James C. MacKenzie, Wellesley Hills, and Adam Orzechowski, Waltham, Mass., assignors to Cabot Corporation, Boston, Mass., a corporation of Delaware

No Drawing. Filed Nov. 5, 1962, Ser. No. 235,533
The portion of the term of the patent subsequent to Jan. 18, 1982, has been disclaimed
20 Claims. (Cl. 260—66)

1. A process for copolymerizing polar monomers chosen from at least two of the following groups:

(a) vinyl ester monomers conforming to the formula:



wherein Q is chosen from the group consisting of hydrogen, any hydrocarbon radical having 1 to 3 carbon atoms, and any substituted hydrocarbon group having 1 to 3 carbon atoms; and R'' is chosen from the group consisting of hydrocarbon radicals and halogen-substituted hydrocarbon radicals having 1–18 carbon atoms;

(b) halogen substituted α-mono- and di-olefinic hydrocarbons conforming to the formula:

$$CH_cX_d{=}C'H_eX_f$$

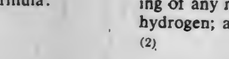
wherein each H is a hydrogen; c is a number from 0 to 2; each X is any halogen; d is a number from 0 to 2; $c+d=2$; C' is any aliphatic, alicyclic or aromatic carbon chain which contains 1–18 carbon atoms; e is a number from 0 to 36; f is a number from 0 to 6, and wherein $f+d$ equals at least one;

(c) acrylic monomers conforming to the formula:



wherein D is chosen from the group consisting of hydrogen, any halogen, methyl, ethyl and propyl radicals; and G is a functional group chosen from the group consisting of carbolkoxy (—COOR) wherein the hydrocarbon radical has a length of one to eighteen carbon atoms; carbamoyl (—$CONH_2$); N-substituted carbamoyl (—CONHR, —$CONR_4$) wherein the hydrocarbon radicals have a length of one to eighteen carbon atoms; formyl (—CHO); cyano (—C≡N); and acyl (—COR) wherein the hydrocarbon radical has a length of one to eighteen carbon atoms; and

(d) vinyl ether monomers conforming to the formula:



wherein E is chosen from a group consisting of hydrogen, any halogen, and any hydrocarbon radical having a length of one to eighteen carbon atoms; and F is chosen from the group consisting of any hydrocarbon radical and halogen-substituted hydrocarbon radical having a length of one to eighteen carbon atoms; with a catalyst comprising:

(a') a finely-divided inorganic solid having an average particle diameter of less than about 0.1 micron and carrying in chemical combination on the surface thereof at least about 1×10^{-4} equivalents per gram of structures conforming to the formula

$$TO_aX_b$$

where T is a metal chosen from the group consisting of the metals of Groups IV*a*, V*a* and VI*a* (Mendeleev Periodic System); O is oxygen; a is a number from 0 to 2; each X is any halogen; b is a number from 1 to 5; and where said structures are chemically linked directly from T to at least one oxygen atom in the surface of said solid; and

(b') an organometallic compound chosen from the group consisting of compounds conforming to the empirical formulae

$$MM'_vX_nR_y \quad (1)$$

where M is chosen from the group consisting of the metals of Groups I, II and III; M' is a metal of Group I; v is a number from 0 to 1; each X is any halogen; n is a number from 0 to 3; each R is chosen from the group consisting of any monovalent hydrocarbon radical and hydrogen; and y is a number from 1 to 4; and

$$R'_pH_mSiO_{\frac{4-(m+p)}{2}} \quad (2)$$

wherein each R' is chosen from the group consisting of hydrocarbon radicals, alkoxy radicals, aryloxy radicals and the halogens; p is a number from 0 to 3; each H is a hydride radical; m is a number from 1 to 4; Si is silicon; and O is oxygen.

3,285,877

PROCESS FOR THE POLYMERIZATION OF MONOMERIC FORMALDEHYDE

Ernst-Ulrich Köcher, Kuno Wagner, and Rudolf Haupt, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Mar. 6, 1963, Ser. No. 263,137
Claims priority, application Germany, Mar. 10, 1962, F 36,250
7 Claims. (Cl. 260—67)

1. The process for preparing high molecular weight polyoxymethylene by polymerizing monomeric formaldehyde which comprises maintaining initially supplied poly-

oxymethylene having an intrinsic viscosity from about 0.2 to 1.2 and having a catalytic amount of a divalent tin compound as catalyst for said polymerization supported thereon, as a fluidized bed within a reaction zone at a temperature of from about 30 to 110° C. while introducing gaseous monomeric formaldehyde containing from 0.3 to 5% by weight of water into said reaction zone and subsequently recovering the resulting high molecular weight polyoxymethylene.

3,285,878

POLYMERIZATION OF FORMALDEHYDE

James C. MacKenzie, Rochester, N.Y., and Joel A. Yancey, Lexington, Mass., assignors to Cabot Corporation, Boston, Mass., a corporation of Delaware

No Drawing. Filed Oct. 23, 1965, Ser. No. 504,246
17 Claims. (Cl. 260—67)

1. A process for polymerizing formaldehyde, paraformaldehyde, trioxane, or mixtures thereof which comprises contacting said substance at temperatures between about —80° C. and about 190° C. with a catalyst comprising a finely-divided inorganic solid having an average particle diameter of less than about 0.1 micron and carrying in chemical combination on the surface thereof at least about 1×10^{-4} equivalents per gram of structures conforming to the formula

$$TO_aX_b$$

wherein T is a metal of Groups IV*a*, V*a*, and VI*a*; O is oxygen; *a* is a number from 0 to 2; each X is any halogen; *b* is a number from 1 to 5 and where said structures are chemically linked directly from T to at least one oxygen atom in the surface of said solid.

3,285,879

CURING OF ISOCYANATE-TERMINATED POLYURETHANE POLYMERS WITH N-MONOALKYL-AROMATIC DIAMINES

John R. Larson, Wood Dale, and Charles M. Hayes, Hoffman Estates, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Jan. 31, 1963, Ser. No. 255,184
5 Claims. (Cl. 260—77.5)

1. A method of curing an isocyanate-terminated polyurethane prepolymer formed by the reaction of a polyisocyanate with a polyalkyleneether glycol, which comprises mixing with said prepolymer a curing agent consisting essentially of an N-monoalkyl-aromatic diamine in an amount sufficient to react with at least 75% of the isocyanate groups of the prepolymer, the alkyl substitution being on only one of the amine groups of said diamine, and heating the resultant mixture to a temperature of at least about 100° C. for a period of at least one hour to produce an elastomer.

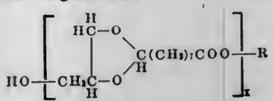
3,285,880

GLYCEROL DERIVATIVES OF AZELAALDEHYDIC ACID AND POLY(ESTER-ACETALS) THEREFROM

William R. Miller, John C. Cowan, and Everett H. Pryde, Peoria, Ill., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Aug. 29, 1963, Ser. No. 305,556
2 Claims. (Cl. 260—78.3)

2. The poly(ester-acetals) obtained by vigorously stirring a 5–10 percent solution of isopropylideneglyceryl azelaaldehydate dimethyl acetal in an organic solvent selected from the group consisting of benzene and methylene chloride for about one hour at a temperature of 1°–34° C. in the presence of about an equal amount of concentrated HCl to hydrolytically form and homopolymerize the ketal of the glyceryl monoesteracetal, isolating the organic solvent phase, washing to free the homopolymer of residual acid, drying over sodium sulfate, and stripping off the organic solvent, said poly(ester-acetals) being characterized by molecular weights of about 550–1500 corresponding to between 4 and 7 monomeric units having the following structure



where R is selected from H and Na; *x* is an integer from 4 through 7.

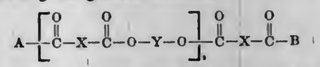
3,285,881

POLYESTER POLYOLS

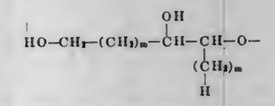
Karl Brack, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Mar. 25, 1963, Ser. No. 267,817
9 Claims. (Cl. 260—78.4)

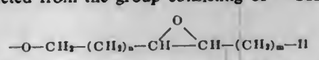
1. As a new composition of matter, a polyester of a cyclic anhydride of a dicarboxylic acid and an epoxy alcohol having the general formula:



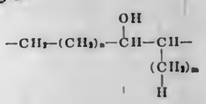
where A is selected from the group consisting of HO— and



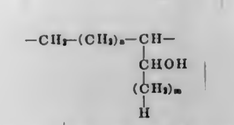
B is selected from the group consisting of —OH and



X is a divalent organic residue, Y is selected from the group consisting of



and



n and *m* are each any whole number of from 0 to 10 and the sum of $m+n$ is 7 to 14; and *x* is an integer of at least one.

3,285,882

CATALYSTS FOR POLYPHENYLENE SULFIDE TYPE RESINS

Roscoe A. Pike, Holden, Mass., assignor to Norton Company, Worcester, Mass., a corporation of Massachusetts

No Drawing. Filed Nov. 8, 1963, Ser. No. 322,493
16 Claims. (Cl. 260—79)

1. A method for catalyzing the replacement of aromatic nuclear halogen by sulfur comprising carrying out the reaction in the presence of a catalyst which is a saturated carboxylic acid derivative having a halogen atom directly attached to a nitrogen atom which is directly attached to at least one acyl group, said halogen atom being selected from the group consisting of chlorine, bromine, and iodine and said reaction mix containing, initially, elemental sulfur, a compound selected from the group consisting of alkali metal and alkaline earth metal oxides, carbonates and sulfides, and at least one compound having aromatic-nuclearly substituted halogen groups, said halogen being selected from the group consisting of chlorine, bromine, and iodine.

3,285,883

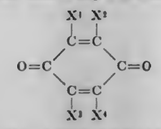
CURED POLYMERS OF ALPHA-OLEFINS AND THEIR PREPARATION

Thomas H. Shepherd, Hopewell, N.J., assignor, by mesne assignments, to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Sept. 23, 1963, Ser. No. 310,903
25 Claims. (Cl. 260—79.5)

1. A method for curing normally solid polymers of an alpha-olefin which comprises heating a normally solid polymer of an alpha-olefin, blended with a small amount, based on the weight of said polymer, of a tetrahaloquinone as a curing agent, at a temperature above the melting point of said blend, for a period of time sufficient to cross-link said polymer.

12. A method as defined in claim 1 wherein the tetrahaloquinone has the following structure:



in which X^1, X^2, X^3 and X^4 are halogen atoms.

3,285,884

CURED NORMALLY SOLID POLYMERS OF ALPHA-OLEFINS AND THEIR PREPARATION

Rudolph S. Wilsher, Kendall Park, N.J., assignor, by mesne assignments, to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Sept. 23, 1963, Ser. No. 310,921
22 Claims. (Cl. 260—79.5)

1. A method for curing normally solid polymers of an alpha-olefin which comprises heating a normally solid polymer of an alpha-olefin, blended with a small amount, based on the weight of said polymer, of a halomethyl substituted aromatic as a curing agent, and sulfur in an amount by weight less than that of said curing agent, at a temperature above the melting point of said blend, for a period of time sufficient to cross-link said polymer.

8. A method as defined in claim 1 wherein the halomethyl substituted aromatic has the following structure:

$$R(CH_2X)_n$$

in which X is a halogen atom, *n* is an integer and R is an aromatic radical.

3,285,885

CURED NORMALLY SOLID POLYMERS AND THEIR PREPARATION

Thomas H. Shepherd, Hopewell, and Rudolph S. Wilsher, Kendall Park, N.J., assignors, by mesne assignments, to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Sept. 23, 1963, Ser. No. 310,926
22 Claims. (Cl. 260—79.5)

1. A method for curing normally solid polymers of an alpha-olefin which comprises heating a normally solid polymer of an alpha-olefin, blended with a small amount, based on the weight of said polymer, of an aromatic diacid halide as a curing agent, and sulfur in an amount by weight less than that of said curing agent, at a temperature above the melting point of said blend, for a period of time sufficient to cross-link said polymer.

8. A method as defined in claim 1 wherein the aromatic diacid halide has the following structure:

$$R(COX)_2$$

in which X is a halogen atom and R is an aromatic hydrocarbon radical.

3,285,886

THRESHOLD TREATMENT OF WATER WITH WATER DISPERSIBLE COMPLEXING POLYMERS

Lewis O. Gunderson, Morton Grove, and Herman Kerst, Des Plaines, Ill., assignors, by mesne assignments, to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Feb. 20, 1963, Ser. No. 260,056
15 Claims. (Cl. 260—80.3)

1. A water dispersible polymer having complexing properties consisting essentially of a linear aliphatic backbone with side chains of N - carboxymethyl amide groups, N - carboxymethyl amide and N - (2 - hydroxyethyl) amide groups, or N - carboxymethyl amide and carboxylic acid groups.

3,285,887

MICROGEL POLYMERS

Louis de Vries, Kentfield, Calif., assignor to Chevron Research Company

No Drawing. Filed July 30, 1962, Ser. No. 213,095
1 Claim. (Cl. 260—80.5)

A polymer useful as a dispersant and viscosity index improver prepared by the process which comprises forming a mixture consisting of divinylbenzene, dodecyl methacrylate and polyethylene glycol methacrylates in which the polyethylene glycol has a molecular weight of from about 200 to 10,000, said mixture consisting of from 5 to 15% by weight of divinylbenzene, emulsifying said mixture in water by means of a water-soluble emulsifying agent, polymerizing said mixture in said emulsion by means of a water-soluble peroxide free radical initiator catalyst under conditions providing a polymer having a molecular weight in the range of from about 5,000,000 to about 50,000,000 as determined by ultracentrifuge and separating the resulting polymer from the water.

3,285,888

INTERPOLYMERS COMPRISING N-ALKYL ACRYLAMIDES, CERTAIN ACRYLIC ESTERS AND/OR N-VINYL PYRROLIDONE

Francis W. Brown, West St. Paul, and Frederick L. Keck, Mendota Heights, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed July 5, 1963, Ser. No. 293,173
9 Claims. (Cl. 260—80.5)

1. A liquid adhesive cement which is resistant to gelation during storage, air-dried coatings of which strongly bond plasticized polyvinyl chloride film to solid substrates, said adhesive cement being a spreadable liquid in a volatile solvent of a polymer of monomers comprising (1) 40–75 parts by weight of at least one member selected from the group consisting of (a) tetrahydrofurfuryl acrylate and (b) alkyl acrylates having 1–8 carbon atoms in the alkyl substituent; (2) 15–45 parts of at least one member selected from the group consisting of N-alkyl acrylamide and N-alkyl-methacrylamide wherein the alkyl group has 1–8 carbon atoms; and (3) 10–30 parts of N-vinyl-2-pyrrolidone, and where the monomer (1) consists essentially of tetrahydrofurfuryl acrylate, the proportion of said N-vinyl-2-pyrrolidone extends from 0 to 30 parts.

3,285,889
POLYMERS OF 1-MONOOLEFINS AND DODECATETRAENES
Philip M. Arnold, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Sept. 16, 1963, Ser. No. 309,304
3 Claims. (Cl. 260—80.5)

3. In a process for forming rubbery polymer compositions, said compositions being selected from the group consisting of a copolymer consisting essentially of 80 to 99.5 weight percent of ethylene and 0.5 to 20 weight percent of dodecatetraene, and terpolymers consisting essentially of 20 to 75 weight percent ethylene, 20 to 75 weight percent of a 1-monoolefin having the formula

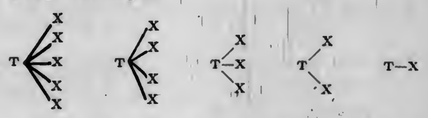
$$CH_2{=}CHR$$

wherein R is selected from the group consisting of an alkyl having 1 to 6 carbon atoms and 0.5 to 20 weight percent of dodecatetraene, said process comprising the steps of polymerizing a monomer selected from the group consisting of ethylene and mixtures of ethylene and at least one of said 1-monoolefins in the presence of a coordination catalyst obtained upon commingling ethylaluminum sesquichloride with a component selected from the group consisting of vanadium tetrachloride and vanadium oxytrichloride, at a temperature ranging from —80 to 150° C. and a pressure ranging from 1 to 500 atmospheres, in the presence of either a toluene or cyclohexane diluent; incorporating into the polymerization system dodecatetraene in an amount as stated hereinabove to make the resulting copolymer or terpolymer amenable to vulcanization with sulfur and recovering the copolymer or terpolymer from the polymerization system.

3,285,890
CATALYSTS FOR POLYMERIZATION
Victor D. Aftandilian, Watertown, Mass., assignor to Cabot Corporation, Boston, Mass., a corporation of Delaware
No Drawing. Filed Sept. 9, 1963, Ser. No. 307,347
20 Claims. (Cl. 260—82.1)

1. A process of polymerizing a substance chosen from the group consisting of mono-olefins, mixtures of mono-olefins, di-olefins, mixtures of di-olefins and mixtures thereof which comprises contacting said substance at temperatures between about —25° C. and about 250° C., with a catalyst comprising

(a) a finely-divided inorganic solid carrying in chemical combination surface structures chosen from the group consisting of:



wherein T is chosen from the group consisting of the metals of Groups IV*a*, V*a* and VI*a*; each X is any halogen; and where said structures are chemically linked directly from T to at least one oxygen atom in the surface of said solid; and

(b) an organometallic compound chosen from the group consisting of compounds conforming to the empirical formula

$$R_pH_tM$$

wherein each R is any monovalent radical chosen from the group consisting of hydrocarbon radicals, alkoxy radicals, aryloxy radicals and any halogen; *p* is a number from 0 to 2; each H is hydrogen; T is a number from 1 to 3; and M is a metal of Group V*b*.

3,285,891
HALOGEN-FREE POLYMERIZATION CATALYSTS
Victor D. Aftandilian, Watertown, Mass., assignor to Cabot Corporation, Boston, Mass., a corporation of Delaware
No Drawing. Filed Jan. 9, 1964, Ser. No. 336,631
20 Claims. (Cl. 260—85.3)

1. A process for polymerizing a substance chosen from the group consisting of a mono-olefin, mixtures of mono-olefins, a di-olefin, mixtures of di-olefins and mixtures thereof which comprises contacting said substance at temperatures between about —25° C. and 250° C., with a catalyst comprising

(a) a substantially nonporous, finely-divided inorganic solid having an average particle diameter of less than about 0.1 micron and carrying in chemical combination between about 5×10^{-4} and about 4×10^{-3} equivalents per gram of surface structures conforming to the formula

$$TO_zQ_s$$

wherein T is a metal chosen from the group consisting of the metals of the Groups IV*a*, V*a* and VI*a*; O is oxygen; *z* is a number from 0 to 1; each Q is chosen from the group consisting of alkoxy and aryloxy radicals comprising 1 to 8 carbon atoms; *s* is a number from 1 to 5; and wherein said structures are chemically linked directly from T to at least one oxygen atom in the surface of said solid;

(b) an organometallic reducing compound chosen from the group of compounds conforming to the formulae

$$MM'_vX_nR_{y-n}$$

wherein M is a metal of Groups I, II and III of the peridoic table; M′ is a metal of Group I; *v* is a number from 0 to 1; each X is any halogen; *n* is a number from 0 to 3; each R is chosen from the group consisting of any monovalent hydrocarbon radical and hydrogen; *y* is a number from 1 to 4; and wherein *y*—*n* equals at least one, and

$$R'_pH_mSO_{\frac{4-(m+p)}{2}}$$

wherein each R′ is chosen from the group consisting of any monovalent hydrocarbon radical, alkoxy radical, aryloxy radical, and the halogens; *p* is a number from 0 to 3; each H is a hydride radical; *m* is a number from 1 to 4; S is a metal of Group IV*b*; and O is oxygen; and

(c) a Lewis acid chosen from the group consisting of metal halides, organometallic halides and boron halides, said Lewis acid being present in amounts between about the minimum amount that will increase yield and up to about 20 millimoles of said Lewis acid per milliatom of said T.

3,285,892
POLYMERIZATION OF VINYL HETEROCYCLIC COMPOUNDS
James C. MacKenzie, Wellesley Hills, and Adam Orzechowski, Waltham, Mass., assignors to Cabot Corporation, Boston, Mass., a corporation of Delaware
No Drawing. Filed Mar. 4, 1963, Ser. No. 262,365
The portion of the term of the patent subsequent to January 18, 1982, has been disclaimed
18 Claims. (Cl. 260—85.7)

1. A process for polymerizing and copolymerizing vinyl heterocyclic monomers conforming to the formula

$$H_2C{=}CHZ$$

wherein each H is hydrogen; C is carbon; Z is chosen from the group consisting of unsubstituted and alkyl- or halo-substituted heterocyclic ring compounds wherein at least one atom of said ring is chosen from the group consisting of nitrogen, oxygen and sulfur and wherein the total number of carbon atoms in said ring structure is at least two and less than about eighteen, which comprises contacting said monomers at temperatures between about —80° C. and about 190° C. with a catalyst comprising a finely-divided inorganic solid having an average particle diameter of less than about 0.1 micron and carrying in chemical combination on the surface thereof structures conforming to the forumla:

$$TO_aX_b$$

wherein T is a metal of Groups IV*a*, V*a* or VI*a*; O is oxygen; *a* is a number from 0 to 2; each X is an halogen; *b* is a number from 1 to 5; and where said structures are chemically linked directly from T to at least one oxygen atom in the surface of said solid, and

an organometallic compound conforming to the general formula

(1) $$MM'_vX_nR_y$$

wherein M is a metal of Groups I, II or III; M′ is a metal of Group I; *v* is a number from 0 to 1; each X is any halogen; *n* is a number from 0 to 3; each R is any monovalent hydrocarbon radical or hydrogen; and *y* is a number from 1 to 4, or

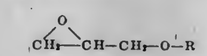
(2) $$R'_pH_mSO_{\frac{4-(m+p)}{2}}$$

wherein each R′ is a hydrocarbon radical, alkoxy radical, aryloxy radical or a halogen; *p* is number from 0 to 3; each H is a hydride radical; *m* is a number from 1 to 4; S is quadrivalent tin, lead, germanium or silicon; and O is oxygen.

3,285,893
CROSS LINKED ELASTOMERIC FIBERS FROM COPOLYMERS OF EPIHALOHYDRINS AND ETHYLENICALLY UNSATURATED MONO-EPOXIDES
Edwin J. Vandenberg, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware
No Drawing. Filed Sept. 17, 1964, Ser. No. 397,326
9 Claims. (Cl. 260—88.3)

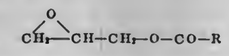
1. An elastomeric fiber comprising a cross-linked copolymer of an epihalohydrin and at least one other epoxide, at least one of which said other epoxide is ethylenically unsaturated epoxide; said copolymer being a solid, amorphous copolymer having a reduced specific viscosity of at least about 0.5 when measured as a 0.1% solution in α-chloronaphthalene at 100° C., said copolymer being esssentially a linear polyether containing at least about 20% by weight of repeating units derived from epihalohydrin and at least about 0.5% by weight of repeating units derived from said ethylenically unsaturated epoxide, said copolymer having been cross-linked with a sulfur-curing agent in the absence of an amine.

3. An elastomeric fiber in accordance with claim 1 wherein the ethylenically unsaturated epoxide is a glycidyl ether having the formula



where R is an ethylenically unsaturated group.

5. An elastomeric fiber in accordance with claim 1 wherein the ethylenically unsaturated epoxide is a glycidyl ester having the formula



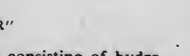
where R is an ethylenically unsaturated hydrocarbon group.

3,285,894
POLYMERIZATION INITIATORS COMPRISING ALKALI METAL ALCOHOLATES
Drahoslav Lím and Jiří Trekoval, Prague, Czechoslovakia, assignors to Ceskoslovenska akademie ved, Prague, Czechoslovakia
No Drawing. Filed Oct. 11, 1963, Ser. No. 315,679
9 Claims. (Cl. 260—88.7)

1. A method of polymerizing a polymerizable monomer selected from the group consisting of acrylonitrile and the esters of acrylic acid and methacrylic acid with alkanols having one to eighteen carbon atoms, which method comprises admixing to said monomer an alkali metal alcoholate of a tertiary alkanol having four to twelve carbon atoms at a temperature between —40° C. and +20° C.

3,285,895
POLYMERIZATION OF VINYL ESTERS
James C. MacKenzie, Wellesley Hills, and Adam Orzechowski, Waltham, Mass., assignors to Cabot Corporation, Boston, Mass., a corporation of Delaware
No Drawing. Filed Oct. 11, 1962, Ser. No. 229,970
The portion of the term of the patent subsequent to Jan. 18, 1982, has been disclaimed
20 Claims. (Cl. 260—89.1)

1. A process for homopolymerizing vinyl esters and mixtures of vinyl esters which comprises contacting at temperatures between about —80° C. and 190° C., a substance conforming to the formula



where D is chosen from the group consisting of hydrogen, any hydrocarbon group having 1 to 3 carbon atoms and any substituted hydrocarbon group having 1 to 3 carbon atoms; and R″ is any radical chosen from the group consisting of hydrocarbon radicals and halogen-substituted hydrocarbon radicals having 1–18 carbon atoms, with a catalyst comprising

(a) a finely divided inorganic solid having an average particle diameter of less than about 0.1 micron and carrying in chemical combination on the surface thereof at least about 1×10^{-4} equivalents per gram of structures conforming to the formula

$$TO_aX_b$$

wherein T is a metal chosen from the group consisting of the metals of Groups IV*a*, V*a* and VI*a*; O is oxygen; *a* is a number from 0 to 1; each X is any halogen; *b* is a number from 1 to 5; and where said structures are chemically linked directly from T to at least one oxygen atom in the surface of said solid; and

(b) an organometallic compound chosen from the group consisting of compounds conforming to the empirical formulae

(1) $$MM'_vX_nR_y$$

where M is chosen from the group consisting of the metals of Groups I, II and III; M′ is a metal of Group I; *v* is 0 or 1; each X is any halogen; *n* is 0, 1, 2 or 3; each R is chosen from the group consisting of any monovalent hydrocarbon radical and hydrogen; and *y* is a number from 1 to 4;

(2) $$R'_pH_mSiO_{\frac{4-(m+p)}{2}}$$

wherein each R′ is chosen from the group consisting of hydrocarbon radicals, alkoxy radicals, aryloxy radicals and halogens; *p* is 0, 1, 2 or 3; each H is a hydride radical; *m* is 1, 2, 3 or 4; Si is silicon; and O is oxygen.

3,285,896
POLYMERIZATION OF VINYL ETHERS

James C. MacKenzie, Wellesley Hills, and Adam Orzechowski, Waltham, Mass., assignors to Cabot Corporation, Boston, Mass., a corporation of Delaware

No Drawing. Filed Sept. 4, 1962, Ser. No. 221,312
The portion of the term of the patent subsequent to January 18, 1982, has been disclaimed
19 Claims. (Cl. 260—91.1)

1. A process for polymerizing vinyl ethers and mixtures thereof which comprises contacting at temperatures between about −80° C. and 190° C., a substance conforming to the formula

$$H_2C=C(R')-O-R'''$$

wherein R′ is chosen from the group consisting of hydrogen, halogens, and any hydrocarbon radical having a length of one to eighteen carbon atoms, and R‴ is any hydrocarbon radical having a length of one to eighteen carbon atoms, with a catalyst comprising:

(a) a finely divided inorganic solid having an average particle diameter of less than about 0.1 micron and carrying in chemical combination on the surface thereof at least about 1×10^{-4} equivalents per gram of structures conforming to the formula:

$$TO_aX_b$$

where T is a metal chosen from the group consisting of the metals of Groups IV*a*, V*a*, and VI*a* (Mendeleev Periodic System); O is oxygen; *a* is a number from 0 to 2; each X is a halogen; *b* is a number from 1 to 5; and where said structures are chemically linked directly from T to at least one oxygen atom in the surface of said solid and

(b) an organometallic compound chosen from the group consisting of compounds conforming to the empirical formula

$$R''_eH_mSiO_{\frac{4-(m+n)}{2}}$$

wherein each R″ is chosen from the group consisting of monovalent hydrocarbon radicals, monovalent alkoxy radicals, monovalent aryloxy radicals and the halogens; *n* is a number from 0 to 3; each H is a hydride radical; *m* is a number from 0 to 4; Si is silicon; and O is oxygen; and compounds conforming to the empirical formula

$$MM'_vX_nR_y$$

wherein M is chosen from the group consisting of the metals of Groups I, II and III; M′ is a metal of Group I; *v* is a number from 0 to 1; each X is any halogen; *n* is a number from 0 to 3; each R is chosen from the group consisting of any monovalent hydrocarbon radical and hydrogen; and *y* is an integer from 1 to 4.

3,285,897
PROCESS OF PREPARING SOLID POLY(ALLYL ALCOHOL)

Edward M. Sullivan and Frederick P. Reding, Charleston, and Edgar W. Wise, South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 30, 1960, Ser. No. 79,572
5 Claims. (Cl. 260—91.3)

1. A process for the production of solid homopolymers of allyl alcohol which comprises contacting allyl alcohol with a catalytic amount of free-radical polymerization catalyst at a pressure of from about 15,000 pounds per square inch to about 125,000 pounds per square inch and at a temperature of from about −80° C. to about +100° C.

3,285,898
PROCESS FOR THE POLYMERIZATION AND COPOLYMERIZATION OF HALOGENATED MONO- AND DI-OLEFINS

James C. MacKenzie, Wellesley Hills, and Adam Orzechowski, Waltham, Mass., assignors to Cabot Corporation, Boston, Mass., a corporation of Delaware

No Drawing. Filed Oct. 1, 1962, Ser. No. 227,545
The portion of the term of the patent subsequent to Jan. 18, 1982, has been disclaimed
20 Claims. (Cl. 260—92.3)

1. A process for homopolymerizing halogenated α-mono- and diolefins, and mixtures of halogenated α-mono- and diolefins, which comprises contacting at temperatures between about −80° C. and 250° C. a substance conforming to the formula

$$CH_cX_d=C'H_eX_f$$

wherein C is carbon; each H is a hydrogen; *c* equals 0, 1 or 2; each *X* is any halogen; *d* equals 0, 1 or 2; $c+d=2$; C′ is any aliphatic, alicyclic, or aromatic carbon chain wherein said chain contains 1–18 carbon atoms; *e* equals 0–36; *f* equals 0–6; and wherein $f+d$ equals at least one, with a catalyst comprising

(a) a finely-divided inorganic solid having an average particle diameter of less than about 0.1 micron and carrying in chemical combination on the surface thereof at least about 1×10^{-4} equivalents per gram of structures conforming to the formula

$$TO_aX_b$$

wherein T is a metal chosen from the group consisting of the metals of Groups IV*a*, V*a*, VI*a*, VII*a* and period 4 of Group VIII (Mendeleev Periodic System); O is oxygen; *a* is a number from 0 to 2; each X is any halogen; *b* is a number from 1 to 5; and where said structures are chemically linked directly from T to at least one oxygen atom in the surface of said solid; and

(b) an organometallic compound chosen from the group consisting of compounds conforming to the empirical formula

(1) $$MM'_vX_nR_y$$

where M is chosen from the group consisting of the metals of Groups I, II and III; M′ is a metal of Group I; *v* is 0 or 1; each *X* is any halogen; *n* is 0, 1, 2 or 3; each R is chosen from the group consisting of any monovalent hydrocarbon radical and hydrogen; and *y* is 1, 2, 3 or 4; and

(2) $$R'_pH_mSiO_{\frac{4-(m+p)}{2}}$$

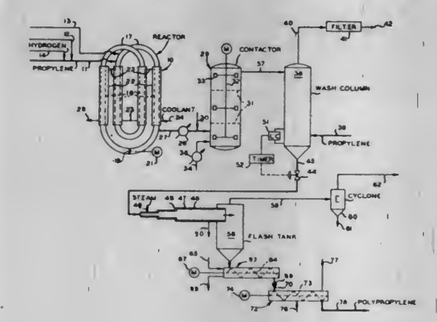
wherein each R′ is chosen from the group consisting of hydrocarbon radicals, alkoxy radicals, aryloxy radicals and the halogens; *p* is 0, 1, 2 or 3; each H is a hydride radical; *m* is 1, 2, 3 or 4; Si is silicon; and O is oxygen.

3,285,899
METHOD FOR CONTINUOUSLY DISCHARGING THE CONTENTS OF A PRESSURIZED VESSEL

Clarence G. Houser and William E. Payne, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Aug. 30, 1962, Ser. No. 220,457
3 Claims. (Cl. 260—93.7)

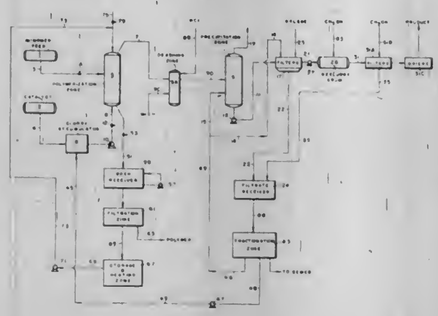
1. A method of recovering solid polyolefin product from a slurry of said polyolefin in an inert liquid hydrocarbon diluent from a zone maintained at super-atmospheric pressures sufficient to maintain said diluent in the liquid phase comprising vaporizing said diluent by discharging said slurry through a heated confined zone of reduced pressure and providing a progressively larger cross-sectional area in said confined zone for expansion of the vapors passing therethrough, said confined zone being heated sufficiently to vaporize said liquid and form a suspension of substantially dry polyolefin particles in said vapor, discharging said suspension into a solids separation zone maintained at substantially atmospheric pressure and recovering therefrom solid polyolefin product.



3,285,900
PRODUCTION OF α-OLEFIN POLYMERS

William G. De Pierri, Jr., and Carl N. Brawner, Baytown, Tex., assignors, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware

Filed Mar. 21, 1963, Ser. No. 267,008
8 Claims. (Cl. 260—93.7)



1. In the process for polymerizing an α-mono-olefinic feed material in a polymerizing reactor vessel in the presence of a stereospecific polymerizing catalyst and a diluent to form a slurry including catalyst residues, polymerized olefins, unpolymerized olefins and a diluent that is removed from the reactor vessel for separation of the constituents thereof and wherein a layer of polymer tends to accumulate on the walls of the reactor vessel, the improved method of recovering the polymer in the layer comprising: contacting the polymer with a liquid hydrocarbon solvent for said polymer, the solvent being introduced at a temperature of at least 130° C. and comprising a major amount of C_8 to C_{14} cyclic saturated hydrocarbons having boiling points in the range 130° C. to 275° C. at atmospheric pressure, cooling the polymer and solvent to form a slurry, and separating said polymer from said solvent.

3,285,901
POLYMERIZATION OF ISOPRENE IN THE PRESENCE OF LITHIUM METAL AND AN INERT LIQUID HYDROCARBON

Lawrence E. Forman, Akron, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Oct. 11, 1962, Ser. No. 229,974
1 Claim. (Cl. 260—94.2)

A method of producing a substantially gel free rubbery synthetic essentially cis-1,4-polyisoprene which comprises polymerizing isoprene at a temperature of not more than about 150° C. in the substantial absence of oxygen and oxygen-containing compounds reactive with lithium and in the presence of metallic lithium and an inert hydrocarbon solvent which is liquid under the reaction conditions, there being sufficient metallic lithium present at the initiation of polymerization to provide at least 0.00001 part by weight of active lithium element per 100 parts of monomer present.

3,285,902
EMULSIFIABLE WAXES AND THEIR PRODUCTION

Karl Schmeidl, Frankenthal, Pfalz, Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

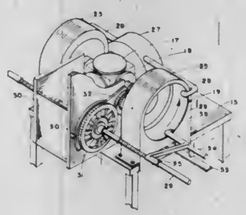
No Drawing. Filed Jan. 29, 1963, Ser. No. 254,608
Claims priority, application Germany, Feb. 6, 1962, B 65,820
6 Claims. (Cl. 260—94.9)

1. A process for the production of waxes emulsifiable in aqueous media by the oxidation of thermally degraded polyolefines which comprises: hydrogenating said thermally degraded polyolefines to saturate a sufficient number of double bonds of said material to produce a product having a bromine number of not more than one, and thereafter oxidizing said hydrogenated polyolefines until the product has an acid number between 4 and 80.

3,285,903
COLLAGEN FILM

Arthur Sinclair Taylor, Spring Valley, N.Y., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed May 24, 1962, Ser. No. 197,330
1 Claim. (Cl. 260—123.7)



A collagen film of uniform thickness characterized by a substantial orientation of collagen fibers in a single direction and a tensile strength in the direction of orienta-

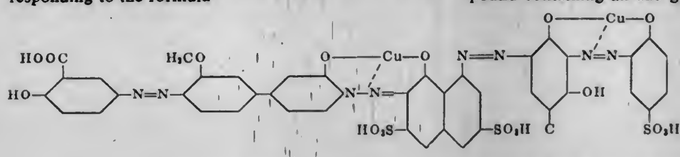
tion at least about 1.6 times the tensile strength in a direction perpendicular to the direction of orientation; produced by centrifuging an acid dispersion of collagen fibers to form a film, continuing to centrifuge until the dispersing liquid has been substantially removed from the film and removing the film so obtained from the centrifuge.

3,285,904
COPPER-CONTAINING POLYAZO DYE

Otto Senn, Basel, Switzerland, assignor to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed Sept. 24, 1964, Ser. No. 399,090
Claims priority, application Switzerland, Apr. 29, 1960, 4,964/60
1 Claim. (Cl. 260—145)

The copper complex compound of the polyazo dye corresponding to the formula

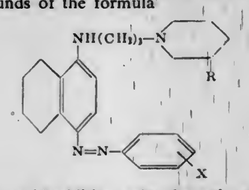


3,285,905
1-{3-{[5,6,7,8-TETRAHYDRO - 4 - (ARYLAZO)-1-NAPHTHYL]AMINO}PROPYL}PIPERIDINE COMPOUNDS

Edward F. Elslager and Leslie M. Werbel, Ann Arbor, Mich., assignors to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed Aug. 30, 1963, Ser. No. 305,833
6 Claims. (Cl. 260—152)

1. A member of the class consisting of 1-{3-{[5,6,7,8-tetrahydro - 4-(arylazo)-1-naphthyl]amino}propyl}piperidine compounds of the formula



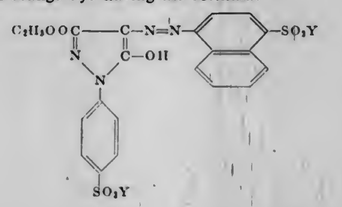
and non-toxic acid-addition salts thereof, where R is a member of the class consisting of hydrogen and methyl and X is a member of the class consisting of hydrogen, halogen, lower alkyl, hydroxyalkyl, alkoxy, acetyl, trifluoromethyl, and nitro, said lower alkyl, hydroxyalkyl, and alkoxy radicals containing from one to three carbon atoms inclusive.

3,285,906
MONOAZO PYRAZOLE DYES

Wilbur H. Kretlow, Oak Park, and Jerome L. Mostek, Niles, Ill., and James S. Dwyer, Lafayette, Ind., assignors to Stange Co., a corporation of Illinois

No Drawing. Filed Feb. 3, 1964, Ser. No. 342,286
2 Claims. (Cl. 260—162)

1. An orange dye having the formula:



wherein Y is selected from the class consisting of sodium, potassium and ammonium.

3,285,907
ADDUCTS OF AN ION EXCHANGE SOLID AND AN ORGANIC AMMONIUM-AZO COMPOUND AND FREE RADICALS THEREFROM

Henri G. G. Dekking, Fullerton, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Oct. 15, 1962, Ser. No. 230,670
11 Claims. (Cl. 260—192)

1. A solid free radical precursor consisting essentially of a clay having an ion exchange capacity of at least about 0.1 milliequivalent per 100 grams bonded through a nitrogen onium group selected from the class consisting of ammonium and amidinium groups to an organic compound containing an azo group capable of homolytic fission upon being to a temperature between 25° and 125° C. to yield a free radical, said organic compound having the following structure:

$$R_1N{=}NR_2$$

wherein:

at least one of said R_1 and R_2 contains said nitrogen onium group selected from the class consisting of ammonium and amidinium groups and said R_1 and R_2 are selected from the class consisting of alkyl, aminoalkyl, aralkyl, and aminoaralkyl wherein said alkyl group is a lower molecular weight alkyl group and wherein said aralkyl group is a phenyl lower molecular weight alkyl group or a naphthyl lower molecular weight alkyl group and wherein the carbon atoms of said R_1 and R_2 vicinal to the azo nitrogen atoms are secondary or tertiary aliphatic carbons.

10. The composition of claim 7 which comprises the adduct of azobisisobutyramidine and kaolin.

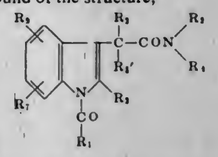
3,285,908
INDOLYL ACID AMIDES

Tsung-Ying Shen, Westfield, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 30, 1963, Ser. No. 276,986
9 Claims. (Cl. 260—211)

1. α - (1 - p - chlorobenzoyl - 2 - methyl - 5 - methoxy-3-indolyl)acetmorpholide.

9. A compound of the structure,



wherein

R_1 is selected from the group consisting of phenyl, naphthyl, biphenyl and Het wherein Het is furyl, thienyl, pyrryl, thiazolyl, thiadiazolyl, pyrazinyl, pyridyl, pyrazolyl, imidazolyl, oxazolyl, pyrimidinyl, isoxazolyl, oximidazolyl, benzimidazolyl, indazolyl, benzoxazolyl, pyrazolonyl, isothiazolyl, triazolyl and pyridazinyl; and substituted phenyl, naphthyl, biphenyl and Het wherein said substituent is selected from the group consisting of hydroxy, lower alkoxy, phenoxy, nitro, halogen, lower dialkylamino, mercapto, lower alkylthio, benzylthio, lower alkanoyl; N,N-dimethylsulfamyl, carb-lower alkoxy, methyl, trifluoromethylacetyl phenyl, cyano, N,N-dimethylcarbamoyl, trifluoromethylthio, methylsulfonyl, N,N-dimethylsulfonamido, acetamino and difluoromethoxy;

R_2 is selected from the group consisting of hydrogen, lower alkyl, lower alkenyl and phenyl;

R_3 is selected from the group consisting of hydrogen, lower alkyl, lower alkenyl, benzyl and together with R_3' and the carbon atom to which it is attached forms the cyclopropyl ring;

R_3' is selected from the group consisting of hydrogen, and together with R_3 and the carbon atom to which it is attached forms the cyclopropyl ring; and

R_4 and R_5 are selected from the group consisting of lower alkyl, hydroxy lower alkyl, benzyl, diethylaminoethyl, phenyl, ethoxyphenyl, chlorophenyl, fluorophenyl, trifluoromethylphenyl, cyclohexyl, N,N-dimethylcarbamylmethyl, N,N-dibutylcarbamylmethyl, (N-methyl-piperidyl-2) methyl, (N-methyl-pyrrolidyl-2) methyl, N-methyl-piperidyl, N-methyl-pyrrolidyl, ethoxyethyl, phenethyl, polyhydroxy lower alkyl and hydrogen, only one of said R_4 and R_5 being hydrogen at any one time, together with the nitrogen and amino sugar, and when R_4 and R_5 are taken together with the nitrogen is selected from the group consisting of morpholino, piperidino, pyrrolidino, N - methylpiperazino, N - phenylpiperazino, N-hydroxyethylpiperazino and piperazino;

R_6 and R_7 are each selected from the group consisting of hydrogen, halogen, lower alkyl, lower alkoxy, halo lower alkyl, hydroxy lower alkyl, nitro, amino, lower alkylamino, di-lower alkylamino, cyano, aminomethyl, lower alkyl aminomethyl, di(lower alkyl) aminomethyl, mercapto, lower alkylthio, benzylthio, di-(lower alkyl) sulfonamido and lower alkyl sulfonamido.

3,285,909
1-AZIRIDINO-1-(DI-LOWER ALKYLAMINO)-ETHANE

Warren J. Rabourn, Pasadena, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 4, 1965, Ser. No. 461,499
3 Claims. (Cl. 260—239)

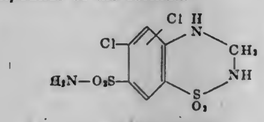
1. A 1-dialkylamino-1-(1-aziridinyl) ethane wherein each alkyl group of the dialkylamino radical contains 1 to 4 carbon atoms.

3,285,910
DERIVATIVES OF 3,4-DIHYDRO-1,2,4-BENZOTHIADIAZINE-1,1-DIOXIDE

Rezsö König, 13a Battai utca, and Zoltán Földi, 10 Abranyi Emil utca, both of Budapest, Hungary

No Drawing. Filed May 4, 1960, Ser. No. 135,387
3 Claims. (Cl. 260—243)

1. Compounds of the formula

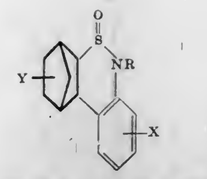


3,285,911
1,4 - METHANODIBENZO(1,2)THIAZINES PRODUCED FROM N-SULFINYLANILINES

Guy Robert Collins, Concord, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 29, 1963, Ser. No. 327,040
13 Claims. (Cl. 260—243)

1. A compound of the formula



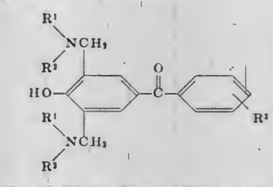
wherein R is selected from the group consisting of hydrogen and lower alkyl, X is selected from the group consisting of hydrogen, lower alkyl, lower alkoxy, phenyl, halogen, NO_2, and NH_2, and Y is selected from the group consisting of hydrogen and cyano.

3,285,912
SUBSTITUTED DIPHENYL KETONES

Frank P. Palopoli, Glenside, Pa., and Vernon J. Feil, Jamestown, N. Dak., assignors to Richardson-Merrell Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 21, 1963, Ser. No. 317,812
5 Claims. (Cl. 260—246)

1. A compound of the formula:



wherein R^1 and R^2 are lower alkyl groups having from one to five carbon atoms, and R^1 and R^2 taken together with the nitrogen to which they are attached form a heterocyclic ring of the group consisting of morpholino, piperidino, N-methyl piperazino, and pyrrolidino; and R^3 is selected from the group consisting of hydrogen, lower alkyl, lower alkoxyl, halogen, and trifluoromethyl.

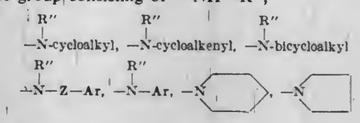
4. 3,5-bis(morpholinomethyl) - 4 - hydroxybenzophenone.

3,285,913
METAL CATALYST PROCESS FOR PREPARING α-AMINO-ACETYLENES

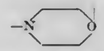
Nelson R. Easton, Indianapolis, and George F. Hennion, South Bend, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Aug. 28, 1963, Ser. No. 305,197
4 Claims. (Cl. 260—247)

1. In the process for preparing hindered acetylenic amines comprising reacting a tertiary acetylenic halide having at least one hydrogen atom on a carbon atom alpha to the carbon atom carrying the halogen atom, with an amine, AmH, wherein Am represents a member of the group consisting of —NH—R″,



and



wherein R″ is a member of the group consisting of hydrogen and hydrocarbon radicals having no more than 12 carbon atoms and free from acetylenic unsaturation; Z represents a bi-valent lower alkyl linkage; and Ar represents an aromatic radical,

the improvement which consists in carrying out the reaction in the presence of a heavy metal catalyst of the group consisting of the metals of all of the

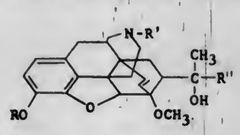
sub-groups of the Periodic Table, the metals of the transition series of the Periodic Table, and aluminum, calcium, tin, lead and bismuth.

3,285,914
3-N-SUBSTITUTED DERIVATIVES OF ORIPAVINE AND THEBAINE

Maxwell Gordon, Elkins Park, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed June 11, 1964, Ser. No. 374,242
15 Claims. (Cl. 260—247.5)

1. A compound selected from the group consisting of a base, and the pharmaceutically acceptable acid addition salts thereof, said base being of the structure:



wherein

R is a member selected from the group consisting of methoxymethyl, nicotinoyl and morpholinoethyl;

R′ is a member selected from the group consisting of cyclopropylmethyl, propargyl and dimethylallyl; and

R″ is a member selected from the group consisting of lower alkyl having 1 to 5 carbon atoms, and phenacyl.

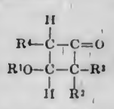
15. 3-morpholinoethyl - N-propargyl-6,14-endoethano-7α-(2-hydroxy-2-n-pentyl)-tetrahydronorthebaine.

3,285,915
PREPARATION OF AMINOVINYL KETONES

James C. Martin, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

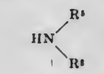
No Drawing. Filed Jan. 2, 1964, Ser. No. 335,348
6 Claims. (Cl. 260—247.7)

1. The method which comprises heating a 3-alkoxycyclobutanone of the formula

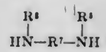


with a secondary amine selected from the group consisting of

(a)

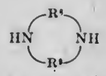


(b)



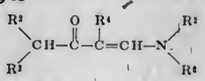
and

(c)



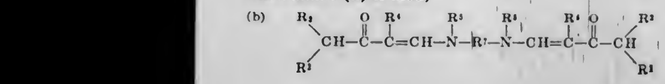
and recovering an aminovinyl ketone selected from the group consisting of

(a)



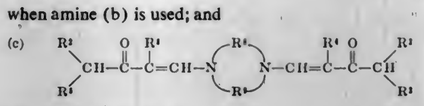
when amine (a) is used;

(b)



when amine (b) is used; and

(c)



when amine (c) is used;

wherein R^1 is alkyl of 1–8 carbon atoms; R^2 and R^3, taken singly, are selected from the group consisting of hydrogen, alkyl of 1–8 carbon atoms, phenyl and lower alkyl phenyl and, taken collectively, form a lower akylene ring with the carbon atom to which they are attached; R^4 is selected from the group consisting of hydrogen and lower alkyl of 1–8 carbon atoms; R^5, taken singly, is lower alkyl of 1–8 carbon atoms; R^6, taken singly, is selected from the group consisting of alkyl of 1–8 carbon atoms, phenyl and lower alkyl phenyl, and wherein R^5 and R^6, together with the nitrogen, form a member selected from the group consisting of morpholino, thiamorpholino, pyrrolidino, piperidino, N-alkyl piperazino and 3-azabicyclo[3.2.2]non-3-yl radicals, R^7 is the bivalent hydrocarbon residue of a secondary amine of up to 8 carbon atoms and R^8 and R^9 are lower alkylene.

5. The method of preparing 4-methyl-1-morpholino-1-penten-3-one which comprises heating 3-ethoxy-2,2-dimethylcyclobutanone with morpholino in approximately equimolar proportions.

3,285,916
PRODUCTION OF POTASSIUM DICHLOROISOCYANURATE

William P. Moore, Chester, and Charles B. Fitz-William, Richmond, Va., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Mar. 18, 1965, Ser. No. 440,781
8 Claims. (Cl. 260—248)

1. The process of producing potassium dichloroisocyanurate which comprises:

(a) introducing an aqueous potassium carbonate solution and an aqueous stream of dichloroisocyanuric acid slurry in proportions to produce a reaction mixture having a mol ratio of dichloroisocyanuric acid to potassium carbonate within the range of from 1.2 to 2.1, into a generally horizontally disposed, longitudinally elongated reaction zone having a lower portion for flow of liquid reaction mixture therethrough and having contiguous to said lower portion an upper gas-receiving portion, both of said portions extending for substantially the full length of said reaction zone;

(b) flowing the resultant mixture through the lower portion of said reaction zone while agitating this mixture, and maintaining it at a temperature within the range of from 5° C. to 75° C.; and

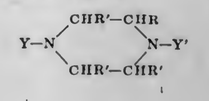
(c) withdrawing the potassium dichloroisocyanurate containing reaction mixture from the reaction zone.

3,285,917
PRODUCTION OF PYRAZINES

Walter H. Brader, Jr., Austin, Tex., assignor to Jefferson Chemical Company, Inc., Houston, Tex., a corporation of Delaware

No Drawing. Filed Oct. 21, 1963, Ser. No. 317,820
4 Claims. (Cl. 260—250)

1. A method for the production of pyrazines which comprises contacting a feed stock with a tungsten oxide catalyst at a temperature within the range of about 250° to about 600° C. and in the presence of from about 1 to about 15 mols of ammonia per mol of feed stock, said feed stock having the formula:



wherein R is selected from the group consisting of C_1–C_{12} alkyl, cycloalkyl, aryl, alkaryl and aralkyl;

wherein R′ is selected from the group consisting of H and R;

wherein Y is $—CH_2CH_2X$;

wherein Y′ is selected from the group consisting of H and Y; and

wherein X is selected from the group consisting of —OH and $—NH_2$.

3,285,918
1′,4′,5′,6′-TETRAHYDROPYRIMIDINO[a-4,3]-4-AZA-5-CHOLESTENE

Norman J. Doorenbos, North Linthicum, and Mu Tsu Wu, Baltimore, Md. (both of 1500 Spring Garden St., Philadelphia, Pa.)

No Drawing. Filed Apr. 18, 1962, Ser. No. 188,563
1 Claim. (Cl. 260—251)

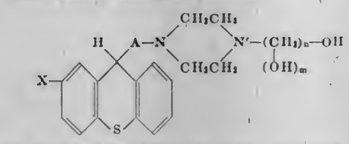
1′,4′,5′,6′-tetrahydropyrimidino[a-4,3]-4-aza - 5 - cholestene.

3,285,919
PIPERAZINYL ALKYL THIAXANTHENE DERIVATIVES

John Andrew Faust and Melville Sahyun, Santa Barbara, Calif.; said Faust assignor to Melville Sahyun, doing business as Sahyun Laboratories, Santa Barbara, Calif., a corporation of California

No Drawing. Filed May 10, 1961, Ser. No. 108,983
12 Claims. (Cl. 260—268)

1. A compound having the formula



wherein X is selected from the group consisting of halo, hydroxy, lower-alkyl and lower alkoxy;

A is an alkylene bridge containing from 2 to 6 carbon atoms;

m is selected from the group consisting of zero and one; and

n is an integer from 2–4, inclusive.

3,285,920
COMBINATION PROCESS FOR PRODUCING PIPERAZINE AND TRIETHYLENEDIAMINE

Herbert G. Muhlbauer and Myrl Lichtenwalter, Austin, Tex., assignors to Jefferson Chemical Company, Inc., Houston, Tex., a corporation of Delaware

Filed Jan. 16, 1964, Ser. No. 338,205
3 Claims. (Cl. 260—268)

1. In a method which comprises the steps of bringing an amine feed stock into contact with a hydrogenation catalyst in a primary reaction zone in the presence of hydrogen and from about two to about ten mols of ammonia per mol of amine feed stock under conditions of temperature and pressure sufficient to cyclize at least a portion of said feed stock to form piperazine and N-aminoethylpiperazine, whereby a first reaction product is formed comprising an amine mixture, the improvement which comprises:

(A) separating said first reaction product in a first separation zone into at least a piperazine fraction and a substantially piperazine-free distillate second feed stock fraction boiling within the range of about 180° to about 250° C. and comprising N-aminoethylpiperazine,

(B) separately bringing said second feed stock into contact with a cyclization catalyst in a second reaction zone in the presence of from about 0.05 to about 0.5 pound of ammonia per pound of said second feed stock under conversion conditions to convert the second feed stock into a second reaction product comprising water, piperazine, N-methylpiperazine, N-ethylpiperazine and triethylenediamine,

(C) separately separating said second reaction product in a second separation zone into a water fraction comprising reaction by-products, including N-methylpiperazine and N-ethylpiperazine, a triethylenediamine fraction and a crude piperazine fraction contaminated with N-methylpiperazine and N-ethylpiperazine,

(D) recovering triethylenediamine from said triethylenediamine fraction, and

(E) discarding at least a portion of said water fraction,

(F) dissolving said crude piperazine fraction in at least 60 wt. percent of water to form an aqueous solution,

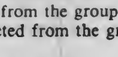
(G) holding said aqueous solution at a temperature of not more than 43° C. to form a slurry containing a crude piperazine hexahydrate precipitate and a mother liquor containing substantially all of the N-methylpiperazine and N-ethylpiperazine in said crude piperazine fraction,

(H) resolving said slurry into a piperazine hexahydrate fraction and a mother liquor fraction,

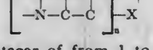
(I) recycling said crude piperazine hexahydrate precipitate to said first separation zone and

(J) recycling said mother liquor fraction to said second separation zone whereby said N-methylpiperazine and said N-ethylpiperazine contaminants are removed with said water fraction,

(K) said amine feed stock comprising a compound having the formula:



wherein X is selected from the group consisting of —OH and $—NH_2$, Y is selected from the group consisting of X and



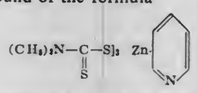
wherein *n* is an integer of from 1 to 3.

3,285,921
METAL COMPLEXES OF DITHIOCARBAMATES

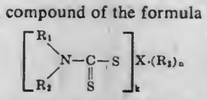
Gerhard Ortner and Ferdinand Grewe, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Nov. 28, 1962, Ser. No. 240,753
Claims priority, application Germany, Nov. 30, 1961, F 35,443
19 Claims. (Cl. 260—270)

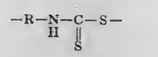
1. The compound of the formula



19. Complex compound of the formula



in which R_1 is a member selected from the group consisting of hydrogen, lower alkyl containing 1–4 carbon atoms, cyclohexyl and phenyl; R_2 is a member selected from the group consisting of lower alkyl containing 1–4 carbon atoms, and



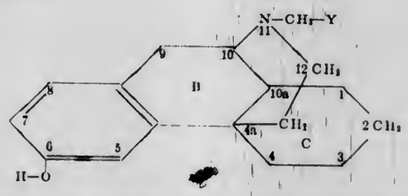
wherein R is a member selected from the group consisting of lower alkylene containing 1–3 carbon atoms; R_3 is a member selected from the group consisting of pyridine, lower alkyl substituted pyridine and di-lower-alkyl-substituted pyridine, the lower alkyl moiety having 1–4 carbon atoms, amino substituted pyridine, quinoline, isoquinoline, methylquinoline, benthiazolone, methylbenzthiazole and benzimidazole; X is a metal ion selected from the group consisting of zinc, manganous, ferrous, nickel and cobalt ions; *k* is an integer of 1–2 and *n* is an integer of 1–3.

3,285,922
N-CYCLOPROPYLMETHYL- AND -CYCLOBUTYL-METHYL-MORPHINANS

Marshall D. Gates, Jr., Pittsford, N.Y., assignor to Research Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Oct. 25, 1963, Ser. No. 318,835
9 Claims. (Cl. 260—285)

1. N-(CH_2-Y)-6-hydroxy - 1,3,4,9,10,10a - hexahydro-2H-10,4a-iminoethanophenanthrene having the structural formula



wherein Y is a member of the group consisting of cyclopropyl and cyclobutyl.

9. N-cyclopropylmethyl-3-methoxyisomorphinan.

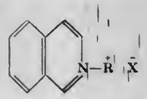
3,285,923
ALKYL ISOQUINOLINIUM PHENATES

Reginald L. Wakeman, Philadelphia, Pa., and Joseph F. Coates, Washington, D.C., assignors, by mesne assignments, to Millmaster Onyx Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed July 3, 1963, Ser. No. 292,764
29 Claims. (Cl. 260—286)

1. Lauryl isoquinolinium chloro o-phenyl phenate.

5. A quaternary ammonium phenate having the structure:



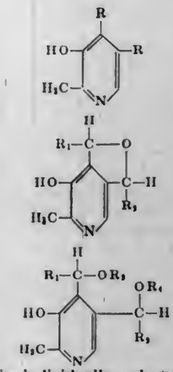
wherein R is an alkyl having 8 to 18 carbon atoms, and X is a residue of phenol or a substituted phenol whose only acidic group is at least one hydroxyl group, the water solubility of said quaternary ammonium phenate being not in excess of 3 parts by weight per 100 parts of solution at room temperature.

3,285,924
INTERMEDIATES AND PROCESS FOR PREPARING PYRIDOXINE AND RELATED COMPOUNDS

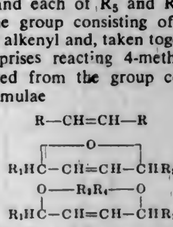
John Mervyn Osbond, Welwyn Garden City, Herts, England, assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 19, 1964, Ser. No. 353,241
Claims priority, application Great Britain, Jan. 3, 1962, 209/62; Oct. 10, 1962, 38,356/62; Mar. 21, 1962, 11,167/62
21 Claims. (Cl. 260—294.9)

1. A method for the preparation of a compound selected from the group consisting of compounds of the formulae



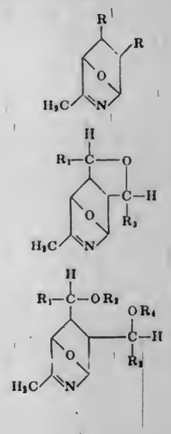
wherein each R is, individually, selected from the group consisting of carboxy, carb-lower alkoxy, cyano, carbonyl halide, formyl, carbamyl, N-lower alkyl carbamyl, N-di(lower alkyl)-carbamyl, and, taken together, anhydride; each of R_1 and R_3 is selected from the group consisting of hydrogen, hydroxy, lower alkoxy and ar-lower alkoxy; each of R_2 and R_4 is, individually, selected from the group consisting of lower alkyl, ar-lower alkyl, aryl, lower alkanoyl, aroyl and, taken together, oxalyl, phthaloyl, carbonyl, $=C(R_5, R_6)$, and the residue of a dibasic inorganic acid; and each of R_5 and R_6 is, individually, selected from the group consisting of hydrogen, lower alkyl, aryl, lower alkenyl and, taken together, lower alkylene; which comprises reacting 4-methyloxazole with a compound selected from the group consisting of compounds of the formulae



wherein R, R_1, R_2, R_3 and R_4 have the same meaning as above, and adding to the reaction mixture a dehydrogenating agent.

6. A process for the preparation of 2-methyl-3-hydroxy-4,5-dicyano-pyridine which comprises reacting 4-methyloxazole with fumaric acid dinitrile in the presence of a dehydrogenating agent.

20. A compound selected from the group consisting of compounds of the formula



wherein each R is, individually, selected from the group consisting of carboxy, carb-lower alkoxy, cyano, carbonyl halide, formyl, carbamyl, N-lower alkyl carbamyl, N-di (lower alkyl)-carbamyl, and, taken together, anhydride; each of R_1 and R_3 is selected from the group consisting of hydrogen, hydroxy, lower alkoxy and ar-lower alkoxy; each of R_2 and R_4 is, individually, selected from the group consisting of lower alkyl, ar-lower alkyl, aryl, lower alkanoyl, aroyl and taken together, oxalyl, phthaloyl, carbonyl, $=C(R_5, R_6)$, and the residue of a dibasic inorganic acid; and each of R_5 and R_6 is, individually, selected from the group consisting of hydrogen, lower alkyl, aryl, lower alkenyl and, taken together, lower alkylene.

3,285,925
AMINO-TRICHLOROPICOLINIC ACID COMPOUNDS

Howard Johnston, Walnut Creek, and Mary S. Tomita, Glendale, Calif., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Apr. 15, 1964, Ser. No. 360,063
10 Claims. (Cl. 260—294.9)

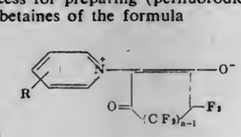
3. 3,5,6-trichloro-4-methylaminopicolinic acid.

3,285,926
(PERFLUORODIOXOCYCLOALKYL)PYRIDINIUM BETAINES

Samuel E. Ellzey, Jr., and Wilma A. Guice, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture

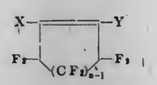
No Drawing. Filed Sept. 29, 1964, Ser. No. 400,279
21 Claims. (Cl. 260—295)

1. A process for preparing (perfluorodioxocycloalkyl) pyridinium betaines of the formula



wherein R is selected from the group consisting of COOR′, Br, and H; R′ is alkyl and *n* is an integer from 1 to 3, which process comprises the following steps:

(a) reacting at least one molar proportion of a halogenated cyclic fluorinated olefin of the type



wherein X and Y are halogens selected from the group consisting of Cl and F and *n* is an integer from 1 to 3, with at least one molar proportion of a pyridine compound selected from the group consisting of pyridine and substituted pyridine, in the presence of a solvent selected from the group consisting of a lower alkanoic acid and N,N-dimethylformamide; said N,N-dimethylformamide not being employed as the solvent when $n=1$;

(b) continuing the reaction until no unchanged olefin remains;

(c) precipitating the resulting betaine by diluting the reaction solution with an excess of water;

(d) washing the precipitated betaine to remove the solvent;

(e) recovering the precipitated betaine, and

(f) drying the recovered product.

18. (3,3-difluoro-2,4-dioxocyclobutyl) - 4 - carbethoxy-pyridinium betaine.

3,285,927
PREPARATION OF METHYL PYRIDINIUM-2-ALDOXIME CHLORIDE

Robert I. Ellin, Baltimore, Md., assignor to the United States of America as represented by the Secretary of the Army

No Drawing. Filed Mar. 2, 1965, Ser. No. 436,697
4 Claims. (Cl. 260—296)

1. A method which consists of

(a) heating 1-methyl pyridinium 2-aldoxime iodide with hydrogen chloride and methanol wherein the molar ratio of 1-methyl pyridinium aldoxime iodide to hydrogen chloride is from 1:5 to 1:10 at a temperature of about 100° C. until the volume of the reactive mass is substantially reduced and the methyl iodide formed as a by-product is driven off as a gas,

(b) dehydrating the residue to produce 1-methyl pyridinium 2-aldoxime chloride.

3,285,928
MERCURY DERIVATIVES OF PROPYL-HYDANTOINS

Franklyn W. Gubitz, Nassau, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 23, 1965, Ser. No. 481,913
11 Claims. (Cl. 260—299)

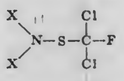
1. A 3 - mercuri - 2 - oxypropyl - hydantoin compound wherein a divalent mercury atom links a pharmaceutically acceptable anion to the terminal carbon atom of an oxypropyl group and the remaining oxy valence is satisfied by an alkyl, hydroxyalkyl, or haloalkyl group containing from one to six carbon atoms and any substituents present on the hydantoin nucleus are selected from the group consisting of lower-alkyl, monocyclic-aryl-lower-alkyl, monocyclicaryl, or monocyclic aralkyl.

3,285,929
FUNGICIDAL COMPOUNDS CONTAINING THE $NSCFCl_2$-GROUPS

Erich Klauke, Cologne-Flittard, Engelbert Kuhle and Ferdinand Grewe, Cologne-Stammheim, and Helmut Kaspers and Richard Wegler, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Oct. 31, 1961, Ser. No. 148,845
Claims priority, application Germany, Nov. 3, 1960, F 32,468; Nov. 25, 1960, F 32,620
8 Claims. (Cl. 260—301)

1. A fungicidal compound of the formula



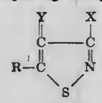
wherein X and Y individually are selected from the group consisting of an organic acyl radical, an aliphatic radical, an aromatic radical and a heterocyclic radical and when X and Y are taken together with the nitrogen atom, a heterocyclic radical, at least one member of X and Y being an organic acyl radical linked to the nitrogen atom through the acyl portion.

3,285,930
ISOTHIAZOLES

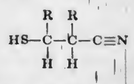
Ralph P. Williams, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Nov. 18, 1964, Ser. No. 412,238
3 Claims. (Cl. 260—302)

1. A process for preparing compounds of the formula



wherein R is a member selected from the group consisting of hydrogen and alkyl, aryl, cycloalkyl, aralkyl and alkaryl radicals containing from 1 to 10 carbon atoms, X is a member selected from the group consisting of chlorine and bromine, and Y is a member of the group consisting of chlorine, bromine, alkyl, aryl, cycloalkyl, aralkyl and alkaryl containing from 1 to 10 carbon atoms, comprising contacting with a compound of the group consisting of elemental chlorine and elemental bromine a 3-mercaptopropionitrile of the formula



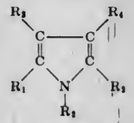
wherein R is a member selected from the group consisting of hydrogen and alkyl, aryl, cycloalkyl, aralkyl and alkaryl radicals containing from 1 to 10 carbon atoms, in the presence of a diluent and thereafter recovering the resulting isothiazole as a product of the process.

3,285,931
PREPARATION OF SUBSTITUTED PYRROLE DERIVATIVES

Rolf K. Huisgen, Munich, Germany, assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 21, 1964, Ser. No. 420,151
8 Claims. (Cl. 260—313.1)

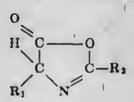
1. A process for the preparation of pyrroles of the formula:



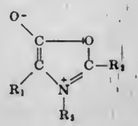
which comprises contacting an acetylenic compound of the formula:

$$R_3C{\equiv}CR_4$$

and an azlactone selected from the group consisting of



and



wherein R_1–R_5, individually, represent a member selected from the group consisting of hydrogen, and monovalent aliphatic, cycloaliphatic, aromatic and heterocyclic groups containing up to 12 carbon atoms; at a temperature of from about 0° to about 140° C., and thereafter recovering said pyrrole.

3,285,932
SYNTHESIS OF CONDENSED AROMATIC-HETEROCYCLIC RING COMPOUNDS

George E. Illingworth, Mount Prospect, and James J. Louvar, Evanston, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed May 21, 1964, Ser. No. 369,289
10 Claims. (Cl. 260—319.1)

1. A process for the preparation of a condensed aromatic-heterocyclic ring compound which comprises contacting an aromatic carbocyclic compound containing an alkyl or alkenyl side chain in a position adjacent to a substituent selected from the group consisting of hydroxy, mercapto and amino with a catalyst at dehydrocyclization reaction conditions, said catalyst comprising a noble metal and lithium composited with an alumina-containing support, condensing said side chain with said adjacent substituent and forming a condensed aromatic-heterocyclic ring compound.

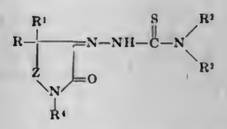
10. A process for the preparation of indole which comprises contacting ortho-ethylaniline with a catalyst at a temperature of from about 400° C. to about 550° C., said catalyst comprising alumina containing platinum and from about 0.01 to about 0.7 wt. percent lithium composited therewith, and forming said indole.

3,285,933
NOVEL 2,3-DIOXOPYRROLIDINE-3-THIOSEMICARBAZONES

Koert Gerzon and Eriks Krumkalns, Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Nov. 2, 1964, Ser. No. 408,378
5 Claims. (Cl. 260—326.3)

1. A compound of the formula



wherein R, when taken alone, is a member of the group consisting of hydrogen, phenyl, halophenyl, lower-alkoxyphenyl, phenylphenyl, nitrophenyl, benzyl, halobenzyl, lower-alkoxybenzyl, phenylbenzyl, nitrobenzyl, and carbo-lower-alkoxy; R^1, when taken alone, is hydrogen; R and R^1, when taken together, are members of the group consisting of benzylidene, halobenzylidene, lower alkoxybenzylidene, nitrobenzylidene, and phenylbenzylidene; R^2 and R^3 are members of the group consisting of hydrogen and lower alkyl; R^4 is a member of the group consisting of lower alkyl and hydroxy-substituted C_2–C_6 alkyl; and Z is a member of the group consisting of —CH_2— and

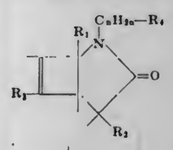


3,285,934
2-AZABICYCLO[3.2.0]HEPT-6-EN-3-ONES

Leo A. Paquette, Portage Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed June 11, 1963, Ser. No. 286,963
5 Claims. (Cl. 260—326.5)

1. A compound selected from the group consisting of the free base form and acid addition salts of a compound of the formula:



wherein R_1 and R_2 are alkyl of 1 to 4 carbon atoms, inclusive, wherein R_3 is selected from the group consisting of hydrogen and alkyl of 1 to 4 carbon atoms, inclusive,

wherein R_4 is selected from the group consisting of di-lower-alkylamino and the heterocyclic moieties, aziridinyl, azetidinyl, pyrrolidinyl, piperidino, hexahydroazepinyl, heptamethylenimino, octamethylenimino, morpholino, and thiomorpholino, each of said heterocyclic moieties having attached as substituents on carbon atoms thereof zero to 3 lower alkyls, inclusive, wherein *n* is 2 to 6, inclusive, wherein N and R_4 are separated by a chain of at least 2 carbon atoms, and wherein the nitrogen atom of R_4 is attached to a carbon atom of C_nH_{2n}.

3,285,935
INDOLYL GLUCURONIDES

Robert E. Harman, Avenel, Frederick A. Kuehl, Jr., Rumson, Robert G. Strachan, Summit, and Ralph F. Hirschmann, Scotch Plains, N.J., assignors to Merck & Co., Inc., a corporation of New Jersey

No Drawing. Filed July 18, 1963, Ser. No. 296,111
3 Claims. (Cl. 260—326.13)

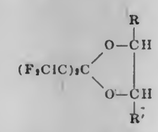
1. A compound selected from the group consisting of the glucuronide of 1-p-chlorobenzoyl-2-methyl-5-methoxy-3-indolyl acetic acid and the lower alkyl esters of the per-lower alkanoylated glucuronide of the said indolyl acid.

3,285,936
PREPARATION OF SUBSTITUTED DIOXOLANES FROM PERHALOACETONE AND AN EPOXIDE

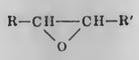
Everett E. Gilbert, Morris Township, Morris County, and Edmund J. Rumanowski, Dover, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Mar. 16, 1964, Ser. No. 352,306
6 Claims. (Cl. 260—340.9)

1. A method for the production of a ketal of the formula



which comprises reacting $(F_2ClC)_2CO$ and an epoxide of the class



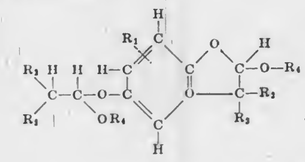
in the presence of a catalytic amount of pyridine, R being selected from the group consisting of hydrogen and alkyl radicals containing from one to six carbon atoms and R′ being selected from the group consisting of hydrogen, alkyl radicals containing from one to six carbon atoms, vinyl and alkoxy radicals containing from one to three carbon atoms, with the provisos that when R and R′ are both alkyl the sum of the number of carbon atoms in R plus the sum of the number of carbon atoms in R′ is from two to six, that when R′ is vinyl R is hydrogen and that when R′ is alkoxy R is hydrogen.

3,285,937
3,3-DIALKYL-2-ALKOXY-2,3-DIHYDROBENZOFURAN-5-OLS AND DERIVATIVES THEREOF

Kent C. Brannock and Robert D. Burpitt, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 9, 1963, Ser. No. 329,267
13 Claims. (Cl. 260—346.2)

11. As a chemical compound a 2-alkoxy-5-(1-alkoxy-2-alkylalkoxy)-2,3-dihydro-3,3-dialkylbenzofuran having the structural formula



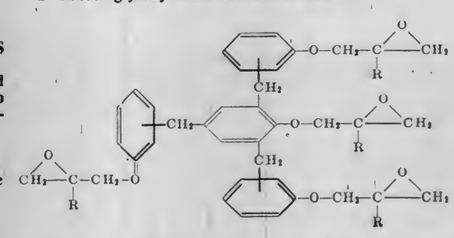
wherein R_1 is a substituent selected from the group consisting of hydrogen and alkyl groups of 1–18 carbon atoms and wherein R_2, R_3 and R_4 are alkyl groups of 1–18 carbon atoms.

3,285,938
TETRAGLYCIDYL ETHERS OF TRIS(HYDROXYBENZYL) PHENOL

Ralph F. Sellers, Middlebush, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Oct. 10, 1961, Ser. No. 144,020
3 Claims. (Cl. 260—348)

1. A tetraglycidyl ether of the formula:



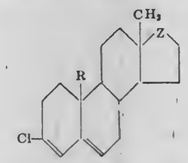
wherein R is a member selected from the group consisting of hydrogen atoms and methyl radicals and with the limitation that each methylene radical is attached to the phenyl radical in a position other than meta to the glycidyl ether radical.

3,285,939
STEROIDAL 3-CHLORO-3,5-DIENES

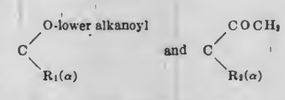
George W. Moersch and Winifred Ann Neuklis, Ann Arbor, Mich., assignors to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed Feb. 13, 1963, Ser. No. 258,157
5 Claims. (Cl. 260—397.4)

1. Steroidal 3-chloro-3,5-dienes having the formula



where R is chosen from the group consisting of hydrogen and methyl, and Z represents a member of the class consisting of



where $R_1(\alpha)$ is chosen from the group consisting of methyl, and ethinyl and $R_2(\alpha)$ is chosen from the group consisting of hydrogen, hydroxyl, and lower alkanoyloxy.

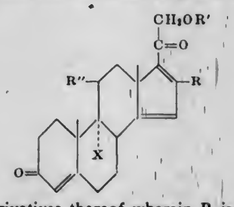
4. 3-chloro-17α-hydroxy-pregna-3,5-dien-20-one.

3,285,940
16-METHYL-$\Delta^{1,4,16}$-PREGNATRIENE-3,20-DIONE COMPOUNDS

David Taub and Robert D. Hoffsommer, Jr., Metuchen, and Norman L. Wendler, Summit, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed June 4, 1959, Ser. No. 818,017
4 Claims. (Cl. 260—397.45)

1. A compound selected from the group consisting of:



and the Δ^1 derivatives thereof wherein R is lower alkyl, R′ is selected from the group consisting of hydrogen and acyl, R″ is selected from the group consisting of hydroxy and oxygen and X is selected from the group consisting of hydrogen and halogen.

3,285,941
PROCESS OF PREPARING VINYL ESTERS OF CARBOXYLIC ACIDS

Willem F. Engel and Gottfried E. Rumscheidt, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 9, 1963, Ser. No. 293,887
Claims priority, application Netherlands, July 10, 1962, 280,722
9 Claims. (Cl. 260—410.9)

1. A process for the preparation of vinyl ester of alkanoic mono-carboxylic acid which comprises passing a gaseous mixture of acetylene and said acid into a high-boiling inert liquid phase containing a dispersed catalyst of the group consisting of the magnesium, iron, copper, aluminum, tin, boron, zinc or cadmium containing catalysts while maintaining the temperature of said liquid phase between 200° C. and 300° C. and controlling the rate of feed of said gaseous mixture into said liquid phase to avoid carboxylic acid concentration in said liquid phase exceeding 5% by weight, collecting the resulting gaseous effluent from said liquid phase, and subsequently separating the vinyl ester of alkanoic mono-carboxylic acid from said gaseous effluent.

3,285,942
PREPARATION OF GLYCOL MOLYBDATE COMPLEXES

John A. Price, Westfield, and Richard F. Neblett, Plainfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Mar. 6, 1962, Ser. No. 177,738
10 Claims. (Cl. 260—429)

1. In the reaction of a glycol from the group consisting of alpha- and beta-alkane diols of from 2 to 18 carbon atoms with a molybdenum compound selected from the group consisting of molybdic acid, ammonium paramolybdate, ammonium molybdate, MoO_3 and molybdenum pentachloride the improvement which consists in adding to the reacting materials an organic nitrogen base having a boiling point no higher than 300° C. measured at atmospheric pressure and selected from the group consisting of alkyl amines having a total of at least 6 carbon atoms, aryl amines, N-dialkyl amides, azines and oxazines, said nitrogen base being added to the reacting materials in an amount within the range of from 1 to 50 weight percent of the amount of molybdenum compound used in the reaction.

3,285,943
PROCESS FOR THE REMOVAL OF IMPURITIES FROM ACTINIDES

Kåre P. Lindland, Kjeller, near Lillestrom, Norway, assignor to Institutt for Atomenergi, Kjeller, near Lillestrom, Norway

No Drawing. Filed May 3, 1963, Ser. No. 277,703
Claims priority, application Norway, May 8, 1962, 144,294/62
9 Claims. (Cl. 260—429.1)

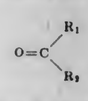
1. A process for the separation of fission products taken from the group consisting of elements having atomic numbers between 30 and 64 and having ion diameters between 1.4 A. and 2.0 A. from uranium and plutonium; said process comprising admixing an acid aqueous uranyl nitrate solution containing dissolved neutron-irradiated uranium with a complexing agent; said complexing agent containing polar atom groups, and being capable of selectively forming uranium molecular complexes of the type

$$UO_2(NO_3)_n \cdot L_m$$

and plutonium molecular complexes of the type

$$Pu(NO_3)_p \cdot L_q$$

in which L is the complexing agent, *n*, *m* and *q* are integers taken from the group consisting of 1 and 2 and *p* is an integer taken from the group consisting of 1, 2, 3 and 4, and being taken from the group consisting of diol compounds, triol compounds, nitrogenous derivatives taken from the group consisting of hydroxylamine, carbamide, triethanolamine and nitrilotriacetic acid, and ketone derivatives of the type



in which R_1 and R_2 denote oxygenated hydrocarbon chains; said polar atom groups being taken from the group consisting of hydroxy, ether, ester, keto and carboxy groups; and contacting the resulting aqueous mixture containing said fission products in an uncomplexed state and the molecules of said uranium and plutonium in a complexed state with a molecular sieve having passages the diameters of which are greater than 25 A. and blind pores the diameters of which are between 6 A. and 12 A.; whereby the complexed uranium and plutonium molecules pass through said passages and said uncomplexed fission products enter and are retained in said blind pores.

3,285,944
MANUFACTURE OF ORGANO-TIN COMPOUNDS

Vincent Oakes, Eccleston, near St. Helens, England, assignor to Pure Chemicals Limited, Liverpool, England, a British company

No Drawing. Filed Apr. 2, 1963, Ser. No. 269,866
Claims priority, application Great Britain, Apr. 9, 1962, 13,529/62; Oct. 15, 1962, 38,866/62
4 Claims. (Cl. 260—429.7)

1. A method of preparing organo-tin compounds containing tin-sulphur linkages, comprising reacting an alkyl tin oxide with an isothiouronium salt.

3,285,945
PROCESS FOR THE PRODUCTION OF ESTER SALTS

Kurt Wember, Marl, Germany, assignor to Chemische Werke Huls Aktiengesellschaft, Marl, Germany, a corporation of Germany

No Drawing. Filed Nov. 1, 1963, Ser. No. 320,941
Claims priority, application Germany, Nov. 9, 1962, C 28,371
4 Claims. (Cl. 260—429.9)

1. Process which comprises reacting at least one member selected from the group consisting of the oxide and the hydroxide of a metal of group II of the periodic

system with a partial ester of an acid selected from the group consisting of di and multibasic saturated and unsaturated aliphatic carboxylic acids having from 3 to 10 carbon atoms and an aliphatic alcohol having from 6 to 20 carbon atoms, in substantially chemically equivalent amounts at a temperature within the range from 10 to 120° C., and in a substantially homogeneous liquid medium consisting essentially of from 0.5 to 20% by volume of at least one lower aliphatic alcohol and 99.5 to 80% by volume of a liquid that is inert under the reaction conditions.

3,285,946
MONO- AND DI-(LOWER ALKYL SUBSTITUTED) DICYCLOPENTADIENYL IRON

Earl G. De Witt, Royal Oak, and Jerome E. Brown and Hymin Shapiro, Detroit, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Nov. 23, 1955, Ser. No. 548,755
2 Claims. (Cl. 260—439)

1. An unsymmetrical di(lower alkyl substituted cyclopentadienyl) iron compound wherein each lower alkyl cyclopentadienyl radical, by virtue of dissimilar alkyl substitution, differs from the other lower alkyl cyclopentadienyl radical.

2. A (lower alkyl-substituted dicyclopentadienyl) iron in which only one cyclopentadienyl group is substituted, said lower alkyl group being the sole substituent.

3,285,947
PROCESS FOR THE CONVERSION OF COMPLEX ALUMINUM-ORGANIC AND BORON-ORGANIC COMPOUNDS OF SODIUM INTO THOSE OF POTASSIUM

Karl Ziegler, 1 Kaiser Wilhelm Platz, Mulheim an der Ruhr, Germany, and Herbert Lehmkuhl, Mulheim an der Ruhr, Germany; said Lehmkuhl assignor to said Ziegler

Continuation of application Ser. No. 114,939, June 5, 1961. This application Oct. 29, 1963, Ser. No. 320,607
Claims priority, application Germany, June 7, 1960, Z 8,056; May 2, 1961, Z 8,715
5 Claims. (Cl. 260—448)

1. A process for the production of potassium-organo-complex compounds of an element selected from the group consisting of aluminum and boron from the corresponding organo-complex compounds of sodium which comprises reacting in an inert atmosphere a sodium-organo-complex compound selected from the group consisting of

$$Na[Al(R)_4],\ Na[Al(R)_3H],\ Na[Al(R)_3OR'],$$
$$Na[Al(R)_3F],\ Na[Al_2(R)_6F],\ Na[B(R)_4],$$
$$Na[B(R)_3H],\ Na[BR_n(OR')_m]$$

and mixtures thereof wherein R represents an alkyl radical containing 1–4 carbon atoms and R′ represents an alkyl radical containing 1–10 carbon atoms, and *n* and *m* are integers from 0 to 4 with the proviso that $n+m=4$ with a potassium amalgam liquid under the reaction conditions and recovering the so-formed potassium-organo complex compound from the reaction mixture.

3,285,948
HALIDES OF RUTHENIUM AND OSMIUM IN CONJUNCTION WITH COBALT AND IODINE IN THE PRODUCTION OF ETHANOL FROM METHANOL

George N. Butter, Terre Haute, Ind., assignor to Commercial Solvents Corporation, a corporation of Maryland

No Drawing. Filed Jan. 22, 1965, Ser. No. 427,497
8 Claims. (Cl. 260—642)

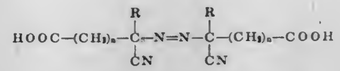
1. In a process for the synthesis of ethyl alcohol comprising reacting under pressures of about 1,000 to about 15,000 p.s.i. and a temperature from about 175 to 230° C. a mixture consisting essentially of methanol, carbon monoxide and hydrogen in the presence of a cobalt-containing catalyst soluble in the reaction medium and an iodine promoter to produce ethyl alcohol, the improvement which consists essentially of conducting the reaction in the presence of catalytic amounts of a secondary promoter selected from the group consisting of ruthenium halide and osmium halide.

3,285,949
CARBOXYL-TERMINATED BUTADIENE POLYMERS PREPARED IN TERTIARY BUTANOL WITH BIS-AZOCYANO ACID INITIATION

Alan R. Siebert, Maple Heights, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

No Drawing. Filed Apr. 17, 1964, Ser. No. 360,752
3 Claims. (Cl. 260—465.4)

1. The method of producing polybutadiene homopolymer having functional carboxyl termination at each end of the polymer chain which comprises solvent polymerizing butadiene monomer using as an initiator an aliphatic azodicarboxylate in which the carbons attached to the azo group are tertiary, represented by the formula



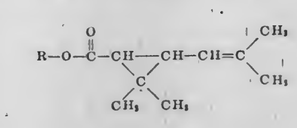
where *n* is an integer from 1 to 6 and R is an alkyl group containing from 1 to 3 carbon atoms and wherein the solvent employed is tertiary butanol.

3,285,950
UNSATURATED ESTERS OF CHRYSANTHEMUM MONOCARBOXYLIC ACID

Joseph Weber, Paterson, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Oct. 2, 1963, Ser. No. 313,152
6 Claims. (Cl. 260—468)

1. Esters having the formula:



in which R is the hydrocarbon residue of an alcohol selected from the group consisting of

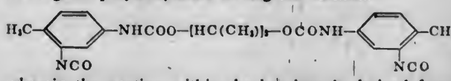
(a) 3-methyl-4-[5-isopropenyl - 2 - methylcyclopenten-1-yl]-2-butanol
(b) 6,10-dimethylundeca-5,9-dien-2-ol
(c) 3,7-dimethyl-6-octen-1-yn-3-ol
(d) 3,7,11-trimethyl-6,10-dodecadien-1-yn-3-ol
(e) 3,7,11-trimethyl-1,6,10-dodecatrien-3-ol
(f) 2-methyl-2-hepten-6-ol
(g) 5,6-dimethyl-5-hepten-2-ol
(h) 5-cyclohexylidene-2-pentanol
(i) 3-methyl-1-butyn-3-ol
(j) 3-methyl-1-buten-3-ol
(k) 3-ethyl-1-buten-3-ol
(l) 3-methyl-3-penten-1-ol
(m) 3,7,11,15-tetramethyl-1-hexadecyn-3-ol
(n) 3,7,11,15-tetramethyl-1-hexadecen-3-ol
(o) 3-methyl-1-penten-4-yn-3-ol
(p) 1,4-pentadien-3-ol

3,285,951
ADDUCTS OF 2,3-BUTANEDIOL AND TOLYLENE DIISOCYANATE

Herbert L. Heiss, New Martinsville, W. Va., assignor to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Oct. 16, 1962, Ser. No. 231,029
1 Claim. (Cl. 260—471)

An organic polyisocyanate having the formula



wherein the portion within the brackets is derived from a 2,3-butanediol having a meso-isomer content of at least 40 percent.

3,285,952
OXIDATION OF 2,5-DIARYLAMINO-DIHYDRO-TEREPHTHALATES WITH NITROBENZENE

Chi K. Dien, Buffalo, N.Y., assignor to Allied Chemical Corporation, a corporation of New York

No Drawing. Filed Nov. 20, 1962, Ser. No. 239,075
10 Claims. (Cl. 260—471)

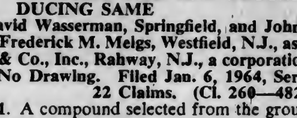
1. A process for the oxidation of esters of 2,5-diarylamino-dihydro-terephthalic acids which comprises heating an ester of 2,5-diarylamino-dihydro-terephthalic acid with nitrobenzene.

3,285,953
ω-MONOALKYL ESTERS OF GLUTAMIC AND ASPARTIC ACID AND PROCESS FOR PRODUCING SAME

David Wasserman, Springfield, and John D. Garber and Frederick M. Melgs, Westfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

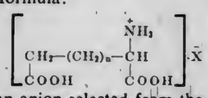
No Drawing. Filed Jan. 6, 1964, Ser. No. 336,032
22 Claims. (Cl. 260—482)

1. A compound selected from the group of compounds within the generic formula:



and the acid addition salts thereof and the base salts thereof; with R being an alkyl radical of at least 11 carbon atoms; and *n* is selected from the group consisting of 0 and 1.

10. The method for producing an ω-alkyl ester of (A) a compound selected from the group of compounds within the generic formula:



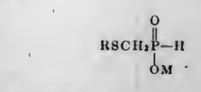
with X being an anion selected from the group consisting of anions of compounds containing an SO_4H moiety and anions of compounds containing an SO_3H moiety; and *n* being selected from the group consisting of 0 and 1; comprising in a tertiary monohydric alkanol, and in the presence of an acidic catalyst reacting (A) with an alkyl monohydric primary alcohol of at least 8 carbon atoms; said acidic catalyst being a compound selected from the group consisting of compounds containing an SO_4H moiety and compounds containing an SO_3H moiety.

3,285,954
THIOMETHYLENEPHOSPHINIC ACIDS

Eugene H. Uhing, Evergreen Park, and Arthur Dock Fon Toy, Park Forest, Ill., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 19, 1962, Ser. No. 174,280
9 Claims. (Cl. 260—500)

1. A thiomethylenephosphinic acid compound of the formula:



wherein:

(a) R is selected from the group consisting of alkyl, aryl, alkaryl, aralkyl, and halophenyl, and

(b) M is selected from the group consisting of hydrogen and alkali metals.

3,285,955
PRODUCTION OF CYCLIC CARBOXYLIC ACIDS BY THERMAL CONVERSION OF SALTS OF OTHER CYCLIC CARBOXYLIC ACIDS

Walter Schenk, Heidelberg, and Albrecht Wallis and Rudi Schanz, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed June 7, 1962, Ser. No. 200,666
Claims priority, application Germany, June 8, 1961, B 62,817
8 Claims. (Cl. 260—515)

1. In a process for the production of alkali salts of aromatic carboxylic acids by catalytic thermal conversion of a reactant mixture of alkali salts or other aromatic carboxylic acids, the step which comprises preparing said reactant mixture by reacting at a temperature of up to 120° C. a metal salt of a carboxylic acid wherein the cation represents a divalent ion selected from the group consisting of cadium, zinc and iron, with potassium carbonate in an at least equivalent amount up to an excess of five times the calculated amount thereof, with reference to the amount of said metal salt, in the presence of water and in the presence of the alkali metal salt of the aromatic carboxylic acid to be converted, removing the water and drying the resulting mixture.

3,285,956
p-PHENYLENEBIS(DIMETHYLACETIC ACID) AND A PROCESS FOR THE PREPARATION THEREOF

John R. Holsten, Raleigh, William A. H. Huffman, Durham, Loyd G. Kasbo, Chapel Hill, and Jack Preston, Raleigh, N.C., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Mar. 13, 1963, Ser. No. 264,753
5 Claims. (Cl. 260—515)

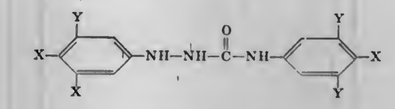
1. A method for the preparation of p-phenylenebis(dimethylacetic acid) which comprises (1) heating p-phenylenebis(dimethylacetonitrile) in the presence of an excess of phosphoric acid at a temperature of from about 90° C. to about 125° C. to obtain a nitrogen containing intermediate product, and (2) dissolving said intermediate product in an alkali hydroxide and refluxing the resulting solution to obtain said p-phenylenebis(dimethylacetic acid).

3,285,957
DIPHENYL SEMICARBAZIDES

Joseph Willard Baker, Kirkwood, and Raymond Eugene Stenseth, Webster Groves, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Feb. 13, 1964, Ser. No. 344,539
5 Claims. (Cl. 260—554)

1. A compound of the formula,



wherein each X is selected from the group consisting of chlorine and bromine, and each Y is selected from the group consisting of hydrogen, chlorine and bromine.

3,285,958
PREPARATION OF TRIAMINOGUANIDINE COMPOUNDS FROM DICYANDIAMIDE

Daniel R. Satriana, Verona, N.J., assignor to the United States of America as represented by the Secretary of the Army

No Drawing. Filed Dec. 1, 1964, Ser. No. 415,572
6 Claims. (Cl. 260—564)

1. A process for preparing triaminoguanidine compounds by reacting dicyandiamide with a compound selected from the group consisting of hydrazine nitrate and hydrazine hydrate; hydrazine hydrochloride and hydrazine hydrate; monomethyl hydrazine nitrate and monomethyl hydrazine; unsymmetrical dimethyl hydrazine nitrate and unsymmetrical dimethyl hydrazine; and phenyl hydrazine nitrate and phenyl hydrazine.

3,285,959
DODECYL-DIMETHYL-1,2,4,5-TETRAMETHYL-BENZYL AMMONIUM CHLORIDE

Samuel B. McFarlane, Summit, N.J., assignor to Millmaster Onyx Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Apr. 19, 1965, Ser. No. 449,317
2 Claims. (Cl. 260—567.6)

1. Free-flowing crystals of dodecyl dimethyl-1,2,4,5-tetramethyl-benzyl ammonium chloride free of any deliquescent isomers thereof.

3,285,960
4,4-DIPHENYLCYCLOHEXYLAMINE DERIVATIVES

Isaac Frederick Halverstadt, Berkeley, Calif., assignor to Cutter Laboratories, Inc., a corporation of Delaware

No Drawing. Filed Jan. 14, 1964, Ser. No. 337,539
12 Claims. (Cl. 260—570)

1. Chemical compounds in which two phenyl groups are attached to the 4-position carbon atom of the cyclohexyl ring of cyclohexylamine and at least one oxy oxygen atom-bearing lower-alkyl group of up to eight carbon atoms is attached to the amino nitrogen atom, providing an at least two carbon atom bridge between the nitrogen atom and the oxygen atom, and wherein the oxy oxygen atom is contained in a member of the group consisting of hydroxy, lower-alkoxy and lower-acyloxy of 1 to 12 carbon atoms.

3,285,961
PROCESS FOR STABILIZING TOLUENE DIAMINE

Philip D. Hammond, North Haven, and Ehrenfried H. Kober, Hamden, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed May 9, 1963, Ser. No. 279,333
5 Claims. (Cl. 260—578)

1. The process for stabilizing molten crude toluene diamine which comprises maintaining an atmosphere of gaseous hydrogen above said molten toluene diamine at a temperature in the range between about 80 and about 120° C.

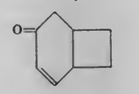
3,285,962
UNSATURATED KETONES

William J. Farrissey, Jr., Northford, Conn., assignor, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware

No Drawing. Filed Dec. 16, 1963, Ser. No. 330,617
3 Claims. (Cl. 260—586)

1. The compound, 6-keto-1,4-cyclooctadiene.

2. The compound having the formula:



3. The method of rearranging 2,6-cyclooctadienone to bicyclo(4,2,0)oct-2-en-4-one which comprises heating 2,6-cyclooctadienone in the presence of hydroquinone to a temperature of between about 175 to about 200° C.

3,285,963
2-POLYCARBONALKYL-1,3-CYCLOPENTANEDIONES

Gordon Alan Hughes and Herchel Smith, Wayne, Pa., assignors to Herchel Smith, Wayne, Pa.

Filed Apr. 15, 1965, Ser. No. 448,508
2 Claims. (Cl. 260—586)

1. 2-ethyl-1,3-cyclopentanedione.

3,285,964
PURIFICATION OF 2,3,5,6 TETRACHLORONITROANISOLE

Rostyslaw Dowbenko and Wen-Hsuan Chang, Gibsonia, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 8, 1962, Ser. No. 236,338
5 Claims. (Cl. 260—612)

1. The method of recovering 2,3,5,6-tetrachloronitroanisole in a high state of purity from a crude mixture of the same comprising chloranil as an impurity, which comprises passing a solution of the crude material in a liquid aliphatic hydrocarbon solvent through a packing of silica gel particles and evaporating the solvent thereby recovering the 2,3,5,6-tetrachloronitroanisole.

3,285,965
PROCESS FOR THE PRODUCTION OF BROMINE DERIVATIVES OF AROMATIC COMPOUNDS

Herbert Jenkner, Cologne-Bruck, Germany, assignor to Chemische Fabrik Kalk G.m.b.H., Cologne-Kalk, Germany

No Drawing. Filed Oct. 28, 1963, Ser. No. 319,585
Claims priority, application Germany, Dec. 5, 1962, C 28,581
10 Claims. (Cl. 260—612)

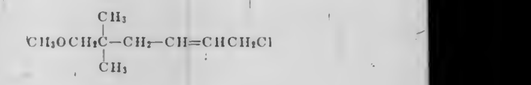
1. In a process for the bromination of a material selected from the group consisting of diphenyl, diphenyl ether and mixtures thereof for the introduction of more than 3 bromine atoms per molecule of such material by contacting such material with 1.01 to 1.2 gram atoms of bromine for every gram atom of hydrogen to be substituted in such material and with an amount of chlorine which at most is equimolar with respect to the bromine, the step which comprises, after completion of the bromination, introducing a quantity of an alkylene of 2–4 carbon atoms into the reaction mixture which is at least equimolar with respect to the free bromine still contained in such reaction mixture to bind such free bromine with the formation of the corresponding alkylene dibromide.

3,285,966
ETHERS AND METHODS OF PREPARATION

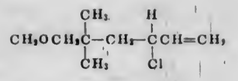
Marvin J. Hurwitz, Elkins Park, and Ellington M. Beavers, Meadowbrook, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Oct. 19, 1960, Ser. No. 63,466
5 Claims. (Cl. 260—614)

1. An ether-substituted allyl halide having a neopentylene group, said ether being selected from the group consisting of



and



3,285,967
CATALYTIC DEALKOXYLATION OF GEM-DIALKOXY COMPOUNDS

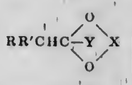
William D. Schaeffer, Pomona, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Oct. 21, 1963, Ser. No. 317,808
10 Claims. (Cl. 260—614)

1. The process for cracking a gem-dialkoxy compound selected from the class consisting of acyclic gem-dialkoxy compounds corresponding to the following:

$$RR'CHC(Y)(OZ)_2$$

and cyclic gem-dialkoxy compounds corresponding to the following:



wherein:

R, R' and Y are hydrogen, aryl or alkyl groups having from 1 to about 7 carbons;

Z is an alkyl group having from 1 to about 7 carbons;

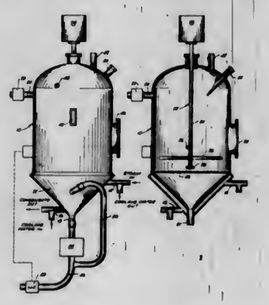
X is an alkylene group having 2 to 3 carbons; and the total carbons in said gem-dialkoxy compound are from 4 to about 20;

said process comprising contacting said gem-dialkoxy compound with trilithium orthophosphate at a temperature between about 150° and 450° centigrade and to crack said gem-dialkoxy compound to an unsaturated ether recovering therefrom said unsaturated ether.

3,285,968
METHOD FOR CONTINUOUSLY PRODUCING CALCIUM ALKOXY ALCOHOLATES

William R. Bradley, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Oklahoma

Filed Nov. 23, 1962, Ser. No. 239,436
7 Claims. (Cl. 260—615)



1. In the method of preparing calcium alkoxy alcoholates by reacting calcium carbide with a glycol ether selected from the group consisting of compounds having the structural formula $ROCH_2CH_2OH$ where R is an alkyl group containing from 1 to 6 carbon atoms, and compounds having the structural formula

$$R'OCH_2CH_2OCH_2CH_2OH$$

where R' is an alkyl group having from 1 to 4 carbon atoms, the improvement which comprises:

(a) continuously passing said glycol ether through a reaction zone containing an excess amount of calicum carbide over that which reacts with said ether during the residence time of said ether in said reaction zone;

(b) continuously introducing into said reaction zone an amount of carbide sufficient to maintain the excess of this reactant;

(c) agitating the contents of said reaction zone;

(d) removing reaction product from said reaction zone; and

(e) said method being characterized further in that

(1) the residence time is from about 5 to about 100 minutes;

(2) the amount of excess calcium carbide maintained in said reaction zone is from about 2 to about 10 theories;

(3) the temperature of the reaction zone is in the range of about 160° F. to about 260° F.; and

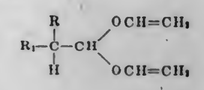
(4) the glycol ether is passed through the reaction zone at a rate such that between about 3.8 percent and 55.5 percent of the glycol ether is reacted with the carbide whereby an alcoholate product solution containing between 1.0 percent and 15.0 percent by weight of calcium is produced.

3,285,969
DIVINYL ACETALS AND THE PREPARATION THEREOF

Tommy L. Tolbert, Chapel Hill, and Edgar Herbert Pitts, Jr., Durham, N.C., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Dec. 27, 1962, Ser. No. 247,539
5 Claims. (Cl. 260—615)

1. A process for the preparation of a divinyl acetal having the formula



wherein R and R_1 are members of the group consisting of hydrogen and alkyl radicals having a carbon content of from 1 to 7 with the total number of carbon atoms in R and R_1 not exceeding 7, said acetal being substantially free of alkenyl 2-haloethyl ethers, which comprises dehydroiodinating the corresponding bis(2-iodoethyl) acetal at a temperature of from about 50° C. to about 150° C. in the presence of an anhydrous alkali hydroxide.

3,285,970
SYNTHESIS OF ACETALS

William D. Schaeffer, Pomona, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed June 18, 1963, Ser. No. 288,634
8 Claims. (Cl. 260—615)

1. The synthesis of acetals by the oxidation of a 1-olefin having 2 to about 5 carbon atoms that comprises contacting said olefin and an oxygen containing gas with a substantially anhydrous organic reaction medium comprising an alkanol having from 1 to about 10 carbons containing a catalytic amount of a member selected from the group consisting of platinum group metals and chloride and bromide salts thereof, between about 0.1 and about 5.0 weight percent of a strong mineral acid selected from the class consisting of sulfuric, phosphoric, hydrochloric and hydrobromic acids and mixtures thereof, and between about 0.05 and about 5.0 weight percent of halogen available as halide ions, said halogen selected from the class consisting of chlorine and bromine, said contacting being at temperatures between about 30° and about 300° centigrade and pressures between about 1 and about 100 atmospheres.

3,285,971
CYCLOALKENE DIOL

Pierre Lafont, Lyon, and Henri Menand, St.-Fons, France, assignors to Rhone-Poulenc S.A., Paris, France, a French body corporate

No Drawing. Filed Apr. 5, 1962, Ser. No. 185,211
Claims priority, application France, Apr. 14, 1961, 858,800, Patent 1,294,313
1 Claim. (Cl. 260—617)

Process for the production of cyclooct-5-ene-1,2-diol which comprises treating cis-1,2-epoxycyclooct-5-ene in the presence of water with perchloric acid at a temperature of 20–150° C., neutralizing the resulting mixture, and separating the resultant diol by distillation.

3,285,972
NITROSATION OF PHENOL

Herbert L. Young, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Dec. 31, 1962, Ser. No. 248,236
17 Claims. (Cl. 260—621)

1. A process for the manufacture of p-nitrosophenol which comprises reacting phenol with an organic nitrite as a nitrosation agent therefor in the presence of an alcohol as a solvent for the said nitrosation, at a temperature of from 0–100° C., and during the entire period of said nitrosation, maintaining the pH of the nitrosation reaction mixture by the addition of a base at a value within the range of from 8–13; the said nitrite being characterized by the structural formula RONO wherein R is selected from the group consisting of an alkyl containing from 1–8 carbon atoms and a monocycloalkyl containing from 5–8 carbon atoms, and the said alcohol being characterized by the structural formula ROH wherein R is an alkyl containing 1–6 carbon atoms; and recovering p-nitrosophenol as product of the process.

3,285,973
PROCESS FOR RECOVERING PHENOL FROM PHENOL-CONTAINING WATER

Sumio Arai, Makoto Funatsu, and Hisahiro Kita, Wakayama, Japan, assignors to Kao Soap Company, Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Mar. 26, 1963, Ser. No. 267,950
Claims priority, application Japan, Mar. 28, 1962, 37/11,415, 37/11,416
5 Claims. (Cl. 260—621)

1. A process for recovering substantially pure phenol from a dilute aqueous solution thereof comprising: carrying out a liquid-liquid counter-current solvent extraction on said solution, using as extraction solvent an amine selected from the group consisting of (1) coconut oil amines, dioctylamine, N-benzyloctylamine, N-cyclohexyloctylamine, dimethyloctylamine and tri-n-octylamine, and (2) said amine dissolved in a solvent selected from the group consisting of cyclohexane, n-heptane, n-hexane, benzene, toluene, xylene, methylisobutyl ketone isopropyl ether, n-butyl ether, n-butyl acetate, carboxylic acid ester, trichlorethylene, kerosine, light oils. dodecylbenzene. butyl carbitol, n-hexyl ether, tributyl phosphate and tricresylphosphate; to recover an aqueous phase and a non-aqueous extract phase containing a phenol-amine compound, heating said non-aqueous extract phase at reduced pressure to simultaneously decompose said compound and to vaporize the phenol; and recovering substantially pure phenol from the vapor of the heating operation.

3,285,974
COLOR STABILIZATION OF PROPARGYL ALCOHOL

Haluk Senman, Calvert City, Ky., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 15, 1963, Ser. No. 316,438
3 Claims. (Cl. 260—632,5)

1. Propargyl alcohol containing uniformly dispersed therein from fifty to one thousand parts of an acid selected from the class consisting of sulfuric and phosphoric acid per one million parts of propargyl alcohol.

3,285,975
ω-PERFLUOROALKYL ALKENOLS

Arthur H. Ahlbrecht, Dellwood, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Mar. 1, 1965, Ser. No. 436,281
3 Claims. (Cl. 260—633)

1. A fluorinated alcohol of the formula:

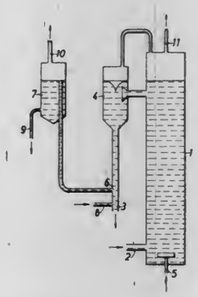
$$R_fCH{=}CH(CH_2)_nOH$$

wherein R_f represents a perfluoroalkyl group having from 3 to 12 carbon atoms and n is 1–10.

3,285,976
PROCESS FOR THE CONTINUOUS PRODUCTION OF PROPYLENE CHLOROHYDRIN

Christian Wegner, Heisterbacherrott, Edgar Muschelknautz, Leverkusen, Otto Jübermann, Opladen-Quettingen, and Hans Le Blanc, Dormagen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft and Erdolchemie Gesellschaft mit beschrankter Haftung, both of Leverkusen, Germany, a corporation of Germany

Filed June 11, 1963, Ser. No. 287,098
Claims priority, application Germany, June 12, 1962, F 37,045
2 Claims. (Cl. 260—634)



1. In the process for the continuous production of propylene chlorohydrin from propylene and aqueous hypochlorous acid, in which a part of the reaction solution is worked up to propylene chlorohydrin and the remainder is recycled to the reaction zone wherein the reaction of propylene and aqueous hypochlorous acid takes place, the improvement which comprises separating the gaseous compounds, including dissolved propylene, from the reaction solution after it leaves the reaction zone and prior to recycling said reaction solution to the reaction zone.

2. Process as claimed in claim 1 which comprises separating the gaseous compounds from the reaction solution by subjecting said reaction solution to a vortex motion in a confined zone.

3,285,977

HYDRATION OF OLEFINS IN THE PRESENCE OF A SOLVENT

Alfred M. Henke, Springdale, Pa., Raymond C. Odioso, Chatham, N.J., and Bruce K. Schmid, McCandless Township, Allegheny County, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Apr. 12, 1962, Ser. No. 186,835
7 Claims. (Cl. 260—641)

1. In a process for the hydration with water over a solid hydration catalyst of an olefin selected from the group consisting of C_4 olefins, C_5 olefins, C_6 olefins and C_7 olefins to form a corresponding product alcohol in the liquid state, the improvement of maintaining both said olefin and said water reactants in the liquid state, reacting said olefin and said water in the presence of a solvent other than product alcohol, said solvent being in the liquid state and being miscible with the reactants to form solvent containing solution, said solvent increasing the solubility of product alcohol, said solvent maintaining said liquid olefin and said liquid water in separate liquid phases, said phases in the presence of said solvent being insoluble in each other so that said water phase is substantially free of olefin.

7. In a process for the hydration with water over a solid hydration catalyst of a first olefin selected from the group consisting of C_4 olefins, C_5 olefins, C_6 olefins and C_7 olefins to form a corresponding first alcohol in the liquid state, the improvement comprising maintaining both said first olefin and said water reactants in the liquid state, conducting said hydration in the presence of a second olefin selected from the group consisting of C_2, C_3 and iso-C_4 olefins to produce a corresponding second alcohol other than said first alcohol, said second alcohol being in the liquid state and being miscible with said first olefin reactant and said water reactant to form a second alcohol containing solution with said first olefin reactant and a separate second alcohol containing solution with said water for increasing the solubility of said first alcohol in said first olefin reactant and in said water reactant, said second alcohol maintaining said first olefin and said water in separate liquid phases so that the first olefin phase is substantially free of water and the water phase is substantially free of said first olefin.

3,285,978

PROCESS FOR PRODUCING 1,3-DICHLOROOLEFINS

Taijiro Oga, Tokyo, Michitoshi Kitabatake, Kawasaki-shi, Kanagawa-ken, and Masao Ogawa and Masazumi Kusunoki, Yokohama, Japan, assignors to Showa Denko Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

No Drawing. Filed Oct. 7, 1963, Ser. No. 314,530
Claims priority, application Japan, Oct. 11, 1962, 37/43,782, 37/43,783; Aug. 9, 1963, 38/40,849, 38/40,850, 38/40,851
7 Claims. (Cl. 260—654)

1. A process for producing 1,3-dichlorobutene-2, which comprises reacting 3-chlorobutene-1 with an alkylhypochlorite selected from the group consisting of tertiary butylhypochlorite and tertiary amylhypochlorite, and separating the thus-produced 1,3-dichlorobutene-2.

2. A process for producing 1,3-dichlorobutene-2, which comprises reacting reformed 3-chlorobutene-1 with an alkylhypochlorite selected from the group consisting of tertiary butylhypochlorite and tertiary amylhypochlorite, and separating the thus-produced 1,3-dichlorobutene-2, said reformed 3-chlorobutene-1 being pretreated by distilling a monochloroolefin stock selected from 3-chlorobutene-1, 1-chlorobutene-2 and a mixture thereof in the presence of at least one metallic chloride selected from the group consisting of cuprous chloride, zinc chloride, stannous chloride and bismuth chloride, thereby said 3-chlorobutene-1 in the stock being reformed and said 1-chlorobutene-2 in the stock being isomerized to 3-chlorobutene-1.

4. A process for producing 1,3-dichloroolefin, which comprises reacting a monochloroolefin selected from the group consisting of 3-chloropropene and 3-chlorobutene-1 with an alkylhypochlorite selected from the group consisting of tertiary butylhypochlorite and tertiary amylhypochlorite in the presence of a free radical reaction initiator.

3,285,979

CHLORINATION PROCESS

Edwin George Edward Hawkins, Lower Kingswood, England, assignor to The Distillers Company Limited, Edinburgh, Scotland, a British company

No Drawing. Filed June 7, 1965, Ser. No. 462,135
Claims priority, application Great Britain, May 2, 1962, 16,765/62
9 Claims. (Cl. 260—654)

1. A process for the production of 2,3,4-trichlorobut-1-ene which comprises passing chlorine gas into 1,3-dichlorobut-2-ene containing a free radical inhibitor, the temperature of the reaction mixture being maintained below 50° C.

3,285,980

PROCESS FOR THE PRODUCTION OF VINYL CHLORIDE

Heinrich Brachert, Oberlar, and Hans-Ewald Konermann, Siegburg, Germany, assignors to Dynamit Nobel, A.G., Troisdorf, Bezirk Cologne, Germany

Filed May 1, 1961, Ser. No. 113,586
Claims priority, application Germany, May 2, 1960, D 33,244
10 Claims. (Cl. 260—656)



1. In a process for the preparation of vinyl chloride by reaction of an acetylene-containing gas with hydrogen chloride, the steps to substantially completely convert the acetylene into vinyl chloride, of preheating a mixture of a gas containing acetylene and hydrogen chloride in an amount in stoichiometric excess to a temperature of from about 50–100° C., contacting the preheated gas mixture in a first reaction zone with mercury chloride supported on activated carbon as catalyst at a temperature between about 110 and 170° C. and thereafter contacting the gas mixture consisting essentially of the gaseous efflux of said first reaction zone in a second reaction zone with mercury vanadate supported on activated carbon as catalyst at a temperature between about 110 and 170° C.

3,285,981

PRODUCTION OF ALPHA, OMEGA-SUBSTITUTED ALKANES

Alexander F. MacLean, Corpus Christi, and George M. Burlingame, Houston, Tex., assignors to Celanese Corporation of America, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 14, 1963, Ser. No. 316,151
7 Claims. (Cl. 260—659)

1. The method of producing an alpha,omega-disubstituted alkane selected from the group consisting of alpha,omega-dichloroalkanes, alpha,omega-dibromoalkanes and alpha-omega-dicyanoalkanes which comprises reacting together at a pressure ranging from about 50 p.s.i. to about 10,000 p.s.i. (1) ethylene, (2) a source of ions selected from the group consisting of chlorine, bromine and cyanide, the ions derived from alkali metal halides, dihalides of calcium, magnesium and barium, and trihalides of aluminum, antimony and cerium, and (3) an inorganic symmetrical peroxygen compound selected from the group consisting of inorganic persulfates, inorganic perphosphates and inorganic percarbonates.

3,285,982

ISOMERIZATION PROCESS AND CATALYST THEREFOR

William G. Nixon, Westchester, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Mar. 10, 1964, Ser. No. 350,664
9 Claims. (Cl. 260—666)

1. A process for the conversion of a hydrocarbon selected from the group consisting of acyclic paraffins, naphthenes, olefins and alkylaromatic hydrocarbons, which comprises isomerizing said hydrocarbon in contact with a substantially anhydrous catalyst prepared by subjecting a phosphoric acid-containing composite to chemical reaction with hydrogen halide or ammonium halide at a temperature of from about 300° C. to about 600° C. to effect chemical combination of the halogen of said halide with the phosphoric acid portion of said composite.

3,285,983

PROCESS FOR THE HYDROGENATION OF TRANS, CIS-1,5-CYCLODECADIENE TO CIS-CYCLODECENE

Joseph T. Arrigo, Mount Prospect, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Feb. 4, 1965, Ser. No. 430,499
4 Claims. (Cl. 260—666)

1. A process for the preparation of cis-cyclodecene which comprises reacting hydrogen and trans,cis-1,5-cyclodecadiene in contact with a catalytic composite comprising platinum and alumina at a temperature of from about 0° C. to about 100° C. and at a hydrogen pressure of from about 200 p.s.i.g. to about 1000 p.s.i.g.

3,285,984

HYDROGENATION OF POLYCYCLIC AROMATICS

Anthony George Goble, Sunbury on Thames, Middlesex, England, assignor to The British Petroleum Company Limited, London, England, a British joint-stock corporation

No Drawing. Filed Dec. 30, 1963, Ser. No. 334,577
Claims priority, application Great Britain, Jan. 11, 1963, 1,339/63
6 Claims. (Cl. 260—667)

1. A process for selectively hydrogenating polycyclic aromatic hydrocarbons to achieve selectivity for partially hydrogenated hydrocarbons in excess of 75%, which comprises contacting the polycyclic aromatic hydrocarbon feedstock in a reaction zone with a hydrogenating catalyst consisting essentially of from 0.01% to 5% of a platinum group mental on a refractory support at a temperature of from 600° F. to 800° F., a pressure of from 400 p.s.i.g. to 2000 p.s.i.g., a liquid hourly space velocity of from 0.1 to 10 v./v./hr, in the presence of in excess of 1% wt. of sulphur by weight of feedstock processed, and in the presence of hydrogen, said hydrogen being present in a hydrogen to hydrocarbon mol ratio of from 2:1 to 100:1, and recovering a product having in excess of 75% of partially saturated hydrocarbons.

3,285,985

PROCESS FOR DEHYDROCYCLIZATION OF HYDROCARBONS

Robert E. Kline, Pittsburgh, and William C. Starnes, Butler, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed May 1, 1963, Ser. No. 277,292
6 Claims. (Cl. 260—673.5)

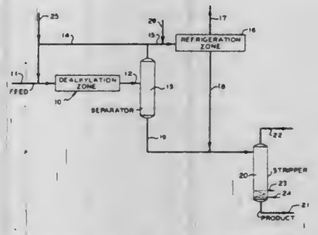
1. A process comprising contacting in the presence of hydrogen a hydrocarbon having an acyclic, unbranched chain of at least 6 carbon atoms under dehydrocyclization conditions with a catalyst consisting in major proportion of eta alumina and in minor proportion of chromia and at least one metal from the group consisting of sodium and potassium.

3,285,986

SEPARATION PROCESS

Miles L. Henderson, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Mar. 12, 1962, Ser. No. 179,003
9 Claims. (Cl. 260—674)



1. A dealkylation zone effluent separation process which comprises passing a dealkylation zone effluent from a dealkylation zone to a separation zone, withdrawing from said separation zone a vaporous stream, recycling a portion of said vaporous stream to said dealkylation zone, passing the remainder of said vaporous stream to a refrigeration zone, withdrawing from said separation zone a liquid stream, withdrawing from said refrigeration zone a vaporous stream, withdrawing from said refrigeration zone a liquid stream, combining said liquid streams withdrawn from said separation zone and said refrigeration zone, passing said combined liquid stream to the upper region of a stripping zone, withdrawing from said stripping zone a vaporous stream, and withdrawing from said stripping zone a liquid product stream.

3,285,987

PURIFICATION OF ANTHRACENE

Louis A. Joo, Johnson City, and Harvey J. Young, Elizabethton, Tenn., assignors to Great Lakes Carbon Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 8, 1965, Ser. No. 431,200
18 Claims. (Cl. 260—675)

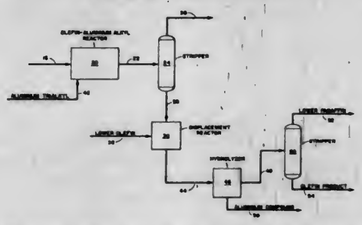
1. In the process for purifying crude anthracene containing 10 to 45 weight percent anthracene in a crude cake wherein the crude cake is subjected to solvent leaching by a liquid-solid extraction process with a solvent selected

from the group consisting of aromatic hydrocarbons, heterocyclic compounds, ketones, ethyl esters of saturated acids having less than four carbon atoms, and mixtures of these with each other and with other known anthracene cake extraction solvents to remove phenanthrene, carbazole and other impurities wherein at room temperature said solvent extraction process results in a large difference between purity and yield, the improvement of extracting the impurities at a lower temperature (T) in the range of 20° C. to −50° C. in combination with a ratio (R) of solvent to anthracene cake of 2:1 to 19:1 by weight so that percent yield (Y) approaches percent purity (P), R and T being so correlated that $.25<P^2Y<.73$.

3,285,988
PURIFICATION OF OLEFINS

Lyndon D. Boyer, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Oklahoma

Filed June 17, 1963, Ser. No. 288,264
9 Claims. (Cl. 260—677)



1. A process for recovering α olefin of at least 6 carbon atoms from a mixed fluid stream containing it which comprises:

(a) contacting said stream with trialkylaluminum in which at least one alkyl group contains from 2 to 4 carbon atoms under conditions effective to cause displacement of an alkyl group from said trialkylaluminum by olefin,

(b) separating the resulting admixture into a first stream comprising organoaluminum and a second stream comprising at least a portion of the remainder of said admixture,

(c) contacting said organoaluminum with an alkene of 2 to 4 carbon atoms under conditions effective to displace olefin from said organoaluminum, and

(d) separating the thus-displaced olefin as a product of the process.

3,285,989
ISOPRENE SODIUM TREATMENT PROCESS

John Samuel Brooks Wolfe, Broadview Heights, and Henry Kahn, Grafton, Ohio, assignors to Goodrich-Gulf Chemicals, Inc., Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed Dec. 28, 1964, Ser. No. 421,666
6 Claims. (Cl. 260—681.5)

1. In a process for treating diolefin monomers with sodium to remove polymerization inhibitors therefrom, including the steps of admixing a sodium metal dispersion of sodium metal in an organic dispersion medium with the crude diolefin monomer, retaining the dispersion and monomer in admixture while reacting the sodium with the sodium reactive inhibitors, and separating the unreacted sodium and sodium reaction products from the reaction mixture, the improvement wherein said diolefin monomer is flashed from said reaction mixture in a heated, moisture free organic liquid bath having a boiling point substantially above the flashing temperature of said diolefin monomer and being inert and unreactive with sodium metal, said diolefin monomer, and said sodium reaction products.

3,285,990
LIQUID PARAFFIN ISOMERIZATION PROCESS

Joe T. Kelly, Littleton, Colo., and William Schoen, Houston, Tex., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed May 8, 1964, Ser. No. 366,149
12 Claims. (Cl. 260—683.7)

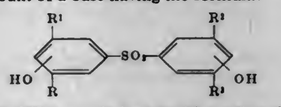
1. An isomerization process comprising: contacting, under liquid phase conditions, an isomerizable hydrocarbon feed selected from the class consisting of (a) paraffins having from 4 to 7 carbon atoms and (b) cycloparaffins having from 5 to 6 carbon atoms in the nucleus and a total of 6 to 9 carbon atoms, said feed containing 0–20 volume percent, based on said feed, of a cycloparaffin inhibitor having not more than 6 carbon atoms in the nucleus and a total of not more than 9 carbon atoms, and not more than 0.5 volume percent, based on said feed, of aromatic hydrocarbon; said contacting of said feed being carried out at a temperature from about 30° F. to about 160° F., for a time sufficient to obtain a substantial degree of isomerization of said feed; said contacting of said feed being carried out in the presence of a solid particulate catalyst consisting essentially of the product formed by reacting aluminum halide with surface hydroxyl groups of surface-hydroxyl-containing adsorbent solid and contacting the solid product of said reaction with hydrogen halide at a temperature in the range of about 60 to 200° F.; and said contacting of said feed being carried out in the presence of hydrogen halide, in an amount from about 1 to about 15 weight percent, based on said feed.

3,285,991
POLYEPOXIDES CURED WITH THE REACTION PRODUCT OF A DIHYDROXYDIPHENYLSULFONE, AN AMINE, AND AN ALDEHYDE

Ralph F. Sellers, Middlebush, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Mar. 26, 1963, Ser. No. 267,926
17 Claims. (Cl. 260—831)

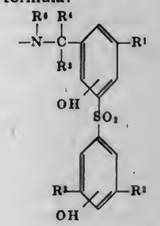
1. A curable polyepoxide composition comprising a polyepoxide having an oxirane epoxy equivalency of greater than one, a hardener for said polyepoxide, and a catalytic amount of a base having the formula:



wherein each OH group is in a position other than meta with respect to SO_2, R, R^1, R^2, and R^3 are selected from the group consisting of halogen, hydrogen, a monovalent hydrocarbon radical and a radical of the formula:



with the further limitation that at least one of said R, R^1, R^2 and R^3 is a radical of the above formula, wherein R^4, R^5, R^6 and R^7 are selected from the group consisting of hydrogen, monovalent hydrocarbon radicals and monovalent hydrocarbon radicals having as a substituent thereon a radical of the formula:



wherein R^1–R^6 are as previously defined and the position of each OH is as previously defined.

3,285,992
POLYESTERAMIDE PREPARED BY REACTING A CARBOXYL CONTAINING COPOLYMER WITH AN ISONITRILE, AND AN ALDEHYDE OR A KETONE

Ivar Ugi and Wulf von Bonin, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Mar. 26, 1963, Ser. No. 267,909
Claims priority, application Germany, Apr. 4, 1962, F 36,466
8 Claims. (Cl. 260—857)

1. Process for preparing polyester amides which comprises reacting at temperatures between −20 and +200° C. (a) a carboxyl group containing polymer having a molecular weight of between 300 and 200,000 and having a carboxyl group content of from 1 to 20% by weight, with (b) an isonitrile of at least 7 carbon atoms and having at least one isonitrile group, and with (c) a carbonyl group containing component selected from the group consisting of aldehydes and ketones, at least two of the addition components (a), (b) and (c) being bifunctional with respect to the defined functional groups.

3,285,993
TERTIARY AMINO POLYAMIDES AS DYEABILITY IMPROVERS FOR POLYESTER RESINS

Yoshiaki Inamoto and Takeo Shima, Iwakuni-shi, Yamaguchi-ken, Japan, assignors to Teijin Limited, Osaka, Japan, a corporation of Japan

No Drawing. Filed Nov. 19, 1963, Ser. No. 324,855
Claims priority, application Japan, Nov. 26, 1962, 37/51,972
8 Claims. (Cl. 260—857)

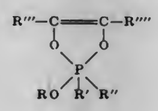
1. A process for producing modified polyesters which comprises mixing in molten state a linear polyester with at least one polyamide, the dicarboxylic acid component of said polyester being mainly composed of terephthalic acid, the glycol component of said polyester being mainly composed of an alkylene glycol, the diamine component of the polyamide being mainly composed of m-xylylenediamine and the dicarboxylic acid component of the polyamide being mainly composed of at least one aliphatic tertiary aminodicarboxylic acid in which the basic amino group is separated from either of the carboxyl groups by at least three carbon atoms.

3,285,994
PROCESS FOR THE CATALYTIC POLYMERIZATION OF POLYMERIZABLE UNSATURATED COMPOUNDS

Horst Leithauser, Marl, Germany, assignor to Chemische Werke Huls Aktiengesellschaft, Marl, Germany, a corporation of Germany

No Drawing. Filed Jan. 22, 1964, Ser. No. 339,356
Claims priority, application Germany, Apr. 2, 1963, C 29,544
2 Claims. (Cl. 260—861)

1. Process for the polymerization of esters of unsaturated acids, vinyl aromatic compounds and mixtures of esters of unsaturated acids with vinyl aromatic compounds which comprises carrying out the polymerization in the presence of 0.01 to 30% based upon the weight of polymerizable compound of a catalyst system which is the 1:1 adduct of an ester of an acid selected from the group consisting of phosphorous acid, phosphonous acid and phosphinous acid with α-diketones and having the general formula



in which R stands for a member selected from the group consisting of hydrogen, alkali metals, and alkyl, cycloalkyl, aryl and aralkyl groups which may be halogenated, R′ stands for a member selected from the group consisting of the alkyl, cycloalkyl, aryl, aralykyl and OR groups which may be halogenated, R″ stands for a member selected from the group consisting of the alkyl, cycloalkyl, aryl, aralkyl, O-alkyl, O-cycloalkyl, O-aryl and O-aralkyl groups which may be halogenated, R‴ and R⁗ each stands for a member selected from the group consisting of the alkyl, cycloalkyl, aryl and aralkyl groups which may be halogenated, and in which the pairs R′ and R″ and R‴ and R⁗ may belong to the same ring, at least one of R′, R″, R‴ and R⁗ being such a group as will assure that the compound of said general formula is an ester.

3,285,995
PROCESS OF PREPARING SELF-EXTINGUISHING RESINOUS POLYESTERS BASED UPON TETRABROMOPHTHALIC ANHYDRIDE

Richard C. Nametz, St. Louis, and Robert J. Nulph, Alma, Mich., assignors to Michigan Chemical Corporation, St. Louis, Mich., a corporation of Michigan

No Drawing. Filed May 22, 1963, Ser. No. 282,208
9 Claims. (Cl. 260—865)

1. In the process for the preparation of a polyester resin by reacting an acidic component comprising tetrabromophthalic anhydride with a basic component selected from the group consisting of di- and polyhydric alcohols the steps which comprise:

(a) mixing impure, crystalline tetrabromophthalic anhydride, containing catalytic acidity occluded in the crystals which causes the formation of cyclic ethers and acetals through the cyclization of the basic component selected from the group consisting of di- and polyhydric alcohols and which is produced by the bromination of phthalic anhydride in oleum, with small amounts of an acid neutralizing material selected from the group consisting of inorganic and organic bases and salts sufficient to effectively neutralize the catalytic acidity resulting from the oleum production of the tetrabromophthalic anhydride; and

(b) reacting the acidic component comprising the tetrabromophthalic anhydride containing the acid neutralizing material with the basic component selected from the group consisting of di- and polyhydric alcohols to form the polyester resin, the polyester resin being free from cyclic ethers and acetals produced through the cyclization of the basic component by the catalytic acidity in the oleum produced tetrabromophthalic anhydride and having a high molecular weight.

7. The process of claim 1 wherein the acid neutralizing material is sodium chloride.

3,285,996
POLYOLEFIN GRAFT COPOLYMER PROCESSING

Roland E. Gunderman, Clare, Irvin B. Kritzman, Kawkawlin, and James A. Moffitt, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 26, 1962, Ser. No. 247,338
5 Claims. (Cl. 260—878)

1. A method for the preparation of polyolefin-acrylic acid graft copolymer granular particles, the steps of the method comprising

providing a dispersion of a solvated polyolefin-acrylic acid graft copolymer wherein the polyolefin is a polymer of monoolefinic non-aromatic aliphatic hydrocarbons containing from 2 to 6 carbon atoms in an organic medium wherein the ratio of copolymer to organic medium is less than of about 1:3;

admixing said dispersion with water,

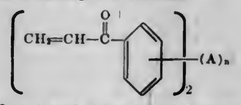
distilling from the water-organic-polymer dispersion the organic solvent until the organic solvent is present in a ratio of from about 2 to about 3 parts of solvent by weight per part of polymer;

agitating the water-organic-polymer dispersion to disperse the organic material within the water in a substantially uniform manner wherein each of the droplets of the organic material contains a quantity of polyolefin graft copolymer that is desired in the final individual particle;

distilling from the water-organic-polymer dispersion the remaining portion of the organic material and maintaining agitation until the ratio of the organic material to the polyolefin is less than 2:1 by weight, subsequently recovering granular graft copolymer particles.

3,285,997
COPOLYMERS OF CHLOROSTYRENE AND DIACRYLOPHENONES
Louis C. Rubens, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed July 17, 1963, Ser. No. 295,810
19 Claims. (Cl. 260—880)

13. A polymerizable monomeric mixture comprising a major portion of a chlorostyrene selected from the group consisting of orthochlorostyrene, metachlorostyrene, parachlorostyrene, 2,3-dichlorostyrene, 2,4-dichlorostyrene, 2,5 - dichlorostyrene, 3,4 - dichlorostyrene, 3,5 - dichlorostyrene, and mixtures thereof with a minor portion of a diacrylophenone having the formula:



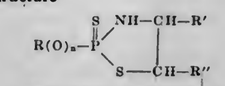
wherein *n* is 0 or 1 and A is a polyvalent member selected from the group consisting of oxygen, alkyl groups containing up to 10 carbon atoms, phenyl, phenoxy, dioxyphenyl, polyoxyphenyl, wherein said phenyl, dioxyphenyl and polyoxyphenyl groups may have ring substitution including straight chain alkyl groups containing from about 1–4 carbon atoms, chlorine groups and nitro groups.

3,285,998
PHOSPHORUS TRICHLORIDE-TRIMETHYLOLALKANE CHLORAL REACTION PRODUCTS
Millard S. Larrison, Livingston, N.J., assignor to Weston Chemical Corporation, Newark, N.J., a corporation of New Jersey
No Drawing. Filed Oct. 30, 1963, Ser. No. 319,940
7 Claims. (Cl. 260—920)

1. The organic reaction product of chloral with the phosphorus and chlorine containing organic polymer obtained by condensing phosphorus trichloride with a trimethylol alkane.

3,285,999
THIOAMIDOPHOSPHOLANES
Bernard Buchner, Westfield, and George G. Curtis, Elizabeth, N.J., assignors, by mesne assignments, to Continental Oil Company, a corporation of Delaware
No Drawing. Filed June 7, 1963, Ser. No. 286,159
7 Claims. (Cl. 260—936)

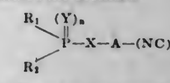
1. A substituted 1,3,2-thioamidophospholane having the general structure



wherein *n* is a digit selected from the group consisting of zero and one, wherein, when *n* is zro, R is selected from the group consisting of alkyl and phenyl groups and wherein, when *n* is one, R is selected from the group consisting of halogen-substituted alkyl, halogen-substituted phenyl and nitro-substituted phenyl groups, and wherein R′ and R″ are selected from the group consisting of H and CH_3, no more than one being CH_2.

3,286,000
PHOSPHORUS ACID ESTER-CONTAINING ISONITRILES
Ivar Ugi and Uwe Fetzer, Leverkusen-Schlebusch, Günter Unterstenhöfer, Opladen, and Wolfgang Behrenz, Wuppertal-Elberfeld, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
No Drawing. Filed Dec. 16, 1963, Ser. No. 330,595
Claims priority, application Germany, Dec. 17, 1962, F 38,571
11 Claims. (Cl. 260—940)

1. A compound of the formula



wherein R_1 and R_2 stand independently for a member selected from the group consisting of alkoxy having up to 6 carbon atoms, alkyl having up to 6 carbon atoms and the group

$$—X—A—(NC)_m$$

Y stands for oxygen or sulfur, *n* stands for zero or one, *m* stands for an integer from 1 to 4, X stands for oxygen or sulfur and A stands for a member selected from the group consisting of lower alkyl having up to 6 carbon atoms, phenyl and lower alkyl substituted phenyl.

3,286,001
REACTION PRODUCTS OF ORGANOPHOSPHORUS MONOHALIDES WITH MERCAPTOALKYLAMINES
Bernard Buchner, Westfield, and George G. Curtis, Elizabeth, N.J., assignors, by mesne assignments, to Continental Oil Company, a corporation of Delaware
No Drawing. Filed June 7, 1963, Ser. No. 286,153
3 Claims. (Cl. 260—947)

1. A di-(O-hydrocarbyl), N-(2-sulfhydroalkyl) phosphoramidothionate.

3,286,002
PREPARATION OF ORGANOPHOSPHORUS S-BENZYLTHIOALKYLAMINE DERIVATIVES AND THEIR DEBENZYLATION PRODUCTS
George G. Curtis, Elizabeth, and Bernard Buchner, Westfield, N.J., assignors, by mesne assignments, to Continental Oil Company, a corporation of Delaware
No Drawing. Filed June 7, 1963, Ser. No. 286,195
4 Claims. (Cl. 260—947)

1. The method of producing phosphorus compounds containing in the molecule at least two open chain (2-sulfhydroalkyl) radicals reacting in the first step with a phosphorus compound at least two mols of an S-benzylthioalkylamine per phosphorus atom of said phosphorus compound, said compound containing at least one pentavalent phosphorus atom and the grouping:

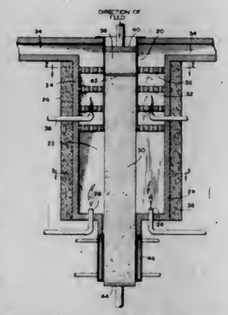


wherein X is a member of the class consisting of oxygen, sulfur and nitrogen bonded with two valencies to one phosphorus atom, said phosphorus compound being a member of the class consisting of P_2S_5, $PSCl_3$, $POCl_3$,

$RP(S)Cl_2$, $ROP(S)Cl_2$, $RSP(S)Cl_2$, $RP(O)Cl_2$
$ROP(O)Cl_2$, $R_2NP(O)Cl_2$, $R_2NP(S)Cl_2$, $RNHP(O)Cl_2$
$RNHP(S)Cl_2$, $(PNCl_2)_3$, and $(PNCl_2)_4$

the R being a hydrocarbyl radical and being a member of the class consisting of alkyl, aryl, alkaryl and aralkyl radicals, and in a subsequent step debenzylating the so formed compounds.

3,286,003
METHOD OF MANUFACTURING SHAPED CARBON BODIES
Vaughn L. Bullough and Robert M. Kibby, Florence, Ala., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Mar. 1, 1963, Ser. No. 262,130
13 Claims. (Cl. 264—29)



1. The method of producing a shaped article from carbonizable material comprising a mixture of carbonaceous aggregate and a thermosetting binder, including the steps of:

passing the carbonizable material through a heated shaping zone,

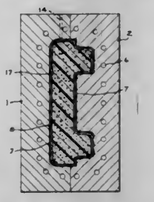
confining said material in the desired configuration during its passage through said zone,

heating the confined material to a temperature less than that required to carbonize the binder but high enough to set the binder and form a substantially rigid article,

transferring said article from said shaping zone to a baking zone, in which it is substantially unconfined, to complete the carbonization thereof, and

removing and cooling the carbonized article.

3,286,004
METHOD OF MANUFACTURING A FOAM PLASTIC ARTICLE
George S. Hill and Kenneth R. Davis, Anchorage, and Robert O. Shuck and Kevork A. Torossian, Louisville, Ky., assignors to General Electric Company, a corporation of New York
Filed Apr. 30, 1964, Ser. No. 363,841
3 Claims. (Cl. 264—45)



1. The method of manufacturing an article comprising a fiber-reinforced plastic shell and a resin foam core, which method comprises:

applying to a mold surface adapted to form a mold cavity with a sprayed-on coating comprising reinforcing fibers and a thermosetting resin binder to form an uncompacted mat of fibers and binder,

prior to curing of said binder, spraying onto the exposed surface of said mat a flexible film of webbing lacquer,

bringing said mold members together to form a closed mold cavity,

introducing into said cavity a foam forming resin mixture adapted during expansion thereof to form a resin foam core to exert a pressure on said film thereby compacting said mat,

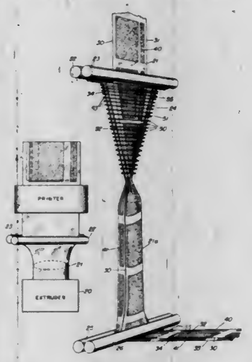
said film preventing penetration of said foamable resin into said mat during foaming thereof,

and finally removing the article so formed from the mold cavity.

ERRATUM

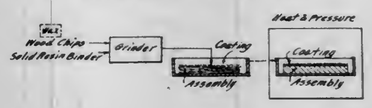
For Class 264—70 see:
Patent No. 3,285,442

3,286,005
METHOD OF MAKING POLYOLEFIN BAGS
Charles A. Cook, Tyler, Tex., assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
Filed Apr. 19, 1963, Ser. No. 274,120
10 Claims. (Cl. 264—95)



1. The method of manufacturing a polyolefin bag which includes the steps of drawing a tube of polyolefin material, flattening said tube on a first and second crease line, reinflating said tube, and reflattening said tube on crease lines removed from said first and second crease lines.

3,286,006
METHOD OF MAKING CHIPBOARD INVOLVING GRINDING TOGETHER A FIBROUS FILLER AND SOLID RESIN
David Logan Annand, 211 Coastal Chambers, 172 Buckingham Palace Road, London, England
Filed Feb. 28, 1963, Ser. No. 261,831
Claims priority, application Great Britain, June 21, 1962, 24,013/62; Aug. 7, 1962, 30,261/62
13 Claims. (Cl. 264—113)



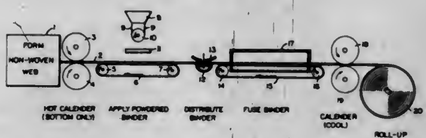
1. A method of making a chipboard comprising the steps of preparing an assembly of wood chips and a resin binder, grinding together particles of a fibrous filler, hav-

ing a mesh number of not less than 20, with solid particles of a resin binder, whereby the solid particles of resin binder are, after grinding, substantially no larger than those of the filler, coating at least one surface of said assembly with the resulting ground mixture, and curing the coated assembly under pressure so as to form a chipboard having at least one substantially smooth surface.

3,286,007
PROCESS OF MANUFACTURING A POLYOLEFIN FIBER-CONTAINING NON-WOVEN FABRIC

Robert Campbell Wilkie, Millis, Albert Gerard Hoyle, Lowell, and Leo John De Roche, Medfield, Mass., assignors to Ludlow Corporation, Needham Heights, Mass., a corporation of Massachusetts

Filed June 25, 1965, Ser. No. 466,982
10 Claims. (Cl. 264—119)

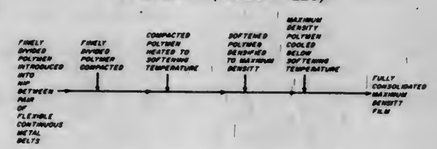


1. A process comprising the steps of:
(a) forming a non-woven web the fiber content of which consists of at least 25 weight percent of a thermoplastic polymer fiber uniformly distributed therethrough;
(b) heating one surface of said web, smoothing, compacting and densifying the fiber content thereof and fusing the thermoplastic fibers at said surface into a loose porous fiber matrix, while leaving the balance of the fibers in the web in a relatively expanded, interlocked but unbonded state;
(c) distributing a thermo-responsive resin binder within the interstices of said web, said resin binder having a melting point below the melting point of said thermoplastic polymer fiber;
(d) heating said web to a temperature sufficient to melt said resin binder but below that temperature at which said thermoplastic polymer fiber melts; and
(e) compacting said web to impress the fibers thereof into said resin binder while simultaneously cooling said web to solidify said resin binder.

3,286,008
METHOD OF MOLDING INTRACTABLE POLYMERS

George Edward Power, Kenneth Donald Meyers, and Robert Emil Fremont, Cincinnati, Ohio, assignors to Formica Corporation, Cincinnati, Ohio, a corporation of Delaware

Filed May 17, 1965, Ser. No. 456,502
10 Claims. (Cl. 264—126)



1. A continuous method for making a fully consolidated, maximum density, plastic sheet comprising continuously introducing a non-sintered finely-divided polymeric thermoplastic material selected from the group consisting of intractable polymers and heat sensitive polymers into the nip between a pair of flexible continuous metal belts, heating the material at least to the softening temperature of said polymeric material in a first heating zone, continuously moving the heated material to a second zone while densifying the material, cooling the material in the densified state to a temperature below the softening temperature of the polymeric material, while continuously removing the densified material from the densifying zone and cooling the sheet thus produced to room temperature wherein said intractable polymers have a molecular weight of at least about 100,000 and a melt index not exceeding about 1.4 at 22 lbs./10 min. at 190° C. and wherein said heat sensitive polymers undergo an irreversible measure of degradation of at least one of their physical properties when subjected to at least their softening temperatures for a prolonged period of time.

3,286,009
METHOD OF IMPROVING THE SURFACE PROPERTIES OF POLYPROPYLENE FILM

Hirosuke Yumoto, Takeshi Hashimoto, Shinji Tanaka, Tamotsu Ito, Yasuhiro Kojima, Yoshinobu Shibata, Takuo Adachi, Yutaka Morita, and Tsutomu Ebihara, all of Shizuoka-ken, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

Filed July 18, 1963, Ser. No. 296,125
Claims priority, application Japan, July 18, 1962, 37/29,290; July 30, 1962, 37/32,106; Aug. 28, 1962, 37/35,654; Oct. 2, 1962, 37/42,678; Nov. 27, 1962, 37/52,060; Dec. 19, 1962, 37/57,632; Dec. 27, 1962, 37/57,947; Dec. 28, 1962, 37/59,196, 37/59,198, 37/59,199
7 Claims. (Cl. 264—129)

1. A method of improving the surface properties of a polypropylene film which comprises first stretching a polypropylene film biaxially to orient said film until its planar orientation index becomes not less than about 2×10^{-3} and its axial orientation index becomes not over about 10×10^{-3} and thereafter subjecting the surface of said film to an oxidation treatment, said planar orientation index and said axial orientation index denotes birefringence expressed as $\frac{1}{2}(\beta+\gamma)-\alpha$ and $\gamma-\beta$, respectively, whereby $\frac{1}{2}(\beta+\gamma)-\alpha$ is the measure of the planar orientation of the film and whereby $-\beta$ is the measure of the equilibrium of the longitudinal and transverse orientations within the film.

3,286,010
PROCESS FOR SEALING TUBES

Henri Popko van Groningen, Essendonkstraat 6, Essen, near Antwerp, Belgium

Filed Apr. 23, 1963, Ser. No. 275,027
Claims priority, application Belgium, May 18, 1962, 617,812
3 Claims. (Cl. 264—242)



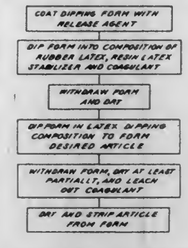
1. A process for sealing a deformable hollow tube having an open end and a head provided with screw threads, said process comprising the steps of firmly mounting the tube upon a support, sealing said head, covering said head with a mold, whereby said mold constitutes a temporary seal for said head and said head constitutes a core for said mold, a space being provided between said head and said mold, filling said space with a molding composition to form a cap upon said head, removing said mold and removing the tube carrying the cap from said support.

3,286,011
METHOD OF MAKING GLOVES

John J. Kavalir, Two Mountains, Quebec, Canada, and Everett V. Anderson, Bethany, Conn., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey

Filed Mar. 18, 1964, Ser. No. 352,988
8 Claims. (Cl. 264—306)

1. A method of making an elastomeric article having a slippery surface comprising in combination the steps of providing a dipping form for the article, the dipping form having a non-adherent surface, dipping the form in a solution of a polyvalent metal salt coagulant for latex, drying the form, dipping the form in an elastomer latex dipping formulation to deposit a desired thickness of elastomer on the form by the action of the coagulant thereon, withdrawing the form and drying partially, leaching out the coagulant, dipping the form in a mixture of elastomer latex and latex of a resin, drying the resulting



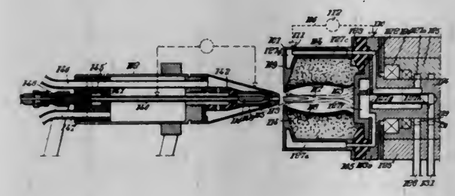
adherent elastomer-resin film on the elastomeric article, and stripping the resulting composite article from the form.

ELECTRICAL

3,286,012
APPARATUS FOR TREATING MATERIALS AT HIGH TEMPERATURES

Marc Foex, Paris, France, assignor to Centre National de la Recherche, Scientifique, Paris, France

Filed Mar. 31, 1965, Ser. No. 444,206
Claims priority, application France, Apr. 11, 1963, 931,314; Apr. 3, 1964, 969,702; June 3, 1964, 976,833
27 Claims. (Cl. 13—1)

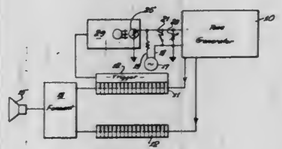


1. An apparatus for treating material at high temperature, comprising: a support; a chamber mounted in said support so as to be rotatable about the chamber longitudinal axis and rotating means to rotate said chamber; said chamber having a hollow central region for receiving a mass of material which under heat produces a melt conductive of the electricity and partly ionized vapors; and at least one axial inlet opening in communication with said central region; and material heating means disposed in proximity to said opening; the improvement wherein said chamber is divided into at least two electrically conductive portions which are longitudinally displaced with respect to one another, and at least one electrically insulating portion rigidly connected between said conductive portions so as to insulate them from one another; and wherein said apparatus further comprises a source of electrical energy connected between said conductive portions so as to create a potential difference therebetween which permits the production of an electric heating current which extends between said conductive portions and through said central region of said chamber, said current flowing along a path in said region constituted by the ionized vapors and the melt formed, under the action of said rotating means in molten layers of the material being treated created in said region by the heat initially produced by said material heating means.

3,286,013
ELECTRONIC VIBRATO DEVICE WITH PLURAL MANUALS

John R. Brand, Northridge, and Bradley J. Plunkett, Van Nuys, Calif., assignors, by mesne assignments, to Warwick Electronics Inc., Chicago, Ill., a corporation of Delaware

Filed June 17, 1963, Ser. No. 288,270
10 Claims. (Cl. 84—1.25)



1. In an electrical musical instrument utilizing a tone generator and a playing key pressable for causing the output of the tone generator to be effective upon an audio system;
a vibrato oscillator connected to provide a constant vibrato effect upon said tone generator;
modifying means for rendering said effect null followed by a gradual restoration of full vibrato effect; and
control means operable by pressing said key for initiating operation of said modifying means.

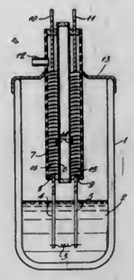
3,286,014
CRYOSTAT WITH COOLING MEANS

John Eric Charles Watts Williams, Wallingford, England, assignor to United Kingdom Atomic Energy Authority, London, England

Filed Feb. 24, 1964, Ser. No. 346,928
Claims priority, application Great Britain, Mar. 1, 1963, 8,262/63
9 Claims. (Cl. 174—15)

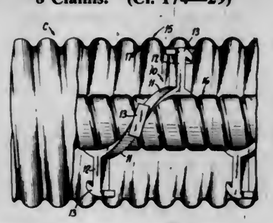
1. In a cryostat containing a cryogenic liquid, an electrical connector for supplying current to a current utilization device immersed in said cryogenic liquid, comprising, two concentric cylinders made of electrically and thermally insulating material, and at least one electrically conducting strip edge-wound between said cylinders to

define therewith at least one helical duct through which gas evaporating from said cryogenic liquid leaves the



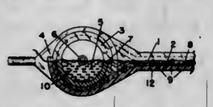
cryostat and in so doing flows in heat exchange relationship with said strip.

3,286,015
COAXIAL HIGH FREQUENCY CABLE AND INSULATING SPACER
Helmut Hildebrand and Alfred Staschewski, Langenhagen, Hannover, Germany, assignors to Hackethal Draht- und Kabel-Werke Aktiengesellschaft, Hannover, Germany
Filed Aug. 21, 1964, Ser. No. 391,094
Claims priority, application Germany, Aug. 22, 1963, H 50,080
8 Claims. (Cl. 174—29)



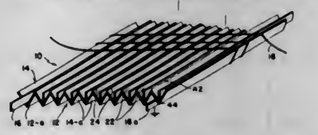
1. A high frequency cable comprising a tubular outer conductor, said outer conductor being corrugated to provide alternating crest and trough portions along the length thereof, an inner conductor coaxially related to said outer conductor, and dielectric spacer means between said conductors, said spacer means comprising a continuous helically extending portion in contact with the outer surface of said inner conductor and radially extending portions spaced along the length of said continuous portion, each of said radially extending portions including at the outer end thereof a portion of a length sufficient to abut at least one crest portion of said outer conductor.

3,286,016
SELF-GREASING INSULATOR
William C. Gregory, 520 N. Burris Ave., Compton, Calif.
Filed Oct. 26, 1964, Ser. No. 407,623
6 Claims. (Cl. 174—30)



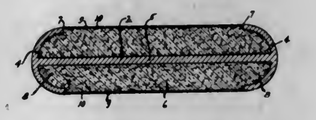
1. A self-greasing insulator embodying an elongated tubular electrically insulated connecting member, said connecting member including a plurality of holes along its length extending from the interior to the exterior thereof, a sealed terminal connected to one end of said connecting member thereby closing said end, an open terminal connected to the other end of said connecting member and containing a hollow reservoir which communicates with the interior of said connecting member, said open terminal having a normally closed access passage opening into said reservoir for the admission of grease and air thereto, and grease and air contained in said reservoir, said grease being of such quantity and viscosity that it will flow from said reservoir into the interior of said connecting member and out said plurality of holes therein onto the exterior surface of said conductor when the air pressure in said reservoir increases due to an increase in temperature and wherein ambient air enters said reservoir through said access passage when the air pressure therein decreases due to a decrease in temperature of said conductor.

3,286,017
MULTIPLE CONDUCTOR CABLE AND METHOD OF MAKING IT
Ralph R. Batcher, 240—02 42nd Ave., Douglaston, N.Y.
Filed Mar. 3, 1964, Ser. No. 349,540
10 Claims. (Cl. 174—36)



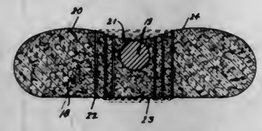
1. A multi-conductor cable comprising
a sheet of insulating film material folded into pleated form to proivde a plurality of parallel pockets between folds of predetermined depth;
and a plurality of electrically conductive elongate ribbons disposed respectively one in each pocket and insulated from each other by the film material.

3,286,018
POWER CABLE CONDUCTOR FOR REDUCING WINDAGE
Joseph R. McLoughlin, Burnt Hills, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 24, 1964, Ser. No. 420,977
7 Claims. (Cl. 174—42)



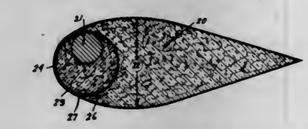
2. An apparatus for reducing the effects of windage and corona loss on electrical transmission lines comprising
an air foil shaped conductor having a cross-sectional length greater than its cross-sectional height,
trailing edges on said conductor at both ends of said cross-sectional length so that one of said trailing edges is always positioned on the opposite side of the conductor from where the wind is coming, and with the cross-sectional length of said conductor being in a plane parallel to the direction of the wind for the wind to pass smoothly around the conductor in a streamlined manner to reduce the effects of windage thereon,
a central member interconnecting said trailing edges to provide torsional rigidity to said conductor,
conducting means interconnecting said edges for providing a large, smooth conducting circumference for reducing corona loss on the conductor.

3,286,019
POROUS CONDUCTOR JACKET
Joseph R. McLoughlin, Burnt Hills, and Wendell T. Starr, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed Dec. 24, 1964, Ser. No. 421,007
6 Claims. (Cl. 174—42)



1. An apparatus for reducing the effect of corona loss and windage on an electrical conductor comprising
an air aerodynamic foil affixed to the conductor in a substantially horizontal plane,
trailing edges on said air foil at both ends thereof positioned to reduce the effects of windage thereon,
an upper surface of said air foil positioned in a horizontal plane, and
means for preventing moisture formed on said upper surface from dripping over said edges and interfering with the effective operation of the air foil.

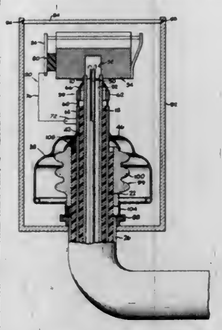
3,286,020
COVERING FOR POWER LINE CONDUCTORS TO REDUCE WINDAGE, CORONA LOSS AND RADIO FREQUENCY INTERFERENCE
Joseph R. McLoughlin, Burnt Hills, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 24, 1964, Ser. No. 421,017
13 Claims. (Cl. 174—42)



1. An apparatus for reducing the effects of fluid currents and corona loss on an electrical conductor comprising
an air foil of nonconducting material attached to the conductor,
a trailing edge on said air foil having a streamlined shape so that air passes smoothly over the surface of the air foil and the conductor to reduce the effects of windage thereon, and
means on a surface of said air foil, electrically connected to the conductor, to increase the effective circumference of the conductor and thereby reduce corona losses thereon.

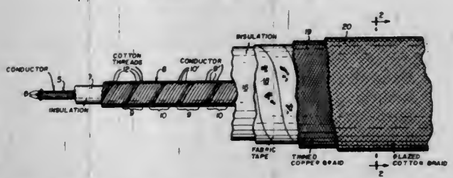
3,286,021
CABLE TERMINAL FOR USE WITH ELECTRON GUN APPARATUS
George Robert Koch, Los Altos, Calif., assignor to Temescal Metallurgical Corporation, Berkeley, Calif., a corporation of California
Filed June 1, 1965, Ser. No. 460,436
7 Claims. (Cl. 174—80)

1. A terminal for a high voltage coaxial cable adapted for supplying power to a filament and an accelerating electrode of an electron gun disposed in a high vacuum electron furnace which cable includes a central conductor, a second tubular conductor disposed concentrically about said central conductor and insulated therefrom, a sleeve of insulation disposed on said second tubular conductor, and a third tubular conductor disposed about said sleeve and terminating in spaced relation to the end of said cable, said terminal comprising means for connecting said central conductor and said second tubular conductor to the filament of said electron gun in vacuum sealed relationship therewith, and a generally cup-shaped vapor shield of conductive material having



an aperture in its base through which said second tubular conductor and said central conductor extend, said shield being in electrical communication with said second tubular conductor and substantially enclosing said insulating sleeve in spaced relationship to said sleeve and said third tubular conductor.

3,286,022
INSULATED X-RAY CABLES
Andrew Hvizd, Jr., Derby, Conn., assignor to The Kerite Company, Seymour, Conn., a corporation of Connecticut
Filed Feb. 6, 1964, Ser. No. 342,945
4 Claims. (Cl. 174—105)



1. A flexible insulated high voltage X-ray cable comprising a central core of metal of high conductivity, a thin layer of insulation surrounding said core, a substantially flat serving on said layer of insulation including groups of parallel, contiguous strands of metal of high conductivity and insulating thread separating the respective groups of contiguous strands from each other, a thick layer of insulation surrounding said serving, and a covering for said thick layer of insulation.

3,286,023
LINE TIE
Robert A. Eucker, Brooklyn, Ohio, assignor to Preformed Line Products Company, Cleveland, Ohio, a corporation of Ohio
Filed May 17, 1965, Ser. No. 456,390
7 Claims. (Cl. 174—173)

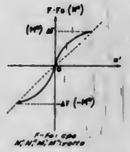
2. The combination comprising:
(a) an electrical conductor;
(b) a support member which is adapted to be supported at one end by external means and having a saddle-like groove at its other end extending normal to the general direction of the conductor, said support member further having an annular recess intermediate its ends; and

(c) an appliance comprising at least one linear element preshaped to include an intermediate portion substantially in the configuration of a bight with its legs return bent at a pair of return bends about a line substantially normal to its axis of symmetry, said



intermediate portion engaging in said saddle-like groove and said annular recess of said mounting device and said intermediate portion crossing over said electrical conductor to bind said electrical conductor tightly in said annular recess.

3,286,024
NON-LINEAR VIDEO-SIGNAL MODULATING SYSTEMS WITH A CHARACTERISTIC "INSTANTANEOUS FREQUENCY DEVIATION VS. PRE-EMPHASIZED SIGNAL LEVEL" HAVING A DECREASING SLOPE WITH INCREASING ABSOLUTE VALUE OF SIGNAL LEVEL
Gérard Melchior, Levallois-Perret, France, assignor to Compagnie Francaise de Television, a corporation of France
Filed Mar. 5, 1963, Ser. No. 263,059
Claims priority, application France, Mar. 12, 1962, 890,746
11 Claims. (Cl. 178—5.2)



1. A system for transmitting video signals, said system comprising:

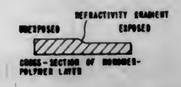
a transmitter comprising: means for pre-emphasizing said video signals through emphasizing the higher frequencies thereof; a non-linear system, coupled to said pre-emphasizing means for frequency modulating the pre-emphasized signals on a wave, with a characteristic "instantaneous frequency deviation versus pre-emphasized signal level" presenting a slope decreasing with the absolute value of said level increasing, said non-linear system having an output; and means, coupled to said output, for transmitting the frequency modulated wave delivered on said output;

and a receiver comprising means for receiving said frequency-modulated wave: a non-linear system, coupled to said receiving means, for deriving said pre-emphasized signals from said frequency modulated wave; and de-emphasizing means, coupled to said last mentioned non-linear system, for deriving said video signals from said pre-emphasized signals.

3,286,025
RECORDING PROCESS USING AN ELECTRON BEAM TO POLYMERIZE A RECORD
Henry Gilbert Ingersoll, Hockessin, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Oct. 25, 1962, Ser. No. 232,991
16 Claims. (Cl. 178—6.6)

1. A process which comprises

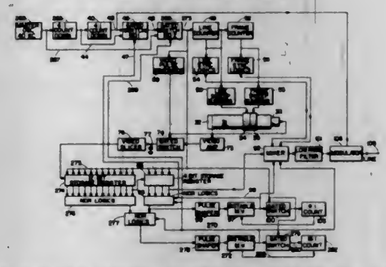
(1) recording information by patternwise-exposing to an electron beam an image-recording polymerizable layer comprising at least one non-gaseous ethylenically unsaturated compound having a boiling point above 100° C. at normal pressure and being capable of forming a polymer of high molecular weight by addition polymerization, to form an image, pattern-



wise, comprising a crosslinked addition polymer in the patternwise exposed areas of said member and

(2) retrieving said information physically from the exposed and polymerized image areas and remaining unexposed background areas of said exposed member.

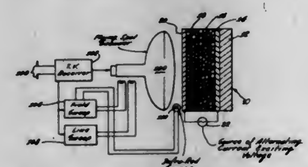
3,286,026
TELEVISION BANDWIDTH REDUCTION SYSTEM
Weldon W. Greutman, Hicksville, Ohio, and Nelson E. Hoag, Fort Wayne, Ind., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Oct. 24, 1963, Ser. No. 318,682
22 Claims. (Cl. 178—6.8)



1. A television system for transmitting a picture comprising: camera tube means having means for converting an optical image into a corresponding electrical characteristic pattern and rectilinear scanning means for converting said pattern into a time-based video signal variable between first and second levels respectively; sweep voltage generating means coupled to said scanning means; first and second sweep timing means respectively having relatively slow and fast rates; means for selectively coupling said timing means to said sweep voltage generating means for actuating the same at said slow and fast rates, respectively; means for modulating a carrier signal with said video signal to provide a transmission signal; means for sensing the level of said video signal and for providing a control signal in response to a predetermined amount of redundant video signal information of a predetermined one of said first and second levels; means coupling said sensing means to said selective coupling means for actuating the same in response to said control signal to couple said second sweep timing means to said sweep voltage generating means; means for providing an indicating signal in said video signal in response to said control signal; means for demodulating said transmission signal to recover said video signal; means for separating said indicating signal from said recovered video signal and for providing another control signal in response thereto; signal-to-image converting means coupled to said demodulating means and including another rectilinear scanning means for converting said recovered video signal into a optical image; another sweep voltage generating means coupled to said other scanning means; third and fourth sweep timing means respectively having said slow and fast rates; another means for selectively coupling said third and fourth timing means to said other sweep voltage

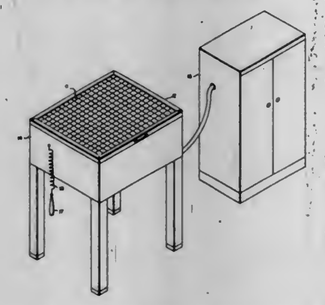
generating means for actuating the same at said slow and fast rates, respectively; and means coupling said separating means to said other selective coupling means for actuating the same in response to said other control signal to couple said fourth sweep timing means to said other sweep voltage generating means.

3,286,027
ELECTRO-LUMINESCENT PHOSPHORESCENT DYNAMIC DISPLAY
Richard A. Martel, Sylmar, Calif., assignor to General Precision, Inc., a corporation of Delaware
Filed Jan. 24, 1964, Ser. No. 339,945
10 Claims. (Cl. 178—7.5)



1. A dynamic display system including: a display cell including electro-luminescent material which luminesces when subjected to an electric field, phosphorescent material having an electric impedance which varies in accordance with the incident radiation connected in series with said electro-luminescent material, and means for introducing an electric field across said electro-luminescent material and said phosphorescent material to excite said electro-luminescent material to luminesce at an intensity determined by the electric impedance of said phosphorescent material; means for causing a succession of dynamic radiation images to be incident upon said phosphorescent material to excite the same and produce variations in the electrical impedance thereof from a particular value; and means for returning the electrical impedance of said phosphorescent material to said particular value between successive ones of said radiation images.

3,286,028
TRACING DEVICE
John W. Gray, Pleasantville, and Arvid W. Jacobson, Millwood, N.Y., assignors to General Precision, Inc., a corporation of Delaware
Filed Jan. 25, 1963, Ser. No. 253,953
7 Claims. (Cl. 178—18)



1. A tracing device including a hand-propelled stylus for providing two varying voltages the instantaneous values of which correspond to the instantaneous coordinate location of the tracing stylus comprising,

an interlaced wire mesh having a plurality of horizontal and vertical conductors insulated from each other, each of said conductors having a plurality of spaced exposed uninsulated areas on one surface of the mesh,

first resistive means electrically interconnecting the horizontal conductors,

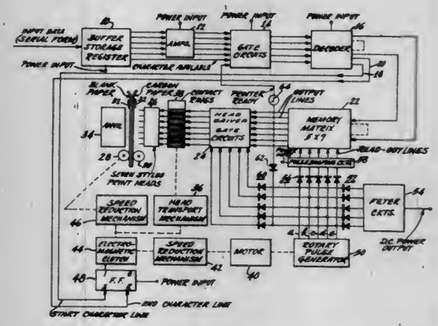
second resistive means electrically interconnecting the vertical conductors,

first means for applying a voltage to the first resistive means,

second means for applying a voltage to the second resistive means,

and means associated with said stylus for simultaneously contacting one exposed area of at least one horizontal and one vertical conductor to establish circuit connections for providing two voltages which correspond to the coordinate location of the stylus and its associated means.

3,286,029
INFORMATION TRANSLATING APPARATUS
Elvin D. Simshauser, Merchantville, and Ross M. Carrell, Haddonfield, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed Dec. 3, 1962, Ser. No. 241,756
8 Claims. (Cl. 178—30)



1. Apparatus for printing a message represented by successively presented input characters of digital information comprising

(a) decoder means responsive to said characters of digital information and having a plurality of output lines each of which is energized in response to a different input character of digital information,

(b) a memory matrix having a plurality of memory elements arranged in a plurality of columns and rows,

(c) memory matrix input means coupled to said decoder means output lines for conditioning different ones of said memory elements which describe the character corresponding to an energized one of said lines,

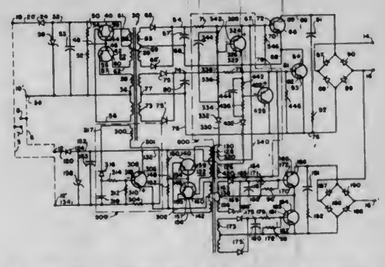
(d) a printing device having a plurality of electromagnetic units each corresponding to a different one of said matrix rows and each including a stylus for forming a dot of a pattern of dots representing said characters,

(e) a rotary pulse generator for repetitively generating sequences of electrical pulses corresponding in number at least to the number of said columns in said memory matrix,

(f) a plurality of gate circuits each having a pair of inputs and an output, said output and one of said inputs of different ones of said gate circuits, respectively being connected to corresponding ones of said printing device units and said matrix rows,

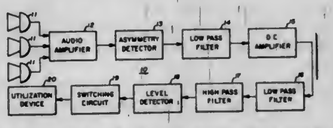
(g) means for applying each electrical pulse simultaneously to the other of each of said gate circuit inputs,
(h) means for applying said pulses to said memory matrix for successively reading out said matrix column by column, into said gate circuits for enabling those of said gate circuits having a conditioned one of said elements of said matrix connected thereto, and
(i) means responsive to the last of each of said sequences of pulses for applying a next succeeding one of said characters to said decoder means.

3,286,030
SOLID STATE RELAY
Hillard E. Puckett and John L. Matthews, Orlando, and James C. Henderson, Winter Park, Fla., assignors to Ortronix, Inc., Orlando, Fla., a corporation of Florida
Filed Nov. 27, 1963, Ser. No. 329,337
22 Claims. (Cl. 178—70)



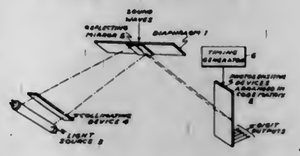
1. A relay which comprises a first input, a second input, a first transistorized oscillator having an input coupled to said first relay input and solely energizable by a signal on said first relay input, a second transistorized oscillator having an input coupled to said second relay input and solely energizable by a signal on said second relay input, a first and second rectifier connected respectively to said first and second transistorized oscillators, a first and second filter connected respectively to said first and second rectifiers and a first and second impedance device having a high and low impedance state connected in controllable relationship to an output of said first and second filters, respectively.

3,286,031
VOICE ACTUATED DEVICE
David A. Geddes, San Jose, Calif., assignor to Alto Scientific Co., Inc., Palo Alto, Calif., a corporation of California
Filed Mar. 4, 1963, Ser. No. 262,407
8 Claims. (Cl. 179—1)



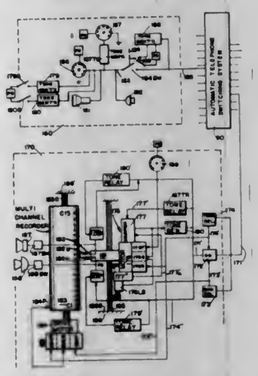
1. A voice actuated device for providing a trigger signal in response to selected voice sound comprising:
a transducer means for converting acoustic vibrations to a corresponding electrical signal;
amplitude peak detector means responsive to the positive and negative portions of said electrical signal and operative to derive a positive and a negative envelope peak signal;
means for comparing the positive and negative envelope peak signals and for developing an asymmetry signal commensurate with their difference; and
filter means responsive to said asymmetry signal and operative to develop said trigger signal, said filter means being selected to pass only those portions of said asymmetry which correspond to said selected voice sounds.

3,286,032
DIGITAL MICROPHONE
Elmer Baum, River Edge, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed June 3, 1963, Ser. No. 284,954
11 Claims. (Cl. 179—1)



1. A microphone to convert sound waves into a given digital code comprising:
first means integral with said microphone having motion imparted thereto by said sound waves, said motion being proportional to the amplitude of said sound waves; and
second means integral with said microphone responsive to said motion of said first means to produce a digital code output according to said given digital code representative of the amplitude of said sound waves.

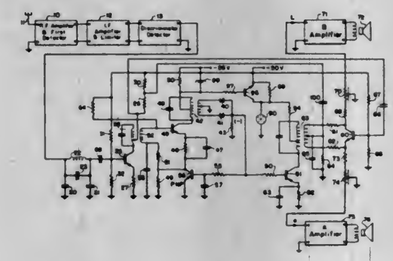
3,286,033
APPARATUS FOR MAGNETICALLY RECORDING AND REPRODUCING AT A REMOTE STATION OVER A TELEPHONE LINE
Jerome H. Lemelson, 8B Garfield Apts., Metuchen, N.J.
Filed Aug. 30, 1960, Ser. No. 56,331
17 Claims. (Cl. 179—6)



1. Magnetic recording and reproduction apparatus comprising in combination:
(a) a signal generating station including means for generating a plurality of control signals and information signals,
(b) a switching system including means for communicatively connecting said signal generating station with a receiving station which includes a magnetic recorder and reproducing unit having an input which is operatively connectable to the input of said receiving station,

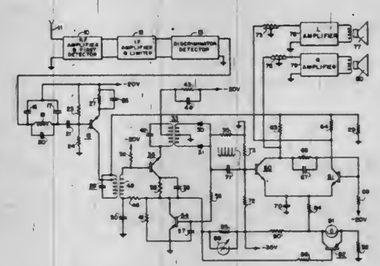
(c) means at said generating station for operatively connecting an output circuit thereof to the input of said receiving station,
(d) said magnetic recorder comprising a magnetic recording unit having a plurality of recording channels and having further means selectively operable in response to a signal transmitted to said receiving station from said sending station for selectively recording a signal onto a predetermined of said channels and means for selectively reproducing signals from a selected of said channels,
(e) said selective recording means including a controller having switching means for effecting selective recording,
(f) said switching means being controllable by relay means which is responsive to signals of predetermined frequency or tone,
(g) said relay means being operatively connected to the input to said receiving station and being responsive to operate said switching means upon receipt of a predetermined signal from said sending station,
(h) means at said sending station for generating on the completed circuit a predetermined tone signal to which said relay means is responsive whereby to effect the operation of said relay means at said receiving station for recording signals onto a predetermined channel of said magnetic recorder prior to the generation at said sending station of an information signal,
(i) and means controlled by said sending station for disconnecting the circuit to said receiving station after the transmission of an information signal thereto and its recording onto a predetermined recording channel of said magnetic recorder.

3,286,034
STEREO PILOT CHAIN CONTROL TRANSISTOR CIRCUIT
Jouke N. Rypkema, Villa Park, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Sept. 24, 1964, Ser. No. 398,949
8 Claims. (Cl. 179—15)



1. In a frequency-modulation receiver for utilizing a monaural signal or a stereophonic signal which includes a pilot tone of a predetermined frequency, a pilot-tone chain comprising:
an input amplifier tuned to said pilot tone;
a signal source responsive to said tone for deriving a signal for demodulating said stereophonic signal;
a variable-gain transistor amplifier having an emitter circuit and coupling said source to said input amplifier;
a high impedance included in said emitter circuit establishing a low-gain quiescent operating condition for said variable-gain amplifier in the presence of said monaural signal;
a feedback circuit coupling said source to the input of said variable-gain amplifier to constitute therewith a regenerative circuit;
and means in said feedback circuit and responsive to the translation of said tone for effectively reducing the impedance of said emitter circuit to change the operating condition of said variable-gain amplifier from said low-gain quiescent state to a condition of high gain in the presence of said stereophonic signal.

3,286,035
MULTIVIBRATOR DETECTOR FOR STEREOPHONIC FREQUENCY MODULATION RECEIVERS
Fleming Dias, Chicago, and Jouke N. Rypkema, Villa Park, Ill., assignors to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Sept. 24, 1964, Ser. No. 398,950
11 Claims. (Cl. 179—15)

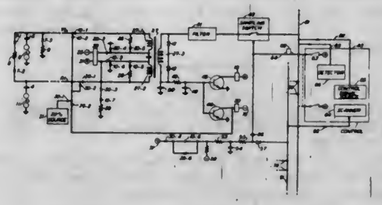


1. A receiver for using a stereophonic program comprising a carrier frequency-modulated in accordance with the sum of two audio signals, a subcarrier signal which has been suppressed-carrier amplitude-modulated with the difference of said two audio signals, and a pilot signal subharmonically related to said subcarrier signal, said receiver comprising:
a frequency-modulation detector responsive to said carrier for deriving a composite signal representing the modulation of said carrier;
a multivibrator including a pair of cross-coupled active devices individually having an electrode system including an electrode for controlling conduction in the device and further having a load circuit;
means responsive to said pilot tone for developing a demodulation signal;
means for concurrently applying at least the modulated suppressed-carrier component of said composite signal to said devices of said multivibrator;
and means for applying said demodulation signal to the control electrode of at least one of said devices to effect conduction in said devices of said multivibrator in alternation and at the frequency of said subcarrier to develop in each of said load circuits opposite phase signals representative of the modulation components of said subcarrier.

3,286,036
TELEPHONE LINE CIRCUIT
Robert K. York, Piscataway Township, Middlesex County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 4, 1963, Ser. No. 285,371
14 Claims. (Cl. 179—17)

1. A telephone line circuit comprising tip and ring line conductors having a first station with a ringer connected to said tip conductor and a second station with a ringer

connected to said ring conductor, a time division switching network, means responsive to first control signals transmitted from a control unit through said switching network for applying ringing current to said ring conductor, means responsive to the transmission of second con-



trol signals from said control unit through said switching network for applying ringing current to said tip conductor, and means responsive to the answer of a call at either of said stations for modifying said ringing current and for transmitting said modified ringing current through said time division switching network to said control unit.

3,286,037
REMOTE LINE CONCENTRATOR SWITCHING NETWORK

Douglas A. Kerr, Springfield, and George F. Swetnam, Jr., Rumson, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

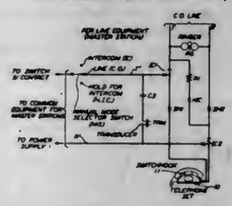
Filed Dec. 16, 1963, Ser. No. 330,731
15 Claims. (Cl. 179—18)

1. A switching network for a remote telephone line concentrator including line switching means; trunk switching means; a plurality of links coupling said line switching means to said trunk switching means; line selector means, trunk selector means and link selector means for respectively controlling said line switching means, trunk switching means and the selection of a particular link between said line switching means and trunk switching means; means in said line selector means and said trunk selector means effective in response to the reception of particular binary code signals indicative of a selected line and trunk for operating said line switching means and trunk switching means to interconnect said line and trunk; and additional means in said link selector means responsive to selected portions of said binary code signals indicative of said selected line for selecting a link between said line switching means and said trunk switching means.

3,286,038
INTERCOMMUNICATION SYSTEM WITH DIAL SELECTED RINGING

James M. Field, New Shrewsbury, and Theodore P. Nenninger, East Brunswick, N.J., and David H. Scholes, Willowdale, Ontario, Canada, assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed June 26, 1963, Ser. No. 290,675
9 Claims. (Cl. 179—40)

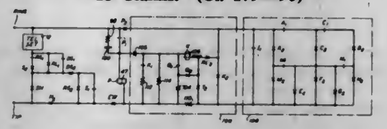


1. An intercommunicating telephone system comprising a plurality of master stations each including a respective telephone set having dial pulse generating means; switch means for selectively aligning the system for intercommunication between local stations, for intercommunication between local stations only, or for normal connection through a central office or for intercommunication between local stations while lines to the central office are maintained in a hold condition; first common means responsive to the dialing of a single digit from one of said dial pulse generating means for signaling a preselected one of said stations; said common means including a two-level stepping switch having contacts corresponding to said master stations on one of said levels, a transistor oscillator for generating a station alerting signal, means operative only after the termination of the generation of a set of dial pulses corresponding to a single dialed digit for initiating the operation of said oscillator, means including said stepping switch for applying a signal from said oscillator to that one of said stations corresponding to the digit dialed thereby to generate an audible alerting signal at said last named station; a plurality of slave stations, and second common means including said stepping switch responsive to the dialing of a single digit from one of said dial pulse generating means for completing a connection between one of said master stations and a preselected one of said slave stations, said stepping switch having contacts on the other one of said levels corresponding to said master station.

3,286,039
CALL TRANSMITTER

Rembert R. Stokes, Indianapolis, Ind., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 31, 1963, Ser. No. 320,298
13 Claims. (Cl. 179—90)



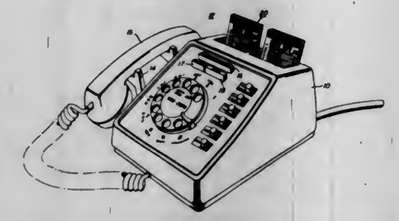
1. A call transmitter employing a code bearing member having a plurality of digits encoded thereon, the call transmitter comprising:
- a plurality of switches;
- means associated with each switch for detecting the coding on the code bearing member, the detecting means being normally spaced from the code bearing member;

- means for moving individual ones of the detecting means toward the code bearing member in a particular detecting sequence and actuating the individual switches responsive to the detection of coding by the detecting means associated therewith; and
- means under the control of the actuated switches for generating signals corresponding to the encoded digits and transmitting the signals out on a communication line.

3,286,040
CALL TRANSMITTER EMPLOYING A CODE BEARING MEDIUM

Ernest R. Andregg, Harold J. Hershey, and Chester W. McGee, Indianapolis, Ind., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 31, 1963, Ser. No. 320,299
11 Claims. (Cl. 179—90)

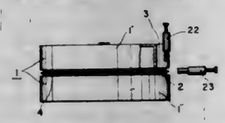


1. A call transmitter employing a code bearing medium having a plurality of digits encoded thereon, the call transmitter comprising:
- a plurality of switches;
- means associated with each of the switches for sensing the coding on the code bearing medium, the sensing means being normally spaced from the code bearing medium;
- means associated with each sensing means for moving the sensing means toward the code bearing medium in a particular sensing sequence, each sensing means actuating its associated switch responsive to coding on the code bearing medium;
- means under the control of the actuated switches for generating signals corresponding to the encoded digits and transmitting the signals out on a communication line; and
- means under the control of the actuated switches for changing the speed at which the signal generating means operates.

3,286,041
APPARATUS FOR ADJUSTING THE POSITIONS OF MAGNETIC HEADS

Yoshiro Nishiwaki, Kanagawa-ku, Yokohama, Japan, assignor to Victor Company of Japan, Ltd., Yokohama, Japan, a corporation of Japan

Filed Oct. 10, 1961, Ser. No. 144,211
Claims priority, application Japan, Nov. 7, 1960, 35/44,806
1 Claim. (Cl. 179—100.2)

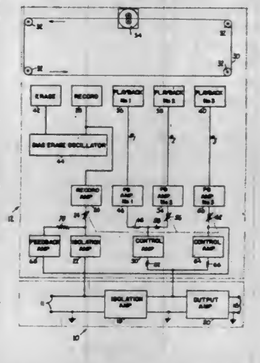


An apparatus for adjusting the positions of magnetic heads comprising a guide drum for guiding a magnetic tape;
- a rotary disk positioned for rotation in said drum;
- a pair of magnetic head blocks adjustably fitted to the peripheral edge of said rotary disk said magnetic head blocks being opposed to each other in the diametral direction to the peripheral edge of said rotary disk,
- each magnetic head block including a magnetic head tip projecting slightly from said rotary disk so as to be in contact with such magnetic tape;
- a mechanism for adjusting the position of said magnetic head block on said rotary disk;
- a pair of reference holes through said rotary disk near said magnetic head blocks on the peripheral edge of said rotary disk,
- said reference holes being opposed to each other in the diametral direction;
- a pair of reference holes in the guide drum coinciding with said reference holes through said rotary disk in a fixed rotary position of said rotary disk;
- two microscopes positioned separately from said guide drum and rotary disk so that with said microscopes the positions of said magnetic head tips can be observed to be compared with each other,
- said microscopes being arranged at an angle of 90 degrees with respect to each other;
- set pins having a tight fit in the reference holes in said disk and said drum whereby to fix said disk and said drum together; and
- means for adjusting the positions of said magnetic head blocks on said rotary disk.

3,286,042
SYNTHETIC REVERBERATION SYSTEMS

Richard H. Dorf, New York, N.Y., assignor to Schober Organ Corporation, a corporation of New York

Filed June 18, 1962, Ser. No. 203,252
5 Claims. (Cl. 179—100.2)



1. In a synthetic reverberation system having input terminals coupled to a direct-signal channel and to a reverberation signal channel and having means for combining the outputs of both channels to provide output for the system, and the reverberation signal channel including delay means combined with plural means for generating from an input signal successive series of time-spaced signals of decreasing amplitude, and further including feedback means coupled to receive the last of the generated signals in each series and reintroduce it into said delay means to generate a new series, improved variable attenuating means for controlling the amplitudes of said spaced signals comprising:
- (a) separate variable attenuation means controlling the relative output amplitudes of said signals from the plural generating means to said combining means;

(b) means at the input of the reverberation signal channel for adding the feedback and the input signal together;
(c) variable attenuation means coupling the adding means to the delay means;
(d) means for ganging together all said attenuation means for simultaneous adjustment to multiple selectible positions; and
(e) the attenuation means coupled to the adding means having an attenuation characteristic tapered to cooperate with matched tapers of the attenuation means which are coupled to the generating means for making the amplitudes of all delayed signals in successive series always decrease along a smooth curve with respect to time for all said positions.

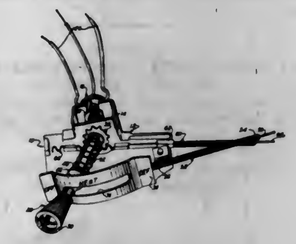
3,286,043
PHONOGRAPH RECORDER-REPRODUCER CARTRIDGE UTILIZING SUPERSONIC AND AUDIO FREQUENCY INPUTS
Robert Wagner, Ford Road, Denville, N.J.
Original application Jan. 17, 1958, Ser. No. 709,634, now Patent No. 3,042,757, dated July 3, 1962. Divided and this application Mar. 19, 1962, Ser. No. 181,236
3 Claims. (Cl. 179—100.41)



1. In a phonographic recorder-reproducer including a support for a moving record: a recorder-reproducer head adapted to have a substantially even response through the audio range and lower portion of the supersonic range, an audio frequency input to the head, a supersonic frequency input to the head, said head including a beam coupled to and responsive to the audio and supersonic inputs having a stylus secured rigidly to a free end portion thereof for engaging the record; means mounting said beam for vibration of its free end in directions laterally of said groove, said mounting means including means to hold the other end of said beam substantially fixed; and rigid clamping means engaging an intermediate portion of the beam to force a node thereat in the vibration of the beam so that the beam will be responsive to a supersonic input well above audible range and vibrate in a standing wave having a node at the nodal point on the beam.

3,286,044
HEATER CONTROL WITH IMPROVED SLIDABLE AND ROTARY MOTION MEANS
David W. Barton, Birmingham, Charles Haddad, Allen Park, and Robert W. Riley, Taylor, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 10, 1965, Ser. No. 512,966
7 Claims. (Cl. 200—4)

1. A control mechanism comprising:
a control shaft,
a housing having a portion defining a linear path for one end of said control shaft,
an electrical switch connected to said housing and having a switching element engageable by said control shaft,
said switching element being constructed to actuate said switch upon axial movement of said control shaft,
a first motion transfer device engaging said control shaft,
a first actuator connected to said first motion transfer device,
said first motion transfer device being constructed to transfer rotary motion of said control shaft to said first actuator,
a second motion transfer device engaging said control shaft,



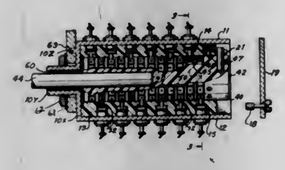
a second actuator connected to said second motion transfer device,
said second motion transfer device being constructed to transfer movement of said control shaft along the linear path defined by said housing portion to said second actuator.

3,286,045
COVER ASSEMBLY FOR SWITCHES
Robert J. Clark, Jr., and Warren R. Tolman, Indianapolis, Ind., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 16, 1965, Ser. No. 440,159
4 Claims. (Cl. 200—5)



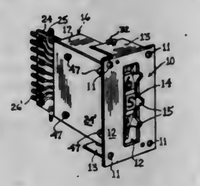
3. A cover assembly for a multiswitch station having a variable number of switch actuators, the cover assembly comprising:
a cover member having a plurality of first and second apertures, each first aperture and a selected one of the second apertures adapted to have a switch actuator extend therethrough, integral upstanding collar portions respectively disposed about each of the first apertures;
a collar member positioned on the periphery of the selected second aperture, the collar member having an upstanding collar portion of substantially the same shape as the collar portions integral with the cover member, the collar member further having means for locating the collar member on and securing the collar member to the cover member;
a face member having a plurality of apertures corresponding in number and arrangement to the upstanding collar portions integral with and secured to the cover member, the face member being positioned on the cover member with the collar portions extending through the apertures in the face member, each aperture in the face member closely conforming to the outside surface of the collar portion about which it is disposed.

3,286,046
MULTIPLE SWITCH WITH GANGED SWITCH CONSTRUCTION AND IMPROVED ACTUATOR CAM STRUCTURE
Raymond John Mincone, 52 Longfellow Ave., Plainedge, N.Y.
Filed Jan. 28, 1966, Ser. No. 526,678
9 Claims. (Cl. 200—8)



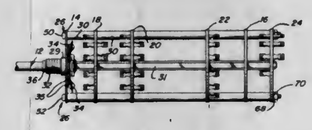
1. An electrical programable multiswitch for simultaneous operation of a plurality of circuits comprising an outside tubular housing having a plurality of pairs of circuit posts thereon; an inner tubular element slidably disposed in said outside housing and having a cylindrical tube therethrough, said inner element having a plurality of channels in the exterior surfaces each with an aperture communicating with the cylindrical tube therein; a cylindrical rotatable element adapted for slidable insertion in said cylindrical tube of said inner element and having a plurality of circular channels therein, each communicating with a respective aperture of a channel of said inner tubular element; electrical contact means secured within each of said channels of said inner tubular member and engaging a respective pair of circuit posts, each contact means having a non-conducting nib disposed in the aperture of said channel and adapted to effectuate make-and-break contact; and selectively removeable insert means in said channels of said rotatable element and adapted to engage said nib to thereby effectuate a make or break electrical contact.

3,286,047
HERMETICALLY SEALED THUMBWHEEL ROTARY SWITCH
Stanford M. Heide, Kenosha, Wis., assignor to Chicago Dynamic Industries, Inc., Chicago, Ill., a corporation of Illinois
Filed Nov. 10, 1965, Ser. No. 507,097
2 Claims. (Cl. 200—11)



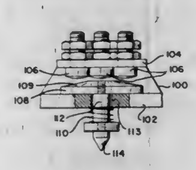
1. A rotatable thumbwheel switch comprising
(a) a mounting bracket having an elongated opening formed therein,
(b) a casing carried by said bracket with one end surrounding said opening and hermetically sealed with respect to said bracket,
(c) a thumbwheel rotatably carried by said casing with an operator portion exposed through said opening,
(d) an assembly including a printed circuit and a wiper switch therefor arranged in said casing,
(e) a hermetical seal between said assembly and said casing,
(f) a connection between said wiper switch and said thumbwheel, and
(g) a hermetical seal at the area of connection between said thumbwheel and said wiper switch.

3,286,048
GANG SWITCH STRUCTURE WITH STRUT SCREW
Bernard J. Golbeck, Crystal Lake, Ill., assignor to Oak Electro/Netics Corp., a corporation of Delaware
Filed July 23, 1965, Ser. No. 474,283
5 Claims. (Cl. 200—14)



1. A multiple section switch having a front plate, at least one switch plate lying in a plane substantially parallel to said front plate, switch actuator means rotatably carried by the front plate and passing through the center of said switch plate and being operatively connected thereto in combination with fastening means passing through said front plate and said switch plate for securing said plates together in a spaced apart relationship, said fastening means comprising an elongate body member, a head on one end of said body member, said head being flattened on two sides so as to provide two substantially parallel plane surfaces thereon, a pair of shoulders formed by said head and projecting beyond the sides of said body member, and threads formed in a short section of the other end portion of said fastening means for receiving a nut in threaded relation therewith for securing the switch plate to the front plate.

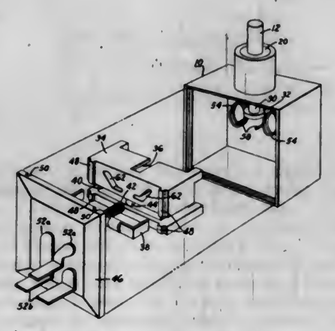
3,286,049
SWITCH UNIT WITH INTEGRAL CONTACT AND ACTUATOR STRUCTURE
Alfred H. Drain, Richland Township, Allegheny County, Pa., assignor to Heppenstall Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 23, 1965, Ser. No. 481,616
13 Claims. (Cl. 200—16)



1. Switch means for use with a cam operator and the like, said switch means including a supporting bracket, a plunger extending through an aperture in said bracket for rectilinear path of movement relative thereto, a cam follower and a generally circular contact disc mounted on said plunger, a planar array of spaced stationary contacts mounted on said bracket and juxtaposed to said disc for make and break contact with said disc upon movement thereof, said aperture being slightly larger than the juxtaposable cross-sectional configuration of said plunger to allow a given amount of misalignment thereof relative to said path, the contacting surface of said disc being uniformly tapered toward and around its circumferential edge to afford wiping of said surface relative to said contacts and centering of said disc and plunger relative to said

array of contacts, and biasing means coupled to said plunger for urging said cam follower against a surface of the cam operator.

3,286,050
SNAP ACTION, DOUBLE THROW SWITCH
David D. Campbell, Birmingham, and James C. Louton, Jr., Utica, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 21, 1964, Ser. No. 405,526
7 Claims. (Cl. 200—47)



1. A limit switch comprising: a switch body having an aperture in one wall thereof; actuator means including a first portion slidably carried in the aperture of said switch body and a second portion disposed within said switch body, said first portion being biased away from said switch body; first means mounted for sliding movement in said switch body between two extremes of movement and having a portion engaging said second portion of said actuator means disposed within said switch body to make said first means responsive to movement of said actuator means, said first means resiliently carrying contact means; fixed contacts carried by one wall of said switch body including terminal portions extending from said switch body and contacting portions carried within said switch body in juxtaposition to the contacts carried by said first means; and second means engaging one wall of said switch body and said first means resisting movement of said first means during a portion of the distance between the two extremes of movement thereof and being adapted to later very quickly shift said first means toward an extreme of movement wherein said resiliently carried contact means engage a different series of fixed contacts as newly positioned than engaging as originally positioned.

3,286,051
ELECTRICAL POWER CONTROL UNIT HAVING A SWITCH AND CONNECTOR WITH SAFETY INTERLOCK
Czeslaw Mackiewicz, Trumbull, Conn., assignor to Harvey Hubbell, Incorporated, Bridgeport, Conn., a corporation of Connecticut
Filed Apr. 12, 1965, Ser. No. 447,463
9 Claims. (Cl. 200—50)

1. An electrical power supply control unit which comprises: a housing; two position switch means in said housing; actuating handle means mounted on said housing; switch operating means intermediate said handle means and said switch means; a connector mounted on said housing and electrically connected to said switch means; separable plug means arranged to be rotatably interlocked with said connector, said plug means defining a keyway therein; and locking means operable from said switch operating means and disposed to extend into said keyway when said switch means is in one of its positions to prevent rotation of said plug means relative to said connector.

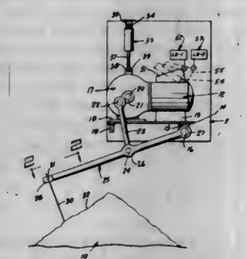


3,286,052
CONNECTOR PLUG FOR POWER DISTRIBUTION TRACK
Manfred Neumann, River Edge, and Anthony Donato, Woodridge, N.J., assignors to Lightolier Incorporated, New York, N.Y., a corporation of New York
Filed June 17, 1963, Ser. No. 288,420
4 Claims. (Cl. 200—51)



1. As an article of manufacture, a connector plug for use with a power distribution track of the type having a pair of spaced parallel conductors within a flanged channel, said plug comprising a substantially rectangular housing, a body member of insulated material rotatably mounted in said housing, said body member having a nose end normally protruding from one end of said housing and having a pair of diametrically opposed locking flanges extending laterally from said body member adjacent its nose end, a pair of diametrically opposed contact fingers extending laterally outward from the nose end of the body member and aligned with and spaced from said locking flanges, said housing having two adjacent walls formed with a slot extending at right angles, a handle extending through said slot into engagement with said body member to rotate said body member and its associated locking flanges and contact fingers with respect to said housing, locking conformations selectively movable with respect to said housing and mounted therein, said locking conformation comprising a U-shaped member in said housing having a cross piece and a pair of legs, the free ends of each of said legs having an outwardly extending concave jaw adapted to engage the flanges of said channel, and means for moving said legs independently of said means for rotating said body member, said means comprising a screw extending between said legs to move the same toward and away from each other.

3,286,053
DEVICE FOR SIGNALING THE HEIGHT OF A PILE OF IRON ORE AND THE LIKE
Lawrence A. Capra, Iron Mountain, Mich., assignor to M. J. Electric, Inc., Iron Mountain, Mich., a corporation of Michigan
Filed June 11, 1965, Ser. No. 463,162
14 Claims. (Cl. 200—61.21)



12. In an apparatus for indicating the level of a stock pile, the combination comprising:
(a) a support member;
(b) an arm having one end pivotally mounted on said support member;
(c) means for moving said arm upwardly and downwardly in an oscillatory motion;
(d) a platform having one end pivotally mounted on said support member and the other end normally disposed on a stop member and being movable upwardly from said stop member in a swinging movement about the pivot on said one end;
(e) said means for moving said arm being mounted on said platform;
(f) means carried by said arm engagable with the level of a stock pile when the level of a stock pile reaches a predetermined height, whereby said arm is retarded in the downward movement and a reactive force is exerted on said platform to pivot the same and create a signal; and,
(g) a dash pot means operatively connected to said platform and means for moving said arm to restrict the downward movement of the platform and provide free upward movement for the platform.

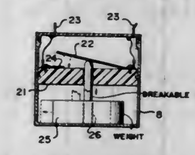
3,286,054
DIRECTIONAL TURN INDICATOR SIGNAL HAVING DELAYED RELEASABLE MEANS CANCELLING SIGNAL AS VEHICLE IS TURNED TO A STRAIGHT AHEAD DIRECTION
Richard H. Jordan, Fort Myers, Fla., and Samuel A. Findley, Bronson, Mich., assignors to Kingston Products Corporation, Kokomo, Ind., a corporation of Indiana
Filed June 15, 1964, Ser. No. 374,995
13 Claims. (Cl. 200—61.34)

1. In a directional turn signal,
a casing open at each end and adapted to be secured to the housing of an automotive steering post and to have a steering post pass therethrough,
an indicator lever pivotally mounted on said casing and biased into a neutral position and turnable either to the right or left of neutral to indicate a turn,
means holding said indicator lever in position either to the right or left of neutral including holding means and releasable brake means,
said holding means comprising a pair of inter-fitting parts having frictionally related portions sized to have interference fit and engageable with one another upon the turning of said indicator lever to indicate a turn,
tripping means operable by turning movement of said steering wheel when making a turn for releasing said



holding means and said brake means as the vehicle is turned to a straight ahead position,
and other means for releasing said brake means only when the steering wheel is not turned far enough to actuate said tripping means and is turned back to a straight ahead position, to accommodate the return of said indicator lever to a neutral position in a time delay interval determined by the frictional resistance of said interference fit.

3,286,055
IMPACT SWITCH
Keith W. Jewell, 340 E. William St., Ann Arbor, Mich.
Filed July 23, 1965, Ser. No. 474,340
4 Claims. (Cl. 200—61.45)



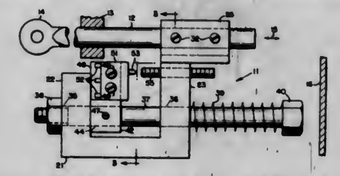
1. An impact switch comprising:
an inertial element;
a frangible rod having a longitudinal axis and supported at one end thereof by said inertial element;
a first electrical contact supported by the other end of said frangible rod;
first means intermediate the ends of said frangible rod for preventing lateral movement of said rod but allowing longitudinal movement of said rod;
a second electrical contact; and
second means for supporting said second electrical contact intermediate said first electrical contact and said first means whereby breakage of said rod by movement of said inertial element causes longitudinal movement of said rod so that contact is made between said first and second electrical contacts.

3,286,056
INSTANTANEOUS DECELERATION SIGNAL SWITCH FOR AUTOMOTIVE VEHICLES
Theodore William Spong, 120 Terrace Park, Rochester, N.Y.
Filed Nov. 20, 1964, Ser. No. 412,618
10 Claims. (Cl. 200—61.89)

1. In an automotive vehicle having a reciprocable accelerator and stop lights
(a) a pair of members,

(b) means connecting one of said members to the accelerator to reciprocate directly in response to the reciprocation of the accelerator,

(c) means connecting the other of said members to said one member for movement therewith in one direction, during the movement of said accelerator a predetermined distance in a direction to increase the motor speed of said vehicle, and independently of the force applied to said accelerator, and for movement in the direction opposite to said one direction, and relative to said one member, during the move-



ment of said accelerator beyond said predetermined distance,

(d) the second-named means including means for returning said other member in said one direction relative to said one member, during the return of said accelerator from beyond said predetermined distance, and

(e) switch means interposed between said members, and operative momentarily during the return of said other member in said one direction momentarily to energize the stop lights of the vehicle.

3,286,057
CENTRIFUGAL SWITCH
Philip Krupen, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed May 6, 1964, Ser. No. 365,540
2 Claims. (Cl. 200—80)



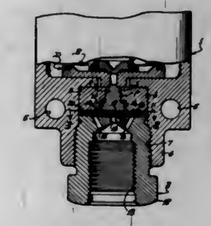
1. A centrifugal switch comprising an electrically conductive casing having a pair of radial chambers on diametrically opposite sides of a rotational axis passing through the center of said casing, an insulating plug closing off the radial outer ends of each of said chambers, a conductive metal rod fixedly imbedded in and passing completely through each of said plugs, a conductive piston slidable in each of said chambers and electrically coupled to said casing, and coiled spring means biasing said pistons radially inward of said casing away from said metal rods.

3,286,058
VEHICLE CONTROL SWITCH
Francis J. Perhats, 30 Rozanne Drive, Addison, Ill.
Filed May 18, 1964, Ser. No. 368,145
9 Claims. (Cl. 200—82)



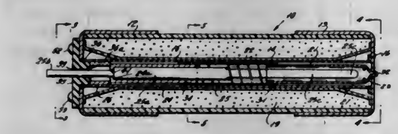
1. In a control switch for a motor vehicle electrical circuit having a control member selectively movable between and open and closed circuit positions, means automatically moving said control member from closed circuit position to open circuit position comprising means normally bliasing said control member to open circuit position, movable detent means engaging said control member in the closed circuit position thereof retaining the same in closed cricuit position against the force of said biasing means, said detent means having first and second positions of engagement with said control member, and operating means connected to said detent means and to a vehicle engine energy source variable in response to operating conditions of the engine moving said detent means from said first member engaging position to said second member engaging position upon and during operation of the engine in predetermined manner and moving said detent means from said second member engaging position to said first member engaging position when the engine is not operating in said pre-determined manner, said first and second positions of engagement of said detent means being spaced from one another for disengaging said detent means from said control member and thereby releasing said control member upon each movement of said detent means, whereby to accommodate movement of said control member by said biasing means from closed circuit position, if the same is so set, to open circuit position.

3,286,059
DIAPHRAGM SWITCH WITH VOLUMETRICALLY DEFORMABLE MEMBER
Donald L. Griffith, Northridge, Billy E. Nowlin, Mission Hills, and Glen A. Berry, Granada Hills, Calif., assignors to Custom Component Switches, Inc., Chatsworth, Calif., a corporation of California
Filed July 16, 1964, Ser. No. 383,094
2 Claims. (Cl. 200—83)



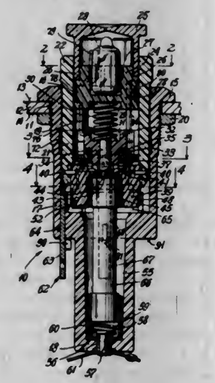
1. A pressure responsive actuator for a reciprocable plunger component of an electric switch apparatus; said actuator comprising a body member having an externally threaded side surface constituting means of detachable connection to the switch apparatus by engagement with complementary internal threads on the switch apparatus a bore disposed in an end surface of said body member in generally parallel relation to said side surface, means affording connection of said bore with a source of fluid pressure, a concave surface formed in the end of said body member opposite the end from which said bore extends, a thin flexible metal diaphragm overlying said concave end surface and having the periphery thereof secured to said body member along the periphery of said concave end surface, fluid passage means connecting the interior of said bore with the space defined by said concave end surface and said diaphragm, a volumetrically deformable, resilient means confined at the side of said diaphragm remote from said concave end surface and carried by said body member operative by volumetric deformation thereof in response to fluid pressure induced distention of said diaphragm, to effect switch actuating movement of a switch actuator engaged by the face of said resilient means which is remote from said diaphragm.

3,286,060
FUSE DEVICE WITH OVERLOAD MEANS
Elwood T. Platz, Grosse Pointe Farms, Mich., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Sept. 22, 1964, Ser. No. 398,186
8 Claims. (Cl. 200—116)



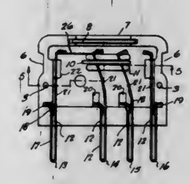
1. A device of the class described including a fusible element and an overload means operative responsive to the passage of predetermined overload current through said fusible element for a predetermined time interval, said current being insufficient to rupture said fusible element; said overload means including a first means, latch means normally maintaining said first means in a first position, biasing means for moving said first means to a second position upon release of said latch means, and a bimetal operatively mounted wherein heat generated by current passing through said fusible element heats said bimetal causing distortion thereof; said latch means being released by said bimetal upon predetermined distortion thereof; said bimetal being a spiral having one end anchored; said latch means is rotated by said bimetal upon heating thereof; said bimetal formed about an axis, and said biasing means moving said first means generally parallel to said axis upon release of said latch means.

3,286,061
FUSE, SWITCH AND PILOT LIGHT UNITARY DEVICE
Paul D. Henderson, Avon, Conn., assignor to The Superior Electric Company, Bristol, Conn., a corporation of Connecticut
Filed Feb. 15, 1965, Ser. No. 432,624
6 Claims. (Cl. 200—121)



1. A fuse, switch and pilot light unitary device comprising a substantially hollow housing having an open entrance, means for mounting the housing on a plate with the entrance being accessible from the exterior of the plate, a tubular holder releasably secured in the housing, said holder having a fuse containing means cooperable with a fuse containing means carried by the housing for supporting a fuse therein, switch means positioned within the holder and movable between an off and an on position, said switch means including a contact means mounted for rotation in the holder, means electrically connecting the switch means to the fuse containing means of the holder, a plunger mounted for reciprocating movement in the holder adjacent the entrance of the housing, switch actuation means carried by the inner end of the plunger and operable upon a reciprocating movement of the plunger to change the position of the switch means, a terminal connected to the switch and a terminal connected to the fuse containing means carried by the housing, an electric bulb secured in the housing and terminal means connected to the bulb for providing energization thereof and in which the contact means of the switch has a plurality of angular on positions alternating with a plurality of angular off positions and the plunger for each reciprocating movement moves the contact from one angular position to the next angular position.

3,286,062
MECHANICAL INDICATING FUSEHOLDER
Joseph P. Hussar, Weymouth, Mass., assignor to Fuse Indicator Corporation, Rockville, Md., a corporation of Maryland
Filed Sept. 3, 1965, Ser. No. 485,00
3 Claims. (Cl. 200—121)

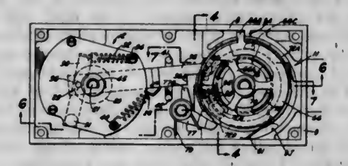


1. A fuseholder connectable to an electrical circuit and an electrical alarm comprising a casing of electrical insulating material having an interior cavity and four openings extending therethrough into said cavity, four contact terminals each of a single sheet of spring pressed electrical conducting material bent into a long section and a short section extending alongside said long section, a hook provided at the free extremity of said short section, and a contact section provided at the free extremity of said long section extending laterally of and on a slant relative to said long section having a slot therein, each of said contact terminals extending through one of said casing openings, means anchoring each of said contact terminal hooks to said casing, means anchoring the long sections of a pair of said contact terminals to said casing, a yoke jointly connecting the contact sections of a second pair of said contact terminals, a fusible element connecting the contact sections of one of said anchored contact terminal long sections with the long section of one of said jointly connected terminals, said contact terminals connected by the said fusible element being connectable to an electrical circuit and the other of said anchored contact terminals having its contact section facing the contact section of the otherof said jointly connected contact terminals and said fusible element through said yoke panel normally retaining one of said facing contact sections from the other of said facing contact sections until said fusible element is ruptured whereupon said contact terminals with facing contact section are capable of setting off an electrical alarm when connected thereto.

3,286,063
COMBINATION THERMOSTAT AND TIMER CONTROL

Leroy Newton, Burbank, Calif., assignor, by mesne assignments, to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland

Filed Mar. 2, 1964, Ser. No. 348,507
7 Claims. (Cl. 200—136.3)

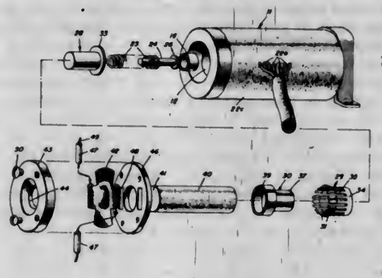


1. A combination thermostat and timer control comprising a casing; a thermostatically controlled switch mounted on said casing; a disc rotatably mounted in said casing and connected to means for adjusting the operating point of said switch upon rotation of the disc; a somewhat drum-shaped housing rotably mounted on a hub portion of said disc; ratchet teeth on the periphery of said housing; a torsion spring mounted within said housing having one end fixed to said casing and its other end fixed to said housing; means formed on said disc for engaging a portion of said housing after said disc is rotated from an "off" position wherein said switch is open to a "warming" position wherein said switch is set to maintan a predetermined low temperature setting, further rotation of said disc to a temperature setting higher than said warming position causing said engagement means on said disc to rotate said housing thereby stressing said spring to store energy therein; a pawl mounted in said casing engageable with said teeth to maintain the energy stored in said spring; and timer controlled means for releasing said pawl to allow said stored energy to rotate said housing thereby causing said housing portions to act on said engaging means on said disc to rotate said disc to said warming position.

3,286,064
SUBLIMATION TIMING SWITCH

Louis Wilson, Silver Spring, Md., Wilson E. Hull, Washington, D.C., and Jacob D. Steinberg, Riverdale, and Robert E. Fischell, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy

Filed Mar. 31, 1965, Ser. No. 444,469
6 Claims. (Cl. 200—142)

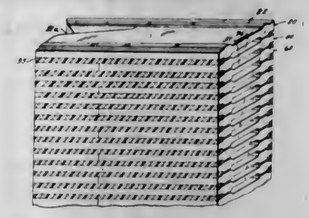


1. A timing switch in a missile or satellite comprising insulating housing means having closed end means and open end means and having a plurality of longitudinally separated series of peripherally spaced terminal means between said closed and open end means;
carrying means being positioned within said housing means between said closed and open end means, said carrying means for sliding sequentially and longitudinally from one of said separated series to another of said separated series of peripherally spaced terminal means and having electrical shorting means for connecting said peripherally spaced terminal means of one of said longitudinally separated series of said spaced terminal means;
sublimable means being positioned between said open end means and said carrying means within said housing means and abutting against said carrying means;
resilient means being positioned within said housing means between said closed end means and said carrying means for loading said carrying means and said sublimable means;
holding means attached to said housing means at said open end means for retaining said sublimable means against said carrying means and maintaining said resilient means within said housing means bearing against said closed end means of said housing means and said carrying means whereby upon sublimation of sublimable means due to the vacuum of space, said resilient means expand longitudinally and move said carrying means enabling said electrical shorting means to make contact sequentially with said longitudinally separated terminal means.

3,286,065
CERAMIC ARC PLATES HAVING MINIMUM DENSITY VARIATIONS

Allen E. Stringfellow, Haddonfield, N.J., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Mar. 16, 1966, Ser. No. 534,699
6 Claims. (Cl. 200—144)

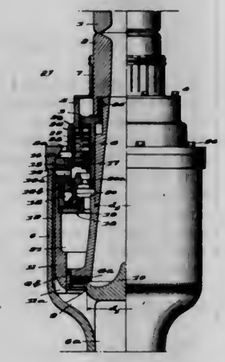


1. An arc plate assembly comprising a plurality of elongated arc plates:
each of said plates having a pair of opposed substantially planar faces each of which has a pair of parallel upstanding ribs formed integrally therewith lengthwise of the arc plate and spaced slightly from the marginal edges thereof;
each of said ribs having a face portion disposed substantially parallel to the adjacent planar face of the arc plate, and, along the opposite edges of said face portion, inclined wall segments which taper outwardly from and connect the face portion to the adjacent planar face of the arc plate;
the planar faces of said arc plates being assembled parallel to one another with the face portions of said ribs which are disposed adjacent corresponding marginal edges of the arc plates being aligned with one another, the marginal edges of said plates being embedded in a resilient cement which maintains the plates in assembled relation with the aligned face portions of the respective ribs spaced slightly apart from one another.

3,286,066
GAS BLAST CIRCUIT BREAKER WITH SPRING MOUNTED HOLLOW CONTACT MEMBER AND ASSOCIATED EXHAUST VALVE CONTROLLED THEREBY

Carl Dieter Floessel, Fislisbach, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company

Filed Sept. 14, 1964, Ser. No. 396,093
Claims priority, application Switzerland, Oct. 17, 1963, 12,750/63
7 Claims. (Cl. 200—148)

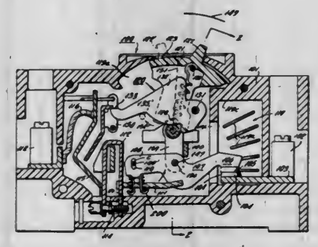


1. A gas blast circuit breaker comprising a chamber having a continuous filling of pressurized gas, first and second nozzle type contact members disposed within said chamber, said first contact member being actuatable towards and away from said second contact member to effect engagement and disengagement respectively of said contact members, said second contact member including spring means establishing a yieldable mounting therefor enabling said second contact member to follow said first contact member for a predetermined distance without separating therefrom during an initial opening phase of the circuit breaker, a gas exhaust valve correlated to the interior of said second contact member and which serves when open to discharge to atmosphere the pressurized gas flowing through said second contact member from said chamber when said contact members become disengaged, said exhaust valve including a valve seat and a movable valve member constituted as a pressure differential piston, said exhaust valve member being held against its seat by said second contact member when said contact members are engaged, and a servo valve including first and second seats and a valve member actuatable in one direction to engage said first seat by movement of said exhaust valve member to the open position and actuatable in the opposite direction to engage said second seat by movement of said second contact member during a contact engaging operation of the circuit breaker, said servo valve member when engaged with said second seat establishing a differential force on said exhaust valve member derived from atmospheric pressure and in such direction as to ready said exhaust valve member to follow the movement of said second contact member during said initial opening phase of the circuit breaker and effect opening of said exhaust valve, and said servo valve member when engaged with said first seat establishing a time delayed force on said exhaust valve member derived from said pressurized gas within said chamber and in such direction as to cause said exhaust valve member to reengage its seat and hence shut off flow of pressurized gas through said second contact member.

3,286,067
CONTACT PRESSURE ARRANGEMENT FOR CIRCUIT BREAKER MECHANISM

Michael A. Menickella, Philadelphia, Pa., and Martin V. Zubaty, Warren, Mich., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Original application June 6, 1963, Ser. No. 285,970. Divided and this application Oct. 4, 1965, Ser. No. 492,414
10 Claims. (Cl. 200—153)

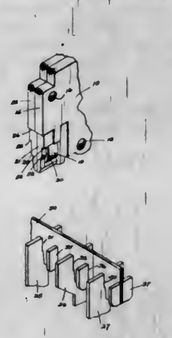


1. Operating means for use in a molded case circuit breaker having a first stationary contact and a pivotally mounted contact blade having a contact mounted thereon cooperating with said stationary contact wherein said operating means comprises an overcenter toggle linkage connected to the contact blade to effect rapid movement thereof into and out of engagement with said stationary contact, said toggle linkage including a first toggle means having an arcuate cam surface along one edge thereof; second toggle means having a first end pivotally connected to said contact blade at a point intermediate the ends thereof; and having a second end rollingly engaging said cam surface; an operating handle having a first end pivotally mounted in said housing and a second end movable along an arcuate path between a closed and an open position; spring means having a first end connected to the second end of said second toggle means and a second end connected to the second end of said operating handle for urging the second end of said second toggle means firmly against said cam surface; said spring means positioned to rapidly move said second toggle means second end in a first direction along said cam surface upon movement of said operating handle from said closed to said open position to rapidly disengage said cooperating contacts; said pivotal mounting for said contact blade comprising contact pressure producing means for maintaining said cooperating contacts in firm engagement when said circuit breaker is in the closed position; said contact pressure producing means comprising pin means for pivotally mounting said contact blade to the molded case breaker housing; said contact blade having an elongated slot for receiving said pin means; substantially resilient U-shaped means having a central portion and first and second arms extending therefrom; said first and second arms being pivotally mounted to said pin means; said central portion urging against the adjacent edge of said contact blade and being sufficiently resilient to urge said contact in a direction to firmly maintain said cooperating contacts in the engaged position.

3,286,068
HALF-WIDTH CIRCUIT BREAKER ADAPTER ARRANGEMENT

Alexander R. Norden, New York, and George W. Knecht, Brooklyn, N.Y., assignors to Murray Manufacturing Corporation, Brooklyn, N.Y., a corporation of New York

Filed Oct. 21, 1964, Ser. No. 405,488
5 Claims. (Cl. 200—166)

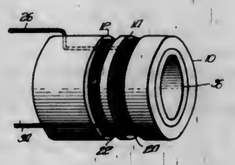


1. The combination of: a load center having bus-blades of predetermined spacing; a plurality of circuit breakers of a thickness one-half the spacing between adjacent bus-blades and of the type having a blade contact adapted to appear at either or both sides of the circuit breaker at the front end thereof; an insulator member having a plurality of parallel slots therein, each embracing a bus-blade; and a plurality of insulator ribs each disposed intermediate a pair of adjacent slots.

3,286,069
ROTARY ELECTRICAL CONTACT ASSEMBLY

Kenly C. Bugg, Fort Wayne, Ind., assignor to Kendick Manufacturing Company, Fort Wayne, Ind., a corporation of Indiana

Filed Aug. 12, 1965, Ser. No. 479,216
11 Claims. (Cl. 200—166)

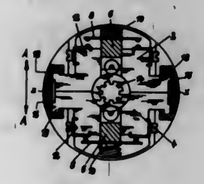


1. A rotary electrical contact assembly comprising: a substantially cylindrical housing of electrically insulating material; an annular recess in said housing; an elongated electrical conductor wound in a plurality of contiguous turns in said recess to form a ring of conducting material in the base of said recess, and an opening in said housing on each side of said ring, each end of said conductor threaded through one of said openings in said housing, and then formed as a twisted pair to form a lead to said ring of conducting material, said lead extending from said ring to one end of said housing.

3,286,070
SWITCH ASSEMBLY HAVING STACKED UNITS WITH SPLIT INSULATING HOUSINGS

Karl Völker, Vienna Austria, assignor to Hubert L. Naimer, Vienna, Austria

Filed Sept. 8, 1964, Ser. No. 394,753
Claims priority, application Austria, Sept. 13, 1963, A 7,367
7 Claims. (Cl. 200—168)



1. An electrical switch assembly comprising, in combination:

(a) a plurality of switch units having a common axis and axially superimposed on each other,

(1) each unit including housing means of electrically insulating material, a plurality of contacts mounted on said housing means, and actuating means for moving said contacts relative to each other toward and away from a position of engagement,

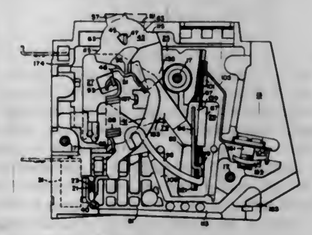
(2) the housing means of each unit including two housing parts offset transversely of said axis and having respective axially extending faces, and locking means releasably locking said parts to each other in abutting engagement of said faces thereof; and

(b) coupling means axially coupling said units to each other.

3,286,071
CIRCUIT INTERRUPTER WITH IMPROVED OPERATING MEANS

Francis L. Gelzheiser, Fairfield, Conn., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Original application Aug. 25, 1960, Ser. No. 51,963, now Patent No. 3,240,902, dated Mar. 15, 1966. Divided and this application Apr. 12, 1965, Ser. No. 470,274
6 Claims. (Cl. 200—172)

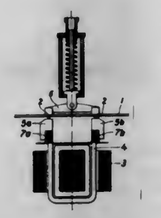


1. A circuit interrupter comprising a stationary contact, a movable contact arm, a movable contact on said movable contact arm, said movable contact arm being movable to move said movable contact into and out of engagement with said stationary contact, an operating member operable to move said movable contact arm, said movable contact arm having a flat portion with a slot therein, a part of said operating member extending into said slot, and pivot parts of said operating member pivotally engaging said flat portion of said movable contact arm on opposite sides of said slot.

3,286,072
WIRE MESH DOUBLE SPOT WELDING

Josef Ritter, Graz-Kroisbach, Styria, and Hans Gött, Graz, Styria, Austria, assignors to AVI Alpenlandische Veredelungs-Industrie Gesellschaft m.b.H., Graz, Styria, Austria

Filed Feb. 7, 1964, Ser. No. 343,333
3 Claims. (Cl. 219—56)

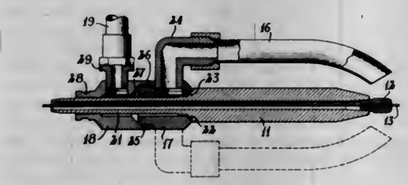


1. In a welding machine, for use in producing welded mesh by double spot welding, comprising in combination, means operable for feeding into the machine longitudinal wires in a longitudinal direction and transverse wires at an angle thereto, said machine including for each double spot weld zone two electrodes arranged in the feed direction of the corresponding longitudinal wire and forming a pair and a passive current bridge also arranged in said longitudinal feed direction disposed opposite said pair of electrodes and cooperating therewith, said pair of electrodes and bridge being operable to receive therebetween said longitudinal wire and two transverse wires in superposition, the plane of the transverse wires being closer to said electrodes than the plane of the longitudinal wires, each pair of electrodes forming with the wires disposed therebetween an electric series connection, two bus bars disposed at right angles to said longitudinal wire feed direction, and two secondary bus bars each movably mounted on a cross bar and extending in said longitudinal direction and adjustably mounting said electrodes, whereby said electrodes may be moved in said longitudinal direction as well as at right angle thereto.

3,286,073
WELDING APPARATUS

George Kofron and Edward A. Benfield, Chicago, Ill., assignors to Acme Welding Supply Co., a corporation of Illinois

Filed Mar. 22, 1965, Ser. No. 441,757
4 Claims. (Cl. 219—130)

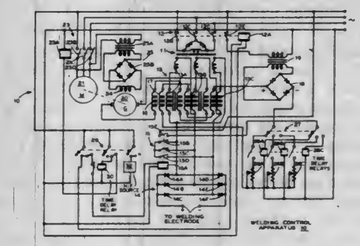


1. Welding apparatus comprising an elongated tube adapted for passage of a welding wire therethrough and terminating at one end in a welding tip, said tube having an external annular shoulder thereon intermediate its ends and an externally threaded portion spaced from the shoulder, a first collar fitting loosely and rotatably around the tube and engaging the shoulder at one end, a second collar threaded onto the threaded portion of the tube and engaging the other end of the first collar, a conduit carried by the first collar and terminating adjacent to the welding tip to direct a stream of gas thereon, and means defining a connection for gas under pressure to the interior of the first collar to flow therethrough and through said conduit, the second collar being movable into tight engagement with the first collar to force the first collar against the shoulder and hold it against rotation.

3,286,074
METHOD AND APPARATUS FOR WELDING THIN METAL STRIPS

Gunther Lehnert, Hannover-Bothfeld, and Heinrich Schrieber, Bremen, Germany, assignors to Hackethal-Draht- und Kabel-Werke Aktiengesellschaft, Hannover, Germany, a corporation of Germany

Continuation of application Ser. No. 291,527, June 28, 1963. This application Apr. 20, 1966, Ser. No. 549,753
Claims priority, application Germany, June 29, 1962, H 46,222
9 Claims. (Cl. 219—131)



1. The method of electrically arc welding a seam between adjacent edges of thin metal strip which is pulled continuously past a stationary electrode in an atmosphere of inert gas comprising the steps of supplying current to said electrodes from controllable magnetic amplifier means, first controlling the current output of said magnetic amplifier means by a fixed predetermined direct current, and second controlling the current output of said magnetic amplifier means in accordance with the speed at which said metal strip is pulled past said stationary electrodes only after the movement of said metal strip reaches a predetermined speed so that at all times there is a current output from the electrode sufficient at least to strike a welding arc.

3,286,075
PROCESS OF WELDING A PRECIPITATION-HARDENABLE AUSTENITIC STEEL

Hans R. Kautz, Willich, and Horst Gerlach, Osterath, Lower Rhine, Germany, assignors to Gebr. Bohler & Co., Aktiengesellschaft, Vienna, Austria

No Drawing. Filed July 26, 1965, Ser. No. 474,953
Claims priority, application Germany, Aug. 4, 1964, B 77,968
1 Claim. (Cl. 219—137)

A process of welding a precipitation-hardenable, austenitic steel, which comprises welding a steel consisting substantially of traces to 0.15% carbon, 0.6–1.5% silicon, 1–2% manganese, 12–17% chromium, 23–30% nickel, a constituent selected from the class consisting of molybdenum usable in an amount of 0.6–3% in association with traces to 4% tungsten, and tungsten usable in an amount of 0.5–4% in association with traces to 3% molybdenum, 1–3% titanium, 0.03–0.3% aluminum, up to 1% vanadium, balance iron with inevitable impurities, with an electrode which has a basic calcium coating and

a core wire consisting of traces to 0.15% carbon, 0.6–1.5% silicon, 1–2% manganese, 17–25% chromium, 8–12% nickel, 45–55% cobalt and 12–20% tungsten.

3,286,076
ELECTRIC HEATING DEVICE WITH ADJUSTABLE HEATING UNIT
Thomas E. Finch, Shelbyville, Ind., assignor to General Electric Company, a corporation of New York
Filed June 1, 1964, Ser. No. 371,372
8 Claims. (Cl. 219—230)



8. An electric heating device comprising a sheathed electrical heating unit having a heating portion at one end and a pair of terminal conductors at the other end; a hollow metallic bushing; said pair of terminal conductors extending into said hollow metallic bushing, a first one of said pair of terminal conductors being centrally disposed within the bushing and the second one of said pair of terminal conductors presenting a conductive area within the bushing and spaced outwardly from said first conductor; means detachably coupling said sheathed heating unit with said metallic hollow bushing; an electrical cable for connection with an electrical power source and including at least two leads; a connector assembly slideably disposed with respect to said bushing connecting said terminal conductors in an electrical circuit with two leads of said cable when said heating unit is coupled with said bushing and causing said leads to be electrically disconnected from said two leads when said heating unit is uncoupled from said bushing; said connector assembly including a pair of conductive means making electrical connections with respective ones of said terminal conductors; spring means biasing said connector assembly into engagement with the centrally disposed terminal conductor; a hollow handle freely supporting the bushing for 360 degree rotation and said hollow handle including means for restraining axial movement of said bushing with respect to said handle and including a means for gripping said bushing and thereby preventing rotation of said bushing relative to the handle; and a means for releasing said bushing to permit said heating unit and said bushing to be adjustably rotated through 360 degrees to provide a desired orientation of the heating portion of said heating unit with respect to the handle.

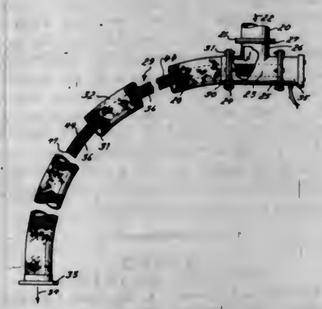
3,286,077
HEAT-ZONED PRESS HEAD
David L. Radford and Burlin D. Bates, Salt Lake City, Utah, assignors to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware
Filed Nov. 23, 1964, Ser. No. 413,105
7 Claims. (Cl. 219—251)

1. A heat-zoned press head comprising:
(a) a metal pressing platen,
(b) at least two complements of heater elements, each arranged over different areal or zonal portions of the platen,
(c) heat-conductive mastic directly and fixedly connecting each heater element of both said complements to the surface of the platen opposite to the pressing surface thereof for conducting the heat of said elements directly to the platen,
(d) means to individually heat said complements of heater elements,
(e) a temperature-sensitive device having direct physical contact with the platen within the areal or zonal portion in which each complement of heater elements is located, and



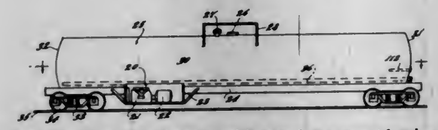
(f) individual control means for each complement of heater elements detached and located remotely from the platen and responsive to each temperature-sensitive device, and electrically connected between each complement of heater elements and temperature-sensitive device.

3,286,078
FLEXIBLE INTERNAL HEATER
Lee P. Hynes, Haddonfield, N.J., assignor to Hynes Electric Heating Company, Kenilworth, N.J., a corporation of New Jersey
Filed Apr. 6, 1964, Ser. No. 357,397
2 Claims. (Cl. 219—306)



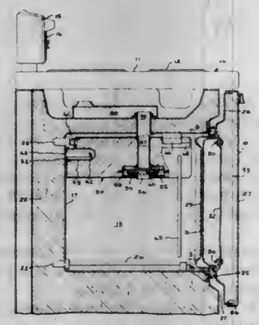
1. In a flexible fluid heater adapted to extend within a fluid enclosure through an opening in the fluid enclosure, a terminal portion, a flexible, bendable, metallic tube secured to said terminal portion at one end and closed at the other end whereby fluid is prevented from entering into the metallic tube, flexible, bendable, substantially longitudinally non-stretchable and longitudinally non-compressible, self-supporting, parallel resistors extending longitudinally within the tube and extending into the terminal portion, rigid sectional fulcrum insulators spaced longitudinally along the resistors, each of the said insulators comprising radial sections with resistor receiving portions within the sections, and tensioning means on each of the insulators for securely holding each of the insulators in secure gripping relationship to the resistors; each of said insulators having an outer radial surface generally conforming in shape to the inner surface of the metal tube, said insulator outer surface and said tube inner surface being in bearing relationship, wherein the resistors are free to bend at positions longitudinally between fulcrum insulators and are securely gripped and held within the fulcrum insulators.

3,286,079
TANK TRANSPORT HEATER
Lee P. Hynes, Haddonfield, and George L. Koester, Jr., Woodcliff Lake, N.J., assignors to Hynes Electric Heating Company, Kenilworth, N.J., a corporation of New Jersey
Filed Apr. 23, 1964, Ser. No. 362,022
3 Claims. (Cl. 219—310)



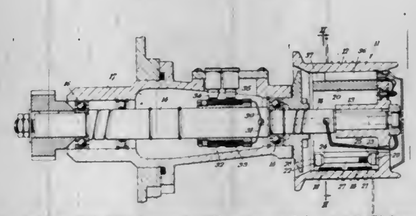
1. A heater in combination with a tank transport having a generally cylindrical longitudinally extending tank with a cylindrical wall and opposing end faces, wherein the heater comprises a tube extending longitudinally of the tank adjacent the tank wall and in heat exchange relationship to the tank contents, a seal between the tank and the tube, a heating element extending longitudinally within the tube and supported therein, said heating element including a resistor, insulators surrounding and supporting said resistor, a longitudinally extending heater frame within the tube and supporting the insulators, fastening means extending through the heater frame for securing said insulators to said frame, and resilient support means including a fixed plate on the tank end face, a fixed member on the frame, and a shock absorber connected to and extending between the fixed plate on the tank and the fixed member on the frame, whereby longitudinal impact loads imparted to the heating element are resiliently absorbed by the shock absorber.

3,286,080
SELF-CLEANING CONVERSION MEANS FOR DOMESTIC OVEN
Walter E. Lewis, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Nov. 29, 1963, Ser. No. 326,908
7 Claims. (Cl. 219—393)



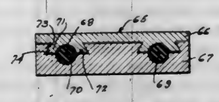
1. An accessory device for an oven comprising a closed box member supporting therein an electrically operated catalytic oxidation unit that has an intake port adjacent a bottom wall thereof, heat insulating material included in the box, one wall of the box being configured to provide a pocket that is adjacent to receive a fluid-filled bulb of a hydraulic thermostat control system for the oven so as to shield the bulb from the oven temperatures, the box including electrical terminal means external thereof and adapted to be engageable with electrical connector means of the oven, and electrical conductor means joining the oxidation unit to the terminal means, support means adapted to hold the box in the upper portion of the oven, said oxidation unit having an exhaust port that is adapted to be in a position to deliver the products of oxidation to an oven venting system.

3,286,081
ELECTRICAL HEATING ARRANGEMENTS
Hector Scowcroft, Bolton, England, assignor to T.M.M. (Research) Limited, Oldham, England, a British company
Filed Mar. 9, 1964, Ser. No. 350,457
Claims priority, application Great Britain, Mar. 8, 1963, 9,400/63
13 Claims. (Cl. 219—470)



1. An electrically heated roller comprising a shell having a circular cross-section, electrical resistance heating means, a deformable annular body arranged within said shell to support said resistance heating means, said annular body disposed to support said heating means in a sliding relationship within said shell, and means for circumferentially expanding the annular body within the shell and for causing said heating means to be held in rotatable contact with the inner periphery of said shell.

3,286,082
HEATING UNIT WITH EMBEDDED TUBULAR ELEMENT
William H. Norton, deceased, late of Mundelein, Ill., by Lynn W. Norton, administratrix, Mundelein, Ill., assignor to Thermel Incorporated
Original application Nov. 29, 1962, Ser. No. 241,069, now Patent No. 3,201,568, dated Aug. 17, 1965. Divided and this application June 14, 1965, Ser. No. 482,962
2 Claims. (Cl. 219—540)

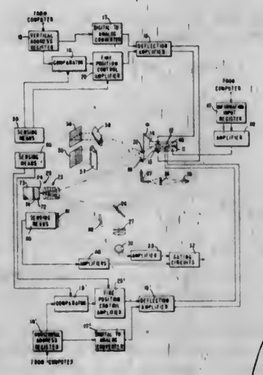


2. An electrical heater comprising in combination,
an elongated tubular electrical heating member with an insulated resistor therein formed with linear sides and a U-shaped joining base,
upper and lower bars having concave matching recesses for embracing the sides of the member,
means defining a slot at one end of the bars for receiving the base of the member,
and a heat conductive plug in said slot in heat conductive engagement with the base of the member,
one of said bars having a male and the other of said bars a female portion of a longitudinally extending dovetail joint with the maximum dimension of the male portion being larger than the minimum dimension of the female portion in their unassembled positions so that said portions are assembled by being axially slid together,
the material of said joint upset beyond the elastic limit by the application of force to the bars for interlocking the bars.

3,286,083
INFORMATION STORAGE SYSTEM

Gunnar Nielsen, Johnson City, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Apr. 16, 1962, Ser. No. 187,798
11 Claims. (Cl. 235—61.11)



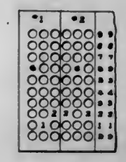
1. An information storage system comprising:
a record medium having a plurality of data storage locations thereon;
each of said data storage locations having a plurality of bit positions;
a bit of digital information recorded in optical form in each of said bit positions;
a cathode ray tube having a luminescent surface and electron beam producing means for producing a point source of light of said luminescent surface;
optical means for transmitting an image of said point source of light to said record medium;
said image of said point source of light having a size closely approximating that of one of said bit positions;
a source of input address signals representing a selected one of said storage locations on said record medium;
means to position said point source of light in response to said input address signals;
illumination responsive means disposed in transducing relation with respect to said record medium; and
said optical means comprising means to sweep said image across said selected one of said storage locations to sequentially illuminate the bit positions thereof.

3,286,084
PUNCH CARD FOR CONTROL SYSTEM FOR MATERIAL HANDLING

Norman L. Peterson, Wauwatosa, and Grady B. Allen, Milwaukee, Wis., assignors, by mesne assignments, to The T. L. Smith Company, Milwaukee, Wis., a corporation of Wisconsin

Original application Nov. 4, 1960, Ser. No. 67,314, now Patent No. 3,133,233, dated May 12, 1964. Divided and this application July 24, 1963, Ser. No. 297,373
3 Claims. (Cl. 235—61.12)

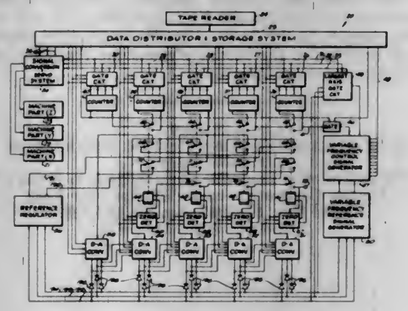
1. A material weighing handling system punch card for controlling the operation of switches in a control system, said card comprising; a plurality of parallel columns, each column of which represents a different material to be measured; at least some of said columns containing a units row, a tens row, and a hundreds row of numerals, the numerals in each row being arranged in numeral order in a vertical direction; at least some of said numerals being punched from said card so as to leave only one number in each row to thereby provide a directly readable visual numerical indication on the punched card of the number themselves which indicate quantities of material to be measured by said switches.



3,286,085
MACHINE TOOL FEEDRATE CONTROL SYSTEM

John A. Rado, Michigan City, Ind., assignor to TWR Inc., a corporation of Ohio

Filed Jan. 23, 1963, Ser. No. 253,411
2 Claims. (Cl. 235—151.11)

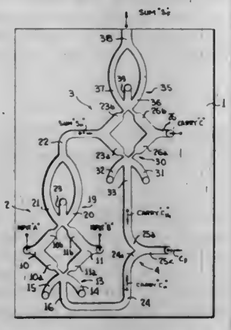


2. In a system for effecting movement of parts along mutually perpendicular axes,
oscillator means for generating a variable frequency control signal,
command pulse generating means responsive to said control signal for generating a plurality of trains of command pulses respectively corresponding to said axes,
means responsive to said trains of command pulses for developing an output signal at a rate proportional to the rate of one of said trains,
means for developing a feedrate command signal at a certain rate,
a frequency comparator including first and second monostable multivibrator means respectively triggered in response to said output signal and said feedrate command signal to develop output pulses having certain amplitudes and durations,
an integrating circuit,
means for applying said output pulses in opposition to said integrating circuit,
and means responsive to the output of said integrating circuit for controlling said oscillator means to maintain the rate of said output signal equal to the rate of said feedrate command signal.

3,286,086
PURE FLUID BINARY ADDER

Peter Bauer, Germantown, Md., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland

Filed Dec. 3, 1964, Ser. No. 415,735
5 Claims. (Cl. 235—201)



1. A fluid logic system comprising two half adder elements and an OR element for performing a binary addition function on input signals from input passages A, B and C so that

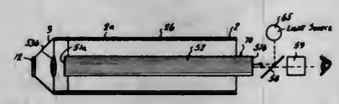
$$\text{Sum}=A\cdot\overline{B}\cdot\overline{C}+\overline{A}\cdot B\cdot\overline{C}+\overline{A}\cdot\overline{B}\cdot C+A\cdot B\cdot C$$
$$\text{Carry}=A\cdot B\cdot C+A\cdot\overline{B}\cdot C+\overline{A}\cdot B\cdot C+A\cdot B\cdot\overline{C}$$

each of said half adders comprising an exclusive OR component for generation of binary 1 and 0 sum output signals and a separate and distinct AND component for generation of binary 1 and 0 carry output signals, each of said components comprising output duct means positioned to receive fluid flow during generation of said binary 1 output signals and dump means positioned to receive fluid flow during generation of said binary 0 output signals and to relieve said system of excess fluid during operation, said output duct means of said exclusive OR components and said dump means of said AND components being substantially axially aligned with and directed toward said input passages.

3,286,087
DEVICE FOR ILLUMINATION

Edward Emanuel Sheldon, 30 E. 40th St., New York, N.Y.

Original applications Mar. 11, 1954, Ser. No. 415,669, now Patent No. 2,877,368, dated Mar. 10, 1959, and Feb. 2, 1962, Ser. No. 170,745, now Patent No. 3,205,390, dated Sept. 7, 1965. Divided and this application May 8, 1964, Ser. No. 366,038
9 Claims. (Cl. 240—2.18)

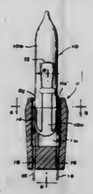


1. A device for illumination comprising in combination a source of radiation and a bundle having plurality of individual fibers for conducting said radiation and operating by internal reflection of said radiation within said fibers, said bundle being disposed in cooperative relationship with said source of radiation and the proximal end of said bundle receiving said radiation from said source, essentially all of said fibers being provided with coating means having a lower index of refraction than said fibers, said coating spacing each of said fibers from adjacent fibers and being independent from the coating of adjacent fibers at least along the major part of their length, said bundle transporting said radiation along said fibers and said radiation emerging from distal end of said bundle to provide the illumination, in said device, furthermore, said radiation source being spaced apart from said proximal end of said bundle receiving said radiation.

3,286,088
PLUG IN LIGHT

Joseph M. Ahroni, 640 S. Spokane St., Seattle, Wash.

Filed Aug. 16, 1965, Ser. No. 480,085
3 Claims. (Cl. 240—10)



1. A miniature lighting assembly unit comprising, a miniature incandescent lamp, an elongated dielectric socket member having a base at one of its ends and presenting a lamp socket open at its other end, said lamp socket having throughout most of its length an oblong generally rectangular transverse cross-section which is laterally expanded at the corners and also having a laterally enlarged mouth portion merging by lateral stop shoulders with the wider sides of the oblong portion of the socket, a pair of opposed spaced electrical contacts located at the narrower sides of the lamp socket below the level of said stop shoulders, said contacts each slidably interfitting with the socket member along a respective pair of said expanded corners thereof for insertion of the contacts through said open end of the lamp socket during assembly of the unit and for holding the contacts apart throughout their length when the socket is empty of a lamp, a pair of spaced insulated power leads threaded through the base of the socket member and connected to said contacts, said lamp comprising a sealed glass bulb formed with an elongated integral necked glass mounting plug having an oblong generally rectangular transverse cross-section and detachably fitting into said socket snugly between said contacts, the bulb proper being wider at its base than the width between the wider faces of said plug to provide bulb shoulder portions opposing said stop shoulders, a filament in said bulb, and a pair of spaced filament leads to said filament emerging from said plug adjacent the narrower sides thereof and doubled back thereover such as to be directly pressed between the plug and said contacts.

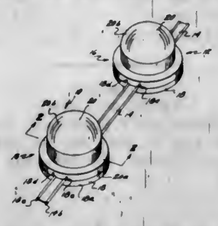
3,286,089
LIGHT UNITS AND ELECTRICAL CONTACTS THEREFOR

Constance L. Smith, 322 S. Lyon, Santa Ana, Calif.

Filed July 21, 1964, Ser. No. 384,169
2 Claims. (Cl. 240—11.2)

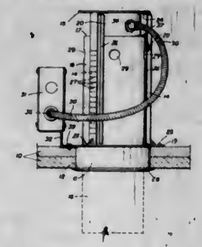
1. A light unit comprising in combination, a housing comprising a base member and a cover therefor formed to provide a cavity therebetween for retaining an electrical lamp, a pair of electrical contacts supported within said base member for engagement with said lamp, each of said contacts being formed with a semi-circular central portion of flexible material and a pair of outwardly extending radial terminals at opposite ends thereof substantially aligned along the diameter of said semi-circular form of said central portion, said base member being formed with

a generally circular aperture for receiving said contacts with the central portions thereof in generally circularly cooperative arrangement and with one terminal of each contact in parallel spaced relation to one of the terminals of the other contact, and a socket in said housing at each



such pair of terminals for individually receiving an electrical conductor having a pair of space conductive members for engagement with the respective terminals thereat, whereby a plurality of such light units can be quickly and easily connected in parallel circuit arrangement.

3,286,090
ADJUSTABLE CEILING FIXTURES
Charles S. Brown, Denver, Colo., assignor to Sechrist Manufacturing Co., Denver, Colo.
Filed Aug. 10, 1964, Ser. No. 388,620
5 Claims. (Cl. 240—78)



1. A ceiling fixture for an electric lamp bulb comprising: a plaster ring adapted to be inserted in an opening in a ceiling, a tubular lamp enclosing shell inserted upwardly through said plaster ring; vertical track members mounted on and arising from said plaster ring and surrounding said tubular shell; spring clips secured at their upper extremities to the upper extremity of said shell and extending downwardly and outwardly therefrom into engagement with said track members, said track members being provided with a vertical slide channel for receiving and guiding said spring clips vertically as said shell is moved vertically.

3,286,091
VEHICLE TRAFFIC CONTROL SYSTEM
Glenn O. Ferm and Gordon W. Davison, Rochester, N.Y., assignors to General Signal Corporation, Rochester, N.Y., a corporation of New York
Filed June 3, 1963, Ser. No. 285,129
23 Claims. (Cl. 246—2)

1. In a system for controlling vehicular traffic on a right of way having a stretch of single track with spaced wayside control locations at respective passing sidings therealong, the combination of:

(a) first communication circuits means interconnecting said wayside control locations for communicating information between said locations distinctive of traffic conditions along said right of way, said first communication circuit means comprising a line circuit extending along said track stretch to interconnect the ends of said passing sidings, said line circuit having pulses of predetermined polarities selected in accordance with traffic conditions along said track stretch transmitted therethrough between the ends of said passing sidings,

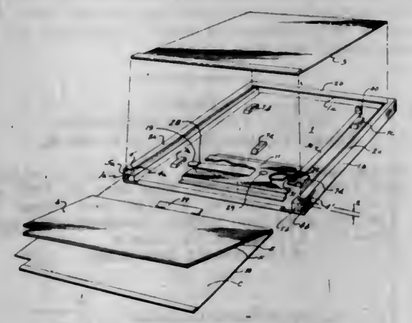
(b) second communication means connecting the wayside to a vehicle on said right of way for communicating information to said vehicle distinctive of the desired performance of said vehicle on said right of way in accordance with the traffic distinctive information being received at said control locations



over said first communication circuit means, said second communication means including coding apparatus for applying pulse code signals to the rails of said stretch of track in advance of a railway distinctive of the desired performance of said train and means on said train for receiving said pulse rate code signals, and

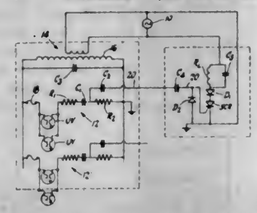
(c) operating means on said vehicle responsive to the information communicated to said vehicle over said second communication means effective to cause said vehicle to perform as desired on said right of way.

3,286,092
RADIOGRAPHIC FILM CASSETTE AND FILM HOLDER WITH MEANS FOR AUTOMATIC UNLOADING OF THE FILM INTO A PROCESSING APPARATUS
Delbert W. Sames, Conklin, N.Y., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 24, 1964, Ser. No. 340,059
4 Claims. (Cl. 250—68)



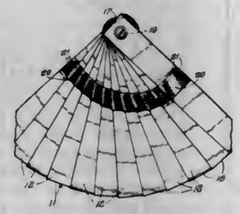
1. A cassette for radiographic sheet material comprising, in combination, a main frame having a base plate, channeled sides and one open side, an X-ray transparent cover on said frame, a film holder comprising a pair of sheet members joined at one end and normally biased to spring apart, guide channels in said main frame adapted to receive the holder and to bring its sheet members loosely together, and mating locking pads at opposite ends of said holder and said frame respectively, said pads being adapted when in locking position to clamp the film in said holder, and control means for moving said pads out of alignment.

3,286,093
FLAME DETECTOR SYSTEM USING A LIGHTLY LOADED GLOW DISCHARGE DETECTOR TUBE
Lyman F. Gilbert, Hazardville, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Continuation of application Ser. No. 235,098, Nov. 2, 1962. This application July 22, 1966, Ser. No. 567,310
7 Claims. (Cl. 250—83.6)



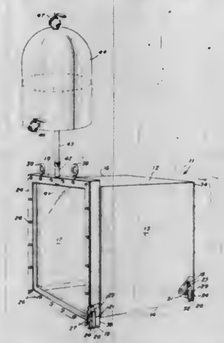
1. A flame detector comprising in combination a source of potential, a glow discharge sensing tube connected to the source of potential and having in series therewith an integrating network and a load impedance across the latter of which an output spike signal is developed incident to avalanche occurring in said tube, a receiver having an input and an output and including a source of potential, a silicon controlled rectifier having its anode and cathode across said source, a load controlled by said silicon controlled rectifier, means providing a high impedance to said source of potential connected to the sensing tube and a low impedance to the spike signal capacitively coupling said output spike signal into the input of the receiver with the silicon controlled rectifier being gated on in response to such coupling of said signal.

3,286,094
RADIATION ENERGY SHIELD PROTECTING A BODY AREA OF A PATIENT FROM X-RAYS AND THE LIKE
John I. Pretto, P.O. Box 580, Las Vegas, Nev.
Continuation of application Ser. No. 97,227, Mar. 20, 1961. This application Mar. 24, 1964, Ser. No. 357,343
1 Claim. (Cl. 250—108)



An ionizing radiation shield conformable to configurations and sizes of portions of a patient's body to be shielded, consisting of: a plurality of elongated leaves of a limp material, opaque to X-rays, each of said leaves having a width greater than the thickness thereof and each having a hole therethrough adjacent one end thereof extending in the direction of minimum thickness of the leaf, said leaves being otherwise imperforate; a common pivot pin extending through the holes of said leaves, plugging the holes, securing the leaves face-to-face in a stacked relation, said leaves being independently movable about said pivot pin from a compact position with the leaves aligned to an extended position with the leaves fanned apart; a flexible, inextensible member extending generally transversely of said leaves; and means at a point intermediate the ends of each leaf for securing said inextensible member to each leaf, the length of said inextensible member between adjacent leaves being less than the width of the leaf, maintaining the leaves in an overlapping relation with said member fully extended, thereby presenting a continuous and imperforate fanned shape opaque to X-rays.

3,286,095
ZINC BROMIDE RADIATION-SHIELDING WINDOW MAINTAINED UNDER AN INERT GAS ATMOSPHERE
William B. Lane, Los Gatos, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Sept. 30, 1963, Ser. No. 312,803
2 Claims. (Cl. 250—108)



1. A transparent radiation-shielding window adapted to complementarily fit in the opening of the wall of a hot cell containing radioactive material and to permit visual observation into said hot cell while biologically shielding the observer from the radiation present in said hot cell, which comprises:

(a) a fluid-tight container adapted to contain a liquid, said container comprising at two opposite ends thereof a pair of spaced sheets of transparent material, said respective sheets defining a field of vision through said container;

(b) a transparent radiation-absorbing liquid completely filling said container for excluding air therefrom; and

(c) a fluid expansion means disposed exteriorly of the container and in fluid communication with said container fluid for relieving fluid pressure on said container sheets,

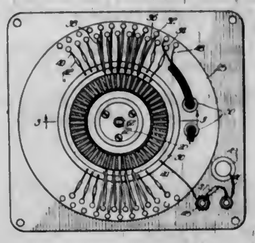
(d) said container fluid partially filling said expansion means, and

(e) gas inlet and outlet means for said expansion means, said inlet means being disposed below the liquid level of the expansion means whereby a chemically-inert gas can be introduced into the expansion means for placing and maintaining the liquid within said expansion means under a chemically-inert gas atmosphere.

3,286,096
HIGH SPEED PHOTO-ELECTRIC ROTARY SEQUENTIAL SWITCH
Alexander Finlay, Springfield, Ill., assignor to Sangamo Electric Company, Springfield, Ill., a corporation of Delaware
Filed Feb. 4, 1964, Ser. No. 342,457
6 Claims. (Cl. 250—208)

1. A photo-electric rotary switch comprising a light source, a plurality of photo sensitive means equally spaced in a ring about said light source and so as to be illuminated thereby, a fraction of said photo sensitive means being disposed in a first plane and extending through an arcuate

portion of said ring, the other of said photo sensitive means being disposed in a second plane parallel to said first plane and extending through a second arcuate portion of said ring, said photo sensitive means being actuated by light radiations so as to act as switches in circuits to which they are connectable, and baffle means rotating about said light source therebetween and the ring of photo



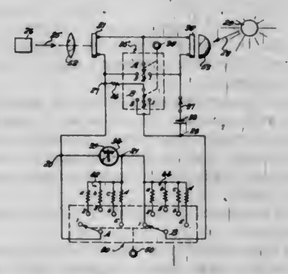
sensitive means which inhibit their illumination, said baffle means including two pairs of spaced scanning apertures, one pair being located in said first plane and the other pair in said other plane, the apertures in each plane being angularly displaced from each other and from the apertures in the other plane by amounts such that each said photo sensitive means is illuminated at least twice in the rotation of said baffle means.

3,286,097

PHOTOMETRIC DEVICE HAVING OPTIONALLY SELECTIVE RESPONSE TO LIGHT ON TWO PHOTORESISTIVE CELLS

Donald W. Norwood, 1470 San Pasqual, Pasadena, Calif.

Filed Nov. 7, 1963, Ser. No. 322,098
12 Claims. (Cl. 250—209)



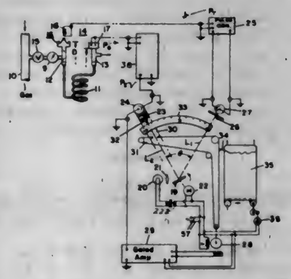
1. In a photometric system responsive to illumination of a photographic scene, the combination of:
first and second photoresistive means, each of said means having an electrical resistance that decreases with increasing intensity of light incident thereon,
means for illuminating one of the photoresistive means with light of intensity substantally correspondng to the intensity of light incident upon a scene,
means for simultaneously illuminating the other photoresistive means with light of intensity substantially corresponding to the average intensity of light reflected by said scene,
electric power means,
electrically actuable means for producing mechanical response to electrical current flowing therein and having electrical resistance to predetermined value,
impedance means having electrical resistance substantially equal to said value,
circuit means forming a main circuit that includes in series the power means and the electrically actuated means, said circuit means including first switch means actuable selectively to three positions to insert in said main circuit said one photoresistive means, said other photoresistive means, and both of said photoresistive means, respectively,
and second switch means actuated with the first switch means for selectively connecting said impedance means in shunt to a portion of said main circuit that includes the electrically actuated means to make the response of said electrically actuated means uniform in all three positions of the first switch means whenever the respective resistances of the two photoresistive means are equal.

3,286,098

METHODS AND APPARATUS FOR DETERMINING FACTORS RELATED TO SONIC VELOCITY IN A GAS

Bernard C. Long, Woodbury, and Olin S. Centofanti, Woodbury Heights, N.J., assignors to Mobil Oil Corporation, a corporation of New York

Filed Feb. 28, 1963, Ser. No. 261,668
10 Claims. (Cl. 250—230)



1. A method for producing an accurate and variable interval of lapsed time related to sound velocity in a gas which comprises repeatedly scanning two angularly-spaced light-sensitive devices by a beam of light rotated at constant angular velocity, converting first electrical pulses incident to scanning of one of said devices to sonic pulses, applying said sonic pulses at one point to the gas, converting said sonic pulses to second electrical pulses upon arrival of said sonic pulses at another point in the gas, and varying the angle between said devices in sense dependent upon whether said second electrical pulses occur before or after the scanning of the other of said devices to match the time interval between the corresponding pairs of first and second pulses with the time required for the sonic pulses to traverse the gas between said points.

3,286,099

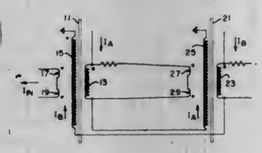
LOGIC CIRCUITS EMPLOYING TORSIONALLY STRAINED MAGNETIC CORES

Henry R. Irons, Washington, D.C., assignor to the United States of America as represented by the Secretary of the Navy

Filed Sept. 24, 1962, Ser. No. 225,944
5 Claims. (Cl. 307—88)

1. A multi-stage logic circuit comprising a first stage including a first saturable core linearly disposed, means applying a torsional strain to said first core, a first input circuit including input winding means on said first core, a first readout winding on said first core, a first reset

winding on said first core, a second stage including a second saturable core linearly disposed, means applying a torsional strain to said second core, a second input circuit including input winding means on said second core, a second readout winding on said second core, a second reset winding on said second core, means connecting said input circuit to a source of signal output voltage from a previous stage of said logic circuit, means serially interconnecting said first readout winding and said second reset winding to a first source of readout current pulses whereby a current pulse from said first source may reset said second core, means connecting said first readout winding to said second input circuit whereby an output voltage from said first readout winding may supply an input voltage pulse to said second input circuit, said first reset winding and said second readout winding serially



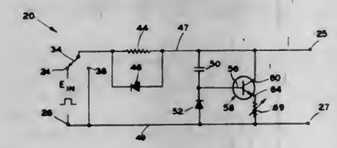
interconnected to a second source of readout current pulses whereby a current pulse from said first source may reset said first core, said current pulses from said first source and from said second source being alternately applied, the signal voltage applied to said first input circuit together with the readout current pulse applied to said first readout winding being sufficient to cause said first core to saturate whereby a readout voltage will appear across said first readout winding when an input signal is present in said first input circuit, the signal voltage applied to said second input together with the current pulse applied to said second readout winding being sufficient to saturate said second core whereby a readout voltage will appear across said second readout winding when an input signal is present in said second input circuit.

3,286,100

VOLTAGE INTEGRATOR CIRCUIT

Robert L. Worthington, East Orange, N.J., and Ernest Hartog, New York, and Menashe Teitelbaum, Brooklyn, N.Y., assignors to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware

Filed Sept. 21, 1962, Ser. No. 225,337
16 Claims. (Cl. 307—88.5)



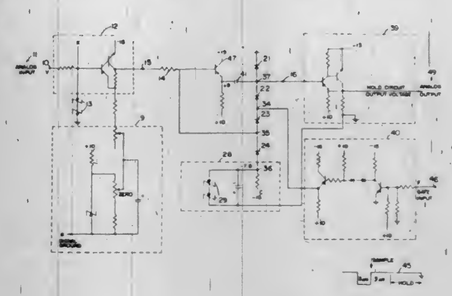
1. A voltage integrator comprising an input for receiving signals, an output connected to the input through a resistor, a circuit having a series connected variable resistor for changing the time constant of the integrator and a transistor having a base, the circuit being connected in parallel with the output, a condenser connected between the first-mentioned resistor and the base of the transistor so that the transistor conducts when a signal of one polarity is applied to the input and the magnitude of the current through the transistor is determined by the charge on the condenser.

3,286,101

SAMPLE AND HOLD CIRCUIT

William Simon, Cambridge, Mass., assignor to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts

Filed Oct. 16, 1963, Ser. No. 316,721
6 Claims. (Cl. 307—88.5)



1. A sample and hold circuit having a sample window from .1 to .5 microsecond and a hold time of from 20 to 100 microseconds comprising:
an analog voltage signal source,
analog signal utilizing means,
analog voltage holding means having an input and an output,
first switch means for clamping the output terminal of said voltage holding means to ground permitting registration of an analog signal from said analog signal source on said analog voltage holding means for a period of from 0.1 to 0.5 microsecond,
second switch means for clamping the input terminal of said voltage holding means to ground permitting transfer of said analog voltage signal from said voltage holding means to said signal utilizing means for a period of from 20 to 100 microseconds,
switch controlling means controlling said first and second switching means,
said controlling means capable of controlling said first and second switching means simultaneously, and
said first and second switch means being coordinated such that when said first switch is closed, second switch is open, and when said second switch is closed, said first switch is opened.

3,286,102

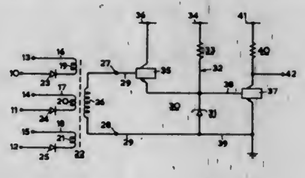
ELECTRIC CIRCUITS

Hassan Paddy Abdel Salam, London, England, assignor to English Electric-Leo Computers Limited, London, England

Filed Dec. 19, 1963, Ser. No. 331,851
Claims priority, application Great Britain, Dec. 28, 1962, 43,295/62
2 Claims. (Cl. 307—88.5)

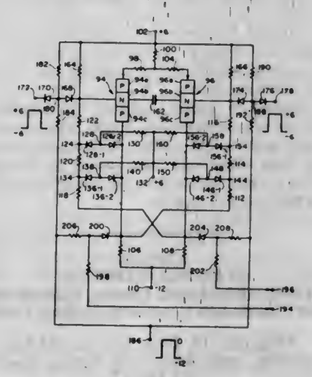
1. An electric digital transfer and storage device comprising a plurality of separate input circuits, a pulse transformer having a plurality of similar input windings and an output winding, a transistor having said output winding connected in the base-emitter circuit thereof, a tunnel diode connected in the emitter-collector circuit of said transistor, and a biasing circuit for causing a bias current to flow in the tunnel diode having a magnitude such that

the tunnel diode may operate at either of two alternative stable states, each input circuit comprising one of a plurality of first input terminals for receiving input potentials from a plurality of input signal sources, one of a plurality of second input terminals for receiving control potential pulses from a control potential source, and one of said input windings and a unidirectional current conduction device connected in series between said first and second input terminals, such that an output signal representing a predetermined binary state is induced in the transformer output winding on application of a control potential pulse to any selected second input terminal only



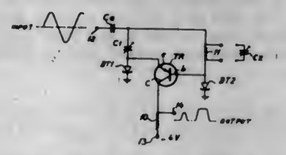
when the input potential signal applied to the associated first input terminal is of a predetermined one of two alternative values, which value represents the aforesaid binary state, induction of said output signal in the transformer output winding being automatically effective to momentarily modify the current flowing in the tunnel diode whereby to cause the tunnel diode to transfer from one potential state to that potential state which is representative of the aforesaid binary state, and output circuit means connected with the tunnel diode for producing as an output signal an electric potential dependent on the potential developed across the tunnel diode.

3,286,103
MULTISTABLE CIRCUIT
Genung L. Clapper, Vestal, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 30, 1963, Ser. No. 334,397
12 Claims. (Cl. 307—88.5)



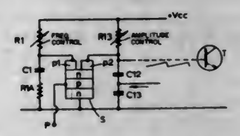
2. In a circuit which has two electrical devices, the combination of means for coupling the devices together regeneratively so that when one of the devices is in a first state the other device is in a different state, and means for selectively providing degenerative feedback in only one of the devices at any time to counteract the regenerative coupling and to permit the devices to be stabilized at preestablished states.

3,286,104
VARIABLE-WIDTH TRANSISTOR PULSE GENERATOR EMPLOYING VARIABLE CAPACITIVE PHASE-SHIFT CIRCUIT FOR CONSECUTIVE SWITCHING OF TWO TUNNEL DIODES
Jean-Jacques Laupretre, Le Perreux sur Marne, France, assignor to Compagnie des Machines Bull (Société Anonyme), Paris, France
Filed Jan. 2, 1964, Ser. No. 335,178
Claims priority, application France, Jan. 8, 1963, 920,761
5 Claims. (Cl. 307—88.5)



1. A pulse generator arrangement for generating a voltage pulse for each positive halfwave of an H.-F. alternating voltage applied on an input terminal, with one transistor having emitter, base and collector electrodes and a load impedance connected in the collector side of the collector-emitter circuit, the arrangement including further: a first tunnel diode, a second tunnel diode, the cathodes of said diodes being directly connected to a reference potential terminal, the anode of the first diode being directly connected to the emitter of said transistor and the anode of the second diode being directly connected to the base of said transistor, a capacitor of adjustable capacitance connected between said input terminal and said emitter and a fixed resistor connected between said input terminal and said base, the capacitance of said capacitor being so set and the value of said resistor being so chosen that, both tunnel diodes operate in their low voltage state during each negative halfwave of the input signal, the first tunnel diode being switched to its high voltage operating state in advance of each positive halfwave of the input signal, thus causing the conduction of said transistor, and the second tunnel diode being switched later to its high voltage state for each positive halfwave, thus stopping the conduction of said transistor.

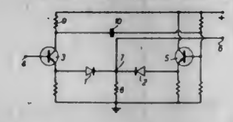
3,286,105
TIME-BASE CIRCUIT EMPLOYING FOUR-LAYER SEMICONDUCTOR SWITCHING ELEMENT HAVING END LAYER DIVIDED INTO TWO SECTIONS
Brian Ernest Attwood, South Croydon, Surrey, England, assignor to North American Philips Company Inc., New York, N.Y., a corporation of Delaware
Filed June 30, 1964, Ser. No. 379,260
Claims priority, application Great Britain, July 2, 1963, 26,184/63
16 Claims. (Cl. 307—88.5)



13. A relaxation oscillator comprising, a four layer semiconductor element having one end layer divided into two separate sections each of which has a terminal and a second layer separated from said end layer by at least one semiconductive layer and having a third terminal connected thereto thereby to form a first current path in said four layer element with a first one of said two sections and a second current path therein with the second

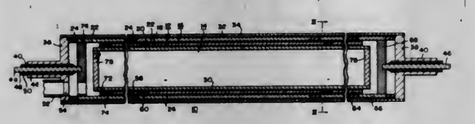
one of said two sections, each of said current paths having a given value of breakdown voltage for initiating current flow therein, a first capacitor, means connecting said first capacitor across the terminals which define said four layer element first current path to provide a discharge path for said first capacitor, means for charging said first capacitor towards said first current path breakdown voltage, a second capacitor connected across the terminals which define said second current path, and means for charging said second capacitor so as to raise the voltage across said second current path to said given breakdown voltage before the voltage across said first capacitor reaches the breakdown valtage of said first current path.

3,286,106
AMPLITUDE CLIPPING CIRCUITS
John Harwood Deveson, Chelmsford, Essex, England, assignor to The Marconi Company Limited, London, England, a British company
Filed Nov. 20, 1964, Ser. No. 412,633
Claims priority, application Great Britain, Feb. 17, 1964, 6,424/64
3 Claims. (Cl. 307—88.5)



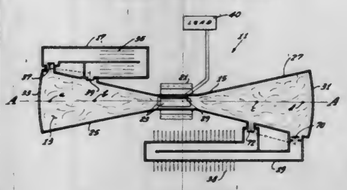
1. An amplitude clipping circuit comprising two rectifiers coupled back to back at one side thereof, means for applying input signals to be clipped to the remaining side of one of said rectifiers, means for applying a clipping reference potential to the remaining side of the other of said rectifiers, means for taking clipped output signals from a point between said rectifiers, and inverter-differentiator means for applying to said remaining side of said other rectifier correcting signals derived from said input signals by inversion and differentiation.

3,286,107
THERMIONIC ENERGY CONVERTER
Alvin E. Fein, Baltimore, Md., and George A. Kemeny, Franklin Township, Westmoreland County, and Lee S. Richardson, Monroeville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 8, 1962, Ser. No. 236,356
9 Claims. (Cl. 310—4)



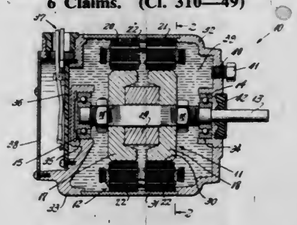
1. A thermionic energy conversion element comprising an elongated unitary and tubular heatable cathode arrangement and an elongated unitary and tubular coolable anode arrangement spaced concentrically from said cathode arrangement, each of said arrangements having longitudinally spaced longitudinal tubular segments, the cathode segments being electron emissive and being radially opposed to but slightly longitudinally offset from the respective anode segments so as to form respective thermionic diodes, the longitudinal segments of one of said arrangements being outwardly disposed on an elongated tubular member with an electrically insulative tubular layer therebetween, the longitudinal segments of the other arrangement being inwardly disposed on an elongated tubular cladding member with another tubular electrically insulative layer therebetween, means for supporting said cathode and anode arrangements relative to each other and for connecting said diodes in electrical series, and end means for hermetically sealing from the exterior at least the interelectrode space between said arrangements.

3,286,108
MAGNETO-HYDRODYNAMIC GENERATOR
Giusto Fonda-Bonardi, Los Angeles, Calif., assignor to Litton Systems, Inc., Beverly Hills, Calif.
Filed Dec. 21, 1961, Ser. No. 161,067
11 Claims. (Cl. 310—11)



1. In a magneto-hydrodynamic generator for transforming kinetic energy of an ionized gas into electrical energy, the combination comprising: an elongated container having first and second opposite ends; a mass of ionized gas particles positioned within said container; first means for generating a magnetic field traversing a portion of the interior of said container; and second means positioned in proximity with said first end for heating said gas at predetermined intervals to cause said gas mass to reciprocate between said first and second ends with a frequency representative of the predetermined interval, said gas mass passing through said magnetic field alternately in opposite directions for generating an electromotive potential, said second means including apparatus for abstracting from said mass of ionized gas particles within said container a predetermined amount of heat energy.

3,286,109
STEP MOTOR DAMPED BY A VISCOUS FLUID FILLING
Elmer W. Madsen, Bristol, Conn., assignor to The Superior Electric Company, Bristol, Conn., a corporation of Connecticut
Filed Feb. 17, 1964, Ser. No. 345,145
6 Claims. (Cl. 310—49)



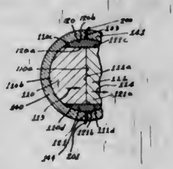
1. An electric motor of the incremental rotational stepping type comprising a stator assembly having an inner periphery substantially defining a cylinder, a rotor assembly including a shaft and at least one radially extending member having a substantially cylindrical outer periphery formed with rotor teeth, and means mounting the rotor assembly to have the periphery of the member radially aligned with the inner periphery of the stator with a small gap existing therebetween, said means including a frame defining a fluid-tight chamber in which the stator and rotor peripheries are located, and a quantity of viscous dampening fluid within said chamber at least at the

gap, said fluid having a viscosity which dampens the oscillations occurring in the rotor assembly when said shaft is stopped at the end of a step.

3,286,110
PERMANENT MAGNET ALTERNATOR

Robert R. Pintar, Diamond Bar, Calif., assignor to TWR Inc., a corporation of Ohio

Filed Feb. 2, 1961, Ser. No. 86,791
3 Claims. (Cl. 310—156)

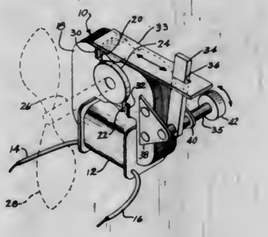


1. An electric machine comprising a rotor assembly having permanent magnet means of solid cross section and having stub shaft means at the opposite sides of the permanent magnet means for mounting said rotor assembly for rotation on an axis intersecting said permanent magnet means, said permanent magnet means comprising a plurality of magnet sections with mating flat surfaces and a damper winding encircling a pair of said magnet sections at the respective mating surfaces thereof, said magnet sections being made of grain oriented material oriented and magnetized at right angles to said flat surfaces, and sleeve means surrounding said permanent magnet sections and said damper winding and having an interior surface conforming with exterior surface portions of said permanent magnet sections.

3,286,111
SPEED CONTROL FOR SHADED POLE INDUCTION MOTORS

Angelo Boudouris, 5856 Highland Drive, Sylvania, Ohio

Filed Dec. 6, 1963, Ser. No. 328,554
1 Claim. (Cl. 310—190)

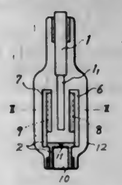


A speed control for a shaded pole induction motor having a rotor, a laminated frame surrounding said rotor including an interpole gap and a shading coil adjacent said interpole gap, said control comprising in combination, an elongate body of magnetic material adjacent and parallel to one side of said laminated frame and extending over said shading coil and said interpole gap, means for sliding said elongate body lengthwise relative to said one side of said laminated frame to vary the area of said elongate body which overlies said one side of said laminated frame, whereby the quantity of magnetic flux from said laminated frame passing through said elongate body may be varied such that the flux diverted from said rotor will be varied in accordance with the position of said elongate body relative to said one side of said laminated frame, said means for sliding said elongate body relative to said frame including a shaft journaled for rotation relative to said frame on an axis normal to the direction of movement of said elongate body and a pivot arm secured to said shaft and extending to and secured to one end of said elongate body whereby angular movement of said shaft will cause said elongate body to slide lengthwise relative to said one side of said laminated frame.

3,286,112
X-RAY TUBES FOR MICROPHOTOGRAPHY

Kiyoshi Kitahama, 1054 Shimonagaya-cho, Minami-ku, Yokohama, Japan, and Tsuruko Kitahama, Minami-ku, Yokohama, Japan; said Tsuruko Kitahama assignor to said Kiyoshi Kitahama

Filed Jan. 8, 1963, Ser. No. 250,126
Claims priority, application Japan, Jan. 10, 1962, 37/648; Sept. 12, 1962, 37/39,268
5 Claims. (Cl. 313—56)

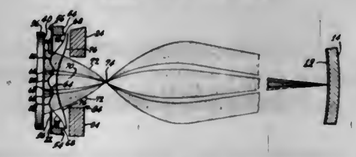


1. An X-ray tube for microphotography comprising two adjacent and substantially parallel arranged anodes closely spaced to define a fine, elongated gap therebetween, the proximate surfaces of said anodes tapering toward one another and constituting X-ray targets, said anodes having adjacent ends contacting each other, a pair of cathodes disposed on either side of said anodes and parallel to said elongated gap, said cathodes having spaced collimating cathodic head portions extending along said gap, and a filament in each head portion having a length corresponding to the length of said elongated gap, whereby cathode rays emitted from the filaments and collimated by said head portions are directed to said X-ray targets and X-rays are directed along the longitudinal axis of said gap away from the contacting ends of said anodes.

3,286,113
CATHODE RAY TUBE

Robert E. Benway, Marion, Ind., assignor to Radio Corporation of America, a corporation of Delaware

Filed Nov. 20, 1961, Ser. No. 153,451
8 Claims. (Cl. 313—82)



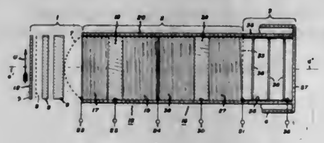
1. A cathode ray tube comprising a luminescent screen and an electron gun adapted to project an electron beam onto said screen, said gun comprising a plurality of electrodes aligned along a central axis, said electrodes including a cathode having a planar electron emitting portion, a control electrode including a planar portion having a subdivided beam control aperture of given diameter opposite said cathode portion, an electron accelerating electrode for accelerating electrons emitted from said cathode portion into separate streams passing through the subdivisions of said aperture, said accelerating electrode having a single aperture of given diameter spaced from and coaxial with said beam control aperture, means including a low potential field-forming electrode adjacent

to said control electrode on the side thereof opposite from said cathode and having a single aperture of substantially greater diameter than said given diameters coaxial with said beam control aperture for creating between said control and accelerating electrodes a convergent electric field for individually converging and focusing each of said electron streams to a common crossover on said central axis, and means for converging and focusing said streams between said crossover and said screen to image said crossover on said screen.

3,286,114
VARIABLE MAGNIFICATION ELECTRON LENS

Kurt Schlesinger, Fayetteville, N.Y., assignor to General Electric Company, a corporation of New York

Filed Sept. 16, 1963, Ser. No. 308,952
14 Claims. (Cl. 313—83)

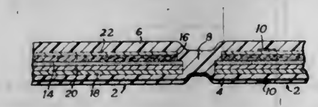


1. A variable magnification electron lens comprising:
(a) a first electrostatic lens unit for generating a first electric field having a substantially quadratic potential distribution along its axis,
(b) a second electrostatic lens unit coaxial with and positioned in tandem with respect to said first lens unit for generating a second electric field having a substantially quadratic potential distribution along said axis, and
(c) means for varying the quadratic potential distribution between said electric fields generated by said first and said second electrostatic lens units to vary the magnification of said electron lens.

3,286,115
ELECTROLUMINESCENT LAMP WITH BORIC ACID OR BORIC OXIDE USED IN CONJUNCTION WITH THE ZINC SULPHIDE LAYER

Peter Whitten Ranby and David William Smith, London, England, assignors to Thorn Electrical Industries Limited, London, England, a British company

Filed Feb. 24, 1964, Ser. No. 346,605
Claims priority, application Great Britain, Feb. 25, 1963, 7,534/63
11 Claims. (Cl. 313—108)

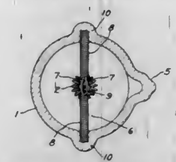


1. An electroluminescent device comprising a hermetically sealed flexible envelope at least a portion of which is light-transmitting, and an electroluminescent cell embedded in said envelope, said cell comprising a pair of spaced electrodes superposed in face to face relationship at least one of said electrodes being light-transmitting, means for conducting current to each of said electrodes, and a layer of a zinc sulfide electroluminescent phosphor dispersed in an organic binder sandwiched between said electrodes, said zinc sulphide being substantially in contact with a material consisting essentially of a member selected from the group consisting of boric acid and boric oxide.

3,286,116
ELECTRIC INCANDESCENT LAMP FILAMENT SUPPORT

Robert N. Malm, Willoughby, Ohio, assignor to General Electric Company, a corporation of New York

Filed July 1, 1964, Ser. No. 379,651
4 Claims. (Cl. 313—274)

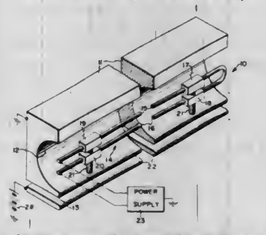


1. An electric incandescent lamp comprising a vitreous envelope, a pair of lead-in conductors extending into and hermetically sealed within said envelope, a coil refractory metal wire filament disposed in said envelope and electrically connected at its ends to said conductors, and a supplementary support for said filament comprising a pair of refractory meal support rods extending in side-by-side relation across and positioned on opposite sides of said filament and anchored at their opposite ends to the wall of said envelope, and wire coil means tightly wound around and binding together the respective end portions of the said side-by-side support rods at each side of said filament to thereby tightly clamp the filament therebetween.

3,286,117
LINEARLY EXPANDABLE FILAMENT FOR ELECTRON GUN STRUCTURE

Alfred L. Donlevy, San Leandro, Calif., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

Filed Jan. 7, 1963, Ser. No. 249,934
4 Claims. (Cl. 313—279)



1. In an electron gun the combination of a gun housing, an elongate cathode filament having a straight line portion and support means for supporting said elongate filament in said housing, said support means including at least one support block positioned adjacent said straight line portion of said filament, said support block being provided with a bore therethrough having a diameter only slightly larger than the diameter of said filament and providing a lever action on said filament to support the straight line length of said filament while permitting said filament to slide therethrough.

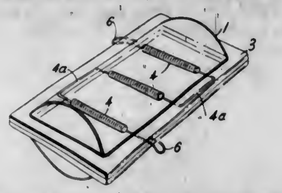
3,286,118
ELECTRIC INCANDESCENT LAMPS

Arthur S. Vause, Rugby, and John W. T. Wright, Leicester, England, assignors to Associated Electrical Industries Limited, London, England, a British company

Filed June 28, 1963, Ser. No. 291,319
Claims priority, application Great Britain, July 6, 1962, 26,055/62
5 Claims. (Cl. 313—318)

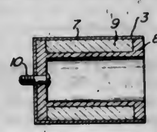
1. An electric incandescent lamp comprising a sealed light transmitting envelope composed of two trough

shaped members with rims sealed together in opposed relation with the rims in contact, at least one filament within the envelope and electrical connections from respective ends of each filament extending in sealed rela-



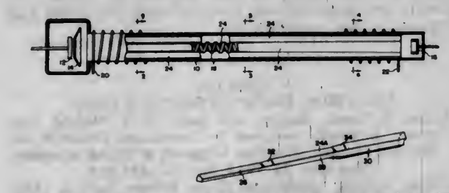
tion between said rims to the exterior of the envelope with the end of each connection remote from the filament sealed between said rims to provide a looped terminal member for the filament.

3,286,119
HOLLOW CATHODE DISCHARGE TUBES
Masao Sugawara, Tokyo, and Hiroshi Okagaki, Kodaira-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Apr. 8, 1964, Ser. No. 358,263
Claims priority, application Japan, May 8, 1963, 38/23,547
6 Claims. (Cl. 313—346)



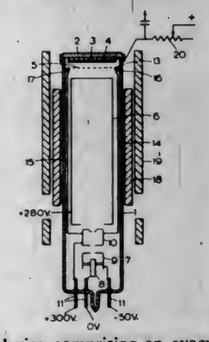
1. A hollow cathode discharge tube having a hollow cathode including chamber means within said hollow cathode for accommodating a low-melting-point metal, said hollow cathode comprising an outer peripheral portion formed of a substance which is resistant to the diffusion and permeation of said low-melting-point metal, an inner peripheral portion formed of a refractory and electro-conductive substance which allows diffusion and permeation therethrough of said low-melting-point metal, and said chamber means being formed between said outer and inner peripheral portions.

3,286,120
VELOCITY TAPERING OF TRAVELING WAVE TUBE CYLINDRICAL DELAY LINE BY USE OF NONUNIFORM SUPPORT ROD
Noel C. Peterson, Severna Park, and John M. Scott, Linthicum Heights, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 9, 1964, Ser. No. 381,505
3 Claims. (Cl. 315—3.6)



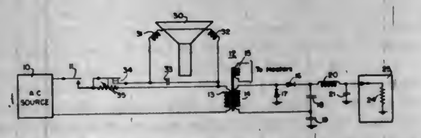
1. A traveling wave tube having a tubular housing with a slow wave structure therein, a support structure supporting said slow wave structure within said housing, said housing being tubular, said slow wave structure having a generally cylindrical configuration and being substantially coaxial with said housing, said support structure comprising a plurality of dielectric rods spaced along the periphery of said slow wave structure, extending along the length of said slow wave structure and interposed between said slow wave structure and said housing to provide uniform spacing between said housing and said slow wave structure, said dielectric rods providing varying dielectric loading to said slow wave structure along at least a portion of their length.

3,286,121
PICK-UP TUBE HAVING A MESH ELECTRODE CONNECTED TO THE BASE BY DEFLECTING FIELD NEUTRALIZING LEADS
Hans Gerhard Lubszynski, Waltham St. Lawrence, England, assignor to Electrical & Musical Industries Limited, Hayes, Middlesex, England, a company of Great Britain
Filed Jan. 10, 1963, Ser. No. 250,535
Claims priority, application Great Britain, Jan. 15, 1962, 1,421/62
3 Claims. (Cl. 315—8)



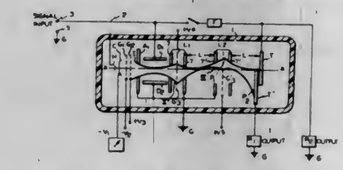
2. A pickup device comprising an evacuated envelope within which are disposed a target, an electron gun, a mesh electrode close and substantially parallel to said target and a wall anode, both said mesh electrode and said wall anode being placed between said target and said gun, the device also having a plurality of contact members attached to said envelope adjacent to said gun to enable connection to electrodes within said envelope, and connecting means from said mesh electrode to at least one of said contact members, said connecting means including alongside said wall anode at least one pair of leads along the device and diametrically opposite with respect to its axis.

3,286,122
AUTOMATIC DEGAUSSING CIRCUIT
Leonard Dietch, Skokie, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware
Filed Aug. 31, 1964, Ser. No. 393,250
4 Claims. (Cl. 315—8)



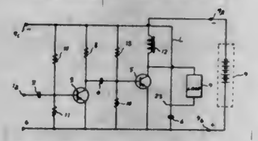
4. In a color television receiver having a picture tube including a shadow mask susceptible to external magnetic fields and a pair of demagnetizing coils mounted adjacent to the picture tube, circuit means for developing a high amplitude, decaying demagnetizing current in said coils comprising; a power supply having a high inrush current characteristic; a thermistor having an inverse-temperature characteristic serially connected between a source of A.C. potential and said power supply; switch means for placing said coils in parallel with said thermistor when said thermistor is below a predetermined temperature range and for disconnecting said coils when said thermistor is above said predetermined temperature range; and a capacitor connected across said coils for cyclically dissipating any residual energy therein upon disconnection of said coils by said switch means, said circuit means cooperating to provide a high amplitude demagnetizing current for said coils.

3,286,123
APPARATUS FOR CHARGED-PARTICLE DEFLECTION MODULATION
Jacob Goldberg, 4 Garrity Road, Burlington, Mass.
Filed June 1, 1962, Ser. No. 199,482
4 Claims. (Cl. 315—17)



1. A charged-particle beam-current modulator having, in combination, means for generating a high-density charged-particle beam and projecting the same along a predetermined axis, means for signal-deflecting the beam off the axis in a first direction to a predetermined region beyond the deflecting means at which region the space charge associated with the deflected beam has caused the beam to have a predetermined divergence, and beam-converging means at said region, the beam-converging means being adjusted to converge the space-charge diverging deflected beam and to direct the same in another direction intersecting the axis to produce through space-charge divergence an amplified off-axis deflection, and means for responding to the off-axis beam.

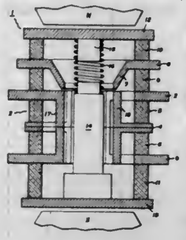
3,286,124
STABILIZED VOLTAGE SOURCE FOR TRANSISTORIZED CIRCUITS
Saburo Oniki and Satoshi Shimada, Ohta-ku, Tokyo, Japan, assignors to Sony Corporation, Tokyo, Japan, a corporation of Japan
Filed Oct. 25, 1963, Ser. No. 319,055
Claims priority, application Japan, Oct. 29, 1962, 37/64,201
4 Claims. (Cl. 315—27)



1. A transistor circuit comprising an output transistor having a base, a collector electrode, and an emitter electrode, a source of electrical power, a load, means connecting said collector electrode and one end of said load to one side of said source of power, means conecting said emitter electrode to the other side of said source of power, a coupling capacitor connected between the other end of said load and said other side of said source of power, and means for tapping off a relatively stable voltage at the junction between said coupling capacitor and said load.

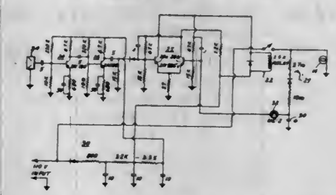
4. The circuit of claim 1 in which said load is a television receiver deflection coil.

3,286,125
RADIO FREQUENCY APPARATUS
Richard G. Lock, Albany, N.Y., assignor to General Electric Company, a corporation of New York
Filed Nov. 20, 1961, Ser. No. 153,425
4 Claims. (Cl. 315—39.63)



1. Radio frequency apparatus comprising an electric discharge device including an envelope, an interaction structure contained in said envelope including a negative central electrode and a surrounding cylindrical array of circumferentially spaced anode segments, three axially spaced anode terminals sealed in the wall of said envelope with alternate ones of said anode segments connected to the outer two of said terminals and the others of said segments connected to the intermediate one of said terminals and a radio frequency output transmission line comprising a central conductor coupled to said intermediate terminal and outer conductive means coupled to both said outer anode terminals, said transmission line includes an output section and a tuning section located on opposite sides of said device and said tuning section includes an element interconnecting the central conductor and outer conductive means and is adjustably positionable for selectively adjustably resonating said apparatus.

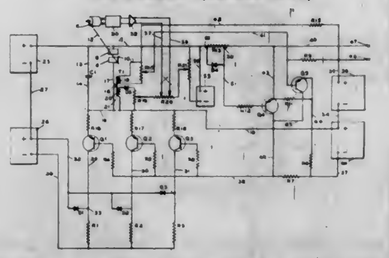
3,286,126
PORTABLE REMOTE CONTROL LIGHT
Arthur R. Crawford, P.O. Box 63, Worthington, Ohio
Filed Feb. 23, 1962, Ser. No. 175,085
6 Claims. (Cl. 315—159)



1. A remote control system for a light comprising a housing small enough to be portable, a lamp receptacle on the housing for receiving a lamp, connector means carried by the housing for establishing electrical connection to an external source of power, detector means in the housing for generating an electrical signal in response to the impingement thereon of radiant energy, multivibrator means connected to the detector means, and adapted to be set in a first state in response to the electrical signal from the detector and including a charging circuit connected between the multivibrator output and input and responsive to the first multivibrator state to

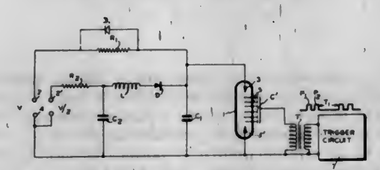
transfer the multivibrator to a second state after a predetermined time period, and switching means to couple the connector means to the receptacle for energizing the lamp therein while the multivibrator means is in the first state.

3,286,127
ELECTRIC DISCHARGE MACHINING APPARATUS WITH CURRENT CONTROL MEANS
Robert L. Henry, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed May 18, 1961, Ser. No. 117,256
12 Claims. (Cl. 315—209)



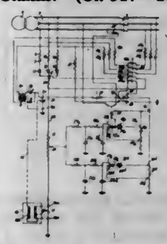
1. A spark discharge machining apparatus comprising a pair of electrodes separated by a spark gap, one of said electrodes consisting of a tool and the other of a workpiece, a capacitor connected across said electrodes, and means to charge said capacitor to the ignition potential of the gap between said electrodes, including a source of direct-current potential having positive and negative end terminals and a mid tap adapted to provide a potential intermediate that existing between said end terminals, a resistor and a diode connected in series between one of said end terminals and said mid tap, said resistor and diode being connected together by a junction and said diode being poled to permit current to flow from said source through said resistor, and a transistor having emitter and collector electrodes connected in series with said capacitor between said junction and the other of said end terminals of said source, whereby the potential on the transistor is limited to the potential between said mid tap and said other end terminal, and the current flow through the transistor is limited by the impedance of said resistor.

3,286,128
APPARATUS FOR MULTIPLE ELECTRIC IMPULSE PRODUCTION
William Arthur Ward, Norwood, Mass., assignor to United States Scientific Instruments, Inc., Watertown, Mass., a corporation of Massachusetts
Filed Dec. 17, 1962, Ser. No. 245,216
20 Claims. (Cl. 315—241)



1. An electric-impulse-producing apparatus having, in combination, first energy-storage means of predetermined value, a normally ineffective impulse-producing load connected across the first energy-storage means, means for storing energy in the first energy-storage means with a predetermined voltage, second energy-storage means of value greater than that of the first energy-storage means, means for storing energy in the second energy-storage means with a further voltage less than the said predetermined voltage, a voltage-boosting circuit connecting the first and second energy-storage means together, and means for rendering the impulse-producing load effective at a first instant of time to enable impulse energization of the load by the stored energy in the first energy-storage means and at a second instant of time later to enable a second impulse energization of the load by the first energy-storage means in which energy has been re-stored from the second energy-storage means through the voltage-boosting circuit.

3,286,129
FAULT DETECTION NETWORK
Claude Gagniere, Nogent sur Oise, France, assignor to Charbonnages de France, Paris, France
Filed Oct. 8, 1963, Ser. No. 314,748
Claims priority, application France, Oct. 13, 1962, 912,199
6 Claims. (Cl. 317—18)



1. Means for continuously monitoring the values of insulation of an electric network with respect to ground and for providing a trigger or alarm signal when insulation faults appear having predetermined insulation values which are independent of network voltage variations and are insensitive to the capacitance of the network, said means comprising:

polarized common electric connetion means between the phases of the network being monitored and ground;

resistane means inserted in said connection means and adapted to furnish a first continuous voltage which is a linear function of the current intensity flowing in said connection means;

D.C. circuit means adapted to furnish a second continuous voltage which is a function of the monitored network voltage and is of the same polarity as said first continuous voltage which is a function of the current intensity flowing in said connection means;

variable means adapted to compare said first and second voltages;

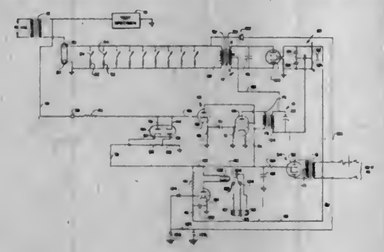
means for actuating safety means, when said first continuous voltage is greater in absolute value than said second continuous voltage;

said means for actuating said safety means being inserted between a point in said resistance means and a point in said D.C. circuit means.

3,286,130
RESISTIVE CURRENT SENSING DEVICE
Henry H. Clinton, Ridgewood, Clinton, Conn.
Filed Jan. 7, 1963, Ser. No. 249,735
14 Claims. (Cl. 317—27)

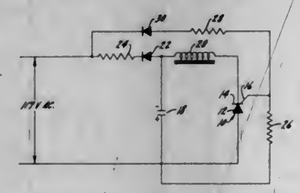
1. A current overload device for use in connection with an external circuit energized by an alternating voltage source and having both resistance and reactance so that the total current therethrough leads or lags the total voltage thereacross and may be resolved into one component in phase with said total voltage and another component ninety degrees out of phase with said total voltage, said

device comprising a means adapted for connection with said external circuit for producing an output voltage signal having a magnitude directly related to the magnitude of



said component of said total current which is in phase with said total voltage, and a switching circuit controlled by said output voltage signal.

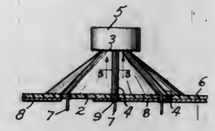
3,286,131
CAPACITOR-OPERATED SCR LINE FAULT DETECTOR
Thomas E. Myers, St. Charles, Ill., assignor to Ideal Industries, Inc., Sycamore, Ill., a corporation of Delaware
Filed July 13, 1964, Ser. No. 382,053
6 Claims. (Cl. 317—33)



1. In a circuit for use in detecting power interruption, a source of electric power, a rectifier having an anode, cathode and gate, a control element having an operating coil, a capacitor in series with said coil, anode and cathode, said capacitor being connected to said power source in a manner to be charged thereby during normal operation, and biasing means connected to said gate and power source to normally maintain said rectifier in a cut-off condition including a resistor connected between said gate and one side of said power source and a second resistor connected between said gate and the other side of said power source, an interruption in power removing the bias and permitting said capacitor to discharge through said rectifier and coil to operate said control element.

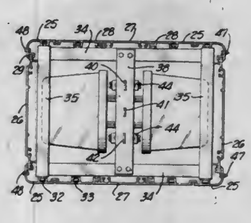
3,286,132
PRINTED CIRCUIT BOARD AND COMPONENT WITH IMPROVED MOUNTING BASE FOR THE COMPONENT
Russell J. Turner, Bellevue, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Nov. 18, 1963, Ser. No. 324,457
1 Claim. (Cl. 317—101)

In a microelectronic article of manufacture of the character described comprising, an insulating panel and electrically conductive strips that define a circuit of a printed circuit board, said insulating panel and said electrically conductive strips having aligned apertures formed therein arranged in a circular pattern, and a microelectronic component having an electrically conductive lead wire extending through each of the aligned apertures in the insulating panel and the electrically conductive strips and rigidly electrically connected to the electrically conductive strips, the improvement comprising; mounting means disposed between the microelectronic component and the insulating panel for seating the microelectronic component thereon and spreading the electrically conductive lead wires from the microelectronic component so that said lead wires extend through the aligned apertures formed in both the insulating panel and the electrically conductive strips that define the circuit of the printed circuit board, said mounting means comprising a frusto-conical body of electrical insulating material having an end portion bearing against the underside of the microelectronic component and an



opposite end portion of greater cross-sectional area bearing against the insulating panel, said body having grooves formed in the outer peripheral conical surface thereof and extending from one end to the opposite end thereof to radially spread and guide an electrically conductive lead wire in each said groove thereof from the microelectronic component mounted on said one end of said mounting means into a corresponding aligned aperture in the insulating panel and the electrically conductive strip, and said lead wires being rigidly electrically connected to the electrically conductive strip.

3,286,133
METER PEDESTAL
Rex E. Sturdivan, Whittier, Calif., assignor to Zinsco Electrical Products, Los Angeles, Calif., a corporation of California
Filed Sept. 1, 1964, Ser. No. 393,581
15 Claims. (Cl. 317—104)



1. In a housing for a plurality of electric service meters or the like, the combination of:

a rectangular enclosure adapted for mounting on a base and having plurality of panels, including corner panels and pairs of opposing side panels,

with said panels having interengaging T and channel sliding engagement sections at the edges thereof for vertical sliding engagement of adjacent panels,

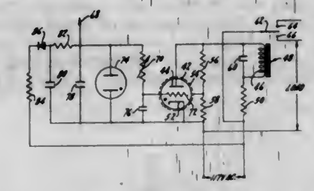
with the corner panels having the same horizontal cross sections and vertically disposed sliding engagement sections on both sides thereof, and

with the side panels of a pair having the same horizontal cross sections and with the panels of at least one pair having vertically disposed sliding engagement sections on at least one side thereof;

laterally disposed frame members within said enclosure fixed to sliding engagement sections of said corner panels;

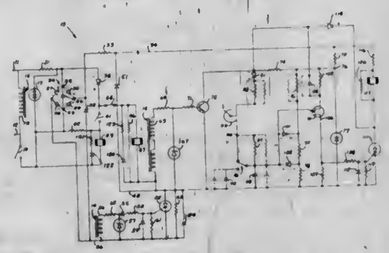
a top for covering the upper end of said enclosure; and means for fastening said top in place on said enclosure.

3,286,134
TOUCH CONTROL CIRCUIT
Thomas E. Myers, St. Charles, Ill., assignor to Ideal Industries, Inc., Sycamore, Ill., a corporation of Delaware
Filed May 16, 1963, Ser. No. 280,953
2 Claims. (Cl. 317—149)



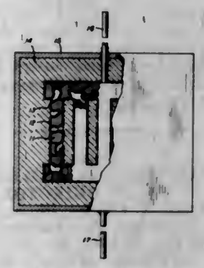
1. In a touch control circuit for connecting a load to a source of power, a gas tube having an anode, grid and cathode, a touch surface and a high resistance connection between said touch surface and said grid, a relay having relay contacts connected to the load and power source, a relay coil in series circuit with said anode, cathode and power source, a capacitor network for holding said grid below ionizing potential including a capacitor connected between said grid and cathode, a gas diode connected in parallel with the series combination of said capacitor and the high resistance between said grid and touch surface, a second capacitor in parallel with said gas diode, and a charging circuit for said second capacitor to charge it to a potential less than the ionizing potential of said gas diode, with said touch surface being connected to said second capacitor and gas diode, human contact with said touch surface applying sufficient potential to ionize said gas diode with ionization of said gas diode permitting said capacitors to discharge through it, the discharge of said capacitors providing a signal on the grid to ionize the tube and cause said power source to energize said relay coil.

3,286,135
TIMING CIRCUIT
Richard E. Haver, Detroit, and Frederick K. Ulrich, East Detroit, Mich., assignors to Robotron Corporation, Detroit, Mich., a corporation of Michigan
Filed Jan. 30, 1964, Ser. No. 341,379
7 Claims. (Cl. 317—142)



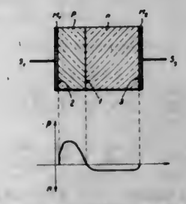
1. In a welding timer for timing a precise number of cycles of an alternating voltage source, the combination comprising:
a first valve;
direct current source means for supplying a positive D.C. potential to the anode member of said first valve;
means supplying voltage in phase with said source voltage to the control member of said first valve; and
connection means connecting the cathode member of said first valve to the other side of said direct current source at a preselected point in the waveform of said alternating voltage, whereby said first valve begins conduction at a preselected point in the waveform of said alternating voltage and wherein said first valve conducts intermittently at the frequency of the voltage source for producing an intermittent positive potential on the anode member thereof.

3,286,136
FABRICATION OF ELECTRODES FROM MODULAR UNITS
David A. McLean, Chatham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 20, 1963, Ser. No. 310,267
8 Claims. (Cl. 317—230)



1. A method for the fabrication of an electrode for use in an electrolytic capacitor which comprises the steps of pressing a film-forming metal powder into a plurality of flat I shaped porous modules, the ends of said modules being of greater thickness than the central portions thereof, partially sintering each of said modules into self-supporting structures by heating, placing a plurality of said structures one directly atop another and pressing the ends thereof to form a porous unitary supporting assembly and sintering said assembly by heating, so producing a porous film-forming electrode.

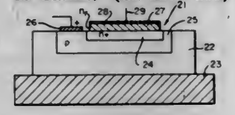
3,286,137
SEMI-CONDUCTOR RECTIFIER ARRANGEMENT HAVING SELF-PROTECTION AGAINST OVER-VOLTAGE
Jakob Luescher and Bogdan Zega, Geneva, Switzerland, assignors to Compagnie Generale d'Electricite, Paris, France
Filed July 14, 1961, Ser. No. 124,039
Claims priority, application Switzerland, July 19, 1960, 8,222/60
6 Claims. (Cl. 317—234)



1. A semi-conductor rectifier having self-protection against overvoltage, said rectifier including, a relatively thin first semi-conductor end layer and a relatively thick second semi-conductor end layer, said semi-conductor layers being of opposite conductivity types and forming a p-n junction, first and second metallic coatings forming corresponding end junctions with said first and second semi-conductor end layers and said metallic coatings having properties for said end junctions to emit charge carriers when a reverse bias is applied across said p-n junction,

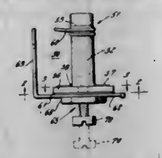
the maximum doping of said first semi-conductor end layer being stronger than the doping of said second semi-conductor end layer and the doping of said first semi-conductor end layer being diminished from said maximum both toward said first metallic coating for the field strength in said corresponding end junction to be increased and toward said p-n junction to have said corresponding end junction emit charge carriers to said p-n junction when said p-n junction is reversely biased and the rectifier to change over to a state of high electrical conductivity when the corresponding reverse electric current exceeds a particular value.

3,286,138
THERMALLY STABILIZED SEMICONDUCTOR DEVICE
William Shockley, Los Altos, Calif., assignor to Clevite Corporation, a corporation of Ohio
Filed Nov. 27, 1962, Ser. No. 240,366
13 Claims. (Cl. 317—235)



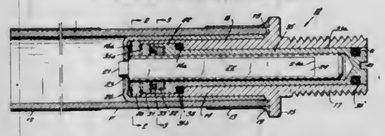
1. In a semiconductor device including
a semiconductor body having first and second regions of given and opposite respective conductivity types with a PN junction having a given area therebetween, said first region serving to inject carriers into said second region and having an exposed surface area disposed in juxtaposition with said given area,
said device exhibiting a positive temperature coefficient of current flow such that an increase in the specific current flowing across a localized portion of said given area produces additional heating of said localized portion which results in an increase in said specific current, the improvement comprising:
distributed resistance means electrically connected to said surface area, said resistance means having a localized resistance in series with each of said localized portions such that the voltage developed across each of said localized resistances is dependent upon the specific current flowing across a corresponding one of said localized portions,
distributed electrode means contiguous with said distributed resistance means,
the value of said resistance means being sufficient to substantially reduce said positive temperature coefficient of current flow thereby to stabilize the current density across said given area.

3,286,139
TRIMMER CONDENSER
Fred W. Edwards, Park Ridge, Ill., assignor to Standard Kollsman Industries, Inc., Melrose Park, Ill., a corporation of Illinois
Filed Sept. 2, 1965, Ser. No. 484,561
9 Claims. (Cl. 317—248)



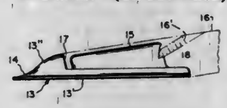
1. A trimmer condenser including a first and second terminal, a fixed capacitive section and a variable capacitive section electrically connected between said terminals, said fixed capacitive section including a disc with first and second metallic layers on opposed faces thereof, said variable section including a tubular member having an external metallic layer electrically connected to said first disc layer, said tubular layer electrically connected to said first terminal, said second disc layer electrically connected to said second terminal, means for adjusting the capacitance of said variable section such that the combined capacitance of said fixed and variable sections, as presented to said first and second terminals, is adjustable.

3,286,140
DIRECT TRAVEL MECHANISM FOR ELECTRICAL REACTORS
Joseph Carnazza, Brooklyn, N.Y., assignor to JFD Electronics Corporation, Brooklyn, N.Y.
Filed May 24, 1965, Ser. No. 458,065
7 Claims. (Cl. 317—249)



6. An electrical reactor including a support, an adjustable element, an adjusting member, first means mounting said member for rotation about an axis relative to said support; second means connecting said element to said member for axial movement relative to said support as said member is rotated about said axis while maintaining said element against rotation, said member including a tubular section, said element having a cup shape for telescoping over said tubular section, said second means including first and second cooperating sections in threaded engagement, said first section being rotated by said member, said second section being interposed between said first section and said element, said first means including a tubular bushing wherein said member is disposed, said member having a formation constructed and positioned for engagement by a tool for rotating said member, said formation disposed within the confines of said bushing, said member being tubular and being closed at a first end thereof, a screw constituting said second section, a nut means constituting said first section mounted to said member at a second end thereof, said screw being provided with an axially extending flat surface coextensive with threaded portions of said screw, additional means mounted to said support and defining an aperture through which said screw is axially movable, said additional means having a straight section defining said aperture with a shape complementary to said flat surface, said straight section and said flat surface cooperating to prevent rotation of said screw.

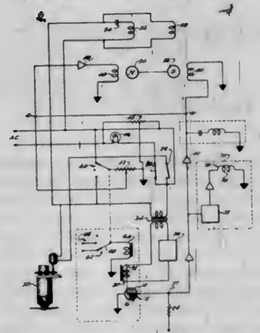
3,286,141
BASE MOUNTING STRUCTURE
Loren L. Raglin, Mountain View, Calif., assignor to Granger Associates, Palo Alto, Calif., a corporation of California
Original application July 31, 1961, Ser. No. 128,165, now Patent No. 3,170,087, dated Feb. 16, 1965. Divided and this application Dec. 27, 1962, Ser. No. 247,733
2 Claims. (Cl. 317—262)



1. A base mounting member arranged for mounting static dischargers on surfaces such as aircraft wing trailing edges, said base mounting member being of substantially

oval shape and having a large under surface portion for providing good physical and electrical contact with the aircraft surface, said mounting member having a central riser portion extending upwardly therefrom and provided with a streamlined rounded forward part and a rear part of reduced thickness so as to mount on the latter a static discharger in easily removable fashion, such static discharger surrounding said rear riser part and merging smoothly into said larger riser forward part.

3,286,142
EDGE FOLLOWING SERVO CONTROL
Derek Harry Redman, Kenley Surrey, England, assignor to Stewart-Warner Corporation, Chicago, Ill.
Continuation of application Ser. No. 144,287, Oct. 9, 1961. This application May 27, 1965, Ser. No. 461,605
26 Claims. (Cl. 318—18)



6. A system for tracing the edge of a pattern on a contrasting background comprising a scanning device, said scanning device comprising photosensitive means having a sensitive area positioned to have an image of the scanning field containing a portion of the pattern edge cast thereon, said photosensitive means adapted to cause fluctuations in an electric signal proportional to variations in light intensity, means for periodically interrupting the image of the edge portion on the sensitive area and defining a reference line, the amplitude of signal fluctuations caused by the periodic interrupting of the image being indicative of the distance of the image of said edge portion from said reference line, means synchronized with said interrupting means for providing a constant amplitude signal phased opposite to said fluctuating signal and having an amplitude substantially less than the maximum amplitude of said fluctuating signal corresponding to an aligned position of said edge portion with the reference line, means for adding said signals and means responsive to the amplitude and phase of said summation signal for moving said scanning device to orient said reference line toward a reference position with respect to said edge portion.

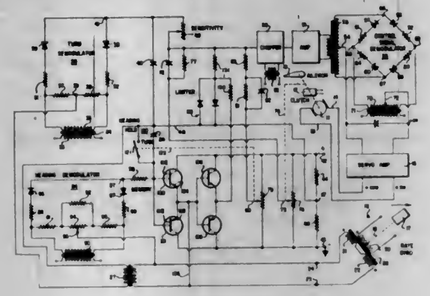
3,286,143
AUTOPILOT FOR MAINTAINING ATTITUDE AND HEADING INCLUDING RATE INTEGRATION AND MEMORY MEANS
Donald P. Kurtz, Morris Plains, and Floyd W. Piper, Denville, N.J., assignors to Aircraft Radio Corporation, Boonton, N.J., a corporation of New Jersey
Filed July 31, 1962, Ser. No. 213,807
10 Claims. (Cl. 318—18)

1. In an automatic pilot for controlling an aircraft having ailerons and a servo system for operating said ailerons, the improvement which comprises:

means for generating a first signal having a component proportional to the rate of turn of the aircraft about its yaw axis,

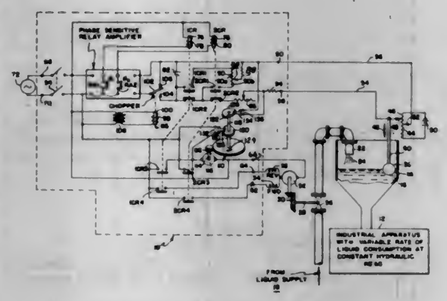
means for integrating said first signal to produce a second signal corresponding to the angle turned by said aircraft about said yaw axis,

means for combining said first and said second signals to produce a control signal,



and means for applying said control signal to said servo system to operate said ailerons in accordance with said control signal and cause the aircraft to turn in a direction to cause said means for generating a first signal to generate a signal to cancel said second signal.

3,286,144
ON-OFF INTEGRATING MOTOR CONTROLLER
John L. Hill, St. Paul, Minn., assignor to Ramsey Engineering Company, St. Paul, Minn., a corporation of Minnesota
Filed Nov. 6, 1963, Ser. No. 321,870
10 Claims. (Cl. 318—18)



1. An integrating controller comprising:

(a) means for producing an integrated error signal;

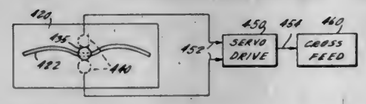
(b) means for preventing said integrated error signal from increasing beyond a certain upper value;

(c) means for decreasing said integrated signal to a certain lower value after reaching said upper value;

(d) means for causing a corrective action to occur in a direction to reduce the error that produced said integrated signal while said signal is decreasing, and

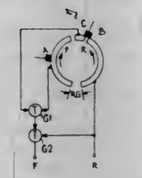
(e) means for delaying the subsequent production of another integrated error signal until after said above-mentioned integrated signal has been decreased to its said lower value.

3,286,145
EDDY CURRENT APPARATUS
Edward S. Silver, 960 Sterling Place, Brooklyn, N.Y.
Filed Nov. 8, 1963, Ser. No. 322,418
14 Claims. (Cl. 318—31)



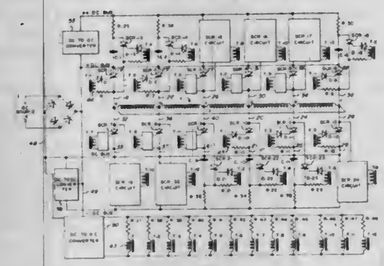
13. A follow-up positioning system comprising in combination: article positioning means responsive to a servo drive signal; preprogrammed storage means for generating said servo drive signal; said storage means comprising a conductive plate; said conductive plate having a longitudinal discontinuity of a predetermined configuration; primary and secondary coil means in cooperative coupling relationship located adjacent said plate; one of said coil means including individual coil members extending transverse to said discontinuity; said predetermined configuration varying in said transverse direction along the length of said discontinuity; the instantaneous location of said discontinuity along said transverse direction varying the coupling condition between individual ones of the coil members of said one of said coil means and the other of said coil means; said variation of coupling condition generating said servo drive signal; said longitudinal discontinuity relatively movable along said longitudinal direction, with respect to said coil means; the instantaneous transverse location of said discontinuity with respect to said individual coil members generating said drive signal in accordance with said predetermined discontinuity configuration.

3,286,146
MOTOR CONTROL DEVICE FOR ATTAINING AN ANGULAR POSITION
Geoffrey Turner Ohlsen, Leicester, and Peter Lyford Smith, Oadby, England, assignors to Associated Electrical Industries Limited, London, England, a British company
Filed Nov. 26, 1963, Ser. No. 325,986
Claims priority, application Great Britain, Nov. 26, 1962, 44,637/62
8 Claims. (Cl. 318—31)



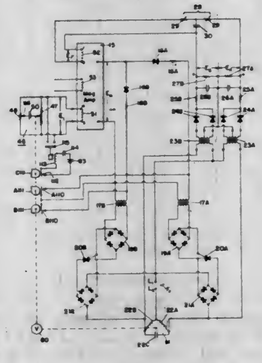
1. Automatic angular positioning control apparatus comprising a plurality of selectively excitable energising devices located at preselectible angular positions, two pick-up devices effective over respective arcs together covering a complete circle except for a reference gap and a diametrically opposed gap in the circle, a third pick-up device effective over an arc located in said diametrically opposed gap with isolation between it and the effective arcs of each of the other two pick-up devices, the energising device being effective over an arc less than each of said gaps but great enough to span the isolation between the effective arc of the third pick-up device and that of each of the other two pick-up devices, and control means for producing relative rotation between the pick-up devices and the energising devices in one direction in response to energisation of one of said first two pick-up devices by an excited energising device and in the opposite direction in response to such energisation of the other two pick-up devices separately or together.

3,286,147
BRUSHLESS D.C. MOTOR
Carl D. Parker and Thomas G. Wilson, Durham, N.C., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed June 19, 1963, Ser. No. 289,052
3 Claims. (Cl. 318—138)



3. In a D.C. motor of the brushless type, the combination of a stator having a winding, a magnetically polarized rotor; a commutating circuit having a first SCR with an anode connected to the stator winding, a cathode connected to a first D.C. bus and a gate; a restoring circuit having a second SCR with an anode connected to the anode of the first SCR, a cathode connected to a second D.C. bus, a capacitor between the cathodes of the first and second SCR's and a gate; and a distributor operatively connected to the gates having a part movable with the rotor for sequentially triggering the SCR's.

3,286,148
POSITIVE LIMIT CONTROL FOR MOTORIZED DRIVE UNITS
Rolland H. Henderson, North Wales, Pa., assignor to Leeds and Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed July 1, 1963, Ser. No. 291,942
6 Claims. (Cl. 318—203)



1. A control system for a reversible motor comprising

an amplifier having a pair of output signal channels respectively terminating in switching means for selective energization of the motor in corresponding direction from a power line,

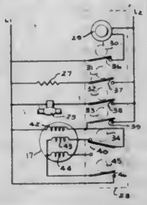
polarity-sensitive means for directing the output signal of said amplifier to one or the other of said channels in dependence upon the polarity of said output signal,

means in the input system of said amplifier for producing a first amplifier-output signal component having a polarity characteristic normally determinative, as directed by said polarity-sensitive means to a corresponding one of said channels, of the sense of energization of said motor for rotation thereof in a selected direction,

means in the input system of said amplifier effective upon energization of the motor to produce a second amplifier-output signal component in opposition to said first signal component and normally damping its speed in the selected direction, and

means including limit switches actuated as the motor approaches either limit of its travel effectively to eliminate said first component of the amplifier-output signal to preclude further energization of the motor in the selected sense, and, by routing of the remaining second component of the amplifier-output signal to the other of said channels by said polarity-sensitive means, to provide for reverse energization of the motor to bring it quickly to rest.

3,286,149
CONTROL MEANS FOR ELECTRIC MOTOR START WINDING
Donald S. Cushing, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Feb. 24, 1964, Ser. No. 346,606
4 Claims. (Cl. 318—221)



1. In an automatic washing machine having a sequence control means to conduct the machine through a series of operations and an electric motor to effectuate certain of said series of operations, said electric motor having a start winding which may be de-energized during certain periods of operation of said motor, the improvement comprising:

(a) a switch adapted to energize said start winding when in a first position and de-energize said start winding when in a second position,

(b) said switch being periodically cycled between said first position and said second position by said sequence control means,

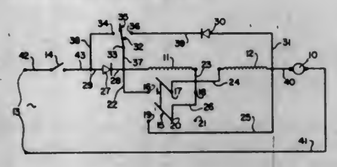
(c) said sequence control means maintaining said switch in said second position for a substantially longer time than in said first position.

3,286,150
MOTOR SPEED CONTROL MEANS
Alexander C. R. Wilson, Towson, and John G. Lawrence, Westminster, Md., assignors to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed Sept. 28, 1964, Ser. No. 399,645
7 Claims. (Cl. 318—245)

6. In a "universal" electric motor comprising an armature and a field winding connected in series with each other and with a source of alternating current, the winding including a pair of field coils; the improvement in speed control means, which comprises:

(a) first switching means having two alternate positions for connecting the field coils, selectively, in series or in parallel with each other;

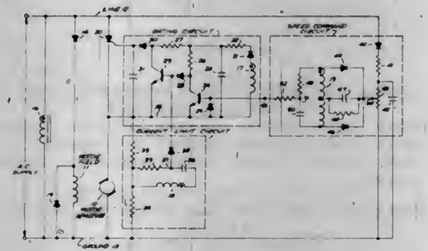
(b) a rectification means; and



(c) second switching means having at least two alternate positions for, first, connecting said rectification means, selectively, in series with the winding and the source of current in each position of said first switching means, and secondly, for shunting said rectification means;

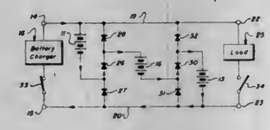
(d) whereby four discrete speed settings are provided for the motor.

3,286,151
CONTROLLED RECTIFIER CURRENT LIMIT FOR D.C. MOTOR
Edward H. Dinger, Waynesboro, Va., assignor to General Electric Company, a corporation of New York
Filed Sept. 20, 1963, Ser. No. 310,242
9 Claims. (Cl. 318—331)



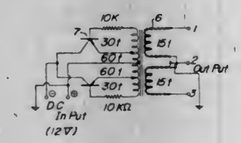
4. A control circuit for supplying current from an alternating current source to a direct current motor armature comprising a unidirectional current control device having a main current path and a control electrode, means coupling said main current path and said armature in series and to said alternating current source, a source of unidirectional control voltage, gating means for coupling said source of control voltage to said control electrode in response to first and second signals having respective predetermined magnitudes and polarities, generating means for generating said first signal, said first signal having a varying magnitude and having a period substantially equal to the period of said alternating current source but having a phase shifted in one direction relative to the phase of said alternating current source, means coupled to said armature and to said generating means for deriving a voltage indicative of the back electromotive force of said armature and for biasing said first signal therewith, means coupling said biased first signal to said gating means, generating means for generating of said second signal, said second signal having a varying magnitude, control means coupled to the second signal generating means for biasing said second signal in accordance with a desired motor speed, and means coupling said biased second signal to said gating means.

3,286,152
MULTIPLE BATTERY CHARGING AND DISCHARGING CIRCUIT MEANS
John B. Noe, Albuquerque, N. Mex., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
Filed Oct. 10, 1963, Ser. No. 315,414
3 Claims. (Cl. 320—7)



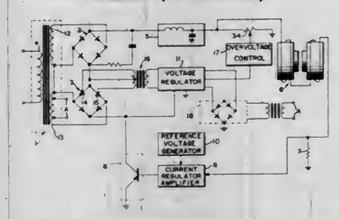
1. Apparatus for operatively orienting batteries in series during charging and in parallel during discharging comprising in combination, battery charging means, electrical load means, first conductor means including a pair of conductors for connecting the charging means and the load means electrically in parallel, second conductor means interconnecting said pair of conductors intermediate the battery charging means and the electric load means and including a first diode, a second diode, and a third diode, each of which is serially connected in the second conductor means to provide unidirectional flow of current through said second conductor means, a first battery connected to one of said pair of conductors and connected to the second conductor means intermediate said first diode and said second diode, a second battery connected to the other of said pair of conductors and connected to said second conductor means intermediate said second diode and said third diode, and first and second means to selectively couple and uncouple the battery charging means and the electrical load means to the first conductor means.

3,286,153
CONVERTER SYSTEM FOR ELIMINATING COMMON MODE INDUCTION VOLTAGE
Fumiyuki Inose, Hachioji-shi, Tokyo, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Oct. 9, 1963, Ser. No. 314,921
Claims priority, application Japan, Nov. 1, 1962, 37/48,313
2 Claims. (Cl. 321—8)



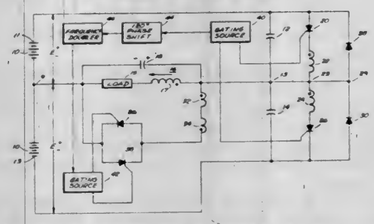
1. An excitation system operative free from common mode induction voltage comprising a D.-C. to A.-C. converter circuit designed for operation at sub-radio frequencies, said converter circuit including an output transformer having a toroidal iron core and input and output windings wound thereon and inductively intercoupled, said input winding being formed of a conventional single conductor insulated wire and said output winding being formed of a conventional coaxial shielded wire so arranged that a voltage is electromagnetically induced in the core conductor of said shielded wire by the input winding, and a point on the outer shielding conductor of said output shielded wire is led to a point of common ground potential.

3,286,154
POWER SUPPLY CURRENT REGULATION UTILIZING A SENSING CIRCUIT TO REGULATE POWER TO THE LOAD
Forrest A. Nelson, Palo Alto, and George A. Baker, San Carlos, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Apr. 13, 1962, Ser. No. 187,362
5 Claims. (Cl. 321—18)



1. A current regulated power supply comprising rectifier means including a controlled rectifier for supplying D.C. power to a load when said controlled rectifier is in a conducting state, current regulating means including a current control circuit for adjusting the current being delivered to said load by said rectifier means, voltage sensing means coupled to said current control circuit for sensing changes in the voltage drop across said current control circuit, and means for generating pulses coupled to said voltage sensing means and responsive to the voltage sensed thereby by generating pulses separated by intervals, said pulse generating means connected to couple said pulses to said controlled rectifier to initiate its conduction, each interval separating pulses proportional to the sensed voltage to maintain the voltage drop across said current control circuit constant.

3,286,155
STATIC INVERTER
Philip D. Corey, Waynesboro, Va., assignor to General Electric Company, a corporation of New York
Filed Mar. 15, 1963, Ser. No. 265,392
4 Claims. (Cl. 321—45)



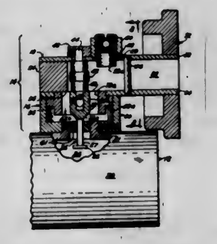
1. A circuit for converting the output of a unidirectional potential source to a quasi-square wave of a given frequency and having a form in accordance with the expression

$$A_n = \frac{4V}{\pi} \sum_n \cos n\alpha \frac{\sin n\omega t}{n}$$

wherein n is an odd number of a chosen value, V is the voltage amplitude of the quasi-square wave and α is equal to one half of the angle between the positive and negative going portions of said wave, said angle being chosen such that $\cos n\alpha$ is equal to zero comprising a series arrangement of first and second switching devices, first and second series arranged inductances connected between said switching devices, a first capacitance connected across the series combination of said first switching device and said first inductance, a second capacitance connected across the series combination of said second inductance and said second switching device, the junctions of said

capacitances and said inductances being connected, a load disposed between said junctions and the midpoint of said source, a third capacitance in shunt with said load, a parallel combination of oppositely poled third and fourth switching devices, a series combination of third and fourth inductances in transformer arrangements respectively with said first and second inductances and connected between one end of said parallel combination and the other end of said load the other end of said combination being connected to the other end of said load, first means having said given frequency in circuit with said first and second switching devices for alternately switching said first and second devices at consecutive half cycles and second means having twice said given frequency in circuit with said third and fourth devices for concurrently switching said third and fourth devices during each half cycle of said third means in a phase retarded $(180-2\alpha)$ with respect to said each half cycle.

3,286,156
HARMONIC GENERATOR
Ralph L. Barkes, Tampa, Fla., assignor to Trak Microwave Corporation, Tampa, Fla.
Filed Dec. 27, 1962, Ser. No. 247,614
3 Claims. (Cl. 321—69)



1. In a harmonic generator for operation with an oscillator energizing an output cavity with a signal of a first frequency, the combination comprising

(A) a coupling probe arranged to protrude into said cavity,
  (1) a cylindrical disc connected on the end of said probe that fits within said cavity for increasing the capacitive reactance with which said probe is coupled to said cavity,

(B) a coaxial transmission line having an inner conductor concentrically disposed within an outer conductor,
  (1) said inner conductor being coupled with the end of said probe remote from said cavity, and
  (2) said outer conductor being coupled with said cavity,
    (a) so that said oscillator signal is coupled from said cavity to said coaxial transmission line,

(C) a rectangular waveguide
  (1) means forming an aperture through a first wall of said waveguide,
  (2) said coaxial transmission line communicating with said waveguide at said aperture with said outer conductor connected to said first waveguide wall,

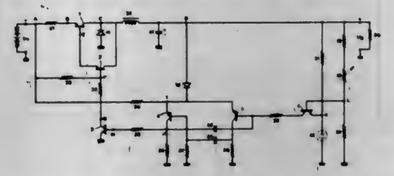
(D) a varactor diode connected between said inner conductor and a second wall of said waveguide opposite said first wall,
  (1) said probe and said coaxial transmission line matching the impedance of said varactor at said first frequency to the impedance of said oscillator cavity,
  (2) said coaxial transmission line applying said oscillator signal between said first and second walls of said waveguide and across said varactor to excite said varactor,
  (3) said varactor being self-biased by said oscillator signal at a negative bias voltage and generating an output signal at a second frequency as a harmonic of said oscillator signal,

(E) a conductive shorting block connected in said waveguide closely spaced from said varactor to present a large inductive reactance to said varactor at said second frequency of said output signal,

(F) an inductive post connected between said first and second waveguide walls spaced from said varactor on the opposite side thereof from said shorting block,

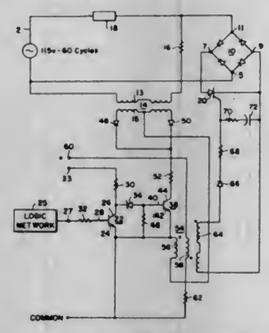
(G) a capacitive plug threadably mounted in said second waveguide wall and adjustably protruding into said waveguide,
  (1) said plug being disposed intermediate said varactor and said inductive post,
  (2) said shorting block, said inductive post, and said capacitive plug tuning said waveguide to propagate said output signal with negligible loss and to suppress signals at frequencies other than said second frequency.

3,286,157
DEVICE FOR THE STABILIZATION OF D.C. VOLTAGE
Joseph Leostic, Sevres, France, assignor to Cit—Compagnie Industrielle des Telecommunications, Paris, France
Filed Apr. 16, 1962, Ser. No. 187,619
Claims priority, application France, Apr. 20, 1961, 859,340
6 Claims. (Cl. 323—18)



4. A device for stabilizing the voltage supplied by a direct current voltage source to a utilization means including a switching transistor connected in series between said voltage source and said utilization means for selectively connecting said voltage source to said utilization means in response to a control signal and storage capacitor means connected in parallel with said utilization means so as to be charged by said voltage source, the improvement comprising means for stabilizing the voltage on said storage capacitor means at a predetermined voltage level including voltage divider means for detecting the voltage difference between a reference voltage and a fraction of said stabilized voltage, multivibrator means for generating said control signal voltage controlled variable impedance means controlled by said voltage difference for biasing said multivibrator means to a stable state providing a continuous output control signal when said voltage source is below said predetermined voltage level and for biasing said multivibrator means to provide a square-wave output control signal when said voltage source is above said predetermined voltage level, said multivibrator means being provided with energizing voltage on the one hand from said voltage source via impedance means and on the other hand from said storage capacitor via rectifier means, and amplifier means connecting the output of said multivibrator means to said switching transistor in control thereof, the impedance of said impedance means connected to said multivibrator being much greater than the impedance of said rectifier means such that said multivibrator means is energized essentially entirely by the stabilized voltage of said storage capacitor, the rise and fall times of said square wave being of unequal duration, the ratio of which is inversely proportional to the magnitude of said voltage difference detected by said voltage divider means, said multivibrator means including an asymmetrical multivibrator and said voltage controlled variable impedance means for biasing said multivibrator means consisting of a transistor connected in the biasing circuit of said multivibrator and capable of controlling the bias thereof in relation to its internal impedance, which is controlled by the magnitude of said voltage difference.

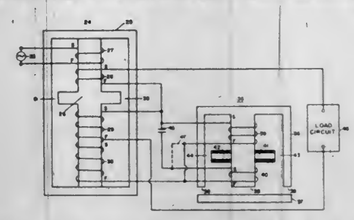
3,286,158
A.C. SWITCH
Robert R. Thatcher, Roanoke, Va., assignor to General Electric Company, a corporation of New York
Filed June 22, 1962, Ser. No. 204,397
9 Claims. (Cl. 323—22)



4. In combination with an A.C. power supply, a load and a unidirectional potential source which produces a first signal in response to a first given condition and a second signal in response to a second given condition, a bridge rectifier having a pair of A.C. input terminals in series arrangement with the power supply and the load and positive and negative D.C. output terminals, the combination of a transformer in circuit with said power supply, said rectifier and said load and rectifying means in circuit with the output of said transformer for deriving a pulse train comprising pulses in synchronism with the half cycles of output from said power supply, a gate controlled rectifier having an anode connected to said positive terminal, a cathode connected to said negative terminal and a gate electrode, active means which is only rendered conductive upon the application thereto of a pulse coincident with the occurrence of one of said signals, and means in circuit with said unidirectional potential source for applying the output of said active means to said gate electrode.

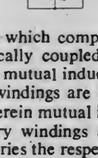
3,286,159
CURRENT SUPPLY APPARATUS EMPLOYING ELECTRIC WAVEFORM CONVERSION
Richard E. Kuba, Columbus, Ohio, assignor to North Electric Company, Galion, Ohio, a corporation of Ohio
Filed Feb. 11, 1963, Ser. No. 257,659
19 Claims. (Cl. 323—45)

18. A current supply apparatus including an alternating current supply source comprising a ferroresonant transformer for providing signals in a cyclic manner having a plurality of frequency components, a variable load, waveform correction means controlled by said signals for providing a substantially sinusoidal harmonic-free output voltage waveform to said load including a transformer comprising a core, a primary winding on said core, a secondary winding on said core, a first high reluctance magnetic path including shunt means magnetically disposed between said primary and secondary windings, and a second high reluctance magnetic path including means



disposed to provide a magnetic return path for magnetic flux which links said secondary winding, capacitor means, means connecting said capacitor means in series circuit with said secondary winding, means connecting said series circuit and said primary winding in parallel to said source to adjust the waveshape output therefrom, and an output circuit including said load coupled to said source to receive the corrected waveform.

3,286,160
FREQUENCY BRIDGE
Kenichi Isoda, Kitatama-gun, Tokyo-to, and Kiyokata Matsuura, Chikusa-ku, Nagoya-shi, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan
Filed Oct. 23, 1963, Ser. No. 318,213
Claims priority, application Japan, Oct. 25, 1962, 37/46,492
1 Claim. (Cl. 323—76)



A frequency bridge which comprises a first inductance consisting of magnetically coupled primary and secondary windings, wherein mutual inductance between the primary and secondary windings are freely variable; second inductance means, wherein mutual inductance between the primary and secondary windings are fixed; a capacitor; means to connect in series the respective primary windings of said first and second inductance means with said capacitor; and means to connect in series the respective secondary windings with said capacitor, whereby a signal is applied to the series-circuit formed by said primary windings of said first and second inductance means and said capacitor, thereby obtaining summation of voltage caused across the terminals of said capacitor and of voltage induced in the secondary windings of said respective first and second inductance means.

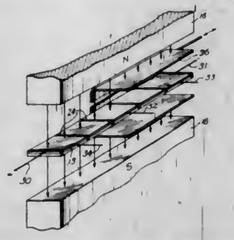
3,286,161
MAGNETO-RESISITIVE POTENTIOMETER
Ronald H. Jones and William O. Evans, Jr., San Diego, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Dec. 4, 1963, Ser. No. 328,142
2 Claims. (Cl. 323—94)

1. An array of series-connected Hall-cell elements, each element being of a material which produces a voltage which is a function of applied orthogonal magnetic

and electric fields, the array of elements comprising an elongated strip of said material deposited on a supporting insulated substrate with spaced transverse strips of conducting metal to divide said material into serially connected end-to-end rectangular Hall-cell wafers,

a voltage source connected to the end terminals of said array for applying said electric field to said cells;

a magnet with poles disposed on opposite sides of said



array of elements to produce the transverse magnetic field;

means for shifting said magnetic field along said array for differentially changing the Hall voltage across said elements; and

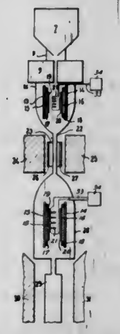
means for reading out the Hall voltages of said spaced elements, comprising output leads connected to the side edges of said wafers.

3,286,162

METHOD OF POLARIZING IONS, AND SOURCES OF POLARIZED IONS, NOTABLY PROTONS AND DEUTERONS, OBTAINED THEREFROM

Anatole Abragam, Paris, René Beurtey, Marly-le-Roi, André Papineau, Gif-sur-Yvette, Jacques Thirion, Vaucresson, and Jacques Michel Winter, Versailles, France, assignors to Commissariat à l'Energie Atomique, Paris, France

Filed July 23, 1963, Ser. No. 296,993
Claims priority, application France, July 28, 1962, 905,423
18 Claims. (Cl. 324—.5)



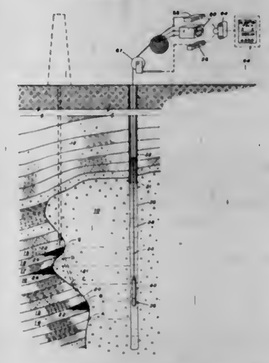
18. In an apparatus for producing polarized atoms, a chamber for inducing dipolar magnetic transitions by adiabatic passage in a weak field comprising a high frequency coil for generating a frequency of said transitions and for creating an electromagnetic field in said chamber and coils and associated pole plates for producing a magnetic field constant in time and having approixmately constant gradient along the length of said chamber.

3,286,163

METHOD FOR MAPPING A SALT DOME AT DEPTH BY MEASURING THE TRAVEL TIME OF ELECTROMAGNETIC ENERGY EMITTED FROM A BOREHOLE DRILLED WITHIN THE SALT DOME

William T. Holser, La Habra, and Robert R. Unterberger and Stanley B. Jones, Whittier, Calif., assignors to Chevron Research Company, a corporation of Delaware

Filed Jan. 23, 1963, Ser. No. 253,339
15 Claims. (Cl. 324—6)



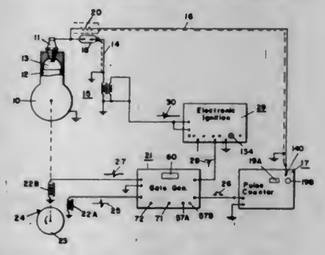
10. The method of mapping the location of the flank of a salt dome at a known depth in the earth which comprises drilling a well bore into the salt dome and extending to a predetermined depth, positioning an electromagnetic energy transmitting and receiving system in said well bore at said depth, supplying and receiving electromagnetic energy at a frequency within a frequency range from 10^6 to 10^{10} cycles per second and from 2×10^{13} to 10^{15} cycles per second for transmission and reflection through said salt dome at said depth, and recording at the earth's surface an indication of the two-way travel time of said electromagnetic energy to and from said flank at said mapping depth.

3,286,164

SYSTEMS FOR DETECTION AND AUTOMATIC REGISTRATION OF PREIGNITION IONIZATION POTENTIALS IN INTERNAL COMBUSTION ENGINES

Charles B. De Huff, Pitman, N.J., assignor to Mobil Oil Corporation, a corporation of New York

Filed May 18, 1962, Ser. No. 195,879
11 Claims. (Cl. 324—16)



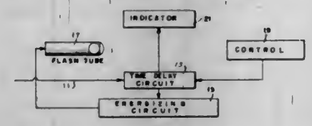
1. A system for checking the preignition characteristics of fuels for an internal combustion engine comprising a firing plug therefor having a single insulated electrode utilized both for producing normal ignition and as a detector of preignition ionization, said electrode being sealed therein and extending into the combustion chamber of said engine, a high-voltage source connected to said electrode for producing said normal ignition, voltage-responsive means connected to an external terminal of said electrode of said firing plug, means for producing gating pulses timed to coincide with the terminal portions of successive fuel compression periods of said engine during which premature combustion may occur, and means for applying said pulses to said voltage-responsive means to de-sensitize it except during said periods for response thereof only to preignition ionization voltages appearing at said electrode.

3,286,165

TIMING LIGHT SYSTEM FOR USE IN AUTOMOTIVE VEHICLE DIAGNOSTIC SYSTEM

Charles R. Small, Woodbury Heights, N.J., assignor to Mobil Oil Corporation, a corporation of New York

Filed Nov. 30, 1962, Ser. No. 241,230
1 Claim. (Cl. 324—16)



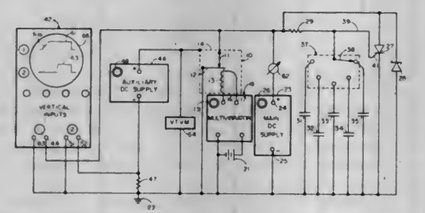
A timing light system comprising a first unit, a portable unit moveable with respect to said first unit, a flexible cable connecting said first unit and said portable unit, a flash tube mounted on said portable unit, energizing means mounted on said first unit electrically connected to said flash tube through said flexible cable to energize said flash tube through said flexible cable in response to an enabling signal, time delay means mounted on said first unit electrically connected to said energizing means to apply an enabling signal to said energizing means in response to each applied input pulse after a time delay, an electrical input to apply to said time delay means ignition pulses from an automotive vehicle engine, means mounted on said first unit electrically connected to said time delay means to indicate the duration of said time delay, and manual control means mounted on said portable unit electrically connected to said time delay means through said flexible cable to selectively vary the duration of said time delay.

3,286,166

APPARATUS FOR NON-DESTRUCTIVE TESTING OF ENCLOSED RELAYS FOR PARASITIC ARC SUSCEPTIBILITY BY CONTROLLING THE CURRENT-TIME INTEGRAL OF THE ARC

Thomas N. Lockyer, Jr., Los Altos, Calif., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Jan. 21, 1963, Ser. No. 252,977
7 Claims. (Cl. 324—28)



1. Apparatus for controlling the duration and current intensity of an arc between first and second electrical contacts so that said arc is extinguished when the time integral of the current of said arc reaches a predetermined value, comprising

a D.-C. constant-current supply connected in shunt with said electrical contacts for establishing an arc between said electrical contacts upon opening of said contacts,

normally open switching means in shunt circuit with said electrical contacts,

means responsive to the voltage of said arc for producing a signal having a value dependent on said voltage and on the duration of said arc, said signal attaining a given value when the duration of the arc is such that said time integral attains said predetermined value,

and means responsive to said signal for closing said switching means when said signal has said given value, thereby to short circuit said contacts and extinguish said arc.

3,286,167

MONITORING OF HETEROGENEITY OF ALKYLATION EMULSIONS

John E. Gwyn, Pasadena, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Apr. 25, 1962, Ser. No. 190,158
6 Claims. (Cl. 324—30)



1. A method for monitoring the heterogeneity of an alkylation emulsion stream, comprising the steps of:

continuously passing an alternating electrical current through a portion of said stream;

detecting said electrical current and producing an electrical signal proportional thereo;

filtering said electrical signal to remove those alternating current components thereof caused by said alternating electrical current while retaining those alternating current components caused by changes in the conductivity of the stream;

and detecting and displaying said retained alternating current components in the filtered signal to indicate the heterogeneity of the stream.

3,286,168

APPARATUS FOR ADJUSTING THE AMPLITUDE AND PHASE OF PICKUP COILS OF EDDY CURRENT INSTRUMENTS

Thomas R. Schmidt, Lafayette, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

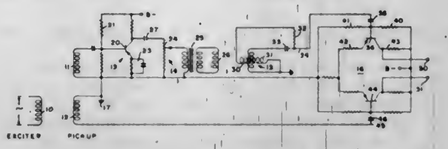
Filed Dec. 18, 1962, Ser. No. 245,588
3 Claims. (Cl. 324—40)

1. An apparatus for adjusting the flaw sensitivity of an eddy current instrument using a source coil and two pickup coils coupled in electrical opposition, said pickup coils being spaced from said source coil a distance at least equal to the diameter of the metallic member under test, said apparatus comprising:

a first circuit means coupled to one of the pickup coils, said circuit means including individually adjustable phase shifting and attenuating networks said phase

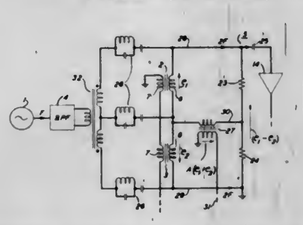
shifting network in addition changing the phase of the pickup coil signal without changing its amplitude;

a second circuit means coupled to the other of said pickup coils;



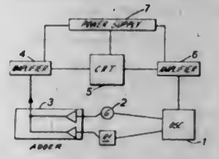
a differential circuit means, said first and second circuit means being coupled to said differential circuit means to vectorially combine the signals of said first and second circuit means.

3,286,169
COMBINED MAGNETOMETER AND GRADIOMETER
Thaddeus Slonczewski, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 22, 1962, Ser. No. 204,442
1 Claim. (Cl. 324—43)



A magnetic gradiometer circuit comprising two magnetic detector units, each unit being of the type comprising a core of saturable magnetic material having a principal magnetic axis about which coils are wound and in which alternating electromotive forces are generated having frequencies which are even order harmonics of a fundamental frequency current with which the core is excited, said generated harmonic electromotive forces being proportional to the component of ambient magnetic field parallel to said axis, means supporting said units in fixed spatial relationship with their principal magnetic axes parallel, a frequency selective network connected to said two detector units to derive therefrom one even order harmonic alternating voltage proportional to the sum of and another even order harmonic alternating voltage proportional to the difference between the said even order harmonic electromotive forces generated therein, said network comprising a pair of substantially equal resistors connected in series to form an accessible terminal therebetween, means connecting said detector units in series to form a junction therebetween and poled so that the said even order harmonic electromotive forces generated therein are of like phase with respect to said junction, means connecting said series connected detector units in series with said series connected resistors whereby said sum voltage may appear between said accessible terminal and said junction and the difference voltage may appear across said series connected resistors, an electromagnetic field nulling means on each detector unit, a feedback circuit coupling said network to said nulling means to nullify a substantial part of said ambient field at said detectors in proportion to said sum voltage, and a gradient indicator circuit also coupled to said network and responsive to said difference voltage.

3,286,170
TRANSDUCER TESTING BY DIFFERENTIAL NON-LINEAR TECHNIQUES
Bryan Albert Palmer, Sunbury-on-Thames, Middlesex, England, assignor to The British Petroleum Company Limited, London, England, a British joint-stock corporation
Filed Sept. 5, 1963, Ser. No. 306,918
Claims priority, application Great Britain, Nov. 29, 1962, 45,145/62
7 Claims. (Cl. 324—57)



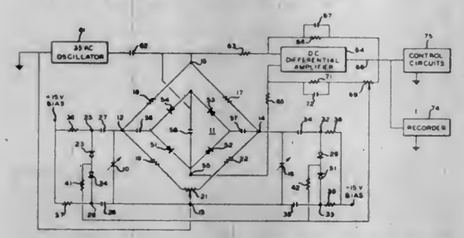
1. Apparatus for testing transducers having resonant characteristics comprising a test network having input terminals for connection to and adjustable frequency source of a fundamental excitation signal and having a plurality of interconnected branches, including a first branch having adjustable resistance, a second branch having terminal means arranged to be connected with a transducer to be tested, and third and fourth branches connected respectively with said first and second branches, said third and fourth branches each including means for introducing a small harmonic distortion in the fundamental signal developed across the adjustable resistance and transducer, respectively, resulting from said fundamental excitation; means connected to said test network for simultaneously and differentially adding said fundamental and harmonic signals in each branch to produce a network output which is a function of the sum of said distorted signals, including the fundamental and harmonic components thereof, said source and branches being interconnected whereby adjustment of said source and adjustable resistance controls the relative amplitudes of said fundamental and harmonic components, and indicating means responsive to said adding means for indicating the signal content of said output whereby said source frequency and said adjustable resistance can be substantially independently adjusted to produce a balanced condition in said network in which the output thereof consists only of said harmonic components when said source frequency is substantially equal to a resonant frequency of said transducer and the value of said variable resistance is substantially equal to the impedance of said transducer at said resonant frequency.

3,286,171
TRANSFORMERLESS A.C. BRIDGE HAVING A D.C. OUTPUT
Dale A. Fluegel and Louis E. Kuntz, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Nov. 18, 1964, Ser. No. 412,116
9 Claims. (Cl. 324—60)

6. Electrical measuring apparatus comprising in combination:

(1) a bridge network comprising first, second, third and fourth bridge terminals; a measuring impedance connected between a first pair of adjacent bridge terminals as one arm of the bridge; a reference impedance connected between a second pair of adjacent bridge terminals as a second arm of said bridge; a bridge output terminal; first, second, third and fourth rectifying devices connected in closed series in front-to-back relationship with each other, the junction between said first and second rectifying devices being connected to said bridge output terminal,

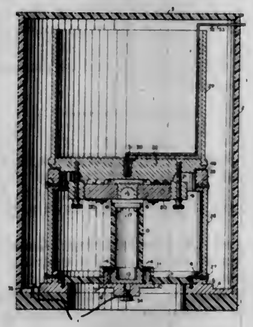
the junction between said third and fourth rectifying devices being connected to said fourth bridge terminal; a first capacitor connected between said first bridge terminal and the junction between said first and fourth rectifying devices; a second capacitor connected between said third bridge terminal and the junction between said second and third rectifying devices; and a third capacitor connected between said fourth bridge terminal and the junction between said first and second rectifying devices;



(2) a voltage source comprising an oscillator having first and second output terminals, means for connecting said first output terminal of said oscillator to said second bridge terminal and for connecting said second output terminal of said oscillator to said fourth bridge terminal; and

(3) a circuit comprising a D.C. differential amplifier having first and second input terminals and an output terminal; means connecting said first input terminal of said amplifier to said fourth bridge terminal; and means connecting said second input terminal of said amplifier to said bridge output terminal.

3,286,172
APPARATUS FOR DETERMINING THE DIELECTRIC CONSTANT OF LIQUIDS HAVING A DISK-SHAPED ELECTRODE LYING ABOVE THE SURFACE OF ITS SUPPORTING MEMBER
James B. Romans, 9111 Louis Ave., Silver Spring, Md.
Filed Dec. 31, 1962, Ser. No. 248,818
2 Claims. (Cl. 324—61)



1. In an apparatus for determining electrical characteristics of dielectric liquids,

a capacitance cell comprising an upper circular plate electrode having a flat under surface in which is means including a centrally located circular recess for containing a quantity of the liquid to be tested, said circular recess having a flat bottom wall,

a lower electrode having a disc-shaped head on and overhanging a stem of smaller diameter,

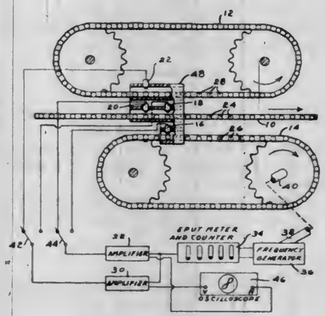
said disc-shaped head being in opposed, spaced, parallel relation to said flat bottom wall of the circular recess in the upper electrode and of substantially smaller diameter than said circular recess,

a collar of electrical insulating material engaging the stem and under surface of said disc-shaped head of the lower electrode in liquid-tight relationship,

said disc-shaped head lying above the upper surface of said collar of insulating material,

and said collar of insulating material having a flat upper surface parallel to and engaging said flat under surface of the upper electrode in liquid-tight relationship on assembly of the capacitance cell.

3,286,173
APPARATUS FOR MEASURING MISALIGNMENT BETWEEN A PLURALITY OF MOVING PARTS
Leroy C. Argyle, Elmira, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Sept. 12, 1962, Ser. No. 223,141
4 Claims. (Cl. 324—68)



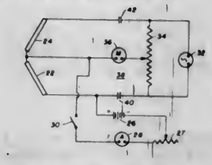
1. An apparatus for sensing misalignment between two parts comprising driving means for moving said parts along predetermined fixed paths at a substantially common velocity, first actuating means affixed to the first of said parts, second actuating means affixed to the second of said parts, first pick-up means for producing a first electrical signal in response to said first actuating means upon translation of said first of said parts to a predetermined position along its path, second pick-up means for producing a second electrical signal in response to said second actuating means upon translation of said second of said parts to a predetermined position along its path, means operatively responsive to said driving means for producing a variable electrical reference frequency corresponding to said common velocity, and timing means operatively responsive to said reference frequency actuated by the signal occurring first in time of said first and second electrical signals and stopped by the signal occurring second in time of said first and second electrical signals for measuring the interval of time between said signals, said interval of time corresponding to the misalignment between said parts.

3,286,174
APPARATUS AND METHOD FOR MEASURING HIGH TEMPERATURE CORROSION AND FLUID FLOW RATES
Edward Schaschl, Crystal Lake, Ill., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed Dec. 6, 1965, Ser. No. 511,637
6 Claims. (Cl. 324—71)

6. A fluid flowmeter comprising

(a) a bare elongated, electrically conductive element substantially non-corrodible in the environment in which it is to be used,

(b) an elongated, corrosion-impervious comparison element having a temperature-resistance characteristic similar to that of the test element,
(c) electrical conductors joined to the ends of said elements,
(d) electrical insulating means for supporting said elements in a unitary structure,

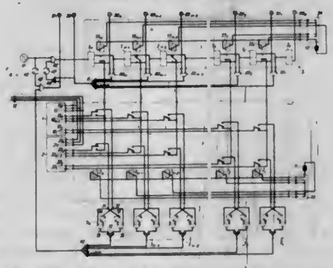


(e) means for applying direct current to said test element without applying it to said comparison element, of sufficient magnitude to heat said test element,
(f) alternating current means connected in a bridge circuit across said conductors, and
(g) means in said bridge circuit for measuring the ratio of the resistances of said elements.

3,286,175
BINARY TESTER FOR LOGIC CIRCUIT SUB-ASSEMBLIES

Guy J. Gerbier, 20 Rue de la Paix, Le Perreux-sur-Marne, France, and Jean-Pierre L. Berger, 124 Blvd. Auguste Blanqui, Paris, France

Filed Dec. 6, 1963, Ser. No. 328,628
Claims priority, application France, Dec. 7, 1962, 917,940
3 Claims. (Cl. 324—73)

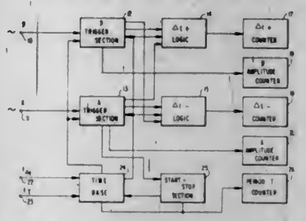


1. A testing device for logic circuit sub-assemblies of any design according to corresponding standard sub-assemblies and having access terminals including input terminals and output terminals the number of said access terminals being less than or equal to a given maximum number, comprising for each access terminal of a sub-assembly having said maximum number of terminals, a trigger stage, said trigger stages being associated as a binary counter, a comparison circuit formed by an and-not gate having two inputs and one output and a relay having two pairs of contacts, said relay being adapted to connect said access terminal and the like terminal of a corresponding standard sub-assembly in parallel on the one hand to an output of said trigger stage via the make contacts of said relay, on the other hand to an output of said trigger stage via the break contacts of said relay and comprising means for selectively energizing the relays corresponding to input terminals of sub-assemblies of any given design, square-wave-signal generator means for stepping said counter through the agency of an inhibitor circuit which is inhibited by the presence at the output of at least one of said comparison circuits of a signal indicating a discrepancy between the output signal associated with the sub-assembly being tested and the output signal associated with the corresponding standard sub-assembly.

3,286,176
ELECTRICAL PHASE METER AND AMPLITUDE COMPARATOR

Meyer H. Birnbolm, Pittsburgh, Pa., assignor to Mellon Institute, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 21, 1964, Ser. No. 405,413
14 Claims. (Cl. 324—83)



1. Apparatus for the measurement of the time delay between two sinusoidal signals, comprising in combination: first and second input means for respectively receiving said two sinusoidal signals; a time base source generating a series of timing pulses for establishing a predetermined per unit time interval; a first trigger circuit including amplitude level sensing means coupled to said input means and said time base source for generating a first pulse sequence in accordance with said timing pulses whenever the first of said two sinusoidal signals exceeds a first predetermined amplitude level; a second trigger circuit also including amplitude level sensing means coupled to said second input means and said time base source for generating a second pulse sequence in accordance with said timing pulses whenever the second of said two sinusoidal signals exceeds a second predetermined amplitude level; logic circuit means coupled to said first and said second trigger circuit and said time base source for determining, within the time that one of said first and second predetermined amplitude levels are exceeded, the occurrence of said first pulse sequence and the non-occurrence of said second pulse sequence and subsequently the occurrence of said second pulse sequence and the non-occurrence of said first pulse sequence; and pulse counter means coupled to said logic circuit means for counting the total number of pulses resulting from said logic circuit means, since by dividing said total number of pulses by two to average the pulse count and by knowing the per unit time interval of said series of timing pulses, the time delay between said two sinusoidal signals can be determined thereby.

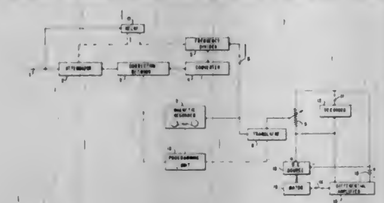
3,286,177
APPARATUS FOR ANALYZING PEAKS BY DETERMINING THE CONTRIBUTION OF INDIVIDUAL PEAKS TO THE WHOLE SIGNAL UTILIZING VOLTAGE TO FREQUENCY TO VOLTAGE CONVERSION

Hendrik Boer and Albertus Schuringa, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Oct. 31, 1962, Ser. No. 234,446
Claims priority, application Netherlands, Apr. 27, 1962, 277,716
5 Claims. (Cl. 324—103)

1. Apparatus for analyzing a signal containing a plurality of peaks each of which represents the quantity of one of a plurality of substances determined by a chromatographic separation comprising:
(a) means for converting said signal to a plurality of electrical impulses the frequency of which is proportional to the momentary magnitude of said signal, said electrical impulses occurring in groups with each group corresponding to one of the peaks in the signal;

(b) storage means connected to the output of said converting means for storing said plurality of electrical impulses;
(c) a variable resistor;
(d) translating means connected to the output of said storage means for varying the resistor to a value of resistance corresponding to the number of impulses received;
(e) circuit means connected in series with said resistor

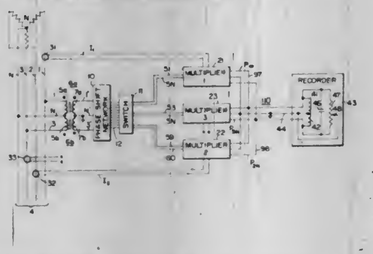


and producing a voltage proportional to the total number of electrical impulses;
(f) programming means for sequentially reading out the said groups of electrical impulses from said storage means and for returning said resistor to zero before each said group of electrical impulses is read out; and
(g) means for measuring the voltage across said resistance.

3,286,178
MEANS FOR MEASURING ACTIVE AND REACTIVE POWER IN A 3-Φ, 4-W DISTRIBUTION SYSTEM, INCLUDING THREE AUTOTRANSFORMERS INTERCONNECTED TO PROVIDE 2-Φ TO 3-Φ CONVERSION

John P. Ultcht, deceased, late of Lynn, Mass., by Alice C. Ultcht, administratrix, Lynn, Mass., assignor to General Electric Company, a corporation of New York

Filed Dec. 27, 1962, Ser. No. 247,765
17 Claims. (Cl. 324—107)

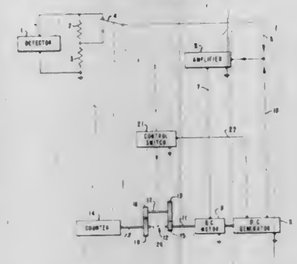


1. An electrical measuring system for obtaining three voltages which are representative of, and in phase with, the potentials existing in a three-phase, four line distribution system comprising,
first transformation means connected to the neutral line and the first line for obtaining a first voltage proportional to and in phase with the voltage between said neutral line and said first line,
second transformation means connected to the neutral line and the second line for obtaining a second voltage proportional to and in phase with the voltage between said neutral line and said second line,
means connected to said first and second transformation means and responsive to said first and second proportional voltages for generating a third voltage proportional to and in phase with the voltage between said neutral line and the third line, and
utilization means connected to said generating means for measuring said first, second, and third voltages.

3,286,179
PLURAL RANGE ELECTRO-MECHANICAL INTEGRATING APPARATUS HAVING VARIABLE TRANSMISSION RATIO GEAR ASSEMBLY TO PROVIDE FOR CONSTANT RATE RECORDING

Albertus Schuringa, Amsterdam, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Oct. 31, 1962, Ser. No. 234,491
Claims priority, application Netherlands, Apr. 27, 1962, 277,714
3 Claims. (Cl. 324—115)



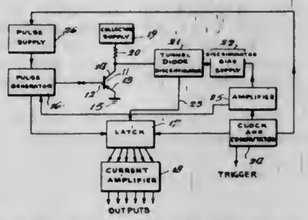
1. Apparatus for determining the time integrated value of an electrical signal comprising:
(a) an input terminal;
(b) a resistor, said resistor being connected between said input terminal and ground, a switch means connected to said input terminal for passing said signal directly, said switch means being also connected to a preset point along said resistor for passing an attenuated value of said signal, the position of the switch means to transmit the direct value of said signal corresponding to a first condition and the position of the switch means to transmit the attenuated value of said signal corresponding to a second condition;
(c) a direct current motor, said direct current motor being coupled to said switch means;
(d) a variable transmission ratio gear assembly, said variable transmission ratio gear assembly being coupled to said direct current motor, said variable transmission ratio gear assembly transmitting the output of said direct current motor directly when the switch means is in said first condition and multiplying the output of said direct current motor by a factor equal to the ratio of the unattenuated value to the attenuated value of said signal when said switch means is in said second condition;
(e) first means coupled to said switch means and said variable transmission for simultaneously switching said switch from said first condition to said second condition and said variable transmission from said direct transmission to said multiple transmission when the magnitude of said signal exceeds a preset value and returning said switch means to said first condition and said variable transmission to said direct transmission when the magnitude falls below a preset value; and
(f) second means coupled to said variable transmission to measure a quantity related to the output of the variable transmission.

3,286,180

ELECTRICAL MEASURING APPARATUS FOR DETERMINING RESPONSE TIME OF TRANSISTORS AND THE LIKE

John C. Hubbs, Oakland, Calif., assignor to E-H Research Laboratories, Inc., Oakland, Calif., a corporation of California

Filed June 22, 1962, Ser. No. 204,477
3 Claims. (Cl. 324—158)



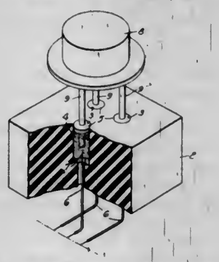
1. Apparatus for determining characteristics parameters of electrical components, comprising means for supplying repetitive electrical input signal pulses having a predetermined pulse repetition period to the electrical component under test, discriminating means connected to said component and serving to generate an output signal when the signal output of said component reaches a predetermined value, a latching means connected to receive the input signal and the output signal from the discriminator, said input signal serving to turn on the latching means to provide a constant amplitude signal and said discriminator output signal serving to turn off the latching means and terminate such signal to form a pulse of predetermined amplitude, means connected to said latching means responsive to said pulse of predetermined amplitude serving to provide a signal proportional to the average value of said pulse of predetermined amplitude over said predetermined repetition period, such signal also being proportional to the period during which the latching means is turned on.

3,286,181

APPARATUS FOR MAINTAINING A RELIABLE ELECTRICAL CONNECTION WITH COMPONENT LEADS

John Dudash, Jr., Reading, John R. Gable, Jr., State College, and John M. Keating, Muhlenberg Park, Pa., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Nov. 13, 1962, Ser. No. 237,066
1 Claim. (Cl. 324—158)



Apparatus for the environmental testing of electrical devices having a body portion and a plurality of leads extending therefrom under vibrational stress conditions, which comprises:

a mounting block formed of insulating material and having a plurality of bores formed therein,

metallic textile material positioned in each of the bores, wherein electrical devices may be mounted on the mounting block by inserting the leads thereof in the textile material, the body portions of the electrical devices being flush with the mounting block after the insertion thereof,

a metallic collar having a hole therethrough to receive the lead of the electrical device in a snug fit, said metallic collar being mounted at the entrance portion of each bore to maintain the textile material in the bores during the vibratory stress applied to the apparatus,

an electrical conductor connected to the textile material in each of the bores and extending therefrom externally of the apparatus for connection in a test circuit,

vibratory means connected to the mounting block for applying vibratory forces of at least fifteen gravities to the mounting block,

cover means readily attachable to the mounting block for securing electrical devices mounted thereon during the application of vibrational stress thereto, the cover means having recesses therein which are shaped to accommodate in a snug fit the body portions of devices inserted into the mounting block so as to securely maintain the devices on the mounting block under the vibrational stress, and

an electrical test set connected to the electrical conductors to test the electrical devices mounted on the block during the vibration thereof.

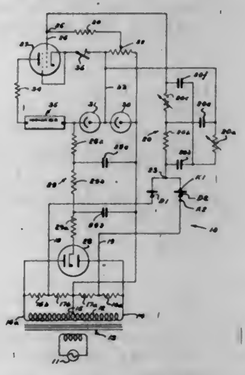
3,286,182

FULL-WAVE VERSUS HALF-WAVE DISCRIMINATING RECTIFICATION APPARATUS FOR TESTING ELECTRICAL CHARACTERISTICS OF A DIODE

Edward R. Doubek, Jr., Brookfield, Ill., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Continuation of abandoned application Ser. No. 200,175, June 5, 1962. This application June 11, 1965, Ser. No. 466,511

5 Claims. (Cl. 324—158)



4. A test circuit for determining the rectification characteristics of a diode, which comprises:

a source of alternating current;

a diode rectifying circuit connected to said source, said circuit including a reference diode for rectifying alternate half-cycles of the current;

means arranged in said rectifying circuit to receive a test diode for rectifying half-cycles of the current which are complementary to said alternate half-cycles of the current, thereby normally converting said rectifying circuit to a full-wave rectifier;

filter means connected to the output of said rectifying circuit for at least partially suppressing the fundamental signal frequency and for selectively differentiating an electrical signal comprised of at least one uninhibited higher-order component harmonic frequency representative of full-wave rectification; and

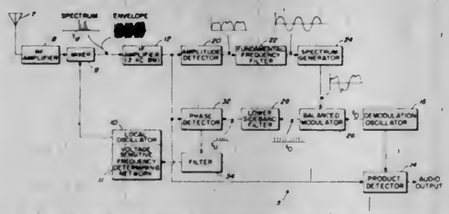
means responsive to the electrical output signal of said filter means for discriminating at a predetermined amplitude the higher-order component frequency representative of full-wave rectification, the attainment by said output signal of said predetermined amplitude being indicative of a minimum acceptable quality of rectification effected by the test diode.

3,286,183

SINGLE SIDEBAND CARRIER RECEIVER SYSTEM WHICH PRODUCES AN ACCURATELY PHASED CARRIER INJECTION SIGNAL

Gerald T. Bergemann, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed May 6, 1963, Ser. No. 278,202
7 Claims. (Cl. 325—329)



5. In a single sideband suppressed carrier receiver system having means for receiving an input signal bearing voice modulation that includes at least harmonic frequency components and a mixer stage connected to the means for receiving an input signal and producing a difference output of which includes a spectrum of frequencies, a phase control network including: means for determining the fundamental frequency of voice modulation connected to the output of said mixer stage; means responsive to said determined fundamental frequency for generating a synthesized spectrum of frequencies connected to the means for determining the fundamental frequency; and means for comparing said synthesized spectrum of frequencies with said spectrum of frequencies appearing at the output of said mixer stage with means for comparing said synthesized frequency connected to said mixer stage and to means responsive to said determined fundamental frequency, said means for comparing said synthesized spectrum producing an error output signal when the phases of the two input signals do not coincide.

3,286,184

PORTABLE TELEPHONE SYSTEM

Frank H. Blitchington, Jr., Greensboro, N.C., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Sept. 11, 1963, Ser. No. 308,196
5 Claims. (Cl. 325—16)

1. In a combined audio-radio frequency telephone system for receiving and impressing audio signals on a telephone line,

a first unit having a first inductive loop,

a transmitter and a receiver in said first unit,

means interposed between said transmitter and said first inductive loop for generating R.F. signals modulated in accordance with signals impressed on said transmitter,

an audio amplifier means interposed between said first loop and said receiver for amplifying audio frequency signals received in said first loop,

a second inductive loop inductively coupled to said first inductive loop,

means for tuning said second loop to respond to said generated R.F. signals,

a normally open contact in said telephone line,

means responsive to the receipt of an R.F. signal in said second inductive loop for closing said open contact,

a normally deenergized audio power amplifier means interposed between said telephone lines and said second inductive loop,

means responsive to said receipt of R.F. signals for energizing said audio power amplifier, and

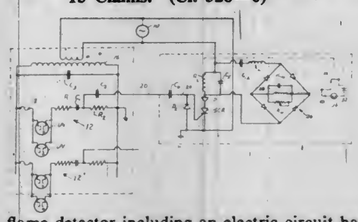
means for holding said audio power amplifier energized during momentary interruptions of said R.F. signals.

3,286,185

FLAME DETECTOR SYSTEM RESPONSIVE TO SPIKE PRODUCED BY TOWNSEND AVALANCHE OF GLOW DISCHARGE TUBE

Lyman F. Gilbert, Somers, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

Continuation of application Ser. No. 235,097, Nov. 2, 1962. This application Oct. 22, 1965, Ser. No. 507,614
15 Claims. (Cl. 328—6)



1. A flame detector including an electric circuit having a glow discharge sensing tube operating out of saturation generating pulses incident to avalanche occurring in the tube, means selectively responsive to said pulse signals operative to produce an output signal of random repetition rate and means providing an indication when the output signal is of a frequency different from the randomly varying frequency.

3,286,186

SONAR SYSTEM AURAL "OR" CIRCUIT

Frank S. White, Jr., Mystic, Conn., assignor to the United States of America as represented by the Secretary of the Navy

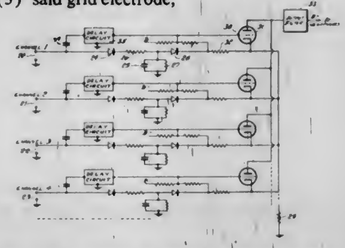
Filed June 8, 1964, Ser. No. 374,237
3 Claims. (Cl. 328—137)

1. An aural "or" circuit comprising a plurality of identical channels, each of said channels having:

(a) a triode including cathode, grid and plate electrodes,

(b) an "or" path having connected in series therein in the following order,
an input terminal,
an asymmetrically conducting element,
charging means,
a second asymmetrically conducting element,
a resistance, said cathode electrode,

(c) a signal path having connected therein in the following order, said terminal,
(1) a capacitor,
(2) a delay means, and
(3) said grid electrode,

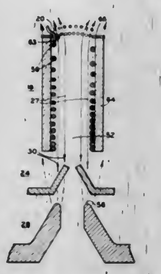


(d) electrical conducting means connecting said plate electrodes of said triodes together,

(e) a resistance having one end thereof connected to each of said cathode electrodes,

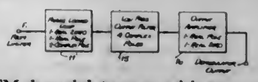
whereby when a positive potential is applied to said plate electrodes and audio input signals are applied at said terminal of each of said channels the audio output signal at said plate electrode will be the largest amplitude of said input signals.

3,286,187
ION SOURCE UTILIZING A SPHERICALLY CONVERGING ELECTRIC FIELD
Dennis Gabor, London, England, assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Oct. 16, 1961, Ser. No. 145,317
5 Claims. (Cl. 328—233)



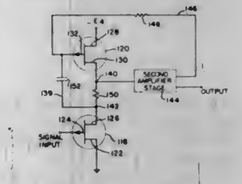
2. In an apparatus for producing ion beams, the combination comprising a means of emitting electrons, an accelerating grid, and a nozzle, said means of emitting electrons, said accelerating grid, and said nozzle all having a common axis; a source of ionizable material in the region of said accelerating grid and said nozzle; means for maintaining approximately the same potential on both nozzle and cathode; means for maintaining an approximately spherically converging electrostatic field between said accelerating grid and said nozzle including a current carrying coil of wire wound in a helix about the said common axis with continually diminishing spacing between turns from the end nearest the grid to the end nearest the nozzle; and means for maintaining a substantially axial magnetic field in the region between said accelerating grid and said nozzle so as to produce pendulation of electrons in said region.

3,286,188
PHASE LOCKED LOOP WITH INCREASED PHASE LINEARITY
Anthony J. Castellano, Jr., R.F.D. 3, Windmill Road, New Fairfield, Conn.
Filed Feb. 21, 1966, Ser. No. 528,901
5 Claims. (Cl. 329—122)



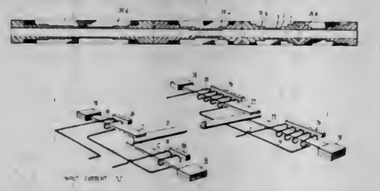
1. An FM demodulator comprising:
a phase locked loop having an output voltage to input phase transfer function with n real zeros, n real poles and p complex poles,
a low-pass filter connected in series with said phase locked loop, the output voltage to input voltage transfer function of said filter having q complex poles, wherein $p+q$ is an even number no less than four, and
an amplifier in series with said filter and said phase locked loop, the output voltage to input voltage transfer function of said amplifier having n real poles and n real zeros,
each of said n real poles in said amplifier substantially equaling in magnitude a separate one of said n real zeros in said phase locked loop, and each of said n real zeros in said amplifier substantially equaling a separate one of said n real poles in said phase locked loop,
said q complex poles in said filter and said p complex poles in said loop forming a set of $p+q$ complex poles distributed on the complex plane as a Gaussian set,
whereby a substantially linear phase transfer function is provided for said demodulator.

3,286,189
HIGH GAIN FIELD-EFFECT TRANSISTOR-LOADED AMPLIFIER
Edward E. Mitchell, Maurice G. Gilliland, and Robert Z. Fowler, Ithaca, and Edgar W. Seymour, Freeville, N.Y., assignors to Ithaco, Inc., Ithaca, N.Y., a corporation of New York
Filed Jan. 20, 1964, Ser. No. 338,985
8 Claims. (Cl. 330—18)



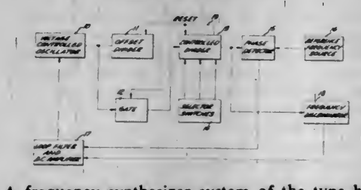
5. Electric signal amplifying means, comprising
a solid-state amplifier including a control electrode adapted to receive an input signal to be amplified, and a pair of output circuit electrodes;
a load impedance;
a field effect transistor including source, drain and gate electrodes;
a source of direct-current load voltage;
conductor means connecting successively in series with said voltage source the output electrode circuit of said amplifier, said load impedance, and the source to drain circuit of said field effect transistor, said conductor means containing a first stage output junction between said load impedance and said source electrode;
a capacitor connecting said gate electrode with a point on said conductor means between said impedance and the amplifier output circuit electrode connected thereto;
an additional amplifier stage having an input terminal connected with said first stage output junction, a second stage output terminal, and a feedback output terminal;
and direct-current bias means for stabilizing the output voltage of said additional amplifier stage including a resistor connecting said feedback output terminal with said gate electrode.

3,286,190
ELECTROMECHANICAL DELAY LINE HAVING PROFILED SENSITIVITY TRANSDUCER FOR CORRECTING PULSE DISPERSION
George H. Hare, Oakland, Calif., assignor, by mesne assignments, to Friden, Inc., San Leandro, Calif., a corporation of Delaware
Filed Aug. 13, 1963, Ser. No. 301,850
6 Claims. (Cl. 333—30)



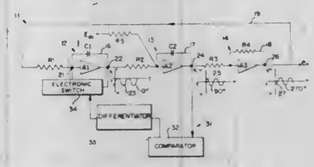
1. In combination in a delay line, two electromechanical magnetostrictive transducers, means for applying a predetermined electric signal to one of said transducers, and means for transmitting an elastic wave between said transducers for carrying a signal from one transducer to the other with a time delay, one of said transducers including a coil having overlying winding portions of unequal length and having a sensitivity that is profiled to vary across it in the direction of travel of said elastic waves thereacross as the amplitude of an elastic wave launched from the other transducer and arriving at said one transducer varies thereacross in the same direction.

3,286,191
AFC WITH OFFSET FREQUENCY DIVIDER
Charles M. Cornwell, El Monte, Calif., assignor to Hoffman Electronics Corporation, El Monte, Calif., a corporation of California
Filed Apr. 8, 1965, Ser. No. 446,556
7 Claims. (Cl. 331—11)



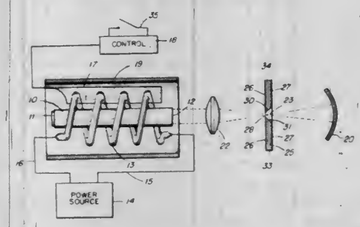
1. A frequency synthesizer system of the type having a voltage controlled oscillator, a controlled divider and a phase detector for comparing the output of the controlled divider with a reference and producing an error voltage for controlling the oscillator, the improvement comprising means causing said oscillator to generate a frequency which is offset from the frequency selected by said controlled divider including an additional divider responsive to said oscillator for establishing said frequency offset, a gate connected with and controlled by said additional divider, and means coupling said gate between said oscillator and said controlled divider for passing the output of said oscillator to said controlled divider after said gate is controlled by said additional divider.

3,286,192
SINE WAVE OSCILLATOR WITH PERIODIC INITIAL CONDITION RESETTING MEANS
Jerry M. Collings, Concord, and Victor H. Sansum, Oakland, Calif., assignors to Systron-Donner Corporation, Concord, Calif., a corporation of California
Filed Feb. 14, 1964, Ser. No. 344,883
11 Claims. (Cl. 331—45)



3. In a sine wave oscillator, a closed loop second order system generating a sinusoid having an initial condition, and means connected to said second order system for reestablishing said initial condition of said sinusoid at periodic intervals during oscillation and during the time the voltage curve for the sinusoid is at substantially zero slope.

3,286,193
LASER STRUCTURE INCLUDING LASER ENERGY TRANSPARENT ENERGY-DIVERTING MASKING ELEMENTS
Charles J. Koester, South Woodstock, and Edgar O. Dixon, East Woodstock, Conn., assignors to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts
Filed July 27, 1962, Ser. No. 212,909
15 Claims. (Cl. 331—94.5)



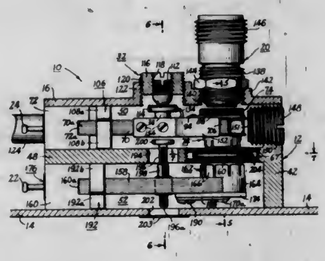
1. In a laser structure, in combination, means providing a propagation path for laser emissive energy, said means including an active laser element through which said path extends; and at least one mask element formed of material substantially transparent at the laser emissive-energy wavelengths and interposed in said path and having a portion effective to divert from said path laser emissive energy incident upon said portion and with an edge of said portion contoured to define at least a portion of the boundary of a region adapted to provide propagation of laser emissive energy in said path, said region being coincident with a transverse cross-sectional area of said path.

3,286,194

ELECTRONICALLY TUNED OSCILLATOR

Ralph L. Barkes, Tampa, Fla., assignor to Trak Microwave Corporation, Tampa, Fla.

Filed Nov. 15, 1963, Ser. No. 323,931
6 Claims. (Cl. 331—97)



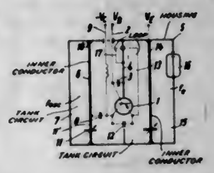
1. A microwave source comprising, in combination:
(A) an electrically conductive open ended housing, said housing including
(1) a pair of side walls and one end wall, and
(2) a partition disposed perpendicularly to said side walls and said one end wall for dividing the interior of said housing into first and second substantially equal resonant cavities,
(B) a high frequency triode rigidly mounted in an aperture in said partition, said triode having
(1) an anode terminal disposed in said first resonant cavity,
(2) a cathode terminal disposed in said second resonant cavity, and
(3) a grid terminal electrically coupled to said housing
(C) an anode line disposed in said first resonant cavity, said anode line having
(1) one end adapted to support a contact member in electrical contacting engagement with said anode terminal, and
(2) its other end rigidly mounted in a support member disposed in the open end of said first resonant cavity,
(D) a cathode line disposed in said second resonant cavity, said cathode line having
(1) one end adapted to support a contact member in electrical contacting engagement with said cathode terminal and
(2) its other end rigidly mounted in a support member disposed in the open end of said second resonant cavity,
(E) feedback means for coupling electromagnetic energy from said first resonant cavity to said second resonant cavity through said partition, said feedback means including
(1) means forming an aperture in said partition and
(2) a feedback screw in threaded engagement with said cathode line, said feedback screw extending through said aperture and having an enlarged end portion disposed in said first resonant cavity,
(F) output means for extracting electromagnetic energy from said first resonant cavity, and
(G) tuning means disposed in said first resonant cavity for varying the resonant frequency thereof.

3,286,195

TRANSISTOR OSCILLATOR FOR UHF TUNERS WITH INCREASED FREQUENCY RANGE

Werner Bachnick, Bredenbeck, and Werner Heitefuss, Hannover, Germany, assignors to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany

Filed May 4, 1964, Ser. No. 364,473
Claims priority, application Germany, May 2, 1963, T 23,941
11 Claims. (Cl. 331—97)



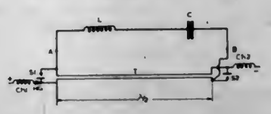
1. An oscillator comprising in combination:
(a) quarter wave length resonant tank circuit means including a housing constituting a grounded outer conductor for said tank circuit means, and a transistor provided with a base, an emitter and a collector disposed in said housing, said base being grounded to said housing and said collector being electrically coupled with said tank circuit means, said tank circuit means cooperating with said transistor for providing high frequency oscillations;
(b) a capacitor connected across said emitter and collector said capacitor providing a first feedback path; and
(c) inductive coupling means connected between said emitter and said collector for providing a second feedback path which increases the feedback of the lower frequencies of the frequency range through which the oscillator is to be tuned.

3,286,196

SPARK GAP CIRCUITS FOR SUSTAINING OSCILLATIONS IN TRANSMISSION LINE RESONATORS

Kurt Landecker, Armidale, New South Wales, Australia, assignor to The University of New England, Armidale, New South Wales, Australia, a body corporate

Filed Mar. 13, 1964, Ser. No. 351,813
Claims priority, application Australia, Mar. 20, 1963, 28,551/63
14 Claims. (Cl. 331—100)



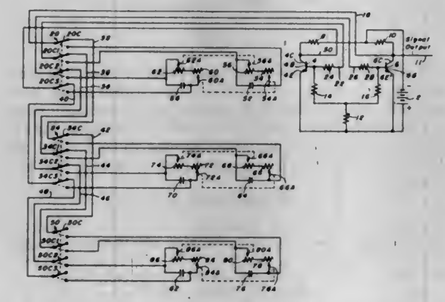
1. Arrangement for the production of sustained oscillations in electric circuits, said arrangement comprising a distributed circuit element of transmission line type having two substantially parallel conductors in a dielectric medium, a source of potential electrically connected to one and the other of said conductors respectively at opposite ends thereof, a resonant circuit electrically connected with the conductors at the other opposite ends thereof, and fast operating switching means electrically connected between adjacent ends of said conductors to connect and disconnect said adjacent ends, said fast operating switching means being activated by the periodically oscillating current in said turned circuit, and the length and dielectric medium of said distributed circuit element being adjusted for a propagation time of said oscillations equal to one half period of oscillation of said resonant circuit, such that the energy associated with a travelling wave progressing periodically from the source of potential through the distributed circuit element of transmission line type is received by the resonant circuit with the correct polarity and in the correct phase of oscillation thereby sustaining the amplitude of oscillation.

3,286,197

MULTIPLE BAND VARIABLE MULTIVIBRATOR

Vincent S. Borsattino, 4627 Lincoln St.; Chursel E. Marker, 793 Indiana St.; Jesse W. Shalla, 2424 W. 57th Place, all of Gary, Ind.

Filed Sept. 15, 1965, Ser. No. 487,545
2 Claims. (Cl. 331—113)



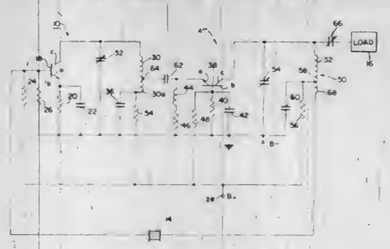
1. A multiple band variable frequency oscillator comprising a first unit including a pair of like transistors each having a base, a collector and an emitter, a D.C. power source, means connecting one side of said power source to each of said emitters, a connection between the other side of said power source and one of said collectors, a resistor in said connection, a connection between the said other side of said power source and the other of said collectors, a resistor in said last named connection, a connection between the said one side of said power source and one of said bases, a resistor in said last named connection, a connection between the said one side of said power source and the other of said bases, and a resistor in said last named connection; a second unit; a third unit; each of said second and third units having a first capacitor connected in parallel with a first variable resistor, a second capacitor connected in parallel with a second variable resistor, the values of the first and second capacitors being equal to one another, and means for varying the effective value of the first and second variable resistors so that the effective value of the first variable resistor will be the same as the effective value of the second variable resistor, the values of the variable resistors and capacitors of the second unit differing substantially from the values of the variable resistors and capacitors of the third unit; and means for selectively connecting the collector of one of said transistors to the base of the other transistor through the first capacitor and first variable resistor of the second and third units and selectively connecting the base of said one transistor to the collector of the said other transistor through the second capacitor and second variable resistor of the second and third units; said last named means including a first switch having four contacts associated with said second unit, one side of two of said contacts being connected to the collector of one of said units and the base of the other of said transistors, one side of the other two of said contacts being connected to the collector of said other transistor and the base of the said other of said transistors, a second switch having four contacts associated with said third unit, the other side of the first said two of said contacts in the first position of said first switch being connected to one side of two of said contacts of said second switch and in their second position being connected to the first capacitor and first variable resistor of the second unit, the other side of the said other two contacts of said first switch in their first position being connected to one side of the other two contacts of said second switch and in their second position being connected to the second capacitor and second variable resistor of the second unit, the other side of the first said two of said contacts of the second switch in their first position being connected to the first capacitor and first variable resistor of the third unit, the other side of the said other two contacts of the second switch in their first position being connected to the second capacitor and second variable resistor of the third unit, an output signal being obtained from said first and second units when the contacts of said first switch are in their second position, and an output signal being obtained from said first and third units when the contacts of said first and second switches are in their first positions.

3,286,198

FREQUENCY STABILIZED TRANSISTOR CRYSTAL OSCILLATOR

Joseph E. Racy, Nashua, N.H., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware

Filed Mar. 20, 1964, Ser. No. 353,389
8 Claims. (Cl. 331—116)



1. A high frequency oscillator comprising
(A) first and second transistor amplifying stages,
(B) means coupling the output of said first stage to the input of said second stage,
(C) feedback means regeneratively feeding a portion of the output of said second stage to the input of said first stage to sustain oscillations in said oscillator,
(D) said second stage being connected in a common base configuration,
(E) said first stage being connected in a common emitter configuration.

3,286,199

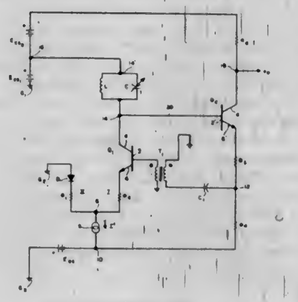
TRANSISTOR-CONTROLLED OSCILLATOR APPARATUS

James K. Skilling, Harvard, Mass., assignor to General Radio Company, West Concord, Mass., a corporation of Massachusetts

Filed June 30, 1965, Ser. No. 468,277
14 Claims. (Cl. 331—117)

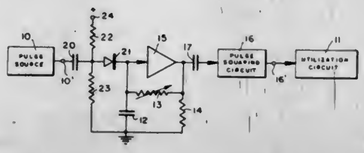
1. An oscillator apparatus having, in combination, a source of current connected to each of a pair of paths at least one of which comprises a switching relay, a tank circuit connected to the switching relay in the said one path, means for feeding back resonant-frequency voltage oscillations from the tank circuit to the switching relay to render the same synchronously periodically conductive at such frequency in the said one switching path, thereby to cause the said paths alternately to pass current

from the said source, the switching relay when thus rendered conductive feeding at least a component of the said resonant-frequency oscillations to the tank circuit along



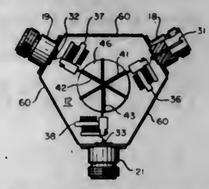
the said one path to sustain resonant-frequency substantially sinusoidal voltage oscillations therein, and means for extracting the said oscillations from the tank circuit.

3,286,200
PULSE-AMPLITUDE TO PULSE-DURATION CONVERTER APPARATUS
Orson G. Foulger, Goleta, Calif., assignor to The United States of America as represented by the Secretary of the Navy
Filed Feb. 18, 1964, Ser. No. 346,063
4 Claims. (Cl. 332—1)



1. A pulse-shaping apparatus for providing an output pulse whose duration is directly proportional to the amplitude of an applied input pulse, wherein the duration of said input pulse is small relative to that of said output pulse, said pulse-shaping apparatus comprising, in combination:
(a) a charge storage capacitor;
(b) means for applying said input pulse to said capacitor to effect charging thereof to a voltage corresponding to that of said input pulse;
(c) capacitor discharge circuit means effective upon termination of said input pulse to discharge said capacitor at a predetermined and substantially constant rate;
(d) said capacitor discharge circuit means including a unity-gain non-inverting amplifier having a shunting resistor and an output load resistor across which is developed an intermediate pulse characterized by a substantially instantaneous increase in amplitude from a zero pulse-amplitude axis to a peak amplitude corresponding to that of said input pulse and by subsequent decay to said axis during a time interval proportional to said peak amplitude; and
(e) squaring circuit means responsive to said intermediate pulse to yield an output pulse of substantially constant amplitude and of duration substantially equal to that of said intermediate pulse.

3,286,201
FERRITE CIRCULATOR HAVING THREE MUTUALLY COUPLED COILS COUPLED TO THE FERRITE MATERIAL
Roy W. Roberts, Jr., Mountain View, Calif., assignor to Melabs, Palo Alto, Calif., a corporation of California
Filed Apr. 29, 1966, Ser. No. 546,396
14 Claims. (Cl. 333—1.1)



1. A circulator device of the character described comprising a junction of at least three transmission lines, mutually coupled coils intersecting at substantially equal angles electrically connected to said transmission lines at said junction, ferrite material coupled to said coils, and means for applying a magnetic field to said ferrite material.

3,286,202
COUPLER FOR DISTRIBUTING MICROWAVE ENERGY AMONG A PLURALITY OF TERMINALS
Bernard J. Daveau, Chatillon-sous-Bagneux, France, assignor to Compagnie Francaise Thomson-Houston, Paris, France, a French body corporate
Filed Oct. 26, 1964, Ser. No. 406,445
Claims priority, application France, Oct. 24, 1963, 951,623, Patent 1,380,714
19 Claims. (Cl. 333—7)

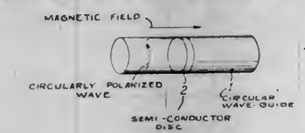


1. In a microwave system, an arrangement for transferring microwave energy between a first terminal and a plurality of at least two second terminals, comprising a waveguide member having a sealed energy-reflecting end wall, an opposite end wall, and side walls; means connecting said first terminal with said opposite end wall of the member; a plurality of at least two energy-coupling probes projecting into the waveguide member normally to sidewall thereof; said probes being positioned on a common surface parallel to said energy-reflecting end wall of the member; the spacing between at least certain of said probes being substantially equal to the transverse dimension of said sidewall divided by the number of probes in said plurality; and means connecting each probe to a respective one of said second terminals.

3,286,203
UNIDIRECTIONAL DEVICE HAVING MEANS FOR TRANSMITTING ONLY ONE SENSE OF A CIRCULARLY POLARIZED WAVE
Jacques Gremillet, Paris, France, assignor to CSF—Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed Aug. 5, 1963, Ser. No. 299,988
Claims priority, application France, Aug. 10, 1962, 906,672
4 Claims. (Cl. 333—24)

2. An unidirectional transmission arrangement comprising: means having a cross-section for transmitting a guided circularly polarized high frequency wave propagating in a predetermined direction, means for applying to said transmitting means a steady magnetic field parallel

to said predetermined direction, a body contained in and extending over the whole of said cross-section of said transmitting means normally to said direction, said body being made of a material having free carriers and

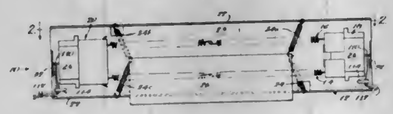


a cyclotron resonance angular frequency for said magnetic field substantially higher than the angular frequency of the wave and an electron collision time substantially higher than the reciprocal of said angular cyclotron frequency.

ERRATUM

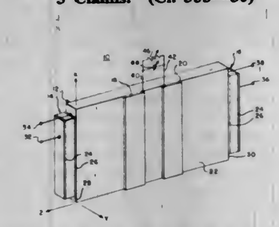
For Class 333—30 see:
Patent No. 3,286,190

3,286,204
REVERBERATION UNIT HAVING VIBRATION-ISOLATING SUSPENSION
William C. Laube, Jr., Maywood, Ill., assignor to Hammond Organ Company, Chicago, Ill., a corporation of Delaware
Filed Apr. 26, 1962, Ser. No. 190,444
4 Claims. (Cl. 333—30)



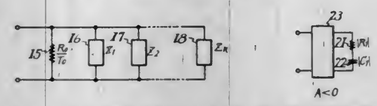
2. A suspension system for a vibration sensitive reverberation unit utilizing electroacoustic transducers for the purpose of vibrationally isolating the reverberation unit comprising, a mounting frame, four substantially identical coil springs supporting said reverberation unit, said springs being in tension and connected at one end to said reverberation unit at spaced points and to the mounting frame at their other ends at spaced points, and the angularity of the springs being such that the axis of each spring is normal to a different face of a tetrahedron.

3,286,205
VARIABLE DELAY LINE
Arthur D. Ballato, Long Branch, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed July 5, 1963, Ser. No. 293,215
3 Claims. (Cl. 333—30)



1. A signal delay line comprising a rectangular parallelepiped Y-cut block of alpha-quart crystal adapted to transmit in the X–Y shear mode, a pair of discrete electrodes mounted on at least one of the X–Z surfaces of said crystal, the dimensions of said electrodes along the X-axis of said crystal being substantially parallel to said X-axis and extending substantially all the way across said X–Z surface, and a variable impedance network connected across said electrodes for controlling the time delay of said delay line.

3,286,206
ACTIVE CR TWO-TERMINAL CIRCUIT
Rokuro Kamiya, Ohta-ku, Tokyo, Japan, assignor to Kabushikikaisha Taiko Denki Seisakusho (Taiko Electric Works Ltd.), Tokyo, Japan, a corporation of Japan
Filed Feb. 27, 1964, Ser. No. 347,746
Claims priority, application Japan, Apr. 24, 1963, 38/21,658
9 Claims. (Cl. 333—80)



1. An active CR two-terminal circuit comprising a plurality of partial two-terminal impedance circuits at least one of which is composed of resistance elements, capacitance elements and a negative impedance conversion circuit, said partial two-terminal impedance circuits, being connected directly in parallel, a resistance circuit which is directly connected in parallel to said partial two-terminal impedance circuits, thereby forming a two-terminal impedance circuit having a value of impedance Z, output terminals connected across said partial two terminal impedance circuit, and a constant current voltage electrical source having an internal resistance R_0 far higher than said impedance Z, said constant current voltage electrical source being connected across said partial two-terminal impedance circuit in which

$$\frac{R_0}{Z}=\prod_{m=1}^{n}\frac{b_{m2}}{a_{m2}}+p\sum_{m=1}^{n}\frac{\beta_{m1}p+\beta_{m2}}{p^2+a_{m1}p+a_{m2}} \quad (1)$$

where $p=j\omega$, ω being angular velocity, a_{m1}, a_{m2}, b_{m2}, β_{m1} and β_{m2} being respectively coefficients, said resistance circuit having a value of

$$\frac{R_0}{\prod_{m=1}^{n}\frac{b_{m2}}{a_{m2}}}$$

and each of said plurality of partial two-terminal impedance circuits having a value of

$$\frac{R_0(p^2+a_{m1}p+a_{m2})}{p(\beta_{m1}p+\beta_{m2})}$$

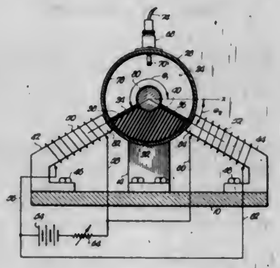
which corresponds to each of said partial fraction of the second term of said Formula 1.

3,286,207
FERRITE TUNED COAXIAL CAVITY APPARATUS
Jerome K. Butler, Lawrence, Kans., assignor to Wilcox Electric Company, Inc., Kansas City, Mo., a corporation of Kansas
Filed Nov. 23, 1962, Ser. No. 239,639
13 Claims. (Cl. 333—83)

1. Resonator apparatus comprising:
a pair of spaced electrical conductors, there being an outer, hollow conductor having a transverse member therein and an inner conductor electrically coupled to the member and disposed in said outer conductor to present a cavity resonator;
an electromagnetic energy input means and an elec-

tromagnetic energy output means, each operably coupled with said conductors;

a pair of dielectrics of different dielectric constant in said cavity, each dielectric partially surrounding the inner conductor and each having a pair of surfaces, each surface lying in a plane intersecting said inner conductor and normal to a plane transverse of said inner conductor, each surface of each dielectric being adjacent to a corresponding, opposing surface of the other dielectric to form a pair of spaces between the opposing surfaces, whereby to elliptically polarize the magnetic field of an electromagnetic wave traveling along the conductors in the regions of the opposing surfaces;



a strip of material disposed in each space respectively in contact with said opposing surfaces, said material being characterized by atomic structure wherein the electrons of the atomic structure will align their individual spin axes with an applied magnetic field and precess about said axes in orbital planes normal to the aligned axes; and

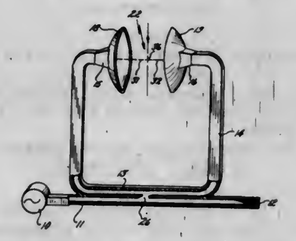
means operable to direct magnetic field components along said strips transversely thereof and either exclusively toward said inner conductor or away from the latter, whereby to impart reciprocal propagation characteristics to the cavity and, align said spin axes to produce interaction of the precessing electrons with said elliptically polarized magnetic field to thereby control the propagation constant of the cavity.

3,286,208

R-F HIGH POWER SIMULATION

Kenneth E. Niebuhr, 637 Crocus Drive, Rockville, Md., and Kenneth G. Eakin, deceased, late of Northfield, N.J., by Margaret B. Eakin, executrix, 297 Neville St., Perth Amboy, N.J.

Filed May 12, 1964, Ser. No. 367,292
4 Claims. (Cl. 333—83)



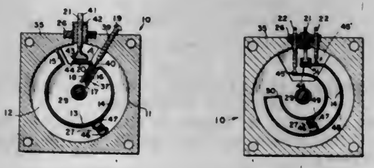
2. Microwave high power testing apparatus having a "free-space" testing region comprising; in combination, a pair of axially-facing antennas spaced by a distance equal to an integral number of wavelengths of the operating frequency, a waveguide connected to said pair of antennas to form a closed electrical loop having an electrical length substantially equal to an integral number of wavelengths of the frequency of said source, a coherent R-F source supplying electromagnetic waves to one end of said waveguide, and energy absorbing means connected to the other end of said waveguide.

3,286,209

V.H.F. and U.H.F. TUNING MEANS

Frank T. Hiatt, Indianapolis, Ind., assignor to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware

Filed May 12, 1965, Ser. No. 455,170
12 Claims. (Cl. 334—43)



1. A tuning means for tuning within predetermined frequency bands comprising: a housing, a bore in said housing, a transmission line of predetermined electrical length retained within said bore, said transmission line including a first tab, said tab electrically coupled to said housing, rotatable means coupled to nib means, said rotatable means for rotatably displacing said nib means, said nib means including contact means riding on said transmission line and the surface of said bore, said nib means electrically coupling said transmission line to said bore, rotatable displacement of said nib means varying said electrical length of said transmission line thereby coarse tuning said tuning means within said frequency band, an inductor assembly including a second tab of said transmission line, means including an inductor tab in predetermined relationship with said second tab of said transmission line, a shorting bar engaging said tabs in predetermined relationship, and means for displacing said shorting bar to fine tune said tuning means when said tuning means is coarse tuned.

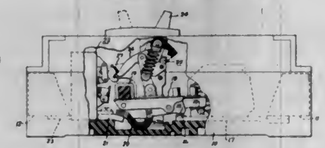
9. A tuning means for tuning within the V.H.F. and U.H.F. frequency bands comprising: a housing; an axial bore in said housing; a circular guide means positioned within said bore; an arcuately shaped transmission line of predetermined electrical length coupled to said guide means, said transmission line including two concentric sections; a rotatable means coupled to a nib means, said rotatable means for rotationally displacing said nib means, said nib means electrically coupling said two concentric sections, rotational displacement of said nib means varying said electrical length of said transmission line thereby coarse tuning said tuning means within said frequency bands; a trimmer capacitor means including a vertically displaceable rod having a head portion fixedly coupled to one of said concentric sections of said transmission line, vertical displacement of said rod, vertically displacing said one concentric section with respect to said other concentric section thereby varying the capacitance of said trimmer capacitor so as to fine tune said coarse tuned tuning means; and a plurality of variable coupling capacitors electrically coupling said tuning means to a tunable circuit, said coupling capacitors for matching impedances between said tuning means and said tunable circuit.

3,286,210

ELECTRIC CIRCUIT BREAKER WITH REMOVABLE TRIP UNIT HAVING IMPACT-RELEASABLE LATCH MEANS

Charles F. Hobson, Jr., Southington, Conn., assignor to General Electric Company, a corporation of New York

Filed Jan. 25, 1965, Ser. No. 427,725
4 Claims. (Cl. 335—10)



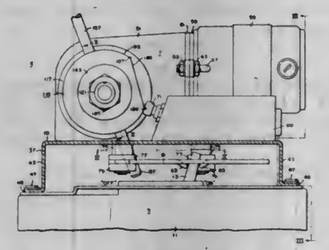
1. A multipole electric circuit breaker comprising: a main insulating casing; at least two pairs of relatively movable contacts supported in said casing; a member releasable to cause automatic opening of said contacts; a primary latch disposed and arranged to releasably engage said releasable member; a separately enclosed trip unit removably mounted in said main insulating casing; a tripping assembly supported on said trip unit to engage said primary latch and biased to restrain said primary latch in engagement with said releasable member; a secondary latch supported on said trip unit and biased to move into engagement with said tripping assembly for releasably disengaging said tripping assembly from said primary latch; a common trip bar carried by said trip unit and extending across all poles of said multipole circuit breaker; at least one current responsive means carried by said trip unit for each of said poles and arranged and disposed to engage said common trip bar, and means carried by said common trip bar restraining said secondary latch from engagement with said tripping assembly, said restraining means being releasable upon a predetermined amount of movement of said common trip bar by said current responsive means.

3,286,211

FRICTION-CLUTCH TYPE MECHANISM FOR OPERATING CIRCUIT INTERRUPTERS

Steven W. Soos, Bedford, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 27, 1964, Ser. No. 414,220
7 Claims. (Cl. 335—68)



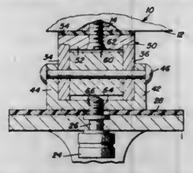
1. A motor operating mechanism for operating a circuit interrupter, said circuit interrupter having an operating member movable between two operating positions, said motor operating mechanism comprising an operating structure supported for generally rectilinear reciprocal movement, means operatively connecting said operating structure with said operating member, a motor, a drive shaft operated by operation of said motor, friction clutch means operatively connecting said drive shaft with said operating structure, and upon operation of said motor said drive shaft operating through said friction clutch means to operatively move said operating structure to thereby operatively move said operating member, and said friction clutch means slipping to prevent the application of a damaging force to said operating member.

3,286,212

MAGNETIC CAMERA SUPPORT FOR USE WITH TRIPOD

Edward H. Thompson, 8550 SW. 125th St., and Vern S. Justin, 3361 SW. 3rd St., both of Miami, Fla.

Filed June 19, 1964, Ser. No. 376,468
6 Claims. (Cl. 335—285)



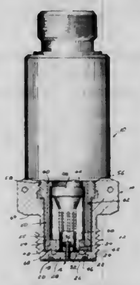
1. A magnetic camera support comprising a pair of upstanding generally parallel magnetized plates including pairs of upper and lower edge portions, a first base plate, means securing said first base plate between one pair of said corresponding edge portions of said magnetized plates, said first base plate including means adapting said first base plate for removable securement to a first object, a second base plate including an elongated positioning rib projecting laterally outwardly of one side face thereof, said second base plate being removably positionable with said one side face in magnetically attracted frictional engagement with the other pair of said corresponding edges of said parallel plates and with said positioning rib snugly received between said parallel plates, said second base plate including means adapting said second base plate for removable securement to a second object.

3,286,213

PRESSURE TRANSDUCER

Yao T. Li, South Lincoln, Mass. (40 Ames St., Cambridge, Mass.)

Filed July 8, 1964, Ser. No. 381,204
9 Claims. (Cl. 338—42)



1. A pressure transducer comprising

a frame open at one end and threaded externally at that end,

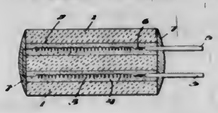
a diaphragm extending across the end of the frame and closing that end, said diaphragm having a flat central portion and a surrounding dished annular portion,

a force summing button secured to the flat central portion of the diaphragm,

a cylindrical strain tube disposed in the frame and secured at one end to the button, said strain tube carrying a plurality of strain gage windings,

a cylindrical nondeformable strain tube holder coextensive with and surrounding the strain tube and terminating at one end adjacent the button, said end of the holder being secured to the frame,
and means connecting the other end of the tube to the other end of the holder.

3,286,214
MEASURING RESISTANCE
Franz Kolb, Kurt Ditterich, Walter Obrowski, and Fritz Schwarz, Hanau am Main, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany
Filed Feb. 3, 1964, Ser. No. 341,920
Claims priority, application Germany, Feb. 2, 1963, D 40,816
2 Claims. (Cl. 338—269)

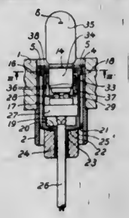


1. In a measuring resistance, a ceramic supporting element having at least one bore therein adapted to receive a wound wire resistance coil, a wound wire resistance coil carried in said bore and a sintered mixture of 1 to 20% by weight of a powdered glass-like silicate mass of the following composition by weight

66–70% SiO_2
5–10% B_2O_3
8–10% Al_2O_3
8–10% Na_2O
4–8% CaO

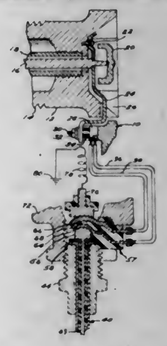
and 99 to 80% by weight of a powdered non-glass-like ceramic filling the remaining space in the bore, said mixture having been sintered at a temperature below the softening point of said glass-like silicate mass to form a cohesive sintered mass.

3,286,215
SOCKET FOR PLUG-IN LAMPS
Willi Hagner, Oberbiel, Germany, assignor to Ernst Leitz G.m.b.H., Optische Werke, Wetzlar (Lahn), Germany
Filed Nov. 18, 1963, Ser. No. 324,471
Claims priority, application Germany, Nov. 20, 1962, L 43,494
11 Claims. (Cl. 339—32)



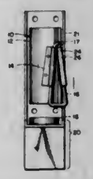
1. A socket for a lamp bulb having a tubular base comprising; an outer shell element having an opening at one end into which the base of a bulb can be inserted, an intermediate ring independent from and movable with respect to the shell to receive the base of the bulb inserted into said opening in the end of said shell, and cooperating elements of a bayonet locking and locating means formed on said base of the bulb and on said intermediate ring and the said one end of said shell for selectively locating the bulb relative to the shell and including abutment means for retaining the bulb in the shell, the elements of said means on said intermediate ring being different from the elements of said means bn said shell.

3,286,216
ELECTRIC TERMINAL
Wilbur F. Jackson, Rolling Hills, and Henry C. Bracksiek, Buena Park, Calif., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Original application June 11, 1963, Ser. No. 287,061. Divided and this application Oct. 23, 1965, Ser. No. 502,990
6 Claims. (Cl. 339—89)



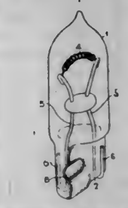
1. An electrical terminal comprising:
a plurality of electrical conductors disposed on a longitudinal axis,
at least one of said conductors being deformed at its extremity in a flattened shape substantially parallel with the longitudinal axis,
all of said conductors formed with a generally cone-shaped deformed portion and nested within each other,
an insulator physically joining said plurality of conductors and extending to separate the conductor extremities to prevent contact between conductors,
said insulator extending around the periphery of the deformed area of the conductor, and
a strip of insulation material positioned between the conductor extremities to prevent contact between the conductors.

3,286,217
VACUUM TUBE MOUNTING STRUCTURE
William S. August, Altadena, and Elmer R. Hastings, Pomona, Calif., assignors to Inland Electronic Products Corporation, Pasadena, Calif., a corporation of California
Filed Jan. 22, 1962, Ser. No. 167,754
4 Claims. (Cl. 339—143)



1. A vacuum tube clamp comprising a hollow generally cylindrical member formed of malleable metallic material having an opening extending axially along the length thereof; and means for varying the circumference of said cylindrical member comprising first and second guiding means secured to the exterior of said cylinder and at an angle relative to each other, and pressure means slidably connected to the first and second guiding means for varying the distance therebetween, said pressure means comprising first and second slidable surfaces arranged to contact said first and second guiding means, respectively, said surfaces being disposed at an angle relative to each other.

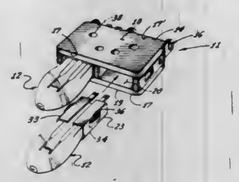
3,286,218
ELECTRIC INCANDESCENT LAMPS
John Willoughby Thomas Wright, James Richard Coaton, and Donald Arthur Howles, Leicester, England, assignors to Associated Electrical Industries Limited, London, England, a British company
Filed Feb. 3, 1964, Ser. No. 341,865
Claims priority, application Great Britain, Feb. 18, 1963, 6,446/63
3 Claims. (Cl. 339—144)



1. In the combination of a socket and a lamp; a socket comprising a body of insulating material having a recess formed in one face thereof, at least the inner portion of the recess being of generally rectangular form to receive the pinch of a lamp, a pair of plate contacts arranged in spaced apart relation adjacent the longer sides of the recess, with a part of each of said contacts projecting through a respective opening in a wall of the body which is parallel to the face having the recess therein and each contact having an inwardly extending projection thereon, and a capless electric incandescent lamp comprising a glass envelope with a flattened glass pinch providing two substantially parallel faces on one end thereof and two lead-in conductors brought out through the pinch with the end portion of each conductor bent back, one parallel to each one of the parallel faces, said end portions being positioned one adjacent each of the opposite edges of the parallel faces and with a recess located in the portion of each face which extends between the conductor on that face and the edge of the face remote from the conductor, said inwardly extending projection engaging with one of said recesses on the pinch of the lamp and said plate contact engaging and pressing an end portion of a conductor against the face of the pinch of the lamp.

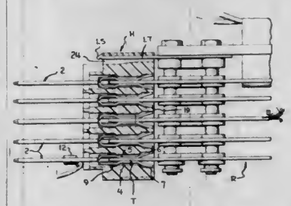
3,286,219
LAMP SOCKET
Donald W. Herrick, Gardena, Calif., assignor to Northrop Corporation, Beverly Hills, Calif., a corporation of California
Filed July 20, 1964, Ser. No. 383,611
3 Claims. (Cl. 339—154)

1. An electrical socket adapted to have at least one incandescent lamp having a rectangular mounting portion mounted therein, comprising: a body portion fabricated of a good electrical insulating material; said body portion including side walls having first and second opposed edges and end walls defining a rectangular passageway therein; said side and end walls having a flush relation adjacent said first edges and terminating substantially midway between said first and second edges; electrical contact means fabricated of lengths of band-like material constructed of a good electrical conducting material; said contact means being folded on themselves at approximately their midpoint to provide a pair of substantially U-shaped members having leg and bite portions; aligned apertures provided in said leg portions; the material removed from one of said leg portions to provide the aperture therein remains partially attached to the leg portion from which it is removed; in the assembled relation of said contact



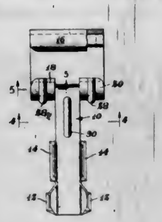
means in said body portion said leg portions having a snug relation with respect to said end walls with the material removed from said one leg being snugly contoured to the ends of said end walls terminating midway between said first and second edges and said bite portions being substantially flush with said second edges thereby providing resilient and positive means for securing the lamp in said socket and a good path for electrical current flowing to the lamps.

3,286,220
ELECTRICAL CONNECTOR MEANS
James Earl Marley, Middletown, and Clarence Ward Wiley, Hershey, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed June 10, 1964, Ser. No. 373,967
7 Claims. (Cl. 339—192)



1. In combination with a housing means having a longitudinally extending passage therein provided with channels in opposed surfaces thereof and an inner abutment wall having an opening therethrough, said channels disposed forward of said wall, a connector means having a tab-receiving section and a post section, said tab-receiving section being disposed within said passage and having a box-shaped section and tine means, said box-shaped section engaging opposed surfaces of said passage and being disposed adjacent said inner wall, means on said box-shaped section and disposed in said channels to lock said connector means in said passage, said tine means extending along and toward a front opening of said passage, said tine means including portions in extended engagement defining a tab-engaging section and end sections extending away from each other with the ends thereof being in sliding engagement with said opposed surfaces, said box-shaped section and the ends of said end sections providing spaced lines of pressure being applied to said tab-engaging section to resiliently maintain said portions in engagement, said post section extending through the opening in said inner wall for engagement with a conductive means.

3,286,221
FLAG TAB RECEPTACLE TERMINAL
Roland F. Blakesley, Bloomfield Hills, Mich., assignor to Essex Wire Corporation, Fort Wayne, Ind., a corporation of Michigan
Filed June 17, 1964, Ser. No. 375,902
6 Claims. (Cl. 339—223)



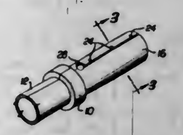
1. In a flag tab receptacle terminal, a base, two pair of ferrule-forming ears adjacent one end of said base, one pair of said ears being adapted to form a ferrule around an insulated conductor and the other pair of said ears being adapted to form a ferrule around the conductor of said insulated conductor, a tab receptacle at the other end of said base, said tab receptacle comprising a channel-forming flange along said other end of said base and a pair of opposed channel-forming flanges separated by a portion of said base extending from said pairs of ears to said tab receptacle.

3,286,222
PRESTRESSED ELECTRICAL CONTACT
David Drinkwater, Orange, Calif., assignor to ITT Cannon Electric Inc., Los Angeles, Calif., a corporation of California
Filed Apr. 9, 1964, Ser. No. 358,497
1 Claim. (Cl. 339—258)



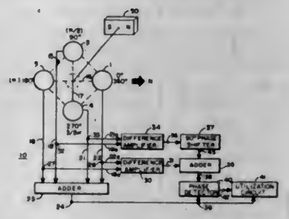
A socket contact for an electrical connector which comprises an elongated contact body having rearward terminating means and having a tubular forward portion, said tubular forward portion having forwardly opening longitudinal slot means therein to provide a plurality of forwardly extending spring contacting fingers having their roots at the rear end of said slot means, the said tubular portion extending rearwardly of said rear end of the slot means, said fingers being adapted to receive a mating pin contact member therebetween, and sleeve means circumferentially engaged in substantial hoop compression partly about said fingers proximate their roots and partly about said tubular portion to the rear of said fingers so as to radially inwardly prestress the fingers and the tubular portion to the rear of said fingers and thereby improve their spring characteristics, said fingers are bent inwardly forward of their roots so as to converge toward their forward ends and are radially inwardly prestressed proximate their roots substantially to their elastic limits, the portion of said sleeve means engaging said tubular portion being completely cylindrical with a single inner diameter smaller than said tubular portion when the tubular portion and the sleeve means are in the unstressed condition, whereby the compression on said tubular portion is caused by the radial interference between the sleeve and the tubular portion and is substantially equally applied throughout the length of the interengaging area.

3,286,223
FERRULE CONSTRUCTION AND A METHOD FOR PRODUCING SAME
Ronald S. Narozny, Panorama City, and Charles C. Anderson, Costa Mesa, Calif., assignors, by mesne assignments, to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed May 18, 1964, Ser. No. 368,200
2 Claims. (Cl. 339—276)



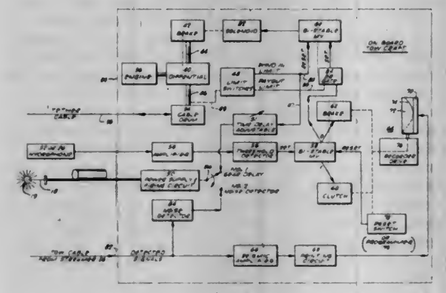
1. An electrical terminal comprising: a ferrule fabricated of a sheet of rollable metal formed into a tube with opposite edge portions of one end section of the sheet overlapping and secured together, said overlapping portions having a total wall thickness approximately equal to the wall thickness of the remaining portion of the tube, opposite edge portions of the other end section of the sheet abutting each other, and edge cutouts dividing said sections and cooperatively providing an inspection port in the completed ferrule, an electrical conductor entering and terminating in the overlapped section of the tube and secured therein, and contact means extending from the end of the tube opposite the entry of the conductor.

3,286,224
ACOUSTIC DIRECTION FINDING SYSTEM
Arthur H. Zefting, Rochester, N.Y., assignor to General Dynamics Corporation, a corporation of Delaware
Filed Feb. 15, 1965, Ser. No. 432,601
7 Claims. (Cl. 340—6)



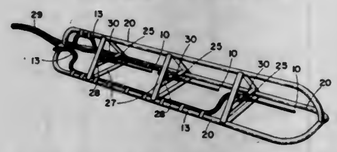
1. An acoustic system comprising
(a) a hydrophone array including four omnidirectional hydrophones,
(b) mounting means for supporting each of said four hydrophones at different corners of an imaginary square having diagonals the lengths of which are fractional parts of a given wavelength at a given operating frequency,
(c) adder means connected to each of said four hydrophones for deriving a reference signal when all of said hydrophones are excited by acoustic energy,
(d) first and second signal combining means, each connected to a pair of said hydrophones which are disposed along each of said diagonals of said square to derive first and second outputs respectively therefrom,
(e) third means for phase shifting one of said first and second outputs from said first and second combining means respectively by ninety degrees and adding the resultant output therefrom to the other one of said first and second combining means outputs to derive a vector resultant signal therefrom,
(f) phase detector means connected to said third means and said adder means for producing a bearing indicative signal which is a function of said reference signal and said vector resultant signal therefrom, and
(g) utilization means connected to said phase detector means and said adder means for displaying said bearing signal from said phase detector means.

3,286,225
CONTINUOUS MARINE SEISMIC SURVEYING
William B. Huckabay, Dallas, and William H. Parker, Richardson, Tex., assignors to Rayflex Exploration Company, Dallas, Tex., a corporation of Texas
Filed May 21, 1964, Ser. No. 369,257
12 Claims. (Cl. 340—7)



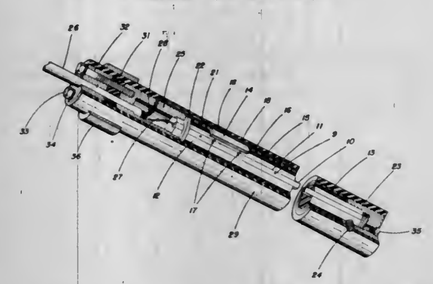
1. In a system for conducting a continuous seismic survey from a moving craft of a subsurface structure, the equipment comprising:
means for initiating a pressure wave;
towed means for detecting reflections of the pressure wave;
means for rapid wind-in and release of said towed means such that periodic minimal-motion is imparted;
means for automatically firing said pressure wave initiating means during said minimal motion condition;
means actuated by the pressure wave initiation for starting a recording cycle; and
recording means for visually registering the detected reflected pressure waves throughout the recording cycle.

3,286,226
UNDERWATER SPARK DISCHARGE SOUND-PRODUCING SYSTEM
Wayne A. Kearsley, Chelmsford, Louis Lucas, Jr., Cambridge, and Donald E. Watts, Belmont, Mass., assignors to Edgerton, Germeshausen & Grier, Inc., Bedford, Mass., a corporation of Massachusetts
Filed Jan. 18, 1965, Ser. No. 426,242
11 Claims. (Cl. 340—12)



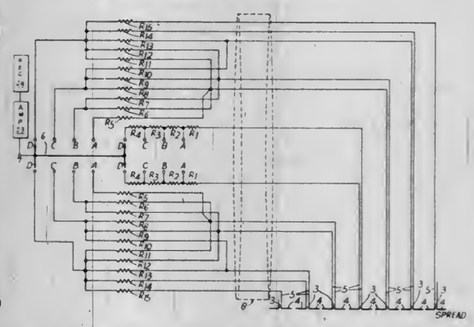
1. An underwater sound-producing system comprising:
an insulated electrode having a small area exposed to the water;
an uninsulated electrode disposed a predetermined distance from said insulated electrode; and
high-voltage potential means connected across said electrodes and adapted to discharge from the small exposed area of said insulated electrode to said uninsulated electrode, said discharge causing a plasma bubble to form about said exposed area, said predetermined distance being just greater than the maximum expansion of said plasma bubble.

3,286,227
LINE HYDROPHONE
Gerard T. Aldrich, Waterford, Conn., assignor to the United States of America as represented by the Secretary of the Navy
Filed Feb. 20, 1953, Ser. No. 338,175
7 Claims. (Cl. 340—13)



1. A hydrophone comprising a stiff first rod, said first rod having a longitudinal surface slot, an electric conductor second rod nested in the slot, a blanket wrapped about said first rod, said blanket having a longitudinal opening exposing said second rod, a stack of cylinders mounted coaxially on said blanket, said cylinders including alternate active elements and spacers, means electrically connecting the inside of each element with said second rod, a longitudinal electric conductor strip outside said stack, means electrically connecting the outside of each element with said strip, and a sound-transparent and impervious boot inclosing said stack.

3,286,228
METHOD OF TRANSMITTING AND RECEIVING SIGNALS IN SEPARATE FREQUENCY PARTS TO REDUCE UNDESIRED COMPONENTS
Nigel Allister Anstey, Chelsfield, Kent, England, assignor to Seismograph Service Corporation, Tulsa, Okla.
Filed Jan. 17, 1963, Ser. No. 252,175
Claims priority, application Great Britain, Jan. 19, 1962, 2,027/62
21 Claims. (Cl. 340—15.5)



1. A method of transmitting and receiving signals utilizing a total signal bandwidth of more than one half octave and employing a transducer array to discriminate between received signals having different apparent veloc-

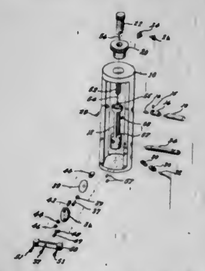
ities across the array, said method comprising the steps of successively transmitting different parts of said total bandwidth signals with each such part containing at least some signals differing in frequency from the signals of the other parts and each of said parts having a bandwidth of less than one octave, changing the effective dimensions of the array between the transmissions of the several parts so that these dimensions are appropriate to the known apparent velocities and the known frequency content of the respective parts, receiving each part at the transducer array, and then combining the signals received from the transmissions of the several parts to yield a combined signal having the intended total bandwidth.

3,286,229

LONG PERIOD HORIZONTAL SEISMOMETER

Edwin G. Millis, Dallas, Tex., assignor to the United States of America as represented by the Secretary of the Air Force

Filed Mar. 31, 1964, Ser. No. 356,336
2 Claims. (Cl. 340—17)



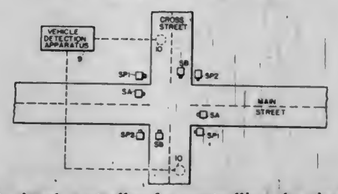
1. In a seismometer for the detection of earth tremors in a horizontal direction comprising, a cylindrical frame, said frame having a longitudinal opening therethrough and a bore at one end, a pendulum mounted within said frame, mounting means comprising a pair of pivots extending from said frame into said pendulum at one end thereof, a spring, a loop of stainless steel wire secured to each end of said spring, one of said loops being fixed to said pendulum remote from said pivots and the other of said loops being adjustably secured to said frame, a male and female relatively adjustable attachment means mounted in said bore at one end of said frame; said male attachment means being secured to said other of said loops, and and a pair of damping means mounted at diametrically opposed positions on said frame and secured to said pendulum at a position remote from said pivots.

3,286,230

TRAFFIC SIGNAL CONTROLLER

Norman A. Bolton, Rochester, N.Y., assignor to The General Signal Corporation, Rochester, N.Y., a corporation of New York

Filed July 5, 1963, Ser. No. 293,030
2 Claims. (Cl. 340—36)



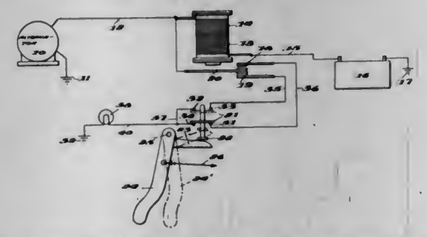
1. A signal controller for controlling the signal indications displayed by vehicular and pedestrian signals at the intersection of a main street and a cross street comprising in combination, an electronic ring counter having a predetermined number of steps and operable from one step to the next sequentially in response to each of a succession of discrete input signals, timing means including a plurality of individually adjustable timing circuit elements selected in turn in accordance with the then-operated step of said counter, traffic responsive means operated in response to traffic crossing said main street, means responsive to said counter for differently controlling said vehicular signals to provide different combinations of signal indications as said counter is operated to successive steps sequentially, means permitting operation of said counter in response to one of said discrete signals from the particular step which controls said vehicular signals to display a proceed indication to main street traffic only when said traffic responsive means has been operated, whereby said stepping means normally dwells on said particular step and thereafter operates through a cycle of operation comprising a plurality of individually timed segments only in response to detection of a vehicle by said traffic responsive means, a second electronic ring counter also having a predetermined number of steps and operable from one step to the next simultaneously in response to each of a succession of discrete input signals applied thereto, said second counter normally dwelling on a selected step but operable between successive steps one at a time sequentially in response to respective discrete input signals when once operated from said selected step, counter controlling means including a plurality of individually adjustable timing elements selected on respective steps of said second counter for controlling the time spacing of successive of said discrete signals applied to said second counter, said second counter on each of a plurality of its steps controlling said pedestrian signals to display a different one of a plurality of pedestrian signal indications, a pedestrian-actuated switch, and means effective only when said pedestrian switch has been operated to operate said second counter from said second step concurrently with the operation of said first counter to the particular step on which said first counter controls the cross street signals to display a proceed aspect.

3,286,231

VEHICLE HAND BRAKE AND GENERATOR SIGNAL SYSTEM

Rolla W. Blair, 507 36th St., Vienna, W. Va.

Filed June 11, 1964, Ser. No. 374,482
7 Claims. (Cl. 340—69)



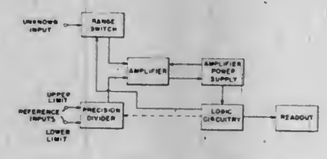
1. A safety hand brake position-indicating signal for motor vehicles comprising in combination:
(a) a signal lamp disposed so that it is visible to the operator of said vehicle,
(b) a relay provided with an energizing coil which is arranged to actuate the armature thereof to contact one or the other of a pair of contacts, one of said contacts being arranged to be closed when the coil is energized and open when the coil is not energized,
(c) the other of said contacts being arranged to be open when the coil is energized and closed when the coil is not energized, said contacts being electrically connected by individual circuits with said signal lamp for passing an electrical current thereto,
(d) a power supply, a hand brake operated single pole double throw switch mounted on said vehicle and electrically connected in series with the contact that is arranged to be closed when said coil is energized so that current will flow through said hand brake operated switch in the position it has taken when the motor is running and the hand brake is set whereby a circuit to said signal lamp will be established and said signal lamp energized to indicate that the brake is set when it should have been released.

3,286,232

DIGITAL COMPARATOR CLASSIFYING DEVICE

Melvin E. Stanford, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

Filed Nov. 3, 1961, Ser. No. 149,931
2 Claims. (Cl. 340—146.2)



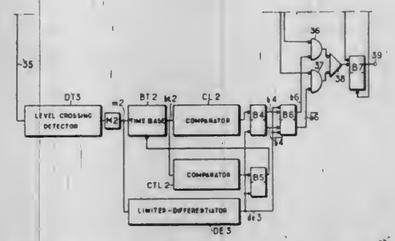
1. A device for classifying an unknown signal magnitude in one of a plurality of reference signal divisions between upper and lower limits comprising:
(a) reference means for producing said plurality of reference signal divisions between said upper and lower limits,
(b) variable means for selecting one of said reference signal divisions,
(c) comparison means having a reference signal division input, an unknown signal input, a down pulse output, and an up pulse output,
(d) means for applying upper and lower limits to said reference means,
(e) means for coupling said variable means to said reference signal division input,
(f) means for coupling an unknown signal to said unknown signal input,
(g) said comparison means being adapted to produce down pulses at said down pulse output in response to a reference signal division greater than an unknown signal and to produce up pulses at said up pulse output in response to an unknown signal greater than a reference signal division,
(h) down switching means having a down pulse input and a down control output,
(i) up switching means having an up pulse input and an up control output,
(j) means for coupling said down pulse input to said down pulse output and for coupling said up pulse input to said up pulse output,
(k) means for coupling said down control output and said up control output to said variable means for controlling the operation of said variable means in response to the operation of said down and up switching means,
(l) indicator means,
(m) and means coupling said down and up control outputs to said indicator means.

3,286,233

FAULT DETECTING DEVICES FOR CHARACTER RECOGNITION

Marc Charles Joseph Lesueur, Chaville, France, assignor to Compagnie des Machines Bull (Société Anonyme), Paris, France

Filed Apr. 23, 1964, Ser. No. 362,017
Claims priority, application France, May 30, 1963, 936,523
6 Claims. (Cl. 340—146.3)



1. A circuit arrangement for analysing a document in movement bearing coded characters which are each composed of a fixed number of separate vertical strokes, said arrangement comprising in combination: first means for sequentially generating a pulse derived from the rear edge of each of the read strokes, first time measuring means for discriminating the time intervals between these pulses, a first bistable flip-flop connected for storing according to this discrimination, among the intervals corresponding to a character, those intervals which are longer than a predetermined time period, a fault detecting arrangement including second means for sequentially generating a pulse derived from the leading edge of each of the read strokes, second time measuring means for discriminating the time intervals between the latter pulse's a second bistable flip-flop connected to said second time measuring means for storing according to this discrimination the time intervals longer than said predetermined time period, and comparing logical circuits coupled to said first bistable flip-flop and to said second bistable flip-flop and adapted for generating an error signal upon occurrence of an abnormal time shift between the stored interval representations issued respectively from the rear and leading edges of the character strokes.

3,286,234

SATELLITE COMMUTATOR HAVING REED RELAY MATRIX

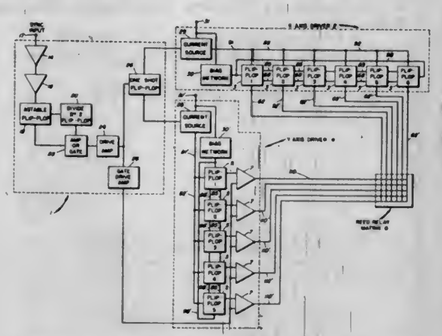
Arthur F. Hogrefe, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed May 7, 1963, Ser. No. 278,793
8 Claims. (Cl. 340—166)

1. An electromechanical commutator circuit, comprising,
a first flip-flop for developing basic timing signals,
a second flip-flop driven by said first flip-flop for dividing in half the frequency of the basic timing signals,
a gating amplifier connected to the output of both of said flip-flops for performing a logical "or" function in generating a waveform having a partial duty cycle,
a one-shot flip-flop electrically connected to said gating amplifier for developing drive pulses,
a drive amplifier electrically connected to said gating amplifier for furnishing gating pulses,
an X-axis driver actuated by said one-shot flip-flop for sequentially developing a plurality of energizing voltages,
a Y-axis driver actuated by said one-shot flip-flop and controlled by said drive amplifier for sequentially

developing a second plurality of energizing voltages, and

a plurality of reed relays formed as a matrix and con-



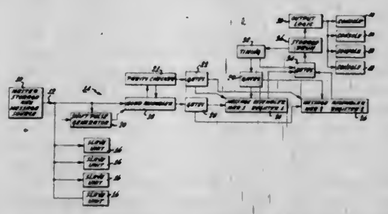
nected to said X-axis driver and to said Y-axis driver, whereby said pair of energizing voltages is consecutively applied to each of said relays for activation thereof.

3,286,235

INFORMATION STORAGE SYSTEM

Robert S. Sinn, Seaside Park, N.J., assignor to Ultronic Systems Corp., Pennsauken, N.J., a corporation of Delaware

Filed May 5, 1961, Ser. No. 108,120
7 Claims. (Cl. 340—172.5)



1. In a stock information system, apparatus for storing and updating a plurality of categories of stock information which comprises

(a) means for receiving a message having a coded multi-character stock identification section, a separate coded information section concerning the identified stock, and a separate coded category identification section identifying the category of information in said information section,

(b) a cyclic memory having a cyclic stock identification section for coded multi-character identifications of stocks and a plurality of separate cyclic sections for a plurality of different categories of stock information, said different categories for a respective stock occurring simultaneously in the respective cyclic sections,

(c) storage means having stock identification and stock information sections,

(d) means for supplying to respective sections of said storage means the multi-character stock identification and stock information in respective sections of said message,

(c) coincidence means for determining coincidence of the multi-character stock identifications in said storage means and in said cyclic memory,

(f) transfer means responsive to said coincidence for transferring stock information in said storage means to said cyclic memory,

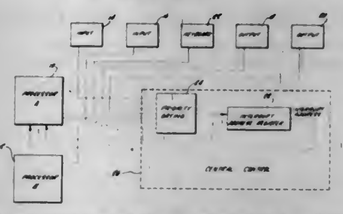
(g) and control means responsive to the category identification in said message for directing the transferred stock information to the corresponding category section of said cyclic memory.

3,286,236

ELECTRONIC DIGITAL COMPUTER WITH AUTOMATIC INTERRUPT CONTROL

William A. Logan, Covina, Richard Stanton Sharp, Sierra Madre, and George Clark Oliphint, San Gabriel, Calif., and Paul D. King, New York, N.Y., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Oct. 22, 1962, Ser. No. 232,016
8 Claims. (Cl. 340—172.5)



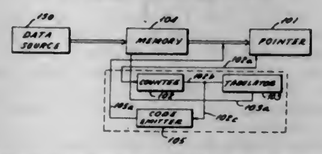
8. A processor including a plurality of registers and control counters for processing digital data in response to a stored program and having a normal mode for executing a stored executive program and a control mode for executing any one of a number of stored interrupt fix-up programs, comprising an addressable memory for storing the executive program and the interrupt fix-up programs in coded form, means associated with the processor for generating a plurality of different interrupt signals in response to different predetermined operating conditions, temporary storage means, means responsive to an interrupt signal for transferring the contents of the registers and counters in the processor to the temporary storage, and means responsive to said particular interrupt signal for selecting and initiating execution of a particular fix-up routine.

3,286,237

TABULATOR

Yoshiyasu Kikuchi, Shiba Mita, Minatoku, Tokyo, Japan, assignor to Nippon Electric Company Limited, Minatoku, Japan, a corporation of Japan

Filed Oct. 26, 1962, Ser. No. 233,280
Claims priority, application Japan, Oct. 28, 1961, 36/39,058
1 Claim. (Cl. 340—172.5)



Means for controlling the manner in which data stored in a memory is to be printed comprising:

memory means storing a plurality of addressable coded characters;

printing means for printing characters on a line by line basis;

multi-stage counter means for developing a cumulative count equal to the number of characters which may be printed on each line;

said counter means advancing said printer to print the next line of characters when said counter means reaches its maximum count;

a first group of logic gates being coupled to the counter means and having output terminals substantially equal in number to said maximum count;

a second group of logic gates fewer in number than said first group;

first patchcord means for selectively coupling said first and second group of logic gates to generate differing address codes as said counter means is advanced;

a third group of logic gates fewer in number than said first group;

second patchchord means for selectively coupling said first and third group of logic gates to generate differing control code formats as said counter means is advanced;

Transfer means controlled by said printer means and said first group of logic gates for transferring characters from said memory means in synchronism with the operating speed of said printer means;

said second group of logic gates including means to inhibit said transfer means when said counter means reaches certain predetermined counts;

means coupled between said third group of logic gates and said printer means for inserting coded characters during the time said transfer means is inhibited;

a non-print signal generating source;

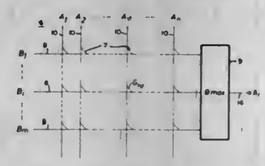
means coupled to the outputs of said memory means and said non-print generating source to prevent said printer means from printing a character whenever the address position being transferred out of said memory means does not contain a character and when said non-print source is energized.

3,286,238

LEARNING MATRIX FOR ANALOG SIGNALS

Karl Steinbuch, Ettlingen, Baden, and Peter Müller, Karlsruhe, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 28, 1962, Ser. No. 240,697
Claims priority, application Germany, Dec. 7, 1961, St 18,653
9 Claims. (Cl. 340—172.5)



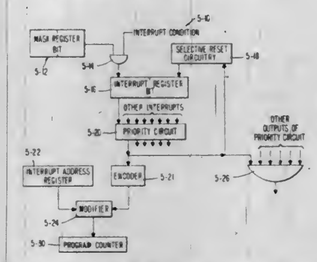
1. An arrangement for learning and identifying a plurality of electric analog signal patterns comprising an $m \times n$ matrix of two or more m rows and one or more n columns of conductors having input and output leads connected to each row and column, connecting elements arranged at the intersecting points of row and column conductors, control means for selectively switching analog and control signals to row and column conductors and maximum detection circuit means whereby during a learning phase each of a plurality of analog signal patterns applied to the one or more columns causes the physical condition of one rows connecting elements to be changed by the action of a column and row control in the course of one or more steps so that the connecting effect of the connecting elements becomes proportional to the features of the respective patterns so that each row represents the class of one pattern out of a number of m patterns and that during the confirming or learned phase, with the aid of the maximum detection circuit, the application of an unknown pattern to column leads will generate an output signal indicative of the row (i) having the row pattern most nearly like the applied unknown pattern.

3,286,239

AUTOMATIC INTERRUPT SYSTEM FOR A DATA PROCESSOR

Blair C. Thompson, King of Prussia, Pa., Cornelius C. Perkins, Birmingham, Mich., and Joseph Shifman, Villanova, and Stanley J. Pezely, Norristown, Pa., assignors to Burroughs Corporation, a corporation of Michigan

Filed Nov. 30, 1962, Ser. No. 241,225
10 Claims. (Cl. 340—172.5)



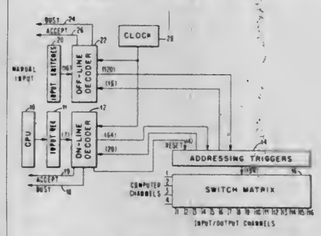
1. In a data processor having a memory means and a processing means, said memory means containing a plurality of programs for execution by said processing means, the combination, comprising: an interrupt means coupled to and active upon said processing means, said interrupt means activated by a signal occurring upon the failure or momentary loss of primary power to said data processor, a storage means coupled to and activated by said interrupt means, said storage means further coupled to receive from said processing means, upon activation by said interrupt means, a sufficient portion of the program information presently being executed by said processing means to enable automatic program resumption from the point of interruption upon restoration of primary power to said data processor.

3,286,240

CHANNEL STATUS CHECKING AND SWITCHING SYSTEM

James F. Thompson, Wappingers Falls, and Charles A. Zito, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

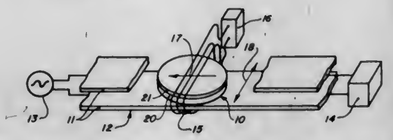
Filed Dec. 31, 1962, Ser. No. 248,749
7 Claims. (Cl. 340—172.5)



5. A channel status checking and switching system for interconnecting selected pairs of m first channels and n second channels comprising a two dimensional switch matrix including $m \times n$ normally open individual switches, said first channels being connected to the m dimension of said matrix and said second channels being connected

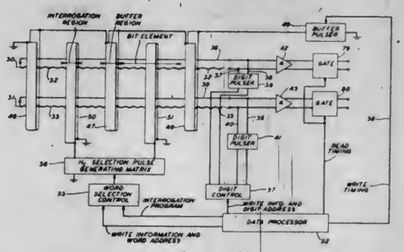
to the *n* dimension of said matrix, a plurality of bistable storage devices, means coupling each of said individual switches to corresponding ones of said bistable storage devices, means for selectively placing each of said storage devices in a set condition to close an individual switch coupled thereto and interconnect a pair of first and second channels, register means for holding the addresses of a selected first and a selected second channel to be interconnected, coincidence means responsive to said register means and to said storage devices to produce an output signal when either of said selected first and second channels is connected to a closed switch, gate means connected to the output of said coincidence means, and means to sample sequentially said gate means to provide individual first channel and second channel busy signals.

3,286,241
NONDESTRUCTIVE READOUT OF THIN FILM MEMORY
Turner E. Hasty, Dallas, and Harold D. Toombs, Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Oct. 18, 1961, Ser. No. 145,803
9 Claims. (Cl. 340—174)



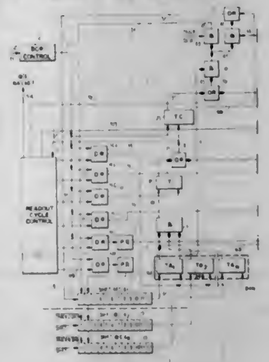
1. Apparatus for sensing the direction of magnetization of a ferromagnetic thin film exhibiting uniaxial anisotropy comprising means for generating a UHF electromagnetic field in the area of said film, means for generating an external magnetic field, of a magnitude less than required to switch the direction of remanent magnetization of the film, in a direction generally parallel to the plane of said thin film, and means for detecting a change in the UHF permeability of said thin film upon said electromagnetic field during the existence of said external magnetic field.

3,286,242
MAGNETIC STORAGE DEVICE USING RE-ENTRANT HYSTERESIS MATERIALS
Umberto F. Gianola, Florham Park, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 29, 1962, Ser. No. 206,208
18 Claims. (Cl. 340—174)



1. In combination,
a wire of magnetic material having a principal, square-loop, hysteresis characteristic defining two stable conditions of magnetic remanence and having a first threshold field required to initiate switching between said stable conditions, said characteristic having re-entrant switching portions with a second and smaller threshold field required to maintain a switching operation,
a lead wrapped around a length of said wire,
means applying current to said lead for generating in said wire length a field which is at least equal to said second threshold field but less than said first threshold field,
a circuit electromagnetically engaging a small segment of said wire length, and
means applying to said circuit a pulse for generating a field in said segment which is at least equal to said first field, the length of said segment being proportioned in relation to the magnitude of said pulse so that a magnetic domain nucleated by the field of said pulse is unstable unless expanded by the field of said current.

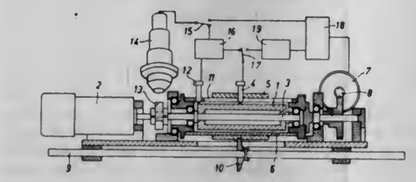
3,286,243
SHIFT REGISTER DESKEWING SYSTEM
Theodore G. Floros, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Mar. 2, 1962, Ser. No. 177,022
2 Claims. (Cl. 340—174.1)



1. In a deskewing device for a magnetic tape recording system adapted to read a magnetic tape having the bits constituting the data and synchronizing signals disposed thereon in a plurality of parallel tracks, the combination comprising
a plurality of sets of data storage registers,
each set including a plurality of shift registers corresponding to and associated with each of said plurality of parallel tracks,
each of said shift registers having a plurality of stages equal to the number of bits of anticipated skew, a pulse generator having its output connected to a predetermined position of each of said shift registers, means actuating said pulse generator by a timing signal from a source independent of said synchronizing signals on said magnetic tape to insert a prime signal in said predetermined position of each of said shift registers prior to readin of data,
control means for initiating readin of data to the shift registers in one of said sets,
means for shifting said prime and data signals through said shift registers by applying a sequence of shift pulses thereto,
means for sensing when said prime signal is shifted through said associated shift register,
means responsive to said sensing means for selectively switching from each shift register to the alternate shift register in said set,

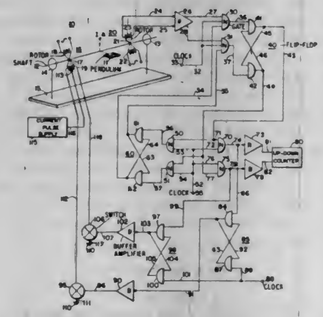
and means responsive to a full set storage register indication for initiating readout of the message stored therein, said full set storage indication being provided by read-out of the prime signals associated with each track.

3,286,244
METHOD AND APPARATUS FOR THE STORING AND REPRODUCTION OF DIGITAL SIGNALS UTILIZING CIRCUMFERENTIAL DISPLACEMENT
Heinz Franke, Heidenheim (Brenz), Wurttemberg, and Alois Hammer, Aalen-Unterrombach, Wurttemberg, Germany, assignors to Carl Zeiss-Stiftung, Wurttemberg, Germany, a corporation of Germany
Filed Oct. 2, 1962, Ser. No. 227,887
Claims priority, application Germany, Oct. 3, 1961, Z 8,999
11 Claims. (Cl. 340—174.1)



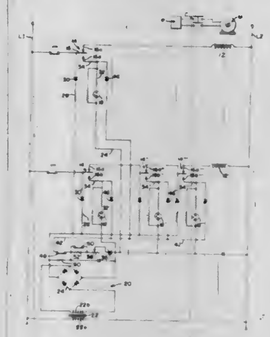
1. In combination, a magnetic drum, means for rotating said drum, a recording head, means for generating a timing signal, the frequency of which is responsive to drum rotation, and the phase of which is keyed to a reference point on the drum, servo means responsive to the amplitude of an information signal to adjust the angular position between said reference position and said head, means for applying said timing signal to said head, and means for comparing the timing signal and the signal read out by said head to reset the angular position between said head and said reference point so as to be identical on readout as upon recording.

3,286,245
CONTROL APPARATUS
Aron B. Cozart, Clearwater, Fla., assignor to Honeywell Inc., a corporation of Delaware
Filed Dec. 16, 1963, Ser. No. 331,053
5 Claims. (Cl. 340—187)



1. A rebalance system comprising:
condition responsive means having a movable member which moves from an initial position in response to a given condition;
rebalance means connected to said condition responsive means, said rebalance means being operable to move said movable member;
first signal generating means connected to said condition responsive means for providing a signal indicative of movement of said movable member from its initial position;
second signal generating means connected to said first signal generating means for receiving said signal from said first signal generating means, said second signal generating means providing first pulses when said signal exceeds a first magnitude, second pulses when said signal is less than a second magnitude, and alternate first and second pulses when said signal is between said first and second magnitudes;
signal supplying means connected to said rebalance means for supplying an energization signal thereto; and
switching means connected to said second signal generating means for receiving said pulses from said signal generating means and further connected to said rebalance means for completing a first signal path therethrough in response to said first pulses whereby said rebalance means moves said movable member in a first direction, for completing a second signal path therethrough in response to said second pulses whereby said rebalance means moves said movable member in a second direction, and for alternaately completing said first and second signal paths therethrough in response to said alternate first and second pulses.

3,286,246
ANNUNCIATOR FOR SYSTEM MALFUNCTIONS
Ralph R. Vosper, Santa Clara, Calif., assignor to Coen Company Inc., San Francisco, Calif., a corporation of California
Filed Dec. 24, 1963, Ser. No. 333,124
6 Claims. (Cl. 340—213)



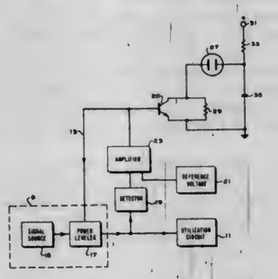
1. Apparatus for indicating a malfunction in an operating system of the type having an armature connected to a first fixed contact for supplying energy to sustain system operation and a second fixed contact to which the armature is moved when the system malfunctions, thereby interrupting energy supply to the system, and which armature returns to the first fixed contact upon abatement of the malfunction, the indicating apparatus comprising a neon bulb which fires to a conductive state at a first relatively high voltage and maintains a conductive state at a second relatively low voltage, means for producing said first voltage, means for producing said second voltage, means connecting said second voltage across said neon bulb, and means including said armature and said second fixed contact for connecting said second voltage producing means across said neon bulb.

3,286,247

POWER LEVELER INDICATOR HAVING AN OSCILLATOR MONITORED FEEDBACK CIRCUIT

Robert L. Dudley, Cupertino, and Siegfried H. Linkwitz, Palo Alto, Calif., assignors to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California

Filed July 11, 1963, Ser. No. 294,345
3 Claims. (Cl. 340—248)



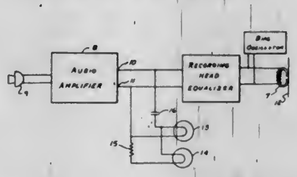
1. Signalling apparatus comprising:
circuit means producing a high frequency signal having an output power which is related to the amplitude of a control voltage of one polarity applied thereto;
a low frequency oscillator adapted to be enabled in response to a voltage of the opposite polarity applied thereto;
feedback means adapted to produce a control voltage of one polarity for said power above a selected level and of the opposite polarity for said power below a selected level;
and means connected to said circuit means and to said oscillator for applying said control signal thereto.

3,286,248

RECORDING LEVEL INTENSITY INDICATOR

Ronald W. Koss, Chicago, Ill., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Oct. 25, 1962, Ser. No. 233,022
5 Claims. (Cl. 340—253)



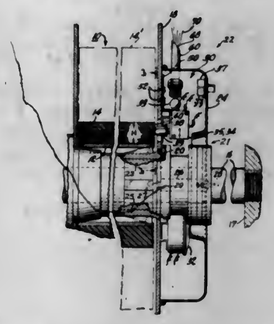
1. In apparatus for recording output signals from a transistorized audio amplifier on recording media including a device for indicating the volume level, said device comprising a circuit including an incandescent lamp and means providing a predetermined resistance in said circuit, said lamp and said predetermined resistance means being connected across said amplifier output to have the output signals impressed directly thereon causing said output signals to directly energize said lamp, said predetermined resistance means causing said lamp to have a dull red glow when the amplifier output signals are at a desired recording level and affording a visible change in illumination in said lamp from said dull red glow to a bright glow when the R.M.S. of the output signals approach the distortion level.

3,286,249

SUPPLY ROLL RUN-OUT WARNING APPARATUS

Joseph D'Angelo, Wyckoff, N.J., assignor to Roto Bag Machine Corporation, Paramus, N.J., a corporation of New York

Filed Mar. 18, 1964, Ser. No. 352,828
6 Claims. (Cl. 340—259)



2. Supply roll run-out warning apparatus for providing a warning signal at a desired time period prior to the run-out of a supply roll of sheet material, said warning apparatus including a rotatable cheek plate having an inner surface for placement near one end face of the roll for said cheek plate to rotate with the roll as the web of sheet material is payed off from the roll, said cheek plate having an opening therein from its outer surface to said inner surface, sensing means mounted for rotation with said cheek plate and including sensing means extending through said opening having a smoothly rounded end for engaging a point on the end face of the roll at a predetermined radial depth from the inner limit of said roll for the sheet material to pay out past said sensing means without snagging, and signal apparatus controlled by said sensing means for providing a signal when the depth of material in said roll is reduced below said point.

4. Supply roll run-out warning apparatus for providing a sequence of warning signals at desired time periods prior to the run-out of a supply roll of sheet material, said warning apparatus including a rotatable cheek plate adapted to be placed near one end face of the roll to rotate with the roll as the material is payed off therefrom, a plurality of sensing means mounted on said cheek plate for engaging a plurality of points on the end face of the roll at different distances from the axis of said roll, a cover detachably secured to said cheek plate for rotation together with said cheek plate, a light and an audible signal apparatus enclosed within said cover, a transparent rod element extending from said light out through said cover for providing a distinctly visible signal as said cheek plate and cover rotate, said light and audible signal apparatus being controlled by said sensing means for simultaneously providing a visible and an audible signal when the depth of material in said roll is reduced below an outer of said points and subsequently discontinuing the audible signal while continuing the visible signal when the depth of material in said roll is reduced below an inner one of said points.

3,286,250

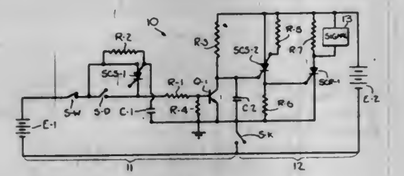
BURGLAR ALARM UTILIZING BI-STABLE ELECTRONIC SWITCHES

Menashe Teitelbaum, 1525 49th St., Brooklyn, N.Y.

Filed Oct. 16, 1964, Ser. No. 404,311
16 Claims. (Cl. 340—276)

1. In an electronic burglar alarm system equipped with at least a signal-emitting device, a door switch having terminals arranged to be in open and closed positions in response to the door being opened and closed, respectively, an electric circuit interconnecting said door switch and said signal-emitting device and arranged to permit the latter to be activated only upon opening of said terminals of said door switch, and a master "on-off" switch for arming and disarming the circuit; the improvement comprising solid state bistable electronic switching means shunted across said terminals of said door switch and having its trigger input connected with said master switch so as to be triggered into its conducting stable state, upon closing of said master switch, when said door switch terminals are in said open position thereof upon the door being open to permit the initial egress from the guarded premises, thereby simulating the closing of said door switch terminals for inhibiting activation of said signal-emitting device as long as the door remains open even though said master switch is closed, said electronic bistable switching means being arranged to be triggered into its nonconducting stable state when short-circuited by a subsequent closing of said door switch terminals upon closing of the door and being further arranged to be prevented from returning to said conducting stable state when said door switch terminals thereafter return to said open position thereof upon a reopening of the door, thereby ensuring the activation of said signal-emitting device.

13. A burglar alarm circuit, comprising voltage supply means; a master switch, a signal-emitting device and a controlled rectifier connected in series with one another across said voltage supply means, said controlled rectifier preventing activation of said signal-emitting device when-



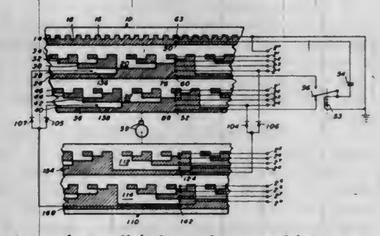
ever said controlled rectifier is in the nonconducting state thereof; a door switch having terminals arranged to be in open and closed positions in response to the door being closed and opened, respectively; a resistance-capacitance charging circuit connected in series with said door switch terminals across said voltage supply means; solid state electronic bistable switching means connected across said voltage supply means through said master switch; said electronic bistable switching means having its trigger input connected to one of said terminals of said door switch, thereby to ensure that a trigger pulse sufficient to render said electronic bistable switching means conducting is applied to the latter only when said door switch terminals are shifted to the closed position thereof while said master switch is closed; and circuit means interconnecting the output of said electronic bistable switching means to the cathode gate of said controlled rectifier; whereby with said door switch terminals in said closed position thereof upon opening of said door to permit the initial egress from the guarded premises, the subsequent closing of said master switch leaves said electronic bistable switching means in the non-conducting state thereof so as to maintain said controlled rectifier likewise in the nonconducting state thereof, while upon the next closing of said door switch terminals with said master switch still closed upon the door being reopened during a reentry into the guarded premises, a trigger pulse is applied to said input of said electronic bistable switching means to render the same conducting and thereby to permit said controlled rectifier to be rendered conducting for activating said signal-emitting device.

3,286,251

ANALOG-TO-DIGITAL ENCODER

Chai B. Byun, Los Angeles, and Kenneth F. Rendler, La Crescenta, Calif., assignors to General Precision, Inc., a corporation of Delaware

Filed Feb. 15, 1963, Ser. No. 258,827
13 Claims. (Cl. 340—347)



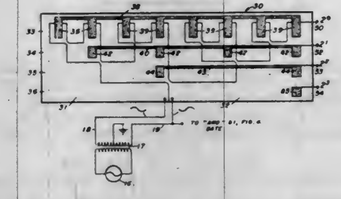
1. An analog-to-digital encoder comprising:
a first code member having a first binary pattern, said first binary pattern being capable of providing a plurality of binary counts of varying significance, said first binary pattern being substantially located in a first 180 degree sector of a surface of said first code member; a second binary pattern being capable of providing a plurality of binary counts of varying significance, said second binary pattern being substantially located in the second 180 degree sector of said first code member; and a control pattern being substantially located near the outer circumference of said first code member, the control pattern being capable of alternately energizing said first and said second binary patterns;
a readout means associated with said first code member for providing a plurality of binary outputs of varying significance including a most significant digit; and
a second code member having a first binary pattern, said first binary pattern being capable of providing a plurality of binary counts of varying significance, said first binary pattern being substantially located in a first 180 degree sector of a surface of said second code member; a second binary pattern being capable of providing a plurality of binary counts of varying significance, said second binary pattern being located substantially in the second 180 degree sector of the surface of said second code member, the most significant digit output of said readout means of said first code member being capable of alternately energizing said first binary pattern and said second binary pattern of said second code member.

3,286,252

CAPACITY ENCODER

Norman J. Bose, North Hollywood, and George N. Malina, Montrose, Calif., assignors to General Precision, Inc., a corporation of Delaware

Filed Nov. 15, 1963, Ser. No. 323,959
23 Claims. (Cl. 340—347)



1. An analog-to-digital encoder comprising:
(A) an information code disk adapted to receive analog quantities in the form of angular position, having a

pair of conductive patterns arranged in a plurality of concentric code tracks, each said code track comprising a plurality of segments, and each said segment insulated from adjacent segments and alternately forming a portion of one of said pair of conductive patterns,

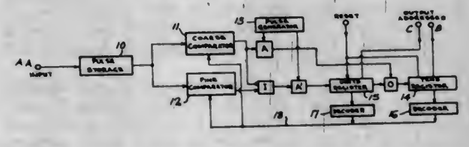
(B) A.C. generating means electrically coupled to said pair of said conductive patterns and adapted to provide an electrical signal to each said pattern at frequencies of different phases providing a varying electrostatic field surrounding said adjacent segments to each said concentric track, said field having a fixed zero potential at a line between said adjacent segments,

(C) a pickoff disk movable with respect to said information code disk comprising a plurality of concentric pickoff tracks, each said track comprising a plurality of pickoff segments, said pickoff segments spaced at a particular distance to insure that all segments are electrostatically coupled to segments of one particular phase for receiving electrical signals indicative of a particular phase to represent a binary 0 and a different phase for a binary 1.

3,286,253
ANALOG-TO-DIGITAL ENCODER

John Leng, Ottawa, Ontario, Canada, assignor to Atomic Energy of Canada Limited, Ottawa, Ontario, Canada

Filed Mar. 10, 1964, Ser. No. 350,793
2 Claims. (Cl. 340—347)



1. An analog-to-digital encoder for converting an analog input signal to a corresponding set of digital output signals, comprising

(a) a lower level digital register,

(b) an upper level digital register,

(c) decoding means coupled to said registers for generating an analog feedback signal corresponding to the digital information in said registers,

(d) means for determining the difference between said analog feedback signal and said analog input signal, and means for generating a first output signal when said difference is not less than a first value equivalent to one step in said upper level register and for generating a second output signal when said difference is less than said first value but not less than a second value equivalent to approximately one step in said lower level register,

(e) and means responsive to said first output signal for pulsing said upper level register and responsive to said second output signal for pulsing said lower level register.

3,286,254
CIRCUIT ARRANGEMENT

Horst Brendes, Sandhausen, and Jörg Fuchs, Herrenberg, Germany, assignors to Teldix Luftfahrt-Ausrüstungs G.m.b.H., Heidelberg-Wieblingen, Germany

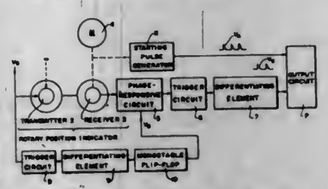
Filed Nov. 13, 1964, Ser. No. 411,070
Claims priority, application Germany, Nov. 25, 1963, T 25,119
23 Claims. (Cl. 340—347)

1. An arrangement for obtaining a digital measurement of an angle, comprising, in combination:

(a) a rotary angle indicator incorporating a transmitter and a receiver each having a stator and a rotor, said stators being electrically connected to each other and said rotor of said transmitter being adjustable to an angular position to be determined;

(b) means for applying an alternating voltage to said rotor of said transmitter;

(c) a drive motor mechanically coupled to said rotor of said receiver for rotating the same, in consequence of which the voltage across said receiver rotor is sinusoidally modulated and undergoes a phase shift when the transmitter and receiver rotors assume the same angular position;



(d) means mechanically coupled to said receiver rotor for producing a starting pulse when said receiver rotor assumes a given angular reference position;

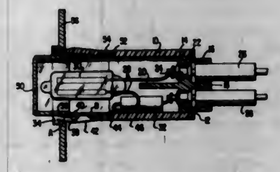
(e) phase-responsive means connected to said receiver rotor for producing an end pulse when said receiver rotor voltage undergoes a phase shift; and

(f) means connected to said means (d) and (e) for determining the duration of the time interval between said starting and end pulses, thereby to obtain a measurement of the angular position of said transmitter rotor which is susceptible to digital evaluation.

3,286,255
PILOT OR TELLTALE LIGHT ASSEMBLY

Gil C. Sanchez, Bronx, N.Y., assignor to Leecraft Manufacturing Co., Inc., Long Island City, N.Y., a corporation of New York

Filed Apr. 11, 1963, Ser. No. 272,442
1 Claim. (Cl. 340—381)

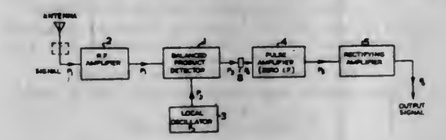


A pilot light assembly for detachably mounting in an apertured supporting member, a tubular elongated housing formed of inherently resilient material, one portion of said housing having spaced slots provided therein and defining a plurality of segments, an annular bead formed on each of said segments at the end of said housing, each of said segments being formed with a plurality of external grooves adjacent said annular bead, a neon glow lamp disposed within said housing and positioned within the segmented portion of the housing, and an elongated tubular lens positioned within the segmented portion of said housing and encompassing said lamp, said lens being provided with an outwardly flared lip, said housing being provided with an annular recess formed in the inner surface thereof adjacent the inner end of said slots for receiving said outwardly flared lip of said lens, said housing with said neon glow lamp and lens positioned therein extending through said aperture with said bead abutting said supporting member, said supporting member engaging one of said external annular grooves and compressing said segments against said lens for retaining said lens in the housing.

3,286,256
METHOD AND APPARATUS FOR ZERO I.F. FREQUENCY AND IONOSPHERIC PULSE RECEPTION

Dennis H. Covill, Hackett Cove, Nova Scotia, Canada, assignor to E.M.I.-Cossor Electronics Ltd., Dartmouth, Nova Scotia, Canada

Continuation of abandoned application Ser. No. 291,992, July 1, 1963. This application July 20, 1965, Ser. No. 480,225
Claims priority, application Canada, June 14, 1963, 877,931
5 Claims. (Cl. 343—5)

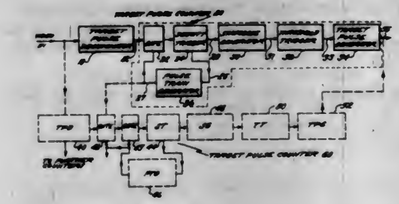


1. A receiver in a pulse echo radar system for receiving echo signals comprising pulses of oscillation of which the frequency is known and of which the phase varies as a function of time, depending upon the propagation time from the transmitter to the receiver, comprising means for forming the product of the received pulses and an oscillation of said known frequency, means for selecting from the output of the product forming means the component corresponding to the pulse envelope of the received signal, the amplitude and polarity of said pulse envelope being a function interalia of the phase variation of said oscillation, means for rectifying said pulse envelope component to derive a uni-directional signal containing excursions of only one polarity, and means for integrating said unidirectional signal over an interval of time sufficient to derive an output signal substantially independent of said variations in pulse envelope amplitude and polarity due to said phase variations.

3,286,257
LOW FALSE ALARM RATE RADAR VIDEO PROCESSOR APPARATUS

Gilmore H. Trafford, Lexington, Mass., and George B. Michel, Baltimore, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force

Filed Jan. 14, 1965, Ser. No. 425,648
3 Claims. (Cl. 343—17.1)

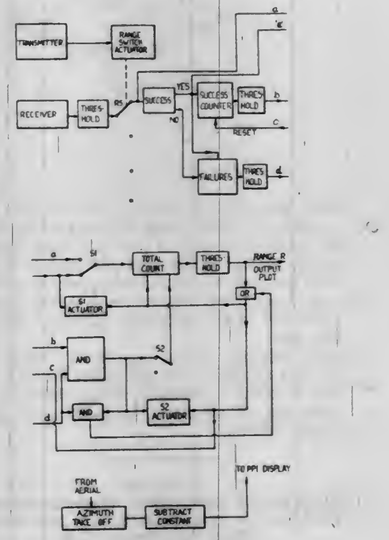


1. In a scanning radar system comprising a receiver adapted to detect RF energy pulses reflected from a distant object, means for reducing false alarm data from one range block per antenna beamwidth comprising: pulse discriminator means connected to the output of said receiver, target pulse counter means connected to said pulse discriminator means and adapted to repeatedly search a predetermined range block throughout said antenna beamwidth to determine the presence of target pulses, voltage step generating means actuated by the output of said pulse counter means, said voltage step means generating a voltage level in proportion to the number of target pulse echoes received over said antenna beamwidth, and threshold trigger means connected to said voltage step generating means to generate an output to be fed to a utilization device when the number of said received target pulses exceeds a predetermined level.

3,286,258
RADAR APPARATUS

Jack Gordon McQueen, Cheadle Hulme, England, assignor to Associated Electrical Industries Limited, London, England, a British company

Filed Mar. 1, 1965, Ser. No. 436,159
Claims priority, application Great Britain, Mar. 6, 1964, 9,706/64
8 Claims. (Cl. 343—17.1)



1. Radar equipment including apparatus for transmitting pulses and receiving echo signals at successive angular positions over an angular sweep, means whereby when an echo signal above a predetermined strength is received a main counting operation is started and continued until reliable signals at the same range cease, means for initiating a compensating count immediately to follow the main count, which compensating count has a length bearing an inverse relationship to the main count and means whereby a backward angular correction is then made from the position at which the compensating count ends to determine the true angular position of the target in the arc swept during the counting operations.

3,286,259
UNFURLABLE REFLECTOR

Robert R. Carman, Talmadge, and Earl Rottmayer, Akron, Ohio, assignors to Goodyear Aerospace Corporation, Akron, Ohio, a corporation of Delaware

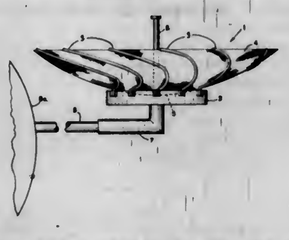
Filed Apr. 30, 1964, Ser. No. 363,771
8 Claims. (Cl. 343—18)

1. In a foldable reflector adaptable for a space environment the combination of

a substantially cylindrically shaped hub having an electromagnetic wave reflective top surface,

pivot means operatively mounted at equally spaced points around the circumference of said hub substantially adjacent to said reflective top surface thereof,

a plurality of ribs each having substantially the curvature of the circumference of said hub and being of about ½ the length thereof with one rib pivotally mounted to each of said pivot means so that when pivoted inwardly the ribs tend to come into engagement with the outer surface of said hub except that the pivotal plane of the ribs is in an angled relationship with respect to the reflective top surface of said hub so that said ribs stack on top of each

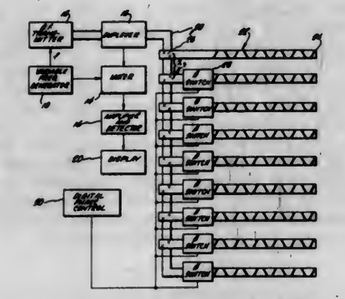


other when pivoted inwardly, and said ribs defining a parabolic dished shape in combination with said top reflective surface of said hub when pivoted outwardly so that the pivoted end thereof is substantially perpendicular to the circumference of said hub,

means to pivot said ribs to the inwardly stacked position and to the outwardly parabolic dished position, and

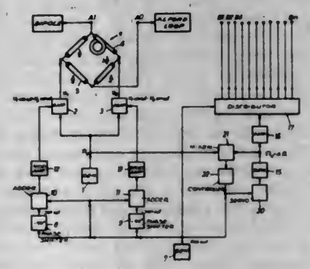
flexible reflective means operatively affixed to said ribs and adapted to fill the spaces between adjacent ribs to define a parabolic dished reflective surface when said ribs are moved outwardly to the parabolic disbed position.

3,286,260
ELECTRONIC SCANNING RADAR SYSTEM
Shirly La Var Howard, 4436 Santa Bella Road, Rolling Hills Estates, Calif.
Filed Feb. 7, 1964, Ser. No. 343,274
4 Claims. (Cl. 343—100)



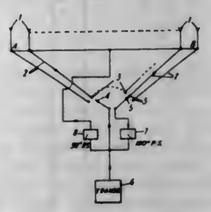
1. A scanning antenna system comprising a plurality of radiating elements, waveguide means for coupling each element to a source of energy, the waveguide means including a single tranmission path, a plurality of junctions spaced along the transmission path, a plurality of phase shift elements, there being one phase shift element associated with each radiating element and coupling the radiating element to an associated one of the junctions, means for simultaneously varying the amount of phase shift introduced by each of the phase shift elements in incremental amounts, whereby the direction of the radiated beam can be shifted in angle in incremental steps, and means for changing the frequency of the energy from the source to scan the beam over an angle corresponding to the incremental beam angle produced by the phase shifting elements.

3,286,261
DIRECTION-DETERMINATION SYSTEM EMPLOYING UNEQUAL DIRECTIONAL PATTERNS
Günter Höfgen, Berlin-Lichtenrade, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed June 28, 1963, Ser. No. 291,355
Claims priority, application Germany, July 9, 1962, St 19,460
8 Claims. (Cl. 343—107)



1. A direction-determination system operating on the basis of two directional patterns which are produced by two spatially separated antenna systems operated at different frequencies, whose spacing is a plurality of wavelengths with respect to the transmitted wavelengths, comprising means to produce at one of said antenna systems a pattern of the amplitude modulation type, and means to produce at the other antenna system a pattern of the frequency-deviation type.

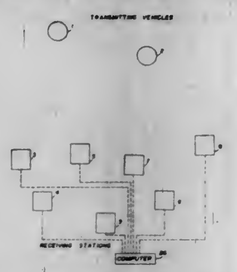
3,286,262
AMPLITUDE MODULATION RADIO BEACON
Charles William Earp, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 6, 1964, Ser. No. 350,040
Claims priority, application Great Britain, Mar. 13, 1963, 9,974/63
17 Claims. (Cl. 343—107)



1. A radio beacon for producing an amplitude modulated field, comprising an array of spaced aerials, a transmitter having first and second outputs of opposite phase, means for coupling said first output of said transmitter

successively and cyclically to each of said aerials in said array, and means for coupling said second output of said transmitter successively and cyclically to each of said aerials in said array.

3,286,263
POLYSTATION DETECTOR FOR MULTIPLE TARGETS
Calvin M. Hammack, P.O. Box 304, Saratoga, Calif.
Filed June 21, 1963, Ser. No. 289,609
12 Claims. (Cl. 343—112)



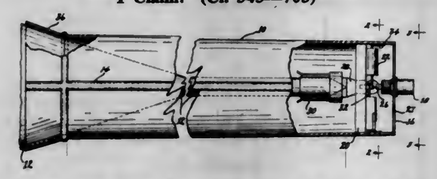
1. A method of determining the position of each of a plurality of objects in space comprising the following steps:

Step (1) Establishing a series of reference points,

Step (2) Measuring by wave propagation and detection means time differences linearly dependent upon the differences in lengths of propagation paths of waves which propagation paths are different because of the difference in the positions of the various objects, and which are dependent upon the positions of the said reference points, and

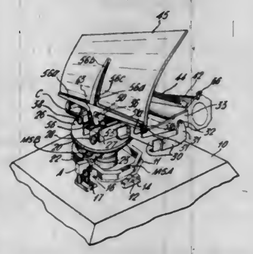
Step (3) Computing the positions of the objects using the measured data by solving a set of simultaneous equations which set comprises as unknown quantities the orthogonal coordinates of the positions of said objects and comprises as known quantities values of the measurements performed in Step (2).

3,286,264
ANTENNA TEST SHIELD
Calvin W. Miley, Fort Walton Beach, Fla., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Apr. 7, 1964, Ser. No. 358,128
1 Claim. (Cl. 343—703)



A mechanically self-supporting cap shield for absorbing and confining energy radiated from a rod antenna and terminating said antenna in free space conditions, said cap shield comprising a cylindrical body, a flared conical flange on one end of said body, said flange being flared to the pitch of a nose cone to fit firmly thereon and to provide mechanical stability and electrical grounding, a supporting disk attached to the interior of said cylindrical body adjacent its other end, resilient means attached to a surface of said disk for fitting firmly over the tip of the antenna, a lumped constant unit comprising resistors and a capacitor mounted on said supporting disk, electrical connection between said antenna and each element of said lumped constant unit, conductive connection between said unit and said cap shield, the electrical characteristics of said cap shield and said lumped constants simulating free space conditions.

3,286,265
SCANNING REFLECTOR ON STABILIZED PLATFORM HAVING A STOWED POSITION
Charles R. Clemence, William C. Brown, James C. Barnes, and Eric F. V. Robinson, Ottawa, Ontario, Canada, assignors to National Research Council, Ottawa, Ontario, Canada, a body corporate
Filed Apr. 1, 1963, Ser. No. 269,363
Claims priority, application Canada, Nov. 12, 1962, 862,141
6 Claims. (Cl. 343—761)



1. A radar antenna assembly for mounting on a generally horizontal base surface, comprising

(a) a framework,

(b) means for mounting said framework on the base surface for pivoting about a first generally horizontal axis,

(c) a first actuator extending between said framework and said surface for controlling pivotal movement of said framework about said axis,

(d) a platform,

(e) means mounting said platform on said framework for pivoting about a second generally horizontal axis perpendicular to said first axis,

(f) a second actuator extending between said platform and said framework for controlling pivotal movement of said platform about said second axis,

(g) a turntable mounted on said platform for rotation about a vertical axis,

(h) an antenna array mounted on said turntable,

(i) first level detector means sensitive to the existence and sense of any misalignment of said framework from the horizontal about said first axis,

(j) second level detector means sensitive to the existence and sense of any misalignment of said platform from the horizontal about said second axis,

(k) levelling means responsive to signals from both said detector means to energise said actuators to restore said platform to a horizontal plane upon occurrence of any such misalignment,

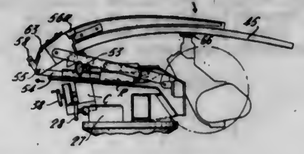
(l) first position detector means sensitive to the existence and sense of any deflection of said first actuator from a predetermined position,

(m) second position detector means sensitive to the existence and sense of any deflection of said second actuator from a predetermined position,

(n) stowage means responsive to signals from both said position detector means to restore both said actuators to their predetermined positions,

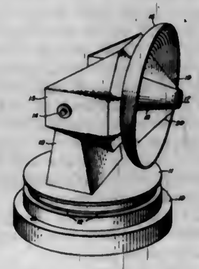
(o) and switch means for choosing between said levelling means and said stowage means and for activating only the chosen means.

3,286,266
SPRING BIASED ACTUATOR TO MOVE RADAR REFLECTOR FROM STOWED TO OPERATIVE POSITION
James C. Barnes, Ottawa, Ontario, Canada, assignor to National Research Council, Ottawa, Ontario, Canada, a body corporate
Filed Apr. 1, 1963, Ser. No. 269,365
Claims priority, application Canada, Nov. 20, 1962, 862,685
3 Claims. (Cl. 343—761)



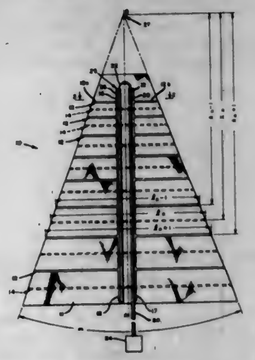
1. A radar antenna array comprising
(a) a reflector,
(b) means mounting said reflector on a frame for pivoting about a horizontal axis between an erect, operating position and a lowered, stowed position,
(c) an actuator extending between said reflector and said frame for controlling pivotal movement of said reflector about said axis,
(d) a stop fixed on said frame for co-operation with an abutment surface on the reflector to define said erect position,
(e) spring means connecting said actuator to said reflector,
(f) means for energising said actuator to move said reflector into erect position to bring said abutment surface into engagement with said stop and thereafter to stress said spring means,
(g) and limit means for de-energizing said actuator only after travel thereof a distance sufficient both to bring about said engagement and to stress said spring means.

3,286,267
INFLATABLE SUBREFLECTOR SUPPORT FOR CASSEGRAINIAN ANTENNA
Milton Lutchansky, Morristown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 17, 1964, Ser. No. 375,886
6 Claims. (Cl. 343—781)



1. A Cassegrainian antenna comprising
a main reflector,
a subreflector,
an inflated mmebrane holding said subreflector in front of said main reflector, and
at least two guying members connected between said main reflector and said subreflector and supporting the portion of the load transverse to said inflated membrane to produce moments on said subreflector just sufficient to maintain said subreflector in the same angular position relative to said main reflector for all elevational angles of the antenna.

3,286,268
LOG PERIODIC ANTENNA WITH PARASITIC ELEMENTS INTERSPERSED IN LOG PERIODIC MANNER
Normand Barbano, Sunnyvale, Calif., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Jan. 2, 1964, Ser. No. 335,001
6 Claims. (Cl. 343—792.5)



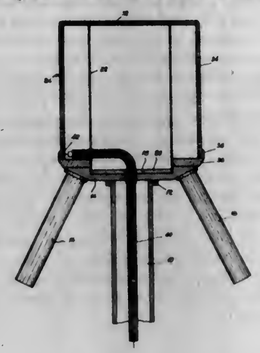
4. A log periodic antenna having an axis and an end fire pattern extending in a given direction comprising
an antenna feed comprising
a pair of conductors,
a plurality of radiating elements directly electrically connected to at least one of said conductors and extending in a direction transverse to said axis with the ends thereof remote from said connection aligned in a straight line which converges toward the axis, all of said radiating elements which are on one side of the axis being connected to the same one of said conductors, and
a plurality of parasitic elements, at least one of said parasitic elements being located between each pair of adjacent radiating elements, the axial spacing of successive ones of all of said radiating and parasitic elements increasing in the direction from the point of convergence to the opposite end of the antenna according to the relationship

$$\sqrt{\tau}=\frac{x_n}{x_{n+1}}$$

where τ is a constant having a value less than 1, x_n is the distance from the point of convergence to the nth element, and x_{n+1} is the corresponding distance from the point of convergence to the $n+1^{th}$ element.

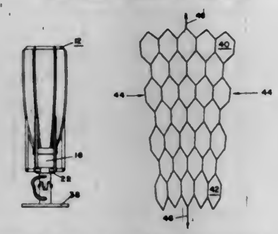
3,286,269
ANTENNA
Karl Torbjörn Cramner, 11 Valkyriavagen, Djursholm, Sweden
Filed Feb. 10, 1964, Ser. No. 343,711
Claims priority, application Sweden, Feb. 28, 1963, 2,210/63
6 Claims. (Cl. 343—830)

1. A quarter wave antenna of the ground surface type, comprising a radiation element having a plastic cylindrical portion, an integral substantially flat top portion closing said cylindrical portion and a metal netting carried by said portions and having a feed point, a thin-walled metal cylinder located within said element and spaced from the cylindrical portion thereof, whereby said metal cylinder and said metal netting constitute respectively the inner and outer conduits of a coaxial resonator, grounded supporting means carrying said element, said metal cylinder being



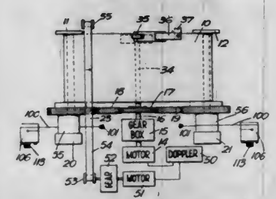
electrically connected to said means, and a coaxial antenna cable having an inner conduit and an outer conduit, the last-mentioned inner conduit being electrically connected with said metal netting at said feed point, the last-mentioned outer conduit being electrically connected with said metal cylinder at a location facing said feed point.

3,286,270
COLLAPSIBLE PARASOL-LIKE REFLECTOR UTILIZING FLEXIBLE HONEYCOMB SHELL
Edgar Kelly, Levittown, Pa., assignor to General Electric Company, a corporation of New York
Filed July 1, 1964, Ser. No. 379,561
1 Claim. (Cl. 343—915)



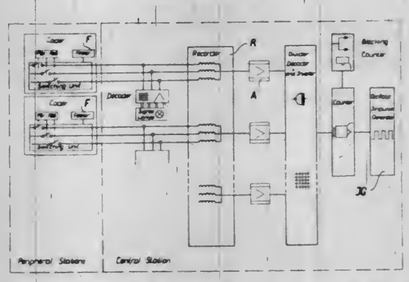
A collapsible and erectable paraboloidal electromagnetic wave reflector comprising:
(1) a circular ring member of electrically conductive honeycomb material comprising a plurality of hexagonal cells each of whose sides is common to two adjacent such cells,
each such cell having two opposite sides lying radially with respect to the said circular ring, one face of the said member defining a concave paraboloid;
(2) a plurality of rigid radial braces of equal length extending at least from the inner circular boundary to the outer circular boundary of the circular ring member,
each said brace being attached at a plurality of points to the said circular ring member on the side of the member away from the said paraboloid defining face;
(3) means for maintaining the said braces in a circularly symmetrical radial relationship and for changing the diameter of the circle determined by the ends of the said braces, a minimum value of such diameter corresponding to a collapsed state of the said reflector, and a maximum value of such diameter corresponding to an erected state of the said reflector.

3,286,271
CHART POSITION INDICATING APPARATUS
Alfred Thomas Holden, London, England, assignor to Decca Limited, London, England, a British company
Filed Sept. 4, 1964, Ser. No. 394,398
12 Claims. (Cl. 346—8)



1. Apparatus having a chart in the form of a strip carried on two spools which chart is traversed past an indicating or marking stylus, wherein there are provided a reversible motor, drive transmission means for each spool arranged to be alternatively driven by said motor to traverse the chart in either direction, said transmission means including a clutch and means for disengaging said clutch when the speed of traverse of the chart exceeds a desired rate, and, associated with each spool, a friction brake resisting rotation of the spool and unidirectional drive means arranged to operate said friction brake only when chart is being wound off the spool.

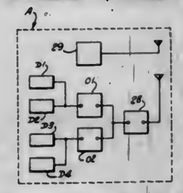
3,286,272
CODE APPARATUS FOR RECORDING MANUFACTURING PROCESSES
Lajos Dege and József Seregi, Budapest, Hungary, assignors to Villamos Automatika Intezet, Budapest, Hungary
Filed Sept. 3, 1963, Ser. No. 306,259
Claims priority, application Hungary, Sept. 15, 1962, DI-80
1 Claim. (Cl. 346—33)



Electric apparatus for analyzing manufacturing processes, comprising a plurality of peripheral stations, said peripheral stations including coding means, each said coding means having an input terminal, at least two output terminals and switch means for selectively connecting said input terminal to at least one of said output terminals, a central station, said central station including a plurality of recording elements for recording in binary code, a predetermined number of said elements associated with each said coding means, pulse generating means coupled to said recording elements, each of said output terminals being connected to one of said recording elements, and timing means coupled to said pulse generating means and said

recording elements for applying pulses to different ones of said predetermined number of said elements at predetermined selectively spaced time periods.

3,286,273
INFORMATION RECORDING SYSTEM UTILIZING A PLURALITY OF DELAY PULSE NETWORKS
Henry Von Kohorn, Pecksland Road, Greenwich, Conn.
Filed Aug. 23, 1962, Ser. No. 218,947
9 Claims. (Cl. 346—74)

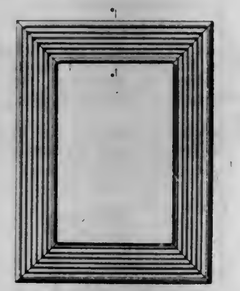


1. An information storage and communications system comprising an information generator, a first transmitter having an input connected to said information signal generator, an intermittetly advanceable permanent information recording means, control means alternatively advancing and stopping said recording means, a continuously advancing information storage device adapted to store information for a predetermined time interval and having an input coupled to said information signal generator and an output connected to said information recording means, and a network actuating said control means, and including a receiver associated with said control means and a selectively actuatable second transmitter remote from and tuned to said receiver and a first delay pulse network connected in said actuating network and having a delay interval not exceeding that of said temporary storage device whereby actuation of said network correspondingly actuates said control means said delay interval following said actuation and a second delay pulse network connected in said actuating network and having a second delay interval whereby actuation of said second delay pulse network deactuates said control means said second delay interval following said actuation of said second delay pulse network.

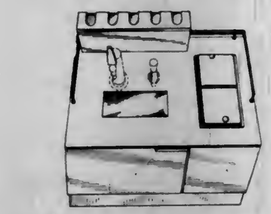
DESIGNS

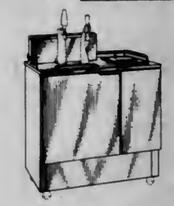
NOVEMBER 15, 1966

206,217
POSTER FRAME
David S. Howell, Troy, Mich., assignor to Arlington Aluminum Company, Detroit, Mich., a corporation of Michigan
Filed Dec. 9, 1965, Ser. No. 129
Term of patent 14 years
(Cl. D1—12)

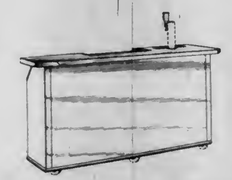


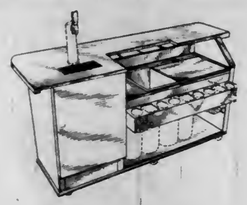
206,218
PORTABLE SODA FOUNTAIN
Frank A. Turiace, Jr., 2820 N. Main St., Los Angeles, Calif.
Filed Feb. 7, 1966, Ser. No. 947
Term of patent 14 years
(Cl. D2—3)





206,219
COMBINED PORTABLE BAR AND SODA FOUNTAIN
Frank A. Turiace, Jr., 2820 N. Main St., Los Angeles, Calif.
Filed Feb. 7, 1966, Ser. No. 948
Term of patent 14 years
(Cl. D2—3)

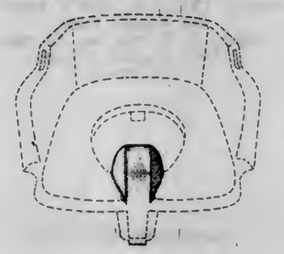




206,220
SHOWER RECEPTOR OR THE LIKE
Raymond R. Flores, Hayward, Calif., assignor to Florestone Products Co., Hayward, Calif., a corporation of California
Filed July 21, 1965, Ser. No. 86,236
Term of patent 14 years
(Cl. D4—4)



206,221
TRAINING SEAT
Knud A. Jensen and Lew W. Throssel, both of Eldora, Iowa, assignors to Infanseat Company, Eldora, Iowa, a corporation of Iowa
Continuation of design application Ser. No. 82,439, Nov. 2, 1964. This application Sept. 13, 1965, Ser. No. 86,956
Term of patent 14 years
(Cl. D4—8)



206,222
MOCCASIN
Gianni Mostile, Via Agnello 2, Milan, Italy
Filed Jan. 27, 1965, Ser. No. 83,607
Term of patent 14 years
(Cl. D7—7)



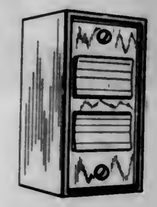
206,223
CHILD'S HIGH CHAIR OR THE LIKE
Albert T. Haley, 650 Michigan Ave., Apt. 14, Miami, Fla.
Filed Sept. 3, 1965, Ser. No. 86,833
Term of patent 7 years
(Cl. D15—1)



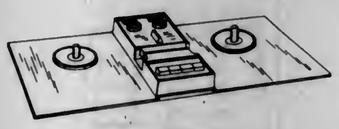
206,224
FASTENER
Enid Morris, 57 W. 58th St., New York, N.Y.
Filed Oct. 8, 1965, Ser. No. 87,369
Term of patent 14 years
(Cl. D17—1)



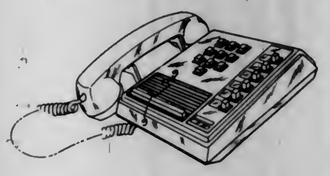
206,225
ELECTRICAL PUSHBUTTON SWITCH UNIT
Harry J. Collins, Jr., Bayside, and Charles C. Davis and Raymond L. Erickson, Brookfield, Wis., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Aug. 4, 1964, Ser. No. 81,159
Term of patent 14 years
(Cl. D26—13)



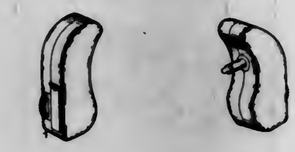
206,226
TAPE DECK
Raymond A. Grosso, Royal Oak, Mich., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed June 29, 1965, Ser. No. 85,943
Term of patent 14 years
(Cl. D26—14)



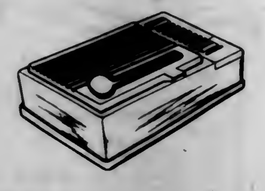
206,227
HANDSFREE TELEPHONE SUBSET
John Dominic Cuccio and Robert Andrew Chleda, Westport, Conn., assignors to International Telephone and Telegraph Corporation
Filed July 1, 1965, Ser. No. 85,986
Term of patent 14 years
(Cl. D26—14)



206,228
BEHIND-THE-EAR HEARING AID UNIT
Charles W. Strzalkowski, 3035 W. Wisconsin Ave., Milwaukee, Wis.
Filed Oct. 15, 1965, Ser. No. 87,502
Term of patent 14 years
(Cl. D26—14)



206,229
DRY CELL CHARGING APPARATUS CASE
Hajime Ota, Tokyo, Japan, assignor to Fedtro, Inc., Long Island, N.Y., a corporation of New York
Filed Dec. 10, 1965, Ser. No. 137
Term of patent 14 years
(Cl. D26—15)



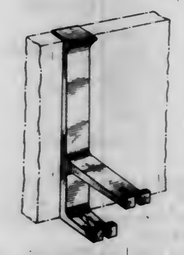
206,230
PULPIT REGISTER STAND
Richard Wareham, Euclid, and Ralph Ellsworth, Willoughby, Ohio, assignors to Superior Funeral Supply Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 4, 1966, Ser. No. 449
Term of patent 14 years
(Cl. D29—23)



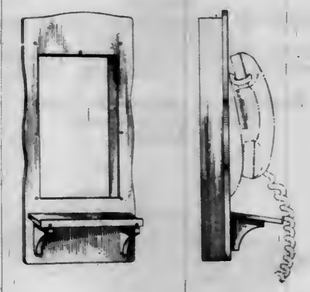
206,231
PULPIT REGISTER STAND
Richard Wareham, Euclid, and Ralph Ellsworth, Willoughby, Ohio, assignors to Superior Funeral Supply Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 10, 1966, Ser. No. 562
Term of patent 14 years
(Cl. D29—23)



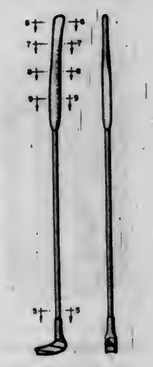
206,232
GARMENT HOOK
Raymond A. Magnuson, Hinsdale, Ill., assignor to Vogel-Peterson Co., Elmhurst, Ill., a corporation of Illinois
Filed Sept. 10, 1965, Ser. No. 86,932
Term of patent 14 years
(Cl. D33—8)



206,233
TELEPHONE WALL CABINET
Richard O. Hoth, deceased, late of East Aurora, N.Y., by Hazel Reabold, administratrix, East Aurora, N.Y.
Filed Nov. 12, 1964, Ser. No. 82,564
Term of patent 14 years
(Cl. D33—18)



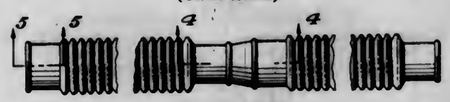
206,234
PUTTER FOR PLAYING GOLF
Howard A. Sasse, Buffalo, N.Y., assignor to Wood Wand Corporation, Buffalo, N.Y., a corporation of New York
Filed Oct. 18, 1965, Ser. No. 87,554
Term of patent 14 years
(Cl. D34—5)



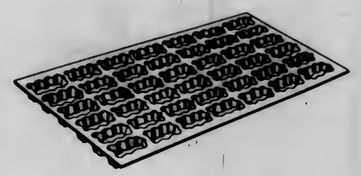
206,235
DISGUISABLE TOY CAP GUN
John W. Ryan, 688 Nimes Road, Bel-Air, Calif., and Warren Dale Kabot, 610 Poinsetta Ave., Manhattan Beach, Calif.
Filed Sept. 22, 1965, Ser. No. 87,122
Term of patent 14 years
(Cl. D34—15)



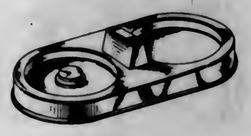
206,236
CORRUGATED HOSE OR THE LIKE
Peter H. Seckel, Wayne, N.J., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Filed Dec. 10, 1965, Ser. No. 142
Term of patent 14 years
(Cl. D43—1)



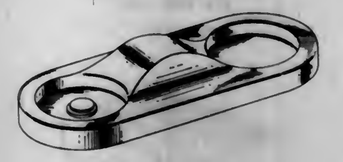
206,237
COMBINED CONFECTION MOLD AND PACKAGING TRAY
Fred Passaglia, Chicago, Ill., assignor to Sugarless Candy Corporation of America, Chicago, Ill., a corporation of Illinois
Filed Sept. 15, 1965, Ser. No. 86,997
Term of patent 14 years
(Cl. D44—1)



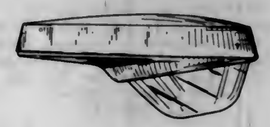
206,238
RIM COATER FOR GLASSES OR SIMILAR ARTICLE
Miguel A. Garay, Los Angeles, and William G. Everett, Inglewood, Calif., assignors to Phyllis L. Struebing, Pasadena, Calif. and Miguel A. Garay, Los Angeles, Calif., doing business as M.S.W. Company, Los Angeles, Calif.
Filed Sept. 30, 1965, Ser. No. 87,231
Term of patent 14 years
(Cl. D44—29)



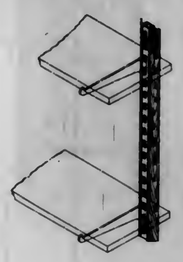
206,239
RIM COATER FOR GLASSES OR SIMILAR ARTICLES
Phyllis L. Struebing, 1505 Washburn Road, Pasadena, Calif.
Filed Oct. 22, 1965, Ser. No. 87,789
Term of patent 14 years
(Cl. D44—29)



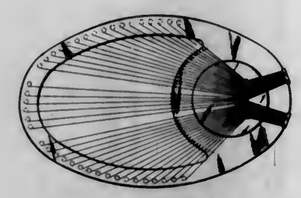
206,240
LUMINAIRE
Sheldon M. Rutter, Miami, Fla., assignor to American Electric Manufacturing Corporation, Southaven, Miss.
Filed Aug. 17, 1964, Ser. No. 81,324
Term of patent 14 years
(Cl. D48—31)



206,241
SHELF STANDARD
Martin Bard, 953 45th St., Brooklyn, N.Y.
Filed Sept. 9, 1965, Ser. No. 86,912
Term of patent 14 years
(Cl. D54—1)



206,242
STRINGED MUSICAL INSTRUMENT
Daniel E. Bloxsom, Jr., 523 S. Lucerne, Los Angeles, Calif.
Filed Oct. 11, 1965, Ser. No. 87,417
Term of patent 14 years
(Cl. D56—1)



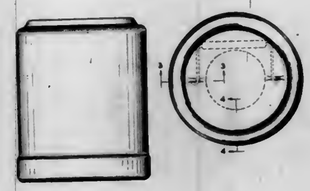
206,243
ORGAN CONSOLE
Winsor D. White, Jr., Blowing Rock, N.C., assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio
Filed July 21, 1965, Ser. No. 86,224
Term of patent 14 years
(Cl. D56—2)



206,244
LIQUID CONTAINER
William H. Coy, Lower Burrell, Pa., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 25, 1965, Ser. No. 84,439
Term of patent 14 years
(Cl. D58—17)



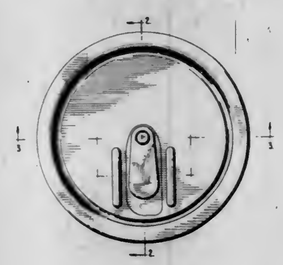
206,245
CONTAINER FOR LIQUIDS
Richard L. Platte, Ann Arbor, Mich., assignor to Hoover Ball and Bearing Company, Saline, Mich.
Filed Apr. 12, 1965, Ser. No. 84,722
Term of patent 14 years
(Cl. D58—17)



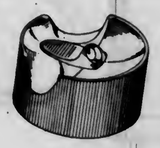
206,246
BOTTLE TOP
Robert E. Watson, Farmington, Mich., assignor to Swedish Crucible Steel Company, Detroit, Mich., a corporation of Michigan
Filed May 26, 1965, Ser. No. 85,466
Term of patent 14 years
(Cl. D58—26)



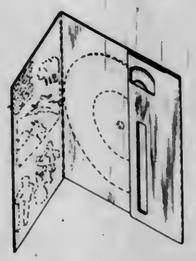
206,247
END CLOSURE FOR A CONTAINER
William T. Saunders, Weirton, W. Va., assignor to National Steel Corporation, a corporation of Delaware
Filed May 27, 1965, Ser. No. 85,480
Term of patent 14 years
(Cl. D58—26)



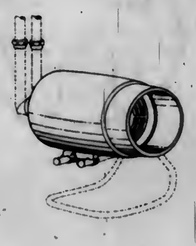
206,248
DISPENSER TOP FOR A PRESSURIZED CAN OR SIMILAR ARTICLE
Wallace W. Peters, Sayreville, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed Aug. 25, 1965, Ser. No. 86,705
Term of patent 14 years
(Cl. D58—26)



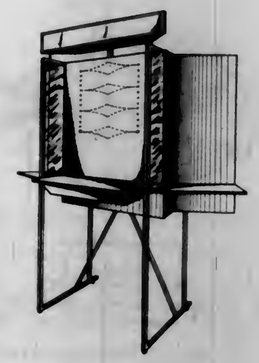
206,249
JACKET FOR A RECORD AND RELATED PICTURE SLIDE
John D. Seaver, Fayetteville, N.Y., and Leo J. Shapiro, Wilmette, Ill., assignors to General Electric Company, a corporation of New York
Filed Nov. 9, 1964, Ser. No. 82,527
Term of patent 14 years
(Cl. D59—2)



206,250
MOTOR HOUSING AND CENTRIFUGAL PUMP COMBINATION
Rand H. Martin, Monterey Park, Calif., assignor to HPE Inc., El Monte, Calif., a corporation of California
Filed May 5, 1965, Ser. No. 85,117
Term of patent 14 years
(Cl. D65—1)



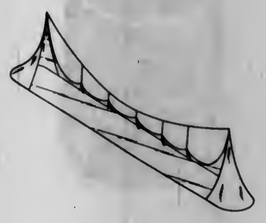
206,251
COMBINED DEMONSTRATION AND DISPLAY STAND
Harold P. Post, 150 Huyshope Ave., West Hartford, Conn.
Filed Sept. 1, 1965, Ser. No. 86,794
Term of patent 14 years
(Cl. D80—9)



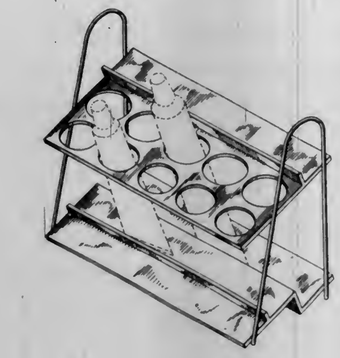
206,252
SOLARIUM
Mike Tecton, 5101 45th St. NW., Washington, D.C. 20016
Filed Sept. 3, 1965, Ser. No. 86,847
Term of patent 14 years
(Cl. D83—1)



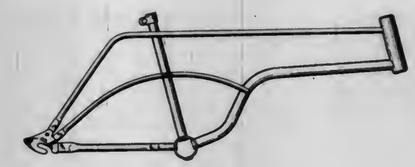
206,253
COMBINED CABANA AND SOLARIUM THEREFOR
Mike Tecton, 5101 45th St. NW., Washington, D.C. 20016
Filed Sept. 16, 1965, Ser. No. 87,025
Term of patent 14 years
(Cl. D83—1)



206,254
RACK FOR HOLDING TOILET ARTICLES, OR THE LIKE
Jennie L. Lopiano, 121 Olive Tree Ridge Road, Noroton Heights, Darien, Conn.
Filed Dec. 29, 1965, Ser. No. 370
Term of patent 14 years
(Cl. D86—10)



206,255
BICYCLE FRAME
Sherwood B. Ross, Woodsburgh, N.Y., assignor to Chain Bike Corporation, Rockaway Beach, N.Y., a corporation of New York
Filed May 2, 1966, Ser. No. 2,128
Term of patent 14 years
(Cl. D90—8)



LIST OF DESIGN PATENTEES

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Davis, Charles C. : *See*—
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Wareham, Richard, and Ellsworth. 206,231.
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PATENTS WERE ISSUED ON THE 15TH DAY OF NOVEMBER, 1966

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Aber, Henry S., and F. T. Goetz. Splash guard and mounting assembly therefor. 3,285,624, 11–15–66, Cl. 280—154.5.

Abragam, Anatole, R. Beurtey, A. Papineau, J. Thirion, and J. M. Winter, to Commissariat a l'Energie Atomique. Method of polarizing ions, and sources of polarized ions, notably protons and deuterons, obtained therefrom. 3,286,162, 11–15–66, Cl. 324—.5.

Abramson, Elmer D., to Central States Paper & Bag Co. Protective containers and mounting means therefor. 3,285,407, 11–15–66, Cl. 206—57.

Ackroyd, Ronald T., to United Kingdom Atomic Energy Authority. Nuclear reactor. 3,285,822, 11–15–66, Cl. 176—42.

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Ageron, Paul, to Commissariat a l'Energie Atomique. Swimming-pool reactor. 3,285,824, 11–15–66, Cl. 176—62.

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Agruss, Meyer S. Heterocyclic compounds in admixture with a triphenylmethane leucocyanide dye former system. 3,285,743, 11–15–66, Cl. 96—90.

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Arrigo, Joseph T., to Universal Oil Products Co. Process for the hydrogenation of trans, cis-1,5-cyclodecadiene to cis-cyclodecene. 3,285,983, 11–15–66, Cl. 260—666.

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Attwood, Brian E., to North American Philips Co., Inc. Time-base circuit employing four-layer semiconductors switching element having end layer divided into two sections. 3,286,105, 11–15–66, Cl. 307—88.5.

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"Automatic" Sprinkler Corp. of America: *See*—
Kersey, Frank N., J. L. Kersey, Jr., and Kemp. 3,285,440.
Kersey, Frank N., J. L. Kersey, Jr., and Kemp. 3,285,441.

Averill, Eugene F., to Titus Mfg. Corp. Grillwork with ornamental relief of face. 3,284,975, 11–15–66, Cl. 52—316.

Avrea, Walter C., to Royal Industries, Inc. Fluid operated braking system. 3,285,672, 11–15–66, Cl. 303—9.

Azure, Leo L., Jr., to Automata Corp. Test grading machine. 3,284,929, 11–15–66, Cl. 35—48.

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Broersma, Robert J. 3,284,981.

B & W Inc.: *See*—
Solum, James R. 3,285,345.

Babcock Electronics Corp.: *See*—
Gillison, James D. 3,285,531.

Babson, Edward S., to United Shoe Machinery Corp. Conveyor system control apparatus. 3,285,195, 11–15–66, Cl. 104—252.

Babusci, Louis D., and D. O. Feder, to Bell Telephone Laboratories, Inc. Nickel-cadmium battery receptacle. 3,285,784, 11–15–66, Cl. 136—133.

Bachnick, Werner, and W. Heltefuss, to Telefunken Patentverwertungsellschaft m.b.H. Transistor oscillator for UHF tuners with increased frequency range. 3,286,195, 11–15–66, Cl. 331—97.

Backer Elektro-Varme Aktiebolag: *See*—
Eskilson, Sture V. 3,285,048.

Badische Anilin- & Soda-Fabrik Aktiengesellschaft: *See*—
Poehler, Guenter, Wegerich, Goehre, and Giehne. 3,285,713.
Schenk, Walter, Wallis, and Schanz. 3,285,955.
Schmeidl, Karl. 3,285,902.

Bailey, Desmond F., to Doulton & Co. Ltd. Moulding ceramic composition. 3,285,873, 11–15–66, Cl. 260—30.6.

Bailey, John D., to Pullman Inc. Freight vehicle door sealing arrangement. 3,284,956, 11–15–66, Cl. 49—493.

Bailey, Robert L., to National Distillers and Chemical Corp. Plastic bottle. 3,285,454, 11–15–66, Cl. 215—100.

Baird, Andrew G.: *See*—
Silenius, Robert T., Binkley, and Baird. 3,285,655.

Baker, Donald C., to J. I. Case Co. Neutral locking and safety starting means for vehicles. 3,285,361, 11–15–66, Cl. 180—82.

Baker, George A.: *See*—
Nelson, Forrest A., and Baker. 3,286,154.

Baker, Joseph W., and R. E. Stenseth, to Monsanto Co. Diphenyl semicarbazides. 3,285,957, 11–15–66, Cl. 260—554.

Baker, Thomas R., to Kliklok Corp. Method of bonding panel portions of a folding box having a coating of a thermoplastic material on both surfaces. 3,285,143, 11–15–66, Cl. 93—36.

Baker, Thomas R., to Kliklok Corp. Folding boxes and blanks, particularly in regard to sealing by means of a thermoplastic coating preapplied to both sides thereof. 3,285,494, 11–15–66, Cl. 229—36.

Baldwin, Gerald L. Footwear ventilating device. 3,284,930, 11–15–66, Cl. 36—3.

Baldwin, John H., P. J. Paetzold, and F. Starr, to Johns-Manville Corp. Composite laminates and molded articles and method of making same. 3,285,803, 11–15–66, Cl. 161—205.

Ballato, Arthur D., to United States of America, Army. Variable delay line. 3,286,205, 11–15–66, Cl. 333—30.

Balsiger, Harold E., to Landis Tool Co. Precision spindle mounting. 3,285,679, 11–15–66, Cl. 308—121.

Banathy, Jeno D., and E. F. Condon, Jr., to International Register Co. Timer adjusted oven temperature control. 3,285,513, 11–15–66, Cl. 236—46.

Bancroft, Charles. Fluid displacement device. 3,285,503, 11–15–66, Cl. 230—187.

Bancroft, Joseph, & Sons Co.: *See*—
Langway, Paul W., and Shattuck. 3,284,868.

Barbano, Normand, to Sylvania Electric Products Inc. Log periodic antenna with parasitic elements interspersed in log periodic manner. 3,286,268, 11–15–66, Cl. 343—792.5.

Barber-Greene Co.: *See*—
Munyon, Julian M. 3,285,148.

Bar-Giora, Ammon, to Yissum Research Development Co. Collapsible wall bracket for hanging clothes. 3,285,423, 11–15–66, Cl. 211—1.3.

Barkes, Ralph L., to Trak Microwave Corp. Harmonic generator. 3,286,156, 11–15–66, Cl. 321—69.

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Weiss, Morris. 3,285,069.

Barnes, James C.: *See*—
Clemence, Charles R., Brown, Barnes, and Robinson. 3,286,265.

Barnes, James C., to National Research Council. Spring biased actuator to move radar reflector from stowed to operative position. 3,286,266, 11–15–66, Cl. 343—761.

Barnes, Robert W.: *See*—
Jamison, Will B., and Barnes. 3,285,347.

Barnhardt, Jacob C., Sr., and W. T. Shea, to Barnhardt Mfg. Co. Polygonal tubular container with reclosable end. 3,285,496, 11–15–66, Cl. 229—51.

Barnhardt Mfg. Co.: *See*—
Barnhardt, Jacob C., Sr., and Shea. 3,285,496.

Barnier, Douglas J., and T. H. Steger, to Kaiser Steel Corp. Removable valve seat. 3,285,565, 11–15–66, Cl. 251—328.

Barringer Research Ltd.: *See*—
Clews, Dirk R. 3,285,698.

Bartell, Robert P., C. F. Gilbo, and J. P. Sawyer, to Armstrong Cork Co. Cushioning and wrapping laminate. 3,285,800, 11–15–66, Cl. 161—123.

Barto, Ronald L.: *See*—
Brinn, Walter K., and Barto. 3,285,736.

Barton, David W., C. Haddad, and R. W. Riley, to Ford Motor Co. Heater control with improved slidable and rotary motion means. 3,286,044, 11–15–66, Cl. 200—4.

Batcher, Ralph R. Multiple conductor cable and method of making it. 3,286,017, 11–15–66, Cl. 174—36.

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Radford, David L., and Bates. 3,286,077.

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Sharp, Walter M., Jr. 3,285,384.

Batten, Ronald W.: *See*—
Dean, John F., and Batten. 3,285,119.

Batz, Walter: *See*—
Morgan, Eric R., Bessen, Batz, and Norman. 3,285,838.

Bauer, Peter, to Bowles Engineering Corp. Pure fluid binary adder. 3,286,086, 11–15–66, Cl. 235—201.

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Hubner, Gerhard. 3,285,582.

Baum, Elmer, to International Telephone and Telegraph Corp. Digital microphone. 3,286,032, 11–15–66, Cl. 179—1.

Baumann, Otto K. T. Bung driving apparatus. 3,285,104, 11–15–66, Cl. 81—52.35.

Baumunk, Dean B., to Douglas Aircraft Co., Inc. Check list holder. 3,284,936, 11–15–66, Cl. 40—61.

Beardsley, Melville W., to A. F. Starobin. Air cushion vehicles with manuvering and forward propulsion controls. 3,285,357, 11–15–66, Cl. 180—7.

Beautiline Ltd.: *See*—
Reilly, Frederick W. 3,285,444.

Beaver, Edward L. Basket support. 3,285,686, 11–15–66, Cl. 312—329.

Beaver, Emil R., Jr.: *See*—
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Henderson, Courtland M., and Beaver. 3,285,018.
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Becker, Arnold E. Pipe support. 3,285,552, 11–15–66, Cl. 248—68.

Becker, Earl M.: *See*—
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Becker, Frederick R., III, to West Virginia Pulp and Paper Co. Leakproof bottom closure for single wall bag. 3,285,498, 11–15–66, Cl. 229—57.

Beckman Instruments, Inc.: *See*—
Ishimaru, Kenzo, and Myers. 3,285,296.

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Beckwith-Arden Inc.: *See*—
Closson, Addison W., Jr. 3,284,872.

Bedsaul, James D., Sr., ½ to W. B. Poff. Multi-purpose hip hook. 3,285,482, 11–15–66, Cl. 224—25.

Behrenz, Wolfgang: *See*—
Ugi, Ivar, Fetzer, Unterstenhofer, and Behrenz. 3,286,000.

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Bell, Leo R., to TRW Inc. Ablatively cooled rocket with non-eroding throat. 3,285,013, 11–15–66, Cl. 60—258.

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Andregg, Ernest R., Hershey, and McGee. 3,286,040.
Babusci, Louis D., and Feder. 3,285,784.
Clark, Robert J., Jr., and Tolman. 3,286,045.
Field, James M., Nenninger, and Scholes. 3,286,038.
Gianola, Umberto F. 3,286,242.
Kerr, Douglas A., and Swetnam. 3,286,037.
Kompfner, Rudolf, and Marcatili. 3,285,129.
Lutchansky, Milton. 3,286,267.
McLean, David A. 3,286,136.
Slonczewski, Thaddeus. 3,286,169.
Stokes, Rembert R. 3,286,039.
York, Robert K. 3,286,036.

Bellamy, Roy G., to United Kingdom Atomic Energy Authority. Nuclear fuel materials. 3,285,737, 11–15–66, Cl. 75—122.7.

Beloit Corp.: *See*—
Justus, Edgar J., and Cronin. 3,285,806.
McClenathan, John A. 3,285,614.
Recor, Clifford R. 3,285,225.

Belt, Earl A.: *See*—
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Bendix Corp., The: *See*—
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Rafferty, Christopher A. 3,285,077.
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Beneke, Jene A., C. J. Kelleher, and S. G. Maguire, to Verson Mfg. Co. Unloader for green ceramic ware. 3,285,433, 11–15–66, Cl. 214—1.

Benfield, Edward A.: *See*—
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Benson Electric Co.: *See*—
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Benway, Robert E., to Radio Corp. of America. Cathode ray tube. 3,286,113, 11–15–66, Cl. 313—82.

Berg, Clyde H. O. Process and apparatus for the treatment of solids in vertical kilns. 3,284,915, 11–15–66, Cl. 34—10.

Berg, John W., to The Bendix Corp. Two stage forming with expanding skirt step. 3,285,045, 11–15–66, Cl. 72—54.

Berg Mfg. & Sales Co.: *See*—
Dobrikin, Harold L. 3,285,673.

Berger, Jean-Pierre L.: *See*—
Gerbier, Guy J., and Berger. 3,286,175.

Bergmann, Gerald T., to Collins Radio Co. Single sideband carrier receiver system which produces an accurately phased carrier injection signal. 3,286,183, 11–15–66, Cl. 325—329.

Berlei (U.K.) Ltd.: *See*—
Williams, Betty M. 3,285,248.

Berliner, Martin. Smokers' ash receptacle. 3,285,463, 11–15–66, Cl. 220—20.5.

Berne, Jean, P. Moulin, and J. Casteran, to Institut Francais du Petrole, des Carburants & Lubrifiants. Weight regulating apparatus for submarine drilling. 3,285,574, 11–15–66, Cl. 254—172.

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Bertoglio, Guido, to Brevetex Anstalt. Machine for automatically cutting strips of adjustable length and width starting from a sheet or from a roll. 3,285,113, 11–15–66, Cl. 83—255.

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Morgan, Eric R., Bessen, Batz, and Norman. 3,285,838.

Bessett, Clifford H., to Packaging Corp. of America. Molded carton. 3,285,491, 11–15–66, Cl. 229—2.5.

Best, Gary R., to Corning Glass Works. Method of forming thin film resistors. 3,284,878, 11–15–66, Cl. 29—155.7.

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Bethlehem Corp., The: *See*—
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Beurtey, Rene: *See*—
Abragam, Anatole, Beurtey, Papineau, Thirion, and Winter. 3,286,162.

Beveridge, John H. Connecting rod for reciprocating piston machine. 3,285,098, 11–15–66, Cl. 74—579.

Bevington, Kenneth A. Chair construction. 3,285,555, 11–15–66, Cl. 248—188.7.

Biach, John L., to Biach Industries, Inc. Tensioning apparatus. 3,285,568, 11–15–66, Cl. 254—29.

Biach Industries, Inc.: *See*—
Biach, John L. 3,285,568.

Bianchi, Maria L.: *See*—
Amici, Alba M., Bianchi, Modelli, Spalla, Di Marco, and Gaetani. 3,285,829.

Bickford, John C.: *See*—
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Bieganowski, Joseph. Fountain brush. 3,284,838, 11–15–66, Cl. 15—505.

Bielefeld, Rolf, to Koontz-Wagner Electric Co., Inc. Valve. 3,285,285, 11–15–66, Cl. 137—625.65.

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Van Huis, Robert L., and Eesink. 3,285,230.

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Harrison, Wayne T., and Carrigan. 3,285,797.

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Binkley, Edwin W.: *See*—
Silenius, Robert T., Binkley, and Baird. 3,285,655.

Binns, Jack N.: *See*—
Heaton, Roger G. 3,285,109.

Birmingham, Douglas W., P. C. R. Fernberg, and C. A. Seckerson, to United-Carr Inc. Hinge stay mechanism. 3,285,647, 11–15–66, Cl. 292—263.

Birnboim, Meyer H., to Mellon Institute. Electrical phase meter and amplitude comparator. 3,286,176, 11–15–66, Cl. 324—83.

Bjornsen, Bjorn G., and T. J. Lechner, Jr., to Johnson Service Co. Input fluid control apparatus. 3,285,263, 11–15–66, Cl. 137—81.5.

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Wilson, Alexander C. R., and Lawrence. 3,286,150.

Black, James H. Area surveillance device. 3,285,151, 11–15–66, Cl. 95—15.

Black, Richard W., and R. E. Bendl, to United States of America, Army. Portable ship's wing for cargo transfer by helicopter. 3,285,435, 11–15–66, Cl. 214—15.

Blackburn, Walter L. Deck button. 3,285,572, 11–15–66, Cl. 254—150.

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Blair, Rolla W. Vehicle hand brake and generator signal system. 3,286,231, 11–15–66, Cl. 340—69.

Blake, Kenneth R., to Micromatic Hone Corp. Method and apparatus for electrolytic machining. 3,285,843, 11–15–66, Cl. 204—143.

Blakesley, Roland F., to Essex Wire Corp. Double lock-washer construction. 3,285,313, 11–15–66, Cl. 151—35.

Blakesley, Roland F., to Essex Wire Corp. Flag tab receptacle terminal. 3,286,221, 11–15–66, Cl. 339—223.

Blance, Robert B., and S. M. Cohen, to Monsanto Co. Poly N-propyl-N-vinylacetamide in hair setting compositions. 3,285,819, 11–15–66, Cl. 167—87.1.

Bliss, Harvey N., to The Britton Corp. Pocket knife with blade locking means. 3,284,897, 11–15–66, Cl. 30—161.

Blitchington, Frank H., Jr., to Western Electric Co., Inc. Portable telephone system. 3,286,184, 11–15–66, Cl. 325—16.

Blonsky, Joseph E., to West Virginia Pulp and Paper Co. Arched towing machine for stabilizing tractors. 3,285,626, 11–15–66, Cl. 280—480.

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Boer, Hendrik, and A. Schuringa, to Shell Oil Co. Apparatus for analyzing peaks by determining the contribution of individual peaks to the whole signal utilizing voltage to frequency to voltage conversion. 3,286,177, 11–15–66, Cl. 324—103.

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Bohanon, Hoy R., to Acme-Engineering and Mfg. Corp. Light trap. 3,285,156, 11–15–66, Cl. 98—121.

Bohler, Gebr., & Co. Aktiengesellschaft: *See*—
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Bolt, Harry C., to Terrapin (Overseas) Ltd. Collapsible buildings. 3,284,966, 11–15–66, Cl. 52—16.

Bolt, William C. Gliding sail. 3,285,545, 11–15–66, Cl. 244—138.

Bolton, Norman A., to General Signal Corp. Traffic signal controller. 3,286,230, 11–15–66, Cl. 340—36.

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Boorum & Pease Co.: *See*—
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Ivory, Henry V., and Vogl. 3,285,251.

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Booth, Pat H., to Zero Plate Co., Inc. Individually accessible multi-compartment refrigerator unit. 3,285,034, 11–15–66, Cl. 62—414.

Boothe, Willis A., to General Electric Co. Fluid-operated detectors. 3,285,264, 11–15–66, Cl. 137—81.5.

Boothe, Willis A., and B. J. Cswakiel, to General Electric Co. Fluid amplifier devices. 3,285,265, 11–15–66, Cl. 137—815.

Boothroyd, Howard W., to Sanders Associates, Inc. Rate gyro null shift eliminator. 3,285,076, 11–15–66, Cl. 74—5.6.

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Bordeaux, Jean, to Robertshaw Controls Co. Water heater dip tube construction. 3,285,241, 11–15–66, Cl. 126—362.

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Sable, Knute, and Newton. 3,285,500.
Tracy, Herbert E., and Matula. 3,285,186.

Borsattino, Vincent S., C. E. Marker, and J. W. Shalla. Multiple band variable multivibrator. 3,286,197, 11–15–66. Cl. 331—113.

Bose, Norman N., and G. N. Malina, to General Precision Inc. Capacity encoder. 3,286,252, 11–15–66, Cl. 340—347.

Bosman, Machiel, to Stamicarbon N.V. Method and apparatus for controlling pulsing of jig washer separating liquid. 3,285,414, 11–15–66, Cl. 209—457.

Bossart, Clayton J.: *See*—
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Boston, William G., to Mobil Oil Corp. Method for oil recovery. 3,285,338, 11–15–66, Cl. 166—9.

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Boudouris, Angelo. Speed control for shaded pole induction motors. 3,286,111, 11–15–66, Cl. 310—190.

Bouvier, Daniel, to Application des Gaz. Valve unit for liquefied gas containers. 3,285,274, 11–15–66, Cl. 137—322.

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Boyar, Louis, to Tru-Seal Pump, Inc. Means for the repair of hand-operated vent regulator assemblies. 3,285,634, 11–15–66, Cl. 287—108.

Boydman, Hyman P., to De Luxe Reading Corp. Display box comprising hingedly connected sections. 3,285,464, 11–15–66, Cl. 220—31.

Boyer, Lyndon D., to Continental Oil Co. Purification of olefins. 3,285,988, 11–15–66, Cl. 260—677.

Boyer, William H.: *See*—
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Brachert, Heinrich, and H.-E. Konermann, to Dynamit Nobel, A.G. Process for the production of vinyl chloride. 3,285,980, 11–15–66, Cl. 260—656.

Brack, Karl, to Hercules Inc. Polyester polyols. 3,285,881, 11–15–66, Cl. 260—78.4.

Brader, Walter H., Jr., to Jefferson Chemical Co., Inc. Production of pyrazines. 3,285,917, 11–15–66, Cl. 260—250.

Bradley, William R., to Continental Oil Co. Method for continuously producing calcium alkoxy alcoholates. 3,285,968, 11–15–66, Cl. 260—615.

Brand, John R., and E. J. Plunkett, to Warwick Electronics Inc. Electronic vibrato device with plural manuals. 3,286,013, 11–15–66, Cl. 84—1.25.

Brandon, Clarence W., 12½% to O. B. Brandon, 5% to H. B. Jacobson, 50% to N. A. Hardin, C. H. Newton, and H. H. Wright. Method and apparatus for vibratory drillings. 3,285,349, 11–15–66, Cl. 175—55.

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Brannock, Kent C., and R. D. Burpitt, to Eastman Kodak Co. 3,3-dialkyl-2-alkoxy-2,3-dihydrobenzofuran-5-ols and derivatives thereof. 3,285,937, 11–15–66, Cl. 260—346.2.

Bratland, Arthur. Combined mixing and homogenizing apparatus. 3,285,331, 11–15–66, Cl. 165—109.

Brauchla, Herbert C. Method of forming screw strip. 3,284,825, 11–15–66, Cl. 10—10.

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De Pierri, William G., Jr., and Brawner. 3,285,900.

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Field, Sheldon B., Bridges, and Fleit. 3,285,216.

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British Petroleum Co. Ltd., The: *See*—
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Brocklehurst, James E., to United Kingdom Atomic Energy Authority. Method of testing graphite. 3,285,072, 11–15–66, Cl. 73—432.

Brodie, Isidore R., to The All-Time Mfg. Co., Inc. Emergency boat ladder. 3,285,367, 11–15–66, Cl. 182—97.

Broersma, Robert J., to B & B Engineering Co. Packing machine for nursery stock. 3,284,981, 11–15–66, Cl. 53—124.

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Brookside Corp.: *See*—
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Brown, Amos P., to Joy Mfg. Co. Boring head arms expansible in fixed ratio. 3,285,665, 11–15–66, Cl. 299—80.

Brown, Boveri & Cie, Aktiengesellschaft: *See*—
Floessel, Carl D. 3,286,066.

Brown, Charles S., to Sechrist Mfg. Co. Adjustable ceiling fixtures 3,286,090, 11–15–66, Cl. 240—78.

Brown Co.: *See*—
Coe, Merrill J., and Rice. 3,285,493.

Brown, Francis W., and F. L. Keck, to Minnesota Mining and Mfg. Co. Interpolymers comprising N-alkyl acrylamides, certain acrylic esters and/or N-vinyl pyrrolidone. 3,285,888, 11–15–66, Cl. 260—80.5.

Brown, Jerome E.: *See*—
De Witt, Earl G., Brown, and Shapiro. 3,285,946.

Brown, William C.: *See*—
Clemence, Charles R., Brown, Barnes, and Robinson. 3,286,285.

Brownlee, Winston E., and J. L. Ritchey, to Parsons Corp. Inflatable tool for applying bonding pressure to patterned areas. 3,285,794, 11–15–66, Cl. 156—581.

Broziat, Horst. Mobile crane having a double-armed jib. 3,285,445, 11–15–66, Cl. 212—38.

Brubaker, James E., to United States of America, Atomic Energy Commission Nuclear fuel module. 3,285,821, 11–15–66, Cl. 176—29.

Bruder, Werner A.: *See*—
Schmitz, Christian, and Bruder. 3,285,566.

Brundage, Benjamin W. Torque arm swivel unit. 3,285,630, 11–15–66, Cl. 285—181.

Brunsing, Jon P. Bottle package and carrier. 3,285,410, 11–15–66, Cl. 206—65.

Bryant, Austin U., to Grove Valve and Regulator Co. Fluid pressure regulator. 3,285,280, 11–15–66, Cl. 137—484.8.

Bryner, Fred, to The Dow Chemical Co. Polyvalent metal carbonate-extended phenolic resins. 3,285,805, 11–15–66, Cl. 161—262.

Buchbinder, Albert J., and T. E. Walsh, to Aerojet-General Corp. Device for inspection of the interior of hollow bodies. 3,285,122, 11–15–66, Cl. 88—14.

Buchner, Bernard: *See*—
Curtis, George G., and Buchner. 3,286.002.

Buchner, Bernard, and G. G. Curtis, to Continental Oil Co. Thioamidophospholanes. 3,285,999, 11–15–66, Cl. 260—936.

Buchner, Bernard, and G. G. Curtis, to Continental Oil Co. Reaction products of organophosphorus monohalides with mercaptoalkylamines. 3,286,001, 11–15–66, Cl. 260—947.

Buckay, Stanley L., to General Motors Corp. Compact leaf spring suspension assembly. 3,285,595, 11–15–66, Cl. 267—19.

Buckler, Benjamin, to Keystone Mfg. Corp. Reeling control mechanism. 3,285,525, 11–15–66, Cl. 242—55.12.

Buehler, Ltd.: *See*—
Graves, George W. 3,284,961.

Bull Nederland (Administraties-en Statistiekmachine MIJ., N.V.): *See*—
Hartel Pieter H. 3,285,602.

Bullough, Vaughn L., and R. M. Kibby, to Reynolds Metals Co. Method of manufacturing shaped carbon bodies. 3,286,003, 11–15–66, Cl. 264—29.

Bulmer, Kurt, and R. S. Foltz, to C. W. Blackley. Sanitary disposable container. 3,285,462, 11–15–66, Cl. 220—20.5.

Burgert, Herbert A., to Unitechnik Aktiengesellschaft. Shock and vibration absorber. 3,285,596, 11–15–66, Cl. 267—64.

Burkhart, William H., Jr. Strip of flexible material having a plurality of separate metal elements mounted thereon in adjacent parallel relationship. 3,285,715, 11–15–66, Cl. 29—183.

Burlingame, George M.: *See*—
MacLean, Alexander F., and Burlingame. 3,285,981.

Burnelli, Hazel G.: *See*—
Burnelli, Vincent J. 3,285,538.

Burnelli, Vincent J., deceased, and H. G. Burnelli, executrix of said V. J. Burnelli. Advanced jet engine installation. 3,285,538, 11–15–66, Cl. 244—36.

Burner, Andre H., to The French Oil Mill Machinery Co. Screw press and shredder apparatus. 3,285,163, 11–15–66, Cl. 100—98.

Burnham, Clyde W., 49% to M. H. Cavanagh. Slide fastener actuators. 3,284,865, 11–15–66, Cl. 24—205.15.

Burpitt, Robert D.: *See*—
Brannock, Kent C., and Burpitt. 3,285,937.

Burroughs Corp.: *See*—
Kaplan, Donald E. 3,285,389.
Logan, William A., Sharp, Oliphint, and King. 3,286,236.
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Burton-Dixie Corp.: *See*—
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Bury, Jack, W. J. Korbelic, D. Erb, and M. O. Vendetti, to Kaywood Corp. Hinged closure assemblies. 3,284,843, 11–15–66, Cl. 16—130.

Butcher, Charles H., Jr., to Universal Marion Corp. Guide roll assembly for telescopic boom. 3,285,431, 11–15–66, Cl. 212—55.

Butler, Jerome K., to Wilcox Electric Co., Inc. Ferrite tuned coaxial cavity apparatus. 3,286,207, 11–15–66, Cl. 333—83.

Buttel, Helmut, to International Standard Electric Corp. Method of sealing contact reeds in a glass tube. 3,284,876, 11–15–66, Cl. 29—155.5.

Butter, George N., to Commercial Solvents Corp. Halides of ruthenium and osmium in conjunction with cobalt and iodine in the production of ethanol from methanol. 3,285,948, 11–15–66, Cl. 260—642.

Butterworth, Harold M., and E. A. Neppiras, to North American Philips Co., Inc. Ultrasonic atomiser. 3,285,517, 11–15–66. Cl. 239—102.

Byun, Chai B., and K. F. Rendler, to General Precision, Inc. Analog-to-digital encoder. 3,286,251, 11–15–66, Cl. 340—347.

CSF-Compagnie Generale de Telegraphie San Fil: *See*—
Gremillet, Jacques. 3,286,203.

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Cabot Corp.: *See*—
Aftandilian, Victor D. 3,285,890.
Aftandilian, Victor D. 3,285,891.
MacKenzie, James C., and Orsechowski. 3,285,876.
MacKenzie, James C., and Orsechowski. 3,285,895.
MacKenzie, James C., and Orsechowski. 3,285,896.
MacKenzie, James C., and Orsechowski. 3,285,898.
MacKenzie, James C., and Yancey. 3,285,878.

Cadiou, Jean, to Andre Citroen Societe Anonyme. Spot type disc brakes. 3,285,371, 11–15–66, Cl. 188—73.

Cake, William R., to Alliance Color and Chemical Corp. Continuous fusion apparatus. 3,285,706, 11–15–66, Cl. 23—277.

Calumet & Hecla, Inc.: *See*—
Mellen, David M., and Singer. 3,285,046.

Calvin, John H. Quick disconnect couplings. 3,285,283, 11–15–66, Cl. 137—614.03.

Camp, Eldridge K., to American Chemical & Refining Co. Method and bath for electroplating rhenium. 3,285,839, 11–15–66, Cl. 204—47.

Campbell, David D., and J. C. Louton, Jr., to General Motors Corp. Snap action, double throw switch. 3,286,050, 11–15–66, Cl. 200—47.

Campbell, Larry J., to United States of America, Army. Magnetic tape handler with vacuum pressure pad. 3,285,488, 11–15–66, Cl. 226—196.

Campbell, Melvin L., to Collins Radio Co. Tape tensioning device. 3,285,529, 11–15–66, Cl. 242—75.2.

Canadian International Paper Co.: *See*—
Pherson, Perry O., Murphy, and Watkins. 3,285,599.

Canevari, Teresio, deceased, by A. Gianotti, sole heiress and legal representative, to Friden, Inc. Calculating machine. 3,285,511, 11–15–66, Cl. 235—60.25.

Cannon, Charles R., to United States of America, Interior. Cellulose acetate reverse osmosis desalination membranes cast from non-aqueous solutions and a method of making the same. 3,285,765, 11–15–66, Cl. 106—187.

Cape, Arthur T., to Coast Metals, Inc. Method of applying metal coating to valves. 3,285,769, 11–15–66, Cl. 117—22.

Capra, Lawrence A., to M. J. Electric, Inc. Device for signaling the height of a pile of iron ore and the like. 3,286,053, 11–15–66, Cl. 200—61.21.

Carl Zeiss-Stiftung: *See*—
Piller, Horst. 3,285,127.

Carlisle, Denis R., R. Gani, and A. E. Weldon, to Rolls-Royce Ltd. Fuel injector for a gas turbine engine. 3,285,007, 11–15–66, Cl. 60—39.74.

Carlson, Harold V., to The Firestone Tire & Rubber Co. Dispersions of rubber and a polyhydric alcohol, with and without bitumen, and the production thereof. 3,285,871, 11–15–66, Cl. 260—28.5.

Carmack, Gerald E.: *See*—
Selander, Edsel S., and Carmack. 3,284,895.

Carman, Robert R., and E. Rottmayer, to Goodyear Aerospace Corp. Unfurlable reflector. 3,286,259, 11–15–66, Cl. 343—18.

Carnaghi, Angelo J., and I. Logsdon, Jr., to Eli Lilly and Co. Capsule with integral locking band. 3,285,408, 11–15–66, Cl. 206—63.2.

Carnazza, Joseph, to JFD Electronics Corp. Direct travel mechanism for electrical reactors. 3,286,140, 11–15–66, Cl. 317—249.

Carnegie, James, and D. G. A. Thomas. Mining apparatus. 3,285,015, 11–15–66, Cl. 61—45.

Caro, Michael R. Drilling apparatus. 3,285,351, 11–15–66, Cl. 175—89.

Carpenter, Robert K.: *See*—
Moore, Thomas I., and Carpenter. 3,285,841.

Carrell, Ross M.: *See*—
Simshauser, Elvin D., and Carrell. 3,286,029.

Carrigan, Raymond J.: *See*—
Harrison, Wayne T., and Carrigan. 3,285,797.

Carson, William N., Jr., and W. H. Fischer, to General Electric Co. Water activated primary battery having a mercury-magnesium alloy anode. 3,285,782, 11–15–66, Cl. 136—100.

Carter, Arthur E.: *See*—
Sebald, Joseph F., Karassik, Davis, and Carter. 3,284,998.

Case, J. I., Co.: *See*—
Baker, Donald C. 3,285,361.

Castellano, Anthony J., Jr. Phase locked loop with increased phase linearity. 3,286,188, 11–15–66, Cl. 329—122.

Casteran, Jean: *See*—
Berne, Jean, Moulin, and Casteran. 3,285,574.

Castoe, John H. Caster and camber adjusting clamp means. 3,285,622, 11–15–66, Cl. 280—96.2.

Caswell, John W.: *See*—
Dale, Ingvald, and Caswell. 3,285,112.

Catalano, Joseph. Folding gate with shove bolt. 3,285,323, 11–15–66, Cl. 160—152.

Caterpillar Tractor Co.: *See*—
Junck, John A., and Kokaly. 3,285,284.

Cavanagh, Muriel H.: *See*—
Burnham, Clyde W. 3,284,865.

Cederleaf, Robert H. Automatic die clamping mechanism for power presses. 3,285,116, 11–15–66, Cl. 83—698.

Celanese Corp. of America: *See*—
MacLean, Alexander F., and Burlingame. 3,285,981.

Centofanti, Olin S.: *See*—
Long, Bernard C., and Centofanti. 3,286,098.

Central States Paper & Bag Co.: *See*—
Abramson, Elmer D. 3,285,407.

Centre National de la Recherche Scientifique: *See*—
Foex, Marc. 3,286,012.
Masieres, Charles. 3,285,053.

Ceskoslovenska Akademie ved: *See*—
Lim, Drahoslav, and Trekoval. 3,285,894.

Chall, Harold J., and C. G. Olson, to Friden, Inc. Division control for calculating machine. 3,285,510, 11–15–66, Cl. 235—60.

Chalpin, Stephen F.: *See*—
Tichenal, Oliver R., Legg, Stockel, O'Neal, Wheeler, and Chalpin. 3,285,295.

Chaney, Gerald, to Robertshaw Controls Co. Breathing demand regulator. 3,285,261, 11–15–66, Cl. 137—64.

Chang, Wen-Hsuan: *See*—
Dowbenko, Rostyslaw, and Chang. 3,285,964.

Charbonnages de France: *See*—
Gagniere, Claude. 3,286,129.

Charpentier, Maurice: *See*—
Levecque, Marcel, Mabru, and Charpentier. 3,285,722.
Levecque, Marcel, Mabru, and Charpentier. 3,285,723.

Chavannes, Marc A., to Sealed Air Corp. Method of manufacturing a composite cellular material. 3,285,793, 11–15–66, Cl. 156—210.

Chemical Construction Corp.: *See*—
Cook, Lucien H., and Mavrovic. 3,285,695.

Chemische Fabrik Kalk G.m.b.H.: *See*—
Jenkner, Herbert. 3,285,965.

Chemische Werke Huls Aktiengesellschaft: *See*—
Leithauser, Horst. 3,285,994.
Wember, Kurt. 3,285,945.

Cheslow, Ernest, to David Wexler & Co. Drum head. 3,285,117, 11–15–66, Cl. 84—414.

Chevron Research Co.: *See*—
DeVries, Louis. 3,285,887.
Holser, William T., Unterberger, and Jones. 3,286,163.
Lew, Henry Y. 3,285,856.

Chicago Dynamic Industries, Inc.: *See*—
Heide, Stanford M. 3,286,047.

Chicago Stainless Equipment Corp.: *See*—
Mistarz, Robert J. 3,285,300.

Childress, Clyde O., to Crocker-Citizens National Bank, as trustee. Powder image transfer system. 3,285,168, 11–15–66 Cl. 101—150.

Chisholm-Ryder Co. of Pennsylvania: *See*—
Roth, William F. 3,284,985.

Choate, Roy D.: *See*—
Johnson, Allie, Choate, Zimmerman, and E. E. Johnson. 3,285,906.

Chope, Henry R.: *See*—
Chope, Wilbert E. and H. R. 3,285,544.

Chope, Wilbert E. and H. R., to Industrial Nucleonics Corp. Mid-air refueling system. 3,285,544, 11–15–66, Cl. 244—135.

Christensen, Henning J., to Petrocarb, Inc. Process for producing nodular cast iron. 3,285,739, 11–15–66, Cl. 75—130.

Christenson, Howard W., J. J. Mooney, Jr., and R. H. Schaefer, to General Motors Corp. Transmission. 3,285,000, 11–15–66, Cl. 60—19.

Christian, Stephen M., to Goodman Mfg. Co. Adjustable boring head for continuous mining machine. 3,285,666, 11–15–66, Cl. 299—80.

Christiansen, Godfred K., to Interlego A.G. Toy building structure including a framed window. 3,284,946, 11–15–66, Cl. 46—19.

Chrysler Corp.: *See*—
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Chymbur, Robert M. Water shoes. 3,284,824, 11–15–66, Cl. 9—310.

Cincinnati Milling Machine Co., The: *See*—
Henry, Robert L. 3,286,127.
Seidel, William B. 3,284,909.

Cit-Compagnie Industrielle des Telecommunications: *See*—
Leostic, Joseph. 3,286,157.

Cttroen, Andre, Societe Anonyme: *See*—
Cadiou, Jean. 3,285,371.

Claiborne, Jefferson L., to Dixie Yarns, Inc. Method for the liquid treatment of yarns. 3,284,820, 11–15–66, Cl. 8—151.2.

Clapper, Genung L., to International Business Machines Corp. Multistable circuit. 3,286,103, 11–15–66, Cl. 307—88.5.

Clark, Curtis. Lay-out tool. 3,284,911, 11–15–66, Cl. 33—189.

Clark, James d'A. Feeding and extracting apparatus and method. 3,285,669, 11–15–66, Cl. 302—14.

Clark, James H. Fence post and fence. 3,285,576, 11–15–66, Cl. 256—21.

Clark, John B., to Standard Oil Co. Method and apparatus for controlling flow of fuel gas. 3,285,620, 11–15–66, Cl. 158—117.5.

Clark, Robert J., Jr., and W. R. Tolman, to Bell Telephone Laboratories, Inc. Cover assembly for switches. 3,286,045. 11–15–66, Cl. 200—5.

Clarke, Daniel J., to The Stalker Corp. Bladed stators. 3,284,881, 11–15–66, Cl. 29—156.8.

Clarkson, J. R., Co., The: *See*—
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Clarkson, John R., to The J. R. Clarkson Co. Screw actuated pinch valve. 3,285,568, 11–15–66, Cl. 251—8.

Clejan, Deodat, to General American Transportation Corp. Combination railway and passenger automobile transportation systems. 3,285,194, 11–15–66, Cl. 104—27.

Clemence, Charles R., W. C. Brown, J. C. Barnes, and E. F. V. Robinson, to National Research Council. Scanning reflector on stabilised platform having a stowed position. 3,286,265, 11–15–66, Cl. 343—761.

Clemens, Ogden A.: *See*—
Schneider, Ronald E., and Clemens. 3,285,162.

Clemens, Ogden A., and B. T. Hensgen, to Swift & Co. Method and apparatus for pressing and slicing. 3,285,161, 11–15–66, Cl. 100—39.

Cleveland, Lucretia. Head support device. 3,285,658, 11–15–66, Cl. 297—395.

Clevite Corp.: *See*—
Davies, Gail F., and Smith. 3,285,714.
Shockley, William. 3,286,138.

Clews, Dirk R., to Barringer Research Ltd. Geochemical method. 3,285,698, 11–15–66, Cl. 23—230.

Clinton, Henry H. Resistive current sensing device. 3,286,130, 11–15–66, Cl. 317—27.

Closson, Addison W., Jr., to Beckwith-Arden Inc. Method of making needled shoe stiening material. 3,284,872, 11–15–66, Cl. 28—72.2.

Cloud, Charles E. Making individual condiment packages. 3,284,984, 11–15–66, Cl. 53—180.

Coakley, Claude A. Shower head. 3,285,521, 11–15–66, Cl. 239—318.

Coast Metals, Inc.: *See*—
Cape, Arthur T. 3,285,769.

Coates, Joseph F.: *See*—
Wakeman, Reginald L., and Coates. 3,285,923.

Coaton, James R.: *See*—
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Cocca, Ubert, and R. Pecoraro, to International Business Machines Corp. Light switching means for selectively controlling the intensity of a light beam. 3,285,130, 11–15–66, Cl. 88—61.

Cockerell, Christopher S., to Hovercraft Development Ltd. Vehicles for travelling over land and/or water. 3,285,356, 11–15–66, Cl. 180—7.

Code, Rheta M. H., and J. B. Lindecher. Racing boots for horses. 3,284,980, 11–15–66, Cl. 54—82.

Coe, Merrill J., and C. D. Rice, to Brown Co. Compartmented tray structure. 3,285,493, 11–15–66, Cl. 229—27.

Coe, Stanley H.: *See*—
Stein, Robert R., and Coe. 3,285,324.

Coen Co.: *See*—
Voorheis, Temple S. 3,285,315.

Coen Co. Inc.: *See*—
Vosper, Ralph R. 3,286,246.

Cofield, Thomas H., and A. H. Filbey, to Ethyl Corp. Saturated hydrocarbon polymers stabilized with 4,4-methylenebis(2-methyl-6-tertiary butyl) phenol. 3,285,874, 11–15–66, Cl. 260—45.95.

Cohen, Abraham B., to Ling-Temco-Vought, Inc. Loudspeaker construction. 3,285,364, 11–15–66, Cl. 181—31.

Cohen, Maurice. Adjustable support assembly. 3,285,208, 11–15–66, Cl. 108—146.

Cohen, Saul M.: *See*—
Blance, Robert B., and Cohen. 3,285,819.

Cohen, Seymour: *See*—
Hecker, Arthur C., and Cohen. 3,285,868.

Colato, Albert E., to Plastics, Inc. Reusable food package with integral adjustable closure. 3,285,495, 11–15–66, Cl. 229—43.

Colburn, Jay T.: *See*—
Hansen, Leo J., Schwall, and Colburn. 3,285,752.

Cole, Howard E., Jr. Endless tape winding devices. 3,285,527, 11–15–66, Cl. 242—55.19.

Coleman, Curtis U., G. E. Davis, and J. P. Malloy, to The Electric Storage Battery Co. Apparatus for the continuous impregnation and forming of tubing. 3,284,849, 11–15–66, Cl. 18—4.

Coles, Robert F., to General Aniline & Film Corp. Color formers containing a m-alkylphenoxyacyl group. 3,285,747, 11–15–66, Cl. 96—100.

Collings, Jerry M., and V. H. Sansum, to Systron-Donner Corp. Sine wave oscillator with periodic initial condition resetting means. 3,286,192, 11–15–66, Cl. 331—45.

Collins, Guy R., to The Dow Chemical Co. 1,4-methanodibenzo-(1,2)-thiazines produced from N-sulfinyl-anilines. 3,285 911, 11–15–66, Cl. 260—243.

Collins Radio Co.: *See*—
Bergemann, Gerald T. 3,286,183.
Campbell, Melvin L. 3,285,529.

Columbia Broadcasting Systems, Inc.: *See*—
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Combustion Engineering, Inc.: *See*—
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Gilbert, Lyman F. 3,286,185.
Hartline, R. Acton. 3,285,319.

Comis, Anthony J.: *See*—
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Commercial Solvents Corp.: *See*—
Arzberger, Fred C., and McCutchan. 3,285,827.
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Ageron, Paul. 3,285,824.
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Laupretre, Jean-Jacques. 3,286,104.
Lesueur, Marc C. J. 3,286,233.
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Compagnie Francaise Thomson-Houston: *See*—
Daveau, Bernard J. 3,286,202.

Compagnie Generale d'Electricite: *See*—
Luescher, Jakob, and Zega. 3,286,137.

Compagnie Generale de Telegraphie Sans Fil: *See*—
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Compur-Werk Gesellschaft mit beschrankter Haftung & Co.: *See*—
Fahlenberg, Paul, and Lang. 3,285,152.
Fahlenberg, Paul, Singer, and Lang. 3,285,149.

Comunita Del Cistercensi Riformati (Trappisti): *See*—
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Conch International Methane Ltd.: *See*—
Bodie, William W., and Young. 3,285,719.
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Condon, Edward F., Jr.: *See*—
Banathy, Jeno D., and Condon. 3,285,513.

Conduction Corp.: *See*—
Turnbiade, Richard C. 3,285,001.

Congdon, George L.: *See*—
Duft, William J., and Congdon. 3,285,297.

Conlon, John J., and D. C. Yearley, to Phelps Dodge Copper Products Corp. Circular trough casting apparatus. 3,284,859, 11–15–66, Cl. 22—57.3.

Connor, Paul P.: *See*—
Grossman, Abraham, and Connor. 3,284,815.

Consolidated Electrodynamics Corp.: *See*—
Elazar, Shmuel. 3,285,074.

Contant, Claude E., to Kawecki Chemical Co. Etched tantalum foil. 3,285,716, 11–15–66, Cl. 29—183.

Conti, John D., to FMC Corp. Banding apparatus. 3,284,982, 11–15–66, Cl. 53—137.

Continental Aviation and Engineering Corp.: *See*—
Morris, Harrison W. 3,285,005.

Continental Can Co., Inc.: *See*—
Moloney, John J., and Foster. 3,285,452.
Obidowski, Edmond J. 3,285,212.

Continental Oil Co.: *See*—
Boyer, Lyndon D. 3,285,988.
Bradley, William R. 3,285,968.
Buehner, Bernard, and Curtis. 3,285,999.
Buehner, Bernard, and Curtis. 3,286,001.
Curtis, George G., and Buehner. 3,286,002.
Walther, Herbert C., Kuhn, and Sparlin. 3,285,339.

Controls Co. of America: *See*—
Matthies, Alan A. 3,285,031.

Cook, Charles A., to National Distillers and Chemical Corp. Method of making polyolefin bags. 3,286,005, 11–15–66, Cl. 264—95.

Cook, Gordon M. J. Roller applicator. 3,284,839, 11–15–66, Cl. 15—541.

Cook, Leo W., to Borg-Warner Corp. Method of forming a clutch cover plate. 3,285,050, 11–15–66, Cl. 72—379.

Cook, Lucien H., and I. Mavrovic, to Chemical Construction Corp. Production of ammonium nitrate. 3,285,695, 11–15–66, Cl. 23—103.

Cook, Roger A. Hanger for paintings and the like. 3,285,549, 11–15–66, Cl. 248—31.

Cooper, Albert S., Jr., A. L. Murphy, W. G. Sloan, and W. A. Reeves, to United States of America, Agriculture. Method of improving the dimensional stability and elastic recovery of all-cotton stretchable fabrics and products thereof. 3,285,690, 11–15–66, Cl. 8—116.3.

Cooper, Geoffrey: *See*—
Gregson, William, Cooper, and Wilkins. 3,285,044.

Coover, Harry W., Jr.: *See*—
McConnell, Richard L., and Coover. 3,285,863.

Corey, Philip D., to General Electric Co. Static inverter. 3,286,155, 11–15–66, Cl. 321—45.

Corlett, Webster D., to Standard Screw Co. Cartridge seal design and arrangement. 3,285,278, 11–15–66, Cl. 137—454.2.

Corn Products Co.: *See*—
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Cornely, Kurt W., to American Thermocatalytic Corp. Cement composition. 3,285,757, 11–15–66, Cl. 106—57.

Corning Glass Works: *See*—
Argyle, Leroy C. 3,286,173.
Best, Gary R. 3,284,878.
Farkas, Richard F. 3,285,767.
Peterson, Gerald D. 3,285,457.

Cornwell, Charles M., to Hoffman Electronics Corp. AFC with offset frequency divider. 3,286,191, 11–15–66, Cl. 331—11.

Corrigan, J. C., Co., Inc.: *See*—
Corrigan, Joseph. 3,285,710.

Corrigan, Joseph, to J. C. Corrigan Co., Inc. Apparatus for automated rendering. 3,285,710, 11–15–66, Cl. 23—280.

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Dyer, Robert H. 3,285,851.

Cottrell, George W. Cervical collar. 3,285,244, 11–15–66, Cl. 128—75.

Couffer, Robert W., Jr., and J. M. Algino, to The Dole Valve Co. Liquid level detector. 3,285,275, 11–15–66, Cl. 137—392.

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Couverture, Roland: *See*—
Artur Du Plessis, Jacques, Hugues, Saubal-Bayard, Loupiac, Couverture, and Taillefer. 3,285,222.

Covill, Dennis H., to E.M.I.-Crossor Electronics Ltd. Method and apparatus for zero I.F. frequency and ionspheric pulse reception. 3,286,256, 11–15–66, Cl. 343—5.

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Coyne, Gerard G., to General Electric Co. Refrigeration system including high pressure limit control means. 3,285,030, 11–15–66, Cl. 62—197.

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Cramner, Karl T. Antenna. 3,286,269, 11–15–66, Cl. 343—830.
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Crespi, Giovanni. Refractory metallurgic composition and products, and method of obtaining same. 3,285,759, 11–15–66, Cl. 106—58.
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Crowley, Walter A. Ground effect machine. 3,285,535, 11–15–66, Cl. 244—2.
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Cullen, Roy H., Aker, and Elliott. 3,285,629.
Cullen, Roy H., J. R. Aker, and C. H. Elliott, said Aker and said Elliott assors. to R. H. Cullen. Methods and apparatus for mounting electrical cable in flexible drilling hose. 3,285,629, 11–15–66, Cl. 285—119.
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Buchner, Bernard, and Curtis. 3,286,001.
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Van Winsen, Friedrich H. 3,285,623.
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D'Angelo, Joseph, to Roto Bag Machine Corp. Supply roll run-out warning apparatus. 3,286,249, 11–15–66, Cl. 340—259.
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De Gaston, Raoul H., to H. L. Valette. Chair back adjusting mechanism. 3,285,657, 11–15–66, Cl. 297—374.
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Loeffler, John E., Jr., McAlister, and Prokish. 3,285,708.
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Ehrenthal, Irving: *See*—
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Ehrler, Robert F., to Diamond Power Specialty Corp. Eduction thermocouple with aspirated conductors. 3,285,787, 11–15–66, Cl. 136—231.

Ehrman, John J.: *See*—
Earnnarino, Joseph M., Granieri, Comis, and Stynler. 3,285,709.

Eickmann, Karl. Piston means for damping noise and/or vibration in rotary fluid machines. 3,285,190, 11–15–66, Cl. 103—136.

Elasar, Shmuel, to Consolidated Electrodynamics Corp. Amplitude damped transducer. 3,285,074, 11–15–66, Cl. 73—517.

Eldredge, Charles L., and K. J. Petters, to Minnesota Mining and Mfg. Co. Absorbent wound dressing. 3,285,245, 11–15–66, Cl. 128—156.

Electric Storage Battery Co., The: *See*—
Coleman, Curtis U., Davis, and Malloy. 3,284,849.

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Labesynski, Hans G. 3,286,121.

Elfstrom, Lars R., to System Communica Aktiebolag. Height adjusting devices for chairs, tables, and the like. 3,285,656, 11–15–66, Cl. 297—337.

Elgin American International, Inc.: *See*—
Gellman, Allen B. 3,285,298.

Elgin Elmac Enterprises, Inc.: *See*—
McDonough, Henry W. 3,285,070.

Elkins, Edward L. Anchor bolt with spring actuated toggle head. 3,285,118, 11–15–66, Cl. 85—3.

Ellin, Robert I., to United States of America, Army. Preparation of methyl pyridinium-2-aldoxime chloride. 3,285,927, 11–15–66, Cl. 260—296.

Elliott, Charles H.: *See*—
Cullen, Roy H., Aker, and Elliott. 3,285,629.

Elliott, Richard I., and F. R. Ashby, to United States Plywood Corp. Laminated cover elements and flashing and sealing means therefor. 3,284,967, 11–15–66, Cl. 52—58.

Ellis Drier Co., The: *See*—
Ellis, Hubert C. 3,285,466.

Ellis, Hubert C., to The Ellis Drier Co. Washing cylinder and door therefor. 3,285,466, 11–15–66, Cl. 220—41.

Ellis, William R., to Long Reach Mfg. Clamp for paper rolls and the like. 3,285,651, 11–15–66, Cl. 294—104.

Elizey, Samuel E., Jr., and W. A. Guice, to United States of America, Agriculture. (Perfluorodioxocycloalkyl)pyridinium betaines. 3,285,926, 11–15–66, Cl. 260—295.

Elslager, Edward F., and L. M. Werbel, to Parke, Davis & Co. 1 - {3 - {[5,6,7,8 - tetrahydro-4-(arylazo)-1-naphthyl]amino} propyl}piperidine compounds. 3,285,905, 11–15–66, Cl. 260—152.

Elterton, George C., to Shell Oil Co. Rotary separation of viscous pseudo-plastics. 3,285,416, 11–15–66, Cl. 210—77.

Emenaker, Leo J.: *See*—
Helms, Clifford J., and Emenaker. 3,285,166.

Emery, Byron C., to Harbor Industries, Inc. Display devices. 3,285,424, 11–15–66, Cl. 211—65.

Emsway Ltd.: *See*—
Shirea, Frank. 3,285,749.

Engel, Willem F., and G. E. Rumscheidt, to Shell Oil Co. Process of preparing vinyl esters of carboxylic acids. 3,285,941, 11–15–66, Cl. 260—410.9.

Engels, Walter: *See*—
Garrison, Joe K., and Engels. 3,285,378.

English, Edgar, Jr. Receiving, storing, and ripening device for one or more perishable food objects. 3,285,411, 11–15–66, Cl. 206—65.

English Electric-Leo Computers Ltd.: *See*—
Salam, Hassan P. A. 3,286,102.

Enterprise Brass Works: *See*—
Mansfield, Meredith D. 3,285,564.

Enthone Inc.: *See*—
Lindemann, Karl H. 3,285,840.

Erb, Donald: *See*—
Bury, Jack, Korbelic, Erb, and Vendetti. 3,284,843.

Erdolchemie Gesellschaft mit beschrankter Haftung: *See*—
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Erickson, Clifford E., to General Electric Co. Clothes washer. 3,285,036, 11–15–66, Cl. 68—12.

Ernst, Adolphe O. G., J. P. J. Jardinier, and J. Rona, to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation. Aerodynamic or hydrodynamic servo-valve, especially for use for the guidance and stabilisation of rockets. 3,285,262, 11–15–66, Cl. 137—81.5.

Eskilson, Sture V., to Backer Elektro-Varme Aktiebolag. Machines for bending pipes, rods and bars. 3,285,048, 11–15–66, Cl. 72—150.

Espino, Carlos. Necktie having a preformed knot. 3,284,807, 11–15–66, Cl. 2—153.

Essex Wire Corp.: *See*—
Blakesley, Roland F. 3,285,313.
Blakesley, Roland F. 3,286,221.

Essink, Jerome M.: *See*—
Van Huis, Robert L., and Essink. 3,285,230.

Esso Production Research Co.: *See*—
Greenkorn, Robert A., and Johnson. 3,285,064.

Esso Research and Engineering Co.: *See*—
De Pierri, William G., Jr., and Brawner. 3,285,900.
Farrissey, William J., Jr. 3,285,962.
Price, John A., and Neblett. 3,285,942.
Reistle, Carl E., Jr. 3,285,335.
Stanford, Alfred E. 3,285,711.

Estebar, Inc.: *See*—
Der Estephanian, Estephan. 3,285,480.

Ethyl Corp.: *See*—
Coffield, Thomas H., and Filbey. 3,285,874.
De Witt, Earl G., Brown, and Shapiro. 3,285,946.
Wikman, Andrew G. 3,284,992.

Eucker, Robert A., to Preformed Line Products Co. Line tie. 3,286,023, 11–15–66, Cl. 174—173.

Eue, Ludwig: *See*—
Weis, Konrad, Hahn, and Eue. 3,285,730.

Evans, Walter F., and R. H. Hall. Garment pockets. 3,284,808, 11–15–66, Cl. 2—247.

Evans, William O., Jr.: *See*—
Jones, Ronald H., and Evans. 3,286,161.

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Mitchell, George F. 3,285,227.

Ewing, William H., to Owens-Corning Fiberglas Corp. Method and apparatus for producing strand package. 3,285,721, 11–15–66, Cl. 65—2.

FMC Corp.: *See*—
Contl, John D. 3,284,982.
Lothrop, Everett W., Jr. 3,285,052.

Faber, George E., to Minnesota Mining and Mfg. Co. Adhesives comprising carboxyl-containing diene polymer, polyester polymer, and a polyisocyanate. 3,285,872, 11–15–66, Cl. 260—30.4.

Fackenthal, Harry: *See*—
Storer, John E., Jr., Fackenthal, and Deal. 3,285,009.

Fahlenberg, Paul, and E. Lang, to Compur-Werk Gesellschaft mit beschrankter Haftung & Co. Photographic shutter. 3,285,152, 11–15–66, Cl. 95—63.

Fahlenberg, Paul, F. Singer, and R. Lang, to Compur-Werk Gesellschaft mit beschrankter Haftung & Co. Photographic camera. 3,285,149, 11–15–66, Cl. 95—10.

Farbenfabriken Bayer Aktiengesellschaft: *See*—
Bottenbruch, Ludwig, and Schnell. 3,285,875.
Hegemann, Josef, and Scholermann. 3,285,770.
Kocher, Ernest-Ulrich, Wagner, and Haupt. 3,285,877.
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Ugi, Ivar, and Von Bonin. 3,285,992.
Wegner, Christian, Muschelknauts, Jubermann, and LeBlanc. 3,285,976.
Weis, Konrad, Hahn, and Eue. 3,285,730.

Farkas, Richard F., to Corning Glass Works. Coating perforate articles. 3,285,767, 11–15–66, Cl. 117—8.

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Von Tersch, Alfred L., and Farmer. 3,284,833.

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Rasmussen, Ralph J. 3,285,377.

Farrissey, William J., Jr., to Esso Research and Engineering Co. Unsaturated ketones. 3,285,962, 11–15–66, Cl. 260—586.

Farrow, Tom J., to Owens-Illinois Glass Co. Method and apparatus for electroforming split glassware molds. 3,285,835, 11–15–66, Cl. 204—6.

Faust, John A., and M. Sahyun, said Faust assor. to M. Sahyun, d.b.a. Sahyun Laboratories. Piperasinyl alkyl thiaxanthene derivatives. 3,285,919, 11–15–66, Cl. 260—268.

Favre, Marcel, to Gebr. Staubli & Co. Drive-mechanism in double lift dobbies. 3,285,291, 11–15–66, Cl. 139—68.

Fawick Corp.: *See*—
Mason, James A. 3,285,374.

Fearon, William W., to Jeffrey Galion Mfg. Co. Cutter bit holder. 3,285,668, 11–15–66, Cl. 299—92.

Feder, David O.: *See*—
Babusci, Louis D., and Feder. 3,285,784.

Federal Screw Works: *See*—
Storch, Harold A. 3,285,640.

Fehring, Wendell B., D. S. Jacobson, and L. E. Shuman, to The Boeing Co. Canted axis retractable double strut landing gear. 3,285,541, 11–15–66, Cl. 244—50.

Feigenbaum, Lawrence H.: *See*—
Leventhal, Bernard E., and Feigenbaum. 3,284,925.

Feil, Vernon J.: *See*—
Palopoli, Frank P., and Feil. 3,285,912.

Fein, Alvin E., G. A. Kemeny, and L. S. Richardson, to Westinghouse Electric Corp. Thermionic energy converter. 3,286,107, 11–15–66, Cl. 310—4.

Felsenthal Instruments, Inc.: *See*—
Kaup, John J. 3,284,941.

Felton, Henry J., to Goulds Pumps Inc. Submersible pump. 3,285,185, 11–15–66, Cl. 103—87.

Ferguson, Jesse T., Jr., to United States of America, Navy. Interchangeable structural joint. 3,285,643, 11–15–66, Cl. 287—189.36.

Ferm, Glenn O., and G. W. Davison, to General Signal Corp. Vehicle traffic control system. 3,286,091, 11–15–66, Cl. 246—2.

Fernberg, Paul C. R.: *See*—
Birmingham, Douglas W., Fernberg, and Seckerson. 3,285,647.

Ferri, Antonio, to General Applied Science Laboratories, Inc. Gas accelerating system. 3,285,063, 11–15–66, Cl. 73—147.

Ferro Corp.: *See*—
Dunning, Lester M. 3,285,773.

Fetzer, Uwe: *See*—
Ugi, Ivar, Fetzer, Unterstenhofer, and Behrenz. 3,286,000.

Fiala, Ernst J. H., to Daimler-Benz Aktiengesellschaft. Steering wheel arrangement. 3,285,091, 11–15–66, Cl. 74—552.

Fiber Industries, Inc.: *See*—
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Kirchner, Carl E., Jr., and Johnson. 3,285,530.

Field, James M., T. P. Nenninger, and D. H. Scholes, to Bell Telephone Laboratories, Inc. Intercommunication system with dial selected ringing. 3,286,038, 11–15–66, Cl. 179—40.

Field, Sheldon B., T. F. Bridges, and M. Fleit, to John J. McMullen Associates, Inc. Pitch stabilization system for water going vessels. 3,285,216, 11–15–66, Cl. 114—122.

Fietelaars, Theodorus A., to Fijin Mechanische Industrie Beckers Sons N.V. Ignition-device for a bomb. 3,285,170, 11–15–66, Cl. 102—7.

Fijin Mechanische Industrie Beckers Sons N.V.: *See*—
Fietelaars, Theodorus A. 3,285,170.

Filbey, Allen H.: *See*—
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Finch, Thomas E., to General Electric Co. Electric heating device with adjustable heating unit. 3,286,076, 11–15–66, Cl. 219—230.

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Finlay, Alexander, to Sangamo Electric Co. High speed photo-electric rotary sequential switch. 3,286,096, 11–15–66, Cl. 250—208.

Finn, John J., ½ to Glenn Electric Heater Corp. Heating and cooling unit for extruders and the like. 3,285,329, 11–15–66, Cl. 165—61.

Firestone Tire & Rubber Co., The: *See*—
Carlson, Harold V. 3,285,871.
Forman, Lawrence E. 3,285,901.

Fischell, Robert E.: *See*—
Wilson, Louis, Hull, Steinberg, and Fischell. 3,286,064.

Fischer, Edward F., to Aluminum Co. of America. Composite aluminum article and aluminum alloys. 3,285,717, 11–15–66, Cl. 29—197.5.

Fischer, William H.: *See*—
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Fisher Governor Co.: *See*—
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Mod, Robert R., Skau, Fore, Magne, Novak, Dupuy, Ortego, and Fisher. 3,285,812.

Fisher, Paul C. Anti-gravity pen. 3,285,228, 11–15–66, Cl. 120—42.03.

Fisher, Robert N., and P. K. Parkinson, to International Telephone and Telegraph Corp. Tool for crimping termination elements to flat electrical cables. 3,284,855, 11–15–66, Cl. 29—203.

Fitz-William, Charles B.: *See*—
Moore, William P., and Fitz-William. 3,285,916.

Fix, Hollis W., to Fruehauf Corp. Accumulation conveyor. 3,285,391, 11–15–66, Cl. 198—127.

Flack, Dennis C., to Sangamo Weston Ltd. Instruments for measuring recorded traces. 3,284,903, 11–15–66, Cl. 33—1.

Flader, Fredric E., to Scott Aviation Corp. Educational turbofan pressure and energy measuring apparatus. 3,285,062, 11–15–66, Cl. 73—147.

Fleit, Martin: *See*—
Field, Sheldon B., Bridges, and Fleit. 3,285,216.

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Flitman, Harry A., and R. J. De Salvo. Method of making signs. 3,284,889, 11–15–66, Cl. 29—411.

Floessel, Carl D., to Brown, Boveri & Cie, Aktiengesellschaft. Gas blast circuit breaker with spring mounted hollow contact member and associated exhaust valve controlled thereby. 3,286,066, 11–15–66, Cl. 200—148.

Florida Aluminum Enterprises, Inc.: *See*—
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Floros, Theodore G., to International Business Machines Corp. Shift register deskewing system. 3,286,243, 11–15–66, Cl. 340—174.1.

Fluegel, Dale A., and L. E. Kuntz, to Phillips Petroleum Co. Transformerless A.C. bridge having a D.C. output. 3,286,171, 11–15–66, Cl. 324—60.

Foex, Marc, to Centre National de la Recherche Scientifique. Apparatus for treating materials at high temperatures. 3,286,012, 11–15–66, Cl. 13—1.

Foldi, Zoltan: *See*—
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Folkerts, Walter E., to Chrysler Corp. Spline shaft. 3,285,638, 11–15–66, Cl. 287—52.02.

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Bulmer, Kurt, and Foltz. 3,285,462.

Fonda-Bonardi, Giusto, to Litton Systems, Inc. Magneto-hydrodynamic generator. 3,286,108, 11–15–66, Cl. 310—11.

Foote, James E., to Diamond International Corp. Warpage control in molded pulp articles. 3,284,917, 11–15–66, Cl. 34—21.

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Fore, Sara P.: *See*—
Mod, Robert R., Skau, Fore, Magne, Novak, Dupuy, Ortego, and Fisher. 3,285,809.
Mod, Robert R., Skau, Fore, Magne, Novak, Dupuy, Ortego, and Fisher. 3,285,812.

Forman, Lawrence E., to The Firestone Tire & Rubber Co. Polymerization of isoprene in the presence of lithium metal and in inert liquid hydrocarbon. 3,285,901, 11–15–66, Cl. 260—94.2.

Formica Corp.: *See*—
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Foss, George W. Overhead garage door latch. 3,285,646, 11–15–66, Cl. 292—133.

Foster, Charles N.: *See*—
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Foster, Edwin E., to Majik-Ironers, Inc. Ironing apparatus. 3,284,934, 11–15–66, Cl. 38—30.

Foster, Frank L.: *See*—
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Foster, Stephen F., to Hercules Inc. Booster device. 3,285,172, 11–15–66, Cl. 102—24.

Fouiger, Orson G., to United States of America, Navy. Pulse-amplitude to pulse-duration converter apparatus. 3,286,200, 11–15–66, Cl. 332—1.

Fowler, Robert Z.: *See*—
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Fowler, Walter E. Gas operated semi-automatic firearm. 3,285,133, 11–15–66, Cl. 89—191.

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Frazel, Wilbur H., to The New York Air Brake Co. Reversing gear drive for a telemetric receiver. 3,285,086, 11–15–66, Cl. 74—319.

Freathy, Ralph E. to V-M Corp. Intermix selector mechanism for record changers. 3,285,611, 11–15–66, Cl. 274—10.

Freeman, Frederick, and H. F. Smith, to Rolls-Royce Ltd. Gas turbine vertical lift engine. 3,285,006, 11–15–66, Cl. 60—39.36.

Frei, Arthur, to J. Bobst and Son SA. Hooks used for folding back flaps in folding-gluing machines. 3,285,144, 11–15–66, Cl. 93—49.

Frei, Ephraim H., S. Leibinzohn, and S. Shtrikman; said Frei and Leibinzohn, assors. to Yeda Research and Development Co., Ltd. Thermally actuated devices. 3,285,470, 11–15–66, Cl. 222—54.

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Frost, John R., to The Dow Chemical Co. Winding apparatus. 3,284,907, 11–15–66, Cl. 33—136.

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Amici, Alba M., Bianchi, Modelli, Spalla, Di Marco, and Gaetani. 3,285,829.

Gagniere, Claude, to Charbonnages de France. Fault detection network. 3,286,129, 11–15–66, Cl. 317—18.

Gahm, Wilbert J., to Piura Plastics, Inc. Collapsible container. 3,285,459, 11–15–66, Cl. 220—8.

Galey, William F., and G. W. Misson, to Pittsburgh Plate Glass Co. Multiple punching mechanism for paper tape. 3,285,509, 11–15–66, Cl. 234—115.

Galla, Joseph J., and P. J. Williams, to Stewart-Warner Corp. Chair construction. 3,285,639, 11–15–66, Cl. 287—53.

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Gardner, Gerald H. F., to Gulf Research & Development Co. Method of thermal stimulation of oil fields. 3,285,336, 11–15–66, Cl. 166—2.

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Garrett, William R., and S. T. Crews, Jr., to Drilco Oil Tool, Inc. Drill collar stabilizer. 3,285,678, 11–15–66, Cl. 308—4.

Garrison, Joe K., and W. Engels, to Southern Machinery Co. Ring rail wind-down unit for spinning machine. 3,285,378, 11–15–66, Cl. 192—12.

Gartley, William H., and D. E. Janke, to Whirlpool Corp. Dryness control for dryer. 3,284,919, 11–15–66, Cl. 34—48.

Gates, Marshall D., Jr., to Research Corp. N-cyclopropylmethyl and cyclobutylmethylmorphinans. 3,285,922, 11–15–66, Cl. 260—285.

Gaumont, Richard J. Towing device. 3,285,443, 11–15–66, Cl. 214—86.

Geddes, David A., to Alto Scientific Co., Inc. Voice actuated device. 3,286,031, 11–15–66, Cl. 179—1.

Geiger, Paul B. and R. C., to The Hobart Mfg. Co. Dispenser for granular materials and the like. 3,285,471, 11–15–66, Cl. 222—70.

Geiger, Russell C.: *See*—
Geiger, Paul B. and R. C. 3,285,471.

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Gelsheiser, Francis L., to Westinghouse Electric Corp. Circuit interrupter with improved operating means. 3,286,071, 11–15–66, Cl. 200—172.

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Airola, Ellis J. 3,285,755.
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Gilbert, Lyman F., to Combustion Engineering, Inc. Flame detector system responsive to spike produced by townsend avalanche of glow discharge tube. 3,286,185, 11–15–66, Cl. 328—6.

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Gregory, William C. Self-greasing insulator. 3,286,016, 11–15–66, Cl. 174—30.

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Griffin, Ira L., to Ira L. Griffin & Sons, Inc. Size applicator. 3,284,870, 11–15–66, Cl. 28—28.

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Griffith, Louis E., to Riley Stoker Corp. Steam generating unit. 3,285,232, 11–15–66, Cl. 122—481.

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Huitt, Jimmie L., and Papalia. 3,285,340.
Kline, Robert E., and Staynes. 3,285,985.
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Gurak, Stanley, to United States Pipe and Foundry Co. Pouring trough for centrifugal casting machine. 3,284,860, 11–15–66, Cl. 22—65.

Gustafson, William E., and F. L. Foster, to Delavan Mfg. Co. Oil burning combustion head. 3,285,316, 11–15–66, Cl. 158—76.

Gute, Harry. Door operator. 3,284,950, 11–15–66, Cl. 49—28.

Gutkowski, Janusz. Pumps. 3,285,192, 11–15–66, Cl. 103—157.

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Hallamore, Barry K., 37.5% to Audio Slide Co. Recording and playback apparatus. 3,285,613, 11-15-66, Cl. 274—11.

Hallsworth, Raymond T., and I. Holroyd, to Rolls-Royce Ltd. Electrolytic hole forming cathode electrode. 3,285,844, 11-15-66, Cl. 204—284.

Halverstadt, Isaac F., to Cutter Laboratories, Inc. 4,4-diphenylcyclohexylamine derivatives. 3,285,960, 11-15-66, Cl. 260—570.

Hamel, William E. Sickle. 3,284,994, 11-15-66, Cl. 56—298.

Hamilton, John F., to Hercules Inc. Booster device. 3,285,173, 11-15-66, Cl. 102—24.

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Hanawa, Toshio, T. Tokunaga, and Y. Iwata, to Hitachi, Ltd. Motor block. 3,285,573, 11-15-66, Cl. 254—168.

Hand, Douglas P. Carrier vehicle transport system. 3,285,449, 11-15-66, Cl. 214—515.

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Hare, Weston A., and W. E. Jordan, to E. I. du Pont de Nemours and Co. Abrasion resistant refractory material. 3,285,761, 11-15-66, Cl. 106—59.

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Hauk, Ernest D. Apparatus and method for removing scale and wax from oilwell tubing. 3,285,778, 11-15-66, Cl. 134—8.

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Haver, Richard E., and F. K. Ulrich, to Robotron Corp. Timing circuit. 3,286,135, 11-15-66, Cl. 317—142.

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Hawkins, Edwin G. E., to The Distillers Co. Ltd. Chlorination process. 3,285,979, 11-15-66, Cl. 260—654.

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Hayman, George C., to Leslie Welding Co., Inc. Window structure. 3,284,954, 11-15-66, Cl. 49—423.

Hiyrinen, Raimo I., and L. Jokihaara, to Valmet Oy. Apparatus for drying web material. 3,284,920, 11-15-66, Cl. 34—122.

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Heaton, Roger G., to J. N. Binns. Heavy duty automatic braking means. 3,285,109, 11-15-66, Cl. 82—28.

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Hegemann, Josef, and W. Scholermann, to Farbenfabriken Bayer Aktiengesellschaft. Process for the treatment of cellulose textile materials with hardenable resin precondensation products and brightening agents. 3,285,770, 11-15-66, Cl. 117—33.5.

Hegenbart, Horst. Hydraulic teletransmission system, comprising transmitter and receiver. 3,285,061, 11-15-66, Cl. 73—141.

Heide, Stanford M., to Chicago Dynamic Industries, Inc. Hermetically sealed thumbwheel rotary switch. 3,286,047, 11-15-66, Cl. 200—11.

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Helquist, Carl A., to Ford Motor Co. Fluid pressure clutch with spring cushion. 3,285,379, 11-15-66, Cl. 192—85.

Hembree, Oscar O., and C. B. Yost, to Hagenbem Co., Inc. Control assembly for oil well pump. 3,285,183, 11-15-66, Cl. 103—26.

Henderson, Courtland M., and E. R. Beaver, Jr., to Monsanto Co. Two-phase thermoelectric body comprising a silicon-germanium matrix. 3,285,017, 11-15-66, Cl. 62—3.

Henderson, Courtland M., and E. R. Beaver, Jr., to Monsanto Co. Two-phase thermoelectric body comprising a silicon-carbon matrix. 3,285,018, 11-15-66, Cl. 62—3.

Henderson, Courtland M., and E. R. Beaver, Jr., to Monsanto Co. Two-phase thermoelectric body comprising a lead-tellurium matrix. 3,285,019, 11-15-66, Cl. 62—3.

Henderson, James C.: *See*—
Puckett, Hillard E., Matthews, and Henderson. 3,286,030.

Henderson, John K. Method and apparatus for controllably drilling off-vertical holes. 3,285,350, 11-15-66, Cl. 175—57.

Henderson, Miles L., to Phillips Petroleum Co. Separation process. 3,285,986, 11-15-66, Cl. 260—674.

Henderson, Paul D., to The Superior Electric Co. Fuse, switch and pilot light unitary device. 3,286,061, 11-15-66, Cl. 200—121.

Henderson, Rolland H., to Leeds and Northrup Co. Positive limit control for motorised drive units. 3,286,148, 11-15-66, Cl. 318—208.

Henke, Alfred M., R. C. Odioso, and B. K. Schmid, to Gulf Research & Development Co. Hydration of olefins in the presence of a solvent. 3,285,977, 11-15-66, Cl. 260—641.

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Henry, Robert L. Motor mounting device. 3,285,547, 11-15-66, Cl. 248—26.

Henry, Robert L., to The Cincinnati Milling Machine Co. Electric discharge machining apparatus with current control means. 3,286,127, 11-15-66, Cl. 315—209.

Henry, Walter N., and J. N. Sramcik, to National Industrial Products Co. Container sealing and filling means. 3,285,299, 11-15-66, Cl. 141—312.

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Hercules Inc.: *See*—
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Foster, Stephen F. 3,285,172.
Hamilton, John F. 3,285,173.
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Young, Herbert L. 3,285,972.

Herrick, David B., to Dresser Industries, Inc. Discharge cooler for rotary positive displacement vacuum pump. 3,285,327, 11-15-66, Cl. 165—47.

Herrick, Donald W., to Northrup Corp. Lamp socket. 3,286,219, 11-15-66, Cl. 339—154.

Hershey, Harold J.: *See*—
Andregg, Ernest R., Hershey, and McGee. 3,286,040.

Hess, James E., to Sun Oil Co. Slow release fertilizer comprising urea, wax, and natural resin. 3,285,733, 11-15-66, Cl. 71—64.

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Hetteen, Allan E., to Polaris Industries, Inc. Rubber track. 3,285,676, 11-15-66, Cl. 305—27.

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Tombari, Aldo L., and Simpson. 3,285,257.

Hewett, Frank W. Furniture. 3,285,685, 11-15-66, Cl. 312—287.

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Hexdall, Andrew M. Adjustable hanger bar. 3,285,553, 11-15-66, Cl. 248—71.

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Sigmon, Carl L. 3,284,987.

High, Roy F., to United States of America, Army. Protective packaging of delicate mechanisms. 3,285,400, 11-15-66, Cl. 206—46.

Hildebrand, Helmut, and A. Staschewski, to Hackethal Draht- und Kabel-Werke Aktiengesellschaft. Coaxial high frequency cable and insulating spacer. 3,286,015, 11-15-66, Cl. 174—29.

Hildinger, William M., W. H. Boyer, and M. L. Van Dreser, to Kaiser Aluminum & Chemical Corp. Refractory. 3,285,760, 11-15-66, Cl. 106—58.

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Hill, John L., to Ramsey Engineering Co. On-off integrating motor controller. 3,286,144, 11-15-66, Cl. 318—18.

Hill, Roger G., and G. A. Hoffman. Tracer head. 3,285,137, 11-15-66, Cl. 90—62.

Hiller, Waldemar. Speech and sound reproducing device in dolls, figures and other objects. 3,285,609, 11-15-66, Cl. 274—1.

Hine, Louis P., Jr., and R. J. Vales, to The C. A. Olsen Mfg. Co. Multi-port gas burner. 3,285,317, 11-15-66, Cl. 158—99.

Hines, Eugene W. Afterburner combustion structure. 3,285,002, 11-15-66, Cl. 60—30.

Hirsch, Alfred, F. Huba, and R. Horvath, to Diamond Alkali Co. Dry cleaning solvent. 3,285,858, 11-15-66, Cl. 252—171.

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Inose, Fumiyuki. 3,286,153.
Inuzuka, Isao, and Yuminaka. 3,285,486.
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Hobson, Charles F., Jr., to General Electric Co. Electric circuit breaker with removable trip unit having impact-releasable latch means. 3,286,210, 11-15-66, Cl. 335—10.

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Hoffman, Louis. Collapsible shelf. 3,285,206, 11-15-66, Cl. 108—134.

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Hogrefe, Arthur F., to United States of America, Navy. Satellite commutator having reed relay matrix. 3,286,234, 11-15-66, Cl. 340—166.

Holden, Alfred T., to Decca Ltd. Chart position indicating apparatus. 3,286,271, 11-15-66, Cl. 346—8.

Holleman, Leendert. Manually operable apparatus for measuring, and visibly indicating the length of a longitudinal member. 3,284,906, 11-15-66, Cl. 33—134.

Holleman, Leendert. Liquid bleach distributor for a washing machine. 3,285,042, 11-15-66, Cl. 68—207.

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Holmquist, Wayne N., to The Boeing Co. Pitch-stabilized, varying-sweep wing. 3,285,542, 11-15-66, Cl. 244—91.

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Holsten, John R., W. A. H. Huffman, L. G. Kasbo, and J. Preston, to Monsanto Co. P-phenylenebis(dimethylacetic acid) and a process for the preparation thereof. 3,285,956, 11-15-66, Cl. 260—515.

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Lohmann, Arthur M. 3,285,177.
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Hoover Ball and Bearing Co.: *See*—
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Siminski, Walter V., and Jenko. 3,285,597.

Hopkin, Norman M., to Johnson, Matthey & Co. Ltd. Deposition of palladium. 3,285,754, 11-15-66, Cl. 106—1.

Hopkins, Evan L. Hand scraper. 3,284,898, 11-15-66, Cl. 30—172.

Hopley, Eric T., to Rolls-Royce Ltd. Bearing assembly. 3,285,004, 11-15-66, Cl. 60—39.08.

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Hott, Albert C., and V. C. Davis, to North American Aviation, Inc. Holding tool. 3,284,962, 11-15-66, Cl. 51—217.

Houser, Clarence G., and W. E. Payne, to Phillips Petroleum Co. Method for continuously discharging the contents of a pressurized vessel. 3,285,899, 11-15-66, Cl. 260—93.7.

Honvener Irving S., to The Dow Chemical Co. Fastener. 3,285,633, 11-15-66, Cl. 287—20.92.

Hoven, Jacob J. Door template. 3,284,912, 11-15-66, Cl. 33—194.

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Howard Electric Co.: *See*—
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Howard, Shirly L. Electronic scanning radar system. 3,286,260, 11-15-66, Cl. 343—100.

Howard, William F., to Howard Electric Co. Automatic pump alternator. 3,285,181, 11-15-66, Cl. 103—11.

Howell, Robert B. Silder. 3,284,864, 11-15-66, Cl. 24—205.14.

Howell, Robert C., and C. A. Lawler, to Bovar Engineers, Inc. Particle storage bin. 3,285,438, 11-15-66, Cl. 214—17.

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Wright, John W. T., Coaton, and Howles. 3,286,218.

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Hoyle, Robert J., Jr., to Potlatch Forests, Inc. Joint in timbers. 3,285,636, 11-15-66, Cl. 287—20.92.

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Hirsch, Alfred, Huba, and Horvath. 3,285,858.

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Hubbell, Harvey, Inc.: *See*—
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Hubbs, John C., to E-H Research Laboratories, Inc. Electrical measuring apparatus for determining response time of transistors and the like. 3,286,180, 11-15-66, Cl. 324—158.

Huber, Max, to Sulzer Bros. Ltd. Exchange tower. 3,285,587, 11-15-66, Cl. 261—96.

Hubin, Anthony S., to Kimberly-Clark Corp. Manufacture of cellulosic products. 3,284,856, 11-15-66, Cl. 19—145.

Hubner, Gerhard, to Hermann Bauermeister Maschinenfabrik und Muhlenbau G.m.b.H. Machine for treating, especially dry-conching and emulsifying chocolate masses or the like. 3,285,582, 11-15-66, Cl. 259—41.

Huckabay, William B., and W. H. Parker, to Rayflex Exploration Co. Continuous marine seismic surveying. 3,286,225, 11-15-66, Cl. 340—7.

Huddle, Carl F., to General Motors Corp. Carburetor temperature control. 3,285,588, 11-15-66, Cl. 261—130.

Huepenbecker, Philip H.: *See*—
Marona, Robert N., and Huepenbecker. 3,285,477.

Huffman, William A. H.: *See*—
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Hughes, Gordon A., and H. Smith, to H. Smith. 2-polycarbonalkyl-1,3-cyclopentanediones. 3,285,963, 11–15–66, Cl. 260—586.

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Reistle, Carl E., Jr. 3,285,335.

Humiston, Paul A., Jr.: *See*—
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Hunter, Joseph M. Rotary air drilling head. 3,285,352, 11–15–66, Cl. 175—214.

Hunth, Werner, to Bolkow Gesellschaft mit beschrankter Haftung. Fluid linkage and servo-system. 3,285,139, 11–15–66, Cl. 91—51.

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Smith, Horace L., Jr. 3,285,514.

Hurwits, Marvin J., and E. M. Beavers, to Rohm & Haas Co. Ethers and methods of preparation. 3,285,966, 11–15–66, Cl. 260—614.

Hussar, Joseph P., to Fuse Indicator Corp. Mechanical indicating fuseholder. 3,286,062, 11–15–66, Cl. 200—121.

Huyck Corp.: *See*—
Furbeck, Warren R., and Murphy. 3,285,487.

Hvisd, Andrew, Jr., to The Kerite Co. Insulated X-ray cables. 3,286,022, 11–15–66, Cl. 174—105.

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Kyle, Leslie B. 3,284,948.

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Hynes, Lee P., and Koester. 3,286,079.

Hynes, Lee P., to Hynes Electric Heating Co. Flexible internal heater. 3,286,078, 11–15–66, Cl. 219—306.

Hynes, Lee P., and G. L. Koester, Jr., to Hynes Electric Heating Co. Tank transport heater. 3,286,079, 11–15–66, Cl. 219—310.

I-T-E Circuit Breaker Co.: *See*—
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Sweger, Theodore J. 3,285,570.

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Imperial Chemical Industries Ltd.: *See*—
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Inamoto, Yoshiaki, and T. Shima, to Teijin Ltd. Tertiary amino polyamides as dyeability improvers for polyester resins. 3,285,993, 11–15–66, Cl. 260—857.

Independent Lock Co.: *See*—
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Indugas, Gesellschaft fur Industrielle Gasverwendung m.b.H.: *See*—
Schmidt, Theodor. 3,285,240.

Industrial Filter & Pump Mfg. Co.: *See*—
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Industrial Nucleonics Corp.: *See*—
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Ingersoll, Henry G., to E. I. du Pont de Nemours and Co. Recording process using an electron beam to polymerize a record. 3,286,025, 11–15–66, Cl. 178—6.6.

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August, William S., and Haestings. 3,286,217.

Inose, Fumiyuki, to Hitachi, Ltd. Converter system for eliminating common mode induction voltage. 3,286,153, 11–15–66, Cl. 321—8.

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Institut Francais du Petrole, des Carburants & Lubrifiants: *See*—
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Cocca, Ubert, and Pecoraro. 3,285,130.
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International Standard Electric Corp.: *See*—
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Inusuka, Isao, and T. Yuminaka, to Hitachi, Ltd. Directional control device for endless circulation system. 3,285,436, 11–15–66, Cl. 214—16.1.

Ioppolo, Anthony. Vehicle dust collector and ventilator. 3,284,836, 11–15–66, Cl. 15—313.

Irons, Henry R., to United States of America, Navy. Logic circuits employing torsionally strained magnetic cores. 3,286,099, 11–15–66, Cl. 307—88.

Irwin, Donald W., and P. L. Johnson, to Fisher Governor Co. Safety shut-off valve. 3,285,288, 11–15–66, Cl. 137—630.15.

Ishida, Haruo, to Daiwa Chemical Industries, Ltd. Chewing gum compositions having low adherence when discarded and methods of preparation thereof. 3,285,750, 11–15–66, Cl. 99—135.

Ishida, Minoru: *See*—
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Ishimaru, Kenzo, and R. C. Myers, to Beckman Instruments, Inc. Pipette apparatus. 3,285,296, 11–15–66, Cl. 141—26.

Isoda, Kenichi, and K. Matsuura, to Kabushiki Kaisha Hitachi Seisakusho. Frequency bridge. 3,286,160, 11–15–66, Cl. 323—76.

Ithaco, Inc.: *See*—
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Yumoto, Hirosuke, Hashimoto, Tanaka, Ito, Kojima, Shibata, Adachi, Morita, and Ebihara. 3,286 009.

Ivarsson, Erik, to Malcus Holquist, Aktiebolaget. Jolt desanding machine for mould flasks. 3,284,861, 11–15–66, Cl. 22—95.5.

Ivory, Henry V., J. W. MacDonald, and J. A. Steele, to Boorum & Pease Co. Loose leaf binder. 3,285,250, 11–15–66, Cl. 129—25.

Ivory, Henry V., and K. Vogel, to Boorum & Pease Co. Loose leaf binder. 3,285,251, 11–15–66, Cl. 129—25.

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Jackson, Harold E., ½ to Petrol Injection Ltd. Fuel injection systems. 3,285,233, 11–15–66, Cl. 123—139.

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Jacobson, Duard S: *See*—
Fehring, Wendell B., Jacobson, and Shuman. 3,285,541.

Jacobson, Harvey B.: *See*—
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Jakubowski, Theodore P., to Shulton, Inc. Dispensing valve with consistency control. 3,285,286, 11–15–66, Cl. 137—628

Jalbert, Domina C., to Space Recovery Research Center, Inc. Multi-cell wing type aerial device. 3,285,546, 11–15–66, Cl. 244—145.

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Jeannin, John F. Fluid pressure energy translating device. 3,285,193, 11–15–66, Cl. 103—162.

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Jenkins, John J., Jr.: *See*—
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Jenny, Jacques, J. Teti, and J. P. Anderson. Method of forming a hoof-covering. 3,285,346, 11–15–66, Cl. 168—4.

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Jensen, Lloyd I., to Johnston Testers, Ltd. Drill stem testing apparatus. 3,285,344, 11–15–66, Cl. 166—149.

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Jernigan, Ernest D., Jr., to Industrial Nucleonics Corp. Rendezvous and docking of space ships. 3,285,533, 11–15–66, Cl. 244—1.

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Jewell, Keith W. Impact switch. 3,286,055, 11–15–66, Cl. 200—61.45.

Johns-Manville Corp.: *See*—
Baldwin, John H., Paetsold, and Starr. 3,285,803.
Dunkle, Heber H. 3,285,632.
Lavino, Dominick. 3,285,724.

Johns-Manville Corp., Societe Anonyme: *See*—
Verly, Maurice J. G. 3,284,850.

Johnson, Alfred L., Jr., to The Garrett Corp. Geometrically-spectrally selective radiator. 3,285,333, 11–15–66, Cl. 165—133.

Johnson, Allie, R. D. Choate, P. J. Zimmerman, and E. E. Johnson; said Zimmerman, and said E. E. Johnson, assors. to Seco, Inc. Bag feeding apparatus. 3,285,606, 11–15–66, Cl. 271—62.

Johnson, Bill. Livestock insecticide applicator. 3,285,231, 11–15–66, Cl. 119—157.

Johnson, Carlton R.: *See*—
Greenkorn, Robert A., and Johnson. 3,285,064.

Johnson, Curtis R. A., to Leeds & Northrup Co. Tensioning device for recorder chart paper. 3,285,484, 11–15–66, Cl. 226—85.

Johnson, Donald: *See*—
Sanders, John E., Disco, Massini, and Johnson. 3,285,354.

Johnson, Eldon E.: *See*—
Johnson, Allie, Choate, Zimmerman, and E. E. Johnson. 3,285,606.

Johnson, Elisha, Jr.: *See*—
Kirchner, Carl E., Jr., and Johnson. 3,285,530.

Johnson, Elisha, Jr., to Fiber Industries, Inc. Doffing device with trigger actuated cutter means. 3,285,114, 11–15–66, Cl. 83—402.

Johnson, Glenn A., to United States of America, Navy. Eccentrically pivoted jetevator with conformable seal. 3,285,520, 11–15–66, Cl. 239—265.35.

Johnson, John G., and R. D. Obadal, to Deere & Co. Radiator grille and removable screen. 3,285,321, 11–15–66, Cl. 160—104.

Johnson & Johnson: *See*—
Dabroski, Winifred C. 3,285,771.
Hynek, Walter J. 3,284,857.

Johnson, Matthey & Co. Ltd.: *See*—
Hopkin, Norman M. 3,285,754.

Johnson, Paul A., to Westinghouse Air Brake Co. Suspended flexible strand conveyor. 3,285,393, 11–15–66, Cl. 198—192.

Johnson, Philip L.: *See*—
Irwin, Donald W., and Johnson. 3,285,288.

Johnson, Russell L.: *See*—
Diehl, John M., Kamenick, and Johnson. 3,284,938.

Johnson Service Co.: *See*—
Bjornsen, Bjorn G., and Lechner. 3,285,263.

Johnson, Thomas E., to Stainless Foundry & Engineering, Inc. Ferrous-base, hardenable, corrosion-resistant, high-strength, high-ductility alloy. 3,285,738, 11–15–66, Cl. 75—128.

Johnston, Howard, and M. S. Tomita, to The Dow Chemical Co. Amino-trichloropicolinic acid compounds. 3,285,925, 11–15–66, Cl. 260—294.9.

Johnston Testers, Ltd.: *See*—
Jensen, Lloyd I. 3,285,344.

Johnstone, Robert D., and D. C. Kofahl, to Richfield Oil Corp. Well drilling method. 3,285,337, 11–15–66, Cl. 166—.5.

Jokihaara, Lauri: *See*—
Hiyrinen, Raimo I., and Jokihaara. 3,284,920.

Jones & Laughlin Steel Corp.: *See*—
Morgan, Eric R., Besen, Batz, and Norman. 3,285,838.

Jones, Ronald H., and W. O. Evans, Jr., to United States of America, Navy. Magneto-resistive potentiometer. 3,286,161, 11–15–66, Cl. 323—94.

Jones, Stanley B.: *See*—
Holser, William T., Unterberger, and Jones. 3,286,163.

Joo, Louis A., and J. B. Braunwarth, to Union Oil Co. of California. Complex polynuclear carboxylic acid stabilization of halogenated aromatic hydrocarbon insecticides in petroleum hydrocarbon solvent. 3,285,813, 11–15–66, Cl. 167—42.

Joo, Louis A., and H. J. Young, to Great Lakes Carbon Corp. Purification of anthracene. 3,285,987, 11–15–66, Cl. 260—675.

Jordan, Richard H., and S. A. Findley, to Kingston Products Corp. Directional turn indicator signal having delayed releasable means cancelling signal as vehicle is turned to a straight ahead direction. 3,286,054, 11–15–66, Cl. 200—61.34.

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Joy Mfg. Co.: *See*—
Brown, Amos P. 3,285,665.

Jubermann, Otto: *See*—
Wegner, Christian, Muscheiknautz, Jubermann, and LeBlanc. 3,285,976.

Junck, John A., and J. Kokaly, to Caterpillar Tractor Co. Hydraulic valve neutraliser. 3,285,284, 11–15–66, Cl. 137—624.27.

Junion, Melville E. Shop truck. 3,285,447, 11–15–66, Cl. 214—506.

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Thompson, Edward H., and Justin. 3,286,212.

Justus, Edgar J., and D. C. Cronin, to Beloit Corp. Web transfer assembly for a papermaking machine. 3,285,806, 11–15–66, Cl. 162—306.

Kabushiki Kaisha Hitachi Seisakusho: *See*—
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Migitaka, Masatoshi, and Tokuyama. 3,285,791.
Nagata, Minoru. 3,285,016.

Kabushiki Kaisha Taiko Denki Seisakusho (Taiko Electric Works Ltd.): *See*—
Kamiya, Rokuro. 3,286,206.
Tamura, Naoji, and Horiuchi. 3,285,486.

Kadish, Frank. Door construction. 3,284,976, 11–15–66, Cl. 52—455.

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Wolfe, John S. B., and Kahn. 3,285,989.

Kahn, Henry, and L. Popa, to Goodrich-Gulf Chemicals, Inc. Oxygenizing systems useful for cleaning purposes. 3,285,777, 11–15–66, Cl. 134—2.

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Hildinger, William M., Boyer, and Van Dreser. 3,285,760.

Kaiser Steel Corp.: *See*—
Barnier, Douglas J., and Steger. 3,285,565.

Kamenick, Rudolph J.: *See*—
Diehl, John M., Kamenick, and Johnson. 3,284,938.

Kamiya, Rokuro, to Kabushikikaisha Taiko Denki Seisakusho (Taiko Electric Works Ltd.). Active CR two-terminal circuit. 3,286,206, 11–15–66, Cl. 333—80.

Kampstrup-Larsen, Harry. Rotary kilns. 3,285,591, 11–15–66, Cl. 263—33.

Kanegafuchi Boseki Kabushiki Kaisha: *See*—
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Kao Soap Co., Ltd.: *See*—
Arai, Sumio, Funatsu, and Kita. 3,285,973.

Kaplan, Donald E., to Burroughs Corp. Item handling apparatus. 3,285,389, 11–15–66, Cl. 198—34.

Kaplan, Harry, and W. C. Craig, to General Aniline & Film Corp. Process of preparing iodophors of nonionic synthetic surfactants. 3,285,816, 11–15–66, Cl. 167—70.

Karassik, Igor J.: *See*—
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Kartiala, Tauno F. Preload bolt joint. 3,285,120, 11–15–66, Cl. 85—62.

Karuhn, Richard F., to Velsicol Chemical Corp. Sealing plugs. 3,285,465, 11–15–66, Cl. 220—39.

Kasbo, Loyd G.: *See*—
Holsten, John R., Huffman, Kasbo, and Preston. 3,285,956.

Kasper, Otto. Wrench having toggle actuated movable jaw and toggle release lever. 3,285,107, 11–15–66, Cl. 81—368.

Katz, Jacob M. Waste paper receptacle with automatic tamping means. 3,285,505, 11–15–66, Cl. 232—43.3.

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Kaubke, Horst: *See*—
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Kaup, John J., to Felsenthal Instruments, Inc. Illuminated panel and method for making same. 3,284,941, 11–15–66, Cl. 40—130.

Kautz, Hans R., and H. Gerlach, to Bohler, Gebr., & Co. Aktiengesellschaft. Process of welding a precipitation-hardenable austenitic steel. 3,286,075, 11–15–66, Cl. 219—137.

Kavalir, John J., and E. V. Anderson, to United States Rubber Co. Method of making gloves. 3,286,011, 11–15–66, Cl. 264—306.

Kawarabayshi, Eizaburo: *See*—
Yano, Shiro, Kawarabayshi, Takura, and Morokawa. 3,284,871.

Kawecki Chemical Co.: *See*—
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Kay, Arthur: *See*—
Day, Lawrence O., Dobrick, and Kay. 3,284,960.

Kaywood Corp.: *See*—
Bury, Jack, Korbelic, Erb, and Vendetti. 3,284,843.

Kearsley, Wayne A., L. Lucas, Jr., and D. E. Watts, to Edgerton, Germeshausen & Grier, Inc. Underwater spark discharge sound-producing system. 3,286,226, 11–15–66, Cl. 340—12.

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Dudash, John, Jr., Gable, and Keating. 3,286,181.

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Brown, Francis W., and Keck. 3,285,888.

Keenan, John G., to Rolls-Royce Ltd. Vehicle for launching rocket propelled vehicles. 3,285,175, 11–15–66, Cl. 102—49.

Kehr, Gunter. Apparatus for the final machining of gears. 3,285,134, 11–15–66, Cl. 90—9.

Keinonen, Frank W., and R. E. Nagler, to Pioneer Mfg. Co. Furnace and burner unit. 3,285,318, 11–15–66, Cl. 158—114.

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Beneke, Jene A., Kelleher, and Maguire. 3,285,433.

Kelley, Jerry O., ½ each to Marlin Electric Co., and D. J. Moloney. Positional computer for bowling. 3,284,928, 11–15–66, Cl. 35—29.

Kellogg Co.: *See*—
Slaybaugh, Lyle, and Humiston. 3,285,200.

Kelly, Edgar, to General Electric Co. Collapsible parasol-like reflector utilising flexible honeycomb shell. 3,286,270, 11–15–66, Cl. 343—915.

Kelly, Joe T., and W. Schoen, to Standard Oil Co. Liquid paraffin isomerization process. 3,285,990, 11–15–66, Cl. 260—683.7.

Kelsey-Hayes Co.: *See*—
Swift, Harvey C. 3,285,370.

Kemeny, George A.: *See*—
Fein, Alvin E., Kemeny, and Richardson. 3,286,107.

Kemp, Trent H.: *See*—
Kersey, Frank N., J. L. Kersey, Jr., and Kemp. 3,285,440.
Kersey, Frank N., J. L. Kersey, Jr., and Kemp. 3,285,441.

Kennard, Doris B. Package for cigarettes and the like. 3,285,403, 11–15–66, Cl. 206—48.

Kent, Stanley J., to United States of America, Army. Pressure tight igniter fitting. 3,285,176, 11–15–66, Cl. 102—70.

Kerite Co., The: *See*—
Hvizd, Andrew, Jr. 3,286,022.

Kern, Dale W., to Riegel Textile Corp. Woven diaper. 3,285,246, 11–15–66, Cl. 128—284.

Kerr, Douglas A., and G. F. Swetnam, Jr., to Bell Telephone Laboratories, Inc. Remote line concentrator switching network. 3,286,037, 11–15–66, Cl. 179—18.

Kersey, Frank N., J. L. Kersey, Jr., and T. H. Kemp, to Automatic Sprinkler Corp. of America. Unloading apparatus for cars and trucks. 3,285,440, 11–15–66, Cl. 214—44.

Kersey, Frank N., J. L. Kersey, Jr., and T. H. Kemp, to Automatic Sprinkler Corp. of America. Dump car assemblies. 3,285,441, 11–15–66, Cl. 214—47.

Kersey, John L., Jr.: *See*—
Kersey, Frank N., J. L. Kersey, Jr., and Kemp. 3,285,440.
Kersey, Frank N., J. L. Kersey, Jr., and Kemp. 3,285,441.

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Keystone Mfg. Corp.: *See*—
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Kibby, Robert M.: *See*—
Bullough, Vaughn L., and Kibby. 3,286,003.

Kieber, Robert J.: *See*—
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Kiekhaefer Corp.: *See*—
North, Irving W. 3,285,221.

Kikuchi, Yoshiyasu, to Nippon Electric Co. Ltd. Tabulator. 3,286,237, 11–15–66, Cl. 340—172.5.

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Kimberly-Clark Corp.: *See*—
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King Fifth Wheel Co.: *See*—
Dunham, Ansel W. 3,285,779.

King, Paul D.: *See*—
Logan, William A., Sharp, Oliphint, and King. 3,286,236.

King, Paul H. Yarn holder. 3,285,532, 11–15–66, Cl. 242—139.

King, William H., R. A. Trimble, and W. G. Franz, to Mobil Oil Corp. Automated lubricating oil refining. 3,285,846, 11–15–66, Cl. 208—28.

Kingston Products Corp.: *See*—
Jordan, Richard H., and Findley. 3,286,054.

Kirchner, Carl E., Jr., and E. Johnson, Jr., to Fiber Industries, Inc. Transfer tail retainer. 3,285,530, 11–15–66, Cl. 242—125.1.

Kita, Hisahiro: *See*—
Aral, Sumio, Funatsu, and Kita. 3,285,973.

Kita, Yasuo, to Shimadzu Seisakusho Ltd. Hydraulic gear motor or hydraulic gear pump. 3,285,188, 11–15–66, Cl. 103—126.

Kitabatake, Michitoshi: *See*—
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Kitahama, Kiyoshi and T.; said T. Kitahama assor. to said K. Kitahama. X-ray tubes for microphotography. 3,286,112, 11–15–66, Cl. 313—56.

Kitahama, Tsuruko: *See*—
Kitahama, Kiyoshi and T. 3,286,112.

Kitrell, John V., and R. R. Wickes, to Lincoln Carriage Corp. Wheel chair. 3,285,619, 11–15–66, Cl. 280—34.

Klang, Marcel: *See*—
Matasa, Claudius G., Drimus, and Klang. 3,285,712.

Klasek, Frank A., to Western Electric Co., Inc. Test probe for detecting misalignment of metal workpieces. 3,284,910, 11–15–66, Cl. 33—180.

Klavir, Samuel N., 50% to R. Seymour. Coupling for angularly disposed shafts. 3,285,080, 11–15–66, Cl. 74—66.

Klein, Robert J.: *See*—
Moehlman, Vernon C., and Klein. 3,285,174.

Kliklok Corp.: *See*—
Baker, Thomas R. 3,285,143.
Baker, Thomas R. 3,285,494.

Kline, Robert E., and W. C. Starnes, to Gulf Research & Development Co. Process for dehydrocyclization of hydrocarbons. 3,285,985, 11–15–66, Cl. 260—673.5.

Klinefelter, Glenn B., to Gorton Heating Corp. Adaptor for heating system air valves. 3,285,270, 11–15–66, Cl. 137—202.

Klingel, Hans, to Karl Huller G.m.b.H. Adjusting device for tool carriers. 3,285,101, 11–15–66, Cl. 77—3.

Klotz, Charles E.: *See*—
McDaniel, Weymouth N., and Klotz. 3,285,823.

Knecht, George W.: *See*—
Norden, Alexander R., and Knecht. 3,286,068.

Knight, Noble A., and R. H. Francis, to West Virginia Pulp and Paper Co. Tube yarn shipper. 3,285,412, 11–15–66, Cl. 206—65.

Knittel, Emil E. Plant cutting tools. 3,284,900, 11–15–66, Cl. 30—B18.

Knox, Richard J.: *See*—
Rade, Douglas B. 3,284,904.

Kober, Ehrenfried H.: *See*—
Hammond, Philip D., and Kober. 3,285,961.

Koch, George R., to Temescal Metallurgical Corp. Cable terminal for use with electron gun apparatus. 3,286,021, 11–15–66, Cl. 174—80.

Koch, Peter, to Trojan Steel & Wire Ltd. Bed chesterfield. 3,284,812, 11–15–66, Cl. 5—13.

Kocher, Ernest-Ulrich, K. Wagner, and R. Haupt, to Farbenfabriken Bayer Aktiengesellschaft. Process for the polymerisation of monomeric formaldehyde. 3,285,877, 11–15–66, Cl. 260—67.

Koenig, Nathan H., to United States of America, Agriculture. Epichlorohydrin and acid anhydride treatment of wool. 3,285,691, 11–15–66, Cl. 8—128.

Koester, Charles J., and E. O. Dixon, to American Optical Co. Laser structure including laser energy transparent energy diverting masking elements. 3,286,193, 11–15–66, Cl. 331—94.5.

Koester, George L., Jr.: *See*—
Hynes, Lee P., and Koester. 3,286,079.

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Johnstone, Robert D., and Kofahl. 3,285,337.

Kofron, George, and E. A. Benfield, to Acme Welding Supply Co. Welding apparatus. 3,286,073, 11–15–66, Cl. 219—130.

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Podbielniak, Walter J., and Kohlins. 3,285,508.

Kojima, Yasuhiro: *See*—
Yumoto, Hirosuke, Hashimoto, Tanaka, Ito, Kojima, Shibata, Adachi, Morita, and Ebihara. 3,286,009.

Kokaly, Joseph: *See*—
Junck, John A., and Kokaly. 3,285,284.

Kolb, Franz, K. Ditterich, W. Obrowski, and F. Schwarz, to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler. Measuring resistance. 3,286,214, 11–15–66, Cl. 338—269.

Kolimorgan Corp.: *See*—
Lovins, Gerald H. 3,285,124.

Komenda, Erwin, to Dr. Ing. h. c. F. Porsche, K.G. Self-supporting vehicle body. 3,285,633, 11–15–66, Cl. 296—28.

Kompfner, Rudolf, and E. A. J. Marcatili, to Bell Telephone Laboratories, Inc. Triple element S-lens focusing system. 3,285,129, 11–15–66, Cl. 88—57.

Konermann, Hans-Ewald: *See*—
Brachert, Heinrich, and Konermann. 3,285,980.

Konig, Rezso, and Z. Foldi. Derivatives of 3,4-dihydro-1,2,4-benzothiadiazine-1,1-dioxide. 3,285,910, 11–15–66, Cl. 260—243.

Koninklijke Nederlandse Gist & Spiritusfabrieken: *See*—
De Flines, Jan, and Van der Waard. 3,285,830.

Koochembere, Chris T., to United States of America, Navy. Rocket propulsion system for ejection seats. 3,285,543, 11–15–66, Cl. 244—122.

Koontz-Wagner Electric Co., Inc.: *See*—
Bielefeld, Rolf. 3,285,285.

Koonz, Carl H., and R. A. Greenberg, to Swift & Co. Process of preparing and feeding a feed containing B. thuringiensis. 3,285,748, 11–15–66, Cl. 99—2.

Koppers Co., Inc.: *See*—
Del Bene, Sam J., and Fox. 3,285,865.
Goldstein, Irving S., and Oberley. 3,285,774.

Korbelic, William J.: *See*—
Bury, Jack, Korbelic, Erb, and Vendetti. 3,284,843.

Koss, Ronald W., to Minnesota Mining and Mfg. Co. Recording level intensity indicator. 3,286,248, 11–15–66, Cl. 340—253.

Kozulla, Robert E., B. S. Segro, and L. B. Courtot, to The Weatherhead Co. Pipe coupling. 3,285,627, 11–15–66, Cl. 285—3.

Kracauer, Paul, to Cumberland Packing Co. Artificial sweetener composition. 3,285,751, 11–15–66, Cl. 99—141.

Kreisman, Wallace S., to GCA Corp. Low pressure gauge. 3,285,271, 11–15–66, Cl. 137—251.

Kretlow, Wilbur H., J. L. Mostek, and J. S. Dwyer, to Stange Co. Monoazo pyrazole dyes. 3,285,906, 11–15–66, Cl. 260—162.

Krey, Theodor. Method of generating seismic waves. 3,285,363, 11–15–66, Cl. 181—.5.

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Gunderman, Roland E., Kritzman, and Moffitt. 3,285,996.

Kroll, Merville O., to G. H. Tennant Co. Sweeping machine brush mounting apparatus. 3,284,830, 11–15–66, Cl. 15—49.

Krueger, Leonard R., to Wausau Iron Works. Quick coupler. 3,285,625, 11–15–66, Cl. 280—479.

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Gerzon, Koert, and Krumkalns. 3,285,933.

Krupen, Philip, to United States of America, Army. Centrifugal switch. 3,286,057, 11–15–66, Cl. 200—80.

Kruse, Melvin S. Line-retrieving plumb bob. 3,284,914, 11–15–66, Cl. 33—217.

Kuba, Richard E., to North Electric Co. Current supply apparatus employing electric waveform conversion. 3,286,159, 11–15–66, Cl. 323—45.

Kuehl, Frederick A., Jr.: *See*—
Harman, Robert E., Kuehl, Strachan, and Hirschmann. 3,285,935.

Kuhn, David A.: *See*—
Walther, Herbert C., Kuhn, and Sparlin. 3,285,339.

Kuhns, John P., and M. L. Rizzone, to United States Steel Corp. Well-pumping apparatus. 3,285,081, 11–15–66. Cl. 74—95.

Kuntz, Louis E.: *See*—
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Küppenbender, Heinz, to Carl-Zeiss-Stiftung, d.b.a. Carl Zeiss. Motion picture camera. 3,285,689, 11–15–66, Cl. 352—83.

Kurtis, Louis A. Bait holder. 3,284,945, 11–15–66, Cl. 43—44.2.

Kurtz, Donald P., and F. W. Piper, to Aircraft Radio Corp. Autopilot for maintaining attitude and heading including rate integration and memory means. 3,286,143, 11–15–66, Cl. 318—18.

Kusunoki, Masazumi: *See*—
Oga, Taijiro, Kitabatake, Ogawa, and Kusunoki. 3,285,978.

Kutik, Louis F., ½ to E. W. Gronemeyer. Progressive plastic injection system. 3,284,854, 11–15–66, Cl. 18—30.

Kutschmende, Ralph. Spiral display apparatus. 3,284,935, 11–15–66, Cl. 40—33.

Kwiatkowski, Rudolph J. Miter table and saw. 3,285,303, 11–15–66, Cl. 143—132.

Kyle, Leslie B., to Hydroponics, Inc. Continuous hydroponic system. 3,284,948, 11–15–66, Cl. 47—1.2.

La Belle, Laurence T., to W. H. Miner Inc. Shock absorber. 3,285,594, 11–15–66, Cl. 267—9.

Lacoste, Roger G., to Texaco Inc. Hydrocarbonthiophosphonates and lubricant compositions thereof. 3,285,853, 11–15–66, Cl. 252—46.6.

Lafont, Pierre, and H. Menand, to Rhone-Poulenc S.A. Cycloalkene diol. 3,285,971, 11–15–66, Cl. 260—617.

Lage, Frederick A. Firearms target device for indicating the shot velocity and pattern. 3,285,066, 11–15–66, Cl. 73—167.

La Marr, Robert R., and C. E. Newins, said Newins assor. to The Prescon Corp. Apparatus for post-tensioning concrete structures. 3,285,569, 11–15–66, Cl. 254—29.

Lamb-Grays Harbor Co., Inc.: *See*—
Dale, Ingvald, and Caswell. 3,285,112.

Lamb, Raymond J., and R. T. Kiley. Apparatus for conditioning material. 3,285,702, 11–15–66, Cl. 23—252.

Lamczyk, Robert J.: *See*—
Lanham, Samuel E., and Lamczyk. 3,284,963.

Landecker, Kurt, to The University of New England. Spark gap circuits for sustaining oscillations in transmission line resonators. 3,286,196, 11–15–66, Cl. 331—100.

Landgraf, Walter D. Ribbon spool reversing mechanism. 3,285,383, 11–15–66, Cl. 197—175.

Landis, Robert L. Sealing gaskets. 3,284,957, 11–15–66, Cl. 49—495.

Landis Tool Co.: *See*—
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Landwirth, Charles. Therapeutic cushion. 3,284,817, 11–15–66, Cl. 5—327.

Landy, Charles. Classifying system. 3,285,434, 11–15–66, Cl. 214—11.

Lane, William B., to United States of America, Navy. Zinc bromide radiation-shielding window maintained under an inert gas atmosphere. 3,286,095, 11–15–66, Cl. 250—108.

Lang, James E., R. A. Proebstle, and L. G. Wisnyi, to United States of America, Atomic Energy Commission. Fuel element containing a mechanically compressible mandril. 3,285,826, 11–15–66, Cl. 176—68.

Lang, Rudolf: *See*—
Fahlenberg, Paul, and Lang. 3,285,152.
Fahlenberg, Paul, Singer, and Lang. 3,285,149.

Langer, Alfred, to Bremshey & Co. Adjustable elastic support for seats, particularly in vehicles. 3,285,502, 11–15–66, Cl. 248—399.

Langner, Alexander, to Beteiligungs- und Patentverwaltungsgesellschaft mit beschränkter Haftung. Transloading device. 3,285,385, 11–15–66, Cl. 198—9.

Langway, Paul W., and E. H. Shattuck, to Joseph Bancroft & Sons Co. Yarn crimping apparatus. 3,284,868, 11–15–66, Cl. 28—1.

Lanham, Samuel E., and R. J. Lamczyk, to General Foods Corp. Cleansing aid. 3,284,963, 11–15–66, Cl. 51—400.

Lanham, William E., G. C. Miller, and W. E. Lanham, Jr. Conveying system. 3,285,394, 11–15–66, Cl. 198—154.

Lanham, William E., Jr.: *See*—
Lanham, William E., Miller, and W. E. Lanham, Jr. 3,285,394.

Larkin, Daniel C. Litter and tissue box container. 3,285,398, 11–15–66, Cl. 206—19.5.

Larrison, Millard S., to Weston Chemical Corp. Phosphorus trichloride - trimethylolalkane chloral reaction products. 3,285,998, 11–15–66, Cl. 260—920.

Larsen, Gregory J., to Sicard Inc. Runway sweeper. 3,284,831, 11–15–66, Cl. 15—82.

Larson, John R., and C. M. Hayes, to Universal Oil Products Co. Curing of isocyanate-terminated polyurethane polymers with N-monoalkyl aromatic diamines. 3,285,879, 11–15–66, Cl. 260—77.5.

Larue, Pierre, to Office National d'Etudes et de Recherches Aerospatiales (O.N.E.R.A.). Solid propellant rocket motors. 3,285,012, 11–15–66, Cl. 60—253.

Laube, William C., Jr., to Hammond Organ Co. Reverberation unit having vibration-isolating suspension. 3,286,204, 11–15–66, Cl. 333—30.

Laubach, Anna C. Supplemental bed sheet combination. 3,284,816, 11–15–66, Cl. 5—81.

Laupretre, Jean-Jacques, to Compagnie des Machines Bull (Societe Anonyme). Variable-width transistor pulse generator employing variable capacitive phase-shift circuit for consecutive switching of two tunnel diodes. 3,286,104, 11–15–66, Cl. 307—88.5.

Lautenschlager, Walter: *See*—
Lehmann, Hellmuth, Grewe, and Lautenschlager. 3,285,807.

Lavino, Dominick, to Johns-Manville Corp. Apparatus for producing glass fibers. 3,285,724, 11–15–66, Cl. 65—16.

Lawler, Charles A.: *See*—
Howell, Robert C., and Lawler. 3,285,438.

Lawrence, John G.: *See*—
Wilson, Alexander C. R., and Lawrence. 3,286,150.

Lease, Robert J., to Sundstrand Corp. Hydrostatic transmission. 3,284,999, 11–15–66, Cl. 60—19.

Lebert, Herbert A. Cigarette with paper wrapper treated for emebercharring action to prevent fomation of high temperature smoke fractions in burning tobacco. 3,285,253, 11–15–66, Cl. 131—15.

LeBlanc, Hans: *See*—
Wegner, Christian, Muschelknautz, Jubermann, and LeBlanc. 3,285,976.

Lechner, Thomas J., Jr.: *See*—
Bjornsen, Bjorn G., and Lechner. 3,285,263.

Lee, Shao-tang. Shiftable variable area wing construction. 3,285,540, 11–15–66, Cl. 244—43.

Leecraft Mfg. Co., Inc.: *See*—
Sanchez, Gil C. 3,286,255.

Leeds and Northrup Co.: *See*—
Henderson, Rolland H. 3,286,148.
Johnson, Curtis A. A. 3,285,484.

Legg, Louis L.: *See*—
Titchenal, Oliver R., Legg, Stockel, O'Neal, Wheeler, and Chalpin. 3,285,295.

Legge, Victor T. Cutting machines more particularly for trimming the edges of lawns. 3,285,348, 11–15–66, Cl. 172—14.

Lehmann, Hellmuth, F. Grewe, and W. Lautenschlager, to Farbenfabriken Bayer Aktiengesellschaft. Method for controlling plant fungi with zinc-manganese 1,2-propylene-bis-di-thiocarbamate mixed salt. 3,285,807, 11–15–66, Cl. 167—22.

Lehmkuhl, Herbert: *See*—
Ziegler, Karl, and Lehmkuhl. 3,285,947.

Lehnert, Gunther, and H. Schrieber, to Hackethal-Draht-und Kabel-Werke Aktiengesellschaft. Method and apparatus for welding thin metal strips. 3,286,074, 11–15–66, Cl. 219—131.

Leibinzohn, Saul: *See*—
Frei, Ephraim H., Leibinzohn, and Shtrikman. 3,285,470.

Leithauser, Horst, to Chemische Werke Huls Aktiengesellschaft. Process for the catalytic polymerization of polymerizable unsaturated compounds. 3,285,994, 11–15–66, Cl. 260—861.

Leitz, Ernst, G.m.b.H., Optische Werke: *See*—
Hegner, Willi. 3,286,215.

Lemelson, Jerome H., to The Triax Co. Program console coupling for an automatic warehouse system. 3,285,437, 11–15–66, Cl. 214—16.4.

Lemelson, Jerome H. Apparatus for magnetically recording and reproducing at a remote station over a telephone line. 3,286,033, 11–15–66, Cl. 179—6.

Leng, John, to Atomic Energy of Canada Ltd. Analog-to-digital encoder. 3,286,253, 11–15–66, Cl. 340—347.

Lenkel, Stefan. Engine lathe length stop. 3,285,110, 11–15–66, Cl. 82—34.

Leostic, Joseph. Cit-Compagnie Industrielle des Telecommunications. Device for the stabilization of D. C. voltage. 3,286,157, 11–15–66, Cl. 323—18.

Le Polles, Robert, and R. Schley, to Commissariat a l'Energie Atomique. Device for attaching a thermocouple probe to a wall. 3,285,556, 11–15–66, Cl. 248—205.

Lescoa, Inc.: *See*—
Middleton, Forest L., and Wind. 3,285,683.

Leslie, John C. L., to Educational Research Associates, Inc. Teaching machine with programmed multiple track film. 3,284,923, 11–15–66, Cl. 35—8.

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Lesueur, Marc C. J., to Compagnie des Machines Bull (Societe Anonyme). Fault detecting devices for character recognition. 3,286,233, 11–15–66, Cl. 340—146.3.

Levecque, Marcel, M. Mabru, and M. Charpentier, to Saint-Gobain de Compagnie. Apparatus for producing fibers from thermoplastic material. 3,285,722, 11–15–66, Cl. 65—15.

Levecque, Marcel, M. Mabru, and M. Charpentier, to Saint-Gobain, de Compagnie. Apparatus for producing fibers from thermoplastic material. 3,285,723, 11–15–66, Cl. 65—15.

Leventhal, Bernard E., and L. H. Feigenbaum, to Globe Book Co., Inc. Programmed self-instruction and quiz apparatus. 3,284,925, 11–15–66, Cl. 35—9.

Lew, Henry Y., to Chevron Research Co. Low foaming compositions having good detersive properties. 3,285,856, 11–15–66, Cl. 252—152.

Lewis, James M.: *See*—
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Lewis, Oliver N., to Olin Mathieson Chemical Corp. Power tool. 3,285,131, 11–15–66, Cl. 89—1.

Lewis, Walter E., to General Electric Co. Self-cleaning conversion means for domestic oven. 3,286,080, 11–15–66, Cl. 219—393.

Leyman Corp., The: *See*—
Homanick, George. 3,285,079.

Li, Pei-Ching, to United States of America, Navy. Method for making single crystal graphite sheets. 3,285,697, 11–15–66, Cl. 23—209.3.

Li, Yao T. Pressure transducer. 3,286,213, 11–15–66, Cl. 338—42.

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Muhlbauer, Herbert G., and Lichtenwalter. 3,285,920.

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Lieberman, Buddy, to Somerville Industries Ltd. Carton setting up machine. 3,285,145, 11–15–66, Cl. 93—51.

Lightoller Inc.: *See*—
Neumann, Manfred, and Donato. 3,286,052.

Lilly, Eli, and Co.: *See*—
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Easton, Nelson R., and Hennion. 3,285,913.
Gerzon, Koert, and Krumkalns. 3,285,933.

Lim, Drahoslav, and J. Trekoval, to Ceskoslovenska Akademie ved. Polymerization initiators comprising alkali metal alcoholates. 3,285,894, 11–15–66, Cl. 260—88.7.

Limes, Robert W., and D. Ponzani, to Republic Steel Corp. Basic refractory compositions for intermediate temperature zones. 3,285,758, 11–15–66, Cl. 106—58.

Lincoln Carriage Corp.: *See*—
Kitrell, John V., and Wickes. 3,285,619.

Lindecher, Joseph B.: *See*—
Code, Rheta M. H., and Lindecher. 3,284,989.

Lindemann, Karl H., to Enthone Inc. Process and composition for zinc electrodeposition. 3,285,840, 11–15–66, Cl. 204—55.

Lindemann, Robert E., to Harris-Intertype Corp. Sheet delivery mechanism having an auxiliary pile support. 3,285,607, 11–15–66, Cl. 271—68.

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Stillman, Nathan, Van Koersel, and Lindroos. 3,285,497.

Lindsey, L. E. Dead end clamp assembly. 3,284,863, 11–15–66, Cl. 24—125.

Lindsey, L. E. Retractable step for utility poles and the like. 3,285,366, 11–15–66, Cl. 182—92.

Ling-Temco-Vought, Inc.: *See*—
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Dudley, Robert L., and Linkwitz. 3,286,247.

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Liquidometer Corp., The: *See*—
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Von, Tersch, Alfred L., and Farmer. 3,284,833.

Litton Systems, Inc.: *See*—
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Litz, Charles J., Jr., to United States of America, Army. Gas generating system. 3,285,539, 11–15–66, Cl. 244—42.

Liu, Wen-Chih: *See*—
Rao, Koppaka V., Marsh, and Liu. 3,285,814.

Livingston, Waltrus L., to General Signal Corp. Apparatus for controlling a vehicle when getting under way. 3,285,196, 11–15–66, Cl. 105—61.

Lobbe, Armin, to Wewerkschaft Eisenhutte Westfalia. Planer and reinforcement guide follower arrangement. 3,285,661, 11–15–66, Cl. 299—34.

Lobbe, Armin, to Gewerkschaft Eisenhutte Westfalia. Planer arrangement for extraction of mineral. 3,285,662, 11–15–66, Cl. 299—34.

Lock, Richard G., to General Electric Co. Radio frequency apparatus. 3,286,125, 11–15–66, Cl. 315—39.63.

Lockerbie, Thomas E. Air agitated disc washer. 3,285,780, 11–15–66, Cl. 134—102.

Lockwood, William B. Process for production of tin plate. 3,285,790, 11–15–66, Cl. 148—12.1.

Lockyer, Thomas N., Jr., to Philco Corp. Apparatus for nondestructive testing of enclosed relays for parasitic arc susceptibility by controlling the current-time integral of the arc. 3,286,166, 11–15–66, Cl. 324—28.

Lodge, Edward E. Automatic door operator. 3,284,952, 11–15–66, Cl. 49—360.

Loebner, William. Collapsible table. 3,285,205, 11–15–66, Cl. 108—119.

Loeffler, John E., Jr., H. P. McAlister, and P. R. Prokish, to Diamond Alkali Co. Cooling chamber design. 3,285,707, 11–15–66, Cl. 23—277.

Loeffler, John E., Jr., H. P. McAlister, and P. R. Prokish, to Diamond Alkali Co. Heat exchanger for apparatus for combustion of gases with oxygen. 3,285,708, 11–15–66, Cl. 23—277.

Logan, William A., R. S. Sharp, G. C. Oliphint, and P. D. King, to Burroughs Corp. Electronic digital computer with automatic interrupt control. 3,286,236, 11–15–66, Cl. 340—172.5.

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Lohmann, Arthur M., to Honeywell Inc. Dual function fuzes. 3,285,177, 11–15–66, Cl. 102—74.

Long, Bernard C., and O. S. Centofanti, to Mobil Oil Corp. Methods and apparatus for determining factors related to sonic velocity in a gas. 3,286,098, 11–15–66, Cl. 250—230.

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Longton, LeRoy T., to J. Hester. Apparatus particularly for use in harvesting hops. 3,285,365, 11–15–66, Cl. 182—63.

Loran, William. Instrument tray. 3,285,409, 11–15–66, Cl. 206—63.5.

Lothrop, Everett W., Jr., to FMC Corp. Impact testing apparatus. 3,285,052, 11–15–66, Cl. 73—12.

Loughridge, Frederick A., to Sylvania Electric Products Inc. Process for fabricating arc tubes. 3,285,725, 11–15–66, Cl. 65—32.

Loupiac, Jean: *See*—
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Louvar, James J.: *See*—
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Lovins, Gerald H., to Kollmorgan Corp. High precision pointing interferometer with modified kosters prism. 3,285,124, 11–15–66, Cl. 88—14.

Lubszynski, Hans G., to Electrical & Musical Industries Ltd. Pick-up tube having a mesh electroue connected to the base by deflecting field neutrallizing leads. 3,286,121, 11–15–66, Cl. 315—8.

Lucas, James W. Desk level overhead projector. 3,285,126, 11–15–66, Cl. 88—24.

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Luckham, Denis C. 3,285,583.

Ludlow Corp.: *See*—
Wilkie, Robert C., Hoyle, and De Roche. 3,286,007.

Luescher, Jakob, and B. Zega, to Compagnie Generale d'Electricite. Semi-conductor rectifier arrangement having self-protection against overvoltage. 3,286,137, 11–15–66, Cl. 317—234.

Luipersbeck, Francis J.: *See*—
Richter, Philip, Luipersbeck, and Czarnecki. 3,285,217.

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Lutchansky, Milton, to Bell Telephone Laboratories, Inc. Inflatable subreflector support for Cassegrainian antenna. 3,286,267, 11–15–66, Cl. 343—781.

Lutz, Frank B., to Monsanto Co. Tufted fabric sleeping bag. 3,284,818, 11–15–66, Cl. 5—343.

Lyman, Brooks, to Pitney-Bowes Inc. Pneumatic sheet detecting control means. 3,285,608, 11–15–66, Cl. 271—74.

M. J. Electric, Inc.: *See*—
Capra, Lawrence A. 3,286,053.

MSL Industries, Inc.: *See*—
Anderson, Gordon R., Jr. 3,285,187.

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Ivory, Henry V., MacDonald, and Steele. 3,285,250.

MacKenzie, James C., and A. Orzechowski, to Cabot Corp. Process for copolymerization of diverse polar monomers. 3,285,876, 11–15–66, Cl. 260—66.

MacKenzie, James C., and A. Orzechowski, to Cabot Corp. Polymerization of vinyl esters. 3,285,895, 11–15–66, Cl. 260—89.1.

MacKenzie, James C., and A. Orzechowski, to Cabot Corp. Polymerization of vinyl ethers. 3,285,896, 11–15–66, Cl. 260—91.1.

MacKenzie, James C., and A. Orzechowski, to Cabot Corp. Process for the polymerization and copolymerization of halogenated mono- and di-olefins. 3,285,898, 11–15–66, Cl. 260—92.3.

MacKenzie, James C., and J. A. Yancey, to Cabot Corp. Polymerization of formaldehyde. 3,285,878, 11–15–66, Cl. 260—67.

Mackiewicz, Czeslaw, to Harvey Hubbell, Inc. Electrical power control unit having a switch and connector with safety interlock. 3,286,051, 11–15–66, Cl. 200—50.

MacLean, Alexander F., and G. M. Burlingame, to Celanese Corp. of America. Production of alpha, omega-substituted alkanes. 3,285,981, 11–15–66, Cl. 260—659.

MacManus, John. Method and apparatus for decorating pastry and the like. 3,285,202, 11–15–66, Cl. 107—54.

Macomson, Wistar W., 50% to C. D. Page, Jr. Apparatus for treating web material with a treating fluid. 3,285,039, 11–15–66, Cl. 68—62.

Madl, Joseph, Jr. Apparatus for decontaminating personnel. 3,285,693, 11–15–66, Cl. 21—61.

Madsen, Elmer W., to The Superior Electric Co. Step motor damped by a viscous fluid filling. 3,286,109, 11–15–66, Cl. 310—49.

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Magne, Frank C.: *See*—
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Mod, Robert R., Skau, Fore, Magne, Novak, Dupuy, Ortego, and Fisher. 3,285,812.

Maguire, Samuel G.: *See*—
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Maissel, Leon I., and C. L. Standley, to International Business Machines Corp. Method for anodizing. 3,285,836, 11–15–66, Cl. 204—15.

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Foster, Edwin E. 3,284,934.

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Maldague, Pierre E. J. M.: *See*—
Tollet, Louis H. J., and Maldague. 3,285,820.

Malecki, Ronald J., D. J. Walker, and D. E. Janke, to Whirlpool Corp. Sensing bands and commutator system for dryers. 3,284,918, 11–15–66, Cl. 34—45.

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Bose, Norman J., and Malina. 3,286,252.

Mallory, P. R., & Co. Inc.: *See*—
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Malloy, James P.: *See*—
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Malm, Robert N., to General Electric Co. Support electric incandescent lamp filament. 3,286,116, 11–15–66, Cl. 313—274.

Malone, Bobby W., to Shell Oil Co. Lubricating oil composition. 3,285,854, 11–15–66, Cl. 252—46.7.

Maltenfort, Martin S., to Alexandria Silberman. Molded vent hood including a movable closure therein. 3,285,155, 11–15–66, Cl. 98—119.

Mansfield, Meredith D., to Enterprise Brass Works. Nozzle structure with lever adjusting insert. 3,285,564, 11–15–66, Cl. 251—240.

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Marcatili, Enrique A. J.: *See*—
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Marchesan, Virgilios, to Comunita Dei Cisterciensi Riformati (Trappisti). Process of embodying chaplets with beads made of coconut husk material or the like fixed on a continuous chain. 3,284,882, 11–15–66, Cl. 29—160.6.

Marchi, Ferdinand, to Louis Marchi & Co., Inc. Citronella candle and stand. 3,285,694, 11–15–66, Cl. 21—116.

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Marchi, Ferdinand. 3,285,694.

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Marier, Gaston. Reinforced endless rubber belt. 3,285,677, 11–15–66, Cl. 305—38.

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Marks, Alvin M. and M. M. 3,285,746.

Marley, James E., and C. W. Wiley, to AMP Inc. Electrical connector means. 3,286,220, 11–15–66, Cl. 339—192.

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Mar-Matic Sales Ltd.: *See*—
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Martel, Richard A., to General Precision, Inc. Electroluminescent phosphorescent dynamic display. 3,286,027, 11–15–66, Cl. 178—7.5.

Martin, Erwin H. E., R. N. Thomson, and D. Norbury, to Dunlop Rubber Co. Ltd. Inflatable structure. 3,285,003, 11–15–66, Cl. 60—35.6.

Martin, George J., to Parker-Hannifin Corp. Flow control valve for fluid motors and the like. 3,285,282, 11–15–66, Cl. 137—596.

Martin, James C., to Eastman Kodak Co. Preparation of aminovinyl ketones. 3,285,915, 11–15–66, Cl. 260—247.7.

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Matasa, Claudiu G., I. I. Drimus, and M. Klang, to Ministerul Industriei Petrolului Si Chimiei. Apparatus for the nitration of organic compounds in gaseous phase. 3,285,712, 11–15–66, Cl. 23—285.

Matheson, Wilfrid G., to Sylvania Electric Products Inc. Filament forming. 3,285,293, 11–15–66, Cl. 140—71.5.

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Matthews, Robert M., Jr.: *See*—
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Matthies, Alan A., to Controls Co. of America. Electrically-operated sleeve valve and air conditioning system. 3,285,031, 11–15–66, Cl. 62—217.

Mattivi, Clifford J., to Gulf Oil Corp. Seam testing method. 3,285,056, 11–15–66, Cl. 73—37.

Matto, Victor G., and E. W. Riegel. Housing for component. 3,285,548, 11–15–66, Cl. 248—27.

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Maxwell, Kenneth E., to Moyer Chemical Co. Methods and compositions using a petroleum oil fraction. 3,285,201, 11–15–66, Cl. 107—27.

May, George, to Mexcel Products Inc. Shock protective material. 3,285,401, 11–15–66, Cl. 206—46.

Maytag Co., The: *See*—
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Mazieres, Charles, to Centre National de la Recherche Scientifique (French Government Administration). Differential thermal micro-analysis apparatus. 3,285,053, 11–15–66, Cl. 73—15.

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Loeffler, John E., Jr., McAlister, and Prokish. 3,285,708.

McCallum, Robert A., to National Union Electric Corp. Oil burner pump. 3,285,180, 11–15–66, Cl. 103—7.

McCaustland, Daniel J., to Gulf Oil Corp. Control of plant pathogenic fungi with alkyl esters of 4-halo-acetoacetic acid. 3,285,808, 11–15–66, Cl. 167—22.

McClain, Walter J., and G. S. Jenkins, to E. Donnelly, C. B. Allen, J. J. Jenkins, Jr., and G. S. Jenkins, a partnership d.b.a. J. E. Greiner Co. Method and apparatus for assembling and erecting a rocket or missile. 3,284,888, 11–15–66, Cl. 29—407.

McClenathan, John A., to Beloit Corp. Intermediate shaft pneumatic seal. 3,285,614, 11–15–66, Cl. 277—62.

McClocklin, Samuel B., to The Owatonna Tool Co. Flow diviuer valve. 3,285,268, 11–15–66, Cl. 137—115.

McConnell, Richard L., and H. W. Coover, Jr., to Eastman Kodak Co. Polymers from phosphonites and diols. 3,285,863, 11–15–66, Cl. 260—2.

McCormick, William A., Jr., to The Pangborn Corp. Method and apparatus for deflashing pneumatic tires. 3,284,958, 11–15–66, Cl. 51—14.

McCurdy, Donald L., to Jervis Corp. Arming unit. 3,285,132, 11–15–66, Cl. 89—1.5.

McCutchan, Winfred N.: *See*—
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McDonald, John E. Centrifugal fans. 3,285,501, 11–15–66, Cl. 230—127.

McDonough, Henry W., to Elgin Elmac Enterprises, Inc. Muscular evaluation and exercising apparatus. 3,285,070, 11–15–66, Cl. 73—379.

McElhinney, Douglas H., to Cabin Crafts, Inc. Integral cushion backing for tufted rugs and process for making same. 3,285,796, 11–15–66, Cl. 161—66.

McFarlane, Samuel B., to Millmaster Onyx Corp. Dodecyldimethyl-1,2,4,5-tetramethyl-benzyl ammonium chloride. 3,285,959, 11–15–66, Cl. 260—567.6.

McGee, Chester W.: *See*—
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McGehee, Vincent R.: *See*—
Haverfield, Fern B., and McGehee. 3,284,883.

McGill, William H. Method of thermometer bulb fabrication. 3,285,727, 11–15–66, Cl. 65—109.

McGraw-Edison Co.: *See*—
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McInnes, Alexander C.: *See*—
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McIver, Clement L., to Methods Inc. Window cleaning device. 3,284,832, 11–15–66, Cl. 15—103.

McKague, Elbert L., Jr., to Thiokol Chemical Corp. Free expanding displaceable throat insert for a nozzle assembly of a solid propellant rocket motor. 3,285,519, 11–15–66, Cl. 239—265.15.

McKay, Dwight L., to Phillips Petroleum Co. Pulsed crystal reflux with a minimal melt. 3,285,027, 11–15–66, Cl. 62—58.

McKelvey, James G., Jr., I. H. Milne, and R. P. Trump, to Gulf Research & Development Co. Membrane support. 3,285,421, 11–15–66, Cl. 210—409.

McLaughlin, Robert C., to Motorola, Inc. Ignition system with inductor connected between breaker points and semiconductor device. 3,285,234, 11–15–66, Cl. 123—148.

McLean, David A., to Bell Telephone Laboratories, Inc. Fabrication of electrodes from modular units. 3,286,136, 11–15–66, Cl. 317—230.

McLoughlin, Joseph R., to General Electric Co. Power cable conductor for reducing windage. 3,286,018, 11–15–66, Cl. 174—42.

McLoughlin, Joseph R., to General Electric Co. Covering for power line conductors to reduce windage corona loss and radio frequency interference. 3,286,020, 11–15–66, Cl. 174—42.

McLoughlin, Joseph R., and W. T. Starr, to General Electric Co. Porous conductor jacket. 3,286,019, 11–15–66, Cl. 174—42.

McManama, Charles E. Lumber edger saw assembly incorporated into a horizontal traversing bandsaw machine. 3,285,301, 11–15–66, Cl. 143—1.

McMullen, John J., Associates, Inc.: *See*—
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McNeill, Walter I.: *See*—
McNeill, Warren L. and W. I. 3,284,826.

McNeill, Warren L. and W. I. Hinged last. 3,284,826, 11–15–66, Cl. 12—136.

McQueen, Jack G., to Associated Electrical Industries Ltd. Radar apparatus. 3,286,258, 11–15–66, Cl. 343—17.1.

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Melabs: *See*—
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Melchior, Gerard, to Compagnie Francaise de Television. Nonlinear video-signal modulating systems with a characteristic instantaneous frequency deviation VS. pre-emphasized signal level having a decreasing slope with an increasing absolute value of signal level. 3,286,024, 11–15–66, Cl. 178—5.2.

Mellen, David M., and D. A. Singer, to Calumet & Hecla, Inc. Tube indenting apparatus. 3,285,046, 11–15–66, Cl. 72—76.

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Mennesson, André L., to Societe Industrielle de Brevets et d'Etudes S.I.B.E. Carburetting devices for internal combustion engines. 3,285,585, 11–15–66, Cl. 261—39.
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Taub, David, Hoffsommer, and Wendler. 3,285,940.
Wasserman, David, Garber, and Meigs. 3,285,953.
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Meyer, Harry K., to Gould-National Batteries, Inc. Method of making an expander. 3,284,880, 11–15–66, Cl. 29—156.6.
Meyerhoff, Leonard, to Eastern Research Group. Hydraulic torque conversion apparatus. 3,285,011, 11–15–66, Cl. 60—221.
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Power, George E., Meyers, and Fremont. 3,286,008.
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Trafford, Gilmore H., and Michel. 3,286,257.
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Miley, Calvin W., to United States of America, Air Force. Antenna test shield. 3,286,264, 11–15–66, Cl. 343—703.
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Miller, Omer E. Tank cover. 3,285,418, 11–15–66, Cl. 210—140.
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Milne, Gilbert A. Picture painting kit. 3,284,927, 11–15–66, Cl. 35—26.
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Mitty, Sol, N. and J. 3,285,620.
Mitty, Sol, N. and J. Shopping cart with slide in wheel brackets. 3,285,620, 11–15–66, Cl. 280—47.26.
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Long, Bernard C., and Centofanti. 3,286,098.
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Money, Lawrence V., Jr., to H. Ornstein. Illuminated wristwatch. 3,284,997, 11–15–66, Cl. 58—50.
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Henderson, Courtland M., and Beaver. 3,285,018.
Henderson, Courtland M., and Beaver. 3,285,019.
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Moore, Lawrence K. Wire-line actuated detonator device. 3,285,171, 11–15–66, Cl. 102—20.
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Morris, Harrison W., to Continental Aviation and Engineering Corp. Turbine engine construction. 3,285,005, 11–15–66, Cl. 60—39.32.
Morris, Leslie J. Binding devices. 3,285,252, 11–15–66, Cl. 129—37.
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Naake, Hans J., to General Electric Co. Method of manufacturing thermoelectric modules. 3,284,877, 11–15–66, Cl. 29—155.5.
Nachshen, Maurice, to Conch International Methane Ltd. Ground reservoir for the storage of a liquefied gas. 3,285,014, 11–15–66, Cl. 61—.5.
Nagata, Minoru, to Kabushik Kaisha Hitachi Seisakusho. Thermoelement type electric power source circuit. 3,285,016, 11–15–66, Cl. 62—3.
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Nardin, Pierre-Antoine. Closing means of casings for apparatus such as measuring instruments, watch movements or the like. 3,284,998, 11–15–66, Cl. 58—90.
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Nelson, George R., and G. Botsaris, to Dennison Mfg. Co. Remoistenable gummed sheet material and composition for making the same. 3,285,764, 11–15–66, Cl. 106—129.
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Norton, Lynn W.: *See*—
Norton, William H. 3,286,082.

Norton, William H., deceased, by L. W. Norton, administratrix, to Thermel Inc. Heating unit with embedded tubular element. 3,286,082, 11–15–66, Cl. 219—540.

Norwood, Donald W. Photometric device having optionally selective response to light on two photoresistive cells. 3,286,097, 11–15–66, Cl. 250—209.

Novak, Arthur F.: *See*—
Mod, Robert R., Skau, Fore, Magne, Novak, Dupuy, Ortego, and Fisher. 3,285,809.
Mod, Robert R., Skau, Fore, Magne, Novak, Dupuy, Ortego, and Fisher. 3,285,812.

Nowlin, Billy E.: *See*—
Griffith, Donald L., Nowlin, and Berry. 3,286,059.

Nulph, Robert J.: *See*—
Nametz, Richard C., and Nulph. 3,285,995.

Numeric Systems of Texas, Inc.: *See*—
Creamer, Robert W. 3,285,111.

Oak Electro/Netics Corp.: *See*—
Golbeck, Bernard J. 3,286,048.

Oakes, Vincent, to Pure Chemicals Ltd. Manufacture of organo-tin compounds. 3,285,944, 11–15–66, Cl. 260—429.7.

Obadal, Richard D.: *See*—
Johnson, John G., and Obadal. 3,285,321.

Oberley, William J.: *See*—
Goldstein, Irving S., and Oberley. 3,285,774.

Obermayer, S., Co., The: *See*—
Jacobs, Louis J. 3,285,763.

Obidowski, Edmond J., to Continental Can Co., Inc. Flanging can bodies having pre-stretched circumferential edges. 3,285,212, 11–15–66, Cl. 113—120.

Obrowski, Walter: *See*—
Kolb, Frans, Ditterich, Obrowski, and Schwarz. 3,286,214.

Ochs, Charles S., to Anchor Hocking Glass Corp. Vacuum hopper. 3,285,387, 11–15–66, Cl. 198—33.

O'Connor, Bernard E. Torsional vibration damper. 3,285,096, 11–15–66, Cl. 74—574.

O'Connor, Bernard E. Torsional vibration damper. 3,285,097, 11–15–66, Cl. 74—574.

Odioso, Raymond C.: *See*—
Henke, Alfred M., Odioso, and Schmid. 3,285,977.

Oehlerking, Dean, to Ideal Industries, Inc. Rotary bench stripper. 3,285,103, 11–15–66, Cl. 81—9.51.

Oestreich, James W.: *See*—
Donaldson, Earl J., and Oestreich. 3,285,536.

Office National d'Etudes et de Recherches Aerospatiales (O.N.E.R.A.): *See*—
Larue, Pierre. 3,285,012.

Oga, Taijiro, M. Kitabatake, M Ogawa, and M. Kusunoki, to Shawa Denko Kabushiki Kaisha. Process for producing 1,3-dichlorooleflns. 3,285,978, 11–15–66, Cl. 260—454.

Ogawa, Masao: *See*—
Oga, Taijiro, Kitabatake, Ogawa, and Kusunoki. 3,285,978.

Ohio Rod Products Co., Inc.: *See*—
Demby, Raymond E., and Demboske. 3,285,492.

Ohlsen, Geoffrey T., and P. L. Smith, to Associated Electrical Industries Ltd. Motor control device for attaining an angular position. 3,286,146, 11–15–66, Cl. 318—31.

Ohta, Genkichi, O. Magase, and M. Shimizu, to Daiichi Seiyaku Kabushiki Kaisha. Hair and skin compositions containing pantethine. 3,285,818, 11–15–66, Cl. 167—87.

Okagaki, Hiroshi: *See*—
Sugawara, Masao, and Okagaki. 3,286,119.

Olin Mathieson Chemical Corp.: *See*—
Hammond, Philip D., and Kober. 3,285,961.
Lewis, Oliver N. 3,285,131.
Moehlman, Vernon C., and Klein. 3,285,174.

Oliphint, George C.: *See*—
Logan, William A., Sharp, Oliphint, and King. 3,286,236.

Olsen, C. A., Mfg. Co., The: *See*—
Hine, Louis P., Jr., and Vales. 3,285,317.

Olson, Cecil G.: *See*—
Chall, Harold J., and Olson. 3,285,510.

Olson, Verlyn D. Carton holding and pouring device. 3,285,472, 11–15–66, Cl. 222—86.

O'Neal, Harry D.: *See*—
Titchenal, Oliver R., Legg, Stockel, O'Neal, Wheeler, and Chalpin. 3,285,295.

Oniki, Saburo, and S. Shimada, to Sony Corp. Stabilized voltage source for transistorized circuits. 3,286,124, 11–15–66, Cl. 315—27.

Optische Werke G. Rodenstock: *See*—
Schlegel, Franz. 3,285,128.

Orne, Nils. Electrical separation of dust. 3,284,990, 11–15–66, Cl. 55—5.

Ornstein, Howard: *See*—
Money, Lawrence V., Jr. 3,284,997.

Ortego, Jesse R.: *See*—
Mod, Robert R., Skau, Fore, Magne, Novak, Dupuy, Ortego, and Fisher. 3,285,809.
Mod, Robert R., Skau, Fore, Magne, Novak, Dupuy, Ortego, and Fisher. 3,285,812.

Orth, Hans: *See*—
Tretow, Werner, and Orth. 3,285,210.

Orthodontists' Research & Mfg. Corp.: *See*—
Dillberg, Raymond E., and Miller. 3,284,902.

Ortlieb, Robert M.: *See*—
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Ortner, Gerhard, and F. Grewe, to Farbenfabriken Bayer Aktiengesellschaft. Metal complexer of dithiocarbamates. 3,285,921, 11–15–66, Cl. 260—270.

Ortronix, Inc.: *See*—
Puckett, Hilliard E., Matthews, and Henderson. 3,286,030.

Orsechowski, Adam: *See*—
MacKenzie, James C., and Orsechowski. 3,285,876.
MacKenzie, James C., and Orsechowski. 3,285,895.
MacKenzie, James C., and Orsechowski. 3,285,896.
MacKenzie, James C., and Orechowski. 3,285,898.

Osbond, John M., to Hoffmann-La Roche Inc. Intermediates and process for preparing pyridoxine and related compounds. 3,285,824, 11–15–66, Cl. 260—294.9.

Ostroot, Gerald F. to Desurik Corp. Consistency sensing element. 3,285,058, 11–15–66, Cl. 73—59.

Otten, Harry M. M., to Stamicarbon N.V. Apparatus for imparting pulsations to a liquid within a container. 3,285,138, 11–15–66, Cl. 91—1.

Outboard Marine Corp.: *See*—
Hage, Stanislas H., and Hale. 3,285,258.
Hale, Gordon B. 3,285,259.

Owatonna Tool Co., The: *See*—
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Strickland, John B. 3,285,446.

Owens-Illinois Inc.: *See*—
Santelli, Thomas R. 3,285,461.
Smith, Robert M., and Wells. 3,285,802.
Torok, Julius J. 3,285,728.

Pace, Thomas. Revolving door safety system. 3,285,209, 11–15–66, Cl. 109—8.

Pacific Preserving Co.: *See*—
Armstrong, Theodore. 3,285,388.

Package Products Co., Inc.: *See*—
Northcott, Thomas V. 3,285,309.

Packaging Corp. of America: *See*—
Bessett, Clifford H. 3,285,491.

Paetzold, Paul J.: *See*—
Baldwin, John H., Paetzold, and Starr. 3,285,803.

Page, C. Dan, Jr.: *See*—
Macomson, Wistar W. 3,285,039.

Palm, Daniel E.: *See*—
Palm, Richard H., Sr., D. E. Palm, Vasile, Frier, and Matthews. 3,285,448.

Palm, Richard H., Sr., D. E. Palm, L. J. Vasile, C. Frier, and R. M. Matthews, Jr., to Ranch Fertilizer Co., Inc. Hopper and trailer lift mechanism. 3,285,448, 11–15–66, Cl. 214—512.

Palmer, Bryan A., to The British Petroleum Co. Ltd. Transducer testing by differential non-linear techniques. 3,286,170, 11–15–66, Cl. 324—57.

Palmer, Raymond C., Jr., to United States of America, Air Force. Rotary null pilot valve controlled device. 3,285,141, 11–15–66, Cl. 91—368.

Palopoli, Frank P., and V. J. Fell, to Richardson-Merrell Inc. Substituted diphenyl ketones. 3,285,912, 11–15–66, Cl. 260—246.

Pangborn Corp., The: *See*—
McCormick, William A., Jr. 3,284,958.

Panopix Research, Inc.: *See*—
Wells, Leon W. 3,285,087.

Pansing, Nelson J., to General Motors Corp. Light control for belt type ice maker. 3,285,029, 11–15–66, Cl. 62—135.

Papalia, John: *See*—
Huitt, Jimmie L., and Papalia. 3,285,340.

Papineau, Andre: *See*—
Abragam, Anatole, Beurtey, Papineau, Thirion, and Winter. 3,286,162.

Paquette, Leo A., to The Upjohn Co. 2-asabicyclo [3.2.0] hept-6-en-3-ones. 3,285,934, 11–15–66, Cl. 260—326.5.

Park, George B. Plant shipping container. 3,284,949, 11–15–66, Cl. 47—34.11.

Parke, Davis & Co.: *See*—
Elslager, Edward F., and Werbel. 3,285,905.
Moersch, George W., and Neuklis. 3,285,939.

Parker Aircraft Co.: *See*—
Ragen, Robert W., and Rodaway. 3,285,065.

Parker, Carl D., and T. G. Wilson, to Sperry Rand Corp. Brushless D.C. motor. 3,286,147, 11–15–66, Cl. 318—138.

Parker, Charles A., to Kimball Systems, Inc. Tag separating devices having edge riffling means. 3,285,604, 11–15–66, Cl. 271—44.

Parker-Hannifin Corp.: *See*—
Martin, George J. 3,285,282.

Parker, Harry W., to Phillips Petroleum Co. Removal of water blocks from oil and gas wells. 3,285,341, 11–15–66, Cl. 166—42.

Parker, William H.: *See*—
Huckabay, William B., and Parker. 3,286,225.

Parkinson, Paul K.: *See*—
Fisher, Robert N., and Parkinson. 3,284,885.

Parks, George U., Jr., S. C. Shuford, and P. T. Heyl, to United Shoe Machinery Corp. Harmonic drive bearings. 3,285,099, 11–15–66, Cl. 74—640.

Parmenter, Morgan D. Teaching aid. 3,284,924, 11–15–66, Cl. 35—9.

Parmley, Richard T., to General Dynamics Corp. Space vehicle insulation. 3,285,460, 11–15–66, Cl. 220—9.

Parsons Corp.: *See*—
Brownlee, Winston E., and Ritchey. 3,285,794.

Parsons, Marshall F. Down draft vertical kiln system. 3,285,590, 11–15–66, Cl. 263—29.

Patternak, Stephen F., to Peerless of America, Inc. Integral dual-passage heat exchange tubing with reverse bends. 3,285,334, 11–15–66, Cl. 165—172.

Patriquin, George P., to Independent Lock Co. Door closer. 3,284,841, 11–15–66, Cl. 16—52.

Patton, Roy A., Jr. Mechanism for use in conjunction with the intake opening of a water jet propelled hydrofoil vehicle. 3,285,214, 11–15–66, Cl. 114—66.5.

Payne, William E.: *See*—
Houser, Clarence G., and Payne. 3,285,899.

Peco Corp.: *See*—
Gorman, Edmond B. 3,285,386.

Pecoraro, Raymond: *See*—
Cocca, Ubert, and Pecoraro. 3,285,130.

Pedrick, John S.: *See*—
Annat, Robert B., and Pedrick. 3,285,140.

Peerless of America, Inc.: *See*—
Pasternak, Stephen F. 3,285,334.

Pellow, Wilbur J., and L. C. Rosenquist, to United States Steel Corp. Rotatable inclined chute for handling sticky bulk material. 3,285,476, 11–15–66, Cl. 222—168.

Peltner, Johannes, and H. Weinrich, to Voith-Getriebe-KG. Shiftable multi-speed transmission. 3,285,100, 11–15–66, Cl. 74—688.

Pennsalt Chemicals Corp.: *See*—
Noel, George R. 3,284,873.
Reed, Karl G. 3,285,506.
Shapiro, Leonard. 3,285,507.

Perhats, Francis J. Vehicle control switch. 3,286,058, 11–15–66, Cl. 200—82.

Perisse, Pierre. Safety pressure-reducing device for gas cylinders under pressure and its application to a spray apparatus. 3,285,469, 11–15–66, Cl. 222—3.

Perkins, Cornelius C.: *See*—
Thompson, Blair C., Perkins, Shifman, and Pezely. 3,286,239.

Perrot, Arnold. Mounting for receiving objects to be framed. 3,284,939, 11–15–66, Cl. 40—152.

Pessen, David W., to Warner & Swasey Co. Pendulum impact tester. 3,285,060, 11–15–66, Cl. 73—101.

Peterfalvi, Michel: *See*—
Vellux, Leon, Jequier, Peterfalvi, and Muller. 3,285,815.

Peterson, Gerald D., to Corning Glass Works. Television picture tube envelopes and method of assembling the envelope parts. 3,285,457, 11–15–66, Cl. 220—2.1.

Peterson, Noel C., and J. M. Scott, to Westinghouse Electric Corp. Velocity tapering of traveling wave tube cylindrical delay line by use of nonuniform support rod. 3,286,120, 11–15–66, Cl. 315—3.6.

Peterson, Stanley G., to Minnesota Mining and Mfg. Co. Smash-resistant offset printing blanket. 3,285,799, 11–15–66, Cl. 161—93.

Petrocarb, Inc.: *See*—
Christensen, Henning J. 3,285,739.

Petrol Injection Ltd.: *See*—
Jackson, Harold E. 3,285,233.

Petters, Karl J.: *See*—
Eldredge, Charles L., and Petters. 3,285,245.

Pewitt, Bernard B. Insulated coaster for glasses, cans, bottles or the like. 3,285,455, 11–15–66, Cl. 215—100.5.

Pewitt, Bernard B. Insulated coaster for glasses, cans, bottles, or the like. 3,285,456, 11–15–66, Cl. 215—100.5.

Pezely, Stanley J.: *See*—
Thompson, Blair C., Perkins, Shifman, and Pezely. 3,286,239.

Pfaff, G. M., A.G.: *See*—
Tretow, Werner, and Orth. 3,285,210.

Pfizer, Chas., & Co., Inc.: *See*—
Rao, Koppaka V., Marsh, and Liu. 3,285,814.

Phelps Dodge Copper Products Corp.: *See*—
Conlon, John J., and Yearley. 3,284,859.

Phelps, Donald D., to Dravo Corp. Removal of contaminants such as arsenic from iron ore and apparatus therefor. 3,285,735, 11–15–66, Cl. 75—6.

Pherson, Perry O., J. A. Murphy, and C. H. Watkins, to Canadian International Paper Co. Web folding machine. 3,285,599, 11–15–66, Cl. 270—40.

Philco Corp.: *See*—
Lockyer, Thomas N., Jr. 3,286,166.

Philips Rozane, Inc.: *See*—
Slater, Eben A. 3,285,817.

Phillips, Harry, to United Shoe Machinery Corp. Cement extruders. 3,285,475, 11–15–66, Cl. 222—146.

Phillips Petroleum Co.: *See*—
Arnold, Philip M. 3,285,889.
Dunn, Robert O., and Moon. 3,285,024.
Fluegel, Dale A., and Kuntz. 3,286,171.
Gragson, James T. 3,285,852.
Graham, John P. 3,285,850.
Henderson, Miles L. 3,285,986.
Houser, Clarence G., and Payne. 3,285,899.
McKay, Dwight L. 3,285,027.
Parker, Harry W. 3,285,341.
Reinecke, Marvin E. 3,285,035.
Scofield, Raymond C., and Wilson. 3,285,847.
Shaul, Duane D. 3,285,025.
Vesper, Daniel M., and Jackson. 3,285,023.
Williams, Ralph P. 3,285,930.

Pidcock, Paul M.: *See*—
Harton, Daniel. 3,285,649.

Piepsny, Richard A.: *See*—
Tavernelli, Joseph F., and Piepsny. 3,285,593.

Pike, John W. Concentration of extracts by freezing. 3,285,022, 11–15–66, Cl. 62—58.

Pike, Roscoe A., to Norton Co. Catalysts for polyphenylene sulfide type resins. 3,285,882, 11–15–66, Cl. 260—79.

Piker, Herbert M., to The Hamilton-Skotch Corp. Insulated container. 3,285,450, 11–15–66, Cl. 215—13.

Piller, Horst, to Carl Zeiss-Stiftung, d.b.a. Carl Zeiss. Magnetically attached microscope accessory for supporting comparison objects. 3,285,127, 11–15–66, Cl. 88—40.

Pinkerton, Harry E. Diaphragm metering pump. 3,285,182, 11–15–66, Cl. 103—44.

Pinson, Alton Z. Fence construction. 3,285,577, 11–15–66, Cl. 256—34.

Pintar, Robert R., to TWR Inc. Permanent magnet alternator. 3,286,110, 11–15–66, Cl. 310—156.

Pioneer Mfg. Co.: *See*—
Keinonen, Frank W., and Nagler. 3,285,318.

Pipe Machinery Co., The: *See*—
Satava, Donald M. 3,284,913.

Piper, Floyd W.: *See*—
Kurtz, Donald P., and Piper. 3,286,143.

Pistey, John M., to General Electric Co. Mounting arrangement for a fluorescent lampholder assembly. 3,285,560, 11–15–66, Cl. 248—342.

Pitney-Bowes Inc.: *See*—
Lyman, Brooks. 3,285,608.

Pitts, Edgar H., Jr.: *See*—
Tolbert, Tommy L., and Pitts. 3,285,969.

Pittsburgh Plate Glass Co.: *See*—
Dowbenko, Rostyslaw, and Chang. 3,285,964.
Drummond, Warren W. 3,285,720.
Galey, William F., and Misson. 3,285,509.
Stein, Edward H. 3,284,974.
Ward, Cecil R. 3,285,726.

Plastic Contact Lens Co., The: *See*—
Reynolds, Alvin E. 3,285,512.

Plastics, Inc.: *See*—
Colato, Albert E. 3,285,495.

Platz, Elwood T., to I-T-E Circuit Breaker Co. Fuse device with overload means. 3,286,060, 11–15–66, Cl. 200—116.

Ploeger, Raymond L., and T. Melot, to The Dow Chemical Co. Ultrasonic degassing of liquids. 3,284,991, 11–15–66, Cl. 55—15.

Plunk, William C., and A. Silver, to The Garrett Corp. Pressure altitude vector balanced transducer. 3,285,071, 11–15–66, Cl. 73—407.

Plunkett, Bradley J.: *See*—
Brand, John R., and Plunkett. 3,286,013.

Plura Plastics, Inc.: *See*—
Gahm, Wilbert J. 3,285,459.

Pneumatic Conveying Systems Co.: *See*—
Hubbard, Elbert G. 3,285,670.

Podbielniak, Walter J., and W. D. Kohlins, to Dresser Industries, Inc. Flow directing centrifugal contacting apparatus with jet mixing action. 3,285,508, 11–15–66, Cl. 233—15.

Podell, Howard I.: *See*—
Boots, Edmund R., and Podell. 3,285,310.

Poehler, Guenter, A. Wegerich, O. Goehre, and H. Glehne, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Tube reactors. 3,285,713, 11–15–66, Cl. 23—288.

Poff, Walter B.: *See*—
Bedsaul, James D., Sr. 3,285,482.

Polaris Industries, Inc.: *See*—
Hetteen, Allan E. 3,285,676.

Ponzani, David: *See*—
Limes, Robert W., and Ponzani. 3,285,758.

Popa, Lazar: *See*—
Kahn, Henry, and Popa. 3,285,777.

Porsche, Dr. Ing. h.c.F., K.G., Firma: *See*—
Komenda, Erwin. 3,285,653.

Porter, Alvin J., and A. W. Merchlewitz, to Products Design & Engineering, Inc. Dispensing device with cammed stopper. 3,285,479, 11–15–66, Cl. 222—521.

Potlatch Forests, Inc.: *See*—
Hoyle, Robert J., Jr. 3,285,636.

Potter, John T. Roller reefer. 3,285,215, 11–15–66, Cl. 114—102.

Power, George E., K. D. Meyers, and R. E. Fremont to Formica Corp. Method of molding intractable polymers. 3,286,008, 11–15–66, Cl. 264—126.

Powers, Milton A., to Skuttle Mfg. Co. Humidifier. 3,285,586, 11–15–66, Cl. 261—92.

Prasser, Donald O. Protective garment. 3,284,806, 11–15–66, Cl. 2—2.1.

Prazak, Charles J., III, to National Video Corp. Assembly jig for positioning photographic shadow masks in color television picture tube face plates. 3,284,884, 11–15–66, Cl. 29—200.

Preformed Line Products Co.: *See*—
Eucker, Robert A. 3,286,023.

Prescon Corp., The: *See*—
La Marr, Robert R., and Newins. 3,285,569.

Presray Corp., The: *See*—
Schroth, Raymond A. 3,284,955.

Preston, Jack: *See*—
Holsten, John R., Huffman, Kasbo, and Preston. 3,285,956.

Pretto, John L. Radiation energy shield protecting a body area of a patient from X-rays and the like. 3,286,094, 11–15–66, Cl. 250—108.

Pribonic, John F., and G. W. Jackson, to General Motors Corp. Plural position control valve with built-in relief valve. 3,285,281, 11–15–66, Cl. 137—596.

Price, David B., to Westinghouse Electric Corp. Automatic beverage maker. 3,285,158, 11–15–66, Cl. 99—281.

Price, John A., and R. F. Neblett, to Esso Research and Engineering Co. Preparation of glycol molybdate complexes. 3,285,942, 11–15–66, Cl. 260—429.

Pricenski, Theodore J.: *See*—
Reid, Robert B., and Pricenski. 3,284,893.
Reid, Robert B., and Pricenski. 3,285,518.

Prisbe, Ernest J., to United-Carr Inc. Belt buckle. 3,285,700. 11–15–66, Cl. 24—230.

Products Design & Engineering, Inc.: *See*—
Porter, Alvin J., and Merchiewits. 3,285,479.

Proebstle, Richard A.: *See*—
Lang, James E., Proebstle, and Wisnyi. 3,285,826.

Prokish, Paul R.: *See*—
Loeffler, John E., Jr., McAlister, and Prokish. 3,285,708.
Loeffler, John E., Jr., McAlister, and Prokish. 3,285,707.

Propst, Robert L., to Herman Miller, Inc. Shelf organizer. 3,285,429, 11–15–66, Cl. 211—184.

Provencher, Alphonse J. Tool for installing groove liners. 3,284,886, 11–15–66, Cl. 29—235.

Pryce, Vaughn K. Detachable handles. 3,285,648, 11–15–66, Cl. 294—16.

Pryde, Everett H.: *See*—
Miller, William R., Cowan, and Pryde. 3,285,880.

Puckett, Hillard E., J. L. Matthews, and J. C. Henderson, to Ortronix, Inc. Solid state relay. 3,286,030, 11–15–66, Cl. 178—70.

Pullman Inc.: *See*—
Bailey, John D. 3,284,956.

Pure Chemicals Ltd.: *See*—
Oakes, Vincent. 3,285,944.

Puri, Inder K. Vigilance control device for diesel and electric locomotives and automobile trucks. 3,285,368, 11–15–66, Cl. 180—82.

Putman, Bill W., to Meek Mfg. Co., Inc. Theftproof frame. 3,284,940, 11–15–66, Cl. 40—152.1.

Puxkandl, Peter, and H. Smejkal, to Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft. Apparatus for lining metallurgical vessels, such as converters. 3,285,290, 11–15–66, Cl. 198—103.

Raburn, Warren J., to The Dow Chemical Co. 1-aziridino-1-(di-lower alkylamine)-ethane. 3,285,909, 11–15–66, Cl. 260—239.

Racy, Joseph E., to Sanders Associates, Inc. Frequency stabilized transistor crystal oscillator. 3,286,198, 11–15–66, Cl. 331—116.

Rade, Douglas B., ½ to R. J. Knox. Archery sight. 3,284,904, 11–15–66, Cl. 33—46.

Radford, David L., and B. D. Bates, to McGraw-Edison Co. Heat-soned press head. 3,286,077, 11–15–66, Cl. 219—251.

Radio Corp. of America: *See*—
Benway, Robert E. 3,286,113.
Simahauser, Elvin D., and Carrell. 3,286,029.

Rado, John A., to TRW Inc. Machine tool feedrate control system. 3,286,085, 11–15–66, Cl. 235—151.11.

Rael, Sol. Display manifold. 3,285,249, 11–15–66, Cl. 129—20.

Rafferty, Christopher A., to The Bendix Corp. Vertical gyro erection system. 3,285,077, 11–15–66, Cl. 74—5.41.

Ragen, Robert W., and K. S. Rodaway, to Parker Aircraft Co., division of Parker-Hannifin Corp. Spring testing machine. 3,285,065, 11–15–66, Cl. 73—161.

Raglin, Loren L., to Granger Associates. Base mounting structure. 3,286,141, 11–15–66, Cl. 317—262.

Ramsey Engineering Co.: *See*—
Hill, John L. 3,286,144.

Ranby, Peter W., and D. W. Smith, to Thorn Electrical Industries Ltd. Electroluminescent lamp with boric acid or boric oxicle used in conjunction with the zinc sulphide layer. 3,286,115, 11–15–66, Cl. 313—108.

Ranch Fertilizer Co., Inc.: *See*—
Palm, Richard H., Sr., D. E. Palm, Vasile, Frier, and Matthews. 3,285,448.

Rand Mfg. Co.: *See*—
Nelson, William R. 3,285,682.

Rantsch, Kurt, and A. Weyrauch, to M. Hensoldt & Sohne, Optische Werke Aargau. Scale reading apparatus. 3,285,123, 11–15–66, Cl. 88—14.

Rao, Koppaka V., W. S. Marsh, W.-C. Liu, to Chas Pfizer & Co., Inc. Antibiotic complex BA–180265 (AB) and process for making same. 3,285,814, 11–15–66, Cl. 167—165.

Rap Industries Inc.: *See*—
Stillman, Nathan, Van Koersel, and Lindroos. 3,285,497.

Rasmussen, Ralph J., to Farmspray Co. Torque released one way brake. 3,285,377, 11–15–66, Cl. 192—8.

Rathbone, Peter, and C. W. Suckling, to Imperial Chemical Industries Ltd. Stabilized methyl chloroform composition. 3,285,857, 11–15–66, Cl. 252—171.

Rayflex Exploration Co.: *See*—
Huckabay, William B., and Parker. 3,286,225.

Recor, Clifford R., to Beloit Corp. Coating applicator. 3,285,225, 11–15–66, Cl. 118—410.

Reda, Ernie. Paint can holder for step ladder. 3,285,557, 11–15–66, Cl. 248—210.

Reding, Frederick P.: *See*—
Sullivan, Edward M., Reding, and Wise. 3,285,897.

Redman, Derek H., to Stewart-Warner Corp. Edge following servo control. 3,286,142, 11–15–66, Cl. 318—18.

Reed, Jay R., to United States of America, Navy. Dynamic displacement transducer. 3,285,051, 11–15–66, Cl. 73—1.

Reed, Karl G., to Pennsalt Chemicals Corp. Centrifuge having self-lubricating bearing. 3,285,506, 11–15–66, Cl. 233—1.

Reeves, John F.: *See*—
Lickliter, Robert P., Abbott, and Reeves. 3,284,977.

Reeves, Willard D. Poultry cutter. 3,284,846, 11–15–66, Cl. 17—11.

Reeves, Wilson A.: *See*—
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Reid, Robert B., and T. J. Pricenski, to Sylvania Electric Products Inc. Method of making a wire plexus. 3,284,893, 11–15–66, Cl. 29—527.

Reid, Robert B., and T. J. Pricenski, to Sylvania Electric Products Inc. Substrate for thermal boundary construction and method of making the same. 3,285,518, 11–15–66, Cl. 239—265.15.

Reilly, Frederick W., to Beautiline Ltd. Extruded frame member. 3,285,444, 11–15–66, Cl. 211—148.

Reinecke, Marvin E., to Phillips Petroleum Co. Temperature control system. 3,285,055, 11–15–66, Cl. 73—23.1.

Reistle, Carl E., Jr., to Esso Research and Engineering Co. In situ pyrolysis of oil shale formations. 3,285,335, 11–15–66, Cl. 166—2.

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Muller, Jacques. 3,285,420.

Renaudette, Silas R., to Corn Products Co. Apparatus for feeding and mixing materials. 3,285,580, 11–15–66, Cl. 259—11.

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Byun, Chai B., and Rendler. 3,286,251,

Repko, John P., to The Dow Chemical Co. Bag closure device. 3,285,499, 11–15–66, Cl. 229—62.

Republic Steel Corp.: *See*—
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Research Corp.: *See*—
Gates, Marshall D., Jr. 3,285,922.

Resener, Baird E., to Amsted Industries Inc. Conveyor chain. 3,285,395, 11–15–66, Cl. 198—189.

Reser, Donald E., to Western Electric Co., Inc. Apparatus for applying a coating material to an elongated longitudinally advancing article. 3,285,224, 11–15–66, Cl. 118—405.

Resler, Edwin L., Jr., to United States of America, Navy. Magnetic induction machine. 3,285,179, 11–15–66, Cl. 103—1.

Reynolds, Alvin E., to The Plastic Contact Lens Co. Graphical corneal contact lens computer. 3,285,512, 11–15–66, Cl. 235—61.

Reynolds Metals Co.: *See*—
Bullough, Vaughn L., and Kibby. 3,286,003.
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Rhodes, Harold B., to Columbia Broadcasting Systems, Inc. Portable piano-type instrument incorporating a sustaining pedal. 3,285,116, 11–15–66, Cl. 84—176.

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Lafont, Pierre, and Menand. 3,285,971.

Rice, Curtis D.: *See*—
Coe, Merrill J., and Rice. 3,285,493.

Rice, Richard M., to Reynolds Metals Co. Extruding apparatus. 3,284,848, 11–15–66, Cl. 18—12.

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Fein, Alvin E., Kemeny, and Richardson. 3,286,107.

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Richardson, Paul E. C., to Bristol Siddeley Engines Ltd. Axial flow turbines and compressors. 3,285,567, 11–15–66, Cl. 253—59.

Richardson, Ryden L., to Union Oil Co. of California. Method of preparing nickel-molybdenum-alumina catalysts. 3,285,860, 11–15–66, Cl. 252—465.

Richfield Oil Corp.: *See*—
Johnstone, Robert D., and Kofahl. 3,285,337.

Richter, Eugene G., to Honeywell Inc. Print hammer control apparatus. 3,285,165, 11–15–66, Cl. 101—93.

Richter, Philip, F. J. Luipersbeck, and W. A. Czarnecki, to Fuller Co. Hatch cover assembly. 3,285,217, 11–15–66, Cl. 114—202.

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Matto, Victor G., and Riegel. 3,285,548.

Riegel Textile Corp.: *See*—
Kern, Dale W. 3,285,246.

Rietz, Ulrich, P. Schmitz, and H. Unterguggenberger, deceased, by L., R., and C. Unterguggenberger, heirs, to Wacker-Chemie G.m.b.H. Method of priming a metal surface with a terpolymer solution containing a polyhydroxy compound. 3,285,772, 11–15–66, Cl. 117—75.

Rifkin, Morton S., to Florida Aluminum Enterprises, Inc. Sliding panel structure. 3,284,953, 11–15–66, Cl. 49—420.

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Brownlee, Winston E., and Ritchey. 3,285,794.

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Kuhns, John P., and Rizzone. 3,285,081.

Robbins, Elmer A., to Tokheim Corp. Currency controlled gasoline dispenser. 3,285,381, 11–15–66, Cl. 194—5.

Robbins, James M. to Jim Robbins Seat Belt Co. Seat belt escutcheon. 3,285,659, 11–15–66, Cl. 297—385.

Robbins, Jim, Seat Belt Co.: *See*—
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Roberts, Donald L., to The Goodyear Tire & Rubber Co. Method of making a white sidewall tire and article produced thereby. 3,285,314, 11–15–66, Cl. 152—353.

Roberts, Roy W., Jr., to Melabs. Ferrite circulator having three mutually coupled coils coupled to the ferrite material. 3,286,201, 11–15–66, Cl. 333—1.1.

Robertshaw Controls Co.: *See*—
Bordeaux, Jean. 3,285,241.
Chaney, Gerald. 3,285,261.
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Robertson, Colin S. Apparatus for distributing material to reduce evaporation from water storages. 3,285,692, 11–15–66, Cl. 21—61.

Robertson, Thomas D., to Sinclair Research, Inc. Process and apparatus for separating and analyzing a fluid mixture. 3,285,701, 11–15–66, Cl. 23—232.

Robinson, Anderson E., to Hercules Inc. Convulcanizable polyether and sulfur-curable rubber laminate. 3,285,804, 11–15–66, Cl. 161—239.

Robinson, Eric F. V.: *See*—
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Robinson, Paul E., and R. W. Shrewsbury, to Minnesota Mining and Mfg. Co. Heading tool. 3,284,847, 11–15–66, Cl. 18—1.

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Rock-Ola Mfg. Corp.: *See*—
Rockola, David C. 3,285,095.

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Ragen, Robert W., and Rodaway. 3,285,065.

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Roeder, Gerald M., to United States Steel Corp. Composite floor panel. 3,284,978, 11–15–66, Cl. 52—589.

Roethel, John H. Door lock. 3,285,645, 11–15–66, Cl. 292—30.

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Schwall, Donald V., and Rogers. 3,285,753.

Rogers Corp.: *See*—
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Rogers, Walter Clark, Jr., to General Steel Products, Inc. Sofa folding bed supporting fixture. 3,284,811, 11–15–66, Cl. 5—13.

Rohm & Haas Co.: *See*—
Hurwitz, Marvin J., and Beavers. 3,285,966.

Rolls-Royce Ltd.: *See*—
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Freeman, Frederick, and Smith. 3,285,006.
Hallsworth, Raymond T., and Holroyd. 3,285,844.
Hopley, Eric T. 3,285,004.
Keenan, John G. 3,285,175.

Romans, James B. Apparatus for determining the dielectric constant of liquids having a disk-shaped electrode lying above the surface of its supporting member. 3,286,172, 11–15–66, Cl. 324—61.

Rona, Janos: *See*—
Ernst, Adolphe O. G., Jardinier, and Rona. 3,285,262.

Ronay, Geza S., and W. M. Sawyer, Jr., to Shell Oil Co. Emulsions and latices of cis 1,4-polyisoprene. 3,285,869, 11–15–66, Cl. 260—23.7.

Root, William L., 3rd, to The Bethlehem Corp. Rotary processor. 3,285,330, 11–15–66, Cl. 165—86.

Roper, Ralph E., to Wallace Expanding Machine, Inc. Apparatus for making tubular members. 3,285,490, 11–15–66, Cl. 228—15.

Rosbrook, Gifford F., to General Motors Corp. Means to prevent gumming and sticking of automatic choke mechanism. 3,285,279, 11–15–66, Cl. 137—483.

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Pellow, Wilbur J., and Rosenquist. 3,285,476.

Rossmann, Peter F. Self-energization spot type brake systems. 3,285,372, 11–15–66, Cl. 188—73.

Roth, William F., to Chisholm-Ryder Co. of Pennsylvania. Container arranging mechanism. 3,284,985, 11–15–66, Cl. 53—247.

Roto Bag Machine Corp.: *See*—
D'Angelo, Joseph. 3,286,249.

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Roussel-UCLAF, S.A.: *See*—
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Rowe, Blaine F. Sun shade. 3,285,260, 11–15–66, Cl. 135—7.1.

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Rubens, Louis C., to The Dow Chemical Co. Copolymers of chlorostyrene and diacrylophenones. 3,285,997, 11–15–66, Cl. 260—880.

Rumanowski, Edmund J.: *See*—
Gilbert, Everett E., and Rumanowski. 3,285,936.

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Ryan, Joseph J. Razor having hair trimming means. 3,284,894, 11–15–66, Cl. 30—29.5.

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Rypkema, Jouke N., to Zenith Radio Corp. Stereo pilot chain control transistor circuit. 3,286,034, 11–15–66, Cl. 179—15.

Sackett, Walter J., Sr. Ammoniated fertilizer manufacturing apparatus and system. 3,285,704, 11–15–66, Cl. 23—259.1.

Safe Flight Instrument Corp.: *See*—
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Sahle, Knute, and A. B. Newton, to Borg-Warner Corp. Combination single and dual stage compressor. 3,285,500, 11–15–66, Cl. 230—40.

Sahlin, Le Roy B., to Archer-Daniels-Midland Co. Apparatus for coating granules. 3,285,223, 11–15–66, Cl. 118—64.

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Faust, John A., and Sahyun. 3,285,919.

Sahyun, Melville: *See*—
Faust, John A., and Sahyun. 3,285,919.
Levecque, Marcel, Mabru, and Charpentier. 3,285,722.

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Levecque, Marcel, Mabru, and Charpentier. 3,285,723.

St. Regis Paper Co.: *See*—
Titchenal, Oliver R., Legg, Stockel, O'Neal, Wheeler, and Chalpin. 3,285,295.

Saito, Norio. Flexible beam structures. 3,284,964, 11–15–66, Cl. 52—2.

Salam, Hassan P. A., to English Electric-Leo Computers Ltd. Electric circuits. 3,286,102, 11–15–66, Cl. 307—88.5.

Salisbury, Mack L., to Sprayfoil Industrial Corp. Apparatus for combining fluids. 3,285,522, 11–15–66, Cl. 239—429.

Salutsky, Murrell L., and J. M. Sanborn, to W. R. Grace & Co. Magnesium potassium phosphate-containing fertilizer and process. 3,285,731, 11–15–66, Cl. 71—33.

Sames, Delbert W., to General Aniline & Film Corp. Radiographic films cassette and film holder with means for automatic unloading of the film into a processing apparatus. 3,286,092, 11–15–66, Cl. 250—68.

Sanborn, James M.: *See*—
Salutsky, Murrell L., and Sanborn. 3,285,731.

Sanchez, Gil C., to Leecraft Mfg. Co., Inc. Pilot or telltale light assembly. 3,286,255, 11–15–66, Cl. 340—381.

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Jeppsson, Erik M., and Sander. 3,285,375.

Sanders Associates, Inc.: *See*—
Boothroyd, Howard W. 3,285,076.
Racy, Joseph E. 3,286,198.

Sanders, John E., A. A. Disco, A. L. Massini, and D. Johnson, to United States of America, Navy. Core retainer having curved gates. 3,285,354, 11–15–66, Cl. 175—242.

Sandoz Ltd.: *See*—
Senn, Otto. 3,285,904.

Sangamo Electric Co.: *See*—
Finlay, Alexander. 3,286,096.

Sangamo Weston Ltd.: *See*—
Flack, Dennis C. 3,284,903.

Sansum, Victor H.: *See*—
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Santelli, Thomas R., to Owens-Illinois Inc. Composite receptacle. 3,285,461, 11–15–66, Cl. 220—17.

Sarjeant, Peter T., to West Virginia Pulp and Paper Co. Lignin containing resin binder. 3,285,801, 11–15–66, Cl. 161—170.

Satava, Donald M., to The Pipe Machinery Co. Thread ring gauge with flush pin. 3,284,913, 11–15–66, Cl. 33—199.

Satriana, Daniel R., to United States of America, Army. Preparation of triaminoguanidine compounds from dicyandiamide. 3,285,958, 11–15–66, Cl. 260—564.

Saubal-Bayard, Rene: *See*—
Artur Du Plessis, Jacques, Hugues, Saubal-Bayard, Loupiac, Couverture, and Tailleter. 3,285,222.

Sauer, L. E., Machine Co.: *See*—
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Sauer, Louis E., to L. E. Sauer Machine Co. Split rotary anvil, head, and the like. 3,285,642, 11–15–66, Cl. 287—189.36.

Sawyer, John P.: *See*—
Bartell, Robert P., Clibo, and Sawyer. 3,285,800.

Sawyer, Webster M., Jr.: *See*—
Ronay, Geza S., and Sawyer. 3,285,869.

Scallet, Barrett L., and I. Ehrenthal, to Anheuser-Busch, Inc. High D.E. syrup and method of making same. 3,285,776, 11–15–66, Cl. 127—30.

Schaefer, Robert H.: *See*—
Christenson, Howard W., Mooney, and Schaefer. 3,285,000.

Schaeffer, William D., to Union Oil Co. of California. Catalytic dealkoxylation of gemdialkoxy compounds. 3,285,967, 11–15–66, Cl. 260—614.

Schaeffer, William D., to Union Oil Co. of California. Synthesis of acetals. 3,285,970, 11–15–66, Cl. 260—615.

Schanz, Rudi: *See*—
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Schaschl, Edward, to Union Oil Co. of California. Apparatus and method for measuring high temperature corrosion and fluid flow rates. 3,286,174, 11–15–66, Cl. 324—71.

Scheck, Roy S., to Unarco Industries, Inc. Storage rack. 3,285,428, 11–15–66, Cl. 211—148.

Schenk, Walter, A. Wallis, and R. Schanz, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of cyclic carboxylic acids by thermal conversion of salts of other cyclic carboxylic acids. 3,285,955, 11–15–66, Cl. 260—515.

Schipper, Pieter W., to Atwater-General Corp. Non-modulating valve. 3,285,276, 11–15–66, Cl. 137—408.2.

Schiegel, Franz, to Optische Werke G. Rodenstock. Catadioptric objective. 3,285,128, 11–15–66, Cl. 88—57.

Schlesinger, Kurt, to General Electric Co. Variable magnification electron lens. 3,286,114, 11–15–66, Cl. 313—83.

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Schmeidl, Karl, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Emulsifiable waxes and their production. 3,285,902, 11–15–66, Cl. 260—94.9.

Schmid, Bruce K.: *See*—
Henke, Alfred M., Odioso, and Schmid. 3,285,977.

Schmid & Wezel: *See*—
Wezel, Walter. 3,285,136.

Schmidt, Henry, Jr., and J. F. Zievers, to Industrial Filter & Pump Mfg. Co. Filter sluicing method and apparatus. 3,285,417, 11–15–66, Cl. 210—81.

Schmidt, Theodor, to Indugas, Gesellschaft fur Industrielle Gasverwendung m.b.h. Industrial gas burner. 3,285,240, 11–15–66, Cl. 126—91.

Schmidt, Thomas R., to Shell Oil Co. Apparatus for adjusting the amplitude and phase of pickup coils of eddy current instruments. 3,286,168, 11–15–66, Cl. 324—40.

Schmitz, Christian, and W. A. Bruder, to Daimler-Benz Aktiengesellschaft. Flow machine. 3,285,566, 11–15–66, Cl. 253—39.

Schmitz, Gert F., to Thiokol Chemical Corp. Mechanical actuator. 3,285,082, 11–15–66, Cl. 74—110.

Schmitz, Peter: *See*—
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Schneider, Ronald E., and O. A. Clemens, to Swift & Co. Bacon pressing. 3,285,162, 11–15–66, Cl. 100—42.

Schneider, Walter L., and D. P. Scotto, to American Bosch Arma Corp. Gas pump apparatus and gyroscope system employing same. 3,285,075, 11–15–66, Cl. 74—5.

Schnell, Hermann: *See*—
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Schober Organ Corp.: *See*—
Dorf, Richard H. 3,286,042.

Schoen, William: *See*—
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Scholermann, Walter: *See*—
Hegemann, Josef, and Scholermann. 3,285,770.

Scholes, David H.: *See*—
Field, James M., Nenninger, and Scholes. 3,286,038.

Schooler, Jerome P. Cantilever panel partition construction and bracket arm support assembly. 3,284,968, 11–15–66, Cl. 52—73.

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Schroth, Raymond A., to The Presray Corp. Motor vehicle seal. 3,284,955, 11–15–66, Cl. 49—477.

Schuler, William. Animal watering device. 3,285,226, 11–15–66, Cl. 119—18.

Schulze, Karl L. Continuous single-zone thermophilic phase composting process. 3,285,732, 11–15–66, Cl. 71—9.

Schuringa, Albertus: *See*—
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Schuringa, Albertus, to Shell Oil Co. Plural range electromechanical integrating apparatus having variable transmission ratio gear assembly to provide for constant rate recording. 3,286,179, 11–15–66, Cl. 324—115.

Schwall, Donald V.: *See*—
Hansen, Leo J., Schwall, and Colburn. 3,285,752.

Schwall, Donald V., and A. B. Rogers, to Armour and Co. Method of preparing a poultry product. 3,285,753, 11–15–66, Cl. 99—107.

Schwarz, Fritz: *See*—
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Schweikert, Wilbur H., to General Electric Co. Pyrolytic graphite coated casting mold and method of making same. 3,284,862, 11–15–66, Cl. 22—192.

Schweitzer, Leo F., Jr. Pallet for stacking, storing and transporting automobile wheels. 3,285,204, 11–15–66, Cl. 108—55.

Scofield, Raymond C., and R. T. Wilson, to Phillips Petroleum Co. Fast thermal cracking of heavy carbonaceous materials. 3,285,847, 11–15–66, Cl. 208—46.

Scott Aviation Corp.: *See*—
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Scott, John M.: *See*—
Peterson, Noel C., and Scott. 3,286,120.

Scotto, Dominick P.: *See*—
Schneider, Walter L., and Scotto. 3,285,075.

Scowcroft, Hector, to T.M.M. (Research) Ltd. Electrical heating arrangements. 3,286,081, 11–15–66, Cl. 219—470.

Sealed Air Corp.: *See*—
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Sebald, Joseph F., I. J. Karassik, H. Davis, and A. E. Carter, to Worthington Corp. Foam collection and disposal system. 3,284,993, 11–15–66, Cl. 55—178.

Sechrist Mfg. Co.: *See*—
Brown, Charles S. 3,286,090.

Seckerson, Clifford A.: *See*—
Birmingham, Douglas W., Fernberg, and Seckerson. 3,285,647.

Seckerson, Clifford A., to United-Carr Inc. Hinge. 3,284,844, 11–15–66, Cl. 16—171.

Seco, Inc.: *See*—
Johnson, Allie, Choate, Zimmerman, and E. E. Johnson. 3,285,606.

Seeler, Henry W., to United States of America, Air Force. Combined cabin uniform and mechanical partial pressure suit complete with helmet. 3,284,805, 11–15–66, Cl. 2—2.

Segro, Basil S.: *See*—
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Seidel, William B., to The Cincinnati Milling Machine Co. Multi-station grinding machine. 3,284,959, 11–15–66, Cl. 51—108.

Seismograph Service Corp.: *See*—
Anstey, Nigel A. 3,286,228.

Selander, Edsel S., and G. E. Carmack. Portable clamp and cutter for electrical flexible tubing. 3,284,895, 11–15–66, Cl. 30—90.5.

Selector's Aggregates Co. Ltd.: *See*—
Taylor-Smith, Ernest J. 3,285,413.

Sellers, Ralph F., to Union Carbide Corp. Tetraglycidyl ethers of tris(hydroxybenzyl) phenol. 3,285,938, 11–15–66, Cl. 260—348.

Sellers, Ralph F., to Union Carbide Corp. Polyepoxides cured with the reaction product of a dihydroxydiphenylsulfone, an amine, and aldehyde. 3,285,991, 11–15–66, Cl. 260—831.

Sellmeyer, Danel J., to General Motors Corp. Cover seal for shift console. 3,285,093, 11–15–66, Cl. 74—566.

Seng Co., The: *See*—
Mikos, Aloysius J. 3,284,814.

Senman, Haluk, to General Aniline & Film Corp. Color stabilization of propargyl alcohol. 3,285,974, 11–15–66, Cl. 260—632.5.

Senn, Otto, to Sandoz Ltd. Copper-containing polyazo dye. 3,285,904, 11–15–66, Cl. 260—145.

Sephton, Hugo H. Flash evaporation and condensation apparatus. 3,3,285,832, 11–15–66, Cl. 202—187.

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Settle, Clayton C. Fishing lure. 3,284,944, 11–15–66, Cl. 43—42.15.

Sevcik, John G., to Burton-Dixie Corp. Combination sitting and sleeping piece. 3,284,813, 11–15–66, Cl. 5—17.

Seymour, Edgar W.: *See*—
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Shannon, John K. Storage battery and method for making same. 3,285,785, 11–15–66, Cl. 136—168.

Shapiro, Clarence M. Louvered structure. 3,284,951, 11–15–66, Cl. 49—75.

Shapiro, Hymin: *See*—
De Witt, Earl G., Brown, and Shapiro. 3,285,946.

Shapiro, Leonard, to Pennsalt Chemicals Corp. Screw-type solids discharge centrifuge having means to discharge light solids. 3,285,507, 11–15–66, Cl. 233—7.

Sharp, Richard S.: *See*—
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Sharp, Walter M., Jr., to The Battelle Development Corp. System for detecting irregularities in typing technique. 3,285,384, 11–15–66, Cl. 197—187.

Shattuck, Ewart H.: *See*—
Langway, Paul W., and Shattuck. 3,284,868.

Shaul, Duane D., to Phillips Petroleum Co. Multi-stage crystallization process. 3,285,025, 11–15–66, Cl. 62—58.

Shaw, Harold M. Electric drill attachment for routing. 3,285,135, 11–15–66, Cl. 90—12.

Shawa Denko Kabushiki Kaisha: *See*—
Oga, Taijiro, Kitabatake, Ogawa, and Kusunoki. 3,285,978.

Shea, William T.: *See*—
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Sheldon, Edward E. Device for illumination. 3,286,087, 11–15–66, Cl. 240—22.18.

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Malone, Bobby W. 3,285,854.
Ronay, Geza S., and Sawyer. 3,285,869.
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Shen, Tsung-Ying, to Merck & Co., Inc. Indolyl acid amides. 3,285,908, 11–15–66, Cl. 260—211.

Shepherd, Thomas H., to Mobil Oil Corp. Cured polymers of alpha-olefins and their preparation. 3,285,883, 11–15–66, Cl. 260—79.5.

Shepherd, Thomas H., and R. S. Wilsher, to Mobil Oil Corp. Cured normally solid polymers and their preparation. 3,285,885, 11–15–66, Cl. 260—79.5.

Shibata, Yoshinobu: *See*—
Yumoto, Hirosuke, Hashimoto, Tanaka, Ito, Kojima, Shibata, Adachi, Morita, and Ebihara. 3,286,009.

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Shockley, William, to Clevite Corp. Thermally stabilized semiconductor device. 3,286,138, 11–15–66, Cl. 317—235.

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Siebol, George. Blind rivet. 3,285,121, 11–15–66, Cl. 85—72.

Siebold, Donald J., to General Electric Co. UHF-VHF tuner. 3,285,078, 11–15–66, Cl. 74—10.54.

Sigmon, Carl L., to Hickory Foundry and Machine Co. Sealing device. 3,284,987, 11–15–66, Cl. 53—373.

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Silberman, Alexandria: *See*—
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Silentius, Robert T., E. W. Binkley, and A. G. Baird, to Smith & Stone Ltd. Baby car seat. 3,285,655, 11–15–66, Cl. 297—254.

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Silver, Alexander: *See*—
Plunk, William C., and Silver. 3,285,071.

Silver, Edward S. Eddy current apparatus. 3,286,145, 11–15–66, Cl. 318—31.

Silver, Julius L., and V. Auerbach, to Union Carbide Corp. Laminated planographic printing plates. 3,285,745, 11–15–66, Cl. 96—90.

Silverman, Louis M., to Transitoke, Inc. Package for transit tokens and the like. 3,285,397, 11–15–66, Cl. 206—.83.

Silvern, David H., to Dresser Industries, Inc. Discharge cooler arrangement for rotary positive displacement vacuum pump. 3,285,332, 11–15–66, Cl. 165—122.

Simmons, Ernest P. Sight for shotguns. 3,284,905, 11–15–66, Cl. 33—47.

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Simon, Edward J. Dispenser holders. 3,285,559, 11–15–66, Cl. 248—313.

Simon, Jean C.: *See*—
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Singer, Franz: *See*—
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Singer, Otto, to Silentbloc (Australia) Proprietary Ltd. Infinitely variable speed transmission apparatus. 3,285,083, 11–15–66, Cl. 74—191.

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Mod, Robert R., Skau, Fore, Magne, Novak, Dupuy, Ortego, and Fisher. 3,285,812.

Skilling, James K., to General Radio Co. Transistor-controlled oscillator apparatus. 3,286,199, 11–15–66, Cl. 331—117.

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Slator, Damon T., to Bowen Tools, Inc. Apparatus for handling tubing or other elongate objects. 3,285,485, 11–15–66, Cl. 226—172.

Slaybaugh, Lyle, and P. A. Humiston, Jr., to Kellogg Co. Processing equipment. 3,285,200, 11–15–66, Cl. 107—14.

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Small, Charles R., to Mobil Oil Corp. Timing light system for use in automotive vehicle diagnostic system. 3,286,165, 11–15–66, Cl. 324—16.

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Puxkandl, Peter, and Smejkal. 3,285,390.

Smith, Constance L. Light units and electrical contacts therefor. 3,286,089, 11–15–66, Cl. 240—11.2.

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Smith, Earle A., to Gleason Corp. Support for fuses. 3,285,550, 11–15–66, Cl. 248—46.

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Smith, Peter L.: *See*—
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Smith, Robert, to General Motors Corp. Refrigerant apparatus. 3,285,504, 11–15–66, Cl. 230—207.

Smith, Robert M., and L. J. Wells, to Owens-Illinois, Inc. Glass aerosol bottles and method for making same. 3,285,802, 11–15–66, Cl. 161—185.

Smith & Stone Ltd.: *See*—
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Smith, Thomas R., to The Maytag Co. Extractor apparatus drive control. 3,285,419, 11–15–66, Cl. 210—144.

Smith, Walter E.: *See*—
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Smothers, Odis B. Distributor breaker point gauge. 3,284,908, 11–15–66, Cl. 33—166.

Snow, Randolph B., to J. C. Wilson Ltd. Strip bottom tray. 3,285,399, 11–15–66, Cl. 206—44.

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Società Farmaceutici: *See*—
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Societe Angle-Belge Vulcain B.A.: *See*—
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Societe dite: Etablissements Termet Pere et Fils: *See*—
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Societe Industrielle de Brevets et d'Etudes S.I.B.E.: *See*—
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Sokol, Leo. Steering knob. 3,285,092, 11–15–66, Cl. 74—557.

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SoMaeCo-D-Inc.: *See*—
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Spalla, Celestino: *See*—
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Spong, Theodore W. Instantaneous deceleration signal switch for automotive vehicles. 3,286,056, 11–15–66, Cl. 200—61.89.

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Steen, Donald B., to United States of America, Navy. Automatic power supply for thermoelectric cooler. 3,285,020, 11–15–66, Cl. 62—3.
Steffel, LuVerne G. Ski stabilizer. 3,284,823, 11–15–66, Cl. 9—310.
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Steimen, Lawrence E., and B. A. Fulton, to Anderson, Clayton & Co. Seed cotton cleaning and ginning. 3,284,855, 11–15–66, Cl. 19—48.
Stein, Edward H., to Pittsburgh Plate Glass Co. Compartment of an assembly of structural glass plates. 3,284,974, 11–15–66, Cl. 52—204.
Stein, Robert R., and S. H. Coe, to Grant Pulley and Hardware Corp. Bi-fold hardware for foldable doors. 3,285,324, 11–15–66, Cl. 160—206.
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Sterling Drug Inc.: *See*—
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Stevens, J. P., & Co., Inc.: *See*—
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Stillman, Nathan, G. R. van Koersel, and C. E. Lindroos, to Rap Industries Inc. Packaging sheet material. 3,285,497, 11–15–66, Cl. 229—55.
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Stokes, Eugene E. Toilet seat lift. 3,284,810, 11–15–66, Cl. 4—251.
Stokes, Rembert R., to Bell Telephone Laboratories, Inc. Call transmitter. 3,286,039, 11–15–66, Cl. 179—90.
Stolpmann, James R. Indium coated O-ring seal. 3,285,631, 11–15–66, Cl. 285—354.
Storch, Harold A., to Federal joint and seal therefor. 3,285,640, 11–15–66, Cl. 287—125.
Storer, John E., Jr., H. Fackenthal, and R. J. Deal, to General Motors Corp. Transmission. 3,285,009, 11–15–66, Cl. 60—54.
Stout, Virgil L., to General Electric Co. Gettering apparatus. 3,285,687, 11–15–66, Cl. 316—30.
Stowasser, George J., to Allis Chalmers Mfg. Co. Unitary building construction. 3,284,970, 11–15–66, Cl. 52—80.
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Stratford, Herbert W., deceased, by C. H. Dicus, administrator. Motor mill. 3,285,524, 11–15–66, Cl. 241—256.
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Svanoe, Hans. 3,285,026.
Sturdivan, Rex E., to Zinsco Electrical Products. Meter pedestal. 3,286,133, 11–15–66, Cl. 317—104.
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Sullivan, Edward M., F. P. Reding, and E. W. Wise, to Union Carbide Corp. Process of preparing solid poly(allyl alcohol). 3,285,897, 11–15–66, Cl. 260—91.3.
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Sun Oil Co.: *See*—
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Svadlenak, Rudolf E., to E. I. du Pont de Nemours and Co. Anhydrous chromic acid solution and process of treating metal therewith. 3,285,788, 11–15–66, Cl. 148—6.2.
Svanoe, Hans, to Struthers Scientific and International Corp. Concentration of extracts by freezing with residence crystal growth. 3,285,021, 11–15–66, Cl. 62—58.
Svanoe, Hans, to Struthers Scientific and International Corp. Freeze crystallization of saline water by injecting an aqueous emulsion of organic refrigerant and sulfonated surfactant. 3,285,026, 11–15–66, Cl. 62—58.
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Sweger, Theodore J., to Illinois Railway Equipment Co. Chain tensioning means comprising a combined sprocket and ratchet wheel and a pawl therefor having a force applied thereto corresponding to the tension on the chain. 3,285,570, 11–15–66, Cl. 254—74.
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Koonz, Carl H., and Greenberg. 3,285,748.
Schneider, Ronald E., and Clemens. 3,285,162.
Swift, Harvey C., to Kelsey-Hayes Co. Disk brakes. 3,285,370, 11–15–66, Cl. 188—73.
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Reid, Robert B., and Pricenski. 3,285,518.
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Taccone, Russell W., to Taccone Corp. Molding machine and head with pressure compensating provision. 3,284,858, 11–15–66, Cl. 22—46.
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Taillefer, Georges: *See*—
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Tamura, Naoji, and M. Horiuchi, to Kabushiki Kaisha Taiko Denki Seisakusho (Taiko Electric Works Ltd.). Pinch roller operating device for magnetic recorder. 3,285,486, 11–15–66, Cl. 226—180.
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Taplin, John F. Piston pump having non-collapsible rolling diaphragm. 3,285,191, 11–15–66, Cl. 103—150.
Taub, David, R. D. Hoffsommer, Jr., and N. L. Wendler, to Merck & Co., Inc. 16-methyl-Δ[1,4]-pregnatriene-3,20-dione compounds. 3,285,940, 11–15–66, Cl. 260—397.45.
Tauschek, Max J., to TWR Inc. Valve stem lock tool. 3,284,887, 11–15–66, Cl. 29—249.
Taussig, Frederick, to Arundale Manufacturers, Inc. Snap lock device for plastic parts. 3,285,637, 11–15–66, Cl. 287—20.92.
Tavernelli, Joseph F., and R. A. Piepsny, to General Electric Co. Furnace heat shield. 3,285,593, 11–15–66, Cl. 263—50.
Taylor, Arthur S., to American Cyanamid Co. Collagen film. 3,285,903, 11–15–66, Cl. 260—123.7.
Taylor-Smith, Ernest J., to Selector's Aggregates Co. Ltd. Screen apparatus. 3,285,413, 11–15–66, Cl. 209—315.
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Teitelbaum, Menashe. Burglar alarm utilizing bi-stable electronic switches. 3,286,250, 11–15–66, Cl. 340—276.
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	3,285,664		3,285,597		3,285,162		3,285,688		3,285,022		3,284,878
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	3,285,667		3,285,974		3,285,193	29	3,284,816		3,285,067		3,285,039
	3,285,670		3,286,004		3,285,200		3,284,857		3,285,068		3,285,114
	3,285,673		3,286,080		3,285,230		3,284,859		3,285,075		3,285,135
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	3,285,739		3,285,498		3,285,306		3,284,899		3,285,130		3,285,956
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	3,285,932		3,285,538		3,285,586		3,285,295		3,285,264		3,284,913
	3,285,982		3,285,704		3,285,588		3,285,347		3,285,265		3,284,952
	3,285,983		3,285,731		3,285,611		3,285,376		3,285,279		3,284,959
	3,286,034		3,285,823		3,285,616		3,285,418		3,285,310		3,284,979
	3,286,035		3,285,918		3,285,633		3,285,437		3,285,324		3,284,980
	3,286,048		3,285,927		3,285,638		3,285,459		3,285,382		3,285,017
	3,286,058		3,286,057		3,285,640		3,285,464		3,285,397		3,285,018
	3,286,073		3,286,064		3,285,659		3,285,523		3,285,402		3,285,019
	3,286,082		3,286,086		3,285,683		3,285,527		3,285,457		3,285,029
	3,286,096		3,286,107		3,285,686		3,285,543		3,285,462		3,285,035
	3,286,122		3,286,120		3,285,732		3,285,548		3,285,463		3,285,109
	3,286,131		3,286,150		3,285,794		3,285,568		3,285,477		3,285,141
	3,286,134		3,286,172		3,285,805		3,285,604		3,285,505		3,285,150
	3,286,139		3,286,208		3,285,825		3,285,702		3,285,558		3,285,158
	3,286,174		3,286,234		3,285,831		3,285,706		3,285,603		3,285,163
	3,286,182	20	3,284,826		3,285,874		3,285,711		3,285,608		3,285,227
	3,286,204		3,284,832		3,285,905		3,285,715		3,285,615		3,285,281
	3,286,248		3,284,841		3,285,934		3,285,745		3,285,620		3,285,282
13	3,284,817		3,284,855		3,285,939		3,285,771		3,285,632		3,285,299
	3,284,944		3,284,872		3,285,946		3,285,784		3,285,634		3,285,308
	3,284,948		3,285,124		3,285,995		3,285,303		3,285,660		3,285,309
	3,285,000		3,285,165		3,285,996		3,285,814		3,285,687		3,285,314
	3,285,009		3,285,191		3,285,997		3,285,816		3,285,694		3,285,317
	3,285,064		3,285,195		3,286,044		3,285,846		3,285,695		3,285,325
	3,285,153		3,285,232		3,286,050		3,285,883		3,285,709		3,285,374
	3,285,214		3,285,271		3,286,053		3,285,884		3,285,729		3,285,384
	3,285,312		3,285,293		3,286,055		3,285,885		3,285,740		3,285,387
	3,285,320		3,285,328		3,286,059		3,285,908		3,285,746		3,285,425
	3,285,327		3,285,475		3,286,060		3,285,935		3,285,751		3,285,426
	3,285,381		3,285,501		3,286,135		3,285,936		3,285,757		3,285,431
	3,285,395		3,285,518		3,286,221		3,285,938		3,285,767		3,285,432
	3,285,408		3,285,525	22	3,284,821		3,285,940		3,285,780		3,285,450
	3,285,490		3,285,580		3,284,823		3,285,942		3,285,782		3,285,461
	3,285,502		3,285,697		3,284,830		3,285,950		3,285,783		3,285,471
	3,285,547		3,285,710		3,284,847		3,285,953		3,285,788		3,285,492
	3,285,701		3,285,725		3,285,057		3,285,954		3,285,793		3,285,504
	3,285,827		3,285,755		3,285,058		3,285,958		3,285,798		3,285,533
	3,285,843		3,285,764		3,285,073		3,285,959		3,285,811		3,285,544
	3,285,913		3,285,775		3,285,177		3,285,991		3,285,826		3,285,593
	3,285,933		3,285,819		3,285,218		3,285,999		3,285,828		3,285,607
	3,285,948		3,285,876		3,285,223		3,286,001		3,285,836		3,285,610
	3,286,039		3,285,882		3,285,245		3,286,002		3,285,853		3,285,617
	3,286,040		3,285,890		3,285,260		3,286,029		3,285,855		3,285,621
	3,286,045		3,285,891		3,285,266		3,286,032		3,285,868		3,285,624
	3,286,069		3,285,892		3,285,268		3,286,033		3,285,878		3,285,627
	3,286,076		3,285,895		3,285,322		3,286,036		3,285,903		3,285,652
	3,286,085		3,285,896		3,285,472		3,286,037		3,285,922		3,285,668
	3,286,113		3,285,898		3,285,476		3,286,038		3,285,928		3,285,707
	3,286,197		3,286,007		3,285,479		3,286,043		3,285,952		3,285,708
	3,286,209		3,286,062		3,285,488		3,286,052		3,285,998		3,285,714
14	3,284,810		3,286,101		3,285,522		3,286,065		3,286,017		3,285,717
	3,284,819		3,286,123		3,285,676		3,286,078		3,286,018		3,285,721
	3,284,833		3,286,128		3,285,747		3,286,079		3,286,019		3,285,724
	3,284,875		3,286,178		3,285,799		3,286,098		3,286,020		3,285,728
	3,284,975		3,286,199		3,285,872		3,286,100		3,286,028		3,285,736
	3,285,066		3,286,213		3,285,888		3,286,136		3,286,042		3,285,744
	3,285,273		3,286,226		3,285,975		3,286,143		3,286,046		3,285,758
	3,285,288		3,286,257		3,286,144		3,286,164		3,286,056		3,285,773
	3,285,316	21	3,284,835	24	3,284,928		3,286,165		3,286,068		3,285,777
	3,285,321		3,284,836		3,285,174		3,286,169		3,286,083		3,285,787
	3,285,361		3,284,843		3,285,237		3,286,205		3,286,087		3,285,790
	3,285,392		3,284,874		3,285,407		3,286,235		3,286,091		3,285,802
	3,285,419		3,284,881		3,285,528		3,286,242		3,286,092		3,285,835
	3,285,529		3,284,907		3,285,637		3,286,249		3,286,103		3,285,840
	3,285,552		3,284,909		3,285,642		3,286,267		3,286,114		3,285,858
	3,285,554		3,284,918		3,285,644	30	3,284,923		3,286,125		3,285,866
	3,286,183		3,284,919		3,285,776		3,286,152		3,286,140		3,285,867
15	3,284,891		3,284,945		3,285,817	31	3,284,851		3,286,145		3,285,871

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U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

November 15, 1966 Volume 832 Number 3

TRADEMARKS

NOTICES

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 115,901 (DECCA), Barnett Samuel & Sons, Ltd., Gramophones, phonographs, and records for the same; **Reg. No. 400,537** (DECCA (in script) RECORDS AND DESIGN), Decca Records, Inc., Mechanical and electrical sound reproducing devices of the record type, phonograph records, phonograph record albums, and phonograph record envelopes; **Reg. No. 510,900** (DECCA), same, Mechanically grooved phonograph records; **Reg. No. 524,955** (DECCA AND DESIGN), same; **Reg. No. 544,104** (DECCALITE), same, Grooved phonograph records; **Reg. No. 569,414** (DECCA GOLD LABEL SERIES AND DESIGN), same; **Reg. No. 570,315** (DECCA FAITH SERIES AND DESIGN), same, Mechanically grooved phonograph records; **Reg. No. 625,414** (NEW WORLD OF SOUND DECCA RECORDS AND DESIGN), same; **Reg. No. 630,024** (DECCA PLAYBACKS), same, News column; **Reg. No. 713,530** (DECCA AND DESIGN), same, Mechanically grooved phonograph records, filed Aug. 29, 1966, D.C., N.D. Ohio (Cleveland), Doc. C66-610, *MCA, Inc.* v. *Deco Records.*

Erratum

All references to Registration No. 816,234, to Philadelphia Chewing Gum Corporation, appearing in the OFFICIAL GAZETTE of October 4, 1966, should be deleted as the registration was withdrawn from issue.

CONDITION OF TRADEMARK APPLICATIONS AS OF SEPTEMBER 30, 1966

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]..... 28,584
Date of oldest new application..... August 4, 1965
Date of oldest amended application (filing date)..... November 26, 1963

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. BETTENDORF, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	8-4-65	4-30-64
(II) F. H. WETHERBEE, Classes 1, 3, 6, 7, 9, 10, 18, 22, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	12-3-65	11-23-63
Renewals (All Classes)	8-17-66	.....
Sec. 12(c) Publications (All Classes)	8-23-66	.....

Applications filed during the month of September—2,089

Registrations Issued..... 419—No. 818,483 to No. 818,901
Renewals Issued..... 70

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 195,118. Lancaster Chemical Corporation, Carlstadt, N.J. Filed June 8, 1964.

DURA-LAN

Class 4—Abrasives and Polishing Materials

For Terrazzo Floor Wax.
First use January 1963.

Class 5—Adhesives

For Adhesive Material Used in Floor Construction To Bond Divider Strips and Mounting in Slab.
First use Mar. 9, 1964.

Class 12—Construction Materials

For Epoxy Grout Materials for Use in the Construction of Plastic Bonded Floor Surfacing, and Sealer in the Nature of Filling Compounds.
First use January 1963.

SN 210,616. Stoelting Brothers Company, Kiel, Wis. Filed Jan. 25, 1965.

STOELTING

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Cheese Processing Equipment—Namely, Mixing Vats, Presses, Can and Pipe Washers, Can Rinsers and Dryers, Pumps, Whey Pans and Tank-Type Curd Strainers, and Receiving, Holding, and Storage Tanks.
First use March 1905.

Class 31—Filters and Refrigerators

For Frozen Confection Freezing and Dispensing Apparatus.
First use April 1963.

SN 217,684. Kanegafuchi Chemical Industry Company, Limited, Higashi-ku, Osaka, Japan. Filed Sept. 16, 1966.

Kanekalon

Owner of Japanese Reg. Nos. 477,934, dated Mar. 16, 1956; 479,069, dated Apr. 11, 1956; 480,634 and 480,651, dated May 9, 1956; and 484,242, dated June 26, 1956.

Class 1—Raw or Partly Prepared Materials

For Synthetic and Mixed Fibres.

Class 39—Clothing

For Clothing (Excluding Athletic Use Apparel)—Namely, Suits, Coats, Dresses, Underwear, Sleepware, Belts for Men, Women and Children; and Fabric Accessories (Excluding Those Belonging to Other Classes).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Woven Fabrics, Knittings, Felt and Other Cloths, Made of Natural, Synthetic, and Mixed Fibres, Textile Carpets, Sheets, Pillow Cases, Mattress Pads and Covers, Blankets, Towels, and Comforters.

Class 43—Thread and Yarn

For Threads and Yarns (Excluding Sutures and Fishing Lines).

SN 220,147. Pulse Communications, Inc., Alexandria, Va. Filed June 1, 1965.

PULSECOM

Class 21—Electrical Apparatus, Machines, and Supplies

For Transmission, Receiving, Generation and Regeneration Equipment, and Parts Therefor, for Use in the Communication and Telemetering Fields, and Electromechanical and Solid-State Electronic Door-Unlatching Devices.

Class 26—Measuring and Scientific Appliances

For Testing, Analyzing, Monitoring, Alarming, and Sensing Equipment, and Parts Therefor, for Use in the Communication and Telemetering Fields.

First use at least as early as Nov. 29, 1963.

SN 224,070. Century Electric Company, St. Louis, Mo. Filed July 23, 1965.

CENTURY

Class 13—Hardware and Plumbing and Steam Fitting Supplies

For Studs, Speed Nuts, Pilots, Rivets, Wheel Lug Nuts, and Wheel Lug Bolts.
First use March 1961.

Class 19—Vehicles

For Brake Drums.
First use 1946.

SN 225,650. Hedaya & Co., d.b.a. Lullabye Lane, New York, N.Y. Filed Aug. 13, 1965.

Lullabye Lane

Class 2—Receptacles

For Pajama Bags and Beach Bags.

Class 22—Games, Toys, and Sporting Goods

For Toys, Including Toy Stuffed Animals, Dolls, Toy Music Boxes, and Toy Brush and Comb Sets.

First use June 14,1965.

SN 225,667. Perpetuum-Ebner, Fabrik fur Feinmechanik und Elektrotechnik, Steidinger & Co., K.G., St. Georgen, Black Forest, Germany. Filed Aug. 13, 1965.

PERPETUUM-EBNER

Owner of German Reg. No. 789,969, dated Apr. 9, 1964.

Class 21—Electrical Apparatus, Machines, and Supplies

For Components for Electroacoustical Receiving and Reproducing Apparatus—Namely, Sound Transducers, Electric Motors, Sound Reproducing Amplifiers and Loud Speakers, Broadcast Reproducing Apparatus, and Combined Radio Receiver, Tape, and Record Playing Apparatus.

Class 36—Musical Instruments and Supplies

For Record Players, Record Changers, Sound Storage Media—Namely, Records and Tapes, and Cases, Housings and Enclosures Therefor.

SN 225,687. The Transilog Co., Inc., Washington, D.C. Filed Aug. 13, 1965.

TRANSILOG

Class 26—Measuring and Scientific Appliances

For Educational Teaching Aid—Namely, Test Grading Machine and Answer Card Sold as a Single Unit; Boolean Algebra and Logic Trainer for Visually Teaching Boolean Functions and Components Thereof.

Class 38—Prints and Publications

For Printed Answer Cards and Arithmetic Cards.

First use Mar. 4, 1963.

SN 226,132. Durable Steel Products, Inc., Chicago, Ill. Filed Aug. 20, 1965.

DURABLE

Class 19—Vehicles

For Replacement Parts for Motor Vehicles—Namely, Radiator Assemblies and Brake and Wheel Cylinder Assemblies, and Parts Therefor.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Replacement Parts for Motor Vehicles—Namely, Motor Vehicle Transmissions, Differentials, Clutches, Gears, Bearings, Pistons, Pump Assemblies for Fuel, Water, and Oil, and Parts Therefor, Bushings, Connecting Rods, Push Rods, Rocker Arms, Carburetors and Parts Therefor, Engine Valves and Valve Springs, Cam Shafts, and Crankshafts.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Replacement Parts for Motor Vehicles—Namely, Seals, Gaskets, and Piston Rings.

First use prior to 1961; 1955 as to "Durable."

SN 228,565. The Proctor-Silex Corporation, Philadelphia, Pa. Filed Sept. 24, 1965.

... put your reliance on a (PS) appliance

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Appliances—Namely, Spray, Steam, and Dry Irons; Toaster-Broilers; Toasters; Percolators; Drink Mixers; and Juicers.
First use July 1960 on electric irons and toasters.

Class 31—Filters and Refrigerators

For Ice Cream Freezers.
First use July 1960.

SN 230,019. Caterpillar Tractor Co., East Peoria, Ill. Filed Oct. 13, 1965.

CATERPILLAR

Owner of Reg. Nos. 79,056, 770,267, and others.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Tools, Auxiliary Equipment and Apparatus for Use in Connection With Welding Machines, More Particularly, Automatic Handling Equipment for Loading and Unloading the Welding Machines; Flash Forming Equipment; Rolling and Coining Equipment for Shaping Bar Ends; Fixturing; and Flash Removal Lathes.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Welding Machines, Parts for Such Welding Machines, and Auxiliary Equipment Therefor, More Particularly, Induction and Resistance Heaters for Heating Workpieces.

First use Feb. 1, 1965.

SN 231,065. Denoyer-Geppert Company, Chicago, Ill. Filed Oct. 22, 1965.

BIOVUE

Owner of Reg. Nos. 633,603 and 746,559.

Class 26—Measuring and Scientific Appliances

For Transparencies, Transparency Viewing Apparatus, and an Educational Transparency Visual Teaching Aid—Namely, Transparencies, Lesson Books, and Viewing Apparatus, Sold as a Unit.

Class 38—Prints and Publications

For Bound Lesson Books, Teachers' Guides, and Printed Transparencies.

First use Sept. 21, 1965.

SN 232,256. Deltrol Corp., d.b.a. Auto-Ponents, Inc., Bellwood, Ill. Filed Nov. 8, 1965.

AUTO-PONENTS

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

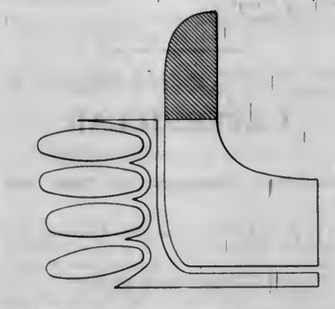
For Hydraulic Valves—Namely, Flow Control Valves, Needle Valves, Check Valves, and Constant Flow Valves.

Class 26—Measuring and Scientific Appliances

For Time Delay Controls.

First use January 1959.

SN 234,714. American Fuel & Supply Co., Inc., d.b.a. American Fuel and Supply Co., Milwaukee, Wis. Filed Dec. 16, 1965.



The drawing is lined for the color green.

Class 6—Chemicals and Chemical Compositions

For Chemicals Used as Weed Killers.

Class 10—Fertilizers

For Fertilizers.

First use Apr. 20, 1965.

SN 234,862. Certified Grocers of California, Ltd., d.b.a. Certified Grocers of California, Los Angeles, Calif. Filed Dec. 20, 1965.

SPRINGFIELD

Owner of Reg. Nos. 654,226, 715,509, and 715,859.

Class 6—Chemicals and Chemical Compositions

For Fabric-Softening Rinses, Bleaches, Starch, and Ammonia (Household).
First use December 1962.

Class 9—Explosives, Firearms, Equipments, and Projectiles

For Book Matches.
First use Aug. 25, 1961.

Class 37—Paper and Stationery

For Facial Tissues.
First use Nov. 1, 1963.

Class 45—Soft Drinks and Carbonated Waters

For Soft Drinks, and Low Calorie Soft Drinks.
First use July 1, 1962.

Class 46—Foods and Ingredients of Foods

For Unpopped Popcorn, Pickles, Cucumber Slices, Frozen Poultry, Peanut Butter, Vegetable Shortening, Vanilla Extract for Food Purposes, Sliced Cooked Ham, Candies, Jellies, Jams, and Preserves; Sliced Smoked, and Sliced Corned Beef; Mayonnaise, Vinegars, Table Syrups, Canadian Style Bacon, Ground Coffee in Cans, Canned Nuts, Ground Pepper, Sandwich Spreads, Salad Dressings, Instant Coffee; Relishes—Namely, Sweet Pickle, Hamburger, and Hot Dog; Uncooked Rice, Tea in Tea Bags, Salt, Honey, Prunes and Raisins, Barbecue Sauces, Frozen Grape Juice, Instant Mashed Potatoes, Canned Soups, Instant Dry Milk, Ice Cream, Sherbet; Seasonings—Namely, Onion Salt; Cake Mixes, Frosting Mixes, Sugar, Gelatin Desserts.
First use 1957.

Class 52—Detergents and Soaps

For Liquid Detergents, and All-Purpose Detergents.
First use Feb. 13, 1962.

SN 236,249. FMC Corporation, Philadelphia, Pa. Filed Jan. 12, 1966.

AVCERAM

Class 1—Raw or Partly Prepared Materials

For Fibers.

Class 43—Thread and Yarn

For Yarns.
First use Dec. 21, 1965.

SN 252,049. Milgo Electronic Corporation, Miami, Fla. Filed Aug. 10, 1966.



The drawing is lined for blue, but no claim is made to color. Owner of Reg. Nos. 785,909 and 791,804.

Class 21—Electrical Apparatus, Machines, and Supplies

For Stepping Switch Assemblies, Amplifier Packages, Plug-In Transistor Networks, Printed Circuit Modules, and Precision Wire Wound Resistors.

Class 26—Measuring and Scientific Appliances

For Analog Computers, Digital Data Transmission Units, Patch Panels, Plotting Boards, Digital Data Receivers, Digital to Analog and Reverse Converters, Firing Systems, Coordinate Converters, Optical Tracking Computers, Monitoring Buffer Units, Real Time Data Transmission Systems, Code Generators, Operation Radar Data Processing Systems, Multipliers and Resolvers.

First use at least as early May 18, 1965; at least as early as June 1, 1962, as to "Milgo" in a different form.

SN 252,050. Milgo Electronic Corporation, Miami, Fla. Filed Aug. 10, 1966.

MILGO

Owner of Reg. Nos. 785,909 and 791,804.

Class 21—Electrical Apparatus, Machines, and Supplies

For Stepping Switch Assemblies, Amplifier Packages, Plug-In Transistor Networks, Printed Circuit Modules, and Precision Wire Wound Resistors.

Class 26—Measuring and Scientific Appliances

For Analog Computers, Digital Data Transmission Units, Patch Panels, Plotting Boards, Digital Data Receivers, Digital to Analog and Reverse Converters, Firing Systems, Coordinate Converters, Optical Tracking Computers, Monitoring Buffer Units, Real Time Data Transmission Systems, Code Generators, Operation Radar Data Processing Systems, Multipliers and Resolvers.

First use at least as early as June 1, 1962.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.
A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 224,223. Manley Bros., Chesterton, Ind. Filed July 26, 1965.

VITASIL

For Washed and Dried and/or Screened Sands, Such as Lake Sands, Bank Sands, and Silica Sands.
First use Dec. 31, 1964.

SN 234,275. The Firestone Tire & Rubber Company, Akron, Ohio. Filed Dec. 9, 1965.

STEREON

For Copolymers of Butadiene and Styrene Prepared in Solution Polymerization Systems.
First use Nov. 9, 1965.

SN 239,518. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Feb. 24, 1966.

ELASTO-LITE

For Rubber or Plastic Shoe Soling Material Sold in Sheet Form.
First use Oct. 29, 1965.

SN 241,343. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed Mar. 18, 1966.

DF

For Synthetic Resin Molding Compositions.
First use Dec. 4, 1962.

SN 249,206. Aquitaine-Organico, Paris, France. Filed June 29, 1966.

RILSAN

Owner of French Reg. No. 496,148, dated May 12, 1961 (Paris); Natl. Inst. No. 164,144; and U.S. Reg. No. 634,488.
For Plastic Materials in the Form of Sheets, Tubes, Bars, Granules, Filaments, and Liquids.

Class 2—Receptacles

SN 200,314. Litter-Bank of America, Inc., Hereford, Tex., assignee of Artistic Receptacles Company, Plainview, Tex. Filed Aug. 21, 1964.



Applicant disclaims the term "Litter" apart from the mark as shown. The drawing is lined for green, but color is not claimed as an element of the mark.
For Trash Receptacles Built in the Shape of a Map of Geographic Areas.
First use June 5, 1964.

SN 206,070. Owens-Illinois, Inc., Toledo, Ohio, by change of name from Owens-Illinois Glass Company, Toledo, Ohio. Filed Nov. 12, 1964.

KONTUR-A-PAK

For Shipping Cartons.
First use Jan. 24, 1963.

SN 219,802. Midwest Hanger Co., Liberty, Mo. Filed May 26, 1965.

Dura-Pack

For Shirt Shells in the Nature of Paper Boxes.
First use January 1964.

SN 223,891. Hudson General Paper Corporation, Englewood, N.J. Filed July 21, 1965.

ADBAG

Applicant disclaims the representation of a bag apart from the mark as shown.
For Paper Bags.
First use July 17, 1965.

SN 224,027. Rigid Boxes, Inc., Minneapolis, Minn. Filed July 22, 1965.

NEST-LOC

Applicant disclaims the representation of the box apart from the mark as shown.
For Corrugated, Solid Fiber or Plastic Boxes With Inner Packing Materials for Cushioning and Protecting Fragile Items Packed in Corrugated, Solid Fiber or Plastic Boxes.
First use June 4, 1965.

SN 224,229. Neely Manufacturing Co., Inc., Corydon, Iowa. Filed July 26, 1965.

Ident-A-Peek

For Garment Bags.
First use June 28, 1965.

SN 224,808. Tee-Pak, Inc., Chicago, Ill. Filed Aug. 2, 1965.
For Plastic Tubular Film Packaged on Dispensing Reels.

CHUB-A-MATIC

First use June 2, 1964.

SN 225,838. Western Kraft Corporation, Portland, Oreg. Filed Aug. 16, 1965.

WESTERN
AGRI-COAT

For Corrugated Boxes.
First use Aug. 30, 1963.

SN 232,744. United Steel and Wire Company, Battle Creek, Mich. Filed Nov. 15, 1965.

UNI-NEST

For Wire Containers for Storage of Food Products, Particularly Baked Goods.
First use Apr. 21, 1964.

SN 242,453. Louise W. Hopkins, Montclair, N.J. Filed Apr. 1, 1966.

Q
Life liner

The word "Liner" and the representation of a flower pot are disclaimed apart from the mark as shown.
For Flower Pots and Flower Pot Liners.
First use Feb. 23, 1966.

Class 4—Abrasives and Polishing Materials

SN 230,010. Turtle Wax, Inc., Chicago, Ill. Filed Oct. 12, 1965.

WAXPLICATOR

For Applicator Impregnated With a Polishing Preparation for Leather, Plastics, and the Like.
First use Sept. 22, 1965.

SN 234,530. The Drackett Company, Cincinnati, Ohio, assignee of Bristol-Myers Company, New York, N.Y. Filed Sept. 16, 1966.

VANTAGE

For Abrasives and Polishing Materials, Including a Furniture Polish.
First use July 23, 1965.

SN 234,532. The Drackett Company, Cincinnati, Ohio, assignee of Bristol-Myers Company, New York, N.Y. Filed Sept. 1, 1966.

VANTAGE HOUSE

For Abrasives and Polishing Materials, Including a Floor Wax and Furniture Polish.
First use July 23, 1965.

Class 5—Adhesives

SN 205,669. Schramm Fiberglass Products, Inc., Chicago, Ill., assignee of Cory Corporation (Pace Home Products Division), Chicago, Ill. Filed Nov. 6, 1964.

GLUE DOCTOR

"Glue" is disclaimed apart from the mark.
For Adhesive for Use With Porous Materials.
First use July 31, 1964.

SN 207,653. Pierce & Stevens Chemical Corp., Buffalo, N.Y. Filed Dec. 7, 1964.

MONOBOND

For Shoe Sole Attaching Adhesives.
First use on or about Sept. 15, 1964.

SN 229,424. Benjamin Foster Company, Philadelphia, Pa. Filed Oct. 6, 1965.

MARINER

For Adhesives for Cementing Insulation to Structural Surfaces.
First use Apr. 1, 1965.

Class 6—Chemicals and Chemical Compositions

SN 189,657. Colonial Alloys Company, Philadelphia, Pa. Filed Mar. 26, 1964.

HI BARRIER DUAL SEALS

The words "Dual Seals" are disclaimed apart from the mark as shown.
For Chemicals of the Salt Bath Type for Effecting Sealing of Oxide Coatings on Aluminum.
First use July 31, 1962.

SN 215,480. American Hoechst Corporation, New York, N.Y. Filed Apr. 1, 1965.

IMPRAPELL

For Oxidative Depilation Agent.
First use November 1964.

SN 225,445. A. E. Staley Manufacturing Company, Decatur, Ill. Filed Aug. 10, 1965.

LIN-BOND

For Laundry Starch.
First use July 16, 1965.

SN 225,920. Tenneco Chemicals, Inc., New York, N.Y., by merger of Berkshire Color & Chemical Co., Reading, Pa. Filed Aug. 18, 1965.

DUROFIX

For Fixing Agents for Nylon Dyes on Nylon, and Reserving Agents for the Application of Direct Dyes to Blends of Nylon and Cellulosic Fibers.
First use Apr. 10, 1963.

SN 226,603. Allied Chemical Corporation, New York, N.Y. Filed Aug. 27, 1965.

TEXFLAME

For Liquefied Petroleum Gases—Namely, Butane and Propane.
First use May 19, 1965.

SN 226,914. Henry Valve Company, Melrose Park, Ill. Filed Sept. 1, 1965.

UNI-COR

Owner of Reg. No. 799,028.
For Kit Containing Chemicals for Testing Acidity.
First use during January 1965.

SN 227,218. Alco Chemical Co., Artesia, Calif. Filed Sept. 7, 1965.

FLY FIGHTER

The word "Fly" is disclaimed apart from the mark as shown.
For Insecticide.
First use Dec. 12, 1957.

SN 227,376. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed Sept. 7, 1965.

LOXENE

Owner of Reg. No. 784,234.
For Antimicrobial Laundry Neutralizer and Brightener, Particularly Adapted for the Control of Mildew and the Growth of Staphylococcus Aureus.
First use June 16, 1965.

SN 227,544. The Ansul Company, Marinette, Wis. Filed Sept. 10, 1965.

ESCORT

For Fire Extinguishing Agent—Namely, Liquid Concentrate for Preparing Light Water.
First use June 23, 1965.

SN 229,064. C-Z Chemical Company, Inc., Beloit, Wis. Filed Oct. 1, 1965.

GERMA-SOFT

For Laundry Preparation for Softening Fabrics.
First use May 21, 1965.

SN 229,115. Northern Propane Gas Company, Omaha, Nebr. Filed Oct. 1, 1965.

Norgas

For Liquified Gaseous Fuels, Particularly Propane and Butane, Used as Industrial, Agricultural, or Residential Fuels.
First use August 1965.

SN 229,966. Faesy & Besthoff, Inc., Edgewater, N.J. Filed Oct. 12, 1965.

F & B

Owner of Reg. Nos. 688,146 and 698,805.
For Animal Repellents—Namely, Tobacco Dust and Rabbit and Dog Chaser.
First use Apr. 28, 1953.

SN 233,670. Armour and Company, Chicago, Ill. Filed Dec. 1, 1965.

KESSLER CHEMICALS

The word "Chemicals" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 323,513 and 510,688.
For Organic Esters.
First use on or prior to Sept. 22, 1958.

SN 235,416. Merck & Co., Inc., Rahway, N.J. Filed Dec. 28, 1965.

LDIM

For Aliphatic Diisocyanate for Use in the Manufacture of Polyurethanes and Polyureas.
First use Nov. 30, 1965.

SN 235,622. Chevron Chemical Company, San Francisco, Calif. Filed Jan. 3, 1966.

ORONITE

Owner of Reg. Nos. 119,923, 661,811, and others.
For Fumaric Acid.
First use January 1959.

SN 235,937. Rhodia Inc., New York, N.Y. Filed Jan. 6, 1966.

TEXENE

For Fragrance for Imparting Desirable Odor Characteristics to Cosmetics, Textiles, Paper, Plastics, and Rubber.
First use Oct. 26, 1965.

SN 235,950. Amchem Products, Inc., Ambler, Pa. Filed Jan. 7, 1966.

SINDONE

For Herbicides.
First use Aug. 20, 1965.

SN 237,327. Geigy Chemical Corporation, Ardsley, N.Y. Filed Jan. 26, 1966.

PROMISAN

Owner of Reg. No. 722,113.
For Chemical Preparations Used as Fixatives for Dyes.
First use Jan. 13, 1966.

SN 239,160. Lee Patten Seed Company, New Jersey, Moonachie, N.J. Filed Feb. 18, 1966.

CRABOUT

Owner of Reg. No. 671,054.
For Herbicide.
First use Dec. 29, 1965.

SN 239,771. Heatbath Corporation, Springfield, Mass. Filed Feb. 28, 1966.

PEN KARB

For Activated Salt Bath Carburizers To Be Used in a Molten State for Case Hardening Steel Parts.
First use November 1949.

SN 239,807. Schering A.G., Berlin, Germany. Filed Feb. 28, 1966.

NOVIGANTH

Owner of German Reg. No. 560,452, dated Feb. 21, 1941.
For Electroplating Bath Chemicals.

SN 240,337. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Mar. 7, 1966.

COMBICELLS

For Laboratory Reagent for Detecting and Identifying Antibodies.
First use Aug. 13, 1965.

SN 240,338. Chas. Pfizer & Co. Inc., New York, N.Y. Filed Mar. 7, 1966.

CELLTROL

For Laboratory Reagent for Determining Blood Cell Count.
First use Aug. 16, 1965.

SN 240,549. Rhodia Inc., New York, N.Y. Filed Mar. 9, 1966.

ODABAN

For Chemical Composition of Fragrance Chemicals, Principally From the Classes of Alcohols, Esters, Aldehydes, Ketones, Ethers, Hydrocarbons, Suitable for the Imparting of Odor Properties to Textiles, Plastics, Paper, and Rubber.
First use Oct. 26, 1965.

SN 240,815. Western Oil and Fuel Company, Minneapolis, Minn. Filed Mar. 11, 1966.



The drawing is lined for the colors red and violet; applicant disclaims color as part of the mark.
For Antifreeze.
First use Aug. 31, 1964.

SN 240,953. Premier Industrial Corporation, Cleveland, Ohio. Filed Mar. 14, 1966.

SPRINGVALE

For Room Deodorant Which Will Aid in Reducing the Hazard of Infection by Airborne Organisms.
First use Jan. 7, 1966.

SN 241,035. Marie L. Cleary, d.b.a. Clearco Products Company, Philadelphia, Pa. Filed Mar. 15, 1966.

CLEARCO

For Lubricant for Yarns and Threads, and for Fabrics To Be Cut, Sewn, or Pressed.
First use Jan. 8, 1945.

SN 241,608. West Chemical Products, Inc., Long Island City, N.Y. Filed Mar. 22, 1966.

WESTRON

For Chemical Preparation for Use in the Manufacture of an Antibacterial Skin Cleanser.
First use July 16, 1965.

SN 241,711. Union Carbide Corporation, New York, N.Y. Filed Mar. 23, 1966.

AMBUSH

For Insecticide.
First use on or about Mar. 3, 1966.

SN 241,814. Standard International Corporation, Andover, Mass. Filed Mar. 24, 1966.

COMPLETE

Owner of Reg. No. 728,647.
For Chemical Preparation Which Whitens White Fabrics and Brightens Colored Fabrics.
First use Feb. 24, 1966.

SN 242,268. Nitro-Aire Corporation, Miami, Fla. Filed Mar. 30, 1966.

NITRO-AIRE

For Nitrogen.
First use Jan. 13, 1965.

SN 243,654. FMC Corporation, New York, N.Y. Filed Apr. 18, 1966.

KP-140

For Plasticizer.
First use January 1941.

SN 243,755. Allied Chemical Corporation, New York, N.Y. Filed Apr. 19, 1966.

PEGASOL

For Solvent for Acid Gas Impurities in Natural or Processed Gases.
First use Mar. 7, 1966.

SN 244,241. Parke, Davis & Company, Detroit, Mich. Filed Apr. 25, 1966.

CHLOROMYCETIN

Owner of Reg. No. 509,735.
For Sensitivity Discs for Testing Microorganisms to Chloramphenicol.
First use on or before Oct. 18, 1951.

SN 245,214. Martin-Marietta Corporation, New York, N.Y. Filed May 9, 1966.

POZZOLITH

Owner of Reg. No. 290,430.
For Chemical and Mineral Substances for Use in the Manufacture of Cement, Concrete, Mortar, and Like Materials To Improve Their Properties.
First use in or about 1930.

SN 245,269. Alvin J. Conner, d.b.a. The Al-Con Chemical Co., New Orleans, La. Filed May 6, 1966.



For Rust Converter and Chemically Reactive Solvent and Rust Inhibitor.
First use Apr. 5, 1946.

SN 246,027. Sanipro Chemical Corp., Brooklyn, N.Y. Filed May 19, 1966.

sanipro

For Bacteria Enzyme Preparation and Chemical Compound for Liquefying Solids and Neutralizing Stains and Organic Discolorations in Urinals, Water Closets, and Waste Lines.
First use Feb. 1, 1940.

SN 247,290. Home Dental Aids Company, d.b.a. Home Dental Aids Co., Inc., Bakersfield, Calif. Filed June 6, 1966.

SEATROL

For Toilet Seat Disinfectant.
First use May 20, 1966.

SN 247,757. Chas. J. Webb Sons Co., Inc., d.b.a. Corrosion Reaction Consultants, Philadelphia, Pa. Filed June 10, 1966.

CRC MARINE FORMULA 6-66

The words "Marine" and "Formula" are disclaimed apart from the mark as shown. Owner of Reg. No. 696,251.
For Rust and Corrosion Inhibitor for Protecting Metal Surfaces on Boats and Components Thereof From the Corrosive Effect of Salt Air and/or Salt Water.
First use Feb. 19, 1960.

SN 248,755. Diamond Alkali Company, Cleveland, Ohio. Filed June 23, 1966.

DACONIL 2787

Owner of Reg. No. 742,188.
For Fungicide.
First use May 25, 1966.

SN 249,925. S. C. Johnson & Son, Inc., Racine, Wis. Filed July 11, 1966.

ACRYSCOPE

Owner of Reg. Nos. 753,520 and 760,868.
For Polymeric Chemicals for Use in the Manufacture of Paints, Inks, Metal Coatings, Corrosion Inhibitors, Plastics, Resins, and Water Soluble and Spirit Soluble Systems for Use as Coatings for Hard and Flexible Surfaces.
First use Oct. 11, 1965.

SN 252,320. Union Carbide Corporation, New York, N.Y. Filed Aug. 15, 1966.

TEMIK

For Insecticide.
First use Apr. 28, 1966.

SN 252,791. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Aug. 22, 1966.

ELECTROCOLOR

Owner of Reg. No. 805,153.
For Photographic Print Dye.
First use Aug. 15, 1966.

SN 252,995. Johnson & Johnson, New Brunswick, N.J. Filed Aug. 24, 1966.

SUDDEN SHOWER

For Room Freshener.
First use July 26, 1966.

SN 253,097. Stauffer Chemical Company, New York, N.Y. Filed Aug. 25, 1966.

SI-O-KWEL

For Antifoam Compound.
First use Aug. 4, 1966.

Class 8 — Smokers' Artides, Not Including Tobacco Products

SN 239,176. Scripto, Inc., Atlanta, Ga. Filed Feb. 18, 1966.

SCRIPTO

For Cigar and Cigarette Lighters, and Flints and Wicks for Lighters.
First use Mar. 2, 1956.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 218,219. Precision Engineered Products Corporation, Charlotte Amalie, Virgin Islands. Filed May 6, 1965.



THE MINUTEMAN

For Pellet Air Rifles.
First use Nov. 16, 1964.

SN 226,470. Remington Arms Company, Inc., Bridgeport, Conn. Filed Aug. 25, 1965.

DIAL-A-ROUND

For Ammunition—Namely, Rimfire Cartridges.
First use Apr. 12, 1965.

Class 12 — Construction Materials

SN 225,487. Martin-Marietta Corporation, New York, N.Y. Filed Aug. 11, 1965.

CONFILM

For Film Forming Materials To Be Applied to the Surface of Freshly Poured Concrete by Spraying or Other Means To Reduce the Rapid Evaporation of Water and Improve the Finishing Characteristics of the Concrete.
First use on or about May 7, 1965.

SN 234,428. Imperial Chemical Industries Limited, Millbank, London, England. Filed Dec. 13, 1965.

PURLBOARD

Owner of British Reg. Nos. B843,147 and B855,571, dated Dec. 21, 1962, and Oct. 22, 1963, respectively.
For Laminated Building Boards Containing Foamed Materials.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 229,720. Allis-Chalmers Manufacturing Company, Milwaukee, Wis. Filed Oct. 11, 1965.

STREAMSEAL

For Butterfly Valves.
First use in or about September 1962.

SN 232,479. Republic Industrial Corporation, New York, N.Y. Filed Nov. 10, 1965.



The drawing is lined for blue, and this color is claimed as an integral portion of the mark.
For Lock Nuts.
First use Oct. 1, 1963.

SN 237,396. Star Key & Lock Manufacturing Co., Inc., Brooklyn, N.Y. Filed Jan. 26, 1966.

COMPAR-A-BOARD

For Portable Boards Provided With Hooks for Receiving Key Blanks and Containing Comparative Key Blank Numbers of the Leading Manufacturers Printed on the Board Next to Each Key Hook.
First use Jan. 3, 1966.

SN 238,361. Nippon Bulge Industries, Ltd., Minato-ku, Tokyo, Japan. Filed Feb. 8, 1966.

NBI

Owner of Japanese Reg. No. 711,170, dated June 22, 1966.
For Elbows, T's, and Other Pipe Fittings.

SN 239,105. Amco Engineering Company, Chicago, Ill. Filed Feb. 18, 1966.

AMCO CRAFT

For ¾-Inch Square Aluminum Tubing, Corner Joints Die Cast for Interfit With the Aforesaid Tubing, and Related Fastening Material for Assembly Into Cabinets, Storage Racks, and Other Structures, for Use by the Home Craftsman.
First use Feb. 8, 1966.

SN 239,276. Jet-Flo Corporation, Tyler, Tex. Filed Feb. 21, 1966.



For Shower Bath Dispenser.
First use December 1964.

SN 241,384. Standard Screw Company, Hartford, Conn. Filed Mar. 18, 1966.



For Fluid Valves—Namely, Faucets.
First use Jan. 14, 1966.

SN 242,065. Stockham Valves & Fittings, Inc., Birmingham, Ala. Filed Mar. 28, 1966.

BLUELINE

For Valves.
First use Mar. 25, 1963.

SN 242,791. The Bishop and Babcock Corporation, Toledo, Ohio. Filed Apr. 6, 1966.



For Sheet Metal Fastening Devices, Including J-Shaped Clips, C-Shaped Clips; Flat Nuts Having Screw-Receiving Impressions; Bridge Spacers; Push-On Fasteners; Tube and Wire Clips; Snap Nut Fasteners; Retainer Rings; Angle Bracket Fasteners; and Vehicle Body Fasteners.
First use Feb. 21, 1955.

SN 244,450. Adhaco Hardware Corporation, Chicago, Ill. Filed Apr. 28, 1966.

ADHACO

For Door Hardware, Comprising Panic Bars and Locks, Threshold Closers, Adjustable Stops, Strap Hinges, Air Seals, Thresholds, Adjustable Astragals, Comprising Vertical Frame Members in Metal Windows or Doors, and Multi-Point Locks.
First use Oct. 1, 1943.

SN 244,558. American Dispenser Company, Inc., New York, N.Y. Filed Apr. 29, 1966.

LATHURSHELF

Owner of Reg. Nos. 600,269 and 690,776.
For Soap Dispenser.
First use 1946.

SN 244,814. The Evans Brick and Pipe Company, Inc., Uhrichsville, Ohio. Filed May 3, 1966.

TEPCO

For Plastic Pipe and Fittings Therefor.
First use on or about Sept. 1, 1965.

SN 245,788. Stephen A. Young Corporation, Flora, Ind. Filed May 16, 1966.

THE BIG DIPPER

For Plumbing Fixtures—Namely, Sink Strainers and Parts Therefor, Including Handles, Lift Rods, Ball Rods, Baskets, and Tailpieces.
First use in or about March 1966.

SN 245,995. South Chester Corporation, Lester, Pa. Filed May 18, 1966.

THREDSTUDS

Owner of Reg. No. 735,891.
For Screw Anchor for Sheet Metal.
First use Apr. 28, 1966.

Class 14 — Metals and Metal Castings and Forgings

SN 235,432. Sharon Steel Corporation, Sharon, Pa. Filed Dec. 28, 1965.

GALVA-BRITE

For Coated Strip Steel.
First use Aug. 16, 1965.

Class 15 — Oils and Greases

SN 205,672. Crawford Fitting Company, Solon, Ohio. Filed Nov. 6, 1964.

Dry Goop

The word "Dry" is disclaimed apart from the mark as shown, but the applicant waives none of its common law rights therein. Owner of Reg. Nos. 660,500, 660,501, and 669,780.
For Resinous Tape Sealant and Anti-Gallant for Threaded Connections.
First use Oct. 27, 1964.

SN 236,109. Macmillan Ring-Free Oil Co., Inc., Los Angeles, Calif. Filed Jan. 10, 1966.



Applicant disclaims the term "Racing-Formula" apart from the mark as shown. Owner of Reg. Nos. 731,744, 748,328, and others.
For Lubricating Oil.
First use Nov. 24, 1965; January 1925 as to "Macmillan."

SN 250,551. Permatex Company, Inc., Brooklyn, N.Y. Filed July 19, 1966.

TOON-OYL

Owner of Reg. No. 365,534.
For Lubricating Oil for Degumming, Decarbonizing, and Prevention of Formation of Sludge in the Interior Working Parts of Internal Combustion Engines.
First use March 1960.

Class 16—Protective and Decorative Coatings

SN 189,668. Agway, Inc., Syracuse, N.Y., by merger of Cooperative Grange League Federation Exchange, Ithaca, N.Y. Filed Mar. 26, 1964.

AGWAY

For Interior and Exterior House Paint and Roof Paint.
First use Mar. 5, 1964.

SN 249,208. Aquitaine-Organico, Paris, France. Filed June 29, 1966.

RILSAN

Owner of French Reg. No. 496,148, dated May 12, 1961 (Paris); Natl. Inst. No. 164,144; and U.S. Reg. No. 634,488.
For Protective Coatings for Metallic or Other Surfaces To Prevent Rust and Decay, Specifically Varnishes, Shellacs, and Resinous Plastic Coatings.

Class 17—Tobacco Products

SN 240,487. Universal Cigar Corporation, New York, N.Y. Filed Mar. 8, 1966.

RIVALS

For Cigars.
First use February 1966.

Class 18—Medicines and Pharmaceutical Preparations

SN 229,091. Hardrock Corporation, East Meadow, N.Y. Filed Oct. 1, 1965.



Applicant disclaims the words "Tonic" and "Iron" apart from the mark as shown. The drawing is lined for the color gold.
For Iron Tonic Fortified With Vitamins E, B_{12}, and B_{12}.
First use Apr. 16, 1965.

SN 231,304. Southwestern Drug Corporation, Dallas, Tex. Filed Oct. 22, 1965.

POW

For Medicated Powder for Athlete's Foot and Fungus Infection of the Groin.
First use Aug. 25, 1964.

SN 249,198. Hudson National, Inc., d.b.a. Hudson Vitamin Products, New York, N.Y. Filed June 29, 1966.

PET-A-SEPTIC

For Antiseptic Preparation for Dogs and Cats.
First use June 16, 1966.

SN 249,201. Hudson National, Inc., d.b.a. Hudson Vitamin Products, New York, N.Y. Filed June 29, 1966.

MINDROX

For Chewable Antacid Tablets.
First use June 15, 1966.

SN 249,286. Richardson-Merrell, Inc., d.b.a. The Wm. S. Merrell Company, Cincinnati, Ohio. Filed June 30, 1966.

ZYPRELONE

For Pharmaceutical Preparations—Namely, Adreno-Cortical Steroids.
First use May 13, 1966.

SN 249,287. Richardson-Merrell, Inc., d.b.a. The Wm. S. Merrell Company, Cincinnati, Ohio. Filed June 30, 1966.

ZOLAFON

For Antibacterial Pharmaceutical Preparations.
First use May 13, 1966.

SN 249,288. Richardson-Merrell, Inc., d.b.a. The Wm. S. Merrell Company, Cincinnati, Ohio. Filed June 30, 1966.

ZYPRED

For Pharmaceutical Preparations—Namely, Adreno-Cortical Steroids.
First use May 13, 1966.

Class 19—Vehicles

SN 227,373. Western Campers, Inc., Buena Park, Calif. Filed Sept. 7, 1965.

TROPICANA

For Camper Bodies Designed To Be Mounted on Vehicles.
First use at least as early as June 1, 1961.

SN 228,823. Hilman Equipment Company, Inc., Sea Girt, N.J. Filed Sept. 28, 1965.

FLAT-TOP

For Load Carrying Devices—Namely, Rollers for Moving Machinery and Other Heavy Objects.
First use at least as early as 1960.

SN 233,522. Outboard Marine Corporation, Waukegan, Ill. Filed Nov. 29, 1965.

SKEE-HORSE

Owner of Reg. No. 259,154.
For Motor Driven Snow Vehicles.
First use Sept. 17, 1964.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 179,743. Transistor Electronics Corporation, Minneapolis, Minn. Filed Oct. 24, 1963.

DATA PANEL

For Panels Using Electrical Logic and Lamp Control Circuits Forming an Assembly for Visual Display.
First use Sept. 23, 1963.

SN 199,656. Communication Papers, Inc., Moosic, Pa. Filed Aug. 11, 1964.

TIMEMARK-14

Owner of Reg. No. 753,235.
For Electrosensitive Recording Paper.
First use Feb. 15, 1963.

SN 206,464. Oak Electro/Netics Corp., d.b.a. Oak Manufacturing Co., Crystal Lake, Ill. Filed Nov. 18, 1964.

MODULINE

For Switches.
First use October 1963.

SN 217,615. EMC Technology, Inc., Philadelphia, Pa. Filed Apr. 29, 1965.

PILL

For Circuit Termination Devices.
First use Mar. 9, 1965.

SN 226,527. Irvin Gassenheimer and Irvin Gassenheimer, Jr., d.b.a. Electronic Engineers, Montgomery, Ala. Filed Aug. 26, 1965.

HOLI-MATIC

For Electronic Room Status and Maid Signalling Service Systems for Signalling at Preselected Locations the Status of Hotel and Motel Rooms, and Parts Thereof.
First use May 25, 1965.

SN 231,708. TRW, Inc., Cleveland, Ohio. Filed Oct. 27, 1965.

PYROLAM

For Impregnated Electrical Insulating Sheets and Tapes and Rods.
First use Aug. 9, 1965.

SN 231,796. ACR Electronics Corp., New York, N.Y. Filed Oct. 29, 1965.

RESCUE LITE

For Portable High Intensity Lamps for Marking, Warning, Signalling Distress, and Search Operations.
First use in about March 1958.

SN 233,392. Radio Corporation of America, New York, N.Y. Filed Nov. 26, 1965.

DIMENSIA IV

For Television Receivers, Radios and Phonographs, and Home Entertainment Centers, Which Consists of a Television Receiver, a Radio, and a Phonograph in One Self-Contained Unit.
First use on or about July 24, 1965.

SN 236,466. Clarostat Mfg. Co., Inc., Dover, N.H. Filed Jan. 14, 1966.

CLARO-DEC

Owner of Reg. No. 613,521.
For Electrical Resistors.
First use on or about Nov. 15, 1965.

Class 22—Games, Toys, and Sporting Goods

SN 192,543. American Magnetop Corporation, Brooklyn, N.Y. Filed May 4, 1964.

MAGNETOP

No claim of exclusive right is made to "Top," for the goods recited.
For Toy Spinning Tops.
First use Mar. 16, 1964.

SN 201,036. Andre Lafrance, Montreal, Quebec, Canada. Filed Sept. 1, 1964.

LIMBERBAG

Priority claimed under Sec. 44(d) on Canadian application filed Apr. 17, 1964; Reg. No. 138,529, dated Dec. 18, 1964.
For Bags Made of Linen or Other Textile Fabrics or of Other Similar Products, Containing Sand, Cylinder-Shaped, of Varying Size, Used as Physical Exercise and Development Equipment.

SN 222,346. Crisloid Plastics, Inc., Providence, R.I. Filed June 30, 1965.

CASINO KENO

No claim of exclusive right is made to "Keno" apart from the mark as shown.
For Apparatus Sold as a Unit for Playing a Board-Type Parlor Game.
First use May 10, 1965.

SN 229,463. Springbok Editions, Inc., New York, N.Y. Filed Oct. 6, 1965.

SPRINGBOK

For Toys, Puzzles, Board Games, Word Games, and Art-Related Games.
First use Oct. 10, 1963.

SN 229,836. Mattel, Inc., Hawthorne, Calif. Filed Oct. 11, 1965.



For Doll, Doll Clothes, and Doll Accessories.
First use Sept. 3, 1965.

SN 231,447. Mattel, Inc., Hawthorne, Calif. Filed Oct. 23, 1965.

BABE BIDDLE

Applicant disclaims the word "Babe" apart from the mark as shown.
For Dolls, Doll Clothes, and Doll Accessories.
First use Oct. 12, 1965.

SN 233,205. Williams Gold Refining Company, Inc., Buffalo, N.Y. Filed Nov. 23, 1965.

IMPERIAL

For Mouthguards.
First use Feb. 13, 1964.

SN 233,947. Mary Parmer Roemer and Albert L. Roemer (firm), Montgomery, Ala. Filed Dec. 3, 1965.

E-Z-WAR

For Printed Pads for Playing Game.
First use Oct. 28, 1965.

SN 233,978. Alou Tackle Co., Inc., Little Neck, N.Y. Filed Dec. 6, 1965.

ALOU

For Lures, Hooks, Weights, and Artificial Bait Devices, and Parts Thereof, Used in Fishing.
First use July 14, 1965.

SN 234,132. Louis Marx & Co., Inc., New York, N.Y. Filed Dec. 7, 1965.

WORLD WIDE SECRET AGENT

Owner of Reg. No. 806,336.
For Toy Guns, Toy Gun Sets, Toy Sleuth Sets, and Accessories, Such Sets Consisting of Pistols, Silencers, Bullets, Holsters, Spy Scopes, Rifles, Shells, Identification Cards, Buttons, Barrel Extensions, Walkie-Talkies, Grenades, Message Missiles, and Homing Toners.
First use Sept. 30, 1965.

SN 234,937. Roystoys Inc., Glenview, Ill. Filed Dec. 20, 1965.

OOPS

For Equipment or Apparatus for Playing a Marble-Type Game.
First use Dec. 5, 1965.

SN 236,577. Lou J. Eppinger Manufacturing Company, Dearborn, Mich. Filed Jan. 17, 1966.

LIL' DEVLE

For Artificial Fish Lures.
First use on or about Aug. 8, 1965.

SN 237,239. Maxwell Manufacturing Company, Vancouver, Wash. Filed Jan. 25, 1966.

OKIE DRIFTER

For Fishing Lure Consisting of an Artificial Salmon Egg Glob of Varying Colors and Fluoresence, Sold Either Alone or Arranged Between Two Hooks.
First use Oct. 15, 1956.

SN 237,255. Sevenstrand Tackle Manufacturing Company, Long Beach, Calif. Filed Jan. 25, 1966.

KONAHEAD

For Fish Lure.
First use Oct. 6, 1965.

SN 242,090. Donald L. Johnson, d.b.a. Don L. Johnson Company, San Pedro, Calif. Filed Mar. 23, 1966.

SPY-EYE

For Toys—Namely, Miniature Rear-View Mirrors in the Nature of Periscopes.
First use Mar. 7, 1966.

SN 242,610. Donald L. Johnson, d.b.a. Don L. Johnson Company, San Pedro, Calif. Filed Apr. 4, 1966.

SPY-DETECTOR

For Toys—Namely, Miniature Rear View Mirrors in the Nature of Periscopes.
First use Apr. 1, 1966.

SN 246,024. Mattel, Inc., Hawthorne, Calif. Filed May 19, 1966.

SWITCH 'N GO

For Toy Vehicles and Accessories Therefor.
First use Jan. 27, 1966.

SN 250,113. Mattel, Inc., Hawthorne, Calif. Filed July 13, 1966.

MATTEL, INC.

Owner of Reg. Nos. 635,129, 753,681, and others.
For Bicycles Marketed Primarily for Use by Children, Tricycles, and Children's Riding Carts.
First use Feb. 12, 1964.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 187,119. L'Air Liquide, Societe Anonyme pour l'Etude et l'Exploitation des Procedes Georges Claude, Paris, France. Filed Feb. 20, 1964.

Owner of French Reg. No. 487,418, dated Apr. 8, 1960 (Paris); Natl. Inst. No. 142,566.
For Liquified Gas Pumps and Turbines and Gas Compressors; Welding Positioning Equipment; and Gas Production Plant, Including Pressure Regulators and Reducers and Installations for Distribution of Gas in the Gaseous or Liquid States.

SN 196,192. Pivot Punch Corporation, North Tonawanda, N.Y. Filed June 22, 1964.

WHIPSLEEVE

For Punches.
First use on or about Jan. 15, 1961.

SN 196,193. Pivot Punch Corporation, North Tonawanda, N.Y. Filed June 22, 1964.

STRAIGHT GROUND

For Punches.
First use on or about Jan. 15, 1961.

SN 198,684. Vacmobile Manufacturing Company Limited, Kilburn, London, England. Filed July 28, 1964.

VACMANCO

For Industrial Vacuum Cleaners, and Coin-Operated, Self-Service Car Wash Machines.
First use Mar. 16, 1963; in commerce Mar. 16, 1963.

SN 209,531. Partek Corporation, Houston, Tex. Filed Jan. 7, 1965.

PARTEK

For High Pressure, Hydraulic Cleaning and Pumping Equipment, and Control Nozzles Used in Connection Therewith Useful for Cleaning Metal, Concrete, Wood or other Surfaces, and Machinery, Equipment, Buildings, and Other Structures.
First use Nov. 23, 1964.

SN 222,389. Lifetime Cutlery Corp., Brooklyn, N.Y. Filed June 30, 1965.

LC

For Flatware and Kitchen Tools, Not Made of or Plated With Precious Metals—Namely, Table Knives, Forks and Spoons, Kitchen Knives, Steak Knives, Cleavers, Sharpening Steels, Steak Knife Sets, Carving Knife Sets, Combination Carving Knife and Steak Knife Sets; Kitchen Tool Sets Comprised of a Basting Spoon, Short Turner, Long Turner, Potato Masher, Pot Fork, Soup Ladle, Slotted Spoon and Rack; Kitchen Hostess Sets Comprised of a Berry Spoon, Gravy Ladle, Serving Fork and Cake Server; and Kitchen Cleaver Sets.
First use November 1963.

SN 222,843. Hydraulic Machinery Company, Butler, Wis. Filed July 7, 1965.

HY-LOADER

For Vehicle-Mounted Log Mover and Loader.
First use Apr. 16, 1965.

SN 227,529. Tempo Products Company, Solon, Ohio. Filed Sept. 9, 1965.

TEMPO

Owner of Reg. Nos. 621,666, 664,885, and 710,145.
For Combination Portable Tanks and Pumps for Draining and Refilling Gasoline Tanks.
First use Aug. 16, 1965.

SN 227,530. Tempo Products Company, Solon, Ohio. Filed Sept. 9, 1965.

Tempo TANKER

Owner of Reg. Nos. 621,666, 664,885, and 710,145.
For Combination Portable Tanks and Pumps for Draining and Refilling Gasoline Tanks.
First use Aug. 16, 1965.

SN 227,602. The Miles Standard Corporation, Saginaw, Mich. Filed Sept. 10, 1965.



For Machine Tools, Particularly Machines Capable of Reaming, Drilling, Chamfering, Milling, Plunging, Tapping, Counterboring, Spot Facing, Turning, Recessing, Grooving, and Countersinking.
First use Nov. 2, 1964.

SN 228,299. Consolidated Trades, Inc., d.b.a. Air Tool Manufacturing Co., Van Nuys, Calif. Filed Sept. 22, 1965.



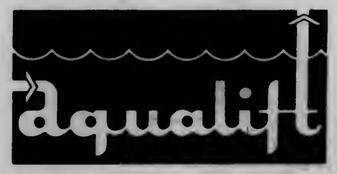
The drawing is lined for the color red, but is not limited to any particular color.
For Pneumatic Tabbing Machines for Roof Shingles, and Pneumatic Ram Loaders for Such Machines.
First use Feb. 10, 1965.

SN 232,139. Otis Engineering Corporation, Dallas, Tex. Filed Nov. 4, 1965.

OTIS

Owner of Reg. Nos. 356,656, 572,820, and others.
For Oil and Gas Well Tools and Oil and Gas Well Drilling, Producing and Servicing Equipment—Namely, Chokes, Landing Nipples, Regulators of the Variable Bottom Hole Choke Type, Separation Tools, Circulating Sleeves, Completion Tools, Circulating Plugs, Flow Sleeves, Pack-Off Anchors, Closing Tools, Running Tools, Pulling Tools, Stroke Jars, Wire Line Sockets, Wire Line Stems, Knuckle Joints, Wire Line Stuffing Boxes, Wire Line Lubricators, Wire Line Cutters, Choke Extractors, Wire Line Subs, Tubing Swages, Fishing Tools, Coupling Locators, Two-Zone Pumps, Packers, Pressure Lock Packers, Sand Bailers of the Pump Type, Paraffin Removers of the Mechanical Type, Perforators, Tubing Cutters, Drilling Heads, Oil Savers, Pressure Operated Unions, Snubbers, Control Heads, Blow Out Preventers, Tubing Heads, and Parts Therefor.
First use Jan. 1, 1936.

SN 233,415. Studebaker Corporation, South Bend, Ind. Filed Nov. 26, 1965.



For Mufflers for Water Cooled Engines and Generators.
First use Oct. 4, 1965.

SN 235,044. Southern Mill Equipment Corp., Charlotte, N.C. Filed Dec. 16, 1965.

ELECTRO VAC

For In-Line Electronic Controlled Distribution Machine for Delivering Hosiery to Containers by Means of a Partial Vacuum.
First use Oct. 27, 1965.

SN 235,397. Donaldson Company, Inc., Minneapolis, Minn. Filed Dec. 28, 1965.



For Centrifugal Separator for Removing Contaminants From Liquids, Specifically for Metal-Cutting Machine Coolants.
First use Sept. 20, 1965.

SN 236,234. Cleveland Twist Drill Company, Cleveland, Ohio. Filed Jan. 12, 1966.



Owner of Reg. Nos. 157,027, 208,281, and others.
For Twist Drills.
First use August 1962.

SN 237,305. Hawker Siddeley Canada Ltd., Vancouver, British Columbia, Canada. Filed Jan. 26, 1966.

PROFILE FOR PROFIT

For Mills for Producing Dimensional Lumber From Small-Diameter Logs.
First use on or about Aug. 1, 1964; in commerce on or about Aug. 1, 1964.

SN 238,137. Hawker Siddeley Canada Ltd., Vancouver, British Columbia, Canada. Filed Jan. 26, 1966.

CHIP-N-SAW

For Mills for Producing Dimensional Lumber From Small-Diameter Logs.
First use on or about July 1, 1962; in commerce on or about July 1, 1962.

SN 238,816. Wisconsin Knife Works, Inc., Beloit, Wis. Filed Feb. 14, 1966.



Owner of Reg. No. 519,519.
For Cutting Tools Consisting of Carbide Saws, Recess Cutters, Gear Tooth Rounding Cutters, Gear Tooth Thinning Cutters, Gear Tooth Pointers, Chamfering Cutters, Spherical Radius Cutters, Center Drills, Burring Tools, Counterbores, Tooth Rounding Blanks, Oil Groove Cutters, Hollow Mill Cutters, and Mill Cutters and Reamers.
First use Mar. 15, 1945.

SN 238,868. The Gillette Company, Boston, Mass. Filed Feb. 15, 1966.

INSERTOR

Owner of Reg. No. 422,514.
For Safety Razor Blades.
First use Mar. 11, 1965.

SN 238,885. Nelmor Co., Inc., North Uxbridge, Mass. Filed Feb. 15, 1966.



For Machinery and Equipment Used in Connection With the Manufacture, Handling or Processing of Plastic Materials.
First use Sept. 29, 1965.

SN 239,655. Pierce-All Manufacturing Limited, Rexdale, Ontario, Canada. Filed Feb. 25, 1966.



For Metal Punching Machine.
First use Dec. 31, 1964; in commerce Dec. 31, 1964.

SN 239,870. Auto Pak Company, Washington, D.C. Filed Mar. 1, 1966.



For Compaction Apparatus for Waste Material.
First use on or about July 1, 1965.

SN 241,346. Joy Manufacturing Company, Pittsburgh, Pa. Filed Mar. 18, 1966.

TWISTAIR

For Machinery—Namely, Air Compressors.
First use Feb. 16, 1966.

SN 242,552. Bauer & Schaurte, Neuss (Rhine), Germany. Filed Apr. 4, 1966.



Owner of German Reg. No. 473,537, dated Dec. 24, 1934.
For Small Metal Parts, Particularly, Nuts, Bolts, and Screws.

SN 243,961. The Cincinnati Shaper Company, Cincinnati, Ohio. Filed Apr. 21, 1966.

CINCINNATI

Owner of Reg. Nos. 638,000 and 814,939.
For Power Operated Punching Machines.
First use Nov. 4, 1938.

SN 248,934. Viking Carpets, Inc., New York, N.Y. Filed June 24, 1966.

COOKIE CUTTER

Applicant disclaims the word "Cutter" apart from the mark as shown.
For Repair Tools With Cutting Blades.
First use May 26, 1966.

Class 24 — Laundry Appliances and Machines

SN 236,300. Textile Marking Machine Co., Inc., Syracuse, N.Y. Filed Jan. 12, 1966.

TEX-O-MATIC

For Apparatus for Automatically Listing, Invoicing, and Attaching Identification Tags to Articles in a Bundle of Laundry, and Classifying the Marked Articles.
First use Sept. 14, 1965.

SN 250,708. Westinghouse Electric Corporation, Mansfield, Ohio. Filed July 20, 1966.

LAUNDROMAT

Owner of Reg. Nos. 433,518, 407,395, and 571,785.
For Electric Laundry Washers, and Electric Dry Cleaning Machines.
First use on or about Oct. 26, 1940.

Class 25 — Locks and Safes

SN 253,587. The Magne-Lok Co., Lyndhurst, N.J. Filed Sept. 1, 1966.

MAGNEROK

For Sash Locks.
First use Aug. 10, 1966.

Class 26 — Measuring and Scientific Appliances

SN 199,732. Fendall Company, Chicago, Ill. Filed Aug. 12, 1964.



For Protective Eye and Face Shields, Spectacles, Goggles, and Helmets With Eye and Face Shields.
First use on or about Jan. 1, 1964; on or about June 1, 1950, in a different form.

SN 216,085. Macbeth Corporation, Newburgh, N.Y. Filed Apr. 8, 1965.

AVLITE

For Electrical Lighting Equipment for Viewing Prints, Transparencies and Other Copy, and Components Therefor.
First use in or about August 1960.

SN 229,766. John W. Copeland, d.b.a. Real Time, Wichita, Kans. Filed Oct. 11, 1965.

REAL TIME

For Airplane Flight Computers.
First use on or about Sept. 15, 1965.

SN 233,121. Nuclear Data, Inc., Palatine, Ill. Filed Nov. 22, 1965.

ND

For Electronic Computers, Pulse Analyzers, and Accessories Therefor.
First use June 23, 1965.

SN 233,393. Radio Shack Corporation, Boston, Mass. Filed Nov. 26, 1965.

MICRONTA

Owner of Reg. No. 609,562.
For Multitesters for Measuring Voltage Currents and Resistance, Voltmeters, Ohmmeters, Exposure Meters, Thickness Gauges, Compasses, Microscopes, Binoculars, Telescopes, Microphotograph Attachments, Magnifying Lenses, Built-In Test Lamps for Photographic Flash Guns, and Photographic Timers.
First use about 1955.

SN 233,408. Simmon Brothers, Inc., Woodside, N.Y. Filed Nov. 26, 1965.

XENOMEGA

For Photographic Enlarging Apparatus.
First use Nov. 9, 1965.

SN 233,815. Owatonna Tool Company, Owatonna, Minn. Filed Dec. 2, 1965.

HYDRA-AMP

For Portable Testing Devices Which Test the Pressure and Flow Across a Point in a Hydraulic System.
First use Oct. 8, 1965.

SN 233,954. Spiratone, Inc., Flushing, N.Y. Filed Dec. 3, 1965.

TELEMAT

For Photographic Lenses.
First use Nov. 13, 1965.

SN 245,544. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed May 13, 1966.

3M

Owner of Reg. Nos. 697,039, 803,075, and others.
For Photographic Color Print Film.
First use Apr. 24, 1963.

Class 29 — Brooms, Brushes, and Dusters

SN 232,196. Dev-Coa, Inc., Floral Park, N.Y. Filed Nov. 5, 1965.

DENTAID

For Disposable Toothbrush.
First use July 18, 1965.

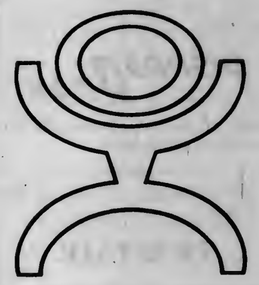
SN 236,053. Celeste, Inc., Wilton, Conn. Filed Jan. 10, 1966.

CELESTE

For Dust Mop Covers.
First use Feb. 4, 1965.

Class 32 — Furniture and Upholstery

SN 237,672. Godfrey L. de'Caccia, d.b.a. D.E.C. Associates, Los Alamitos, Calif. Filed Feb. 1, 1966.



For Work Tray Units Having Receptacles for Tools and Parts, and Parts Thereof.
First use Oct. 21, 1965.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 242,885. The Joseph Dixon Crucible Company, Jersey City, N.J. Filed Apr. 7, 1966.

DIXAGRAF

Owner of Reg. No. 430,835.
For Crucibles.
First use Mar. 21, 1966.

SN 242,886. The Joseph Dixon Crucible Company, Jersey City, N.J. Filed Apr. 7, 1966.

DIXAMAG

Owner of Reg. No. 430,835.
For Crucibles.
First use Jan. 5, 1966.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 224,355. United States Rubber Company, New York, N.Y. Filed July 27, 1965.

GUARDSMAN

For Power Transmission Belts for Automobiles, and Hose for Automobiles.
First use May 7, 1965.

SN 224,650. Servotronics, Inc., Cheektowaga, N.Y. Filed July 30, 1965.

APEX

For Metallic Seals.
First use on or about Mar. 30, 1960.

SN 224,651. Servotronics, Inc., Cheektowaga, N.Y. Filed July 30, 1965.

OMEGA

For Metallic Seals.
First use on or about Jan. 8, 1963.

SN 231,787. United States Rubber Company, New York, N.Y. Filed Oct. 28, 1965.

TACTICAL CC

For Pneumatic Tires.
First use July 7, 1950.

Class 36 — Musical Instruments and Supplies

SN 216,532. Orrtronics, Inc., Opelika, Ala. Filed Apr. 14, 1965.



For Automatic Tape Players, and Prerecorded Tape Cartridges for Use Therein.
First use Oct. 29, 1964.

SN 222,748. Josef F. Püchner, Nauheim, Germany. Filed July 6, 1965.

Josef Püchner

For Wood Wind Instruments.
First use Jan. 19, 1949; in commerce Jan. 23, 1959.

SN 223,459. Rheem Manufacturing Company, New York, N.Y. Filed July 15, 1965.

Tape-O-Thèque

For Prerecorded Tapes.
First use Apr. 23, 1965.

SN 237,520. Grundig Werke G.m.b.H., Furth, Bavaria, Germany. Filed Nov. 30, 1965.

EN 3

For Magnetic Recorders-Reproducers, and Parts and Accessories Therefor.
First use August 1964; in commerce September 1964.

SN 243,442. Wm. R. Gratz Co., Inc., Lynbrook, N.Y. Filed Apr. 14, 1966.

Höfner

Owner of Reg. No. 702,258.
For Stringed Instruments and Fretted Instruments—Namely, Violins, Violas, Cellos, Bases, Guitars, Banjos, and Mandolins, and for Strings and Other Accessories.
First use on or about Dec. 1, 1957, on violins.

SN 253,263. M. Hohner Inc., Hicksville, N.Y. Filed Aug. 29, 1966.

ASTRONAUT HARMONICA

For Harmonicas.
First use July 28, 1966.

Class 37 — Paper and Stationery

SN 225,808. Phoenix Products Company, Inc., Milwaukee, Wis. Filed Aug. 16, 1965.

SELF STICK

Owner of Reg. No. 512,489.
For Bands, Wraps, Sheets, Envelopes, and Labels, Used for Sterile Packaging by Hospital Personnel and Manufacturers of Hospital Supplies; Automotive Parts Packaging; Packaging for Soft Goods—Namely, Articles of Clothing, Fabrics and Yarn; and Packaging for Hardware and Other Hard Goods.
First use Feb. 1, 1938.

SN 225,836. Venus Pen & Pencil Corporation, New York, N.Y. Filed Aug. 16, 1965.

VELTIP

For Ink Markers.
First use July 16, 1965.

SN 232,585. Panter Company, Inc., Detroit, Mich. Filed Nov. 12, 1965.

PanCo

For Office Supplies—Namely, Labeling Clips for Use With Loose Leaf Ring Books and Binders.
First use Oct. 26, 1965.

SN 241,824. Tennessee Gas Transmission Company, Houston, Tex. Filed Mar. 24, 1966.

TENNECO

For Paper, Paperboard, and Paperboard Sheeting Made From Fibrous Pulp.
First use Mar. 7, 1966.

SN 241,826. Tennessee Gas Transmission Company, Houston, Tex. Filed Mar. 24, 1966.

TENNECO

For Paper, Paperboard, and Paperboard Sheeting Made From Fibrous Pulp.
First use Mar. 7, 1966.

Class 38 — Prints and Publications

SN 233,993. Central National Bank, Chicago, Ill. Filed Dec. 6, 1965.

THE CENTRAL IDEA

For Newsletter Dealing With Agriculture and Banking.
First use Aug. 5, 1965.

SN 236,069. Downie, Turner & Buress, Baltimore, Md. Filed Jan. 10, 1966.

PERFORMANCE . . SPECIFIED

For Product Information Leaflets Issued Periodically.
First use September 1964.

SN 237,531. Capital Gains Research Bureau, Inc., Larchmont, N.Y. Filed Jan. 28, 1966.

THE CAPITAL GAINS INVESTOR

For Periodical Newsletters and Bulletins.
First use Jan. 21, 1966.

SN 238,780. The Pillsbury Company, Minneapolis, Minn. Filed Feb. 14, 1966.

FUNNY FACE

Owner of Reg. No. 786,098.
For Children's Books.
First use July 15, 1965.

SN 246,022. National Periodical Publications, Inc., New York, N.Y. Filed May 19, 1966.

JUSTICE LEAGUE of AMERICA

For Comic Magazines.
First use Jan. 25, 1966.

SN 250,330. Columbia Pictures Corporation, New York, N.Y. Filed July 15, 1966.

For Motion Picture Films.
First use June 27, 1966.

Class 39 — Clothing

SN 207,351. Winig Slipper Corporation, Gloversville, N.Y. Filed Dec. 2, 1964.

Leather mocs

"Mocs" is disclaimed apart from the mark as shown.
For Slippers.
First use Aug. 25, 1953.

SN 209,509. I. C. Isaacs and Company, Inc., Baltimore, Md. Filed Jan. 7, 1965.

ALL-WAYS PREST

Owner of Reg. No. 540,184.
For Slacks and Shorts for Men and Women.
First use Dec. 17, 1964.

SN 219,815. Raden Mfg. Co., Dallas, Tex. Filed May 26, 1965.

judy Jrs. of DALLAS

Applicant disclaims the words "of Dallas" apart from the mark as shown.
For Women's and Misses' Skirts, Dresses, Formals, Suits, Jackets, Coats, and Blouses.
First use on or about July 1, 1954.

SN 227,230. Beaumont Dry Goods Company, Inc., Beaumont, Tex. Filed Sept. 7, 1965.

BEAUTEX

For Men's Shirts, Overalls, Pants and Underwear; Men's, Women's, and Children's Hose, Shoes, and Hats; Women's Bras and Pants, and Handkerchiefs.
First use May 19, 1916.

SN 232,212. Lady Marlene Brassiere Corporation, New York, N.Y. Filed Nov. 5, 1965.

CLOVER LEAF

For Brassieres, Girdles, Corselettes, and Panty-Girdles.
First use Oct. 29, 1965.

SN 233,880. College-Town of Boston, Boston, Mass. Filed Dec. 3, 1965.

COLLEGE-PRESS

For Skirts, Slacks, and Blouses.
First use Oct. 15, 1965.

SN 234,213. Kromer Cap Co., Inc., Milwaukee, Wis. Filed Dec. 8, 1965.

KROMER BLIZZARD K

Applicant disclaims the word "Kap" apart from the mark as shown.
For Caps and Hats.
First use Mar. 30, 1923.

SN 234,994. Canoe Underwear Co., Pine Grove, Pa. Filed Dec. 21, 1965.

little Lord Stuart

For Boys' Trousers.
First use Jan. 5, 1955.

SN 236,389. Keystone Adjustable Cap Co., d.b.a. Keystone Adjustable Cap Company, Philadelphia, Pa. Filed Jan. 13, 1966.

Servis Cap

Applicant disclaims the word "Cap" apart from the mark as shown.
For Paper Caps.
First use on or about Jan. 1, 1937.

SN 238,425. Goodstein Bros. & Co., Inc., New York, N.Y. Filed Feb. 9, 1966.

FOXHEAD

For Men's All Weather Coats, Including Raincoats, Topcoats, and Overcoats.
First use Dec. 16, 1965.

SN 239,439. Poirette Corsets, Inc., New York, N.Y. Filed Feb. 23, 1966.

PANZINI

For Women's Panties.
First use Feb. 16, 1966.

SN 239,584. Boyd W. Bullock, d.b.a. Bullock Enterprises, Coshocton, Ohio. Filed Feb. 25, 1966.

GRIP-N-SLIP

For Golf Gloves.
First use Aug. 25, 1965.

SN 239,665. Sarong, Inc., Dover, Del. Filed Feb. 25, 1966.

SPAND-PLUS

For Foundation Garments.
First use Feb. 9, 1966.

SN 239,918. Maidenform, Inc., New York, N.Y. Filed Mar. 1, 1966.

PRECIOUS LITTLE

For Foundation Garments.
First use Dec. 30, 1965.

SN 240,384. Carole Curtis, Inc., New York, N.Y. Filed Mar. 7, 1966.

The Big K

For Children's, Teens', and Ladies' Slacks and Pants.
First use Jan. 20, 1966.

SN 240,520. The Joseph & Feiss Company, Cleveland, Ohio. Filed Mar. 9, 1966.



For Men's Tailored Clothing—Namely, Suits, Coats, Vests, Trousers, Sport Jackets, Slacks, Topcoats, and Overcoats.
First use Jan. 4, 1966.

SN 240,576. James Branch & Sons Ltd., Northampton, England. Filed Mar. 10, 1966.

BECTIVE

For Footwear—Namely, Boots and Shoes.
First use January 1948; in commerce 1948.

SN 240,606. Haggar Company, Dallas, Tex. Filed Mar. 10, 1966.

HAGGAR IMPERIAL 2030

Owner of Reg. Nos. 524,051, 751,773, and others.
For Men's and Boys' Clothing—Namely, Slacks.
First use on or about Feb. 7, 1966.

SN 240,734. Philip Gurian Sons, Inc., New York, N.Y. Filed Mar. 11, 1966.

Alison Peters

The trademark, as shown, is not the name of a particular living individual.
For Women's and Misses' Sportswear—Namely, Slacks, Skirts, Blouses, Shorts, Sweaters, Shifts, and Shells.
First use 1965.

SN 240,741. International Latex Corporation, Dover, Del. Filed Mar. 11, 1966.

LIVING

Owner of Reg. Nos. 382,071, 799,929, and others.
For Shower Caps.
First use July 20, 1965.

SN 241,027. Blue Gem Manufacturing Company, Greensboro, N.C. Filed Mar. 15, 1966.

BEACH BOY

For Ladies' and Girls' Sportswear—Namely, Outershirts, Skirts, and Slacks; and Boys' Slacks and Jeans.
First use Jan. 3, 1966.

SN 249,178. Originala Incorporated, New York, N.Y. Filed June 28, 1966.

Originala

For Women's Coats, Suits, and Dresses.
First use on or about June 20, 1966.

SN 250,614. Emporium World Millinery Co., Chicago, Ill. Filed July 20, 1966.

BeverlyBlaine

The mark is fanciful.
For Women's Hats.
First use 1946.

SN 250,650. Emporium World Millinery Co., Chicago, Ill. Filed July 20, 1966.

BettyBlake

The mark is fanciful.
For Women's Hats.
First use Apr. 3, 1938.

SN 253,074. Johnson & Johnson, New Brunswick, N.J. Filed Aug. 24, 1966.

CAREFREE

Owner of Reg. Nos. 681,567 and 764,022.
For Diapers.
First use May 8, 1966.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 209,508. Huyck Corporation, Rensselaer, N.Y. Filed Jan. 7, 1965.

STA-FLAT

For Segmented Seams in Fabrics Used on Paper Making Machinery.
First use Sept. 15, 1964.

SN 218,672. James Lees and Sons Company, Bridgeport, Pa. Filed May 12, 1965.

PLAZA SQUARE

For Textile Rugs and Carpets.
First use Jan. 10, 1964.

SN 237,886. Spectrum Fabrics Corporation, New York, N.Y. Filed Feb. 2, 1966.

TELESPECTRUM

Owner of Reg. No. 411,014.
For Piece Goods of Natural and Synthetic Fibers, and Mixtures Thereof for Decorative Drapery, Slipcovers, and Upholstery.
First use Dec. 15, 1965.

SN 238,238. Klopman Mills, Inc., Rockleigh, N.J. Filed Feb. 7, 1966.

LOOK BEFORE YOU LEAN—MAKE SURE IT'S A FABRIC YOU CAN LEAN ON BY KLOPMAN

No claim is made to the word "Fabric" apart from the mark as shown. Owner of Reg. Nos. 697,510, 736,479, and 754,276.
For Greige and Finished Fabrics in the Piece of All Types for Use in Men's, Women's, and Children's Apparel, in Home Furnishings, and in the Industrial Field.
First use Dec. 7, 1965.

SN 238,334. Bates Manufacturing Company, Incorporated, Lewiston, Maine. Filed Feb. 8, 1966.

PIPING ROCK

Owner of Reg. No. 808,576.
For Yard Goods for Making Drapes, Curtains, Slip-Covers, Napkins, Tablecloths, and the Like.
First use Jan. 7, 1966.

SN 240,160. Duraloom Carpet Mills, Inc., Lehighton, Pa. Filed Mar. 4, 1966.

ENDURANCE

Owner of Reg. No. 573,050.
For Carpets and Rugs.
First use Nov. 22, 1950.

SN 240,253. Bruck & Engelmann Ltd., Huddersfield, York, England. Filed Mar. 7, 1966.

BELKASET

Owner of British Reg. No. 875,298, dated Feb. 6, 1965.
For Textile Piece Goods—Namely, Men's Suitings.

SN 241,773. Fair-Tex Mills, Inc., New York, N.Y. Filed Mar. 24, 1966.

MINTED

For Knitted Fabrics Used in Making Dresses, Sportswear, Slacks, and the Like.
First use Apr. 2, 1965.

SN 244,152. Thomas Pride Mills, Inc., Atlanta, Ga. Filed Apr. 22, 1966.

SASSYGRASS

For Rugs and Carpets.
First use on or about Jan. 1, 1966.

SN 244,153. Thomas Pride Mills, Inc., Atlanta, Ga. Filed Apr. 22, 1966.

PUSSYFOOT

For Rugs and Carpets.
First use on or about Jan. 1, 1966.

SN 244,321. Henry Glass & Co., New York, N.Y. Filed Apr. 26, 1966.

NEW COLONIES

For Cotton Piece Goods.
First use 1946.

SN 244,424. Oberman Fabrics, Inc., New York, N.Y. Filed Apr. 27, 1966.



Owner of Reg. No. 421,396.
For Piece Goods of Synthetic Fibers or Blends Thereof.
First use Aug. 7, 1944.

244,749. Shirley Fabrics Corp., New York, N.Y. Filed May 2, 1966.

IMAGINATION

Owner of Reg. No. 405,913.
For Textile Fabrics in the Piece of Cotton, Rayon, Synthetic Fibres, and Mixtures Thereof.
First use Apr. 13, 1937.

SN 244,879. B. Berger Company, Cleveland, Ohio. Filed May 4, 1966.

LE MANOIR

For Printed Fabrics.
First use Oct. 5, 1965.

SN 244,990. International Fabric Corporation, Boston, Mass. Filed May 5, 1966.

GABARINO

For Shoe Fabrics.
First use Feb. 1, 1966.

SN 245,065. Deering Milliken, Inc., New York, N.Y. Filed May 6, 1966.

DOMAIN

Owner of Reg. No. 803,988.
For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers, and Combinations Thereof.
First use 1958.

SN 245,124. Westwood Textile Manufacturing, Inc., Southbridge, Mass. Filed May 6, 1966.

BLACK DIAMOND

For Woolen Worsted Spun Fabric for Women's Wear, Dresses, Coats, Suits, and Sportswear.
First use July 1, 1965.

Class 43—Thread and Yarn

SN 244,185. Calthread, Inc., Alhambra, Calif. Filed Apr. 25, 1966.

CALTHREAD

For Monofilament Nylon Thread.
First use Sept. 12, 1962.

SN 244,186. Calthread, Inc., Alhambra, Calif. Filed Apr. 25, 1966.

ECONO-THREAD

For Monofilament Nylon Thread.
First use Feb. 25, 1964.

SN 244,196. Deering Milliken, Inc., New York, N.Y. Filed Apr. 25, 1966.

WISTELLE

Owner of Reg. No. 704,703.
For Yarn.
First use on or about Apr. 22, 1966.

SN 244,250. Rich-Flex Mfg. Corporation, Lincoln, R.I. Filed Apr. 25, 1966.

RICH-FLEX

For Elastic and Metallic Twisted Yarns.
First use on or about July 14, 1958.

Class 44—Dental, Medical, and Surgical Appliances

SN 158,230. Courtland Laboratories, Los Angeles, Calif. Filed Nov. 30, 1962.

Courtland

Owner of Reg. No. 700,252.
For Needles for Use in Syringes and Blood Collection Devices.
First use Sept. 21, 1962.

SN 216,791. Brunswick Corporation, Chicago, Ill. Filed Apr. 19, 1965.

SENTINEL LINE

No exclusive right is claimed to the word "Line" apart from the mark as a whole.
For Flexible, Semi-Rigid and Rigid Medical Tubing for Use Both Internally and Externally of the Patient.
First use Sept. 19, 1963.

SN 236,256. Hazleton Laboratories, Inc., d.b.a. Instrument Development Company, Reston, Va. Filed Jan. 12, 1966.

TECH-TABS

For Patch Test To Determine Skin Reactions, Including a Plastic Envelope Having an Opening in a Side Thereof To Expose a Portion of a Cellulose Filter Pad Disposed Therein.
First use Dec. 7, 1965.

SN 236,859. Williams Gold Refining Company Incorporated, Buffalo, N.Y. Filed Jan. 19, 1966.

WJ

Owner of Reg. No. 811,411.
For Dental Materials and Specialties—Namely, Teeth, Crown and Bridge Resin, and Resin Cement.
First use in or about May 1964 on teeth.

SN 236,860. Williams Gold Refining Company, Incorporated, Buffalo, N.Y. Filed Jan. 19, 1966.

WJ

Owner of Reg. No. 811,411.
For Dental Materials—Namely, Shade Guides, Artificial Teeth, and Dental Articulators.
First use Dec. 7, 1965.

SN 245,108. Sales Research Development Co., Salt Lake City, Utah. Filed May 6, 1966.

ORD APPROVED

Applicant disclaims the word "Approved" apart from the mark as shown.
For Mechanical, Portable Hydrotherapy massage Whirlpool Baths in the Nature of a Pump for a Tub.
First use Nov. 9, 1964.

Class 45—Soft Drinks and Carbonated Waters

SN 230,690. The Pillsbury Company, Minneapolis, Minn. Filed Oct. 20, 1965.

LEFTY LEMON

Applicant disclaims the word "Lemon" apart from the mark as shown.
For Powders for Preparing Soft Drinks.
First use Apr. 22, 1965.

SN 231,218. The Pillsbury Company, Minneapolis, Minn. Filed Oct. 22, 1965.

JOLLY OLLY ORANGE

Applicant disclaims the word "Orange" apart from the mark as shown.
For Powders for Preparing Soft Drinks.
First use Apr. 30, 1965.

SN 238,404. Clicquot Club Company, Millis, Mass. Filed Feb. 9, 1966.

CLICQUOT SPRING

The word "Spring" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 19,634, 668,434, and others.
For Spring Water.
First use Oct. 28, 1965.

Class 46—Foods and Ingredients of Foods

SN 211,686. Vita-Pakt Citrus Products Co., Covina, Calif. Filed Feb. 9, 1965.

DARI-PAKT

For Orange Food Drink Base.
First use Dec. 7, 1964.

SN 214,338. General Industries Corporation, Salt Lake City, Utah. Filed Mar. 17, 1965.

FROSTDOG

Owner of Reg. No. 655,568.
For Frozen Confection—Namely, Fruit Ices, and Ice Cream.
First use 1955.

SN 218,902. The Pillsbury Company, Minneapolis, Minn. Filed May 14, 1965.

CHOCOLATE JUNCTION

Applicant disclaims the word "Chocolate" apart from the mark as shown.
For Chocolate Flavored Powders for Making Hot or Cold Food Drinks.
First use May 3, 1965.

SN 223,342. Philadelphia Chewing Gum Corporation, Havertown, Pa. Filed July 14, 1965.

CHERRY MOONS

The term "Cherry" is disclaimed apart from the mark as shown.
For Candy Coated Chewing Gum Balls.
First use June 10, 1965.

SN 223,838. Smokehouse Barbecued Products, Inc., Dallas, Tex. Filed July 20, 1965.



For Barbecued Chicken, Sliced Barbecued Beef, Chopped Barbecued Beef, Barbecued Ribs, and Barbecue Sauce.
First use Feb. 28, 1964, on barbecue sauce.

SN 228,920. The Maryland Baking Company, d.b.a. Maryland Baking Co., Baltimore, Md. Filed Sept. 20, 1965.

TOTEM

For Receptacles for Holding Individual Servings of Hot and Cold Foods Made of a Baked Edible Pastry Composition.
First use on or about Sept. 15, 1965.

SN 230,889. The Pillsbury Company, Minneapolis, Minn. Filed Oct. 21, 1965.

THE IDEA FLOUR

Applicant disclaims the word "Flour" apart from the mark as shown.
For Wheat Flour.
First use July 30, 1965.

SN 230,998. American Potato Company, San Francisco, Calif. Filed Oct. 22, 1965.

RUSSET FARMS

Applicant disclaims the word "Russet" apart from the mark as shown.
For Dehydrated Potatoes.
First use Sept. 25, 1965.

SN 231,207. The Pillsbury Company, Minneapolis, Minn. Filed Oct. 22, 1965.

LOUD-MOUTH LIME

Applicant disclaims the word "Lime" apart from the mark as shown. Owner of Reg. No. 799,945.
For Gelatin Dessert Mix.
First use May 4, 1965.

SN 231,212. The Pillsbury Company, Minneapolis, Minn. Filed Oct. 22, 1965.

LEFTY LEMON

Applicant disclaims the word "Lemon" apart from the mark as shown.
For Gelatin Dessert Mix.
First use Apr. 22, 1965.

SN 231,213. The Pillsbury Company, Minneapolis, Minn. Filed Oct. 22, 1965.

ROOTIN'-TOOTIN' RASPBERRY

Applicant disclaims the word "Raspberry" apart from the mark as shown. Owner of Reg. No. 800,458.
For Gelatin Dessert Mix.
First use May 4, 1965.

SN 231,214. The Pillsbury Company, Minneapolis, Minn. Filed Oct. 22, 1965.

CHOO CHOO CHERRY

Applicant disclaims the word "Cherry" apart from the mark as shown.
For Gelatin Dessert Mix.
First use May 4, 1965.

SN 231,216. The Pillsbury Company, Minneapolis, Minn. Filed Oct. 22, 1965.

JOLLY OLLY ORANGE

Applicant disclaims the word "Orange" apart from the mark as shown.
For Gelatin Dessert Mix.
First use Apr. 22, 1965.

SN 231,217. The Pillsbury Company, Minneapolis, Minn. Filed Oct. 22, 1965.

FRECKLE FACE STRAWBERRY

Applicant disclaims the word "Strawberry" apart from the mark as shown. Owner of Reg. No. 799,044.
For Gelatin Dessert Mix.
First use May 4, 1965.

SN 231,490. Red Owl Stores, Inc., Hopkins, Minn. Filed Oct. 23, 1965.

SILVER SERVICE

For Smoked Ham.
First use Oct. 6, 1965.

SN 231,511. United States Tobacco Company, New York, N.Y. Filed Oct. 23, 1965.

CIRCUS

The drawing is lined for red. Owner of Reg. Nos. 260,343, 700,620, and others.
For Pistachios, Salted Spanish Peanuts, Salted Peanuts, Pecans, Black Walnuts, Salted Cashews, English Walnuts, Almonds, and Salted Mixed Nuts.
First use about March 1965; Apr. 20, 1946, as to "Circus."

SN 231,953. Vic Culver Company, d.b.a. Vic Culver Co., Duarte, Calif. Filed Nov. 1, 1965.

coffee boy

The word "Coffee" is disclaimed apart from the mark as shown.
For Vegetable Product for Use in Coffee, on Cereals, Fruits and Desserts, and With Soups and Sauces, as a Milk or Cream Substitute.
First use July 12, 1965.

SN 232,109. Albanese Food Products Company, Cleveland, Ohio. Filed Nov. 4, 1965.



The picture of the woman forming part of the mark is fanciful, and does not represent an actual person.
For Ceci and Noodles in Tomato Sauce.
First use Sept. 3, 1965.

SN 232,304. The Frank Tea & Spice Company, Cincinnati, Ohio. Filed Nov. 8, 1965.

SEASON-EEZ

For Wet and Dry Food Seasonings of a Spice Nature.
First use Oct. 18, 1965.

SN 232,510. Arkansas Valley Industries, Inc., Little Rock, Ark. Filed Nov. 12, 1965.

WILLOWBROOK FARMS

For Frozen Fresh Dressed Poultry—Namely, Chickens and Chicken Parts.
First use March 1962.

SN 236,563. Cock 'n Bull Products, Los Angeles, Calif. Filed Jan. 14, 1966.

Cock 'n Bull

Owner of Reg. No. 519,944.
For Plum Pudding, Horseradish Sauce, and Welsh Rabbit.
First use Oct. 25, 1946.

SN 238,986. U.S. Cocoa Corporation, Camden, N.J. Filed Feb. 16, 1966.

DE-CAL

For Low Calorie Instant Hot Chocolate Cocoa Mix.
First use Dec. 12, 1965.

SN 239,067. Mott's Incorporated of Mississippi, Water Valley, Miss. Filed Feb. 17, 1966.

CALEDONIA

For Fresh Chickens and Frozen Chickens.
First use Apr. 20, 1965.

SN 239,089. Thomas Foods, Inc., Cincinnati, Ohio. Filed Feb. 17, 1966.

THOMAS

Owner of Reg. No. 599,155.
For Frozen Meats—Namely, Dinner Beef Steaks, Breaded Veal Steaks, Chopped, Molded and Cubed Beef Steaks, Short Ribs of Beef, Beef Patties, Pork Chops, Veal and Beef for Stew, Chopped Beefsteaks, Pepper, Mushroom and Onion Beefsteaks, Sandwich Steaks, Rib Eye Steaks, and Meat Loaf.
First use Oct. 10, 1962.

SN 239,843. WVD Company, Denver, Colo. Filed Feb. 28, 1966.

Aristocrat

Owner of Reg. Nos. 117,926 and 680,090.
For Fresh Vegetables.
First use January 1933.

SN 250,427. Donna Citrus, Inc., Donna, Tex. Filed July 18, 1966.

DOUBLE Donna Delicious

The word "Delicious" is disclaimed apart from the association shown.
Owner of Reg. No. 335,395.
For Fresh Citrus Fruits; Fresh Vegetables; and Fresh Pineapple.
First use at least as early as 1956.

SN 253,827. Los Angeles Importing Co., Monterey Park, Calif. Filed Sept. 6, 1966.

ONORATO

The word "Onorato" may be translated to mean "honorable" in English.
For Canned Fish; Wine Vinegar; Olives; Olive Oil; and Giardiniera, a Product Comprised of Mixed Vegetables in Wine Vinegar.
First use in or about the year 1940.

SN 253,829. Los Angeles Importing Co., d.b.a. L.A. Importing Co., and Joe's Spices Co., Monterey Park, Calif. Filed Sept. 6, 1966.

JOE'S SPICES

No claim is made to the word "Spices," which is the name of the goods.
For Spices—Namely, Herb Seasoning, Crushed Chili, Oregano, Italian Style Mixed Spices, Rosamarino Leaf, Mixed Herb Seasoning for Spaghetti Sauce.
First use in or about the year 1935.

Class 50—Merchandise Not Otherwise Classified

SN 207,007. Ceramic Products Corporation, Morgan, Pa. Filed Nov. 27, 1964.

cpc

The mark comprises the letters "CPC."
For Insulating Bushings for Shielding the Arc Created by a Stud Welding Gun Which Is Used To Fasten a Bolt, Shear Pin, or Threaded Stud to Weldable Metal.
First use Oct. 26, 1964.

SN 233,812. National Research Corporation, Cambridge, Mass. Filed Dec. 2, 1965.

NRC

For Radiant Heat Reflecting Articles Such as Ground Cloths, Car or Boat Covers, Ponchos, Camping Blankets or Covers, etc., All the Foregoing Made of Metallized Plastic Film Sheets in Single Sheet or Laminate Form.
First use Sept. 7, 1965.

SN 244,213. General Crafts Corporation, Baltimore, Md. Filed Apr. 25, 1966.

JEWEL TONE

For Kits for Making Handbags, Including Material Preformed to the Shape of the Bag, Decorations To Be Applied Thereto, and an Instruction Booklet.
First use Sept. 23, 1965.

SN 245,114. Sternco Industries, Inc., Allendale, N.J. Filed May 6, 1966.

DELTA

Owner of Reg. Nos. 755,092, 755,061, and 755,180.
For Aquarium Accessories—Namely, Ornaments, Scrapers and Planters for Aquarium Tanks, and Decorated Aquarium Plants.
First use Sept. 4, 1962.

Class 51—Cosmetics and Toilet Preparations

SN 230,083. Santa Monica Chemical Corporation, Santa Monica, Calif. Filed Oct. 13, 1965.

Bubblove

For Bubble Bath Preparation.
First use on or before Sept. 1, 1964.

SN 238,769. Norse Chemical Corporation, Cudahy, Wis. Filed Feb. 14, 1966.

NORSE



For Cosmetics and Toilet Preparations—Namely, After Shave Lotion, Men's Cologne, Men's Hair Color, and Men's Hair Controller.
First use Nov. 17, 1965.

SN 238,770. Norse Chemical Corporation, Cudahy, Wis. Filed Feb. 14, 1966.

NORSE

Owner of Reg. No. 156,511.
For Cosmetics and Toilet Preparations—Namely, After Shave Lotion, Men's Cologne, Men's Hair Color, and Men's Hair Controller.
First use Nov. 17, 1965.

SN 238,771. Norse Chemical Corporation, Cudahy, Wis. Filed Feb. 14, 1966.

NORSE



Owner of Reg. No. 156,511.
For Cosmetics and Toilet Preparations—Namely, After Shave Lotion, Men's Cologne, Men's Hair Color, and Men's Hair Controller.
First use Nov. 17, 1965.

SN 241,931. The Realistic Company, Cincinnati, Ohio. Filed Mar. 25, 1966.

SEMI-PERM

For Permanent Wave Curling Solutions.
First use on or about Mar. 3, 1966.
Subj. to Intf. with SN 240,248.

SN 242,881. Cardinal Parfums Inc., Brooklyn, N.Y. Filed Apr. 7, 1966.



The word "Bubble" is disclaimed apart from the mark as shown.
For Bubble Bath.
First use Mar. 24, 1966.

SN 252,514. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Aug. 17, 1966.

AZUREX

For Perfume.
First use Aug. 8, 1966.

SN 252,519. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Aug. 17, 1966.

AZUREL

For Perfume.
First use Aug. 2, 1966.

SN 252,523. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Aug. 17, 1966.

AZURINE

For Perfume.
First use Aug. 9, 1966.

SN 253,088. American Home Products Corporation, New York, N.Y. Filed Aug. 25, 1966.

CURL-A-WAY

For Hair Relaxer Preparation.
First use Aug. 3, 1966.
Subj. to Intf. with SN 252,056.

SN 253,704. Robert Miles Sherman, d.b.a. Madeleine de Martel, New York, N.Y. Filed Sept. 2, 1966.

AZARET

For Perfume.
First use Aug. 16, 1966.

Class 52 — Detergents and Soaps

SN 215,475. Alberto-Culver Company, Melrose Park, Ill. Filed Apr. 1, 1965.

Derma Fresh
POWER
SOFT

Applicant disclaims the word "Soft" apart from the mark as shown. Owner of Reg. Nos. 714,631, 781,133, and others.
For Detergents for Use in Household.
First use Mar. 16, 1965.

SN 215,476. Alberto-Culver Company, Melrose Park, Ill. Filed Apr. 1, 1965.

Derma Fresh
SOFT
POWER

Applicant disclaims right to the word "Soft" as separate and apart from the mark as shown. Owner of Reg. Nos. 714,631, 781,133, and others.
For Detergents for Use in Household.
First use Mar. 16, 1965.

SN 229,620. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed Oct. 7, 1965.

LOKRINSE

For Rinsing Agent for Cleaning and Sealing Metals Subsequent to a Phosphate Coating Treatment, and Paint Stripping Agent.
First use Aug. 4, 1965.

SN 236,138. Premax Laboratories, Inc., Oakland, Calif. Filed Jan. 10, 1966.

DROPS OF MAGIC

For Concentrated Liquid Detergent.
First use May 28, 1963.

SN 239,858. Abco, Inc., Irwin, Pa. Filed Mar. 1, 1966.

HYPER

For Cleaner Concentrate for General Industrial and Commercial Use.
First use Apr. 19, 1965.

SN 249,202. Hudson National, Inc., d.b.a. Hudson Vitamin Products, New York, N.Y. Filed June 29, 1966.

BACTODAN

For Medicated Shampoo.
First use June 15, 1966.

SERVICE MARKS

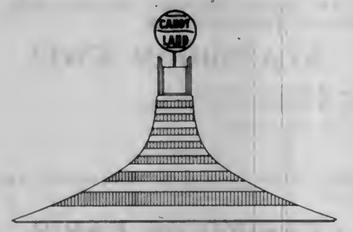
Class 100 — Miscellaneous

SN 208,470. Maitland Junior Chamber of Commerce, Maitland, Fla. Filed Dec. 18, 1964.

Louie
the ELF

For Advisory Services in the Field of Fund-Raising.
First use Oct. 20, 1964.

SN 212,644. Candy Land of Jesup, Inc., Jesup, Ga. Filed Feb. 24, 1965.



The drawing is lined for the colors red and blue. No claim is made to the exclusive right to use the word "Candy" apart from the mark as shown.
For Drive-In Restaurant Services.
First use Jan. 1, 1965.

SN 234,254. Trans Caribbean Airways, Inc., New York, N.Y. Filed Dec. 8, 1965.

TRANS CARIBBEAN
JET CLUB

Owner of Reg. Nos. 746,383 and 697,599.
For Miscellaneous Personal Services Provided for a Select Group of Passengers Transported by Applicant.
First use May 1, 1963.

SN 247,495. Fastener Industries, Inc., Cleveland, Ohio. Filed June 7, 1966.

FASTENOMICS

For Consulting and Advisory Services, Including Supplying Information Regarding Procedures, Equipment and Supplies, for Selecting Methods of and Devices and Apparatus for, Joining Together a Plurality of Parts.
First use Apr. 12, 1966.

Class 101 — Advertising and Business

SN 191,684. F. F.-J. M. Fields, Inc., d.b.a. J. M. Fields, Inc., Boston, Mass. Filed Apr. 21, 1964.



No claim is made to the words "Quality" and "Discount" apart from the mark as shown

For Retail Department Store Services.

First use Aug. 9, 1962.

SN 231,565. Golden Kernel Popcorn, Inc., Kutztown, Pa. Filed Oct. 24, 1965.



For Advising and Consulting in the Establishment and Operation of Popped Popcorn Manufacturing and Distributing Establishments.

First use on or about May 29, 1965.

SN 231,567. Golden Kernel Popcorn, Inc., Kutztown, Pa. Filed Oct. 24, 1965.

GOLDEN KERNEL

For Advising and Consulting in the Establishment and Operation of Popped Popcorn Manufacturing and Distributing Establishments.

First use on or about May 29, 1965.

Class 102 — Insurance and Financial

SN 229,105. Medi-Fact Inc., West Peabody, Mass. Filed Oct. 1, 1965.

DENTI-FACT

For Billing and Collection Services Rendered to the Dental Profession.

First use May 12, 1965.

SN 234,612. Uni-Serv Corporation, Great Neck, N.Y. Filed Dec. 13, 1965.

UNI-SURANCE

For Administering Accident and Health and Life Insurance Programs.

First use June 5, 1964.

Class 103 — Construction and Repair

SN 211,624. Burndy Corporation, Norwalk, Conn. Filed Feb. 9, 1965.

QIK FACILITY

For Services Rendered to the Public in the Design and Construction and Assembly of Electrical Connectors.

First use October 1964.

SN 224,681. National Work Clothes Rental, d.b.a. National Industrial Laundries, Elizabeth, N.J. Filed July 30, 1965.



The mark consists of a stylized man saluting and stylized representation of a shield.

For Laundry Service and Rental Service Respecting Towels, Work Uniforms or Coveralls, and Dust Mops.

First use July 23, 1965.

Class 105 — Transportation and Storage

SN 231,542. Columbia Tours, Inc., New York, N.Y. Filed Oct. 24, 1965.

FIESTA IBERIA

No claim is made to the word "Iberia" apart from the mark as shown.

For Travel Agency Services.

First use 1962.

Class 107 — Education and Entertainment

SN 187,583. Hayden Huddleston Advertising Agency, Inc., Roanoke, Va. Filed Feb. 27, 1964.

KLASSROOM KWIZ

Owner of Reg. No. 425,138.

For Quiz Type Television Program.

First use Jan. 13, 1964.

SN 219,488. Henri Varna et Cie, Paris, France. Filed May 21, 1965.

CASINO DE PARIS

For Entertainment Services—Namely, Variety and Night Club Shows and Theatrical Performances.

First use 1880; in commerce January 1964.

CERTIFICATION MARKS

Class A — Goods

SN 231,291. Timber Engineering Company, Washington, D.C. Filed Oct. 22, 1965.

FORMALL

The mark certifies that the goods of others upon which the mark is applied have been produced under and have been tested in accordance with standards adopted by applicant as to species of wood, type, grade and quality of the plywood.

For Plywood Principally for Use in Making Concrete Forms.

First use Sept. 17, 1965.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

818,483. FIBRE-KORK. Fibreflex Packing & Manufacturing Company, Inc. SN 210,549. Pub. 8–30–66. Filed 1–25–65.

818,484. ADM AND DESIGN. Archer-Daniels-Midland Company. MULTIPLE CLASS (Classes 1, 5, 6, 10, 15, 16, 38, 46, and 100). SN 225,624. Pub. 8–30–66. Filed 8–13–65.

818,485. BEES SEEDS THAT GROW. Bees Limited. SN 232,658. Pub. 8–30–66. Filed 11–15–65.

818,486. FLUOROLOY. The Fluorocarbon Company. SN 234,892. Pub. 8–30–66. Filed 12–20–65.

818,487. SILGOL. Three Springs Fisheries. SN 235,138. Pub. 8–30–66. Filed 12–22–65.

818,488. V–14. Dairyland Seed Company, Inc. SN 237,434. Pub. 8–30–66. Filed 1–27–66.

818,489. V–12. Dairyland Seed Company, Inc. SN 237,435. Pub. 8–30–66. Filed 1–27–66.

818,490. NU-TIM. Dairyland Seed Company, Inc. SN 237,438. Pub. 8–30–66. Filed 1–27–66.

818,491. BLACKBERRY. Kentucky Alma Coal Corporation. SN 238,236. Pub. 8–30–66. Filed 2–7–66.

818,492. SNOWCAL. The Cement Marketing Company, Limited. SN 238,342. Pub. 8–30–66. Filed 2–8–66.

818,493. DION. Diamond Alkali Company. SN 239,128. Pub. 8–30–66. Filed 2–18–66.

Class 2 — Receptacles

818,494. ZUCON, INC. AND DESIGN. Zucon, Inc. SN 220,615. Pub. 8–30–66. Filed 6–7–65.

818,495. ECONO SLEEVES. Kleer-Vu Industries, Inc. SN 221,279. Pub. 8–30–66. Filed 6–16–65.

818,496. DESIGN. Zucon, Inc. SN 221,542. Pub. 8–30–66. Filed 6–18–65.

818,497. KAISER. Kaiser Aluminum & Chemical Corporation. SN 222,488. Pub. 8–30–66. Filed 7–1–65.

818,498. E-Z KART-N-PAK. Gulf States Paper Corporation. SN 222,698. Pub. 8–30–66. Filed 7–6–65.

818,499. ROUNDTAINER. Diamond National Corporation. SN 222,834. Pub. 8–30–66. Filed 7–7–65.

818,500. CHAMPAGNE. Rocket Jewelry Box, Inc. SN 223,003. Pub. 8–30–66. Filed 7–9–65.

818,501. WEYERHAEUSER. Weyerhaeuser Company. SN 241,208. Pub. 8–30–66. Filed 3–16–66.

Class 5 — Adhesives

818,484. (See Class 1 for this trademark.)

818,502. SEALEX. Berryman Products, Inc. SN 225,922. Pub. 8–30–66. Filed 8–18–65.

818,503. MISCELLANEOUS DESIGN. Gilman Paper Company. SN 226,143. Pub. 8–30–66. Filed 8–20–65.

818,504. ARCHER. Archer-Daniels-Midland Company. SN 226,987. Pub. 8–30–66. Filed 9–2–65.

Class 6 — Chemicals and Chemical Compositions

818,484. (See Class 1 for this trademark.)

818,505. PACER AND DESIGN. Pacer International Corporation. CONSOLIDATED CERTIFICATE. SN 158,851, pub. 9–15–64, filed 12–10–62, Cl. 6; SN 158,852, pub. 4–20–65, filed 12–10–62, Cl. 26.

818,506. FRENCH MAID. Mandate Manufacturing Limited. MULTIPLE CLASS (Classes 6 and 52). SN 206,734. Pub. 8–30–66. Filed 11–23–64.

818,507. FINISHING TOUCH. National Detergents, Inc., d.b.a. National Cleaners Chemical Mfg. Co. SN 214,454. Pub. 9–28–65. Filed 3–18–65.

818,508. PRP ETC. AND DESIGN. Pilar River Plate Corp. SN 224,878. Pub. 8–30–66. Filed 8–3–65.

818,509. CRYOSTAIN. Miles Laboratories, Inc., assignee of Ames Lab-Tek, Inc. SN 229,397. Pub. 8–30–66. Filed 10–6–65.

818,510. CALCOLON. American Cyanamid Company. SN 235,811. Pub. 8–30–66. Filed 1–5–66.

818,511. IRGATRIL. Geigy Chemical Corporation. SN 237,326. Pub. 8–30–66. Filed 1–26–66.

818,512. CORAL. The Sinclair Manufacturing Company, d.b.a. Sinclair Manufacturing Company. SN 237,880. Pub. 8–30–66. Filed 2–2–66.

818,513. GLOBE, ETC. AND DESIGN. Globe Chemical Co., Inc. SN 238,031. Pub. 8–30–66. Filed 2–10–66.

818,514. EAUDESOL. Albert Verley & Company. SN 246,131. Pub. 8–30–66. Filed 5–20–66.

Class 7 — Cordage

818,515. TRX. Pacific-Western Materials, Inc. SN 222,502. Pub. 8–30–66. Filed 7–1–65.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

818,516. SPEEDIES. Micro-Precision Co. SN 223,326. Pub. 8–30–66. Filed 7–14–65.

818,517. POWER-LOKT. Remington Arms Company, Inc. SN 226,471. Pub. 8–30–66. Filed 8–25–65.

818,518. TAT. Emerson Electric Co. SN 228,523. Pub. 8–30–66. Filed 9–24–65.

Class 10 — Fertilizers

818,484. (See Class 1 for this trademark.)

818,519. PURASOL. W. R. Grace & Co. SN 223,990. Pub. 8–30–66. Filed 7–22–65.

818,520. STA-MULCH. Sta-Soil Corporation. SN 245,547. Pub. 8–30–66. Filed 5–13–66.

Class 11 — Inks and Inking Materials

818,521. SELECTRAMATIC. Manifold Supplies Company. SN 232,044. Pub. 8–30–66. Filed 10–20–65.

Class 12 — Construction Materials

818,522. VITRICON AND DESIGN. Vitricon Inc. SN 189,515. Pub. 8–30–66. Filed 3–24–64.

818,523. WITHDRAWN.

818,524. ABSTRACTA DESIGN POUL CADOVIUS AND DESIGN. Poul Cadovius. SN 215,836. Pub. 8–30–66. Filed 4–6–65.

818,525. VEE-LITE. Howmet Corporation, by change of name from Howe Sound Company. SN 226,660. Pub. 9–6–66. Filed 8–27–65.

818,526. TEX-PATCH. Textured Coatings of America, Inc. SN 227,190. Pub. 8–30–66. Filed 9–3–65.

818,527. TEX-TAPE. Textured Coatings of America, Inc. SN 227,191. Pub. 8–30–66. Filed 9–3–65.

818,528. TABOPAN AND DESIGN. Abreu & Cia, Lda. SN 232,500. Pub. 8–30–66. Filed 11–12–65.

818,529. MASTERPIECE. Potlatch Forests, Inc. SN 235,934. Pub. 8–30–66. Filed 1–6–66.

818,530. CADENCE. Cadence Corporation. SN 235,957. Pub. 8–30–66. Filed 1–7–66.

818,531. DYNA-FRAME. Baltimore Concrete Plank Corporation. SN 236,353. Pub. 8–30–66. Filed 1–13–66.

818,532. DAM-IT. The Euclid Chemical Company. SN 236,729. Pub. 8–30–66. Filed 1–18–66.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

818,533. IDEAL. Idealspaten- und Schaufelwalzwerk vorm. Eckardt & Co. GmbH. SN 212,005. Pub. 8–30–66. Filed 2–15–65.

818,534. DESIGN OF GOLD COLORED CLIP. Dover Corporation. SN 213,851. Pub. 4–26–66. Filed 3–11–65.

818,535. KNEE TOUCH. The Powers Regulator Company. SN 232,476. Pub. 8–30–66. Filed 11–10–65.

818,536. CLASSICWARE. Camelot, Inc. SN 233,073. Pub. 8–30–66. Filed 11–22–65.

818,537. SWAGELOK ETC. AND DESIGN. Crawford Fitting Company. SN 234,336. Pub. 8–30–66. Filed 12–10–65.

818,538. INVISALIFT. General Motors Corporation. SN 235,974. Pub. 8–30–66. Filed 1–7–66.

818,539. PERFIX. Thomas L. Kalahar, d.b.a. Kalahar & Company and Perf Hook Manufacturing Company. SN 235,990. Pub. 8–30–66. Filed 1–7–66.

818,540. GEMINI AND DESIGN. Sterling Faucet Company. SN 236,022. Pub. 8–30–66. Filed 1–7–66.

818,541. BUTTERFLY (DESIGN). Crane Co. SN 236,241. Pub. 8–30–66. Filed 1–12–66.

818,542. NAT. The National Screw & Manufacturing Company. SN 236,405. Pub. 8–30–66. Filed 1–13–66.

818,543. AIRDRAULIC. Independent Lock Company. SN 236,823. Pub. 8–30–66. Filed 1–19–66.

818,544. RP AND DESIGN. Research Products Manufacturing Company. SN 237,155. Pub. 8–30–66. Filed 1–24–66.

Class 14 — Metals and Metal Castings and Forgings

818,545. BOHLER. Gebr. Bohler & Co. Aktiengesellschaft. SN 129,672. Pub. 5–15–62. Filed 10–11–61.

818,546. WEIRALLOY. National Steel Corporation. SN 233,189. Pub. 8–30–66. Filed 11–23–65.

818,547. FLEXICLIP. The Rails Company. SN 233,283. Pub. 8–30–66. Filed 11–24–65.

818,548. SPARTALOY. Sparta Foundry Company. SN 233,842. Pub. 8–30–66. Filed 12–2–65.

Class 15 — Oils and Greases

818,484. (See Class 1 for this trademark.)

818,549. DR. ZZINGG AND DESIGN. Franth Wetherholts, d.b.a. "A World Renown" Products. SN 234,095. Pub. 8–30–66. Filed 12–6–65.

818,550. CRAFTSMAN. Sears, Roebuck and Co. SN 235,125. Pub. 8–30–66. Filed 12–22–65.

Class 16 — Protective and Decorative Coatings

818,484. (See Class 1 for this trademark.)

818,551. DISTRON 7. Distmark, Inc. SN 206,009. Pub. 8–30–66. Filed 11–12–64.

818,552. FLUOROCLAD. The Sherwin-Williams Company. SN 230,302. Pub. 8–30–66. Filed 10–15–65.

818,553. SPARKLON. Morton International, Inc. SN 230,413. Pub. 8–30–66. Filed 10–18–65.

818,554. PERMANOX. Wyandotte Chemicals Corporation. SN 232,628. Pub. 7–5–66. Filed 11–12–65.

Class 17 — Tobacco Products

818,555. CROWNPOINT. P. Lorillard Company. SN 240,456. Pub. 8–30–66. Filed 3–8–66.

818,556. WAVERLY. P. Lorillard Company. SN 240,458. Pub. 8–30–66. Filed 3–8–66.

818,557. STOCKTON. P. Lorillard Company. SN 240,459. Pub. 8–30–66. Filed 3–8–66.

818,558. RACETON. P. Lorillard Company. SN 240,460. Pub. 8–30–66. Filed 3–8–66.

Class 18 — Medicines and Pharmaceutical Preparations

818,559. SOLUSPAN. Schering Corporation. SN 183,288. Pub. 4–26–66. Filed 12–19–63.

818,560. LINI GEL. H. C. Burns Company, Inc., d.b.a. H. C. Burns Pharmaceuticals. SN 224,066. Pub. 8–30–66. Filed 7–23–65.

818,561. BENDOCID. Merck & Co., Inc. SN 225,980. Pub. 8–30–66. Filed 8–18–65.

818,562. AQUA-FILM. Mi-Con Laboratories, Inc. SN 226,547. Pub. 8–30–66. Filed 8–26–65.

818,563. SHIFFER SYSTEM SCALP SERVICE. Charles Ellwood Shiffer, d.b.a. Dr. Shiffer's Laboratories. SN 226,794. Pub. 8–30–66. Filed 8–30–65.

818,564. ANTI-INFLAMMATORY ETC. AND DESIGN. Merck & Co., Inc. SN 227,766. Pub. 8–30–66. Filed 9–14–65.

818,565. ACTIVAGE. Richardson-Merrell Inc. SN 233,132. Pub. 6–28–66. Filed 11–22–65.

818,566. ROTIMOS. Geigy Chemical Corporation. SN 234,561. Pub. 8–30–66. Filed 12–14–65.

818,567. ORMANTA. Geigy Chemical Corporation. SN 234,562. Pub. 8–30–66. Filed 12–14–65.

818,568. REEF. Warner-Lambert Pharmaceutical Company. SN 236,027. Pub. 8–30–66. Filed 1–7–66.

818,569. CO-XAN. The Central Pharmacal Company. SN 236,462. Pub. 8–30–66. Filed 1–14–66.

818,570. NOLOC. Mallinckrodt Chemical Works. SN 237,851. Pub. 8–30–66. Filed 2–2–66.

818,571. THERMO-BRACE. Veterinary Supply Depot Incorporated. SN 238,023. Pub. 8–30–66. Filed 2–3–66.

818,572. ADMISSORB. American Home Products Corporation. SN 238,034. Pub. 8–30–66. Filed 2–4–66.

818,573. SHIELD (DESIGN). Philips Roxane, Inc. SN 238,444. Pub. 8–30–66. Filed 2–9–66.

818,574. XYNISONE. B. F. Ascher & Company, Inc SN 238,484. Pub. 8–30–66. Filed 2–10–66.

818,575. DYNOLEN. Richardson-Merrell Inc. SN 238,564. Pub. 8–30–66. Filed 2–10–66.

818,576. ENTONOX. The British Oxygen Company Limited. SN 238,605. Pub. 8–30–66. Filed 2–11–66.

818,577. UROSPAS. The Denver Chemical Manufac uring Company, d.b.a. Wampole Laboratories. SN 238,720. Pub. 8–30–66. Filed 2–14–66.

818,578. GLOBALGON. Geigy Chemical Corporation. SN 238,865. Pub. 8–30–66. Filed 2–15–66.

818,579. UNASYN. Chas. Pfizer & Co., Inc. SN 243,575. Pub. 8–30–66. Filed 4–15–66.

818,580. KETO-BAN. International Stock Food Corporation. SN 243,783. Pub. 8–30–66. Filed 4–19–66.

818,581. RESPROMYCIN. The Purdue F ederick Company. SN 243,894. Pub. 8–30–66. Filed 4–2?–66.

818,582. RESPIROCYCLINE. The Purdue Frederick Company. SN 243,895. Pub. 8–30–66. Filed 4–21–66.

Class 19—Vehicles

818,583. BAE HELIPAD AND DESIGN. B.A.E. Corporation. SN 226,118. Pub. 8–30–66. Filed 8–20–65.

818,584. RAILITE. Aeronca Manufacturing Corporation. SN 226,601. Pub. 8–30–66. Filed 8–27–65.

818,585. HEIL HUGE-PAC. The Heil Co. SN 227,144. Pub. 8–30–66. Filed 9–3–65.

818,586. DREADNAUGHT. Stanray Corporation. SN 227,185. Pub. 8–30–66. Filed 9–3–65.

818,587. ACCU-LITE. The Firestone Tire & Rubber Company. SN 227,410. Pub. 8–30–66. Filed 9–8–65.

818,588. LIL' CHIK. Arnold, Schwinn & Co. SN 227,546. Pub. 8–30–66. Filed 9–10–65.

818,589. SAFE-T-FLECTOR. Reflex Corporation of America. SN 228,074. Pub. 8–30–66. Filed 9–17–65.

818,590. REO. White Motor Corporation. SN 228,231. Pub. 8–30–66. Filed 9–20–65.

818,591. UDS. United Distributors Service, Inc., d.b.a. United Distributors Service. SN 232,742. Pub. 8–30–66. Filed 11–15–65.

Class 20—Linoleum and Oiled Cloth

818,592. CORONELLE. Armstrong Cork Company. SN 236,172. Pub. 8–30–66. Filed 1–11–66.

Class 21—Electrical Apparatus, Machines, and Supplies

818,593. EECO. Electronic Engineering Company of California. MULTIPLE CLASS (Classes 21 and 26). SN 166,267. Pub. 7–7–64. Filed 4–8–63.

818,594. CASWELL ELECTRONICS ETC. AND DESIGN. Caswell Electronics Corporation. SN 207,564. Pub. 8–30–66. Filed 12–7–64.

818,595. ROXTER. Roxter Corporation. SN 222,873. Pub. 8–30–66. Filed 7–7–65.

818,596. TAPERLINE. Industrial Distributors, Inc. SN 226,916. Pub. 8–30–66. Filed 9–1–65.

818,597. MOGISTER. General Instrument Corporation. SN 227,676. Pub. 8–30–66. Filed 9–13–65.

818,598. COFFEE HOST AND DESIGN. Holiday Inns of America, Inc., d.b.a. Coffee Host. SN 233,345. Pub. 8–30–66. Filed 11–26–65.

818,599. GRAYCASE. Graybar Electric Company, Inc. SN 237,218. Pub. 8–30–66. Filed 1–25–66.

Class 22—Games, Toys, and Sporting Goods

818,600. PENGUIN AND DESIGN. Western-Hoegee Co. SN 192,646. Pub. 8–30–66. Filed 5–4–64.

818,601. AS AND DESIGN. Aluminum Specialty Company. SN 201,999. Pub. 8–30–66. Filed 9–16–64.

818,602. BID IT RIGHT. Milton Bradley Company. SN 202,550. Pub. 2–15–66. Filed 9–24–64.

818,603. GOLDEN SOVEREIGN SERIES AND DESIGN. Ben Pearson, Inc. SN 204,084. Pub. 8–30–66. Filed 10–15–64.

818,604. FORM-FIT. Madison Dental Co. SN 207,618. Pub. 1–11–66. Filed 12–7–64.

818,605. WILDCAT BRONSON AND DESIGN. Bronson Specialties, Inc. SN 217,267. Pub. 8–30–66. Filed 4–26–65.

818,606. PERPLEXION. Jerry Lucas Pass-Time Games, Inc. SN 220,300. Pub. 8–30–66. Filed 6–3–65.

818,607. STYMIE. Milton Bradley Company. SN 223,285. Pub. 5–31–66. Filed 7–14–65.

818,608. BIG DEAL AND DESIGN. Viscount Products, Inc. SN 224,664. Pub. 8–30–66. Filed 7–30–65.

818,609. NIK-NOK. Clayton John Burnard. SN 226,619. Pub. 8–30–66. Filed 8–27–65.

818,610. CALCUFRAME. Milton Bradley Company. SN 229,053. Pub. 8–30–66. Filed 10–1–65.

818,611. FORMULA-SIX. Shakespeare Company. SN 229,137. Pub. 8–30–66. Filed 10–1–65.

818,612. FORMULA-SIX. Shakespeare Company. SN 229,138. Pub. 8–30–66. Filed 10–1–65.

818,613. D-A-M AND DESIGN. Deutsche Angelgerate Manufaktur (Dam) Hellmuth Kuntze Gesellschaft mit beschrankter Haftung & Co. Kommanditgesellschaft. SN 229,340. Pub. 8–30–66. Filed 10–5–65.

818,614. HI-JACK. Hi-Jack. SN 229,350. Pub. 8–30–66. Filed 10–5–65.

818,615. HEAD OF A COON WEARING A RACING HELMET AND SCARF (DESIGN). Hi-Jack. SN 229,351. Pub. 8–30–66. Filed 10–5–65.

818,616. CON. Constantine W. Colburn, d.b.a. Con Surf Boards. SN 229,500. Pub. 8–30–66. Filed 10–7–65.

818,617. TARGETEX. Daisy Manufacturing Company. SN 229,955. Pub. 8–30–66. Filed 10–12–65.

818,618. BABY CHATTER. Mattel, Inc. SN 231,439. Pub. 8–30–66. Filed 10–23–65.

818,619. MR RACEWAYS AND DESIGN. Model Raceway Distributors, Inc., d.b.a. Model Raceways Ltd. SN 233,621. Pub. 8–30–66. Filed 11–30–65.

818,620. MR. PRESIDENT. Minnesota Mining and Manufacturing Company. SN 235,847. Pub. 8–30–66. Filed 1–5–66.

818,621. G AND DESIGN. "G" Grip Corporation. SN 239,405. Pub. 8–30–66. Filed 2–23–66.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

818,622. BOHLER. Gebr. Bohler & Co. Aktiengesellschaft. SN 129,073. Pub. 5–15–62. Filed 10–11–61.

818,623. SEMS. Illinois Tool Works Inc. SN 215,220. Pub. 8–30–66. Filed 3–29–65.

818,624. BELOIT ARC-FOILS AND DESIGN. Beloit Corporation. SN 219,109. Pub. 8–30–66. Filed 5–18–65.

818,625. TRANSITREAD. Stearns Manufacturing Co. SN 224,561. Pub. 8–30–66. Filed 7–29–65.

818,626. DELIGHT-WARE. Chicken Delight, Inc. SN 226,513. Pub. 8–30–66. Filed 8–26–65.

818,627. FESTIVAL. Elfriede Krusius, d.b.a. Gebr. Krusius. SN 226,924. Pub. 8–30–66. Filed 9–1–65.

818,628. HORNET. Van-Wilson Limited. SN 230,461. Pub. 8–30–66. Filed 10–18–65.

818,629. SKY SLIDE. Pacific-Western Materials, Inc. SN 232,475. Pub. 8–30–66. Filed 11–10–65.

818,630. UDS. United Distributors Services, Inc., d.b.a. United Distributors Service. SN 232,743. Pub. 8–30–66. Filed 11–15–65.

818,631. COMMANDER. Walker Manufacturing Company. SN 233,026. Pub. 8–30–66. Filed 11–19–65.

818,632. POWER-TEX. Essick Manufacturing Company. SN 234,273. Pub. 8–30–66. Filed 12–9–65.

818,633. MEADOWS. Maremont Corporation. SN 234,449. Pub. 8–30–66. Filed 12–13–65.

818,634. HYDRASONIC. General Motors Corporation. SN 235,973. Pub. 8–30–66. Filed 1–7–66.

818,635. TNT. Gray Manufacturing Company, Inc. SN 236,989. Pub. 8–30–66. Filed 1–21–66.

818,636. VD AND DESIGN. Van Dorn Company, d.b.a. Van Dorn Plastics Machinery Company. SN 237,056. Pub. 8–30–66. Filed 1–21–66.

818,637. TUF-BAND. Certified Metal Products Company. SN 237,307. Pub. 8–30–66. Filed 1–26–66.

818,638. DIKE-O-STRIKE. Dike-O-Seal Incorporated. SN 237,440. Pub. 8–30–66. Filed 1–27–66.

Class 24—Laundry Appliances and Machines

818,639. TURBOCLENE AND DESIGN. Engelhard Hanovia of Canada Limited, d.b.a. Engelhard Hanovia Lamps. SN 212,858. Pub. 8–30–66. Filed 2–26–65.

818,640. GRAND WAY. The Grand Union Company. SN 232,551. Pub. 8–30–66. Filed 11–12–65.

818,641. THREE HANDS FANCIFULLY ARRANGED (DESIGN). General Electric Co. SN 233,337. Pub. 8–30–66. Filed 11–26–65.

Class 25—Locks and Safes

818,642. SAFEMASTERS. The Safemasters Co., Inc. SN 231,237. Pub. 8–30–66. Filed 10–22–65.

Class 26—Measuring and Scientific Appliances

818,505. CONSOLIDATED CERTIFICATE. See Class 6.

818,593. (See Class 21 for this trademark.)

818,643. CLINIMETER. Ambco Electronics. SN 220,442. Pub. 12–14–65. Filed 6–7–65.

818,644. MISCELLANEOUS DESIGN. Atlantic Microfilm Corporation. SN 225,464. Pub. 8–30–66. Filed 8–11–65.

Class 27—Horological Instruments

818,645. MARSHALLOY. Morrie Chaitlen, d.b.a. C. & E. Marshall Co. SN 232,972. Pub. 8–30–66. Filed 11–19–65.

818,646. AVANT. Sunbeam Corporation. SN 233,016. Pub. 8–30–66. Filed 11–19–65.

Class 28—Jewelry and Precious-Metal Ware

818,647. CHERISHED. Fred Seltzer Corporation. SN 227,524. Pub. 8–30–66. Filed 9–9–65.

818,648. COLEE. Colee. SN 232,194. Pub. 8–30–66. Filed 11–5–65.

818,649. FORBES AND DESIGN. The International Silver Company. SN 233,104. Pub. 8–30–66. Filed 11–22–65.

Class 29—Brooms, Brushes, and Dusters

818,650. ROYALTON. Paris Presents, Ltd. SN 225,664. Pub. 8–30–66. Filed 8–13–65.

818,651. GRAND WAY. The Grand Union Company. SN 232,552. Pub. 8–30–66. Filed 11–12–65.

818,652. DURASHAM. Charles Offenhartz, d.b.a. Duratanned Leather Company. SN 232,714. Pub. 8–30–66. Filed 11–15–65.

818,653. SATIN STROKE. American Brush Corporation. SN 232,961. Pub. 8–30–66. Filed 11–19–65.

818,654. PRO. Pro-phy-lac-tic Brush Company. SN 233,005. Pub. 8–30–66. Filed 11–19–65.

818,655. PRO. Pro-phy-lac-tic Brush Company. SN 233,006. Pub. 8–30–66. Filed 11–19–65.

Class 30—Crockery, Earthenware, and Porcelain

818,656. KEEPSAKE HOUSE. Louis Madow, d.b.a. Keepsake House and Madow's. SN 203,779. Pub. 8–30–66. Filed 10–12–64.

Class 31—Filters and Refrigerators

818,657. DURALEX. Mermaid, Inc. SN 215,634. Pub. 8–30–66. Filed 4–2–65.

818,658. FILTEREX. Crane Co. SN 225,407. Pub. 8–30–66. Filed 8–10–65.

818,659. RCI AND DESIGN. Reichhold Chemicals, Inc. SN 232,718. Pub. 8–30–66. Filed 11–15–65.

818,660. FIBRA-CEL. Johns-Manville Corporation. SN 236,268. Pub. 8–30–66. Filed 1–12–66.

818,661. THE EXECUTIVE TWINS. Executive Products, Inc. SN 238,627. Pub. 8–30–66. Filed 2–11–66.

Class 32—Furniture and Upholstery

818,662. VP. Vogel-Peterson Co. SN 219,089. Pub. 8–30–66. Filed 5–17–65.

818,663. ECONOMIZER. Alma Desk Company. SN 236,223. Pub. 8–30–66. Filed 1–12–66.

818,664. HIDDEN SECRET. Countess York Ltd. SN 236,358. Pub. 8–30–66. Filed 1–13–66.

818,665. ROYAL ROSE. New York Feather Co., Inc. SN 236,406. Pub. 8–30–66. Filed 1–13–66.

818,666. BLUE ROSE. New York Feather Co., Inc. SN 236,407. Pub. 8–30–66. Filed 1–13–66.

818,667. MIDNIGHT ROSE. New York Feather Co., Inc. SN 236,408. Pub. 8–30–66. Filed 1–13–66.

Class 33—Glassware

818,668. RCI AND DESIGN. Reichhold Chemicals, Inc. SN 232,719. Pub. 8–30–66. Filed 11–15–65.

Class 34 — Heating, Lighting, and Ventilating Apparatus

818,669. NORMAN AND DESIGN. International Telephone and Telegraph Corporation. SN 219,579. Pub. 8–30–66. Filed 5–24–65.

818,670. DUAL-FLOW. Thermal Dynamics Corporation. SN 221,116. Pub. 8–30–66. Filed 6–14–65.

818,671. DAVDAL. David Dalin. SN 229,771. Pub. 8–30–66. Filed 10–11–65.

818,672. BETALIGHT. Saunders-Roe and Nuclear Enterprises Limited. SN 236,520. Pub. 8–30–66. Filed 1–14–66.

818,673. CONDOR. The British Oxygen Company Limited. SN 236,799. Pub. 8–30–66. Filed 1–19–66.

818,674. TRI-TEMP. Essick Manufacturing Company. SN 237,101. Pub. 8–30–66. Filed 1–24–66.

818,675. DURA-WELD. Mid-States Distributing Company, Inc. SN 237,369. Pub. 8–30–66. Filed 1–26–66.

818,676. RISE. Carter-Wallace, Inc. SN 237,932. Pub. 8–30–66. Filed 2–3–66.

818,677. CAMPMAID. The Arnold Tackle Corporation. SN 238,599. Pub. 8–30–66. Filed 2–11–66.

818,678. CONSARC. Consarc Corporation. SN 245,132. Pub. 8–30–66. Filed 5–9–66.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

818,679. SNAPSEELS. A.P.M.-Hexseal Corporation. SN 199,245. Pub. 8–30–66. Filed 8–5–64.

818,680. TACOSEAL. Dodge Manufacturing Corporation. SN 232,680. Pub. 8–30–66. Filed 11–15–65.

Class 36 — Musical Instruments and Supplies

818,681. DEMIDRUM AND DESIGN. Emil L. Farnlund. SN 216,286. Pub. 8–30–66. Filed 4–12–65.

818,682. LOST-NITE. Lost Nite Records, Inc. SN 243,251. Pub. 8–30–66. Filed 4–12–66.

Class 37 — Paper and Stationery

818,683. THILMANY. Thilmany Pulp and Paper Company. SN 186,128. Pub. 8–30–66. Filed 2–5–64.

818,684. OSAGE. Continental Can Company, Inc. SN 231,055. Pub. 8–30–66. Filed 10–22–65.

818,685. JUSTRITE. Eberhard Faber Inc. SN 231,074. Pub. 8–30–66. Filed 10–22–65.

818,686. "WILCO." The Holes-Webway Co., d.b.a. The H-W Co. SN 231,130. Pub. 8–30–66. Filed 10–22–65.

818,687. DECOMOLD. American Radiator & Standard Sanitary Corporation. SN 231,366. Pub. 8–30–66. Filed 10–23–65.

818,688. TYVEK. E. I. du Pont de Nemours and Company. SN 231,747. Pub. 8–30–66. Filed 10–28–65.

818,689. HYTONE. Westab Inc. SN 232,489. Pub. 8–30–66. Filed 11–10–65.

818,690. ENDURANCE BOND. Graham Paper Company. SN 242,976. Pub. 8–30–66. Filed 4–8–66.

Class 38 — Prints and Publications

818,484. (See Class 1 for this trademark.)

818,691. COMPOSITE CATALOG. Gulf Publishing Company. SN 200,722. Pub. 8–30–66. Filed 8–27–64.

818,692. VIP. Printing Industry Corporation of America. SN 224,643. Pub. 8–30–66. Filed 7–30–65.

818,693. TUESDAY. Tuesday Publications, Inc. SN 230,009. Pub. 8–30–66. Filed 10–12–65.

818,694. INTERNATIONALS AND DESIGN. Hallmark Cards, Incorporated. SN 230,388. Pub. 8–30–66. Filed 10–18–65.

818,695. K AND DESIGN. Koppel Photo Engraving Co., Inc. SN 230,400. Pub. 8–30–66. Filed 10–18–65.

818,696. INTEREST IS THE GREATEST EDUCATOR AND DESIGN. Montgomery Music Inc. SN 231,835. Pub. 8–30–66. Filed 10–29–65.

818,697. TOTAL CHURCH PROGRAM ETC. AND DESIGN. Scripture Press Publications, Inc. SN 232,794. Pub. 8–30–66. Filed 11–16–65.

818,698. GO GO WITH TEEN LIFE AND DESIGN. Publication House, Inc. SN 233,129. Pub. 8–30–66. Filed 11–22–65.

818,699. HUMAN FIGURE (DESIGN). B. F. Ascher & Company, Inc. SN 233,304. Pub. 8–30–66. Filed 11–26–65.

818,700. PETROLEUM AND CHEMICAL TRANSPORTER. Sutherland Publications, Inc. SN 233,959. Pub. 8–30–66. Filed 12–3–65.

Class 39 — Clothing

818,701. KONA KLOTH. Nali' i Fashions, Ltd. SN 155,827. Pub. 8–30–66. Filed 10–24–62.

818,702. SOFT-LINE. International Latex Corporation. SN 171,255. Pub. 8–30–66. Filed 6–18–63.

818,703. SPRUCE UPS. Spruce Associates, Inc. SN 197,620. Pub. 8–30–66. Filed 7–10–64.

818,704. COURREGES. Andre Courreges, S.a.r.L. SN 202,557. Pub. 8–30–66. Filed 9–24–64.

818,705. THUNDERBALL. Spatz Bros., Inc. SN 217,796. Pub. 8–30–66. Filed 4–30–65.

818,706. PCA AND DESIGN. Pajama Corporation of America. SN 219,812. Pub. 8–30–66. Filed 5–26–65.

818,707. HIDDEN CIRCLE. Shannon Mfg. Co. SN 221,106. Pub. 8–30–66. Filed 6–14–65.

818,708. GABRIELLE. Gimbel Brothers, Inc. SN 223,400. Pub. 8–30–66. Filed 7–15–65.

818,709. KENRIDGE PARK. Gimbel Brothers, Inc. SN 223,401. Pub. 8–30–66. Filed 7–15–65.

818,710. LADY LAURA. R. and M. Kaufmann Incorporated. SN 223,794. Pub. 8–30–66. Filed 7–20–65.

818,711. HANWAY. City Products Corporation. SN 224,164. Pub. 8–30–66. Filed 7–26–65.

818,712. MIRAFIT. Champ Hats, Inc. SN 224,509. Pub. 8–30–66. Filed 7–29–65.

818,713. LE VOY'S INC. Le Voy's, Inc. SN 226,928. Pub. 8–30–66. Filed 9–1–65.

818,714. TF (DESIGN). Huntley Knitting Mills, Inc., d.b.a. Huntley of York. SN 229,431. Pub. 8–30–66. Filed 10–6–65.

818,715. CAPE-HEART. Cape-Heart Fashions, Inc. SN 230,131. Pub. 8–30–66. Filed 10–14–65.

818,716. KIKI DELUXE. Kiki Undies Corporation. SN 230,257. Pub. 8–30–66. Filed 10–15–65.

818,717. LADY T AND DESIGN. Barbara Gayle, Inc. SN 230,379. Pub. 8–30–66. Filed 10–18–65.

818,718. WISPA-SHANK. Interco Incorporated, by change of name from International Shoe Company. SN 230,648. Pub. 7–26–66. Filed 10–20–65.

818,719. STITCH CRAFT. Bullock Hosiery, Inc. SN 232,814. Pub. 8–30–66. Filed 11–17–65.

818,720. CASUALAD. Savada Bros., Inc. SN 233,832. Pub. 8–30–66. Filed 12–2–65.

818,721. CACHET. Junior Accent, Inc. SN 233,911. Pub. 8–30–66. Filed 12–3–65.

818,722. BRAND X. Chadbourn Gotham, Inc. SN 233,995. Pub. 8–30–66. Filed 12–6–65.

818,723. VISTRAM AND DESIGN. Farbenfabriken Bayer Aktiengesellschaft. SN 234,190. Pub. 8–30–66. Filed 12–8–65.

818,724. A "MEMORIZED" DRESS AND DESIGN. Alfred Werber, Inc. SN 234,319. Pub. 8–30–66. Filed 12–9–65.

818,725. THE FREUDIAN SLIP. Leonard Decof. SN 234,395. Pub. 8–30–66. Filed 12–13–65.

818,726. GIRL WITH SURFBOARD (DESIGN). Bay Club Sportswear of California, Inc. SN 234,501. Pub. 8–30–66. Filed 12–13–65.

818,727. INMA. International Nutria Marketing Association. SN 236,384. Pub. 8–30–66. Filed 1–13–66.

818,728. MISSY MATES. The Williams Manufacturing Company. SN 236,942. Pub. 8–30–66. Filed 1–20–66.

818,729. GRASS ROOTS. Ship 'N Shore, Inc. SN 237,041. Pub. 8–30–66. Filed 1–21–66.

818,730. MY-T-TUFF. The Alden Mills. SN 237,193. Pub. 8–30–66. Filed 1–25–66.

818,731. CUTLASS. Corman & Wasserman Inc. SN 237,316. Pub. 8–30–66. Filed 1–26–66.

818,732. STUDENT TOURS. Blue Bell, Inc. SN 246,019. Pub. 8–30–66. Filed 5–19–66.

Class 40 — Fancy Goods, Furnishings, and Notions

818,733. AMERICANA. The Hawie Manufacturing Co. SN 236,383. Pub. 8–30–66. Filed 1–13–66.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

818,734. STELLASET. Celanese Corporation of America. SN 203,157. Pub. 8–30–66. Filed 10–2–64.

818,735. STELLACEL. Celanese Corporation of America. SN 203,158. Pub. 8–30–66. Filed 10–2–64.

818,736. POLLY DEE. Erwin Mills, Inc. SN 226,134. Pub. 8–30–66. Filed 8–20–65.

818,737. TYVEK. E. I. du Pont de Nemours and Company. SN 231,748. Pub. 8–30–66. Filed 10–28–65.

818,738. OUTDOOR/INDOOR AND DESIGN. Ozite Corporation. SN 233,277. Pub. 8–30–66. Filed 11–24–65.

818,739. POLYELLA. William Heller, Inc. SN 233,341. Pub. 8–30–66. Filed 11–26–65.

818,740. FORT SYNOCHLOR. United Merchants and Manufacturers, Inc. SN 235,806. Pub. 8–30–66. Filed 1–4–66.

818,741. CROWN ROYAL. C.R. Textiles Corp. SN 235,956. Pub. 8–30–66. Filed 1–7–66.

Class 43 — Thread and Yarn

818,742. TYPICO. Filatures Prouvost & Cie La Lainiere de Roubaix. SN 235,768. Pub. 8–30–66. Filed 1–4–66.

818,743. OPALETTE. Emile Bernat & Sons Co. SN 235,966. Pub. 8–30–66. Filed 1–7–66.

Class 44 — Dental, Medical, and Surgical Appliances

818,744. INTERJET. Bernard Trupp and Garrison Trupp (joint owners), d.b.a. Trupp Interdental. SN 185,828. Pub. 8–30–66. Filed 1–31–64.

818,745. SATELIGHT. American Sterilizer Company. SN 221,779. Pub. 8–30–66. Filed 6–23–65.

818,746. SHEERS. The Pioneer Rubber Company. SN 232,088. Pub. 8–30–66. Filed 11–3–65.

Class 45 — Soft Drinks and Carbonated Waters

818,747. DOBBS. Canada Dry Bottling Company of Worcester, d.b.a. Dobbs Beverage Company and as Dobbs. MULTIPLE CLASS (Classes 45 and 46). SN 209,572. Pub. 8–30–66. Filed 1–8–65.

818,748. DESERT DRY. Valley Spring Beverage Co., d.b.a. Desert Dry Beverage Company. SN 226,317. Pub. 8–30–66. Filed 8–23–65.

818,749. SUPER DUPER. S. M. Flickinger Co. Inc. SN 230,240. Pub. 8–30–66. Filed 10–15–65.

818,750. WOBBLER. Graf's Beverages, Inc. SN 234,748. Pub. 8–30–66. Filed 12–16–65.

818,751. TROPICAL JOY. Clicquot Club Company. SN 237,661. Pub. 8–30–66. Filed 2–1–66.

818,752. KLEE-KO. Clicquot Club Company. SN 237,662. Pub. 8–30–66. Filed 2–1–66.

818,753. DESIGN OF ESKIMO BOY'S HEAD. Clicquot Club Company. SN 237,663. Pub. 8–30–66. Filed 2–1–66.

Class 46 — Foods and Ingredients of Foods

818,484. (See Class 1 for this trademark.)

818,747. (See Class 45 for this trademark.)

818,754. VACATION LAND. Michigan Milk Producers Association, d.b.a. Vacationland Dairy Cooperative. SN 187,030. Pub. 8–30–66. Filed 2–19–64.

818,755. GRANDMA ANDERSON'S. Ivey Corporation, d.b.a. Grandma Anderson's Preserving Kitchens. SN 194,804. Pub. 8–30–66. Filed 6–3–64.

818,756. PEVELY TAFFY CRUNCH. Pevely Dairy Company. SN 197,425. Pub. 8–30–66. Filed 7–8–64.

818,757. SANDY CUTS. The Quaker Oats Company. SN 203,531. Pub. 8–30–66. Filed 10–7–64.

818,758. CUMMINGS STUDIO CANDIES. Arline K. Cummings, d.b.a. Cummings Studio Candies. SN 207,796. Pub. 8–30–66. Filed 12–9–64.

818,759. NEW DUTCH. Koninklijke Fabrieken C. J. van Houten & Zoon N.V., by change of name from C. J. van Houten & Zoon N.V. SN 207,998. Pub. 5–31–66. Filed 12–11–64.

818,760. GIFT OF NATURE. S. Schonfeld Company, Inc. SN 208,392. Pub. 8–30–66. Filed 12–17–64.

818,761. MRS. GRASS. I. J. Grass Noodle Co., Inc. SN 208,569. Pub. 8–30–66. Filed 12–21–64.

818,762. KOKO-FREEZE. H. P. Hood & Sons, Inc., d.b.a. H. P. Hood & Sons. SN 208,928. Pub. 8–30–66. Filed 12–28–64.

818,763. BROASTED SUPREME. The Broaster Co. SN 209,988. Pub. 8–30–66. Filed 1–15–65.

818,764. ANGEL AND DESIGN. F. Malatesta Co., d.b.a. F. Malatesta. SN 210,799. Pub. 8–30–66. Filed 1–27–65.

818,765. NESTLE'S. The Nestle Company, Inc. SN 210,808. Pub. 8–30–66. Filed 1–27–65.

818,766. SMOKETEEN CASINGS. Hygrade Food Products Corporation. SN 211,362. Pub. 8–30–66. Filed 2–4–65.

818,767. SOUR C. Tip Top Foods, Inc. SN 214,036. Pub. 6–14–66. Filed 3–12–65.

818,768. SPOON SIZE. National Biscuit Company. SN 214,281. Pub. 8–30–66. Filed 3–16–65.

818,769. DERRY'S MSG AND DESIGN. Derry Products, Inc. SN 215,055. Pub. 8–30–66. Filed 3–26–65.

818,770. AZALEA. Azalea Meats, Incorporated. SN 216,654. Pub. 8–30–66. Filed 4–16–65.

818,771. VOLAITAS. Filler Products, Inc. SN 217,457. Pub. 8–30–66. Filed 7–29–65.

818,772. MOGEN DAVID. Mogen David Food Products Inc. SN 218,462. Pub. 8–30–66. Filed 5–10–65.

818,773. VITARINE AND DESIGN. The Vitarine Co., Inc. SN 218,931. Pub. 8–30–66. Filed 5–14–65.

818,774. CAROLINA PRIDE A WELL DRESSED BIRD AND DESIGN. Carolina Poultry, Inc. SN 219,670. Pub. 8–30–66. Filed 5–25–65.

818,775. PUREPAK. Purepak Foods, Inc. SN 219,909. Pub. 12–14–65. Filed 5–27–65.

818,776. JAXON. Lee-Jax Kitchens, Inc., assignee of Custom Foods, Inc. SN 220,834. Pub. 8–30–66. Filed 6–10–65.

818,777. DELMARK FARMS. The Dietene Company, d.b.a. The Delmark Company. SN 221,359. Pub. 8–30–66. Filed 6–17–65.

818,778. PEP-OR-SPICE. Dodge & Olcott, Inc. SN 222,350. Pub. 8–30–66. Filed 6–30–65.

818,779. HONEYCOMB. General Foods Corporation. SN 222,480. Pub. 8–30–66. Filed 7–1–65.

818,780. ANIMATED POPS. Traveler's Manufacturing & Sales Company, Inc., d.b.a. Animated Pop Co. SN 223,749. Pub. 8–30–66. Filed 7–19–65.

818,781. LITVOK'S DE-LITE AND DESIGN. Savick's Food Products Co., Inc. SN 224,468. Pub. 8–30–66. Filed 7–28–65.

818,782. SULTANA AND DESIGN. National Biscuit Company. SN 224,778. Pub. 8–30–66. Filed 8–2–65.

818,783. DUCHESSE-ANNE. Etablissements Lefevre-Utile, Societe en nom Collectif et en Commandite Simple. SN 225,125. Pub. 8–30–66. Filed 8–6–65.

818,784. CL CONVENIENT LIVING. Edward M. Levy, d.b.a. Convenient Living. SN 226,063. Pub. 8–30–66. Filed 8–19–65.

818,785. BOSTON LIGHT AND DESIGN. O'Donnell-Usen Fisheries Corp. SN 227,062. Pub. 8–30–66. Filed 9–2–65.

818,786. AMERICAN MAID. The Red Wing Company, Inc. SN 227,181. Pub. 8–30–66. Filed 9–3–65.

818,787. EL EBRO. Ebro Packing Co., Inc. SN 228,023. Pub. 8–30–66. Filed 9–17–65.

818,788. CHEF'S TOUCH MC MCCORMICK AND DESIGN. McCormick & Company, Incorporated. SN 229,837. Pub. 8–30–66. Filed 10–11–65.

818,789. HORSE KRUNCH. Allied Mills, Inc. SN 230,470. Pub. 8–30–66. Filed 10–18–65.

818,790. GROTESQUE FIGURE OF ORANGE (DESIGN). The Pillsbury Company. SN 231,208. Pub. 8–30–66. Filed 10–22–65.

818,791. GROTESQUE FIGURE OF STRAWBERRY (DESIGN). The Pillsbury Company. SN 231,209. Pub. 8–30–66. Filed 10–22–65.

818,792. GROTESQUE FIGURE OF LEMON (DESIGN). The Pillsbury Company. SN 231,210. Pub. 8–30–66. Filed 10–22–65.

818,793. GROTESQUE FIGURE OF RASPBERRY (DESIGN). The Pillsbury Company. SN 231,211. Pub. 8–30–66. Filed 10–22–65.

818,794. GROTESQUE FIGURE OF CHERRY (DESIGN). The Pillsbury Company. SN 231,215. Pub. 8–30–66. Filed 10–22–65.

818,795. PEDERNALES. Patio Foods, Inc. SN 231,698. Pub. 8–30–66. Filed 10–27–65.

818,796. BOOZERS. Adams and Brooks, Inc., d.b.a. A. & B. Confections. SN 231,874. Pub. 8–30–66. Filed 11–1–65.

818,797. SHO-NUFF. Bayou Foods Inc., d.b.a. Nautical Foods Co. SN 231,881. Pub. 8–30–66. Filed 11–1–65.

818,798. SU'FLAY. National Dairy Products Corporation. SN 232,008. Pub. 8–30–66. Filed 11–2–65.

818,799. RIGHT-AWAY. United Fruit Company. SN 232,040. Pub. 8–30–66. Filed 11–2–65.

818,800. REQUEST. Perk Foods Company. SN 232,229. Pub. 8–30–66. Filed 11–5–65.

818,801. FIRST FAMILY. Ripon Foods, Inc. SN 232,239. Pub. 8–30–66. Filed 11–5–65.

818,802. CABIN HOME. Western Grain Company. SN 232,490. Pub. 8–30–66. Filed 11–10–65.

818,803. FUL-COURSE. Agway, Inc. SN 232,498. Pub. 8–30–66. Filed 11–12–65.

818,804. EGG-LIFT. Agway, Inc. SN 232,499. Pub. 8–30–66. Filed 11–12–65.

818,805. PLOCHMAN. Plochman, Inc. SN 234,665. Pub. 8–30–66. Filed 12–15–65.

818,806. TIPS. The John Mueller Licorice Co. SN 235,075. Pub. 8–30–66. Filed 12–20–65.

818,807. SLIMS. The John Mueller Licorice Co. SN 235,076. Pub. 8–30–66. Filed 12–20–65.

818,808. TALL BOY. Morgan Packing Company, Inc. SN 235,117. Pub. 8–30–66. Filed 12–22–65.

818,809. FORTUNE AND DESIGN. Fortune Foods Inc. SN 235,457. Pub. 8–30–66. Filed 12–23–65.

818,810. TURKEYBURGETTE. Hickory Valley Farm, Inc. SN 241,590. Pub. 8–30–66. Filed 3–22–66.

818,811. PARTY PRIDE. Safeway Stores, Incorporated. SN 243,172. Pub. 8–30–66. Filed 4–11–66.

818,812. BIG CHOICE. Philadelphia Chewing Gum Corporation. SN 243,617. Pub. 8–30–66. Filed 4–18–66.

Class 47 — Wines

818,813. VINAS DE ORFILA. Sociedad Anonima Vinedos y Bodegas "Jose Orfila" Ltda. SN 217,568. Pub. 8–30–66. Filed 4–28–65.

818,814. JOSE ROMERO P. GIL. Jaime Fernandez Diestro, S.A. SN 221,707. Pub. 8–30–66. Filed 6–22–65.

818,815. SC NATUR AND DESIGN. Sektkellerei Carstens K.G. SN 224,343. Pub. 8–30–66. Filed 7–27–65.

818,816. JEAN-OH. Schenley Distillers, Inc., d.b.a. Weston Winery. SN 230,573. Pub. 8–30–66. Filed 10–19–65.

818,817. GENE-O. Schenley Distillers, Inc., d.b.a. Weston Winery. SN 230,574. Pub. 8–30–66. Filed 10–19–65.

818,818. OLD NUTCRACKER BRAND. E. & J. Gallo Winery, d.b.a. Gallo Vineyards. SN 231,681. Pub. 8–30–66. Filed 10–27–65.

818,819. CARLITO. Williams & Humbert Limited. SN 232,100. Pub. 8–30–66. Filed 11–3–65.

Class 48 — Malt Beverages and Liquors

818,820. GLUEK. G. Heileman Brewing Company, Inc. SN 224,194. Pub. 8–30–66. Filed 7–26–65.

818,821. NORMALTA. De Sammensluttede Bryggerier A/S. SN 235,963. Pub. 8–30–66. Filed 1–7–66.

Class 49 — Distilled Alcoholic Liquors

818,822. CHARTMAN. Schenley Distillers, Inc. SN 231,238. Pub. 8–30–66. Filed 10–22–65.

818,823. PERSONA GRATA. Schenley Distillers, Inc. SN 231,240. Pub. 8–30–66. Filed 10–22–65.

818,824. BEGORRA. Schenley Distillers, Inc. SN 231,241. Pub. 8–30–66. Filed 10–22–65.

818,825. STRATFORD. Continental Distilling Corp., d.b.a. Continental Distilling Co. SN 232,674. Pub. 8–30–66. Filed 11–15–65.

818,826. PALO VIEJO GRANADO. Puerto Rico Distillers, Inc., d.b.a. Barcelo Marques & Co. SN 238,667. Pub. 8–30–66. Filed 2–11–66.

818,827. KUMQUETTE. Puerto Rico Distillers, Inc., d.b.a. Compania de Bebidas del Oriente. SN 240,538. Pub. 8–30–66. Filed 3–9–66.

Class 50 — Merchandise Not Otherwise Classified

818,828. DON'T HAVE A PARTY WITHOUT US. Design Center, Incorporated. SN 221,802. Pub. 8–30–66. Filed 6–23–65.

818,829. RAK-A-TIE. Pandora, Incorporated. SN 228,745. Pub. 2–1–66. Filed 9–27–65.

818,830. CLITHEROE HOUSE. Nurthing Vandoorn Bateson. SN 230,758. Pub. 8–30–66. Filed 10–21–65.

818,831. LINCOLN ETC. AND DESIGN. Lincoln Engraving Company. SN 231,151. Pub. 6–21–66. Filed 10–22–65.

818,832. VERI COLOR. Precision Dynamics Corporation. SN 232,791. Pub. 8–30–66. Filed 11–16–65.

818,833. CALFO-KIT. Calfonex, Inc. SN 238,166. Pub. 8–30–66. Filed 2–7–66.

818,834. CAPRI. Nagel Manufacturing & Supply Co., Inc. SN 238,269. Pub. 8–30–66. Filed 2–7–66.

Class 51 — Cosmetics and Toilet Preparations

818,835. SABRE. Colgate-Palmolive Company. SN 158,960. Pub. 8–30–66. Filed 12–12–62.

818,836. SABRE SHAVE. Colgate-Palmolive Company. SN 158,961. Pub. 8–30–66. Filed 12–12–62.

818,837. SABRE. Colgate-Palmolive Company. SN 161,437. Pub. 8–30–66. Filed 1–25–63.

818,838. CARUSET. Carros Corp. SN 223,008. Pub. 8–30–66. Filed 7–9–65.

818,839. FANTOCHE. Chas. Pfizer & Co., Inc. SN 228,185. Pub. 8–30–66. Filed 9–20–65.

818,840. STYLIZED JI (DESIGN). Johnson Industries, Inc. SN 230,839. Pub. 8–30–66. Filed 10–21–65.

818,841. HEADLIGHT. Ashe Laboratories Limited. SN 232,651. Pub. 8–30–66. Filed 11–15–65.

818,842. AQUAMED. Herald Pharmacal, Inc. SN 235,564. Pub. 8–30–66. Filed 12–30–65.

818,843. ORCHID PETAL. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics. SN 237,031. Pub. 8–30–66. Filed 1–21–66.

818,844. MUTINY. John R. Virus, d.b.a. Brandy Harvest. SN 237,501. Pub. 8–30–66. Filed 1–27–66.

Class 52 — Detergents and Soaps

818,506. (See Class 6 for this trademark.)

818,845. CMC AND DESIGN. Comet Manufacturing Corporation. SN 199,541. Pub. 8–30–66. Filed 8–10–64.

818,846. TRAIL-BLAZER. S. C. Johnson & Son, Inc. SN 217,741. Pub. 8–30–66. Filed 4–30–65.

818,847. ARCTIC. Colgate-Palmolive Company. SN 237,429. Pub. 8–30–66. Filed 1–27–66.

Service Marks

Class 100 — Miscellaneous

818,484. (See Class 1 for this trademark.)

818,848. PIZZA VILLA AND DESIGN. Sam Durkin. SN 202,680. Pub. 8–30–66. Filed 9–25–64.

818,849. GF STUDIOS AND PLANNING UNIT. The General Fireproofing Company. SN 209,505. Pub. 8–30–66. Filed 1–7–65.

818,850. BOY (DESIGN). Pinocchio Associates, Inc. SN 225,995. Pub. 8–30–66. Filed 8–18–65.

818,851. A WAYFARER INN AND DESIGN. Wayfarer Inns of New York, Inc. SN 228,423. Pub. 8–30–66. Filed 9–22–65.

818,852. DOWNTOWNER. The Downtowner Corporation. SN 240,867. Pub. 8–30–66. Filed 3–14–66.

Class 101 — Advertising and Business

818,853. TELETTER. Dial Dictation, Inc. SN 219,405. Pub. 8–30–66. Filed 5–21–65.

818,854. TELCARD. Telmark, Inc. SN 224,265. Pub. 8–30–66. Filed 7–26–65.

818,855. UNIVATION. Central States Management Consultants, Inc. SN 224,928. Pub. 8–30–66. Filed 8–4–65.

818,856. WRH. Weyerhaeuser Company. SN 227,900. Pub. 8–30–66. Filed 9–15–65.

818,857. DIXIE EMPLOYMENT AGENCIES AND DESIGN. Dixie Agencies, Inc. SN 230,363. Pub. 8–30–66. Filed 10–18–65.

Class 102 — Insurance and Financial

818,858. FOUNDED 1894 INVESTORS DIVERSIFIED SERVICES, INC. AND DESIGN. Investors Diversified Services, Inc. SN 218,437. Pub. 8–30–66. Filed 5–10–65.

818,859. INVESTORS ETC. AND DESIGN. Investors Diversified Services, Inc. SN 221,603. Pub. 8–30–66. Filed 6–21–65.

Class 103 — Construction and Repair

818,860. TECH-CARE AND DESIGN. Whirlpool Corporation. SN 203,134. Pub. 8–23–66. Filed 10–1–64.

818,861. SAFEMASTERS. The Safemasters Co., Inc. SN 230,082. Pub. 8–30–66. Filed 10–13–65.

818,862. ECONOMAT. Driv-Thru Car Wash Limited. SN 233,255. Pub. 8–30–66. Filed 11–24–65.

Class 105 — Transportation and Storage

818,863. DCS AND DESIGN. Mail Delivery Service Co., Inc., d.b.a. Data Courier Service. SN 220,310. Pub. 8–30–66. Filed 6–3–65.

Class 107 — Education and Entertainment

818,864. SHOWCASE CINEMAS AND DESIGN. National Amusements, Inc. SN 206,952. Pub. 8–30–66. Filed 11–25–64.

818,865. PITMAN HOT LINER AND DESIGN. Pitman Manufacturing Company. SN 207,078. Pub. 8–30–66. Filed 11–27–64.

818,866. LOS DIPLOMATICOS. Adolfo Lorenzo Pego. SN 221,193. Pub. 8–30–66. Filed 6–15–65.

Collective Membership Mark

Class 200

818,867. PDI MEMBER PLUMBING AND DRAINAGE INSTITUTE AND DESIGN. Plumbing and Drainage Institute. SN 233,631. Pub. 8–30–66. Filed 11–30–65.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 1—Raw or Partly Prepared Materials

818,868. Geo. J. Ball, Inc., d.b.a. Pan-American Seed Co., West Chicago, Ill. SN 227,816. Filed P.R. 9–15–65; Am. S.R. 9–15–66.

ClimaTested

For Flower Seeds.
First use on or before July 15, 1965.

Class 2—Receptacles

818,869. Weyerhaeuser Company, Tacoma, Wash. SN 224,823. Filed 8–2–65.

PLASTICLAD

Owner of Reg. No. 768,019.
For Paperboard Cartons—Namely, Folding Cartons Which Have Been Coated With a Plastic-Like Preparation.
First use Nov. 26, 1962.

Class 12—Construction Materials

818,870. Watersaver Co., Inc., Denver, Colo. SN 217,429. Filed P.R. 4–26–65; Am. S.R. 9–19–66.

WATERSAVER

The drawing is lined for blue but no claim is made for color.
For Rubber, Asphalt, and Vinyl Plastic Strips and Sheets Arranged and Shaped for Ditch Liners, Reservoir Liners, Tank Liners, Flume Liners, Flashings and Caulks Used Primarily as Waterproof Containers or Linings.
First use Jan. 5, 1960.

Class 17—Tobacco Products

818,871. Jamestown Leaf Tobacco Co., Inc., Richmond, Va. SN 229,250. Filed P.R. 10–4–65; Am. S.R. 9–19–66.

TO SATISFY IS TO SERVE

For Leaf Tobacco Purchased From Warehouse Floor and Subsequently Processed for Use as Pipe Tobacco, Cigarette Tobacco, Snuff, Cigar Filler, and Chewing Tobacco, or Resold to Manufacturers in Bundle, Scrap, or Whole-Leaf Form for Export Purposes.
First use Sept. 10, 1965.

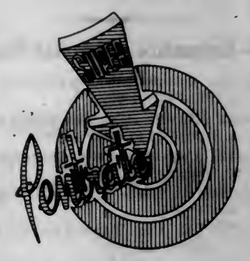
Class 18—Medicines and Pharmaceutical Preparations

818,872. Mattox and Moore, Inc., Indianapolis, Ind. SN 206,735. Filed P.R. 11–23–64; Am. S.R. 8–26–66.

IT'S THE PASTE THAT MAKES THE DIFFERENCE

For Injectable Vitamin, Antibiotic and Meat-Producing Veterinary Preparations in Paste Form.
First use Nov. 1, 1964.

818,873. Progressive Drugs of America, Inc., Chattanooga, Tenn. SN 240,394. Filed 3–7–66.



The drawing is lined for red and blue.
For Proprietary Medicine for the Relief of Muscular Aches and Pains and for Soothing of Neuralgia, Lumbago, Minor Arthritic or Rheumatic Pain.
First use Apr. 19, 1963.

Class 19—Vehicles

818,874. Advisement, Incorporated, Fairview Park, Ohio. SN 204,328. Filed P.R. 10–19–64; Am. S.R. 9–1–66.

VAN-CAMPER

For Camper Conversion Interior Units for Van-Type Motor Vehicles.
First use June 30, 1964.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

818,875. Riccar America Company, Anaheim, Calif. SN 222,065. Filed P.R. 6–25–65; Am. S.R. 9–19–66.

FORD

For Sewing Machines; Sewing Machine Component Parts.
First use June 14, 1965.

Class 26—Measuring and Scientific Appliances.

818,876. Comptone Company, Ltd., New York, N.Y. SN 224,170. Filed P.R. 7–26–65; Am. S.R. 9–13–66.

SLIT-SPECS

For Sunglasses.
First use Apr. 15, 1965.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

818,877. Union Oil Company of California, Los Angeles, Calif., assignee of The Pure Oil Company, Palatine, Ill. SN 204,404. Filed P.R. 10–20–64; Am. S.R. 9–16–66.

SUPER SILENT SNOW

For Tires.
First use on or about Sept. 1, 1964.

818,878. Seetru Limited, Bristol, England. SN 206,084. Filed P.R. 11–12–64; Am. S.R. 9–16–66.

TUTCHTITE

Owner of British Reg. No. B795,484, dated Sept. 15, 1959.
For Sealing Washers and Rings for Use With Valves.

Class 37—Paper and Stationery

818,879. Oxford Paper Company, New York, N.Y. SN 180,228. Filed P.R. 10–31–63; Am. S.R. 9–13–66.

PLANOWEB

For Web Offset Printing Papers.
First use Oct. 23, 1963.

Class 38—Prints and Publications

818,880. Garland B. Porter, d.b.a. Porter Publishing Company, Atlanta, Ga. SN 213,601. Filed P.R. 3–8–65; Am. S.R. 9–19–66.

SOUTHERN MARKETS/MEDIA

For Magazine.
First use at least as early as Jan. 11, 1965.

818,881. Garland B. Porter, d.b.a. Porter Publishing Company, Atlanta, Ga. SN 222,292. Filed P.R. 6–29–65; Am. S.R. 9–20–66.

COMMUNICATIONS/SOUTH

For Feature in a Trade Magazine.
First use at least as early as Mar. 10, 1965.

818,882. Pittsburgh Railways Company, Cleveland, Ohio. SN 225,349. Filed P.R. 8–9–65; Am. S.R. 9–12–66.

POLLUTION CONTROL

For Trade Magazine.
First use on or about July 26, 1965.

818,883. Medical Digest, Inc., Northfield, Ill. SN 226,851. Filed P.R. 8–31–65; Am. S.R. 9–12–66.

MODERN CARDIOLOGY

For Periodical Publication Presently in the Form of a Pamphlet.
First use Aug. 27, 1965.

818,884. Medical Digest, Inc., Northfield, Ill. SN 226,852. Filed P.R. 8–31–65; Am. S.R. 9–12–66.

MODERN SURGERY

For Periodical Publication in the Form of a Pamphlet.
First use Aug. 27, 1965.

818,885. Medical Digest, Inc., Northfield, Ill. SN 226,853. Filed P.R. 8–31–65; Am. S.R. 9–12–66.

MODERN OPHTHALMOLOGY & OTOLARYNGOLOGY

For Periodical Publication Presently in the Form of a Pamphlet.
First use Aug. 27, 1965.

818,886. Medical Digest, Inc., Northfield, Ill. SN 226,854. Filed P.R. 8–31–65; Am. S.R. 9–12–66.

MODERN GENERAL PRACTICE

For Periodical Publication Presently in the Form of a Pamphlet.
First use Aug. 27, 1965.

818,887. Popular Science Publishing Company, Inc., New York, N.Y. SN 227,705. Filed 9–13–65.

POPULAR SCIENCE BOOK CLUB

For Books.
First use Sept. 1, 1964.

818,888. The Miller Publishing Company, Minneapolis, Minn. SN 231,579. Filed P.R. 10–24–65; Am. S.R. 9–19–66.

DAIRY HERD MANAGEMENT

For Monthly Trade Magazine.
First use Sept. 16, 1965.

Class 39—Clothing

818,889. Mr. Witt, Inc., New York, N.Y. SN 228,267. Filed P.R. 9–21–65; Am. S.R. 9–8–66.



For Men's Dress and Sport Shirts.
First use Sept. 3, 1965.

818,890. Balfour Shirtmakers Ltd., New York, N.Y. SN 229,913. Filed P.R. 10–7–65; Am. S.R. 9–13–66.

BALFOUR

For Outershirts.
First use Sept. 3, 1965.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

818,891. Raycrest Mills, Inc., New York, N.Y. SN 228,191. Filed P.R. 9–20–65; Am. S.R. 9–15–66.

LANCASHIRE LAWN

For Cotton Goods.
First use Aug. 16, 1965.

Class 46 — Foods and Ingredients of Foods

818,892. Popcorn Processors, Inc., Los Angeles, Calif. SN 217,208. Filed P.R. 4–23–65; Am. S.R. 9–16–66.

PIZZA KRISPS

For Baked, Flavored, Corn Meal Snack Product in Puffed Form.
First use Mar. 15, 1965.

818,893. Rocket Citrus Products, Inc., St. Louis, Mo. SN 226,789. Filed P.R. 8–30–65; Am. S.R. 8–26–66.

APPLE JACK

For Fruit-Flavored Food Beverages Sold by the Dairy Industry and Frozen Concentrates for Making the Same.
First use July 18, 1965.

818,894. Quality Bakers of America Cooperative, Inc., New York, N.Y. SN 228,748. Filed P.R. 9–27–65; Am. S.R. 9–6–66. COLLECTIVE MARK.

Bon-Bon Pie

For Baked Goods, To Wit, Pie.
First use Sept. 15, 1964.

Class 47 — Wines

818,895. Colony Imports, Inc., Los Angeles, Calif. SN 248,679. Filed P.R. 6–22–66; Am. S.R. 9–16–66.

THE WINE WITH EXOTIC IDEAS!

For Tropical Fruit Wine.
First use May 1964.

Class 48 — Malt Beverages and Liquors

818,896. Bierbrauerei Becker o.H.G., St. Ingbert, Saar, Germany. SN 228,239. Filed 9–21–65.



The German word "Bier" is the equivalent of the English word "beer." The drawing is lined for the color yellow. Owner of German Reg. No. 801,359, dated Dec. 30, 1964.
For Beer.

Class 50 — Merchandise Not Otherwise Classified

818,897. Exitolite Corporation, New York, N.Y. SN 197,689. Filed P.R. 7–13–64; Am. S.R. 9–14–66.

For Non-Electrical Exit Signs Powered by Radio-Isotope.
First use Apr. 20, 1964.

Class 52 — Detergents and Soaps

818,898. Miami Tile and Terrazzo, Inc., Miami, Fla. SN 212,032. Filed P.R. 2–15–65; Am. S.R. 8–19–66.

KLEENZ

For Floor Cleaner, Rust and Stain Remover, Brick and Masonry Cleaner, Pool and Filter Cleaner, etc.
First use Nov. 5, 1964.

Service Marks

Class 100 — Miscellaneous

818,899. The Diners' Club Inc., d.b.a. Confirm-A-Room, New York, N.Y. SN 226,225. Filed P.R. 8–23–65; Am. S.R. 9–19–66.

CONFIRM-A-ROOM

For Hotel Reservation Service.
First use Aug. 5, 1964.

Class 107 — Education and Entertainment

818,900. Institute of Lifetime Learning, Washington, D.C. SN 218,996. Filed P.R. 5–17–65; Am. S.R. 9–15–66.

EVERY WEDNESDAY MORNING

For Educational Services—Namely, Lectures on Art, Science, Travel, Literature, Religion, Geography, Music, Headline News, Geriatrics and Related Subjects of Interest to Older People.
First use Jan. 8, 1964.

818,901. Paul B. Noble, Jr., Winchester, Va. SN 233,520 Filed P.R. 11–29–65; Am. S.R. 9–14–66.

ALL-STUDENT BAND, U.S.A.

For Organizing a Band Composed of Student Musicians and Arranging for Domestic and International Tours and Concerts by Said Group.
First use August 1964.

TRADEMARK REGISTRATIONS RENEWED

29,392. LAVA. Cl. 52. 12–29–1896.
54,861. ATCO (MONOGRAM). Cl. 43. 7–31–06.
54,863. LUSTRE TWIST. Cl. 43. 7–31–06.
55,288. BROOK HILL. Cl. 49. 8–14–06.
55,744. ANESTHESIN. Cl. 18. 8–21–06.
56,587. THERMALITE. Cl. 16. 10–9–06.
57,245. CARBONA. Cl. 4. 11–6–06.
57,475. SABEN. Cl. 14. 11–13–06.
57,506. FEARLESS AND DESIGN. Cl. 14. 11–13–06.
57,820. RAYO. Cl. 34. 11–27–06.
58,436. BURNITOL AND DESIGN. Cl. 2. 12–18–06.
58,649. MONOTYPE. Cl. 37. 12–18–06.
60,566. RUSSWIN. Cl. 25. 2–12–07.
213,571. BLUE SEAL VASELINE AND DESIGN. Cl. 51. 6–1–26.
215,536. AGFA. Cl. 26. 7–20–26.
215,624. MASTER METAL. Cl. 12. 7–20–26.
215,722. SUNNY KANSAS. Cl. 46. 7–27–26.
216,161. TDA CO AND DESIGN. Cl. 19. 8–3–26.
218,101. PASTILLES VALDA AND DESIGN. Cl. 18. 9–21–26.
218,131. ENNA JETTICK. Cl. 39. 9–21–26.
218,376. ALLISATIN. Cl. 18. 9–28–26.
218,925. PRIMEX. Cl. 46. 10–5–26.
218,963. LUPEX. Cl. 26. 10–5–26.
219,155. STERLING TAILORING CO. AND DESIGN. Cl. 39. 10–12–26.
219,350. STERLING AND DESIGN. Cl. 39. 10–19–26.
220,294. ESSO. Cl. 15. 11–9–26.
221,052. JUST SUITS. Cl. 46. 11–23–26.
221,053. FAIRFAX HALL. Cl. 46. 11–23–26.
221,054. WILLIAM BYRD. Cl. 46. 11–23–26.
221,770. DURAC. Cl. 26. 12–7–26.
221,908. AGERITE. Cl. 6. 12–14–26.
222,005. FLIT. Cl. 23. 12–21–26.
222,921. STEWART'S. Cl. 11. 1–11–27.
222,983. FOUNTAIN PARK. Cl. 45. 1–11–27.
224,048. THE THERMOS. Cl. 38. 2–15–27.
420,804. IH. Cl. 14. 5–7–46.
420,883. JUNIOR PROM. Cl. 52. 5–7–46.
421,056. TWEET. Cl. 46. 5–14–46.
421,294. VI-GRANS. Cl. 18. 5–28–46.
421,730. IH. Cl. 23. 6–18–46.
422,535. YACHT CLUB. Cl. 45. 7–30–46.
423,572. KINGCOTE. Cl. 1. 9–3–46.
423,627. HEARTH CLUB BAKING POWDER AND DESIGN. Cl. 46. 9–3–46.
423,700. MIX-I-GO. Cl. 15. 9–10–46.
423,920. PYRONEAL. Cl. 14. 9–17–46.
423,921. PYROTEM. Cl. 14. 9–17–46.
423,939. SAGA. Cl. 27. 9–17–46.
423,942. PURETUNG. Cl. 34. 9–17–46.
423,965. ATOMIC AND DESIGN. Cl. 34. 9–17–46.
423,995. BIZ. Cl. 52. 9–17–46.
424,339. TIDE. Cl. 52. 10–1–46.
424,452. FLEXIFILE. Cl. 32. 10–8–46.
424,652. TELEFACTS. Cl. 32. 10–15–46.
424,925. "WELD-RITE." Cl. 35. 10–29–46.
425,103. TARGET. Cl. 35. 11–5–46.
425,274. GOLD-SEAL AND DESIGN. Cl. 39. 11–12–46.
425,698. LAN-C-AIR. Cl. 39. 12–3–46.
425,701. CADWELD. Cl. 14. 12–3–46.
425,811. KINTRIM. Cl. 12. 12–3–46.
426,187. CHALLENGER. Cl. 35. 12–17–46.
426,281. VATAR "A." Cl. 18. 12–24–46.
426,368. SIPORTER. Cl. 23. 12–24–46.
426,538. FARMER JOHN BRAND AND DESIGN. Cl. 46. 12–31–46.
427,064. CHAMPION. Cl. 35. 1–28–47.
427,427. GUILDCRAFT AND DESIGN. Cl. 28. 2–11–47.
427,484. DIXO. Cl. 6. 2–11–47.
427,641. SWOON SUIT. Cl. 39. 2–18–47.
427,711. BERNARDO SANDALS. Cl. 39. 2–18–47.
427,717. DAYNITE. Cl. 9. 2–18–47.
428,145. ROUND THE CLOCK WITH BABY AND DESIGN. Cl. 26. 3–11–47.

TRADEMARK REGISTRATIONS CANCELED

Section 8

The following registrations issued Sept. 27, 1960

704,790. EMM-PRESS AND DESIGN. Cl. 3.
704,792. NEW HORIZON. Cl. 3.
704,802. OSMOSE PFR ETC. AND DESIGN. Cl. 6.
704,805. VACON. Cl. 6.
704,809. AIR METER. Cl. 12.
704,817. MIRR-O-NEER. Cl. 12.
704,818. BLUE CHIP. Cl. 12.
704,823. CONVERT-A-JAL. Cl. 12.
704,824. PEERLESS. Cl. 12.
704,828. FENWALL. Cl. 12.
704,831. CAPRI. Cl. 13.
704,833. ASTRO-NUT AND DESIGN. Cl. 13.
704,834. ASTRO-NUT. Cl. 13.
704,845. SUPER FLO-TONE. Cl. 16.
704,849. TARPO. Cl. 16.
704,864. OINTMENT 500. Cl. 18.
704,865. BELL-LAX. Cl. 18.
704,874. GOLD COAST HORSE POWER AND DESIGN. Cl. 18.
704,875. MIT RONAL. Cl. 18.
704,882. RADIOPLANE. Cl. 19.
704,886. WINSTON. Cl. 19.
704,888. ROLLTEX. Cl. 20.
704,889. CARLTON. Cl. 21.
704,890. DELAPENA ETC. AND DESIGN. Cl. 21.
704,892. KSM AND DESIGN. Cl. 21.
704,894. MUNTZ AND DESIGN. Cl. 21.
704,897. RORIS. Cl. 21.
704,900. PROMARK. Cl. 22.
704,901. STOP TEES AND DESIGN. Cl. 22.
704,902. ZOOMJET. Cl. 22.
704,903. MOODY CAP. Cl. 22.
704,907. SPRY FRY. Cl. 22.
704,908. DUCK BUTTS. Cl. 22.
704,909. JEEP O PLANE. Cl. 22.
704,913. SMARTEE AND DESIGN. Cl. 22.
704,914. TWIRLY BIRD AND DESIGN. Cl. 22.

704,916. INSIDE TRACK. Cl. 22.
704,917. AEROPLASTICS. Cl. 22.
704,918. PORT-A-SHUFFLE. Cl. 22.
704,919. POOL LOAFER. Cl. 22.
704,925. ALPHABET VILLAGE AND DESIGN. Cl. 22.
704,927. GRADEROLL. Cl. 23.
704,930. DEX-O-PAK. Cl. 23.
704,932. ISOFORCE. Cl. 23.
704,934. SUPERCOMPACTOR. Cl. 23.
704,935. ALGONQUIN. Cl. 23.
704,941. COMP. Cl. 26.
704,945. STEWART GW WARNER AND DESIGN. Cl. 26.
704,946. DYSTAC. Cl. 26.
704,953. CELLEX. Cl. 32.
704,954. TORSION-WEB. Cl. 32.
704,961. DIE-LOK. Cl. 34.
704,964. WELCOME. Cl. 36.
704,967. HUDSON AND DESIGN. Cl. 36.
704,968. TONE-MASTER. Cl. 36.
704,974. LYTLE. Cl. 38.
704,991. SIT-FIT. Cl. 39.
705,002. STERLING. Cl. 39.
705,004. THE PIPER AND DESIGN. Cl. 39.
705,006. WUNDA-WHIRL. Cl. 39.
705,007. FLATTER-FIT. Cl. 39.
705,011. MIYAKO. Cl. 42.
705,008. JX. Cl. 39.
705,016. CUPERSIL. Cl. 42.
705,017. LOOP-A-LASTIC. Cl. 43.
705,022. DAKA ASEPTIC SHIELDS AND DESIGN. Cl. 44.
705,023. HAWAIIAN HOSPITALITY. Cl. 45.
705,026. NATHAN HALE. Cl. 46.
705,028. POCAHONTAS. Cl. 46.
705,029. DOROTHY K. Cl. 46.
705,033. HAWAIIAN HOSPITALITY. Cl. 46.
705,052. GANTELINE. Cl. 51.
705,054. LIPISIENNE. Cl. 51.
705,055. INSPIRATION. Cl. 51.
705,063. HELICO. Cl. 52.
705,064. SANICUTAN. Cl. 52.
705,067. LINCO. Cl. 52.
705,068. LINCO AND DESIGN. Cl. 52.
705,073. SLENDERAMA BY TARR. Cl. 100.
705,074. HOM AND DESIGN. Cl. 101.
705,085. KLEEN-POOL. Cl. 6.
705,091. FUNNY-SAKS. Cl. 37.
705,092. STIK 'N SCRIBBLE. Cl. 37.
705,093. PENTOMIC ETC. AND DESIGN. Cl. 39.
705,095. ELECTRIC-MAKE UP. Cl. 44.

Section 18

727,287. VANEX. Cl. 46. 2-6-62.
766,874. SILVER KING. Cl. 52. 3-17-64.

Erratum

In the OFFICIAL GAZETTE of August 23, 1966, at page TM 220, under "Trademark Registrations Canceled, Section 8," after "700,604" *700,606. FESCONY. Cl. 39.* should be inserted.

INDEX OF REGISTRANTS

NOVEMBER 15, 1966

(Registered; Renewed; Canceled; Amended, Disclaimed, Corrected, etc.; New Certificates; 12c Publications.)

A. & B. Confections: *See*—
Adams and Brooks, Inc.
A.P.M.-Hexseal Corp., Englewood, N.J. 818,679, pub. 8-30-66. Cl. 35.
"A World Renown" Products: *See*—
Wetherholts, Franth.
Abbott Laboratories: *See*—
Farbwerke vorm. Meister Lucius & Bruning.
Abraham Silks Co. Inc., New York, N.Y. 705,011, canc. Cl. 42.
Abreu & Cia, Lda, Amarante, Portugal. 818,528, pub. 8-30-66. Cl. 12.
Actien-Gesellschaft fur Anilin-Fabrikation, Berlin, to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany. 215,536, ren. 11-15-66. Cl. 26.
Adams and Brooks, Inc., d.b.a. A. & B. Confections, Los Angeles, Calif. 818,796, pub. 8-30-66. Cl. 46.
Advance Aircraft, Inc., Chicago, Ill. 704,909, canc. Cl. 22.
Advisement, Inc., Fairview Park, Ohio. 818,874. Cl. 19.
Aerial Products, Inc., Merrick, N.Y., to Harvell-Kilgore Corp., Toone, Tenn. 427,717, ren. 11-15-66. Cl. 9.
Aeronca Mfg. Corp., Middletown, Ohio. 818,584, pub. 8-30-66. Cl. 19.
Aeroplastics Corp., Venice, Calif. 704,917, canc. Cl. 22.
Aeroquip Corp.: *See*—
Lee Rubber & Tire Corp.
Agfa-Gevaert Aktiengesellschaft: *See*—
Actien-Gesellschaft fur Anilin-Fabrikation.
I.G. Farbenindustrie Aktiengesellschaft.
Agway, Inc., Syracuse, N.Y. 818,803, pub. 8-30-66. Cl. 46.
Agway, Inc., Syracuse, N.Y. 818,804, pub. 8-30-66. Cl. 46.
Alden Mills, The, Meridian, Miss. 818,730, pub. 8-30-66. Cl. 39.
Allied Mills, Inc., Chicago, Ill. 818,789, pub. 8-30-66. Cl. 46.
Alma Desk Co., High Point, N.C. 818,663, pub. 8-30-66. Cl. 32.
Aluminum Specialty Co., Manitowoc, Wis. 704,831, canc. Cl. 13.
Aluminum Specialty Co., Manitowoc, Wis. 818,601, pub. 8-30-66. Cl. 22.
Ambco Electronics, Los Angeles, Calif. 818,643, pub. 12-14-65. Cl. 26.
American Brush Corp., Chicago, Ill. 818,653, pub. 8-30-66. Cl. 29.
American Cyanamid Co., Wayne, N.J. 818,510, pub. 8-30-66. Cl. 6.
American Home Products Corp., New York, N.Y. 818,572, pub. 8-30-66. Cl. 18.
American-Marietta Co., Chicago, Ill. 704,849, canc. Cl. 16.
American Radiator & Standard Sanitary Corp., New York, N.Y. 704,961, canc. Cl. 34.
American Radiator & Standard Sanitary Corp., New York, N.Y. 818,687, pub. 8-30-66. Cl. 37.
American Sterilizer Co., Erie, Pa. 818,745, pub. 8-30-66. Cl. 44.
American Thermos Bottle Co., The, Norwich, Conn., to King-Seeley Thermos Co., Ann Arbor, Mich. 224,048, ren. 11-15-66. Cl. 38.
American Thread Co., The, New York, N.Y. 54,861, ren. 11-15-66. Cl. 43.
American Thread Co., The, New York, N.Y. 54,863, ren. 11-15-66. Cl. 43.
Animated Pop Co.: *See*—
Traveler's Mfg. & Sales Co., Inc.
Archer-Daniels-Midland Co., Minneapolis, Minn. 818,484, pub. 8-30-66. Multiple Class (Classes 1, 5, 6, 10, 15, 16, 38, 46, and 100)
Archer-Daniels-Midland Co., Minneapolis, Minn. 818,504, pub. 8-30-66. Cl. 5.
Arden, Elizabeth, Sales Corp., New York, N.Y. 705,380, canc. Cl. 51.
Armstrong Cork Co., Lancaster, Pa. 818,592, pub. 8-30-66. Cl. 20.
Arnold, Schwinn & Co., Chicago, Ill. 818,588, pub. 8-30-66. Cl. 19.
Arnold Tackle Corp., The, Paw Paw, Mich. 818,677, pub. 8-30-66. Cl. 34.
Ascher, B. F., & Co., Inc., Kansas City, Mo. 818,574, pub. 8-30-66. Cl. 18.
Ascher, B. F., & Co., Inc., Kansas City, Mo. 818,699, pub. 8-30-66. Cl. 38.
Aseptic Drinking Cup Co., The, Cambridge, to Sample-Durick, Inc., Chicopee, Mass. 58,436, ren. 11-15-66. Cl. 2.
Ashe Laboratories Ltd., Leatherhead, Surrey, England. 818,841, pub. 8-30-66. Cl. 51.
Astro-Nut, Inc., Chicago, Ill. 704,833, canc. Cl. 13.
Astro-Nut, Inc., Chicago, Ill. 704,834, canc. Cl. 13.
Atlantic Microfilm Corp., Spring Valley, N.Y. 818,644, pub. 8-30-66. Cl. 26.
Aurora Plastics Corp., West Hempstead, N.Y. 704,902, canc. Cl. 22.
Azalea Meats, Inc., Orangeburg, S.C. 818,770, pub. 8-30-66. Cl. 46.
B.A.E. Corp., Los Angeles, Calif. 818,583, pub. 8-30-66. Cl. 19.
Balfour Shirtmakers Ltd., New York, N.Y. 818,890. Cl. 39.
Ball, Geo. J., Inc., d.b.a. Pan-American Seed Co., West Chicago, Ill. 818,868. Cl. 1.
Baltimore Concrete Plank Corp., Baltimore, Md. 818,531, pub. 8-30-66. Cl. 12.
Barcelo Marques & Co.: *See*—
Puerto Rico Distillers, Inc.
Barrack Poultry Corp., New York, N.Y. 705,026, canc. Cl. 46.
Bateson, Nurthing Vandoorn, Woodland Hills, Calif. 818,830, pub. 8-30-66. Cl. 50.
Bay Club Sportswear of California, Inc., Los Angeles, Calif. 818,726, pub. 8-30-66. Cl. 39.
Bayou Foods Inc., d.b.a. Nautical Foods Co., Mobile, Ala. 818,797, pub. 8-30-66. Cl. 46.
Beaunit Mills, Inc., New York, N.Y. 705,016, canc. Cl. 42.
Bees Ltd., Sealand, Chester, England. 818,485, pub. 8-30-66. Cl. 1.
Beesley Mfg. Co., Inc., Los Angeles, Calif. 704,919, canc. Cl. 22.
Bell & Co., Inc., Orangeburg, N.Y. 704,865, canc. Cl. 18.
Bell Laboratory, Inc.: *See*—
Bell, Robert J.
Bell, Robert J., d.b.a. Bell Laboratories to Bell Laboratory, Inc., Orlando, Fla. 423,700, ren. 11-15-66. Cl. 15.
Beloit Corp., Beloit, Wis. 818,624, pub. 8-30-66. Cl. 23.
Bengtson, L. H., Jr., Oklahoma City, Okla. 704,916, canc. Cl. 22.
Beresic, Dorothy L., d.b.a. Dorothy K Products, Phoenix, Ariz. 705,029, canc. Cl. 46.
Bernardo Sandals, Inc.: *See*—
Bruzzichelli, Aldo, Co.
Bernat, Emile, & Sons Co., Uxbridge, Mass. 818,743, pub. 8-30-66. Cl. 43.
Berryman Products, Inc., San Jose, Calif. 815,502, pub. 8-30-66. Cl. 5.
Bierbrauerei Becker O.H.G., Kaiserstrasse, Germany. 818,896. Cl. 48.
Blue Bell, Inc., Greensboro, N.C. 818,732, pub. 8-30-66. Cl. 39.
Borneo Sumatra Trading Co., Inc., New York, N.Y. 704,886, canc. Cl. 19.
Botany Industries, Inc., d.b.a. Rolley Co., South San Francisco, Calif. 705,055, canc. Cl. 51.
Bradley, Milton, Co., Springfield, Mass. 818,602, pub. 2-15-66. Cl. 22.
Bradley, Milton, Co., Springfield, Mass. 818,607, pub. 5-3-66. Cl. 22.
Bradley, Milton, Co., Springfield, Mass. 818,610, pub. 8-30-66. Cl. 22.
Brandy Harvest: *See*—
Virus, John R.
Brehm, George S., d.b.a. Hygienic Sanitation Co., Philadelphia, Pa. 427,484, ren. 11-15-66. Cl. 6.
British Oxygen Co., Ltd., The, London, England. 818,576, pub. 8-30-66. Cl. 18.
British Oxygen Co., Ltd., The, London, England. 818,673, pub. 8-30-66. Cl. 34.
Broaster Co., The, Rockton, Ill. 818,763, pub. 8-30-66. Cl. 46.
Bronson Specialties, Inc., Bronson, Mich. 818,605, pub. 8-30-66. Cl. 22.
Brooks, Vernon A and Phillip A. Brooks, Chicago, Ill. 766,874, canc. Cl. 52.
Bruzzichelli, Aldo, Co., to Bernardo Sandals, Inc., New York, N.Y. 427,711, ren. 11-15-66. Cl. 39.
Bulldog Construction Specialties Corp., Lorain, Ohio. 704,818, canc. Cl. 12.
Bulluck Hosiery, Inc., New York, N.Y. 818,719, pub. 8-30-66. Cl. 39.
Burlington Industries, Inc., New York, N.Y. 705,008, canc. Cl. 39.
Burnard, Clayton J., Kirkland, Wash. 818,609, pub. 8-30-66. Cl. 22.
Burns, H. C., Co., Inc., d.b.a. H. C. Burns Pharmaceuticals, Oakland, Calif. 818,560, pub. 8-30-66. Cl. 18.
Burns, H. C., Pharmaceuticals: *See*—
Burns, H. C., Co., Inc.
C.R. Textiles Corp., New York, N.Y. 818,741, pub. 8-30-66. Cl. 42.
Cadence Corp., Paramount, Calif. 818,530, pub. 8-30-66. Cl. 12.
Cadovius, Poul, Aarhus, Denmark. 818,524, pub. 8-30-66. Cl. 12.
Calfonex, Inc., Englewood, N.J. 818,833, pub. 8-30-66. Cl. 50.
Callite Tungsten Corp., Union City, N.J., to Sylvania Electric Products Inc., New York, N.Y. 423,942, ren. 11-15-66. Cl. 34.
Camelot, Inc., Dallas, Tex. 818,536, pub. 8-30-66. Cl. 13.
Canada Dry Bottling Co. of Worcester, d.b.a. Dobbs Beverage Co. and AS Dobbs, Shrewsbury, Mass. 818,747, pub. 8-30-66. Multiple Class (Classes 45 and 46).
Cape-Heart Fashions, Inc., New York, N.Y. 818,715, pub. 8-30-66. Cl. 39.
Carbona Products Co.: *See*—
Marshall Chemical Co.
Carolina Poultry, Inc., Siler City, N.C. 818,774, pub. 8-30-66. Cl. 46.
Carros Corp., New York, N.Y. 818,838, pub. 8-30-66. Cl. 51.

Carter-Wallace, Inc., New York, N.Y. 818,676, pub. 8–30–66. Cl. 34.
Caswell Electronics Corp., San Jose, Calif. 818,594, pub. 8–30–66. Cl. 21.
Celanese Corp. of America, New York, N.Y. 818,734, pub. 8–30–66. Cl. 42.
Celanese Corp. of America, New York, N.Y. 818,735, pub. 8–30–66. Cl. 42.
Cement Marketing Co., The, London, England. 818,492, pub. 8–30–66. Cl. 1.
Central Pharmacal Co., The, Seymour, Ind. 818,569, pub. 8–30–66. Cl. 18.
Central States Management Consultants, Inc., Appleton, Wis. 818,855, pub. 8–30–66. Cl. 101.
Certified Metal Products Co., Chicago, Ill. 818,637, pub. 8–30–66. Cl. 23.
Chadbourn Gotham, Inc., Charlotte, N.C. 818,722, pub. 8–30–66. Cl. 39.
Chaitlen, Morrie, d.b.a. C. & E. Marshall Co., Chicago, Ill. 818,645, pub. 8–30–66. Cl. 27.
Champ Hats, Inc., New York, N.Y. 818,712, pub. 8–30–66. Cl. 39.
Chemical Works Formerly Sandoz, Basel, Switzerland, to Sandoz, Inc., Hanover, N.J. 218,376, ren. 11–15–66. Cl. 18.
Chesebrough Mfg. Co. Consolidated, to Chesebrough-Pond's Inc., New York, N.Y. 213,571, ren. 11–15–66. Cl. 51.
Chesebrough-Pond's Inc.: *See*—
Chesebrough Mfg. Co. Consolidated.
Chicken Delight, Inc., Rock Island, Ill. 818,626, pub. 8–30–66. Cl. 23.
Clippy Inc., Clifton, N.J. 705,054, canc. Cl. 51.
City Products Corp., Des Plaines, Ill. 818,711, pub. 8–30–66. Cl. 39.
Clicquot Club Co., Millis, Mass. 818,751, pub. 8–30–66. Cl. 45.
Clicquot Club Co., Millis, Mass. 818,752, pub. 8–30–66. Cl. 45.
Clicquot Club Co., Millis, Mass. 818,753, pub. 8–30–66. Cl. 45.
Clougherty Bros., to Clougherty Packing Co., Vernon, Calif. 426,538, ren. 11–15–66. Cl. 46.
Clougherty Packing Co.: *See*—
Clougherty Bros.
Coffee Host: *See*—
Holiday Inns of America, Inc.
Colburn, Constantine W., d.b.a. Con Surf Boards, Santa Monica, Calif. 818,616, pub. 8–30–66. Cl. 22.
Cole of California, Inc., to Cole of California, Inc., Los Angeles, Calif. 427,641, ren. 11–15–66. Cl. 39.
Colee, Philadelphia, Pa. 818,648, pub. 8–30–66. Cl. 28.
Colgate-Palmolive Co., New York, N.Y. 818,835, pub. 8–30–66. Cl. 51.
Colgate-Palmolive Co., New York, N.Y. 818,836, pub. 8–30–66. Cl. 51.
Colgate-Palmolive Co., New York, N.Y. 818,837, pub. 8–30–66. Cl. 51.
Colgate-Palmolive Co., New York, N.Y. 818,847, pub. 8–30–66. Cl. 52.
Colgate-Palmolive Co., New York, N.Y. 818,895. Cl. 52.
Colony Imports, Inc., Los Angeles, Calif. 818,895. Cl. 47.
Comet Mfg. Corp., Atlanta, Ga. 818,845, pub. 8–30–66. Cl. 52.
Compania de Bebidas del Oriente: *See*—
Puerto Rico Distillers, Inc.
Comptone Co., Ltd., New York, N.Y. 818,876. Cl. 26.
Computer Systems, Inc., New York, N.Y. 704,946, canc. Cl. 26.
Compur-Werk Friedrich Deckel OHG, Munich, Germany. 704,941, canc. Cl. 26.
Con Surf Boards: *See*—
Colburn, Constantine W.
Confirm-A-Room: *See*—
Diners' Club Inc., The.
Consarc Corp., Rancocas, N.J. 818,678, pub. 8–30–66. Cl. 34.
Consolidated Foods Corp.: *See*—
Reid, Murdoch & Co.
Continental Can Co., Inc., New York, N.Y. 818,684, pub. 8–30–66. Cl. 37.
Continental Distilling Co.: *See*—
Continental Distilling Corp.
Continental Distilling Corp., d.b.a. Continental Distilling Co., Philadelphia, Pa. 818,825, pub. 8–30–66. Cl. 49.
Convenient Living: *See*—
Levy, Edward M.
Corman & Wasserman Inc., Baltimore, Md. 818,731, pub. 8–30–66. Cl. 39.
Countess York Ltd., Jersey City, N.J. 818,664, pub. 8–30–66. Cl. 32.
Courreges, Andre, S.A.R.L., Paris, France. 818,704, pub. 8–30–66. Cl. 39.
Crane Co., New York, N.Y. 818,541, pub. 8–30–66. Cl. 13.
Crane Co., Chicago, Ill. 818,658, pub. 8–30–66. Cl. 31.
Crawford Fitting Co., Solon, Ohio. 818,537, pub. 8–30–66. Cl. 13.
Cummings, Arline K., d.b.a. Cummings Studio, Salt Lake City, Utah. 818,758, pub. 8–30–66. Cl. 46.
Cummings Studio: *See*—
Cummings, Arline K.
Dairyland Seed Co., Inc., Campbellsport, Wis. 818,488, pub. 8–30–66. Cl. 1.
Dairyland Seed Co., Inc., Campbellsport, Wis. 818,489, pub. 8–30–66. Cl. 1.
Dairyland Seed Co., Inc., Campbellsport, Wis. 818,490, pub. 8–30–66. Cl. 1.
Daisy Mfg. Co., Rogers, Ark. 818,617, pub. 8–30–66. Cl. 22.
Daka Paper Co., Erie, Pa. 705,022, canc. Cl. 44.
Dalin, David, Milwaukee, Wis. 818,671, pub. 8–30–66. Cl. 34.
Data Courier Service: *See*—
Mail Delivery Service Co., Inc.
Davis Clothing Co., Brockton, Mass. 425,698, ren. 11–15–66. Cl. 39.
Decof, Leonard, Providence, R.I. 818,725, pub. 8–30–66. Cl. 39.
Delmark Co., The: *See*—
Dietene Co., The.
Denver Chemical Mfg. Co., The, d.b.a. Wampole Laboratories, Stamford, Conn. 818,577, pub. 8–30–66. Cl. 18.
Derry Products, Inc., New York, N.Y. 818,769, pub. 8–30–66. Cl. 46.
De Sammensluttede Bryggerier A/S, Oslo, Norway. 818,821, pub. 8–30–66. Cl. 48.
Desert Dry Beverage Co.: *See*—
Valley Spring Beverage Co.
Design Center, Inc., Kansas City, Mo. 818,828, pub. 8–30–66. Cl. 50.
Deutsche Angelgerate Manufaktur (DAM) Hellmuth Kuntze Gesellschaft mit beschrankter Haftung & Co., Kommanditgesellschaft, Berlin, Germany. 818,613, pub. 8–30–66. Cl. 22.
Dial Dictation, Inc., New York, N.Y. 818,853, pub. 8–30–66. Cl. 101.
Diamond Alkali Co., Cleveland, Ohio. 818,493, pub. 8–30–66. Cl. 1.
Diamond National Corp., New York, N.Y. 818,499, pub. 8–30–66. Cl. 2.
Dietene Co., The, d.b.a. The Delmark Co., Minneapolis, Minn. 818,777, pub. 8–30–66. Cl. 46.
Dike-O-Seal Inc., Chicago, Ill. 818,638, pub. 8–30–66. Cl. 23.
Diners' Club Inc., d.b.a. Confirm-A-Room, New York, N.Y. 818,899. Cl. 100.
Distmark, Inc., San Francisco, Calif. 818,551, pub. 8–30–66. Cl. 16.
Dixie Agencies, Inc., Jacksonville, Fla. 818,857, pub. 8–30–66. Cl. 101.
Dobbs and Beverage Co. and As Dobbs: *See*—
Canada Dry Bottling Co. of Worcester.
Dr. Shiffer's Laboratories: *See*—
Shiffer, Charles E.
Dodge Mfg. Corp., Mishawaka, Ind. 818,680, pub. 8–30–66. Cl. 35.
Dodge & Olcott, Inc., New York, N.Y. 818,778, pub. 8–30–66. Cl. 46.
Dorothy K Products: *See*—
Beresic, Dorothy L.
Dover Corp., New York, N.Y. 818,534, pub. 4–26–66. Cl. 13.
Downtowner Corp., The, Memphis, Tenn. 818,852, pub. 8–30–66. Cl. 100.
Driv-Thru Car Wash Ltd., Toronto, Ontario, Canada. 818,862, pub. 8–30–66. Cl. 103.
Dumont-Airplane & Marine Instruments, Inc., Clearfield, Pa. 704,897, canc. Cl. 21.
Dunhill International, Inc.: *See*—
Glasco Products Co.
Dunn & McCarthy, Inc., Auburn, N.Y. 218,131, ren. 11–15–66. Cl. 39.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 818,688, pub. 8–30–66. Cl. 37.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 818,737, pub. 8–30–66. Cl. 42.
Duratanned Leather Co.: *See*—
Offenhartz, Charles.
Durkin, Sam, Atlanta, Ga. 818,848, pub. 8–30–66. Cl. 100.
Eberhard Faber Inc., Crestwood, Wilkes-Barre, Pa. 818,685, pub. 8–30–66. Cl. 37.
Ebro Packing Co., Inc., Chicago, Ill. 818,787, pub. 8–30–66. Cl. 46.
Electric Railway Improvement Co., The, to Erico Products, Inc., Cleveland, Ohio. 425,701, ren. 11–15–66. Cl. 14.
Electronic Engineering Co., Santa Ana, Calif. 818,593, pub. 7–7–66. Multiple Class (Classes 21 and 26).
Emerson Electric Co., St. Louis, Mo. 818,518, pub. 8–30–66. Cl. 9.
Emhart Corp.: *See*—
Russell & Erwin Mfg. Co.
Emms Leather Goods Co. Inc., Jamaica, N.Y. 704,790, canc. Cl. 3.
Engelhard Hanovia of Canada Ltd., d.b.a. Engelhard Hanovia Lamp, Canadian Co., Ontario, Canada. 818,639, pub. 8–30–66. Cl. 24.
Erico Products, Inc.: *See*—
Electric Railway Improvement Co., The.
Essick Mfg. Co., Los Angeles, Calif. 818,632, pub. 8–30–66. Cl. 23.
Essick Mfg. Co., Los Angeles, Calif. 818,674, pub. 8–30–66. Cl. 34.
Etablissements Lefevre-Utile, Societe En Nom Collectif et en Commandite Simple, Nantes (Loire Atlantique), France. 818,783, pub. 8–30–66. Cl. 46.
Euclid Chemical Co., The, Cleveland, Ohio. 818,532, pub. 8–30–66. Cl. 12.
Executive Products, Inc., Toledo, Ohio. 818,661, pub. 8–30–66. Cl. 31.
Exitolite Corp., New York, N.Y. 818,897. Cl. 50.
Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 818,723, pub. 8–30–66. Cl. 39.
Farbwerke vorm. Meister Lucius & Bruning, Hochst-On-The-Main, Germany, to Abbott Laboratories, North Chicago, Ill. 55,744, ren. 11–15–66. Cl. 18.
Farnlund, Emil L., Monrovia, Calif. 818,681, pub. 8–30–66. Cl. 36.
Fenestra Inc., Detroit, Mich. 704,828, canc. Cl. 12.
Fernandez, Jaime, Diestro, S.A., Jeres de la Frontera, (Cadiz), Spain. 818,814, pub. 8–30–66. Cl. 47.
Fibreflex Packing & Mfg. Co., Inc., Philadelphia, Pa. 818,483, pub. 8–30–66. Cl. 1.
Filatures Prouvost & Cie la Lainiere de Roubaix, Roubaix (Nord), France. 818,742, pub. 8–30–66. Cl. 43.
Filler Products, Inc., Forest Park, Ga. 818,771, pub. 8–30–66. Cl. 46.

Firestone Tire & Rubber Co., The, Akron, Ohio. 818,587, pub. 8–30–66. Cl. 19.
Flickinger, S. M., Co., Inc., Buffalo, N.Y. 818,749, pub. 8–30–66. Cl. 45.
Fluorocarbon Co., The, Anaheim, Calif. 818,486, pub. 8–30–66. Cl. 1.
Fortune Foods Inc., San Francisco, Calif. 818,809, pub. 8–30–66. Cl. 46.
Friedman, Keller & Co., Paducah, Ky., to McKesson & Robbins, Inc., New York, N.Y. 55,288, ren. 11–15–66. Cl. 49.
Funny-Saks Co.: *See*—
Robertson, Evelyn R.
Furniture Merchandising Corp., New York, N.Y. 704,968, canc. Cl. 36.
"G" Grip Corp., Fairfield, Conn. 818,621, pub. 8–30–66. Cl. 22.
G and H Industries, Montpelier, Vt. 704,907, canc. Cl. 22.
Gallo, E. & J., Winery, d.b.a. Gallo Vineyards, Modesto, Calif. 818,818, pub. 8–30–66. Cl. 47.
Gallo Vineyards: *See*—
Gallo, E. & J., Winery.
Gayle, Barbara, Inc., New York, N.Y. 818,717, pub. 8–30–66. Cl. 39.
Gebr. Bohler & Co. Aktiengesellschaft, Austrian Co., Vienna, Austria. 818,545, pub. 5–15–62. Cl. 14.
Gebr. Bohler & Co., Aktiengesellschaft, Vienna, Austria. 818,622, pub. 5–15–62. Cl. 23.
Gebr. Krusius: *See*—
Krusius, Elfriede.
Gelgy Chemical Corp., Ardsley, N.Y. 818,511, pub. 8–30–66. Cl. 6.
Gelgy Chemical Corp., Ardsley, N.Y. 818,566, pub. 8–30–66. Cl. 18.
Gelgy Chemical Corp., Ardsley, N.Y. 818,567, pub. 8–30–66. Cl. 18.
Gelgy Chemical Corp., Ardsley, N.Y. 818,578, pub. 8–30–66. Cl. 18.
General Controls Co., Glendale, Calif. 704,932, canc. Cl. 23.
General Electric Co., Schenectady, N.Y. 818,641, pub. 8–30–66. Cl. 24.
General Fireproofing Co., The, Youngstown, Ohio. 424,652, ren. 11–15–66. Cl. 32.
General Fireproofing Co., The, Youngstown, Ohio. 818,849, pub. 8–30–66. Cl. 100.
General Foods Corp., White Plains, N.Y. 818,779, pub. 8–30–66. Cl. 46.
General Instrument Corp., Newark, N.J. 818,597, pub. 8–30–66. Cl. 21.
General Motors Corp., Detroit, Mich. 818,538, pub. 8–30–66. Cl. 13.
General Motors Corp., Detroit, Mich. 818,634, pub. 8–30–66. Cl. 23.
Genesco Inc.: *See*—
Utica Knitting Co.
Gilman Paper Co., New York, N.Y. 818,503, pub. 8–30–66. Cl. 5.
Gimbel Bros., Inc., New York, N.Y. 818,708, pub. 8–30–66. Cl. 39.
Gimbel Bros., Inc., New York, N.Y. 818,709, pub. 8–30–66. Cl. 39.
Glasco Products Co., Chicago, Ill., to Dunhill International, Inc., Ravenna, Ohio. 428,145, ren. 11–15–66. Cl. 26.
Globe Chemical Co., Inc., Decatur, Ga. 818,513, pub. 8–30–66. Cl. 6.
Gold Coast Laboratories, Inc., Coral Gables, Fla. 704,874, canc. Cl. 18.
Goodrich, B. F., Co., The, Akron, Ohio. 221,908, ren. 11–15–66. Cl. 6.
Goodrich, B. F., Co., The, Akron, Ohio. 424,925, ren. 11–15–66. Cl. 35.
Gould & Eberhardt, Inc., Irvington, N.J. 704,890, canc. Cl. 21.
Grace, W. R., & Co., New York, N.Y. 818,519, pub. 8–30–66. Cl. 10.
Graf's Beverages, Inc., Milwaukee, Wis. 818,750, pub. 8–30–66. Cl. 45.
Graham Paper Co., St. Louis, Mo. 818,690, pub. 8–30–66. Cl. 37.
Grand Union Co., The, East Paterson, N.J. 818,640, pub. 8–30–66. Cl. 24.
Grand Union Co., The, East Paterson, N.J. 818,651, pub. 8–30–66. Cl. 29.
Grandma Anderson's Preserving Kitchens: *See*—
Ivey Corp.
Grass, I. J., Noodle Co., Inc., Chicago, Ill. 818,761, pub. 8–30–66. Cl. 46.
Gray Mfg. Co., Inc., St. Joseph, Mo. 818,635, pub. 8–30–66. Cl. 23.
Graybar Electric Co., Inc., New York, N.Y. 818,599, pub. 8–30–66. Cl. 21.
Greylock Confectionery Corp.: *See*—
Tweet, Inc.
Gulf Publishing Co., Houston, Tex. 818,691, pub. 8–30–66. Cl. 38.
Gulf States Paper Corp., Tuscaloosa, Ala. 818,498, pub. 8–30–66. Cl. 2.
H-B Instrument Co.: *See*—
Hilergesell Bros.
H-W Co., The: *See*—
Holes-Webway Co., The.
Hallmark Cards, Inc., Kansas City, Mo. 818,694, pub. 8–30–66. Cl. 38.
Hart Schaffner & Marx: *See*—
Kahn Tailoring Co.
Harvell-Kilgore Corp.: *See*—
Aerial Products, Inc.
Hascall, George C., Cleveland, Ohio, to Hooker Chemical Corp., Niagara Falls, N.Y. 56,587, ren. 11–15–66. Cl. 16.
Hawaiian Kitchen, San Francisco, Calif. 705,023, canc. Cl. 45.
Hawaiian Kitchen, San Francisco, Calif. 705,033, canc. Cl. 46.
Hawle Mfg. Co., The, Bridgeport, Conn. 818,733, pub. 8–30–66. Cl. 40.
Hell Co., The, Milwaukee, Wis. 818,585, pub. 8–30–66. Cl. 19.
Helleman, G., Brewing Co., Inc., La Crosse, Wis. 818,820, pub. 8–30–66. Cl. 48.
Helle, P. H., Co., Inc., Worcester, Mass. 705,063, canc. Cl. 52.
Heller, William, Inc., New York, N.Y. 818,739, pub. 8–30–66. Cl. 42.
Heppenstall Co., Pittsburgh, Pa. 423,920, ren. 11–15–66. Cl. 14.
Heppenstall Co., Pittsburgh, Pa. 423,921, ren. 11–15–66. Cl. 14.
Herald Pharmacal, Inc., Bedford, Va. 818,842, pub. 8–30–66. Cl. 51.
Hickory Valley Farm, Inc., Stroudsburg, Pa. 818,810, pub. 8–30–66. Cl. 46.
Hilergesell Bros., to H-B Instrument Co., Philadelphia, Pa. 221,770, ren. 11–15–66. Cl. 26.
Hi-Jack, Fort Worth, Tex. 818,614, pub. 8–30–66. Cl. 22.
Hi-Jack, Fort Worth, Tex. 818,615, pub. 8–30–66. Cl. 22.
Hobson, Houghton & Co. Ltd., Sheffield, England. 57,506, ren. 11–15–66. Cl. 14.
Holes-Webway Co., The, d.b.a. The H-W Co., St. Cloud, Minn. 818,686, pub. 8–30–66. Cl. 37.
Holiday Inns of America Inc., d.b.a. Coffee Host, Memphis, Tenn. 818,598, pub. 8–30–66. Cl. 21.
Hom, Inc., Walnut Creek, Calif. 705,074, canc. Cl. 101.
Hood, H. P., & Sons: *See*—
Hood, H. P., & Sons, Inc.
Hood, H. P., & Sons, Inc., d.b.a. H. P. Hood & Sons, Boston, Mass. 818,762, pub. 8–30–66. Cl. 46.
Hooker Chemical Corp.: *See*—
Hascall, George C.
Hoppy Taw Corp., Salt Lake City, Utah. 704,903, canc. Cl. 22.
House of Perfection, Inc., The, New York, N.Y. 705,006, canc. Cl. 39.
House of Perfection, Inc., The, New York, N.Y. 705,007, canc. Cl. 39.
Howmet Corp., New York, N.Y., from Howe Sound Co., Dallas, Tex. 818,525, pub. 9–6–66. Cl. 12.
Hudson Record Co., Inc., Union City, N.J. 704,967, canc. Cl. 36.
Hulman & Co.: *See*—
Rumford Chemical Works.
Humble Oil & Refining Co.: *See*—
Standard Oil Co.
Standard Oil Co. (New Jersey).
Huntley Knitting Mills, Inc., d.b.a. Huntley of York, York, S.C. 818,714, pub. 8–30–66. Cl. 39.
Huntley of York: *See*—
Huntley Knitting Mills, Inc.
Hygienic Sanitation Co.: *See*—
Brehm, George S.
Hygrade Food Products Corp., Detroit, Mich. 818,766, pub. 8–30–66. Cl. 46.
I.G. Farbenindustrie Aktiengesellschaft, Frankfort-On-The-Main, Germany, to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany. 218,963, ren. 11–15–66. Cl. 26.
Idealspaten- und Schaufelwalzwerk vorm. Eckhardt & Co. G.m.b.H., Herdecke/Ruhr, Germany. 818,533, pub. 8–30–66. Cl. 13.
Illinois Tool Works Inc., Chicago, Ill. 818,623, pub. 8–30–66. Cl. 23.
Imperial Flo-Glaze Paints Ltd., The, Ontario, Canada. 704,845, canc. Cl. 16.
Imperial International Corp., New York, N.Y. 704,935, canc. Cl. 23.
Independent Lock Co., Fitchburg, Mass. 818,543, pub. 8–30–66. Cl. 13.
Industrial Distributors, Inc., Bridgeport, Conn. 818,596, pub. 8–30–66. Cl. 21.
Institute of Lifetime Learning, Washington, D.C. 818,900. Cl. 107.
Interco Inc., from International Shoe Co., Chicago, Ill. 818,718, pub. 7–26–66. Cl. 39.
International Harvester Co., to International Harvester Co., Chicago, Ill. 420,804, ren. 11–15–66. Cl. 14.
International Harvester Co., to International Harvester Co., Chicago, Ill. 421,730, ren. 11–15–66. Cl. 23.
International Latex Corp., Dover, Del. 818,702, pub. 8–30–66. Cl. 39.
International Nutria Marketing Association, Watonga, Okla. 818,727, pub. 8–30–66. Cl. 39.
International Shoe Co.: *See*—
Interco Inc.
International Silver Co., The, Meriden, Conn. 818,649, pub. 8–30–66. Cl. 28.
International Stock Food Corp., Waverly, N.Y. 818,580, pub. 8–30–66. Cl. 18.
International Telephone and Telegraph Corp., New York, N.Y. 818,669, pub. 8–30–66. Cl. 34.
Investors Diversified Services, Inc., Minneapolis, Minn. 818,858, pub. 8–30–66. Cl. 102.
Investors Diversified Services, Inc., Minneapolis, Minn. 818,859, pub. 8–30–66. Cl. 102.
Ivey Corp., d.b.a. Grandma Anderson's Preserving Kitchens, Minneapolis, Minn. 818,755, pub. 8–30–66. Cl. 46.
J.B.M. Achievements, Inc., New York, N.Y. 705,119, canc. Cl. 2.
Jamestown Leaf Tobacco Co., Inc., Richmond, Va. 818,871. Cl. 17.
Jersey City Foam Products Co., Jersey City, N.J. 704,953, canc. Cl. 32.
Johnson Industries, Inc., Menlo Park, N.J. 818,840, pub. 8–30–66. Cl. 51.

Johns-Manville Corp., New York, N.Y. 818,660, pub. 8–30–66. Cl. 31.
Johnson, S. C., & Son, Inc., Racine, Wis. 818,846, pub. 8–30–66. Cl. 52.
Jomac, Inc., Philadelphia, Pa. 705,002, canc. Cl. 39.
Junior Accent, Inc., New York, N.Y. 818,721, pub. 8–30–66. Cl. 39.
KSM Products, Inc., Merchantville, N.J. 704,892, canc. Cl. 21.
Kahn Tailoring Co., d.b.a. Sterling Tailoring Co., Indianapolis, Ind., to Hart Schaffner & Marx, Chicago, Ill. 219,155, ren. 11–15–66. Cl. 39.
Kahn Tailoring Co., d.b.a. Sterling Tailoring Co., Indianapolis, Ind., to Hart Schaffner & Marx, Chicago, Ill. 219,350, ren. 11–15–66. Cl. 39.
Kaiser Aluminum & Chemical Corp., Oakland, Calif. 818,497, pub. 8–30–66. Cl. 2.
Kalahar, Thomas L., d.b.a. Kalahar & Co., and Perf Hook Mfg. Co., Park Ridge, Ill. 818,539, pub. 8–30–66. Cl. 13.
Kaufmann, R. and M., Inc., Aurora, Ill. 818,710, pub. 8–30–66. Cl. 39.
Kay Jewelry Stores, Inc., Washington, D.C. 704,889, canc. Cl. 21.
Keepsake House and Madow's: *See*—
Madow, Louis.
Kentucky Alma Coal Corp., Drift, Ky. 818,491, pub. 8–30–66. Cl. 1.
Kiki Udies Corp., New York, N.Y. 818,716, pub. 8–30–66. Cl. 39.
King-Seeley Thermos Co.: *See*—
American Thermos Bottle Co., The.
Kinkead Industries Inc., Chicago, Ill. 425,811, ren. 11–15–66. Cl. 12.
Kleer-Vu Industries, Inc., New York, N.Y. 818,495, pub. 8–30–66. Cl. 2.
Koninklijke Fabrieken, C. J. van Houten & Zoon N.V., from C. J. van Houten & Zoon N.V., Weesp, Netherlands. 818,750, pub. 5–31–66. Cl. 46.
Koppel Photo Engraving Co., Inc., Hawthorne, N.J. 818,695, pub. 8–30–66. Cl. 38.
Krusius, Elfriede, d.b.a. Gebr. Krusius, Solingen, Germany. 818,627, pub. 8–30–66. Cl. 23.
Lake Shore Engineering Co., to Lake Shore, Inc., Iron Mountain, Mich. 426,368, ren. 11–15–66. Cl. 23.
Lake Shore, Inc.: *See*—
Lake Shore Engineering Co.
Lanston Monotype Machine Co., Philadelphia, Pa., to United States Banknote Corp., New York, N.Y. 58,649, ren. 11–15–66. Cl. 37.
Larson, Alpheus W., Chilton, Wis. 705,092, canc. Cl. 37.
Lee-Jax Kitchens, Inc., from Custom Foods, Inc., Dayton, Ohio. 818,776, pub. 8–30–66. Cl. 46.
Lee Rubber & Tire Corp., to Aeroquip Corp., d.b.a. Republic Rubber Division, Youngstown, Ohio, 425,103, ren. 11–15–66. Cl. 35.
Lee Rubber & Tire Corp., d.b.a. Republic Rubber Division, to Aeroquip Corp., d.b.a. Republic Rubber Division, Youngstown, Ohio. 426,187, ren. 11–15–66. Cl. 35.
Lee Rubber & Tire Corp., to Aeroquip Corp., d.b.a. Republic Rubber Division, Youngstown, Ohio. 427,064, ren. 11–15–66. Cl. 35.
Les Parfums Chypron S.A., Colombes, France. 705,064, canc. Cl. 52.
Levin Bros., Inc., Minneapolis, Minn. 704,954, canc. Cl. 32.
Le Voy's, Inc., Salt Lake City, Utah. 818,713, pub. 8–30–66. Cl. 39.
Levy, Edward M., d.b.a. Convenient Living, Evanston, Ill. 818,784, pub. 8–30–66. Cl. 46.
Linco Products Corp., Chicago, Ill. 705,067, canc. Cl. 52.
Linco Products Corp., Chicago, Ill. 705,068, canc. Cl. 52.
Lincoln Engraving Co., Philadelphia, Pa. 818,831, pub. 6–21–66. Cl. 50.
Lord Baltimore Press, Inc. The, Baltimore, Md. 704,930, canc. Cl. 23.
Lorillard, P., Co., New York, N.Y. 818,555, pub. 8–30–66. Cl. 17.
Lorillard, P., Co., New York, N.Y. 818,556, pub. 8–30–66. Cl. 17.
Lorillard, P., Co., New York, N.Y. 818,557, pub. 8–30–66. Cl. 17.
Lorillard, P., Co., New York, N.Y. 818,558, pub. 8–30–66. Cl. 17.
Lost Nite Records, Inc., Philadelphia, Pa. 818,682, pub. 8–30–66. Cl. 39.
Lucas, Jerry, Pass-Time Games, Inc., Columbus, Ohio. 818,606, pub. 8–30–66. Cl. 22.
Luther Ford & Co., to Luther Ford Products Co., Minneapolis, Minn. 222,921, ren. 11–15–66. Cl. 11.
Luther Ford Products Co.: *See*—
Luther Ford & Co.
Lytle Engineering & Mfg. Co., Chicago, Ill. 704,974, canc. Cl. 38.
Madison Dental Co., Madison, Wis. 818,604, pub. 1–11–66. Cl. 22.
Madow, Louis, d.b.a. Keepsake House and Madow's, New York, N.Y. 818,656, pub. 8–30–66. Cl. 30.
Mail Delivery Service Co., Inc., d.b.a. Data Courier Service, San Francisco, Calif. 818,863, pub. 8–30–66. Cl. 105.
Malatesta, F.: *See*—
Malatesta, F., Co.
Malatesta, F., Co., d.b.a. F. Malatesta, Boston, Mass. 818,764, pub. 8–30–66. Cl. 46.
Mallinckrodt Chemical Works, St. Louis, Mo. 818,570, pub. 8–30–66. Cl. 18.
Mandate Mfg., Ltd., Vancouver, British Columbia, Canada. 818,506, pub. 8–30–66. Multiple Class (Classes 6 and 52).
Manifold Supplies Co., Brooklyn, N.Y. 818,521, pub. 8–30–66. Cl. 11.
Maremont Corp., Chicago, Ill. 818,633, pub. 8–30–66. Cl. 23.
Marshall, C. & E., Co.: *See*—
Chaitlen, Morrie.
Marshall Chemical Co., Marshall, Va., to Carbona Products Co., Long Island City, N.Y. 57,245, ren. 11–15–66. Cl. 4.
Mattel, Inc., Hawthorne, Calif. 818,618, pub. 8–30–66. Cl. 22.
Mattox and Moore, Inc., Indianapolis, Ind. 818,872. Cl. 18.
McCormick & Co., Inc., Baltimore, Md. 818,788, pub. 8–30–66. Cl. 46.
McKesson & Robbins, Inc.: *See*—
Friedman, Keller & Co.
Medical Digest, Inc., Northfield, Ill. 818,883. Cl. 38.
Medical Digest, Inc., Northfield, Ill. 818,884. Cl. 38.
Medical Digest, Inc., Northfield, Ill. 818,885. Cl. 38.
Medical Digest, Inc., Northfield, Ill. 818,886. Cl. 38.
Merck & Co., Inc., Rahway, N.J. 818,561, pub. 8–30–66. Cl. 18.
Merck & Co., Inc., Rahway, N.J. 818,564, pub. 8–30–66. Cl. 18.
Mermaid, Inc., Butler, Wis. 818,657, pub. 8–30–66. Cl. 31.
Miami Tile and Terrazzo, Inc., Miami, Fla. 818,898. Cl. 52.
Michigan Milk Producers Association, d.b.a. Vacationland Dairy Cooperative, Marquette, Mich. 818,754, pub. 8–30–66. Cl. 46.
Mi-Con Laboratories, Inc., Wauconda, Ill. 818,562, pub. 8–30–66. Cl. 18.
Microfibres, Inc.: *See*—
Rayon Processing Co. of R. I. Inc., The.
Micro-Precision Co., Omaha, Nebr. 818,516, pub. 8–30–66. Cl. 9.
Midland Mfg. Corp., Columbus, Ohio. 704,927, canc. Cl. 23.
Mid-States Distributing Co., Inc., St. Paul, Minn. 818,675, pub. 8–30–66. Cl. 34.
Miles Laboratories, Inc., Elkhart, Ind., from Ames Lab-Tek, Inc., Billerica, Mass. 818,509, pub. 8–30–66. Cl. 6.
Military Post Suppliers, Newark, N.J. 705,093, canc. Cl. 39.
Mills, Erwin, Inc., New York, N.Y. 818,736, pub. 8–30–66. Cl. 42.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 818,620, pub. 8–30–66. Cl. 22.
Mr. Witt, Inc., New York, N.Y. 818,889. Cl. 39.
Model Raceway Distributors, Inc., d.b.a. Model Raceways Ltd., Cambridge, Mass. 818,619, pub. 8–30–66. Cl. 22.
Model Raceways Ltd.: *See*—
Model Raceway Distributors, Inc.
Mogen David Food Products, Inc., Chicago, Ill. 818,772, pub. 8–30–66. Cl. 46.
Montgomery Music Inc., Buffalo, N.Y. 818,696, pub. 8–30–66. Cl. 38.
Morgan Packing Co., Inc., Austin, Ind. 818,808, pub. 8–30–66. Cl. 46.
Morton International, Inc., Chicago, Ill. 818,553, pub. 8–30–66. Cl. 16.
Mueller, John, Licorice Co., The, Cincinnati, Ohio. 818,806, pub. 8–30–66. Cl. 46.
Mueller, John, Licorice Co., The, Cincinnati, Ohio. 818,807, pub. 8–30–66. Cl. 46.
Muench Sash & Door Co., Chicago Heights, Ill. 704,817, canc. Cl. 12.
Munts TV, Inc., Evanston, Ill. 704,894, canc. Cl. 21.
Nagel Mfg. & Supply Co., Inc., Austin, Tex. 818,834, pub. 8–30–66. Cl. 50.
Nali'I Fashions, Ltd., Honolulu, Hawaii. 818,701, pub. 8–30–66. Cl. 39.
National Amusements, Inc., Boston, Mass. 818,864, pub. 8–30–66. Cl. 107.
National Biscuit Co., New York, N.Y. 818,768, pub. 8–30–66. Cl. 46.
National Biscuit Co., New York, N.Y. 818,782, pub. 8–30–66. Cl. 46.
National Dairy Products Corp., New York, N.Y. 818,798, pub. 8–30–66. Cl. 46.
National Detergents, Inc., d.b.a. National Cleaners Chemical Mfg. Co., Chicago, Ill. 818,507, pub. 9–28–65. Cl. 6.
National Screw & Mfg. Co., The, Cleveland, Ohio. 818,542, pub. 8–30–66. Cl. 13.
National Silver Co., New York, N.Y. 427,427, ren. 11–15–66. Cl. 28.
National Steel Corp., Pittsburgh, Pa. 818,546, pub. 8–30–66. Cl. 14.
Nautical Foods Co.: *See*—
Bayou Foods Inc.
Nestle Co., Inc., The, White Plains, N.Y. 818,765, pub. 8–30–66. Cl. 46.
New York Feather Co., Inc., New York, N.Y. 818,665, pub. 8–30–66. Cl. 32.
New York Feather Co., Inc., New York, N.Y. 818,666, pub. 8–30–66. Cl. 32.
New York Feather Co., Inc., New York, N.Y. 818,667, pub. 8–30–66. Cl. 32.
Nicod, Daniel, Zurich, Switzerland. 704,888, canc. Cl. 20.
Noble, Paul B., Jr., Winchester, Va. 818,901. Cl. 107.
Northrop Aircraft, Inc.: *See*—
Northrop Corp.
Northrop Corp., from Northrop Aircraft, Inc., Beverly Hills, Calif. 704,882, canc. Cl. 19.
O'Donnell-Usen Fisheries Corp., Boston, Mass. 818,785, pub. 8–30–66. Cl. 46.
Offenharts, Charles, d.b.a. Duratanned Leather Co., Millburn, N.J. 818,652, pub. 8–30–66. Cl. 29.
Osmose Wood Preserving Co. of America, Inc., Buffalo, N.Y. 704,802, canc. Cl. 6.
Oxford Paper Co., New York, N.Y. 818,879. Cl. 37.
Ozite Corp., Chicago, Ill. 818,738, pub. 8–30–66. Cl. 42.
Pacer International Corp., New York, N.Y. 818,505, pub. 9–15–64. Multiple Class (Classes 6 and 26).
Pacific-Western Materials, Inc., Pico Rivera, Calif. 818,515, pub. 8–30–66. Cl. 7.
Pacific-Western Materials, Inc., Pico Rivera, Calif. 818,629, pub. 8–30–66. Cl. 23.
Pajama Corp. of America, New York, N.Y. 818,706 pub. 8–30–66. Cl. 39.
Pan-American Seed Co.: *See*—
Ball, Geo. J., Inc.

Pandora, Inc., Kansas City, Mo. 818,829, pub. 2–1–66. Cl. 50.
Paris Presents, Ltd., Chicago, Ill. 818,650, pub. 8–30–66. Cl. 29.
Pastival, Inc.: *See*—
Societe Annonyme Etablissements Pastival.
Patio Foods, Inc., San Antonio, Tex. 818,795, pub. 8–30–66. Cl. 46.
Pearson, Ben, Inc., Pine Bluff, Ark. 818,603, pub. 8–30–66. Cl. 22.
Peerless Supply Co., Providence, R.I. 704,823, canc. Cl. 12.
Peerless Supply Co., Providence, R.I. 704,824, canc. Cl. 12.
Pego, Adolfo L., Hialeah, Fla. 818,866, pub. 8–30–66. Cl. 107.
Perk Foods Co., Chicago, Ill. 818,800, pub. 8–30–66. Cl. 46.
Pevely Dairy Co., St. Louis, Mo. 818,756, pub. 8–30–66. Cl. 46.
Peyron, Antoine F., Paris, France. 705,095, canc. Cl. 44.
Pfizer, Chas., & Co., Inc.: *See*—
Primrose House, Inc.
Pfizer, Chas., & Co., Inc., New York, N.Y. 818,579, pub. 8–30–66. Cl. 18.
Pfizer, Chas., & Co., Inc., New York, N.Y. 818,839, pub. 8–30–66. Cl. 51.
Philadelphia Chewing Gum Corp., Havertown, Pa. 818,812, pub. 8–30–66. Cl. 46.
Physicians and Hospitals Supply Co., Inc., Minneapolis, Minn. 426,281, ren. 11–15–66. Cl. 18.
Pilar River Plate Corp., Newark, N.J. 818,508, pub. 8–30–66. Cl. 6.
Pillsbury Co., The, Minneapolis, Minn. 818,790, pub. 8–30–66. Cl. 46.
Pillsbury Co., The, Minneapolis, Minn. 818,791, pub. 8–30–66. Cl. 46.
Pillsbury Co., The, Minneapolis, Minn. 818,792, pub. 8–30–66. Cl. 46.
Pillsbury Co., The, Minneapolis, Minn. 818,793, pub. 8–30–66. Cl. 46.
Pillsbury Co., The, Minneapolis, Minn. 818,794, pub. 8–30–66. Cl. 46.
Pinocchio Associates, Inc., Woodside, N.Y. 818,850, pub. 8–30–66. Cl. 100.
Pioneer Rubber Co., The, Willard, Ohio. 818,746, pub. 8–30–66. Cl. 44.
Pitman Mfg. Co., Grandview, Mo. 818,865, pub. 8–30–66. Cl. 107.
Pittsburgh Railways Co., Cleveland, Ohio. 818,882. Cl. 38.
Plochman, Inc., Chicago, Ill. 818,805, pub. 8–30–66. Cl. 46.
Plumbing and Drainage Institute, Oak Park, Ill. 818,867, pub. 8–30–66. Cl. 200.
Popcorn Processors, Inc., Los Angeles, Calif. 818,892. Cl. 46.
Popular Science Publishing Co., Inc., New York, N.Y. 818,887. Cl. 38.
Porter, Garland B., d.b.a. Porter Publishing Co., Atlanta, Ga. 818,880. Cl. 38.
Porter, Garland B., d.b.a. Porter Publishing Co., Atlanta, Ga. 818,881. Cl. 38.
Porter Publishing Co.: *See*—
Porter, Garland B.
Portsmouth Cotton Oil Refining Corp., Portsmouth, Va., to The Procter & Gamble Co., Cincinnati, Ohio. 218,925, ren. 11–15–66. Cl. 46.
Potlatch Forests, Inc., San Francisco, Calif. 818,529, pub. 8–30–66. Cl. 12.
Powers, Hazel D., d.b.a. Powers Industries, West Des Moines, Iowa. 704,925, canc. Cl. 22.
Powers Industries: *See*—
Powers, Hazel D.
Powers Regulator Co., The, Skokie, Ill. 818,535, pub. 8–30–66. Cl. 13.
Precision Dynamics Corp., Burbank, Calif. 818,832, pub. 8–30–66. Cl. 50.
Primrose House, Inc., to Chas. Pfizer & Co., Inc., New York, N.Y. 420,883, ren. 11–15–66. Cl. 52.
Printing Industry Corp. of America, Chicago, Ill. 818,692, pub. 8–30–66. Cl. 38.
Procter & Gamble Co., The: *See*—
Waltke, William, & Co.
Portsmouth Cotton Oil Refining Corp.
Procter & Gamble Co., The, Cincinnati, Ohio. 423,995, ren. 11–15–66. Cl. 52.
Procter & Gamble Co., The, Cincinnati, Ohio. 424,339, ren. 11–15–66. Cl. 52.
Production and Marketing Co., Newtown, Conn. 704,900, canc. Cl. 22.
Productos Caseros, S.A., Mexico City, Mexico. 727,287, canc. Cl. 46.
Progressive Drugs of America, Inc., Chattanooga, Tenn. 818,873. Cl. 18.
Pro-phy-lac-tic Brush Co., Florence, Mass. 818,654, pub. 8–30–66. Cl. 29.
Pro-phy-lac-tic Brush Co., Florence, Mass. 818,655, pub. 8–30–66. Cl. 29.
Publication House, Inc., New York, N.Y. 818,698, pub. 8–30–66. Cl. 38.
Puerto Rico Distillers, Inc., d.b.a. Barcelo Marques & Co., Arecibo, Puerto Rico. 818,826, pub. 8–30–66. Cl. 49.
Puerto Rico Distillers, Inc., d.b.a. Compania de Bebidas del Oriente, Arecibo, Puerto Rico. 818,827, pub. 8–30–66. Cl. 49.
Purdue Frederick Co., The, Yonkers, N.Y. 818,581, pub. 8–30–66. Cl. 18.
Purdue Frederick Co., The, Yonkers, N.Y. 818,582, pub. 8–30–66. Cl. 18.
Pure Oil Co., The: *See*—
Union Oil Co. of California.
Purepak Foods, Inc., New York, N.Y. 818,775, pub. 12–14–65. Cl. 46.
Quaker Oats Co., The, Chicago, Ill. 818,757, pub. 8–30–66. Cl. 46.
Quality Bakers of America Cooperative, Inc., New York, N.Y. 818,894. Cl. 46.
Quickee Products Inc., Yonkers, N.Y. 705,085, canc. Cl. 6.
R & D Associates, Encino, Calif. 704,901, canc. Cl. 22.
R. and H. Specialty Co., Glen Elly, Ill. 704,918, canc. Cl. 22.
Rails Co., The, Maplewood, N.J. 818,547, pub. 8–30–66. Cl. 14.
Rattenbury, H. E. "Dick," Dixon, Calif. 704,908, canc. Cl. 22.
Raycrest Mills, Inc., New York, N.Y. 818,891. Cl. 42.
Rayon Processing Co. of R. I. Inc., Central Falls, to Microfibres, Inc., Pawtucket, R.I. 423,572, ren. 11–15–66. Cl. 1.
Red Wing Co., Inc., The, Fredonia, N.Y. 818,786, pub. 8–30–66. Cl. 46.
Reflex Corp. of America, Troy, Mich. 818,589, pub. 8–30–66. Cl. 19.
Richmond Chemicals, Inc., White Plains, N.Y. 818,659, pub. 8–30–66. Cl. 31.
Reichhold Chemicals, Inc., White Plains, N.Y. 818,668, pub. 8–30–66. Cl. 33.
Reid, Murdoch & Co., to Consolidated Foods Corp., Chicago, Ill. 422,535, ren. 11–15–66. Cl. 45.
Remington Arms Co., Inc., Bridgeport, Conn. 818,517, pub. 8–30–66. Cl. 9.
Remington Rand Inc., Buffalo, to Sperry Rand Corp., New York, N.Y. 424,452, ren. 11–15–66. Cl. 32.
Republic Rubber Division: *See*—
Lee Rubber & Tire Corp.
Research Products Mfg. Co., Irving, Tex. 818,544, pub. 8–30–66. Cl. 13.
Rexall Drug and Chemical Co., d.b.a. Vanda Cosmetics, Los Angeles, Calif. 818,843, pub. 8–30–66. Cl. 51.
Reynolds Metals Co.: *See*—
United States Foil Co.
Ricear America Co., Anaheim, Calif. 818,875. Cl. 23.
Richardson-Merrell Inc., New York, N.Y. 818,565, pub. 6–28–66. Cl. 18.
Richardson-Merrel Inc., Cincinnati, Ohio. 818,575, pub. 8–30–66. Cl. 18.
Ripon Foods, Inc., Ripon, Wis. 818,801, pub. 8–30–66. Cl. 46.
Robertson, Evelyn R., d.b.a. Funny-Saks Co., Dallas, Tex. 705,091, canc. Cl. 37.
Rocket Citrus Products, Inc., St. Louis, Mo. 818,893. Cl. 46.
Rockey Jewelry Box, Inc., New York, N.Y. 818,500, pub. 8–30–66. Cl. 2.
Rockwell-Standard Corp.: *See*—
Timken-Detroit Axle Co., The.
Rolley Co.: *See*—
Botany Industries, Inc.
Roxane, Philips, Inc., New York, N.Y. 818,873, pub. 8–30–66. Cl. 18.
Roxter Corp., Long Island City, N.Y. 818,595, pub. 8–30–66. Cl. 21.
Rumford Chemical Works, to Hulman & Co., Rumford, R.I. 423,627, ren. 11–15–66. Cl. 46.
Russell & Erwin Mfg. Co., New Britain, Conn., to Emhart Corp., Hartford, Conn. 60,566, ren. 11–15–66. Cl. 25.
Safemasters Co., Inc., The, Washington, D.C. 818,861, pub. 8–30–66. Cl. 103.
Safemasters Co., Inc., The, Washington, D.C. 818,642, pub. 8–30–66. Cl. 25.
Safeway Stores, Inc., Oakland, Calif. 818,811, pub. 8–30–66. Cl. 46.
Sample-Durick, Inc.: *See*—
Aseptic Drinking Cup Co., The.
Sanctuary, Inc., The, Effingham, Ill. 704,913, canc. Cl. 22.
Sanderson Brothers & Newbould Ltd., Sheffield, England. 57,475, ren. 11–15–66. Cl. 14.
Sandoz, Inc.: *See*—
Chemical Works Formerly Sandoz.
Sapphire Corp., New York, N.Y. 704,991, canc. Cl. 39.
Saunders-Roe and Nuclear Enterprises Ltd., Hayes, Middlesex, England. 818,672, pub. 8–30–66. Cl. 34.
Savada Bros., Inc., New York, N.Y. 818,720, pub. 8–30–66. Cl. 39.
Savick's Food Products Co., Inc., Milwaukee, Wis. 818,781, pub. 8–30–66. Cl. 46.
Schenley Distillers, Inc., d.b.a. Weston Winery, New York, N.Y. 818,816, pub. 8–30–66. Cl. 47.
Schenley Distillers, Inc., d.b.a. Weston Winery, New York, N.Y. 818,817, pub. 8–30–66. Cl. 47.
Schenley Distillers, Inc., New York, N.Y. 818,822, pub. 8–30–66. Cl. 49.
Schenley Distillers, Inc., New York, N.Y. 818,823, pub. 8–30–66. Cl. 49.
Schenley Distillers, Inc., New York, N.Y. 818,824, pub. 8–30–66. Cl. 49.
Schering Corp., Bloomfield, N.J. 818,559, pub. 4–26–66. Cl. 18.
Schonfeld, S., Co., Inc., New York, N.Y. 818,760, pub. 8–30–66. Cl. 46.
Scripture Press Publications, Inc., Wheaton, Ill. 818,697, pub. 8–30–66. Cl. 38.
Searle, G. D., & Co., Skokie, Ill. 704,875, canc. Cl. 18.
Sears, Roebuck and Co., Chicago, Ill. 818,550, pub. 8–30–66. Cl. 15.
Seetru Ltd., Bristol, England. 818,878. Cl. 35.
Sektkellerei Carstens Kg., Neustadt/Weinstrasse, Germany. 818,815, pub. 8–30–66. Cl. 47.
Seltzer, Fred, Corp., Lincolnwood, Ill. 818,647, pub. 8–30–66. Cl. 28.
Shakespeare Co., Kalamazoo, Mich. 818,611, pub. 8–30–66. Cl. 22.
Shakespeare Co., Kalamazoo, Mich. 818,612, pub. 8–30–66. Cl. 22.
Shannon Mfg. Co., North Hollywood, Calif. 818,707, pub. 8–30–66. Cl. 39.
Shapiro, Edward and Herman Shapiro, New York, N.Y. 705,004, canc. Cl. 39.

Sherwin-Williams Co., The, Cleveland, Ohio. 818,552, pub. 8–30–66. Cl. 16.
Shiffer, Charles E., d.b.a. Dr. Shiffer's Laboratories, Cleveland, Ohio. 818,563, pub. 8–30–66. Cl. 18.
Ship 'N Shore, Inc., Upland, Pa. 818,729, pub. 8–30–66. Cl. 39.
Shwayder Brothers, Inc., Denver, Colo. 704,792, canc. Cl. 3.
Silverman, Leo, Elkins Park, Pa. 705,017, canc. Cl. 43.
Sinclair Mfg. Co., The, d.b.a. Sinclair Mfg., Toledo, Ohio. 818,512, pub. 8–30–66. Cl. 6.
Smith, J. Hungerford, Co, Rochester, N.Y., to United Fruit Co., Boston, Mass. 222,983, ren. 11–15–66. Cl. 45.
Sociedad Anonima Vinedos Y Bodegas Jose Orfila Ltda., Mendoza, Argentina. 818,813, pub. 8–30–66. Cl. 47.
Societe Anonyme Etablissements Pastival, Paris, France, to Pastival, Inc., New York, N.Y. 218,101, ren. 11–15–66. Cl. 18.
Societe Technique de Parfumerie, F. Millot, Paris, France. 705,052, canc. Cl. 51.
Sparta Foundry Co., Sparata, Mich. 818,548, pub. 8–30–66. Cl. 14.
Spatz Bros., Inc., New York, N.Y. 818,705, pub. 8–30–66. Cl. 39.
Sperry Rand Corp.: *See*—
Remington Rand Inc.
Spruce Associates, Inc., New York, N.Y. 818,703, pub. 8–30–66. Cl. 39.
Squibb, E. R., & Sons, to E. R. Squibb & Sons, Inc., New York, N.Y. 421,294, ren. 11–15–66. Cl. 18.
Squibb, E. R., & Sons, Inc.: *See*—
Squibb, E. R., & Sons.
Standard Oil Co., Bayonne, N.J., to Humble Oil & Refining Co., Houston, Tex. 57,820, ren. 11–15–66. Cl. 34.
Standard Oil Co. (New Jersey), Bayonne, N.J., to Humble Oil & Refining Co., Houston, Tex. 220,294, ren. 11–15–66. Cl. 15.
Standard Oil Co. (New Jersey), Bayonne, N.J., to Humble Oil & Refining Co., Houston, Tex. 222,005, ren. 11–15–66. Cl. 23.
Stanray Corp., Chicago, Ill. 818,586, pub. 8–30–66. Cl. 19.
Sta-Soil Corp., Van Nuys, Calif. 818,520, pub. 8–30–66. Cl. 10.
Stearns Mfg. Co., Flat Rock, Mich. 818,625, pub. 8–30–66. Cl. 23.
Sterling Faucet Co., Morgantown, W. Va. 818,540, pub. 8–30–66. Cl. 13.
Sterling Tailoring Co.: *See*—
Kahn Tailoring Co.
Stewart-Warner Corp., Chicago, Ill. 704,945, canc. Cl. 26.
Stran-Steel Corp., Ecorse, Mich. 704,809, canc. Cl. 12.
Sunbeam Corp., Chicago, Ill. 818,646, pub. 8–30–66. Cl. 27.
Super-Compactors, Inc., Sacramento, Calif. 704,934, canc. Cl. 23.
Sutherland Publications, Inc., Bethesda, Md. 818,700, pub. 8–30–66. Cl. 38.
Sylvania Electric Products Inc.: *See*—
Callite Tungsten Corp.
Tallman-McCluskey Fabrics Co., to Tallman McCluskey Fabrics Co., St. Louis, Mo. 423,965, ren. 11–15–66. Cl. 34.
Tarr, Alexander R., d.b.a. Slenderama by Tarr, Green Springs, Ohio. 705,073, canc. Cl. 100.
Taylor & Sledd, Inc., Richmond, Va. 705,028, canc. Cl. 46.
Telmark, Inc., Syracuse, N.Y. 818,854, pub. 8–30–66. Cl. 101.
Textured Coatings of America, Inc., Los Angeles, Calif. 818,526, pub. 8–30–66. Cl. 12.
Textured Coatings of America, Inc., Los Angeles, Calif. 818,527, pub. 8–30–66. Cl. 12.
Thermal Dynamics Corp., Lebanon, N.H. 818,670, pub. 8–30–66. Cl. 34.
Thilmany Pulp and Paper Co., Kaukauna, Wis. 818,683, pub. 8–30–66. Cl. 37.
Three Springs Fisheries, Lilypons, Md. 818,487, pub. 8–30–66. Cl. 1.
Timken-Detroit Axle Co., The, Detroit, Mich., to Rockwell-Standard Corp., Pittsburgh, Pa. 216,161, ren. 11–15–66. Cl. 19.
Tip Top Foods, Inc., Emeryville, Calif. 818,767, pub. 6–14–66. Cl. 46.
Traveler's Mfg. & Sales Co., Inc., d.b.a. Animated Pop Co., Boston, Mass. 818,780, pub. 8–30–66. Cl. 46.
Trupp, Bernard and Garrison Trupp, d.b.a. Trupp Interdental, Baltimore, Md. 818,744, pub. 8–30–66. Cl. 44.
Trupp Interdental: *See*—
Trupp, Bernard and Garrison Trupp.
Tuesday Publications, Inc., Chicago, Ill. 818,693, pub. 8–30–66. Cl. 38.
Tweet, Inc., to Greylock Confectionery Corp., Cambridge, Mass. 421,056, ren. 11–15–66. Cl. 46.
Twirly Bird, Inc., Norman, Okla. 704,914, canc. Cl. 22.
Union Oil Co., of California, Los Angeles, Calif., from The Pure Oil Co., Palatine, Ill. 818,877. Cl. 35.
United Distributors Service: *See*—
United Distributors Service, Inc.
United Distributors Service, Inc., d.b.a. United Distributors Service, Roanoke, Va. 818,591, pub. 8–30–66. Cl. 19.
United Distributors Service, Inc., d.b.a. United Distributors Service, Roanoke, Va. 818,630, pub. 8–30–66. Cl. 23.
United Fruit Co.: *See*—
Smith, J. Hungerford, Co.
United Fruit Co., Boston, Mass. 818,799, pub. 8–30–66. Cl. 46.
United Merchants and Mfg., Inc., New York, N.Y. 818,740, pub. 8–30–66. Cl. 42.
United States Banknote Corp.: *See*—
Lanston Monotype Machine Co.
United States Foil Co., Louisville, Ky., to Reynolds Metals Co., Richmond, Va. 215,624, ren. 11–15–66. Cl. 12.
United States Time Corp., The, Middlebury, Conn. 423,939, ren. 11–15–66. Cl. 27.
Utica Knitting Co., Utica, N.Y., to Genesco Inc., Nashville, Tenn. 425,274, ren. 11–15–66. Cl. 39.
Vacationland Dairy Cooperative: *See*—
Michigan Milk Producers Association.
Valley Spring Beverage Co., d.b.a. Desert Dry Beverage Co., Phoenix, Ariz. 818,748, pub. 8–30–66. Cl. 45.
Vanda Cosmetics: *See*—
Rexall Drug and Chemical Co.
Van Dorn Co., d.b.a. Van Dorn Plastics Machinery Co., Cleveland, Ohio. 818,636, pub. 8–30–66. Cl. 23.
Van Dorn Plastics Machinery Co.: *See*—
Van Dorn Co.
Van Houten, C. J., & Zoon N.V.: *See*—
Kroninklijke Fabrieken, C. J. van Houten & Zoon N.V.
Van-Wilson Ltd., Burlington, Ontario, Canada. 818,628, pub. 8–30–66. Cl. 23.
Verley, Albert, & Co., Linden, N.J. 818,514, pub. 8–30–66. Cl. 6.
Veterinary Supply Depot Inc., Dallas, Tex. 818,571, pub. 8–30–66. Cl. 18.
Victor Drug Co., Chicago, Ill. 704,864, canc. Cl. 18.
Virus, John R., d.b.a. Brandy Harvest, Woodside, N.Y. 818,844, pub. 8–30–66. Cl. 51.
Viscount Products, Inc., New York, N.Y. 818,608, pub. 8–30–66. Cl. 22.
Vitarine Co., Inc., The, Springfield Gardens, N.Y. 818,773, pub. 8–30–66. Cl. 46.
Vitricon Inc., Woodside, N.Y. 818,522, pub. 8–30–66. Cl. 12.
Vogel-Peterson Co., Elmhurst, Ill. 818,662, pub. 8–30–66. Cl. 32.
Walker Mfg. Co., Racine, Wis. 818,631, pub. 8–30–66. Cl. 23.
Waltke, William, & Co., St. Louis, Mo., to The Procter & Gamble Co., Cincinnati, Ohio. 29,392, ren. 11–15–66. Cl. 52.
Wampole Laboratories: *See*—
Denver Chemical Mfg. Co., The.
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 818,568, pub. 8–30–66. Cl. 18.
Watersaver Co., Inc., Denver, Colo. 818,870. Cl. 12.
Wayfarer Inns of New York, Inc., Rhinebeck, N.Y. 818,851, pub. 8–30–66. Cl. 100.
Welcome Records, Los Angeles, Calif. 704,964, canc. Cl. 36.
Werber, Alfred, Inc., St. Louis, Mo. 818,724, pub. 8–30–66. Cl. 39.
West Virginia Pulp and Paper Co., New York, N.Y. 704,805, canc. Cl. 6.
Westab Inc., Dayton, Ohio. 818,689, pub. 8–30–66. Cl. 37.
Western Grain Co., Birmingham, Ala. 818,802, pub. 8–30–66. Cl. 46.
Western-Hoegee Co., Los Angeles, Calif. 818,600, pub. 8–30–66. Cl. 22.
Weston Winery: *See*—
Schenley Distillers, Inc.
Weyerhaeuser Co., Tacoma, Wash. 818,501, pub. 8–30–66. Cl. 2.
Weyerhaeuser Co., Tacoma, Wash. 818,856, pub. 8–30–66. Cl. 101.
Weyerhaeuser Co., Tacoma, Wash. 818,869. Cl. 2.
Whirlpool Corp., Benton Harbor, Mich. 818,860, pub. 8–30–66. Cl. 103.
White Motor Corp., Cleveland, Ohio. 818,590, pub. 8–30–66. Cl. 19.
Wholesale Grocers Exchange, Inc., Richmond, Va. 221,052, ren. 11–15–66. Cl. 46.
Wholesale Grocers Exchange, Inc., Richmond, Va. 221,053, ren. 11–15–66. Cl. 46.
Wholesale Grocers Exchange, Inc., Richmond, Va. 221,054, ren. 11–15–66. Cl. 46.
Wichita Flour Mills Co., The, to Wichita Flour Mills, Inc., Wichita, Kans. 215,722, ren. 11–15–66. Cl. 46.
Wichita Flour Mills, Inc.: *See*—
Wichita Flour Mills Co., The.
Williams & Humbert Ltd., London, England. 818,819, pub. 8–30–66. Cl. 47.
Williams Mfg. Co., The, Portsmouth, Ohio. 818,728, pub. 8–30–66. Cl. 39.
Wyandotte Chemicals Corp., Wyandotte, Mich. 818,554, pub. 7–5–66. Cl. 16.
Zucon, Inc., Birmingham, Ala. 818,494, pub. 8–30–66. Cl. 2.
Zucon, Inc., Birmingham, Ala. 818,496, pub. 8–30–66. Cl. 2.

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U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

November 22, 1966 Volume 832 Number 4

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of October 1966

Examiner affirmed	189
Examiner affirmed in part	35
Examiner reversed	58
Total	282

Failure To Argue Rejection in Brief

In view of the Notice appearing in 826 O.G. 1060 and entitled, "Appeal Briefs Under Rules 192 and 193(b)," whenever a brief is found to be defective for the reason that an applicant has failed to respond to some ground or grounds of rejection advanced by the Examiner, the Examiner should simply note this fact in the Examiner's Answer and point out which claims are affected thereby. Further treatment of the affected claims in the Answer is unnecessary.

RICHARD A. WAHL,
Assistant Commissioner.

Oct. 20, 1966.

Registration To Practice

The following list contains the names of all applicants for registration to practice before the United States Patent Office who attained passing grades in the examination of Aug. 9, 1966. Information tending to affect the eligibility of any of said applicants on moral or ethical grounds should be furnished the Commissioner of Patents on or before Dec. 12, 1966.

S. WM. COCHRAN,
Vice-Chairman, Committee on Enrollment.

Nov. 1, 1966.

List of Applicants Who Passed the Examination for Registration To Practice Before the Patent Office Held August 9, 1966.

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New Applications Received During September 1966

Patents	6,948
Designs	446
Plant Patents	19
Reissues	16
Total	7,429

Issue—November 22, 1966

Patents	1463	No. 3,286,274 to No. 3,287,736, incl.
Designs	61	No. 206,256 to No. 206,316, incl.
Plant Patents	1	No. 2,686
Reissues	3	No. 26,114 to No. 26,116, incl.
Total	1528	

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Adverse Decisions in Interferences

In the designated interferences involving the indicated claims of the following patents final decision have been rendered that the respective patentees were not the first inventors with respect to the claims listed.

Patent No. 2,999,389, C. E. Granqvist, GYROSCOPE DEVICE WITH VIBRATING GAS PARTICLES OR PARTICLES OF ANOTHER SOUND TRANSFERRING MEDIUM, decided Sept. 29, 1966, Interference No. 93,792, claim 1.

Patent No. 3,039,918, E. Hambach and F. Herbold, AGENTS FOR COMBATING PLANT INJURING NEMATODES, decided June 17, 1966, Interference No. 94,277, claims 1, 2 and 3.

Patent No. 3,078,231, K. A. Metcalfe and R. J. Wright, CONTROLLED DEVELOPER FOR USE IN ELECTROPHOTOGRAPHY AND ELECTRO-RADIOGRAPHY, decided Sept. 2, 1966, Interference No. 94,531, claim 1.

Patent No. 3,093,120, D. T. Ayers, Jr., FLUID PRESSURE MOTOR MECHANISM, decided Aug. 23, 1966, Interference No. 95,209, claims 1, 2, 3, 4, 5 and 9.

Patent No. 3,143,930, D. T. Ayers, Jr., FLUID PRESSURE MOTOR MECHANISM, decided Aug. 23, 1966, Interference No. 95,209, claims 1, 2, 3, 4, 5, 8 and 9.

Patent No. 3,093,441, R. E. Whitfield, L. A. Miller and W. L. Wasley, SHRINKPROOFING WOOL WITH INTERPOLYMERS, decided Sept. 15, 1966, Interference No. 94,157, claims 2, 24, 25 and 27.

Patent No. 3,120,762, E. P. Bullard III and E. P. Bullard IV, MACHINE CONTROL, decided Mar. 2, 1966, Interference No. 94,810, claims 1, 2, 3, 5, 6, 7, 9, 10, 11, 13, 14 and 15.

Patent No. 3,122,070, I. L. Kauffman and D. S. Annett, METHOD AND APPARATUS FOR SIDE SEAMING CARTON BLANKS BY APPLICATION OF HEAT, decided Aug. 9, 1966, Interference No. 94,927, claims 5, 6, 7 and 8.

Patent No. 3,143,955, E. B. Rockwell, BEVERAGE BREWING MACHINE, decided May 27, 1966, Interference No. 94,852, claim 8.

Patent No. 3,147,996, R. A. Ferrara and K. C. Hammer, SEAT BELT REEL LOCK, decided Sept. 29, 1966, Interference No. 95,116, claims 1, 2, 3 and 5.

Patent No. 3,151,358, K. G. Gerber, APPARATUS FOR PRODUCING FLAT FILM FROM THERMOPLASTIC MATERIAL, decided Oct. 3, 1966, Interference No. 94,848, claim 10.

Patent No. 3,160,105, K. S. Sherman and C. R. Alexander, PUMP FOR HIGH VISCOSITY FLUIDS, decided Sept. 2, 1966, Interference No. 95,045, claims 1, 2, 4, 6, 9 and 11.

Patent No. 3,172,562, F. M. Nascher and J. L. Schwartz, STACKABLE CONTAINER, decided Sept. 22, 1966, Interference No. 95,176, claims 1 and 2.

Erratum

In the OFFICIAL GAZETTE, Oct. 11, 1966, vol. 831, p. 734, first column, under the heading "3,278,467," between lines 7 and 8 thereof, insert the following:

No Drawing. Filed Aug. 22, 1963, Ser. No. 303,952

Notice of Tentative Recordation of a Trade Name

[T.D. 66234]

Tentative recordation of trade name under section 42, Trademark Act of 1946, and section 11.16, Customs Regulations

TREASURY DEPARTMENT
OFFICE OF THE COMMISSIONER OF CUSTOMS
Washington, D.C., October 20, 1966

An application has been filed in the Treasury Department for the recordation of the following described trade name under the provisions of section 42, Trademark Act of 1946, and section 11.16, Customs Regulations:

"FLOWER MODES" is a trade name used by Flower Modes, Ltd., a corporation organized under the laws of the State of New York, located at 17 East 37th Street, New York, New York. The trade name is used in connection with women's accessory merchandise such as hair ornaments, costume flowers, hats, hair coverings, bags, and raincoats; it is also used on novelty items, stuffed toys and cosmetic novelties. The merchandise is imported from Japan, France and Italy.

Any person who desires to file an opposition to the recordation of this trade name shall notify the Commissioner of Customs, Bureau of Customs, Washington, D.C. 20226, before the expiration of 30 days after October 31, 1966, of his intent to oppose the recordation. If a notice of opposition is filed, the opposer will be furnished with a copy of the application for recordation of the trade name, together with its supporting documents and instructions as to the procedure to be followed. The customs officers concerned will be given notice within 45 days after October 31, 1966, of any opposition proceedings.

Until 45 days after October 31, 1966, all articles of foreign manufacture bearing names or marks which copy or simulate the abovementioned trade name shall be detained, but not seized. If a notice is received that an opposition has been filed, such articles shall continue to be detained until a final

determination is made concerning the right of the applicant of the trade name. Articles detained either before or after any such notice is received shall receive the treatment provided for in section 11.17(b), Customs Regulations, which permits removal or obliteration of the offending mark or name prior to release, or exportation or destruction of the merchandise.

(Signed) LESTER D. JOHNSON,
Commissioner of Customs.

Patents Available for Licensing or Sale

3,067,310. MICROFILM ELECTRIC HEATERS. Frank C. Walz, et. al. Correspondence to: Anderson, Spangler & Wymore, Suite 2114, 1700 Broadway, Denver, Colo., 80202.

3,249,737. PORTABLE HEATER. John S. Casebeer, Box 156, Chula, Mo., 64635.

3,215,917. ELECTRICALLY-DRIVEN TIMING DEVICE. Willard E. Buck. Correspondence to: Anderson, Spangler & Wymore, Suite 2114, 1700 Broadway, Denver, Colo., 80202.

3,258,880. SHARPENING MACHINE FOR TOOL-CARRYING HEADS. Maurice Garin, Lyons, France. Correspondence to: Michael S. Striker, 360 Lexington Avenue, New York, N.Y., 10017.

3,263,808. METHOD FOR THE SEPARATION OF PARTICLES OF DIFFERTNT SIZES AND DENSITIES. Jerome A. Schwartz, 3520 Lake Shore Drive, Chicago, Ill., 60604.

3,273,624. THERMOSTATIC LIQUID FUEL CONTROL DEVICE FOR FURNACES. John D. Webster, Norfolk, Va. Correspondence to: Joseph M. Carson, Jr., 316 Board of Trade Bldg., Norfolk, Va., 23510.

3,276,684. FISH WEIGHT COMPUTER. Clark A. Ritchie, 8522 N. Georgia, Oklahoma City, Okla., 73114.

3,278,014. CUP STORAGE RIM. William S. Thornton, 204 Ella St., Lafayette, La., 70501.

3,279,322. RADIUS CUTTING TOOLS. Harry Stuart, 712 Washington Ave., West Haven, Conn.

3,280,830. NEWSPAPER UMBRELLA FRAME. Joseph Zweben, 2492 Williams Court, Bellmore, L.I., N.Y.

The following 2 patents are offered by Ronald W. Mayes, 6241 East 13th St., Wichita, Kans., 67208.

2,860,615. SEAL.

3,080,819. FUEL FEEDING SYSTEM.

Eastman Kodak Company announces that, in accordance with its policy, nonexclusive licenses upon reasonable terms are available to responsible domestic applicants (under the circumstances prevailing at the time) under the following U.S. patents.

Applications for license may be addressed to the Director, Patent Department, Eastman Kodak Company, 343 State St., Rochester, N.Y., 14650.

2,974,578. MANUAL ADJUSTMENT OF AUTOMATIC EXPOSURE CONTROL FOR PHOTOGRAPHIC CAMERAS.

2,996,400. POSITIVE AND NEGATIVE ELECTRO PRINTING.

2,999,441. AUTOMATIC EXPOSURE CONTROL SYSTEM FOR PHOTOGRAPHIC CAMERAS.

3,051,066. TWO-SPEED CAMERA FOR FLASH PHOTOGRAPHY.

3,053,985. PHOTOCELL CIRCUITS.

3,071,832. CLIP FOR DETACHABLY CONNECTING A CARRYING STRAP TO A CAMERA.

3,147,932. FILM LOADING CASSETTE.

3,176,599. FILTER COMPENSATION DEVICE.

3,184,356. METHOD FOR SLITTING AND SPLICING FILM.

3,184,584. PHOTOGRAPHIC FLASH UNIT.

3,187,659. DRUM PROCESSING DEVICE.

3,196,565. SLIDE CHANGER FOR PROJECTORS.

3,208,363. AUTOMATIC FILM SENSITIVITY COMPENSATION.

3,208,685. ANTI-FRICTION DISK FOR STRIP MATERIAL CARTRIDGE.

3,208,686. FILM CARTRIDGE.

3,260,182. MAGAZINE AND CAMERA WITH FILM CHARACTERISTIC INDICATING MEANS.

General Electric Company is prepared to grant nonexclusive licenses under the following 35 patents upon reasonable terms to domestic manufacturers.

Applications for license under the following 16 patents may be addressed to: Hotpoint Division, 5600 West Taylor St., Chicago, Ill., 60644. Attn: Patent Counsel.

2,850,612. ELECTRIC BAKING AND BROILING OVENS.

2,885,789. APPARATUS FOR DRYING FABRICS.

2,994,317. DOMESTIC COOKING APPLIANCE.

2,996,167. MANUFACTURING METHOD AND APPARATUS.

3,003,495. HINGE CONSTRUCTION.

3,027,753. LEAK DETECTION DEVICE.

3,064,291. BRUSHING APPARATUS.

3,124,157. CONJOINTLY OPERATED COUPLING AND VENT VALVE.

3,126,024. DISHWASHING APPARATUS.

3,241,545. POLYTETRAFLUOROETHYLENE COATED COOKING DEVICES.

3,243,565. PIVOTAL SWITCH-OPERATING ASSEMBLY.

3,243,577. ELECTRIC SURFACE HEATING UNIT.

3,246,122. TEMPERATURE CONTROLLED SURFACE HEATING UNIT.

3,250,268. COMPOSITE DOOR STRUCTURE.

3,253,731. HOT WATER STORAGE TANKS.

3,254,016. APPARATUS FOR DEMINERALIZING RAW WATER.

Applications for license under the following 19 patents may be addressed to: General Electric Company, Power Distribution Division, 100 Woodlawn Ave., Pittsfield, Mass. Attn: Division Patent Counsel.

2,561,202. CONSTANT CURRENT OPEN CIRCUIT PROTECTIVE SYSTEM.

2,599,285. OVATE ROADWAY REFLECTOR.

2,721,093. CLOSURE FASTENER.

2,736,841. ELECTROMAGNETIC SWITCHING MEANS.

2,838,717. CONTROL SYSTEM.

2,913,549. TIME DELAY SWITCHES.

2,913,637. PHOTOCONDUCTIVE CONTROL CIRCUIT.

3,054,091. LOAD MONITORING CIRCUIT.

3,080,491. PHOTOELECTRIC CONTROLLER.

3,131,871. COMBINATION RAIL AND LUMINAIRE.

3,160,837. TRANSFORMER WITH HEAT DISSIPATING SUPPORT MEANS.

3,189,789. IGNITION CIRCUIT FOR A DISCHARGE LAMP.

3,189,790. STARTING AND OPERATING CIRCUIT FOR GAS DISCHARGE LAMPS.

3,230,411. LOW VOLTAGE PROTECTIVE GAPS PROVIDED WITH ARC RUNNING SURFACES FOR CIRCULATING ARCS.

3,230,416. LOW VOLTAGE PROTECTIVE GAPS HAVING MAGNETIC MEANS FOR CIRCULATING ARCS.

3,265,884. FLOODLIGHT.

3,265,877. ILLUMINATING SYSTEM.

3,275,740. HIGH TEMPERATURE INSULATION FOR ELECTRICAL CONDUCTORS.

3,275,928. VOLTAGE REGULATOR WITH MAGNETIC AMPLIFIER ELEMENTS.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF SEPTEMBER 26, 1966

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action: New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	7-3-63	10-2-61
GENERAL ORGANIC CHEMISTRY, GROUP 120—G. D. MITCHELL, Manager. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	6-4-63	8-31-61
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—M. STERMAN, Manager. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.	8-1-63	8-21-61
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	2-5-63	1-31-62
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	7-1-63	10-23-61
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—M. L. LEVY, Manager. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	7-15-63	12-15-61
SECURITY, GROUP 220—S. BOYD, Manager. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	1-16-62	9-9-63
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—E. J. SAX, Manager. Communications; Multiplexing Techniques; Facsimile; Date Processing, Computation and Conversion; Storage Devices and Related Arts.	1-7-63	6-6-61
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—F. M. STRADER, Manager. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	4-12-63	7-31-61
PHYSICS, GROUP 280—R. L. EVANS, Manager. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	1-13-64	10-25-62
DESIGNS, GROUP 290—S. BOYD, Manager. Industrial Arts; Household, Personal and Fine Arts.	6-15-65	1-5-65

Total number of pending applications (excluding Designs)	195,258
Total number of Design applications pending	Not available
Total number of applications awaiting action (excluding Designs)	143,338
Total number of Design applications awaiting action	Not available
Date of oldest new application awaiting action	Jan. 16, 1962
Date of oldest amended application awaiting action	June 6, 1961

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during November 1966, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1965*.

Patents..... Numbers 2,486,373 to 2,490,010, inclusive

Plant Patents..... Numbers 888 to 903, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid, Flexible and Special Receptacles and Packages.	6-26-64	5-16-63
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks; Fasteners.	5-19-64	3-19-62
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, Etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	2-13-64	3-19-62
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	12-4-64	10-15-63
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	7-8-64	8-20-62
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager. Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	10-17-63	7-25-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE EDWIN SUKMAN

No. 7443. Decided November 4, 1965

[53 CCPA —; 351 F.2d 658; 147 USPQ 280]

1. PATENTABILITY—EVIDENCE—STATE OF THE ART.
"Appellant's argument is in fact directed to what prior knowledge in the art would lead a skilled person to consider in attempting to solve the problem appellant faced. No evaluation of an invention can ignore the known technology of record and the direction indicated thereby."
2. SAME—PARTICULAR SUBJECT MATTER—PRODUCTION OF CYCLOHEXANONE.
The refusal of certain claims to a process for the production of cyclohexanone, as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 859,155.

AFFIRMED.

William C. Long for appellant.

Clarence W. Moore (*Irving R. Pellman* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

WORLEY, *Chief Judge*, delivered the opinion of the court.

This is an appeal from the decision of the Board of Appeals which affirmed the Examiner's rejection of claims 18, 19 and 21–23 in appellant's patent application [1] for "Chemical Process."

The nature of the appealed subject matter is reflected in claim 22:

22. The process for the production of cyclohexanone which comprises contacting a mixture of 40 to 99% cyclohexanol, 0 to 50% cyclohexanone and 1 to 10% of other product formed during cyclohexane oxidation with zinc oxide catalyst to dehydrogenate the cyclohexanol to cyclohexanone.

By way of background, the record establishes that it is well known to dehydrogenate secondary alcohols to the corresponding ketones by passing the alcohol at elevated temperatures over substances acting as dehydrogenation catalysts. Among the catalysts used for that purpose have been metals such as copper and brass, as well as certain metallic oxides such as zinc oxide. Although cyclohexanol, the particular secondary alcohol of interest here, has been converted to cyclohexanone employing such processes, the cyclohexanol itself, insofar as the record shows, has always been derived from hydrogenation of phenol.

More recently, cyclohexanol has been prepared by another process involving vapor phase oxidation of cyclohexane.[2] As seen from the above claim, appellant employs cyclohexane-derived cyclohexanol in his zinc oxide-catalyzed process for preparation of cyclohexanone.

The Examiner rejected the claims as unpatentable over each of the Lazier [3] and Mottern [4] patents, both of which disclose the dehydrogenation of secondary alcohols utilizing a zinc oxide composition as a dehydrogenation catalyst. Lazier states that his process is useful "in the treatment of cyclic alcohols, such as cyclohexanol," and that

[1] Serial No. 859,155, filed December 14, 1959.
[2] Appellant has stated in the record that processes involving "oxidation of cyclohexane to produce reaction product mixtures largely consisting of cyclohexanol and cyclohexanone * * * are known in the art and have been so known for a considerable time."
[3] U.S. Patent No. 1,895,516, issued January 31, 1933.
[4] U.S. Patent No. 2,586,694, issued February 19, 1952.

"inert ingredients such as hydrocarbons may be present in the alcohol dehydrogenated and thus form a part of the resulting solvent mixture." In an example, Lazier describes the cyclohexanol used in his process as derived from "the catalytic hydrogenation of phenol." While the Examiner recognized that the references were silent as to the use of cyclohexane-derived cyclohexanol as a feedstock in the disclosed dehydrogenation processes, it was his position that cyclohexanol in such a feedstock would be expected to undergo dehydrogenation by a zinc oxide catalyst to cyclohexanone, notwithstanding the presence of certain other cyclohexane oxidation products as impurities. The Board agreed, stating:

> • • • we believe that it would be obvious to a person of ordinary skill in this art (35 U.S.C. 103) to use the zinc oxide catalysts of the references in dehydrogenating cyclohexanol derived from the oxidation of cyclohexane. • • •

Appellant contends the Board has tacitly assumed that the processes of the claims and of the references were both being applied to equivalent feedstocks, and that it also has erroneously assumed that a showing that one feedstock may be treated with a particular catalyst is tantamount to a showing that the use of the other would be obvious. He asserts that the phenol-derived cyclohexanol treated in the prior art and the cyclohexane-derived cyclohexanol treated in his process are not equivalent, since the compositions do not function in the same manner.

To illustrate his point, appellant directs attention to certain experiments set forth in his specification which show that red brass, asserted to be the catalyst employed commercially for dehydrogenation of phenol-derived cyclohexanol to cyclohexanone, rapidly loses its activity and yields poor conversion when contacted with a cyclohexane-derived cyclohexanol feedstock containing cyclohexanol, cyclohexanone, and various cyclohexane oxidation product impurities. On the other hand, the activity of red brass is not impaired when pure cyclohexanol is subjected to dehydrogenation in a process said to be "exemplary of the commercial process used for producing cyclohexanone." A comparison of two examples, one employing zinc oxide catalyst with the impure cyclohexane-derived cyclohexanol, the other employing red brass catalyst with the pure phenol-derived cyclohexanol, shows comparable overall yields of cyclohexanone achieved in the two processes.

The Board rejected appellant's argument, stating:

> We agree with the Examiner that the arguments based upon the effectiveness of red brass are of little significance, inasmuch as the rejection is not based upon a combination of references • • • [requiring] the substitution of zinc oxide for red brass. The supposition that the course of investigation would first proceed with red brass and that, finding this catalyst ineffective, one would be led away from zinc oxide, is based upon "the manner in which the invention was made." As indicated by the last sentence of 35 U.S.C. 103, this is not a factor in determining patentability. • • •

The Board's reference to the last sentence of 35 U.S.C. 103, which provides that "Patentability shall not be *negatived* by the manner in which the invention was made" [Emphasis supplied], does not seem appropriate here. [1] Appellant's argument is in fact directed to what prior knowledge in the art would lead a skilled person to consider in attempting to solve the problem appellant faced. No evaluation of an invention can ignore the known technology of record and the direction indicated thereby.

However, we cannot agree with appellant that one skilled in this art, upon review of the known technology as represented in this record, would be dissuaded from the application of a zinc oxide catalyst to the dehydrogenation of cyclohexane-derived cyclohexanol, or that the prior art strongly suggests moving in the direction of the brass catalyst in preference to zinc oxide. The prior art does not appear unaware of the fact that red brass catalysts deactivate in the presence of feedstock impurities, or that zinc oxide catalysts are effective in the presence of feedstock impurities. Indeed, Lazier states:

> • • • Considerable attention has been given to the development of methods based upon the use of copper as a catalyst in these reactions, but numerous obstacles have thus far prevented the development of a completely successful process.
>
> Some of these difficulties may be briefly indicated as follows: • • • (2) Copper, while the most desirable catalyst from the standpoint of initial activity and freedom from a tendency to induce side reactions, *quickly deteriorates as a result of sintering or of poisoning by impurities present in the gaseous mixture passed over the catalyst.* (3) Oxide catalysts, *although capable of retaining their activity for long periods*, are ordinarily relatively inactive and therefore require the use of much higher temperatures to bring about the same results obtained with copper catalysts. • • •
>
> In developing the process which is the subject of this specification • • • it was found feasible to combine the advantages of high activity and freedom from side reactions of the reduced metals *with the long life and freedom from poisoning characteristic of oxide catalysts.* • • • [Emphasis supplied.]

It seems to us that the prior art of record, rather than leading away from the claimed subject matter as appellant contends, would suggest the process here claimed to one of ordinary skill. Certainly no reference deprecates the use of a zinc oxide catalyst with a feedstock containing impurities. While we appreciate appellant's arguments, we are not convinced the subject matter is unobvious within the meaning of the statute.

[2] The decision is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

BOURNS, INC. *v.* GENERAL SCIENTIFIC CORP.

No. 7603. Decided June 9, 1966

[53 CCPA —; 361 F.2d 482; 149 USPQ 840]

1. TRADEMARK—CONFUSING SIMILARITY—"KWIK-TRIM" AND "E-Z-TRIM" FOR POTENTIOMETERS.

On the issue of confusing similarity between the mark sought to be registered "KWIK-TRIM" and the registered mark "E-Z-TRIM," both marks for potentiometers, and with reference to the statements by the Trademark Trial and Appeal Board that "Considering the nondistinctive nature of the term 'TRIM' and considering the marks in their entireties, we conclude that 'KWIK-TRIM' does not look or sound like 'E-Z-TRIM' nor do they have the same meaning or connotation," and that "We conclude that there is no likelihood of confusion," *Held* that "We have reviewed the Board's action • • • but are unable to find that the Board erred • • •" and that "Aside from the Board's reasoning, it would seem that the technical nature and uses of potentiometers suggest that purchasers would be inclined to exercise care and discrimination • • •."

APPEAL from the Patent Office. Opposition No. 42,738.

AFFIRMED.

Oscar A. Mellin, Carlisle M. Moore, Raymond W. Colton for appellant.

Robert C. Comstock for appellee.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, JR., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK,

United States Senior District Judge for the Eastern District of Pennsylvania

KIRKPATRICK, *J.*, delivered the opinion of the court.

Appellant contends here that the Trademark Trial and Appeal Board committed reversible error in dismissing its opposition to applicant's registration of "KWIK-TRIM" over appellant's prior registered mark "E-Z-TRIM," both applied to potentiometers.

In evaluating the marks, the Board stated:

> Opposer contends that the marks of the parties have substantially identical suggestive connotations. In this regard opposer directs our attention to the definition of the word "facile" and to the definition of the word "facility" but the words with which we are concerned are "quick" and "easy." The dictionaries which are available to us * * * do not indicate that the terms "quick" and "easy" are synonyms or even have similar suggestive connotations.
>
> The only similarity between the marks resides in the common use of the term "TRIM." * * *
>
> Considering the nondistinctive nature of the term "TRIM" and *considering the marks in their entireties*, we conclude that "KWIK-TRIM" does not look or sound like "E-Z-TRIM" nor do they have the same meaning or connotation. We conclude that there is no likelihood of confusion. [Emphasis supplied.]

Appellant argues specifically that the Board improperly dissected the competing marks; that when viewed in their entireties the marks have the same suggestive connotation; and that doubt should be resolved in its favor as prior registrant.

[1] We have reviewed the Board's action in light of appellant's arguments but are unable to find that the Board erred in any of the respects that appellant alleges. Aside from the Board's reasoning, it would seem that the technical nature and uses of potentiometers suggest that purchasers would be inclined to exercise care and discrimination, a point developed in appellee's brief but not treated in appellant's brief.

The decision is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE LEO G. GLASSER, ROBERT J. KANZLER AND DANIEL J. TROY

No. 7509. Decided July 21, 1966

[53 CCPA —; 363 F.2d 449; 150 USPQ 437]

1. PATENTABILITY—PARTICULAR SUBJECT MATTER—"METHOD AND APPARATUS FOR PHOTOMETRIC ANALYSIS."

The decision of the Board of Appeals refusing certain claims in an application entitled "Method and Apparatus for Photometric Analysis," as unpatentable over the prior art, is reversed.

APPEAL from the Patent Office. Serial No. 641,167.

REVERSED.

Harry J. McCauley for appellants.

Clarence W. Moore (*Jere W. Sears* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*

WORLEY, *Chief Judge*, delivered the opinion of the court.

Appellants here seek reversal of the decision of the Board of Appeals which affirmed the Examiner's rejection of claims 5 through 9, the only remaining claims, of their application,[1] entitled "Method and Apparatus for Photometric Analysis," as unpatentable over the prior art.

[1] Serial No. 641,167, filed February 19, 1957.

The application relates to a photometric apparatus and method for such purposes as "the gaging of a transparent or translucent film, the measurement of the fluorescence of solids suspended in liquids, and the determination of the percentage concentration of a particular substance in a mixture with others without regard to whether the materials are in gaseous, liquid or solid phase." It discloses apparatus wherein a single beam of light including selected wave lengths is directed through a sample to a semi-transparent mirror, splitting the transmitted radiation into two separate beams which are directed, through different filters having preselected filtering characteristics, to two separate phototubes serving as detectors. The outputs of the two detectors, described as varying exponentially, are impressed on separate channels of a dual-channel logarithmic amplifier forming part of a circuit designed to extract the logarithms of the output and perform a subtraction operation thereon, "thus effectively performing a ratio measurement." The output of the amplifier, which is said to vary linearly with concentration or thickness, is applied to an indicator or controller. It is further stated that some analytical determinations are such that the intensities of the radiations transmitted in the beam are linear functions and that a direct measurement of the linear ratio is made in those cases instead of measuring the logarithm of the ratio.

The application refers to photometric analysis as involving two variables. The first is described as the subject of analytical interest, while the second "is considered as referring to interference generally, which may be optically selective or non-selective, or to environmental changes having an effect on the radiation from the sample, such as random variations in the intensity of the light source, fluctuations in pressure or temperature of the sample, or the like." One of the two beams split from the beam transmitted through the sample, designated the "analytical" beam, is allocated primarily to the evaluation of the first variable and the other, or "compensation" beam, primarily to compensation for the effect of the second variable. The application further states:

> * * * The transmitted radiation passed in each of the two beams is regulated by the interposition of appropriate filters in each of the beams preselected so that the minimum change in the first variable which it is desired to detect exerts a greater effect on the ratio of the intensity of radiation passed in a given one of the beams to the intensity of radiation passed in the other beam than is exerted by the anticipated maximum change in the second variable on this ratio within the range of the analysis. * * *
>
> The regulation effected by the filters in the analytical and compensation beams is such that the change in the ratio of the intensities of the radiation transmitted in the two beams is uniquely a measure of the sample characteristic under evaluation, independent of any non-selective interference or environmental changes or any anticipated selective changes which alter the analytical radiation from the sample. This results from the fact that the wave lengths of the beams are selected with the aid of absorption spectral data or routine empirical measurement so that the first variable affects the intensity of the analytical beam in a considerably greater proportion than it affects the intensity of the compensation beam, while at the same time the anticipated selectively-absorbing second variable affects the intensity of both beams in the same proportion within the sensitivity desired for the analysis of the first variable. It will be clear that non-selective interference by its very definition affects both beams in the same proportion and is therefore automatically canceled from the ratio, so that, after suitable calibration, the analysis is solely that of the isolated factor of interest.

As one example, the application describes use of the invention to measure the concentration of chlorine in dry air with a span of 0–1% chlorine at an accuracy corresponding to a maximum error of 0.01%

chlorine in the presence of a concentration of nitrogen dioxide varying between 0 and 0.05%. It states that two wave lengths for the beam impressed on the sample are chosen "to give an appreciable difference in absorptivity towards chlorine and a difference in absorptivity towards nitrogen dioxide so small that the extreme variation in nitrogen dioxide content affects the absorbance less than the absorbance change equivalents to the desired sensitivity in terms of chlorine." The necessary conditions are said to be met by use of wave lengths of 365 mμ and 436 mμ, to which the absorptivities of chlorine and nitrogen in liters/mol.-cm. are:

	365 mμ	436 mμ
Chlorine	25.17	1.636
Nitrogen dioxide	318	327

One of the split beams is impressed on a detector through a 365 mμ filter, the other on the remaining detector through a 436 mμ filter.

Claims 5 and 7 are representative:

5. An analyzer for the photometric analysis of a sample on the basis of radiation transmitted from said sample wherein intensities of the several wave lengths in said radiation are single-valued functions of a first variable and a second variable characteristic of said sample comprising in combination beam-splitting means adapted to receive and divide radiation from a specific region of said sample into two separate beams, one of which beams is passed through a first filter to a first radiation detector and the other of which beams is passed through a second filter to a second radiation detector, both detectors being disposed with respect to said beam-splitting means so that each said radiation detector views the identical area of said specific region, said first filter and said second filter being preselected to pass narrow bands of wave lengths in each of said beams so that the minimum change in said first variable desired to be detected exerts a greater effect on the ratio of the intensity of radiation passed in said first beam to the intensity of radiation passed in said second beam than is exerted by the anticipated maximum change in said second variable within the range of analysis, and a ratio-measuring electrical circuit connected to the output sides of said radiation detectors.

7. A method of photometric analysis of a radiation-absorbing sample wherein intensities of the several wave lengths in the radiation transmitted from the sample are single-value functions of a first variable and a second variable characteristic of said sample comprising in sequence dividing radiation transmitted from said sample into a first beam of radiation and a second beam of radiation, filtering each said beam of radiation to transmit a different band of wave lengths for each said beam chosen so that the minimum change in said first variable desired to be detected exerts a greater effect on the ratio of the intensity of radiation transmitted in said first beam to the intensity of radiation transmitted in said second beam than is exerted by the maximum change in said second variable within the range of analysis, and electrically measuring the ratio of the intensity of the radiation transmitted in said first beam to the intensity of the radiation transmitted in said second beam together with a measurement of said first variable as a function of said ratio.

The issue is patentability over the prior art, the art of record being:

Meyer, 2,503,165, April 4, 1950.
Wright et al., 2,737,591, March 6, 1956.
Bliss, 2,823,800, February 18, 1958.
Ator et al., 2,987,182, June 6, 1961.
Fastie et al., Journal of the Optical Society of America, vol. 37, No. 10, October 1947, pp. 763–768.

The Wright et al. patent (Wright) relates to photometric analyzers for organic mixtures wherein a single beam of light is directed through the mixture in a sample cell and split into two separate beams upon emerging from the cell. The two resulting beams are then passed through separate filters to separate detectors which may be bolometers disposed in separate arms of an electrical bridge circuit. A potentiometer-type resistor interconnects the two bolometers with the adjustable contact on the resistor connected to one terminal of indicating means and normally so dividing the resistance between the two bolometer arms as to provide a balanced bridge. Variation in the substance in the sample cell which is being analyzed will cause unbalancing of the bridge and means are provided for automatically moving the adjustable contact to rebalance the bridge and recording the amount of adjustment required as a measure of the concentration of the substance. As an example, Wright discloses use of the apparatus to analyze a mixture of 1-butylene, 2-butylene, and butadiene. On the basis of a wave length of 6.25 mμ being strongly absorbed by butadiene but not by 1-butylene and 2-butylene, one of the split beams is passed through a filter which will prevent passage of the 6.25 mμ wave length, the other through a filter which will pass most of the 6.25 mμ wave length but is strongly absorptive of other wave lengths.

Meyer relates to photometric apparatus for absorption and emission analysis wherein a beam of radiation is split into two beams having the same characteristics. One is passed through a liquid containing a substance to be analyzed which absorbs part of the radiation, while the other is passed through the same liquid without the substance, the latter serving as a standard. The transmitted beams are alternately applied to a detector connected to circuitry producing a voltage "proportional to the logarithm of the ratio of the radiation intensities," which is a measure of the concentration of the substance to be analyzed.

The Fastie et al. publication (Fastie) discloses measurement of carbon dioxide through infrared radiation directed through a sample cell into two detectors. One detector differs from the other in that its input is filtered so that it does not receive any energy which carbon dioxide absorbs while both detectors are sensitive to other absorbing gases in the cell. The outputs of the two detectors are connected in opposition to an indicating device.

For reasons given later, the subject matter of Bliss and Ator et al. (Ator) need not be discussed.

The Examiner rejected the appealed claims as unpatentable over Wright in view of any of Fastie, Bliss or Ator, and, optionally, over the same references further in view of Meyer. He held Bliss and Ator available as references because he considered an affidavit submitted to antedate them under Rule 131 inadequate.

In its original decision, the Board held claims 5, 7 and 8 unpatentable over Wright alone, and claims 6 and 9 unpatentable over Wright in view of Meyer. It stated that Bliss and Ator were "cumulative, at best" and did not consider them further, thus not ruling on the sufficiency of the Rule 131 affidavit. The Board did not mention Fastie. On reconsideration, the Board modified its position as to the showing in Wright, but otherwise adhered to its original decision.

It appears uncontroverted that Wright discloses that part of claim 5 which precedes the recitation of the characteristics of "said first filter and said second filter * * *." However, that recitation and the following final recitation of a "ratio measuring electrical circuit * * *" are both in controversy.

Taking the last recitation first, as did the Board, the Examiner conceded that Wright does not teach a "ratio-measuring circuit" as recited. Although the Board originally stated that "there is no merit in appellants' argument that Wright et al. measures a difference and not a ratio," on reconsideration it stated:

> Appellants are correct in stating that with bolometers as the detecting devices the ratio of intensities would not be obtained, except perhaps in a very limited range where the outputs of the two bolometers were about the same. Appellants lay down as a criterion that the detectors must have a linear current output with respect to radiation intensity.

The Board also noted that Wright states "that thermopiles and other detectors may be used which produce an electric current in accordance with, or proportionate to, the absorbed light energy." However, the absence of any specific disclosure in Wright of circuits wherein those elements are used in a manner which measures the ratio of the intensities of the two beams leaves us unsatisfied that the reference suggests that a "ratio-measuring circuit" as required by the claims be used with the "thermopiles and other detectors."

The Examiner conceded that Wright does not disclose measuring the required ratio.[2] However, he noted that appellants admit that their logarithmic type measuring circuit per se "is old" and concluded that "only skill in the art would be involved in using a ratio measuring circuit in the Wright et al. device, if desired, since no unexpected results would follow." He further regarded Meyer's use of a ratio measuring electric circuit in photometric apparatus would make it obvious to use a ratio measuring circuit in Wright.

We do not think appellants' concession that their logarithmic type measuring circuit per se is old establishes that it would be obvious to substitute it for the measuring circuit of Wright, since the latter clearly measures and indicates a different function of the beam intensities than the logarithm of their ratio, and the Examiner and Board have not pointed out a reason why one skilled in the art would switch to determination of the latter function in Wright.

Although Meyer determines the logarithm of the ratio of the intensities of two beams in photometric apparatus, the comparison he makes is between one beam which passes through the material under investigation and another which passes through a reference material only, rather than between beams which have both passed through the test material as in Wright. The view, advanced by the Examiner, that it would be obvious to use a logarithmic measuring circuit in Wright because Meyer shows such circuit to be "conventional" in the photometric analyzing art, is not convincing in view of that difference in the beams utilized. Meyer does point out that the exponential relationship involved in the absorption of radiation under the laws of Beer and Lambert results in the logarithmic function he measures being proportional to the concentration of the substance under investigation in his system, and the Solicitor refers to the same laws in connection with a general discussion of the operation of the present device. However, no clear connection is established by the arguments here between those laws and the question of obviousness of modifying Wright to measure the ratio of radiation intensities. The point was not developed in the Patent Office prosecution of the case.

Morever, the controlling issue here lies not only in the use of a ratio-measuring circuit but in whether it would be obvious to use such a

[2] Thus the Examiner stated in his answer: • • • It is recognized that the ratio measuring circuit called for at end of claim 5 is not present in the Wright et al. device. • • •

circuit in combination with filters selected so that the minimum change in the variable desired to be detected provides a greater change in the ratio of radiation intensities than does the anticipated maximum change in the second variable. Concerning that limitation, the Board stated:

> • • • it is inherently disclosed in the Wright et al. patent as a result of the filter characteristics set forth in column 5, lines 57–63.

The portion of Wright which the Board thought inherently disclosed the recited filter characteristics reads:

> When the detectors 11 and 12 are bolometers, it is necessary that one of the light-filters 6 and 7 absorb a large proportion of light of the distinctive band of wave lengths absorbed by the component to be determined in the analysis and that it transmit light of other wave lengths.

Without further explanation, which the Board did not provide, it is not apparent to us why that statement is thought to disclose that the two filters are "preselected to pass narrow bands of wave lengths in each of said beams so that the minimum change in said first variable desired to be detected exerts a greater effect on the ratio of the intensity of radiation passed in said first beam to the intensity of radiation passed in said second beam than is exerted by the anticipated maximum change in said second variable within the range of analysis."

The Board also stated on reconsideration:

> We find no error in our position relative to limitation (1) [the recitation of the filter characteristics], as stated in our decision. Furthermore, since the system of Wright et al. compensates for dirt on the windows of the sample cell and for other variations, such as variation of the light intensity of the source, which affects both beams equally, their system is such that the relation of the beam intensities, as set forth in the claims, is met, i.e., dirt on the windows of the sample cell, or variation in the intensity of the source light, will affect both beams to the same extent just as in appellants' device.

Of course, Wright, like appellants, does split a single beam after it passes through the material under analysis to cause both beams to be affected similarly by factors such as opaque material on windows of the cell and variation in intensity of the source of incident radiation. However, variations of that type, such as a reduction in intensities of the two beams to some proportion of their normal values, will change to different degrees the indicated output quantity of a measuring circuit which provides essentially a *difference* measurement while leaving a circuit which measures the *ratio* of intensities theoretically unaffected. Also, the recitation relative to the first and second filters, as in claim 5, leaves the clear implication that the result of having the minimum change in the first variable exert a greater effect on the ratio of the intensities of the two beams than the maximum change in the second variable is caused by the frequency characteristics of the filters. The correction which Wright obtains for factors which are nonselective as to wave length appears to arise from his splitting a single analytical beam in two and not from the characteristics of his filters.

As noted above, Fastie, relied on by the Examiner but not mentioned by the Board, connects the detectors for the two beams in opposition and thus does not measure the ratio of their intensities. It thus does not overcome the deficiency of Wright in that respect. In addition, we are not satisfied that Fastie would make it obvious to preselect filters having the characteristics called for in claim 5. The reference states that only one of the two detectors is responsive to the gas being measured while both respond equally to other gases. However, it does not deal with the problem of compensating for a second variable which

is also absorptive of radiation of the same wave length as the measured gas.

We appreciate that the failure of a reference to disclose the recited relationship of the filters in the same words used by appellants would not be fatal to the rejection but, for the reasons set out, we are not satisfied on this record that the relationship required by claim 5 is taught or made obvious by the references relied on in the rejections we have specifically discussed. Since the same limitations are carried in the other appealed claims, we are obliged to reverse the rejection as to all claims.

The Solicitor states in his brief that Bliss and Ator "needn't be considered." Under the particular circumstances, we agree with that concession. In both dismissing those patents as "cumulative, at best" and failing to rule on a contested holding by the Examiner that appellants' affidavit under Rule 131 is insufficient to overcome the patent filing dates, the Board has left us without any indication whether it considers the claims properly rejected on prior art which includes those patents.

[1] The decision is reversed.

REVERSED.

U.S. Court of Customs and Patent Appeals

IN RE G. D. SEARLE & CO.

No. 7604. Decided May 12, 1966

[53 CCPA —; 360 F.2d 650; 149 USPQ 619]

1. TRADEMARK—REGISTRABILITY.

"* * * to qualify for registration the asserted mark must be a 'trademark' in the two-fold sense of (*a*) identifying the user's goods and (*b*) distinguishing such goods from those of others."

2. SAME—SAME—TRADEMARK ACT OF 1946, SECTIONS 2 AND 45

"* * * it will be seen that section 2 limits registration on the Principal Register to 'trademarks' and 'marks,' and in its preamble repeats the restriction found in section 45 that a trademark must serve to *distinguish* applicant's goods from those of others. Subsection (e) prohibits the registration of a 'mark' which is 'merely descriptive' of the goods while subsection (f), upon which appellant relies, provides the exception that nothing in sec. 2 shall prevent the registration of a 'mark' which has become 'distinctive' of the applicant's goods in commerce."

3. SAME—DESCRIPTIVENESS—"COMMON DESCRIPTIVE NAME"—TRADEMARK ACT OF 1946, SECTION 14(c).

"The term, 'common descriptive name' is found in section 14(c) (15 U.S.C. 1064) which provides that a registered mark may be canceled 'if the registered mark becomes the common descriptive name of an article or substance.' It expresses principles long recognized in trademark law that not *every* term can function as a trademark, e.g., common descriptive names. * * * Where the term identifies *the product* to the public, it cannot serve to identify appellant's goods *or* distinguish them from those of others. When this occurs, the term is the 'common descriptive name' or, if not 'descriptive,' the 'common name' or 'generic' name of the product and hence is incapable of serving as a trademark. If for such reason the term is subject to cancellation it should not be registered."

4. SAME—SAME—SAME—"THE PILL."

"We consider it pertinent that a considerable amount of the evidence of record shows use of the words, the pill, *absent* quotation marks when these words are used in the context of meaning an oral contraceptive. There is considerable evidence which shows the term 'the pill' as it is sought to be registered having been used in connection with appellant's goods. At best, the evidence of record simply does not support appellant's position that the addition of quotation marks to an otherwise common descriptive name converts it into a trademark. To the contrary we find substantial evidence that the term is the common descriptive name of an oral contraceptive pill at the time the issue of registrability was under consideration in the Patent Office."

5. SAME—REGISTRABILITY—"NICKNAMES."

"Callmann, in support of the proposition that a nickname applied to a product by the public may become a trade symbol, cites such examples as 'Bud' for 'Budweiser,' 'Coke' for 'Coca-Cola,' and the 'Met' for the 'Metropolitan Opera Association.' Such trade symbols clearly serve to identify the trademark owner and distinguish his goods from those of others and are not 'nicknames' given by the public to identify a product per se."

6. SAME—DESCRIPTIVENESS—MARK IDENTIFYING PRODUCT RATHER THAN SOURCE—"THE PILL"—TRADEMARK ACT OF 1946, SECTIONS 2 AND 45.

"Whether the objection to registration of 'the pill' is phrased as 'highly descriptive' or 'inescapably descriptive' or 'common descriptive name,' or 'common name,' or 'generic name,' on the facts of record the basis for the objection is the same: the term 'the pill' here functions to identify the product to the public rather than to identify and distinguish appellant's goods from those of others and cannot be appropriated as a trademark. Where it appears from the evidence that registrability of the term is precluded under sections 45 and 2, inquiry under sections 2(e) and 2(f) is not necessary."

APPEAL from the Patent Office. Serial No. 142,567.

AFFIRMED.

Walter C. Ramm for appellant.

Joseph Schimmel (*George C. Roeming* of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, JR., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

SMITH, *J.*, delivered the opinion of the court.

This is an appeal from a decision of the Trademark Trial and Appeal Board (143 USPQ 220) affirming the Examiner's refusal to register the following term:

"the pill"

Registration of the above term is sought on the Principal Register [1] as a trademark applied to "Pharmaceutical preparations in tablet form containing norethynodrel" asserted to be useful as an oral contraceptive. Exclusive right to use the word "pill" apart from the trademark as presented is disclaimed.[2]

The issue is whether the above term is registrable on the Principal Register under the provisions of the Trademark Act of 1946 (15 U.S.C. 1051 et seq.). Appellant argues that "the pill" has become distinctive of its goods and is therefore registrable under section 2(f) of the Trademark Act of 1946 (15 U.S.C. 1052(f)). The Solicitor argues that the term is the "common descriptive name" of the *product*, an oral contraceptive, and does not in fact "distinguish appellant's goods from the goods of others."

The Trademark Act of 1946 provides for Federal registration of both "trademarks" and "marks." These terms are defined in section 45 as follows:

Trademark.—The term "trademark" includes any word, name, symbol, or device or any combination thereof adopted and used by a manufacturer or merchant *to*

[1] Application Serial No. 142,567. First use in interstate commerce alleged as March 30, 1962.

[2] The disclaimer is made on the stated condition that it "shall not prejudice applicant's rights in such trademark at common law."

identify his goods and distinguish them from those manufactured or sold by others.

* * * * * * *

Mark.—The term "mark" includes any trademark * * * *entitled to registration* under this act whether registered or not. [Emphasis added.]

[1] Thus, to qualify for registration the asserted mark must be a "trademark" in the two-fold sense of (*a*) identifying the user's goods and (*b*) distinguishing such goods from those of others. Such a "trademark" becomes registrable on the Principal Register only as it meets the conditions of section 2, as stated in the following applicable provisions:

Sec. 2. Trademarks registrable on the Principal Register

No trademark *by which the goods of the applicant may be distinguished from the goods of others* shall be refused registration on the Principal Register on account of its nature unless it—

* * * * * * *

(e) consists of a *mark* which (1) when applied to the goods of the applicant is *merely descriptive* * * * of them * * *

(f) except as expressly excluded in paragraphs (a), (b), (c), and (d) of this section, nothing herein shall prevent the registration of a *mark* used by the applicant which has become *distinctive of the applicant's goods* in commerce. * * *

[2] From the foregoing it will be seen that section 2 limits registration on the Principal Register to "trademarks" and "marks," and its preamble repeats the restriction found in section 45 that a trademark must serve to *distinguish* applicant's goods from those of others. Subsection (e) prohibits the registration of a "mark" which is "merely descriptive" of the goods while subsection (f), upon which appellant relies, provides the exception that nothing in sec. 2 shall prevent the registration of a "mark" which has become "distinctive" of the applicant's goods in commerce.

The positions of the parties may be stated in additional detail in the terms of the statute.[3] Appellant argues that the term "the pill" qualifies as a "trademark" under section 45 and, while it might be said to be "merely descriptive"[4] under section 2(e), the proofs of record show that it has become "distinctive" of appellant's goods, section 2(f), and therefore registrable under section 2.

The Solicitor does not concede that the term "the pill" distinguishes appellant's goods from those of others, as required by section 45 and the preamble in section 2. The Solicitor's position is that the term does not qualify as a "trademark," section 45, *because* it is the "common descriptive name" of the *product* and therefore does not "identify" or "distinguish" appellant's goods from those of others, section 45 and preamble, section 2.

[3] The term, "common descriptive name" is found in section 14(c) (15 U.S.C. 1064) which provides that a registered mark may be canceled "if the registered mark becomes the common descriptive name of an article or substance." It expresses principles long recognized in trademark law that not *every* term can function as a trademark, e.g., common descriptive names. See Vandenburgh, Trademark Law and Procedure 4, 26, 60–62 (1959). Cf. *J. Kohnstam* v. *Louis Marx & Co.*, 47 CCPA 1080, 1084; 280 F.2d 437, 440; 126 USPQ 362, 364. Where the term identifies *the product* to the public, it cannot serve to identify appellant's goods *or* distinguish them from those of others. When this occurs, the term is the "common descriptive name" or, if not "descriptive," the "common name" or "generic" name of the product and hence is incapable of serving as a trademark. If for such reason the term is subject to cancellation, it should not be registered.

If the Solicitor's position is correct there is no need to reach the further inquiry as to whether the term per se is a combination of words which may *properly serve* as a trademark, sections 45, 2, or whether it is "merely descriptive" under section 2(e) or whether from the evidence it is "distinctive" of appellant's goods in commerce under section 2(f). See *In re Meyer & Wenthe, Inc.*, 46 CCPA 919, 267 F.2d 945, 122 USPQ 372.

Appellant argues "the pill" is not the common descriptive name of an oral contraceptive and thus that it qualifies as a "trademark" or "mark," since it includes a combination of "words" and a "symbol." Appellant states in its brief:

> * * * the trademark "the pill" comprises a unitary totality of three elements: (1) The article *the*; (2) the noun *pill*, which word has been disclaimed; and (3) quotation marks before and after the words *the pill* forming an integral part of the trademark and not merely employed to set off those two words.

Appellant reasons that this "unitary totality of three elements" qualifies the term as a "trademark" or "mark" which is registrable.

Appellant argues that the evidence of record shows "public recognition * * * of 'the pill' as a nominative pertaining only to appellant," which "continued subsequent to and notwithstanding F & DA [Food and Drug Administration] approval of other manufacturers' oral contraceptive products and the commercial marketing of such competitive products."

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[3] The precise grounds of the rejection which was affirmed by the Trademark Trial and Appeal Board are somewhat obscure. The Examiner in his letter of Sept. 11, 1963, in response to appellant's communication filed Jan. 7, 1963, stated:

> The notation "The Pill" is so *highly descriptive* and so commonly used to designate an oral medicinal preparation that *no amount of evidence* could convince the Examiner that the mark presented serves to *distinguish* applicant's goods in commerce. [Emphasis added.]

The Examiner here used the phrase "highly descriptive" as apparently meaning that the term could not function as a trademark and therefore would not be "capable of distinguishing applicant's goods," sections 2, 45. On this basis it is not seen how the term would be eligible for registration on the Supplemental Register, section 23, Trademark Act of 1946, 15 U.S.C. 1091.

However, there is evidence that the Examiner at one time considered the term to be "merely descriptive," section 2(e), in view of the earlier history of the prosecution. Appellant submitted evidence to prove distinctiveness under section 2(f) and this evidence was considered by the Examiner but he then stated that "no amount of evidence could convince the Examiner that the mark presented serves to distinguish applicant's goods in commerce." Thus, in terms of the statutes, it appears that the Examiner's position was that the term was not a trademark as defined in section 45, and could not distinguish appellant's goods in commerce, sections 2, 45. In the Examiner's answer of April 6, 1964, he stated:

> Registration is refused for the reason that it is not believed that the mark presented serves or would be looked upon as a mark *indicating a source of origin in the applicant*. [Emphasis added.]

The Examiner appears to have receded from his previous position. In terms of the statute, the term was not registrable because it did not "identify [appellant's] * * * goods," section 45, and was not therefore a trademark registrable on the Principal Register. Apparently the Examiner considered the evidence.

The Board, in affirming the Examiner, relied on several grounds. It stated that the *evidence* showed the term did not *identify* appellant's goods; further, that the *evidence* did not show that the term *distinguished* appellant's goods from those of another. Apparently the Board reached this conclusion by comparing appellant's goods, an oral contraceptive, to other methods of contraception as at the time registration was sought appellant was the sole producer of an oral contraceptive in pill form which had received FDA approval.

The Board also held the term "the pill" was not such a combination of words which could be registered as a trademark, stating:

> * * * Manifestly, the utilization of the article "the" and of the quotation marks cannot convert a simple notation comprising ordinary words of the English language used in their ordinary sense into a registrable trademark.

Thus apart from the evidence, the Board seems to have found the term was not registrable as it could not serve as a trademark, section 45.

Finally, the Board considered that the evidence showed that the term was the "common descriptive name" of an oral contraceptive which could not be registered for appellant's own exclusive use. Cf. section 14(c).

[4] Appellant does not argue the technical differences between a "pill" and a "tablet." "The pill" is apparently conceded to be descriptive of the nature of the goods, a pharmaceutical tablet.

As background, appellant states in its brief:

The unitary expression "the pill" originated, in peculiarly appropriate circumstances, as a nickname * * *

* * * * * * *

Appellant's norethynodrel-containing product was the original and continues to be an outstanding member of its class. * * *

* * * * * * *

This product, in the most formal sense, is distinguished by the famous trademark Enovid.

* * * * * * *

By late 1961, appellant knew that hundreds of thousands of women were using the Enovid product. Most significantly, appellant came also to know that many of these women, as well as physicians, retail pharmacists, wholesale drug employees, and other interested persons, had conferred the nickname "the pill" on the product. Precisely when or how this soubriquet had its genesis cannot be documented with pinpoint precision. Nevertheless, the nickname stuck. When the public heard or said or wrote or read "the pill," it meant appellant's Enovid product. And the expression, with the same meaning, likewise became current in the medical profession and the drug trade. Indeed, as other similar products have been developed by other manufacturers, these have sometimes been referred to as "another" pill or (manufacturer's name) pill.

But "the pill" has specific and continuing meaning. Appellant's norethynodrel-containing product is not this pill or that pill or indefinitely a pill or generally any pill. It is "the pill." To preserve this unique identificatory significance, appellant utilized "the pill" extensively in its advertising, adopted the expression as a trademark, and filed the application which led eventually to this appeal.

We find, however, there is substantial evidence of record in support of the Solicitor's position that the term "the pill" serves merely to identify an oral contraceptive.[5]

[5] Illustrative of such evidence in the record is the following:

'THE PILL'

"The pill," as the new product is already known in medical, cocktail, and sewing circles, is the most highly effective contraceptive ever available. * * *

* * * * * * *

Altho "the pill" has not been generally publicized, already about a million women are taking it regularly as a contraceptive. Planned Parenthood centers are enthusiastic about the new oral contraceptive. * * *

* * * * * * *

Women who take it as a birth control measure have just as much—or more—chance of becoming pregnant as ever, once they stop taking the pills.

* * * * * * *

Of those who took the pill regularly, only one became pregnant. * * *

* * * * * * *

The Planned Parenthood federation gave its medical approval shortly afterward, urging its 100 affiliated groups in the United States to make the pills available to any woman who wants them.

* * * * * * *

However, Planned Parenthood's experience with the pills indicates that very few women feel they are too expensive, * * * Beck, "The Pill," Chicago Tribune (magazine), pp. 18, 19, March 4, 1962.

WORLD BIRTH CONTROL CHALLENGE

* * * Treatment consists of nothing but swallowing a pill once a day * * * the patient has only to stop the pills for a while to revert to normal.

* * * the pills retail for * * *. It may be possible to design the pill in such a way * * *

* * * when the patient became used to the pill * * * Life Magazine, p. —, Nov. 23, 1959.

BIRTH-CURB GROUP TO DISTRIBUTE PILL

Oral Contraceptive Will Be Offered at Clinics * * *

* * * * * * *

The pill was developed by * * * New York Times, p. —, Aug. 4, 1960.

BIRTH CONTROL

The 'Remarkable' Pill

The tiny birth-control pill * * * proved to be an effective contraceptive * * * Newsweek, p. —, Jan. 30, 1961.

* * * When a woman takes the pills as directed * * *

The pills—the first 100 percent effective method of birth control—would seem to be the ultimate in contraception. * * *

* * * the pills offer the best promise yet * * *

* * * some doctors are concerned about the long-term safety of the pills, Pageant, p. —, October 1961.

BIRTH CONTROL PILLS

* * * the birth-control pill is here. * * *

* * * A pill a day is almost guaranteed to keep the stork away. The Saturday Evening Post, p. —, June 30, 1962.

Evidence Fails To Link Pill To Six Deaths

The Government said * * * that studies so far had not turned up any evidence that a birth control pill * * *

* * * The pill has not been removed from the market. The Denver Post, p. 41, Aug. 9, 1962.

[Footnote continued on following page]

In the foregoing we have set forth much of the evidence which supports the Solicitor's position and, while we have not set forth the evidence supporting appellant's position, we have carefully considered it as it relates to the issue before us. We recognize also that not all of the evidence above referred to shows the exact term which appellant seeks to register. [4] We consider it pertinent that a considerable amount of the evidence of record shows use of the words, the pill, *absent* quotation marks when these words are used in the context of meaning an oral contraceptive. There is considerable evidence which shows the term "the pill" as it is sought to be registered having been used in connection with appellant's goods. At best, the evidence of record simply does not support appellant's position that the addition of quotation marks to an otherwise common descriptive name converts it into a trademark. To the contrary we find substantial evidence that the term is the common descriptive name of an oral contraceptive pill at the time the issue of registrability was under consideration in the Patent Office. *Roselux Chemical Co.* v. *Parsons Ammonia Co.*, 49 CCPA 931, 942; 299 F.2d 855; 132 USPQ 627.

Under appropriate circumstances, we agree with appellant that:

The acquisition of a nickname, by the original or an outstanding member of a class, is a familiar incident of American life. In politics and public affairs, in sports and entertainment, and in commerce and business, nicknames perform the important function of singular and specific identification.

A commercial nickname, applied by the trade and the general public to a product, is entitled to trademark status, Callmann, The Law of Unfair Competition and Trademarks (second edition, 1950):

> "If the public calls a product by other than its tradename, this nickname may become a trade symbol entitled as such to protection against unfair competition. Whether or not, it is similar to the original trademark, the soubriquet is protected as an independent trademark if the owner formally adopts it as such or unprotestingly allows its continued use" (page 1233).

[5] Callmann, in support of the proposition that a nickname applied to a product by the public may become a trade symbol, cites such examples as "Bud" for "Budweiser," "Coke" for "Coca-Cola," and the "Met" for the "Metropolitan Opera Association." Such trade symbols clearly serve to identify the trademark owner and distinguish his goods from those of others and are not "nicknames" given by the public to identify a product per se. Callmann also states, at page 1232:

* * * a mark may be so inescapably descriptive that it will defeat all attempts to transform it into a mark of identification and, in such a case, even long-continued

The Five most-wanted cures.

HOW CLOSE ARE WE TO A "CHEAP" (PENNY-A-DAY) BIRTH-CONTROL PILL?

"The Pill" costs about * * * it is not suggested that "The Pill" * * * Ladies Home Journal, p. 40, October 1962.

Extraordinary News About "The" Pill for Women (page 73).

An End to Woman's "Bad Days"? Reader's Digest, cover, December 1962.

Test Ban—Technology; Birth Control—"The Pill"

"The pill" was developed in the 1950's * * * by the G. D. Searle Company * * *

Although Enovid dominates the field at present, another company, Ortho Pharmaceutical, came on the market * * * with a * * * pill * * * and several other applications are pending both for new pills * * *. The pills vary a bit * * *. The pills in effect simulate * * *

The response to the pill has been spectacular. * * * Approximately one out of four women experiences a variety of side effects and discontinues using the pill * * *

* * * the pill works by an essentially "natural" process * * *

Clients of "The Pill"

Another large group of potential beneficiaries of oral contraceptives is the poor * * *

* * * * * * *

The pill has run into trouble in a variety of ways. * * * 141 Science 618, 620, Aug. 16, 1963.

"THE PILL"—A PRACTICAL PROGRESSIVE PROGRAM FOR PLANNED PARENTHOOD

* * * * * * *

Family planning, especially through the use of birth control pills, is one of the most widely talked about medical subjects in the press today.

* * * in order to obtain continuity of care, most patients were seen at a special "Pill Clinic." * * * Report, Planned Parenthood Association of Metropolitan Washington, D.C., Inc., M. Street Clinic.

use and large expenditures for advertising will not aid in the search for secondary meaning.

[6] Whether the objection to registration of "the pill" is phrased as "highly descriptive" or "inescapably descriptive" or "common descriptive name," or "common name," or "generic name," on the facts of record the basis for the objection is the same: the term "the pill" here functions to identify the product to the public rather than to identify and distinguish appellant's goods from those of others and cannot be appropriated as a trademark. Where it appears from the evidence that registrability of the term is precluded under sections 45 and 2, inquiry under sections 2(e) and 2(f) is not necessary.

The decision of the Board is affirmed.

AFFIRMED.

RICH, *Acting Chief Judge*, concurring, with whom ALMOND, *J.*, joins.

I agree with the refusal of registration for the reasons stated in the opinion of the Trademark Trial and Appeal Board, as amended, as published at 143 USPQ 220.

The record evidence permits of no conclusion other than that of the Board that "the pill" has come to indicate oral contraceptives in pill form, regardless of source, wherefore it *cannot* serve to distinguish the product of any single producer.

There is no other question to be discussed.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

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2,908,168, H. C. Pfaff, Jr., DEVICE FOR SECURING POLE TO SUPPORTING SURFACE; **3,141,620**, K. F. Guggemos, LIGHTING DEVICE, filed Sept. 7, 1966, D.C.N.J. (Newark), Doc. 903–66, *Pfaff and Kendall* v. *Sterner Lighting, Inc.*

2,911,082, Wensel and Schade, PEAR FEEDING AND ORIENTING APPARATUS, filed Sept. 15, 1966, D.C., N. D. Calif. (San Francisco), Doc. 45648, *John S. Wensel et al.* v. *FMC Corporation et al.*

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2,925,719, Robbins and Linn, REFRIGERATING PACKAGE, filed Sept. 13, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c1662, *Kwik-Kold, Inc.* v. *Thermal Dynamics, Inc.*

2,938,466, J. H. Debs, BAKING PAN ASSEMBLY, filed Feb. 27, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c352, *Chicago Metallic Manufacturing Company* v. *Ekco Products Company*. By agreement, order dismissing action with prejudice Sept. 19, 1966.

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2,995,617, Maximoff and Kalmar, SELF-LOCKING TERMINAL; **2,996,674**, A. Just et al., SELF-ORIENTING TERMINAL CONNECTORS; **3,136,591**, same, PRINTED CIRCUIT BOARD ASSEMBLY, filed Sept. 14, 1961, D.C. Minn. (Minneapolis), Doc. 4–61/243, *Malco Manufacturing Company et al.* v. *National Connector Corporation*. Patent Nos. 3,086,074 and 3,136,591 included by supplemental complaints. Patent No. 2,995,617 held infringed; defendant enjoined; complaint dismissed as to Patent Nos. 3,086,074 and 3,136,591; defendant's counterclaim dismissed (notice Sept. 20, 1966).

2,998,656, J. P. St. Amour, HOLE LOCATION GAUGE, filed Feb. 25, 1964, D.C., E.D. Mich. (Detroit), Doc. 25025, *John P. St. Amour* v. *A. A. Industries, Inc. et al.* Consent decree—claims 1, 3 and 4 of Patent No. 2,998,656 held infringed; defendants enjoined Sept. 21, 1966.

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3,151,297, H. Toomin, HIGH GAIN SUPERREGENATIVE DETECTORS, filed Oct. 15, 1964, D.C., S. D. Calif. (Los Angeles), Doc. 64–1422S, *Electrosolids Corporation* v. *Olson Electronics, Inc.* Stipulation and order dismissing complaint and counterclaim without prejudice July 28, 1966.

3,157,157, Clay and Letson, METHOD AND APPARATUS FOR DISPENSING FEED TO LIVESTOCK, filed Sept. 14, 1966, D.C., W.D. Wis. (Madison), Doc. 66–C–104, *Clay Equipment Corporation* v. *Dairy Equipment Company, Inc.*

3,157,193, R. J. Purtell, IRRIGATION SYSTEM; **3,245,595**, same; **3,245,608**, same, filed Sept. 1, 1966, D.C., N.D. Tex. (Lubbock), Doc. 5–330, *The J. B. Knight Co., Inc.* v. *Stewart & Stevenson Services, Inc.*

3,166,636, D. F. Rutland et al., DATA COMPOSER, filed Sept. 12, 1966, D.C. Del. (Wilmington), Doc. 3255, *The Bunker-Ramo Corporation* v. *Sargent Industries, Inc.* Same, filed Sept. 13, 1966, D.C., S.D. Calif. (Los Angeles), Doc. 66–1470–PH, *Sargent Industries, Inc.* v. *The Bunker-Ramo Corporation*.

3,169,612. (See 3,104,699.)

3,170,496, Kobler and Stanley, POWER-OPERATED RECIPROCATING TOOL WITH INTEGRAL BEARING BLOCK, filed Mar. 10, 1965, D.C. Md. (Maltimore), Doc. 16251, *The Black and Decker Manufacturing Company* v. *Fullerton Supply Co., Inc.* Case dismissed without prejudice Sept. 23, 1966.

3,181,535. (See 3,043,310.)

3,190,048. (See 3,031,813.)

3,198,480. (See 3,091,945.)

3,198,493, E. G. Sukup, PORTABLE GRAIN AERATION DEVICE, filed Sept. 19, 1966, D.C., N.D. Iowa (Fort Dodge), Doc. 66–C–2033–C, *Sukup Manufacturing Co.* v. *David Manufacturing Company*.

3,245,595. (See 3,157,193.)

3,245,608. (See 3,157,193.)

Des. 191,531. (See 3,065,333.)

Des. 194,094. (See 3,104,699.)

Des. 195,439. (See 3,149,666.)

REISSUES

NOVEMBER 22, 1966

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

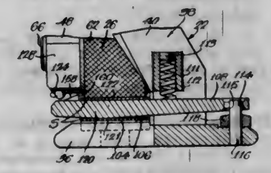
26,114

POWER STRAP TENSIONING TOOL

John H. Leslie, Winnetka, and Harrison C. Lingle, Wilmette, Ill., assignors to Signode Corporation, a corporation of Delaware

Original No. 3,028,885, dated Apr. 10, 1962, Ser. No. 739,115, June 2, 1958. Application for reissue Oct. 21, 1963, Ser. No. 317,860

26 Claims. (Cl. 140—123.6)



20. The combination in a strap tensioning tool for drawing a strap taut about an object to be bound, a frame adapted to rest on said object, a strap seat carried by said frame for supporting said strap, means including a rotary tensioning wheel for engaging said strap opposite said seat and effecting longitudinal movement thereof, said strap seat having a strap engaging portion which shifts relative to the strap seat under pressure exerted between the tensioning wheel and the strap seat to automatically provide uniform gripping pressure across the engaged portions of the strap even though the angular relationship between the tensioning wheel and the strap seat changes due to deflection of tool parts.

26,115

AQUEOUS EXPLOSIVE SLURRIES CONTAINING SULFUR COMPOUNDS HAVING A LOW COEFFICIENT OF EXPANSION

William L. Schwoyer, Allentown, Pa., assignor to Trojan Powder Company, Allentown, Pa., a corporation of New York

No Drawing. Original No. 3,222,232, dated Dec. 7, 1965, Ser. No. 350,550, Mar. 9, 1964. Application for reissue Feb. 1, 1966, Ser. No. 532,500

15 Claims. (Cl. 149—41)

1. An aqueous slurried explosive composition characterized by a low coefficient of expansion with temperature comprising an inorganic nitrate oxidizer in an amount within the range from about 10 to about 95%, particulate aluminum in an amount within the range from about 0.5 to about 20%, an aqueous liquid in an amount to form a slurry, a sulfur compound selected from the group consisting of inorganic thiosulfates and organic sulfonates in an amount sufficient to inhibit the thermal expansion of the slurry.

26,116

SUPERSONIC JET FUEL AND METHOD USING ISOPARAFFINIC HYDROCARBONS AND POLYCYCLIC HYDROCARBONS PREPARED FROM AROMATIC FRACTIONS

Robert L. Barnes, Placentia, and Robert L. Dinsmore, Long Beach, Calif., assignors to Richfield Oil Corporation, Los Angeles, Calif., a corporation of Delaware

No Drawing. Original No. 3,177,653, dated Apr. 13, 1965, Ser. No. 242,888, Dec. 7, 1962. Application for reissue Mar. 23, 1966, Ser. No. 538,181

7 Claims. (Cl. 60—208)

5. A method of operating a jet engine which comprises feeding a mixture of air and a fuel consisting essentially of hydrogenated polycyclic hydrocarbons *prepared from a polycyclic aromatic fraction* boiling in the range of 400 to 520° F. and from 10 to 25 volume percent of hydrogenated propylene tetramer boiling in the range of 360 to 410° F., subjecting said mixture to combustion, passing the resulting hot combustion gases through a turbine to partially expand the gases therein, and then discharging the hot gases into the atmosphere through a nozzle to produce thrust.

PLANT PATENTS

GRANTED NOVEMBER 22, 1966

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,686

CARNATION PLANT

Dana H. Perkins, 323 Jefferson St., Lapeer, Mich.

Filed Sept. 22, 1965, Ser. No. 489,446

1 Claim. (Cl. Plt.—70)

A new and distinct variety of carnation plant, substantially as herein shown and described, characterized as to novelty by its large, strong and upright stem; the unique shape and large size of its bud; the large size and full shape of its white flower; and its vigorous growth habit which produces its distinctive characteristics of size and form in areas of low light intensity and relatively severe winter conditions.

PATENTS

GRANTED NOVEMBER 22, 1966

GENERAL AND MECHANICAL

3,286,274

PRESSURE SUIT TIE-DOWN MECHANISM

James H. O'Kane, Friendswood, Tex., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Apr. 7, 1964, Ser. No. 358,127

12 Claims. (Cl. 2—2.1)



1. In combination with an inflatable pressure suit having a crotch, a helmet and a rigid neckring to which the helmet is removably secured, a pressure suit tiedown mechanism comprising:

a pulley block assembly disposed on the front of said suit;

cable means attaching said pulley block assembly to opposite sides of the neck ring;

first and second pulleys rotatably mounted on said pulley block assembly;

a first cord reeved over said first pulley;

a second cord reeved over said second pulley;

a crotch strap attached to said suit in the vicinity of the crotch and having a longitudinally upwardly extending end portion;

coupling means joining the upward end of said crotch strap with the ends of said cords;

clamping means associated with each of said cords, each said clamping means responsive to movement of its associated cord in a given direction over its supporting pulley for clamping the cord whereby when said cords are pulled by the suit wearer's hands in the directions adapted to actuate said clamping means a downward pull will be exerted on the neck ring and an upward pull exerted on the crotch strap to thereby shorten the suit and hold down the suit helmet;

means for rendering said clamping means inoperative and maintaining said cords in a taut condition when the pull exerted on said cords by the suit wearer's hands is released; and

means for maintaining the adjustment made in the length of the suit by the suit wearer in pulling the cord in the directions adapted to actuate said clamping means.

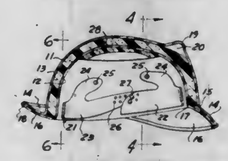
3,286,275

SAFETY HELMET

John L. Marchello, Ann Arbor, Mich., assignor, by mesne assignments, to American Safety Equipment Corporation of Michigan, New York, N.Y., a corporation of Delaware

Filed Dec. 30, 1964, Ser. No. 422,120

1 Claim. (Cl. 2—3)



In a safety helmet comprising a thin wall outer shell and a thin wall inner shell fitted within the outer shell and spaced therefrom, a relatively thick liner fitted within and substantially filling the space between the inner and outer shells, said liner being formed of a resilient shock absorbing material; each of said shells being formed of a stiff, semi-flexible material, characterized by being bendable under substantial pressure, but normally recovering its shape upon release of such pressure; means fastening together the free edges of each of such shells, the shells being otherwise free of positive securement to each other and to the liner, the improvement which comprises:

an outwardly and forwardly bulged ridge on the forward portion of said outer shell, said ridge creating an empty space between the inner surface of said outer shell and the outer surface of said resilient liner;

whereby said ridge acts as a bumper capable of absorbing by deflection and deformation substantial local impact, and whereby said empty space provides an unrestrained avenue for outward deflection of said resilient liner in response to an impact received elsewhere on said liner, thereby enhancing the ability of said two shells and liner to freely float and flex relative to each other for the distribution and dissipation of impact to the helmet.

3,286,276

SCARF HAVING MULTIPLE PURPOSE

Elliott W. Calisch, 1602 Bexhill Road, Richmond, Va.

Filed Dec. 8, 1964, Ser. No. 416,793

4 Claims. (Cl. 2—91)

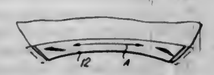
1. A combination item of wearing apparel and flexible display element for use in combination with similar elements in forming a coordinated large flexible display panel of a plurality of elements which comprises a rectangular flexible web having parallel longitudinal edges and parallel transverse edges formed with a plurality of transverse alternating colored rectangular sections, a plurality of spaced fastening elements fixed along one of said longitudinal edges along the transverse center lines of colored sections of one color, a plurality of similarly spaced complementary fastening elements fixed along the other of said longitudinal edges on the transverse center lines of colored sections of another color, said fastening elements permitting a plurality of said combination items to be fastened together along their longitudinal edges, fastening means fixed to one of said transverse edges and complementary fastening means fixed

to the other of said transverse edges to permit a plurality of said combination items to be fastened together along



their transverse edges, the resulting fastened plurality of combination items creating a checkerboard effect.

3,286,277
STRETCH GARMENT
George Weiss, 520 Magnolia Blvd., Long Beach, Long Island, N.Y.
Filed Aug. 6, 1965, Ser. No. 477,680
9 Claims. (Cl. 2—115)



1. A method of making and resizing a garment comprising the steps of cutting thermoplastic and stretchable fabric garment parts to an initial size having a prescribed lengthwise dimension, said fabric garment parts being oriented during cutting to arrange the stretch thereof to extend substantially in said lengthwise dimension and having a thermoplastic content selected to enable said garment parts when stretched to have a substantially permanent heat set imparted thereto to effectively permanently elongate said lengthwise dimension, assembling and securing said parts to form a garment, imparting a predetermined lengthwise stretch to said garment parts to increase said lengthwise dimension in an amount appropriate to resize said garment parts in accordance with the wearer's growth, and while retaining said predetermined lengthwise stretch applying heat to said parts at a temperature and for a time sufficient to overcome the plastic memory of said thermoplastic fabric to impart a substantially permanent heat set to said garment parts such that said parts will remain permanently elongated and, thereby resized during subsequent use thereof.

3,286,278
KNITWEAR ARTICLES HAVING COLLARS
Terence Richard O'Connor, Radford, Nottingham, England, assignor to Corbett & Davies Limited
Filed Apr. 27, 1964, Ser. No. 362,634
Claims priority, application Great Britain, Aug. 16, 1963, 32,416
4 Claims. (Cl. 2—116)

1. In a knitted garment, a knit collar having
(a) a transverse, integrally knit, tube formed adjacent each end thereof,
(b) the outer end of each tube being closed by knitted stitches,
(c) collar stiffening means disposed within each tube and



(d) sewn stitches closing the inner end of each tube, and joining the collar to the garment.

3,286,279
DISPOSABLE BABY BIBS
Maudestean C. Brown, 4512 Don Arturo Place, Los Angeles, Calif.
Filed Apr. 1, 1964, Ser. No. 356,677
2 Claims. (Cl. 2—49)

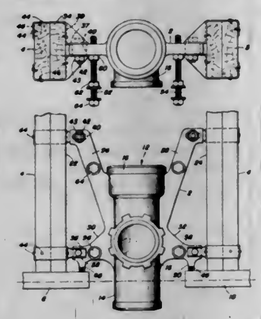


1. A protective bib structure, as for use on children to receive and retain food particles and the like, comprising:
a back sheet of flexible material adapted to be over the area of the child that is to be protected, said back sheet being shaped to define opposed internal curved side edges at approximately midlength whereby to provide a section of reduced width therein;
a front sheet of flexible material matingly shaped with said back sheet and in part edge fixed to said back sheet whereby to provide a pocket between said back sheet and said front sheet, said front sheet defining diamond-shaped apertures of substantial area therethrough to receive and pass food and the like;
a flap of flexible material affixed to said front sheet and said back sheets for overlappingly closing said pocket;
a sheaf of napkins in stacked alignment within said pocket, said napkins matingly shaped with said pocket and including an absorbent surface facing said front sheet and a continuous film surface facing said back sheet; and
means for affixing said bib structure as defined, to said child.

3,286,280
CARRIER
Robert B. Duggan, Louisville, Ky., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 10, 1964, Ser. No. 343,573
16 Claims. (Cl. 4—252)

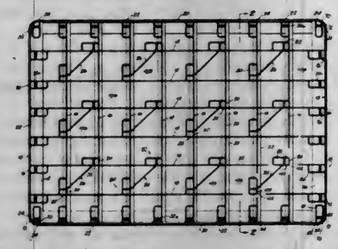
1. A mounting device for supporting a plumbing fixture from spaced vertically positioned frame members comprising, a carrier, said carrier having sections formed to receive connecting means for supportingly connecting the plumbing fixture thereto and apertured portions extending in the direction of the frame members, together

with means for connecting said carrier portions to said frame members, said means comprising elongated mounting straps, means for connecting one end portion of each of said straps to an associated carrier portion, said straps being sufficiently flexible to wrap transversely



about an associated frame member in a direction opposite and tensile force to be applied to said straps by the weight supported by said carrier, said straps being sufficiently long to overlap at least two corners of said frame members, and means for securing the free end of each strap to its associated frame member.

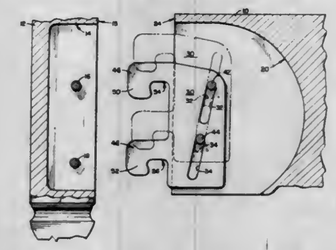
3,286,281
BOX SPRING ASSEMBLY
Walter V. Slominski, Lexington, Ky., assignor to Hoover Ball and Bearing Company, Saline, Mich., a corporation of Michigan
Filed Feb. 24, 1965, Ser. No. 435,000
14 Claims. (Cl. 5—247)



1. A box spring assembly comprising a rectangular frame, a plurality of spaced wire springs extending transversely of said frame at a position above said frame, a plurality of spaced wire springs extending longitudinally of said frame at a position above the frame, each of said wire springs having a body portion and end portions which are secured to said frame, each of said end portions having angularly related sections which are relatively movable to enable movement of said body portions toward and away from said frame, means secured to at least some of said springs forming a rectangular border wire spaced above said frame, and means resiliently supporting said body portions intermediate said end portions on said frame.

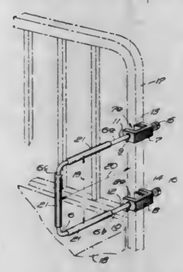
3,286,282
BEDSTEAD FASTENING
Adelbert P. Cloutier, 22–24 N. Main St., Orange, Mass.
Filed Oct. 21, 1964, Ser. No. 405,504
1 Claim. (Cl. 5—296)

In fastening means for interengaging the adjacent working faces of steel to steel or steel to wood or wood to steel or wood to wood components, the combination of, a pair of spaced vertically-offset slip pins extending transversely across a vertical recess extending inwardly from the working face of one of the components, a unitary latching plate having a pair of spaced angularly-aligned and inclined slots for receiving the respective of said slip pins as said latching plate is positioned in slidably mounted connection with the said one of the components and having a pair of hooks formed rigidly upon said latching plate



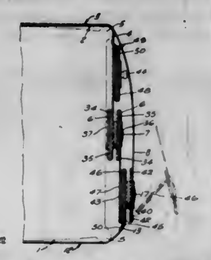
and disposed outboard of the vertical plane of the working face of the said one of the components and hooking back toward said vertical plane, a pair of spaced vertically-aligned cross pins extending across a vertical recess extending inwardly from the working face of the other of said components, and adapted each for interengagement with the respective of the hooks of said latching plate as the hooks of said latching plate are extended into mating position within the recess of the said other component.

3,286,283
HAND GRIP ATTACHMENT FOR HOSPITAL-TYPE BEDS
Joseph M. Bertoldo, 627 Salem St., Malden, Mass.
Filed Dec. 31, 1964, Ser. No. 422,747
2 Claims. (Cl. 5—317)



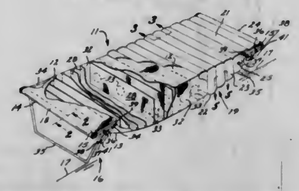
1. A hand-gripping device for attachment to the vertical back post of a bed and for improving unassisted mobility of a patient, comprising a rigid substantially U-shaped open metal framework of bar-like elements integrally joined together and lying in substantially one plane, said framework having a width of about one foot and having a length of at least about one foot and not in excess of about the distance from a headboard of a bed to the lower edge of a pillow on the bed, a spaced pair of clamps each rigidly secured to a different one of two free ends of said elements at the open end of said framework, each of said clamps being opened along the same side of said framework to receive a vertical back post of a bed therein and including adjustable means to hold said framework on the vertical back post with said framework extending forward therefrom in a substantially vertical plane.

3,286,284
MATTRESS PROTECTOR ASSEMBLY
Martha I. Klogether, 904 N. Electric, Alhambra, Calif., and Winifred B. Templeton, 6127 Hereford Drive, Los Angeles, Calif.
Filed July 28, 1964, Ser. No. 385,619
16 Claims. (Cl. 5—335)



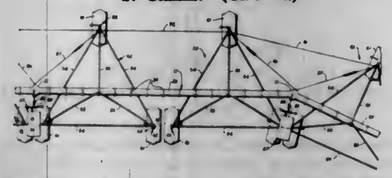
1. A protector for covering a mattress which may be turned between two relatively inverted positions, comprising a sleeve adapted to encircle the mattress at an area to be protected and adapted to be inverted with the mattress, said sleeve having a first waterproof portion which, in a first position of the mattress and sleeve, extends across the upper side of the mattress, and in a second inverted position extends across the underside of the mattress, said sleeve having a second waterproof portion which extends across the underside of the mattress in said first position and across its upper side in said second position, a draw sheet to extend across the upper side of said first waterproof portion, above the mattress, in said first position of the mattress, and to extend across the upper side of said second waterproof portion, above the mattress, in said second position, and fastener means for detachably securing said draw sheet to the sleeve when the draw sheet is disposed above said first portion of the sleeve in said first position of the mattress and also when said draw sheet is received above said second portion in said second position of the mattress.

3,286,285
AIR MATTRESS AND HAMMOCK COMBINATION
James I. Harvey, Jr., Suite 1510, Crossroads of the World, 6671 Sunset Blvd., Los Angeles, Calif.
Filed Nov. 23, 1964, Ser. No. 412,940
16 Claims. (Cl. 5—348)



1. A stress-transmitting and minimizing top-surface-loading hammock-type mattress structure, comprising: a longitudinal upper substantially horizontal panel member having a top load-receiving surface adapted to effectively receive and carry a load thereabove; a longitudinal lower tension panel member similar to said longitudinally upper panel member but longer than same and having at opposite longitudinal ends thereof tension attachment portions thereof cooperable for attachment to two corresponding longitudinally spaced auxiliary, substantially horizontally directed and substantially parallel elevated end support bar members, which are so longitudinally spaced with respect to the length of said lower tension panel member as to cause it to lie in a substantially centrally downwardly looped and curved configuration closely simulating a catenary as seen in side elevation, and which hold said lower panel member elevated above a support to maintain said curved configuration; and stress-transferring compression means effectively positioned between said upper panel member and lower tension panel member and effectively compressibly coupling said upper panel member, and any load effectively carried thereabove, to said lower tension panel member by direct downward compressive stress transfer.

3,286,286
PONTOON SUPPORT FOR OVER-THE-WATER PIPELINES
Arthur J. Nelson, 611 Las Palmas Drive, Santa Barbara, Calif.
Filed Nov. 18, 1964, Ser. No. 412,003
17 Claims. (Cl. 9—1)



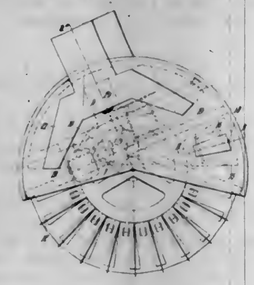
1. An assembly for supporting sections of pipeline having universally connected ends above the surface of a body of water for limited articulated movement relative to each other about said ends, comprising:
(a) a plurality of aligned frameworks disposed in parallel relationship to each of said sections, said frameworks each comprising:
(1) a base portion;
(2) three mounts disposed on said base portion in a substantially horizontal plane, said mounts being spaced relative to each other to define the apexes of a triangular configuration; and,
(3) an upstanding portion fixed to and extending upwardly from said base portion;
(b) means on the upstanding portion of each of said frameworks pendulously suspending the section of pipeline which is in parallel relationship therewith;
(c) first pontoon means secured, respectively, to and extending downwardly from a pair of said mounts on each framework along a line extending substantially parallel to and to one side of the section of pipeline suspended therefrom for free pivotal movement relative to said framework about an axis substantially parallel to said section;
(d) second pontoon means secured to and extending downwardly from the remaining mount on each framework on the other side of the section of pipeline suspended therefrom for free pivotal movement relative to said framework about an axis substantially parallel to said section; and wherein,
(e) said first and second pontoon means are of sufficient buoyancy to support said framework and sections of pipeline suspended therefrom above the surface of the body of water; and,
(f) the frameworks disposed on opposite sides of the universally connected ends of the sections of said pipeline are joined together for limited articulated movement with respect to each other.

3,286,287
BODY FINS FOR SWIMMERS
William Knox Martin, 145 Audubon Ave., New York, N.Y.
Filed Aug. 27, 1964, Ser. No. 392,388
7 Claims. (Cl. 9—308)

6. A swimming aid mounted about a swimmer's hand and comprising a flexible fin extending from the arm surface, wherein a rigidizing muscular rib section is provided with a hand grip portion positioned for manipulation by the hand to a stretched position to set the flexible fin into a rigid position, and to provide a flexible fin surface when the hand permits the rib section to recede into a relaxed position.

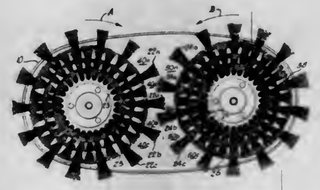


3,286,288
LEATHER MULLING APPARATUS
Ronald Geoffrey Coulson, Kettering, Northampton, England, assignor to The British Boot, Shoe & Allied Trades Research Association, Kettering, England, a British association
Filed Aug. 8, 1963, Ser. No. 300,867
Claims priority, application Great Britain, Aug. 10, 1962, 30,770/62
12 Claims. (Cl. 12—1)



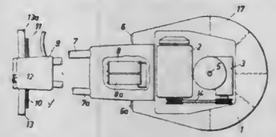
1. Apparatus for the treatment of articles of leather or like materials comprising a substantially cylindrical cabinet having spaced parallel planar walls and a peripheral wall, said cabinet having a first opening formed therein for receiving articles therethrough and at least one additional opening spaced from said first opening for admitting a processing atmosphere to the interior of said cabinet, an article carrier rotatably mounted in said cabinet, said carrier comprising a rotatable central support and a plurality of radially extending, circumferentially spaced vanes mounted in fixed position on said support, said vanes being of a size sufficient to lie closely adjacent both said planar walls and said peripheral walls to define between said walls and each adjacent pair of vanes, a substantially atmospherically isolated article receiving and treating chamber, means for rotating said carrier to move each of said treating chambers successively into register with said first and additional openings, and means communicating with said additional opening for injecting a processing atmosphere through said additional opening and into said cabinet and a treating chamber registered therewith, said spacing between said first and additional openings being a distance not less than to the spacing between a pair of adjacent vanes thereby substantially preventing the escape of the processing atmosphere entering through said additional opening out through said first opening to the atmosphere.

3,286,289
TWO-BRUSH FLOOR POLISHER
Frank K. Bayless, Darien, Conn., and Raymond L. Brown, Banksville, N.Y., assignors to Electrolux Corporation, Old Greenwich, Conn., a corporation of Delaware
Filed Oct. 2, 1964, Ser. No. 401,165
3 Claims. (Cl. 15—49)



1. In a surface treating apparatus wherein two side-by-side circular brushes adapted for making facial contact with the surface to be treated are rotatable in synchronism about their vertical axis, the improvement wherein each brush includes a ring of bristles arranged at the outermost peripheral edge of said circular brush, said ring comprising a plurality of spaced-apart tufts of bristles, each said tuft extending axially to contact the surface to be treated and outwardly beyond the periphery of its circular brush, said spaced-apart tufts when moving arcuately entering to a substantial depth individual spaces between the tufts of the other brush without interfering with the arcuately moving tufts of said other brush thereby leaving no untreated surface space between the side-by-side brushes.

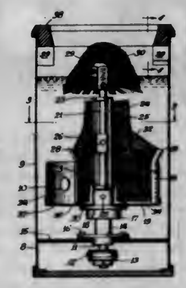
3,286,290
FLOOR POLISHING MACHINES
Werner Marth, Duisburg, Germany, assignor, by mesne assignments, to Vertex-Vertriebsgesellschaft mit beschrankter Haftung, Aachen, Germany, a corporation of Germany
Filed Nov. 25, 1964, Ser. No. 413,939
Claims priority, application Germany, Nov. 28, 1963, St 21,379
8 Claims. (Cl. 15—49)



1. A floor polishing machine comprising a housing, an electric motor supported upon the housing, said motor being positioned substantially symmetrically and transversely to the direction of travel of the machine and with an output shaft thereof disposed in a generally horizontal plane, a single rotary tool disc mounted for rotation by a vertical shaft, means for drivably coupling said shafts to each other, said coupling means including a drive belt disposed in a position generally parallel to the direction of travel of the machine, said coupling means further including a meshed worm and a worm wheel, said worm wheel being secured to said vertical shaft and being centrally arranged relative to said housing, said worm being disposed transversely of the direction of machine travel, a handle, means hingeably mounting said handle to said housing adjacent said motor and remote from said

worm and worm wheel, said handle including a lower end portion adjacent said mounting means defining a chamber, and electrical control elements completely housed by said chamber.

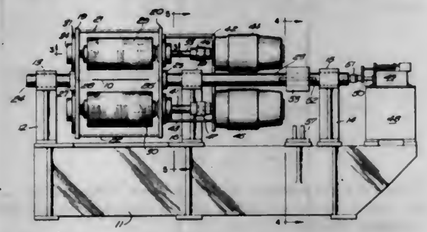
3,286,291
PORTABLE WASHER FOR MUGS AND STEINS
Burton D. Linne, Chicago, Ill., assignor to Austin Continental Industries, Incorporated, Chicago, Ill.
Filed Mar. 10, 1965, Ser. No. 438,518
5 Claims. (Cl. 15—76)



4. A portable washer for steins and mugs including in combination an outer water tank, an inner smaller brush tank, and a central spindle supporting an assembly of brushes and said brush tank, which spindle is the extension of a drive shaft that extends through the bottom of said outer tank and is rotated by external motor-driven means, said brush tank having multiple holes in its side walls and its bottom to permit passage of sediment and food particles into said outer tank, said brush tank having multiple channels disposed generally vertically and equal distances from each other around the inside wall of said tank to hold a plurality of generally vertical brushes, said vertical brushes extending substantially above the top of said brush tank and such extending portion being bent back over the top edge of said tank, said vertical brushes having bristles that extend horizontally and radially in toward said central spindle up to the top of said brush tank and above that point where the brush bends back over the top edge of said tank, the bristles extend radially in towards said central spindle but at an ever-increasing angle above the horizontal bristles, said assembly of brushes consisting of multiple vertical brushes arranged equally distant around said spindle and extending radially outward therefrom and a conically shaped brush on the top end of said central spindle.

3,286,292
METAL STRIP BRUSHING MACHINE
Robert J. Smith, Harwinton, Conn., and William P. Herman, Providence, R.I., assignors to The Plume & Atwood Brass & Copper Corp., Thomaston, Conn., a corporation of Connecticut
Filed July 8, 1964, Ser. No. 381,138
6 Claims. (Cl. 15—77)

1. A device for brushing a metal strip moving under tension from an unwinding to a winding position comprising an elongated base, a plurality of spaced vertical posts mounted on said base, a bearing on the top of each post, said bearings being in axial alignment, a split shaft rotatably and axially slidably mounted in said bearings, a rectangular plate vertically mounted at the split end of one shaft portion, a complementary rectangular plate mounted on the split end of the other shaft portion, said plates being horizontally joined by supporting members to form a rectangular frame supported by said shaft, the



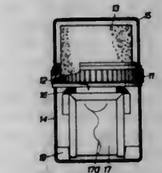
metal strip passing through said frame, spaced upper and lower brushing elements mounted in said frame above and below the strip, means for pivoting said shaft and frame to cause said brushing elements to contact the upper and lower surfaces of the strip, and means mounted on said base for reciprocating said shaft and frame transversely to the strip.

3,286,293
STOP MEANS FOR GUN CLEANING DEVICE
Charles F. Eckert, 1109 Devereaux St., Philadelphia, Pa.
Filed Mar. 9, 1965, Ser. No. 438,225
8 Claims. (Cl. 15—104.16)



1. A stop means for a gun cleaning device comprising a cylindrical body with a central longitudinal axis of symmetry having an opening therethrough along said axis for receiving the rod of a gun cleaning device and a front plane surface, a protective washer unit positioned along the front plane surface of said body for contacting the muzzle end of a gun, and locking means received within said body for detachably securing said body with said rod for positioning and preventing motion between said rod and said body.

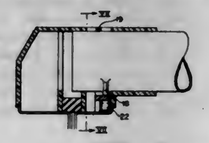
3,286,294
POLISHING DEVICES
Joseph Peter Raffe, London, England, assignor to Reckitt & Colman (Overseas) Limited, Hull, England
Filed Aug. 11, 1964, Ser. No. 388,890
Claims priority, application Great Britain, Sept. 13, 1963, 36,104
11 Claims. (Cl. 15—258)



1. A collapsible polishing means comprising a base member, a pad of a polishing material secured to one face of said base member, said base member consisting of a plurality of sections, and hinge means interconnecting said sections, said pad having a polishing surface of serpentine configuration in the direction of its length and the

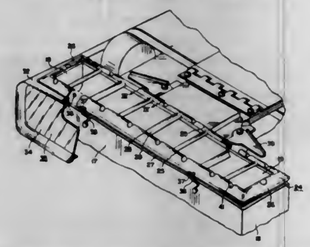
folds of said surface being arranged to interlock when said base member is collapsed about said hinge means.

3,286,295
VACUUM CLEANER NOZZLE
Charles T. Fromknecht, Anderson, S.C., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 4, 1964, Ser. No. 415,914
5 Claims. (Cl. 15—410)



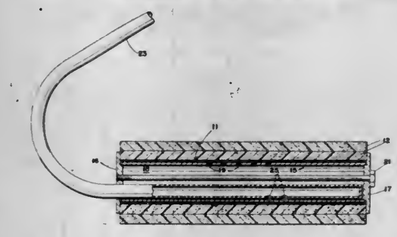
1. A nozzle for a vacuum cleaner having a suction device, said nozzle comprising: a generally rectangular body member having a cover plate secured at the bottom thereof, an enlarged housing portion formed integrally with said body member and extending to the rear thereof, a connector tube for attaching the nozzle to the suction device, a projection on said tube, said enlarged housing portion being provided with a longitudinal bore and a groove coextensive therewith, said connector tube being insertable in said bore and said projection in said groove, locking means in said housing portion, first means in said housing portion for limiting travel of said tube, said projection being adapted to cooperate with said locking means for permitting insertion of said tube beyond said first limiting means, second means in said housing portion cooperating with said projection for limiting the extent of insertion of said tube beyond said first limiting means, said locking means and said first limiting means cooperating with said projection to permanently retain said connector tube in said housing portion.

3,286,296
VACUUM CLEANER
Robert S. Waters, Lexington, Ohio, assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 8, 1964, Ser. No. 394,852
5 Claims. (Cl. 15—422)



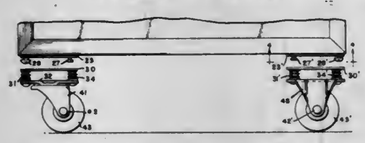
3. In an upright vacuum cleaner having a nozzle structure adapted to move over a surface being cleaned, in combination, a pair of longitudinal wall members and a pair of transverse wall members cooperating to form a suction inlet, a nozzle guard having a pair of longitudinal frame members and a pair of transverse frame members, said frame members each comprising a vertical portion and a horizontal portion and cooperating to form a substantially box-like structure having a continuous top surface at the free ends of said vertical portions, a sealing gasket positioned between the free ends of said wall members and said continuous top surface, extensible means including a hook for securing one of said longitudinal members to an adjacent longitudinal frame member to form a hinge between said nozzle guard and said nozzle structure, rotatable means secured to the nozzle structure adjacent the other of said longitudinal wall members and adapted to exert pressure on the other of said longitudinal frame members while simultaneously extending said extensible means, whereby sealing between the free ends of said walls and the sealing gasket and between said top surface and said sealing gasket is effected.

3,286,297
FLOOR WAXER
Charles H. MacFarland, Rocky River, Ohio, assignor to The Scott & Fetzer Company, Cleveland, Ohio, a corporation of Ohio
Continuation of application Ser. No. 340,240, Jan. 27, 1964. This application Oct. 13, 1965, Ser. No. 515,270
2 Claims. (Cl. 15—555)



2. A device for applying wax to a floor, comprising roller means including rotatable cylindrical porous means for contacting a floor and applying wax thereto, non-rotating support means for rotatably supporting said cylindrical porous means and for receiving and applying wax against the inner surface of said cylindrical porous means, said support means having a longitudinally extending cylindrical wall disposed within said cylindrical porous means and said support means having radially extending end walls, wax storage means remote from said roller means, and a combined handle and wax supply tube extending from said storage means to said support means, said supply tube having an end portion thereof with outlet openings therein extending longitudinally within said support means and being secured in an off-center relationship to one radial end wall of said support means so that said longitudinally extending end portion is disposed closely adjacent the longitudinally extending cylindrical wall of said support means immediately adjacent the floor.

3,286,298
CASTER ASSEMBLY
William J. Veary, 146 Rockland St., and Aldo J. De Rossi, 124 Francis St., both of New Bedford, Mass.
Filed Dec. 8, 1964, Ser. No. 416,728
4 Claims. (Cl. 16—44)



1. A caster assembly for attachment to an object to be rolled from place to place, the assembly including a flat substantially rectangular mounting plate fixedly secured to the object, a headed stud depending from said mounting plate, securing means depending from said mounting plate in spaced relation to said stud, and a wheel unit adapted for detachable engagement with said

mounting plate, the wheel unit including a flat, substantially rectangular clamp plate having a keyhole slot adapted to receive the stud of said mounting plate, terminal recess means in said clamp plate for the reception of said securing means, support rods secured to said clamp plate and extending downwardly therefrom, wheel support means having strategically positioned openings through which said support rods are adapted to pass, means for holding said wheel support means on said support rods, spring means interposed between said clamp plate and wheel support means for normally urging the same apart, the wheel unit further including a wheel member rotatably supported by said wheel support means.

3,286,299
DRAPERY CARRIER

Jerrold E. Golden, Freeport, Ill., assignor to Western Newell Mfg. Co., Freeport, Ill., a corporation of Illinois

Filed Aug. 14, 1964, Ser. No. 389,652
2 Claims. (Cl. 16—87.4)

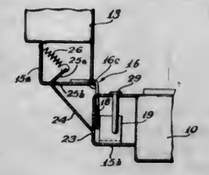


1. A drapery carrier comprising a thin, flat and generally rectangular blade portion adapted to lie in a vertical plane, a head spaced above said blade portion and alined with the vertical centerline of the blade portion, said blade portion being made of a rigid plastic material and the thickness of the blade portion being correlated with said material to permit the needle of an ordinary sewing machine to pass through the blade portion whereby the material of a drape may be sewn directly to the blade portion, an intermediate portion rigidly connecting said head and said blade portion, the upper part of said intermediate portion being generally cylindrical and smaller in cross section than said head and lower part of said intermediate portion being generally planar to merge with said blade portion, and a horizontal flange extending across said blade portion adjacent the upper end thereof to locate the drape relative to the blade portion, said flange being defined by shoulders which are contiguous with said intermediate portion and the blade portion and which are at a right angle to the blade portion.

3,286,300
COMBINATION STOP AND LATCH FOR MULTI-PURPOSE APPLIANCE

Arthur D. Altemiller, St. Louis, Mo., assignor to Knapp-Monarch Co., St. Louis, Mo., a corporation of Delaware

Filed July 10, 1964, Ser. No. 381,689
7 Claims. (Cl. 16—138)



1. A stop-and-latch mechanism for a multi-purpose appliance having multiple sections adapted for movement between alternative positions where pairs of sections are overlying each other, or are substantially at right angles to each other, or are in side-by-side coplanar position, said stop and latch mechanism comprising, in combination, a pair of appliance sections, a two-part hinge providing one hinge part secured to a first of the sections and the other hinge part slidably associated with the second of the sections, an opening in the second section arranged to be selectively blocked or unblocked by the other hinge part, an elongated brace plate carried by the first section and having a distal end for insertion into said opening to engage said other hinge part to define the right angle position for said two-section appliance, and the selective movement of said other hinge part to unblock said opening permitting insertion of substantially the entire brace through said opening to define the alternative coplanar position for the two sections of the appliance.

3,286,301
WINDOW SASH BALANCES

Phil Skolnik, P.O. Box 45558, Houston, Tex.

Filed July 16, 1964, Ser. No. 383,109
5 Claims. (Cl. 16—197)

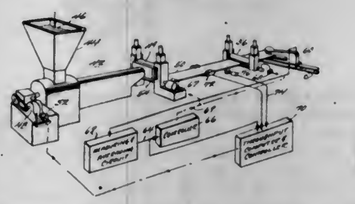


2. The combination with a window having a movable sash, of a balance device having a coiled spring and a spiral rod operatively connected with the coiled spring, said spiral rod having an end portion and extending generally parallel with a lateral edge of the sash and beside said edge, and means connecting said end portion with the sash comprising a bracket having one end portion attached to said lateral edge of the sash, and having the opposite end portion offset from the sash and extending flatwise in abutting relation against a side of the spiral rod parallel with the face of said lateral edge of the sash, said last-mentioned end portion of the bracket having an elongated slot therein, and a headed pin projecting from the end portion of the spiral rod into said slot for detachably connecting the spiral rod with the bracket.

3,286,302
CONTROL SYSTEM FOR MAXIMIZING THE PRODUCTION OF A MATERIAL FORMING PROCESS

George I. Doering, Columbus, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio

Filed Dec. 26, 1963, Ser. No. 333,350
8 Claims. (Cl. 18—2)



5. Apparatus for increasing the production of an industrial process line, said line receiving a supply of raw material for providing a continuous product having a uniform weight characteristic, said apparatus comprising:

means for forming said material into said continuous product,

means for feeding said material through said forming means at a controllable rate,

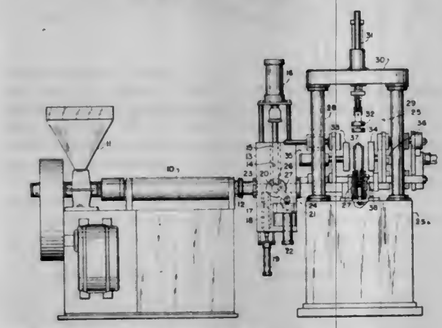
means for measuring the mass flow of said product provided by said forming means, and

means for adjusting said rate of material feed to said forming means to maintain said product mass flow substantially constant.

3,286,303
MACHINE FOR FORMING HOLLOW PLASTIC ARTICLES

Orville B. Sherman, Ho-Ho-Kus, N.J., assignor, by mesne assignments, to National Bottle Corp., Ardmore, Pa., a corporation of Illinois

Filed Oct. 29, 1963, Ser. No. 319,839
12 Claims. (Cl. 18—5)



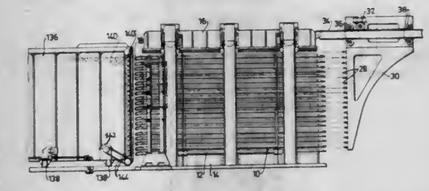
1. A machine for forming hollow plastic articles comprising a continuously operable, relatively low-pressure extruding section, an intermittently operable blow-molding section, an intermittently operable, relatively high-pressure injecting section for feeding pre-heated material received from said extruding section into said blow-molding section, conduits connecting said sections, hydraulically-operated low-pressure means in said injecting section for receiving said pre-heated material from said extruding section, hydraulically-operated high-pressure means in said injecting section for feeding said pre-heated material into said blow-molding section, said high-pressure means being adapted to receive said pre-heated material from said low-pressure means and said extruding section simultaneously, and rotatable valve means arranged in said conduits intermediate said low-pressure section and said high-pressure section, said valve means having a channel having two outlets arranged at a right angle to one another, said low-pressure means, said high-pressure means and said valve means being adapted to cooperate in timed sequence for eliminating back-pressure against said extruding section during the operating phase of said high-pressure means.

3,286,304
DEVICE IN MULTILAYER PRESSES

John Willard Falkinger, Farsta, and Bertil Olof Olofsson, Umea, Sweden, assignors to Defibrator Aktiebolag, a corporation of Sweden

Filed Mar. 17, 1964, Ser. No. 352,590
Claims priority, application Sweden, Mar. 19, 1963, 2,982/63
11 Claims. (Cl. 18—17)

1. A device in multilayer presses for production of sheets or boards of fibrous material, comprising a plurality of superimposed heated press plates, a roller member associated externally of each plate except the top plate, said plates adapted to have sheet or board blanks fed on wire sieves adapted to be unrolled from said roller members to be subjected subsequently to pressure and heat between said press plates and removal from the press after the pressing operation, characterized by at least one traction member disposed to act on said wire sieves at



their free end and motors adapted to act on the shafts of each individual roller member and to exercise moments in a direction opposite to the direction of action of the traction members so as to keep the wire sieves stretched.

3,286,305
APPARATUS FOR CONTINUOUS MANUFACTURE OF HOLLOW ARTICLES

Peter H. Seckel, Wayne, N.J., assignor, by mesne assignments, to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

Filed Sept. 3, 1964, Ser. No. 394,172
7 Claims. (Cl. 18—19)

1. In an apparatus for the continuous blow molding of tubular thermoplastic articles, including:

(a) extrusion means to form a continuous plastic tube in a softened condition adapted for forming by internal fluid pressure;

(b) means to introduce a pressurized fluid internally of said tube;

(c) a single continuous conveyor movable through a closed path and located adjacent the extrusion means, the conveyor being movable in a substantially vertical plane;

(d) a plurality of slide bars mounted transversely on the conveyor;

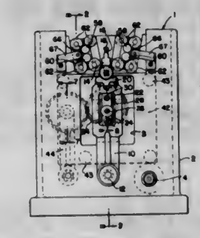
(e) a pair of segments mounted in opposed relationship for movement on each slide bar toward and away from each other and in a direction substantially perpendicular to the direction of movement of the conveyor, each mold segment having a mold cavity facing inwardly toward the mold cavity in the opposing mold segment, the mold segment being movable inwardly into abutting relationship with each to form a transversely enclosed mold larger than the transverse cross sectional size of the plastic tube; adjacent mold segments on adjacent slide bars being in abutting relationship with each other during the molding operation to form a continuous mold;

(f) means to move the opposed mold segments toward and away from each other; and,

(g) each pair of opposed mold segment being movable with the conveyor at a speed synchronized with the rate of feed of the plastic tube and receiving said tube within the mold; the pressurized fluid being

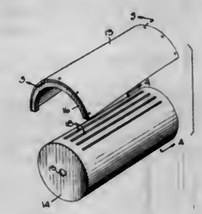
introduced internally of the tube after the tube is within the mold to expand the tube into conformity with the shape of the mold cavity to form a continuous tubular thermoplastic article.

3,286,306
FIBER SEPARATOR
Hugh M. Brown, Clemson, S.C., assignor to The Sheffield Corporation, Dayton, Ohio, a corporation of Delaware
Filed Jan. 11, 1961, Ser. No. 81,993
7 Claims. (Cl. 19—65)



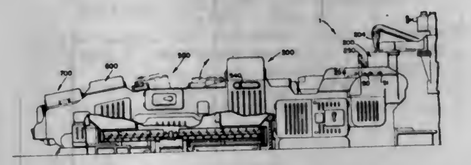
1. Apparatus for separating fibers from a sample of fibrous material comprising a frame, a comb supported from said frame for receiving said sample, extracting means supported from said frame and including a plurality of rollers and fiber engaging belts associated therewith on each side of said comb for alternately engaging said sample on opposite sides thereof, means supported from said frame for causing relative movement between said comb and said extracting means to thereby extract a portion of the fibers from said sample, means operably associated with said rollers for collecting the extracted portion of the fibers, and adjustable stop means supported from said frame for limiting said relative movement.

3,286,307
CYLINDRICAL BANDING JETS
George A. Watson, Charlotte, N.C., assignor to Celanese Corporation of America, New York, N.Y., a corporation of Delaware
Filed Sept. 9, 1963, Ser. No. 307,389
21 Claims. (Cl. 19—66)



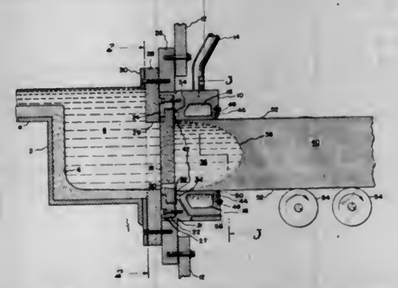
1. A banding jet, comprising a pair of members presenting, respectively, a convex surface and a concave surface, said members being juxtaposed to one another to define between said surfaces a shallow, relatively wide, arcuate passageway, at least one of said members being hollow and adapted to receive within the interior thereof a pressurized fluid, at least said one member being provided within the region of said surface thereof with a plurality of narrow openings disposed angularly relative to the arc length of said passageway and facilitating admission of said pressurized fluid into said passageway the arc length of said passageway being between about 75 and 180°.

3,286,308
MEANS FOR MOVING PRINTING PLATES IN A PLATE CASTING AND FINISHING MACHINE
Paul L. Tollison, North Plainfield, Charles L. Ricards, South Plainfield, and Paul J. Schkeeper, Plainfield, N.J., assignors to Wood Newspaper Machinery Corporation, Plainfield, N.J., a corporation of Virginia
Original application June 6, 1961, Ser. No. 115,145, now Patent No. 3,172,172, dated Mar. 9, 1965. Divided and this application Jan. 19, 1965, Ser. No. 426,638
7 Claims. (Cl. 22—3)



1. In a stereotype plate casting and finishing machine having a shaving station, a rotatable knife bar rotatably mounted in said shaving station about an axis extending parallel to the longitudinal axis of said machine and carrying a saw for severing the tail portion of a cast plate, and gear drive means for rotating said knife bar, the improvement characterized by a plate propeller mechanism for moving a cast plate from said shaving station comprising a movable carriage positioned on said knife bar, a pivotable lug mounted on said carriage, and carriage drive means for moving said carriage along the longitudinal axis of said casting and finishing machine independently of the rotation of said knife bar to move a cast plate from said shaving station after the tail portion has been severed therefrom.

3,286,309
METHOD AND APPARATUS FOR HORIZONTAL CASTING OF INGOTS
Kenneth J. Brondyke, Oakmont, and Richard T. Craig, New Kensington, Pa., assignors to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 6, 1963, Ser. No. 286,033
18 Claims. (Cl. 22—57.2)

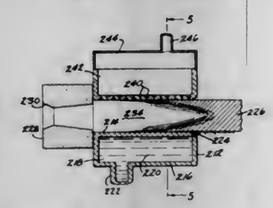


1. The method of continuously casting ingots in a horizontally disposed chilled mold open at one end and closed at the opposite end with a heat insulating member except for an opening therein for passage therethrough of molten metal, said method comprising maintaining a body of molten metal adjacent said chilled mold, feeding to the lower half section of said mold substantially all of the metal entering the mold, said feeding being in the form of a stream which is inwardly of and in close proximity to the mold wall in said lower half section, said stream

being relatively short in the direction of metal feed and in general conformity with, and extending around and upwardly along, the periphery of said lower half section of the mold wall, initiating freezing of the metal at the head of the mold next to the insulating closure member and around the entire periphery of the mold and progressively increasing the thickness of the frozen metal toward the exit end of the mold and withdrawing the ingot from the mold.

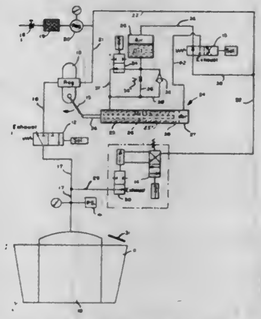
8. Apparatus for the continuous casting of an ingot in a horizontally disposed mold having internally chilled walls comprising an open top molten metal reservoir, a common wall of refractory heat insulative material between said reservoir and said mold except for a gate opening for passage of molten metal from said reservoir to said mold, said gate opening being long and narrow and generally conforming to the shape of and confined to substantially the lower half section of the inner mold wall, said gate opening also being spaced inwardly from said wall but in close proximity thereto, means for supplying lubricant to the inner mold wall at the head end of said mold, said mold having a coolant chamber within the walls thereof and a passageway from the chamber to the exit end of the mold terminating outwardly of the inner mold wall surface, said passageway also converging toward the exit end of the mold whereby the coolant is discharged upon the ingot emerging from the mold, and means for withdrawing the ingot from the mold.

3,286,310
CONTINUOUS CASTING MOLD VENTING APPARATUS
James E. Dore, Milford, Conn., and Avery L. Kearney, Birmingham, Mich., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Oct. 22, 1963, Ser. No. 317,883
5 Claims. (Cl. 22—57.2)



1. Casting apparatus comprising:
(A) an elongate mold having a wall defining a molten metal solidification cavity therewithin, said mold having
  (1) an inlet and an outlet end and
  (2) cooling means disposed in heat transfer relationship with said cavity for rapidly inducing solidification of molten metal within said cavity,
(B) a distribution nozzle associated with said inlet end of said mold,
(C) vapor escape means disposed in said mold and communicating between said mold cavity and ambient atmosphere for removing vapor or gases from said solidification cavity formed during solidification of molten metal therewithin whereby said cooling means is in more effective heat transfer relationship with said solidifying metal, and
(D) a collection plenum communicating with said vapor escape means and maintained at a subatmospheric pressure, said collection plenum comprising an elongate chamber overlying said vapor escape means and traversing the longitudinal extent of said mold cavity, said chamber being defined by integral radial extensions of said mold wall.

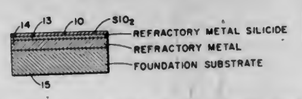
3,286,311
CONTROL APPARATUS FOR POURING MOLTEN METAL
Theodore D. Rhoads, Port Washington, Wis., assignor to Modern Equipment Co., Port Washington, Wis., a corporation of Wisconsin
Filed Feb. 17, 1964, Ser. No. 345,335
1 Claim. (Cl. 22—69)



In a pneumatic pouring control apparatus for a molten metal vessel having a sealed interior chamber and a discharge spout, having a pressure regulator connected to a source of air and provided with a lever for controlling the air pressure delivered thereby, having an air line leading from said regulator to the interior chamber of said vessel, and having a sensing device adapted to detect the liquid level in the vessel discharge spout, the improved regulator control means comprising:
a combination pneumatic and hydraulic cylinder and double-acting ram assembly operatively associated with said regulator lever, said cylinder having a forward, oil chamber and a rearward, air chamber and said movable, double-acting ram having a head thereon within said cylinder and defining said forward and rearward chambers, and said ram having a forwardly-projecting end operatively associated with said regulator lever;
a combination air-oil tank;
an air line associated with said tank for directing air under pressure into the rearward, air chamber of said cylinder;
valve means associated with said air line;
a first oil line between said tank and the forward, oil chamber of said cylinder;
adjustable valve means in said first oil line having a closed position and having an open position permitting the unrestricted flow of oil from said cylinder forward chamber to said tank as said ram moves forwardly, thereby permitting a relatively fast ram extension rate to actuate said regulator lever and cause a corresponding rapid initial pressure build-up in the vessel;
a second oil line between said tank and said cylinder forward chamber;
a flow control valve in said second oil line, whereby oil flowing to the tank through said second oil line when said first oil line valve is closed will be impeded to reduce the ram extension rate and corresponding pressure build-up rate within the vessel during pouring;
means operatively associated with said level-sensing device adapted to automatically close said first oil line valve when the metal reaches a predetermined level in the vessel discharge spout, thereby obtaining said slower, more readily controlled pressure increase in the vessel during pouring; and
means for directing oil from said tank into the cylinder

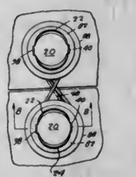
forward chamber after a desired amount of metal has been poured from the vessel to move said ram rearwardly, thereby actuating said regulator lever to halt the pressure build-up within the vessel, and thereby halting the pouring operation.

3,286,312
REFRACTORY COATED CASTING MOLD
Richard S. Davis, Lexington, John L. Engelke, Arlington, and Joan B. Mattuck, Boston, Mass., assignors to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Mar. 29, 1965, Ser. No. 443,435
11 Claims. (Cl. 22—129)



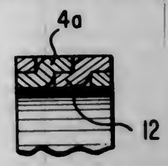
1. A permanent mold for casting molten metals, comprising
(a) a cavity suitable for receiving the molten metal to be cast;
(b) a thin layer of SiO_2 covering that portion of the cavity surface which is contacted by said molten metal; and
(c) a substrate in which said cavity is defined, at least that portion of said substrate directly in contact with said layer of SiO_2 being of a material containing chemically bonded silicon in a form which is readily oxidized to SiO_2 in an oxidizing atmosphere, said material being one which retains its structural integrity at the melting temperature of the metal to be cast.

3,286,313
FASTENING DEVICE
Raymond A. Beghetto, Jr., 113 W. 6th Ave., Cheyenne, Wyo. 82001
Original application June 29, 1962, Ser. No. 206,395, now Patent No. 3,151,370, dated Oct. 6, 1964. Divided and this application July 31, 1964, Ser. No. 386,702
9 Claims. (Cl. 24—16)



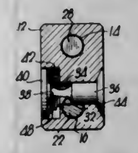
1. Securing means for juxtaposed closure lid sections of a receptacle or the like comprising a pronged member having a centrally-disposed discoidal main body portion and including a pair of diametrically-opposed arcuate flanges projecting laterally away from a side thereof and diverging from each other, a pair of prongs having one of their respective ends integral with said main body portion and projecting laterally away from the other side thereof, said ends of said prongs being diametrically-opposed and disposed intermediate each adjacent pair of ends of said flanges, said prongs being inserted through one of said closure sections, a cylindrical disc member having a thong projecting therefrom, said cylindrical disc member being mounted on said prongs, means on the other of said closure sections to receive said thong thereon, and said thong being wrapped alternately around said prongs and said last-named means to secure said closure sections together.

3,286,314
METHOD OF MANUFACTURING RINGS AND RIVETED ENDLESS ANNULAR STRUCTURES
Hans Oetiker, 21 Oberdorfstrasse, Horgen, Switzerland
Filed Jan. 21, 1964, Ser. No. 339,223
Claims priority, application Switzerland, Jan. 29, 1963, 1,091/63
18 Claims. (Cl. 24—20)



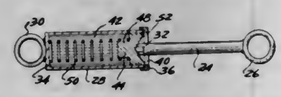
1. A method for manufacturing rings, comprising the steps of:
providing a relatively narrow and long sheet metal strip with a longitudinal slot near one end thereof of greater length than width and with a lug protruding from said sheet metal strip near the other end thereof and of substantially complementary size to said slot with the relatively longer dimension of said slot and lug being in the longitudinal direction of said strip,
thereafter forming the strip in the longitudinal direction thereof into the shape of a ring and inserting said lug into said longitudinal slot,
thereupon bending back said lug substantially into the plane of the circumference of the ring,
and thereafter applying pressure to the bent back lug in such a manner that the material disposed underneath said lug is pressed into the aperture of the U-shaped cutout whereby all bending edges of the material forming the riveted joint are disposed in the circumferential direction and oppose opening of the joint in the presence of forces seeking to expand the ring in its diameter.

3,286,315
FASTENING DEVICE
Montague B. Price, 2607 E. 6th, Topeka, Kans.
Filed Nov. 4, 1964, Ser. No. 408,868
3 Claims. (Cl. 24—73)



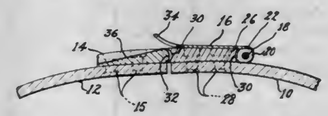
1. A releasable fastener comprising:
an elongated body of rigid material having a pair of end surfaces, a pair of opposite side surfaces and a pair of spaced, parallel, longitudinally extending bores through the body, each bore opening on each of said end surfaces, said body having a cylindrical chamber extending transversely through the body perpendicular to one of the bores and communicating therewith, said chamber including a cylindrical enlarged portion adjacent one end thereof and opening on one side surface of said body, said portion being concentric with the remainder of the chamber and of greater diameter than the latter, the inner end of said enlarged portion presenting an annular shoulder on the body in circumscribing relationship to said remainder of the chamber, the other end of said remainder portion including a bevelled recess communicating with the opposite side surface of the body and extending inwardly toward said enlarged portion, said recess presenting an outwardly flared, bevelled seat on the body disposed in circumscribing relationship to said chamber;
a shackle comprising an elongated member received in said one bore and protruding outwardly beyond said end surfaces, each protruding end of said member being bent into a hook with the point of the hook axially aligned with the other of said bores, the member being manually shiftable in said one bore longitudinally thereof for selectively moving the point of a hook into spaced relationship outwardly from a proximal end surface with the point of the other hook extending into said other bore, there being an intermediate position of the member with the points of both hooks extending into said other bore to defiine closed loops at each end of the body bounded by said hooks and corresponding proximal end surfaces; and
a latch for releasably holding the member in said intermediate position, said latch including an elongated, transversely circular element shiftably mounted in the chamber for reciprocable movement longitudinally thereof, said element having a circumferentially extending groove proximal one end of the element, there being a notch in the member adjacent the element in registry with the chamber when the member is in said intermediate position, a circular pressure plate secured to one end of the element adjacent said one side surface of the body and disposed in the enlarged portion of the chamber, said plate being of lesser thickness than the axial depth of said enlarged portion within said body to permit shifting of the plate toward said shoulder, a disc secured to the element adjacent said opposite side surface of the body, said disc having an inner, annular, bevelled edge normally in complemental engagement with said bevelled seat for holding said element in a position with the groove out of alignment with said notch in the member, and a tapered coil spring in said enlarged portion between the plate and the shoulder normally biasing the element toward a position thereof with the element complementally received in the notch for blocking the member against movement from said intermediate position, the element being manually shiftable in the chamber responsive to pressure on said plate for movement to a position of the element with the groove in registry with said one bore to permit longitudinal shifting of the member in the bore.

3,286,316
COUPLING
Andre Marosy, Oak Park, Mich., assignor of seventeen and one-half percent to Nathan Roth, twenty percent to Maynard Sacra, and twenty-two and one-half percent to Norman Pattison
Filed May 22, 1964, Ser. No. 369,360
5 Claims. (Cl. 24—221)



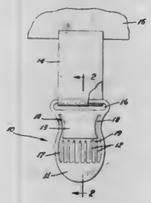
1. A coupling comprising a male member and a female member, the male member comprising a rod having at least one lateral extension adjacent one end thereof, the female member comprising a tubular housing, an end closure on one end of the housing having a slot operative to receive the end of the male member including the lateral extension, a locking element slidably mounted within the tubular housing, means for biasing the locking element into abutment with the interior side of said end closure, the side of said locking element adjacent to said end closure having a groove formed laterally therein with its greatest depth in the center and with at least one side sloping from said center to the edges of the locking element, guide means in the tubular housing in engagement with the locking element and positioning the locking element with an outermost point of said sloping side in alignment with the slot in the end closure of the tubular housing whereby insertion of the rod of the male member through the end closure forces the locking element away from the end closure and rotation of the male member allows the locking element to move into closer relation to said end closure.

3,286,317
LOW-PROFILE, HIGH-STRENGTH LATCH
William C. Boyce, Dallas, and Howard E. Freeman, Grand Prairie, Tex., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force
Filed Feb. 27, 1964, Ser. No. 347,975
3 Claims. (Cl. 24—223)



1. A low profile high strength latch for joining two objects comprising
a bifurcated member secured to one of said objects, said member having a convex surface within the bifurcated portion of said member, opposite its open end,
a cam member rotatably mounted proximate the ends of and between the legs of said bifurcated member, and
a fitting on the other of said objects, said fitting comprising a flat plate of a size to fit within the bifurcated portion of said bifurcated member, with opposite edges of said fitting having concave grooves therein for engagement with said convex surface of said bifurcated member and said cam.

3,286,318
STOCKING FASTENER
Jan J. Erteszek, 631 Bonhill Road, Los Angeles, Calif.
Filed Mar. 17, 1965, Ser. No. 440,568
1 Claim. (Cl. 24—243)



A stocking fastener comprising an internally apertured essentially planar body adapted to be generally vertically positioned in use, a row of teeth carried by a lower portion of the body and projecting upwardly within the apertured area of the body to free ends insertable through a fabric, and means directly overlying said ends of the teeth and operable to releasably retain the fabric against removal therefrom, said retaining means comprising a web in overlying relation to the teeth, said web and teeth being relatively movable from said relation to free

the fabric for removal from the teeth and said web being in the form of a flap resiliently deflectable from the teeth.

3,286,319
DOUBLE THREADING CLIP

Stanley H. Sather, New Westminster, British Columbia, Canada, assignor to Aktiebolaget Svenska-Flaktfabriken, Stockholm, Sweden

Filed Mar. 23, 1965, Ser. No. 442,004
12 Claims. (Cl. 24—253)

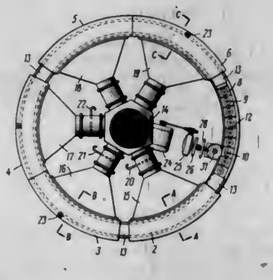


2. In a double threading clip a multiple spring for closing said clip onto a web comprising a first row of aligned helical spring elements, a second row of aligned helical spring elements, transverse elements extending from between the helical elements of the first row to between the helical elements of the second row, and holding elements extending outwards of each row of helical spring elements from between the elements of each row and cooperable with said transverse elements to effect closing of said clip.

3,286,320
UNIT FOR THE HEAT TREATMENT OF YARN WOUND ON BOBBINS

Vasily Vasiljevich Voronin, Konstantin Vasiljevich Panov, Jakov Nikiforovich Mikhailik, Igor Alexandrovich Kokolevsky, Dmitry Trofimovich Pekov, Sergei Nikolaevich Fedorov, Petr Dmitrievich Zorin, Victor Nikiforovich Solomin, and Vasily Vasiljevich Pomolotov, all of Moscow, U.S.S.R., assignors to Kruzhevnaja Gardinno-Tulevaja Fabrika im. E. Teljmana

Filed July 17, 1964, Ser. No. 383,445
3 Claims. (Cl. 28—58)

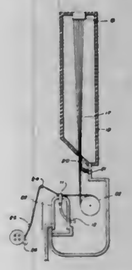


1. A unit for the heat treatment of yarn wound on bobbins for producing lace fabrics, comprising a frame, a steaming chamber, at least one drying and at least one cooling chamber, said chambers being interconnected in sequence and mounted on said frame; means arranged on said frame for transporting the bobbins through all the chambers and insuring a continuous processing of said bobbins; means mounted on said frame for interconnecting said chambers to permit passage of said bobbins while insuring isolation between said chambers; means mounted on said frame for supplying air to said chambers, and drive means for said means for transporting the bobbins through the chambers.

3,286,321
METHOD OF TREATING MULTIFILAMENT YARN

Charles A. Fletcher and Richard F. Dyer, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Nov. 22, 1963, Ser. No. 325,719
7 Claims. (Cl. 28—72)



1. In a process of producing a jet-treated multifilament yarn by blowing said multifilament yarn in a jet with a fluid to obtain an internally entangled yarn product having improved and predetermined entanglement spacing, said process being further characterized in that the amount of fluid required to operate the process is lower than that required with comparable prior processes, the improvement features which comprise preparing the multifilament yarn for processing in the jet, supplying yarn lubricant to this yarn, passing said lubricated yarn through said jet in a manner that the multifilaments may impinge on the inner surface of the jet portion enclosing the yarn undergoing processing, introducing the fluid into the jet in a direction non-parallel to the direction of yarn movement through the jet but wherein the yarn moves in a direction for at least a part of the time which may be substantially parallel to fluid flow in the jet, the jet being particularly characterized in that the inner surface of the jet which encloses the yarn undergoing the aforesaid processing has a mirror-like surface with a surface roughness value of less than 8 R.M.S., controlling the pressure and tension on the multifilaments undergoing processing with fluid in said jet within conventional pressure and tension ranges known to cause the filaments to separate and entangle with other filaments at spaced zones whereby the aforesaid improved product yarn with predetermined internal entanglement spacing is obtained with said lower amount of fluid supplied to the jet.

3,286,322
POLYPROPYLENE CARPET FIBERS

Loy D. Sneary, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Aug. 5, 1963, Ser. No. 300,081
2 Claims. (Cl. 28—76)

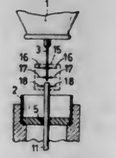
1. A method for providing a carpet of good tuft resilience woven from fiber comprising: homopolymers and copolymers of propylene, which comprises:

(a) spinning polypropylene continuous filaments from polypropylene resin;
(b) combining said filaments into continuous filament and staple yarns;
(c) bulking the resulting polypropylene yarn;
(d) immersing the bulked yarn in a bath of a polyfunctional monomer at a temperature between 20° and 120° C. selected from the group consisting of divinyl benzene, the mono-, di-, tri- and tetra-ethylene glycol diacrylates, the mono-, di-, tri- and tetra-ethylene glycol dimethacrylates, vinyl acrylate, vinyl methacrylate, allyl acrylate, allyl methacrylate, the divinyl ether of diethylene glycol, diallyl maleate, diallyl itaconate, diallyl malonate, diallyl benzene phosphonate, triallyl phosphate, triallyl cyanurate, glyceryl trimethacrylate;
(e) exposing the monomer-saturated bulked yarn to a field of high energy radiation for a time sufficient to give a total dosage within the range between 0.05 and 50 megarads, thereby cross-linking of the monomer-polymer components thereof; and
(f) conventionally weaving the thus treated polypropylene yarn into a carpet.

3,286,323
LEAD THREADING DEVICE FOR LAMP BASING APPARATUS

Ernst Bastiaanse, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Aug. 2, 1962, Ser. No. 214,284
Claims priority, application Netherlands, Aug. 28, 1961, 268,694
3 Claims. (Cl. 29—25.19)



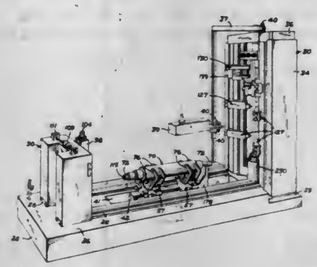
1. A device for threading at least one current supply lead of a lamp through an associated aperture in a cap to be mounted on the lamp neck comprising a holder for said cap having at least one guide pin therein adapted to pass through said aperture, said holder being displaceable in the direction of the current supply lead, a pair of pliers for axially aligning the facing free ends of the current supply lead and guide pin when the same have been located close to each other, means for axially displacing said guide pin in said pliers relative to said current supply lead, and means on the free end of said guide pin adapted to be coactively associated with said current supply lead by said axial displacement for thereafter guiding said current supply lead through the aperture in said lamp cap whereby the cap is slipped on the neck of said lamp over said current supply lead aligned by said guide pin.

3,286,324
MACHINE TOOL

Charles F. Hautau, Oxford, Ohio, assignor to The Black Clawson Company, Hamilton, Ohio, a corporation of Ohio

Filed Dec. 21, 1964, Ser. No. 419,979
15 Claims. (Cl. 29—27)

1. A machine tool for completely finishing a metal roll of substantial weight and size, comprising a vertically extending frame member adapted to receive the roll positioned with its axis vertical, a power operated drive mechanism mounted at the bottom of said frame member and including chuck means adapted to grip a lower end portion of the roll and to rotate the roll about its vertical axis, a bottom centering member mounted within said chuck means, means for providing engagement between said bottom centering member and a centering hole in the end of the roll, a top centering member mounted on said frame member, means for moving said top centering member in a vertical direction along said frame member to adjust the vertical spacing between said top centering member and said bottom centering member for accommodating rolls of different lengths, a vertical guideway connected to said frame member, a tool member

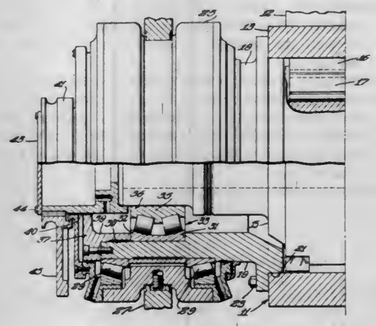


slidably mounted on said guideway, and means for moving said tool member along said guideway for finishing the circumferential surface of the roll while the roll is rotated by said drive mechanism.

3,286,325
SUPPORT AND DRIVE FOR CONTROLLED CROWN ROLL

Edgar J. Justus, Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin

Filed May 21, 1965, Ser. No. 457,753
6 Claims. (Cl. 29—116)



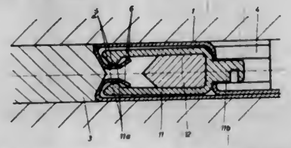
1. In a crown roll and in combination with a second roll forming a pressure nip therewith,

a cylindrical roll shell,
a separate sleeve secured to and extending axially outwardly of each end of said shell,
first bearing means extending about said sleeves and rotatably supporting said sleeves and roll shell,
a center shaft extending along the interior of said roll shell and beyond opposite ends thereof and having fluid pressure movable means adapted to apply nip correcting pressure to the inside of said roll shell,
drive means having driving connection with one of said sleeves for rotatably driving said shell about said center shaft,
and spherical self-aligning bearing means supporting said center shaft in said sleeves and disposed directly inside of said first bearing means and compensating for bending of said center shaft by the nip correcting pressures on said shell.

3,286,326
METHOD OF ASSEMBLING A FORKED SPRING WITHIN A BOW-SHAPED CONTACT

Roland Klotz, Steinheim (Murr), Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 17, 1964, Ser. No. 411,758
Claims priority, application Germany, Nov. 27, 1963, St 21,368
1 Claim. (Cl. 29—155.55)



A method for manufacturing an elastic plug-in contact, including an electrically conductive bow-shaped contact spring having slots on inwardly directed bow-shaped ends, and an aperture located in the bight of the spring on an axis passing between the inturned ends and bisecting said bight and including a planar bow-shaped tension spring having an integral stud located intermediate its ends and extending in a direction opposite to said last mentioned ends, and wherein the tension spring is nested within the contact spring with its stud passing through the contact spring aperture and its end passing through said slots and engaging the outer sides of the inturned ends whereby said contact and tension springs are located together comprising:

firmly supporting said contact spring;

inserting said tension spring into the contact spring from one side of said contact spring to engage said aperture in the contact spring with said stud;

rotating the tension spring into a plane through the contact spring to cause engagement between said slots in the contact spring and ends of the tension spring;

inserting a pressure piece within said tension spring;

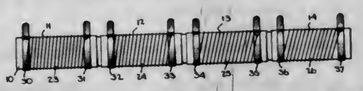
forcing said pressure piece to engage the contact spring bow-shaped ends to permanently deform said last mentioned ends simultaneously to firmly lock out said tension spring and form a permanent plug-in contact; and

removing said pressure piece.

3,286,327
METHOD OF MANUFACTURING ELECTRICAL RESISTORS

Charles J. Ganci, Bellerose Manor, N.Y., assignor to Ward Leonard Electric Co., Mount Vernon, N.Y., a corporation of New York

Filed July 27, 1962, Ser. No. 212,914
5 Claims. (Cl. 29—155.68)

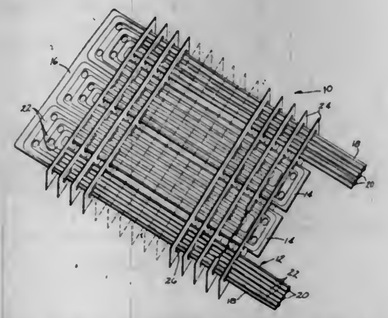


1. A method of manufacture of electrical resistors comprising forming a straight core, fastening a number of terminals at longitudinally predetermined spaced intervals on said core and longitudinally arranged in pairs, said core having a clear portion between pairs, mounting resistive wire elements around said core between respective pairs of terminals and attaching and terminating said elements thereto to form a plurality of longitudinally spaced resistors with said clear portions therebetween, forming a solid insulating protective coating on said core to cover said resistive wire elements and severing said core between the terminals of adjacent resistors to form individually separate resistors.

3,286,328
METHOD OF MAKING HEAT EXCHANGERS

George A. Anderson, Northford, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

Original application June 24, 1963, Ser. No. 290,052. Divided and this application Feb. 13, 1964, Ser. No. 353,013
3 Claims. (Cl. 29—157.3)



1. The method of making a heat exchange device which comprises the steps of:

(A) providing a heat exchange panel having a pattern of internal unjoined portions disposed between solid portions of said panel with the unjoined portions forming opposed walls integrally joined to said solid portions,

(B) forming a plurality of elongated apertures in said panel, each of said apertures extending from one lateral edge of said panel to a point spaced from the opposite edge thereof, each of said apertures lying wholly within one of said solid portions and being of a length to define a plurality of spaced fingers containing said unjoined portions and projecting out from a lateral marginal portion of said panel adjacent said opposite lateral edge,

(C) providing at least one sheet metal fin having a plurality of slots corresponding in spacing and number to the spacing and number of said fingers, each of said slots being at least equal in length to the width of said fingers and greater in width than the unexpanded thickness of said panel,

(D) forming on said fin adjacent the slots thereof means for supporting said fin on said panel,

(E) assembling said fin on said panel in a substantially perpendicular relationship to said panel by inserting the fingers thereof into the corresponding slots of said fin, and

(F) expanding said walls into contact with said means of paragraph (D) by the application of a fluid pressure into said unjoined portions, whereby said walls exert substantially equal and opposite moments on said fin to constrain said fin in said perpendicular relationship.

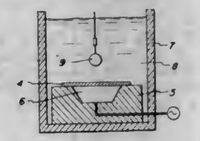
3,286,329
PROCESS FOR THE MANUFACTURE OF A GEAR

Masao Naruse, Musashino-shi, Tokyo, and Takehiko Kumasawa, Kurashiki-shi, Japan; said Kumasawa assignor to Shim-Mitsubishi Jukogyo Kabushiki, Tokyo, Japan

Filed Mar. 6, 1963, Ser. No. 263,273
Claims priority, application Japan, Mar. 12, 1962, 37/9,575
2 Claims. (Cl. 29—159.2)

1. A method of making a gear comprising forming a suitable hard and anti-abasive metal in the shape of a thin flat plate gear blank, explosively deforming said

blank into the final form of an outer cup-shaped shell of a gear, assembling a shaft part in the center of said gear

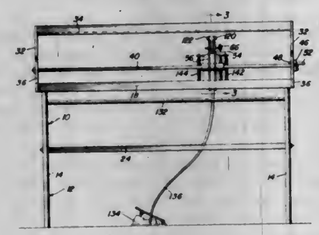


shell, and filling the portion enclosed by said gear shell and said shaft part with a lightweight material.

3,286,330
VALVE SPRING COMPRESSOR

Nick Peters, Box 117, Wolf Point, Mont.

Filed Jan. 11, 1965, Ser. No. 424,681
8 Claims. (Cl. 29—219)

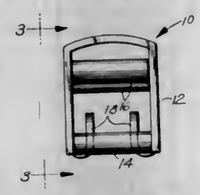


1. A valve spring compressor comprising a stand including means adapted to support a cylinder head assembly including overhead valves in an upright position with the heads of said valves disposed lowermost, a generally horizontal support shaft supported from said stand, a pair of lever members, means pivotally securing said lever members from said shaft for rotation about axes generally paralleling said shaft and including pairs of vertically spaced corresponding opposite end portions spaced laterally outwardly of opposite sides of said shaft, means carried by one pair of corresponding end portions of said lever members adapted to engage a head portion and a valve spring retainer of one of said valves, and force means connected between said lever members for effecting pivotal movement of said lever members relative to said shaft.

3,286,331
RUBBER LINER SPREADER

Ludie J. Wright, 732 W. Fort King St., Ocala, Fla.

Filed Jan. 14, 1964, Ser. No. 337,638
1 Claim. (Cl. 29—235)

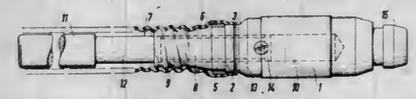


A rubber liner spreader tool comprising of a substantially U-shaped frame providing handle grip means, a plurality of spaced apart rollers carried within said frame, said rollers adapted to secure the rubber liners on a plate glass, a pair of inwardly extending legs adapted to guide said rubber liner on said plate glass, said legs being secured to the bottom portion of said frame, the lower one of said rollers adapted to be engaged with the edge of said plate glass providing guidance and support means for said tool when in use, said lower roller adapted to rotate about its axis when engaged with said glass, at least one upper roller in rolling engagement with the outside surface of said rubber liner when said tool is in use, and said upper roller being adapted to engage said rubber liner to the edge of said plate glass, and a plurality of fasteners adapted to secure said upper and lower rollers within said frame.

3,286,332
TOOL FOR USE IN ASSEMBLING CONDUITS AND END FITTINGS

John William Wilson, Slough, England, assignor to Superflexit Limited, Slough, England

Filed Feb. 23, 1965, Ser. No. 434,712
Claims priority, application Great Britain, July 23, 1964, 29,683/64
4 Claims. (Cl. 29—243.52)



1. A tool to facilitate the insertion of a sleeve into the end of an internally helically convoluted flexible conduit, said tool having a main part comprising an externally threaded extremity for entry into the end of the helically convoluted flexible conduit, the main part including a cylindrical part of diameter slightly less than that of the sleeve which is to be inserted into the conduit, a second cylindrical part adjacent the first cylindrical part and of larger diameter than the first cylindrical part to form an intermediate shoulder against which the sleeve can abut and having a predetermined width, the edge of the second cylindrical part remote from the first cylindrical part providing a guide to enable the unwanted extremity of the conduit to be cut off leaving a determined length of conduit projecting beyond the sleeve for subsequently turning inwardly into the sleeve to form an inwardly turned cuff after the conduit and its contained sleeve have been removed from the tool, the main part including a handle portion which can be grasped by one hand when introducing the main part into the end of the conduit leaving the other hand free to grasp the conduit, whereby when the main part is screwed into the end of the conduit, such end will ride over and encompass the sleeve.

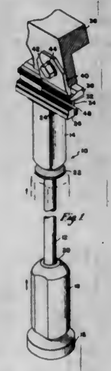
3,286,333
HAND TOOL FOR USE IN CONNECTION WITH THREAD GUIDES

Stanley Dolinsky, 609 Madison Ave., Reading, Pa.

Continuation of application Ser. No. 86,073, Jan. 31, 1961. This application Mar. 31, 1964, Ser. No. 356,696
6 Claims. (Cl. 29—254)

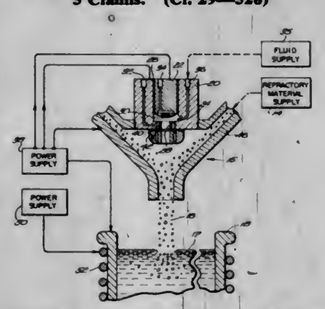
1. A hand tool for attaching tips to and removing the tips from complementary spaced apart shanks of knitting elements arranged in a row on a warp knitting machine, comprising a body having a base and a wall for supporting and positioning an assembly of spaced apart tips arranged in a row beneath the shanks, said body having a comb above said base at one side thereof and extending inwardly at least partially across said base and being provided with teeth for insertion between the shanks above the point at which the tips are attached to the shanks, said teeth being positioned to vertically align the assembly of tips lengthwise with respect to the shanks, and means connected to said body for applying a force thereto for effecting attach-

ment of the row of tips to the row of shanks, said teeth upon movement downwardly along the shanks while in-



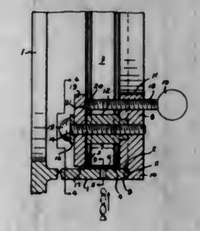
serted therebetween serving to remove a row of tips from a row of shanks.

3,286,334
PRODUCTION OF DISPERSION HARDENED MATERIALS
Donald A. Hay, Wellesley, Mass., assignor to Contemporary Research, Inc., Waltham, Mass., a corporation of Delaware
Filed July 16, 1965, Ser. No. 472,627
5 Claims. (Cl. 29—528)



1. A process for interspersing a relatively hard particulate material in a relatively soft metal, said process comprising the steps of liquefying the entire mass of said soft metal to a melt while retaining it against outward flow by the walls of a container, directing said hard particulate material in a gaseous stream toward the upper surface of said melt with sufficient speed relative to said melt to penetrate into said melt notwithstanding counter forces established by the surface tension of said melt, dispersing said particulate material substantially uniformly throughout said melt, said metal being selected from the class consisting of copper, nickel, silver, gold, aluminum, platinum and palladium, said particulate material being composed of a refractory compound selected from the class consisting of oxides, carbides, borides, nitrides, selenides, silicides and phosphides, said particulate material ranging substantially between 0.01 and 50 microns in extent and ranging between 0.1 and 25% by total weight of the final product, said metal and said particulate material being substantially mutually insoluble, the temperature of said gaseous stream being at least as great as the melting point of said melt and the velocity of said stream being at least 1000 centimeters per second, solidifying said melt and working it by compression in at least one dimension in order to impart increased strength thereto.

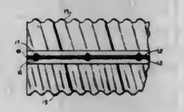
3,286,335
METHOD FOR REPLACING A SEAL IN A SUPPORT HOUSING
Dante C. Di Pietra, 1108 Elwood St., Rome, N.Y.
Filed Mar. 23, 1964, Ser. No. 354,185
1 Claim. (Cl. 29—401)



A method for replacing circular rear shaft bearing gas seals in rear shaft bearing support housings in gas turbine engines having said seals riveted radially through the bases thereof and said housings in axially spaced relation to the outer ends of the housings which comprises, drilling the rivets radially from the center of the housing to remove the rivet heads, driving the rivets out of the seal and the housing from the inside of the seal to free seal in said housing, withdrawing said seal axially out of said housing through said outer end, inserting an undrilled similar replacement seal in said outer end of said housing perpendicular to the axis of the housing, moving said seal a predetermined distance into said housing while securely retaining said seal in said perpendicular relation to the axis of said housing to locate and support said replacement seal in said housing an axial distance from the outer end of the housing a distance equal to the distance from the outer end of the housing equal to the distance from said end to a transverse plane through the centers of the rivet holes for the rivets for securing the seal in the housing less one-half the distance between the opposite side faces of the seal to dispose a median plane through the base of the seal coincident with a plane through the centers of the rivet holes aforesaid in the housing, drilling radially inward through the rivet holes in the housing to form at least three rivet holes through the base of the seal in three appreciably circumferentially spaced radial directions to form rivet receiving holes through the center of the base of the seal aligned with the rivet holes in the housing, inserting bolt means through said holes and tightening the same to securely fix said seal in said housing, drilling the remainder of the rivet holes in the seal through the rivet holes in the housing while said seal is supported in position in said housing by said bolt means, inserting final rivets for the seal through the drilled holes, from the inside and spreading the outer ends to clinch the same and securely fix said seal in said housing, removing said bolt means and inserting the remaining rivets in place thereof, spreading the outer ends thereof to clinch the same and secure the replacement in the housing with the rivets therefor passing outwardly through the base of the seal midway between the front and faces thereof.

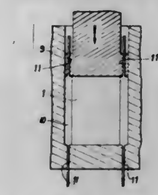
3,286,336
METHOD OF MAKING NESTABLE PIPE
Jack P. Lombardi, Duguid Road, Manlius, N.Y.
Filed Mar. 10, 1965, Ser. No. 438,595
4 Claims. (Cl. 29—411)

1. A method of manufacturing nestable pipe sections from finished pipe, comprising: as a first step, securing a pair of angle irons longitudinally of the pipe on each of two diametrically opposite sides of the pipe, one flange of each angle iron of each pair projecting substantially radially from the pipe and the projecting flanges of each pair being spaced apart a small distance; and then, as



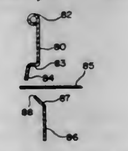
a second step, sawing the pipe apart longitudinally between each pair of projecting flanges; the projecting flanges of each pair of angle irons being spaced apart in the first step a distance substantially equal to the thickness of the kerf made by the saw to be used in the second step.

3,286,337
PROCESSES FOR SHAPING METALS UNDER HIGH HYDROSTATIC PRESSURE
Charles Sauve, Versailles, France, assignor to Commissariat à l'Energie Atomique
Filed Aug. 10, 1964, Ser. No. 388,501
Claims priority, application France, Aug. 20, 1963, 945,150
12 Claims. (Cl. 29—423)



1. A process for shaping difficult to deform ductile metals under high hydrostatic pressure, comprising: confining a first ductile metal to be shaped in a first zone in a rigid container; confining a second ductile metal in a second zone in said rigid container in force-transmitting engagement with said first ductile metal; said second zone being configured to conform to the desired final shape of said first ductile metal, applying a pressure to said first ductile metal sufficiently high to force said first ductile metal to flow out of said first zone and into said second zone and to simultaneously force said second ductile metal to flow out of said second zone through at least one outlet orifice of predetermined size communicating with said second zone, said outlet orifice being of such a size as to require the application of a predetermined pressure to said second ductile metal by said first ductile metal to force said second ductile metal to flow therethrough.

3,286,338
METHOD FOR TENSIONING SIEVES
Nicholas J. Bohr, 20451 Tracy Ave., Euclid, Ohio
Filed Feb. 4, 1964, Ser. No. 342,408
3 Claims. (Cl. 29—446)

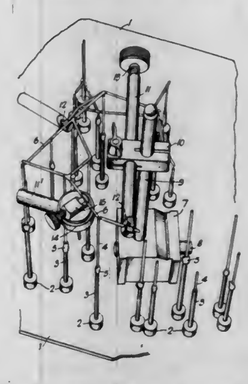


1. A method of tensioning presoldered woven wire cloth sieves comprising:

providing a preassembled sieve structure having an upper annular frame with outwardly and downwardly turned flange portions on its lower margin and a concentric lower annular skirt having an outwardly and upwardly angled flange portion on its upper margin nested in the angle formed by the flange portions of said upper frame with an annular piece of wire cloth held therebetween by means of filleted solder,

simultaneously exerting a downwardly and radially directed inward force about substantially all of the periphery of the flange of the upper frame uniformly to deform said angled flange on said lower skirt downwardly and radially outwardly and said turned flange on said upper annular frame downwardly and radially inwardly about the edge of said radially outwardly deformed flange on said skirt to thereby increase the tension on said cloth.

3,286,339
CONSTRUCTION OF MODELS REPRESENTING MOLECULAR AND OTHER STRUCTURES
Olga Kennard, Cambridge, and Charles Frank Gamblin Doré, Harrow, Middlesex, England, assignors to National Research Development Corporation, London, England, a corporation of Great Britain
Filed July 18, 1963, Ser. No. 295,941
Claims priority, application Great Britain, July 30, 1962, 29,263/62
10 Claims. (Cl. 29—466)

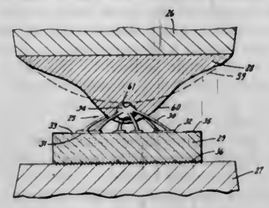


4. A method of constructing a molecular model which comprises disposing on a flat horizontal datum plane base a two-co-ordinate projection of the atomic centres of the molecule, mounting at the projection of each atomic centre a member of length equivalent to the third co-ordinate of the atom thereby locating the positions of the atomic centres in space with respect to the said base, clamping framework elements to extend between adjacent atomic centers to represent valence bonds, magnetically securing the clamping means to the base and joining adjacent valence bond elements end to end.

3,286,340
FABRICATION OF SEMICONDUCTOR UNITS
William R. Kritzler, Newton Center, Mass., and Victor C. Sirvydas, Hatboro, Pa., assignors to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Feb. 28, 1964, Ser. No. 348,071
7 Claims. (Cl. 29—471.1)

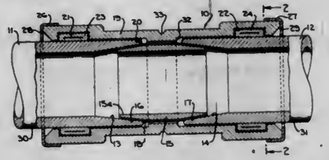
1. In the fabrication of a semiconductor: providing a surface region of the semiconductor with a group of spaced upstanding thin metal wires each having a bead of the same metal at a free end of the wire, a predetermined distance from the surface; forming a cluster of said beads,

one in contact with another; melting the cluster and coalescing it into a metal ball; thereby melting adjacent



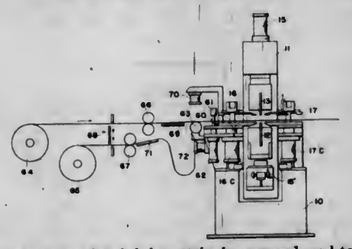
portions of the wires; and merging the melting portions into said ball.

3,286,341
METHOD OF MAKING A TUBULAR JOINT
Leonidas C. Miller, % L. C. Miller Co., 717 Monterey Pass Road, Monterey Park, Calif.
Continuation of applications Ser. No. 248,727, Dec. 31, 1962, and Ser. No. 185,252, Apr. 5, 1962. This application May 26, 1965, Ser. No. 458,976
7 Claims. (Cl. 29—471.1)



3. The process of making a joint connecting a metal tube to a metal shell, comprising: forming a flaring internal surface on an end portion of the tube, positioning a metal ferrule having a central bore and having an end section externally tapered and coated with a material selected from the group consisting of polymeric material, glass and ceramic, so that the tapered and coated section of the ferrule extends into and seats within the flaring surface of the tube, encircling the ferrule and end portion of the tube with a metal shell, positioning a body of solder adjacent the shell and the tube, whereby an assembly is formed, and heating the assembly to a temperature sufficient to melt the solder and to cause the material to form a bond, whereby upon cooling of the assembly a joint of said material is formed between the ferrule and said tube and a solder joint is formed between the tube and the shell.

3,286,342
METHOD AND APPARATUS FOR JOINING STRIP
Melvin M. Seeloff and Joseph H. Cooper, Warren, Ohio, assignors to The Taylor-Winfield Corporation, Warren, Ohio, a corporation of Ohio
Filed Feb. 21, 1963, Ser. No. 260,104
16 Claims. (Cl. 29—482)



6. In apparatus for joining strip in general end-to-end relation and having a pair of longitudinally spaced entry and exit strip clamps as well as means movable transversely of the strip held in said clamps to join said strip into a substantially continuous length, the improvement comprising a strip shear positioned at the entrance end of said entry clamp in a longitudinal direction to crop off the tail end of a strip length extending through said clamps and beyond said exit clamp, and means for retracting the tail end of said strip to thereby facilitate the longitudinal entry into said clamps of the leading end portion of a second strip length extending at the entrance end of said entry clamp with said leading end portion overlying the first mentioned strip length.

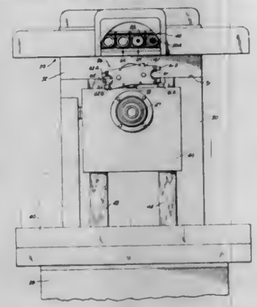
3,286,343
METHOD OF PREPARATION OF A COMPOSITE GUIDE TUBE FOR NUCLEAR REACTOR, AND DEVICES FOR THE PRACTICAL APPLICATION OF SAME
Lucien Alfille, Orsay, André Barriere, Paris, Guy Farges, Antony, Georges Rodier, Levallois, and Michel Rozenholc, Montrouge, France, assignor to Commissariat a l'Energie Atomique, Paris, France
Filed Jan. 23, 1963, Ser. No. 253,348
Claims priority, application France, Jan. 31, 1962, 886,559
4 Claims. (Cl. 29—528)



1. Method of preparation of a composite guide tube which is designed for nuclear reactors of the cool pressure tube type and through which a coolant circulates, in which a heat-insulating refractory powder is placed on a rigid inner tube, the said powder is surrounded by a flexible envelope tube and then compressed to a predetermined value, the composite guide tube assembly which is thus obtained is subjected to at least one cycle of internal heating at a temperature which is higher than the operating temperature of the reactor and external cooling especially by means of a circulation of water, the said cycle producing diametral and axial deformations which introduce a clearance between the said powder and the said inner tube, the extremities of the said guide tube being then shaped especially by cutting-off and facing on the lathe.

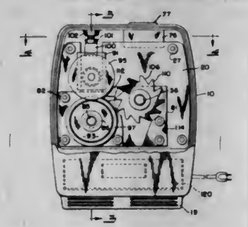
3,286,344
MACHINE TOOL WITH A TOOL CHANGER
Wallace E. Brainard and Erich F. Drechsler, Milwaukee, Wis., assignors to Kearney & Trecker Corporation, West Allis, Wis., a corporation of Wisconsin
Filed Mar. 1, 1965, Ser. No. 435,978
20 Claims. (Cl. 29—568)

1. In a machine tool having a frame;
a rotatable tool receiving spindle supported by said frame;
a tool storage magazine supported by said frame and having a plurality of tool storage positions;
a plurality of tools stored in said storage positions of said magazine;
a tool ready station and a tool restock station, said stations being spaced apart a distance equal to the spacing between the axes of two adjacent storage positions of said magazine, so that a storage position will be located at the ready station and an adjacent storage position will be located at the restock station;
a tool transfer member supported by said frame for rotational and axial movement on a common axis that is disposed between said spindle and stations, said tool transfer member having a pair of tool engaging sockets that are displaced relative to each other 180°±one-half of the angle from the axis about which the transfer member is movable subtended by two adjacent storage positions; and,
power means connected to operate said transfer member in a cycle of operation to simultaneously engage



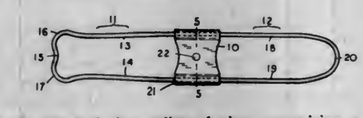
a tool in a storage position located at the ready station and a tool in said spindle and to effect a simultaneous transfer of the tools so engaged to locate the tool from the storage position at the ready station in said spindle and move the tool from said spindle into the storage position at said restock station.

3,286,345
COMBINATION TOOL FOR REMOVING A CAN LID AND CUTTING THE REMAINDER OF THE CAN INTO SMALL PIECES
Rollo Van Wagner, Rte. 1, New Haven, Ohio
Filed Nov. 1, 1965, Ser. No. 505,836
14 Claims. (Cl. 30—4)



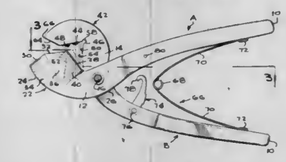
1. An electrically operated can opener and cutting device, comprising a housing, motor means mounted in said housing, first means driven by said motor means for removing the top of such can from the body thereof, and second means driven by said motor means for slitting the body of said can to form a continuous, relatively narrow strip and to sever said strip into a plurality of relatively small pieces.

3,286,346
DEVICE FOR SCORING AND PEELING CITRUS FRUIT
Peter J. Perry, 1900 18th Ave. S., Seattle, Wash. 98144
Filed July 14, 1965, Ser. No. 471,983
3 Claims. (Cl. 30—24)



1. A citrus fruit peeling device comprising a frame member; a U-shaped peeling loop of wire protruding from said frame member, said loop having a closed outer end and having its two inner ends rigidly connected with said frame member, said loop having a curvature away from the plane of the frame in the vicinity of its outer end portion, the curvature conforming generally to that of a citrus fruit, the closed outer end portion of said U-shaped peeling loop comprising an inwardly reentrant medial portion connected by two outwardly convex corner portions with the side members of the loop, whereby forces tending to deflect said peeling loop sidewise when it is thrust between the peeling and edible portion of a fruit are minimized; and means rigid with said frame member and protruding from said frame member in a generally opposite direction from said peeling loop, said means being capable of serving as a handle whereby said peeling loop can be thrust between the peeling and the edible portion of a citrus fruit to loosen the peeling from the edible portion of the fruit.

3,286,347
CORNER BEAD SHEARS
Bert L. Potter, 5211 Massachusetts Ave., Indianapolis, Ind., and Stanford E. Warrenburg, 150 S. John St., Bloomfield, Ind.
Filed June 12, 1964, Ser. No. 374,595
1 Claim. (Cl. 30—229)



A shears for a corner bead having a tubular member and angularly divergent flanges, said shears comprising first and second crossed and pivoted handles, a first jaw on the forward end of said first handle, said first jaw having multiple shearing edges disposed at different angles relative to each other, each of said shearing edges being straight; a second jaw on the forward end of said second handle, said second jaw being formed with a notch shaped to conformably-receive a corner bead, said second jaw having a single shearing edge located forwardly of the notch, said second jaw shearing edge being substantially straight and adapted to come into shearing relationship with at least one of said multiple shearing edges as the handles are closed for cutting a corner bead present in the notch, the length of the single shearing edge of the second jaw being substantially shorter than the combined lengths of the shearing edges of the first jaw, said notch being formed at its apex with an arcuate recess adapted to be frictionally engaged by the tubular member of a corner bead.

3,286,348
CELLULAR PLASTIC SKIVER
Peter William Kunst, Utica, Mich., assignor to Fruehauf Corporation, Detroit, Mich., a corporation of Michigan
Filed Mar. 10, 1965, Ser. No. 438,689
1 Claim. (Cl. 30—289)

A tool for skiving the surface of a rigid cellular plastic structure comprising
a U-shaped frame defined by a bight portion and spaced leg portions,
a pair of aligned bearings on the ends of the leg portions of said frame, respectively,
an elongated relatively thin blade having parallel sides twisted so as to define helical edges on opposite sides of the longitudinal axis thereof, said blade being supported by said bearings for rotation about its own longitudinal axis, said bearings extending radially

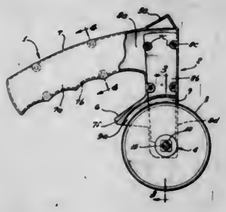
outwardly from the axis of rotation of said blade a distance substantially equal to the radius of said blade whereby said bearings are engageable with



said plastic structure to control the depth of cut thereinto, and

motor means on said frame for rotating said blade.

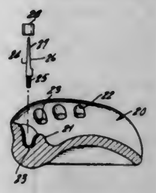
3,286,349
PASTRY CUTTING APPARATUS
George G. Larson, 8424 Rindge Ave., Playa Del Rey, Calif.
Filed June 12, 1964, Ser. No. 374,571
4 Claims. (Cl. 30—292)



1. A rotary disc cutter apparatus comprising: a disc having an outer marginal cutting edge, a support member, means rotatably mounting said disc on said support member with the latter projecting radially from said disc and beyond the periphery of said disc, a handle disposed entirely outwardly of the periphery of said disc and secured to the outer portion of said support member at a location beyond the periphery of said disc and projecting from said outer portion of said support member substantially at right angles to said support member, and a projection at the upper juncture of said handle and the outer portion of said support member in alignment with said support member providing a thumb piece engageable by the thumb of a user, whereby thumb pressure on said thumb piece passes substantially radially through said support member and through the axis of said disc.

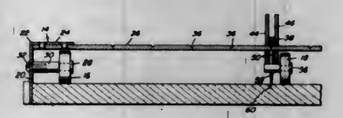
3,286,350
DOWEL AND CLIP ASSEMBLY AND ITS USE IN THE MANUFACTURE OF DENTAL RESTORATIONS
Abraham J. Cooper, 1 De Kalb Ave., Brooklyn, N.Y.
Filed Aug. 26, 1963, Ser. No. 304,389
11 Claims. (Cl. 32—40)

1. A dowel and clip assembly for supporting and positioning within a model, artificial teeth dies prepared in the manufacture of dental restorations comprising an elongated dowel member of substantially conical shape, an elongated flattened portion on the dowel, a tooth die receiving portion on the thick end of the dowel, a spring-like clip member receiving the conical portion of the



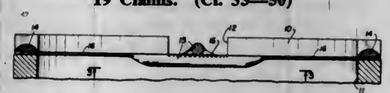
dowel, and a flattened bearing surface within the clip to support and position the flattened portion of the dowel.

3,286,351
SHEET MATERIAL SCRIBER
Roy McAlister, Tremonton, Utah (Soda Springs, Idaho)
Filed Feb. 8, 1965, Ser. No. 430,856
6 Claims. (Cl. 33—42)



1. A Sheetrock scriber comprising a scriber carriage, said carriage comprising an elongate angle member L-shaped in cross section, a plurality of tandem spaced rollers journaled on one leg of said elongate angle member, the bottom of said rollers being substantially above the bottom of said leg, said leg providing a scriber guide for cooperating with the edge of a sheet of Sheetrock to be scribed, a ruler and a scriber head carrying arm fixedly secured to the other leg of said elongate angle member and extending generally at right angles thereto, a scriber head adjustably secured along the length of said ruler and scriber head carrying arm, and a roller journaled on said scriber head in parallelism with said angle member rollers.

3,286,352
RETICLE FOR A SIGHTING INSTRUMENT
George K. Schray, Portland, Oreg., assignor to Leupold & Stevens Instruments, Inc., Portland, Oreg., a corporation of Oregon
Filed Apr. 20, 1964, Ser. No. 364,880
19 Claims. (Cl. 33—50)



6. In a reticle,

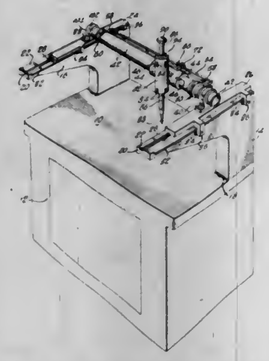
filament-supporting means having an opening surrounding a line of sight and extending in a predetermined direction parallel to said line of sight,

and a filament extending across and having a ribbon-like portion having a predetermined width and lying in a plane transverse to said direction and visible in the opening,

the filament also having a portion also visible in the opening and connected directly to the ribbon-like portion and having no transverse dimension greater than a small fraction of said predetermined width,

the filament being substantially uniform in transverse cross-sectional area throughout the portion thereof visible in the opening.

3,286,353
INSPECTION MACHINE
John T. Potter, Locust Valley, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Filed Aug. 12, 1963, Ser. No. 301,491
7 Claims. (Cl. 33—174)



1. Apparatus for mounting a sensor for movement along coordinate axes over a planar surface having a front edge, a back edge and two side edges, comprising a first and second rail assembly positioned in parallel relationship on each side edge of said planar surface adjacent the back edge and extending upwardly above said planar surface a predetermined distance and including a portion extending forwardly in a cantilever manner toward a line over said front edge of said planar surface, each of said rail assemblies having a guide rack and a parallel flange on said cantilever portion, a first and second end truck movably mounted on said respective first and second tracks, each of said end trucks having a clamp arm including a roller guide to engage the respective flange to hold said truck to said rail, a first clamp assembly mounted on said first truck, a second clamp assembly mounted on said second truck, a tubular shaft extending between said trucks with the ends of said shaft being rigidly clamped by said first and second clamp assemblies respectively, a sleeve peripherally surrounding said shaft, a roller bearing set at each end of said sleeve, each roller bearing set comprising three roller bearings equally spaced around the periphery of said sleeve, each of said roller bearings being rotatably mounted in said sleeve with the periphery of said bearing in rolling engagement with the surface of said shaft, whereby said sleeve is movable along said shaft but is restrainedly mounted against deflection forces, a beam fixedly mounted in parallel relationship to said shaft, said sleeve having a U-shaped bracket fixedly mounted thereon, the arms of said U-shaped bracket slidably engaging each side of said beam to restrain rotation of said sleeve about the shaft, and means for mounting said sensor on said sleeve.

3,286,354
GAGE PLATE
Carl W. Richter, Detroit, Mich. (11450 Stephens Road, Warren, Mich.)
Filed Aug. 25, 1964, Ser. No. 391,912
8 Claims. (Cl. 33—174)

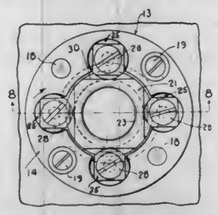
1. A gage plate comprising

a base having a gaging surface,

a plurality of spaced openings in said gaging surface of said base,

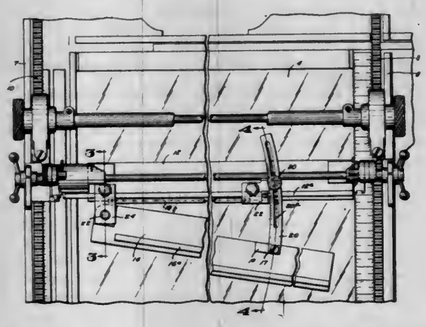
a bushing in each said opening having accurately formed locating opening therein,

and means for adjusting the position of said bushing in its respective opening comprising a plurality of eccentric cams rotatably engaging the periphery



of said bushing, said bushing having flat portions thereon engaged by said cams, and means for locking each said cam in rotatably adjusted position.

3,286,355
STRETCH COMPENSATING DEVICE FOR LINE-UP TABLE AND METHOD OF COMPENSATING
George H. Charnock, Jr., Newton Center, Mass., assignor to American Photocopy Equipment Company, Evanston, Ill., a corporation of Illinois
Filed Mar. 24, 1964, Ser. No. 354,237
4 Claims. (Cl. 33—184.5)

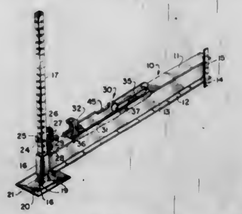


1. A device of the class described comprising a straight edge mechanism, said straight edge mechanism including ruling edge means angularly supported in the straight edge mechanism for producing a series of lines in predetermined spaced relationship and means for varying the position of angularlity of the ruling edge means, said means for adjusting the ruling edge means consisting of a slotted arm having a scale inscribed thereon, said scale presenting a series of progressively decreasing divisions which indicate a range of changes in dimension of the spacing of the ruled lines occurring in accordance with variation in the angular settings of the ruling edge means.

3,286,356
GRADE MEASURING DEVICE
Carl R. Johnson, 19 Northbrook Drive, Mount Vernon, Ill.
Filed Nov. 21, 1963, Ser. No. 325,328
2 Claims. (Cl. 33—214)

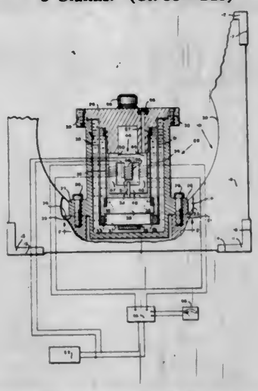
1. A grade deviation measuring device comprising an elongated body, said body having a top and a bottom surface, a sleeve mounted on one end of said body said sleeve having a longitudinal axis generally perpendicular to the plane of said top surface, a scale slidably carried by said sleeve and being freely movable therethrough, a shoe pivotally attached to the lower end of said scale and adapted to engage the material of the grade, an indicator plate adjustably mounted on said body adjustable in the direc-

tion of said sleeve axis, and having a portion disposed about said scale, means for securing said indicator plate in fixed adjusted position, an adjustable level mounted on said body and including a fixed member and an adjustable member, means for pivoting said adjustable member relative to said fixed member in a plane perpendicular to



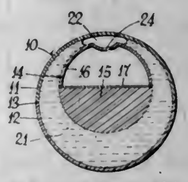
said top surface and extending lengthwise of said top surface and for fixing said adjustable member in adjusted position, and a level indicator carried by said adjustable member, said adjustable level enabling the angle of inclination of said body member to be determined and said scale member measuring deviations of the material of the grade from said angle of inclination.

3,286,357
ELECTRONIC LEVEL
Eugene V. Grumman, Fairfield, Conn., assignor to The Bullard Company, Bridgeport, Conn., a corporation of Connecticut
Filed Oct. 18, 1963, Ser. No. 317,378
3 Claims. (Cl. 33—215)



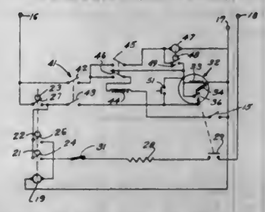
1. An electronic leveling instrument comprising a frame having a longitudinal axis and a reference surface adapted to be positioned against a surface the deviation of which from a datum plane is desired to be measured; a housing supported in said frame; a pendulum disposed in said housing; means for supporting said pendulum in said housing and permitting movement of said pendulum in the direction of said longitudinal axis; a differential impedance device mounted in said housing adjacent to, and in cooperative relation with, said pendulum, said device being adapted to produce an output signal in response to longitudinal movements of said pendulum on either side of a null position corresponding to the true vertical position of the pendulum; and means connected to said pendulum for varying the signal produced by said impedance device upon longitudinal movement of said pendulum from said true vertical position, said pendulum supporting means comprising a pair of flat, flexible, V-shaped members attached to an upper portion of said housing and depending therefrom in longitudinally spaced relation, said members having angularly intersecting legs of equal length with the spaced ends of said legs disposed upwardly and attached to said housing, said legs having an intersecting portion adjacent said pendulum and attached thereto along a longitudinal axis passing substantially through the center of gravity of said pendulum, whereby transverse tilting of said frame at angles less than one-half the included angle of said angularly intersecting legs has minimal effect on the longitudinal movement of said pendulum and the accuracy of said leveling instrument.

3,286,358
ENCASED FLOAT
Jordan P. Smokowski, 875 Fillmore Ave., Buffalo, N.Y.
Filed Mar. 19, 1962, Ser. No. 182,993
7 Claims. (Cl. 33—223)



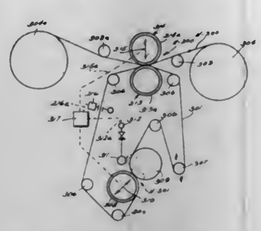
1. A directional compass comprising an outer transparent hollow spherical casing and an inner spherical float member of substantially smaller diameter than the interior of said casing floating in a liquid medium in said casing, the center of gravity of said float member being below its geometrical center whereby the same floats in a predetermined vertical position, and magnetic means associated with said float member biasing the same about a vertical axis to indicate geographic directions, the liquid medium substantially filling the space between the casing and the float member but leaving a central air bubble between the upper generally spherical surface of the float member and the upper interior surface of the casing, said air bubble comprising a globule of air completely enclosed in a continuous imperforate liquid film to form a resiliently deformable oblate spheroid serving as a fluid spacer to maintain such surfaces out of contact and center the upper end of the float member in the casing.

3,286,359
ANTI-WRINKLE CYCLE FOR DRYERS
Carrol A. Orr, Stevensville, and Samuel J. Miller, Baroda, Mich., assignors to Whirlpool Corporation, Benton Harbor, Mich., a corporation of Delaware
Filed June 8, 1964, Ser. No. 373,169
14 Claims. (Cl. 34—12)



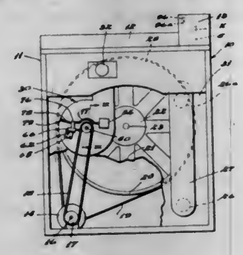
1. The method of inhibiting the setting of wrinkles in fabrics during drying which comprises continuously tumbling said fabric for a predetermined time interval sufficient to dry the fabrics substantially, terminating the tumbling at the completion of said time interval, and thereafter intermittently tumbling said fabrics for short periods of time at intervals to thereby prevent the formation of deep set wrinkles in said fabrics.

3,286,360
DIVIDED TEMPERATURE CONTROLLED PRESS
Charles W. E. Walker, Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Oct. 16, 1963, Ser. No. 316,646
2 Claims. (Cl. 34—23)



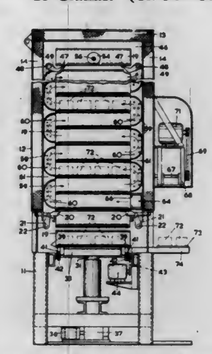
1. A method of reducing the moisture in a traveling paper web which comprises passing the web through a drying nip in contact with a traveling felt, and contacting the web with a smooth heated surface, thereby contributing heat energy to the web ahead of the nip to bring the web to a temperature of substantially 212° F. to prevent the formation of a partial vacuum in the web at the off-running side of the nip, thereby maintaining a temperature differential between the web and felt of at least about 50° F.

3,286,361
CLOTHES DRYER AND CONTROL THEREFOR
Clifton A. Cobb and William F. Gourdeau, St. Joseph, Mich., and James T. Williams, Berwyn, Ill., assignors to Whirlpool Corporation, St. Joseph, Mich., a corporation of Delaware
Filed Nov. 12, 1963, Ser. No. 322,641
9 Claims. (Cl. 34—31)



1. The method of drying which includes the steps of
(a) driving a blower at a first speed to drive a stream of air through a treatment zone at a corresponding volumetric flow rate for effecting a drying action on materials to be dried,
(b) simultaneously adding thermal energy to the air stream ahead of the treatment zone to enhance the drying characteristics of the air stream,
(c) continuing steps (a) and (b) until the temperature of the air stream leaving the treatment zone attains a predetermined level,
(d) thereafter driving the blower at a decreased second speed to drive the air stream through the treatment zone at a correspondingly decreased volumetric flow rate,
(e) subsequent to step (d) stopping the addition of thermal energy to the air stream,
(f) and continuing steps (d) and (e) for a pre-timed cool-down period.

3,286,362
HANDLING OF GOODS DURING PROCESSING OR TREATMENT
William Noel Bolt, Holly House Farm, Great Sankey, Warrington, England
Filed Nov. 21, 1963, Ser. No. 325,419
Claims priority, application Great Britain, Nov. 27, 1962, 44,714/62
13 Claims. (Cl. 34—33)

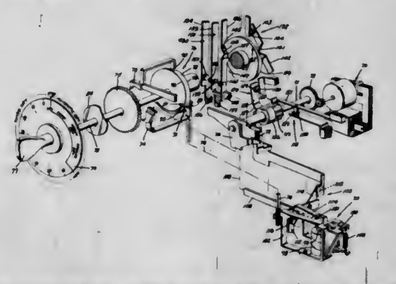


1. Method of processing goods, comprising arranging the goods on supporting trays open at their ends and disposed one above the other in two juxtaposed columns in a processing chamber, repeatedly indexing the columns lengthwise a distance substantially equal to the pitch of the trays in the columns, one column being indexed upwardly and the other downwardly, continuously forcing a processing medium into the open end of the lowermost tray in the upwardly indexed column, guiding the processing medium issuing from the opposite end of that tray into the adjacent open end of the tray next above in that column, repeating the guiding action at each end of each successive tray in the column so that, as the column is indexed, the processing medium travels alternately along the successive trays in opposite directions, guiding the processing medium issuing from the uppermost tray in the upwardly indexed column into an open end of the uppermost tray in the downwardly indexed column, guiding the procesing medium issuing from the opposite end of that tray into the adjacent open end of the tray next below in that column, repeating the guiding action at each end of each successive tray in that column so that, as the column is indexed, the processing medium travels along the successive trays in opposite directions, and, after such indexing operation, transferring the uppermost tray in the upwardly indexed column to the top of the downwardly indexed column, transferring a charge of processed goods from the lower end of the downwardly indexed column to a delivery station and passing a charge of unprocessed goods into the lower end of the upwardly indexed column.

3,286,363
FABRIC DRYER CONTROLS
Charles Grimshaw, Morrison, Ill., assignor to General Electric Company, a corporation of New York
Filed Mar. 24, 1964, Ser. No. 354,372
5 Claims. (Cl. 34—45)

1. A control for use in conjunction with a fabric dryer having a chamber for receiving fabrics to be dried, means for tumbling the fabrics, means for drying the fabrics, and resistance probing elements positioned in said chamber so as to be bridged by tumbling fabrics, said fabrics bridging said elements presenting a resistance varying with the amount of moisture in said fabrics, said control comprising: a control member including ratchet means manually settable to an operating position and having an off

position for terminating the operation of the dryer; a timer motor; switch means actuated by said control member to cause the tumbling means, drying means and timer motor to be energized when the control member is set to an operating position and to be turned off when the control member is in the off position; pawl means engageable with said ratchet means for moving said control member step by step to the off position from a set operating position; said timer motor coupled with and driving said pawl means; a capacitor connected in circuit with the resistance probing elements and a direct current source so as to be charged from said source; control means responsive to the charge on said capacitor for providing a preselected runout period of operation, circuit means including a look switch connecting said capacitor, current source, and resistance probing elements in circuit with said switch and control means; and means actuated by said timer motor for closing and opening said look switch intermittently to provide a



look interval during which said control means is coupled with said capacitor, source, and probing elements, and a no-look interval during which said control means is uncoupled from said capacitor, source, and probing elements; said capacitor being charged during a no-look interval in accordance with the magnitude of the resistance presented by fabrics bridging the probing elements and said capacitor being discharged during a look interval to provide a signal indicative of the resistance presented by the fabrics bridging said elements during the preceding no-look interval; said control means initiating the runout period by causing said pawl means to engage said ratchet means when the energy discharged from said capacitor to said control means during the look interval exceeds a predetermined value, and said control means preventing said runout period from starting when said energy supplied to the control means by the discharge of said capacitor is below said predetermined value.

3,286,364
DRYER WITH ANTI-WRINKLE CONTROL

Harold E. Morrison, Benton Harbor, and Otto F. Krauss, St. Joseph, Mich., assignors to Whirlpool Corporation, Benton Harbor, Mich., a corporation of Delaware

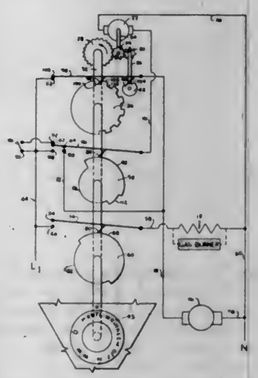
Filed June 15, 1964, Ser. No. 374,891
7 Claims. (Cl. 34—45)

1. In a laundry dryer having a fabric tumbling drum, air translation means for moving air through said drum, air heating means for heating air entering said drum, and drive means for driving said drum and said air translation means:

a sequential controller for controlling said dryer through a timed fabric treatment cycle of operation comprising a drying portion and an anti-wrinkle portion;

circuit means including said sequential controller, said air heating means, and said drive means;

first switch means in said circuit means, controlled by said sequential controller for continuously actuating said drive means during said drying portion of said timed fabric treatment cycle; and second switch means in said circuit means, controlled by said sequential controller for intermittently energizing said drive means during said anti-wrinkle portion of said

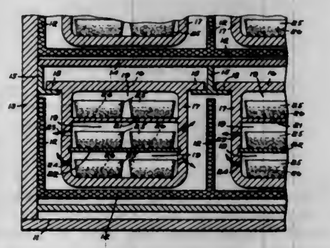


timed fabric treatment cycle, whereby following said drying portion of said timed fabric treatment cycle said drive means drives said drum to intermittently tumble said fabric until the completion of said timed fabric treatment cycle.

3,286,365
FREEZE DRYING APPARATUS

Ulrich Hackenberg, Bensberg-Refrath, Germany, assignor to Leybold Anlagen Holding A.G., Zug, Switzerland

Filed Apr. 3, 1964, Ser. No. 357,322
Claims priority, application Germany, Apr. 6, 1963, L 44,578
10 Claims. (Cl. 34—92)

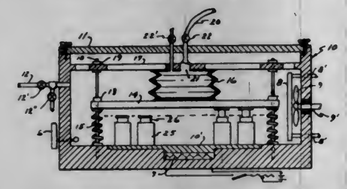


1. An apparatus for the freeze drying of moisture containing material comprising a vacuum chamber, heating means positioned within said vacuum chamber, housing means positioned within said vacuum chamber adjacent said heating means, a plurality of means adapted to be filled with a material to be freeze dried, said container means being removably positioned within said housing means and having an opening to permit the escape of water vapor therefrom, said housing adapted to completely shield the material contained in said container means from direct heat radiation from said heating means, and wherein said housing means contains an opening which permits escape of water vapor from the material contained in said container means.

3,286,366
APPARATUS FOR FREEZE DRYING PRODUCTS IN SMALL CONTAINERS

Monroe Seligman, 115 The Circle, Passaic, N.J.

Filed Oct. 26, 1964, Ser. No. 406,330
2 Claims. (Cl. 34—92)

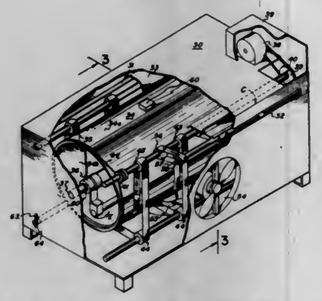


1. In a lyophilizing apparatus, in combination an enclosed box-like container utilized as a freeze dryer, said box-like container having a flat base or floor to receive a plurality of bottle shaped containers and their contents in nested abutting relationship in which all containers are identical in size and in which each container is provided with an open neck into which an elongated stopper is inserted, said box-like container provided with a cover to seal said freeze dryer, a movable platen within said freeze dryer and mounted above said floor and parallel thereto, a cooling coil and condenser within said freeze dryer, said cooling coil and condenser connected to a refrigerant system, a fan mounted within said freeze dryer to move the internal atmosphere, a heating element mounted within said freeze dryer and in the floor of said container to provide heat by conduction to said bottle shaped containers when desired, said movable platen resiliently mounted and provided with stops to limit its upward movement, means to partially evacuate said freeze dryer and partially pop said stoppers from said bottle shaped containers, means to freeze dry the contents of said bottle shaped containers, and means to lower said platen and return all stoppers to a sealed position in each container.

3,286,367
DRYER FOR PHOTOGRAPHIC TYPE EMULSION COATED SHEETS

Henry N. Fairbanks and Daniel H. Robbins, Rochester, N.Y., assignors, by mesne assignments, to Itek Corporation, Lexington, Mass., a corporation of Delaware

Filed Oct. 4, 1963, Ser. No. 313,880
7 Claims. (Cl. 34—123)



1. In a dryer for drying sheet material:

(a) a curved platen having a sheet contact surface associated therewith;

(b) a plurality of spaced flat sheet transport belts;

(c) means for causing said flat belts to contact the sheet contact surface associated with said curved platen, the ratio of the sum of the widths of said flat belts over the width of said sheet contact surface of said platen being such as to leave wide spaces between said belts for the purpose of vaporizing moisture therefrom;

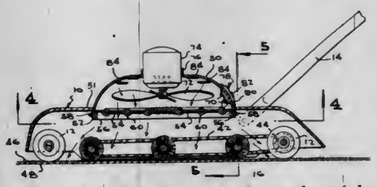
(d) means for driving said belts to cause said sheet material to be transported through said dryer between said curved platen and said belts, and

(e) means for causing drying gas to pass over at least a portion of said sheet contact surface of said curved platen to accelerate the drying of said sheet material.

3,286,368
CARPET AND RUG DRYER

William F. Thomas, 1526 W. Willits St., Santa Ana, Calif.

Filed Oct. 4, 1963, Ser. No. 313,937
1 Claim. (Cl. 34—151)

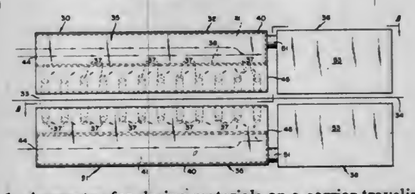


A dryer comprising an inverted pan-shaped housing having a top wall and sidewalls, wheel means on the housing providing mobility for the housing on a surface, said housing top wall being formed with a central opening, a dome having an open lower end registered with said opening and secured to the top wall, a spider extending across the lower end of the dome and secured thereto, concentrically-spaced electrical heating elements carried by the spider, a vertical axis fan supported within the dome above the heating elements, said fan comprising an electric motor secured through the center of the wall of the dome, the wall of the dome being formed with air inlet opening means, a plurality of longitudinally spaced rotary brushes extending across the housing beneath the heating elements and journaled on the side wall of the housing, said wheel means comprising a wheel, and means operatively connecting said wheel to the brushes.

3,286,369
DRYING APPARATUS

Horace L. Smith, Jr., Richmond, Va., assignor to Hupp Corporation, Cleveland, Ohio, a corporation of Virginia

Original application Mar. 4, 1963, Ser. No. 262,569. Divided and this application Dec. 17, 1965, Ser. No. 514,471
20 Claims. (Cl. 34—155)



1. Apparatus for drying materials on a carrier traveling at high velocity, comprising:

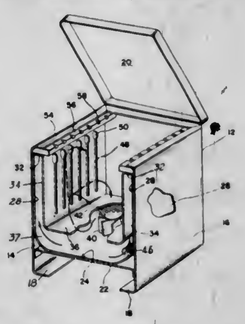
(a) casing means arranged adjacent said carrier and extending in the direction of its movement;

(b) radiant energy source means within said casing means operable at a temperature at which it will emit radiant energy of a wave length that will produce a high rate of heating in said materials and a low rate of heating in said carrier; and

(c) control means responsive to changes in the carrier velocity for maintaining the quantities of the radiant

energy supplied to successive like increments of said carrier substantially equal, said control means including means for varying the total flux of the radiant energy in proportion to changes in the velocity of said carrier without substantial variation in the wave length of said radiant energy by varying the effective length of the radiant energy source means.

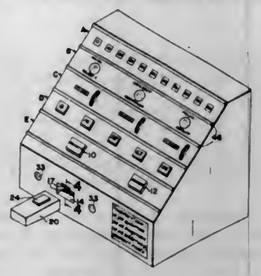
3,286,370
DRYING MACHINE
Henry F. Hope, 195 Welsh Road, Huntingdon Valley, Pa.
Filed Nov. 29, 1963, Ser. No. 326,716
4 Claims. (Cl. 34—163)



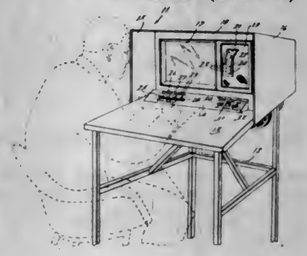
1. A machine for drying X-ray film, or the like, including:
an inner shell having side walls and a bottom wall and having its upper end open,
an outer shell comprising side walls and a bottom wall,
means securing said shells together with said side and bottom walls spaced from each other respectively to provide a plenum,
a door for closing the top of said inner shell,
there being an intake opening in the bottom wall of said inner shell,
the area of said intake opening being less than the area of the bottom wall of the inner shell,
a suction fan disposed between the bottom walls of said inner and outer shells, with its suction side registering with said opening and with its pressure side leading to said plenum,
there being air discharge openings in the opposite side walls of the inner shell leading from said plenum to the interior of said inner shell,
a heater near the pressure side of said fan, and
means mounting the object to be dried in the path of flow of air emanating from said discharge openings.

3,286,371
TEACHING DEVICES
Kenneth M. Beach, Jr., Santa Clara, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Sept. 30, 1964, Ser. No. 400,430
5 Claims. (Cl. 35—8)

1. A teaching machine for teaching a student, said machine including means for accepting a sample to be evaluated by said student, said machine including means for both student and machine evaluation of said accepted sample in accordance with a predetermined type of evaluation criterion and means for converting both said student and machine evaluations into at least two different types of answers for presentation to said student at the same time, said machine including a first feedback means and presentation means for presenting to said student one answer of said at least two different types of answers which answer is based on precoded information stored in said machine and both said student and machine evaluations of said sample, said machine including second feedback and presentation means for presenting to said student the other answer of said at least two different types of answers which answer is based on said student and machine evaluations of said sample independently of said precoded information stored in said machine, said machine further including means for permitting the student to select either or both of said at least two different types of answers for presentation to said student.



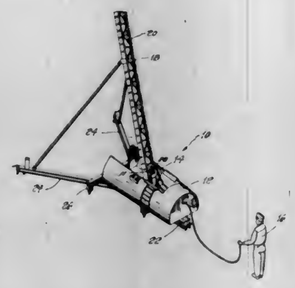
3,286,372
INSTRUCTIONAL AND TESTING DEVICE
Sam B. Williams, Walled Lake, John F. Jones, Berkley, and Lawrence P. Kazyak, Detroit, Mich., assignors to Williams Research Corporation, Walled Lake, Mich., a corporation of Michigan
Filed May 1, 1963, Ser. No. 277,171
37 Claims. (Cl. 35—9)



1. In a testing device, means for presenting a question to a student, a plurality of manually operable answer selection members accessible to the student, scoring means for registering a correct or incorrect answer by the student in response to the question, means forming part of said question presenting means for connecting said answer selection members to said scoring means for a predetermined period of time following the presentation of the question, and means including a portion of said question presenting means responsive to expiration of said predetermined time without the actuation of any of said answer selection members by said student for registering an incorrect answer on such scoring means.

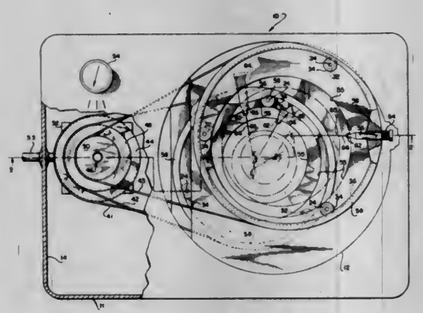
3,286,373
FULL PRESSURE SUIT ACTIVATION SYSTEM WITH EJECT CAPABILITIES
Daniel D. Mangieri, Commack, N.Y., assignor to the United States of America as represented by the Secretary of the Navy
Filed July 26, 1965, Ser. No. 475,025
5 Claims. (Cl. 35—12)

1. The method of training pilots to cope with ejection condition from an airplane comprising the steps of placing the pilot in a simulation airplane ejection apparatus having an upwardly inclined guide tower,
simultating oxygen conditions in an airplane,
accelerating the pilot along said upwardly inclined guide tower,
providing oxygen under pressure to the helmet and



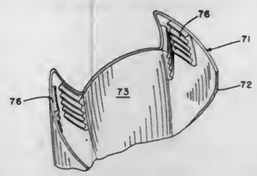
to the suit of the pilot while he is moving along said inclined guide tower in realistic similarity to actual ejection conditions, and
increasing the oxygen supplied to the suit as the simulated altitude becomes greater, whereby the pressure suit provides differential pressure between ambient pressure and that of 3.5 p.s.i.g.

3,286,374
PLANETARIUM
William H. Baynes, 4122 Greenbush Ave., Sherman Oaks, Calif.
Filed Feb. 28, 1964, Ser. No. 348,077
7 Claims. (Cl. 35—45)



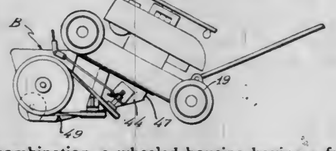
1. A device for plotting elliptical planetary orbits having the Sun for one focus and an alternate focus, comprising:
a plate member having a cam surface corresponding to the orbit of a planet to be plotted;
a circular hoop member rotatably mounted on said plate member, said hoop member being centered about a point corresponding to said alternate focus; and
cam means connected to said hoop member in engagement with said cam surface.

3,286,375
BOOT HAVING PANTS LEG RETAINING MEANS
Constantine T. Troy, 1330 Cleveland Ave., Wyomissing, Pa.
Filed Mar. 26, 1965, Ser. No. 442,904
5 Claims. (Cl. 36—7.1)



1. A gusset type boot having means to engage the lower end of a pants leg and secure said pants leg in the upper portion of said boot comprising at least one pair of gripping elements adapted to seat in mating relationship to each other, said pair of elements being fixedly positioned in facing relationship to each other within a fold formed between the upper portion of the boot and the gusset, with one of said elements being positioned on the gusset and the other one of said elements being positioned on said upper portion of the boot.

3,286,376
LAWN MOWER ATTACHMENTS
Howard C. Wildes, 3052 22nd Ave. S., Minneapolis, Minn.
Filed Nov. 19, 1962, Ser. No. 238,497
1 Claim. (Cl. 37—43)

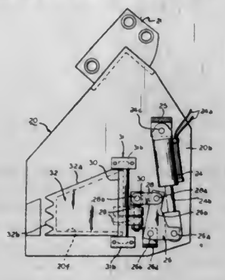


In combination, a wheeled housing having a front end and a rear end having a top panel and a depending peripheral wall thereon having a discharge passage therein, a motor mounted on the top panel and including a drive shaft extending downwardly through the top panel, a bottom closure plate extending across the lower end of the peripheral wall and having an intake opening therein substantially concentric with said shaft, a fan blade mounted on said drive shaft between said top panel and said bottom closure plate, a snow collecting member generally U-shaped in plan secured beneath said bottom closure plate, the sides of said collecting member being generally wedge-shaped in side elevation being relatively shallow at its rear end, said snow collecting member holding said bottom closure plate in an upwardly inclined position, the forward end of said snow collecting member being open and the rear end thereof extending about the intake opening in said bottom closure plate to guide snow thereto, a transverse shaft secured to and extending between the sides of said U-shaped snow collecting chamber and having snow breaking members thereupon, and means connecting said transverse shaft and said drive shaft for driving the transverse shaft.

3,286,377
TRENCHING HOE HAVING SPREAD FOOTING CUTTING MEANS
Glenn H. Long, 3003 Central, Glenview, Ill.
Filed Nov. 20, 1963, Ser. No. 324,940
2 Claims. (Cl. 37—118)

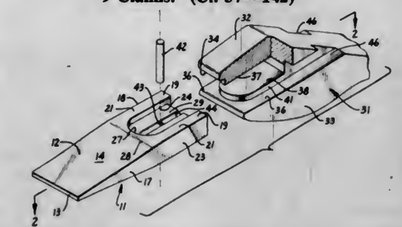
1. An excavation bucket that can be utilized for both trenching and the cutting of additional cross-section at

the bottom of a trench comprising: a pair of opposing sides, a pair of diverging wings, each of said diverging wings being pivotally mounted to one of said opposing sides, said diverging wings having open and closed positions, said diverging wings being in alignment with said sides of said excavation bucket in their closed posi-



tion, said diverging wings projecting outward from said sides in their open positon, said pair of opposing sides have openings that are substantially of the same size and shape as said diverging wings, said diverging wings being positioned over said openings when in said closed position, and means for selectively actuating said diverging wings to said open and said closed positions.

3,286,378
WEBBED PRONG-TYPE TOOTH WITH RESILIENT RETAINING MEANS
John G. Benetti, Cupertino, Calif., assignor, by direct and mesne assignments, of one-half to Gerald A. Petersen, Santa Clara, Calif., and one-half to Anita Petersen, Saratoga, Calif.
Filed Dec. 2, 1963, Ser. No. 327,199
9 Claims. (Cl. 37—142)



8. A tooth for digging equipment comprising a distal portion and a proximal portion, said distal portion having converging top and bottom distal surfaces terminating in a cutting edge, said proximal portion having longitudinally extending top and bottom proximal surfaces and formed with a hole from top to bottom of said proximal portion and longitudinal grooves on said top and bottom proximal surfaces extending forwardly of said hole, and a resilient insert positioned in said hole and adapted partially to fit into said groove, said insert being thicker than the depth of said grooves.

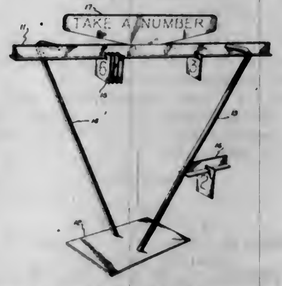
3,286,379
DIGGING TOOTH WITH CORRUGATED CROSS-SECTION
John G. Benetti, Cupertino, Calif., assignor, by direct and mesne assignments, of one-half to Gerald A. Petersen, Santa Clara, Calif., and one-half to Anita E. Petersen, Saratoga, Calif.
Filed Jan. 13, 1964, Ser. No. 337,318
6 Claims. (Cl. 37—142)

1. A unitary tooth for digging equipment comprising a proximal portion formed for attachment of said tooth to a holder and a distal portion, said distal portion formed with top and bottom surfaces, each said surface formed at the distal end of said tooth with longitudinal corrugations extending rearward from the distal end of the tooth



and forming with said distal end a plurality of corners, said corners and distal end comprising digging surfaces, said tooth tapering forwardly, said corrugations on said top surface being laterally offset and staggered relative to said corrugations on said bottom surface.

3,286,380
CUSTOMER SERVICE DEVICE
Charles E. Dean, 3807 Estel Road, Fairfax, Va.
Filed Feb. 18, 1964, Ser. No. 345,769
1 Claim. (Cl. 40—19.5)

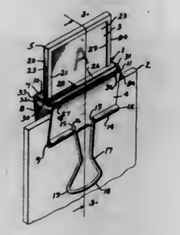


A customer service device for dispensing service chits having a predetermined order of identity comprising a first horizontal bar member having a substantially uniform cross section with an upright narrow flange portion and a relatively broad lower portion; a base plate support member adapted for adherence to a selected surface; at least one other support member of the standards variety interconnecting said base plate support member and said upright flange portion of said first horizontal bar member; and a second horizontal bar member having a substantially uniform cross section with at least said relatively broad portion, said second horizontal bar member having one end thereof connected to one of said support members and one end free, arranged to supportingly receive chits having a cut out portion compatible with the cross-section thereof via said free end, said support member interconnecting said base plate support member and said upright flange being affixed to the uppermost portion of said upright flange such that chits having a cutout portion compatible with the cross-section of said horizontal bar members may be moved thereon.

3,286,381
INDEX TAB AND CLIP
Norman L. Wooge, Kansas City, Kans. (R.R. 2, Ottawa, Kans.)
Filed Jan. 25, 1965, Ser. No. 427,837
8 Claims. (Cl. 40—23)

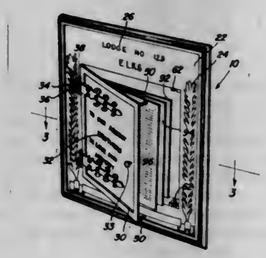
1. An index tab and clip comprising:
(a) a clamp member in the form of a generally U-shaped clamp having a substantially flat bight portion with spaced resilient jaws extending therefrom for receiving and gripping a sheet member therebetween,

(b) an index card holder having a bottom wall portion engaging a clamp wall in overlying relation,
(c) means on said bottom wall engaging said clamp wall to detachably secure said bottom wall to said clamp,
(d) spaced walls mounted on said bottom wall and extending upwardly therefrom with the space be-



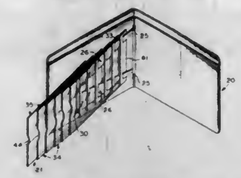
tween said walls defining an index card receiving cavity, one of said spaced walls having an opening for exposure of an index card that is located between said walls,
(e) said bottom wall having an opening providing access to said cavity which access is normally closed by the clamp wall.

3,286,382
WALL MOUNTED PLAQUE WITH INSERTABLE PANELS
Elmer S. Newman, Cincinnati, Ohio, assignor to Newman Bros., Inc., a corporation of Ohio
Filed Feb. 17, 1964, Ser. No. 345,271
6 Claims. (Cl. 40—102)



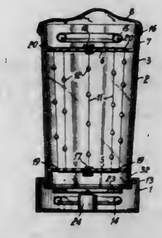
1. A memorial plaque comprising a frame adapted to be supported from a supporting member, said frame including a hollow central space, a closure door for said space, said closure door being movable from a closed position to a position exposing the interior of the space, and a plurality of panels normally received in said space and being pivotally supported in relation thereto for movement to a position projecting from the space for enabling the panels to be observed, said panels adapted to receive a plurality of groups of indicia designating certain information relating to the plaque, said door being pivotally attached to said frame at one side of said space, said panels being pivotally attached to said frame within said space at the edge thereof opposite to the pivotal axis of said door whereby the door is swung open in one direction and the panels swung outwardly of the space in the opposite direction.

3,286,383
CARD AND PHOTOGRAPH HOLDER FOR WALLETS, PASS CASES, AND THE LIKE
Benjamin B. Osher, Lawrence, N.Y., assignor to Kleer-Vu Industries, Inc., New York, N.Y.
Filed Sept. 29, 1964, Ser. No. 400,112
3 Claims. (Cl. 40—102)



1. In a holder for cards, photographs and the like which is adapted to be used with a wallet, pass case and the like, a tongue which is adapted to be connected to the wallet, pass case or the like, and a plurality of windows operatively connected to said tongue, and interengaging means on said tongue and windows, said interengaging means comprises tapered portions on said tongue, and said windows including support pieces provided with slots of different sizes for slidably receiving therein the tapered portions of said tongue.

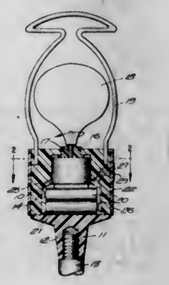
3,286,384
OPTICAL ADVERTISEMENT DEVICE SIMULATING A FILLED CONTAINER
Willi Furchtbar, Bopserwaldstrasse 45, Stuttgart, Germany
Filed June 6, 1962, Ser. No. 200,513
Claims priority, application Germany, June 10, 1961, F 34,134
12 Claims. (Cl. 40—106.52)



1. An advertising device simulating a filled container comprising a hollow base of an opaque material having an aperture in its top, a container comprising an outer container wall inserted with its lower end into said aperture and connected to said base, an inner substantially rigid and self-supporting container wall inserted into said outer wall, a bottom member disposed below the lower end of said inner wall, a bottom plate resting on said bottom member and supporting said inner wall, a cover plate closing the upper end of said inner wall, and an inverted cup-shaped member above said cover plate and inserted into the upper end of said outer wall and having an upper surface of a shape and color in accordance with the top of the simulated contents of said container, said inner container wall being of external shape substantially complementary to the internal shape of said outer container wall so that said inner container wall is in substantially flush abutting engagement with said outer container wall, all of said parts of said container consisting of a suitable light-permeable plastic, said outer wall consisting of a clear glasslike plastic, said inner wall being colored in accordance with said simulated contents, and said bottom and cover plates consisting of a translucent

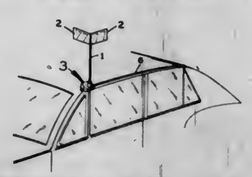
plastic, and an annular light source at least within said base for illuminating said container parts from the inside through said bottom member.

3,286,385
BEER TAP HANDLE
Charles G. Tate, Jr., 19 S. Locust Ave., North Providence, R.I.
Filed Feb. 17, 1964, Ser. No. 345,336
4 Claims. (Cl. 40—126)



1. A beer tap handle comprising a plastic housing having a threaded shank for mounting on a beer tap lever, a hand operated protective frame mounted above said housing for operating said lever, said housing having a recess, a source of electrical power in said recess, and an advertising member mounted above said housing and within said frame, said advertising member being activated by the electrical power in said recess, said electrical power including a rotating motor driven by dry cell batteries, said motor rotating said advertising member.

3,286,386
AUTOMOBILE PARKING SIGNAL
Hershey Glantz, 1401 SW. 17th Terrace, Miami, Fla.
Filed Jan. 14, 1966, Ser. No. 520,781
1 Claim. (Cl. 40—129)



An automobile signal for attachment to the gutter portion thereof comprising a body member molded from an elastomer material having a transverse groove of uniform cross section in close proximity with the bottom thereof formed substantially to the shape of the outer surface of a gutter of the automobile top,

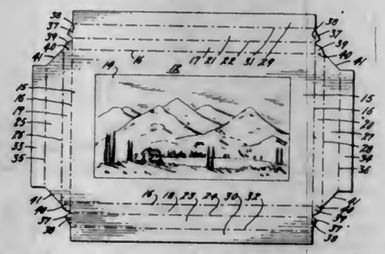
a tongue integral with said body of uniform cross section projecting into said groove along its length for engagement with the inner surface of said gutter,

a lip of predetermined thickness and uniform cross section integral with said body extending under and overlapping said groove a predetermined distance,

said body adapted to rest against the outer margin of said top adjacent said gutter when said gutter is positioned in said groove with said tongue extending therein and said lip bearing against the underside of said gutter for retaining said body in substantially rigid relation to said gutter,

a rod of predetermined length forming a flagstaff having a lower end portion thereof secured in said body in substantial vertical relation to said gutter when said body member is engaged therewith including an identification flag secured on the upper portion thereof whereby said signal may be applied or removed from said gutter by manually tilting said body normal to said gutter and temporarily flexing said lip and said projection into and from engagement with said gutter respectively.

3,286,387
SELF-FRAMED PICTURES
Allan Henry Poertner, Denver, Colo., assignor to Uniframe Corp., Denver, Colo., a corporation of Colorado
Filed June 29, 1964, Ser. No. 378,554
1 Claim. (Cl. 40—154)



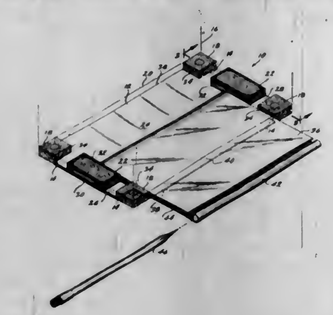
A self-framing picture comprising: a rectangular cardboard blank having a picture on its front face; elongated frame edge areas foldably joined to the top, bottom and end edges of said blank; elongated frame face areas foldably joined to the outer edges of said frame edge areas; elongated sealing flaps foldably joined to the outer edges of said frame face areas; adhesive areas on the back faces of, and extending the full length of, said sealing flaps so that said frame edge areas may be folded upwardly from said blank and said frame face areas may be folded inwardly over said blank and said sealing flaps may then be folded outwardly between said frame face areas and said blank and adhesively secured to the latter through the medium of said adhesive areas to form a closed three-dimensional frame of triangular cross section about said picture; a triangular closing tab foldably attached on each extremity of the frame face areas at the top and bottom of said blank which may be folded to close the extremities of the triangular cross section; and an arcuate locking tab foldably projecting from each extremity of the two frame edge areas at the ends of said blank for insertion into the extremities of the two frame edge areas at the top and bottom of said blank when said frame is assembled to close the corners of the latter.

3,286,388
TELEPHONE ACCESSORY
Uria Makiri, 6137½ Saturn St., Los Angeles, Calif.
Filed Mar. 9, 1964, Ser. No. 350,441
7 Claims. (Cl. 40—336)

1. In combination with a telephone having a rectangular bottom wall having spaced, parallel front and rear edges and spaced, parallel side edges, said side edges having a length exceeding that of said front and rear edges, and pad means mounted on each corner of said bottom wall for maintaining said bottom wall in spaced relation with a surface supporting said telephone, a telephone accessory comprising:

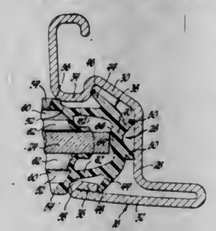
flat rectangular shelf means substantially corresponding in size to said bottom wall, said shelf means having front and rear edges and side edges; and

attachment means affixed to and upstanding from the upper surface of said shelf at said front and rear edges of said shelf means and lying within the boundaries thereof, said attachment means engaging said bottom wall adjacent the front and rear edges thereof and maintaining said shelf means in fixed spaced relation with said bottom wall, said attachment means including body portions substantially filling the space between their corresponding front or rear



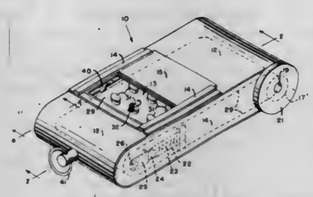
pads and having inner edge surfaces aligned with the inner edge surfaces of the said telephone pad means at the corners of the telephone, whereby a space is provided between the bottom of the telephone and said shelf means to receive a book or pad to be guided laterally into said space by the inner edges of the attachment means and said pad means.

3,286,389
VEHICLE BODY
Thomas E. Draplin, Southfield, and Walter Wenger, Rochester, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 20, 1964, Ser. No. 390,875
3 Claims. (Cl. 49—441)



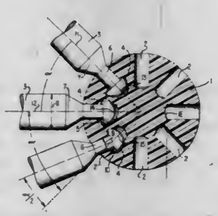
1. A vehicle body door structure comprising, in combination, a door window frame member including a channel portion provided with a base wall and a pair of side walls, each having a weatherstrip retaining rib provided with a shoulder facing inwardly toward said base wall, and a weatherstrip of generally channel cross section received within said channel portion and including a base wall of less thickness than the distance between said shoulders and channel portion base wall and a pair of side walls, each of said weatherstrip side walls including a deflectable rib extending angularly and outwardly therefrom and being engageable with a respective weatherstrip retaining rib shoulder to retain said weatherstrip within said channel portion, said weatherstrip base wall including a plurality of deflectable ribs extending angularly inwardly therefrom and opposite to said weatherstrip side wall ribs and being engageable with said channel portion base wall to bias said weatherstrip side wall ribs into engagement with said retaining rib shoulders, said weatherstrip side walls each including a second deflectable rib extending inwardly therefrom and defining a panel receiving opening, said second deflectable ribs being engageable with opposite surfaces of a panel slidably received within said weatherstrip.

3,286,390
CONTAINER
Frank L. Guice, 134 Martin Terrace, Bridgeport, Conn.
Filed Sept. 30, 1964, Ser. No. 400,419
9 Claims. (Cl. 43—57.5)



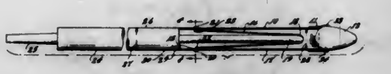
1. A container for holding fishing flies comprising in combination, a side wall attached at its peripheral edge to a sheet of material forming an open sided container; another side wall adapted snugly to fit the open end of said container; spaced parallel shafts having their one ends journaled in means at each end of said other side wall; means on said first side wall for journaling the opposite ends of said shafts; an endless belt surrounding said shafts; means on said belt for supporting fishing flies; first releasable means fixed to said other side wall; and second releasable means fixed to said first side wall; and adapted to cooperate with said first releasable means for releasably securing said side walls to each other spaced apart by said sheet of material.

3,286,391
CONSTRUCTION TOY HAVING A VARIABLE ANGLE JOINT
Max Mengeringhausen, Steinachstrasse 5, Wurzburg, Germany
Filed Mar. 30, 1964, Ser. No. 355,811
3 Claims. (Cl. 46—29)



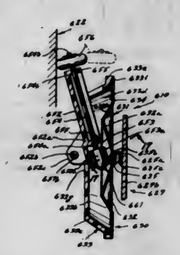
1. A construction toy comprising in combination, a relatively small spherical connecting member of elastic material with a Shore hardness of about 35 and having a plurality of substantially cylindrical holes therein having interior wall means, generally rigid rod members having cylindrical shaft portions on the ends thereof of substantially the same diameter as the cylindrical holes, said cylindrical shaft portions terminating in hemispherical head means having relatively sharp edges adapted for insertion in the holes of said connecting member and engageable with the wall means of said cylindrical holes at selected angles to anchor said cylindrical shaft portions therein in selected angular relations to the axes of said cylindrical holes, and said hemispherical head means having a diameter of about twice that of said cylindrical holes and said cylindrical shaft portions.

3,286,392
TOY ROCKET AND LAUNCHING ASSEMBLY
Francis J. Fortunato, 1643 Race St., Philadelphia, Pa.
Filed Apr. 25, 1963, Ser. No. 275,663
7 Claims. (Cl. 46—74)



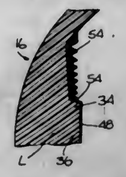
1. In a toy rocket, the combination of a missile assembly and a launching assembly propelling said missile assembly; said missile assembly including a light, hollow body portion having a lightweight, resilient projectile means end and a launch end, and, resilient means secured intermediate said ends of said body portion; said launching assembly including a handle portion and push rod extending from said handle having a free end, said push rod having cross section area permitting insertion within said hollow body portion and having sufficient length to engage upon and stretch said resilient means; said launch assembly being telescoped within said missile assembly immediately prior to launching.

3,286,393
TOY SOUND DEVICE ADAPTED TO ACTUATE A RESONATOR BY REPETITIVE SHOCK EXCITATION
John W. Ryan, Bel Air, Calif., assignor to Mattel, Inc., Hawthorne, Calif., a corporation of California
Filed Apr. 16, 1965, Ser. No. 448,712
5 Claims. (Cl. 46—111)



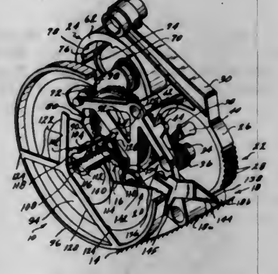
3. In combination with a vehicle having a rotatable vehicle wheel and a fender covering said rotatable wheel, a device for producing sounds simulating the sounds produced by an internal combustion engine, comprising:
an apertured recess provided in said fender adjacent said rotatable wheel and defining a speaker grill for said device;
non-metallic vibratile resonator means mounted in said recess between said grill and said wheel, said resonator means having a low-pitched natural frequency substantially less than 7500 c.p.s., said resonator means being adapted to produce indiscriminate noise simulating the noise produced by an internal combustion engine when subjected to repetitive shock-excitation wherein the bulk of the noise has a frequency below approximately 2500 c.p.s., said resonator means comprising a generally circular diaphragm comprising reversely tapered conical portions arranged in radial alignment whereby to minimize the depth of said recess; and
actuating means operatively associated with said resonator means and said vehicle wheel for subjecting said resonator means to said repetitive shock-excitation.

3,286,394
DOLL'S EYE WITH PEARLESCENT IRIS
Harry Brudney, New York, N.Y., assignor to Jacoby-Bender, Inc., Woodside, N.Y., a corporation of New York
Filed Mar. 19, 1964, Ser. No. 353,130
7 Claims. (Cl. 46—169)



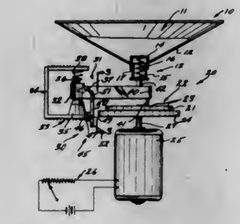
5. An eyeball for a doll's eye, said eyeball comprising a lens portion formed of a transparent material, said lens portion having a convex front surface and having a rear surface including an annular area defining an iris, said annular area surrounding a central area defining a pupil, said annular area being broken up into a multitude of variously arranged rearwardly extending contiguous tiny pointed pyramidal projections, and a layer of pearlescent material covering said annular iris area.

3,286,395
DEVICE FOR SIMULATING MOTOR SOUNDS
John W. Ryan, Bel Air, Calif., assignor to Mattel, Inc., Hawthorne, Calif., a corporation of California
Filed Apr. 12, 1965, Ser. No. 447,484
9 Claims. (Cl. 46—192)



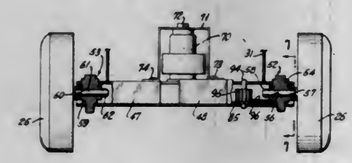
3. A device for producing sounds simulating the sounds produced by an internal combustion engine, comprising:
a non-metallic resonator means having a low-pitched natural frequency and being adapted to produce a noise simulating the noise produced by an internal combustion engine when subjected to repetitive shock-excitation;
means freely movable relative to said resonator for impacting said resonator means to impart repetitive shock-excitation thereto, said impacting means including impeller means for moving the same and having first gear means provided thereon, said impacting means also including manually-actuated gear means operatively connected to said first gear means on said impeller means for operating said impeller means;
flywheel means rotatably mounted adjacent said impeller means; and
second gear means connecting said flywheel means to said impeller means for giving uniform motion to said impeller means upon operation of said impeller means by said manually actuated gear means, said flywheel means storing momentum for continuing the operation of said impeller means after operation of said manually-actuated gear means has been terminated.

3,286,396
TOY SOUND DEVICE ADAPTED TO ACTUATE A RESONATOR BY A CYCLIC SERIES OF IMPULSES
John W. Ryan, Bel Air, Calif., assignor to Mattel, Inc., Hawthorne, Calif., a corporation of California
Filed Mar. 26, 1965, Ser. No. 443,051
16 Claims. (Cl. 46—232)



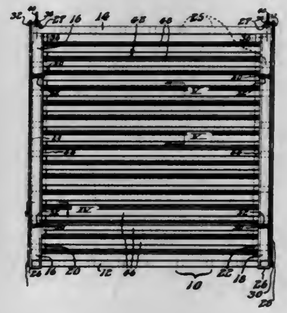
1. A simply constructed and operated toy sound device adapted to actuate a resonator by a repetitive series of shock-exciting impulses thereto, comprising:
a resonator means adapted to emit a sound when shock-excited;
a rotatably mounted turntable means having at least one abrupt obstruction, said turntable means comprising a disc having a plurality of discrete radially extending elements comprising said abrupt obstruction; and
transfer means operatively mounted between said resonator means and said turntable means and adapted to be actuated only by engagement with said turntable obstructions to conduct the shock impulse imparted by said obstruction to said resonator means, said resonator means and said transfer means being free of securement to each other whereby said resonator means may vibrate independently of movement of said transfer means.

3,286,397
TOY VEHICLE WITH POWER STEERING
Raymond J. Lohr, Erie, Pa., assignor to Louis Marx & Co., Inc., New York, N.Y., a corporation of New York
Filed June 4, 1963, Ser. No. 285,278
2 Claims. (Cl. 46—244)



1. A toy wheeled vehicle comprising a chassis, ground engageable wheels carried by said chassis for rotation about generally horizontal axes, mounting means dirigibly mounting at least one of said wheels for pivotal movement about a generally vertical axis, an electric motor carried by said chassis, a generally vertically disposed drive shaft connected in driven relation with said motor and spaced from said generally vertical axis, and a reduction gear train carried by said chassis connected in driven relation with said drive shaft and disposed in the space between said drive shaft and mounting means, said chassis comprising a pair of generally horizontal vertically spaced lower and upper walls, and said mounting means comprising a pin extending generally vertically between and pivotally carried by said chassis walls, said drive shaft extending into the space between said walls, and said reduction gear train being located between said walls and mounted thereby in driving relation with said pin, whereby said motor effects power steering of said one wheel.

3,286,398
MUSHROOM CULTIVATION
Paul G. Stengel, R.D. 2, Kennett Square, Pa.
Filed Mar. 6, 1964, Ser. No. 349,905
5 Claims. (Cl. 47—1.1)



1. In apparatus for commercially cultivating mushrooms, the combination comprising a pair of vertically spaced horizontally extending members and a pair of horizontally spaced upright members forming an upright open framework of a depth in the direction from front to back substantially equal to the depth of said members in said direction and of a height and width each in the order of several times the depth of said members in said direction, grille-like means covering the front of said framework, and grille-like means covering the back of said framework and spaced from the grille-like means covering the front of said framework a distance approximately equal to the depth of said members in said direction, said framework being adapted for being packed with mushroom compost and said grille-like means being adapted for coacting with said framework for confining the body of mushroom compost and for coacting with the underlying surfaces of the body of mushroom compost to form a series of horizontally extending vertically spaced troughs for holding musbroom casing piled against each of said surfaces to effectively cover the same.

3,286,399
PRODUCTION AND USE OF LIQUID MUSHROOM SPAWN
Alain Laniece, Saumur, France, assignor to Royal Champignon, Saumur, France, a company of France
No Drawing. Filed Mar. 18, 1964, Ser. No. 352,957
Claims priority, application France, Nov. 12, 1963, 953,373
5 Claims. (Cl. 47—1.1)

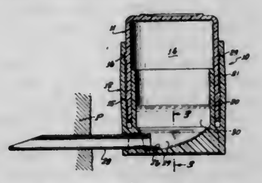
3. A process for the preparation of mushroom spawn in liquid form comprising: dispersing in water at least one carbohydrate having in its molecule carbon chains of at least twelve carbon atoms, and at least one nitrogenous compound selected from the group consisting of amino-acids, peptides and proteins; sowing the liquid culture medium so produced with mushroom propagative tissue; allowing mycelium to develop; testing said medium for carbohydrate and detectable nitrogen; and when said tests are negative collecting the liquid spawn produced.

3,286,400
MEANS AND METHODS FOR TREE SURGERY
Lou A. Gruenewaelder, 6917 Pershing Ave., University City, Mo.
Filed Apr. 22, 1964, Ser. No. 361,704
10 Claims. (Cl. 47—8)



8. The method of performing tree surgery on cavities which result from disease or injury, said method comprising locating the cavity opening, drilling small holes in the tree to determine the extent of the cavity, washing the cavity with a solution of insecticides, fungicides and bactericides, injecting into the cavity a fluid foam of synthetic resin having the quaternary ammonium compounds dimethyl silicone, sulfur, activated carbon and chlorobutanol dispersed therein, allowing the foam to fill the cavity and solidify, and cementing patches of synthetic resin having nicotine extract, quaternary ammonium compounds, pyrethrum extract, chlorobutanol, activated carbon, sulfur, calcium cyanide, carbon bisulfide and mercuric chloride over the cavity opening and the small holes thereby sealing the filled cavity.

3,286,401
PLANT INJECTION DEVICE
James J. Mauget, 1043 Bilton Way, San Gabriel, Calif.
Filed Mar. 10, 1964, Ser. No. 350,751
12 Claims. (Cl. 47—57.5)



6. A device for injecting a quantity of liquid into a plant, comprising:

a pair of cup-shaped, interfitting body sections having imperforate side walls that slidably engage each other with a fluid-tight fit, said body sections cooperating to enclose a single undivided interior space of which the volume is varied by relative axial movement of the body sections;

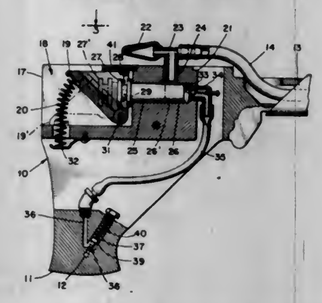
locking means carried on the body sections comprising interengageable configurations on the body sections, the first body section having two similar configurations at axially spaced positions and the second body section having a single complementary configuration engageable with either of the similar configurations to prevent relative axial motion of the body sections in a direction to separate the body sections but disengageable from one of said similar configurations to engage the other of said similar configurations by relative axial movement of the two body sections in a direction to reduce the volume of said interior space;

a quantity of liquid in said space having a volume less than said reduced volume of the space, the remainder of the space being filled with a gas in contact with said liquid;

passage means in one container section for discharging the liquid;

and a discharge tube slidably received in the discharge passage with a fluid-tight fit with the sides of the passage.

3,286,402
INJECTION HATCHET
Michael Newton, % Forest Research Lab., Oregon State Univ., Corvallis, Oreg.
Filed Feb. 25, 1965, Ser. No. 435,259
9 Claims. (Cl. 47—57.5)



3. An injection hatchet comprising, in combination: a head structure having a cutting edge and including a fluid outlet orifice adjacent to said cutting edge; a handle connected to said head structure; a fluid inlet hose passing to said head structure; a cylinder incorporated in said head structure and having a fluid inlet port passing into said cylinder at one side and a fluid outlet port passing from one end of said cylinder, said inlet hose communicating with said inlet port and said outlet orifice communicating with said outlet port; a plunger slidably mounted in said cylinder for movement between first and second positions towards and away from said outlet port, said plunger eclipsing said inlet portion said first position and exposing said inlet port in said second position; a check valve means connected between said outlet port and said outlet orifice to pass fluid from said cylinder to said outlet orifice and block the flow of fluid in a reverse direction; an inertia operated member movably mounted in said head and coupled to said plunger for moving said plunger from said first to said second position upon impact of said cutting edge with a tree; and biasing means in said head structure normally urging said inertia member in a direction to move said plunger from said second position to said first position whereby swinging said hatchet to imbed said cutting edge in a tree and move said plunger from said first to said second position draws fluid into said cylinder, said biasing means thereafter moving said plunger back to its first position to expel said fluid through said outlet port, check valve means, and orifice into said tree so that said fluid can only be injected in said tree after said cutting edge has been imbedded therein.

3,286,403
METHOD AND DEVICE FOR ARTIFICIALLY POLLINATING PLANTS
Johannes Mathernus Antonius Tanke, Oosteinde 63, Wateringen, Netherlands
Filed Mar. 5, 1964, Ser. No. 349,606
Claims priority, application Netherlands, Mar. 8, 1963, 289,992
10 Claims. (Cl. 47—1.41)

5. A device for artificially pollinating plants comprising common support means for a plurality of plants and means for acting on said common support means to produce uniform oscillatory movement thereof, the latter means comprising a rotatable shaft and an eccentric on said shaft for driving said support means, said eccentric having a circumferential surface which has a continuous-



ly varying distance with respect to the axis of rotation of said shaft.

3,286,404
METAL AWNING WITH ADJUSTABLE MOUNTING CONSTRUCTION
James K. Harrison, Portland, Oreg., assignor to Irwin-Hodson Metal Mfg. Corp., Portland, Oreg., a corporation of Oregon
Filed Mar. 15, 1965, Ser. No. 439,685
2 Claims. (Cl. 49—384)



1. A foldable awning assembly for hingeable and weatherproof mounting on a mounting-wall surface, which assembly includes:

a frame assembly comprised of a hinge-bar member adjacent said mounting-wall surface, an outboard member at lower elevation at the outboard edge of said awning, and end members at each end of said frame;

a series of troughs disposed within said frame, side by side, each inclined from an upstream end supported by said hinge-bar member to a downstream end supported by said outboard member, said troughs having their side edges formed into interlocking flanges for interlocking assembly with adjacent troughs, the upstream end of each of said troughs having a transverse closure barrier, and a transverse recess on the under side;

walls in said hinge-bar member forming a recess for the reception of the upstream ends of said troughs, and comprising a continuous overhead flange for covering the upstream ends of said troughs, and a continuous shoulder for supporting said upstream ends by reception into said transverse recesses;

walls in the underside of said hinge-bar member forming a hinge-reception slot continuous for the length of said member;

a plurality of hinge brackets mountable to said mounting-wall surface;

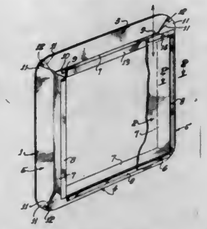
hinge means for hingeable connection of said hinge bar member to said hinge brackets, said hinge means being slidable in said hinge-reception slot to accommodate said hinge bracket locations;

and a resilient weatherstrip means along the edge of said hinge bar member, said weatherstrip means being spaced above said hinge means and extending upwardly toward mounting wall surface, and providing a weatherproof cover above said hinge means.

ERRATUM

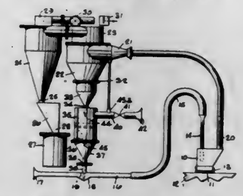
For Class 49—441 see:
Patent No. 3,286,389

3,286,405
ACCESS DOOR
William T. Schembri, Burbank, Calif. (10549 San Fernando Road, Pacoima, Calif. 91331)
Filed May 14, 1964, Ser. No. 367,303
6 Claims. (Cl. 49—463)



1. An access door assembly comprising a door component formed of a rectangular sheet of metal and including an end edge portion, a pair of parallel side edge portions, and a handle portion constituting the edge opposite said end edge portion, and a sheet metal frame component of complementary rectangular configuration and comprising parallel side and end members of identical cross sectional configuration including a mounting flange portion, a body portion projecting outwardly at right angles to the plane of said mounting flange portion and a rebent edge portion constituting a door edge receiving groove disposed in a plane parallel to said mounting flange portion with the open side of said groove disposed at the inner peripheral surface of said body portion; said side edges of said door component being slidably received in two parallel ones of said door edge receiving grooves and said end edge of said door component being received in another of said door edge receiving grooves, said groove portion opposite said door end edge receiving groove being collapsed to afford clearance for movement of said door in said grooves in which it is slidably received, and said handle portion of said door being disposed at the side of said door component remote from said mounting flange portion of said frame component.

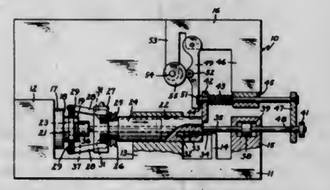
3,286,406
METHOD AND APPARATUS FOR ABRADING
Stewart Ives Ashworth, Crimond, Outhill, near Studley, England, assignor to Abrasive Developments Limited, Solihull, England, a British company
Filed Feb. 26, 1964, Ser. No. 347,588
Claims priority, application Great Britain, Feb. 27, 1963, 7,808/63; Nov. 15, 1963, 45,178/63
19 Claims. (Cl. 51—8)



8. Apparatus for abrading a surface on a workpiece comprising a blasting chamber, a primary air inlet conduit connected at one end to the blasting chamber, means for entraining abrasive in the primary air flowing through the conduit up-stream of its entry into the blasting chamber, aperture means in the wall of the chamber to be closed by said workpiece, means for applying suction to said chamber to draw primary air and abrasive into the chamber and remove air and spent abrasive from the chamber when said aperture means is closed by the workpiece, means for

directing abrasive entering the chamber against said surface and means for restricting the entry of secondary air into the chamber around the periphery of the aperture means when the latter is closed by the workpiece.

3,286,407
ABRASIVE FINISHING APPARATUS
George H. Lockwood, Worcester, Mass., assignor to The Heald Machine Company, Worcester, Mass., a corporation of Delaware
Filed Mar. 4, 1964, Ser. No. 349,303
7 Claims. (Cl. 51—33)



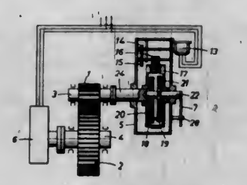
7. Apparatus for finishing an annular surface of a workpiece by abrasion, comprising

(a) a workhead having a clamp for holding the workpiece,

(b) a toolhead mounted adjacent the workhead and having a spindle which is subject to rotation about and reciprocation substantially along the major axis of the said surface, the toolhead pressing a tool against the surface with a predetermined pressure, and

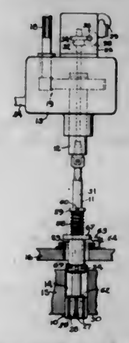
(c) means operative on the said clamp for releasing the workpiece occasionally for a short period of time to permit a slight rotation thereof.

3,286,408
DEVICE FOR CORRECTION OF PRODUCTION FAULTS IN GEAR-WHEEL TEETH
Kurt D. Lantz, Thorsvagen 22, Ektorp, Sweden
Filed June 30, 1964, Ser. No. 379,207
1 Claim. (Cl. 51—105)



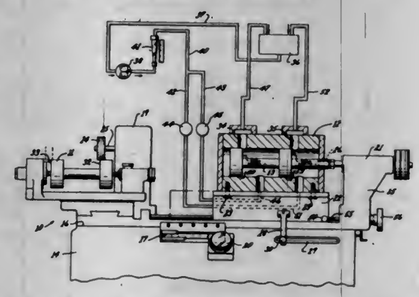
A device for correcting production faults of teeth of gear wheels comprising in combination, a tool gear wheel in the shape of a pinion having teeth which are adapted to be in mesh with the teeth of the gear wheel to be corrected, individual electric motors for rotating said tool gear wheel and said gear wheel to be corrected, respectively, means for electrically interconnecting said motors so as to maintain a predetermined relationship between their rotational speeds, means for allowing mutual adjustment of said motors with a view to securing any desired clearance between the flanks of co-engaging teeth of said tool gear wheel and said gear wheel undergoing correction, at least one of said motors being coupled to its respective gear wheel through a planetary gear comprising a rotatable casing having gear teeth on its outside drivingly connected with one of said motors, said casing having two gear wheels of different diameter mounted on separate co-axial shafts aligned with said tool gear wheel, a pair of pinions mounted on the same shaft in said casing meshing respectively, with said last-mentioned two gear wheels, means for holding one of said last-mentioned two gear wheels against rotation whereby the principal errors of said tool gear wheel rotate during the correcting operation at a speed differing from that of said gear wheel to be corrected.

3,286,409
HONING MACHINE
Donald K. Greenberg, Rockford, Ill., assignor to Barnes Drill Co., Rockford, Ill., a corporation of Illinois
Filed Mar. 27, 1964, Ser. No. 355,269
5 Claims. (Cl. 51—165)



2. In a machine for rough and finish honing the wall of a bore in a workpiece in a substantially continuous honing cycle, the combination of, an expansible honing tool, drive mechanism for rotating said tool and simultaneously reciprocating the same back and forth through said bore, feed mechanism for expanding said tool at a first rate sufficient to maintain rough honing pressure on said bore wall and then at a second slower rate to finish hone said wall, and a successively acting sizing device including first means for sensing the attainment of a first predetermined bore size and controlling said feed mechanism to terminate the rough honing action and initiate the finish honing, and second means for sensing the subsequent attainment of a second predetermined bore size larger than said first size and controlling said mechanism to initiate termination of said finish honing action and the honing cycle.

3,286,410
FORMING METHOD AND APPARATUS
Henry L. Boppel, Dayton, Ohio, assignor to The Sheffield Corporation, Dayton, Ohio, a corporation of Ohio
Filed June 1, 1964, Ser. No. 371,524
8 Claims. (Cl. 51—165)



1. A machine for forming the first of a cooperating pair of first and second flow controlling components by reference to desired flow conditions obtained through cooperation of a formed second component with a reference first component while cooperating together in an operating fluid environment comprising,

a base,

carriage means mounted on said base for movement therealong,

forming means on said base,

support means adjustably mounted on said base,

means for detachably mounting a reference first component to said carriage means for movement therewith,

means for mounting a second formed cooperating component on said support means and in flow relation with said reference first component,

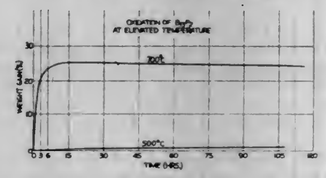
means for placing said reference first and said second component in an operating fluid environment,

means for sensing the conditions of said fluid environment,

means for adjustably mounting said first cooperating component on said base,

and means for relatively moving said first component and said forming means from a first forming position to a second through a basic relative movement of given amount and in a sense modified in each instance as determined by the necessary relative movement between said second component and said reference first component from a first desired flow condition to a second as indicated by said sensing means controlled by said reference first and said second component, whereby said first and second cooperating components are flow matched for optimum performance when placed in assembled relation.

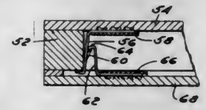
3,286,411
GRINDING WHEELS AND STONES OF OXIDE BONDED $B_{13}P_2$ AND METHOD OF PRODUCING SAME
James L. Peret, Milwaukee, Wis., assignor to Allis Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Dec. 18, 1963, Ser. No. 331,439
7 Claims. (Cl. 51—307)



1. An abrasive article of manufacture comprising an object shaped from $B_{13}P_2$ particles pressed to form said object at pressures of about 1000 p.s.i. and then bonded together by an oxide phase resulting from the oxidation of the said $B_{13}P_2$ particles at temperatures of at least 500° C. but preferably about 700° C. and above.

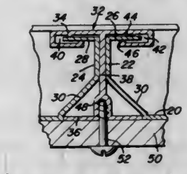
3,286,412
PANEL AND FRAME ASSEMBLY
James W. Greig, Grosse Pointe Park, and Leslie J. Berridge, Detroit, Mich., assignors to Woodall Industries, Incorporated, Detroit, Mich., a corporation of Michigan
Filed Feb. 13, 1964, Ser. No. 344,726
2 Claims. (Cl. 52—621)

1. A panel and supporting frame assembly comprising, in combination, a frame support having opposed spaced apart side frame members, each side frame member provided with a linearly disposed panel face supporting portion and means disposed linearly of the face supporting portion of each side frame member adapted to be engaged by clips secured to the panel when the panel is mounted upon the panel face supporting portions of the spaced apart side frame members, said clips extending transversely of the frame from said panel face supporting portion, a panel mounted upon the face supporting portions of the opposed spaced apart side frame members, to extend across the space between the two side frame members and overlie said panel face supporting portions thereof, clip retainers secured to the inner face of the panel adjacent to the opposed inner sides of the two side frame members overlaid by the panel, spring clips of a generally right angular shape, each clip having a base portion engaged with a clip retainer secured to the panel and a leg portion extending away from the base portion and away from the panel and terminating at its free end in a flange, said flange engaged over the clip engaging means of the frame member holding the panel toward the panel supporting face thereof when the panel is mounted upon



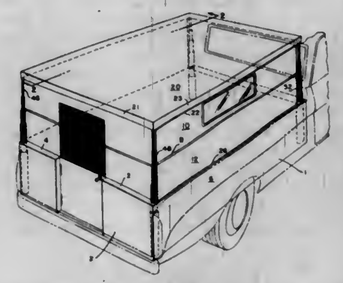
the panel face supporting portions of the two spaced apart side frame members, said panel and frame assembly characterized in that a second panel is provided to extend across the space between the two side frame members and overlie that face of each side frame member opposed to the face overlaid by the first panel, and characterized further in that the second panel is provided with clip retainers secured to its inner face opposed to the clip retainers secured to the first panel when the second panel is mounted upon the side frame members opposed to the first panel, and spring clips each having a base portion engaged with a clip retainer of the second panel and carried thereby, and characterized further in that these spring clips carried by the second panel have leg portions which overlap the leg portions of the clips carried by the first panel when the two panels are mounted upon opposed faces of the side frame member and interconnect with the leg portions of the spring clips carried by the first panel holding the second panel toward the side frame members upon which it is mounted.

3,286,413
AWNING STRUCTURE
Harry C. Wells, Hialeah, Fla., assignor to Harry Reckson, Miami Beach, Fla.
Filed Nov. 19, 1963, Ser. No. 324,742
17 Claims. (Cl. 52—16)



11. A beam for use as a structural element comprising a pair of vertically spaced one-piece horizontally extending flanges connected together by means of a single vertical web portion, the top flange being bent back under itself to form a pair of channels opening toward each other and separated by said web portion and a centrally located elongated groove in the bottom flange thereof, each channel including a pair of vertical lugs and partially projecting across the space defined by said channels, said lugs being laterally spaced with respect to each other and one lug of each pair extending from each leg of said channel.

3,286,414
EXTENSIBLE CAMPER
Charles J. Harrison and Ernest S. Fridley, both of 22625 E. Cliff Drive, Santa Cruz, Calif.
Filed Nov. 6, 1963, Ser. No. 321,865
2 Claims. (Cl. 52—66)



1. In combination a truck body having upright planar side and end walls and a camper mounted thereon, said camper having a generally horizontal planar top member and downturned side and ends, said downturned sides and ends being in the plane of the respective sides and ends of the truck body, said downturned ends being inturned to provide a supporting flange, hinged pairs of side and end panels hinged to said top member, the upper side of said side panels being hinged to the lower edge of said downturned sides and having their ends terminating short of the inner edge of said inturned supporting flanges, said pair of end panels being hinged to said planar top member and extending downwardly between the inner edges of the inturned supporting flange and the ends of the side panels, and jack means positioned in said truck body adjacent the inner side of each of the end walls and extending upwardly along the outer side of said hinged end panels and having their upper ends secured in contacting relation to the respective inturned supporting flanges, the upper edges of said end walls of said truck body having inwardly extending flanges through which said jack means extend and which coact with said inturned flanges of said planar top when the camper is closed, whereby said camper may be expanded into operative position or collapsed into inoperative position.

3,286,415
REINFORCED SHELL CONSTRUCTION
Norman E. Schlenker, 60 Green Meadow Drive, Orchard Park, N.Y.
Filed Aug. 22, 1962, Ser. No. 219,815
1 Claim. (Cl. 52—86)



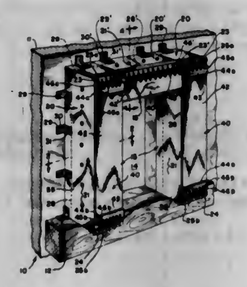
A composite shell construction having first and second external curved surfaces, comprising a plurality of spaced first reinforcing elements having first and second sides, said first reinforcing elements being oriented to define the general curvature of the shell, permanent support means for said first reinforcing elements, a plurality of spaced second reinforcing elements extending transversely of and being rigidly secured to and being supported by said first sides of said first reinforcing elements and therefore following the general curvature of said shell as determined by the orientation of said first reinforcing elements, said second reinforcing elements aiding in maintaining said first reinforcing elements in predetermined relation relative to each other by virtue of being secured thereto, third reinforcing elements extending transversely of and contiguous to said second sides of said first reinforcing elements, permanent form means spanning the spaces between and being supported by said first reinforcing elements and generally following the curvature of said shell as determined by the orientation of said first reinforcing elements relative to each other to thereby define said first external curved surface, and concrete-like material having first and second sides with said first side resting on said permanent form means, said concrete-like material being bonded to and embedding said first reinforcing elements and said third reinforcing elements, said second side of said concrete-like material being curved to provide said second external curved surface, said second reinforcing elements being located on the opposite side of said permanent form means form said concrete-like material, whereby said first reinforcing elements provide resistance to said shell against tension or compression or flexure forces when bonded to said concrete-like material in said composite shell structure, and whereby said forces applied to said composite shell structure are resisted in compression or tension by said second reinforcing elements, said second reinforcing elements thereby enhancing the strength and stiffness of said shell while permitting the minimizing of thickness of the concrete-like portion thereof.

3,286,416
FENCE POST AND SQUARING PLATE ATTACHMENT
James E. Ashworth, Palo Alto, Calif., assignor to United States Steel Corporation, a corporation of Delaware
Filed June 4, 1963, Ser. No. 285,369
4 Claims. (Cl. 52—153)

1. In combination, a metal fence post having a T-shaped tab protruding from one side thereof, a squaring plate secured to said post and having a horizontal slot therein, said T-shaped tab of said post having a flange portion with a squaring plate retaining surface substantially facing said post and a neck portion between said flange portion and said post, said horizontal slot in said plate having a top portion wider than said flange portion of said tab and a bottom portion narrower than said flange portion, said neck portion of said tab positioned within the narrower bottom portion of said slot in said plate, said squaring plate retaining surface of the flange portion of said tab bearing against said plate at points laterally adjacent said narrow portion of said horizontal slot, said tab being upwardly bent at said neck portion, and said neck portion being pulled in tension between said post and said squaring plate retaining surface bearing against said plate.

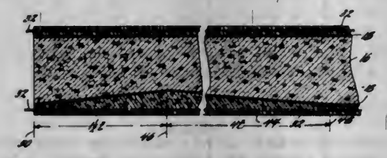
3,286,417
DOOR-SEALING DEVICE FOR TRUCK DOCK
Errol P. Dazzo, 528–42 Park Ave., Brooklyn, N.Y.
Filed July 28, 1965, Ser. No. 477,359
13 Claims. (Cl. 52—204)

9. A sealing device for the doorway of a truck dock, comprising two vertical horizontally spaced pads and a horizontal pad, means supporting the three pads in an inverted rectangular U-shaped array at the sides and top of said doorway; each pad comprising an elongated rectangular flexible core having a flat horizontal upper surface, a fabric cover substantially enclosing the core, means for supporting the cover and core in a stationary position at said doorway, said cover having a vertical rectangular front panel, a rectangular flexible apron vertically disposed at and slidably covering a major portion of only said front panel a support for the apron secured to the upper end of the cover and having a portion overlaying the front panel and extending the full width of



the front panel, and quick detachable means attaching the apron to said support at closely spaced points along the entire length of said portion and the entire width of the apron so that the apron is uniformly supported across its entire width and can be detached and replaced without disassembling and disturbing the core and cover of the core of any one of the pads.

3,286,418
PRESTRESSED COMPOSITE LOAD-BEARING SLAB
William E. Radford, Orlando, Fla., assignor to Kissam Builders' Supply Company, Orlando, Fla., a corporation of Florida
Filed Aug. 14, 1962, Ser. No. 216,770
3 Claims. (Cl. 52—223)



1. A composite, load-bearing slab made up of a pair of strong, dense face elements and a core of low-density:
each face element comprising a relatively thin, precast sheet of Portland cement concrete of load bearing quality, reinforced with prestressed wires extending between the areas of support of the slab; and
a low-density core clearly differentiated from said faces, of sufficient thickness to space the face elements at optimal distance from the neutral axis of the slab;
each of the faces of the core having adhesively cemented thereto one of the face elements, the line of adhesion being sharp and well-defined and of load-transferring quality, the areas of contact between the core and the face elements being substantially continuous over the entire portion in contact;
wherein the thickness of the lower face element increases from a thickness of 1/10 the slab thickness, at the end, to about 1/4 the slab thickness at a distance of 1½ times slab thickness from the end and then decreases to 1/10 the slab thickness at a distance of 5½ times slab thickness from the end.

3,286,419
SECTIONAL HOLD-DOWN ANCHOR DEVICE
George J. Eriksson, Morton Grove, Ill., assignor to Superior Concrete Accessories, Inc., Franklin Park, Ill., a corporation of Delaware
Filed Dec. 26, 1963, Ser. No. 333,409
4 Claims. (Cl. 52—225)

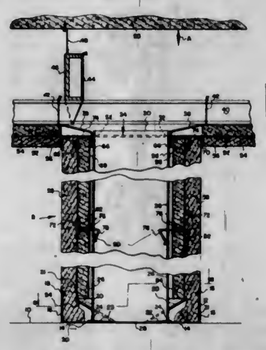


1. As a new article of manufacture, a composite sectional hold-down anchor device for positioning the tensioning cables of a prestressed concrete beam within a beam form preparatory to concrete pouring operations, said anchor device comprising two upper and lower body castings of identical size and configuration, and a connector part, each of said two body castings comprising a tubular hub portion from which there extend in radial fashion on opposite sides thereof a pair of side wings, said side wings being formed with open-ended notches which extend inwardly and upwardly toward the hub portion for reception therein of respective tensioning cables and for assimilation of the upward thrust of such cables when the same are drawn taut, said tubular hub being formed with internal contour threads, said connector casting being in the form of an elongated rod having external contour threads thereon, said body castings being disposed in coaxial end-to-end abutting relationship with their side wings extending in coplanar relationship and with the lower open rim of the upper body casting bearing against the upper open rim of the lower body casting so that the contour threads of the two body castings, in effect, are continuous from one casting to the other, said connector part being in the form of a threaded rod and having a portion thereof threadedly and telescopically received in the lower end of the upper body casting and having another portion thereof threadedly and telescopically received in the upper end of the lower body casting and serving to draw the two body castings hard against each other.

3,286,420
MEANS FOR ISOLATING PLASTER AND CEILING JUNCTURES
Hiram Kenneth Lewis, 3725 E. Campbell, Phoenix, Ariz.
Filed June 17, 1963, Ser. No. 288,126
9 Claims. (Cl. 52—241)

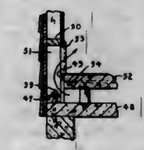
1. In a means for isolating plaster wall and ceiling junctures the combination of: a building structure comprising upright partition walls and a ceiling; studding members in and between opposite sides of said walls; a channel member disposed at substantially right angles to said studding and engaging the upper ends thereof; three substantially U-shaped channel portions of said channel member being open in a downward direction and having four downwardly extending flanges in the same direction; and ceiling supporting structure suspending said channel member one of said channel portions

being an intermediate channel disposed between the other two of said three channel portions; a first pair of said four flanges spaced apart and forming first channel sides and common dividers between said intermediate channel portion and said other two channel portions; a second pair of said four flanges forming second sides for said other two channel portions; said first pair of flanges disposed at opposite sides of said studding mem-



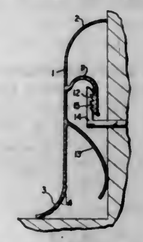
bers; a web of said channel member disposed between said first pair of flanges, said web having openings therethrough in which said studding members extend and in which they are laterally supported lath means adjacent said studding members and one of said first pair of flanges; wall plaster parallel with and adjacent to said lath means and one of said second pair of flanges; and ceiling plaster abutted to the outer surface of one of said second pair of flanges.

3,286,421
FLOOR AND WALL CONSTRUCTION
Wayne P. Branstrator, 2916 Ridgeway Drive, Fort Wayne, Ind.
Continuation of application Ser. No. 38,903, June 27, 1960. This application July 31, 1963, Ser. No. 300,407
4 Claims. (Cl. 52—250)



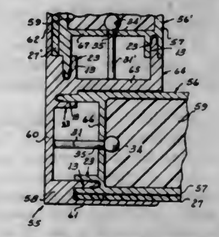
1. A unitary floor structure comprising: a rigid lower moulded horizontal slab having an upper surface; means supporting outer edge portions of said slab; a plurality of separate and spaced rigid upstanding columnar pillars having their lower ends embedded in and supported by said lower slab; said pillars being dispersed over the area of said lower slab; means fixed on said pillars and interlockingly embedded in the material of said lower slab; receiving means provided at the top of each pillar; substantially rigid reinforcing members extending over and bridging the spaces between said pillars; said receiving means engaging said reinforcing members and holding the same in fixed crossed relation to the tops of said pillars; the top of each pillar comprising an upper bearing surface surrounding said receiving means; a horizontal layer of filler disposed on said lower slab at a depth substantially corresponding to that of the height of said pillars, an upper moulded horizontal slab supported on said bearing surfaces of said pillars and said filler and substantially encompassing said reinforcing members and receiving means; said upper slab having a generally smooth lower surface spaced from said upper surface of said lower slab a predetermined distance, whereby said spaced slabs define therebetween a substantially unobstructed space for free circulation of air in all directions between said columnar pillars when said filler is removed; said upper slab having at least one edge portion which is inset with reference to an underlying edge portion of said lower slab to provide a space above said underlying edge portion; and a vertical wall structure supported on said underlying edge portion in juxtaposed relation to said one edge portion of said upper slab.

3,286,422
BASEBOARD
Josef Pangerl, Cologne-Kalk, Germany, assignor to Hans Utsch & Co., New York, N.Y., a corporation of New York
Filed Dec. 5, 1963, Ser. No. 328,244
Claims priority, application Germany, Jan. 23, 1963, P 30,993
11 Claims. (Cl. 52—287)



4. An extruded baseboard for mounting in the junction zone of a wall and a floor which comprises an exterior profile having a wall rest and a resilient floor rest to compensate for changes in the floor level, a resilient notched system comprised of a multiple notch means adapted to receive a counter notch means attached to the wall and a resilient member attached to the baseboard between the notched system and the floor rest which extends beyond the leading edge of the wall rest and exerts a horizontal pressure against the wall whereby the wall rest is held firmly against the wall.

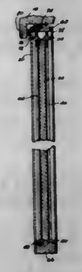
3,286,423
BUILDING WALL AND PARTITION STRUCTURE
John J. Donlon, 953 Hastings St., Baldwin, N.Y.
Filed Mar. 19, 1963, Ser. No. 266,340
7 Claims. (Cl. 52—288)



5. A corner fascia for a wall structure composed of two walls substantially meeting at an angle, each of the walls being composed of a plurality of interlocked panels disposed in edge alignment in courses which lie at right angles to each other, each of said panels having frame members extending along the edges thereof, the frame members along the edges of contiguous panels having formations thereon which lie between the broad opposite

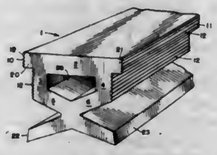
surfaces of the panels, which extend longitudinally of the edges of the bodies of the panels, and which mutually interfit, the interfitting formations on each of the said frame members comprising a longitudinally extending tongue and a longitudinally extending groove laterally spaced from the tongue, the tongue of one frame member at a joint between contiguous panels being receivable within the groove on the other frame member upon relative movement of aligned panels thus to be joined toward each other in their common plane, said corner fascia being generally in the form of a channel having two broad plate-like members extending at the angle of the walls with respect to each other and adapted at least partially to overlie the edges of the respective walls, the outer side of one of said plate-like members bearing edge formations which are complementary to those of the edge of the respective wall so as matingly to interfit therewith, the inner side of the other of the plate-like members bearing edge formations which are complementary to those of the edge of the respective wall so as matingly to interfit therewith, whereby the edge of a first wall, to be joined to said one plate-like member, will at least partially overlap the end of a second wall, to be joined to said other plate-like member.

3,286,424
DOOR CONSTRUCTION
Romer G. Weyant, 81 Edgewater Drive, Elkhart, Ind.
Filed Jan. 4, 1965, Ser. No. 423,178
3 Claims. (Cl. 52—291)



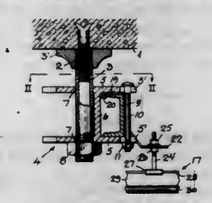
1. In a door having front and rear panels in spaced relation and having top, bottom and side edges forming a continuous margin adapted to fit into a door jamb, a frame member mounted between said panels and extending vertically substantially between said top and bottom edges of said door and being disposed closely adjacent one of said side edges, said door being adapted to be hinged on said jamb at the other of said side edges, said frame member further having a pair of longitudinal grooves extending vertically substantially between said top and said bottom edges, one of said grooves being disposed in said frame member adjacent said front panel, and the other of said grooves being disposed in said frame member adjacent said rear panel, and a pair of tension members extending longitudinally of said vertical frame member in parallel spaced relation, one of said tension members being disposed in one of said grooves and the other of said tension members being disposed in the other of said grooves, each end of each of said tension members having an abutment engaging opposed horizontal faces adjacent opposite ends of said frame member, one of said abutments on each of said tension members being adjustable longitudinally of said member to selectively adjust the tension in said tension members and thereby selectively adjust the compression in said frame member adjacent said front face and said rear face.

3,286,425
JOINT SEALS
Howard R. Brown, Bowling Green, Ohio, assignor to The D. S. Brown Company, North Baltimore, Ohio, a corporation of Ohio
Filed June 19, 1964, Ser. No. 376,459
4 Claims. (Cl. 52—396)



1. A joint seal comprising an elongated elastomer strip having an elastomer, upper web, a pair of spaced, elongated, elastomer side webs depending from said upper web and spaced inwardly from the longitudinal side edges of said upper web to provide laterally projecting edges on said upper web, a pair of elongated, downwardly and inwardly extending, converging elastomer webs extending from the bottom portions of said side webs to a junction of said converging webs, and a pair of downwardly and outwardly extending, elongated elastomer legs extending from said junction, the outermost edges of said legs extending beyond the planes of the outer walls of said side webs.

3,286,426
CARRYING DEVICES FOR PANEL CEILING STRUCTURES
Oddvar S. Halbostad, Skoyenasvelen 21, Bryn, Norway, and Gunnar Arnesen, Bygdoylund 39, Bygdoy, Norway
Filed June 4, 1963, Ser. No. 285,255
Claims priority, application Norway, June 8, 1962, 144,664
6 Claims. (Cl. 52—481)

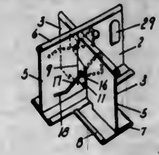


1. In a carrying device for a panel ceiling the combination of a supporting member mounted rotatably and axially adjustable on a fastening bolt secured in an overhead building structure, said bolt forming the axis of rotation of said supporting member, a horizontal girder supported between its ends by said supporting member, means for retaining said girder at different distances from the axis of rotation of said supporting member, angle shaped clips suspended on said girder displaceably in the longitudinal direction thereof, slotted horizontal lower end portions on said clips, carrying rails for panels arranged below said clips and extending at right angles to the girder and screw means adjustably connecting said carrying rails to said end portions.

3,286,427
CEILING STRUCTURE
James L. Cotter, Hastings, Mich., assignor to Hastings Aluminum Products Inc., Hastings, Mich.
Filed July 31, 1963, Ser. No. 298,901
5 Claims. (Cl. 52—483)

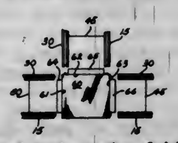
1. A multiple panel structure comprising a plurality of panels, support means for said panels comprising a plurality of parallel main support members and a plurality

of cross support members spaced to supportingly receive said panels, said main and cross support members having web portions of substantial width with laterally projecting flanges on their lower edges, said main support members having vertical slots in the web portions thereof, the upper ends of which terminate in spaced relation to the top and the lower ends in spaced relation to the bottom of the webs of said main support members, said cross members being disposed with their flanges in end thrust engagement with the flanges of said main support members, said cross members having tongues projecting from the ends of their web portions disposed through said slots in said main support members with the end edges of the webs of said cross members above and below said tongues in thrust supporting engagement with the webs of said members, the lower edge of one tongue of a pair being



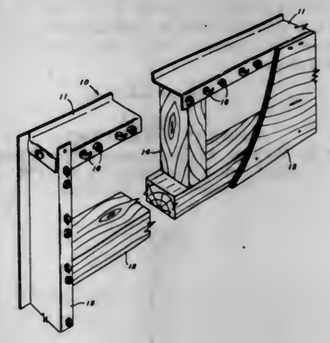
engaged with the bottom end of the slot and the upper edge of the other tongue of the pair being engaged with the upper end of the slot, the inner edges of said tongues being inclined and in supporting engagement with each other, said tongues having holes therein, springably resilient fastener members disposed in said rotatable in said holes in said tongues and having angularly disposed support member engaging portions at one end and a loop-like engaging member at the other end which constitutes a fingerpiece facilitating rotative adjustment of the fastener member after it has been inserted in a hole in a tongue to position the angularly disposed portion in engagement with the adjacent side of the main support member and with the loop portion in engagement with the support member to prevent rotative movement of the fastener member after it has been adjusted to clamping position.

3,286,428
WALL OF BUILDING BLOCKS WITH SPACED, PARALLEL WOODEN PANELS AND STEEL CONNECTOR PLATES
Charles Kay, 3191 Thornapple River Drive SE., Grand Rapids, Mich.
Filed Sept. 18, 1963, Ser. No. 310,193
3 Claims. (Cl. 52—496)



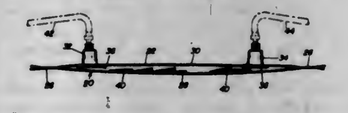
1. A self-supporting, decorative, finished wall construction, comprising: a plurality of preformed, hollow, unfilled, blocks, each having tongue and groove connectors on the top, the bottom, and on both ends; said blocks being interfitted in longitudinally offset relationship; each of said blocks consisting solely of a pair of spaced, parallel, coextensive wood panels having finished outer surfaces, the outer surfaces of one group of panels forming one finished wall surface, and the outer surfaces of the second group of opposite panels forming a second finished wall surface; and a pair of rigid cold rolled steel connector plates extending between said panels; each of said plates having a thickness of at least 0.028 inch and not greater than about 0.040 inch; said panels each having a pair of preformed grooves in the inner faces thereof perpendicular to said inner faces; each of said plates including a main body portion and a pair of end flanges parallel to each other and perpendicular to the main body portion; the ends of said main body portion of each plate being interfitted in said grooves at right angles to said panels, and said flanges being forcefully embedded in the grain of said wood panels; and said finished wall having air spaces within said hollow blocks insulating the decorative outer surface of one panel from the decorative outer surface of the second panel.

3,286,429
COMPOSITE WOOD-METAL STRUCTURAL MEMBER
George D. Ratliff, Jr., Churchill Borough, Allegheny County, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Sept. 9, 1963, Ser. No. 307,403
1 Claim. (Cl. 52—727)



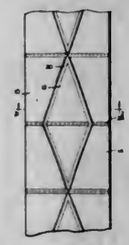
A composite beam comprising a top chord member, a bottom chord member spaced therefrom and a panel extending between and secured to said members, said top chord member being a flanged metal member disposed with its flange parallel to said panel and in abutting relation therewith, said flange having flexible spurs extending therefrom and said panel being impaled on said spurs, whereby on initial loading of the beam, the resulting stress in the panel is only partially transferred to the top chord member.

3,286,430
METHOD OF SEALING AND PACKAGING
Joseph J. Esty, 1812 Tustin St., San Diego, Calif.
Filed Feb. 11, 1963, Ser. No. 257,608
8 Claims. (Cl. 53—21)



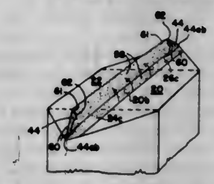
1. Those steps in the process of treating materials and packaging the same, which steps consist in:
(A) placing the material in an air impervious and flexible container;
(B) cleaning the material with a cleaning fluid while the material is in the container;
(C) then exhausting at least part of the fluid from the container;
(D) and then sealing the container with the material therein.

3,286,431
PACKAGING PROCESS
Rex L. Sturm, 2939 Van Ness St. NW., Washington, D.C.
Filed Oct. 4, 1963, Ser. No. 314,037
6 Claims. (Cl. 53—37)



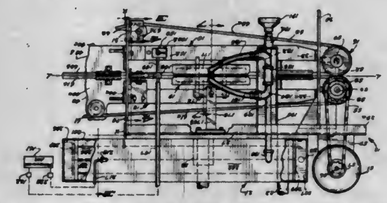
1. The method of forming multi-compartment containers from a pliable tubing of non-metallic material of at least in part thermoplastic nature, comprising,
(a) filling a length of tubing of a thermoplastic nature with a first product of a fluid nature.
(b) subjecting the tubing to pressure between a pair of opposed tools being of lesser width than the width of the filled tubing.
(c) pressing the walls of the tubing into contact with each other, thereby segregating a portion of the fluent material from the remainder of fluent material in said tubing.
(d) creating heat through said tools to weld the contacting walls together to seal off said segregated portion.
(e) repeating the steps of segregating by pressing and welding at intervals along the length of said tubing, whereby the length of tubing contains segregated portions and intercommunicating portions along the length of tubing.
(f) evacuating the fluent material remaining within the intercommunicating channels of said welded tubing.
(g) introducing a second product of a fluent nature into said intercommunicating channels.
(h) segregating by pressing and welding portions of said intercommunicating channels.
(i) severing said tubing within the width of the welded portion defining an area containing at least two segregated portions with one of said portions containing said first fluent material and the other of said portions containing said second product of a fluent nature.

3,286,432
BAG CLOSURE
George Long, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware
Filed July 31, 1963, Ser. No. 299,033
3 Claims. (Cl. 53—38)



1. A process to close a filled bag at a closure portion thereof, said closure portion comprising front, rear and two side walls which adjoin to one another by the side portions thereof in a generally tubular configuration, each wall having an inner and an outer surface, each wall also having a base portion by which it joins to said bag and an end portion located opposite its base portion, said process comprising:
(a) folding said front and back wall each along generally the base portions thereof so that each side wall is formed with an upwardly and rearwardly directed first fold line extending from generally the base portion of said front wall to the end portion of said side wall behind the middle thereof so as to define a respective first triangular fold piece, and each side wall is formed also with an upwardly and forwardly directed second fold line extending from generally the base portion of said back wall to its related first fold line so that each side wall is formed into a flap, at least one of said flaps being thus formed with a re-entrant fold adjacent said second fold line, which re-entrant fold forms from an outer portion of said first triangular fold piece a second triangular fold piece, the outer surface of said second piece being in facing relationship to an adjacent portion of said first piece, which adjacent portion comprises a third piece, said back wall overlapping said front wall so that there is provided from said closure portion an underlap piece and an overlap piece, the inner surface of said overlap piece and the outer surface of said underlap piece each being a bonding surface,
(b) lifting from said underlap piece the portion of said overlap piece which is further from the base portion of said back wall, while holding against said underlap piece the portion of the overlap piece which is nearer the base portion of said back wall,
(c) applying an adhesive to at least one of said bonding surfaces and to the outer surface of at least one of said second and third triangular pieces, and bringing said bonding surfaces into contact and bringing into contact said second and third triangular piece so as to bond said underlap piece to said overlap piece and bond said second and third triangular pieces one to another.

3,286,433
BAG TOP SEALING MACHINE AND METHOD FOR FORMING A BAG TOP CLOSURE
Harold K. Johnson, Bloomington, and Richard H. Ayres, Minneapolis, Minn., assignors to Bemis Company, Inc., a corporation of Missouri
Filed Feb. 14, 1963, Ser. No. 258,446
11 Claims. (Cl. 53—39)



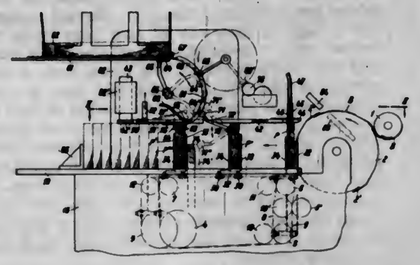
1. A method for forming a bag top closure seal on a bag top of a heat sealable bag comprising supportingly conveying in a given horizontal direction a heat sealable bag at its sidewalls at an elevation below the top marginal edges of the bag, spreading the top marginal edge portions of the bag as it is being conveyed, cleaning the interior surface of the spread marginal edge portions, and after cleaning the spread marginal edge portions, directing streams of hot air toward one another in directions transverse to the movement of the bag to contact the bag top adjacent to its marginal edges to form a heat seal bead closure.

3,286,434

APPARATUS FOR GROUPING AND BANDING A SPECIFIC NUMBER OF ENVELOPES AT A TIME IN PACKETS, PARTICULARLY IN CONJUNCTION WITH HIGH-SPEED ENVELOPE MACHINES

Richard Winkler, Rengsdorf, near Neuwied, Rhineland, and Kurt Dünnebier, Wollendorf, near Neuwied, Rhineland, Germany

Filed July 16, 1963, Ser. No. 295,354
Claims priority, application Germany, July 31, 1962, W 32,707
3 Claims. (Cl. 53—64)



1. Apparatus for grouping and banding a predetermined number of envelopes in packs, particularly for use in conjunction with high-speed envelope machines, in which the envelopes are first collected in a collecting station in front of auxiliary stops movable automatically into and out of a flow of envelopes, transversely to the direction of the flow, and then the flow of envelopes is interrupted by grippers displaceable automatically transversely and parallel to its direction and the packet gripped between the grippers is conveyed to a banding station; comprising, in combination, the following features:

(a) grippers disposed upright and in a plurality of pairs which are articulately secured to two pairs of chains, the chains being mounted for periodic movement in the same horizontal and vertical planes, in such a manner that when the chains are stationary, there are always two pairs of grippers in the collecting station, two pairs of grippers in an intermediate station, and two pairs of grippers in the banding station,

(b) conveyor discs adjacent the collecting station having grippers and leaf springs to feed the envelopes individually, one after the other, into gaps between the pairs of grippers at the collection station,

(c) auxiliary stops mounted for movement vertically upwards and downwards at the collecting station into the path of the envelopes fed by the conveyor discs, and only become effective during the time when no grippers are ready to receive the envelopes in the collecting station,

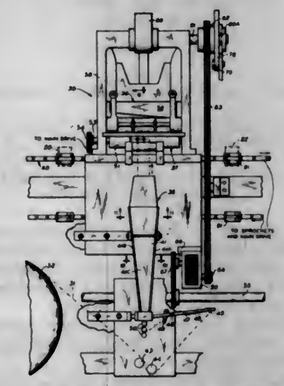
(d) a banding mechanism at the banding station having a holder for a stack of bands, a first suction device for withdrawing the lowermost band from the stack, a device for applying adhesive to a band held by the suction device, a second suction device and receiving the band from the same adjacent the first suction device, a lower band applier which takes over the lower end of the band from the second suction device, first pulls it downwards and then folds it upwards over the upper end of the band, means for laterally guiding the band while being transferred from the first suction device to the band applier on the second suction device, and a gripper having nozzles for holding the upper end of the band and later blowing it downwards.

3,286,435

MOIST PACKAGED ARTICLE AND METHOD OF MAKING SAME

Emanuel M. Weinberger, Mount Vernon, N.Y., assignor, by mesne assignments, to Holland-Rantos Company, Inc., New York, N.Y., a corporation of New York

Filed July 24, 1963, Ser. No. 297,436
4 Claims. (Cl. 53—117)



2. An apparatus for packaging an article in an open end envelope comprising:

(a) a folding station,

(b) means for continuously feeding the article to be packaged to said folding station wherein said article is folded into a strip including a plurality of longitudinally extending accordian folds,

(c) a cutting station including a cutting means,

(d) means for feeding said continuous folded strip to said cutting station, whereby said cutting means severs the end of said strip into predetermined lengths,

(e) a stuffing station disposed adjacent said cutting station,

(f) said stuffing station including a stuffing means disposed intermediate the ends of said severed length,

(g) means for conveying an open end envelope beneath said stuffing station,

(h) and means for timing the operation of said cutting means, stuffing means, and envelope conveying means so that said stuffing means reversely folds said length and stuffs the same in said envelope.

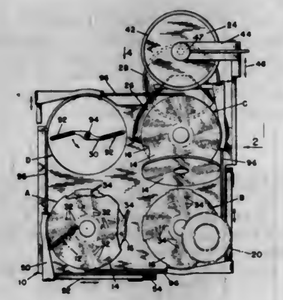
3,286,436

CAPSULE FILLING MACHINE

Eino E. Lakso, Fitchburg, Mass., assignor to The Lakso Company, Incorporated, a corporation of Massachusetts

Filed Sept. 19, 1962, Ser. No. 224,645
4 Claims. (Cl. 53—281)

1. In a machine for decapping, filling and recapping capsules, a support, said support accommodating four stations on a closed circuit, a plurality of capsule-receiving plates, there being one less number of capsule-receiving plates than stations, each plate being in two parts including a horizontal capsule body plate and a superposed capsule cap plate, said body plates being coplanar and all the plates having cavities therein for receiving the capsules, the cavities in the body plate being less in diameter than the cavities of the cap plate, the cavities in the respective plates being aligned in pairs for the reception of the capsules, the body portions of the capsules being placed first in the combined cavities and the cap plate having a restriction against which the edges of the caps are lodged for limited motion into the cavities, vacuum means for separating the bodies of the capsules from the caps within the cavities, power means moving the combined superposed plates loaded with empty capsules from the first station to the second station, power means at the second station for lifting the cap plate revealing the open ends of the capsule bodies, means for filling the capsule bodies at the second station, said lifting means reapplying the cap plate to the body plate in timed relation to the operation of the filling means, power means for traveling the combined plates containing caps and filled bodies in separated condition to a third station, movable pins at the



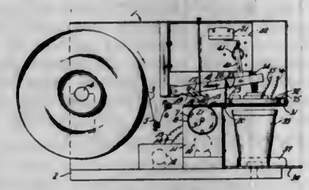
latter station for thrusting the filled bodies upwardly into the caps, said pins continuing upwardly to thrust the filled capsules out of the cap plate, power means to operate the pins in timed relation to the plate moving means, means operating in timed relation with respect to the operation of the pin operating means to remove the filled capsules from the cap plate, power means operating in timed sequence to move the now empty combined plates to a fourth station, means to clean the cavities, means to then move the cleaned combined plates back to the first station for reloading, and means to tap the empty capsules prior to loading in the combined cavities to loosen the caps relative to the bodies of the capsules.

3,286,437

APPARATUS FOR APPLYING COVERS TO CUPS

Richard Melvin Cole, 3353 Hudson Drive, Cuyahoga Falls, Ohio

Filed Apr. 10, 1963, Ser. No. 272,156
11 Claims. (Cl. 53—296)



1. In heat seal apparatus for applying covers to thermoplastic cups, the combination of

means to engage and intermittently advance a strip of thermoplastic film slightly wider than the diameter of a cup, which means include a drive roll and a pressure roll and a support arm therefor,

the film being engaged between said drive roll and pressure roll,

a lever arm to which said support arm is pivotally attached,

guide means to engage and support said film as advanced by said means,

frame means to position a cup under said advanced film,

a pair of parallel horizontal vertically spaced guide plates extending transversely of said film and having said film pass therebetween,

cutter means including a cutter bar attached to said lever arm and associated with said guide plates to cut said film into sections after it has been advanced,

heater means positioned above said film on said lever arm at said cup positioning means, and

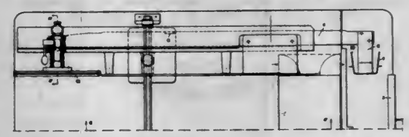
timer and driven cam means engaging said lever arm to force it towards a positioned cup to cut said film and force such film against said cup by said heater means for heat seal contact between said film and said cup.

3,286,438

MECHANISM IN A PACKAGING MACHINE FOR CLOSING THE OPEN ENDS OF A WRAPPER APPLIED AROUND A BOX OR LIKE ARTICLE

Cornelis Sol, Westzaan, Netherlands, assignor to N. V. Machinefabriek Verwachting, Wormer, Netherlands, a corporation of the Netherlands

Filed May 21, 1963, Ser. No. 281,954
Claims priority, application Netherlands, May 23, 1962, 278,768
6 Claims. (Cl. 53—379)



1. A packaging machine for closing the open ends of a wrapper about an article comprising, in combination: a machine table means for receiving a partially wrapped article at a supply end thereof, the ends of the article being in the unwrapped condition and having flaps protruding therefrom; pushing means for moving said article longitudinally forwardly along said table means; folding means disposed at the supply end of said table and having fixedly carried therewith rearwardly directed tuck-in tongue means for tucking closed forward flap means in response to forward longitudinal movement of said forward flap extending from said article past said first tuck-in tongue means; forwardly directed tuck-in tongue means fixedly carried by said folding means, said forwardly directed tuck-in tongue means providing means for tucking closed rearward flap means in response to rearward longitudinal movement of said folding means past said rearward flap means and subsequent forward movement of said folding means; slide means fixedly connected at one end of said folding means; said slide means being operatively related at an opposite end to pressure plate means for sealing closed the wrapper flaps against the article; means for moving said pressure plate means transverse of said table and said article in conjunction and synchronism with forward and rearward movement of said folding means longitudinally of said table.

3,286,439

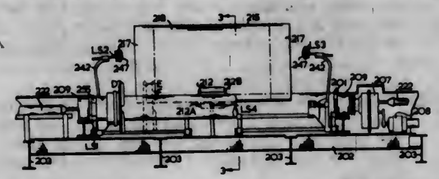
CRIMPING MACHINE

Andrew Czapary Martin and Grant McCoy Robb, Beaupre, Quebec, Canada, assignors to Abitibi Power & Paper Company, Limited, Iroquois Falls, Ontario, Canada, a corporation of Canada

Filed Nov. 26, 1963, Ser. No. 326,158
Claims priority, application Canada, Sept. 27, 1963, 885,507
7 Claims. (Cl. 53—380)

1. A crimping machine for crimping the ends of the wrapper on a paper roll comprising a pair of drive rolls

adapted to rotate and support a roll of paper during the crimping operation, a pair of sleeves slidably and rotatably mounted on one of said drive rolls, each of said sleeves containing crimper blocks adapted to crimp the ends of a wrapper surrounding the paper roll, means



for operating said sleeves independently of each other, a roll sensing means linked with each sleeve and adapted to move in unison with said sleeves, and means for lowering said paper roll onto said drive rolls and ejecting said paper roll from the said drive rolls once the crimping operation has been completed.

3,286,440
RIDING SADDLES
James A. Walker, Jackson A. Ratrie, and William K. Walker, all of Joplin, Mo., assignors to Parlay Leather Company, Joplin, Mo., a corporation of Missouri
Filed Mar. 23, 1965, Ser. No. 442,121
5 Claims. (Cl. 54—44)



2. A riding saddle comprising a main body portion, a V-shaped spring steel fork secured to the front underside of said body portion and maintaining a transverse curvature to said body portion, a plastic impregnated fabric adapted to be molded wet to the underside of the main body portion and, upon drying, to assume a permanent set so as to be laminated to the underside of said main body portion, said plastic impregnated fabric providing an upwardly concave longitudinal curvature to the saddle and a liner overlining the underside of said plastic impregnated fabric and main body portion, said liner, plastic impregnated fabric and main body portion being secured to each other.

3,286,441
BOOT FOR WALKING HORSE
Harold C. Eanes, % Eanes Manufacturing Company, Stoneville, N.C.
Filed June 16, 1965, Ser. No. 464,350
7 Claims. (Cl. 54—82)



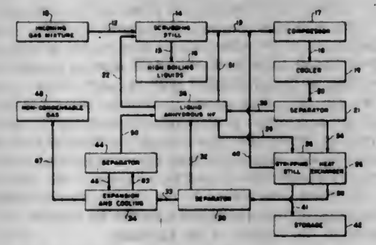
1. A boot for use in obtaining the desired front leg action in certain special gaited horses, such as a walking horse, comprising:

a plurality of independent segment members adapted to collectively define a truncated generally conical boot for encircling the pastern portion of the leg of a horse, each of said segment members being inwardly curved and having an interior convex surface for frictional engagement with the pastern,

strap means slidably connected to said segment members at the upper portion thereof for adjusting the effective diameter of the upper end of the boot and adapted to removably encircle the pastern immediately below the fetlock portion of the leg for maintaining the boot in operative position and said segment members in frictional engagement with the pastern, and

means connecting said segment members at the lower portions thereof and adapted to removably encircle the leg adjacent the upper extremity of the hoof portion for aiding in maintaining the boot in operative position and said segment members in frictional engagement with the pastern.

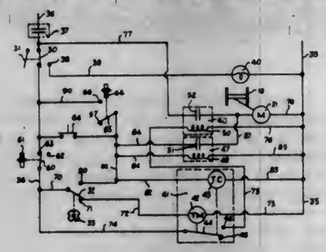
3,286,442
CONDENSATION OF HYDROGEN FLUORIDE FROM NON-CONDENSABLE DILUENTS
Joseph J. Wylegala, Grand Island, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
Filed May 27, 1964, Ser. No. 370,413
3 Claims. (Cl. 55—23)



3. A method of condensing hydrogen fluoride in a non-condensable gas stream which comprises scrubbing a non-condensable gas stream containing hydrogen fluoride by contacting it with liquid hydrogen fluoride, cooling the gas stream by said contact while vaporizing hydrogen fluoride gas from the liquid hydrogen fluoride with which the said gas stream is contacted, combining the thus-vaporized hydrogen fluoride gas with the said gas stream in the zone of contact with the said liquid hydrogen fluoride, fractionating the resulting mixture of gas and liquid, separating high boiling condensates therefrom, compressing the resulting gas mixture from which the high boiling condensates have been removed, removing heat generated in compressing, and separating liquified hydrogen fluoride from the compressed gas.

3,286,443
CONTROL APPARATUS FOR ADVANCING WEB OF FILTER MEDIUM THROUGH A FILTERING ZONE
James E. Wooldridge and Oscar A. Wurtenberg, Louisville, Ky., assignors to Continental Air Filters, Inc., Louisville, Ky., a corporation of Delaware
Filed Dec. 3, 1963, Ser. No. 327,679
4 Claims. (Cl. 55—211)

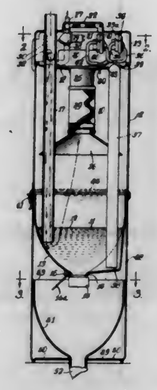
4. In a control apparatus for advancing a web of filter medium in an air filter having a rewind roll for storing spent web fed through a filtering zone and a motor for driving said roll, the improvement comprising an electrical system for efficiently utilizing the web during abnormal operating conditions and including; a switch-operating means actuated in dependence upon linear advance of said web, a first switch actuated by said means and movable between a normal first position and a second position, first and second relays having separate circuits for respectively energizing said roll-driving motor; a self-resetting timer for timing the successive normal advances of said web and comprising a timing motor, a timer switch movable between a position energizing said second relay and a position de-energizing said second relay, and a timer coil adapted upon energization to move said timer switch from said relay-energizing position to said relay-de-energizing position and to reset said timer; and an overload pressure switch for establishing emergency circuit to said roll-driving motor, upon attainment of a predetermined pressure drop across said web, said pressure switch being movable between a normal inactive position having no influence upon said relays and timer



coil and an active position establishing an overriding circuit to each of said first relay and said timer coil, whereby upon movement of said pressure switch to said active position said timer coil is energized to reset said timer and to hold said timer in reset condition regardless of the position then occupied by said first switch, said first switch upon movement to its second position normally energizing said timer coil and said first relay and de-energizing said timer motor and upon movement to its first position normally energizing said timer motor and de-energizing said timer coil and said first relay, whereby upon interruption of power during occupancy of said first position by said first switch, the timer will retain the time accrued thereon at the occurrence of said power failure and during the emergency circuit supplied by said overload switch will cancel the time accrued thereon at the occurrence of said pressure drop thus to utilize the web efficiently both during normal and during abnormal operating conditions.

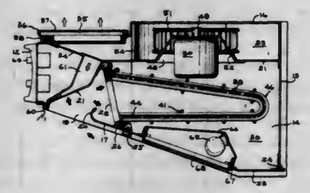
3,286,444
VACUUM CLEANER
George Boswinkle, St. Joseph, and Lester H. Hinkel, Benton Harbor, Mich., assignors to Whirlpool Corporation, a corporation of Delaware
Filed Dec. 30, 1964, Ser. No. 422,190
5 Claims. (Cl. 55—215)

1. In a device for separating solids from fluids, apparatus comprising: a separating chamber adapted to contain solids-entrapping liquid and having an air space above the surface of said liquid; a conduit for air carrying entrained solids emptying into the liquid in said chamber; liquid supply means for supplying liquid to said chamber to raise the liquid level therein; suction means for maintaining a sub-atmospheric pressure in said chamber air space to draw said air through said conduit and said liquid; air pressure dome means communicating with said chamber liquid, said liquid level effecting the air pressure in said pressure dome means; pressure responsive means having a movable member with first and second opposite sides, said movable member being movable in the direction of said second side to terminate operation of said liquid supply means; means providing communication between said first side of said movable member and said pressure dome means for increasing pressure thereon with increasing pressure in said dome means; and means providing communication between said second side of said movable member and said chamber air space for



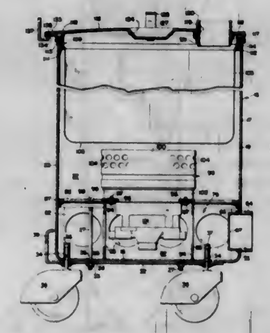
exposing said second side to said sub-atmospheric pressure in said space, said movable member thereby being moved in the direction of its second side for terminating the operation of said liquid supply means at a preselected air pressure differential between said air space and said air pressure dome means.

3,286,445
RECIRCULATING AIR CLEANER
Stanley B. Welch, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Nov. 14, 1963, Ser. No. 323,771
6 Claims. (Cl. 55—350)



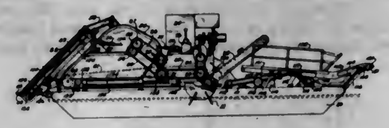
3. A recirculating air cleaner that is adapted to be located above a cooktop of a domestic range, said air cleaner comprising walls forming a hollow housing having an air inlet port, a first filter medium interposed in the inlet port, a plenum chamber positioned downstream of the first filter medium, a second filter medium positioned in the plenum chamber, a motor-blower unit mounted in the housing for drawing air from the said plenum chamber, and a main air exhaust port connected with the blower, there being a third filter medium located within said main exhaust port, and a secondary exhaust port connected with the blower and being of thin elongated shape, and duct work adjacent the main exhaust port for drawing off some of the air to the secondary air exhaust port so as to discharge air in a downward direction toward the cooktop in the manner of an air curtain so as to direct the air beneath the housing toward the intake port.

3,286,446
MULTIUSE CANISTER TYPE VACUUM CLEANER
Reynold Happe, Greenville, S.C., Louis F. Daman, Martinsville, N.J., and Russell S. Newhall, Greenville, S.C., assignors to The Singer Company, a corporation of New Jersey
Filed Aug. 27, 1963, Ser. No. 304,831
1 Claim. (Cl. 55—357)



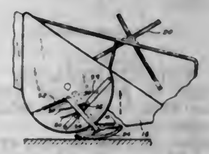
A multiuse vacuum cleaner adapted for use as an upright canister cleaner, a horizontal canister cleaner, and a portable cleaner, said cleaner comprising in combination a parallelepiped shaped hollow drum having a closing end wall, an encompassment side wall, and an open end; a pair of carrying straps; snaps at both ends of each of said straps; a pair of apertured foot assembly bars, each bar being formed with an apertured upstanding end, said upstanding ends extending beyond one side of said encompassment side wall and being adapted to engage a floor when said cleaner is used as a horizontal cleaner, each of said foot assembly bars having a respective one of said straps associated therewith and the snap of the respectively associated strap removably attaching the snap of the respective strap through an aperture of its associated foot assembly bar for using said cleaner as a portable cleaner; means for securing said foot assembly bars to the closed end wall of said drum; four casters, two of which are carried by each of said bars; an egg crate spacer placed in said drum, said spacer being formed from a plurality of interengaging apertured slats, the bottom edges of said slats engaging the inside surface of said end wall; a motor mounting plate engaging the top edges of the slats of said egg crate spacer; means for holding said mounting plate in place; a motor-fan unit mounted on said mounting plate; an exhaust ferrule passing through a wall of said drum; a cap-type guard carried on the top of said motor-fan unit, said guard having a solid top wall and an apertured side wall; a flanged gasket fitted to the upper end of said drum; a dust collecting bag having its upper end carried on the flange of said gasket, and said dust bag being held in a position to filter all dust laden air entering said drum; an apertured lid closing the open end of said drum; a pair of latches secured to opposite sides of said drum and holding said lid to the open end of said drum, each of said latches having a respective one of said straps associated therewith, each of said latches being formed with an eyelet removably receiving one of the snaps carried on the straps associated therewith; a pick-up handle secured to said lid; an extension hose attached to an aperture in said lid; and an overhanging extension formed as part of said lid, said extension extending substantially at right angles to and from the same side of the outer surface of said encompassment side wall from which the upstanding ends of said foot assembly bars extend, and said extension cooperating with the upstanding ends of said foot assembly bars to provide feet for supporting said cleaner when said vacuum cleaner is used as a horizontal canister cleaner, and said extension having a downwardly open recess adapted for engaging a wall bracket when said vacuum cleaner is hung on a wall.

3,286,447
MARINE HARVESTER WITH COMPRESSOR MEANS
Mathias E. Grinwald, Hartland, Wis., assignor, by direct and mesne assignments, to Aquatic Controls Corporation, Hartland, Wis., a corporation of Wisconsin
Filed June 1, 1961, Ser. No. 114,105
6 Claims. (Cl. 56—9)



4. In a machine for harvesting underwater plants, including a hull and means for propelling the hull; a conveying structure pivotally secured to the front end of the hull comprising: a pair of open mesh lateral conveyors adapted to be at least partially submerged beneath the water surface and when so submerged to move in a direction to convey material toward the center of the hull, an inclined conveyor disposed rearwardly of the lateral conveyors in a position to receive material conveyed by the lateral conveyors and to convey the same upwardly toward the hull, said lateral conveyors having their innermost ends disposed inwardly of the outer edges of the inclined conveyor whereby water passing through the open mesh of the lateral conveyors will backwash the return surface of said conveyors as the hull moves through the water to dislodge material clinging to said return surfaces and to cause such material to fall upon the inclined conveyor.

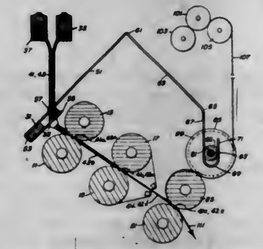
3,286,448
AUTOMATIC HEADER CONTROL APPARATUS
Beverly L. Moore, Seymour, Iowa, assignor, by mesne assignments, to Roper-Wright Manufacturing Co., Inc., Goshen, Ind., a corporation of Indiana
Filed Jan. 21, 1964, Ser. No. 339,185
5 Claims. (Cl. 56—208)



1. In a combine having a header and cutting means along the forward edge, a header height sensing and adjusting apparatus, comprising,
a plurality of feeler members spaced along and under the forward edge of said cutting means, each of said members being pivotally connected at one end to the forward edge of said header, the other end of each of said feeler members extending rearwardly,
means for normally urging said feeler members to pivot downwardly,
each of said feeler members being channel-shaped with the open side of said channel facing upwardly,
a rocker shaft extending along the width of said header rearwardly of said forward edge,

a rocker member for each of said feeler members with one end slidably received in said channel and the other end fixedly connected to said rocker shaft,
a power means for raising and lowering said header, and
means operatively connected between said rocker shaft and said power means to adjust said header downwardly as one of said feeler members moves downwardly and to adjust said header upwardly as said feeler members move upwardly, said feeler members normally being held in contact with the ground by said means for urging them downwardly.

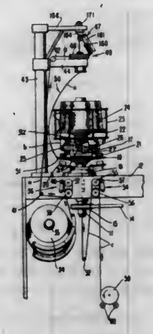
3,286,449
STRETCH YARN FEEDER FOR SPINNING FRAMES
Robert L. Carroll, 408 McIver St., Greenville, S.C.
Filed Mar. 27, 1964, Ser. No. 355,315
8 Claims. (Cl. 57—12)



2. A strand feeding device for feeding a strand to a drafting system of a spinning frame of the type having a series of drafting rolls rotating on axes parallel to each other and having a traverse bar reciprocating in a direction parallel to said axes, said feeding device comprising a feeding and metering roller rotatably mounted in contact with one of said drafting rolls to be rotated by the rotation of the drafting roll, a circumferential groove in the periphery of said metering roller for receiving a strand at one point of the circumference of the roller and feeding such strand along part of the circumference of the roller and delivering the strand to the drafting roll with which the metering roller is in contact, and means controlled by the reciprocation of said traverse bar for reciprocating said metering roller in the direction of the axis of rotation of the drafting roll with which it is in contact while maintaining such contact, so that the strand groove in said metering roller will move back and forth across a working face portion of said drafting roll.

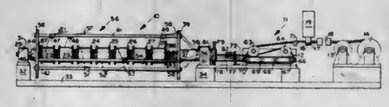
3,286,450
APPARATUS FOR TWISTING AND PLYING STRANDS
Alfred W. Vibber, 560 Riverside Drive, New York, N.Y.
Filed June 22, 1964, Ser. No. 376,820
18 Claims. (Cl. 57—58.3)

1. In strand twisting apparatus, means for rotating a running strand in the form of a balloon and for pulling the strand forward, means for guiding the apex end of the balloon comprising a strand guiding means positioned coaxially of the balloon adjacent the apex end thereof, adjustable means supporting the apex guide for movement axially of the balloon to vary the height of the apex guide for the balloon, and mechanism for controlling the last named means comprising rotatable tension sensitive means disposed to be engaged and turned in one direction by frictional engagement with a run of the strand spaced from and in tension transmitting relation with the balloon, means yieldingly urging the tension sensitive means to rotate in the opposite direction, and means responsive to



rotation of the tension sensitive means to axially adjust said supporting means for the apex guide.

3,286,451
STRANDER
Laurence B. Woolman, Marion, Ind., assignor to Anaconda Wire and Cable Company, a corporation of Delaware
Filed Mar. 24, 1965, Ser. No. 442,246
3 Claims. (Cl. 57—58.32)

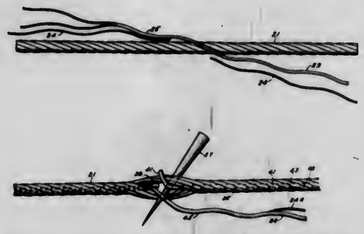


1. An apparatus for forming an insulated, stranded conductor comprising:
(A) an extruder,
(B) a rotating strander mounted upstream of said extruder, helically winding a plurality of wires, thereby forming said stranded conductor paying into said extruder,
(C) a capstan pulling said conductor through said extruder and said strander, and
(D) driving means rotating said strander, said driving means being powered solely by the passage therethrough of said conductor being pulled by said capstan,
whereby the speed of rotation of said strander is responsive to changes in the speed of advance of said conductor.

3,286,452
LONG SPLICE AND METHOD OF MAKING SAME
David W. Gathman, Williamsport, Pa., assignor, by mesne assignments, to Bethlehem Steel Corporation, a corporation of Delaware
Filed May 27, 1964, Ser. No. 370,465
7 Claims. (Cl. 57—142)

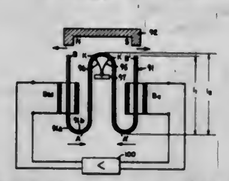
1. In a long splice in wire rope having an independent multistrand wire core and a plurality of outer strands, a tuck comprising:
(a) an outer strand the loose end of which is reduced in cross section for a short distance adjacent said rope,
(b) the wire core having several contiguous strands removed for several lays,
(c) the reduced section of said loose end being laid in the wire core in the void formed therein by the removal of said contiguous strands,
(d) the wire rope having a section of its wire core

removed for a short distance beyond the laid-in section of said outer strand, and



(e) the remainder of said loose end being inserted into said rope so as to occupy the void formed by removing said section of wire core therefrom.

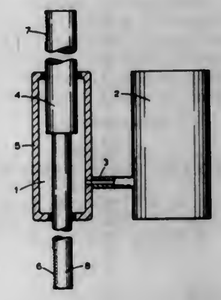
3,286,453
MAGNETOSTRICTIVE HOROLOGICAL DRIVE SYSTEMS
Thomas Baehni, Bienne, Switzerland, assignor to Baehni & Cie, Bienne, Switzerland, a corporation of Switzerland
Filed Feb. 25, 1965, Ser. No. 435,279
Claims priority, application Switzerland, Apr. 6, 1960, 3,877/60
7 Claims. (Cl. 58—23)



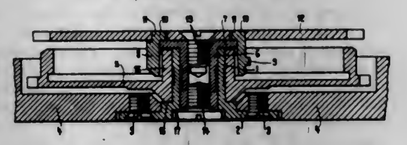
1. An electric time piece comprising time-piece works having a drive input element; a resonator comprising a flexible laminated magnetostrictive element having at least one lamina of magnetostrictive material and having the characteristic of flexing when subjected to a magnetic field, said element comprising an elongated flexible strip in the form of a double U with two pairs of leg portions connected by curved portions and a further curved portion connecting inner leg portion to the two pairs, and in which means support said strip by a further third curved portion, a driving winding associated with said magnetostrictive element and producing, when energised, a magnetic field acting on said magnetostrictive element to flex it, means for transmitting energy of said element to said drive input element to drive a time-piece, a time base providing an electric signal of an accurately predetermined frequency, and means electrically connecting said time-base with said resonator whereby the rate of oscillation of said resonator is actually controlled by said time base.

3,286,454
GAS SPRING
Heinz Hampel, Lindach uber Schwabisch Gmund, and Ernst Wüstenhagen, Koblenz, Germany, assignors to Stabilus Industrie- und Handelsgesellschaft m.b.H., Koblenz-Neuendorf, Germany
Filed Aug. 17, 1964, Ser. No. 392,672
Claims priority, application Germany, Aug. 22, 1963, St 21,002
2 Claims. (Cl. 58—42)

1. A clockwork or like mechanism comprising a mechanical escapement mechanism, a gas spring and drive means connecting said escapement mechanism and said gas spring, said gas spring comprising an elongated housing containing gas, a cylindrical plunger operating in opposed openings in said housing, said plunger having a first portion extending through one said opening and terminating within said housing, a second portion of said plunger of less diameter than said first portion rigidly secured to the inner end of said first portion and extending axially through the other said opening, sealing means about each of said openings cooperating with the surface of said plunger to seal it against gas leakage, the outer end of said second portion having teeth thereon and constituting said drive means connecting said escapement mechanism to said gas spring.



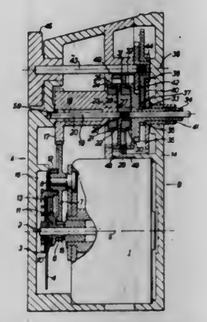
3,286,455
WATCH MOVEMENT
Jean Winkelmann, Peseux, Switzerland, assignor to Fabrique d'Ebauches de Peseux S.A., Peseux, Switzerland
Filed June 3, 1965, Ser. No. 460,991
Claims priority, application Switzerland, June 18, 1964, 7,997/64
5 Claims. (Cl. 58—59)



1. In a watch movement, frame means, a fixed tube supported by the frame means, a motor spring barrel rotatably mounted on the outer surface of said fixed tube, a tubular shaft rotatably mounted inside said fixed tube, a core, means attaching the core to the tubular shaft for rotation therewith, a barrel winding wheel, projections extending from the core, the barrel winding wheel being provided with openings in which the core projections are engaged, and means removably attaching the barrel winding wheel to said tubular shaft for rotation therewith and positioned outwardly of said core, whereby the barrel winding wheel may be removed.

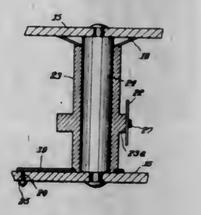
3,286,456
HOROLOGICAL INSTRUMENTS
Boris Victorien Barlow, Edgware, England, assignor to S. Smith & Sons (England) Limited, London, England, a British company
Filed Sept. 21, 1964, Ser. No. 397,781
3 Claims. (Cl. 58—85.5)

1. A timing mechanism comprising a motor, a reduction gear train driven by the motor and having an output member, adjusting means operatively connected to the reduction gear train and operable to adjust the position of the output member, the reduction gear train having at least a stage comprising an integral cluster of two external gears centred about a first axis, the said member being arranged to be driven about a second axis so that the first axis rotates about the second axis, a fixed internal gear which is centred on the second axis and with which



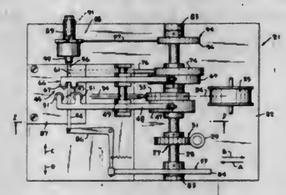
one of the external gears is in mesh, and a rotatable internal gear rotatable about and centred on the second axis, the rotatable internal gear being in mesh with the other external gear, and a support, the fixed internal gear being frictionally carried by the support so that operation of the adjusting means causes the fixed internal gear to slip with respect to the support.

3,286,457
OSCILLATION DEVICE OF MAGNETIC ESCAPEMENT
Shuji Ando, Tokyo-to, Japan, assignor to Kabushiki Kaisha Hattori Tokeiten Ginza, Chuo-ku, Tokyo-to, Japan, a joint-stock company of Japan
Original application Mar. 20, 1962, Ser. No. 181,051. Divided and this application July 25, 1963, Ser. No. 303,704
Claims priority, application Japan, Apr. 19, 1961, 36/13,715, 36/13,716
6 Claims. (Cl. 58—116)



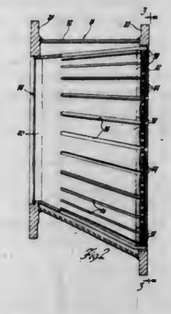
1. In a magnetic escapement for a timepiece of the type having a magnet as an oscillating member and an escape wheel with which said magnet is magnetically coupled, a magnet supporting mechanism comprising a combination of spaced structural timepiece components, an arbor fixed at opposite ends between such components, a tube rotatably mounted on said arbor, a seat block carried by the tube for receiving and supporting a magnet, turning moment imparting means carried by said tube and capable upon actuation of turning said tube and thereby said magnet to impart fine adjustment of the position of the seat block and the magnet carried thereby relative to the escape wheel and means for actuating said turning moment imparting means to effect such fine adjustment.

3,286,458
MINIATURE STAPLE MANUFACTURE AND LOADING
Rudolph F. Mallina, Hastings on Hudson, N.Y., assignor to Foundation for Medical Technology, New York, N.Y., a corporation of New York
Filed Aug. 21, 1963, Ser. No. 303,499
18 Claims. (Cl. 59—74)



1. In a method of forming successive miniature staples, the steps comprising cyclically feeding thin wire, thereafter cutting from said wire a piece of predetermined length, then forming said piece into U-shape having a central portion of predetermined length and two legs, and subsequently cutting the free ends of each leg at a predetermined angle to the leg thereby shortening and pointing said legs.

3,286,459
TURBINE INLET SCREEN ASSEMBLY
Max Ephraim, Jr., Chicago, Ill., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 31, 1963, Ser. No. 334,852
3 Claims. (Cl. 60—13)



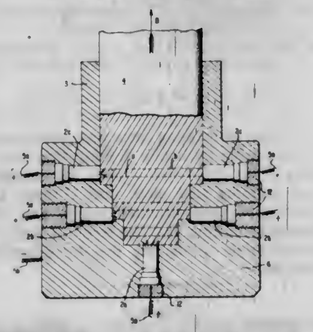
1. In an internal combustion engine having an exhaust gas driven turbine, a screen assembly covering the inlet to said turbine and protecting said turbine from potentially damaging particulate matter in the exhaust gases, said screen assembly comprising a housing portion mounted at the inlet to said turbine, said housing portion defining an exhaust gas flow path therethrough, a screen portion disposed within said housing across the exhaust gas flow path, said screen portion being subject to radial thermal expansion toward said housing portion during engine operation, said screen portion being slightly spaced radially from said housing portion to permit thermal

expansion of said screen portion relative to said housing portion, and support means mounting said screen portion on said housing portion, said support means including a tubular support member having at one end a continuous annular base portion rigidly secured to said housing portion and having at the opposite end an edge portion rigidly secured to said screen portion, said support member having a plurality of peripherally spaced slots extending longitudinally from said base portion through said edge portion to form a plurality of flexible finger portions which support said screen portion during thermal expansion relative to said housing portion.

3,286,460
PRESSURE ACTUATING DEVICE

Hans Stadler, Nurnberg, and Richard Gronemann and Heinz Gawlick, Furth, Bavaria, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany

Filed Sept. 4, 1964, Ser. No. 395,619
20 Claims. (Cl. 60—26.11)



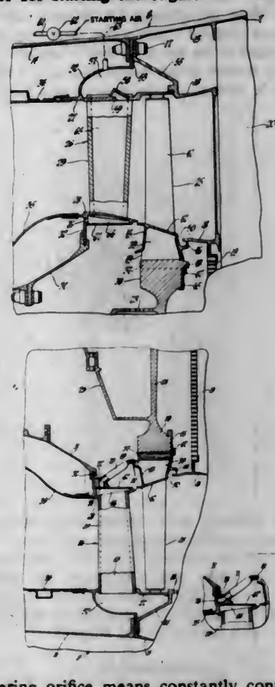
5. A power operator, comprising a pressure cylinder; a breech head closing one end of said cylinder; a piston means forming a plurality of expansion chambers in cooperation with said cylinder and breech head; a plurality of propellant cartridge chamber means opening into said expansion chambers for the reception of propellant cartridges, with firing components; means for firing the propellant cartridges, in a predetermined order so that the gas pressure in said expansion chambers will remain substantially constant during the firing stroke of said piston means; said piston means having an axially extending substantially concentric recess forming one of said expansion chambers; and said cartridge chamber means being symmetrically arranged.

3,286,461
TURBINE STARTER AND COOLING

Douglas Johnson, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed July 22, 1965, Ser. No. 474,000
6 Claims. (Cl. 60—39.14)

1. An air-cooled gas turbine comprising, in combination,
- a turbine wheel bearing blades on its periphery
- a turbine nozzle adapted to direct motive fluid to the blades
- combustion apparatus supplying motive fluid to the turbine nozzle including an air jacket supplied with compressed air when the turbine is in operation
- means defining an air chamber
- turbine air impingement starting nozzles supplied from the chamber
- turbine cooling nozzles supplied from the chamber located to direct cooling air at the turbine wheel
- valved means for supplying compressed gas to the chamber for starting the engine

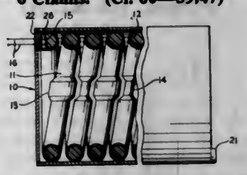


and metering orifice means constantly connecting the combustion chamber air jacket to the chamber.

3,286,462
GAS GENERATOR HAVING SLOW BURNING GRAIN FOR VARIABLE GAS FLOW

Marvin Miller, Fair Lawn, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

Filed Oct. 9, 1963, Ser. No. 314,895
6 Claims. (Cl. 60—39.47)



1. A variable output gas generator comprising, a casing in the form of a coiled tube having portions thereof varying in cross sectional area spaced along its length, combustible material in the casing for generation of gases upon ignition and combustion thereof, and means in said generator for ignition of said combustible material.

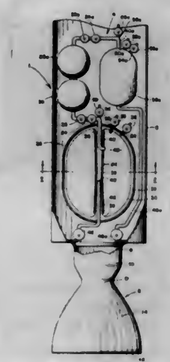
3,286,463
EXPULSION DEVICE

James D. McGroarty, Hidden Hills, Calif., assignor to North American Aviation, Inc.

Filed Aug. 9, 1963, Ser. No. 300,971
13 Claims. (Cl. 60—39.48)

1. A liquid propellant delivery system for rocket engines and the like comprising:
- a tank containing liquid propellant,

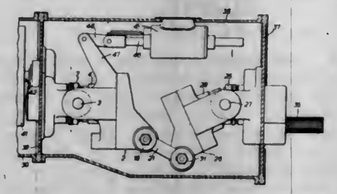
- means to supply gas under pressure to said tank and in contact with said propellant,
- a hollow barrier in said tank, said barrier being adapted to allow passage of liquid propellant from its interior side to its exterior side when exposed to said propellant, said barrier further being adapted to prevent passage of said gas when wetted with said propellant, said barrier being adapted to receive said pressurizing gas on its interior side thereof, and
- a propellant collecting space means defined by said tank and said barrier exterior side,
- a tube in communication with said collecting space and extending from end to end through said barrier, the walls of said tube converging from at least one end of the tube to a point intermediate the tube ends and,
- a pipe extending into said tube to admit and conduct away propellant.



3,286,464
HYDRAULIC APPARATUS

George Herbert Dowty, Arle Court, Cheltenham, England, assignor to Dowty Technical Developments Limited, Cheltenham, England, a company of Great Britain

Filed June 2, 1965, Ser. No. 460,873
Claims priority, application Great Britain, June 4, 1964, 23,127/64
7 Claims. (Cl. 60—53)

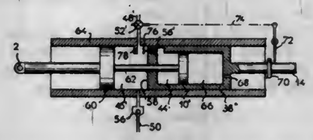


1. A hydrostatic power transmission comprising a positive displacement transmission pump, a positive displacement transmission motor having one dimension larger in size than a dimension of the transmission pump, located in close proximity to the transmission pump with the two said dimensions parallel, at least one hydraulic connection extending between the transmission pump and the motor, an auxiliary pump located close to the transmission pump in the direction of the transmission pump dimension so that the overall dimension of the two pumps is less than the dimension of the motor and lies between two planes extending from the extremes of the motor dimension at right angles thereto, and a gear or like connection between the auxiliary pump and the transmission pump.

3,286,465
DRIVE REGULATING MECHANISMS

Georges Cerles, Gardanne, and Pierre Audemar, Paris, France, assignors to Pechiney, Compagnie de Produits Chimiques et Electrometallurgiques, Paris, France, and Societe Alsacienne de Constructions Mecaniques, Paris, France

Filed Dec. 3, 1963, Ser. No. 327,847
10 Claims. (Cl. 60—54.5)

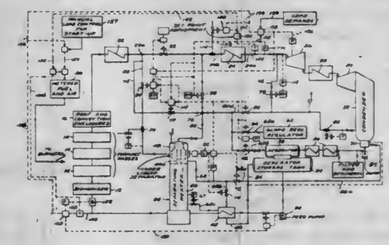


1. In a construction including a drive member having a drive shaft adapted to reciprocate in a pre-set pattern between first and second positions, and a driven member adapted to be moved by said drive member between first and second positions, the improvement comprising hydraulic coupling means adapted to regulate the extent of the movements imparted to said driven member, said coupling means including a first piston connected to said drive shaft, a cylinder for holding hydraulic fluid, a second piston connected to said driven member and means communicating said cylinder with said second piston whereby movement of said first piston can transmit corresponding movement to said second piston, first and second outlet lines associated with said cylinder, first and second valve means associated with the respective outlet lines, an hydraulic fluid reservoir in communication with said outlet lines, means for operating said first valve means at a time intermediate the completion of the stroke of said first piston as it moves from said first position to said second position to open communication between said cylinder and said first outlet line whereby said fluid can be passed from said cylinder through said first outlet line to said reservoir to relieve said pressure of said fluid on said second piston and to thereby effect stopping of said second piston before completion of said stroke, and means for operating said second valve means at a time intermediate the completion of the return stroke of said first piston to open communication between said reservoir and said cylinder through said second outlet line during said return stroke for returning said fluid to said cylinder.

3,286,466
ONCE-THROUGH VAPOR GENERATOR VARIABLE PRESSURE START-UP SYSTEM

William D. Stevens, North Caldwell, N.J., assignor to Foster Wheeler Corporation, New York, N.Y., a corporation of New York

Filed Apr. 24, 1964, Ser. No. 362,229
13 Claims. (Cl. 60—105)



1. A once-through vapor generator comprising a main flow path including a plurality of heating surfaces and a condensate system in series;

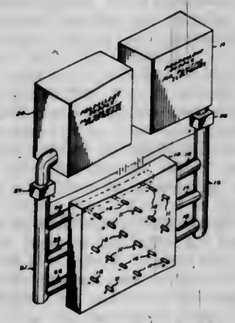
a start-up system including first and second by-pass loops leading from a first point intermediate said heating surfaces to the condensate system;

the first by-pass loop including separating means for separating a mixed phase flow into a vapor stream and a liquid stream, a vapor line to return the vapor stream to a second point intermediate the heating surfaces but downstream of the first point;

a shut-off valve in the main flow path intermediate the first and second points;

the second by-pass loop including a conduit, a pressure reducing valve in the conduit adapted to maintain pressure in the heating surfaces and to divert a variable flow to said condensate system.

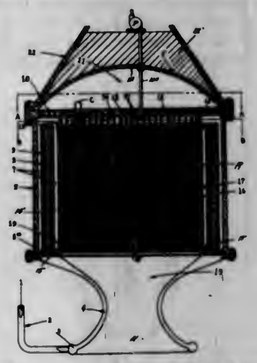
3,286,467
PLURAL NEEDLE ELECTRODE ELECTROSTATIC THRUST DEVICE
Robert E. Hunter, Waynesville, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force
Filed Jan. 19, 1965, Ser. No. 426,700
3 Claims. (Cl. 60—202)



1. An electrostatic thrust device, comprising: a plurality of uniformly spaced capillary aperture electrodes; means for providing a flow of propellent fluid material through said electrodes; means for mounting said electrodes for directing streams of propellant into the ambient; means for connecting certain of said electrodes at a high positive potential; means for connecting the remainder of said electrodes at a high negative potential; said electrodes at a high positive potential being interspersed between and adjacent said electrodes at a high negative potential with each electrode being at an opposite electrical polarity than each of the immediately adjacent electrodes, said electrodes being located in predetermined positions for electrically accelerating said streams of propellant solely through the interaction of the electric fields between said electrodes for producing an electrically neutralized flow of high velocity particles into the ambient.

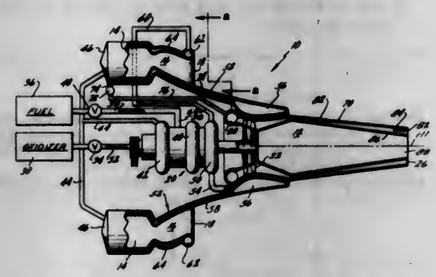
3,286,468
NUCLEAR ROCKET REACTOR
Richard K. Plebuch, Watertown, Mass.
(28563 Blythewood Drive, Palos Verdes Peninsula, Calif.)
Filed Sept. 5, 1963, Ser. No. 306,911
10 Claims. (Cl. 60—203)

1. In a nuclear reactor, a vessel having a fuel core therein, means therein from which said core is supported from above said core, said core being spaced from said means to provide a chamber, means sealing said chamber, a plenum chamber above said supporting means, means for the supply of coolant propellant through the vessel outside of said core and through said first means into the plenum chamber, means for the conduct of the coolant-propellant from said plenum chamber through said first



means into said core, means to maintain a pressure lower than that of the coolant-propellant in said first chamber whereby supporting force will be exerted on said core.

3,286,469
ROCKET NOZZLE COOLING AND THRUST RECOVERY DEVICE
Robert R. Atherton, North Palm Beach, Fla., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed July 7, 1961, Ser. No. 122,447
6 Claims. (Cl. 60—224)

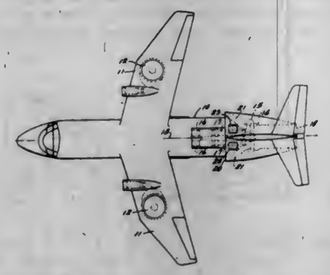


1. A rocket engine comprising a central, rearwardly tapered, expansion plug concentric about an axis defined by a fuel jacket at its forward end and a cooling duct at its after end, means to provide fuel to said jacket, at least one combustion chamber, defined at least in part by said fuel jacket and connected to receive fuel therefrom while positioned to provide products of combustion into a thrust nozzle, said thrust nozzle defined at least in part by said fuel jacket thereby making at least some of said fuel gaseous and positioned to discharge products of combustion along said central plug to generate thrust, means to pass said gaseous fuel through said cooling duct.

3,286,470
TIP-TURBINE FAN WITH THRUST REVERSER
Howard E. Gerlaugh, Ormond Beach, Fla., assignor to General Electric Company, a corporation of New York
Continuation of application Ser. No. 104,326, Apr. 20, 1961, now Patent No. 3,117,748, dated Jan. 14, 1964. This application Nov. 14, 1963, Ser. No. 296,154
2 Claims. (Cl. 60—229)

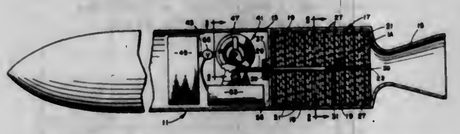
1. An aircraft power plant comprising tip turbine fan thrust means including a surrounding envelope having an

inlet for passage of air therethrough, gas generator means having an axis substantially parallel with the axis of said fan means and separate from and outside the envelope of said fan, said gas generator means having an air inlet separate from and non-interfering with said inlet, a con-



nection between the tip turbine of said fan and said gas generator means for direct drive of said fan by the exhaust gases from said gas generator means, a forwardly directed nozzle in said connection and a valve in said connection to selectively direct exhaust gas to said turbine and to said nozzle for reverse thrust.

3,286,471
SOLID PROPELLANT ROCKET MOTOR
Charles J. Kaplan, Woodland Hills, Calif., assignor to North American Aviation, Inc.
Filed Sept. 30, 1963, Ser. No. 313,411
1 Claim. (Cl. 60—254)



A solid propellant rocket motor comprising:

a housing with an exhaust nozzle at the aft end thereof,

a solid propellant grain disposed in said housing, said grain comprising:

a plurality of adjoining circular disc-shaped segments of solid propellant having a coextensive aperture at their center axis,

burning inhibitor disposed between adjoining segments,

and means for injecting a hypergol fluid through said center aperture, said means comprising:

a retractable means for carrying said fluid through said aperture,

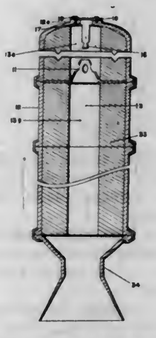
said retractable means disposed initially in said aperture the length of said grain,

means for feeding said hypergol through said retractable means,

and means for retracting said retractable means from said aperture.

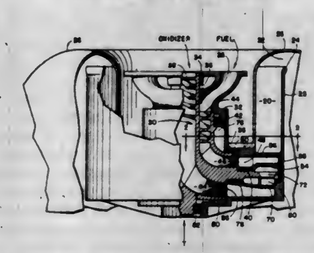
3,286,472
ROCKET MOTOR AND IGNITION SYSTEM
James R. Thurston, Brigham City, Utah, assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Feb. 24. 1964, Ser. No. 346,656
4 Claims. (Cl. 60—256)

1. A solid propellant rocket motor and an ignition system therefor comprising, in combination, a casing, a perforated solid propellant charge containing a combustion chamber having a head end in said casing, said ignition system comprising a consumable flow restrictor means and a combustible material containing igniter mounted in said head end and extendible interiorly of said chamber, said restrictor means defining a sub-chamber with said chamber head end, means in said igniter for accelerating the high temperature gas obtained from combustion of said combustible material into said sub-chamber to ignite the solid propellant in the head end of said combustion cham-



ber, and a radially extending, substantially circular baffle attached to said igniter means, said baffle forming an annular flow passage between the solid propellant surface in said chamber and the outer edge of said baffle to restrict gas flow from said sub-chamber until ignition of said head end propellant occurs producing an increased amount of high temperature gases to ignite the remainder of said solid propellant and consume said restrictor means.

3,286,473
FIXED INJECTOR AND TURBOPUMP ASSEMBLY
Thomas E. Cowell, Woodland Hills, Calif., assignor to North American Aviation, Inc.
Filed June 26, 1963, Ser. No. 291,233
2 Claims. (Cl. 60—258)



1. An integrated turbine and pump assembly for a rocket engine having a main combustion chamber and a thrust chamber comprising;

a first rotatable pump,

a second rotatable pump integral with and concentrically arranged to said first pump,

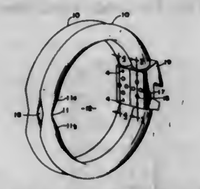
a plurality of turbine blades affixed to and adapted to drive said pumps,

fixed injector means for each of said pumps,

a pre-combustion chamber adjacent one of said injector means and adapted to receive fluid therefrom,

means to convey fluid to said precombustion chamber from the other of said injector means whereby fluid from each of said injector means will mix to form combustion gases, said turbine blades being adapted to be driven by said combustion gases in said precombustion chamber so as to rotate said pumps.

3,286,474
HOOP SEGMENTED INJECTOR AND COMBUSTOR
Herbert A. Hoche, Jr., Woodland Hills, and William R. Seugling, Van Nuys, Calif., assignors to North American Aviation Inc.
Filed Dec. 5, 1962, Ser. No. 243,202
7 Claims. (Cl. 60—260)



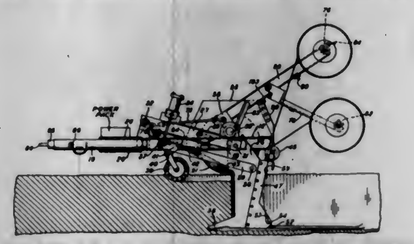
1. A modular rocket engine including a combustion chamber comprising a series of abutting, juxtaposed, substantially duplicate segments; each segment comprising
an injector portion,
coolant tube loops extending from opposite sides of said injector portion, said loops terminating in a throat-forming portion spaced from and facing said injector portion,
manifold means connected to one of said loops and means to flow coolant through said tube loops from said manifold means to said injector portion,
each said segment when in abutting position with other segments being adapted to conduct coolant therethrough in parallel flow paths, the inwardly facing portions of said loops and the injector portion in all of said segments collectively forming and defining said combustion chamber.

3,286,475
METHOD OF AGGLOMERATING AND STABILIZING PARTICULATE MATTER BY CHEMICAL TREATMENT
Nicholas M. Adams, Chicago, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed Mar. 27, 1963, Ser. No. 268,436
20 Claims. (Cl. 61—36)

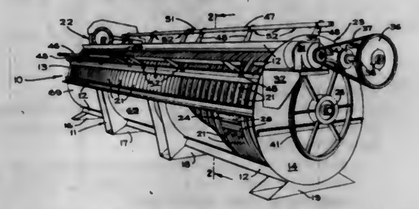
1. A process of aggregating particulate matter to produce exceptionally high strength agglomerates thereof which comprises the steps of contacting said matter in the presence of water with a polymerizable mixture comprising 10–49% by weight of an acrylamide based monomer, 0.1–4.0% by weight of a cross-linking agent capable of reaction with said acrylamide, 0.2–8.0% by weight of a catalyst, and 10–49% by weight of an alkaline earth metal compound selected from the group consisting of hydroxides and oxides, and effecting polymerization of said mixture in the presence of said particulate matter whereby said matter and said mixture are converted to a substantially water-impermeable mass, further characterized as possessing superior strength.

3,286,476
CABLE LAYING PLOW
John C. Maclay, Basking Ridge, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 30, 1963, Ser. No. 312,776
4 Claims. (Cl. 61—72.6)

1. A cable plow comprising a frame mounted upon two wheels and adapted to be trailed behind moving means, a share pin jointed to said frame by arm members, holding means including said members for maintaining said share in the same attitude with respect to the ground, an extendable tongue rigidly mounted to the front of said frame said tongue including hitching means on its foremost end, said tongue being sufficiently extendable to cause the line of action of the resultant force of the ground against said share to create a moment about said hitching means that assists in maintaining the share in the ground, main reel support arms raisably and lowerably attached to the rear of said frame, said main arms including main cradles on their outermost ends, said main cradles being adapted to receive the ends of a reel axle, auxiliary reel support arms attached to said main support arms, said auxiliary reel support arms having an operative and an inoperative position, said auxiliary reel support arms including auxiliary cradles on their outermost ends and being adapted to receive the ends of reel axles, and tabs on one clip of said main cradles, said tabs extending away from said main cradles and adapted to block the entrance into the auxiliary cradles when said auxiliary reel support arms are not in an operative position.



3,286,477
HEAT TRANSFER METHOD
Harold W. Adams, San Jose, Calif., assignor to FMC Corporation, a corporation of Delaware
Filed Jan. 6, 1961, Ser. No. 81,082
5 Claims. (Cl. 62—63)

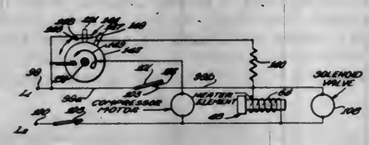


1. A method of cooling articles having rounded exterior surfaces consisting of the steps of moving the articles along a predetermined path, introducing a gaseous medium into a cooling liquid to form a foam coolant, and applying a coating of the foam in heat transfer relation substantially entirely around the curved exterior surface of each article as it is moved along said path.

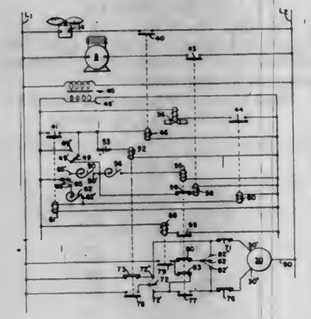
3,286,478
ICE MAKER HEATER CIRCUIT
Thomas B. Chace, Winnetka, and Joseph M. Algino, Chicago, Ill., assignors to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois
Filed May 17, 1965, Ser. No. 456,125
10 Claims. (Cl. 62—135)

1. In an ice maker,
means for forming ice cubes,
ejection means associated with said forming means and operative through successive cycles in given time periods to eject ice cubes from said forming means seriatim,
power means including a temperature responsive power element having a force applying member operatively connected to said ejection means,

said force applying member being moved from a first position to a second position upon the raising of the temperature of said power element to a high temperature and being moved back again to said first position upon the cooling down of said power element to a lower temperature to power said ejection means through an operating cycle,
first heating means functionally connected to said power element and operative intermittently whereupon the temperature of said power element is first raised to said high temperature and is then cooled down to said second temperature, and
second heating means also functionally connected to said power element and operative when said first heating means is inoperative to delay the cooling down of said power element and to increase the time period during which said ejection means operates through a cycle.

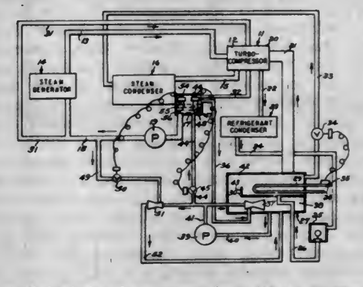


3,286,479
INLET AIR CONTROL
John J. Nolan, Cazenovia, and David S. Wilson, East Syracuse, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Mar. 31, 1965, Ser. No. 444,130
10 Claims. (Cl. 62—186)



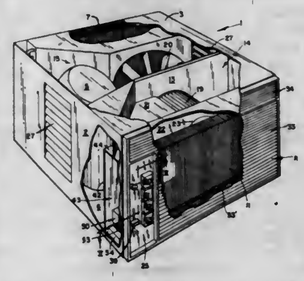
1. In conditioning apparatus having fan means for drawing air to be conditioned into said apparatus, and passage forming means adapted to communicate the inlet of said fan means with both the area being conditioned and the outdoors, the combination of means controlling operation of said fan means; damper means in said passage forming means adapted to close communication of said passage means with the outdoors, said damper means being movable between open and closed positions; and control means for said damper means responding to operation of said fan means to move said damper means in accordance with conditions of the air in said passage forming means to permit said fan means to draw selected amounts of outdoor air into said apparatus, said damper control means including means to limit opening movement of said damper means to a preset position between said damper open and closed positions.

3,286,480
STEAM POWERED REFRIGERATION SYSTEM
James A. Papapanu, Syracuse, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Sept. 1, 1964, Ser. No. 393,646
3 Claims. (Cl. 62—188)



1. A fluid balancing system for a steam powered refrigeration system, comprising the combination of, a refrigerant side having provision for collecting water; a power side including a steam condenser having means for collecting water, means including a steam driven engine for operating the refrigerant side and in circuit for discharging steam into the steam condenser, and means including a steam condensate pump for withdrawing the condensate from the steam condenser; and means for balancing water and refrigerant on the power and refrigerant sides and including, first valve means for passing water from said refrigerant side to said power side when said first valve means is open, second valve means for passing water from said steam condensate pump to said refrigerant side when said second valve means is open, and operating means for opening said first valve means when a predetermined low water level exists on said power side and for opening said second valve means when a predetermined high water level exists on said power side.

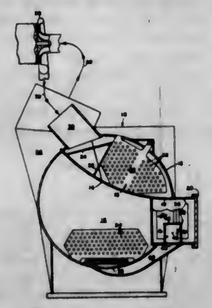
3,286,481
HEATING ARRANGEMENT FOR AIR CONDITIONING CONTROLS
James C. Wrench, Cazenovia, and William W. Bell, Jr., Marcellus, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Dec. 23, 1964, Ser. No. 420,685
3 Claims. (Cl. 62—202)



1. In an apparatus for air conditioning a space having a cover with compression means, an evaporator and a condenser connected in a closed refrigerant flow circuit therewithin, means partitioning said apparatus cover into an indoor compartment housing said evaporator and an outdoor compartment housing said condenser and compression means, and fan means for circulating air to be conditioned over the evaporator, the combination of

control means for said apparatus including switch means adapted when actuated to energize said apparatus to condition said space, and a thermal responsive operator for said switch means comprising an expansible chamber actuator disposed in said outdoor compartment and a temperature responsive element connected thereto, said temperature responsive element protruding into the space being conditioned, said actuator and element forming a closed fluid-filled system effective when exposed to a predetermined temperature to actuate said switch means, and means for heating the portion of said thermal responsive operator exposed to outdoor temperatures to permit said temperature responsive element to control operation of said apparatus when outdoor temperatures are below said predetermined response temperature, said heating means comprising a resistance type heating element circumjacent said expansible chamber actuator, second switch means adapted when actuated to energize said resistance heating element, said second switch means being series connected with said first switch means whereby actuation of said second switch means readies said apparatus for operation under control of said thermal responsive operator.

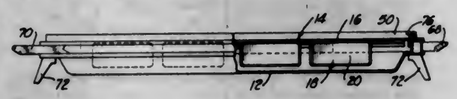
3,286,482
APPARATUS FOR CONTROLLING REFRIGERANT FLOW IN A REFRIGERATION MACHINE
William E. Clark, Carl M. Anderson, and William L. McGrath, Syracuse, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed July 10, 1964, Ser. No. 381,650
4 Claims. (Cl. 62—218)



1. In a refrigeration machine including an evaporator, a compressor, a condenser connected to form a refrigerant flow circuit wherein chamber means is interposed between the condenser and evaporator for collecting both gaseous and liquid refrigerant from the condenser for passage to the evaporator, refrigerant flow control means disposed in said chamber means, said control means comprising a hollow passage means disposed in said chamber the interior being in communication with the evaporator, said passage means having vertically spaced openings formed therein for passing refrigerant to the evaporator, said openings passing either liquid or gaseous refrigerant depending upon the level of liquid refrigerant present in the chamber.

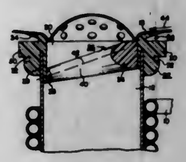
3,286,483
COLD SERVER WITH HOLDOVER MEANS
Frederick J. Burg, Bellrose, N.Y., assignor to Salton, Inc., New York, N.Y., a corporation of New York
Filed Sept. 8, 1964, Ser. No. 394,950
2 Claims. (Cl. 62—371)

1. A food server adapted to serve food materials and adapted to maintain such food materials at a temperature below normal room ambient temperature, said food server comprising a deck, said deck being made of a material of relatively high thermal conductivity, such deck having a substantially planar top surface and a bottom surface, heat sink means detachably secured to said bottom surface, said heat sink means containing a material having a phase change from solid to liquid at approximately the same temperature as the fusion point of ice and having a heat of fusion at least equal to the heat of fusion of ice, said heat sink being in thermal continuity with respect to the top of said deck, a housing arranged for the support of said deck, said housing having edge defining walls and having a bottom, said housing being continuous from said edge defining walls through said bottom, projections integrally formed with said edge defining walls extending in-



wardly with respect to said edge defining walls, said projections being arranged to support said deck, said bottom of said housing being spaced from said heat sink means when said deck is mounted on said projections, said housing being made of a material of relatively low thermal conductivity, a frame positioned around said housing, said frame engaging said housing so that said frame is rigidly positioned with respect to said housing, handle means on said frame, said handle means being adapted for the manual lifting of said frame, said housing and said deck plate positioned therein, legs secured to said frame, said legs being arranged to support said housing so that the bottom of said housing is positioned away from a supporting surface.

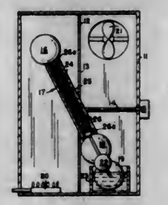
3,286,484
WATER COOLER
Charles F. Ter Bush, Grove City, and Edward H. Donselman, Upper Arlington, Columbus, Ohio, assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 6, 1965, Ser. No. 453,753
9 Claims. (Cl. 62—391)



1. A water cooler including:
a water bubbler discharging into a catch basin;
a drain outlet in said basin, said outlet being disposed to normally receive the major portion of waste water from said bubbler along one side;
a drain pipe connected to said outlet;
water supply means for said bubbler, said water supply means extending in heat exchange relation with the exterior of said drain pipe; and
a ring constructed to have the general shape of the inner peripheral portion of a torus, obliquely disposed adjacent the upper end of said pipe for spreading waste water generally uniformly around the inner surface of said pipe to precool said water supply means, the inwardly-facing curved surfaces of said inner peripheral portion of said ring being of diminishing perimeter, as measured in a vertical plane, in a descending direction, the curved surface of largest perimeter

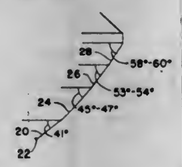
being located at the side of said outlet normally receiving the heaviest flow of said waste water.

3,286,485
REFRIGERATION HEAT EXCHANGERS
Louis H. Leonard, Jr., De Witt, and Joseph E. Embury, Memphis, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Jan. 4, 1965, Ser. No. 423,071
3 Claims. (Cl. 62—477)



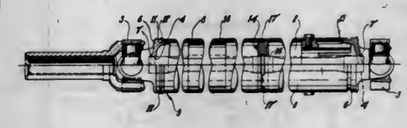
1. In an absorption refrigeration machine the combination comprising an absorber and a generator, a heat exchanger in circuit between said absorber and generator for the passage therethrough from the absorber of relatively cold fluid to be tempered and for the passage therethrough from the generator of relatively hot fluid, said heat exchanger including an enclosure for the passage of said fluid to be tempered, a plurality of containers in said enclosure for heat exchange relationship with the fluid to be tempered, each said container extending a distance substantially less than the length of the enclosure so that the individual containers are not simultaneously in heat exchange relation with hot fluid and cold fluid, said containers each containing heat exchange fluid having a vapor temperature in its container below the highest normal temperature and above the lowest normal temperature encountered in the heat exchanger whereby heat is transferred through the latent heat of the heat exchange fluid in the containers between the hot and cold fluids passing through the heat exchanger.

3,286,486
DIAMOND WITH SPECIALLY FACETED PAVILION
James Hulsman and Harry Hulsman, Westchester County, N.Y. (both of 630 5th Ave., New York, N.Y.)
Filed Jan. 10, 1964, Ser. No. 337,065
6 Claims. (Cl. 63—32)



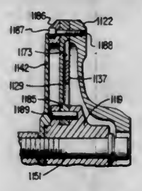
1. A brilliant-cut precious stone having a faceted crown and a faceted pavilion with a girdle interposed between the crown and pavilion, said pavilion having seventy-two facets formed thereon, wherein the seventy-two facets consist of the following: thirty-two triangular facets adjoining the girdle; sixteen diamond-shaped facets adjoining said thirty-two triangular facets; sixteen kite-shaped facets adjoining said diamond-shaped facets; and eight additional kite-shaped facets adjoining said first mentioned kite-shaped facets.

3,286,487
PROPELLER SHAFTS FOR MOTOR VEHICLES AND OTHER PURPOSES
James Ronald Esperson, Vermont, Victoria, Australia, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 14, 1964, Ser. No. 418,054
Claims priority, application Australia, Dec. 13, 1963, 38,805/63
3 Claims. (Cl. 64—1)



1. A propeller shaft adapted for use in motor vehicles and comprising
a pair of spaced flanges adapted to be connected with with separate portions of a power train,
a central shaft having its opposite ends connected to said flanges so as to be capable of transmitting torque therebetween, said shaft being torsionally resilient so as to minimize the transfer of undesirable torsional vibrations between said flanges,
a tubular casing concentrically surrounding said shaft, said casing being mounted on and extending between said flanges so as to maintain them in alignment, said casing being rotatably fixed with respect to one of said flanges and capable of at least limited rotatable movement with respect to the other of said flanges and
friction damping means carried on said casing and frictionally contacting said other flange whereby to assist in damping out torsional vibrations transmitted to said propeller shaft.

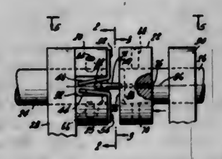
3,286,488
FLEXIBLE COUPLINGS AND HUB MOUNTINGS
James H. Anderson, Sr., and James H. Anderson, Jr., both of 1615 Hillock Lane, York, Pa.
Filed May 12, 1964, Ser. No. 366,866
11 Claims. (Cl. 64—12)



1. A flexible coupling for connecting two substantially aligned shafts comprising a first and a second hub, means to fix each hub to an end of a corresponding shaft so that said hubs are disposed in adjacent opposing relation to one another, a radially extending flange terminating in an axially extending marginal rim on said first hub, said second hub disposed co-axially within said rim and defining with said rim an annular space therebetween, a first plurality of relatively rigid elongated torque transmitting members extending in a radial plane between said rim and said second hub, a second plurality of relatively rigid elongated torque transmitting members extending in a radial plane between said rim and said second hub, said rim having a common means for receiving an end of each of said first and second plurality of rigid members, said second hub having a common means for receiving an end

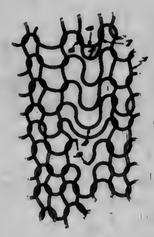
of each of said first and second plurality of rigid members, said members of each of the first and second pluralities of relatively rigid members having portions thereof configured so as to be arranged in spaced relation to one another, said members of said first and second pluralities having a greater moment of inertia in the transverse direction than in the axial direction with respect to said hub whereby said members have a greater resistance to flexure in said transverse direction than in said axial direction while providing for transmission of torque between said shafts.

3,286,489
ANTI-BACKLASH PRECISION COUPLING
Jerome C. Turro, 245 Ramsey Road, Yonkers, N.Y.
Filed Jan. 7, 1965, Ser. No. 424,015
6 Claims. (Cl. 64—15)



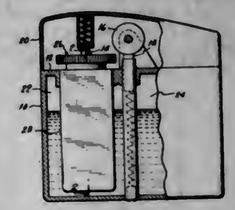
1. A shaft coupling comprising, in combination, first and second generally cylindrical annular bodies each having a central bore, means on each of said bodies for clamping same to a respective shaft to be coupled together, said first body being provided with leaf spring means forming two pairs of diametrically opposed spring walls mutually flaring out forwardly toward said second body, said second body having a pair of projecting ball members fixed thereto, each ball member being positioned for insertable engagement between one pair of said two pairs of spring walls.

3,286,490
RUN RESIST KNIT WEAR AND PROCESS
Bruce E. Martin, Hockessin, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed June 4, 1964, Ser. No. 372,573
14 Claims. (Cl. 66—202)



1. A textile article comprising a knitted fabric composed of filaments of synthetic, linear, fiber-forming polycarbonamide composition having first and second components in adhering side-by-side relationship, said first component being a copolycarbonamide having a selective sensitivity to tack-inducing agents and occupying from about 5% to about 60% of the periphery of said filaments, said second component being a homopolycarbonamide, said filaments being self-bonded between said first components at from about 5% to about 65% of the knit cross-over contacts.

3,286,491
FUEL METERING DEVICE
James D. Smith, Stroudsburg, Pa., assignor to Ronson Corporation, Woodbridge, N.J., a corporation of New Jersey
Filed Apr. 27, 1964, Ser. No. 362,727
7 Claims. (Cl. 67—7.1)



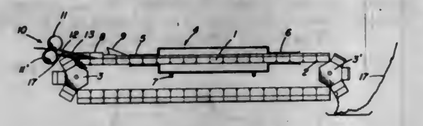
1. An improved lighter comprising, a fuel container capable of holding highly volatile fuel in its liquid state above atmospheric pressure, a burner nozzle mounted above said fuel tank for directing the flow of gaseous fuel from said tank, a passageway interconnecting said fuel container and said burner nozzle, an elongated porous element containing therethrough a myriad of tortuous interconnected passageways of a size sufficient to permit restricted but positive flow of liquids and free flow of gases, said elongated porous element mounted to extend from a lower point within said casing near its bottom to an upper point within said tubular passageway located sufficiently above the maximum liquid level capacity of said container to prevent capillary wetting of said porous element above said upper point, said elongated porous element further being provided over its entire length with a fluid impervious lateral surface which is tightly sealed to said tubular passageway.

3,286,492
CANDLE NOVELTY
Preston J. Frazier, Jr., Houston, Tex., assignor to Faroy, Inc., a corporation of Texas
Filed Mar. 15, 1965, Ser. No. 439,758
6 Claims. (Cl. 67—21)



1. A candle novelty, comprising:
(a) a holder having a bottom and a wall extending upwardly therefrom,
(b) said wall being formed of a translucent material which prevents a viewing of the contents of the holder until a candle therein creates a light within the holder,
(c) a candle disposed in said holder and being formed of a material which liquefies from the heat produced by the candle when the wick thereof is lit,
(d) a non-metallic flexible strip disposed between the candle and the wall of the holder and shaped to conform to the inner surface of the wall of the holder, and
(e) said strip being hidden by the wall of said holder prior to lighting said candle and having transparent portions through which light from the burning candle wick is transmitted after the candle is liquefied to reveal the configuration of the transparent portions through the translucent wall of the holder.

3,286,493
APPARATUS FOR TREATING MATERIAL UNDER SUPERATMOSPHERIC PRESSURE
Kazuo Ogino, Keiichi Zoda, and Keitaro Shimoda, all of Saidaiji, Japan, assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Filed Nov. 9, 1964, Ser. No. 409,864
Claims priority, application Japan, Nov. 30, 1963, 38/64,589
5 Claims. (Cl. 68—5)

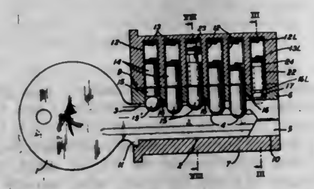


1. Apparatus for continuously treating material with a treating medium under superatmospheric pressure comprising:
(a) an endless conveyor comprising a plurality of substantially cylindrical containers secured end-to-end, all of such containers having the same external cross-sectional configuration in planes perpendicular to the path of travel of such containers when such conveyor is in motion, each of said containers including a lid moveable between an open position and a closed position and each being provided with openings through which treating medium can flow into such container when such lid is in the closed position;
(b) a pressurized chamber surrounding a portion of said conveyor, said chamber being provided with an inlet seal and an outlet seal disposed along such path of travel, each of such seals being configurated to enclose at all times at least a portion of a container in a pressure-sealing enclosure;
(c) means to move said endless conveyor so each container thereof follows a closed path, a portion of which passes through said pressurized chamber and the inlet seal and outlet seal thereof; and
(d) means for introducing a treating medium into said pressurized chamber under superatmospheric pressure.

ERRATUM

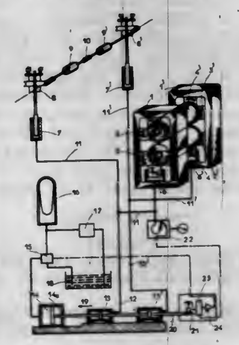
For Class 70—371 see:
Patent No. 3,286,773

3,286,494
PICK-PROOF PIN-TUMBLER LOCK MECHANISM
Stan J. Sussina, 136 Elm St., Mamaroneck, N.Y.
Filed Mar. 23, 1964, Ser. No. 354,169
10 Claims. (Cl. 70—419)



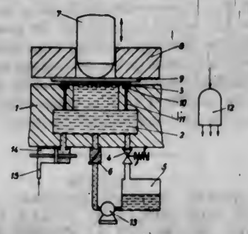
1. A pick-proof mechanism for pin tumbler locks having locking hardware selectively actuable to its locking and unlocking positions by rotation of a plug in a cylinder, the plug being connected to the locking hardware, on insertion of a proper key into the keyway of the plug to move the pin tumblers of the lock to a shear line, comprising a radial chamber in the cylinder open at its end toward the plug and closed at its other end, at least one arcuate peripheral groove in the cylindrical surface region of the plug of which at least a portion registers with the open end of the chamber, pin means slidable in the chamber and spring biased to extend the pin means a limited distance into the groove, and means comprising at least one spherical ball wholly within and movable in the groove selectively to a first position permitting the pin means to maintain its extending-into-the-groove position thereby limiting plug rotation and to a second position to restore the pin means against its spring bias wholly into the chamber thereby permitting plug rotation, the tumblers of the lock being at the shear line in both the first and second positions of the movable means.

3,286,495
DEFORMATION COMPENSATING HYDRAULIC DEVICE FOR ROLLING MILLS OF THE HYDRAULIC MECHANICAL PRESSURE TYPE
Lucien Diolot, Neuilly-sur-Seine, France, assignor to Societe Nouvelle Spidem, Paris, France
Filed Feb. 7, 1964, Ser. No. 343,380
Claims priority, application France, Feb. 11, 1963, 924,375
8 Claims. (Cl. 72—8)



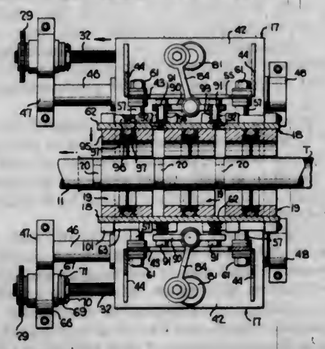
1. A system for compensating for the deformation of working rolls in rolling mills of the type including a screwdown mechanism associated with ram cylinders through a hydraulic screwdown circuit containing a constant volume of hydraulic fluid to adjust the roll supporting chocks to a roll clearance of predetermined value, comprising
(a) expansible equalizing means communicating with said screwdown circuit and adapted to receive therefrom and release thereinto amounts of said fluid as the pressure in said circuit varies in response to the changes in said clearance caused by fluctuating roll separating forces,
(b) hydraulic servo means adapted to cause contraction or expansion of said equalizing means,
(c) electric circuit means for sensing and comparing the variation of pressure in said ram cylinders and the variation of expansion or contraction of said equalizing means, said electric circuit means, responsive to the comparison of said variations adapted to energize said hydraulic servo means to return said equalizing means in a position where the pressure in said screwdown circuit counteracts said separating forces to such an extent as to re-establish said predetermined clearance.

3,286,496
APPARATUS FOR HYDRAULIC DEEP-DRAWING OF SHEET METAL
Eugen Burk, Traunstein, Germany, assignor to Siemens-Electrogeräte Aktiengesellschaft, Berlin and Munich, Germany, a corporation of Germany
Original application July 3, 1962, Ser. No. 207,311, now Patent No. 3,288,255, dated Sept. 28, 1965. Divided and this application May 4, 1965, Ser. No. 453,131
Claims priority, application Germany, July 7, 1961, S 74,709; May 23, 1962, S 79,575
9 Claims. (Cl. 72—54)



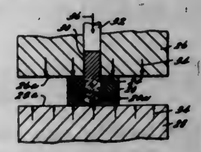
1. A drawing press for hydraulically deep-drawing sheet material from blank or pre-shaped workpieces, comprising a container defining a space for holding liquid under pressure, said container having a surface for supporting the workpiece so that the workpiece forms a closure for said container, said container being provided with a groove in its upper portion, and a resilient sealing member of soft material within said groove to form said workpiece supporting surface, retainer means movable toward and away from said container surface for sealingly holding the workpiece thereagainst, a male die movable toward and away from said container for pressing the workpiece against the liquid container therein, and program control means for controlling the pressure and flow of said liquid into said space in dependence upon the working stroke travel of said male die.

3,286,497
RECIPROCATING MULTIPLE DIE DEVICE FOR CAN CUTOFF AND FLANGING BY MAGNETIC IMPULSE
John T. Cary, Markham, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Feb. 5, 1964, Ser. No. 342,603
14 Claims. (Cl. 72—56)



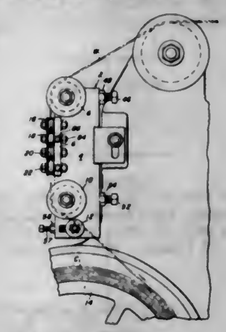
1. An apparatus for dividing a moving tube into predetermined lengths, said apparatus comprising a fixed tube support, means for advancing a tube along said tube support, a pair of cooperating die halves, first die half moving means for moving said die halves into and out of tube clamping relation, second die half moving means for reciprocating said die halves longitudinally of said tube support, means connected to said tube advancing means and said first and second die half moving means for opening and closing said die halves and longitudinally of said tube support in timed relation to the movement of a tube over said tube support, and means carried by said tube support for outwardly expanding a tube in alignment with said die halves with said die halves being closed.

3,286,498
COMPRESSIVE FORMING
Richard Maurice Cogan, Hamilton, Mass., assignor to General Electric Company, a corporation of New York
Filed Feb. 3, 1964, Ser. No. 341,909
7 Claims. (Cl. 72—61)



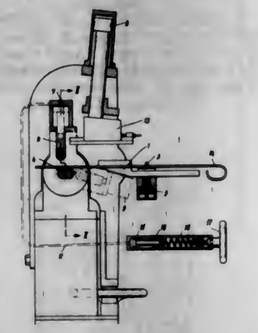
1. In a method of compressive forming an article from a workpiece having a hollow core, the steps of:
(a) placing all of the material of the workpiece under compression with a first force which is less than that required to plastically deform the material of the workpiece; and
(b) applying to internal walls of the workpiece hollow core a second force;
(c) the sum of the first and second forces exceeding that force required to plastically deform the material of the workpiece.

3,286,499
APPARATUS FOR COILING WIRE
Sebastian Junta and Paul J. Kovacs, Pittsburg, Calif., assignors to United States Steel Corporation, a corporation of Delaware
Filed Nov. 12, 1963, Ser. No. 322,957
6 Claims. (Cl. 72—161)



1. Apparatus for coiling wire from a wire processor onto a rotating take-up block comprising a first rotatable roller adjacent the wire processor over which the wire from the processor passes, a second rotatable roller spaced from said first roller toward the take-up block, the axes of said rollers and take-up block being parallel to one another, a plurality of rollers arranged between said first and second rollers and bearing on opposite sides of the wire passing over the first and second rollers, said plurality of rollers directing the wire in a tortuous path, the axes of said plurality of rollers being parallel to one another and perpendicular to the axes of said first and second rollers, a small roller arranged between the second roller and the take-up block with its axis parallel to the axis of said take-up block, said small roller being arranged to contact said wire and direct it away from a line tangent to said take-up block and said second roller, and means for moving said small roller toward and away from said wire passing thereover.

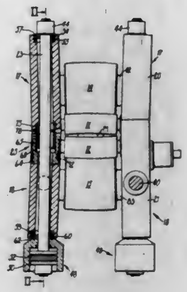
3,286,500
BENDING MACHINE
Josef Weiss, Hagen, Germany, assignor to Heinrich Bartz Kommanditgesellschaft, Dortmund, Germany
Filed Nov. 27, 1963, Ser. No. 326,463
Claims priority, application Germany, Nov. 30, 1962, B 69,814
6 Claims. (Cl. 72—219)



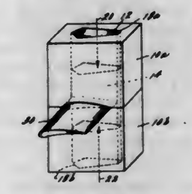
1. A bending machine for forming loops of any desired shape on round or flat stock or the like comprising a support for the workpiece, cooperating hydraulic clamping means and hydraulic centering means securing the workpiece on said support, a die block having an equal cross section along its effective length and corresponding to the loop to be formed, a bender comprising a hydraulic cylinder and a roller head resiliently forced against said die block, said bender being supported for rotary movement to wrap the end of said workpiece around said die block, hydraulic means producing the rotary movement of the bender, a hydraulic compensating cylinder communicating with said first hydraulic cylinder, a piston in said compensating cylinder, and adjustable pressure means adjustably and yieldingly loading said piston against the hydraulic fluid pressure, thus equalizing the pressure exerted by said roller head when moving the bender in pressure exerting contact around said die block.

3,286,501
PRE-STRESSED ROLLING MILLS
John André Tracy, Talbot Woods, Bournemouth, England, assignor to The Loewy Engineering Company Limited, Bournemouth, England, a company of Great Britain
Filed July 30, 1963, Ser. No. 298,653
Claims priority, application Great Britain, Aug. 3, 1962, 30,071/62, 30,072/62
6 Claims. (Cl. 72—237)

1. A "frameless" rolling mill in which the bearing chocks at each side of the mill form together one assembly, and in which each assembly is interconnected by pre-stressed columns, sets of bearing pads being positioned between the two chocks of one assembly as well as between one chock of one of said assemblies and the pre-stressing means, the pads of each set contacting each other on matching convex and concave bearing surfaces respectively which are so arranged on the pads that a chock of an assembly is free to tilt or rock relative to the other chock of the same assembly and about an axis perpendicular to both the axis of the associated roll and the common plane through the axes of the rolls.



3,286,502
SIDE EXTRUSION
Richard Maurice Cogan, Hamilton, Mass., assignor to General Electric Company, a corporation of New York
Filed Mar. 26, 1964, Ser. No. 354,894
7 Claims. (Cl. 72—259)

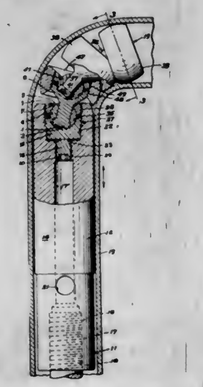


1. In a method of extruding from a workpiece billet through an extrusion orifice an article having a cross-sectional shape other than circular normal to the axis of extrusion, the steps of:
shaping the workpiece billet to provide the billet with end portions and wall portions extending lengthwise between the end portions, each cross-sectional dimension of the billet through the wall portions normal to the length between the end portions of the billet being shaped to correspond generally with each common cross-section through the extrusion orifice so that the generally larger cross-sections through the billet corresponds in general position with the larger cross-sections through the extrusion orifice;
positioning the billet in an extrusion die having a billet receptacle shaped to correspond with the shape of the billet so that a wall portion intermediate the end portions is positioned opposite an extrusion orifice in a wall of the extrusion die and each cross-sectional dimension of the workpiece billet normal to the workpiece billet length is in alignment with each common cross-section through the extrusion orifice so that the generally larger cross-sections through the workpiece billet are in general alignment with the larger cross-sections through the extrusion orifice; and then
extruding the article through the extrusion orifice from a wall portion of the billet at a point intermediate the end portions.

3,286,503
METHOD OF BENDING TUBING AND MANDREL COMPONENT THEREOF

James L. Garrett, 2472 3rd St., San Francisco, Calif.

Filed Jan. 27, 1964, Ser. No. 340,160
3 Claims. (Cl. 72—466)

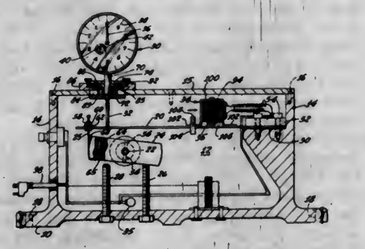


1. In a bending mandrel for placement in a metal tubing to be bent, a flexible section of articulated elements comprising a series of links arranged in juxtaposition, an enlarged flaring portion on each of said links defining a recess, said recess having a groove therein, a split-link ball having an annular circumferentially disposed groove therein, on each link of said series of links, a link ball ring mounted on each of said split-link balls for reception in said annular groove of each link ball and said groove of each said recess to latch said articulated elements in a substantially straight line, and a rigid mandrel ball movably mounted on each enlarged portion of each of said links for relative movement between the mandrel and an encompassing metal tubing during bending operations to inhibit formation of kinks or crimps in the inner wall of the metal tubing.

3,286,504
LOW TORQUE METER

Bosko Grabovac, Altadena, Calif., assignor to Torque Controls, Inc., San Gabriel, Calif., a corporation of California

Filed Apr. 9, 1964, Ser. No. 358,580
12 Claims. (Cl. 73—1)

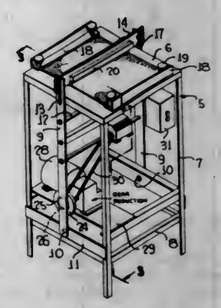


4. In a device to measure torque forces over a given range of values, the combination of:
- a flexible beam rigidly anchored at one end with the other end free to flex;
- restraining means engaging the other end of the beam and flexing the beam in one lateral direction to a given degree with the beam free to flex in said one lateral direction beyond the given degree;
- a spring-biased indicator gage under load by the beam with the spring force of the gage urging flexure of the beam in said lateral direction, said gage having a scale covering the given range of torque values with the scale rising in the direction of unloading of the gage;
- rotary input means to receive torque forces to be measured, a portion of the rotary input means having a concentric peripheral surface; and
- elongated flexible means connecting said rotary input means with the beam to flex the beam in said one lateral direction beyond the given degree and thus correspondingly unload the indicator gage;
- said elongated flexible means lying against said concentric peripheral surface to extend tangentially therefrom to the beam throughout the given range of torque values.

3,286,505
CARPET TESTING MACHINE

Le Roy M. Penman and Eugene P. Fetzer, Bloomsburg, Pa., assignors to The Magee Carpet Company, Bloomsburg, Pa., a corporation of Pennsylvania

Filed Apr. 17, 1964, Ser. No. 360,643
10 Claims. (Cl. 73—7)

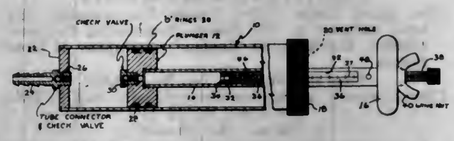


1. A pile fabric testing machine comprising a friction bar of rectangular shape in cross section extending transversely of the fabric having one of its longitudinal edges in frictional contact with the pile of the fabric, means supporting the ends of said bar for free vertical movement and means for rocking said first means to move said bar back and forth over the pile of the fabric.

3,286,506
SAMPLING PUMP

Richard L. Lloyd, Salt Lake City, Utah, assignor to the United States of America as represented by the Secretary of the Army

Filed May 20, 1964, Ser. No. 369,046
1 Claim. (Cl. 73—23)

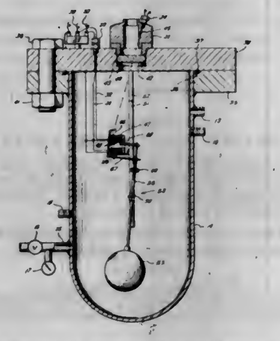


A pump for testing a sample of a gas comprising:
- a pump casing;
- a plunger reciprocably mounted in the casing;
- a hollow plunger rod having a cut-away area attached to the plunger and reciprocably mounted in the casing;
- a glass tube with graduated indicia thereon viewable through said cut-away area and mounted in the hollow plunger rod;
- a removable closure for the plunger rod that may be removed so that the glass tube may be inserted in the plunger;
- a color-changeable indicating compound in the glass tube;
- a valve means for the pump operative to admit a sample of air to be tested to the pump as the plunger is reciprocated in one direction;
- and valve means for the plunger to admit the sample to the glass tube and the indicating compound as the plunger is reciprocated in a second direction to change the color of the compound in accordance with the characteristics of the air sample.

3,286,507
PENDULUM DENSITOMETER

William M. Moore, Shreveport, La., assignor to United Gas Corporation, Shreveport, La., a corporation of Delaware

Filed Feb. 27, 1964, Ser. No. 347,733
22 Claims. (Cl. 73—30)



1. The method of measuring the density of a gaseous fluid comprising,
- flowing the fluid to be measured to a pendulum chamber,
- oscillating a pendulum within said pendulum chamber, and
- timing the period of oscillation of said pendulum to determine the density of said fluid within said pendulum chamber.

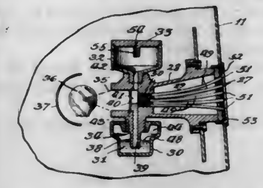
7. A gaseous fluid density measuring device comprising,
- a pendulum chamber,
- a fluid inlet into said pendulum chamber,
- a fluid outlet from said pendulum chamber,
- a pendulum mounted wthin said pendulum chamber for oscillation,
- means imparting oscillation to said pendulum, and
- means timing the period of oscillation of said pendulum.

3,286,508
SIGNAL APPARATUS

Raymond W. Spiegel, Stevensville, Mich., assignor to Whirlpool Corporation, a corporation of Delaware

Filed Feb. 21, 1964, Ser. No. 346,485
9 Claims. (Cl. 73—38)

1. Signal apparatus, comprising: a light source; means for transmitting light from said source in a beam of finite transverse dimensions; means for providing a place of visual observation of said beam; transparent colored means progressively movable from exteriorly of said beam to intercept said beam in said transverse dimensions and thus color the beam progressively for said visual observation at said place; variable pressure means; and means operated by said variable pressure means for thusly moving said colored means progressively with increasing

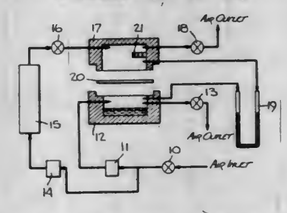


pressure in said variable pressure means, the relative extent of said movement of said colored means and thus of said pressure thereby being indicated by the extent of coloring of said beam in said transverse dimensions.

3,286,509
APPARATUS FOR MEASURING WATER VAPOR PERMEABILITY

Michael J. Gluckman, New City, and Hubert O. Ranger, Ossining, N.Y., and Alfred E. Beecher, Tacoma, Wash., assignors to St. Regis Paper Company, New York, N.Y., a corporation of New York

Filed Sept. 22, 1964, Ser. No. 398,179
8 Claims. (Cl. 73—38)



1. Apparatus for determining the water vapor permeability of a given material, said apparatus comprising top and bottom cells adapted to be interconnected to form an air-tight chamber therebetween, said material whose water permeability is to be determined being positioned in said chamber between said top and bottom cells whereby water vapor passing from one of said cells to the other must pass through said material, means for regulating the relative humidity in said cells whereby the relative humidity in said bottom cell is higher than the relative humidity in said top cell, means for measuring changes in relative humidity in said top cell, and means for measuring the time required for the relative humidity in said top cell to increase from one value to another due to the passage of water vapor from said bottom cell through said material to said top cell whereby the water vapor permeability of said material can be determined.

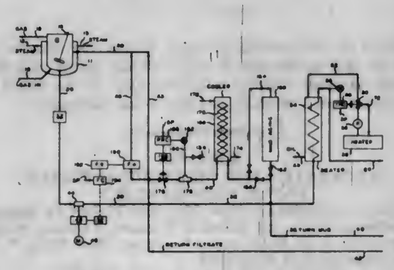
3,286,510
DRILLING MUD TEST APPARATUS AND PROCESS

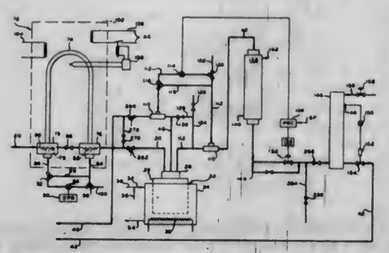
Harry W. Parker, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed May 18, 1964, Ser. No. 368,256
16 Claims. (Cl. 73—53)

1. A drilling mud testing apparatus comprising in combination:
- (a) a mud reservoir having a mud inlet and a mud outlet;
- (b) filtering means for determining rate of water loss from said mud having a mud inlet, a mud outlet, and a filtrate outlet;
- (c) conduit means connecting the mud outlet of the

reservoir of (a) with the mud inlet of the filtering means of (b);
(d) a high pressure pump in the conduit means of (c) for supplying high pressure mud to the filtering means of (b);
(e) a heater in the conduit means of (c) downstream of the pump of (d) for heating the mud flowing thru the conduit means of (c);
(f) a viscometer in the conduit means of (c) downstream of the heater of (e), having heating means therein;
(g) return conduit means connecting the mud outlet

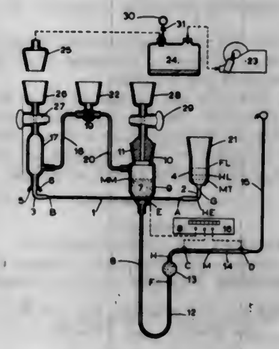




of the filtering means of (b) with the mud inlet of the reservoir of (a);
(h) a cooler in the conduit means of (g) for cooling mud returning to the mud reservoir of (a) thru the conduit means of (g);
(i) a backpressure valve in the conduit means of (g) for holding the mud pressure upstream thereof and reducing the pressure downstream thereof;
(j) means connected with the filtrate outlet of the filtering means of (b) for determining the filtrate flow rate from said outlet; and
(k) means for controlling the pressure output of the pump of (d).

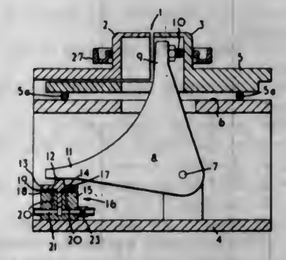
3,286,511
VISCOSITY MEASUREMENT
John Harkness, Taunton, England, assignor to Coulter Electronics, Inc., Hialeah, Fla., a corporation of Illinois
Filed Jan. 15, 1964, Ser. No. 337,801
Claims priority, application Great Britain, Jan. 17, 1963, 2,166/63
11 Claims. (Cl. 73—55)

1. A method of testing the viscosity of a test liquid which comprises the steps of drawing a known volume of test liquid through a horizontally arranged capillary tube under the influence of a gravitationally descending columnar stream of non-test liquid and registering the time interval required for the leading end of the stream of non-test liquid to traverse the distance between a pair of points, said distance being related directly to said known volume and the inner diameter of the tube being



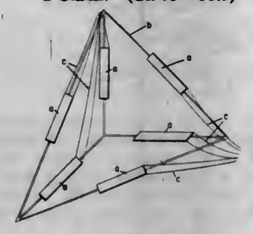
selected to exert a viscous drag on the test liquid whereby the rate of travel of said leading end between said pair of points is indicative of the viscosity of the test liquid.

3,286,512
APPARATUS FOR TESTING LIP SEALS
Ernest T. Jagger, Geoffrey W. Halliday, and Peter W. Pattison, Newcastle upon Tyne, England, assignors to George Angus & Company Limited, Newcastle upon Tyne, England, a British company
Filed Nov. 16, 1964, Ser. No. 411,284
Claims priority, application Great Britain, Nov. 21, 1963, 45,999/63
5 Claims. (Cl. 73—88)



1. Lip seal testing apparatus comprising a diametrally split cylindrical surface member composed of two parts mounted for relative movement perpendicularly to the diametral split between them, the cylindrical surface of the split member corresponding in diameter to a cylindrical surface to be sealed by the lip of a seal to be tested, and actuating means for both effecting and indicating the relative movement of the split member parts; in which said actuating means includes a pneumatic load cell, a thrust member of said cell, means for supplying air under controlled pressure to said cell to move said thrust member, mechanical coupling means between said thrust member and a part of said split member for transmitting movement of one to the other and a pressure gauge connected to said cell to respond to change of pressure consequent on movement of said thrust member.

3,286,513
CONCRETE PROBE
Zbigniew A. Wasiutynski, Warsaw, Poland, assignor to Polska Akademia Nauk-Instytut Podstawowych Problemow Techniki, Warsaw, Poland
Filed Sept. 12, 1963, Ser. No. 308,585
Claims priority, application Poland, Sept. 14, 1962, P 99,657
1 Claim. (Cl. 73—88.5)



A concrete probe adapted to be embedded in concrete for use in simultaneously measuring six strain components at a selected spot in the concrete, comprising: a plurality of elongate members connected together to form the edges of an open framework in the form of a tetrahedron, with predetermined angles between connected members, at least one strain gauge connected to each member for use in measuring the deformation thereof, and individually identifiable conductors leading from the respective gauges for connection to a measuring apparatus.

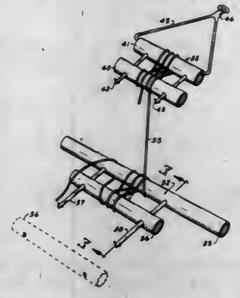
3,286,514
TOTAL PRESSURE TRANSDUCER
Curtis A. Anderson, Cincinnati, Ohio, assignor to the United States of America as represented by the Secretary of the Army
Filed Mar. 20, 1964, Ser. No. 353,639
4 Claims. (Cl. 73—88.5)



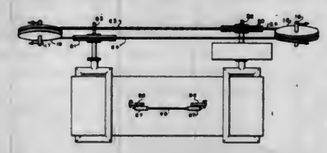
4. A pressure measuring device for embodiment in a material mass having a modulus of elasticity and modulus of rigidity corresponding to the material mass comprising:
(a) a flexible, sealed envelope having a maximum thickness centrally thereof and tapering to minimum thickness at the edge thereof;
(b) a liquid contained within said envelope having a low thermal coefficient of expansion, low freezing point and high incompressibility;
(c) a pressure responsive transducer immersed in said liquid; and
(d) electrical conductor leads connected to said transducer and projecting externally of said envelope for connection to an indicating means whereby said pressure measuring device embedded in the material mass records internal pressures of said material mass without affecting the homogeneity of the material mass.

3,286,515
TENSILE STRENGTH TESTING DEVICE
Robert E. Bendl, Grafton Court, R.F.D. 2, Denbigh, Va.
Filed Oct. 8, 1963, Ser. No. 314,819
3 Claims. (Cl. 73—95.5)

3. Means for connecting a flexible strand to a tension absorbing structure in a manner to avoid concentration of stress at any particular location along said strand, said means comprising a first tubular member of cylindrical shape, a second tubular member of cylindrical shape disposed adjacent and parallel to said first member, both of said members being of a diameter sufficient to avoid any sharp bends in a flexible strand wrapped around said members, and guide pins secured to one of said members and extending slidably through apertures in the other of said members to maintain said members in substantially parallel relationship while permitting variation in the distance therebetween.



3,286,516
APPARATUS FOR PERFORMING FLEXURE TESTS
Paul W. Post, P.O. Box 279, Tacoma, Wash.
Filed May 13, 1963, Ser. No. 279,773
6 Claims. (Cl. 73—100)

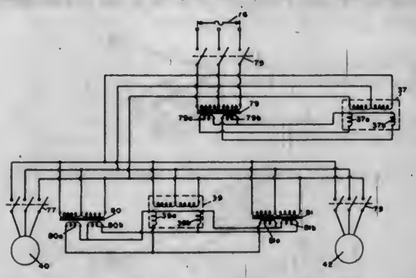


2. A flexure test machine comprising a force producing means connected to a cable and pulley system which converts the force to two equal opposite torques acting about parallel axes, torque measurement apparatus mounted on one torque axis, loading frames mounted on both torque axes for applying torques to a flexure specimen, carriages and tracks supporting the torque axes in parallel orientation, free to turn and move laterally in their plane, and a frame to which the force producing means, one end of the cable and pulley system, and tracks are attached and held in proper relative position.

3,286,517
VEHICLE WHEEL AND ENGINE TESTING APPARATUS
Robert F. Ostrander, New Haven, Conn., assignor to Ostradyne, Inc., New Haven, Conn., a corporation of Connecticut
Filed Sept. 24, 1963, Ser. No. 311,144
7 Claims. (Cl. 73—116)

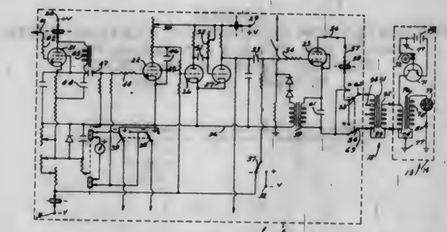
1. A vehicle and engine testing device, for testing vehicles having a pair of ground engaging drive members, comprising a first and a second means one engageable in driving relationship with each of said members, a first motor generator drivingly connected to said first means, a first absorption dynamometer connected to said first means and adapted to brake the same, a second motor generator drivingly connected to said second means, a second absorption dynamometer connected to said second means and adapted to brake the same, a first meter

connected to measure the combined power used by and generated by said motor generators, and a second meter



connected to simultaneously measure the differential of power used by and generated by said motor generators.

3,286,518
DYNAMIC COMPRESSION CIRCUIT
Anatolijs Mazurkevics, Kalamazoo, Mich., assignor to Allen Electric and Equipment Company, Kalamazoo, Mich., a corporation of Michigan
Filed Feb. 24, 1964, Ser. No. 346,887
8 Claims. (Cl. 73—116)



1. In a dynamic compression tester for an electrically ignited multiple cylinder internal combustion engine having an ignition system including an ignition coil which has a relatively low primary winding voltage drop, the combination comprising:

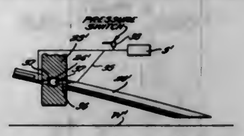
a trigger device having anode means, cathode means and control electrode means;

means synchronized with the ignition rate of the engine for providing a firing pulse on said control electrode said trigger device requiring said firing pulse and an anode-cathode voltage in excess of that across said primary for conduction;

transformer means connected between said cathode means and anode means on one side thereof and across said coil primary winding on the other side thereof so that the voltage drop across said coil primary winding is sufficiently increased by said transformer means as to allow conduction of said trigger device and whereby said transformer means transfers the zero impedance resulting from such conduction to short out said ignition coil primary winding.

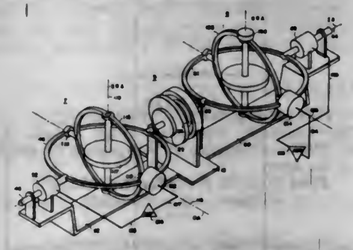
3,286,519
TRAVELING SHEET BREAK DETECTOR
Lloyd Hornbostel, Jr., Beloit, Wis., assignor to Beloit Corporation, a corporation of Wisconsin
Original application Feb. 15, 1961, Ser. No. 89,452, now Patent No. 3,159,028, dated Dec. 1, 1964. Divided and this application Feb. 10, 1964, Ser. No. 350,139
5 Claims. (Cl. 73—159)

1. A mechanism for detecting a break in a web normally travelling in a predetermined running plane comprising a flow nozzle having an orifice for directing a stream of fluid against the surface of the web, means movably supporting said nozzle for movement between a first position and a second position with the nozzle being held in first position by the reactive force of the fluid flowing against the web, a fluid supply conduit communicating



with the nozzle, a valve in said conduit operated by said nozzle and restricting flow through said conduit in said second position of the nozzle, and means responsive to effect on the air in said conduit resulting from the valve restricting flow with movement of the nozzle from first to second position for manifesting breakage of the web.

3,286,520
CONTROL APPARATUS
Glenn R. Quasius and Leo Spiegel, Clearwater, Fla., assignors to Honeywell Inc., a corporation of Delaware
Filed June 24, 1963, Ser. No. 290,012
3 Claims. (Cl. 73—178)



1. Inertial measurement apparatus of the class described comprising:

(a) a first inertial instrument for sensing acceleration relative to a sensitive axis and having a mechanical output indicative thereof;

(b) a second inertial instrument for sensing angular velocity relative to a sensitive axis and having a mechanical output indicative thereof;

(c) means mounting said first and second inertial instruments so that said sensitive axes are substantially parallel;

(d) pickoff means comprising

(1) base means having a first surface,

(2) a plurality of second surfaces,

(3) cooperative means situated on all of said surfaces,

(4) energizing means connected to said cooperative means,

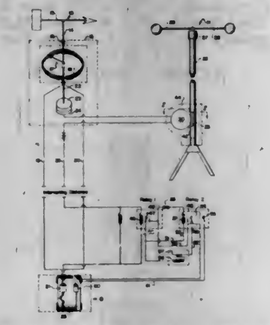
(5) means mounting said plurality of second surfaces for rotation each in juxtaposition with respect to another of said surfaces to form a plurality of pairs of surfaces, said cooperative means on one surface of each of said pairs coacting with said cooperative means on the other surface of each of said pairs upon relative rotation therebetween to provide output pulses, and

(6) means for continuously rotating one surface of each of said pairs of surfaces;

(e) means connecting said mechanical outputs of said first and second inertial instruments to said plurality of second surfaces of said pickoff means; and

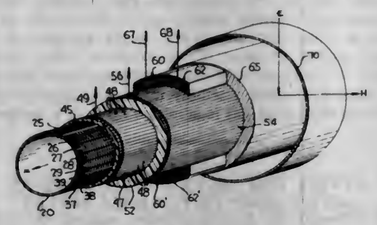
(f) means connected to receive said output pulses from said pickoff means having electrical outputs indicative of the rotation and the rate of rotation of said plurality of second surfaces with respect to each other and with respect to said base means.

3,286,521
WIND DIRECTION AND VELOCITY RECORDING SYSTEM
Allison B. Stout, Jr., Salt Lake County, Utah, assignor to Kennecott Copper Corporation, New York, N.Y., a corporation of New York
Filed Mar. 26, 1964, Ser. No. 354,970
6 Claims. (Cl. 73—189)



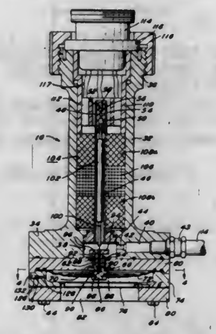
1. A wind direction and velocity recording system, comprising: means, including a potentiometer, a windvane, and a potentiometer tap movable by said windvane to constantly indicate wind direction; a line supplying power for said potentiometer; means including a normally closed switch in said power line, and an anemometer for repeatedly momentarily opening the normally closed switch to constantly signal wind velocity; a recorder; means for recording said potentiometer tap position on said recorder; and means for recording signaled wind velocity on the recorder.

3,286,522
MAGNETOELECTRIC FLOWMETER APPARATUS
Vincent J. Cushing, 9804 Hillridge Drive, Kensington, Md.
Filed Aug. 13, 1963, Ser. No. 301,865
19 Claims. (Cl. 73—194)



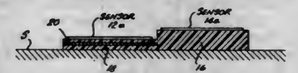
1. Magnetoelectric flowmeter apparatus comprising conduit means of dielectric material through which fluid is adapted to flow, means adjacent said conduit means for producing an electric field within said conduit means with said electric field disposed substantially transverse to the direction of fluid-flow through said conduit means, and magnetic sensing means adjacent said conduit means for sensing the magnetic flux created by fluid flowing within said conduit means and passing through said electric field, said magnetic sensing means providing an output indicative of fluid flow rate.

3,286,523
LIQUID LEVEL GAUGE
Martin R. Barrows, North Wales, Donald E. Kaplan, Philadelphia, and William B. Pegram, Swarthmore, Pa., assignors, by mesne assignments, to Robinson-Halpern Company, West Conshohocken, Pa., a corporation of Pennsylvania
Filed Jan. 30, 1964, Ser. No. 341,211
4 Claims. (Cl. 73—301)



4. Pressure gauge apparatus for measuring the difference between input pressures whose individual magnitudes exceed the pressure difference, said apparatus comprising a sensor including an electrical differential pressure transducer having a single resilient pressure-responsive device and a plurality of pressure input connections in communication with said resilient device; means for applying one of said pressures to one of said input connections; and means providing a closed, liquid-fill pressure-transmitting system between a source of another of said pressures remote from said sensor and said resilient device, said closed pressure-transmitting means including a pressure-sensing head having a casing with first and second openings therein, a chamber for liquid-fill, and a slack diaphragm secured to said casing and extending across and enclosing said first opening and chamber, and an elongated conduit for pressure-transmitting liquid-fill connected between said second head opening and another of said transducer input connections so that liquid-fill in the volume between said slack diaphragm and the resilient pressure-responsive device of said transducer accurately transmits the pressure applied to said slack diaphragm to said resilient device in a direction to oppose said one pressure, said electrical transducer including a circuit for producing electrical signals that vary in accordance wtih said pressure differences, said circuit including means responsive to variations in ambient temperature for producing a variable impedance to said signals to compensate for variations of the density of liquid-fill in said conduit with said temperature.

3,286,524
THERMAL MEASURING APPARATUS
Erle W. Malone, Seattle, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed June 4, 1963, Ser. No. 286,131
17 Claims. (Cl. 73—341)

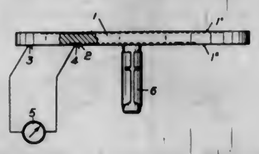


10. Thermal measurement apparatus comprising two temperature sensitive electrical transducer devices having predetermined thermal capacities, respectively different electrical response sensitivities to temperature and having thermal impedances the ratio of which is substantially the

inverse of the ratio of their respective electrical response sensitivities, with the ratio of the respective thermal capacities of such devices being substantially equal to the inverse ratio of their respective thermal impedances, means to present said two transducer elements to the same temperature condition to be measured, and electrical means connected to the two transducer devices for detecting the difference of the responses thereof.

3,286,525
DEVICE FOR THE THERMOELECTRIC MEASUREMENT OF THE TEMPERATURE OF ROTARY SPECIMEN CARRIERS

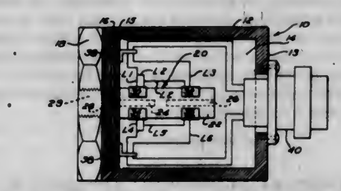
Fritz Grasenick, 12 Rechbauerstrasse, Graz, Austria
Filed June 29, 1964, Ser. No. 378,871
Claims priority, application Austria, July 3, 1963, A 5,320
3 Claims. (Cl. 73—359)



1. A device for the thermoelectric measurement of the temperature of rotary specimen carriers, particularly of the temperature of rotary plates for preparations used in electronic microscopy in a treatment chamber, comprising a specimen carrier made of metal, such as copper, a metal ring made of some other metal such as the allow constantan, the said metal ring being electrically conductive and positively connected with the said specimen carrier, the latter constituting in conjunction with the metal ring a thermocouple for the measurement of the temperature of the specimen carrier and said ring being in direct thermal and electrical contact with the face of the disc.

3,286,526
PRESSURE TRANSDUCER

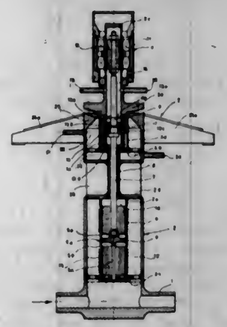
Harry W. Mulcahy, Chicago, and Richard G. Tillou, Clarendon Hills, Ill., assignors to W. H. Miner, Inc., Chicago, Ill., a corporation of Delaware
Filed Apr. 27, 1964, Ser. No. 362,649
10 Claims. (Cl. 73—393)



1. A transducer assembly for use in translating fluid pressures which are adapted to vary at any one of a number of different rates into electrical signals corresponding in value to the fluid pressure with variations in temperature being automatically compensated, said assembly comprising a solid cylindrical element having one cylindrical axial bore formed in one end and adapted to be connected to a source of fluid pressure with the diameter of said bore being less than the diameter of any fluid passageway interconnected between said bore and said source and having a second axial bore identical in diameter to said one bore formed in the opposite end of said cylindrical element and adapted to be exposed to the atmosphere, and a series of four strain gauges bonded to the outer surface of said element in a manner such that same respond to hoop strains in said element with two of said gauges being adjacent said one bore and with the other two gauges being adjacent said second bore, said gauges being connected in separate legs of a Wheatstone bridge.

3,286,527
PRESSURE MEASURING INSTRUMENT FOR HIGH TEMPERATURE LIQUID

Bernhard Scheiten-Petersen, Varese, and Wolfgang Schulze, Ispra, Italy, assignors to European Atomic Energy Community (EURATOM), Brussels, Belgium
Filed Nov. 4, 1963, Ser. No. 321,265
Claims priority, application Germany, Dec. 11, 1962, E 24,007
3 Claims. (Cl. 73—395)

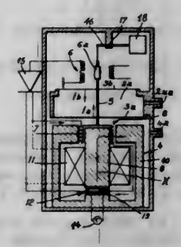


1. In a pressure measuring instrument for high temperature liquid comprising a housing having a lower inlet portion and an upper portion, a measuring head, a pressure transfer assembly including a pressure plate and a pressure rod for transferring the pressure impulse to said measuring head, a return spring between a spring plate secured to said pressure rod and the upper portion of said housing, a wetted pressure bellows between said pressure plate and the inlet portion of said housing and means for cooling said pressure rod between said inlet and said upper portion of said housing, the improvement comprising a counter spring opposite said return spring on the opposite side of said spring plate and a counter bellows opposite said pressure bellows on the wetted side of said pressure plate, the ratio of the spring strengths of said return springs to those of said bellows being approximately 5:1, and an inter-communicating space enclosing the pressure transfer assembly up to said pressure plate, to which measuring gas is admitted through a conduit.

3,286,528
DEVICE FOR MEASURING FORCES BY APPLICATION OF THE HALL EFFECT

Jean Jullien-Davin, Valence, France, assignor to Crouzet, Valence, France, a French company
Filed May 7, 1964, Ser. No. 365,687
Claims priority, application France, May 10, 1963, 934,378, Patent 1,364,146; Apr. 20, 1964, 971,568, Patent addition 85,627
14 Claims. (Cl. 73—398)

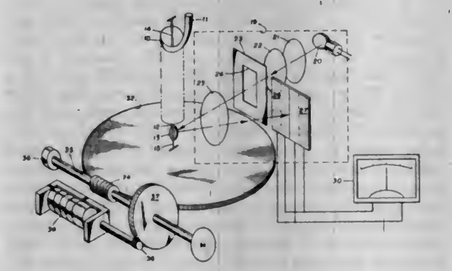
1. Device for measuring a force which is exerted on a movable member, said device comprising: means for producing a magnetic field; a Hall generator comprising a semiconductor strip having input and output terminals, the semiconductor strip being disposed in said magnetic field and at right angles to said field and the input terminals of the semiconductor strip being connected to a control circuit comprising a control current source; an electric conductor placed in the magnetic field in such a manner as to cut the lines of force thereof, the electric conductor being coupled to said movable member and connected in series with the Hall generator in said control circuit; means for detecting the position of the movable member



and adapted to control the source of control current as a function of said position of the movable member in order that a current which creates an opposing force in opposite direction with respect to the force to be measured flows in the electric conductor; and an electrical measuring apparatus connected to the output terminals of the Hall generator.

3,286,529
PRECISION PRESSURE GAUGE

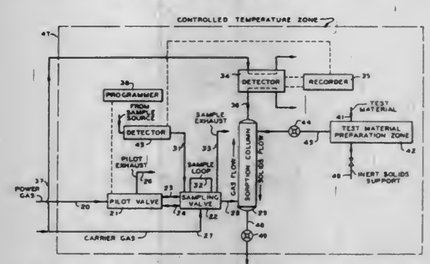
John B. Damrel, Jr., and Jerry L. Fruit, Houston, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Continuation of application Ser. No. 268,780, Mar. 28, 1963. This application Dec. 13, 1965, Ser. No. 513,468
25 Claims. (Cl. 73—418)



1. A pressure gauge which comprises:
(a) a hollow helical tube supported with one end thereof fixed and with the other end movable,
(b) a mirror mounted at said other end of said tube and at the axis thereof for rotation relative to said axis in dependence upon movement of said other end of said tube,
(c) structure for establishing a pressure differential across the walls of said tube to move said other end,
(d) a sensing system for directing a beam of light onto said mirror and including light-sensitive means for detecting the reflected light,
(e) rotatable means for supporting said sensing system for rotation about said axis to bring into predetermined space coincidence said light-sensitive means and said reflected light, and
(f) a circuit means responsive to said light-sensitive means for developing a distinctive physical condition upon occurrence of said space coincidence.

3,286,530
DETERMINATION OF GASEOUS AFFINITY

Buell O. Ayers, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 28, 1963, Ser. No. 319,372
14 Claims. (Cl. 73—432)



1. A method for measuring a property of a material by chromatography, comprising:
introducing the material in flowable form into the upper portion of a sorption column;
passing a gas mixture comprising a component to be selectively adsorbed by said flowable material, thru a first measurement device adapted to indicate the concentration therein of said adsorbable component;
introducing said gas mixture into the lower portion of said sorption column in countercurrent flow with the downwardly flowing material at a flow rate adapted to maintain a moving bed therein;
passing the gaseous effluent from the upper portion of said zone thru a second measurement device similarly adapted to indicate the new concentration of said adsorbable component;
comparing the indicated measurements on said devices, the difference being representative of the magnitude of the property of said material to be determined; and
withdrawing accumulating flowable material from the lower portion of said column.

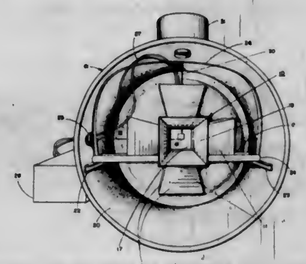
6. A method for measuring the oxygen affinity of a polymer by vapor phase chromatography, comprising:
introducing particulate polymer into the upper portion of a column;
periodically introducing a slug of gas mixture containing a free-oxygen component into the lower portion of said column;
passing an inert carrier gas through a detector to determine a reference standard;
continuously introducing said inert carrier gas into said lower portion in countercurrent flow with the downwardly flowing polymer at a flow rate adapted to maintain a moving bed therein;
passing the gaseous effluent from the upper portion of said zone through a component peak detector to determine the relative retention times of said gas mixture components;
measuring the oxygen affinity of said polymer from the foregoing determinations; and
withdrawing accumulating particulate polymer from the lower portion of said column.

3,286,531
OMNI-DIRECTIONAL ANISOTROPIC MOLECULAR TRAP

Harold Shapiro, Silver Spring, and William F. Hardgrove, Forest Heights, Md., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed June 3, 1964, Ser. No. 372,438
18 Claims. (Cl. 73—432)

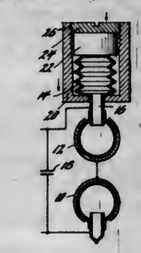
1. In an evacuated vacuum chamber having an evacuating pump means and wherein it is desired that substan-

tially all molecular bounce-back of molecules liberated from an object being tested therein be eliminated, the improvement comprising: a structure for forming within said chamber a defined area for locating said object, said structure providing substantially no wall surface perpen-



dicular to the travel of said molecules; means attached to said structure for deflecting said liberated molecules in a direction away from said object; and a rotating means located in the path of said molecules to deflect said molecules in a direction such that they can be exhausted from said chamber by said pump means.

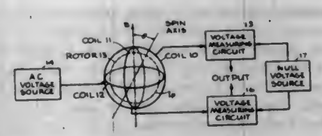
3,286,532
INTEGRATING VARIABLE TIME DELAY DEVICE
Rene J. Perdreaux, Brooklyn, N.Y., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Aug. 31, 1962, Ser. No. 220,635
8 Claims. (Cl. 73—503)



6. An integrating circuit for integrating external forces comprising a pair of nuclear cells connected in polarity opposition, means responsive to external forces for changing the potential of one cell and integrating means connected in parallel with said cells wherein the integrating means stores a potential proportional to the integral of the force applied to said one cell, and said means for changing the potential of one of said cells is a chamber of nuclear material communicating with one of said cells including means therein for supplying a variable amount of nuclear material to said one cell in response to the application of an external force to said material within said chamber.

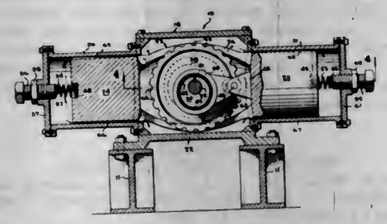
3,286,533
ANGLE READOUT TRANSDUCER
George H. Towner, Palos Verdes, Calif., assignor, by mesne assignments, to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio
Filed May 20, 1963, Ser. No. 281,719
14 Claims. (Cl. 74—5.6)

1. In combination,
at least three coils having mutually perpendicular axes,



a rotating mass spinning about the center of said coils,
said mass having electrically conducting portions.

3,286,534
PISTON TYPE VIBRATOR
Marvin A. Truelock, Southland, Harrison Keys, Slaton, and Merle M. Rose, Lubbock, Tex., assignors to Big Eight Implement Company, Lubbock, Tex., a corporation of Texas
Filed Oct. 13, 1964, Ser. No. 403,516
7 Claims. (Cl. 74—44)

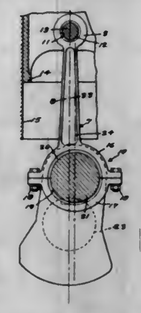


1. A vibrator assembly for use with soil engaging implements to improve the efficiency with which soil is moved comprising a drive shaft housing adapted to have an oil reservoir therein, at least one piston cylinder and associated cylinder head protruding from the drive shaft housing, a one piece piston assembly mounted in the drive shaft housing and the piston cylinder and being adapted for reciprocative movement therein, the piston assembly having at least one piston interconnected with an enlarged internally hollow concave center member, spring means in compression between the cylinder head and the associated piston so that a desired compressive force is maintained upon the piston at all times, a drive shaft projecting through the drive shaft housing transverse to the axial length of the piston assembly, bearing means in the drive shaft housing supporting the drive shaft, means for supplying lubricating oil to the piston assembly, an eccentric mounted on the shaft, means for interconnecting the eccentric with the piston assembly whereby when the drive shaft revolves the eccentric the piston assembly is caused to reciprocate thereby transmitting sympathetic vibration to the entire vibrator assembly causing the vibrations to be induced to the soil engaging implement.

3,286,535
CONNECTING ROD ASSEMBLY
Martin W. Schrader, 1601 Hesket St., Sacramento, Calif.
Filed Nov. 3, 1964, Ser. No. 408,566
1 Claim. (Cl. 74—44)

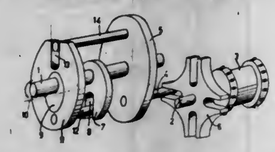
In an engine having a cylinder containing a reciprocating piston provided with a wrist pin and a crankshaft having a crankpin, a connecting rod having a bearing defining one end thereof pivotally engaging the wrist pin and a journal defining its opposite end in which the crankpin is journaled, said bearing and journal being laterally offset in opposite directions relative to the longitudinal axis of the connecting rod and in directions such that the

weight mass of the connecting rod is always laterally offset toward the leading side of said journal with respect



to the direction of rotation of the crankshaft when the crankpin is moving between the wrist pin and crankshaft.

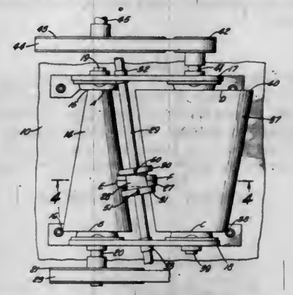
3,286,536
DRIVING MECHANISMS MORE PARTICULARLY FOR THE MOVEMENT OF PICTURE FILMS
Johan Paul Heinrich Hallmann, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 3, 1964, Ser. No. 349,024
Claims priority, application Netherlands, Mar. 7, 1963, 289,946
5 Claims. (Cl. 74—84)



1. An intermittent film drive having a film sprocket comprising a continuously driven rotatable drive shaft, a Geneva gear provided with an intermittently driven shaft, said film sprocket mounted on said latter shaft, a crank rotatable about said drive shaft provided with a pin engaging in the slots of said Geneva gear for intermittently rotating the latter, a first disc rigidly connected to said drive shaft, a second disc rotatable about said drive shaft and mounted eccentrically relative thereto, said first disc being provided with a first peripheral slot, a first pin mounted on said second disc and engageable in said first peripheral slot, said second disc provided with a second peripheral slot, a second pin secured to said crank and engageable in the second peripheral slot of said second disc whereby said crank is rotated at a greater speed than the rotation of said drive shaft.

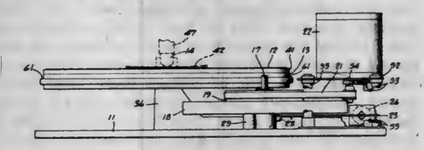
3,286,537
POTTER'S WHEEL HAVING A VARIABLE SPEED POWER TRANSMISSION SYSTEM
Oscar J. Riley, San Gabriel, Calif., assignor to Oscar-Paul Corporation, Los Angeles, Calif., a corporation of California
Filed Aug. 24, 1964, Ser. No. 391,702
20 Claims. (Cl. 74—193)

1. A variable speed power transmission system comprising: a base; a driver cone rotatably secured to said base; a driven cone rotatably secured to said base spaced from said driver cone, said driven cone being inversely positioned adjacent said driver cone; shifting means slidably secured to said base; intermediate wheel means slidably attached to said shifting means, said intermediate wheel means simultaneously engaging the surface of said driver cone and said driven cone, said intermediate wheel means being canted so as to rotate in a plane inclined relative to the respective surface of each of said cones; spring means positioned between said intermediate wheel



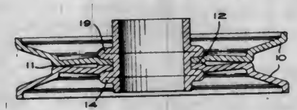
means and said shifting means so as to maintain said intermediate wheel means in constant simultaneous contact with said surfaces of said cones; means connected to said driver cone to provide rotational power to said driver cone; and means connected to said driven cone to transmit power from said driven cone.

3,286,538
ROTATING DRIVE SYSTEM MEMBER
Charles A. Vogel, Sunnyvale, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Sept. 21, 1964, Ser. No. 397,926
3 Claims. (Cl. 74—215)



1. In a rotating drive system, a peripherally-engageable turntable, comprising:
a central hub member mounted for rotation;
a peneperipheral portion mounted on said hub member and formed of compliant material; and
a peripheral portion mounted on said peneperipheral portion and formed as a thin flexible band having substantially zero circumferential elongation under predetermined forces directed radially against said turntable.

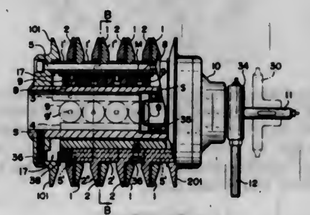
3,286,539
PULLEY CONSTRUCTION EMPLOYING BEADED HUB AND MEANS FOR PRODUCING SAME
Harry O. Loper, Ypsilanti, George T. Timoff, Pontiac, and Henry J. Anderson and Edward F. Schlee, Jr., Birmingham, Mich., assignors, by mesne assignments, to The Eynon Company, Detroit, Mich., a corporation of Michigan
Filed Sept. 16, 1964, Ser. No. 396,959
2 Claims. (Cl. 74—230.4)



1. A pulley construction comprising a pair of opposed apertured dished pulley halves assembled on a tubular

hub element, said pulley halves having hub engaging portions with free state axially spaced dimensions adapted to be pressed together in pre-loaded assembled condition, said hub having a uniform wall thickness and a pair of integral annular beads adapted to hold said hub engaging portions of said dished pulley halves together in assembled relation.

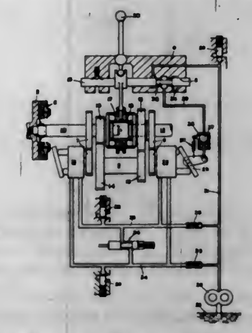
3,286,540
STEPLESS SPEED CHANGE GEAR
Osamu Inou, Sakyo-ku, Kyoto-shi, and Ichiro Yamanaka, Ibaragi-shi, Osaka-fu, Japan, assignors to Nihon Spindle Seizo Kabushiki Kaisha, Hoyogo-ken, Japan
Filed Nov. 10, 1964, Ser. No. 410,138
Claims priority, application Japan, Nov. 14, 1963, 61,304/63
7 Claims. (Cl. 74—230.17)



1. A stepless speed change gear comprising an elongated hub, a plurality of sheave discs fixedly mounted on said hub, a plurality of sheave discs slidably mounted on said hub, one of each of said slidable sheave discs cooperating with a respective one of said fixed sheave discs to form a V-pulley of variable effective diameter, first pressure receivers fixed to said fixed sheave discs, second pressure receivers fixed to said movable sheave discs, said first and second pressure receivers being alternately spaced around the periphery of said hub, each pressure receiver having a pair of contact faces cooperating in spaced relation with contact faces on adjacent pressure receivers to define roller receiving channels about the periphery of said hub between each adjacent first and second pressure receivers, a holder slidable in each of said channels, a plurality of rollers rotatably supported by each of said holders and in engagement with proximate contact faces, and means cooperating between said first pressure receivers, said second pressure receivers and said holders for shifting said second pressure receivers and said movable sheave discs with respect to said first pressure receivers and said fixed sheave discs and concurrently moving said holders with respect to said first and second pressure receivers.

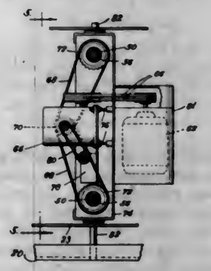
3,286,541
VARIABLE SPEED GEARBOXES
Kenneth Dearnley and Thomas Eastwood, Huddersfield, England, assignors to David Brown Tractors Limited
Filed Nov. 27, 1963, Ser. No. 326,458
Claims priority, application Great Britain, Dec. 4, 1962, 45,712/62
7 Claims. (Cl. 74—339)

1. A variable speed gearbox comprising a multi-ratio toothed gear power transmission mechanism for transmission mechanism for transmitting torque between input and output shafts, said transmission having two rotating parts and means for mechanically connecting said parts together when their relative speeds have been brought into a required ratio, a variable speed hydrostatic power transmission mechanism drivably connected between said two rotating parts of said toothed gear power transmission mechanism which are to be mechanically connected together, means for adjusting the speed ratio of said hydrostatic power transmission mechanism to the same as that required between said rotating parts, and mechanical inertia lock means for baulking the mechanical



connection together of said rotating parts by said mechanical connecting means until their relative speeds are in exactly the required ratio.

3,286,542
POWER OPERATED PLATFORM
Richard S. Jay, Evanston, Ill., assignor to Jarke Corporation, Chicago, Ill., a corporation of Illinois
Original application Aug. 13, 1963, Ser. No. 301,792, now Patent No. 3,237,921, dated Mar. 1, 1966. Divided and this application July 26, 1965, Ser. No. 485,665
6 Claims. (Cl. 74—424.8)

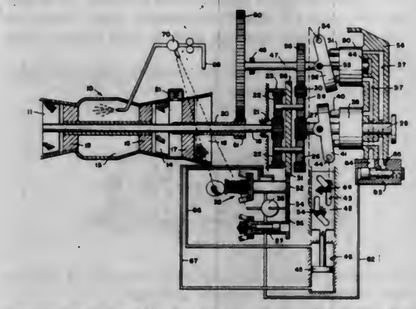


1. An extensible means for use on a power operated platform having a base and a platform including in combination, frame means pivotally secured at one end to said base, a ball screw nut positionably affixed to said frame means, motor means affixed to said frame means and coupled to said ball screw nut for rotating it, a ball screw shaft having one end pivotally secured to said platform and its other end threadedly retained within said ball screw nut for axial movement upon rotation of said ball screw nut, whereby axial movement of said ball screw shaft exerts a force directly upon said platform to cause movement of said platform.

3,286,543
COMBINED TURBINE AND HYDRO-MECHANICAL TRANSMISSION
Kenneth W. Porter, Northport, N.Y., assignor to Fairchild Hiller Corporation, a corporation of Maryland
Filed July 12, 1963, Ser. No. 294,586
15 Claims. (Cl. 74—472)

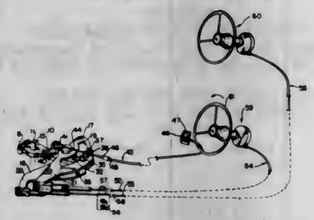
1. A prime mover-transmission comprising, in combination, a gas turbine engine having at least one turbine rotor, at least one compressor rotor, and a combustion chamber in which air from said compressor rotor is

burned with fuel and the gases fed to said turbine rotor, means coupling a turbine rotor to a shaft forming the power output of said engine, a differential gear set driven by said rotor power output shaft, a continuously variable torque multiplying transmission interposed between a first



output of said differential gear set and a second output thereof, said second output being coupled to drive a load and means mechanically coupling another one of said gas turbine engine rotors to the first output of said differential gear set.

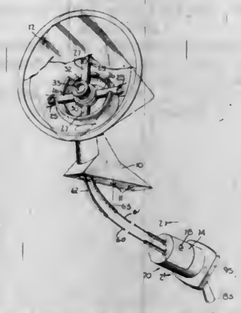
3,286,544
SHAFT TURNING AND STEERING APPARATUS
William J. Gilmore, Manitou Beach, and Eugene G. Schmidt, Adrian, Mich., assignors to American Chain & Cable Company, Inc., New York, N.Y., a corporation of New York
Filed Nov. 15, 1963, Ser. No. 324,027
14 Claims. (Cl. 74—483)



1. Apparatus for turning a shaft which is selectively operable by one of a plurality of control assemblies comprising:
(a) a lever arm,
(b) connecting means on said lever arm for attachment to said shaft,
(c) a plurality of shift units mounted on said arm such that each is independently movable,
(d) a secondary lever portion fixedly extending from each of said units to which one of said control assemblies is attachable, and
(e) clutch means on said arm for selective interlocking engagement with any one of said shift units to permit the engaged unit and the lever arm to turn together independent of the other shift units.

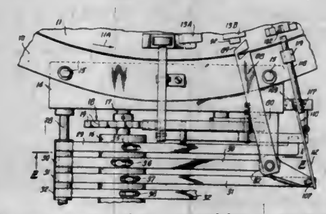
3,286,545
UNIVERSAL POSITIONING MECHANISM
Handry J. Malachowski, Jersey City, N.J., assignor to Yankee Metal Products Corporation, Norwalk, Conn., a corporation of Connecticut
Filed June 24, 1964, Ser. No. 377,756
17 Claims. (Cl. 74—501)

1. In a combination of the class described, a mirror, means mounting said mirror for universal movement, a pair of bars secured to said mirror and positioned at right angles to one another with a portion of each bar at each side of said means mounting said mirror for universal movement, a pair of cams for each of said bars, means for moving said cams in opposed relation



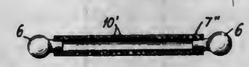
with one cam of each pair coacting with its bar at one side of said mounting means and the other cam coacting with the other side of said bar, whereby said cams move said bars and said mirror on the universal mounting while also holding said bars stationary when said cams are stationary.

3,286,546
CAM CONSTRUCTION
Morris Philip, 2519 Grand Ave., Bronx, N.Y.
Original application Apr. 20, 1962, Ser. No. 189,125, now Patent No. 3,147,605. Divided and this application June 12, 1964, Ser. No. 374,563
12 Claims. (Cl. 74—567)



1. A cam construction, comprising a supporting section, a cam section having a camming surface adjacent its forward end, means resiliently securing said cam section to said supporting section for movement in a direction transverse to said camming surface, and stop means for limiting rearward movement of said cam section.

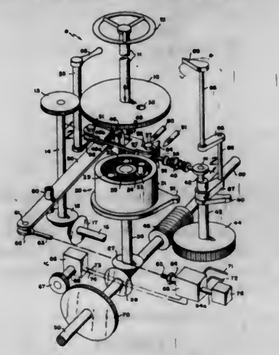
3,286,547
TUBULAR CONNECTING DEVICE
Jürgen Ulderup, Bergstrasse, Lemforde, Hannover, Germany
Filed Oct. 12, 1964, Ser. No. 403,275
Claims priority, application Germany, Nov. 18, 1963, U 10,280
7 Claims. (Cl. 74—579)



1. An element for mounting articulated parts, such as for joining wheel axles and wheels with a chassis frame or body in a motor vehicle comprising a metal connecting element of tubular configuration, a ball member having an axially extending plug portion extending into and; closing each end of said tubular element, and an in-

sulating material of open cellular plastic material extending around and through said tubular member and providing a sound insulation.

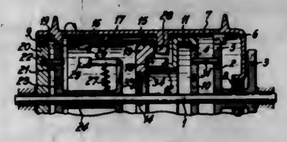
3,286,548
STEERING ACTUATOR FOR HYDROFOIL VEHICLES
John Gordon Baker, Evansville, Wis., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed May 14, 1965, Ser. No. 456,010
9 Claims. (Cl. 74—626)



1. A self-centering power steering actuator comprising:
a steering input member movable in first and second directions from a neutral position;
an output member for connection to steering means;
a reversible motor coupled to said output member for driving thereof in opposite directions from a centered position;
motor control means for controlling operation of said motor in response to movements of said input member, said motor being operative to move said output member in one direction from said centered position when said input member is to one side of said neutral position, and said motor being operative to move said output member in the opposite direction when said input member is to the other side of said neutral position;
centering spring means;
means connecting said spring means to said input member, and means connecting said spring means to said output member;
said input member being free of biasing effects of said spring means when said input member is in its neutral position and said output member is in its centered position, and said output member being operative when in positions to either side of its centered position to cause said spring means to bias said input member in that direction from its neutral position which will cause said motor to return said output member to its centered position.

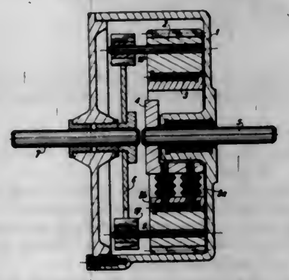
3,286,549
DUAL SPEED HUB WITH AUTOMATIC SPEED SHIFT
Hans Joachim Schwerdhöfer, Schweinfurt (Main), Germany, assignor to Fichtel & Sachs A.G., Schweinfurt (Main), Germany, a corporation of Germany
Filed Aug. 1, 1963, Ser. No. 299,258
Claims priority, application Germany, Aug. 18, 1962, F 37,630
14 Claims. (Cl. 74—752)

1. In a dual-speed hub, in combination:
(a) a shaft having an axis;
(b) a driver member and a hub shell mounted on said shaft for rotation about said axis;
(c) a dual speed transmission interposed between said driver member and said shell for transmitting the rotation of said driver member to said shell member, said transmission being movable between a lower speed position and a higher speed position, the transmission ratio of said transmission being lower in said lower speed position than in said higher speed position;
(d) two control members threadedly engaged for relative rotation about said axis;



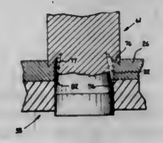
(e) impeding means for impeding rotation of one of said control members about said axis;
(f) centrifugal speed governor means responsive to rotation of said hub shell at a predetermined speed for drivingly connecting the other control member to said hub shell for rotation in a predetermined direction, whereby said control members are moved axially relative to each other during rotation of said hub shell at said predetermined speed, and
(g) motion transmitting means operatively interposed between one of said control members and said transmission for moving said transmission from one to the other one of said positions thereof responsive to the relative axial movement of said control members.

3,286,550
HYPOCYCLIC SPEED REDUCERS
Claude Rosain, 50 Rue Raynouard, and Georges Stcherbatcheff, 29 Ave. de la Bourdonnais, both of Paris, France
Filed Apr. 2, 1963, Ser. No. 270,045
Claims priority, application France, Apr. 19, 1962, 895,129
1 Claim. (Cl. 74—798)



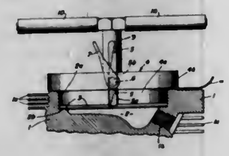
A hypocyclic speed reducer comprising: first and second elements; means for mounting said elements in hypocyclic relationship and for driving the second of said elements from an input shaft in rolling engagement for relative rotation with respect to the first of said elements and a flexible coupling connecting said second element to an output shaft, said flexible coupling comprising: two pairs of elongated spring leaves which are rigid insofar as compression and pulling strains are concerned and resilient insofar as flexing strains are concerned, said spring leaves respectively having first and second ends; said first ends of one pair of spring being associated with two diametrally opposed points of one of said rollers; a bar having a median portion rigidly connected to said shaft, said bar having two ends, said first ends of the other pair of springs being connected to said ends; and a rigid plate having two pairs of diagonally opposed corners, said second ends of each pair being connected to diametrally opposed corners.

3,286,551
METHOD OF MAKING A CUTTER PLATE
Larry M. Tipton, 316 Wood Road, Anderson, Ind.
Filed Dec. 11, 1963, Ser. No. 329,669
4 Claims. (Cl. 76—101)



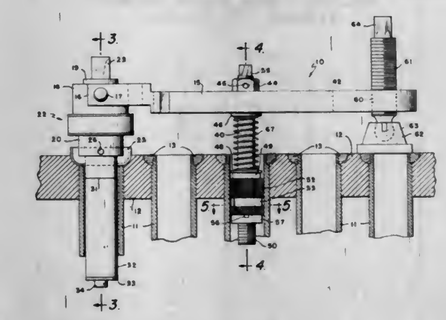
1. A method of making a cutter plate for use in a food chopper or the like comprising the step of punching the plate through to form an aperture in said plate; the step of punching the plate around the aperture to form an annular recess in said plate surrounding the aperture to move a portion of the plate material to a location outboard of the first surface of the plate, and the step of grinding off said first surface and said portion of material to form a sharp edge at the junction of said aperture and first surface.

3,286,552
RE-SURFACING TOOL
Jesse T. Simmons, 601 E. Main St., Chattanooga, Tenn.
Filed Nov. 27, 1964, Ser. No. 414,160
4 Claims. (Cl. 77—2)



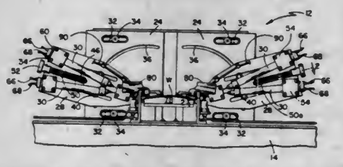
1. A tool for re-surfacing the gasket-seating shoulder within the combustion chamber bore of a cylinder head comprising, a flat circular body having a circular plug portion of a diameter to fit closely within said bore and for free-turning within said bore, said body having an annular flange at the upper portion thereof extending radially beyond sail plug portion and being seated on the face of said cylinder-head surrounding said bore during re-surfacing operation, said body and plug and flange being formed as an integral unit, said flange holding said plug portion near but spaced from said shoulder, said body having a hole extending through the body parallel with the axis of the body and opening through the plug portion thereof at the gasket-seating surface of said shoulder, a cutting bit located within said hole and having a cutting edge to engage the entire width of the gasket-seating surface of said shoulder, said bit being adjustable in position along the length of said hole, and releasable clamping means for holding said bit in adjusted position within said hole.

3,286,553
BOILER SUPERHEATER TUBE REAMING ASSEMBLY
John W. Spencer, 5817 Andrea Drive, Norfolk, Va., and Claude C. Rice, 95 Alywin Road, Portsmouth, Va.
Filed Aug. 20, 1965, Ser. No. 481,438
7 Claims. (Cl. 77—2)



1. Reaming appartus comprising:
a pressure arm having a bifurcated end;
a ring pivotally supported in said bifurcated end;
a shaft rotatably journalled in said ring;
a thrust bearing acting between said shaft and said ring;
a reaming element carried by said shaft for rotation therewith;
fulcrum means adjustably positionable along said pressure arm between the ends thereof and including expansion means for anchoring of said fulcrum means in an opening; and
screw means operative on the end of said pressure arm remote from said bifurcated end for supply feed thrust to said shaft through said bearing.

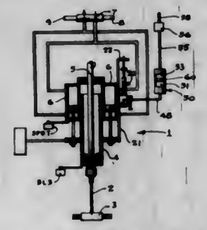
3,286,554
DRILLING APPARATUS
Joseph J. L. Jodoin, West Townsend, Mass., assignor to Foster Grant Co., Inc., Leominster, Mass., a corporation of Delaware
Filed Mar. 27, 1964, Ser. No. 355,373
3 Claims. (Cl. 77—22)



1. A drilling mechanism comprising:
at least two pairs of drills; each drill including a chucking member and a drill body;
drill bits carried by said chucking members;
each of said drill bits including an end drilling portion and a chucked portion;
drill mounts for mounting the drills of each pair in angular relationship to each other such that the drills converge in the direction of the chucking member;
guide blocks mounted on each drill mount adjacent the chucking members of the drills;
said guide blocks having guideways extending therethrough;
said guideways being adapted to guide and orient said drill bits so that the end portions of said bits are spaced apart in closely spaced substantially parallel

relationship, and means for supporting the drill mounts for adjustable movement in three directions.

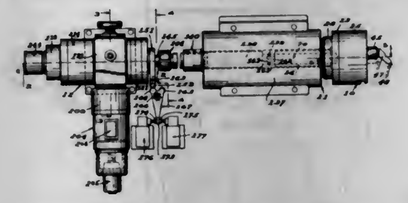
3,286,555
STEP BY STEP FEED MEANS WITH A DASHPOT
Adolph V. Klancnik, 1020 Glenview Road, Glenview, Ill.
Filed July 8, 1964, Ser. No. 380,996
2 Claims. (Cl. 77—32.3)



1. In a reciprocatory machine tool, a spindle means reciprocatory towards and away from a workpiece, said spindle means adapted to receive a tool for performing machining operations on said workpiece when engaging said workpiece and when moving with said spindle in a first direction, power means for advancing and retracting said spindle means, a dashpot means having a plunger operable by said spindle means while said tool is in engagement with said workpiece to reduce the rate of movement of said spindle means in an advancing direction, a one way connecting means on said spindle means adapted to engage said plunger when said spindle means moves in said advancing direction, said one way connecting means being ineffective to move said plunger when said spindle moves in a retracting direction, electrical control means for said power means to cause reciprocation of said spindle means in a first direction toward said workpiece and to cause said power means to retract said spindle means, said electrical control means including timing means for operating said electrical control means to control said power means to move said spindle means in cyclic movements in said advancing direction and in said retracting direction to cause successive machining operations on said workpiece, first switch means in said electrical control means operable to disable said timing means to prevent said cyclic movements of said spindle means by said timing means and to enable said electrical control means to operate said power means to move said spindle means in the advancing direction, and second switch means in said electrical control means to detect movement of said spindle means to a predetermined position in said first direction to cause operation of said power means to retract said spindle means, and fluid actuated means controlled by said second switch means to return said plunger of said dashpot means to its original position when said spindle means has reached said predetermined position, said predetermined position corresponding to the completion of the machining operations on said workpiece.

3,286,556
BORING HEAD WITH TOOL POSITIONING MEANS
Roland B. Reynolds, Birmingham, Dietrich Rumpp, Detroit, and Emerson R. Trobaugh, Farmington, Mich., assignors to Ex-Cell-O Corporation, Detroit, Mich.
Filed Sept. 14, 1965, Ser. No. 487,120
20 Claims. (Cl. 77—57)

1. In a boring head the combination comprising:
(a) a rotatably mounted spindle;
(b) a housing secured to said rotatable spindle;
(c) a tool slide assembly movably mounted on said housing for adjustment perpendicular to the longitudinal axis of said spindle and having a cutting tool operatively mounted thereon;
(d) a counterweight assembly movably mounted on said housing for adjustment perpendicular to the longitudinal axis of said spindle with the total weight



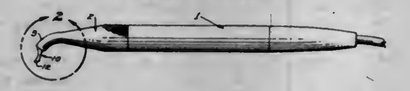
of said tool slide assembly being equal to the total weight of said counterweight assembly;
(e) adjustment means for simultaneously moving said tool slide assembly and said counterweight assembly in opposite directions perpendicular to the axis of said spindle; and,
(f) means for actuating said adjustment means.

3,286,557
MACHINE REAMERS WITH INTERCHANGEABLE CUTTERS
Erich Rietzler, Wasseralfingen, and Hermann Haller and George Kress, Aalen, Germany, assignors to MAPAL Fabrik fur Präzisionswerkzeuge Dr. Kress KG., Aalen, Wurttemberg, Germany, a corporation of Germany
Filed Dec. 20, 1963, Ser. No. 332,094
Claims priority, application Germany, Dec. 22, 1962, M 55,229, M 55,230, M 55,231
12 Claims. (Cl. 77—75.5)



1. A reamer comprising an elongated body rotatable about its longitudinal axis and presenting a substantially radial abutment surface, an elongated blade having one face thereof bearing against said abutment surface, means for clamping the blade to said surface, at least one adjusting element displaceable in said body in a path at an angle to the plane of said blade, each said element presenting a wedging surface bearing against the inner edge of the blade for fixing the radial position of the blade in said body, and means for adjusting the position of each said adjusting element, said blade having opposite longitudinal side edges each adapted to serve as a cutting edge, either of which edges may be positioned for cutting while the other constitutes the inner edge of the blade, each said wedging surface mating with whichever of said edges is disposed as said inner edge.

3,286,558
ANGULARLY OPERABLE HEAD FOR IMPACT TOOLS
Fred M. Hufnagel, 719 Nevada City Highway, Grass Valley, Calif.
Filed Apr. 9, 1965, Ser. No. 447,001
8 Claims. (Cl. 81—1)



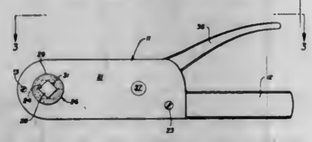
1. The combination with an impact tool having a reciprocable impact member of an angularly operable impact head, comprising:
(a) a tubular housing adapted for attachment to an impact tool and including a straight bore receiving the impact end of said impact member, and an arcuate bore continuing from said straight bore;
(b) and an arcuate impact transmitting means fitting said arcuate bore and having an impact receiving end confronting said impact member and an impact tip protruding from said arcuate bore.

3,286,559
COMBINED FORCEPS-CONTAINER DEVICE
William T. Terrell, Youngstown, and Norbert J. Forness, Tonawanda, N.Y., assignors to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware
Filed Apr. 1, 1964, Ser. No. 356,455
10 Claims. (Cl. 81—43)



1. A combined forceps-container device comprising a pair of arm means connected at their inner ends and normally biased apart, said arm means having opposed forceps gripping means at their outer ends and opposed container forming recess means intermediate their inner and outer ends and said arm means, when biased together, forming a container portion, said container portion having a wholly enclosed cavity of uniform cross-section through substantially the entire cavity length.

3,286,560
RATCHET WRENCH
John R. Murray, 2615 Lincoln Ave., Belmont, Calif.
Filed Aug. 25, 1965, Ser. No. 482,375
4 Claims. (Cl. 81—58.1)



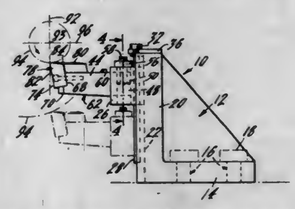
1. A ratchet wrench comprising, a support, a wrench member mounted for rotation on said support, a hand grip mounted on said support for manual reciprocation, a ratchet gear mounted on said wrench member for rotation concentrically therewith, a pawl holder mounted on said support for movement concentric to said gear, means connecting said grip and holder for rotary displacement of said holder upon reciprocation of said grip, and a pawl carried by said holder and engageable with said gear to effect unidirectional rotation of said gear and wrench member upon reciprocation of said grip.

3,286,561
ADJUSTABLE WRENCH
Edward M. Norman, 112 Main St., Mount Morris, N.Y.
Filed Mar. 29, 1966, Ser. No. 538,310
8 Claims. (Cl. 81—130)



1. An adjustable wrench comprising a body forming a handle, a head at one end of said body and a first jaw protruding from said head and having a working face adapted to engage one side of a workpiece, said head being provided in line with and starting adjacent the base of said working face, with a deep pocket having a series of straight parallel ridges of uniform cross sectional size and shape arranged generally parallel with said working face along at least one side of said pocket which extends perpendicularly to said working face, an adjustable jaw having a working face, and an extension fixed to said adjustable jaw to project generally parallel with its said working face into said pocket, said extension having a series of straight parallel ridges of uniform cross sectional size and shape and mating to slidingly fit among the said ridges of said pocket, said pocket being of greater extent, in a direction perpendicular to said working face of said first jaw, than said extension as that by slidingly engaging the ridges of said extension into different ridges of said pocket said working face of said adjustable jaw can be placed at different adjusted distances from said working face of said first jaw.

3,286,562
TANGENT FORM TOOL
Robert E. Curran, 56 Grandview St., Huntington, N.Y.
Filed Dec. 9, 1964, Ser. No. 417,097
8 Claims. (Cl. 82—36)



1. A tool for forming a workpiece rotating about an axis,
said tool comprising a support member having a guide,
a slide movable along said guide,
means engageable between said member and slide to move said slide along said guide,
a holder having a seat,

said holder being movable with said slide and rotatable relative thereto about an axis,

a forming tool of substantially rectangular cross-section secured in said seat and having a work forming edge,

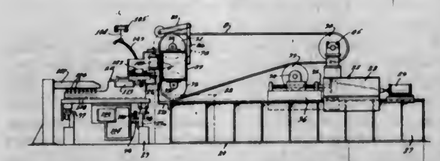
said seat being at an angle inclined relative to the horizontal of the axis of rotation of said holder to incline said forming tool to position the defining walls of said forming edge at rake angles with respect to the axis of rotation of the workpiece,

and said seat being at an angle transverse to the vertical of the axis of rotation of said holder to position the forming edge of said tool at a shear angle with respect to the axis of rotation of the workpiece.

3,286,563
METHOD AND APPARATUS FOR MACHINING BELTS

Gilbert C. Gilbert, Beloit, Wis., and Jack A. Willcox, Rockford, Ill., assignors to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin

Original application Apr. 13, 1962, Ser. No. 187,376, now Patent No. 3,240,091, dated Mar. 15, 1966. Divided and this application June 28, 1965, Ser. No. 478,005
33 Claims. (Cl. 83—5)



1. A device for machining a massive belt comprising in combination:

(a) a plurality of means for supporting the belt for rotation about a plurality of parallel axes;

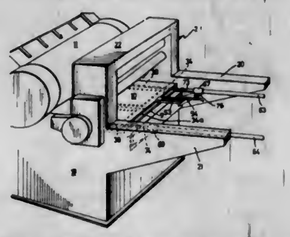
(b) a drive mechanism drivably connected to said belt-support means, said drive mechanism including selectively operative means for rotating the belt continually and also for rotating the belt incrementally; and

(c) a machining head supported adjacent to the belt, and adapted to remove part of the material of the belt between increments of rotation thereof.

3,286,564
PROCESS AND DEVICE FOR THE MANUFACTURE OF PUNCHED SHEETS

Victor Vidiella Pernas, General Primo de Rivera 105, and Miguel Cortes Virgos, Santa Maria 109, both of Badalona, Spain

Filed Apr. 24, 1964, Ser. No. 362,512
Claims priority, application Spain, May 4, 1963, 287,695
9 Claims. (Cl. 83—24)

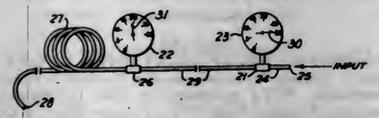


1. In the manufacture of punched sheets of paper, cardboard, Bristol board, and the like, the novel method comprising the steps of: providing a sheet supporting jig having a surface mounting tubular punches projecting upwardly therefrom and opening at their lower ends through such surface; supporting the sheets on the upper ends of the tubular punches; moving the jig with the sheets thereon to a punching station; at the punching station, forcing the sheets downwardly over the punches to punch holes through the sheets with the waste punchings falling through the tubular punches; receiving the waste punchings in a cavity beneath such surface and closed except for a discharge aperture; retracting the jig from the punching station toward a waste discharge station; during such retraction, directing air under pressure into the cavity in a direction away from the punching station and toward the discharge aperture to sweep the waste punchings outwardly through the discharge aperture; and receiving the discharged waste punchings in a container adjacent that end of the jig further from the punching station and having an inlet communicating with the discharge opening.

3,286,565
METHOD OF MANUFACTURING A CAPILLARY TUBE

John J. Hronas, Greentree, Pa., assignor to Calgon Corporation, Pittsburgh, Pa.

Filed June 17, 1964, Ser. No. 375,891
2 Claims. (Cl. 83—54)

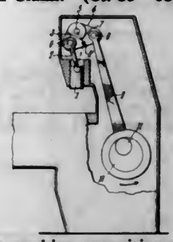


1. Method of manufacturing a capillary tube of a known flow rate comprising obtaining a capillary tube longer than the estimated length possessing the desired flow rate, measuring the air pressure drop therein, and cutting off a length of tube proportional to the excess over the air pressure drop of a length of tube having the desired flow rate.

3,286,566
SLOT PUNCHING MACHINE

Karl Griesinger, Goppingen-Jebenhausen, Germany, assignor to Firma L. Schuler AG., Goppingen, Wurttemberg, Germany

Filed Feb. 3, 1964, Ser. No. 342,143
Claims priority, application Germany, Feb. 15, 1963, Sch 32,789
1 Claim. (Cl. 83—68)

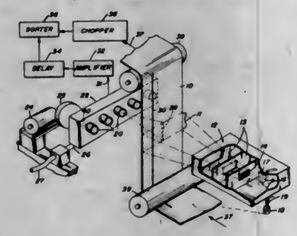


A slot punching machine comprising a press frame having a base portion and a main driving shaft in said base portion, a ram movable in said frame, a rocker member having a plurality of arms and pivoted to said frame, a thrust member connecting one of said arms to said ram, said one of said arms and the thrust member forming a toggle linkage, and a connecting rod pivotally connected at the upper end thereof to another of said arms, an eccentric member on said main driving shaft, said connecting rod being slidably and rotatably connected at the lower end thereof to said eccentric member, said rocker member, said thrust member and said connecting rod being arranged so that said toggle linkage swings across the in-line position intermediately between the dead-centre positions of said connecting rod and said eccentric member, a driving motor, belt connections between said motor and said driving shaft, and power-operated braking means of said main driving shaft to halt the rotation of the latter, said power-operated braking means including a brake disc on said main driving shaft, a brake band adapted to apply braking force to said brake disc, a hydraulic cylinder having a piston connected to said brake band for applying said braking force, electrical control means for said driving motor, electrical control means for controlling the flow of hydraulic medium to said cylinder, and an electrical switch constituting a common control for both of said electrical control means.

3,286,567
TRANSMITTED LIGHT STREAK SCANNER

Robert A. Wright, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Mar. 9, 1964, Ser. No. 350,377
6 Claims. (Cl. 83—80)



1. A streak fault detector for use with a moving translucent web comprising:

a light source for illuminating one side of the web as it moves past an inspection station;

photodetector means positioned to scan the other side of the illuminated portion of the web, said photodetector means being responsive to light transmission of the web in a narrow region of substantial length with the longest axis of the scan pattern being parallel to the movement of the web;

means for driving said photodetector means laterally relative to the web so that the scan pattern covers a substantial lateral portion thereof whereby longitudinal streak faults coming within the scan pattern will provide substantial signal variation to said photodetector means;

electronic circuit means receptive of signal information from said photodetector means including,

a notch filter to inhibit signals corresponding to any signal variations resulting from operation of said driving means, and

amplifier means receptive of the filtered signal information for developing a distinguishable error signal in response to a streak fault; and

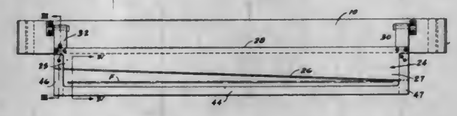
sorter means for separating portions of the translucent web causing such error signals from other portions of the web.

3,286,568
RECIPROCABLE CUTTING MECHANISM WITH STRIPPER

Norman C. Schutt and Floyd W. Flynn, Glen Cove, and John L. Bjelland, Glen Head, N.Y., assignors to Powers Chemco, Inc., Glen Cove, N.Y., a corporation of New York

Filed Mar. 25, 1964, Ser. No. 354,612
2 Claims. (Cl. 83—136)

1. Cutting means for cutting a selected length of material from a material supply roll comprising a movable carrier member, a knife blade having one end of its cutting edge wider than the other, mounting means for mounting said knife blade at each end to said carrier, at least one of said mounting means including spring means for providing tension in said knife blade, a shear blade, extension means mounted integrally with said knife blade and in contact with the cutting plane of said shear blade, said extension means comprising a pair of arm members mounted at each end of said knife blade and extending forwardly of the cutting edge thereof, whereby as said knife blade is brought into cutting engagement with said

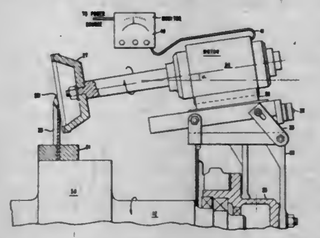


shear blade, the cut progresses from the widest end of said knife blade to its narrowest end, said spring means maintains continuous tension on said knife blade during the cutting operation, and said extension means maintains the cutting edge of said knife blade in the desired shear relationship with said shear blade, and stripper means mounted to said extension means, said stripper means extending substantially longitudinally of said knife blade, whereby the leading edge of the cut material is positioned between said shear blade and said knife blade after each cutting operation.

3,286,569
HELICAL CUTTER FOR SYNTHETIC FIBER AND HONING DEVICE THEREFOR

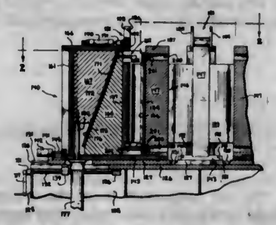
Jack Arnet Hancock, Nashville, Tenn., and James Earl Spellman, Unionville, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed May 18, 1965, Ser. No. 458,835
5 Claims. (Cl. 83—174)



1. In an apparatus for chopping a moving bundle of synthetic fiber tow into bundles of staple fiber, the combination of an essentially helical cutter having a radial rise supported upright on a cylinder which revolves on its own axis with a speed adjusted to harmonize with the linear motion of said tow whereby to cut across the entire bundle of tow at essentially the same distance from an immediately preceding cut, said helical cutter being fabricated from a material adapted to continous honing on one edge, a honing device adapted to make honing contact with the cutting edge of said helical cutter recurrently during the working period of the latter, said honing device being cup-shaped with the open end of the cup being the working portion, said honing device being mounted so as to properly contact said helical cutter along its entire working edge during selected revolutions thereof and means permitting advancement of said honing device toward said helical cutter whereby to maintain said honing device in an operative alignment.

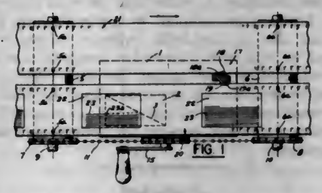
3,286,570
APPARATUS FOR FORMING METALLIC SHEET MEMBERS
Ralph E. Roper, Indianapolis, Ind., assignor to Wallace Expanding Machines, Inc., Indianapolis, Ind., a corporation of Indiana
Original application Feb. 23, 1962, Ser. No. 175,152, now Patent No. 3,222,910. Divided and this application Feb. 12, 1965, Ser. No. 438,157
5 Claims. (Cl. 83—184)



1. Apparatus for splitting a cluster of parts formed in an annular workpiece comprising a base, a plurality of cutter assembly support members slidably mounted on said base for horizontal radial movement, means for adjustably fixing the horizontal radial position of said support members with respect to said base, a cutter assembly slidably mounted on each of said support members for horizontal radial movement, a fluid motor fixed to each of said support members and having a fluid piston connected to the respective cutter assembly slidably mounted thereon for radial movement of each assembly, each cutter assembly comprising a base and an anvil structure fixed to said assembly base and extending upwardly therefrom, said anvil structure having a radially outwardly facing surface having the same shape as the workpiece adjacent the desired cut, a cutter die structure slidably mounted on each assembly base for horizontal radial movement and cooperating cutting action with said anvil structures, vertically extending side and outer members fixed to each assembly base and defining a three-sided inwardly opening enclosure for each cutter die structure, a top member fixed to said side and outer members, a latch pivoted to said top member and swingable into latching engagement with said anvil structure for locking the upper end of said anvil structure against horizontal movement relative to said enclosure, a cam member vertically movable between each outer member and cutter die structure, each cam member and cutter die structure having cooperating outwardly and downwardly sloping cam surfaces whereby downward movement of said cam member moves said cutter die structure inwardly toward said anvil structure, said cam surfaces being keyed together whereby upward movement of said cam member moves said cutter die structure outwardly, and a fluid motor having its piston fixed to said cam member for vertical movement thereof.

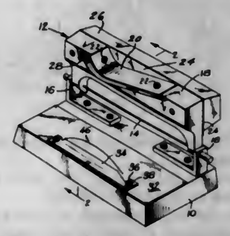
3,286,571
MARKING DEVICE FOR A SOUND RECORD CARRIER
Werner K. Bender, Plainville, Conn., assignor to The Kalart Company Inc., Plainville, Conn.
Filed Sept. 15, 1961, Ser. No. 138,442
5 Claims. (Cl. 83—272)

1. A marking device for simultaneously marking a pattern carrier and a program carrier carrying several lengthwise aligned sound record areas each including parallel sound track sections, said device comprising guide means for guiding both said carriers parallel to each other along parallel paths, drive means operable for moving both carriers in the same direction at a synchronous rate of speed, and marking means for simultaneously marking both carriers, said marking means including cutting means stationarily disposed adjacent to both said carriers and operable to cut markings simultaneously in both said carriers, stationarily disposed indexing means co-acting with the program carrier for placing the sound track sections on successive sound record areas thereof in a predetermined


FIG 1

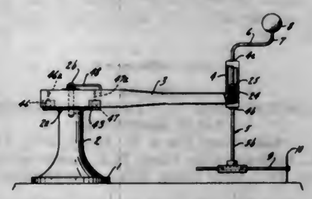
position in reference to the indexing means, and means for operating said cutting means whereby the locations of the markings on both carriers are indicative of the sound track sections of successive sound record areas on the program carrier.

3,286,572
FEATHER CUTTER
Virgil J. Berg, Rte. 1, Waterloo, Iowa
Filed Dec. 31, 1964, Ser. No. 422,646
2 Claims. (Cl. 83—467)



1. In a feather cutter, a base, a cutting head mounted on said base for movement toward and away from said base, means on said base for positioning a feather to be cut, a shaped feather cutting blade carried by said cutting head and adapted to engage a feather on said base and cut the same to the shape of said blade, means of cooperation between said cutting head and said base to guide said cutting blade to the same location on said base each time said feather cutter is operated, said first mentioned means comprising a gauge plate which is provided with notches receiving the ends of said feather cutting blade to cut the feather to length.

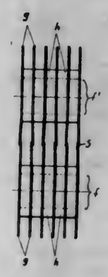
3,286,573
PIZZA CUTTER
George E. Esch, 5324 S. Ashland Ave., Chicago, Ill.
Filed May 18, 1964, Ser. No. 368,304
5 Claims. (Cl. 83—490)



1. A pizza cutter comprising a base, a support rising from said base, an arm pivoted on said support and laterally extending therefrom, a housing carried by said

arm, a rod rotatably and reciprocally carried by said housing and extending vertically above and below said housing, a second arm extending laterally from said rod above said housing, a handle carried by said arm, a third laterally extending arm carried by said rod below said housing, a cutter wheel rotatably carried by said arm, said arm being rotatable between an operative and a storage position, yielding means engaging said arm and said support and effective to urge said arm toward said storage position, and means for retaining said arm in said operative position, said means including at least one magnetized element carried by said arm, an abutment plate upstanding from said support and positioned for contact by said magnetized element when said arm is in said operative position.

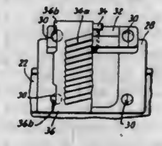
3,286,574
PAPER SLITTING APPARATUS
Auguste Paul Durand, 2 Rue H. Berlioz, Saint-Etienne, France
Filed Apr. 22, 1964, Ser. No. 361,649
1 Claim. (Cl. 83—501)



In an apparatus for cutting sheets of paper into strips, a pair of spaced terminal mounting boxes, a pair of mutually spaced polygonal drive shafts extending between and terminally mounted in said boxes, a plurality of resiliently flexible metal knife blades of uniform size provided with central apertures registering with the contours of each said shaft and mounted in stacked relation on said shafts, separating washers mounted on said shafts respectively between adjacent blades, said shafts being mounted on said boxes to have the blades on a first said shaft extend with their peripheries extending within the peripheries of the blades on the second of said shafts, and said blades being arranged in successive pairs in such manner that the blades of each pair of blades on the first said shaft have their peripheries extending between the peripheries of the blades of the correspondingly positioned pair of blades on the second said shaft.

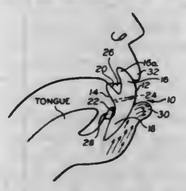
3,286,575
MICROTOME
Rolf Burkhardt, Munich-Pasing, Germany, assignor to Compur-Werk Gesellschaft mit beschrankter Haftung & Co., Munich, Germany
Filed Nov. 6, 1964, Ser. No. 409,434
Claims priority, application Germany, Nov. 15, 1963, C 31,419
5 Claims. (Cl. 83—699)

1. A microtome for cutting sections of a preparation encased in a cover comprising a holder for a microtome knife, means on said holder for removably mounting said microtome knife, a preliminary cutting tool for insertion in said holder in place of said microtome knife and provided with a plurality of cutting teeth lying serially in the cutting direction for the purpose of cutting the end



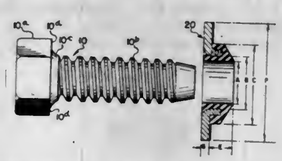
portion from said cover prior to cutting sections of the preparation with the microtome knife.

3,286,576
DEVICE FOR EXERCISING AND COORDINATING FACIAL AND RELATED MUSCULATURE AND STRUCTURE
Alvy West, 39 Andover Road, Roslyn Heights, Long Island, N.Y.
Filed May 17, 1965, Ser. No. 456,394
11 Claims. (Cl. 84—466)



1. A device for exercising and cordinating selected facial and related muscles comprising a member adapted to be received within the mouth, said member including an upper portion provided with a groove for receiving the upper teeth therein, and a lower portion sized to fit between the lower lip and the lower gums in spaced relation to the upper edge of the lower teeth when the mouth is closed for positioning the lower front teeth rearwardly of the upper front teeth, said member being sized so that the bottom edge abuts the bottom wall of the chamber defined by the lower lip and the lower teeth to space the upper and lower teeth apart.

3,286,577
SHOULDERED WASHER AND FASTENING ELEMENT
Harry C. Weidner, Jr., Shaker Heights, Ohio, assignor to The Atlas Bolt and Screw Company, Cleveland, Ohio, a corporation of Ohio
Filed May 13, 1964, Ser. No. 367,079
6 Claims. (Cl. 85—1)



2. A washer for use with a fastening element comprising a shank having a head at one end, said washer comprising a backing member having one face adapted to bear against said head and having a hole extending therethrough to receive said shank, said washer having projecting portions spaced around said hole and projecting from the opposite face of said backing member, said washer having a rubber-like sealing ring secured to the opposite face of said backing member and to at least some of each of said portions, said ring having a hole extending at least partially therethrough and being generally

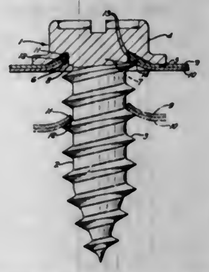
coaxial with the hole in said backing member for receiving said shank, said projecting portions having an axial heighth from said opposite face sufficient to engage a fastening element receiving member and to determine the driven position of said fastening element and washer therein, said backing member having an integral annular sleeve projecting from said opposite face around said hole in said ring and containing said projecting portions as portions thereof, said sleeve being constructed to engage with a circular contact said fastening element receiving member in said driven position so as to provide a material-to-material contacting seal therewith, said backing member, projecting portions and seal-like ring being so dimensioned that if sufficient driving force is applied to the head of said fastening element after said projecting portions engage said fastening element receiving member, the periphery of said backing member is turned downwardly toward said fastening element receiving member and said opposite face assumes a concave shape to restrict the outward flow of said rubber-like ring for providing a good sealing action around said fastener, an annular portion of said rubber-like ring extending within the bore of the hole in said backing member and within said sleeve to frictionally engage the shank of said fastening element and to provide a good seal thereon, and portions of said rubber-like ring being forced into the space between said shank and the hole in said fastening element receiving member and being located both inside and outside said sleeve outwardly from said fastening element receiving member to form a multiplicity of seals in said driven position, the heighth of said sleeve being such that said rubber-like ring provides a good seal in the driven position between the opposite faces of the backing member and said fastening element receiving member and between said shank and the receiving hole therefor in said fastening element receiving member, said sleeve being encased in said rubber-like ring so that driving said fastening element to said driven position causes said sleeve to pierce said rubber-like ring and to engage the fastening element receiving member so that the rubber-like ring is in a high state of compression for providing a good seal, the end of said sleeve most remote from said backing member bearing against said fastening element receiving member, said fastening element comprising a screw having a threaded shank, portions of said rubber-like sealing ring forced by said sleeve down into the hole in said fastening element receiving member around the threads on said shank, and the opposite face of said backing member being bent into a concave shape restricting outward flow of said rubber-like ring.

3,286,578
PLASTIC NUT WITH METALLIC THREAD ENGAGING INSERTS
Theodore E. Fiddler, % T. E. Fiddler Associates, Inc., 1600 N. Woodward Ave., Birmingham, Mich.
Original application Nov. 4, 1964, Ser. No. 408,995. Divided and this application July 2, 1965, Ser. No. 469,188
2 Claims. (Cl. 85—36)



1. A nut adapted for use with a stud having a predetermined major diameter, said nut comprising a body of synthetic resinous plastic material having a bore defined by an internal cylindrical wall, the diameter of said bore being less than said major diameter of said stud, and a plurality of separate, straight metal inserts within the body of said nut circumferentially and axially spaced therein and each extending in a generally radial direction with respect to the axis of said internal cylindrical wall, each of said inserts having a thread-engaging inner end portion positioned adjacent said internal cylindrical wall and being spaced from said axis by a distance equal to less than one-half said major diameter of said stud but, by a distance at least equal to the spacing of said internal wall from said axis, the inner end position of each insert being formed as a cutting edge whereby said internal wall defining said bore expands as the stud is threaded into said bore and said inner end of each insert cuts a thread on the stud, the said inner ends of said inserts being generally rectangular in transverse cross section and being positioned with their lateral axes inclined relative to the transverse plane of the body of said nut, the lateral axes of said inserts being disposed along a common helix along the internal cylindrical wall defining the bore of the nut.

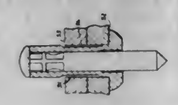
3,286,579
SELF-TAPPING SCREW
Louis J. Lovisek, Cheshire, Conn., assignor to Screw & Bolt Corporation of America, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 4, 1964, Ser. No. 408,791
6 Claims. (Cl. 85—41)



1. A self-tapping screw adapted to fasten together two thin metal sheets each provided with a marginal portion surrounding a hole for passage of the screw, said screw comprising an integral head and shank, the underside of the head having an annular bearing area and an annular recess between that area and the shank, a full formed thread on the shank terminating substantially at the transverse plane defined by said bearing area, the unthreaded shank portion extending between the terminal end of the thread and the bottom of the recess being substantially cylindrical and having a diameter less than the crest diameter of the thread but greater than the root diameter of the thread and substantially equal to the pitch diameter thereof, the thread being capable of deforming the marginal portion of at least the top one of the sheets to provide a leading edge therein as the screw is threaded into the sheets and the terminal portion of the thread on continued rotation of the screw being capable of extruding the entire marginal portion of at least the top sheet completely into the recess under the head and to eliminate the lead previously produced on the edge thereof, thereby to capture at least the top sheet with its marginal portion wholly confined between the bottom of the recess and the adjacent terminal end of the thread on the shank.

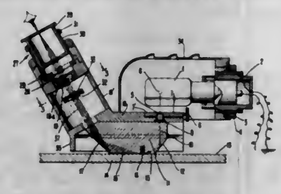
3,286,580
BLIND RIVET WITH SELF-PLUGGING MANDREL
Harvey Philip Jeal, Hertfordshire, England, assignor to Avdel Limited, Welwyn Garden City, Hertfordshire, England, a British joint-stock company
Continuation of application Ser. No. 203,621, June 19, 1962. This application Oct. 22, 1965, Ser. No. 507,622
Claims priority, application Great Britain, June 19, 1961, 22,026/61
3 Claims. (Cl. 85—77)

1. In combination, a pair of apertured members and a fastener for use in the blind riveting thereof, said fastener being disposed through apertures in said members and comprising a rivet having an annular head and a tubular shank with a substantially squared-off anular end portion telescoped over a self-plugging mandrel, said tubular shank having a portion thereof of uniformly reduced external diameter relative to the remainder of said shank, said portion being slightly greater in axial length than the combined total thickness of said members and disposed so that a plane defining the abutting faces of said members intersects said portion intermediate the axial ends thereof, said mandrel being formed with a mushroom-like head and a stem portion extending from the underside of said head, the underside of said head being dished to form the peripheral edge of said head



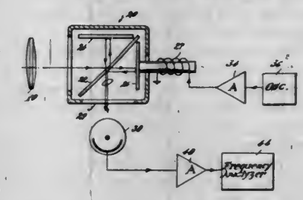
into an annular rim of rounded section facing the squared-off end of said tubular shank, said rounded rim being located to engage the squared-off end of said shank substantially at the middle of the annular area of the end of the shank, said stem portion having a first section thereof adjacent said underside of said head formed in a configuration of reduced cross-sectional area as compared with the main part of said stem portion, whereby initial displacement of said mushroom-like head toward said annular head causes the wall of said tubular shank to flow outwardly and around the edge of said mushroom-like head, and further displacement causes the wall of said tubular shank to fill said first section of reduced cross-sectional area.

3,286,581
METHOD AND APPARATUS FOR DETERMINING SURFACE BIREFRINGENCES IN A TRANSPARENT MATERIAL EMPLOYING A PRISM PLACE ADJACENT TO THE SURFACE
Paul Henri Acloque, Paris, and Claude Guillemet, Bessancourt, France, assignors to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France
Filed Aug. 29, 1960, Ser. No. 52,575
Claims priority, application France, Sept. 1, 1959, 803,995
16 Claims. (Cl. 88—14)



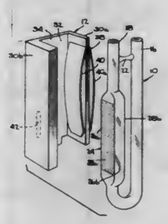
1. In an instrument for detecting and measuring surface strains in a glass specimen having a plane surface, a glass prism having a plane face adapted to rest on the plane surface of the specimen in contact therewith, a light barrier in said prism, lying in a plane normal to said face and intersecting the same in a first line, means for projecting a plane beam of light through said prism and onto said face to intersect the same in a second line closely adjacent said first line and at a dihedral angle not less than the critical angle of incidence of said prism, and optical means for observing light from said projecting means refracted into said prism on the other side of said barrier, after traversing surface layers of the specimen.

3,286,582
INTERFERENCE TECHNIQUE AND APPARATUS FOR SPECTRUM ANALYSIS
Lawrence N. Mertz, Cambridge, Mass., assignor, by mesne assignments, to Block Engineering, Inc., Cambridge, Mass., a corporation of Delaware
Filed June 29, 1961, Ser. No. 120,600
5 Claims. (Cl. 88—14)



1. The method of optical spectrum analysis with an interferometer having a reciprocable mirror and having photoelectric detecting means in its light exit path, comprising the steps:
directing light within an appreciable spectral range of optical frequencies from a source to be examined through the interferometer;
reciprocating the mirror with substantially constant velocity over an appreciable portion of each reciprocating cycle, at an excursion, and at a repetition rate to produce fluctuating light amplitude outputs at frequencies related to the component optical frequencies contained in the source of light to be examined;
directing said fluctuating light amplitude outputs on to said photoelectric detecting means; and
analyzing the amplitude of each frequency component of the output signal obtained from said photoelectric detecting means during that portion of each reciprocating cycle during which the velocity of the mirror is substantially constant to provide an indication of the intensities of the various frequency components within the spectral range of said source, and indicating the distribution of the optical energy of said light source among the various corresponding wavelengths corresponding to said various frequency components.

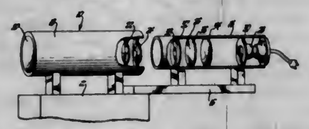
3,286,583
COLORIMETER FLOW CELL AND HOLDER
Andres Ferrari, Scarsdale, N.Y., assignor to Technicon Instruments Corporation, Chauncey, N.Y., a corporation of New York
Filed June 22, 1962, Ser. No. 204,486
2 Claims. (Cl. 88—14)



1. Apparatus for the colorimetric examination of a fluid stream, comprising:
(a) a flow cell holder adapted to be removably mounted in a spectrophotometer and having a pair of laterally spaced and longitudinally extending confronting side members, providing a space therebetween,

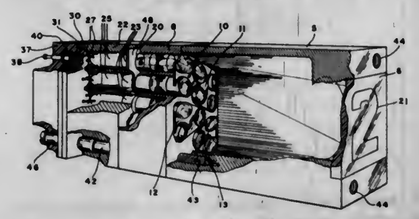
(b) a tubular flow cell removably mounted on said holder in said space,
(c) said tubular flow cell having a longitudinally extending side wall for providing a flow path and at least one portion of said side wall being light permeable,
(d) an elongated spring member mounted on one of said side members and in engagement with a portion of said side wall of said flow cell different from said light permeable side wall portion,
(e) another side wall portion different from said light permeable side wall portion of said flow cell being in engagement with the other side member of said holder for resiliently holding said flow cell in said mounted position on said holder, and
(f) another elongated spring member mounted on one of said side members of said holder for engaging a part of said spectrophotometer for resiliently holding said holder in said mounted position in said spectrophotometer.

3,286,584
ILLUMINATED DOUBLE RETICULE COLLIMATOR
Donald W. Hermann, Milwaukee, Wis., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 18, 1962, Ser. No. 231,417
2 Claims. (Cl. 88—14)



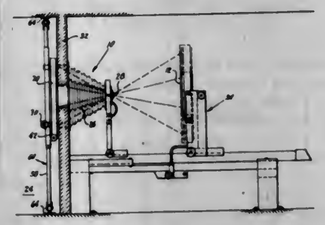
1. In a collimator having an objective lens, a first reticule at the focal point of the lens, a second reticule slightly spaced beyond the focal point so that when viewed through the objective lens by means of a sighting device the first reticule will appear at infinity focus of said device and the second reticule will appear at a focus of said device further than infinity, means for illuminating the reticules comprising a light source, a condenser between the light source and the reticules to focus light onto the reticules, and a dark field stop between the light source and the reticules to prevent light passing directly from the source to the objective lens.

3,286,585
REAR PROJECTION SYMBOL PRESENTATION
Stuart N. McCullough, Encino, and Garrison G. Hollowich, Los Angeles, Calif., assignors, by mesne assignments, to Shelly Associates, Inc., El Segundo, Calif.
Filed Aug. 7, 1961, Ser. No. 129,880
13 Claims. (Cl. 88—24)



1. A visual indicator having a plurality of individual projection paths for directing light to a common area comprising:
a plurality of lamps, one lamp being provided for each of said paths;
each path further including a separate plurality of lenses for refracting light in said paths along parallel axes;
the separate plurality of lenses in each path being substantial optical equivalents of the lenses provided in each of the other paths, the last lens in each of said separate plurality of lenses having a prismatic light exit surface, said prismatic light exit surface in each path being individually aligned at an angle relative to the parallel axis of the respective path to refract light from the respective parallel axis along an axis angularly directed toward a point on the common area.

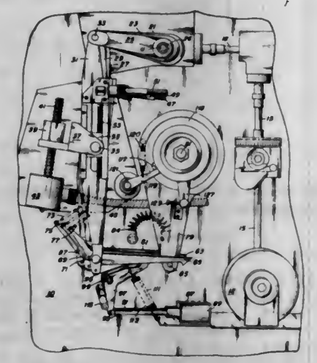
3,286,586
DARKROOM CAMERA WITH MULTI-EXPOSURE CAMERA BACK
Russell H. Whitney, 23 Romar Drive, Annapolis, Md.
Filed Oct. 23, 1963, Ser. No. 318,436
5 Claims. (Cl. 88—24)



1. A camera system for making up a composed multi-exposure printing form for reproduction comprising
a page or other partial copy camera having an open-back mounted in a darkroom wall,
a multi-exposure size transparent film carrier mounted adjustably in the plane of the image in the darkroom,
means for adjusting said film carrier in said plane to properly align the film for each of the several exposures, and
an exposure film mounting means for mounting the film on the front face of said transparent film carrier,
said front face of said transparent film carrier being frosted and the rear face thereof having guide lines to facilitate viewing of the image during adjustment and to enable proper alignment of the images within the guide lines.

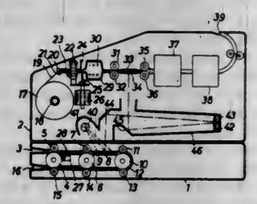
3,286,587
PHOTOGRAPHIC COPYING APPARATUS
James F. Hayden and Glen W. Offensend, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Original application Apr. 2, 1962, Ser. No. 184,107, now Patent No. 3,253,503, dated May 31, 1966. Divided and this application Dec. 16, 1963, Ser. No. 330,807
2 Claims. (Cl. 88—24)

1. An optical system for use in an apparatus for projecting document images from the apparatus recording station, in which documents are successively received, onto a recording media located in the exposure station of the apparatus, said system comprising:
(1) a first reflector disposed to receive images of the documents when in said recording station,
(2) a projection lens positioned to transmit the document images reflected by said first reflector,
(3) a second reflector disposed to reflect the document images transmitted by said projection lens to the recording media in said exposure station, and
(4) carriage means operatively associated with said first and second reflectors and with said projection lens including:
(a) means for varying the distance from and angular relationship of said first reflector to the recording station,
(b) means for changing the position of said projection lens along the optical axis of said system,



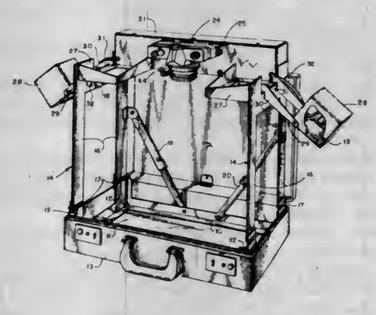
(c) means for varying the spacing of said reflectors along the optical axis of said system and the angular position of said second reflector with respect to said exposure station,
whereby said reflectors and said projection lens can be synchronously moved so as to change the size of the image projected to said exposure station while maintaining such image in focus on said recording media.

3,286,588
OPTICAL COPYING APPARATUS
Richard Wick and Jürgen Orthmann, Grunwald, Munich, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany
Filed Dec. 17, 1963, Ser. No. 331,207
Claims priority, application Germany, Dec. 18, 1962, A 41,913
11 Claims. (Cl. 88—24)



1. In an optical copying apparatus, in combination, first positioning means for positioning at least a portion of a sheet, which has thereon subject matter to be copied, in a predetermined area of a subject plane; second positioning means for positioning at least a portion of a sheet having a photosensitive surface in a predetermined area of an image plane which is substantially parallel to and spaced from said subject plane; and image-forming means situated between said planes for directing to said predetermined area of said image plane an image of subject matter located at said predetermined area of said subject plane, said image-forming means including an objective which has an optical axis which is substantially parallel to and located between said planes, a subject reflector facing said predetermined area of said subject plane and said objective for directing an image of subject matter at said predetermined area of said subject plane to said objective, an objective reflector located behind said objective at the side thereof opposite from said subject reflector for directing back through the objective the rays which are directed toward said objective by said subject reflector, and an image reflector facing said objective and said predetermined area of said image plane for receiving the rays directed back through said objective by said objective reflector and for directing said rays to said predetermined area of said image plane for forming an image of the subject matter at said predetermined area of said subject plane on a photosensitive surface of a sheet located at said predetermined area of said image plane.

3,286,589
PHOTOGRAPHIC COPYING APPARATUS
John E. Glidden, Glen Burnie, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed Sept. 22, 1964, Ser. No. 398,460
2 Claims. (Cl. 88—24)



1. Folding photographic copy apparatus comprising a base section and an upper section detachably lockable together in operating position, said base section comprising an open rectangular metallic frame to rest upon a flat copy surface and enclosing an area upon which the copy element is placed, said frame having vertical corner posts rigid with said frame and of a height slightly less than the small dimension of the apparatus when folded, a pair of vertical H-shaped support members each member being hinged to the upper ends of opposite pairs of corner posts in such manner that they will fold inward and downward to horizontal position one overlying the other, the upper section comprising an enclosed casing of a length substantially the same as the maximum length of said base frame and fitting within the frame, the said casing being no higher than said corner posts and adapted to receive batteries and electric circuitry for energizing lighting means, a pair of lamps received in said housings, flexible connections from said energizing means to said lamps, a camera secured to said housing, platform supports fixed to said casing, lamp manipulating means pivoted to said platform supports at one end and to said housings at their other end operable to swing said housings from their folded position within the bounds of the folded position of the apparatus and outward to their operation positions.

3,286,590
FULL CIRCUMFERENTIAL VIEWING SYSTEM

Harry P. Brueggemann, San Marino, Calif., assignor, by mesne assignments, to Conductron Corporation, Ann Arbor, Mich., a corporation of Delaware

Original application Feb. 21, 1963, Ser. No. 260,250, now Patent No. 3,203,328, dated Aug. 31, 1965. Divided and this application Mar. 3, 1965, Ser. No. 436,870
3 Claims. (Cl. 88—24)



1. A projector for displaying a full circumferential view from a panoramic image recorded on a photographic film comprising:

an elliptical mirror, the concave side of which has a specular surface;

a first spherical mirror, the axis of which is disposed at right angles to the axis of said elliptical mirror, the concave side of said spherical mirror having a specular surface;

a second spherical mirror coaxially aligned with, and spaced apart from, said elliptical mirror, the convex side of said second spherical mirror having a specular surface;

beam splitter means disposed at the intersection of the axes of said first and second spherical mirrors and inclined 45° to the axis of said elliptical mirror, said photographic film being laterally displaced from said beam splitter means and lying in a plane normal to the optic axis as deviated by said beam splitter means;

a projection light source for illuminating said photographic film; and

condenser lens means interposed between said photographic film and said light source means for collimating light from said source for illuminating said photographic film.

3,286,591
ADJUSTABLE MOUNTING PLATE

Joseph Nitkiewicz, Farmington, Mich., assignor to Optical Gaging Products, Inc., Rochester, N.Y.

Filed Mar. 30, 1965, Ser. No. 444,013
17 Claims. (Cl. 88—24)

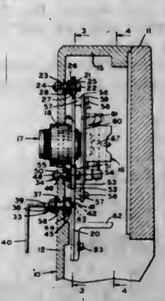
1. An adjustable mounting plate apparatus for adjusting the position of one member relative to another member, comprising:

(a) a support means;

(b) an adjusting plate adapted to carry one member;

(c) means for mounting said adjusting plate on said support means for simultaneous pivotal and straight-line movement of the adjusting plate relative to the support means; and,

(d) means connected to said adjusting plate at positions spaced apart from the means mounting said adjusting plate to said support means, for adjusting said adjusting plate in two perpendicular directions

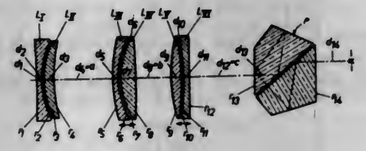


to adjust the position of said one member relative to the position of another member.

3,286,592
OBJECTIVE WITH CONTINUALLY VARIABLE FOCAL LENGTH AND FIXED IMAGE PLANE

Helmut Wagner, 14 Siechhofstrasse, Wetzlar (Lahn), Germany, and Adolf Sterlepper, 35 Oberdorfstrasse, Steindorf, Wetzlar, Germany

Filed Oct. 14, 1965, Ser. No. 495,946
Claims priority, application Germany, Apr. 22, 1961, H 42,386
1 Claim. (Cl. 88—57)



An optical objective of continually variable focal length comprising

(a) a fixed first member composed of two components of which one is a positive lens which is arranged in rear of the other component which is a biconcave lens;

(b) a second member positioned to the rear of said first member and composed of two components of which the one in rear of said positive lens is a negative lens and the one in rear of the latter is a biconvex lens; and

(c) a third member positioned to the rear of said second member and composed of two components of which the one in rear of said second member is a biconvex lens and the one in the rear of the latter is a negative lens;

(d) said second and third member being each axially displaceable independently with respect to each other, the amounts of displacement of said displaceable members being less than .7 times the amount of the obtainable focal length variation $f_{max}-f_{min}$,

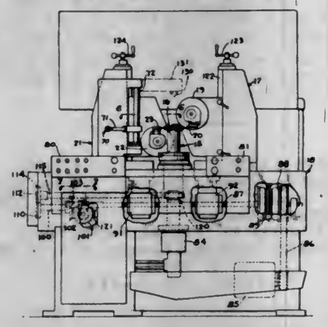
(e) the design data of the optical objective substantially corresponding to the values of the following table in which L_I to L_{VI} designate the successive lens elements in order of the incoming light, $1/r_1$ to $1/r_{12}$ designate the successive curvatures of the surfaces, d_1 to d_{12} designate the successive zenith distances, and wherein f_m indicates the median focal length of the entire optical objective, n_C the refractive indices for the red hydrogen line C, n_d the refractive indices for the yellow helium line d, n_F the refractive indices for the blue hydrogen line F, while a, b and c are the variable distances between said members corresponding to the focal length variations:

Lens	Curvature $K=1/r$	Zenith distance d	Refractive Indices		
			n_T	n_d	n_F
L_I	$1/r_1=0.40980/f_m$	$d_1=0.03200\,f_m$	1.66284	1.66755	1.67878
	$1/r_2=+2.92194/f_m$	$d_2=0$			
L_{II}	$1/r_3=+2.92184/f_m$	$d_3=0.04120\,f_m$	1.77607	1.78470	1.80613
	$1/r_4=+1.30514/f_m$	$d_4=a$			
L_{III}	$1/r_5=+1.26812/f_m$	$d_5=0.03200\,f_m$	1.66092	1.66680	1.67107
	$1/r_6=+2.79846/f_m$	$d_6=0$			
L_{IV}	$1/r_7=+2.79846/f_m$	$d_7=0.07440\,f_m$	1.56163	1.56470	1.57175
	$1/r_8=-0.88496/f_m$	$d_8=b$			
L_V	$1/r_9=+1.30514/f_m$	$d_9=0.04800\,f_m$	1.55657	1.56013	1.56848
	$1/r_{10}=-0.91075/f_m$	$d_{10}=0$			
L_{VI}	$1/r_{11}=-0.91075/f_m$	$d_{11}=0.03200\,f_m$	1.77607	1.78470	1.80613
	$1/r_{12}=0$	$d_{12}=c$			

3,286,593
METHOD AND APPARATUS FOR CHAMFERING TOOTHED MACHINE ELEMENTS

William H. Bibbens, 1078 Puritan, Birmingham, Mich.

Filed Dec. 15, 1964, Ser. No. 418,501
10 Claims. (Cl. 90—1.4)

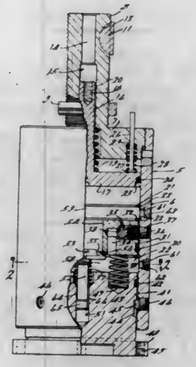


1. In a machine for chamfering end edges of teeth of a workpiece gear, said machine comprising a spindle adapted to receive the workpiece gear leaving it teeth exposed for chamfering at both of its end faces and to locate said gear axially, a locating member adapted to engage at least one tooth of the workpiece gear when moved in a position of contact therewith and to locate said workpiece gear on said spindle angularly, means to lock the workpiece gear on the spindle in the located position, means to move said locating member out of contact with the gear, two swinging cutters disposed one at each of the two end faces of the workpiece gear in similar space relation to the respective faces of the workpiece gear, each of said cutters adapted to chamfer two near side edges and at least a portion of each of the adjacent respective root edges of two spaced teeth separated by at least one full tooth, cam-and-follower means, one for each of said cutters adapted to actuate the same through similar reciprocating paths to produce successive chamfering and return strokes, and means to index the spindle one tooth at a time until completion of chamfering of all teeth on both end faces of the workpiece gear.

3,286,594
PRESSURE CONTROL TOOL DRIVING DEVICE

Clemens A. Kruse, Jr., 1718 Waverly Road, Ann Arbor, Mich.

Filed Aug. 10, 1965, Ser. No. 478,649
8 Claims. (Cl. 90—11)

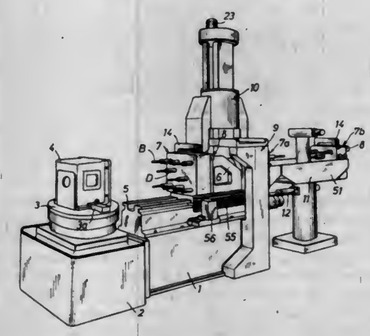


1. In a head for driving a tool from a spindle and advancing the tool into the work, a cylinder having a closed end securable to a spindle, a partition within the cylinder forming an upper and lower chamber, a floating piston in the lower chamber having means for supporting a tool, stop means limiting the movement of the floating piston from the cylinder end, springs between the floating piston and the partition for urging the latter outwardly a maximum amount, the partition having a passageway therethrough closed by a relief valve which limits the force which can be applied on the fluid in the lower chamber by the floating piston the movement of which into the cylinder reduces the rate of advancement of the tool.

3,286,595
MACHINE TOOL

Jakob Wollenhaupt, Bergisch-Gladbacher Strasse 635, Cologne-Holweide, Germany

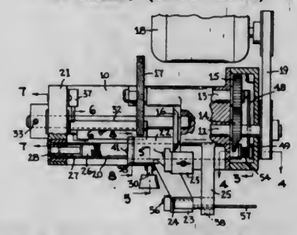
Filed Sept. 21, 1965, Ser. No. 489,031
Claims priority, application Germany, Sept. 26, 1964, W 37,611
32 Claims. (Cl. 90—11)



32. In an automatic multiple spindle machine, a frame; a slide mounted on said frame; a first multiple-spindle tool holder detachably connected with said slide; a spare multiple-spindle tool holder; and interchanging means

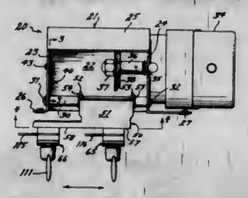
comprising lifting means for simultaneously moving said tool holders vertically toward and away from said slide, and turning means for simultaneously turning said tool holders subsequent to movement away from said slide and through such an angle that the spare tool holder is automatically connected to the slide subsequent to downward movement thereof.

3,286,596
AUTOMATIC KEY CUTTING MACHINE
Nathan S. Lieptz, Beachwood, Ohio, assignor, by mesne assignments, to Curtis Noll Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Dec. 31, 1964, Ser. No. 422,821
13 Claims. (Cl. 90—13.05)



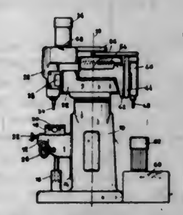
1. In a key cutting and duplicating machine of the character described, the combination of a traversing carriage, key clamping means carried by said carriage, a rotatable cutter wheel disposed in the path of movement of said clamping means, a rotatable brushing wheel disposed in the path of movement of said clamping means, powered means for causing traversing of said carriage to bring said clamping means sequentially into operative traversing relationship to each of said wheels, said powered means comprising a rotatable screw engageable with said carriage to traversably displace said carriage, a reciprocating drive mechanism, and a uni-directional clutch coupling said mechanism to said screw to effect uni-directional rotation thereof.

3,286,597
KEY-DUPLICATING MACHINE
Jerome Schwartz, % Taylor Lock Company, 2034 W. Lippincott St., Philadelphia, Pa.
Filed June 3, 1965, Ser. No. 461,136
13 Claims. (Cl. 90—13.05)



1. In a key-duplicating machine; the combination comprising a frame having an open front, a shaft carried by said frame interiorly thereof and mounted for rotation about a generally horizontal axis, a cutting tool in said frame and carried by said shaft for rotation therewith, way means on said frame extending longitudinally of and spaced from said shaft axis, a carriage mounted on said way means for movement longitudinally therealong and swinging movement toward and away from said shaft axis, a guide mounted in said frame spaced longitudinally thereof from said tool, and clamp means carried by said carriage for releasably clamping a cut key adjacent to said guide and a key blank adjacent to said tool, said clamp means being swingable and slidable with said carriage to move a cut key along said guide and a key blank along said tool to be cut by the latter, said frame comprising an integral sheet of stiff bendable material cut and bent to define an upstanding rear wall, end walls integral with said rear wall extending forwardly from opposite ends of said rear wall to vertically rigidify the latter, and a hood integral with said rear wall extending forwardly from said rear wall and arcuately over the space between said end walls to horizontally rigidify said rear wall, said way means extending between the forward ends of said end walls to rigidify said end walls, said carriage comprising an integral sheet of stiff bendable material cut and bent to define a generally flat body part extending transversely from said way means, said body part being provided with a bend extending generally parallel to said way means for longitudinally rigidifying said body part, and a pair of ears integrally depending from opposite ends of said body part slidably and rotatably engaging said way means to mount said body part for sliding and rotative movement relative to said way means, said clamp means comprising a pair of substantially identical vises mounted on said body part respectively located for swinging movement toward and away from said guide and tool, said vises each comprising a lower member on and in interfitting engagement with said body part, an upper member on said lower member, resilient means urging said members apart, and tie means for forcibly moving said members toward each other, said upper and lower members having meeting surfaces, at least one of said surfaces being oblique to the direction of member movement toward and away from each other to simultaneously move said upper member toward said lower member and away from said shaft axis, to thereby draw a clamped article away from said axis, said lower and upper members each being formed with at least a single protrusion and a single recess for receiving the protrusion of the adjacent member, said recesses and protrusions being formed with said meeting surfaces.

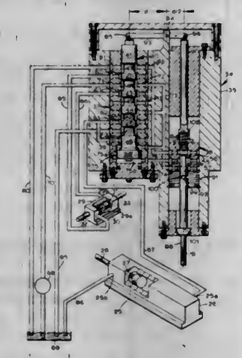
3,286,598
DUPLICATING MILLING MACHINE
Johann Müller, Munich, Germany, assignor to Hans Deckel, Munich, Germany, and Friedrich Wilhelm Deckel, Zug, Switzerland
Filed Oct. 19, 1964, Ser. No. 404,614
Claims priority, application Germany, Nov. 15, 1963, D 42.952
3 Claims. (Cl. 90—13.1)



1. A duplicating milling machine comprising, a machine standard having an upper surface and a vertical axis, a table adapted for movement in three coordinate directions and adapted to hold a workpiece and model operatively connected to said machine standard, a turret portion connected to the upper surface of said machine standard for pivotal movement about the vertical axis thereof, first and second machine tool means connected at opposite ends of said turret portion in operative relation to said table, said first machine tool means including a roughing spindle, a hydraulic feeler connected adjacent said roughing spindle, hydraulic control means

connected to said table and said hydraulic feeler whereby said hydraulic feeler is connected to selectively move said table through said hydraulic control means in three coordinate directions relative to said roughing spindle, said second machine tool means comprising a precision duplicating tool connected for movement in three coordinate directions relative to a fixed position of said table, guide means connected to said precision duplicating tool for moving said precision duplicating tool by hand and said turret portion being pivotal from a first position to a second position to successively dispose said first and second machine tool means in operative position above said table.

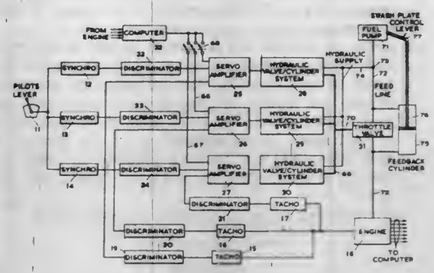
3,286,599
TRACING MECHANISM FOR AMPLIFIED FLOW
Wendell I. Evans, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed Feb. 12, 1964, Ser. No. 344,441
6 Claims. (Cl. 91—36)



1. Tracer mechanism comprising:
(a) a main valve having a movable valve member,
(b) a pilot valve having two relatively movable members,
(c) a stylus connected to one of said pilot valve members for displacement thereof,
(d) means responsive to the displacement of said one pilot valve member to initiate movement of the movable member of the main valve,
(e) and means responsive to movement of the movable valve member of the main valve member to move said other movable valve member of said pilot valve to terminate movement of said main valve member.

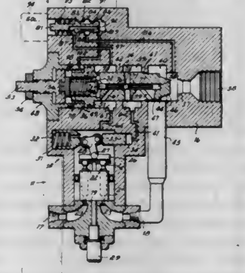
3,286,600
ELECTRONIC ENGINE CONTROLLERS
Peter John Colburn, Pinner, England, assignor to Ultra Electronics Limited, London, England, a corporation of Great Britain
Filed Mar. 26, 1965, Ser. No. 442,971
8 Claims. (Cl. 91—411)

1. A speed control system for an engine comprising:
a control lever;
three parallel connected electrical communication channels having their inputs operatively connected to said lever;
a throttle operatively connected to the output of said communications channels such that signals on said communications channels control the operation of said throttle; and
a single control means operatively connected between said engine and the inputs of said communications



channels, said control means being responsive to a plurality of engine conditions for modifying the operating effects of said lever on said channels.

3,286,601
DEPRESSURIZING AND BLOCKING VALVE MEANS FOR VARIABLE DISPLACEMENT PUMP
Roger D. Jones, Camarillo, Calif., assignor to Abex Corporation, a corporation of Delaware
Filed Jan. 18, 1965, Ser. No. 426,299
7 Claims. (Cl. 91—434)



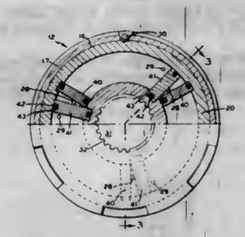
1. Depressurizing and blocking valve means for a variable displacement pump of the type having a fluid motor for changing the displacement thereof, comprising,
a body having a pressure inlet and a pressure outlet,
a piston cooperable with a valve seat between said inlet and outlet to form a valve,
means for applying pressure fluid from said inlet to said piston to move said piston toward said seat and close said valve, said means including a selectively operable control valve and a flow restricting passage defined by and between said piston and body when said piston approaches said seat,
first passage means for applying pressure fluid from said inlet to said fluid motor including a portion within said piston, a spool movable in the portion of said first passage means within said piston and presenting a first transverse surface forming a first valve with said piston in said passage means for controlling the application of fluid therethrough to said motor, said first transverse surface being acted upon at all times by pressure fluid in said passage means from said inlet,

second passage means for releasing fluid from said motor including a portion within said piston, said spool also presenting a second transverse surface forming a second valve with said piston in said second passage means for controlling the release of fluid therethrough from said motor,

a spring having one end fixed with respect to said body and urging said spool in a direction against the force of said pressure fluid on said first transverse surface and tending to close said first valve and open said second valve, the force applied by said spring to said spool being independent of the position of said piston but the pressure required to open said first valve diminishing as said piston approaches said seat,

and means for adjusting the force of said spring.

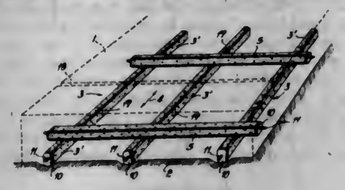
3,286,602
MECHANICAL ACTUATOR
Edgar A. Butner, Scarsdale, N.Y., Joseph E. Scerbo, Stamford, Conn., and Roy B. Johnson, Larchmont, N.Y., assignors to American Machine & Foundry Company, a corporation of New Jersey
Filed Nov. 22, 1963, Ser. No. 325,572
2 Claims. (Cl. 92—28)



1. A mechanism for imparting rotary movement comprising a cylindrical stator member, a rotor mounted within said stator, said stator being provided with a central hub, and normally held against movement relative to said rotor by an interference coupling between the outer face of said rotor and the inner face of said stator, at least one operating vane mounted on the interior of said rotor and extending inwardly therefrom into close proximity with the hub of said stator, at least one operating vane carried by said hub and extending outwardly therefrom into close proximity with the inner surface of said rotor, means for introducing fluid under pressure at said interface to expand said stator relative to said rotor and thereby uncouple said rotor from said stator, and means operative when said rotor is uncoupled from said stator acting on said vanes to effect relative rotational movement between said stator and said rotor.

3,286,603
CONCRETE ROADWAY
Ulrich Finsterwalder, Munich-Obermenzing, Germany, assignor to Dyckerhoff & Widmann Kommanditgesellschaft, Munich, Germany
Filed May 15, 1964, Ser. No. 367,760
Claims priority, application Germany, Mar. 16, 1959, D 30,220
6 Claims. (Cl. 94—8)

1. Jointless roadway of concrete comprising a concrete slab, prestressed armoring elements of concrete in the form of elongated bars or the like embedded in the slab and disposed generally parallel to the longitudinal direction of the roadway in spaced relationship alongside one another, each of said elements being provided at the longitudinal axis thereof with at least one prestressing member having projecting ends adapted to receive tensioning nuts, and a plurality of said prestressed concrete elements being

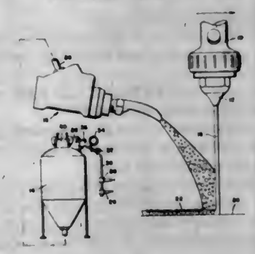


disposed sequentially in rows with the ends thereof in force transmitting relationship to one another to constitute an uninterrupted armature.

3,286,604
MARKING MATERIALS
Eduard R. de Vries, Huntingdon, Pa., assignor to Prismo Safety Corporation, Huntingdon, Pa., a corporation of Pennsylvania
No Drawing. Filed Aug. 16, 1962, Ser. No. 217,278
15 Claims. (Cl. 94—22)

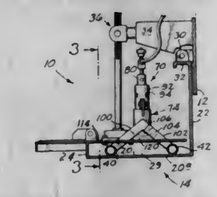
1. Free flowing glass beads having a diameter in the range of ½–50 mils which are coated with a coating of finely divided aluminum leafing powder wetted by a medium fast evaporating liquid free of resinous binder whereby after the relatively volatile liquid has evaporated the aluminum leafing powder may be readily removed from the glass beads.

3,286,605
APPARATUS AND METHOD FOR MARKING A SURFACE
Rufus W. Wilson, deceased, late of Huntingdon, Pa., by Leona E. Wilson, administratrix, Huntingdon, Pa., and Samuel E. Wissinger, Huntingdon, Pa., assignors to Prismo Safety Corporation, Huntingdon, Pa., a corporation of Pennsylvania
Filed Sept. 30, 1964, Ser. No. 400,602
6 Claims. (Cl. 94—44)



1. Apparatus for applying a coating to a surface comprising first means for ejecting a stream of coating material onto said surface, the axis of said ejecting means being substantially perpendicular to said surface, and a second ejecting means located rearwardly of said first ejecting means with respect to the direction of travel thereof for ejecting a stream of particles, the axis of said second ejecting means being at an angle to the axis of said first ejecting means, the axis of said ejected stream of particles intersecting said surface slightly forwardly of the point of application of said first stream whereby a portion of the stream of particles is intimately mixed with said stream of coating material prior to the application thereof to said surface and a portion of the stream of particles falls onto said coating after application thereof to said surface.

3,286,606
HEATED SCREED ASSEMBLY
Jack D. Layton, Salem, Oreg., assignor to Layton Manufacturing Co., Salem, Oreg., a corporation of Oregon
Filed Aug. 4, 1964, Ser. No. 387,297
7 Claims. (Cl. 94—45)



1. In a paving machine including an elongated screed plate for leveling and smoothing paving material,

upstanding walls extending longitudinally along opposite sides of the screed plate, joined thereto, and forming opposed internal corners with the top and longitudinal side margins of the screed plate,

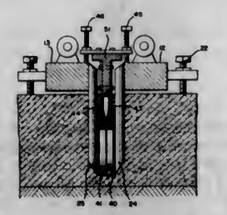
an elongated heat-diffusing conduit for each of said corners, mounted on the top of and extending along the length of the screed plate adjacent the corner,

passages in the wall of each of said heat-diffusing conduits, in side portions of the conduit, extending obliquely relative to the plane of the top of the screed plate, and accommodating the flow of hot gases out of the conduit, with such gases directed toward a corner,

burner means remote from said heat-diffusing conduits including a mixer housing for producing a mixture of combustible gases, and

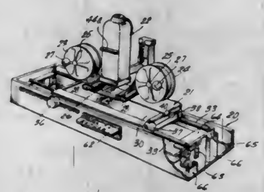
a transfer duct connecting said burner means and heat-diffusing conduits.

3,286,607
INSTALLING DEVICE FOR CONCRETE JOINT FORMING MEMBER
William F. Middlestadt, Arnold, Md., assignor to Middlestadt Corporation, Baltimore, Md., a corporation of Maryland
Filed June 24, 1964, Ser. No. 377,557
6 Claims. (Cl. 94—51)



1. An installing machine for inserting a joint forming member into concrete comprising, a frame having wheels thereon adapted to ride on concrete forms, a pair of cross bars mounted on said frame and extending across the concrete, fingers on each of said cross bars extending normally with respect to the plane intersecting the longitudinal axes of the cross bars, said fingers being staggered so that the fingers on one of said cross bars interfit with the fingers on the other of said cross bars, means mounting said cross bars on said frame for vertical movement with respect to said frame whereby said cross bars may be lowered to extend the fingers into the plastic concrete, means mounting said cross bars for lateral movement with respect to each other to separate the interfitting fingers to form an area therebetween clear of large aggregate in the concrete for insertion of the joint forming member, and means mounted on said frame for vertical movement with respect thereto for forcing a joint forming member into the area in the plastic concrete between the separated fingers, the fingers on said cross bars serving as guide means for the joint forming member during insertion thereof.

3,286,608
PHOTOGRAPHIC-TYPE PRINTING DEVICE
Murray Friedel, North Miami Beach, Fla., assignor to Visual Graphics Corp., New York, N.Y., a corporation of New York
Filed May 20, 1964, Ser. No. 368,846
10 Claims. (Cl. 95—4.5)

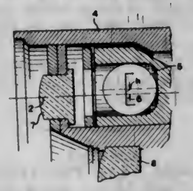


1. A photographic type printing device comprising, a printing section within an enclosure, a character strip positioned below the printing section, an adjustable casette positioned a distance below the character strip so that an image of a character may be viewed prior to a printing operation, at least one light sensitive sheet carried within the casette, said printing section including a lamp for providing illumination to aid in adjusting the respective positions of the character strip and the light sensitive sheet, said printing section also including a collimating lens for producing parallel light rays which pass through transparent portions of the character strip and cast an image thereof on the sensitive sheet, a removable light filter also in the printing section for passing nonactinic light when the sensitive sheet is being adjusted, a manually adjustable means for raising and lowering the printing section, said means also mechanically coupled to the casette to lower and raise the sensitive sheet for separating the character strip and the sensitive sheet for observation and for bringing the strip and sheet into contact when a printing operation is to be performed, and electric circuit means for activating said lamp only when the character strip is in contact with the light sensitive sheet.

3,286,609
LIGHT RECEIVING DEVICE FOR ELECTRICAL EXPOSURE METER FOR CAMERAS
Tatsuo Kobayashi, Kaizuka, and Masaichiro Konishi, Nishinomiya, Japan, assignors to Minolta Camera Kabushiki Kaisha, Osaka, Japan, a corporation of Japan
Filed Mar. 3, 1964, Ser. No. 348,983
2 Claims. (Cl. 95—10)

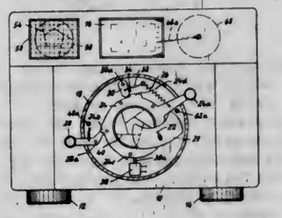
1. A light receiving device for an electrical exposure meter for a camera, said device comprising an annular lens tube body, a main objective lens disposed within said tube, an annular recess formed between said objective lens and said tube body, a condensing lens positioned at the front end of said tube body with its optical axis parallel to the optical axis of said objective lens, a light receiving body positioned behind said condensing lens and within said annular recess, an adjustable annular diaphragm

mounted within said tube body between said condensing lens and said light receiving body, said diaphragm having a group of slit-like iris openings therein, the invention be-



ing characterized in that the optical axis of said condensing lens is spaced parallel to, and offset from, the optical axis of said light receiving body.

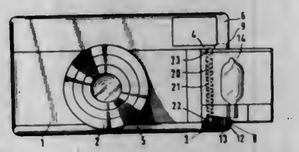
3,286,610
PHOTOGRAPHIC CAMERA
Paul Fahlenberg, Baierbrunn, near Munich, Germany, assignor to Compur-Werk Gesellschaft mit beschrankter Haftung & Co., Munich, Germany, a German firm
Filed Nov. 10, 1964, Ser. No. 410,164
Claims priority, application Germany, Nov. 19, 1963, C 31,464
4 Claims. (Cl. 95—10)



1. A photographic camera comprising a shutter, an electronic control arrangement for establishing the speed of an exposure made by said shutter, an electric circuit having a portion including a photo-resistance responsive to light reflected from an object to be photographed, means for varying the resistance value of said portion of said circuit to introduce into said portion of said circuit the exposure factor of film sensitivity, an electrically operated shutter speed indicating meter, and switch means for operatively connecting said portion of said circuit alternatively either to said indicating meter, to cause said meter to indicate what the shutter speed would be if an exposure were then made under prevailing conditions of light and film sensitivity, or to said arrangement, to cause the resistance value of said portion of said circuit to control said arrangement in timing the speed of an exposure.

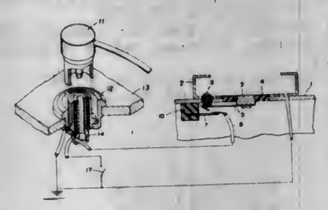
3,286,611
PHOTOGRAPHIC CAMERAS
Karl Heinz Lange, Bunde-Ennigloh, Westphalia, Germany, assignor to Balda-Kamerawerk Rudolf Gruter, Kommanditgesellschaft, Bunde, Westphalia, Germany, a German company
Filed Oct. 2, 1964, Ser. No. 401,089
Claims priority, application Germany, Oct. 5, 1963, B 73,769
5 Claims. (Cl. 95—11)

1. A photographic camera including:
(a) a camera casing;
(b) a movable flash reflector having substantially the same height as said casing;
(c) a backing for said reflector shaped to form in one position a flush closure with said camera casing, said backing having a passage therethrough;
(d) top and bottom balls disposed in said passage in said backing;
(e) a compression spring disposed in said passage between said balls;
(f) top and bottom webs extending said casing laterally on one side of said camera, said webs having aligned locating recesses for receiving said balls when said reflector is in predetermined positions from said one position;



(g) free terminal edges of said webs having aligned slots therein set rearwardly of said camera;
(h) tubular bearing pins on said reflector engaged in said slots; and
(i) camera top and base members extending over and under said top and bottom webs respectively to retain said bearing pins in said aligned slots.

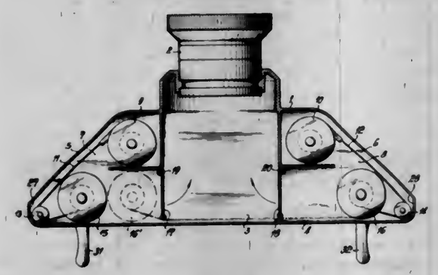
3,286,612
PHOTOGRAPHIC CAMERA WITH CONTACT ARRANGEMENT IN THE ACCESSORY SHOE AND AT OTHER PLACES OF THE CAMERA
Ernst Lieser, Stuttgart-Vaihingen, Germany, assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Oct. 7, 1964, Ser. No. 402,084
Claims priority, application Germany, Dec. 18, 1963, K 51,663
2 Claims. (Cl. 95—11)



1. In a photographic camera having an electrical circuit arrangement with a shutter synchronizing switch including a pair of electrically connectable poles and an electrical socket including a pair of terminals, each terminal connected to respective switch poles, the socket having means to receive the connector of a flash attachment having a lamp ignition voltage to apply the voltage at the switch poles, the improvement comprising:
(a) an accessory shoe in the circuit arrangement and including an electrically conductive base member connected to one socket terminal and the respective switch pole, the base member defining a central opening and having inwardly extending ends defining retaining channels to releasably retain a connecting foot of a camera attachment,
(b) a contact member of electrically conductive material disposed within the base member opening and electrically insulative material separating the contact member and the base member,

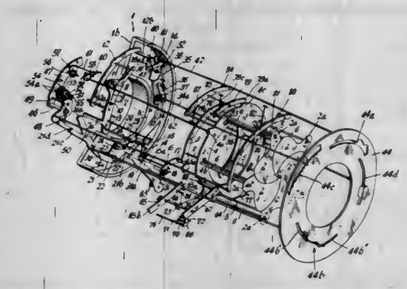
(c) a resilient plate spring of electrically conductive material having one end fixed to the contact member and the other end disposed below and spaced from the base member at one channel,
(d) an electrical lead connected to the other socket terminal and respective switch pole and normally spaced from the said other end of the plate spring to interrupt the electrical circuit to the accessory shoe and prevent voltage applied through the socket from being effective at the base member and contact member, and
(e) a slidable, electrically insulative stud fixed to the said other end of the plate spring and having a portion passing through the base member into the said one channel and positioned for downward sliding movement only upon use of the accessory shoe by insertion of an accessory foot to move the spring into engagement with the lead and electrically connect the contact member with the other socket terminal and respective switch pole, thereby completing the circuit for the accessory shoe and apply voltage to the base member and contact member only when the shoe is being used.

3,286,613
TWO-FILM CAMERA
Hans W. F. Domnick, Steubenstrasse 23, Wiesbaden, Germany
Filed Mar. 2, 1965, Ser. No. 436,489
23 Claims. (Cl. 95—31)



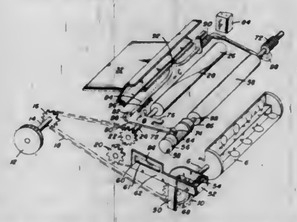
1. In a camera having a body containing an exposure chamber and an objective defining an image field within said chamber, a magazine and a carrier working position in said body at opposite sides of said exposure chamber, means in said magazine for holding therein a supply roll of unexposed film in strip form wound with a light-sensitive side facing inward, a spool carrier normally disposed at a rest position in said magazine and adapted to hold a winding spool having the leading end of said film attached thereto, means operable to displace said carrier and a winding spool thereon from said rest position across said exposure chamber to said working position, means for returning said carrier and spool from said working position to said normal rest position, means for preventing rotation of said winding spool during each displacement of said carrier across said exposure chamber in the direction from said magazine toward said working position so that a length of unexposed film extending from said supply roll to said spool will then be drawn lengthwise into the image field with said light-sensitive side facing said objective, and means for rotating said spool in the direction to wind thereupon the film so drawn into said field, with said light-sensitive side of the film facing inward, during each return movement of said carrier from said working position to said normal rest position.

3,286,614
PHOTOGRAPHIC AUTOMATICALLY COCKED SHUTTER WITH ESCAPEMENT MECHANISMS FOR OBTAINING BOTH SHORT AND ULTRA-LONG EXPOSURE TIMES
Karl Helber, Calmbach (Enz), Germany, assignor to Alfred Gauthier G.m.b.H., Calmbach (Enz), Germany, a corporation of Germany
Filed Sept. 29, 1964, Ser. No. 400,095
Claims priority, application Germany, Oct. 5, 1963, G 38,863
7 Claims. (Cl. 95—63)



1. A photographic self-cocking shutter comprising: a shutter blade; means to control the movement of said shutter blade between an open position and a closed position; a first driving mechanism connected to said means and comprising a first driving spring; a first escapement mechanism associated with said driving mechanism to control the operation thereof for making relatively short exposures of controlled duration; a second driving mechanism connected to said means and comprising a second driving spring; a second escapement mechanism associated with said second driving mechanism and connected to make relatively long exposures of controlled duration; a pawl; and a shutter speed control to set the position of said pawl to place it in operative engagement with either said first or said second driving mechanism, said pawl being connected to cock said first driving spring when said pawl operatively engages said first driving mechanism, said pawl being connected to cock said second driving spring and said second escapement mechanism simultaneously.

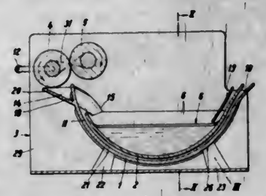
3,286,615
AUTOMATIC RESETTING EXPOSING MECHANISM
George S. Jones, Webster, and Robert F. Smith, Jr., Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Dec. 11, 1963, Ser. No. 329,765
9 Claims. (Cl. 95—77.5)



1. A photographic apparatus comprising an exposing station, means for transporting a light sensitive sheet through said exposing station, control means for selectively varying the exposure of said sheet at said station from a normal exposure, means for resetting said control means to provide said normal exposure, and means controlled by and correlated with movement of said sheet through

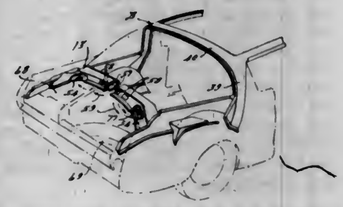
said exposing station for operating said resetting means upon completion of other than said normal exposure of said sheet at said station for resetting said control means to provide a normal exposure.

3,286,616
DEVELOPING DEVICE
Walter Limberger, Hamburg-Poppenbuttel, Germany, assignor to Lumoprint Zindler K.G., Hamburg, Germany, a corporation of Germany
Filed Nov. 1, 1963, Ser. No. 320,748
Claims priority, application Germany, Nov. 15, 1962, L 43,457
5 Claims. (Cl. 95—89)



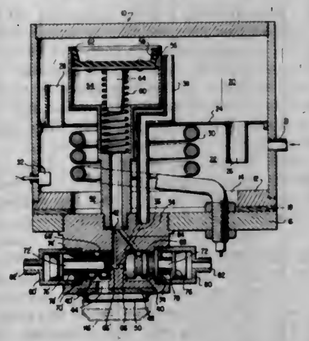
1. A device for processing two sheets of copying material including a first sheet carrying an exposed latent image adapted to be developed by contacting said sheet of copying material with a treatment medium and a second sheet of copying material adapted to receive an image transferred from said first sheet, said device comprising:
a trough including a bottom and side walls for receiving said treatment medium, said trough bottom being formed as a guide for at least one sheet of copying material, each of the ends of said trough bottom extending at right angles relative to said side walls and extending upwardly in the zone of the upper edges of said side walls;
inlet means at one upwardly extended bottom portion of said trough and outlet means at the other upwardly extended bottom portion of said trough;
a pair of squeezing and transport rollers arranged above said outlet means relative to said trough;
drive means for said pair of squeezing and transport rollers,
said trough bottom being formed by a double wall including an inner wall and an outer wall, said inner wall conforming to said outer wall and being connected to the side walls of said trough for retaining said treatment medium above said inner bottom wall,
said inlet means and said outlet means being formed respectively by a first and a second opening formed between said inner and said outer bottom wall,
said second opening being arranged relative to the lowermost point of said trough at a lower level than the adjacent upwardly extended end of said outer bottom wall which is directed between said pair of squeezing and transport rollers;
horizontally extending guide elements impervious to the treatment medium and arranged on the inner bottom wall at a level coinciding with the upper surface of said treatment medium, whereby said first sheet of copying material upon sliding along said guide elements is contacted with said medium, said outer and said inner bottom walls of the trough are at least partially arcuately curved in longitudinal section; and
frame means rotatably supporting said pair of squeezing and transport rollers and provided with support elements for supporting said trough, said support elements having support surfaces arcuately curved in correspondence with the arcuate curvature of said trough bottom, thereby allowing adjustment of said trough to incline said trough relative to said frame.

3,286,617
VEHICLE BODY INTERIOR VENTILATION ARRANGEMENT
Rickief W. Shirk, Ferndale, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Oct. 21, 1964, Ser. No. 405,374
9 Claims. (Cl. 98—2)



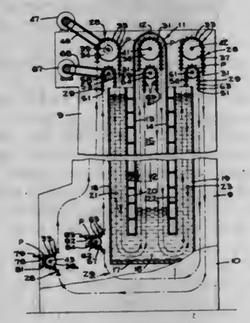
5. In a vehicle body having a rigid roof section overlying a seating area and a transparent window panel positioned rearwardly of the seating area with said window panel extending transversely of the body and downwardly from said roof section, a hollow beam member extending transversely of the vehicle body and supporting a transverse edge of said window panel, said beam member having inlet ports in a downwardly facing side thereof connectible to the seating area and exhaust ports in a rearwardly facing side thereof that discharges to the vehicle body exterior, said inlet and discharge ports being so located that the air flow from the seating area and through said hollow beam member follows a tortuous path that damps noise transmission.

3,286,618
WATER RESERVOIR THERMAL CIRCULATOR AND FLOW CONTROL FOR BREWING MACHINE
Jose Mariet Barrera, Po. Valldoreix 6, San Cugat Del Valles, Barcelona, Spain
Filed Sept. 10, 1965, Ser. No. 486,313
Claims priority, application Spain, Apr. 16, 1962, 276,529
6 Claims. (Cl. 99—302)



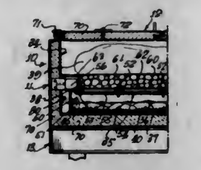
6. A combined water reservoir, thermal circulator and flow control apparatus for a brew-making machine, comprising a completely enclosed water reservoir, a partition dividing the reservoir into upper and lower chambers, means for admitting cold water under pressure to said lower chamber, water heating means in the lower chamber, a pair of pipes one extending upwardly and the other downwardly from said partition for communicating said chambers to obtain a thermal circulation of heated water to said upper chamber and cooled water from the upper to the lower chamber, and valve controlled metering means communicating with said upper chamber and an infuser and operable by pressure of liquid in said upper chamber to discharge a measured quantity of hot water to the infuser.

3,286,619
DOUBLE CHAIN HYDROSTATIC COOKER
Harold B. Lee, West Heidelberg, Victoria, Australia, assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed June 26, 1963, Ser. No. 290,756
6 Claims. (Cl. 99—362)



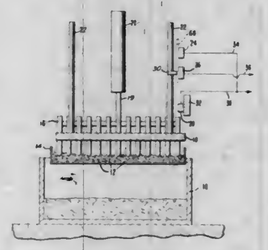
1. A hydrostatic sterilizer comprising means defining a sterilizing chamber having a sterilizing medium therein, means defining a vertically extending hydrostatic water leg having heated water therein communicating with said sterilizing chamber and arranged to balance the pressure of the sterilizing medium in said sterilizing chamber, a first and a second conveyor extending through said sterilizing chamber and said water leg, first drive means for driving said first conveyor at a predetermined speed, and second drive means for driving said second conveyor at a speed different from that of said first conveyor.

3,286,620
ELECTRIC COOKER WITH HEATED ROCK BEDS
Cecil S. Brown, 437 E. 127th St., Los Angeles, Calif.
Filed Aug. 10, 1964, Ser. No. 388,449
5 Claims. (Cl. 99—446)



1. An electric cooker for cooking food after shut-off of electricity, which cooker includes:
an insulated oven;
electrical receptacle means disposed at an intermediate elevation on the interior wall of said oven;
electrical connection and control means on the exterior of said oven for controlling the electricity to said receptacle;
an electric heater for connection to said receptacle, said heater comprising a grid of electric heating elements disposed in a horizontal plane, grill work bars in the form of strips of overhead shielding above each of the elements of said grid, and insulating means for supporting said elements under said overhead shielding strips to protect said elements from descending liquids;
an electric plug means integral with said grill to provide electric connection of said heating elements to said receptacle;
a screen-bottom tray supported above said grill, and a bed of heat resistant rock supported on said screen-tray, said bed being comprised of rock particles coarse enough not to pass through said screen, but small enough to provide a substantially level layer for support of cooking food, said layer being pervious to descending liquids but impenetrable to direct radiation from said electric grill;
an electrial connection housing integral with said screen tray for shielding said electrical connection;
and a drip tray below said electric grill, said drip tray containing heat impervious rocks substantially larger in size than the rocks comprising said layer above said grill.

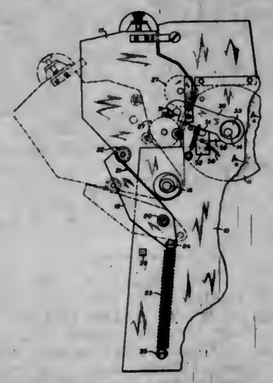
3,286,621
ELECTRONIC LOGIC CIRCUITRY CONTROL FOR STAPLE FIBER BALING DEVICE
James Henry Martin, Jr., Waynesboro, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed June 11, 1964, Ser. No. 374,304
5 Claims. (Cl. 100—45)



1. In a staple fiber baling device comprising a container, and a power-operated staple-compacting ram, the ram being reciprocally mounted with respect to the container thereby defining a path through which the ram moves; at least two spaced electrical switches along the path of the ram including a source of electrical power connected to said switches; means movable when the ram moves and operable to close temporarily each electrical switch when close thereto; the lower of said electrical switches located at a position just below that reached by said means when the ram is compressing a full bale whereby said lower of the electrical switches remains inoperative; the upper switch effectively located to be closed temporarily by said means upon retracting the ram from compressing fiber in said container; electronic logic circuitry operable upon closing said switches comprising first circuit means including means to stop the ram, the first circuit means having a first stable state and adopting a first conducting state upon the upper switch closing and applying a power pulse thereto and then said upper switch opening, and in said first conducting state said first circuit means upon receiving a second pulse by virtue of a second closing of said upper switch operating to stop the ram, and second circuit means that upon the lower

switch closing and applying a power pulse thereto operates to return said first circuit means from its first conducting state to its first stable state.

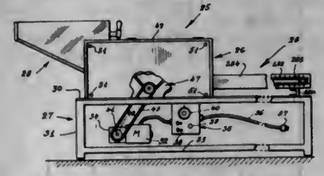
3,286,622
MOUNTING AND OPERATING MEANS FOR INKING UNIT AND PLATE CYLINDER OF A PRESS
Luis Mestre, 305 E. 46th St., New York, N.Y.
Filed Mar. 23, 1964, Ser. No. 360,158
19 Claims. (Cl. 101—218)



1. A printing press comprising a press frame; printing mechanism mounted on the frame including a plate cylinder, an eccentric shaft carried by the press frame and mounting the plate cylinder for rotation and the press frame mounting the eccentric shaft for pivotal movement, a blanket cylinder, a blanket cylinder shaft, an impression cylinder, an impression cylinder shaft, and one of said blanket cylinder shaft and impression cylinder shaft being eccentric to provide a second eccentric shaft and mounted in the frame for pivotal movement; an inking unit mounted on the press frame to feed ink to a plate on the plate cylinder including an inking unit frame, inking means mounted on the inking unit frame, mounting means carried by the press frame and mounting the inking unit for movement to and from open and closed positions and also to and from operative and inoperative positions; latching mechanism carried by the press frame and the inking unit frame releaseably securing the inking unit frame to the press frame to retain the inking unit in closed position with respect to the press frame including releaseable latching lever means havings ends, interengaging means carried by one end of the latching lever means and one of the frames, a latching lever eccentric means mounted on one of the frames and operatively connected with the other end of the latching lever means; and operating mechanism carried by the press frame and operatively connected with the eccentric shaft for the plate cylinder and the latch lever eccentric means to turn the same and shift the inking unit and the plate cylinder to and from operating position including sheet sensing means controlling the operating mechanism and located to be operated by a sheet being fed to the press.

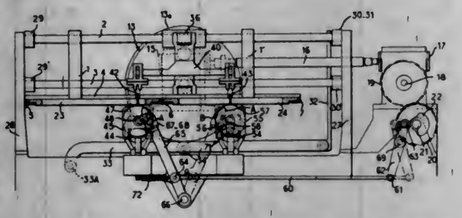
3,286,623
SPECIAL CYLINDRICAL IMPRINTING MACHINE
Geza Verik, 50 Green St., College Point, N.Y.
Filed Sept. 9, 1965, Ser. No. 486,155
9 Claims. (Cl. 101—37)

1. In a pen imprinting machine the combination of a printing mechanism housing enclosing a printing mechanism, a hopper at one end of said housing, a conveyor assembly at the opposite longitudinal end of said housing, a frame below said housing supporting said housing, hopper and conveyor assembly at a level convenient to a workman, a motor carried on said frame for delivering power to said mechanism and a control box mounted on said frame for controlling said motor and said printing mechanism having self-contained means for imprinting a plurality of colors upon said pens being carried from said hopper through said housing and upon said conveyor assembly, said frame comprising a horizontal flat panel, a plurality of upstanding legs, means for supporting said motor below said horizontal panel and said control box



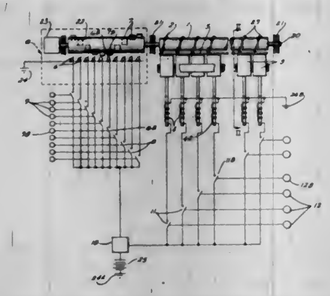
supported on said frame below said panel, said control box including an extension cord to a power source, an off-on switch and a speed control dial and said control box being electrically connected to said motor, said hopper comprising an inclined bottom panel, a pair of end panels, a stationary side panel and a multiple opposite side panel, said end panels each having a plurality of horizontal slots, said movable end panel having a plurality of projections, each of said projections extending into one of said horizontal slots, a threaded opening in each of said projections for receiving a screw for rigidly securing said movable panel to said end panels.

3,286,624
APPARATUS FOR AUTOMATICALLY PRINTING TWO FACES OF AN OBJECT
Louis Gilbert Dubuit, 60 Rue Vitruve, Paris, France
Filed Apr. 2, 1965, Ser. No. 445,093
Claims priority, application France, Apr. 14, 1964, 970,861; Oct. 7, 1964, 990,551; Nov. 10, 1964, 994,505
7 Claims. (Cl. 101—40)



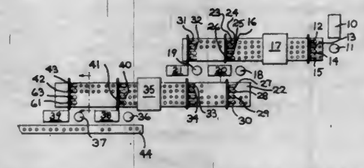
1. Apparatus for automatically printing, in succession, the two large lateral faces of an object having an oval transverse cross section, said apparatus comprising:
(a) two printing stations each arranged to print a respective one of the large lateral faces of such object and each including a rotating device for bringing a respective one of such lateral faces into rolling, non-sliding contact with a printing element;
(b) a transfer device mounted between said rotating devices for carrying said object and including: a lever mounted to pivot about a stationary axis between a first position in which it intercepts such object while it is being carried by one of said rotating devices and a second position in which it places such object in position to be engaged by the other one of said rotating devices; two forks mounted on one end of said lever in spaced relation with respect to one another for receiving such object; a cam driven in rotation in synchronism with said rotating devices; a control lever having an intermediate point in its length mounted on a stationary pivot; a cam follower mounted on said control lever in a position to contact said cam; a connecting rod connecting said lever to said control lever; and elastic restraining means connected to said transverse device for constantly urging said cam follower against said cam, said cam being so shaped that during one full rotation it moves said lever from its said first position to its said second position and back to its first position; and
(c) means for driving said cam in order to move said transfer device between said first position and said second position.

3,286,625
RECORDING INSTRUMENTS
Marceau Roger Petit, Clichy, France, assignor to IER Impression Enregistrement des Resultats, Paris, France, a company of France
Filed July 28, 1965, Ser. No. 475,545
Claims priority, application France, Nov. 12, 1962, 915,074
5 Claims. (Cl. 101—93)



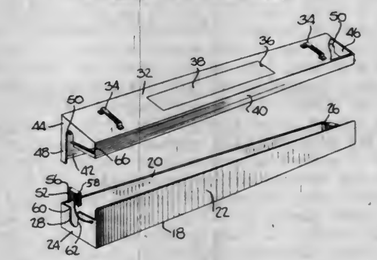
1. A recording machine for making impressions on a printing support comprising the combination:
a cylinder having at least one series of axially spaced, circumferentially elongated and radially projecting sectors arranged to define on the periphery of said cylinder a linear path extending along, and at least partially around, said cylinder, the angular extent of each sector being substantially less than 90 degrees;
means for continuously rotating said cylinder;
a plurality of hammers distributed axially along said cylinder, each hammer extending axially of said cylinder to be engageable with a plurality of adjacent sectors, the engaging surface on each hammer adjacent said cylinder having a dimension, in a direction circumferentially of the adjacent surface of the cylinder, substantially smaller than the circumferential extent of the sectors engageable thereby;
a printing support disposed between said hammers and said cylinder for engagement by said hammers whereby to press said support against those of said sectors radially aligned with said hammers, each sector being capable of providing the same type of impression throughout its circumferential length;
means for moving said support between said cylinder and said hammers transaxially of said cylinder;
means for driving selected ones of said hammers toward said cylinder; and
means for synchronizing the movement of said hammers with the rotation of said cylinder.

3,286,626
SCREEN DECORATING METHOD
Edward A. Nowak, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed June 5, 1964, Ser. No. 372,871
3 Claims. (Cl. 101—129)



1. In the method of applying plural screen decorations to plural articles of glassware having slighly varying circumferences wherein each article is given successive, registered, screen decorations and the screening effects rotation of the articles by lateral movement of the screen in contact with the article and further wherein the screen is moved in one direction to screen one of the articles and in the opposite direction to screen the next succeeding article whereby alternate articles are rotated in opposite directions, comprising the steps of screening successive articles of circular cross-section at a first station, manually segregating those articles which were rotated in said one direction from those which were rotated in the opposite direction, moving the segregated ware from the first station to a second station, manually selecting those articles which were rotated in said one direction for decorating at said position in the same direction as that in which the first decoration was applied, further manually selecting those articles which were rotated in said second direction for decorating at said second station in the same direction as that in which the first decoration was applied, and applying a third decoration to said articles in the same manner in which the first and second decorations were applied to the articles.

3,286,627
ENCLOSED INK TROUGH WITH INK ROLLER SHAFT SEALING MEANS
Leon J. Cahn, Long Island City, N.Y., assignor to Lee Machinery Corporation, New York, N.Y.
Filed Aug. 13, 1964, Ser. No. 389,325
4 Claims. (Cl. 101—364)



1. In an ink fountain for holding a supply of ink for the ink fountain roller of a printing press, the combination comprising a trough for holding said supply of ink therein, said trough including a front plate, a back plate displaced opposite to said front plate, a bottom plate and a pair of opposed side plates forming a trough open at the top, each of said side plates being provided with a generally U-shaped recess to accommodate the shaft of said ink fountain roller, a closure element movably mounted in each of said recesses and having a portion thereof complementary with the arcuate portion of said recess to completely enclose the shaft of said ink fountain roller there-

between, said closure elements being so dimensioned that the top edge of each of said closure elements is aligned with the top edge of its respective trough side plate to form a generally straight continuous support edge therewith, a hood enclosing said trough and having a top plate, back plate, a front plate, a pair of side plates complementary to respective members forming said trough and a supporting flange on each of said hood side plates normally resting on the continuous support edge comprising the top edge of an associated closure element and trough side plate top edge thereby effecting a seal about said ink fountain roller shaft while enclosing said ink fountain.

3,286,628
ELECTRIC DETONATOR IGNITION SYSTEMS
Guy Bayard Young and Steven James Lubinski, New Castle, Pa., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Filed Mar. 25, 1965, Ser. No. 442,714
9 Claims. (Cl. 102—28)



1. An electric blasting cap resistant to static discharges and stray currents comprising an elongated tubular metal shell, a base charge of a detonating explosive at the bottom of said shell, an initiation charge super-imposed directly on said base charge, an ignition charge super-imposed directly on said initiation charge, a bridgewire connected to the ends of a pair of leg wires imbedded in said ignition charge, a bridge plug of insulated material surrounding and supporting said leg wires, the base of said plug being super-imposed directly on said ignition charge, a layer of porous dielectric material surrounding said leg wires and being super-imposed directly on said plug, a layer of water-proof sealing material surrounding said leg wires and being super-imposed directly on said layer of porous dielectric material; the lower portion of said plug having a smaller circumference than the upper portion thereof, a section of dielectric tubing fitted over said lower portion of said plug so as to fill the annular space between the lower portion of said plug and said shell wall, said tubing being of a length such that its lower portion extends downward around a portion of the ignition charge and below the level of the bridgewire so as to provide a longer potential arc path between the ends of said leg wires and said shell than the potential arc path between the lead wires and said shell through said porous dielectric layer, said ignition charge being a composition selected from the group consisting of

(a) a mixture composed of from 1.5 to 2.5%, by weight, of amorphous boron and from 98.5 to 97.5% by weight, of PbO;
(b) a mixture composed of from 8 to 30%, by weight, of amorphous boron and from 92 to 70%, by weight, of PbO and;
(c) a mixture composed of 15 to 30%, by weight, of amorphous boron and from 85 to 70%, by weight, of Pb_3O_4;

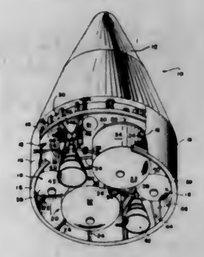
said composition being in granular, free-flowing form and having a bulk density of from 1.2 to 3 grams per cc.

6. A composition for use as an ignition charge in electric blasting caps selected from the group consisting of

(a) a mixture composed of from about 1.5 to about 2.5%, by weight, of amorphous boron and from 98.5 to 97.5%, by weight, of PbO;
(b) a mixture composed of from 8 to 30%, by weight, of amorphous boron and from 92 to 70%, by weight, of PbO; and
(c) a mixture composed of from 15 to 30%, by weight, of amorphous boron and from 85 to 70%, by weight, of Pb_3O_4;

said composition being in granular, free-flowing form and having a bulk density of 1.2 to 3 grams per cc.

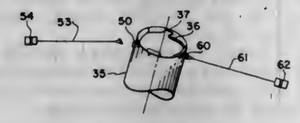
3,286,629
MULTI-MISSION MODULE
Jay H. Laue, Huntsville, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Oct. 7, 1964, Ser. No. 402,365
2 Claims. (Cl. 102—49)



1. In a space vehicle carrying a payload having specific size and weight characteristics, a stage comprising:

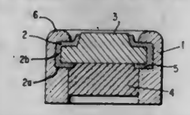
(a) an immutable first group of elements including
  (1) a plurality of rocket engines;
  (2) thrust transmitting structure secured to each of said rocket engines;
  (3) said thrust transmitting structure comprising a framework joined to said rocket engines and projecting toward the periphery of said stage;
  (4) a plurality of propellant container bulkheads;
  (5) conduit means connected to said rocket engines;
(b) a specialized second group of elements including
  (1) a load bearing structure designed specifically to support said payload;
  (2) said load bearing structure including a plurality of supporting rings encircling said first group of elements;
  (3) means for joining selected pairs of said container bulkheads to form closed containers the capacity of which may be varied by changing the size of said means to thereby provide a means for varying propellant loadings;
  (4) means interconnecting said conduit means and said containers;
(c) means for securing said framework of said thrust transmitting structure to at least one of said supporting rings;
(d) means for securing the closed containers formed by said bulkheads and said joining means to at least one of said supporting rings.

3,286,630
SPACECRAFT SEPARATION SYSTEM FOR SPINNING VEHICLES AND/OR PAYLOADS
Seymour Salmirs, Newport News, and Otis J. Parker, Chesapeake, Va., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed May 4, 1965, Ser. No. 453,227
16 Claims. (Cl. 102—49)



1. Space vehicle separation mechanism or the like for a spinning vehicle comprising: an upper stage; a lower stage in juxtaposition to said upper stage; balls engaging said upper and lower stages for joining said stages together; means for changing the relative speeds of rotation between the stages causing one stage to overrun the other; and means for accelerating separation of the stages.

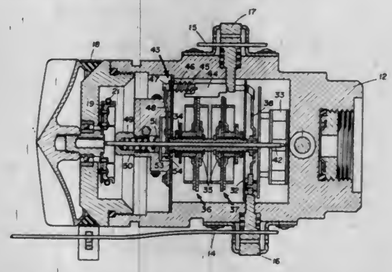
3,286,631
ELECTRICAL PRIMER
Heinz Gawlick and Hellmut Bendler, Furth, Bavaria, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany
Filed Sept. 10, 1964, Ser. No. 395,469
Claims priority, application Germany, Sept. 12, 1963, D 42,464
7 Claims. (Cl. 102—70.2)



1. An electrical primer operable according to the gap-ignition principle for igniting cartridges, shells, propellant charge containers and the like, consisting essentially of: a tubular case haveing an internally extending annular case flange at one end, an internal ledge facing said case flange, and a portion of enlarged internal diameter between said case flange and said ledge; said flange, ledge and portion of reduced internal diameter defining an internally opening first annular groove within said case; an insulation member within said first annular groove; said insulation member having an insulating disc portion abutting said ledge, an integral insulating tubular portion abutting said portion of reduced internal diameter, and an integral insulating flange portion abutting said case flange; said insulating disc portion, insulating tubular portion and insulating flange portion defining an internally opening second annular groove within said insulating member; a disc shaped electrically conductive pole piece having an outer portion securely mounted within said second annular groove; said pole piece and said insulation member closing the said one end of said tubular case; and a primer composition mounted within said tubular case.

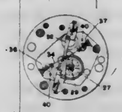
3,286,632
DUAL TIME OPTION MECHANICAL FUZE
James H. Potts, Jr., Silver Spring, and Cecil L. Duncan, Adelphi, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed June 30, 1964, Ser. No. 380,120
5 Claims. (Cl. 102—84)

1. A dual time option mechanical fuze adapted to be connected to a booster charge, comprising,
a firing pin,
a spring-urged slider element positioned between said firing pin and said booster charge,
an enabling pin releasably engaging said slider element,
a timer mechanism,
a shaft rotatably driven by said timer,
first and second individually settable timing discs mounted in side-by-side relationship on said timer shaft and rotatable therewith,
a second shaft substantially parallel to said timer shaft,
a drop leaf positioned on said second shaft,
means for biasing said drop leaf against the periphery of said first timing disc and for urging said drop leaf longitudinally along said second shaft when said first timing disc is rotated by the timer mechanism to a predetermined position,



means for moving said enabling pin to release said slider and thereby align said firing pin and detonator,
firing pin retaining means releasably engaging said firing pin,
linkage means connecting said retaining means and said second shaft for releasing said firing pin retaining means when said second shaft is rotated by the movement of the drop leaf into said timing disc to thereby release the firing pin,
and a manually-releasable pop-out pin normally preventing longitudinal movement along the second shaft of the drop leaf,
whereby when said pop-out pin is released, the drop leaf is urged along said second shaft to a position wherein it engages the second timing disc instead of the first, thus providing an option of either of two preset time functions for the fuze.

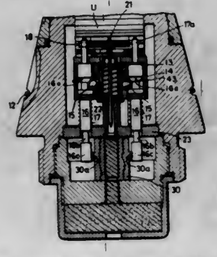
3,286,633
CONSTANT FREQUENCY ESCAPEMENT MECHANISM
George S. Westerman, Cinnaminson, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Sept. 3, 1964, Ser. No. 394,367
4 Claims. (Cl. 102—84)



1. A timing mechanism for a projectile fuze comprising, an oscillatory escapement lever for metering timer power output, a hairspring connected to said lever and controlling the oscillation thereof, means slidably mounted for reciprocatory movement substantially along a line extending through said hairspring and lever connection and supporting end portions of said hairspring, and means biasing said supporting means toward said connection, so con-

structed and arranged that when the timing mechanism is subjected to high speed rotation, said supporting means will maintain a substantially constant predetermined beat frequency therein.

3,286,634
CLOCKWORK TIME-FUZE FOR PROJECTILES WITHOUT RIFLING
Rudolf Weber, Schramberg, Wurttemberg, Germany, assignor to Messrs. Gebruder Junghans Aktiengesellschaft, Schramberg, Wurttemberg, Germany, a corporation of Germany
Filed May 25, 1964, Ser. No. 369,870
Claims priority, application Germany, May 31, 1963, J 23,805
4 Claims. (Cl. 102—84)



1. Clockwise time-fuze for projectiles without rifling, comprising a fuze casing, a clockwork mechanism in the casing, a striker pin axially arranged in the casing, a central bell-shaped retaining sleeve surrounding the axial striker pin with the latter and the retaining sleeve being movable relative to each other and are separate elements, a guide sleeve fixed in the fuze casing and guiding a shank of the striker pin, the retaining sleeve also being provided on the guide sleeve, a spring to maintain the guide sleeve in place, a pair of feed spring loaded retainer pins arranged diametrically opposite each other on two sides of the retaining sleeve, a pellet carrier swivel slide arranged in the casing, at least one of said pins engaging the clockwork mechanism with its front end and both pins locking with their rear ends the pellet carrier swivel slide against rotation by a torsion spring, and two diametrically opposite locking balls in the retaining sleeve in engagement in annular grooves in the retaining pins in their forward position.

3,286,635
REVERSIBLE PRESSURE HYDRAULIC SYSTEM
Eugene A. Roeske, St. Louis, Mo., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Nov. 13, 1964, Ser. No. 410,847
1 Claim. (Cl. 103—3)

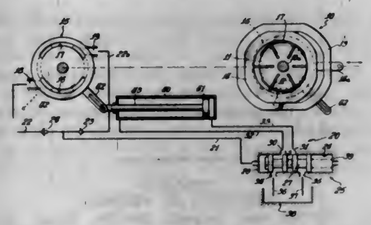
A reversible flow pressure controlled hydraulic system comprising:

(a) a reversible variable displacement hydraulic pump wherein the flow of fluid may be reversed without reversing the sense of rotation, comprising:
- (1) a housing,
- (2) fluid pumping means operable in said housing,
- (3) a rotatable port plate associated with said pumping means,
- (4) first and second kidney ports associated with said rotatable port plate,
- (5) first and second fluid passages connected to said first and second kidney ports, respectively,
- (6) first and second check valves in said first and second fluid passages, respectively,
- (7) a third fluid passage connected to said first and second fluid passages between said first and second check valves whereby, regardless of the direction of fluid flow, the fluid is discharged through said third fluid passage, and
- (8) means for rotating said rotatable port plate,

(b) a source of power connected to said reversible displacement hydraulic pump for driving said pump,

(c) reversible means connected with respect to said pump for reversing fluid flow,

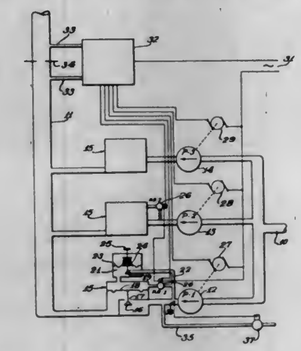
(d) hydraulic fluid pressure control means operably connected to said reversible variable displacement hydraulic pump comprising:
- (1) a cylinder having a piston operable therein provided with a piston rod operably connected to said rotatable port plate thereby serving to regulate the volume of fluid pumped,



- (2) a spool valve comprising:
  - (1a) a cylindrical chamber,
  - (2a) a spool operable in said cylindrical chamber,
  - (3a) a first port in said cylindrical chamber in fluid communication with the rod side of said cylinder,
  - (4a) a second port in said cylindrical chamber in fluid communication with the piston side of said cylinder,
  - (5a) a third port in said cylindrical chamber communicable with a sump and said first port,
  - (6a) a fourth port in said cylindrical chamber communicable with said sump and said second port,
  - (7a) a fourth fluid passage communicable with said first and second ports and in communication with one end of said cylindrical chamber and
  - (8a) a spring biased between the other end of said cylindrical chamber and the said spool, the said third fluid passage being connected to the said one end of said cylindrical chamber whereby fluid is delivered to the said spool valve regardless of the direction of fluid flow from the said pump, which in turn provides fluid to said cylinder for the operation of said piston for controlling the movement of said rotatable port plate thereby controlling the volume of fluid pumped which in turn determines the fluid pressure level based on the value of said spring.

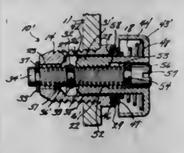
3,286,636
TANKLESS PUMPING SYSTEM
Robert F. Schaub, La Grange, Ill., assignor to SyncroFlo, Inc., Downers Grove, Ill., a corporation of Illinois
Original application Apr. 1, 1963, Ser. No. 269,515, now Patent No. 3,195,555, dated July 20, 1965. Divided and this application Apr. 9, 1965, Ser. No. 454,238
3 Claims. (Cl. 103—25)

1. A tankless pumping system comprising a pump connected between a source and a line conduit, a pressure regulator connected between the said pump and the conduit for controlling pressure supplied to the conduit by the said pump, and means responsive to the flow through the conduit for controlling said pump and said pressure regulator to limit the pressure in the conduit to a relatively low value when the flow through the conduit is below a



predetermined value and to allow the pressure to increase above the said low value when the flow is above said predetermined value, and to cause said pump to stop operating when said flow is below said predetermined value and to cause said pump to commence operating when said flow increases above said predetermined value.

3,286,637
FLUID PUMP
Jerry P. Malec, 3125 S. 41st St., Omaha, Nebr.
Filed Nov. 5, 1963, Ser. No. 321,620
11 Claims. (Cl. 103—37)



1. A fluid pump comprising in combination:

housing means having a bore formed therein at one end, an opening formed therein at the other end, and having a chamber formed therein between said bore and said opening;

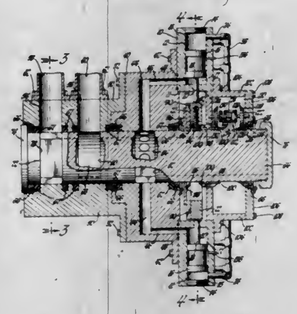
a rigid piston means reciprocally inserted through said bore, chamber and opening, with one end of said piston means extended outwardly beyond said bore and the opposite end of said piston means extended outwardly beyond said opening;

means embracing said piston means and movable longitudinally thereon against said housing at the open end thereof to effect a seal whereby to retain fluid within said chamber;

said bore having a first diameter, said chamber having a second diameter larger than said first diameter, and said opening having a third diameter larger than said second diameter; and

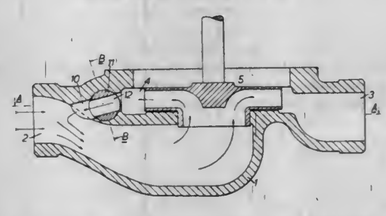
means biasing said piston means toward a normal position where said bore is opened to the passage of fluid therethrough and said opening is sealed against the passage of fluid therethrough, said piston means movable to a position where said bore is sealed against the passage of fluid therethrough and said opening is intermittently opened to the passage of fluid therethrough during the reciprocation of said piston means.

3,286,638
FLOATING PISTON HYDRAULIC PUMP
Scott C. Daubin, Santa Barbara, Calif., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 31, 1964, Ser. No. 341,609
5 Claims. (Cl. 103—38)



1. In combination, a pump comprising a housing, a cylinder in said housing, a rotatable shaft in said housing, a piston freely movable for reciprocatory movement in said cylinder, a first chamber in said cylinder at one end of said piston, cam means driven by said shaft for moving said piston in one direction in said cylinder, a second chamber in said cylinder at the end of said piston opposite said first chamber, a suction passage, a pressure delivery passage, said cam being effective upon rotation of said shaft for moving said piston to draw fluid into said second chamber from said suction passage, a source of compressible fluid under pressure connected to said first chamber, said fluid pressure in said first chamber being effective for moving said piston in the opposite direction for forcing fluid from said second chamber to said pressure delivery passage upon further rotation of said shaft, means for varying the pump capacity including differential gearing for varying the cam eccentricity, thereby varying the effective stroke of said piston, and means for varying the pressure of the fluid in said first chamber for controlling the maximum pressure delivered by said pump.

3,286,639
PUMPS
Stanley Peerman Hutton, Cardiff, Wales, assignor to B.S.A. Harford Pumps Limited
Filed July 23, 1963, Ser. No. 297,006
Claims priority, application Great Britain, July 24, 1962, 28,402/62
11 Claims. (Cl. 103—41)



1. A centrifugal pump comprising a pump housing defining therewithin a volute chamber, an inlet duct for a main flow of fluid to said volute chamber and an outlet duce from said volute chamber, said housing further defining a by-pass passage connecting said volute chamber with said inlet duct, and pump means within said volute chamber for pumping fluid through the housing, said by-

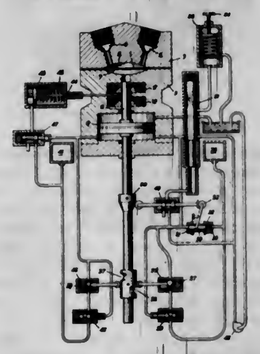
pass passage being oriented to direct the by-pass flow into the inlet duct substantially in opposition to the flow in said duct and at an acute angle thereto causing a streamlined flow in the part of the main flow adjacent to the mouth of the by-pass passage in the inlet duct.

3,286,640

AUTOMATIC CONTROL FOR HYDRAULICALLY DRIVEN DIAPHRAGM-OPERATED COMPRESSORS AND PUMPS SUBJECTED TO VERY HIGH PRESSURES

Helmut Bauer, Basel, Switzerland, assignor to Maschinenfabrik Burckhardt A.G., Basel, Switzerland

Filed Aug. 12, 1965, Ser. No. 479,220
Claims priority, application Switzerland, Apr. 24, 1962, 4,900/62
6 Claims. (Cl. 103—44)



1. In combination with a fluid-delivery machine including a chamber, a diaphragm subdividing said chamber into an operative chamber containing the fluid to be delivered and an actuating chamber and a hydraulically controlled piston adapted to execute periodically a forward stroke feeding a driving fluid into the control chamber to urge the diaphragm into the operative chamber and a return stroke sucking the driving fluid back to urge the diaphragm rearwardly, the provision of means tapping off a sample of the low pressure driving fluid at a selected moment during the delivery period before the diaphragm reaches its outermost position, means of storing said sample, and means comparing the pressure of the stored sample with the actual pressure of the driving fluid at other moments and adapted to stop the forward stroke of the hydraulic piston when said actual pressure has risen above the stored pressure by a predetermined amount.

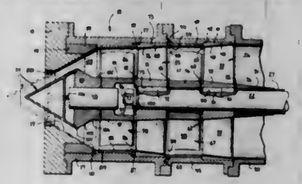
3,286,641

JET BOAT PUMP

Martin M. Delao and Theodore M. Englehart, Indianapolis, Ind., assignors to The Buehler Corporation, Indianapolis, Ind., a corporation of Indiana

Filed Jan. 13, 1964, Ser. No. 337,206
3 Claims. (Cl. 103—93)

1. Propulsion apparatus for watercraft comprising: a water conveying conduit having an inlet end and a restricted outlet end, a shaft extending longitudinally and centrally of said conduit, a pair of annular bearings surrounding said shaft and spaced longitudinally thereof, a pair of annular bearing sleeves surrounding said bearings, a plurality of radially extending stator vanes fixed to one of said bearing sleeves and the interior surface of said conduit and mounting said bearing sleeves centrally of said conduit for rotatable support of said shaft; a first hub fixed to said shaft upstream of said stator vanes and positioned between said annular bearing sleeves, a plurality of rotor blades fixed to said first hub; a second hub fixed to said shaft adjacent one of said bearing sleeves, a plurality of rotor blades fixed to said second hub, means for rotating said shaft to cause said rotor blades to pump water through said conduit, said first hub having a diameter which tapers linearly with distance from a smaller outside diameter toward the inlet end to a larger outside diameter adjacent said one bearing sleeve, said one bearing sleeve having a constant outside diameter equal to the diameter of said first hub at its larger end, said second hub having one end adjacent said bearing sleeve, said second hub having an outside diameter which increases linearly with distance from a diameter at said one end



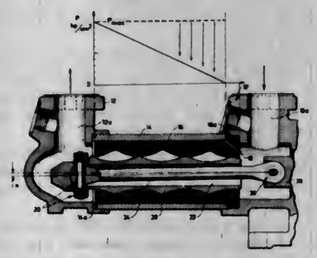
which is equal to the diameter of said one bearing sleeve to a larger diameter at said other end, said other bearing sleeve having a constant outside diameter equal to the diameter of said second hub's other end, the interior surface of said conduit having a configuration which tapers linearly from a larger upstream to a smaller downstream inside diameter around said first hub and rotor blades, is then of constant inside diameter around said one bearing sleeve, then tapers linearly to a smaller downstream inside diameter around said second hub and rotor blades, and is then of constant inside diameter around a stator member and stator blades, whereby an annular water passage is provided which decreases in area about said rotor hubs and is constant in size about said bearing sleeve and stator member.

3,286,642

HYDRAULIC BALANCING DEVICE IN SCREW PUMPS

Gustav Rudolf Lindberg, Valla, Sweden, assignor to Aktiebolaget Flygts Pumpar, Solna, Sweden

Filed Jan. 7, 1965, Ser. No. 424,047
Claims priority, application Sweden, Aug. 8, 1964, 9,970/64
2 Claims. (Cl. 103—117)



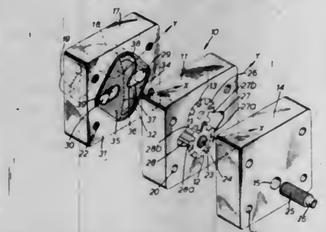
1. A hydraulic balancing device in screw pumps of the kind comprising a casing having one inlet and one outlet, a stator made of an elastic material fixed within the casing between said inlet and said outlet, a rotor being mounted for rotation and in a simultaneous eccentric movement within the stator in cooperation with the stator thread in such a way as to form closed chambers between said rotor and said stator, said chambers gradually and continuously moving axially from said inlet to said outlet while conveying the pumped medium under growing pressure, characterized in that the stator diameter is slightly less than the inner diameter of said casing so that a small gap is formed therebetween substantially around the periphery of said stator, said small gap being connected to the pressure and suction side of said pump permitting a small flow of pumping medium to pass from the pressure side to the suction side of said pump, the pressure exerted against the periphery of said stator decreasing from a maximum at the pressure side of said stator to a minimum at the suction side of said stator so that the pressure distributed along said periphery of said stator will coincide at any point with the pressure prevailing radially within the pumping chamber.

3,286,643

GEAR PUMPS AND MOTORS

Thomas D. H. Andrews, Leckhampton Hill, Cheltenham, and John C. E. Flint, Chalford, England, assignors to Dowty Technical Developments Limited, Cheltenham, England, a British company

Filed Oct. 5, 1964, Ser. No. 401,597
Claims priority, application Great Britain, Oct. 14, 1963, 40,357/63
8 Claims. (Cl. 103—126)



1. An hydraulic machine comprising a casing formed with two overlapping working cylinders, and including a low pressure port and a high pressure port, two intermeshing gears each of which is supported for rotation solely at the tips of its teeth in a respective working cylinder, one gear being directly connected to a drive shaft in such a manner that that gear itself forms the only means for rotatably supporting the shaft in the casing, annular grooves being formed in the wall of each cylinder extending from the low presure port part-way around the respective cylinder, and located to place the spaces between the gear teeth in communication with that port as they pass each groove, to relieve the tooth pressure around part of each gear and thus to produce resultant thrust so directed as to afford bearing of the gear primarily against an uninterrupted part of the cylinder's peripheral wall.

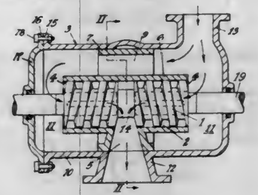
3,286,644

PUMPS

Leslie Sterling, Poole, Dorset, England, assignor to Hamworthy Pumps & Compressors Limited, Poole, Dorset, England

Filed Sept. 3, 1964, Ser. No. 394,133
Claims priority, application Great Britain, Sept. 18, 1963, 36,703/63
2 Claims. (Cl. 103—128)

1. A countrflow screw pump including a casing having an open end, removable means for closing the open end, a hollow open ended tubular insert constituting a pumping chamber within the casing spaced at both ends thereof from the ends of the casing, intermeshing symmetrical double-ended counter-rotating screw-threaded rotors closely fitting in the chamber for pumping a fluid through the chamber, first and second opposed lateral extensions integral with the tubular insert bearing against internal surfaces of the casing for spacing the pumping chamber laterally from the casing, said casing having a first port at one end communicating directly with the respective end of the pumping chamber and a second port laterally disposed and aligned with said first extension, said first extension being provided with a laterally extending port interconnecting said pumping chamber and second port, said second extension being provided with a longitudinally extending passage interconnecting the ends of



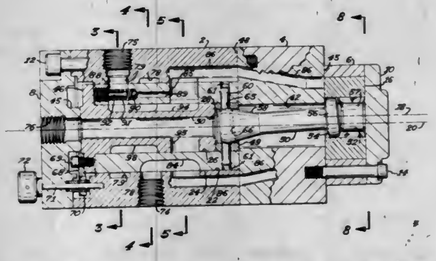
the casing so that said first port communicates with both ends of the pumping chamber, said first extension sealing the laterally extending port from the interior of the casing, and said insert and first and second lateral extensions being slidable within the casing whereby the insert and extensions can be removed bodily from the casing through the open end thereof upon removal of the removable means.

3,286,645

ROTARY FLUID PRESSURE DEVICE

Kenneth A. Albers, Minneapolis, Minn., assignor to Char-Lynn Company, Minneapolis, Minn., a corporation of Minnesota

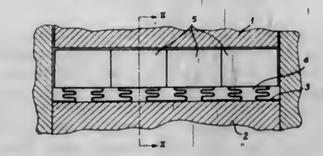
Filed July 9, 1965, Ser. No. 470,747
6 Claims. (Cl. 103—130)



1. In a fluid pressure device, fluid inlet means and at least two fluid outlet means, casing means, an internally toothed ring member defining the outer wall of a chamber, a cooperating externally toothed star member having fewer teeth than said ring member disposed eccentrically in said chamber, one of said members having orbital movement about the axis of the other of said members and one of said members having rotational movement about its own axis, the teeth of said members intermeshing to form expanding cells on one side of the line of eccentricity and contracting cells on the other side of said line during relative movement between said members, valve means including a first valve element which has a plurality of circumferentially arranged fluid passages communicating with said chamber which passages correspond in number to the number of teeth of one of said members, said valve means including a second valve element operatively connected to one of said members which has rotation about its own axis for rotation in synchronism with said rotational movement of said member, said valve means including a third valve element which slidably engages said second valve element and is adjustably moveable relative to said casing means, said second valve

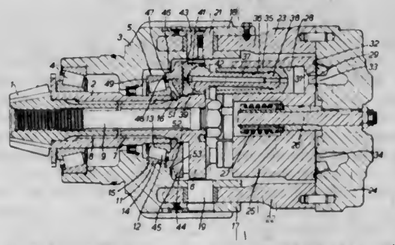
element having fluid supply passage means for admitting fluid from said fluid inlet means to said expanding cells and fluid exhaust passage means controlled by said third valve element to selectively exhaust all of the fluid from said contracting cells to only one of said fluid outlet means or to simultaneously and separately exhaust fluid from at least two different contracting cells to different ones of said fluid outlet means.

3,286,646
SPRINGS FOR THE PACKINGS OF ROTARY ENGINES
Lucien Peras, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France
Filed June 22, 1964, Ser. No. 376,864
Claims priority, application France, June 26, 1963, 939,463, Patent 1,383,762
1 Claim. (Cl. 103—136)



In a rotary motor having a stator and a rotor turning within the stator, the improvement comprising a plurality of packing elements contiguously arranged in a stator groove to fix the boundaries of the operation chambers between the rotor and the stator, a plurality of springs positioned in the groove bottom to urge said packing elements against the rotor thus forming a continuous joint, said springs being formed by a thin plate folded so that said springs are of a bellows shape and extend parallel to each other and transverse to the general direction of said plate, each of said springs engaging a corresponding packing element so that said packing elements are subjected to an independent elastic force.

3,286,647
HYDRAULIC APPARATUS
Dennis E. Lambeth, Cheltenham, England, assignor to Dowty Technical Developments Limited, Cheltenham, England, a British company
Filed Feb. 3, 1965, Ser. No. 430,111
Claims priority, application Great Britain, Feb. 8, 1964, 5,386/64
2 Claims. (Cl. 103—162)

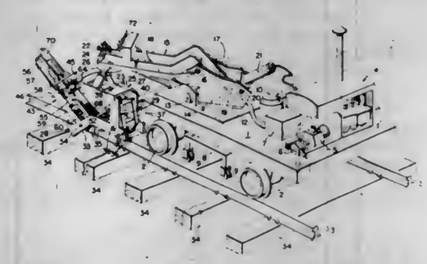


1. A hydraulic pump or motor comprising a rotatably mounted drive shaft, a drive flange fast on the drive shaft, a plurality of slippers capable to axial sliding movement in bores in the drive flange, a rotary cylinder barrel mounted for rotation about an axis inclined or inclinable to the drive flange axis and having a plurality of cylinders parallel or inclined to the rotation axis, pistons slidably mounted one in each cylinder, piston rods articulated to the pistons and the slippers to form a plurality of assemblies each comprising a slipper, a piston and a piston rod, a wear plate mounted adjacent to the drive flange, the wear plate including a flat surface against which the slippers are adapted to bear during rotation of the drive flange and cylinder barrel, a radial thrust ball or roller bearing for the drive shaft mounted adjacent to the drive flange and a bearing housing securing the outer race member of the bearing in position, one end surface of the race member being located against a machined surface in the bearing housing and the other end surface of the race member forming a support surface against which the wear plate is axially urged by the force exerted by the slippers, the wear plate including an annular projection by which it bears against the said race member, and said projection being concentric with the circular path of the slippers on the flat surface.

3,286,648
RAIL RENEWAL PROCESS
Dennis William Brosnan, Box 1808, Washington, D.C.
Filed Aug. 30, 1963, Ser. No. 305,725
33 Claims. (Cl. 104—2)

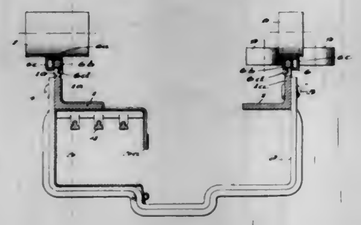
1. A method for replacing the rails on the existing ties of a track structure with continuous ribbon rails comprising the steps of: laying the new rails at a narrow gauge between the old rails of the standard gauge track to form a service track; removing spikes and rail anchors from the standard gauge track; cleaning the ends of the ties of the track structure outwardly of each of the rails of the standard gauge track; moving the old rails respectively outwardly onto the cleaned ends of the ties; gauging the old rails at a predetermined wide gauge to form a second service track; removing old tie plates and re-conditioning the surface of the ties in the areas of the removed old tie plates; installing new tie plates on the re-conditioned surfaces of the ties and gauging the position of the same from the rails of the narrow gauge service track; spreading the new rails from their narrow gauge position to a position on the tie plates; then gauging the new rails to standard gauge and spiking and anchoring the new rails to the ties; and then removing the old rails continuously onto equipment carried on the new rails of the standard gauge track.

3,286,649
RAILROAD TIE DOWELING MACHINE
Ralph Hughes, Graysville, Tenn., assignor, by mesne assignments, to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Jan. 26, 1962, Ser. No. 168,947
16 Claims. (Cl. 104—17)



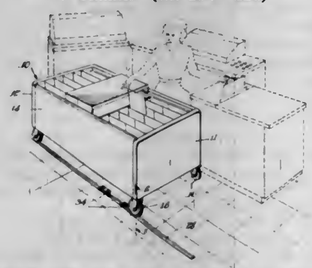
1. A railroad tie doweling machine to be mounted upon a railroad track and to dowel the end of a tie under the track comprising a car, a source of power, a doweling unit, support means for mounting said doweling unit upon said car for movement between an operative position relative to the tie and an inoperative position above the tie, said doweling unit comprising a clamping mechanism for transversely compressing the tie, a drilling mechanism having a rotary drilling element movable endwise on an axis transversely of the tie and mounted on said unit for movement between a drilling position relative to the tie and an inoperative position, a dowel-driving mechanism having an endwise-movable dowel-driving rod and mounted on said unit for movement between a dowel-driving position wherein said rod is disposed in axial alignment with the hole drilled in the tie by said drilling element and an inoperative position, and means operatively connecting said source of power to said support means for actuating the same to move said doweling unit between said operative and inoperative positions and to said clamping and drilling and dowel-driving mechanism for actuating the same.

3,286,650
RENEWABLE RAIL CAP
James F. King, Jr., and Foldier L. Phillips, Winston-Salem, N.C., assignors to The Bahnson Company, Winston-Salem, N.C., a corporation of North Carolina
Filed Feb. 4, 1964, Ser. No. 342,382
3 Claims. (Cl. 104—106)



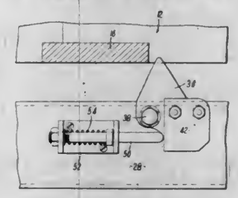
1. In a track structure, the combination comprising at least one rail, a cap installed on said rail, said cap including a depending flange portion located adjacent a side face of the rail, the lower edge of said flange portion terminating above the lowermost point of a series of longitudinally spaced holes provided in the side face of said rail, and said cap being locked in place on said rail by an upset of the cap flange into each of the holes in said rail.

3,286,651
SLIDING TUB DESK FILE CABINET AND MOUNTING THEREFOR
Ernest A. Dahl, Jr., 729 Greenwood Ave., Wilmette, Ill.
Filed July 7, 1964, Ser. No. 380,847
7 Claims. (Cl. 104—126)



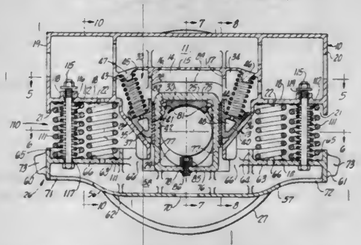
1. A storage system for file cards and the like comprising; a storage container, first and second anti-friction means connected to the bottom of said container, said first antifriction means comprising first and second rollers positioned subjacent one side of said container, said rollers having a circumferential groove therein, a rail means removably secured to a floor means and being adapted to engage and to maintain said first antifriction means in a predetermined path, said rail means being shaped complementary to the groove of said rollers for rolling engagement of the rollers over said rail means, and stop means fixedly secured to the rail means intermedi te said rollers to limit travel of said container along said rail means, said second antifriction means being adapted to directly engage said floor means and to travel in the same direction as said first antifriction means.

3,286,652
STORAGE EQUIPMENT
Michael John Charles Ringwood, Eastcote, and Wesley John Spooner, Chalfont St. Peter, England, assignors to Acrow (Engineers) Limited, Paddington, London, England
Filed Sept. 23, 1964, Ser. No. 398,620
2 Claims. (Cl. 104—147)



1. Pallet storage equipment comprising a track for pallets, which track is open ended and extends from one side of the equipment to the other, a reciprocating drive means incorporating fingers provided to move the pallets in the track, the fingers on a forward drive stroke engaging a pallet to move it in the track and on a return stroke pivoting to a position in which they do not move the pallets; said fingers being pivotally mounted on a common carrier which is reciprocated by said reciprocating drive means, and said fingers being biased to drive positions in which they engage pallets on a drive stroke and are pivoted against the force of the bias on a return stroke due to the engagement of the fingers with the pallets, and said fingers being held in their driving positions by biasing members which can move on a drive stroke to allow the fingers to pivot to non-drive positions upon obstruction of the pallet track.

3,286,653
TRACKING TRUCK
Hans B. Weber, Bedford, Ohio, assignor, by mesne assignments, to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Sept. 3, 1963, Ser. No. 306,006
12 Claims. (Cl. 105—165)



1. In a tracking two-wheel railway truck, comprising: (A) a pedestal frame having an upper body portion adapted for mounting on a railway car with its length parallel to that of the car, and a pair of longitudinally spaced hollow guide columns co-depending therefrom defining therebetween a pedestal opening;

(B) a journal saddle having a base and a centrally located journal housing extending upwardly therefrom interposed in vertical guide relation and longitudinal spaced relation with said guide columns in said pedestal opening for housing the journal end of a wheel and axle assembly along a horizontal journal axis of fixed relation with said housing, said pedestal opening having a longitudinal dimension exceeding the longitudinal width of the housing so as to permit substantial angular motion capability of the axle and saddle assembly relative to the pedestal frame during curve negotiation;

(C) the frame and the saddle having vertically aligned upper and lower load support spring seats, respectively, in both fore and aft spaced relation with said columns and said housing;

(D) vertically reacting load support spring means disposed between said seats to support said frame relative to the saddle; and

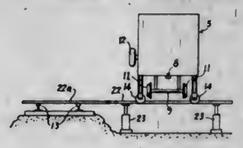
(E) a cushion biased friction unit disposed between each of said columns and the housing for damping relative lateral movement and relative vertical movement of said saddle and said frame.

3,286,654

CONVERTIBLE RAIL-HIGHWAY VEHICLE

Earl H. Fisher, 630 Casgrain Ave., St. Lambert, Montreal, Quebec, Canada

Filed Aug. 29, 1963, Ser. No. 305,492
Claims priority, application Canada, June 22, 1963, 878,536
3 Claims. (Cl. 105—177)



1. A vehicle adaptable for highway or rail travel, comprising a chassis, axle means supported under the chassis, the axle means having an axis extending transversely of the vehicle, a set of highway wheels and a set of rail engaging wheels rotatably mountable on the axle means, a set of set-off wheels mounted on the chassis and rotatable about axes located in planes perpendicular to the axis of the axle means, the set-off wheels being engageable with removable set-off rails for movement of the vehicle sideways from the direction of the highway or rail travel when the vehicle is elevated to raise the highway and rail engaging wheels out of contact with the highway or rails, brackets mounting said set-off wheels on the chassis, said brackets being pivoted at one end to the chassis, brace means securing the brackets in a vertical position under the chassis, and means holding the brackets and brace means up against the underside of the chassis when the vehicle is supported on the highway or rail engaging wheels.

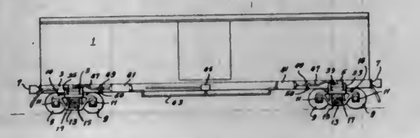
3,286,655

RESILIENT RAILWAY CAR SUSPENSION

Richard L. Lich, St. Louis, Mo., assignor to General Steel Industries, Inc., Granite City, Ill., a corporation of Delaware

Filed Feb. 13, 1964, Ser. No. 344,730
10 Claims. (Cl. 105—197)

1. A railway vehicle comprising spaced trucks each having an unsprung portion, springs carried thereby, and structure supported on said springs, the deflection of said springs between their empty and fully loaded conditions being within the permissible variation in car coupler height, transverse members mounted on said structures to swivel relative to said truck about vertical axes substantially at the centers thereof, transversely spaced upright springs seated on said transverse members, a car body supported on said upright springs, cooperating means on said body and said transverse members restraining said transverse members against relative movements longitudinally of said body, a coupler mounted on an end of the vehicle, and means permitting said upright springs to provide resilient support for said body when said first-named springs are compressed to their full load condition and preventing lowering of said coupler below its minimum permissible height.

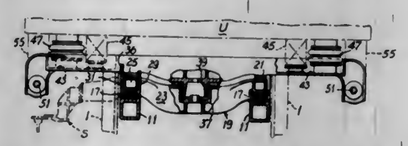


3,286,656

RESILIENT RAPID TRANSIT TRUCK

Richard L. Lich, St. Louis, Mo., assignor to General Steel Industries, Inc., Granite City, Ill., a corporation of Delaware

Filed Jan. 2, 1964, Ser. No. 335,277
10 Claims. (Cl. 105—199)



1. A railway truck comprising wheels, axles, a pair of transversely-spaced longitudinally extending side frames supported at their ends on said axles and having upwardly facing flat horizontal surfaces, substantially horizontal flat elastomeric pad devices of substantial width transversely of the truck seated on said upwardly facing surfaces and spaced apart longitudinally of the truck, a rigid frame extending transversely of the truck and having downwardly facing flat horizontal surfaces supported on said pad devices, and cooperating means on said rigid frame and both said side frames opposing relative horizontal movements of said frames, said pad devices opposing by their resistance to compression transverse tilting of said side frames relative to said rigid frame but permitting differential longitudinal tilting of said side frames relative to said rigid frame responsive to differing vertical irregularities in the two track rails.

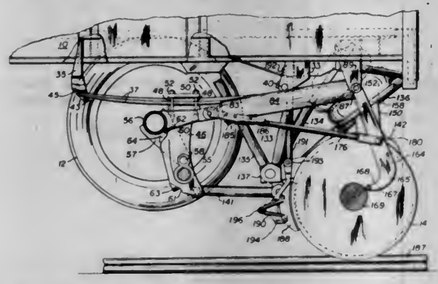
3,286,657

RAILWAY-HIGHWAY VEHICLE TRUCK

Kenneth A. Browne, Lakewood, Ohio, assignor to The Chesapeake and Ohio Railway Company, Cleveland, Ohio, a corporation of Virginia

Filed Aug. 13, 1963, Ser. No. 301,811
16 Claims. (Cl. 105—215)

1. A road-rail vehicle comprising a vehicle frame structure, an axle assembly extending transversely of the vehicle and having wheels thereon, support means carried by said frame structure for supporting said axle assembly for movement relative to said frame structure between retracted and vehicle support positions, and pneumatic means operatively connected with said axle assembly and said frame structure for relatively moving said axle assembly and frame structure away from each other to position the wheels in their vehicle support position and for providing a shock absorbing means for said vehicle when said wheels are in their vehicle support position.

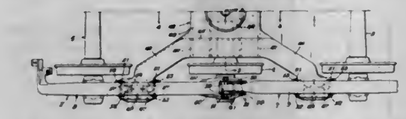


3,286,658

SIX-WHEEL TRUCK BOLSTER

Carl E. Tack, Elmhurst, Ill., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey

Original application Feb. 14, 1962, Ser. No. 173,232, now Patent No. 3,220,357, dated Nov. 30, 1965. Divided and this application Apr. 8, 1965, Ser. No. 446,547
1 Claim. (Cl. 105—227)



A bolster for a railway car truck comprising an integral casting including a body portion of relatively shallow depth and short transverse extent, the body portion including vertically spaced elements, the bolster including longitudinal beams of box section at the sides and above the body portion, legs of box section forming continuations of and extending from the longitudinal ends of the beams in directions longitudinally and laterally from the body portion, the legs at their juncture with the body portion extending vertically from the bottom surface of the body portion above the top surface thereof, the legs tapering vertically from their juncture with the body portion to their extended ends and having foot portions of box section at their extended ends, said foot portions having friction shoe pockets in their longitudinally fore and aft sides, and longitudinally extending transversely spaced lugs on opposite sides of the pockets, and transverse beams of box section under the body portion and extending the full width of the body portion and to the lateral limits of the longitudinal beams, the top and bottom elements of the box section transverse beams forming continuations of said spaced elements of the body portion, the transverse beams tapering at their outer ends to reduced depth at the laterally outer limits of the longitudinal beams.

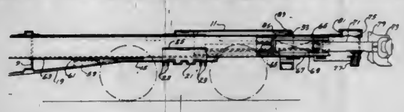
3,286,659

RAILWAY CAR CONSTRUCTION

James B. Cunningham, St. Louis, Mo., assignor to General Steel Industries, Inc., Granite City, Ill., a corporation of Delaware

Filed Nov. 23, 1964, Ser. No. 413,084
4 Claims. (Cl. 105—420)

1. In a railway vehicle, an underframe, an elongated draft sill, means spaced inwardly from the ends of said underframe and supporting said draft sill in said underframe for movement lengthwise therein with an end portion of said draft sill normally projecting outwardly from the end of said underframe, an end surface of said underframe adjacent said draft sill sloping upwardly and inwardly longitudinally of said underframe, said draft sill having a correspondingly sloping surface outwardly of and in opposing normally spaced relation with said underframe surface, said underframe and draft sill surfaces being adapted for engagement when said draft sill moves a predetermined distance lengthwise of said underframe.

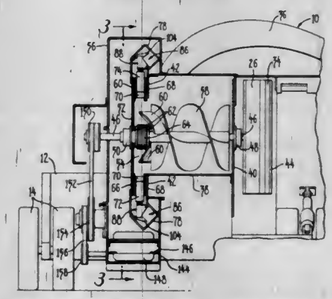


3,286,660

HAY WAFERING APPARATUS

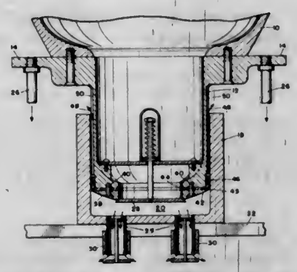
Merle H. Peterson, Livonia, Mich., assignor to Massey-Ferguson, Inc., Detroit, Mich., a corporation of Maryland

Filed May 14, 1962, Ser. No. 194,398
4 Claims. (Cl. 107—14)



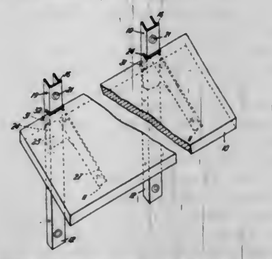
1. In an apparatus for making compressed hay wafers, said apparatus being of the type having an annular series of axially open radially extending die cells each including axially spaced entrance and exit ends with the entrance ends thereof arranged about a rotary compression means for successively applying force to hay disposed opposite the entrance ends of said die cells to compress a column of hay into and through said die cells; the improvement comprising means axially engageable with the columns of hay emerging from the exit ends of said die cells to axially compact said columns and form the latter into compressed wafers of hay as said force is applied, said means engageable with the columns of hay comprising a carriage pivotally mounted adjacent the exit end of each die cell, a compaction plunger reciprocably mounted on said carriage, yieldable spring means continuously urging said plunger to an extended position projecting from said carriage and being yieldable in response to reciprocation of said plunger to a retracted position on said carriage, and means normally holding said carriage in a first position in which said plunger is axially aligned with said die cell at the exit end thereof for engagement with the column of hay emerging therefrom and being operable in response to reciprocation of said plunger to a predetermined retracted position to permit pivotal movement of said carriage to a second position in which said plunger extends at an angle to the axis of said die cell to break and eject wafers of substantially uniform length from said column, said last-named means comprising latch means pivotally mounted adjacent said carriage and engageable therewith in said first position thereof, said plunger in its predetermined retracted position being engageable with said latch means to disengage the latter from said carriage for movement thereof to said second position.

3,286,661
RAISED DOUGHNUT MAKING MACHINE
Harry H. Bundschuh, 2404 Denver Ave., San Diego, Calif.
Filed Oct. 24, 1963, Ser. No. 318,739
9 Claims. (Cl. 107—14)



1. A dough extrusion machine comprising:
a cylinder having an open end and a closed end with dough discharge outlets therein;
a hollow piston having an open end and a closed end reciprocably mounted in said cylinder and forming with said cylinder a dough compression chamber;
a one-way valve positioned centrally in said closed piston end so as to permit flow of dough from the interior of said piston into said compression chamber when said piston is moved in one direction; and
vent means effecting the escape of gas entrapped in said dough compression chamber to the exterior of said chamber and including a one-way valve which is opened by the pressure exerted on the dough in said chamber to open as said piston is forced into said cylinder.

3,286,662
STRIP SUPPORT ASSEMBLIES
William R. Connery, Clady Works, Dunadry, Northern Ireland
Filed Nov. 19, 1964, Ser. No. 412,552
Claims priority, application Great Britain, Nov. 21, 1963, 46,044/63
7 Claims. (Cl. 108—144)



1. A carrier-device mounting, comprising, in combination, two carrier-device-mounting members each including two channel sections which are integral to form a rectangular section and adapted to be secured between two fixed structures, each member having a channel-shaped root portion which includes a channel-shaped base adapted to overlie a channel section externally in nested relation and flanked by parts engageable at the sides of the channel section, said root portion being slidable along said member, and means for securing the root portion of each carrier-device on a separate channel section of each of the two members, the base of the channel section protruding beyond one side wall of said section to form a longitudinal lip, and each said root portion having at one side a return bend engageable about said lip and at the other side a flange to lie over the other side wall of said section, said flange and other side wall having therein axially alignable holes engageable by the shank of a stud.

3,286,663
OVER-BED TABLE
Stuart N. Mann, Derby, and William Garfield Steel, Tonawanda, N.Y., assignors to The Hard Manufacturing Co., Buffalo, N.Y.
Filed May 26, 1965, Ser. No. 458,859
2 Claims. (Cl. 108—144)

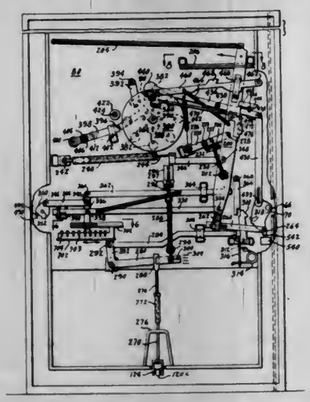


1. In an over-bed table, a horizontally extending base and a table top generally overlying said base, column means extending vertically between said base and said table top adjacent to a corresponding edge of each, said column means comprising a first hollow column member fixed to and extending upwardly from said base and a second hollow column member depending from said table top and telescoping over said first hollow column member, said members being relatively vertically movable for adjusting the height of the table top, said first column member including an upwardly extending locking member and said second column portion having a locking member therein extending downwardly into said first column member, means acting between said locking members for selectively locking them against relative vertical movement, and an upright release rod engageable at its lower end with said last mentioned means and extending upwardly within said second column member to a point beneath said table top, means at the under side of said table top movable to reciprocate said release rod to free said locking means, a pair of spiral springs attached at the outer end of each to opposite sides of the interior of said first column member and adapted to unroll downwardly, a pair of laterally spaced rollers at the lower end of said downwardly extending locking member for anti-friction engagement against the peripheries of said spiral springs to unroll the same and produce balanced forces at opposite sides of said column means to counterbalance said table top when said locking means is released.

3,286,664
HOLDUP-PROOF BOOTH
Ira A. Fulks, 5430 Sinclair Road, Columbus, Ohio
Filed Mar. 16, 1966, Ser. No. 534,698
9 Claims. (Cl. 109—7)

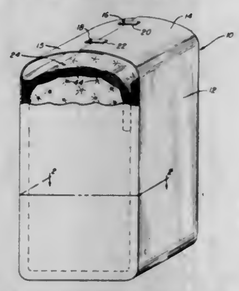
1. A holdup proof booth for denying entry into a security area to all but authorized persons and for incarcerating unauthorized persons who attempt to enter the security area by means of the booth comprising:
an enclosed booth,
an entrance door into said booth,
an exit door from said booth,

a lock mechanism chamber,
locking means for selectively locking the entrance door,
locking means for selectively locking the exit door,
a master lever locking mechanism in the chamber comprising:
a master lever mounted for pivotal movement,
means interconnecting the entrance door lock with the master lever for maintaining the entrance door in a locked condition in response to selected modes of operation of the master lever,



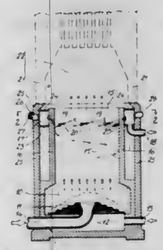
means interconnecting the exit door lock with the master lever for maintaining the exit door in a locked condition in response to selected modes of operation of the master lever a picture profile lock mechanism including a picture wheel having thereon a plurality of visual devices at least one of which is visible from within said booth, and
means interconnecting the pivoted master lever with the picture profile lock mechanism for selectively covering and uncovering the visual device visible from the booth and for controlling the mode of operation of the master lock mechanism in response to the setting of the picture profile lock mechanism.

3,286,665
INSULATED CONTAINER
James F. Wygant, Gary, and John J. Petkus, Whiting, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana
Filed June 1, 1965, Ser. No. 460,373
6 Claims. (Cl. 109—82)



1. A light-weight, non-rigid container for combustible materials which provides increased protection against the effects of heat and fire, which container comprises a wall and closing means, said wall comprising compacted layers of resilient thermal-insulating material, and heat-destructible fastening means connected to said layers to hold them together, said fastening means being destroyed upon exposure to moderately elevated temperatures below about 300° C., thereby permitting the compacted layers of said wall to expand and separate and to provide increased protection to the combustible materials in said container.

3,286,666
COMBUSTION APPARATUS
Olof Axel Ohlsson, Stockholm, Sweden, assignor to AB Svenska Maskinverken, Kallhall, Sweden, a joint-stock company of Sweden
Filed Nov. 3, 1964, Ser. No. 408,536
11 Claims. (Cl. 110—28)

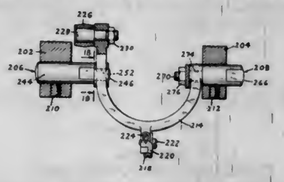


1. In a combustion apparatus, in combination: a primary combustion chamber having means for introducing and burning relatively coarse solid fuels therein in a manner to produce an ample supply of hovering solid fuel particles most of which are in an ignited condition, an open-ended cyclone chamber of circular cross section communicating with said primary combustion chamber in a manner to receive said hovering fuel particles therefrom while most of them are still burning, said cyclone chamber having an outlet end opening into a heat consuming apparatus, a plurality of gas inlet tuyères opening into said cyclone chamber in a substantially tangential direction and means for introducing gas through said tuyères into said cyclone chamber in a manner to produce therein a cyclonically rotating stream of gases capable of catching said hovering fuel particles emanating from said coarser solid fuels burned in the primary combustion chamber, a plurality of said gas inlet tuyères being located in the vicinity of the outlet end of said cyclone chamber and being each disposed at an angle to a radial plane which is perpendicular to the axis of said cyclone chamber to expel the gas supplied therethrough in a helical direction relatively to the circular interior wall of said cyclone chamber and away from the outlet end thereof.

3,286,667
SEWING MACHINE IMPROVEMENTS
Gerald C. Roth, Oak Lawn, Ill., assignor to Union Special Machine Company, Chicago, Ill., a corporation of Illinois
Filed Mar. 5, 1964, Ser. No. 349,582
4 Claims. (Cl. 112—176)

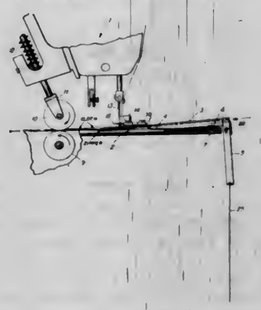
1. In a blind stitch sewing machine having a curved needle mounted in an oscillating needle bar supported in a head in a position relative to a node former, the improvement comprising at least one eccentric stud having first and second cylindrical portions supporting said needle bar in said head, the longitudinal axes of said cylindrical portions being displaced from one another, said first cylindrical portion being mounted in said head and arranged

for rotation therein, said second cylindrical portion pivotally supporting said needle bar, whereby rotation of said eccentric stud varies the position of the axis of rotation



of said needle bar relative to said node former and thereby varies the position of said needle relative to the node former and the work.

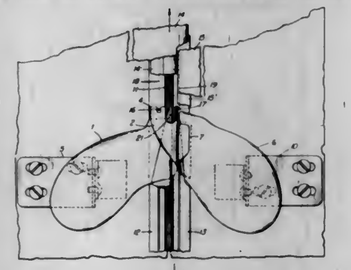
3,286,668
INTERMITTENT ZIPPER SEWING MACHINE AND METHOD
John L. Rockerath, Utica, John E. Goppert, New Hartford, and Harold J. Schreck, Utica, N.Y., assignors to Jet Sew, Inc., Barneveld, N.Y., a corporation of New York
Filed June 9, 1964, Ser. No. 373,662
8 Claims. (Cl. 112—265)



1. A machine for sewing separated lengths of zipper tape into fabric,
having drive mechanism to feed separated lengths of zipper tape through the machine,
guide means in the line of feed which provides a vertical dimension for free passage of zipper tape and zipper through the stitch point,
and fabric holding pins adjacent to the guide to facilitate aligning and drawing the fabric taut during backtacking.

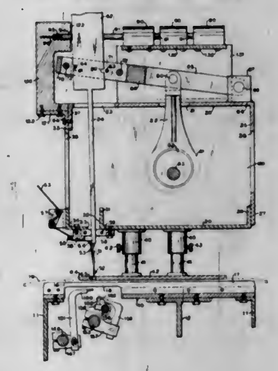
3,286,669
CONTINUOUS ZIPPER SEWING APPARATUS AND METHOD
John L. Rockerath, Utica, John E. Goppert, New Hartford, and Harold J. Schreck, Utica, N.Y., assignors to Jet Sew Inc., Barneveld, N.Y., a corporation of New York
Filed July 24, 1964, Ser. No. 384,967
3 Claims. (Cl. 112—265)

1. A two needle machine for sewing continuous zippers into fabric
comprising draw roller mechanism to move to-be-sewed fabric and zipper-bearing tapes through the machine,
differential means mounted forward relatively to the needles to cooperate with said draw roller mechanism to maintain the tapes taut as they move through the machine, including variable speed drive apparatus, brake devices therewith associated, and a tape guide assembly,
a turn down folder disposed above one stitch point, to fold fabric into a looped strip of fabric for seaming,
a larger turn down folder disposed above the other stitch point, having plural convolutions to fold fabric into a larger looped strip of fabric for seaming, and a loop diverter within said convolutions, said larger turn down folder overlying the smaller turn down folder to place the larger looped strip in overlying relation to the zipper, concealing the same, and there being a fixed space directly above the line of travel of the zipper to facilitate free passage of zipper sliders between the folders, without dislodging the tapes,



stripper elements one adjacent each needle and stitch point, disposed on each turn down folder and spaced apart from each other to facilitate passage of zipper sliders therebetween, and simultaneously maintain the tapes flat as they move close to the stitch points,
a throat plate adjoining the stitch points, having a channel beneath the stripper elements to further facilitate passage of zipper sliders through the stitch points,
and a non-pressing finger guard adjacent the needles, above the folders, and movable between protective and withdrawn positions.

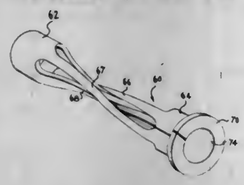
3,286,670
INDEPENDENTLY VARIABLE STROKE MULTIPLE NEEDLE TUFTING MACHINE
John H. Boyles, Rte. 4, Dalton, Ga.
Filed Nov. 28, 1958, Ser. No. 777,071
28 Claims. (Cl. 112—266)



1. In a method of forming a design in tufted fabrics, the steps of successively inserting loops of yarn through a base fabric while maintaining said base fabric in a prescribed and fixed plane, inserting certain of said successive loops through and beyond the extent of insertion of other

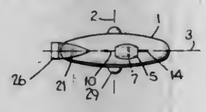
loops according to a predetermined design, restraining each loop against withdrawal from the fabric substantially the full extent of its insertion and releasing the restrained loops.

3,286,671
PIN AND SOCKET CONNECTOR ASSEMBLY
Glenwood A. Fuller, Hershey, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed June 10, 1963, Ser. No. 286,725
5 Claims. (Cl. 113—119)



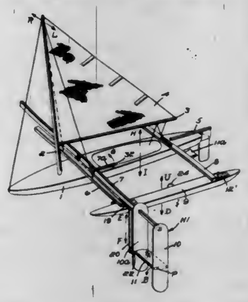
1. An improved method for forming pin or socket spring members of the type having an axis of travel to provide engagement for electrical connection comprising the steps of blanking a flat sheet of relatively thin metal material to define a configuration including end portions having the length thereof extending in a direction transverse to the axis of travel with said end portions being spaced apart and joined by material blanked to define a plurality of slots and a plurality of arms, with a slot disposed between each arm of a width equal to or greater than the width of an arm and with the slots and arms being generally parallel to each other and diagonal to the axis of travel such that the perimeter of said configuration is generally rhomboidal, stamping the said arms into an arcuate configuration in a direction transverse to the axis of travel and rolling said blanked and stamped sheet material to a point of abutment of the edges of the end portions to define tubular portions of substantially the same diameter joined together by helically disposed arms.

3,286,672
DEEP SEA SALVAGE EQUIPMENT
Guenther Wolfgang Lehmann, 425 Bernardo Ave., Sunnyvale, Calif.
Filed June 1, 1964, Ser. No. 371,850
8 Claims. (Cl. 114—54)



1. A salvage equipment carrier, comprising in combination an essentially disk-like shaped body, a number of inflatable salvage bags in circular arrangement with reference to the center vertical axis of said disk-like shaped body, a pressure vessel at the center of said disk-like shaped body, radial girders extending from said center pressure vessel up to at least and below said circular arranged salvage bags, a ring girder interconnecting said radial girders at points below said salvage bags, cylinders atop said ring and radial girders fixedly attached to them, spheres within said cylinders and consisting each of two halfspheres, accommodating inflatable salvage bags, the lower halfspheres fixedly connected to said cylinder atop said rings and radial girders, said inflatable salvage bags fixedly attached to said lower halfspheres, said upper halfspheres removably resting on the lower halfspheres, said lower halfspheres accommodating gas generating means, hinged covers over said cylinders and flush with the outer hull shell of the salvage equipment carrier, propulsion means on port and starboard of said salvage equipment carrier and arranged essentially at the periphery of said salvage equipment carrier, a stabilizing plane at the rear of said salvage equipment carrier, brake-flaps at said stabilizing plane, vertical stabilizing planes attached to the outer longitudinal boundaries of said horizontal stabilizing planes, the outer longitudinal boundaries of said horizontal stabilizing plane set back and inwardly with reference to said propulsion means, said propulsion means producing jet forces with attacking points forward of the transverse midship section, said propulsion means and horizontal stabilizing plane at the rear arranged in the same horizontal center plane of the disk-like shaped salvage equipment carrier, pads and eyes below said radial and ring girders for salvage gear attachments, and pressure equalized compartments in said salvage equipment carrier.

3,286,673
HYDROFOIL STABILIZING MEANS FOR WATERCRAFT
Henry W. Nason, 366 Farmington Ave., Plainville, Conn.
Filed June 21, 1965, Ser. No. 465,371
15 Claims. (Cl. 114—66.5)

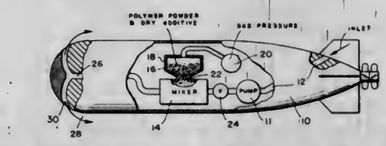


1. An apparatus of the class described comprising in combination a watercraft supported in a body of water, float supporting means solidly secured to the watercraft and projecting transversely outwardly from either side thereof, a pair of float members, pull arms projecting downwardly and rearwardly relative to the float supporting means, said pull arms hingedly connecting the float members to the float supporting means in spaced relation to the watercraft in said water and hydrofoil means independently connected to the watercraft and including hydrofoil elements operatively connected to the pull arms and movable therewith.

3,286,674
SOLUBILITY ACCELERATION ADDITIVE FOR MIXING NON-NEWTONIAN FLUIDS
Robert G. Thompson, Los Angeles, and Robert K. Gottfredson, Altadena, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Mar. 17, 1965, Ser. No. 440,649
5 Claims. (Cl. 114—67)

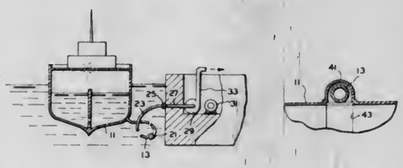
1. Apparatus for delivering a liquid to the boundary layer of a water vehicle which will reduce the vehicle drag, comprising:
(a) a supply chamber carried within the vehicle containing a mixture of particles, said particles being granulated table sugar and polymer particles which, when hydrated, have the drag reducing characteristics of Seperan or Polyox;

(b) said supply comprising, by weight, 50% to 75% of the polymer particles and of a size not to exceed about 120 mesh, said sugar particles comprising the remainder;
(c) a mixing chamber to which ambient water is continuously delivered in a turbulent flow;



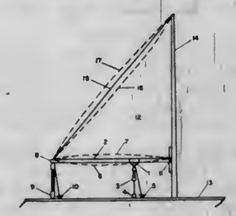
(d) means for metering said mixture to the water to provide a drag reducing liquid having, by weight, about .1% of polymer,
(e) and means for delivering the resultant liquid to the boundary layer of the vehicle.

3,286,675
SYSTEM FOR UNLOADING TANKERS
Edward R. Weber, Rowayton, Fairfield, Conn., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Aug. 3, 1964, Ser. No. 386,997
4 Claims. (Cl. 114—74)



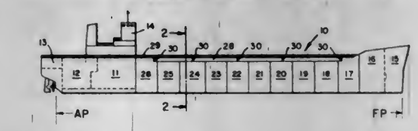
4. Apparatus for loading and unloading liquid cargo from a deep compartment in a water-borne tanker having a hull, comprising a cargo outlet in said compartment below the water level, a first conduit connected to said outlet, a shore based discharge pump located below the water level, a second conduit connected to the inlet of said pump, a coupling for interconnecting both said conduits, and means formed in the outer surface of the hull of said tanker for receiving and protecting the first conduit during movement of said tanker through the water.

3,286,676
BOOM ATTACHMENT
Preston L. Veltman, Anne Arundel County, Md. (212 Old County Road, Severna, Md.)
Filed Mar. 8, 1965, Ser. No. 437,959
3 Claims. (Cl. 114—102)



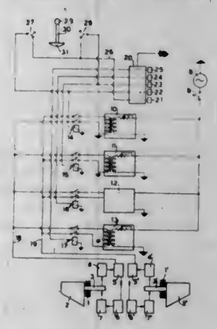
3. A vang fitting for attachment to a slotted sail boom, said fitting comprising elements having upper curved ends terminating in the slot of said boom, and the lower ends thereof terminating in a shackle, said shackle functioning to removably affix the curved members to said boom.

3,286,677
ANTI-PITCH SYSTEMS
Bryant A. Hilliard, Norwalk, Conn., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Nov. 9, 1964, Ser. No. 409,703
7 Claims. (Cl. 114—125)



1. A ship having a reduced tendency to pitch in rough sea comprising
(a) an elongate hull having a predetermined waterline,
(b) a series of fluid cargo holds adapted to hold a fluid cargo consecutively arrayed from stern to bow,
(c) duct means interconnecting a forward one and a rearward one of said holds for communication therebetween and being disposed symmetrically about the center line of said hull and substantially above said waterline,
(d) flow restricting means of predetermined areas arranged in said duct means to retard fluid cargo flow between said holds in a manner that transfer of said cargo from said holds will occur periodically when said ship is periodically elevated at alternate ends by periodically encountered wave forces,
(e) said restricting means being of sufficient predetermined area and number to create substantially a one-half period phase lag between said applied wave forces and the period of said cargo transfer,
(f) whereby said transfer of cargo will create damping moments in substantial opposition to the moment created by said wave forces.

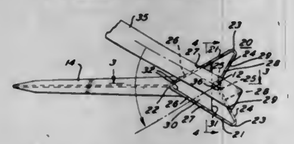
3,286,678
ACTIVATED-FIN INSTALLATION ON BOARD SHIPS
Raffaello Bruscaglioni, Milan, Italy, assignor to Filotecnica Salmoiraghi S.p.A., Milan, Italy, a company of Italy
Filed Apr. 5, 1965, Ser. No. 445,600
Claims priority, application Italy, Apr. 3, 1964, 7,181/64
4 Claims. (Cl. 114—126)



1. An activated-fin system for ships comprising at least one pair of fins, one fin on either broadside of the ship, each actuated individually by an actuating mechanism controlled, through a servoamplifier by a signal coming from an electric bridge control station, characterized in that said electric bridge control station is fed by a signal

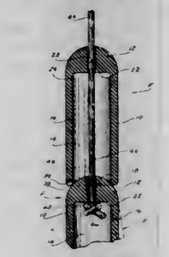
generated by an apparatus responsive to the hydrodynamic thrust acting upon each fin and by a signal transmitted by a device selected from a group, common to all of the fins, comprising a device responsive to the ship's rolling motion and whose actuation causes the simultaneous opposite movement of the fins for stabilizing the ship, a device whose actuation causes the upward rotation of the fin placed on the left-hand broadside of the ship and the simultaneous inactivation of the fin placed on the right-hand broadside of the ship, a device whose actuation causes the upward rotation of the fin placed on the right-hand broadside of the ship and the simultaneous inactivation of the fin placed on the left-hand broadside, and a device, whose actuation causes the simultaneous rotation in the same direction of both fins of the pair, control means being provided for the selective actuation of each of the devices aforesaid.

3,286,679
ANCHORS
John M. Wood, Jr., Box 394, Island Heights, N.J.
Filed Mar. 26, 1965, Ser. No. 443,033
8 Claims. (Cl. 114—208)



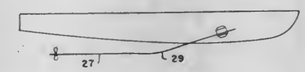
1. In an anchor of the twin fluke type the combination a stock,
a pair of flukes secured along their rear marginal edges to the stock with their inner edges in spaced relation,
a crown between said flukes having a forward vertex with diverging walls extending rearwardly from said vertex to spaced margins beyond the stock from which inwardly disposed connecting walls extend to and are secured to the stock,
said diverging walls having slots extending rearwardly from said vertex,
said forwardly disposed walls having slots extending forwardly toward said margins, and
a shank pivotally mounted on said stock and movable in said slots.

3,286,680
BOAT FENDER
Robert Caretta, 117 9th St., Racine, Wis.
Filed July 20, 1965, Ser. No. 473,397
1 Claim. (Cl. 114—219)



A fender to be suspended adjacent to the hull of a boat, comprising a plurality of elongated cylindrical bodies of resilient material positioned axially and end-to-end, each of said bodies having an upper spherical end, and a lower end, and being provided with an axial cylindrical bore defining a shell terminating at said lower end in an annulus, said annulus being provided with a downwardly-open notch extending radially thereacross, said bore terminating upwardly in a bottom at a point spaced below said upper end, said body provided with an axial aperture extending from said spherical end to said bottom, a suspension member passing freely through said apertures, said bodies positioned on said suspension member with said spherical end positioned upwardly and with said annulus of each fender resting upon the said spherical end of the adjoining fender, and means to fix the lowermost fender against downward axial displacement relative to said suspension member.

3,286,681
PROPELLER SHAFT SUPPORT
John Plum, Montgomery County, Md. (5402 Tuscarawas Road, Washington, D.C. 20016)
Filed Nov. 30, 1964, Ser. No. 414,927
5 Claims. (Cl. 115—34)

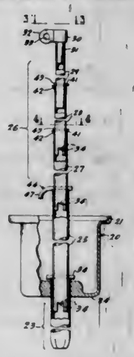


1. For a watercraft, propeller shaft support means comprising:
downwardly extending propeller shaft bracket means located at an aft portion of the craft;
power take-off means comprising at least one flexible propeller shaft having a propeller at its aft end and having at its forward end a first load bearing point located at least substantially forwardly of said bracket and at its aft end a second load point at the bracket;
means for supporting said at least one shaft in a prestressed condition in a convex downward curve between said first and second load points, said means comprising a further strut extending from the craft to a position of said shaft intermediate said first and second load points to establish an intermediate load point for said shaft, said further strut having bearing means for carrying said shaft;
whereby the inflow of water to the propeller is essentially parallel to the shaft at the propeller location.

3,286,682
TELESCOPIC MAST WITH UNDERGROUND STORAGE
Arthur W. Cook, 822 Roosevelt St., and Jesse F. Cook, 568 Harrison Ave., both of Lima, Ohio
Filed Apr. 13, 1964, Ser. No. 359,349
7 Claims. (Cl. 116—173)

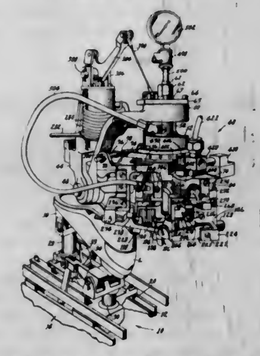
1. A telescopic mast comprising: a cup-shaped housing with an open top end and a closed bottom end, a plurality of tubular members telescopically fitted together with the top end of the largest tubular member secured to and extending through the bottom of said cup-shaped housing, a cap secured to the top end of the smallest tubular member, said tubular members intermediate said top and bottom members having one side portion adjacent their top ends bent laterally outwardly, a plurality of non-rigid retaining members one end of each of which are secured to a respective one of said laterally bent portions of said tubular members, a plurality of generally L-shaped pins respective ones of which are secured to respective ones of said non-rigid retaining members, each of said tubular members which project out of said largest tubular member having aligned openings through opposite sidewalls adjacent the lower ends thereof, the upper portion of said aligned openings acting as abutment surfaces and the upper portions of each of said intermediate tubular

members having upwardly facing abutment surfaces opposite which said aligned openings of the tubular member telescoped therein can be positioned, said L-shaped pins having a lateral leg adapted to bear against said upwardly facing abutment surfaces of the tubular member to which the pin is attached and extend through aligned openings of the tubular member which is slidingly received in the tubular member to which the pin is attached,



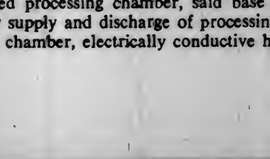
each of said lateral legs of each L-shaped pin having flat bottomed recess means against which said abutment surfaces of one of adjacent telescoping members is adapted to rest when the other leg of the pin projects downwardly, and the lateral leg of each pin having oppositely facing shoulders which abut opposite sides of one of the tubular members when said other leg of the pin projects downwardly.

3,286,683
COATING APPARATUS
George A. Fuller, Jr., Wenham, and Robert D. Tucker, Wakefield, Mass., assignors to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed Feb. 8, 1962, Ser. No. 172,013
9 Claims. (Cl. 118—2)



1. In a coating apparatus for applying liquid coating material to marginal areas of the bottoms of shoes, means for moving lasted shoes, to which soles are to be cemented, in a fixed bottoms up attitude in a predetermined rectilinear horizontal feed path, a support mounted for vertical and horizontal bodily movements during operation of the machine in paths transverse of said feed path, a nozzle carried by said support and adapted when supplied with liquid coating material under pressure and transferred along a surface in engagement therewith for applying a band of coating material to said surface, and gaging means carried by said support and adapted to engage the upper and side surfaces of a shoe, means for yieldingly holding the support in disposition relative to said feed path operative to cause the feeding movement of a shoe along the path to effect engagement thereof with the gaging members to cause the support through said gage members to bear downwardly upon the bottom and horizontally against the side of the shoe, said gaging means being operative, when the support bears downwardly upon the bottom and horizontally against the side of a shoe moving as aforesaid, to orient the support to effect transfer of the nozzle in coating engagement with the margin of the shoe bottom along one side thereof.

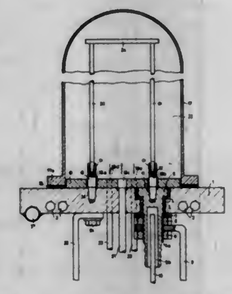
3,286,684
CEMENTATION COATING PACK
William L. Aves, Arlington, Tex., assignor to Ling-Temco-Vought, Inc., Dallas, Tex., a corporation of Texas
Filed Dec. 24, 1962, Ser. No. 246,718
3 Claims. (Cl. 118—48)



1. In combination with a retort having walls, a cementation coating pack comprising:
at least on emetallic part to be cementation coated and enclosed in the retort;
a quantity of particles of a salt which upon being heated is thermally decomposable to form a carrier gas;
powdered material packed around and in contact with the metallic part, at least some of the powdered material being reactive with the carrier gas and depositable therefrom on the metallic part;
and a powdered, inert material packed between the powdered material in contact with the metallic part and the retort walls,
all the salt particles being segregated in at least one amassment embedded in the inert material and separated from the metallic part by at least the material in contact with the metallic part, the metallic part being spaced from all the salt particles and free of contact therewith.

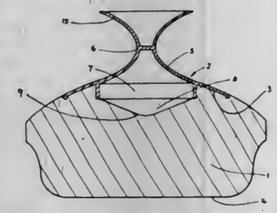
3,286,685
PROCESS AND APPARATUS FOR PYROLYTIC PRODUCTION OF PURE SEMICONDUCTOR MATERIAL, PREFERABLY SILICON
Herbert Sandmann, Nurnberg, and Ulrich Rucha, Munich, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a German corporation
Filed Jan. 25, 1962, Ser. No. 168,756
Claims priority, application Germany, Jan. 26, 1961, S 72.220
11 Claims. (Cl. 118—49.1)

1. Apparatus for producing pure semiconductor material by thermal dissociation and precipitation of the material from a gaseous substance that contains the material as a component, onto precipitation carrier structure electrically heated by being traversed by electric current, comprising a processing vessel having a base of metal with a ground planar top surface and a bell-shaped recipient gas-tightly sealed on said top surface to provide an enclosed processing chamber, said base having duct means for supply and discharge of processing gas to and from said chamber, electrically conductive holder means mounted on said base in said chamber for holding and electrically energizing said precipitation carrier structure, said recipient consisting of material different from that of said base, and an insert plate removably seated on said top surface of said base in face-to-face contact therewith



and extending over the entire inner cross section of said recipient adjacent to said top surface, said insert plate having substantially the same thermal properties as said recipient and containing openings through which said holder means protrude and openings for said duct means.

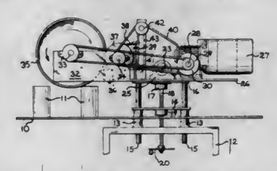
3,286,686
SOAP-CAKE AND HANDLE THEREWITH
Robert B. Staver, 191 Hillview Ave., Los Altos, Calif.
Filed Aug. 12, 1963, Ser. No. 301,536
1 Claim. (Cl. 118—76)



In combination, a body of soap of a size to be grasped in the hand and manipulated thereby, said body having an upper surface portion, a member extending upwardly from and attached to at least part of said upper surface portion of said body, said body having an opposite surface for application to an object to be treated, said member including means for being held by the hand; wherein said member is at least partially hollow whereby to define, in said combination, a closed internal cavity the lower face of which is formed at least in part by said body of soap, the portion of the body of soap whose face forms at least part of said cavity, being hollowed out below the lowest level of the face of said cavity formed by said member, said hollow generally increasing in depth with increasing distance measured laterally away from the nearest face of said cavity formed by said member.

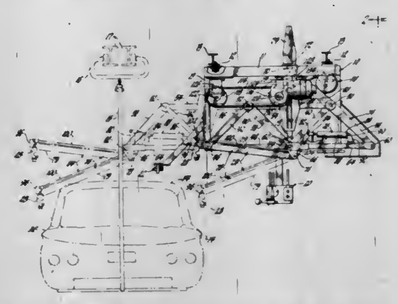
3,286,687
TUMBLER BEADER
Robert J. Miner and Walter A. Timm, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio
Filed Nov. 26, 1963, Ser. No. 326,005
4 Claims. (Cl. 118—239)

1. Apparatus for applying ceramic color to the mouth-defining rim surfaces of tumblers or the like comprising, means for moving a plurality of tumblers in upright position in a straight line, a horizontal shaft, a frame and means thereon mounting said shaft with one end extending outwardly over the line of moving tumblers and spaced vertically thereabove, a platform, means rockably mounting said platform on the outwardly extending end of said shaft so as to be disposed in a longitudinally and overlying rockable relation to said line of moving the tumblers, a motor mounted on said platform longitudinally thereof and at one side of the pivot, a rotatable drum means rotatably mounting said drum on the platform longitudinally thereof at the other side of said pivot, said drum defining a peripheral decorating surface that is in an overlying relationship with the line of tumblers and engageable with their rim surfaces as they move longitudinally beneath said platform, means drivingly connecting said



motor to rotate said drum, a supply of ceramic color carried on said platform, inking means including an inking roller rotatable in said ceramic color and positioned between said supply thereof and said decorating surface of the drum for transferring the color to said decorating surface, the platform being counterweighted so as to rock in the direction for lowering the decorating surface of the drum into engagement with the rim surface of the tumblers therebeneath, means connected to said frame for raising and lowering said shaft with respect to said line of moving tumblers, stop means on the frame and engageable with said platform for limiting the rocking movement of said platform, and resilient means connected between said platform and said stop means normally urging said platform into contact with said stop means.

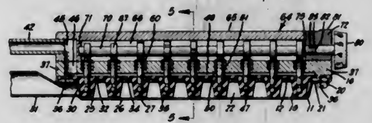
3,286,688
PAINT SPRAYING APPARATUS
William G. Blenman, Grosse Pointe, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 22, 1963, Ser. No. 296,572
6 Claims. (Cl. 118—323)



1. A spraying machine, comprising support means, a first parallelogram linkage including a pair of first parallel links pivotally interconnected by a first intermediate link and each pivoted to the support means, a second parallelogram linkage including a pair of second parallel links pivotally interconnected by the first intermediate link and pivotally interconnected by a second intermediate link, the second parallel links being equal in length to the first parallel links, spray means, means mounting

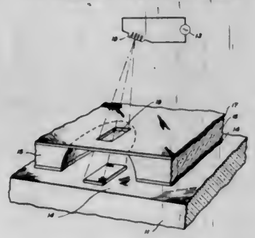
the spray means on the second parallelogram linkage, means for swinging the first parallelogram linkage, control means interconnecting one of the second parallel links and the support means to impart a coordinated opposite swinging movement to the second parallelogram linkage upon swinging movement of the first parallelogram linkage to thereby effect movement of the spray means in a rectilinear path.

3,286,689
ADHESIVE APPLICATOR
Edward R. Ziemba, West Lawn, Pa., assignor to Textile Machine Works, Wyomissing, Pa., a corporation of Pennsylvania
Filed Oct. 14, 1963, Ser. No. 315,773
9 Claims. (Cl. 118—411)



1. In a device for applying adhesive to surfaces said device including an elongated adhesive receiving chamber comprising a forward wall to overlie said surfaces, a series of orifices in said forward wall, a flexible diaphragm defining in part a rear wall of said chamber and having projecting portions in overlying relationship to said orifices but spaced therefrom in a relaxed condition of said diaphragm, means to supply fluid under pressure behind said diaphragm to flex said diaphragm and move said projecting portions into orifice closing positions against said forward wall, and means independent of said fluid pressure means to move selected ones of said projecting portions into said orifice closing positions, said last named means comprising cams located rearwardly of said diaphragm and individual to each of said projecting portions.

3,286,690
VAPOR DEPOSITION MASK
John McGlasson, Jr., Middlesex, and James T. Nelson, Gillette, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed May 9, 1963, Ser. No. 279,192
3 Claims. (Cl. 118—504)

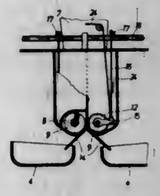


1. A mask for controlling the deposition pattern of vapor deposited material from an evaporation source comprising a thin slice of semiconductor material having a coating of oxide on at least one face thereof, said coating having an aperture therein defining the deposition pattern, said slice having an undercut clearance passage therethrough underlying said aperture, any plane cross sectional area of said passage parallel to the plane of said one face being greater than the area of said aperture and none of said slice lying within the perimeter of said aperture defined by lines perpendicular to the face around the perimeter of said aperture.

3,286,691
ODOR AND LIQUID ABSORBING ANIMAL LITTER AND METHOD OF PREPARING SAME
Arnett R. McFadden, 2519 W. 90th, Leawood, Kans.
No Drawing. Filed Dec. 23, 1964, Ser. No. 420,781
9 Claims. (Cl. 119—1)

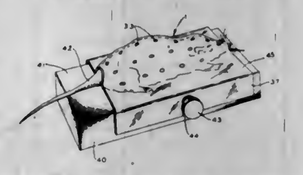
1. A composition for use as animal litter comprising a particulate, compressed, chlorophyl containing grass material characterized by the properties of readily absorbing liquids, having a color suitable for masking animal wastes deposited in the litter and including a sufficient active quantity of chlorophyl therein to suppress and destroy odors emanating from said wastes.

3,286,692
DEVICES FOR AUTOMATICALLY FEEDING CONCENTRATED FODDER INTO MILKING STALL MANGERS
Otto Metzger, Hof Backensholz, Ohrstedt, Husum, Germany
Filed Jan. 25, 1965, Ser. No. 427,710
Claims priority, application Germany, Jan. 29, 1964, M 59,723
4 Claims. (Cl. 119—52)



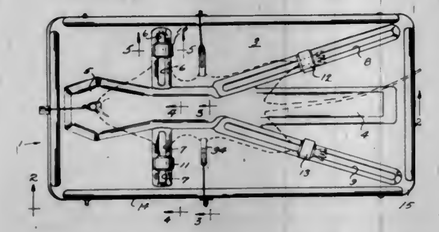
1. A feed dispensing device of the class described, comprising: a plurality of feed boxes; feed supply means; a screw conveyor for each feed box, said conveyor delivering a predetermined metered amount of feed from said supply means to its associated feed box in response to rotation of said conveyor through a predetermined angular displacement; separate pawl and ratchet means individually connected to each screw conveyor for rotation thereof; an oscillating motor driven shaft connected to all of said pawl and ratchet means for simultaneously advancing all of said screw conveyors through an angular displacement during the course of each oscillation thereof; and adjustment means individual to each of said pawl and ratchet means for separately adjusting the angular displacement imparted to each screw conveyor in response to each oscillation of said shaft.

3,286,693
METHOD OF MAKING AND USING AN ANIMAL RESTRAINT
Albert E. Clarke, Jr., 25470 Elena, Los Altos Hills, Calif., and John M. Rietman, 675 E. McKinley Ave., Sunnyvale, Calif.
Filed May 4, 1964, Ser. No. 364,860
5 Claims. (Cl. 119—103)



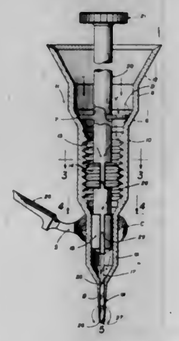
1. A method of making an animal restraint for a specific type of animal comprising the steps of placing one animal in the position in which it is desired later to restrain other animals of the same type, freezing said one animal in said position, placing a formable plastic sheet over said one animal, forming said sheet by the application of differential fluid pressure on opposite sides thereof to conform to the shape of said one animal, and then removing said formed material.

3,286,694
ANIMAL OPERATING BOARD AND CLAMP THEREFOR
Jerome J. Landy, 13700 SW. 78th Court, Miami, Fla.
Filed Jan. 18, 1965, Ser. No. 426,226
20 Claims. (Cl. 119—103)



1. An operating board for small animals comprising a table having an area for receiving an animal, said table having a plurality of elongated slots extending way from said area in the general directions of the limbs of an animal on said area, and clamping means fastenable to said limbs and having means engageable within said slots, to secure said animal to said board and effectively restrain said animal, said table being elevated at the edges of said elongated slots to prevent drainage of liquid through said slots.

3,286,695
HEAVY FLUID WRITING PEN
Jack M. Martin, 10014 Mansel Ave., Inglewood, Calif.
Filed Apr. 22, 1966, Ser. No. 544,609
5 Claims. (Cl. 120—44)



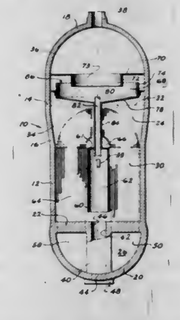
1. A heavy-fluid writing pen of the character described, comprising:

a tubular body forming a fluid reservoir, and a dependent outlet tube disposed for gravitational passage of viscous writing-fluid from the reservoir lengthwise through said tube to an outlet mouth, said body above the outlet tube being formed with a length characterized by a smooth bore and greater internal diameter than the outlet tube,

a generally cylindrical rod disposed axially movable within said body and having positioning means for selectively locating it therealong with a distal length of the rod closely embraced by said outlet tube, which distal length is formed with a contact end projectable from said outlet mouth for wiping transfer of fluid to a worksurface therefrom, the pen also being formed with longitudinal channel means between the inner circumference of the outlet tube and the distal length of the rod which is embraced thereby, thus to enable flow of fluid from the reservoir to the contact end,

a length of said cylindrical rod which traverses said smooth bore length of the tubular body having radially extending rib means disposed slidably longitudinally along the bore, and the exterior of said smooth bore length having handle attachment means for disposing an operating handle extending transversely therefrom, whereby the intersection of said rod with a plane extended through said handle attachment means and said rib means locates a fulcrum below which vibration of the rod within the outlet tube caused by writing, promotes descent of fluid along said longitudinal channel means to the contact end of the rod and thence to a worksurface.

3,286,696
VERTICAL STEAM GENERATOR WITH CENTRAL DOWNCOMER
Charles R. Green and Ronald B. Creek, Chattanooga, Tenn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Oct. 29, 1965, Ser. No. 505,665
13 Claims. (Cl. 122—34)



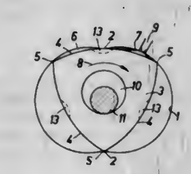
1. A vapor generator comprising: wall means forming a vertically elongated pressure vessel of circular cross section; a tube sheet dividing said vessel into a vapor generating section and a heating fluid section; a body of liquid in said vapor generating section having a level defining an upper vapor space and a lower liquid space; a vapor outlet from said vapor space; a tube bundle including parallel rows of vertically elongated U-tubes immersed in said body of liquid, said tubes being disposed with their bends uppermost and with their ends attached to said tube sheet in communication with said heating fluid section; means for passing a heating fluid through said tubes; means dividing said heating fluid section into inlet and outlet portions; axially disposed conduit means spaced inwardly from said vessel wall to form an inner downcomer chamber and an outer annular chamber containing said rows of tubes, said conduit means having its lower end spaced from said tube sheet to establish communication between said inner and outer chambers; separator means communicating with said outer annular

chamber operative to discharge vapor to said vapor space and liquid to said liquid space; a downcomer trough positioned in said vapor space and being adapted to receive liquid discharged from said separator means; and a vertically elongated, generally rectangular duct disposed between adjacent rows of said U-tubes, having its upper end communicating with said trough and its lower end communicating with said downcomer chamber, said duct being of sufficient width to provide sufficient cross-sectional area for limiting the velocity of liquid flowing therethrough.

3,286,697
ROTARY PISTON INTERNAL COMBUSTION ENGINE AND METHOD OF OPERATING SAME

Johann Keylwert, Cologne-Kalk, Germany, assignor to Klockner-Humboldt-Deutz Aktiengesellschaft, Cologne, Germany

Filed May 24, 1963, Ser. No. 283,668
Claims priority, application Germany, May 26, 1962, K 46,852
4 Claims. (Cl. 123—8)



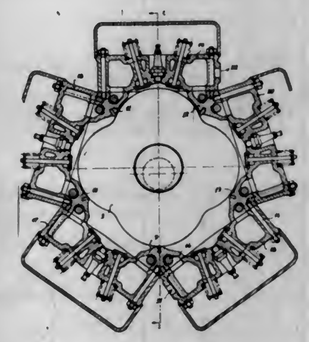
1. In a method of operating a rotary piston internal combustion engine, in which the piston is surrounded by a body having a multi-arch inner confining surface confining with said piston a combustion chamber and in the upper dead center position of said piston dividing said combustion chamber into two sectional combustion chambers of crescent-shaped cross section, the steps of: on each combustion cycle first compressing air in the chamber and then injecting a small quantity of fuel into said combustion chamber while said piston is in its upper dead center position or slightly thereafter, and subsequently after a certain angular movement of said piston of from 10° to 40° beyond its upper dead center position injecting into said the front sectional combustion chamber in the direction of piston rotation a second quantity of fuel considerably larger than said first quantity of fuel while proportioning said first quantity of fuel so that after the injection of the latter and following the initiation of the combustion and subsequent expansion of the combustion gases the temperature of the combustion gases in said chamber will be favorable for the injection of said second quantity of fuel.

3,286,698
ROTARY ENGINES

Lucien Peras, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France

Filed Jan. 2, 1964, Ser. No. 335,129
Claims priority, application France, Jan. 11, 1963, 921,219, Patent No. 1,353,048
6 Claims. (Cl. 123—8)

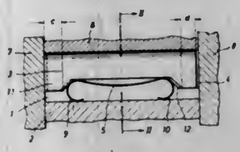
1. Rotary engine comprises a rotor having N lobes revolving within a stator having $(N+1)$ lobes to constitute $(N+1)$ working chambers having each a combustion chamber associated therewith, said stator consisting of two lateral bearing plates and of a member surrounding the rotor periphery, said engine being characterized in that said peripheral member consists of a plurality of separate elements half of which are bracing members and distance-pieces, and the remainder are combustion heads each formed with a combustion chamber and adapted to receive the valves and spark plug relevant to this chamber, as well as means for assembling these component elements.



3,286,699
RADIAL SEALING DEVICE FOR ROTARY PISTON ENGINE

Manfred Frenzel, Burscheid, near Cologne, Germany, assignor to Goetzewerke Friedrich Goetze Aktiengesellschaft, Burscheid, near Cologne, Germany

Filed Jan. 3, 1964, Ser. No. 335,618
Claims priority, application Germany, Jan. 5, 1963, G 36,787
5 Claims. (Cl. 123—8)

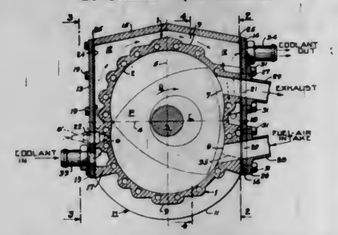


1. A radial sealing device for use in connection with the piston of an internal combustion engine of the rotary piston type, which piston is provided with substantially radial grooves extending axially of the piston, a pair of sealing bars in face to face engagement in each said groove, each bar being radially and axially movably arranged in its respective groove and the individual bars of each pair of bars being independently of one another movable in the pertaining groove, the respective sealing bars when viewed in the tangential direction of said piston being generally U-shaped in configuration with the leg portions thereof at opposite ends of the bar and extending from the bar toward the bottom of the respective groove, the radial extent of each bar at the ends thereof being less than the radial extent of the pertaining groove, each bar having one leg portion on a respective end thereof narrower in the axial direction than the adjacent leg portion of the other bar, and spring means in the space located axially between the leg portions of each said pair of bars and located radially between the radially inner edge of said pair of bars and the bottom of said groove, said spring means bearing axially on the respective one leg portions of the pertaining said bars so as to bias the individual bars of the pair of bars in each groove in respectively opposite axial directions.

3,286,700
FLUID COOLED HOUSING FOR INTERNAL COMBUSTION ENGINES

Walter Froede, Neckarsulm, Wurttemberg, Germany, assignor to NSU Motorenwerke Aktiengesellschaft, Neckarsulm, Germany, and Wankel G.m.b.H., Lindau (Bodensee), Germany, both corporations

Filed July 28, 1964, Ser. No. 385,730
Claims priority, application Germany, Aug. 22, 1963, N 23,639
10 Claims. (Cl. 123—8)



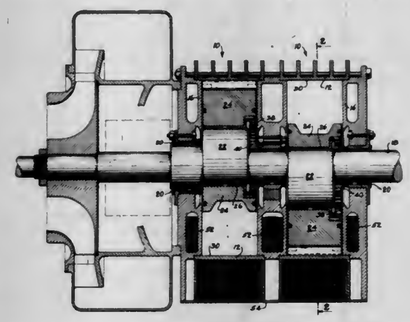
1. A fluid cooled housing for an engine of the rotary combustion type that includes a main peripheral shell within which a rotary piston is operable for completing in one revolution a four-stroke cycle process, said shell defining a two-lobe cavity having a major axis and a minor axis, said cavity at one side of the major axis having a fuel-air intake opening and a gas exhaust opening, the ignition taking place in the cavity at the opposite side of the major axis, whereby a "hot region" extends in the direction of piston rotation peripherally along the shell generally between the areas of ignition and exhaust, and a comparatively "cold region" extends between the areas of intake and ignition, the aforesaid housing throughout the peripheral extent of the "hot region" having parallel cooling passages extending peripherally over the shell, said passages being defined respectively by said shell, spaced flange-like ribs extending radially from the shell and positioned in respective planes parallel to the plane of said major and minor axes, and cover structure for enclosing the space between said ribs, said cover structure in part being integral with said ribs and shell throughout a central portion of the "hot region" at one end of the major axis, the cover structure at the adjoining sides of said central portion also comprising a first plate at one end of the minor axis having an opening for inflow of coolant to said passages, and a second plate at the opposite end of said minor axis having respective openings in registry with said intake and exhaust openings and also having an opening for outflow of said coolant, said first and second plates being secured to the respective sides of the shell and abutting said ribs for defining cooling passages in communicating alignment respectively, with the passages in said central portion, and for sealing the edges of said openings.

3,286,701
EXHAUST PORT COOLING STRUCTURE FOR ROTARY ENGINES

Frederick A. Kling, North Haledon, and Roland L. Bowlby, Wyckoff, N.J., assignors to Curtiss-Wright Corporation, a corporation of Delaware

Filed Nov. 18, 1964, Ser. No. 412,020
7 Claims. (Cl. 123—8)

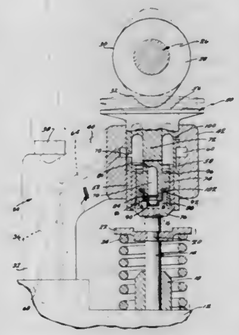
1. An outer body structure for a rotary combustion engine having a plurality of working chambers which carry a working fluid around the outer body axis for combustion in one region of said outer body and for discharge of the combustion gases in a second region of said outer body; said outer body structure including a peripheral wall having an exhaust port formed therein in said second region of said outer body, air cooling means for the walls of said exhaust port including a plurality of enclosed passages provided in said peripheral wall with said passages being spaced along the exhaust port axis and disposed between the inner and outer periphery of said peripheral wall, said passages being in close proximity to the walls of said exhaust port so that said passages surround a substantial portion of the outer wall of said exhaust port and said passages having supply openings at their upstream ends on opposite sides of said exhaust port for supplying cooling air to said passages and having a single common discharge opening circumferentially disposed downstream from said supply opening for discharging cooling air from said passages whereby cooling air will be circulated around the walls of said exhaust port for removing a substantial amount of heat from said second region of said outer body.



3,286,702
TAPPET ASSEMBLY

Morris V. Dadd, Muskegon, Mich., assignor to Johnson Products, Inc., Muskegon, Mich., a corporation of Michigan

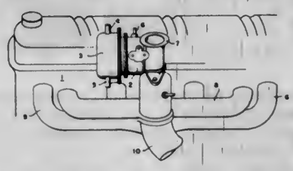
Filed Nov. 4, 1964, Ser. No. 408,994
3 Claims. (Cl. 123—90)



1. An inverted hydraulic tappet assembly for an overhead cam shaft engine having valves with stems extending up through the cylinder head, an alignment bracket attached to the cylinder head adjacent each valve, and having an alignment collar between the valve and the adjacent cam of the cam shaft; an inverted hydraulic tappet slidable in said collar; said tappet including a hollow tappet housing having an enlarged, upper mushroomed head in operative contact with the respective cam of the cam shaft, and having an open lower end; a hollow lash

adjuster body in said open lower end and having a closed lower end projecting into operative contact with the upper end of the valve stem; a plunger inside said hollow lash adjuster body, with its upper end in abutment with said tappet housing; a pressure chamber between the lower end portion of said plunger and the closed end of said lash adjuster body; a passage through said tappet housing and a communicating passage through said plunger to said pressure chamber; a check valve on the lower end of said passage to prevent backward flow from said pressure chamber through said plunger; and oil passage means through said bracket and collar from the cylinder head, to said tappet housing passage and said plunger passage for flow to said pressure chamber.

3,286,703
CARBURETOR FUEL HEATER FOR INTERNAL COMBUSTION ENGINES
Avery M. Rawles, Sr., 135 Mount Carmel Drive, Natchez, Miss.
Filed Nov. 13, 1964, Ser. No. 410,961
1 Claim. (Cl. 123—122)



A fuel vaporizer for a liquid cooled internal combustion engine comprising:

a carburetor having a flanged housing;

a float bowl having a first flange corresponding with and attached to said flange on said carburetor housing;

a fuel inlet in said float bowl;

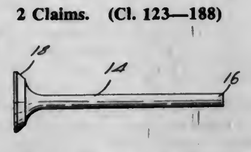
a second flange extending externally from said float bowl and spaced from said first flange;

a flanged jacket surrounding said float bowl and sealingly attached to said second flange thereon forming a closed chamber of uniform dimension around said float bowl;

a liquid inlet in said chamber;

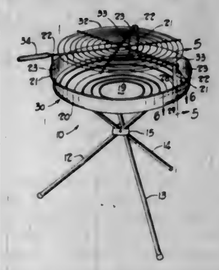
and a liquid outlet in said chamber disposed oppositely of said liquid inlet in said chamber whereby said liquid is passed through said chamber in a heat exchange relationship with said float bowl to vaporize fuel in said float bowl.

3,286,704
ENGINE VALVE
Louis J. Danis, Battle Creek, Mich., assignor to Eaton Yale & Towne Inc., a corporation of Ohio
Original application Jan. 10, 1964, Ser. No. 337,064. Divided and this application Jan. 13, 1965, Ser. No. 434,159
2 Claims. (Cl. 123—188)



1. A poppet-type engine valve comprising a head portion integrally affixed to an elongated stem portion terminating in an integral tip, the core of said valve body consisting of a metal selected from the group consisting of carbon steel and low-alloy steel containing from about 0.03% to about 0.60% carbon and up to about 5% of intentional alloying constituents, said core having a case hardener surface therearound extending inwardly to a depth of at least about 0.010 inch and having a surface hardness of at least about 20 Rc on the stem and the face of said valve head and a hardness of at least about 50 Rc on said tip of said stem.

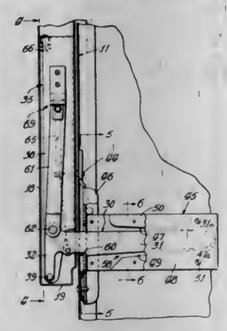
3,286,705
COLLAPSIBLE BARBEQUE GRILLE
Alan Bedol, Shaker Heights, Ohio, assignor to Marshallan Products, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Dec. 7, 1964, Ser. No. 416,578
1 Claim. (Cl. 126—25)



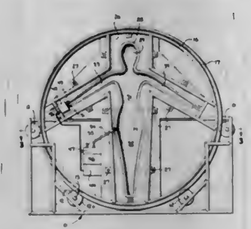
A collapsible barbeque grille, comprising in combination, a circular sheet metal fuel bowl having a continuous circular upstanding rim; three, triangularly spaced, flexible, leg engaging clips mounted on the underside of the fuel bowl; a foldable tripod, having a laterally extending foot at the upper end of each leg, including a raised toe portion at the outer end of each foot, adapted to fit through the bowl clips and lock the bowl to the legs when the tripod is in its open, fuel bowl supporting position; the rim having, vertically paired, headed studs spaced circumferentially of the inner face thereof; a flat bracket mounted on each set of paired studs through vertically spaced and aligned slots at the bottom end thereof, engageable with the stud heads, to lock the bracket in vertical pressed engagement against the inner curved face of the fuel bowl rim; each bracket also having vertically spaced terminal slots at its upper end adapted to support a food retaining grating, in co-operation with the slots of associated brackets, in adjusted positions, parallel to the bottom of the fuel bowl.

3,286,706
DETACHABLE OVEN DOOR
Walter F. Hoppe, Effingham, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Aug. 6, 1964, Ser. No. 387,859
3 Claims. (Cl. 126—194)

1. In a range, the combination comprising a frame defining an opening in an oven or the like, a door for normally closing said opening, a sheath associated with said frame having an access opening and defining a pocket, said sheath pocket terminating in a rounded portion, a longitudinally extending door support arm having lower and upper edges, respectively, and opposite ends, said lower and upper edges being received in said pocket in spaced relationship with one of said arm ends being rounded to engage said sheath rounded portion, means at the opposite end of said arm for pivotally carrying said door, a notch provided in said arm lower edge and positioned a predetermined distance from said means for pivotally carrying said door, a slot in said frame exposing said sheath access opening, a ledge associated with said slot, said arm insertable into said sheath through said slot and said notch engageable with said ledge to hold said arm in position permitting pivoting of said door to close said oven opening, said sheath rounded portion and said arm rounded end complementarily shaped to cam said notch and ledge out of engagement upon lifting of said door thereby permitting selective removal of said door from said oven, said door weight normally acting on said arm to maintain said notch and ledge engaged.



3,286,707
ROTATING DEVICE WITH INFLATABLE MEANS FOR SECURING A HUMAN THEREIN
Forest M. Shafer, Camby, Ind.
(R.R. 19, Box 527, Indianapolis, Ind.)
Filed Oct. 28, 1963, Ser. No. 319,482
1 Claim. (Cl. 128—24)



A health aid device comprising:

a stationary frame;

a plurality of wheels mounted to said frame for rotation in a plane;

a movable frame having a circular channel, said channel being supported on said wheels whereby said movable frame is rotatable,

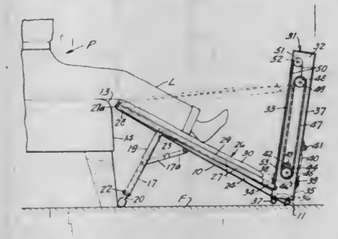
and a pneumatic cushion mounted on said movable frame and contoured to receive a human body and inflatable to securely embrace a human body during rotation of said movable frame.

3,286,708
HEALTH REST WITH A TILTABLE SUPPORT
Robert Gärtner, Butzbach, Hesse, Germany, assignor to Robert Gärtner, Dusseldorf, Germany
Filed June 14, 1965, Ser. No. 463,625
Claims priority, application Germany, June 12, 1964, G 40,833
16 Claims. (Cl. 128—24)

1. A health rest which comprises: frame means, supporting means pivotally supported by said frame means and pivotable from a substantially horizontal position to a substantially vertical position and vice versa, said supporting means having a top side for supporting and resting a person in stretched out position and also having a bottom side located opposite said top side, the pivot axis of said supporting means being located above said supporting means when said supporting means is in its horizontal position, adjustable feet holding means arranged in spaced relation to one end of said supporting means for supporting the feet of a person on said supporting means, adjustable shoulder supports arranged near the other end of said supporting means for supporting the shoulders of a person on said supporting means, rail means connected to said bottom side of said supporting means and extending in the longtiudinal direction of said supporting means, adjustable means adjustably mounted on said rail means and connected to said feet holding means, adjustable means on said bottom side of said supporting means and connected to said shoulder supports for adjusting said shoulder supports.



3,286,709
THERAPEUTIC DEVICE FOR AIDING CIRCULATION OF BLOOD IN THE LIMBS
Ludolf J. Hoyer, 1041 3rd Ave., Windom, Minn.; Robert O. Brown, 4500 Morningside Road, Minneapolis, Minn.; and John R. Caldwell, Jr., Windom, Minn.
Filed Dec. 5, 1963, Ser. No. 328,379
4 Claims. (Cl. 128—25)



4. Apparatus for aiding and inducing circulation of blood in a person's leg

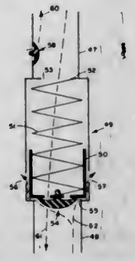
comprising a generally planar and inclined frame member having a floor-engaging forward end and an elevated aft end to be positioned adjacent the seat of a chair upon which a person is seated,

a frame-supporting structure swingably secured to said frame member adjacent the rear end thereof for supporting said rear end in elevated position,

a broad, generally flat and elongate leg-supporting member having a front end and also having a rear end swingably secured to said frame member and being swingably oscillatable to raise and lower said front end,

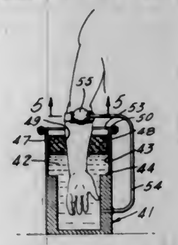
and means cyclically and slowly tilting said leg-supporting member successively to a first position wherein said front end is elevated above the rear end and to a second position wherein said front end is depressed below the rear end, whereby to similarly move the leg of the person for successively draining the blood from the leg and causing blood to rush into the leg.

3,286,710
APPARATUS FOR USE IN MOUTH-TO-MOUTH RESUSCITATION
Roscoe G. Bartlett, Jr., Lime Kiln, Md.
Original application Feb. 9, 1962, Ser. No. 172,359, now Patent No. 3,219,030, dated Nov. 23, 1965. Divided and this application July 23, 1965, Ser. No. 474,529
8 Claims. (Cl. 128—29)



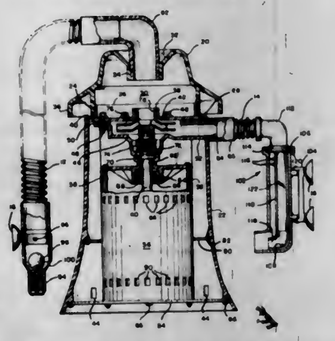
1. Apparatus for use in mouth-to-mouth resuscitation comprising, in combination,
a tubular member, the open end terminal portions of said member serving as an operator's and a patient's mouthpiece;
said tubular member having venting ports cut through the wall thereof at a location adjacent the patient's mouthpiece;
a first check valve mounted in a wall portion of said tubular member at a location adjacent the operator's mouthpiece,
said check valve being normally closed and opening only when the pressure at the operator's mouthpiece is less than the ambient pressure whereby air may be drawn into the interior of said tubular member through said check valve during the inspirational effort of the operator to help satisfy his respiratory requirements;
a piston having a head and a cylindrical body portion slidably accommodated within a section of said tubular member with said head portion facing said patient's mouthpiece;
a second check valve,
said second check valve being mounted in the head of said piston and opening an air passageway from one end to the other of said tubular member when the pressure at the operator's mouthpiece is greater than the pressure at the patient's mouthpiece whereby the operator's exhalations can pass through said second check valve into the patient's respiratory system and the patient's exhalations cannot pass through said second check valve into the operator's respiratory system;
and means normally holding said piston at a first location within said section of said tubular member at which position part of its cylindrical body portion covers said venting ports,
said last-mentioned means permitting said piston to be displaced from said first position towards the operator's mouthpiece whenever the pressure at the operator's mouthpiece is less than the pressure at the patient's mouthpiece whereby during the inhalation effort of the operator said piston moves towards said operator's mouthpiece and its cylindrical body portion uncovers said venting ports so that any air expelled into the patient's mouthpiece during this inhalation effort may pass out through said venting ports into the atmosphere.

3,286,711
MEANS AND METHOD FOR SELF-PRESSURE CYCLING OF LIMBS TO IMPROVE BLOOD CIRCULATION
Norman A. MacLeod, La Habra, Calif., assignor of thirty-six percent to R. Welton Whann, Los Angeles, Calif., eighteen percent to Wilbur A. Selle, Los Angeles, Calif., and ten percent to Frank F. Reed, Pasadena, Calif.
Filed June 29, 1964, Ser. No. 378,665
7 Claims. (Cl. 128—40)



7. A self-pressure cycling chamber for limbs to improve blood circulation, comprising:
(a) a chamber for containing liquid under pressure,
(b) said chamber having an opening adapted to receive a limb; and
(c) a piston slidingly and sealingly engaged in said chamber opening,
(d) said piston having an opening adapted to receive said limb therethrough for extending into said chamber and being flexible around its opening to fit snugly on the limb to form a seal therearound,
(e) said piston being slidably movable relative to said chamber and said liquid by the force of reciprocal movement of said limb thereon toward and away from said chamber to vary the pressure of all the liquid in said chamber when it is filled and sealed.

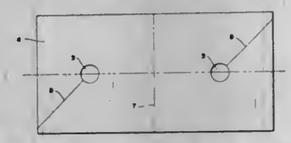
3,286,712
HYDROTHERAPY APPARATUS
Philip Roden, 1820 E. Wood Place, Milwaukee, Wis.
Filed Oct. 10, 1963, Ser. No. 315,186
5 Claims. (Cl. 128—66)



4. A portable hydrotherapy unit adapted to be positioned adjacent a tub of water comprising
a housing,
a water reservoir in said housing,
an electrically non-conductive hose having one end removably connected to the reservoir and the other end adapted to be immersed in the water in the tub,
a pump having an inlet and an outlet mounted in said housing below said reservoir with the inlet connected to said reservoir,

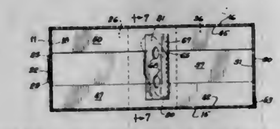
a second electrically non-conductive hose having one end connected to the outlet of the pump and the other end adapted to be immersed in the water in the tub,
said other end of said hose being selectively securable to any part of the tub, and
a motor mounted in said housing below and operatively connected to said pump,
said reservoir, pump and motor being axially aligned in a vertical relation.

3,286,713
SURGICAL DRESSING
Leonard D. Kurtz, Woodmere, N.Y., and Robert H. Smith, Bridgeport, Conn., assignors to Deknatel, Inc.
Filed Feb. 23, 1965, Ser. No. 434,225
7 Claims. (Cl. 128—156)



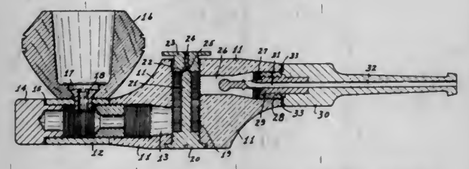
1. A surgical dressing made of a sheet of absorbent material having a longitudinal axis, said material defining two apertures spaced apart and located along said axis, said material having two slits located on opposite sides of said axis and extending from each aperture to the respective outermost edge of the end of said sheet, said slits being at an angle to said axis.

3,286,714
CONTAINER FOR RECORDS
John E. Fellowes, Wheaton, Ill., assignor to Bankers Box Company, Franklin Park, Ill., a corporation of Illinois
Filed Apr. 30, 1962, Ser. No. 190,930
5 Claims. (Cl. 129—31)



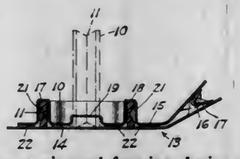
1. A storage box comprising an elongated rectilinear container formed from a blank of foldable stiff paperboard material, said container including a floor, a front panel, a rear panel, side panels and elongated rail flaps integral with and connected to said container along fold lines inside said container, said rail flaps having smooth uninterrupted upper and lower surfaces, said rail flaps further overlying and being disposed closely adjacent to said floor along substantially the entire length of said floor, said rail flaps having unbroken free edges facing one another and defining between those free edges a slot-like space along substantially the entire length of said container, and a follower member formed from a blank of foldable stiff paperboard material and disposed transversely of and movable longitudinally of said container, said follower member having a paper supporting panel, a rail-engaging panel, a floor engaging panel and means for maintaining said rail-engaging panel and said paper supporting panel in a predetermined angular relationship, said floor-engaging panel comprising a central portion having a transverse dimension with respect to the container which is less than the width of said slot-like space and ear-like projections integral therewith and extending transversely of the container under said rail-engaging panel and lying between said elongated rail flaps and said floor to guide said follower member in the longitudinal movement of the latter in said container, said ears being shaped to expose diagonally opposite corners of said rail-engaging panel from the floor of the container, whereby said rail-engaging panel rests upon the rail flaps while the ears are received between the rail flaps to facilitate assembly of the follower member in the container.

3,286,715
SMOKING INSTRUMENT
Ernest L. Teaford, Sr., R.R. 1, Eaton, Ohio
Filed May 4, 1964, Ser. No. 364,409
1 Claim. (Cl. 131—198)



A tobacco pipe having a vertically disposed tobacco bowl at the forward end thereof and having a smoke outlet in the lower portion thereof, a hollow stem member having a forward portion thereof extending horizontally below the bowl, supporting the same and in communication with the smoke outlet thereof, said stem member having an intermediate portion extending vertically from and in communication with the stem forward portion, said intermediate portion having an open upper end and an open lower end, said stem member having a rear portion extending horizontally from said intermediate portion and in communication therewith and a mouthpiece at the rear end of the rear stem portion, communicating therewith and extending rearwardly therefrom, the open ends of said intermediate portion having removable closures therein, one of said closures having an axial passage therein adapted to permit air to be drawn into said intermediate portion, said air passage terminating in a divergent wall portion within the intermediate portion of the stem, the second closure member including a central extension in the form of a needle having a pointed tip complementary to said divergent wall portion, means for moving said closures toward and away from each other whereby said needle tip may be seated in or unseated from said divergent wall portion to close, to open and to regulate the volume of air drawn into said intermediate portion, said divergent wall portion being located in said vertical intermediate stem portion adjacent to the location where said vertical portion communicates with a horizontally extending portion of the stem member.

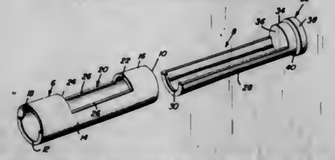
3,286,716
COMBINATION HAIR CURLING RING AND RETAINING CLIP FOR PRODUCING PIN CURLS
Arthur H. Llaros, 417 Springville Ave., Eggertsville, N.Y.
Filed Jan. 27, 1964, Ser. No. 340,399
1 Claim. (Cl. 132—40)



In combination, a pin curl forming device comprising a one-piece flexible plastic annular curl winding member having a central circumferentially extending groove in its exterior periphery adapted to receive hair wound circularly about said member, said annular member having

a rim thickness in a radial direction of less than one fourth of the inside diameter to provide an unobstructed central space and said annular member being of relatively short axial extent, and curl-retaining clip means comprising a pair of arms and resilient means urging the arms toward each other, one of said arms having a pair of offset portions for receiving diametrically opposite rim portions of said annular member, said clip means being applied across said annular member to bear against the opposed radial faces thereof with said rim portions disposed in said offsets whereby the later retain a curl wound in said groove, one of said arms being engageable with adjacent hair of the scalp to retain said annular member flatwise against the scalp.

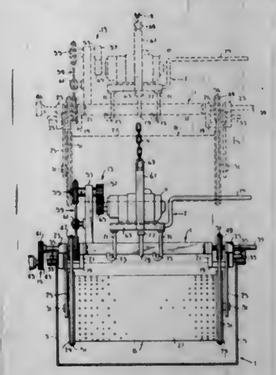
3,286,717
COIN HOLDER
Lester A. Teegardin, Rte. 4, Streator, Ill.
Filed Oct. 13, 1965, Ser. No. 495,507
6 Claims. (Cl. 133—8)



1. For use when handling and sorting coins of various denominations, a portable hand-size coin holder comprising: two component parts; namely, a readily insertable and removable coin receiving tray unit which is adapted to permit the user to conveniently stack coins therein until the tray is wholly loaded, said tray unit being of a predetermined transverse cross section and length measurement capable of holding a prescribed number of coins with requisite nicety and when full constituting self-counting means, and an open-ended barrel unit constituting a case for said tray unit, the latter being slidingly housed and normally enclosed in said case, said case being proportional in size and shape with said tray unit, said tray unit having finger-gripping means at one end and a limit stop shoulder abutting the corresponding end of said case when the tray unit is protectively stored in said case, said tray unit being semi-cylindrical in cross section to fittingly receive and adequately hold and stack the coins therein, and said case being conformingly cylindrical in cross section, the median upper half-portion of said case being provided with an elongated slot defining a sight opening, said slot being amply long that the user can determine at a glance the denomination of the coins contained in said tray without having to withdraw the tray from said case for identification purposes, one open end portion of said case being beveled to further aid in checking the denomination of the encased coins, said beveled portion being semi-circular and confined to said upper half-portion, and that end of the tray unit proximal thereto and oriented therewith being provided with a lateral semi-circular coin abutting flange, said flange being in a plane common with said bevel and limited in cross-sectional dimension, whereby to minimize the likelihood of needlessly obscuring the face of the coin which is in contact with the interior of the flange.

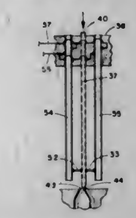
3,286,718
PLATING BARREL SUSPENSION
Leonard P. Kumpf, Affton, Mo., assignor to Lasalco Incorporated, St. Louis, Mo., a corporation of Missouri
Filed Nov. 13, 1964, Ser. No. 411,061
13 Claims. (Cl. 134—140)

1. A plating barrel suspension comprising a carrier adapted to be lowered to a position spanning two opposite walls of a tank and adapted to be lifted from said position, said carrier having means for rotatably supporting a barrel with the barrel in the tank when the carrier is lowered, a sling adapted to be suspended from a hoist, said sling and said carrier having coacting means thereon for detachably coupling the carrier and the sling, and means for driving the barrel when the carrier and sling are coupled comprising a motor carried by the sling and a dis-



engageable and detachable driving connection between the motor and the barrel comprising a driving member on the sling driven by the motor and a driven member on the carrier connected to the barrel, said driving member coming into engagement with the driven member when the sling is coupled to the carrier and said driving member disengaging from the driven member when the sling is uncoupled from the carrier.

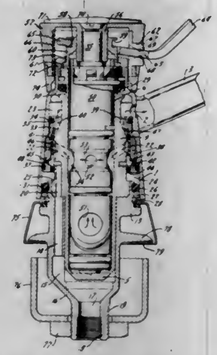
3,286,719
PIEZOELECTRIC FLUID JET TRANSFER VALVE
Richard H. Myers, Arlington, Tex., assignor to Ling-Temco-Vought, Inc., Dallas, Tex., a corporation of Delaware
Filed Dec. 30, 1963, Ser. No. 334,381
1 Claim. (Cl. 137—83)



A jet transfer valve comprising a piezo-electric bender, a conduit having an inlet at one end and a nozzle at the other, means for securely mounting one end of said bender and one end of said conduit, said conduit and said bender being constrained in movement so that their free ends opposite their respective mountings move in an arc in unison in a predetermined plane, means for connecting a fluid power stream to said inlet, a plurality of ports, said ports being disposed adjacent the path that is traveled by said nozzle during its travel in said arc, means for applying controlled amounts of electric charge to opposite faces of said bender to cause said free end to move in said predetermined arc, and said ports being disposed in said plane and aligned with said nozzle so that a different one of said ports receives fluid from said

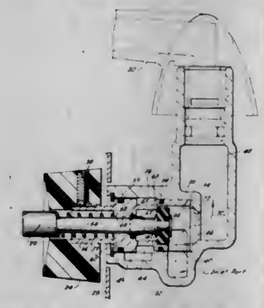
power stream for a different respective position of said nozzle as determined by the amount of charge applied to said bender.

3,286,720
DIVERTER ASSEMBLY-VACUUM TYPE
Paul A. Mongerson, Elyria, Ohio, assignor to Standard Screw Company, Bellwood, Ill., a corporation of New Jersey
Filed Mar. 16, 1964, Ser. No. 352,225
14 Claims. (Cl. 137—119)



1. In combination in a mixing faucet having a hollow valve body with a plurality of inlets and a plurality of outlets and a housing movably positioned thereabout and defining therewith a discharge chamber, a diverter movably positioned within said discharge chamber, a pressure chamber adjacent said discharge chamber, said diverter extending into said pressure chamber, a plurality of discharges from said discharge chamber and means for moving said diverter, said means including an exhaust passage leading from said pressure chamber to one of said discharge passages from said discharge chamber whereby when fluid moves through said one of said discharge passages, said diverter is bodily moved by the flow of liquid through said exhaust passage into said last mentioned discharge passage.

3,286,721
ANTISIPHON DIVERTER VALVE ASSEMBLY
Phillip Cravits, Burbank, Calif., assignor, by mesne assignments, to Croname, Incorporated, Chicago, Ill., a corporation of Illinois
Filed Aug. 8, 1963, Ser. No. 300,788
7 Claims. (Cl. 137—218)

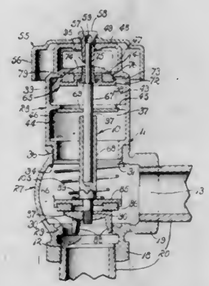


1. Antisiphon means in a device of the character described wherein the device has a diverter valve chamber, an inlet communicating with the chamber, a first outlet passage communicating with the chamber, a second outlet passage communicating with the chamber, and a diverter valve member in the chamber movable between a first position closing the first outlet passage and a second position closing the second outlet passage, said antisiphon means comprising:

means to place the first outlet passage in communication with the atmosphere in response to subatmospheric pressure in the first outlet passage; and

yielding means to urge the diverter valve member towards its first position, said yielding means being relatively weak to permit the diverter valve member to move away from its first position in response to subatmospheric pressure at the inlet thereby to place the inlet in communication with the first outlet passage.

3,286,722
VACUUM BREAKER
John A. Royer, Fresno, Calif., assignor to Buckner Industries, Inc., a corporation of California
Filed July 27, 1964, Ser. No. 385,413
7 Claims. (Cl. 137—218)



1. A vacuum breaker comprising a housing having a fluid inlet port, an outlet port, a vent to the atmosphere disposed at an elevation above the inlet port and the outlet port, a passage providing fluid communication between the ports and the vent, and an annular seat intermediate the vent and the ports, and circumscribing said passage; reciprocating means mounted in the housing for alternately successively closing the inlet port and the vent; and a buoyant member mounted in the housing elevationally below the seat and above the ports for elevational movement relative to the reciprocating means between a position engaged with the seat and closing the passage and a position downwardly retracted from the seat.

3,286,723
IRRIGATION SYSTEM
Rufus J. Purtell, Brownfield, Tex., assignor, by mesne assignments, to The J. B. Knight Co., Inc., Brownfield, Tex., a corporation of Texas
Filed July 29, 1964, Ser. No. 385,942
8 Claims. (Cl. 137—344)

1. In an agricultural irrigation system having

(a) an elongated pipe adapted to carry water under pressure,

(b) a plurality of risers on the pipe adapted to carry sprinklers for sprinkling water onto land to be watered, and

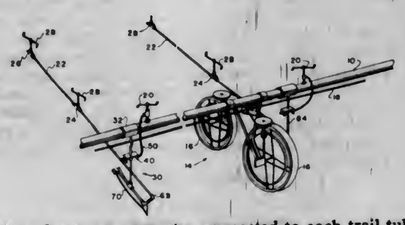
(c) a plurality of vehicles attached to the pipe movably supporting the pipe above the ground, the improvement comprising:

(d) a movable support between adjacent vehicles including,

(i) a leg pivotally connected to the pipe about an axis parallel to the pipe, and

(ii) a foot on the bottom of the leg adapted to bear against the earth and support the pipe when the system is not being moved;

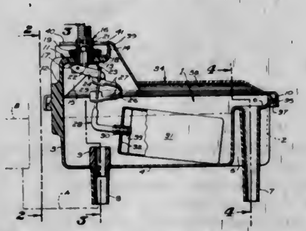
(e) a trail tube pivoted to each movable support near the bottom thereof;



(f) at least one connector connected to each trail tube and adapted to carry a sprinkler thereon; and

(g) a fluid connection from the pipe to the trail tube so that water may be sprinkled onto the land both from the sprinklers on the pipe and sprinklers on the trail tubes.

3,286,724
FLOAT CONTROL MEANS
Frank L. Sawyer, Canoga Park, Calif., assignor to Robert Manufacturing Company, Los Angeles, Calif., a corporation of California
Filed June 12, 1964, Ser. No. 374,665
3 Claims. (Cl. 137—426)



1. A float control means, comprising:

(a) a float housing having a raised bracket at one end;

(b) a cover for said housing having a raised portion at one end partially covering said bracket;

(c) a float valve body having an inlet at its upper end and an outlet at its lower end, and a valve element controlling flow from said inlet;

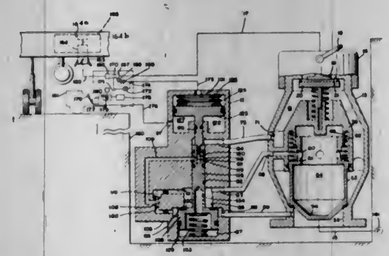
(d) a valve-actuating lever pivotally attached to said valve body and engageable with said valve element, the extended end of said lever being folded to form an integral U-shaped spring clip, having a pair of essentially aligned slots;

(e) a float arm having a portion frictionally slidable in said slots thereby to effect vertical adjustment of said float arm;

(f) and a float carried by said arm.

3,286,725
HYDRANT PRESSURE REGULATOR
James S. Elbogen, Encino, William Seller, Jr., Los Angeles, and Ralph H. Lebow, Pacific Palisades, Calif., assignors to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 2, 1961, Ser. No. 86,740
33 Claims. (Cl. 137—484.2)

1. A pressure regulator comprising a housing having an inlet for high pressure fluid and a main valve for controlling flow of fluid from said inlet through said housing, a pressure chamber in said housing for receiving fluid to apply a closing pressure to said main valve, conduit means including a restricted orifice connecting said inlet to said chamber, a first passage for exhausting fluid from said chamber, a first servo valve in said first passage, means for exerting a predetermined fluid pressure directly upon said first servo valve tending to open said first servo valve, means for directing fluid downstream of said main valve to said first servo valve in opposition to said predetermined fluid pressure whereby said first servo valve will be opened when the pressure of the downstream fluid is less than the predetermined pressure and will be closed when the pressure of the downstream fluid is greater than the

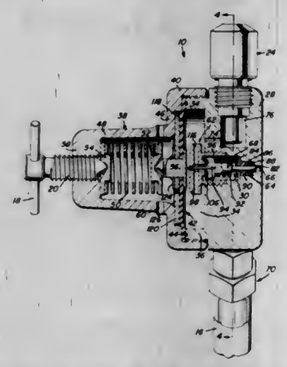


predetermined pressure, said first servo valve when open serving to exhaust fluid from said chamber whereby high pressure fluid in said inlet opens said main valve and serving when closed to trap fluid in said chamber whereby high pressure fluid gaining access to said chamber through said orifice will close said main valve, a second passage including portions of said conduit means connecting said inlet to said chamber, a second servo valve for controlling flow of fluid through said second passage, and said means further responsive to downstream pressure greater than said predetermined pressure for opening said second servo valve to permit additional flow of high pressure fluid from said inlet to said chamber for closing said main valve.

3,286,726
GAS REGULATOR
Billy Lynn Guy, Lexington, Ky., assignor to Kim Products, Inc., Burgin, Ky., a corporation of Kentucky
Filed Apr. 20, 1964, Ser. No. 361,025
7 Claims. (Cl. 137—505.18)

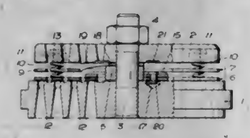
1. A pressure regulator valve comprising, a valve body having an inlet chamber and an outlet chamber, nozzle means fixedly mounted in said body for establishing fluid communication between said inlet chamber and said outlet chamber, a valve member movably mounted in said inlet chamber and having a valve face engageable with said nozzle means, resilient valve seating means mounted in said valve face between portions thereof respectively exposed to fluid pressure in the inlet and outlet chambers, said nozzle means having a relatively hard valve engaging surface exclusively engaged with the resilient seating means for absorbing shock and preventing extrusion thereof when said portions of the valve face are subjected to differential pressures of the inlet and outlet chamber, said resilient seating means comprising, an annular insert having an exposed surface dimensionally exceeding the relatively hard valve engaging surface of the nozzle means by controlled radial clearances for preventing extrusion of the insert by pressure forces respectively exerted by fluid in the inlet and outlet chambers.

2. The combination of claim 1 including polished rod means fixed to said valve member and exposed to atmospheric pressure for regulating the bias imposed thereon,



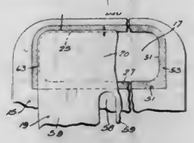
and vibration damping seal means mounted in said valve body for wiping engagement with the polished rod means for sealing the inlet chamber.

3,286,727
MULTIPLE RING VALVE
Theodor Karl Kehler, Vienna, Austria, assignor to ENFO Entwicklungs- und Forschungs-Aktiengesellschaft, Vaduz, Liechtenstein
Filed May 1, 1964, Ser. No. 364,220
Claims priority, application Austria, May 8, 1963, A 3,729/63
6 Claims. (Cl. 137—516.13)



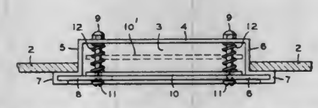
1. A multiple ring valve, in particular for high-speed, high-pressure compressors, comprising a valve seat and a valve guard in spaced relation to said valve seat, concentrical ports in the valve seat and ports in the valve guard, at least one spacer located between the valve seat and the valve guard determining the distance between the valve seat and the valve guard, a valve plate consisting of concentrical rings and radial webs interconnecting the said rings, the said valve plate covering the ports in the valve seat, and a guide plate of about the same cross-section as the valve plate for the frictionless guidance of the valve plate, both said plates being located between the valve seat and the valve guard, the innermost ring of the valve plate being ripped open by obliquely extending slots to form flexible arms connected with the remaining rings of the valve plate by means of radial webs, the said guide plate comprising a hub locked in the valve axis and the flexible guide arms cut out of the said guide plate, one part of the said guide arms being connected with said hub and the other part thereof being connected with the flexible arms of the valve plate, the flexible arms of the valve plate covering the innermost port of the valve seat, said port being located close to the said spacer and surrounding same, the said spacer being cut out in the area of the connections between the flexible arms of the valve plate and the guide arms of the guide plate, so as to provide space for the connections between the two plates.

3,286,728
SLOT TYPE REED VALVE
Donald K. Stephenson, Wauwatosa, Wis., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed Mar. 27, 1963, Ser. No. 268,362
2 Claims. (Cl. 137—525.3)



1. A reed valve including a reed plate having therein means defining a port and a seat extending from and surrounding said port, a reed member subject to curvature upon port closing operation and including a port closing portion, and means securing said reed member to said reed plate for movement of said port closing portion relative to said reed plate to and from a position of engagement with said seat, said reed member overlapping said seat by an amount less than about .045 inch along a portion of said seat which is most remote from said reed member securing means, said port being elongated and including a rectilinear edge at the intersection of said port and said remote portion of said seat, said edge extending lengthwise of said port, and said seat having end portions including resilient means surrounding at least a portion of said port and permitting displacement of the surface of said end portions.

3,286,729
STORM DOOR RELIEF VALVE
Joseph C. Mehaffy, 201 Smith Ave., Kirkwood, Mo.
Filed Apr. 29, 1963, Ser. No. 276,534
2 Claims. (Cl. 137—543.15)

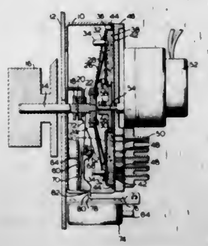


1. In a storm door relief valve for the type described, a top wall, a front wall and two side walls integral with said top wall, a back wall flange integral with said top wall, said front wall and said side walls, a back wall provided with a central opening, said back wall held parallel to said front wall against said flange by at least three mounting bolts which extend through said back wall and said front wall, a valve plate covering said central opening, said valve plate being reciprocally guided on said mounting bolts between said front wall and said back wall, said back wall, valve plate and mounting bolts all being removably mounted relative to the front wall and to each other, and spring means to hold said valve plate reciprocably against said back wall.

3,286,730
PNEUMATIC PROGRAMMER
Roland D. Beck and Ellsworth F. Smock, Anaheim, and Roy W. Houser, Orange, Calif., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Continuation of application Ser. No. 153,300, Nov. 20, 1961. This application Feb. 27, 1964, Ser. No. 347,882
21 Claims. (Cl. 137—550)

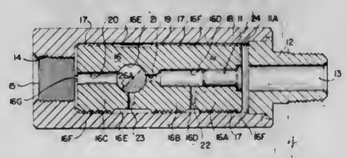
1. In combination, a reading head having a reading surface interrupted by a plurality of passage means, a flexible reading means having opposed surface means, said reading means having one surface means disposed against

said reading surface, means for causing relative movement between said reading means and said reading head, said reading means having a channel means in said one surface means thereof for interconnecting two of said passage means together, porous compressible means disposed against substantially the entire other surface means



of said reading means that is aligned with said reading surface, and means for causing said porous compressible means to urge substantially the entire one surface means of said reading means that is aligned with said reading surface into sealing engagement with said reading surface.

3,286,731
ADJUSTABLE DAMPENING DEVICE
Theodore S. Zajac, Parma, Ohio, assignor to The Perry-Fay Company, a corporation of Ohio
Filed Apr. 10, 1964, Ser. No. 358,737
16 Claims. (Cl. 137—599)



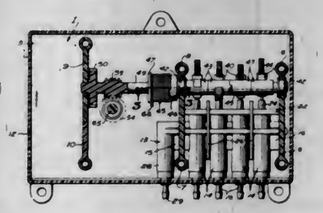
1. A device for dampening shock in the fluid of a fluid line comprising the combination of a body member having a bore therein and an inlet and outlet communicating with said bore, a core member mounted in said bore in axial alignment therewith and between said inlet and outlet, the external wall of said core member and the internal wall of said bore having a spirally disposed fluid path extending therealong defined by a threaded surface formed on one of said walls and an unthreaded surface on the other of said walls, the crest of the threads on the said threaded surface engaging the said unthreaded surface, said fluid path being divided by a groove in the core member at a location intermediate its ends into a plurality of sections along said core member, by-pass means communicating with said groove and extending through said core member from said fluid path intermediate said inlet and outlet, said by-pass means providing lesser resistance to flow of fluid therethrough than through said fluid path, adjustable gate means positioned athwart said by-pass means for selectively controlling communication through said by-pass means to select the sections to be by-passed through said by-pass means from said fluid path from said inlet to said outlet, and actuating means extending into the body member and core member for adjusting the operative position of said gate means from the exterior of said body member.

3,286,732
FLOW CONTROL DAMPER
Raymond L. Alley, Toledo, Ohio, assignor to The American Warming & Ventilating, Inc., Toledo, Ohio, a corporation of Ohio
Filed Feb. 4, 1963, Ser. No. 255,794
3 Claims. (Cl. 137—601)



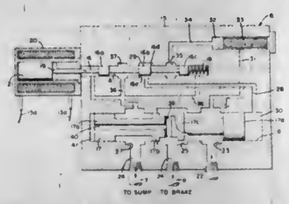
1. A flow control damper including frame members, a plurality of damper blades rotatably supported by two opposed frame members, means for rotating said blades between open and closed positions with both edges of each of said blades defining arcuate paths, said blades being pivoted about axes intermediate the longitudinal edges of the blades, a plurality of curved baffles extending between the opposed frame members, said baffles being located adjacent the arcuate paths of said blades with at least portions of the baffles being laterally spaced from portions of said paths, and means for controlling the blade rotating means in response to a characteristic of fluid flowing through said damper to maintain said characteristic constant.

3,286,733
IRRIGATION CONTROLLER
Edwin J. Hunter, Riverside, Calif., assignor to Moist O'Matic, Inc., Riverside, Calif., a corporation of Minnesota
Filed June 8, 1964, Ser. No. 373,316
5 Claims. (Cl. 137—624.2)



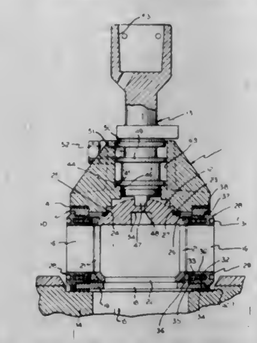
4. A multiple pilot valve for irrigation controllers, comprising:
(a) a pilot valve body formed of yieldable plastic material and including a set of parallel valve tubes joined by transverse webs;
(b) a cap strip formed of yieldable plastic material and including a set of sealing cups and means permitting limited variation in spacing between said sealing cups thereby to permit accommodation of said sealing cups in said valve tubes;
(c) each valve tube including a valve chamber closed at one end by a sealing cup, a valve seat at the other end of said valve chamber and a flow passage continuing from said valve seat;
(d) said valve body including a duct extending through said webs and joining said valve chambers;
(e) and a set of valve elements slidable in said valve chambers and including stems extending through said cap strip.

3,286,734
THREE WAY PRESSURE CONTROL SERVO VALVE
Everett W. Hartshorne, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Nov. 16, 1964, Ser. No. 411,515
8 Claims. (Cl. 137—625.64)



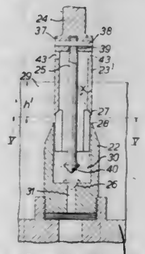
1. A pressure control valve including
a housing,
a brake line, a pressure line, and a sump line connected to the housing,
a power valve means in the housing having a central null position isolating all lines and movable in one direction to a pressure position connecting the pressure and brake lines, and movable in the opposite direction to a discharge position to connect the brake and sump lines,
a first pressure chamber at one end of the power valve means and connected to the pressure line and tending to move the power valve means to pressure position,
a second pressure chamber at the other end of the power valve means and connected to the brake line and tending to move the power valve means to discharge position,
pilot valve means in the housing connected to the first pressure chamber and movable from a closed position holding pressure in the first chamber to an open position discharging pressure from the first chamber to the sump line,
spring means normally closing the pilot valve, and
solenoid means for opening the pilot valve.

3,286,735
UNLOADING VALVE
John J. Yindrock, Des Plaines, Ill., assignor to Vapor Corporation, Chicago, Ill., a corporation of Delaware
Filed Feb. 10, 1964, Ser. No. 343,515
5 Claims. (Cl. 137—625.41)



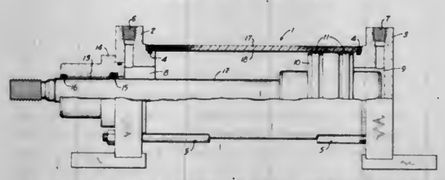
1. A tank car unloading valve comprising, an upstanding substantially cylindrical body having a pair of diametrically opposed and axially aligned inlets in the side wall adapted to be in communication with the contents of a tank car and an outlet in the bottom wall in communication with the exterior of the tank car, said outlet axis extending perpendicular to the axis of the inlets, a cover secured on the body having a bore therethrough, a ball valve member rotatably mounted in said body and having a pair of diametrically opposed inlet openings in the side wall aligning with the body inlets when the valve is in open position and an outlet opening in the bottom that is constantly in communication with the body outlet, a ball stem extending through said cover bore to the outside of the valve and being coupled to the ball valve member for driving same between open and closed positions, and an emergency wrench-receiving socket on said ball valve member accessible through the outlet opening and body outlet.

3,286,736
VALVE FOR USE WITH VISCOUS LIQUIDS
Andre François Joachim Guillermic, Paris, France, assignor to The British Petroleum Company Limited, London, E.C. 2, England, a British joint-stock corporation
Filed June 10, 1963, Ser. No. 286,636
Claims priority, application France, June 25, 1962, 901,856
9 Claims. (Cl. 137—628)



1. A valve having a low load loss in relation to motive pressure for selectively regulating and stopping the flow of viscous liquids, the valve including two members arranged so as to be movable relative to one another to open and close a passage through the valve, the two members having bevelled co-operating edges such that when the members are in an open position the passage so formed has a periphery completely comprised of bevelled edges.

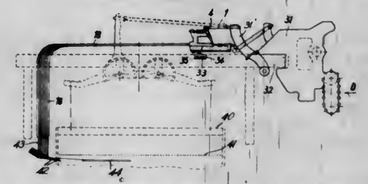
3,286,737
WEAR-RESISTANT ARTICLE AND METHOD OF MAKING THE SAME
Mark E. Kelly, Jr., Milwaukee, Wis., assignor to Dowsmith Inc., Milwaukee, Wis., a corporation of Delaware
Filed Aug. 1, 1963, Ser. No. 299,248
6 Claims. (Cl. 138—144)



1. A tubular article having wear resistant properties, comprising an outer cylindrical laminated member formed of circumferentially disposed substantially continuous filaments of a reinforcing material bonded together with a cured thermosetting resin, and an inner member bonded to the inner surface of said outer laminated member and formed of a thermosetting resin containing finely divided particles of a lubricating material

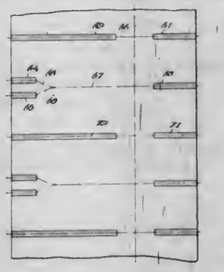
selected from the group consisting of molybdenum disulfide, graphite, tungsten disulfide, tellurium disulfide, selenium disulfide, tetanium disulfide, and mixtures thereof, said lubricating material comprising from 2 to 50% by weight of the inner member.

3,286,738
WEFT THREAD MOTION APPLIED TO WARP THREAD DOBBIES IN SHUTTLELESS LOOMS
Ramón Balaguer Golobart, Calle Caspe 86, Barcelona, Spain
Filed Sept. 10, 1964, Ser. No. 395,524
Claims priority, application Spain, Sept. 11, 1963, 291,729
5 Claims. (Cl. 139—122)



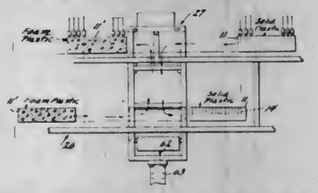
1. A weft thread selecting motion for shuttleless looms driven by a dobby mechanism, said selecting motion comprising a body, weft thread presenting and selecting elements, cables actuating said elements, swing levers supported and articulated in said body for moving said cables in one direction to place said selecting elements in operative position, first spring means actuating said cables in the opposite direction to place them in their rest position, second spring means adapted to return said swing levers to their rest position after each presentation of a weft thread, and oscillating levers operatively connecting said dobby mechanism with said swing levers.

3,286,739
PROCESS OF MANUFACTURING A TEXTILE FABRIC FOR POCKET MATERIALS HAVING NO STITCHED SEAM
Masaji Itakura, 3 Ekoda, 3-chome, Nakano-ku, Tokyo, Japan
Filed Oct. 25, 1962, Ser. No. 232,948
1 Claim. (Cl. 139—389)



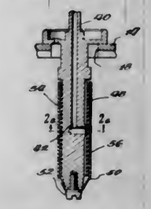
A method of making seamless pockets for attachment to garments, said method comprising the steps of providing a web of woven fabric woven with a repeat pattern of wide areas of two-layer material united with each other along the longitudinal edges of the web and extending across the width of the web alternating with narrow areas of single-layer material extending transversely of the length of the web, said narrow areas being formed of single strips extending across the full width of the web but being interrupted intermediate the longitudinal adges of the web by a portion of said two-layer material alternating with a combination of a single strip made of single-layer material extending partly across the width of the web from one longitudinal edge thereof and a pair of strips made of single-layer material and extending partly across the web from the other longitudinal edge thereof, the inner ends of said single strip and said pair of strips in said combination being separated from each other by a portion of two-layer material, cutting the web crosswise along each interrupted single strip intermediate the longitudinal edges thereof and also along the single strip and the pair of strips in said combination of strips intermediate the longitudinal edges of the strips in said combinations, and further cutting the web lengthwise intermediate the inner ends of said interrupted single strips and also intermediate the inner ends of the strips in said combination of strips.

3,286,740
METHOD AND APPARATUS FOR TRANSFERRING ELECTRICAL COMPONENTS HAVING LEADS FROM ONE WORK HOLDER TO ANOTHER WORK HOLDER
Francis J. Fuchs, Jr., Princeton Junction, N.J., and William R. Wyatt, Greenville, S.C., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Feb. 25, 1964, Ser. No. 347,201
12 Claims. (Cl. 140—147)



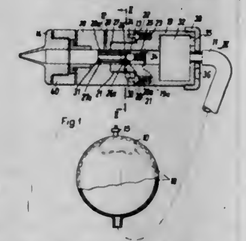
1. A method of removing from a work holder a plurality of electrical components having heads and leads extending therefrom in a common direction, which comprises:
supporting the work holder,
clamping the heads of the components to prevent movement thereof,
advancing the work holder relative to the clamped heads to separate one from the other, and
simultaneously straightening the leads by moving a comb along the leads.

3,286,741
FUEL VALVE
Allen B. Gellman, Glencoe, Ill., assignor to Elgin American International, Inc., a corporation of Illinois
Filed June 24, 1963, Ser. No. 289,994
13 Claims. (Cl. 141—18)



9. In a filler valve assembly for the fuel reservoir of a liquefied gas fuel device that is subjected to use in an environment that is subject to temperature variants and having means defining a fuel passageway opening through a valve seat into said reservoir together with a valve member movable toward and away from said valve seat, said assembly including fluid pressure responsive means for urging said valve member toward said valve seat with a force proportional to the pressure of fuel in said reservoir, the improvement comprising: thermal responsive means in said reservoir for urging said valve member toward said seat with a force inversely proportional to the temperature of said reservoir, whereby when the pressure of fuel in said reservoir decreases in response to a decrease in environmental temperature, the force urging said valve member toward said valve seat applied by said thermal responsive means will increase to insure maintenance of said valve member in a sealing relation with said valve seat.

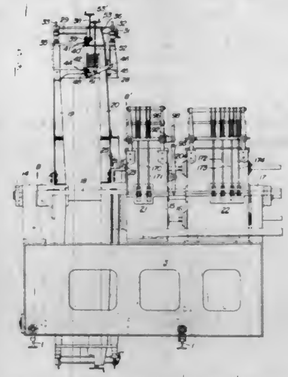
3,286,742
APPARATUS FOR DISPENSING LIQUIDS
Günther Doll, Stuttgart-Zuffenhausen, Germany, assignor to AS-Motor G.m.b.H., Esslingen, Germany
Filed Oct. 9, 1963, Ser. No. 319,630
Claims priority, application Germany, Oct. 15, 1962, A 41,390
13 Claims. (Cl. 141—27)



1. An apparatus for dispensing liquids, which comprises: a container for receiving and releasing fluid, pressure storage means arranged within said container for exerting pressure on fluid in said container, conduit means having one end connected to said container and having its other end adapted selectively to be connected to a nozzle and to the mouth of a fluid supply conduit, and a combined quantity control-check valve interposed in said conduit means and provided with passage means for conveying fluid in either direction from said one end to said other end of said conduit means and vice versa to thereby permit charging said container with and discharging fluid from said container through one and the same conduit means, said valve having two sections respectively confining parts of said passage means and being movable relative to each other, control means arranged in a portion of said passage means and normally being effective to permit flow of fluid only in the direction from said other end of said conduit means to said one end thereof, and means associated with at least one of said sections and operable in response to a relative movement of said sections with regard to each other to establish fluid connection between portions in said passage means ahead of and behind said control means to thereby permit fluid flow from said one end to said other end of said conduit means.

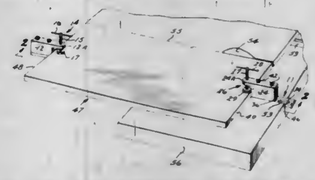
3,286,743
AUTOMATIC CONTINUOUS-CUTTING ROTARY LOG FEEDER FOR BAND-SAWING MILLS
Suekichi Yumino, 2 Nishi-6-chome, Kita-8-jo, Sapporo-shi, Japan
Filed Dec. 4, 1963, Ser. No. 327,969
Claims priority, application Japan, Dec. 8, 1962, 37/55,621
5 Claims. (Cl. 143—105)

1. A band-sawing mill having a band saw and a lumber feeding means which means comprises a horizontally disposed generally circular rotary chuck wheel having a plurality of chuck means provided circularly on the wheel for holding lumber on the periphery of the chuck wheel



and a driving means for driving said chuck wheel spirally so as to feed said lumber held in said chucks successively to the band saw.

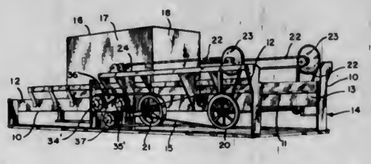
3,286,744
POWER SAW GUIDE APPARATUS
Cash G. Stall and Beth A. Stall, both of 2400 Manhattan Ave., Manhattan Beach, Calif.
Filed Aug. 3, 1964, Ser. No. 386,936
10 Claims. (Cl. 143—168)



1. Power saw guide apparatus comprising: a longitudinal guide bar having a bottom portion having a cross-sectional shape similar to a longitudinal slot formed in the upper surface of a saw table parallel to and laterally offset from a power saw blade and adapted to be slidably inserted into and received by said longitudinal slot for manually controlled movement along the length thereof, said longitudinal guide bar being provided with a clamp mounting member having a vertically spaced portion adjacent to one end thereof and provided with a controllably vertically adjustable clamp member adapted for controllably releasably clamping one edge portion of a workpiece in fixed relationship with respect to said clamp member and with respect to an underlying portion of said longitudinal guide bar, said longitudinal guide bar also being provided with a clamp mounting member having a vertically spaced portion adjacent to an opposite end thereof and provided with a controllably vertically adjustable clamp member adapted for controllably releasably clamping an opposite edge portion of said workpiece in a fixed relationship with respect to said clamp member and with respect to an underlying portion of said longitudinal guide bar, at least one of said clamp mounting members being provided with controllably lockable and unlockable slidable engagement coupling means effectively coupling same with respect to the corresponding portion of said longitudinal guide bar for controllable unlocking thereof and for relative longitudinal slidable movement of said clamp mounting member along said longitudinal guide bar and for subsequent locking of said slidable engagement

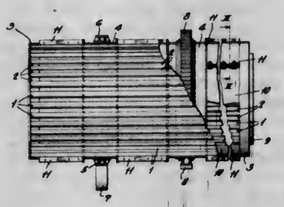
coupling means in a selected relative position thereof with respect to said longitudinal guide bar for facilitating engagement of the corresponding one of said clamp members with the corresponding edge of said workpiece irrespective of the width of said workpiece between said longitudinally spaced clamp members.

3,286,745
MACHINES FOR PRODUCING WOOD SHAVINGS
Thomas F. Meis, P.O. Box 27, Mondovi, Wis.
Filed Aug. 14, 1964, Ser. No. 389,731
3 Claims. (Cl. 144—178)



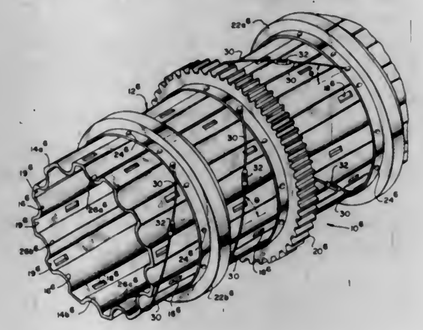
1. A machine for producing wood shavings comprising: an elongated table having a cutter opening therein; an open bottom wood log hopper mounted for reciprocating movement over and beyond said cutter opening; a pair of rotary cutters supported for rotation below said table opening and having portions projecting therethrough and slightly above said table; means for rotating said cutters in opposite directions; and means for reciprocating said hopper to cause it to completely traverse the cutter opening and both cutters in each direction of reciprocation of the hopper, the full reciprocation of the hopper and the directions of rotation of the cutters causing the lowermost logs in the hopper to be substantially evenly shaved in each direction of reciprocation of the hopper only by the cutter rotating in the same direction as the table is being then reciprocated from the then leading ends of the logs inwardly.

3,286,746
BARK-PEELING APPARATUS
Leif Eriksson, Honefoss, Norway, assignor to A/S Myrens Verksted, Oslo, Norway
Filed June 18, 1964, Ser. No. 376,050
Claims priority, application Norway, June 22, 1963, 149,120
4 Claims. (Cl. 144—208)



1. A log barking device comprising a series of open-ended rotatable drum sections having discharge openings for discharge of bark at the periphery at least one of said drum sections having end openings of smaller diameter than the diameter of the drum and releasable sealing means for sealing the discharge openings in at least the drum section formed with end openings of reduced diameter.

3,286,747
BARKING DRUM
Henri A. Delcellier, Beaurepaire, Quebec, Canada, assignor to Canadian Ingersoll-Rand Co., Ltd., Montreal, Quebec, Canada, a corporation of Canada
Filed July 2, 1964, Ser. No. 379,837
6 Claims. (Cl. 144—208)



1. In a barking drum for removing bark from cut logs, a drum body comprising:

a plurality of opposing plate sections cooperating to form the outer walls of said drum body and to define a cavity for receiving said cut logs;

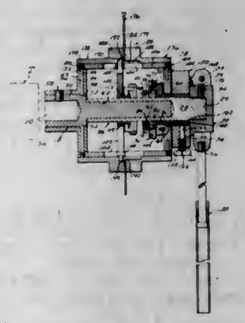
the opposite sides of each of said plate sections each extending adjacent a side of another of said plate sections and being secured to said adjacent side of said another of said plate sections;

said plate sections being deformed to include a plurality of integral, inwardly extending protrusions projecting into said cavity for agitating cut logs therein; and

means connecting said plate sections to retain the latter in said cooperating relationship wherein they define said cavity;

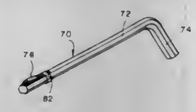
said connecting means comprising a plurality of spaced, rim members extending peripherally around said cavity and joining said plate sections into a unitary construction.

3,286,748
MULTI-PURPOSE SAW ATTACHMENT
Ralph F. Giusti, 1705 8th Ave., Yuma, Ariz.
Filed Oct. 30, 1964, Ser. No. 407,807
10 Claims. (Cl. 144—238)



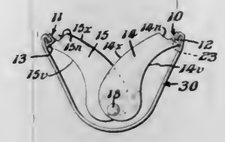
1. An attachment of the character described, comprising a drive shaft adapted to be fixed on a power shaft, a tubular static shaft engaged on the drive shaft, torque reaction eliminating means connected to the static shaft, a hollow cylindrical carrier hub having inner and outer heads, the inner head being circumposed on and fixed to the drive shaft, the outer head being formed with a central opening surrounding and larger in diameter than the static shaft, a cam plate adjuster sleeve movable circumposed on the static shaft and extending through the opening of the outer carrier hub head, a cam plate adjusting knob threaded on the adjuster sleeve between the outer carrier hub head and said torque reaction means, means connecting the adjuster sleeve and the adjusting knob to rotate together, a releasable thumb screw traversing the knob and securably engaging the adjuster sleeve, a lateral arm on the adjuster sleeve inwardly of the outer carrier hub head, said arm having an inwardly extending cam follower pin, a tubular cylindrical blade carrier slidably circumposed on the carrier hub, a disc saw blade surrounding and fixed to the blade carrier and positioned in a plane normal to the axis of the carrier hub, a cam plate formed with a radially elongated opening receiving the static shaft, said cam plate being formed in its outer side with a socket receiving the said cam follower pin, a bracket surrounding and secured to the static shaft and engaged with the inner side of the cam plate, the inner side of the cam plate being formed with a circular cam groove, means eccentrically pivoting the cam plate to the bracket, cam shoe means engaged in the cam groove, bell crank means pivoted on the sidewall of the carrier hub, said bell crank means being operatively connected to said cam shoe means, slide means circumposed on the static shaft to which the bell crank means is operatively connected, the sidewall of the carrier hub being formed with opposed longitudinal slots, said slide having fixed radial arms extending through the slots and operatively engaged with the blade carrier.

3,286,749
FASTENER TOOL WITH FASTENER ENGAGING MEANS
Howard K. Learned, 3825 N. Hillside, Wichita, Kans.
Filed Aug. 28, 1964, Ser. No. 393,487
1 Claim. (Cl. 145—50)



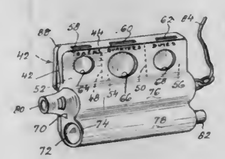
In a fastener tool of the class for non-rotatably interlocking with and for turning threaded fasteners about an axis upon axial meshing of the tool with such fasteners, an improved means for opposing inadvertent dislodgment of the fastener from interlocking relationship with the tool; said means comprising said tool having a surface adapted to face toward a portion of a fastener axially meshed with the tool, said surface having an extent approximately parallel to the axis that is continuous and free of any abrupt angularities along such continuous extent, an elongated spring having a length generally corresponding to said extent of the surface, said spring being disposed along said extent and being adjacent one end thereof rigidly secured to the tool and seated flush against the surface with the spring then extending therefrom along and being internally prestressed resiliently against and in continuous engagement with said extent of the surface, then smoothly curving away from the surface, and thence smoothly curving with relatively shorter radius of curvature towards said extent of the surface to terminate in an end resiliently biased against and in sliding engagement with said extent of the surface.

3,286,750
SPECTACLE CASE AND LIKE CONTAINER
Joseph A. Hueber and Edward K. Hueber, Penn Valley, Pa., assignors to Kelley & Hueber, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed Oct. 21, 1965, Ser. No. 499,343
7 Claims. (Cl. 150—29)



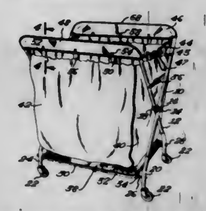
1. A spectacle case and the like comprising a rigid frame movable between open and closed positions, said frame comprising a pair of inverted U-members each having an upper rigid bar disposed in parallel relation to the bar of the other U-member, each bar having a lever arm depending from each end portion thereof, the adjacent lever arms at each end lying in adjacent planes generally normal to the plane of the bars; pivot means pivotally interconnecting the adjacent arms at their lower end portions; and a flexible bag material having its opposite ends secured only to the upper rigid bars and looped freely about the depending lever arms; the outer vertical edge of each lever arm being convex arcuate and the two adjacent arms at each end forming substantially complete end closures for the otherwise generally open-ended oval loop formed by the bag material when the case is in closed condition; the inner edge of each lever arm above the pivot means being concave arcuate for allowing the adjacent arms at each end to be pressed in opposing directions until the inner concave edge of each lever arm comes into engagement with the loop of flexible bag material, thereby to spread apart the upper rigid bars.

3,286,751
PROTECTIVE ASSEMBLY OF DEVICES FOR OFFICE, HOME, STREET AND SUBWAY
Harry S. Dishart, 5701 Fort Hamilton Parkway, Brooklyn, N.Y.
Filed Sept. 24, 1965, Ser. No. 489,904
8 Claims. (Cl. 150—35)



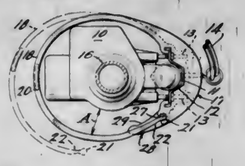
1. A combined utility and emergency case comprising a plate-like body with a flange extending rearwardly from the top thereof, flanges extending rearwardly from the sides thereof, spaced vertical flanges extending rearwardly forming compartments rearwardly of the plate-like body at the top portion of the body, the top flange having slots of various sizes leading to said compartments for the reception of coins of various sizes, said plate-like body having round openings leading to said compartments, said openings serving as windows, and a coin purse secured to the rear of the plate-like body and serving as a closure for said compartments.

3,286,752
HAMPER
Winsor Gould Duryee, Jr., Delano, Minn., assignor to Mobilcraft Manufacturing, Incorporated, Delano, Minn., a corporation of Minnesota
Filed Aug. 13, 1964, Ser. No. 389,361
7 Claims. (Cl. 150—49)



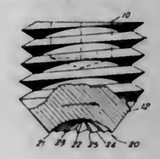
1. A waste collecting cart of the type having a folding metal frame having two main inverted U-frame members that are pivoted together intermediate of the length of their legs whereby they may be spread apart to define a generally six-sided polyhedron onto which a bag made of pliable material may be secured and held in an open position for filling; the improvement comprising, a bag having an open top adjacent the frame top, a pocket secured to each side of said bag directly adjacent said inverted U-frame members, said pockets embracing the upper ends of said U-frame members, means for preventing said pockets from becoming accidentally disengaged from said inverted U-frame members, rod members secured to the legs of each inverted U-frame member serving to brace the legs, a platform shelf pivoted to one of said rod members and legs secured to said platform opposite said pivoted side for engaging the other of said rods to both brace said U-frame members in a direction opposite to the brace rods and also to serve as a platform as a support for the bottom of said bag.

3,286,753
PROTECTIVE ANTENNA COVER
James P. Kimmett, Delphos, Ohio, assignor to Kimcraft, Inc., Delphos, Ohio, a corporation of Ohio
Filed Jan. 12, 1966, Ser. No. 520,159
8 Claims. (Cl. 150—52)



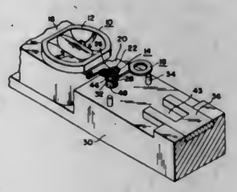
1. A removable cover for an antenna rotor housing secured to a support pole and having a plurality of spaced apart projecting members extending from one side thereof, said cover comprising an elongate web of flexible material having an inner and an outer major surface, a plurality of spaced apart recesses in said inner surface extending into said web and adapted to receive said projecting members of said rotor housing, at least one first attachment member in the outer surface of said web at one end thereof and at least one second attachment member extending from the other end of said web and adapted to join with said first attachment member, said first and second attachment members spaced apart a distance substantially equal to the peripheral distance around said rotor housing and support pole whereby, when said projecting members are received by said recesses with said inner major surface of said web adjacent said rotor housing, said web may be wrapped around said housing and support pole and said attachment members joined to one another to hold said cover tightly around the periphery of said rotor housing and support pole.

3,286,754
SELF-LOCKING SET SCREW
Paul W. Klooz, West Hartford, and Herman G. Muenchinger, Chaplin, Conn., assignors to Veeder-Root, Incorporated, Hartford, Conn., a corporation of Connecticut
Filed Sept. 11, 1964, Ser. No. 395,727
4 Claims. (Cl. 151—37)



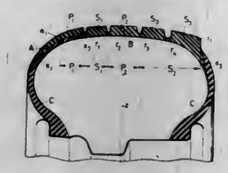
1. A self-locking screw having external threads on the outer surface adapted to be threaded into a hole and to engage a workpiece comprising: a work-engaging end having a countersunk recess of a generally curvilinear contour axially disposed therein; a plurality of teeth in spiral form etxending radially from the center of said set screw on the internal surface of said recess in the same direction as said external thread, said teeth being generally triangular in shape and having a shallow leading angle and a relatively steep locking angle and terminating at the edge of said recess concentric with the longitudinal axis of the screw so that the material of the workpiece is deflected and flowed radially outwardly upon engagement therewith by the point of said screw so that said teeth will engage the material to prevent loosening of said set screw, said teeth having a spacing and depth in relation to the external threads such that when the external threads are turned through an arc equal to the arc subtended by two adjacent teeth the axial movement of the screw will not exceed 10% of the tooth depth.

3,286,755
ARRANGEMENT FOR RETAINING A FASTENER ON A WIRING OR OTHER DEVICE
Frank J. Petrasy, Bridgeport, Conn., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Original application Aug. 15, 1962, Ser. No. 217,197, now Patent No. 3,189,058, dated June 15, 1965. Divided and this application Jan. 28, 1965, Ser. No. 428,827
1 Claim. (Cl. 151—69)



An arrangement for securing a fastener against removal from an opening in a wiring device mounting yoke through which a threaded shank of said fastener extends, said arrangement comprising an elongated wire element, said wire element having an arm at each end thereof bent to one side at a substantial angle, a central portion of said wire element joined with said arms through respective elbow portions and extending laterally around said fastener shank so that the wire side opposite said one wide side faces said fastener shank, said central wire portion extending around a perimetrical portion of said shank by more than 180 degrees and being limited against longitudinal withdrawal from said fastener along said fastener shank by adjacent threads of said shank, said wire element having a cross sectional diameter less than the pitch of said adjacent threads so that said wire element is disposed at least partially inwardly of the outer diameter of said threads, said elbow portions of said wire arms being sufficiently proximate to each other in separate planes to prevent withdrawal of said wire element laterally of said fastener shank, said wire arms diverging in a direction away from said shank and engageable with an undersurface of said yoke adjacent said yoke opening to limit withdrawal movement of said shank through said yoke opening, said central wire portion extending sufficiently around said fastener shank for opposite end portions of said central wire portion to cross each other to thereby dispose said elbow portions beyond said opposite side of said central wire portion.

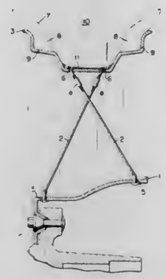
3,286,756
AUTOMOBILE TIRE
Willy Ellenrieder, Esslingen (Neckar), and Rudolf Hennecke, Buoch, near Waiblingen, Germany, assignors to Investment in Patent Development S.a.r.l.
Filed Mar. 5, 1965, Ser. No. 437,483
Claims priority, application Germany, Mar. 11, 1964, E 26,591
21 Claims. (Cl. 152—209)



1. A motor vehicle tire with an outside rubber cover, comprising side walls, a tread having grooves including cross-grooves having a directional component transverse to the peripheral direction, a first tread area portion adjacent to one shoulder and relatively unaffected by said cross-grooves, a second tread area portion adjacent to the other shoulder and being relatively greatly subdivided by said cross-grooves, said first tread area portion being made of rubber possessing relatively great resistance to skidding and said second tread area portion being made of rubber possessing relatively great resistance to wear.

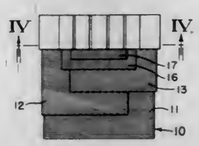
3,286,757
PNEUMATIC TIRE AND WHEEL ASSEMBLY
Harold R. Thomas, Cuyahoga Falls, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Oct. 31, 1962, Ser. No. 234,441
13 Claims. (Cl. 152—330)

11. A pneumatic tire and wheel assembly having the beads of the tire in contact circumferentially with the shoulders of the rim whereby the tire and the portion of the rim between the beads thereof forms an air chamber for inflating the tire, said portion of the rim between the rim shoulders being sealed against loss of air, said seal resulting from the reaction and curing of a liquifiable reaction mixture in contact with the surface of the rim where the liquifiable reaction mixture comprises
(a) a reactive hydrogen containing polymeric material having a molecular weight from about 500 to 10,000;
(b) a polyisocyanate in at least about 1 mol for each mol of polymeric material, and



(c) a curing agent for the reactants (a) and (b) and which has been reacted and cured in contact with the rim.

3,286,758
TIRE CONSTRUCTION
Jonas A. Svereckis, Detroit, and Joseph G. Manchetti, St. Clair Shores, Mich., and Herbert B. Hindin, Hinsdale, Ill., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 24, 1965, Ser. No. 442,440
7 Claims. (Cl. 152—356)

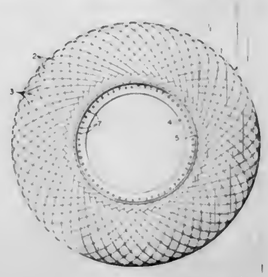


1. A high speed, low aspect ratio pneumatic tire including axially spaced bead rings and having at least two plies of cord material, said two plies comprising a single length of material extending between and folded over said bead rings and having its end portions overlapping one another in the crown portion of the tire, the cords of one of said plies being radially disposed in the tire, the cords of the other of said plies crossing the cords of said one ply throughout at least the sidewalls of the tire by an angle of from 10° to 20°.

3,286,759
TIRE
Malcolm G. Anderson, Bradenton, Fla., assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Apr. 15, 1965, Ser. No. 448,368
14 Claims. (Cl. 152—358)

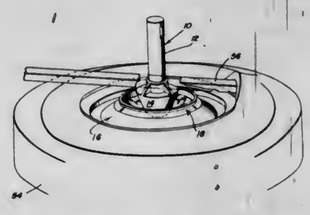
1. In a vehicle tire and rim assembly which includes a rigid rim having a radially outwardly extending flange along each of the opposite edges thereof, a tire structure mounted on said rim and an inflatable air retaining tube confined in the chamber formed by the interior of said tire and said rim, the improvement comprising a tire formed of two sets of strips of elastomeric material, each set having a plurality of substantially identical preformed vulcanized strips, the strips of each set extending at a

substantial angle to the peripheral center line of the tire with the angle of one set being the same but opposite



to that of the other and the vulcanized strips woven in a basket weave and fastening means removably attaching the ends of said strips to the rim flanges.

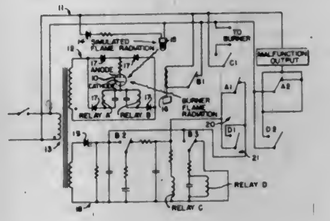
3,286,760
TIRE CHANGER ADAPTER
Garman J. Riepen, Box 60, R.R. 2, Osage City, Kans.
Filed May 27, 1965, Ser. No. 459,240
7 Claims. (Cl. 157—1.1)



1. A tire changer adapter for use on a vehicle wheel having a central opening formed therein, said adapter comprising a generally dish-shaped member including a generally circular bottom wall whose circumferential edge portions curve upwardly into upstanding outwardly divergent outer peripheral wall portions, said bottom wall being of a diameter adapted to be seatingly received in said central opening, said bottom wall having a small central opening formed therein adapted to receive the lowermost portion of an inverted cone-shaped holddown member of a tire changing machine.

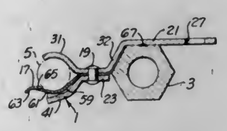
3,286,761
SELF-MONITORING CONDITION DETECTING APPARATUS
Robert O. Engh, Hopkins, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Dec. 27, 1965, Ser. No. 516,439
10 Claims. (Cl. 158—28)

1. Condition detecting apparatus for controlling the operation of a system wherein a given condition exists at an environment as a result of the operation of the system, comprising:
a condition detector sensitive to the given condition and adapted to be subjected to the environment in which the given condition occurs,
cycling means including means to subject said detector to the simulated presence of the given condition during first reoccurring periods and to subject said detector to the environment during second reoccurring periods,
first output means controlled by said detector during said first period and having a first state indicative of the ability of said detector to detect the simulated condition, and a second state indicative of the inability of said detector to detect the simulated condition,
second output means controlled by said detector during said second period and having a first state indicative of the actual presence of the given condition



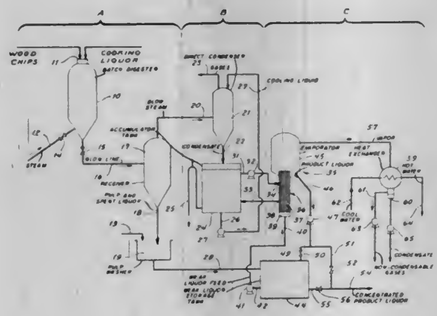
at the environment, a second state indicative of the absence of the given condition at the environment, and a third state indicative of the inability of said detector to detect the absence of the given condition,
and control means, connected to and controlled by said second output means when in said first or third states and by said first output means when in said second state, adapted to maintain the operation of the system.

3,286,762
COMBINATION PILOT BURNER AND THERMOCOUPLE MOUNT
Harold A. McIntosh, South Pasadena, and Houston Rehrig, Pasadena, Calif., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Dec. 3, 1964, Ser. No. 415,646
2 Claims. (Cl. 158—123)



1. A mount for a pilot burner and cylindrical thermocouple for attachment to a supporting structure comprising:
a mounting bracket having at least one aperture adjacent one end thereof, the other end of said mounting bracket forming a curved arm, said mounting bracket having an intermediate portion connecting said ends;
a back bracket attached to said intermediate portion and having a protecting arm generally diverging with respect to said curved arm, said intermediate portion and said arms forming a generally Y-shaped section;
a curved resilient lock spring fixed at said intermediate portion between said brackets, said lock spring following said protecting arm and normally curving away from said curved arm for a first portion of its length and then normally curving toward said curved curved arm for a second portion of its length, said curved arm and said lock spring forming a portion of a cylindrical section for releasably retaining said thermocouple;
a tab on said lock spring, said tab protruding rearwardly toward said intermediate portion and inwardly toward said curved arm to firmly secure said thermocouple; and
a pilot burner fixed to said mounting bracket and clamping a portion of said spring thereagainst.

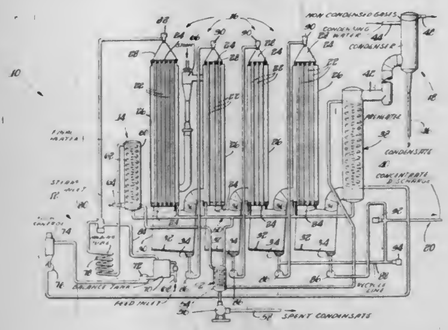
3,286,763
RECOVERING HEAT FROM A BLOW EVAPORATOR FOR USE IN A SURFACE EVAPORATOR
Harold E. Jacoby, % Jacoby Process Equipment Co., Inc., 97 Shepherd Lane, Roslyn Heights, N.Y.
Filed Oct. 19, 1964, Ser. No. 404,727
15 Claims. (Cl. 159—2)



1. A heat reclaiming and evaporating apparatus for use in a pulp-cooking system having a pressure type pulp digester for reducing wood chips to pulp and from which digested pulp and hot spent cooking liquor are discharged at an elevated temperature, which comprises an evaporator of the heated surface type, means for collecting a heated fluid which is wholly derived from said spent cooking liquor, means for forwarding said heated fluid directly to said evaporator to serve as at least the predominant source of heating fluid for the evaporator, and means for introducting spent cooking liquor derived from the pulp digester of the pulp-cooking system into the evaporator in heat exchanging relationship with said heating fluid.

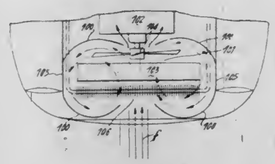
3,286,764
FLOW CONTROL FOR A MULTIPLE-EFFECT EVAPORATOR
Harry G. Mojonnier, River Forest, Chester J. Witt, Deerfield, and Sigmund P. Skoli, Elmwood Park, Ill., assignors to Mojonnier Bros. Co., Chicago, Ill., a corporation of Illinois
Filed Mar. 26, 1964, Ser. No. 354,971
5 Claims. (Cl. 159—44)

1. Flow controlled apparatus comprising: first container means for receiving a variable flow of a selected liquid; flow regulating means for maintaining a selected level of liquid in said first container means; second container means underlying said first container means; first conduit means communicating the liquid-containing portion of said first container means with said second container means; orifice means in said first conduit means opening below the liquid level in said second container means; second conduit means for passing a forced flow of said liquid; a pump connected in fluid circuit between said second container means and said second conduit means, the inlet of said pump being coupled to said second container means and the outlet of said pump being coupled to said second conduit means for delivering said forced flow; valve means connected in fluid circuit in said second conduit means, including a valve member for modulating the flow of liquid passing from said second container means from substantially zero flow to a predetermined maximum flow; and control means for selectively



operating said valve means in accordance with the level of liquid in said second container means, including sensor means detecting the level of liquid in said second container means and varying the position of said valve member in accordance with the liquid level in said second container means, whereby to throttle the flow of liquid to said second conduit means thereby preventing said pump from operating in the absence of liquid and whereby to establish a substantially uniform rate of flow through said second conduit means.

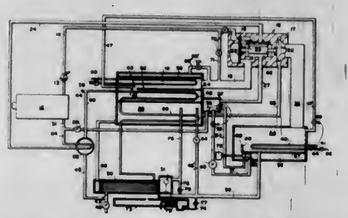
3,286,765
METHOD AND APPARATUS FOR AIR-CONDITIONING A VEHICLE
Maxime Louis Jentet, Chatou, France, assignor to Societe Anonyme des Usines Chausson, Asnieres, Seine, France, a company of France
Filed June 22, 1964, Ser. No. 376,737
Claims priority, application France, July 2, 1963, 940,151, Patent No. 84,616
5 Claims. (Cl. 165—2)



1. A method for heating and cooling the inside of a vehicle having an internal combustion engine provided with heat dissipating means and also having a reversible cycle heat pump circuit operating with coolant fluid, comprising steps of circulating said coolant fluid in front of said heat dissipating means of the engine at one time in such a manner that ambiant atmospheric air is successively put first in thermal relation with said coolant fluid and second with said heat dissipating means for cooling of

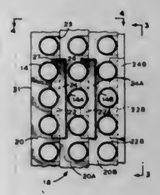
said engine whereby the coolant fluid is cooled allowing said reversible heat pump circuit to operate as a cooler for the inside of said vehicle, and at another time causing said ambient air passing over said heat dissipating means to be recirculated at least in part and to be brought several times in thermal relationship with said coolant fluid circulating in front of said heat dissipating means and with said heat dissipating means to transfer heat from said heat dissipating means to said coolant liquid whereby the coolant fluid is heated allowing said reversible heat pump circuit to operate as a heater for the inside of said vehicle.

3,286,766
HEATING AND COOLING SYSTEM
William T. Osborne, Syracuse, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed June 23, 1964, Ser. No. 377,262
2 Claims. (Cl. 165—14)



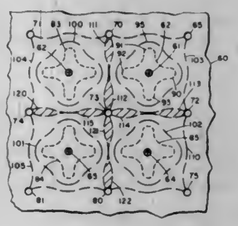
1. In a heating and cooling system, the combination of, a steam operated power side including a steam engine, and a steam condenser for providing heat to a load and normally at a pressure below atmospheric pressure during cooling operation of the system, means for pressurizing said power side with refrigerant vapor upon shutdown of the system to effectively prevent the entry of ambient air into the power side, a refrigerant circuit for circulating refrigerant during cooling operation of the system and including a cooler having a chilled water line to be flooded in a body of liquid refrigerant for cooling a load, refrigerant flow metering means for passing liquid refrigerant to said cooler, and a refrigerant compressor driven by said engine for withdrawing refrigerant vapor from the cooler to provide a relatively low pressure area therein during cooling operation of the system, a closed storage vessel away from relatively hot portions of the system and below said refrigerant circuit, means for withdrawing the pressurizing refrigerant vapor from the power side when the system is inoperative for cooling and passing the pressurizing refrigerant vapor to said refrigerant circuit, means operable for condensing refrigerant vapor when said compressor is inoperative, means providing communication between said vessel and a low portion of said refrigerant circuit between said refrigerant flow metering means and said cooler for draining liquid refrigerant from said refrigeration circuit into the vessel when said compressor is inoperative and for the passage of the liquid refrigerant from the vessel to the cooler when the compressor is again in operation to reduce the pressure in said cooler preparatory to cooling operation of the system, and valve means in the connecting means for releasably holding the refrigerant in said vessel, whereby upon opening the system, as for servicing, loss of refrigerant is substantially reduced, and during winter heating operation the refrigerant is substantially removed from said refrigeration circuit and remains relatively cool, thus effectively avoiding high refrigerant pressures in the system.

3,286,767
TUBE SUPPORT ARRANGEMENT
Arthur L. Evans, Massillon, Ohio, assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 1, 1964, Ser. No. 400,736
4 Claims. (Cl. 165—82)



1. In a heat exchanger having a plurality of spaced substantially parallel tubes arranged as a tube bundle, a tube support arrangement comprising a first member extending transversely of a first row of tubes on one side thereof and having a portion projecting between adjacent tubes in said first row to define openings wherein the tubes of said first row are confined, clamping means positioned on the opposite side of the tubes of said first row from said first member, said clamping means being connected with and cooperating with said first member to maintain the tubes of said first row in said openings, a second member in alignment with said first member and extending transversely of a second row of tubes which are substantially parallel to said first row of tubes, said second member having a portion projecting between adjacent tubes in said second row to define openings wherein the tubes of said second row are confined, said clamping means being engaged with and arranged to align and guide said second member.

3,286,768
RECOVERY OF PETROLEUM FROM A SUBTERRANEAN RESERVOIR
John P. Heller, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed Sept. 16, 1963, Ser. No. 309,123
14 Claims. (Cl. 166—9)



1. In a process for the production of petroleum from a formation penetrated by an injection well and a production means including at least one production well by injection of a displacing liquid into said formation through said injection well and displacement of said petroleum by said displacing liquid in the direction of said production well, the improvement comprising injecting said displacing liquid into said formation from said injection well only in a direction in which flow on the displacing liquid would normally be the slowest from said injection well to said production well.

3,286,769
METHOD OF STRAIGHTENING A DEFORMED PIPE STRING UNDER COMPRESSION IN A WELL
James V. Langston, Luling, and John A. Diodene, Gretna, La., assignors, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Aug. 17, 1964, Ser. No. 390,125
11 Claims. (Cl. 166—39)

1. A method of treating a well having a string of pipe therein at least a portion of which is under compression and which has become deformed to the extent that passage of well tools therethrough is prevented which comprises cooling at least a portion of said pipe string a sufficient amount to shorten said pipe string and thereby induce tension and remedy said deformity in that portion of said pipe string which is under compression.



3,286,770
METHOD OF TREATING WELLS
John A. Knox and Reginald M. Lasater, Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware
No Drawing. Filed May 25, 1965, Ser. No. 458,772
10 Claims. (Cl. 166—42)

1. A method of treating non-oil-bearing water-wet earthen formations for increasing the flow rate of water therethrough, comprising the steps of:

(a) injecting into said formation a well treating solution, said solution consisting essentially of:

(1) a treating agent, which does not form a precipitate upon hydrolysis with water, selected from the group consisting of the organohalogensilanes, the organosilane esters, and mixtures thereof, and

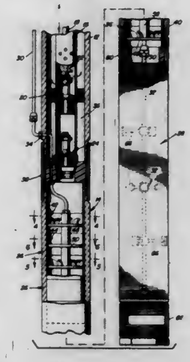
(2) a water soluble anhydrous solvent which is substantially non-reactive with said treating agent;

and thereby rendering said formation preferentially oil-wettable; and

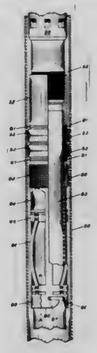
(b) flowing water through the treated formation at a rate greater than that possible through an untreated formation of like composition and under like conditions.

3,286,771
BOTTOM HOLE OIL TREATER INJECTOR
Purdy L. Sisson, Oklahoma City, Okla., assignor to Automation Oil Corporation, Oklahoma City, Okla., a corporation of Oklahoma
Filed Feb. 10, 1964, Ser. No. 343,740
11 Claims. (Cl. 166—177)

1. A bottom hole oil treating device comprising in combination with a tubing string through which oil is produced an oil treater unit mounted upon the lower end of said tubing string and communicating therewith, means introducing an oil treating chemical agent into the lower end of said treater unit for mixing with the oil passing therethrough, said treater unit comprising a plurality of vertically spaced alternate screen and baffle units within said treater unit with adjacent baffle units having oppositely directed baffles thereby effecting reversal of flow of the oil passing through successive baffle units.



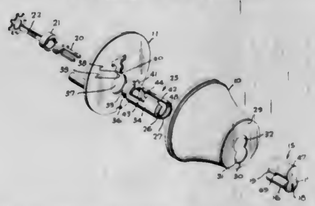
3,286,772
WELL PACKER
Joseph Solari and Darrell C. Gallear, Taft, Calif., assignors to Chevron Research Company, a corporation of Delaware
Original application June 29, 1961, Ser. No. 120,603. Divided and this application June 4, 1965, Ser. No. 473,263
1 Claim. (Cl. 166—179)



An improved packer comprising a mandrel, at least one packing ring on the exterior of said mandrel, bushing means between said mandrel and said packing ring, said bushing means providing for rotatable motion between the mandrel and the packing ring when said packing ring is expanded, means for expanding said packing ring, said means operably positioned on the exterior of said mandrel, a pin on said mandrel, a locking cage operably connected to said expanding means contacting said pin, said locking cage characterized by a flat lower surface and an annular notch adapted to engage and disengage said pin on said mandrel, said notch being the only break in said flat lower surface, whereby said mandrel can be rotated to move said

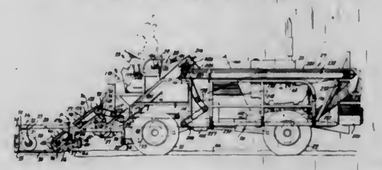
pin into and out of said notch and along said flat surface and resilient means keeping said pin into contact with said flat surface when said pin is out of said notch.

3,286,773
AUXILIARY RETAINER FOR REMOVABLE CORE
Fred J. Russell, 8635 Otis St., South Gate, Calif., and George B. Solovieff, San Clemente, Calif.; said Solovieff assignor to said Russell
Filed Nov. 16, 1964, Ser. No. 411,389
4 Claims. (Cl. 70—371)



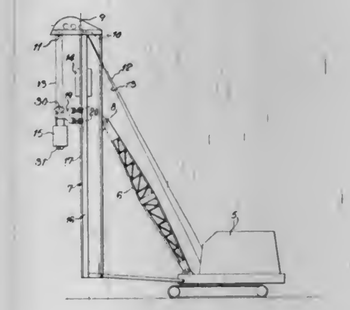
1. In a lock device, a housing comprising a mounting plate at the inner end having an opening therein and a face plate at the outer end having a hole therein, and a key-operated mechanism having a projecting cam means thereon responsive to operation by a removal key and not responsive to operation by an operator key, the combination of an auxiliary retainer comprising a sleeve in endwise engagement with said face plate, a portion of the sleeve having a position in said hole, the inner end of the sleeve being in engagement with the mounting plate, and a projection on said inner end having a position in said opening, a shoulder on said portion in endwise engagement with said mounting plate, and means holding said sleeve in nonrotating engagement with one of said plates consisting of rotationally facing shoulders on said one of said plates and said sleeve, whereby said sleeve is anchored nonrotatably in position between said face plate and said mounting plate, said sleeve having a slot for reception of a portion of the key-operated mechanism, and a shoulder adjacent the slot engageable with said cam means whereby to retain said key-operated mechanism in said auxiliary retainer.

3,286,774
TOMATO HARVESTER
Coby Lorenzen, Istvan J. Szluka, and Frederick L. Hill, Davis, Calif., assignors to The Regents of the University of California, Berkeley, Calif.
Original application Sept. 28, 1960, Ser. No. 59,031, now Patent No. 3,199,604, dated Aug. 10, 1965. Divided and this application May 31, 1963, Ser. No. 289,159
9 Claims. (Cl. 171—1)



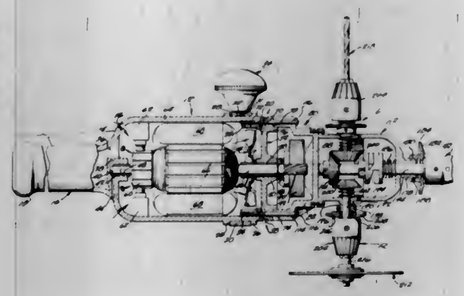
1. A tomato harvesting method practiced on and by a movable conveyance moving substantially continuously along a row of tomato plants, which comprises the successive steps of: cutting off the main stem of growing tomato plants below ground level; gently elevating each cut-off plant vertically with substantially all of its tomatoes still vegetatively attached while moving them rearwardly of said conveyor and then, only after said plants have been elevated, separating the ripe tomatoes from each raised plant by shaking action alone.

3,286,775
PILE HAMMER FOR DRIVING BY IMPACT OR BY VIBRATORY ACTION
Moses Hornstein, Merrick, N.Y., assignor to Horn Pile & Foundation Corp., Merrick, N.Y., a corporation of New York
Filed May 20, 1964, Ser. No. 368,884
7 Claims. (Cl. 173—48)



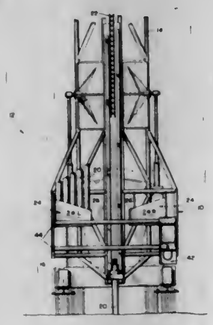
7. A hammer for driving by vibratory action or by impact, comprising
a leads frame open along one side,
guide rails within said frame for an impact hammer,
brackets extending from said guide rails at opposite edges of the opening in said leads frame,
a second set of guide rails mounted on said brackets and a vibratory hammer mounted on said second set of guide rails.

3,286,776
COMBINATION POWER HAND TOOL
Eugene M. Richison and Ethel M. Richison, Kinta, Okla., assignors of one-half to Kenneth Conklin and T. H. Conklin, jointly, both of Stigler, Okla.
Filed June 23, 1964, Ser. No. 377,253
17 Claims. (Cl. 173—48)



1. A combination power hand tool comprising a handle support, a motor mounted on the support having a motor shaft, a longitudinal shaft journaled on the support and operatively-connected to the motor shaft, said longitudinal shaft having a bevel pinion fixed thereon and a rear cam wheel, a reciprocating shaft slidably-journaled on the support and having a forward cam wheel facing the rear cam wheel, a first actuation control device movably-mounted on the support and connected with the reciprocating shaft for engaging and disengaging the forward cam wheel with the rear cam wheel, and a first radial shaft slidably journaled on the support, said first radial shaft having a bevel pinion adapted for engagement with the bevel pinion of the longitudinal shaft, a second actuation control device movably mounted on the support and connected with the radial shaft for engaging and disengaging its pinion with the pinion of the longitudinal shaft.

3,286,777
ROCK DRILL PIPE STORAGE AND HANDLING DEVICE
Laszlo Gyongyosi, Easton, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed July 18, 1963, Ser. No. 295,899
11 Claims. (Cl. 175—52)

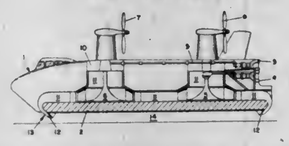


1. In a rock drilling apparatus, the combination of
(a) a derrick mounted on a base,
(b) a rotary head mounted on said derrick for longitudinal movement along said derrick,
(c) a stationary rack mounted on said derrick adapted to store a plurality of drill pipes vertically,
(d) a movable carrier having means to engage the bottom end of a single drill pipe and support that drill pipe vertically, and
(e) means supported by said derrick to support said carrier and said pipe support means for movement into positions for individual engagement and support of each of said drill pipes in said rack and for movement to carry each of said drill pipes individually into axial alignment with said rotary head.

3,286,778
METHOD FOR MINIMIZING THE OCCURRENCE OF FIRES DURING WELL DRILLING OPERATIONS
John Gordon Jackson, Denver, Colo., assignor to Well Completions Inc., Denver, Colo., a corporation of Colorado
No Drawing. Filed July 13, 1962, Ser. No. 209,755
5 Claims. (Cl. 175—69)

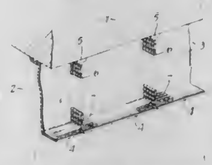
1. The method of minimizing the occurrence of fire during drilling of wells wherein air is used as the circulating fluid, which method comprises: Introducing into the circulating air materials which react to form a sufficient amount of an inert gas to reduce the oxygen content of the air below that which will support combustion.

3,286,779
SKIRT DEPTH AND AIR-CUSHION PLANFORM AREA DIMENSIONAL RELATIONSHIP FOR GROUND EFFECT VEHICLE STABILITY
Richard Stanton Jones, Cowes, Isle of Wight, England, assignor to Westland Aircraft Limited, Yeovil, Somerset, England
Filed Jan. 14, 1963, Ser. No. 251,341
Claims priority, application Great Britain, Jan. 26, 1962, 3,151/62, 3,152/62
1 Claim. (Cl. 180—7)



A ground effect vehicle comprising a base platform, means for generating a supply of pressurized gas for use in forming a pressurized gas supporting cushion under said base platform, and a skirting attached to and extending below said base platform in a manner to retard the escape of the pressurized gas supporting cushion and thereby increase the clearance height of the vehicle during operation, said skirting being formed from a flexible material so as to yield and pass over encountered obstacles and return to its original extended position, said skirting incorporating downwardly directed orifices at the lower edge thereof and passage means for connecting said orifices to said supply of pressurized gas whereby pressurized gas is directed from said orifices to form a fluid curtain to create and maintain the pressurized gas supporting cushion, the dimensions of said skirting being so related to the planform dimensions of said supporting air cushion that said skirting extends below said base platform by a distance between one-sixth and one-seventh of the beam axis dimension of the planform area of the cushion and that the fore and aft axis of the planform area of the cushion is at least ten times as long as the depth of the skirting below the base platform.

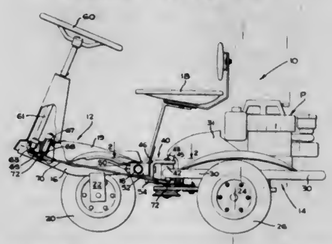
3,286,780
FLEXIBLE SKIRT WITH CHAINS FOR AIR CUSHION BORNE VEHICLES
Grahame George Yates, Wiltshire, England, assignor to Vickers-Armstrongs (Engineers) Limited, London, England, a British company
Filed Mar. 13, 1964, Ser. No. 351,783
Claims priority, application Great Britain, Apr. 22, 1963, 15,867/63
7 Claims. (Cl. 180—7)



1. An air cushion vehicle comprising a vehicle body, there being an air cushion space under said body, a flexible skirt depending from the underside of the body for minimising leakage of air laterally from said space, and chains depending from the underside of the vehicle body at spaced locations along the flexible skirt, said chains and skirt engaging each other at said locations, each chain comprising a plurality of link members connected in series from the vehicle body down to the lower portion of the flexible skirt and being foldable vertically but laterally rigid in a direction perpendicular to the

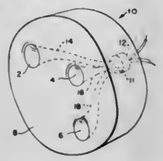
general direction of the skirt adjacent that chain, said chains co-operating with said skirt for restraining outward movement of the latter under the influence of pressure of air in the cushion.

3,286,781
ARTICULATED VEHICLE WITH PIVOTABLE FRAME STEERING
Dudley D. Ramaker, Cedar Grove, Wis., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Feb. 2, 1965, Ser. No. 429,812
4 Claims. (Cl. 180—52)



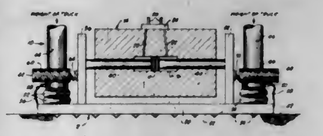
1. An articulated vehicle comprising a two-wheeled front section and a rear pushing section, a joint connecting said sections for relative pivotal movement of said sections in a horizontal plane about a vertical axis and for pivotal movement of one section relative to the other about a longitudinal horizontal axis, an abutment member fixed to one of said sections including a projection extending toward the other of said sections, said projection having an upwardly facing abutment surface which is slanted in the vertical direction and which is arranged to be contacted by a portion of said other of said sections when said sections are relatively rotated about the horizontal axis, the point of contact between said abutment surface and said other section being dependent upon the relative angle between said sections in the horizontal plane whereby the amount of permissible relative pivotal movement between said sections in one direction about said horizontal axis is progressively decreased as said angle between said sections in the horizontal plane is decreased.

3,286,782
ENERGY COUPLING DEVICE
Dwight W. Batteau, Cambridge, Mass., assignor to United Research Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Apr. 9, 1962, Ser. No. 186,105
2 Claims. (Cl. 181—.5)



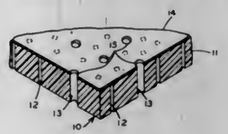
1. An omnidirectional acoustic coupler for coupling a source of sound energy to a detector, said coupler comprising a three-dimensional body of rubberlike material having at least one substantially planar surface, means forming a cavity in said body other than in said surface, said cavity being open at one end thereof and being adapted to receive a detector therein, at least three apertures formed in said planar surface, at least one of said three apertures lying outside a straight line connecting the other two of said apertures, tubular channels formed in said body connecting each of said apertures with said cavity, said channels progressively decreasing in diameter from said apertures to said cavity, each of said channels differing in length by a substantial amount whereby a plurality of images of a sound signal impinging on said planar surface are received by said detector.

3,286,783
METHOD AND APPARATUS FOR INDUCING SEISMIC SHEAR WAVES IN THE EARTH AND FOR SEISMIC SURVEYING
Jesse T. Cherry, Jr., and Kenneth H. Waters, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Nov. 14, 1962, Ser. No. 237,661
7 Claims. (Cl. 181—.5)



1. A method for inducing seismic shear waves in the earth comprised of the steps of:
coupling a member to the earth; and,
reciprocating the member in a linear horizontal direction at a predetermined, controlled frequency.

3,286,784
ACOUSTICAL MATERIAL
Thomas Mariner, Mount Joy, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Feb. 25, 1964, Ser. No. 347,219
9 Claims. (Cl. 181—33)

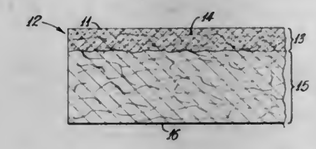


1. Acoustic sheet material comprising at least one primary layer of material having a plurality of spaced, relatively small perforations generally of a predetermined size therethrough and having a plurality of spaced apertures generally of size greater than said predetermined size of said small perforations and at least one secondary layer of material on at least one side of and adjacent said primary layer, said secondary layer having a plurality of apertures of substantially the same size as and in register with said primary layer apertures.

3,286,785
HIGH TEMPERATURE RESISTANT ACOUSTICAL BOARD
Richard F. Shannon, Lancaster, and Jerry L. Helser, Hebron, Ohio, assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed May 24, 1965, Ser. No. 457,984
12 Claims. (Cl. 181—33)

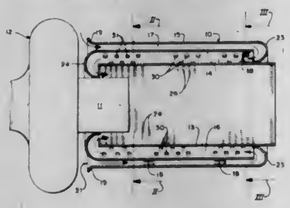
1. An acoustical and thermal insulating element capable of maintaining structural integrity at temperatures in excess of 1000° F., comprising a plurality of siliceous fibers interbonded into an integral, void-containing mass having a density of between 1 to 30 pounds per cubic foot and shaped in the form of a panel having two substantially parallel major surface and a thickness of between 250 and 3000 mils, and deposited within said voids present between said fibers and adjacent to one of said surfaces

and to a depth of at least 15 mils, an impregnant comprising between 75 to 98% by weight of aluminum silicate particles consisting essentially of between 10 to 90% by weight of hydrated aluminum silicate containing between 50 to 75% by weight of SiO_2 and between 15 to 35% by weight of Al_2O_3, and between 10 to 90% by weight of an aluminosilicate of a metal selected from the group consisting of sodium, potassium, calcium, magnesium, barium and combinations of said metals, in which



said metal is present in a quantity in excess of 6% by weight, and admixed with and interadhering said aluminum silicate particles between 2 to 25% by weight of a binder phase consisting essentially of between 1 to 20% by weight of colloidal silica and between 1 to 15% by weight of bentonite, the remainder of said panel and the portion of said panel immediately adjacent to the second of said major surfaces to a depth of at least 50 mils being substantially devoid of said impregnant and retaining said density of 1 to 30 pounds per cubic foot.

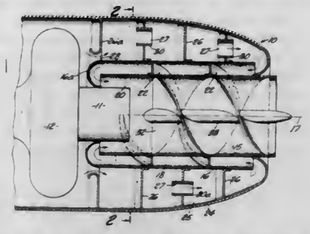
3,286,786
GAS TURBINE EXHAUST SILENCER AND ACOUSTICAL MATERIAL THEREFOR
Leslie S. Wirt, Phoenix, Ariz., assignor to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed Dec. 23, 1964, Ser. No. 420,608
19 Claims. (Cl. 181—50)



8. In a silencer for the exhaust of a gas turbine, a tubular duct wall in position for exhaust gas flow over at least one surface, said wall having a multiplicity of slits extending therethrough, such slits having a width not exceeding a small fraction of the thickness of the wall, said wall having a viscous flow restriction that is of the same order of magnitude as the specific acoustic impedance of the gas, the thickness of the duct wall being uniform throughout the length and circumference of the duct.

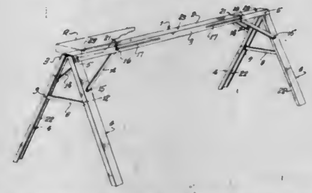
3,286,787
TURBINE EXHAUST SILENCER
Leslie S. Wirt, Phoenix, Ariz., assignor to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed July 1, 1965, Ser. No. 468,777
22 Claims. (Cl. 181—67)

1. A silencer for a stream of high velocity exhaust gases from a combustion chamber, comprising:
(a) wall means of tubular shape forming a duct through which the gas stream flows, said wall means having spaced gas inlet and gas outlet means; and
(b) means associated with said wall means to form a plurality of tubular layers with an annular sound absorbing air space therebetween, at least the inner



layer being a sheet laminar absorber of permeable material having a viscous flow restriction that is of the same order of magnitude as the specific acoustic impedance of said gas.

3,286,788
SAWHORSE OR TRESTLE
Frank B. Swanson, Glendale, Calif., assignor to Bank of America National Trust and Savings Association, administrator
Filed June 14, 1965, Ser. No. 463,823
7 Claims. (Cl. 182—155)



1. A sawhorse comprising an elongated main frame member of inverted channel metal having downwardly diverging side flange portions and a pair of foldable leg assemblies at each end thereof and movable between a folded position housed between said diverging side flange portions and an extended position supporting said frame member, each of said leg assemblies comprising a pair of legs each having one end thereof separately pivotally connected to one each of the ends of said side flange portions of said main member and movable on said pivots between said folded position parallel to said main member between the side flange portions thereof and an extended position substantially at right angles thereto in said extended position, a separate, manually releasable brace having means associated with each leg operable automatically to lock the associated leg in extended position and a pair of manually releasable cross braces associated one each with each of said pairs of legs; each of said cross braces being pivotally mounted on an inner face of one of the legs of the pair with which it is associated and being inherently tensioned and having means to automatically lock itself upon the other leg of the associated pair of legs in a position spreading the legs engaged thereby at a predetermined distance apart when said legs are moved to said extended position.

3,286,789
COLLAPSIBLE LADDER
Paul O. Planchon, 2207 Emeric Ave., San Pablo, Calif.
Filed Nov. 30, 1964, Ser. No. 414,595
3 Claims. (Cl. 182—163)

1. A folding ladder comprising
a plurality of hingedly interconnected ladder sections, said sections each including a pair of spaced rails con-

nected by a plurality of rungs, said rails having an outer rail member containing a rigid slidable captured inner rail member,

hinge means connecting the proximate end portions of said aligned rail members,

said inner and outer rail members being of such a length to permit accordion like folding of said sections into juxtaposition when said hinge means of said outer members are disposed transversely adjacent the corresponding hinge means of said inner members, said outer members being adapted for longitudinal movement with respect to said inner mem-

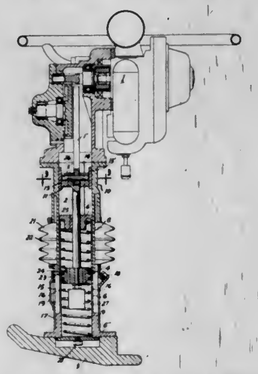


bers to permit misalignment of the hinge means of said outer members with respect to the hinge means of said inner members whereby the rigid portion of said outer members are adjacent and support to rigidly lock the hinge means connecting said inner members and the rigid portions of said inner members are adjacent and support to rigidly lock the hinge means of said outer members, and means for facilitating the longitudinal shifting of said members relative to each other including rollers alongside the ends of said rail members and supported by one member to roll against the other.

3,286,790
LUBRICATING MEANS FOR A SYSTEM FOR A MANUALLY GUIDED MOTOR DRIVEN WORKING DEVICE

Heinrich Kestel, Munich, Germany, assignor to Hermann Wacker and Peter Wacker, Munich, Germany

Filed July 6, 1964, Ser. No. 380,329
Claims priority, application Germany, July 19, 1963, W 34,922
8 Claims. (Cl. 184—6)

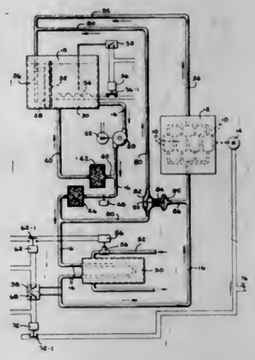


1. Lubricating means for a reciprocating system of a motor driven, manually guided working apparatus which effects reciprocating working movements, said apparatus being adapted for operation by a motor and including a housing for the transmission of forces, a joint member movable in said housing and having a wrist pin connected to the motor by means of a connecting rod, an element including a guiding cylinder movable in said housing and a rammer or tamping foot carried by said element, a guiding piston having a piston rod connected to said joint member reciprocally movable in said cylinder and spring means interposed between said guiding piston and said guiding cylinder, said joint member having a passage for oil extending therethrough, said guiding cylinder having a plurality of radial apertures and a lower portion for holding a lubricant such as oil and having an upper portion having an oil passage extending therethrough, and said guiding piston having at least one oil passage, said passages in said guiding piston, said upper cylinder portion and in said joint member being adapted to pass oil in atomized condition upwardly to components to be lubricated.

3,286,791
LUBRICATING SYSTEM

Daniel B. Cofer, Carrollton, Ga., Herman Kudla,, Chicago, and William C. Martin, Naperville, Ill., and Dale D. Proctor, Carrollton, Ga.; said Kudla and said Martin assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York and said Cofer and said Proctor assignors to Southwire Company, Incorporated, Carrollton, Ga., a corporation of Georgia

Filed Sept. 25, 1964, Ser. No. 399,136
6 Claims. (Cl. 184—6)



1. A system for lubricating an apparatus which comprises:

a tank for holding a supply of oil and having a supply line to and a return line from the apparatus;

means for heating the oil in said tank to a temperature of a predetermined value;

means for advancing the oil in said supply line;

a heat exchanger connected into said supply line for passage of the oil therethrough;

means for circulating a coolant in said heat exchanger; and

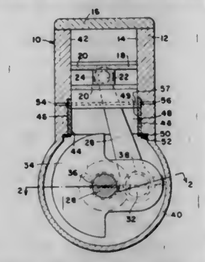
control means responsive to the temperature of the oil supplied to the apparatus for rendering said coolant circulating means operative and unoperative in response to the changes in the temperature of the oil above and below said predetermined value.

3,286,792
MACHINE LUBRICATING MEANS AND PARTS THEREFOR

Byron T. Wall, 143—20 Franklin Ave., Flushing, N.Y.

Continuation of application Ser. No. 307,059, Sept. 6, 1963. This application Nov. 26, 1965, Ser. No. 514,753
19 Claims. (Cl. 184—6)

1. A machine comprising at least two relatively movable parts, one of said parts being a bearing including a porous metal element having a liquid lubricant pervious surface contacting and supporting the other of said relatively movable parts, liquid lubricant filling said porous metal element, said porous metal element having all its surfaces other than the one contacting said other relatively movable part completely sealed against outflow

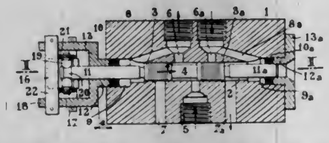


of liquid lubricant through said other surfaces from said element and thereby supplying lubricant between the relatively movable parts.

3,286,793
AUTOMATIC REVERSING AND METERING DEVICE FOR CENTRAL LUBRICATION SYSTEMS

Henri Bricout, Meudon, France, assignor to Societe anonyme dite: Societe d'Applications des Machines Motrices, Issy-les-Moulineaux, Seine, France

Filed Mar. 17, 1964, Ser. No. 352,476
Claims priority, application France, Mar. 19, 1963, 928,406
8 Claims. (Cl. 184—7)



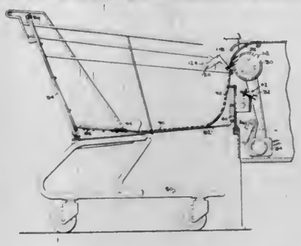
7. A direction control valve for selecting two alternative flow and return fluid paths, said valve being of the five-way, closed center type and actuable by the difference of pressures between said paths, comprising in combination: a valve body having two canals for the alternative selected paths; a spindle having lands and disposed in said body to be actuated by the difference of pressure at said canals; a carriage mounted coaxially with said spindle, and constituted by two pistons, solid in translation one with the other and disposed on either end of the spindle respectively to be actuated by the difference of pressure at said canals; the diameter of said pistons being greater than the diameter of said lands; whereby said spindle is actuated by said carriage after the cross-over position when said spindle moves across center.

3,286,794
APPARATUS FOR CHECKING MERCHANDISE

Willie M. Shoffner, 318 S. Lutheran Church Road, R.R. 2, New Lebanon, Ohio

Filed Sept. 15, 1964, Ser. No. 396,652
8 Claims. (Cl. 186—1)

1. In a merchandise check out arrangement; a check out counter having platform means for receiving articles of merchandise, a cart for transporting articles of merchandise to said counter and having an upper basket portion open toward the top, said basket portion having a back wall swingable inwardly of the basket about the upper edge of the back wall, said basket portion having a flexible member forming the front wall and at least the major portion of the bottom wall of the basket portion, means pivotally connecting the back edge of said flexible member with said back wall in the region of the bottom thereof, the front edge of said flexible member projecting outwardly from the region of the top of the front edge of said cart, and roll means on the check out counter engageable with the said front edge of said flexible member and operable for drawing said flexible member about the

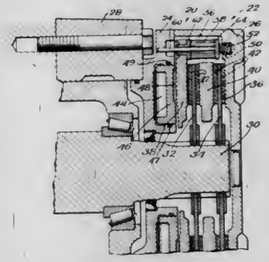


said roll means thereby to elevate articles in the cart for ease of handling by a check out clerk, said roll means comprising magnet elements in axially distributed relation thereon, and the front edge of said flexible member having a magnetic strip thereon engageable with said magnet elements.

3,286,795
SELF-ADJUSTING HYDRAULIC DISK BRAKES

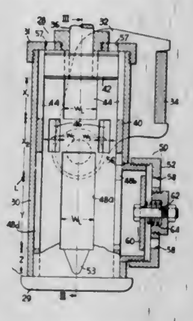
Robert D. Barrett, Westchester, and Kazys Raciunas, Cicero, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware

Filed Apr. 7, 1965, Ser. No. 446,328
16 Claims. (Cl. 188—72)



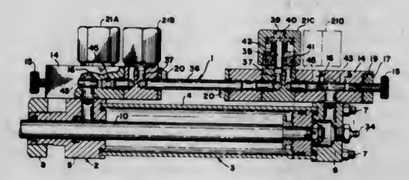
1. In a vehicle having a supporting frame and a rotating axle to be braked, an automatically adjusting disk brake comprising: a housing including first and second housing members secured to said frame about said axle; a plurality of axially shiftable rotor and stator disks mounted about said axle within said housing in coaxial interleaved position; friction surfaces on at least alternate disks; actuating means operative between said housing members adapted to effect frictional braking engagement of said disks by axially compressing said disks into frictional interengagement with actuating force; automatic adjusting means to compensate for wear of said friction surfaces including an axially extending deformable member having a predetermined longitudinal crushing resistance less than said actuating force of said actuating means, said adjusting means extending longitudinally and axially between said actuating means and one of said housing members; and resilient means acting between said deformable member and one of said housing members to space all said disks axially upon deenergizing of said actuating means to disengage said brakes, whereby as said friction surfaces wear incrementally, said deformable member is progressively crushed permanently in an axial direction between said actuating means and at least one of said housing members in an amount corresponding to wear of said friction surfaces.

3,286,796
HYDRAULIC SHOCK ABSORBER
Henry L. Peek, Wellesley, Mass., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Dec. 22, 1964, Ser. No. 420,301
5 Claims. (Cl. 188—96)



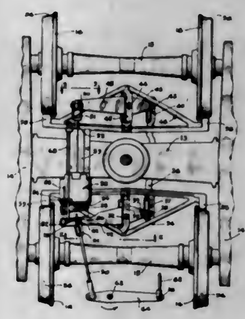
1. In a hydraulic shock absorber, a hollow cylinder, a piston movable in said cylinder, said cylinder having passageway means formed in the inside surface thereof for cooperating with said piston to define an orifice for accommodating the flow of liquid past said piston as the latter is moved, said passageway means being shaped so as to provide an orifice of variable size as said piston moves in said cylinder, normally open valve means communicating between the interior and exterior of said cylinder, and means for biasing said valve means open, said valve being adapted to close against the bias of said biasing means in response to fluid pressure of predetermined magnitude within said cylinder while said piston moves through said cylinder in one direction to provide an orifice of predetermined size, said valve being further adapted to reopen in response to the bias of said biasing spring when said piston continues to move in said one direction through said cylinder to provide an orifice different in size than said predetermined size.

3,286,797
HYDRAULIC CONTROL UNIT
Kurt W. Leibfritz, Norridge, and Kenneth A. Bracki, Mount Prospect, Ill., assignors to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed June 29, 1964, Ser. No. 378,803
11 Claims. (Cl. 188—97)



1. In a hydraulic control unit, the combination of a cylinder; a piston reciprocable in said cylinder having a piston rod for attachment to a reciprocable device whose movements are to be controlled; an adjustable metering valve connected to one end of said cylinder for variably restricting the flow of fluid from said cylinder therethrough thus to control the rate of movement of said piston toward said one end of said cylinder; first and second fluid pressure actuated valves connected to said metering valve and having passages therethrough respectively to bypass the restriction of said metering valve and to permit flow of fluid therethrough downstream of said metering valve; and a movable valve member in each fluid pressure actuated valve having a plunger portion which, when communicated with a pressure source moves said valve member to passage closing position whereby, when said first valve is closed, movement of said piston toward said one end of said cylinder is controlled by said metering valve and, when said second valve is closed, movement of said piston toward said one end is stopped.

3,286,798
BRAKES
Thomas S. Taylor, Suffern, N.Y., and Frederick Raymond Ling, New Milford, N.J., assignors to Abex Corporation, a corporation of Delaware
Filed Dec. 31, 1964, Ser. No. 422,613
6 Claims. (Cl. 188—195)

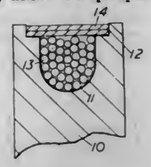


1. In a truck mounted brake unit adapted to cause braking of railroad car wheels and adapted to be secured to the truck of a railroad car, wherein a bolster of the truck is spring mounted for vertical movement relative to the side frames of the truck; a pair of brake beams disposed on opposite sides of the bolster, said brake beams being disposed for movement to apply a braking force to the car wheels; operating means for said brake beams including a live lever pivoted on one of said brake beams, a dead lever pivoted on the other of said brake beams, and a connecting rod between said live lever and said dead lever; an operating cylinder and piston means secured to said bolster and movable vertically with said bolster; and a camming plate secured to said piston means and operable to engage and rotate said live lever, said camming plate engaging said live lever at different contacting points on said live lever as said camming plate moves vertically with said bolster relative to said live lever so that the moment acting on each of the brake beams changes with loading of the railroad car and so that the amount of braking force is changed with changes with loading of the railroad car.

3,286,799
DISC BRAKE FOR A VEHICLE
Brian Roger Shilton, Middlewich, England, assignor to Rolls-Royce Limited, Derby, England, a company of Great Britain
Filed Sept. 28, 1964, Ser. No. 399,671
Claims priority, application Great Britain, Oct. 25, 1963, 42,296/63
3 Claims. (Cl. 188—218)

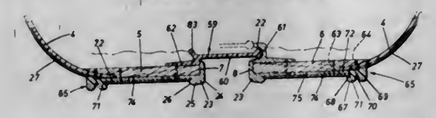
1. A vehicle disc brake comprising a disc having a peripheral groove therein, a plurality of strands of wire which are disposed loosely in the groove and which damp

the natural frequency of axial vibration of the disc and a band extending about the periphery of said disc and



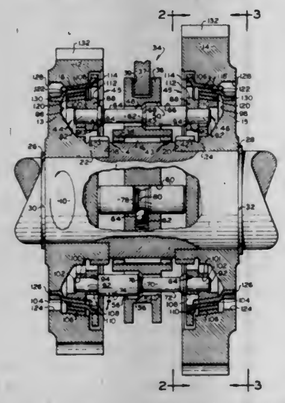
covering said groove for retaining said strands of wire loosely in said groove.

3,286,800
LUGGAGE CASE
Jack Slan, 65 Densley Ave., Toronto, Ontario, Canada
Filed Feb. 5, 1965, Ser. No. 437,343
5 Claims. (Cl. 190—49)



1. A luggage case comprising a pair of opposed sections, each of said sections comprising a moulded shell, a rigid frame extending around the perimeter of said shell, and means for securing said frame to said shell around the perimeter thereof, said means comprising a trim strip member including an inwardly extending lateral flange and an outer upstanding bead portion, first fastening means securing said upstanding bead portion to an adjacent portion of said shell and an outer portion of said frame and second fastening means securing said flange portion to an adjacent portion of said frame.

3,286,801
SYNCHRONIZING CLUTCH WITH MULTIPLE CONICAL DISCS
Richard J. Wojcikowski, Toledo, Ohio, assignor to Dana Corporation, Toledo, Ohio, a corporation of Virginia
Filed July 17, 1964, Ser. No. 383,282
10 Claims. (Cl. 192—53)



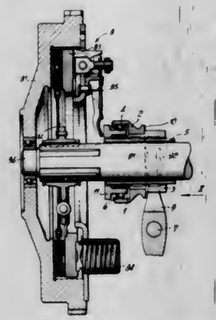
1. A synchronizing clutch for use with a first member coaxially and rotatably mounted relative to a second member and being operative to couple said members for unitary rotation in a torque transferring relationship comprising in combination,

(a) a shiftable element mounted on said second member for unitary rotation therewith and axial movement relative thereto,
(b) said element having a neutral position and being shiftable axially toward said first member to a first position and being further shiftable axially toward said first member from said first position to a second position,
(c) friction clutch means having a first and a second portion frictionally engageable with each other for frictionally coupling said members,
  (1) said first portion being carried by said first member for unitary rotation therewith and said second portion being carried by said element for unitary rotation therewith.
  (2) said portions of said friction clutch means being frictionally engaged upon movement of said element from its neutral position to its first position and being operative when engaged to frictionally synchronize the rotation of said member,
  (3) said portions of said friction clutch means being disengaged upon return of said element to its neutral position,
(d) releaseable means connecting said second portion and said element for unitary axial movement while said element moves from its neutral position to its first position and for allowing said element to move axially relative to said second portion upon movement from its first position to its second position,
(e) blocking means for blockingly engaging said element and inhibiting the same from moving from said first to said second position while said members are rotating relative to each other and for allowing said element to move to said second position upon substantial synchronization of the rotation of said members,
(f) positive clutch means having a first and a second coupling portion positively engageable with each other for positively coupling said members,
  (1) said first coupling portion being carried by said first member for unitary rotation and said second coupling portion being carried by said element for unitary rotation,
  (2) said coupling portions being positively engaged upon movement of said element to its second position,
(g) characterized in that
  (1) said friction clutch means is a multiple cone clutch, and
  (2) torque responsive means are carried by said first portion and said first member and torque responsive means are carried by said second portion and said element for urging said first and second portions axially apart relative to each other and respectively relative to said first member and said element upon movement of said element from its second to its neutral position.

3,286,802
CLUTCH RELEASE BEARING MECHANISM
Kurt Fädler and Richard Binder, Schweinfurt am Main, Germany, assignors to Fichtel & Sachs A.G., Schweinfurt am Main, Germany, a corporation of Germany
Filed Nov. 25, 1964, Ser. No. 413,887
Claims priority, application Germany, Dec. 14, 1963, F 41,540
4 Claims. (Cl. 192—98)

1. A clutch release mechanism comprising, in combination:
(a) a support;
(b) a sleeve member having an axis and being axially slidably mounted on said support;

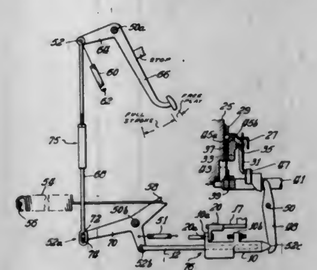
(c) a unitary outer race member having an inner cylindrical bearing face and another inner face about said axis;
(d) an inner race member having an outer bearing face spaced radially inwardly of and opposite said inner face, said bearing faces being coaxial;
(e) a plurality of bearing members interposed between said race members in simultaneous rolling contact with said bearing faces;
(f) abutment means integral with said inner race member and projecting beyond said outer race member in one axial direction;
(1) said other inner face of said outer race member projecting beyond said inner race member in the other axial direction,



(2) the dimensions of said other face transverse of said axis being substantially smaller than the corresponding dimensions of said inner bearing face,
(3) said other inner face of said outer race member being secured to said sleeve member in contact therewith; and
(g) actuating means for actuating axial movement of said race members relative to said support;
(1) said actuating means including a motion transmitting member movably mounted on said support,
(2) said outer race member having an abutment face abuttingly engaging said motion transmitting member,
(3) said inner bearing face, said other face, and said abutment face of said outer race member being integral elements of the unitary outer race member.

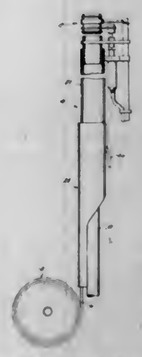
3,286,803
ADJUSTMENT MECHANISM FOR CLUTCH LINKAGE
Reinhold C. Zeidler, Detroit, Mich., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed May 28, 1964, Ser. No. 370,837
5 Claims. (Cl. 192—111)

1. A clutch comprising a driving member; a pressure plate, cover plate, and clutch release levers operatively associated with said driving member; a driven member interposed between said pressure plate and said driving member having friction material thereon; a clutch release bearing axially shiftable with respect to said driving member; a linkage system connected to said clutch release bearing including an adjustable link; motion limiting means attached to assume a plurality of positions with respect to said driving member positioning means being manually movable and being effective to reposition said motion limiting means from one of said positions to another of said positions, said positioning means including means to limit the stroke of a portion of said adjustable link; resilient means connected to said linkage system adapted to urge said linkage system in a first direction; and manual means connected to said linkage system adapted to urge



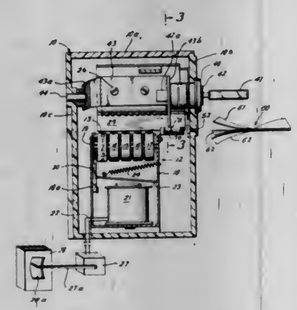
said linkage system in a second direction; said motion limiting means being movable in direct proportion to the amount of wear of said friction material to restrict the movement of a portion of said adjustable link whereby movement of said manual means results in a change in the length of said adjustable link.

3,286,804
EXTENSIBLE AND RETRACTABLE DELIVERY TUBE ASSEMBLY
Louis L. Bernheim, 2660 Mira Vista Drive, Richmond, Calif.
Filed Aug. 24 ,1965, Ser. No. 482,140
7 Claims. (Cl. 193—7)



1. An extensible and retractable delivery tube assembly comprising:
a web of substantially flat elongated sheet material having opposed marginal side edges;
supply means for supplying said web;
a length of tubing of said sheet material extending integrally from said web;
releasable fastening means for securing the marginal side edges of the length of tubing;
flattener and forming means for receiving the flat sheet and forming it into the tubing and for receiving the tubing and forming it into the flat sheet, the flattener and forming means including a flattener which receives the flat sheet material and forms it into the tubing when the tubing is pulled away from the supply means and receives the tubing and forms it into the flat sheet material when the tubing is pulled towards the supply means, the flattener including an elongated member having opposed sides which define a space therebetween of sufficient dimension to receive the flat web material at one end thereof and conform to the shape thereof and receive the tubing at the other end thereof and conform to the shape thereof;
and means for selectively varying the effective length of said length of tubing.

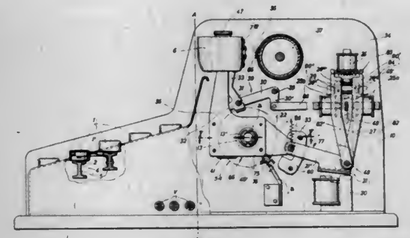
3,286,805
COUNTER AND PRINT OUT APPARATUS
Russel W. New, Dallas, Tex., assignor to Meter-All Mfg. Co., Inc., Dallas, Tex., a corporation of Texas
Filed Feb. 2, 1965, Ser. No. 429,731
7 Claims. (Cl. 194—9)



1. Apparatus for accumulating a total that is equal to or proportional to the number of coins deposited in a coin-operated machine and for printing the total on a recording slip, comprising, a housing, means mounted in the housing for accumulating such a total including numbered printing elements for printing the total accumulated, a platen, means mounting the platen in the housing for movement into and out of engagement with the printing elements, and lock means operable by a key for moving the platen into and out of engagement with the printing elements, said lock means having an opening therein for removably receiving a separate key and being of a construction such that the key can be removed only after the lock means has been positioned such that the platen is out of engagement with said printing elements, said housing having a slot through which a recording slip may be inserted between the platen and the printing elements to record thereon the total impressed on the platen by the printing elements when the platen is in engagement with the printing elements.

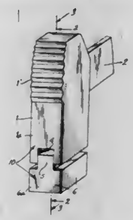
3,286,806
ROTATABLE AND TILTABLE TYPE HEAD CONTROL APPARATUS
Herbert Schoenfelder, Stolberg-Busbach, Rhineland, Germany, assignor to Olympia Werke A.G., Wilhelmshaven, Germany
Filed Mar. 12, 1965, Ser. No. 439,203
23 Claims. (Cl. 197—16)

1. Type head control apparatus comprising, in combination, bearing means; a type head mounted on said bearing means for rotation about a first axis, said type head having an outer surface with circumferential rows of types forming columns in axial planes so that during rotation of said type head different columns are successively positioned in a printing position opposite a printing surface; carrier means supporting said bearing means for tilting movement with said type head about a second axis, said second axis extending through said type head and being located in spaced relation to said first axis and in a plane which is perpendicular to said first axis whereby said first and second axes are devoid of any common point; and tilting means connected with said bearing means spaced from said second axis and being operable for



tilting said bearing means with said type head about said second axis for placing selected rows of types opposite said printing surface.

3,286,807
ADJUSTABLE DRIVE CAM FOR TYPEWRITERS
Herbert Decker, Nurnberg, Germany, assignor to Max Grundig, Furth, Bavaria, Germany
Filed Oct. 11, 1963, Ser. No. 315,486
Claims priority, application Germany, Oct. 13, 1962, G 36,134
5 Claims. (Cl. 197—17)



1. A drive cam for a type action, comprising a first part having a first surface; a second part having a second surface, said first and second surfaces together forming a composite elongated cam face having opposite free ends with said first surface leading said second surface in the longitudinal direction of said composite cam face, said surfaces having the same width, one of said parts having a recess and a central rectangular recessed surface portion and the other part having a projection projecting into said recess and having a central rectangular projecting surface portion having the same transverse width as said recessed surface portion and projecting into the same; threaded adjusting means for gradually adjusting the relative position of said first and second parts and including a screw passing through said second part and being threaded into said first part so that the same are held in different relative positions in which the distance between said opposite free ends and therewith the length of said composite cam face is different so that different amounts of energy are transferred to said drive cam from a power roll engaging said composite cam face along the

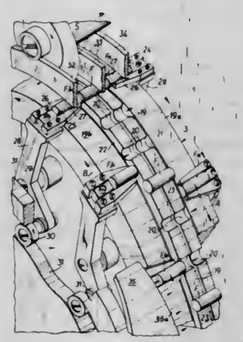
length thereof; and a support having an arm having a first portion located in said first part and a second portion longitudinally projecting from said first part and slidably engaging said second part for guiding the same in longitudinal direction and for preventing transverse displacement of the same.

3,286,808
TYPEWRITER RIBBON COMBINATION
John P. Arena, Lexington, Delbert L. Corman, Wilmore, and Alwyn B. Perry, Lexington, Ky., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 5, 1964, Ser. No. 372,983
18 Claims. (Cl. 197—172)



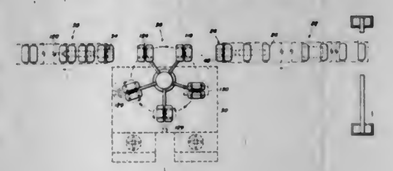
1. A ribbon assembly comprising:
a ribbon wound to form a spool,
a leader attached to said ribbon at the end away from the center of said spool and wound on said spool, said leader being connected to said spool by adhesive between said leader and said spool, said leader also having a portion extending away from said connected point and the center of said spool with adhesive on the side of said extending portion away from the center of said spool, said portion extending away away being sufficiently long to permit firm adherence by the adhesive on it to the hub of a take-up spool for said ribbon.

3,286,809
METHOD AND APPARATUS FOR MANIPULATING ROD SHAPED ARTICLES
Gerhard Meinecke, Hamburg-Wilhelmsburg, Germany, assignor to Hauni-Werke Korber and Co. K.G., Hamburg-Bergedorf, Germany
Filed Dec. 31, 1963, Ser. No. 334,849
18 Claims. (Cl. 198—32)



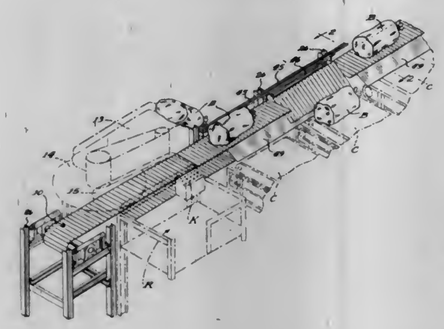
1. An apparatus for manipulating filter sections and similar rod shaped articles obtained by severing each of a series of consecutive rods of multiple unit length whereby each rod yields a row of coaxial sections, comprising a conveyor having a peripheral conveyor face and a plurality of holder means on said peripheral conveyor face, said holder means forming a single file and each arranged to receive one section of a row and to advance the rows in a direction transversely to the axes thereof, said rows being received in selected holder means of said conveyor so that each pair of consecutive rows is separated by $n-1$ empty holder means wherein n is the number of sections in a row; shuffling means for displacing all but said one section of each consecutive row with reference to said conveyor, while the sections remain supported by said peripheral conveyor face, and into alignment with one of said empty holder means so that the sections of each row are staggered transversely with reference to each other on said peripheral conveyor face, said shuffling means comprising a plurality of shuffling members articulately secured to and arranged to move with said conveyor, and means for moving said shuffling members with reference to said conveyor, each of said shuffling members comprising forked portions having prongs constituting stop means for engaging and for moving the respective section with reference to said conveyor and into registry with an empty holder means in response to movement of the shuffling member with respect to the conveyor, at least some of said shuffling members being arranged to move the respective sections counter to the direction of movement of said conveyor; and shifting means for shifting the thus moved sections of consecutive rows into aligned empty holder means so that all sections of each consecutive row form on said conveyor a single file.

3,286,810
APPARATUS FOR ARRANGING AND FEEDING ARTICLES
William M. Ripple, Metairie, and Herbert J. Smith, New Orleans, La., assignors to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 19, 1965, Ser. No. 434,008
10 Claims. (Cl. 198—33)



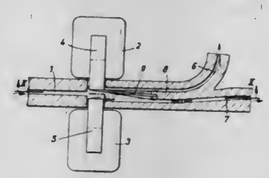
1. A device for arranging a series of successive articles movable in a line and facing the same direction into back-to-back pairs comprising:
(a) a platform means deposed adjacent the end of said line of articles for successively receiving the article movable in said line,
(b) said platform means including a first portion and a second portion for receiving said articles,
(c) means for effecting rotation of said second portion to rotate the article supported thereon,
(d) a fixed article support to receive the article supported on said second portion,
(e) and means operatively connected to said platform means to effect vertical displacement and lateral displacement thereof toward and away from said fixed article support whereby said platform means is moved toward said fixed support when said platform is in the vertically displaced position thereof and away from said fixed article support in the lowered position thereof whereby said article is deposited on said fixed support.

3,286,811
SELECTIVE DELIVERY TILTING SLAT CONVEYOR FOR MAIL BAG HANDLING SYSTEMS
Joseph E. McWilliams, 1345 Canterbury Lane, Glenview, Ill.
Filed Dec. 31, 1964, Ser. No. 422,680
3 Claims. (Cl. 198—38)



1. In a mail bag handling system including a conveying means for moving the bags along a predetermined path past a series of one or more unloading stations at one side of the conveying means, the improvement wherein said conveying means comprises:
an endless articulated conveyor including means for training same to define same into vertically aligned and superposed upper and lower substantially horizontally disposed runs and means for driving same at a uniform speed longitudinally thereof,
said conveyor comprising:
a plurality of spacing members extending transversely of the conveyor and connected together longitudinally of the conveyor in articulated relation,
a slat carried by each of said spacing members and extending transversely of the conveyor,
said slats being proportioned to overhang said one side of said conveyor,
said slats defining substantially flat load support surfaces that are oriented to face upwardly when the respective slats are disposed in said upper run,
said slats being secured to their respective spacing members for pivotal movement about like aligned axes, extending longitudinally of said conveyor, between a horizontally disposed loading supporting position and a downwardly inclinded load discharging position,
said slats being disposed to present said load supporting surfaces of the slats when in said upper run and in said load support position in coplanar closely spaced relation,
said axes being disposed adjacent said one side of the conveyor,
said slats being formed so that said load support surfaces of said slats when in said upper run and in said load support position provide an elongate substantially planar support for mail bags that extends substantially the full length of said run whereby mail bags may be placed at random positions on said conveyor run lengthwise of the conveyor,
means for biasing said slats to pivot to said load discharging position,
a releasable latch device acting between each spacing member and the slat it carries to releasably secure the respective slats in their load supporting positions against the action of said biasing means,
said latch devices being operable independently of each other,
means for selectively releasing at a selected one of said unloading stations the latch devices of the group of slats supporting a particular mail bag to be discharged at that unloading station, including means for simultaneously releasing the latch devices of the slats of such group on operation of said selectively releasing means,
and means for restoring the released slats to their latched positions after discharge of a mail bag at a selected unloading station,
whereby individual mail bags may be loaded on said conveyor at random positions lengthwise of said upper run and discharged at their destined unloading stations by releasing at said station the slats that support same.

3,286,812
SWITCH
Karl Rehm, Konstanz, Germany, assignor to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany
Filed Apr. 20, 1965, Ser. No. 449,421
Claims priority, application Germany, Apr. 22, 1964, T 26,054
12 Claims. (Cl. 198—31)

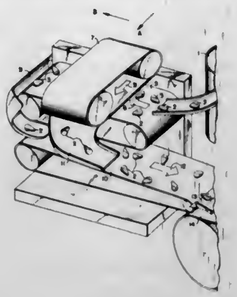


1. In an electromagnetic switch arrangement for conveyors of flat articles, such as letters or documents, and including a switch blade of ferromagnetic materials at least at its leading edge, and electromagnet means arranged at both sides in the region of the leading edge of the switch blade, the improvement wherein each electromagnet means includes a constantly energized portion and at least one pulse energized winding, and means for compensating for the constant magnetic flux in the particular magnet against which the switch blade is bearing when the opposite electromagnet means has its appropriate winding pulse energized.

3,286,813
APPARATUS FOR FEEDING STAMPINGS TO MACHINES
Paul Fuhrimann, 10 Centralstrasse, Romanshorn, Switzerland
Filed Oct. 19, 1964, Ser. No. 404,842
Claims priority, application Switzerland, Dec. 10, 1963, 15,142/63
13 Claims. (Cl. 198—33)

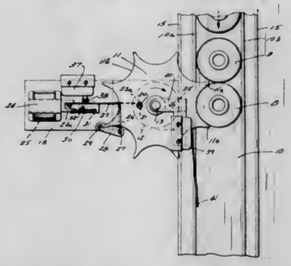
1. Apparatus for feeding burred stampings in the same attitudes to machines, comprising: upper and lower endless conveyor belts having non-slip surfaces, said endless belts being disposed at an angle one to the other with the lower run of said upper belt above the upper run of said lower belt in parallel planes at a clearance less than the thickness of the stampings; a third conveyor belt, the upper run of said lower belt being to receive all the stampings intended for a machine but to convey only downwardly burred stampings to said third conveyor belt and the lower run of said upper belt being to convey only up-

wardly burred stampings to said third conveyor belt; and means for inverting the stampings conveyed by one of said upper and lower conveyor belts before such stamp-



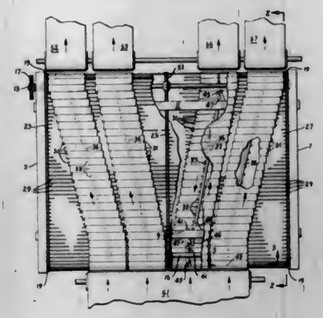
ings reach said third conveyor belt, so that all stampings received by said third conveyor belt are in the same attitudes.

3,286,814
ARTICLE GROUPING DEVICE
Everett J. Atkinson, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Oct. 22, 1964, Ser. No. 405,721
6 Claims. (Cl. 198—34)



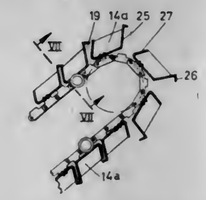
1. Apparatus for grouping articles into individual groups alike in number, comprising a horizontally traveling conveyor on which the articles are supported and carried forward through a grouping station, a rotatable starwheel defining a plurality of articles receiving pockets, means mounting the starwheel at said station in the path of the articles for receiving them in said pockets and guiding them forwardly through said station, and automatic means engageable with said starwheel preventing forward movement of the starwheel to arrest the articles at said station and actuated by predetermined line pressure of arrested articles to advance individual groups of said articles beyond said station, said means comprising a contactor connected to said starwheel for movement therewith in a rotary path, an arm, means mounting the arm for movement into and out of said path of the contactor, power-operated drive means connected to said arm normally moving the latter into the path of said contactor and operable for withdrawing it out of said path, said power-operated drive means comprising an electrically-operated solenoid, the arm being connected to the solenoid armature, and the solenoid is spring loaded so that when solenoid is de-energized the arm is extended into the path of said contactor, and control means connected to said drive means for energizing its said solenoid in response to a predetermined number of articles being accumulated in contact with star wheel at the grouping station.

3,286,815
SPACING DEVICE
Joseph Shuster, Saratoga, and Joe D. Giulie, Los Altos Hills, Calif., assignors to Illumitronic Systems Corporation, a corporation of California
Filed Dec. 16, 1964, Ser. No. 418,737
3 Claims. (Cl. 198—34)



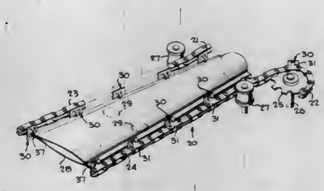
1. A device for changing the lateral spacing of a plurality of articles on a conveyor, comprising in combination:
(a) a conveyor belt of a certain width for conveying and delivering articles in one direction from a delivery end;
(b) an endless conveyor having a forward side and a rearward side, and having an upper horizontal run moving forwardly in said one direction and having a lower reversely moving horizontal run;
(c) means for driving said endless conveyor in said one direction;
(d) a plurality of elongate carrier plaques mounted on said endless conveyor to be carried forwardly thereby from said conveyor belt and movable laterally thereon perpendicular to said one direction of movement, each of said plaques having a top side and an underside and having a member projecting from the said underside thereof;
(e) said plurality of carrier plaques assembled to define a plurality of paths over the endless conveyor, each path having an article receiving end positioned to receive articles on the plaques directly from said delivery end of said conveyor belt and having an article discharge end;
(f) said carrier plaques in each of said paths being in longitudinal edge engaging relation with the said top sides thereof together forming an unbroken article supporting surface through the length of the path;
(g) said article receiving ends of said paths being in relatively close side by side relation and positioned approximately centrally of the endless conveyor and said conveyor belt width being at least equal to the combined widths of said receiving ends of the paths for delivering articles from the belt directly onto the plaques;
(h) a plurality of individual article receiving conveyor belts equal in number to said paths disposed at said forward side of said endless conveyor in a position for each to receive articles directly thereon from the plaques of the adjacent paths;
(i) said individual article receiving conveyor belts each being of a width less than the first said conveyor belt but at least substantially equal to the widths of the paths formed by the plaques;
(j) said plurality of individual article receiving conveyor belts being in spaced relation with one another and offset laterally of the direction of movement of said endless plaque carrying conveyor with respect to the article receiving ends of the adjacent paths of plaques;
(k) first guide cam rail means located under the upper run of said endless conveyor and adapted to be engaged by the depending members on said carrier plaques to urge said plaques into lateral diversion paths and effecting the said lateral offsetting of the plaques of the paths;
(l) and second guide cam rail means located above the lower run of said endless conveyor and adapted to be engaged by said members and to return said carrier plaques to a central position;
(m) said first and second guide cam rail means associated with each of said paths of plaques functioning to restrict or maintain the plaques to movement continuously in a fixed path so that the plaques of one path cannot cross over to an adjacent path.

3,286,816
BUCKET ELEVATOR
Herbert Knaust and Ulrich von Kritter, both of Heinr. v. Kleiststr. 2, Bad Homburg vor der Hohe, Germany
Filed Jan. 24, 1964, Ser. No. 339,958
7 Claims. (Cl. 198—149)



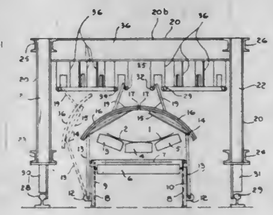
1. A bucket elevator comprising, in combination:
(a) a support;
(b) pulley means on said support;
(c) rail means mounted on said support and defining an upward elevator run;
(d) an endless elongated chain constituted by a plurality of consecutive links and trained over said pulley means;
(e) a plurality of wheels mounted on said chain in longitudinally spaced relationship and engaging said rail means;
(f) a plurality of substantially identical buckets mounted on respective links of said chain,
(1) each bucket having a bottom wall, two longitudinal side walls, and two longitudinally spaced walls transverse of the direction of elongation of said chain,
(2) said side walls and said transverse walls extending from said bottom in a normally upward direction away from said chain when said bucket travels over said upward run and having respective top edges remote from said bottom wall,
(3) said transverse walls respectively constituting the front and rear walls of said bucket, the rear wall of one bucket and the front wall of a consecutive bucket having respective portions adjacent said chain and obliquely inclined in a forward direction to the direction of bucket movement when the buckets travel over said upward run, said adjacent wall portions being substantially parallel and jointly defining a slot therebetween,
(4) a portion of one of said walls remote from said chain overhanging said slot and the top edge of the other adjacent wall,
(5) the center-to-center spacing of said buckets being at least twice the center-to-center spacing of said links in said direction of elongation; and
(g) fastening means fixedly securing a portion of said bottom adjacent said rear wall and remote from said front wall to the respective link for mounting said bucket thereon.

3,286,817
CHAIN CARRIER CLIP
Roger S. Brigham, Crete, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Sept. 6, 1963, Ser. No. 307,189
26 Claims. (Cl. 198—179)



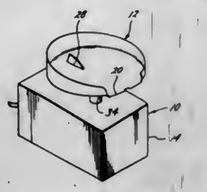
23. An article handling device for simultaneously conveying an article and applying compressive forces thereon transversely of the direction of article movement, said article handling device comprising a pair of endless conveyors having opposed straight runs disposed in converging relation, and article clamping clips carried by said conveyors, said clips being of the type wherein the greater the force exerted thereon by an article the greater the stripping action of said clips on the article.

3,286,818
AUTOMATIC BELT CONVEYOR COVERS FOR USE WITH TRAVELLING TRIPPER
Ian Scott Ross, 1334 W. Pender St., Vancouver, British Columbia, Canada
Filed Dec. 17, 1964, Ser. No. 419,034
8 Claims. (Cl. 198—204)



1. Conveyor belt cover and cover opening mechanism comprising in combination a conveyor belt travelling within a frame over conventional head and tail pulleys and idlers, a plurality of openable cover members pivotally mounted on said frame and over said conveyor belt, engaging-pins extending upwardly from said cover members, movable tripper carriage mechanism situated above said cover members, cover-opening mechanism suspended from said movable carriage and being engageable with said engaging-pins, and an inclined tripper frame member secured above said tripper carriage.

3,286,819
MATERIAL FEEDING APPARATUS
Walter P. Niblick, Sr., 8803 S. Main, Houston, Tex.
Filed Sept. 30, 1965, Ser. No. 491,722
9 Claims. (Cl. 198—220)



1. A material feeding apparatus comprising:
a bottom directed at an angle downwardly,
a wall connected to the periphery of the bottom and including a material discharge opening adjacent the lowest side of the bottom, said wall forming a rounded interior connection to the bottom for cleaning,
a lip projecting outwardly and upwardly from the bottom adjacent the discharge opening,
said lip including a nitch at the lowest point on the lip, said notch extending to the bottom for self cleaning of said bottom, and
means connected to the bottom for oscillating said bottom for feeding a material from the discharge opening.

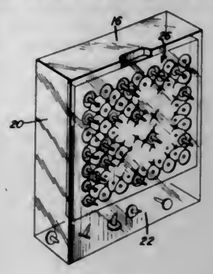
3,286,820
TITANIUM PRIMER FOR A VACUUM PUMP
Edmond C. Hurst, Stoughton, Wis., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Sept. 28, 1962, Ser. No. 227,691
1 Claim. (Cl. 206—.4)



A vacuum pump primer comprising tantalum wire wound in circular helical loops having an internal diameter approximately equal to the diameter of said tantalum wire, with adjacent loops contiguous and the interstices between said loops as small as possible; and a body of titanium filling the interstices of said loops of the helix and the interior thereof.

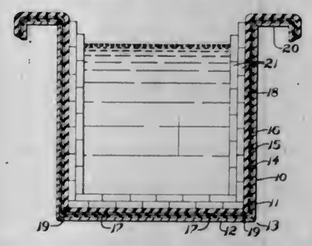
3,286,821
TACK RECEPTACLE AND DISPENSER
Rosemary Trenkamp, 102 Center Road, Page Park, Fort Myers, Fla.
Filed Oct. 26, 1964, Ser. No. 406,484
2 Claims. (Cl. 206—1)

1. A holder and dispenser for driven fasteners having elongated shanks and enlarged heads at one end thereof, said holder and dispenser comprising a substantially closed receptacle including a back wall, a peripheral side wall and a front wall consisting of an imperforate partial wall portion and a removable and reversible wall portion, said partial wall portion, in conjunction with the peripheral side wall and the back wall, defining a chamber at one end of the receptacle, said removable wall portion having a plurality of holes therein, each hole being of a size so as to receive the shank portion of a driven fastener therethrough while preventing passage of the fastener head, whereby, upon a shaking of the receptable with a supply of driven fasteners therein, a plurality of fasteners will be received within the holes in a manner so as to



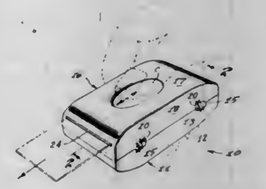
allow a reversal of the removable wall portion so as to expose the heads and allow a dispensing of the individual fasteners.

3,286,822
LINING FOR ACID TANKS
Theodore E. Saxman, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed May 5, 1965, Ser. No. 453,445
4 Claims. (Cl. 206—2)



1. An acid tank comprising a metal shell, a first sheet of rubber of substantial thickness bonded to the inner surface of the shell, a second sheet of rubber over the first with joints in the second sheet staggered from the joints in the first sheet and with the exposed surface of the second sheet of rubber smooth and free from shoulders and a brick sheathing over the rubber.

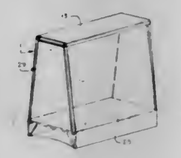
3,286,823
PLASTIC BUSINESS OR CALLING CARD DISPENSER
Richard P. Gillespie, Passaic, N.J., assignor to Berlin & Jones Co., East Rutherford, N.J.
Filed Oct. 20, 1964, Ser. No. 405,100
1 Claim. (Cl. 206—39)



A card case comprising a pair of substantially like upper and lower box-shaped cover portions each having a rectangular wall and a perimetral flange and with the flanges

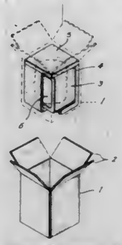
of each cover portion disposed in opposed abutting relationship defining a rectangular chamber for releasably storing a stack of cards, hinge means at one longer side of the case for pivotally connecting the cover portions to one another, catch means on the longer side of the case opposite from the hinge means for releasably holding the cover portions together in opposed relationship, the rectangular wall of the upper cover portion having a central elongated opening therethrough to permit frictional engagement of the top card of the stack therein for slidably ejecting the engaged card, a narrow slot at each transverse flange of the upper cover portion flush with the inside surface of its rectangular wall to permit unobstructed ejection of the top card of the stack in either direction, a follower plate within the lower cover portion engageable with the lowermost card of the stack and a bowed leaf spring disposed between the follower plate and the rectangular wall of the lower cover portion for urging the cards therein toward the rectangular wall of the upper cover portion having the opening therethrough.

3,286,824
WIRE BRACED CONTAINER FOR DISPLAY PACKAGE
Harry Rosenthal, Portsmouth, Va.
(304 Lake Circle Drive, Chesapeake, Va.)
Filed Sept. 24, 1964, Ser. No. 398,933
6 Claims. (Cl. 206—45.33)



1. A rigid display package assembly comprising: a flat rectangular base made of paperboard material serving as a support for an article to be displayed, said support being provided with a triangular cross section channel extending along the entire length of a longitudinal outer edge of said base, said channel being integral with and being formed by infolding and adhesively securing that part of the paperboard material of said base which constitutes an extension of the longitudinal outer edge of said base; a rigid, generally rectangular top member formed of joined paperboard layers, said rectangular top member having a dimension along the longitudinal outer edge thereof equal to the longitudinal outer edge of said base support member and said top member having an open edge at each short end thereof; two identical wire braces, the bottom end of each brace fitting into a corner of the channel of the base at opposite ends of said channel and the top end of each brace fitting between the open edges of said outer short ends of the top paperboard member, each of said identical wire braces being formed with vertical portion which forms a vertical edge of the package and also being formed with a perpendicular intucked portion in the shape of a lap which is inserted into the base channel spaces with the top member and the base member in parallel relation to each other, each of said wire braces being further formed with a prong end which is reversedly bent to form a knee of said lap, said prong end digging into an apex of said triangular section channel of the base to anchor the brace in proper spaced vertical relation at a corner of said base; and a transparent wrapping surrounding the assembly of wire brace pairs, base member and top member.

3,286,825
ARTICLE OF MANUFACTURE AND THE METHOD OF PACKAGING
Robert F. Laas, 5534 Southlea, Houston, Tex.
Filed Sept. 28, 1964, Ser. No. 399,788
5 Claims. (Cl. 206—46)



1. In an article of manufacture for use in packing delicate articles, a pair of rectangular strips of flexible packing material, one of said strips being anchored to the other strip in cross-wise relation, and another strip of packing material anchored to one end of and extending laterally from one of said rectangular strips.

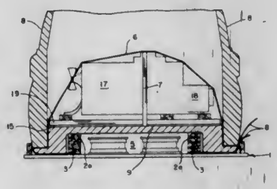
3,286,826
DOG REFUSE PACKAGE
Sigrid E. Stoll, 1800 N. Serrano St., Hollywood, Calif. 90027
Filed June 24, 1964, Ser. No. 377,589
1 Claim. (Cl. 206—47)



A portable combination flat package for use in removing dog refuse from an area in which it is deposited, including:
(a) a flexible fibrous container in the form of a sack having an open end that is defined by first and second flat side walls, two end walls and a bottom, with said end walls and bottom having centrally disposed fold lines formed therein that extend the length thereof, and said first side wall includes as an integral part thereof an extension that projects beyond said open end, which container is selectively disposable in either a first position in which it is flattened, a second position in which it is expanded to receive dog refuse through said open end when said extension is placed in contact with the surface on which said refuse rests, and a third position in which said container is rolled upon itself with said refuse within the confines thereof, with said extension when said container is in said third position being wrapped thereabout to seal the same;
(b) a rectangular sheet of cardboard of substantial stiffness disposed within said container when in said first position to prevent lateral creasing of said container, which sheet has a plurality of spaced fold lines formed therein that extend longitudinally and transversely therein which aid in shaping said sheet into a scoop when said sheet is removed from said container, and when said sheet is so shaped it defines two parallel longitudinally extending flanges that act as stiffeners in the use of said scoop to pick up refuse and deposit the same together with said sheet in said container when in said second position; and
(c) tie means within said container in said first posi-

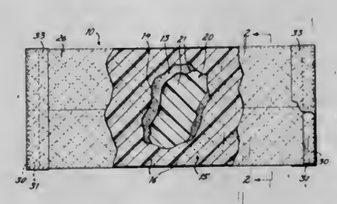
tion for holding said container in said third position with said refuse and sheet within the confines thereof with said extension being wrapped around said container to seal the same.

3,286,827
VEHICLE PACKAGING
John G. Cadillac, Saddle River, N.J., and Robert T. Cadillac, Brooklyn, N.Y., assignors to Aacon Contracting Co., Inc., a corporation of New York
Filed Dec. 21, 1964, Ser. No. 420,013
10 Claims. (Cl. 206—47)



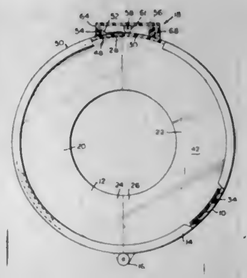
8. A vehicle cab and box for shipping which comprises, a pallet forming the bottom of the box; a plurality of support blocks secured to said pallet and positioned to engage the underside of said cab at the cab support members at those points where holes are drilled to secure said cab to its chassis; load distributing means positioned along the floor of said cab extending along and resting upon the cab support members; fastening means for securing said load distributing means in said position; and cradle means for supporting heavy subassemblies, said cradle means being secured in load bearing relationship to said load distributing means.

3,286,828
CLOTH-BOARD REEL
Joseph T. Yovanovich, Rosemont, Pa., assignor to National Tube and Reel Corporation, Belleville, N.J., a corporation of New Jersey
Filed Oct. 8, 1965, Ser. No. 494,071
8 Claims. (Cl. 206—50)



7. A cloth-board reel fabricated of flexible sheet material and comprising a longitudinally extending generally flat intermediate sheet, a first longitudinally extending stiffener sheet generally congruent and in facing relation with one face of said intermediate sheet, said first sheet having corrugations of generally rectangular cross-sectional configuration extending across said stiffener sheet generally 45 degrees to the longitudinal dimension thereof and defining generally rectangular areas of troughs in facing engagement with said intermediate sheet and generally rectangular areas of crests spaced from said intermediate sheet, a second longitudinally extending stiffener sheet generally congruent and in facing relation with the other face of said intermediate sheet, said second stiffener sheet having corrugations of generally rectangular cross-sectional configuration extending approximately 45 degrees obliquely across said second stiffener sheet transversely of said first-stiffener-sheet corrugations, said second-stiffener-sheet corrugations defining troughs of generally rectangular area in facing engagement with said intermediate sheet and crests of generally rectangular area spaced from said intermediate sheet, a wrapper sheet extending circumferentially about said intermediate and first and second stiffener sheets, and adhesive means securing said trough areas to said intermediate sheet and said crest areas to said wrapper sheet.

3,286,829
WRAP-AROUND REEL CASE
George F. Lyman, South Hadley, Mass., and Gregory Mathus, West Hartford, Conn., assignors to Data Packaging Corp., Cambridge, Mass., a corporation of Massachusetts
Filed Mar. 15, 1965, Ser. No. 439,837
4 Claims. (Cl. 206—52)

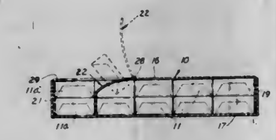


1. A reel closure comprising
an encircling wall made of a stiff material to resist distortion and having an inwardly facing channel for receiving the periphery of the flanges of a reel placed within the wall,
a rubber-like gasket disposed within the channel for sealing the edge of the reel closed when the wall is closed about the reel,
means formed as an integral part of the encircling wall and coplanar with one side of the channel for aligning the reel flanges with the channel when the reel is placed against the means,
two breaks provided in the encircling wall substantially 180° apart with the margins of one break secured together by a hinge,
a latch including a pivotally mounted plate on one margin of the second break and a shoulder on the other margin of said second break and engaged by the plate to yieldably retain the wall in a closed condition,
a closed chamber beneath the plate,
and spring means disposed within the chamber and engaging the plate and urging the plate to engage the shoulder.

3,286,830
PACK DISPENSING CARTON
Edwin F. Robb, Jr., Deephaven, Minn. (159 Baker Bldg., Minneapolis, Minn.)
Filed Aug. 23, 1965, Ser. No. 481,577
9 Claims. (Cl. 206—56)

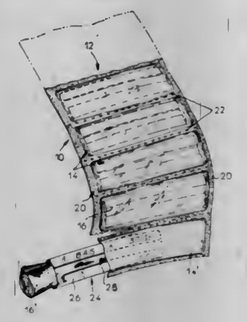
1. A pack dispensing carton comprising an elongated parallelepiped container in combination with a plurality

of packs packaged in said container, said container including a top wall and an end wall attached to the top wall, said top wall having a flexible closure member projected toward said end wall and a series of perforations defining the sides and one end of the closure member, said one end of the closure member being spaced from the end wall, the opposite end of the closure member



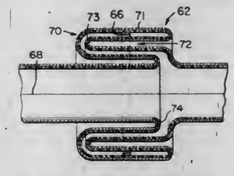
joined with the top wall and projected transversely thereto in a transverse plane longitudinally spaced from the end wall a distance of about twice the width of a pack, said closure member selectively bendable to an open position outwardly from the carton and to a closed protected position inside the carton in engagement with at least one pack, said closure member biasing said at least one pack toward said end wall.

3,286,831
PACKINGS FOR STOCKINGS AND LIKE ARTICLES
Bernard Giberstein, Paris, France, assignor to "Begy" Societe Europeenne de Bas Sans Couture, Autun, Saone-et-Loire, France, a French body corporate
Filed Dec. 8, 1965, Ser. No. 512,467
Claims priority, application France, Dec. 8, 1964, 997,899
1 Claim. (Cl. 206—56)



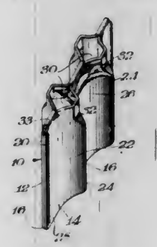
A packaging for stockings consisting of a continuous strip of detachable individual pouches, each of which contains but a single stocking, comprising a first envelope consisting of a tubular element open at its two ends and having a longitudinal portion made of a transparent material to make the color of the stocking apparent and another portion of an opaque material carrying different marks indicating the size, the brand and the price of the stocking, said envelope containing a single stocking in a rolled and flattened condition, and two superposed rectangular sheets of transparent synthetic material free of any marks secured together by welding or gluing along their longitudinal edges and also transversely to form individual rectangular pouches each of which contains a stocking in its aforementioned envelope, and perforations along the said transverse connections to permit the said pouches to be easily separated.

3,286,832
STERILE ARTICLE PACKAGE
Nicholas J. Pilger, Thousand Oaks, Calif., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Mar. 30, 1966, Ser. No. 538,796
9 Claims. (Cl. 206—56)



1. A sterile article package comprising an envelope of air-impervious material surrounding and enclosing the article,
said envelope having a sterile internal surface,
a portion of said envelope defining a panel having opening means associated therewith for separating said panel along a line to gain access to said article,
and means cooperating with said opening means tending to curl the panel areas adjacent said separation line upwardly and outwardly therefrom to upwardly expose said sterile internal surface thereat on either side of said separation line,
whereby contact of the packaged article with the relatively unsterile package external surface is prevented during withdrawal of said article through said separated panel.

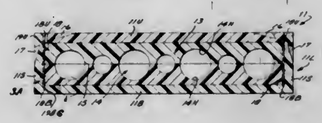
3,286,833
MOLDED PULP PACKAGING UNIT
Gilbert R. Chadbourne, Oakland, Maine, assignor to Keyes Fibre Company, Portland, Maine, a corporation of Maine
Filed Dec. 2, 1963, Ser. No. 327,269
12 Claims. (Cl. 206—65)



6. A molded pulp article for holding a group of cylindrical rimmed cans positioned in two parallel rows with the cans in each row having their upper and lower rims, respectively, in contact comprising a sheet of molded pulp adapted to be positioned between the two rows of cans, the positioner including an upper margin providing rim support portions adjacent each can position and a lower margin providing rim support portions adjacent each can position, the distance between the rim support portions of the upper and lower margins being equal to the distance between the upper and lower rims of the cans so that can rims may closely overhang the marginal rim support portions, a relatively rigid wall portion between the upper and lower margins to retain the two rows of cans in generally parallel alignment, ridge means formed on opposite sides of the wall portion to restrain the cans in each row against movement in a lateral direc-

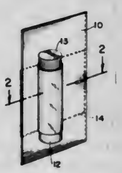
tion parallel with the wall portion of the positioner, and portions on at least the upper margin which extend out of the plane dividing the two rows of cans to provide finger grip openings.

3,286,834
PROTECTIVE PACKAGING APPARATUS FOR EASILY DAMAGED OBJECTS
Edgar English, Jr., Edwards, Calif. (P.O. Box 169, Rosamond, Calif.)
Filed Nov. 17, 1964, Ser. No. 411,736
11 Claims. (Cl. 206—65)



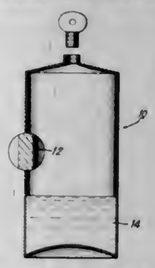
1. Protective packing apparatus for easily damaged objects, comprising: container means having an interior chamber therein and provided with at least two adjacent area-coextensive protective compressible pad means having opposed mating aligned recess means portions formed therein, said opposed mating recess means portions cooperating with the similar adjacent aligned recess means portions to define corresponding complete recess means, with each recess means being adapted to receive and protectively support therein a substantially similarly shaped and sized easily damaged object therein with said mating recess means portions being in surface contact with substantial surface areas of said easily damaged object whereby to firmly and protectively support same within said recess means in nested relationship therein; and structural strength-imparting supporting stiffener wall means of substantial compressive strength positioned effectively around said compressible pad means immediately adjacent to corresponding portions of said container means and effectively stiffening and supporting same to prevent the compressive collapse thereof under compressive loading up to a predetermined maximum value.

3,286,835
DISPLAY PACKAGE AND METHOD OF MAKING THE SAME
William B. Crane, Jr., New York, N.Y., assignor to United Shoe Machinery Corporation, Flemington, N.J., and Boston, Mass., a corporation of New Jersey
Filed June 19, 1964, Ser. No. 376,430
30 Claims. (Cl. 206—80)



13. A display package comprising
(a) a display card having an opening,
(b) a display product positioned on the card generally in the region of said opening and with at least a portion of the product projecting forward of the opening, and
(c) a strip of thermoplastic film secured to the back of the card and having an open-ended, loop-forming portion extending through the opening and embracing the product,
(d) at least the loop-forming portion of the film being in a heat-shrunk-taut condition to secure the product tightly to the front face of the card, said loop-forming portion being of re-formed configuration and having a smaller loop circumference than prior to re-formation.

3,286,836
LINED FLASK FOR MERCURY
Giulio Cesari, Rome, Italy, assignor to Monte Amiata, Società Mineraria per Azioni, Rome, Italy, a corporation of Italy
Filed June 30, 1965, Ser. No. 468,464
2 Claims. (Cl. 206—84)



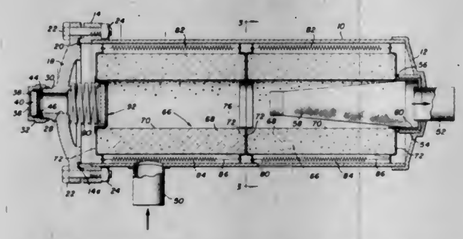
1. A hollow iron container with a mouth, said container having a coating of a cured epoxy resin on the internal surface thereof and said container having a body of mercury stored therein.

3,286,837
BENEFICIATION OF TIN ORE
Venancio Mercade and James B. Duke, Metuchen, N.J., assignors to Minerals & Chemicals Philipp Corporation, Township of Woodbridge, N.J., a corporation of Maryland
Filed Mar. 20, 1964, Ser. No. 353,559
15 Claims. (Cl. 209—166)



1. In a method for recovering cassiterite from an ore containing silicate and quartz minerals wherein the cassiterite is floated from gangue minerals in an acid pulp in the presence of collector reagents capable of floating both cassiterite and silicate gangue minerals,
a preliminary step of subjecting an aqueous pulp of the ore to flotation in an acid circuit in the presence of a cationic nitrogenous collector reagent and fluoride ion in the absence of a fatty acid reagent, said cationic nitrogenous collector reagent being selected from the group consisting of fatty amine containing 18 carbon atoms and fatty acid alkanolamide derived from fatty acids containing from 12 to 18 carbon atoms, thereby to produce a silicate-rich froth product and a machine discharge product, washing said machine discharge product until said machine discharge product is substantially free of fluoride ion, thereby providing an aqueous pulp that is more amenable to subsequent concentration of cassiterite by froth flotation in an acid circuit in the presence of flotation reagents that would otherwise be capable of floating both cassiterite and silicate gangue.

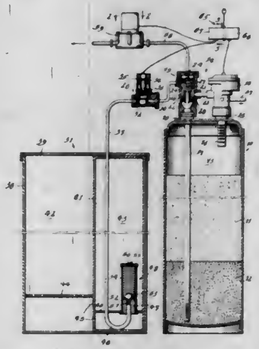
3,286,838
REFRIGERANT DRIER OR FILTER
Evan Jones, Evanston, Ill., assignor to Henry Valve Company, Melrose Park, Ill., a corporation of Illinois
Filed Mar. 6, 1963, Ser. No. 263,278
3 Claims. (Cl. 210—95)



3. In a refrigerant drier assembly of the type having a sleeve-like casing with at least one drier cartridge unit removably mounted therein, which cartridge unit is of the radial flow type and includes a cylindrical drier element with an axially extending central bore and with annular cap plates mounted at each end of the drier element, which casing has a first refrigerant connection communicating with the interior thereof through a side wall portion of the casing, and which casing includes a second refrigerant flow connection communicating with the interior of said casing at one end thereof, a cover plate at each end of the casing with one of the cover plates and the casing defining a chamber at one end of the cartridge unit, which one cover plate includes a centrally disposed window in axial alignment with the central bore of the drier element, the improvement comprising, a ring assembly detachably mounted in the cap plate at said one end of the cartridge unit, which ring assembly includes another window mounted therein, a coil spring coaxial with said central bore, which spring has opposite ends thereof in respective engagement with said one cover plate around the window therein and with said ring assembly around the other window therein, whereby the spring serves both to maintain the ring assembly on said one cap plate and to yieldably hold the cartridge unit in place in the casing.

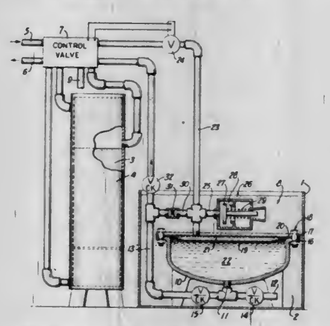
3,286,839
BRINE SAVER DEVICE
Charles E. Lyall, Deerfield, Ill., assignor to Culligan, Inc., Northbrook, Ill., a corporation of Delaware
Filed July 16, 1962, Ser. No. 210,121
5 Claims. (Cl. 210—101)

5. A brine saver device for utilization with an automatically controlled periodically regenerated water conditioning unit including a tank containing ion exchange material, a control valve for said tank, a hard water supply line and a service line communicating with said control valve, a brine tank adapted to supply regenerant to said valve, and a conduit communicating between said brine tank and said valve, the brine saver device comprising a positive displacement water meter positioned in said service line to measure the quantity of water treated by said tank, a first cam in said meter rotated thereby as water passes therethrough, a first single pole double-throw switch on said meter, a follower arm on the switch resting on said cam, a switch arm actuated by said follower arm, said cam being so contoured as to shift the follower every 180° of cam revolution, a timer motor, a second cam rotated by said timer motor, a second single pole double-throw switch having a follower cam actuated by said second cam every 180° of cam revolution, a second switch arm on the second switch actuated by its associated follower arm, a brine solenoid valve located in said conduit, a source of electric current, one line



from said source communicating with the switch arm of said first switch, the other line from said source being connected in series with said timer motor, said brine solenoid valve and the switch arm of the second switch, a pair of contacts in each switch adapted to be alternately contacted by the switch arm of the switch, and a pair of lines connecting corresponding contacts of each switch, whereby the switches cooperate to intermittently actuate said brine solenoid valve to supply softened water to said brine tank.

3,286,840
PULSATING FLUID PUMP
William Albert Staats, Torrance, Calif., assignor by mesne assignments, to Culligan, Inc., Northbrook, Ill., a corporation of Delaware
Filed Jan. 8, 1964, Ser. No. 336,482
11 Claims. (Cl. 210—134)



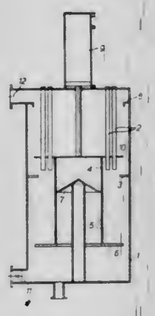
1. In combination with a brine source and a water softening bed, a cyclically operable fluid pumping system for transferring the brine solution to the water softening bed, comprising,
(a) a fluid operated pump having a movable pumping member establishing an actuating chamber and a pumping chamber adapted to be connected to the softener bed and to the brine source, said pumping

member being resiliently urged to preselected position in said pumping chamber and movable therefrom to effect a transfer of fluid through said pump,

(b) a pressurized water source selectively operably connected to said actuating chamber, and

(c) a pressurized relief passageway means between the brine source and said actuating chamber including a resiliently loaded valve means continuously urged to an open position against the pressure in the actuating chamber, said valve means being closed by the pressure differential established thereacross due to a change in pressure in the actuating chamber to a pressure intermediate the maximum and minimum operating pressures.

3,286,841
MAGNETIC FILTER MECHANISM
Erich Dinglinger, Heinrich-Heinestr. 50, Bremen, Germany
Filed Sept. 13, 1962, Ser. No. 223,563
Claims priority, application Germany, Sept. 19, 1961, D 37,126
3 Claims. (Cl. 210—223)



1. In a magnetic filter system, the combination comprising

a casing having an inlet adjacent the lower end therein through which contaminated fluid is directed and an outlet adjacent the upper end thereof through which cleaned fluid is removed,

a plurality of magnetic cells positioned within said casing,

each said cell comprising a plurality of permanent magnets assembled in an elongated vertical stack,

a filter tube of non-magnetic material having a perforated side wall thereof mounted in said casing with its axis extending generally vertically and the magnetic cells positioned adjacent the exterior of the perforated side wall of said tube,

means for moving said filter tube generally vertically and parallel relative to said magnetic cells,

said filter tube having an imperforate top wall closing the interior thereof,

said filter tube having an open bottom wall,

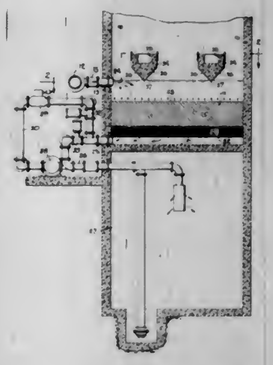
said filter tube having an imperforate peripheral flange on the lower end thereof,

a generally horizontal sealing ring on the interior of the casing intermediate the top and bottom of said casing cooperating with said flange to direct inflow to either the exterior or the interior of the filter tube,

and a fixed valve on the interior of the casing cooperating with the lower end of the filter tube to either open or close the tube,

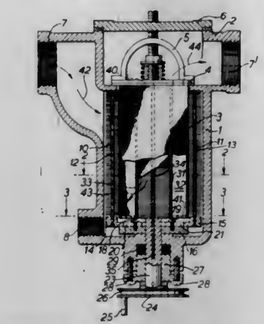
whereby when the lower end of said filter tube is in engagement with said fixed valve, all of said contaminated fluid flows exteriorly of said filter tube, when said filter tube is in contact with the sealing ring, all of the contaminated fluid flows into said filter tube and when the filter tube is in an intermediate position between the sealing ring and the fixed valve, some of the contaminated fluid flows exteriorly of said filter tube.

3,286,842
FILTER APPARATUS
George E. De Jong, 509 Empire Bldg., Rockford, Ill.
Filed July 3, 1962, Ser. No. 207,218
1 Claim. (Cl. 210—275)



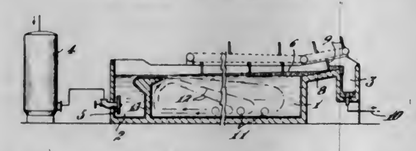
Liquid filtering apparatus comprising a plurality of filtration cells arranged in a horizontal row, each cell having a bed of filter material disposed within it and filling the cell to a predetermined level, a common header for liquid to be filtered, said common header communicating with a clarification tank containing liquid to be filtered, a liquid inlet conduit for each cell communicating with said common header, check-valve means in each inlet conduit, each of said inlet conduits opening to its cell above said predetermined level, a common filtered-water collection pipe discharging into a clear well, a plurality of outlet conduits each connecting the discharge of a filter cell with the common filtered-water collection pipe, an effluent valve in each of said outlet conduits, backwash means for effecting a reverse flow of liquid upwardly through the bed of filter material, said backwash means including a common backwash supply conduit having its source of supply in said clearwell, a backwash supply line for each filter cell connecting said common backwash supply line with the outlet conduit at a point between the cell discharge and the effluent valve, a backwash valve in each backwash supply line, backwash discharge means comprising at least one open trough extending across said cells at a level higher than the level at which said inlet conduits communicate with the cells, said trough terminating in said clarification tank, said trough having an upper portion with an upwardly-opening channel and having a depending lower portion decreasing in cross-section downwardly, the sidewalls of said cells along the trough being substantially upright, and said lower portion of the trough terminating at a point spaced a substantial distance below the channel to form a progressively and upwardly narrowing, substantially reduced effective cross-sectional area in each cell, whereby the velocity of the backwash liquid is increased adjacent the trough.

3,286,843
SELF-CLEANING FILTER
Frederick Kraissl, Jr., 244 Kinder Kamack Road, North Hackensack, N.J.
Filed Aug. 20, 1965, Ser. No. 481,317
3 Claims. (Cl. 210—332)



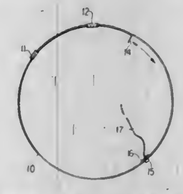
1. A self-cleaning separator comprising a casing, a lateral inlet and a lateral outlet for fluid adjacent the upper end thereof, a substantially cylindrical separator in said casing, an opening in the top of said casing, the diameter thereof being at least equal to that of said separator, a base below said separator, a shaft extending downwardly from said base and axial with respect to said separator, means attached to said shaft outside of said casing for rotating said shaft, said separator having outer and inner cylindrical members concentric with each other and defining an annular space therebetween, an inner central brush in said inner member attached to said shaft on said axis and contacting said inner member, radial arms extending laterally from said base, and outer brushes on the ends of said arms contacting the outer face of said outer member first impermeable means closing the lower end of said annular space, second impermeable means closing the upper end of said inner member, said inlet communicating with the outer face of said outer member and the inner face of said inner member, said outlet communicating with said annular space, and means at the top of said separator for lifting the same from the casing without displacing said brushes.

3,286,844
FIBER FLOTATION APPARATUS
Fredrik Juell, Oslo, Norway, assignor to E. D. Jones Corporation, Pittsfield, Mass., a corporation of Delaware
Filed Sept. 26, 1963, Ser. No. 311,898
2 Claims. (Cl. 210—523)



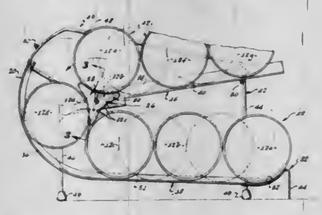
1. Fibre recovery apparatus comprising an inlet chamber and a flotation chamber, the inlet chamber having an inlet for introducing aerated fiber suspension and the flotation chamber having an outlet for floating fibers, means in said flotation chamber for removing clarified water, a partition wall separating said chambers from one another and extending upwardly and terminating below the level of said outlet in a wide top surface, leaving a shallow liquid passage over the top surface of the partition throughout the length and width of the partition, and a scraper for moving the material floating in the flotation chamber towards said outlet, characterized in that the upper end of the side of said partition wall in the flotation chamber and said partition increases in thickness upwardly to provide said wide top surface.

3,286,845
HANGER
Edwin L. Meyer, 376 Cleveland Ave., Bridgeport, Conn., and James W. Robertson, Silver Hill Road, Easton, Conn.
Filed Nov. 2, 1964, Ser. No. 408,029
5 Claims. (Cl. 211—34)



1. In a boot hanger, a strip of resilient, relatively stiff material having guide means formed at one end thereof; a connector attached to said strip at substantially its midpoint; an eyelet fixed to said connector, the construction being such that the end of the strip opposite that supporting the guide means can be threaded through the guide means to form an expansible and contractable hoop; and a cord fixed to said eyelet.

3,286,846
RACK FOR STORING AND DISPENSING CONTAINERS
Arthur Brandes, Monrovia, Calif. (13741 Thunderbird Drive, 1–F, Seal Beach, Calif. 90740)
Filed Dec. 2, 1964, Ser. No. 415,409
9 Claims. (Cl. 211—49)



2. A rack for storing and dispensing cylindrical containers, comprising:

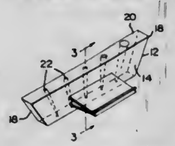
frame means;

an elongated dispensing trackway on said frame means adapted to receive such containers at its rearward end for rolling movement thereon in tandem toward its forward end;

an elongated loading trackway on said frame means overlying said dispensing trackway and spaced thereabove, said loading trackway being adapted to receive such containers at its forward end for rolling movement thereon in tandem toward its rearward end; and

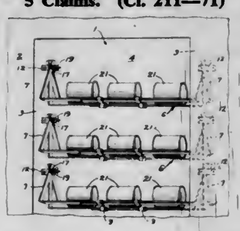
anti-jamming means on said frame means including a rotatable style for transferring sequentially containers from the rearward end of said loading trackway to the rearward end of said dispensing trackway, said style engaging simultaneously a plurality of containers and maintaining spacing between containers so engaged.

3,286,847
ARTIST'S BRUSH HOLDER
Edward V. LeBlanc, 1080 Massachusetts Ave., Arlington, Mass., and Evangelos George Galinos, 45 Greenwood Rd., Burlington, Mass.
Filed Jan. 15, 1965, Ser. No. 425,881
1 Claim. (Cl. 211—65)



For use with a painter's pallette a brush holder of trapezoidal outline with parallel front and back surfaces and with a series of elongated downwardly tapered and downwardly converging apertures open at both ends for easy cleaning with their axes in a plane midway between the two surfaces, said plane being perpendicular to the surface of the pallette while the long and short parallel edges of the trapezoid are respectively above and below the surface of the pallette when the holder is in place with its front surface in full-length contact with the rear edge of the pallette, and a pair of resilient arms of substantial width extending forwardly from only the middle portion of the holder with their free ends converging toward each other for supporting the holder on the pallette said arms having curved tip portions diverging from each other for easy fitting of a pallette edge between the arms.

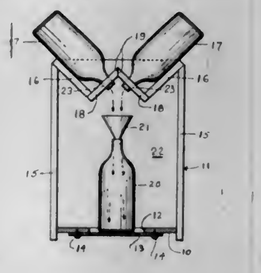
3,286,848
CAN HANGER SHELF
Donna J. Galli, San Anselmo, Calif., assignor of one-half to Beverly Bernardi, Daly City, Calif.
Filed Feb. 2, 1965, Ser. No. 429,780
5 Claims. (Cl. 211—71)



1. A can hanger shelf comprising
(a) a plurality of support elements spaced from one another to form a cradle for cans laid on their sides thereon,
(b) a substanially perpendicular hanger member at each end of each support element, the free ends of adjacent hanger members being superimposed,
(c) and means to pivotally mount said superimposed ends on a supporting surface thereby to hold said support elements in cradle forming position.

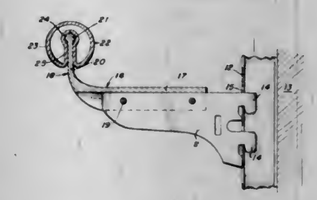
3,286,849
RACK
Nick Dominos, 157 Belmont Ave., North Arlington, N.J.
Filed May 26, 1965, Ser. No. 458,917
3 Claims. (Cl. 211—74)

1. A rack comprising:
(a) a generally flat base;
(b) a pair of generally vertical side-panels attached at opposite sides of the base;
(c) a pair of supports each attached to one of the side panels and extending in an inward and downward direction;
(d) a pair of positioning panels each attached to one of the supports and extending in an inward and upward direction with their ends in engagement, each panel having a passage therethrough dimensioned to receive the neck of a bottle to be drained;



(e) a cut-out area on the base dimensioned to receive a collector vessel.

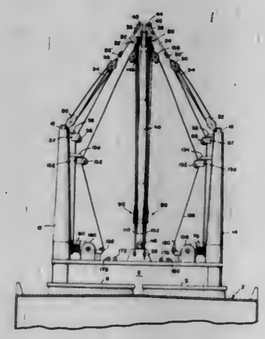
3,286,850
HANG ROD ASSEMBLY
Richard R. Ruhnke, Skokie, Ill., assignor to Garcy Corporation, a corporation of Illinois
Filed Nov. 16, 1964, Ser. No. 411,368
6 Claims. (Cl. 211—105.1)



1. In a hang rod assembly, a bracket, an adapter mounted on said bracket, said adapter comprising a body portion and a support member extending upwardly and integral with said body portion, and a tubular hang rod suspended from the upper edge of said support member and supported solely by said support member, said hang rod having interior portions thereof in engagement with opposite surfaces of said support member, and the entire exterior portion of said hang rod being free of engagement with said support member.

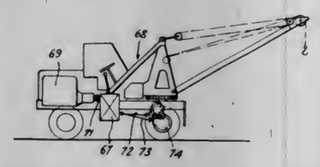
3,286,851
CARGO HANDLING RIG
John R. Sperg, Philadelphia, Pa., assignor to Sun Shipbuilding & Dry Dock Company, Chester, Pa., a corporation of Pennsylvania
Filed Nov. 6, 1964, Ser. No. 409,356
3 Claims. (Cl. 212—3)

1. Cargo handling apparatus comprising a boom having its heel mounted for universal movement, mast means mounted on either side of said boom heel, boom topping lift means connected to the boom head and said mast means for positioning the boom and a pair of cargo fall purchases having one of the purchases depending from one side of the boom head and the other of the purchases depending from the other side of the boom head, each purchase comprising a lower block and an upper block which is mounted adjacent the boom head, line means reeved through said purchases, winch means operatively connected to said line means, and means to connect together the lower purchase blocks comprising a projecting



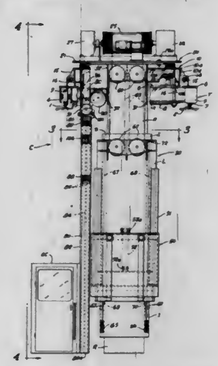
member on one lower purchase block and a hollow member for the reception of the projecting member on the other lower purchase block.

3,286,852
GEAR BOX
Arthur Haulotte, La Martiniere, Chambery, Savole, France
Continuation of application Ser. No. 70,730, Nov. 21, 1960. This application Dec. 5, 1963, Ser. No. 329,345
Claims priority, application France, Nov. 20, 1959, 810,784
2 Claims. (Cl. 212—38)



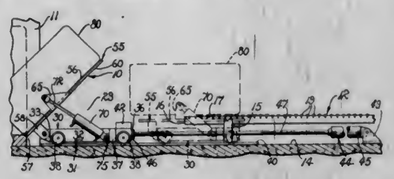
1. Hoisting apparatus comprising a vehicle, wheels supporting said vehicle, a platform rotatably mounted on said vehicle, a jib having a lower end pivoted on said platform, a jib winch, a hoisting winch, power means for driving said jib winch, said hoisting winch, said rotatable platform, and said wheels, and gearbox means independently connecting said power means to said jib winch, hoisting winch, rotatable platform, and wheels, for movement thereof in any of two directions, said gearbox means comprising: an input shaft, a pair of pinion gears of the same size supported on said input shaft for rotation therewith, a first output shaft, a first larger gear and a first smaller gear loosely supported on said first output shaft, a second output shaft, a second larger and a second smaller gear loosely mounted on said second output shaft respectively in mesh with said first smaller and first larger gears on said first output shaft, said pinion gears being respectively in mesh with said first and second larger gear, a third output shaft with a third smaller gear and a third larger gear loosely mounted and respectively in mesh with said first larger and smaller gears, a fourth output shaft with a fourth smaller gear and a fourth larger gear loosely mounted thereon and respectively in mesh with said second larger and said second smaller gears, clutch means for each of the gears on said output shafts for respectively engaging the latter gears in driving relation with the corresponding output shaft, said smaller and larger gears on each output shaft being driven in opposite directions thereby enabling each of said output shafts to be driven in opposite directions by selective engagement of the respective clutch means, said smaller and larger gears on each output shaft causing such shaft to rotate at different preestablished speeds, said output shafts being coupled respectively to said jib winch, said hoisting winch, said rotatable platform, and said wheels, the higher speed being used for driving said hoisting winch to raise the load and the lower speed being used for driving the hoisting winch to lower the load such that the motive force of the load which is developed as the latter descends causes the speed of the latter to increase to a magnitude substantially equal to that at which the load is raised by said hoisting winch.

3,286,853
STACKER CRANE POWER LIFT MECHANISM
Max J. Dechantsreiter, Milwaukee, Wis., assignor to Harnischfeger Corporation, West Milwaukee, Wis., a corporation of Wisconsin
Original application Dec. 24, 1964, Ser. No. 420,908, now Patent No. 3,250,399, dated May 10, 1966. Divided and this application Nov. 10, 1965, Ser. No. 507,206
1 Claim. (Cl. 212—128)



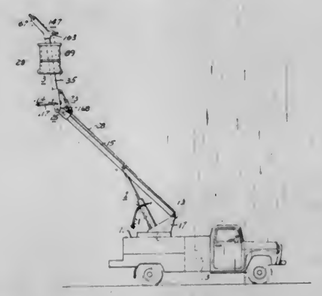
An overhead travelling crane having a turntable rotatably mounted about a vertical axis, a downwardly extending, telescoping mast assembly secured to said turntable and for vertically positioning a load carried by said assembly, said assembly comprising a rigid mass secured to said overhead crane, a rectangular in cross section intermediate mast mounted around said rigid mast in telescoping relationship therewith and vertically movable relative to said rigid mast, an elongated and rectangular in cross section load mast having means to support a load, said load mast mounted around said intermediate mast and vertically movable relative to said intermediate mast, power lift means mounted on said turntable and connected directly to said load mast for imposing the weight of the load directly on said rigid mast and affecting vertical movement of said load mast, said power lift means including a power winch drum on said turntable, sheaves mounted on the outside of the upper end of said elongated load mast, and a flexible cable connecting said drum and said sheaves; a flexible lift connection between said intermediate mast, said rigid mast, and said load mast, said flexible lift connection comprising sheaves mounted on and adjacent the lower end of said intermediate mast, cable means trained around said sheaves and dead-ended on the rigid mast and on and within the load mast, whereby vertical movement of said load mast causes vertical movement of said intermediate mast in the same direction but at a lower speed.

3,286,854
BALE HANDLING DEVICE
Richard B. Crawford, P.O. Box 664, Fresno, Calif.
Filed Dec. 2, 1964, Ser. No. 415,297
6 Claims. (Cl. 214—1)



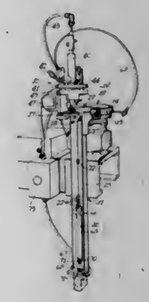
1. A bale handling device adapted to transport bales between a bale press and a conveyor spaced from the press comprising a carriage; first powered means connected to said carriage for selective reciprocal movement of the carriage along a predetermined path of travel between the press and the conveyor; a bale support pallet pivotally mounted on the carriage and having a pair of opposite leg portions defining therebetween a slot at least wider than said conveyor; and second powered means mounted on the carriage and connected to the pallet at a point eccentrically from said pivotal connection of the pallet with the carriage for selective swinging movement of the pallet between a substantially horizontal position when disposed adjacent to the conveyor, and a position upwardly inclined from the carriage adjacent to the press said leg portions being adapted to extend on opposite sides of the conveyor when the carriage is disposed in said horizontal position.

3,286,855
CRANE EXTENSION AND RESULTING CRANE ASSEMBLY
Theodore R. Bill, San Leandro, Calif., assignor to Standard Trailer Company, a corporation of California
Filed June 1, 1965, Ser. No. 460,192
12 Claims. (Cl. 214—3)



1. A crane comprising
a boom
a boom extension hingedly secured to the end of said boom, said boom extension comprising hinge means anchored at one end to said boom and at its other end terminating in means for attaching one end of a beam thereto, a beam attached at one end to said hinge means, and means for raising said boom extension about the end of said boom and through a range approaching a substantially vertical position,
a carrier assembly adjustable along said beam, and means for locking said carrier assembly to said beam at a selectable position thereon,
and a workman supporting means carried by said carrier assembly.

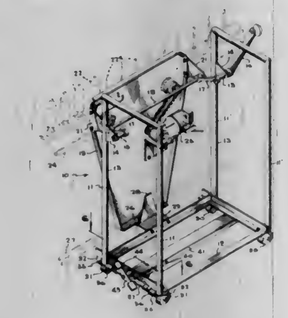
3,286,856
MANDREL THREADING APPARATUS
John E. Greenlay, Rosemount, Montreal, Quebec, and Bernard A. Berger, Montreal, Quebec, Canada, assignors to Northern Electric Company Limited, Montreal, Quebec, Canada
Filed Aug. 2, 1965, Ser. No. 476,356
13 Claims. (Cl. 214—8)



1. An apparatus for threading articles each having a central bore therethrough onto a wire mandrel, said apparatus comprising an article retaining means having an article receiving opening therethrough, a mandrel supporting means at one side of said retaining means for holding the mandrel with one free end projecting into said opening, said retaining means having resilient means about said opening for engaging one of the articles and frictionally retaining said one article in said opening with the free end of the mandrel projecting into the bore of said one article to thereby centralize said free end in said opening, a holding means adjacent the opposite side of the retaining means as the mandrel supporting means and adapted to hold another of the articles with the bore thereof aligned with the central axis of the opening in said retaining means, means for feeding articles one at a time into said holding means, and a press means for pushing the article held in the holding means to thereby replace said one article in said opening whereby said one article will be released from said retaining means to slide freely along said mandrel.

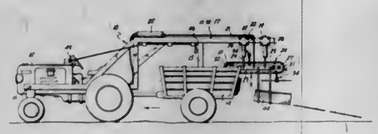
3,286,857
TRANSPORTING CARRIAGE FOR AUTOMATIC DOFFING APPARATUS AND THE LIKE
James F. King, Jr., and Donald A. Sloan, Winston-Salem, N.C., assignors to The Bahnson Company, Winston-Salem, N.C., a corporation of North Carolina
Filed June 30, 1964, Ser. No. 379,074
12 Claims. (Cl. 214—38)

1. A wheeled carriage for transporting a load over a floor and positioning the same in selectively aligned relation on a load receiving structure, comprising a rigid carriage frame having means defining a stationary horizontal pivot axis spaced above the floor, a plurality of floor engaging wheels journalled in said frame arranged in a pair of laterally spaced wheel zones lying on opposite sides of said pivot axis whereby said pivot axis lies between said wheel zones, a generally vertically arranged, vertically elongated rigid movable mounting panel having an upper portion located near the vertical level of said stationary pivot axis for supporting the load and a lower portion located below said stationary pivot axis, eccentric members rotatable about said stationary pivot axis having means pivoted to the upper portion of said panel defining a movable pivot axis paralleling and spaced eccentrically of said stationary pivot axis, and means for rotating said eccentric members about said stationary pivot axis between an inboard transport position disposing said movable pivot axis and the load supporting upper portion of said panel between said wheel zones for convenience of transport and a load transfer position disposing said movable pivot axis



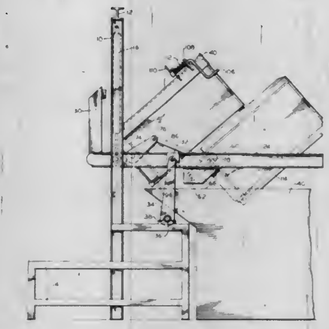
and the load supporting upper portion of said panel between said wheel zones for convenience of transport and a load transfer position disposing said movable pivot axis and the load supporting portion of said panel outboard of said wheel zones and projected laterally from one of the wheel zones to engage the load receiving structure.

3,286,858
CANE PLANTER
Leonard J. Julien, Rte. 1, Box 173, Donaldsonville, La.
Filed Nov. 19, 1964, Ser. No. 412,361
10 Claims. (Cl. 214—83.26)



1. Cane planting machinery for cooperation with an open-topped vehicle, said machinery comprising a portably mounted main frame, an elongated sub-frame suspended from said main frame, means for connecting said main frame to said vehicle in a position in which at least one end of said sub-frame is suspended over said vehicle and is constrained to travel therewith, means for raising and lowering said sub-frame relative to said main frame, at least one flexible endless carrier means mounted on said sub-frame to travel in a predetermined path relative thereto, means for driving said endless carrier means, grab means carried by and spaced longitudinally along said endless carrier means, said grab means being adapted to open and close in a direction transverse to said predetermined path, means biassing said grab means to its closed position, expander means on said sub-frame positioned to temporarily open said grab means at a cane pick-up point near one end of said sub-frame and at a cane release point near the other end of said sub-frame, and upwardly open trough means positioned beneath said release point to receive cane released by said grab means and guided into a predetermined position relative to the path of travel of said vehicle.

3,286,859
METHOD FOR DUMPING CONTAINERS
Alfred W. Gerrans, San Jose, Calif., assignor to Sunsweet Dryers, San Jose, Calif., a corporation of California
Original application Feb. 6, 1962, Ser. No. 171,489, now Patent No. 3,245,561, dated Mar. 29, 1966. Divided and this application May 26, 1965, Ser. No. 474,194
3 Claims. (Cl. 214—152)



1. The method of dumping containers where each of the containers has a top with an open mouth therein and a geometrical center which comprises:
(a) supporting a pair of said containers in piggyback relation with the mouths of both of said containers facing upwardly and with one container of the pair resting on the top of the other container of the pair, and
(b) moving said containers to a dumping position by simultaneously
(1) moving the geometrical centers of the containers away from each other, and
(2) moving said containers to positions where they are at least partially inverted with the mouths thereof facing downwardly while still supporting said containers together.

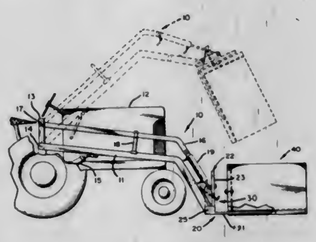
3,286,860
APPARATUS FOR LIFTING AND TILTING CONTAINERS FOR EMPTYING THEM INTO A RECEIVER
Jakob Naab, Schillerstrasse 17, Laubenheim (Rhine), Germany
Filed Feb. 15, 1965, Ser. No. 433,263
Claims priority, application Germany, Feb. 15, 1964, Z 10,651
7 Claims. (Cl. 214—303)



1. An apparatus for lifting and tilting containers comprising, in combination:
(a) a lifting and tilting frame cooperable with a container to carry the same,
(b) a tilt arm, and pivot means on the upper end of the arm for swingably mounting the latter on a supporting structure,

(c) guide linkage means connecting the frame to the lower portion of the tilt arm to enable the frame and a container carried thereby to be shifted on the arm between lowered and raised positions while remaining substantially upright,
(d) said linkage means enabling the frame for the raised position of the latter to forcibly abut the tilt arm, and
(e) a power-operated lifting means comprising an elongate cylinder and piston device connected to the arm and to the frame to effect movement of the latter from the lowered to the raised position thereof independently of the pivotal position of the said tilt arm,
(f) said cylinder and piston device being disposed substantially in the same plane containing the tilt arm for all pivotal positions of the latter.

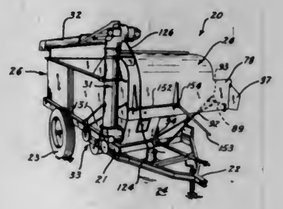
3,286,861
MATERIAL HANDLING APPARATUS
Philip L. Ehrhorn, 3965 Regan Drive, San Mateo, Calif.
Filed June 17, 1964, Ser. No. 375,836
8 Claims. (Cl. 214—314)



2. A power lift and dumping apparatus comprising at least one support arm, at least one dumping arm, a load bearing member pivotally connected to said arms, means for moving said support arm to adjust said load bearing member between raised and lowered position, locking means comprising a shank portion pivotally connected to said load bearing member and an up-turned hook portion, means connected to said support arm and engageable with said shank portion when said load bearing member is moved to said lowered position to cause said hook portion to move downwardly, means for causing said hook portion to move upwardly when said load bearing member is raised, a container adapted to be supported by said load bearing member, and means on said container engageable by said locking means as said hook portion moves upwardly.

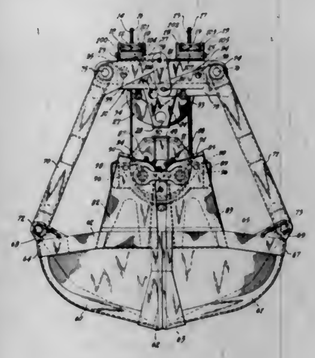
3,286,862
SELF-UNLOADING FEED WAGON
Elmer K. Hansen, 801 S. Martha, Sioux City, Iowa
Filed Aug. 5, 1964, Ser. No. 387,664
9 Claims. (Cl. 214—519)

1. A self-unloading vehicle for transporting bulk material comprising:
(a) a wheel supported frame,
(b) box means for carrying bulk material supported on said frame, said box means having side walls, an upwardly and forwardly inclined front wall, and a bottom wall,
(c) horizontal conveyer means operatively positioned in the box means adjacent the bottom wall thereof for moving bulk material toward the front wall,
(d) elevator conveyer means operably positioned transversely in the box means adjacent the front wall for receiving bulk material from the horizontal conveyer means and moving the bulk material upwardly over the front wall,
(e) housing means secured to the front of the box means and extended transversely thereof for receiving the bulk material from the elevator conveyer means, said housing means having a first discharge opening at one end thereof and a second discharge opening at the opposite end thereof,
(f) a uni-directional moving cross conveyer means operably positioned in the housing means for moving bulk material to the first and the second discharge openings,



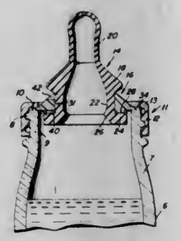
(g) means mounted on the housing means for selectively closing the first discharge opening whereby when said first opening is closed and the second opening is open the cross conveyer means discharges bulk material through said second opening, and when said two discharge openings are open the cross conveyer means discharges bulk material through said first opening, and
(h) drive means for simultaneously operating the horizontal conveyer means, the elevator conveyer means, and the cross conveyer means.

3,286,863
REMOVABLE BUCKET HOLDING AND OPERATING SHEAVE APPARATUS
George F. Thompson, Cleveland, Ohio, assignor to McDowell-Wellman Engineering Company, Cleveland, Ohio, a corporation of Ohio
Filed Nov. 13, 1963, Ser. No. 323,482
2 Claims. (Cl. 214—656)



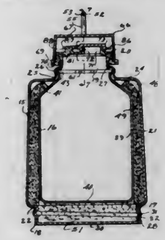
1. A removable holding and operating sheave apparatus for a clamshell scoop type bucket having a pair of confronting scoops, a head frame, linking means coacting between said frame and said scoops, a crosshead frame to which said scoops are hingedly secured, said removable sheave apparatus including in combination:
(a) an oppositely disposed upper sheave block having upper sheave pin supporting arms extending therefrom,
(b) an upper sheave pin extending between and having its axis lying in a plane perpendicular to said arms,
(c) a single holding cable engaging sheave rotatably mounted on said upper sheave pin,
(d) a pair of bucket closing cable receiving sheaves rotatably mounted on said upper sheave pin,
(e) a lower sheave block having sheave pin supporting arms extending towards said oppositely disposed upper sheave pin support arms,
(f) spaced end plates secured to the extremities of said lower sheave pin supporting arms, respectively and spacer bars for maintaining said end plates in fixed spaced relation to each other,
(g) a lower sheave pin extending between said lower sheave pin supporting arms, the axis of which lies in a plane parallel to the plane of the axis of said upper sheave pin, said lower sheave pin being disposed at an angle relative to said upper sheave pin,
(h) three bucket scoop closing cable receiving sheaves rotatably mounted on said lower sheave pin,
(i) said upper sheave block including pin receiving means for releasably securing said upper sheave block to said head frame,
(j) said lower sheave block including pin receiving means for releasably securing said lower sheave block to said crosshead frame, and,
(k) releasable fastening means for securing the extremities of the upper sheave pin supporting arms to the confronting extremities of the lower sheave pin supporting arms, respectively.

3,286,864
NURSING NIPPLE WITH VENTED ADAPTER
William M. Patterson, Akron, Ohio, assignor to Jay D. Lenner, Summit County, Ohio
Filed Oct. 21, 1964, Ser. No. 405,463
3 Claims. (Cl. 215—11)



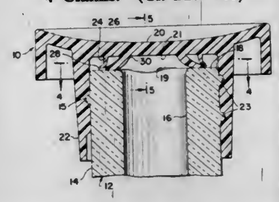
1. In combination, a nursing nipple having a body portion provided with outstanding endless reinforcing shoulder, also provided below said shoulder with a neck provided at its bottom with an outstanding endless flange, the top surface of said flange being provided with an endless channel constituting a keyway, an adapter collar snugly embracing said neck and fitted between said shoulder and flange and having an endless rib removably keyed in said keyway, said rib having a benting kerf therein, said collar having an outstanding mounting and clamping flange adapted to be seated on the lip of a cap-equipped bottle neck, and said collar being further provided with an air inlet orifice, said orifice being communicable with said kerf.

3,286,865
INSULATED CONTAINER AND THE METHOD OF MAKING THE SAME
Herbert M. Piker, Wyoming, Ohio, assignor to The Hamilton Skotch Corporation, Hamilton, Ohio, a corporation of Ohio
Filed Dec. 13, 1960, Ser. No. 75,617
7 Claims. (Cl. 215—13)



1. In a container of the class described the combination of a molded outer enclosing member including a bottom, a top and side walls connecting said bottom and top, a centrally apertured neck integral with and upstanding from said top and including an outwardly projecting hollow bead, said outer member bottom having formed therethrough an opening, an inner container including a top, bottom and connecting side walls of a dimension to pass through said outer member bottom opening, said container top having upwardly projecting therefrom a neck centrally apertured including an outwardly projecting flange disposed in the outer member hollow bead and whereby said container is supported centrally within the outer member, separate means for closing outer member bottom opening and container neck, said outer member neck having at diametrically opposite points hollow lugs outwardly radially projecting therefrom, said inner container neck flange having at diametrically opposite points outwardly projecting ears insertable within the outer member hollow lugs, and transportable means carried by the outer member lugs and cooperating with the inner container ears for supporting and transporting said outer member and suspended inner container.

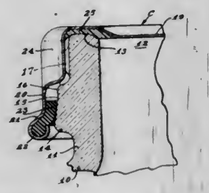
3,286,866
PLASTIC CAP
James A. McIntosh, Upper Montclair, N.J., assignor to Mack-Wayne Plastics Company, Wayne, N.J., a corporation of New Jersey
Filed Apr. 15, 1965, Ser. No. 448,495
4 Claims. (Cl. 215—40)



1. A closure for use on a threaded neck container including a threaded outer wall, an inner wall and an interconnecting rim, said closure comprising a top wall, a tapped cylindrical skirt depending from the top wall for threaded engagement with the outer wall of the neck, an annular resilient bead positioned on the under side of the top wall tapering outwardly from its inner peripheral edge to its outer peripheral edge with its inner surface at an angle with respect to the top wall surface of 75° to 85° and its outer surface at an angle with respect to the

top wall of 80° to 90°, the annular resilient bead being, disposed concentrically with the skirt and having a median diameter greater than the diameter of the inner wall of the neck but less than the diameter of the outer wall of the neck, an annular resilient sleeve positioned on the under side of the top wall and disposed concentrically within the annular resilient bead, the annular resilient sleeve being joined at its inner peripheral edge to the top wall, depending angularly downwardly from the top wall outwardly toward the skirt such that its inner surface is at an angle with respect to the top wall surface of 40° to 50° and its outer surface is at an angle with respect to the top wall surface of 55° to 65°, and having a slant height from its inner peripheral edge to its outer peripheral edge greater than the radial distance between the inner peripheral edge and the median diameter of the annular resilient bead; whereby as the closure engages the threaded neck, the resilient sleeve is deflected upwardly and outwardly by the rim so as to bear against the annular resilient bead on one side whereby the outer peripheral edge of the annular resilient bead is deflected upwardly and outwardly by the deflected resilient sleeve and against the rim on the other side thereby forming a sealing relationship.

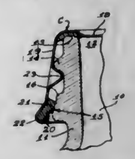
3,286,867
CONTAINER AND CLOSURE FOR SAME
George V. Mumford, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Oct. 6, 1965, Ser. No. 493,353
9 Claims. (Cl. 215—40)



1. In combination, a container having a cylinder-like mouth defining neck, said neck having an external annular band-like side-seal surface spaced below the mouth, cam means externally of the neck between said mouth and side-seal surface, a closure cap telescoped over the neck and comprising a panel, an annular depending attaching skirt at the periphery of the panel, an annular sealing gasket secured internally of the skirt at its free edge for engagement with said side-seal surface, and internal protuberances on the cap skirt positioned for contact with said cam means incident to rotation of the cap in one direction relative to the container thereby to effect bodily axial movement of the cap.

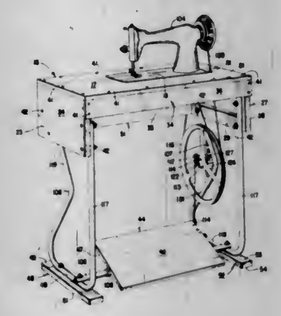
3,286,868
CONTAINER AND CLOSURE FOR SAME
George V. Mumford, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Oct. 6, 1965, Ser. No. 493,354
5 Claims. (Cl. 215—40)

1. In combination, a glass container having a cylinder-like neck defining a mouth, an external screw-thread just below said mouth, said neck formed with an annular frusto-conical sealing surface below the screw-thread, there being an annular downwardly facing shoulder at the upper margin of the sealing surface, a sheet metal closure cap telescoped over said neck and comprising a disk-like panel, a depending annular attaching skirt at the periphery of the panel, said skirt having a flared lower portion forming a back-up wall for a sealing gasket, the wall and sealing surface being substantially parallel, a cut ring sealing gasket secured to said wall and of such width that when the cap is in sealing position the upper



margin of the gasket is beneath said shoulder, said gasket engaging the container, and holding means on the cap skirt engaging the screw-thread.

3,286,869
COMBINED SEWING MACHINE SHIPPING CRATE AND STAND
John W. Krein, Westport, Conn., and Henry J. Milan, Clark, and William G. Hauser, Fanwood, N.J., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Sept. 23, 1965, Ser. No. 495,012
1 Claim. (Cl. 217—12)

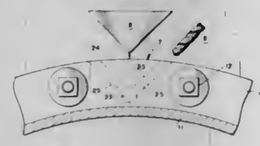


A combined sewing machine shipping crate assembly and stand assembly comprising a plurality of members some of which have unfinished and finished sides and certain of which when assembled in one manner form a crate for shipping a sewing machine and which when assembled in another manner form a stand for supporting a sewing machine, said members comprising:

(a) a sewing machine which when forming part of said crate assembly is housed in said crate and which when forming part of said stand assembly is supported on said stand;
(b) an apertured top member which when forming part of said shipping crate assembly has its unfinished side outermost and which when so used acts as the cover for said crate, and when forming part of said stand assembly has its finished side outermost, and which when so used acts as the tabletop for supporting said sewing machine on said stand;
(c) a closure member which when forming part of said shipping crate assembly closes the aperture in said top member;
(d) a back member which when forming part of said shipping crate assembly has its unfinished side outermost and which when so used acts as a side panel for said crate and when forming part of said stand assembly has its finished side outermost and which when so used has its upper edge secured to the rear edge of said top member;

(e) a pair of end panel members which when forming parts of said shipping crate assembly have their unfinished sides outermost and which when so used act as ends for said crate and when forming parts of said stand assembly have their unfinished sides outermost and which when so used have their upper edges secured to opposite edges of said top member, and their back edges secured to opposite ends of said back member;
(f) a pair of substantially U-shaped leg members each having upper and lower ends, said lower ends being formed with horizontal bottom portions, said leg members which when forming part of said crate assembly are housed in said crate and which when forming part of said stand assembly have their upper ends secured to the unfinished surfaces of said end panel members;
(g) a front panel having a vertical height less than the vertical height of said back panel and when forming part of said stand assembly has its finished side outermost and which when so used has its upper edge secured to the front edge of said top member and its opposite ends secured to the front edges of said end panel members;
(h) a pair of leg support members which when forming part of said shipping crate assembly act as batten strips therefor and which when used as part of said stand assembly are secured to the lower horizontal bottom portions of said leg members and act as leg supports therefor; and
(i) a plurality of miscellaneous parts which when forming part of said shipping crate assembly close the front and the bottom of said shipping crate.

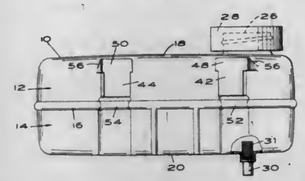
3,286,870
MEANS AND METHOD OF FLUID TANK CONSTRUCTION
Henry Foelsch, Elmhurst, Ill., assignor to Lithcote Corporation, Melrose Park, Ill., a corporation of Delaware
Filed Mar. 13, 1964, Ser. No. 351,805
10 Claims. (Cl. 220—5)



1. A massive, fluid tank comprising, a series of axially-disposed, flanged annular-sections, and flanged end closure sections, gasket rings interposed between the flanges, a series of circularly-spaced fasteners clamping the sections into a unitary tank structure, a series of segments removed from each of said gaskets, and metal segments substantially identical with the gasket segments replaced for the gasket segments and bonded to the opposed faces of the section flanges.

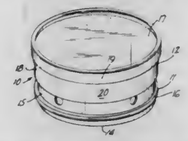
3,286,871
FUEL TANK AND MOUNT
William C. Eberline, Cass City, Mich., assignor to Walbro Corporation, Cass City, Mich., a corporation of Michigan
Filed June 26, 1964, Ser. No. 378,283
4 Claims. (Cl. 220—5)

1. A fuel tank and mount comprising:
(a) a tank formed of molded plastic parts each forming a top and a bottom respectively, these parts being butt welded together at the matching edges to form a reinforcing rib seam around the girth of the tank, said tank having walls which are each crowned in two directions to add rigidity to the tank and prevent vibration of the walls, and



(b) means to mount said tank comprising spaced brackets having facing edges forming re-entrant recesses and lugs on one wall of said tank having a portion to enter into said recesses behind said facing edges of said brackets, and
(c) means on the top of said lugs extending to the wall of said tank to overlie and shield said brackets and to form a stop in the mounting motion of said tank into said brackets.

3,286,872
EXPANDABLE BOX WITH NON-REMOVABLE COVER
Ralph V. Burdick, Jr., Colonial Green, Loudonville, N.Y.
Filed Mar. 6, 1964, Ser. No. 350,010
3 Claims. (Cl. 220—41)

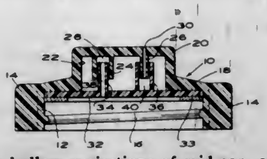


1. A box including a bottom portion and a cover portion having a bottom wall and a top wall respectively, a bottom skirt and a cover skirt respectively extending from said bottom wall and said top wall with said bottom skirt telescoped within said cover skirt, said bottom skirt being formed with a hole therethrough, a first position of said cover portion in which said cover skirt overlies said hole, a second position of said cover portion in which said hole is exposed to view, an outwardly projecting flared edge formed at the upper edge of said bottom skirt, said hole being disposed between said outwardly projecting edge and said bottom wall, an increased diameter portion of said cover skirt receiving said outwardly projecting edge of said bottom skirt and shoulders formed at the extremities of said increased diameter portion providing stop means with said outwardly projecting zone.

3,286,873
FUEL TANK CAP
Charles H. Tuckey, Cass City, Mich., assignor to Walbro Corporation, Cass City, Mich., a corporation of Michigan
Filed June 1, 1964, Ser. No. 371,486
5 Claims. (Cl. 220—44)

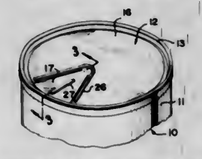
1. A vent cap for closing a vent opening of a container for liquids comprising:
(a) a body having a portion for co-operation with a gravity fill opening in the top of a container wherein the head space of the container is exposed to the interior of the cap in a liquid tight connection,
(b) a portion defining an axially extending air chamber in the body, having formed thereon spaced hollow

projections one of which is open to the atmosphere through the top wall of said cap, and a separable insert in said cap having a base annularly sealed interiorly against the walls of said cap and having upwardly projecting hollow portions telescopingly relat-



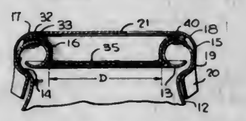
ed to the hollow projections of said cap, one of said latter projections having an opening extending through said plate whereby to form a sinuous passage from the interior of said cap to the exterior thereof through respective pairs of telescoping projections.

3,286,874
EASY OPENING CAN
John S. Bozek, Chicago, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Feb. 12, 1965, Ser. No. 432,370
17 Claims. (Cl. 220—48)



1. An easy opening can end comprising an upstanding chuck wall and an end panel, a pair of inwardly converging weakening lines formed in said end panel and in part defining a triangular tear strip, said can end being recessed between said chuck wall and said end panel in alignment with said tear strip to define an upstanding wall around said end panel and in opposed spaced relation to said chuck wall, and a generally circumferentially extending third weakening line in said upstanding wall and extending between the widely spaced ends of said pair of weakening lines whereby said can end may be ruptured along said third weakening line and said tear strip pried out of the plane of said end panel.

3,286,875
EASY-OPENING RING AND PLUG CLOSURE
Henry E. Frankenberg, Berwyn, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Nov. 1, 1963, Ser. No. 320,767
2 Claims. (Cl. 220—54)



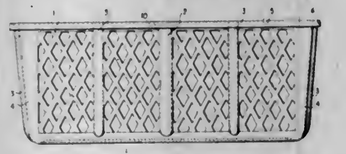
1. An easy-opening reclosable closure for a container, said closure comprising a seal cap including an annular end portion, a top corner radius portion and a skirt portion having a corrugated edge structure, said skirt portion being connected to said end portion by said top corner radius portion; a pull tab extending inwardly of said end portion; score lines extending from said pull tab across a section of said end portion, said top corner radius portion and said skirt portion to define a tear strip; a sealing disc comprising a closure panel, a skirt and a hem, said skirt being connected to said hem and said closure panel, locking means on said skirt for engaging the underside of an inwardly rolled container lip for resiliently holding said disc in said container, said locking means comprising a plurality of nibs circumferentially spaced around said skirt adjacent to said closure panel, said hem being substantially U-shaped in cross-section and including a top leg section and a bottom leg section connected by a resilient bight portion for providing sealing compression when said corrugated edge structure of said skirt portion is crimped beneath a locking ring of said container.

3,286,876
CONTAINERS
Eugene Ring, Clinton, Ohio, assignor to Goodyear Aerospace Corporation, Akron, Ohio, a corporation of Delaware
Filed June 15, 1964, Ser. No. 375,234
8 Claims. (Cl. 220—73)



1. An improved glass fiber thermoset resin impregnated container having at least one reinforcing member extending around its periphery, said reinforcing member comprising a metal member encircling said periphery and imbedded in an elastomeric polyurethane, said elastomeric polyurethane being adhered to the thermoset resin of the glass fiber forming the container.

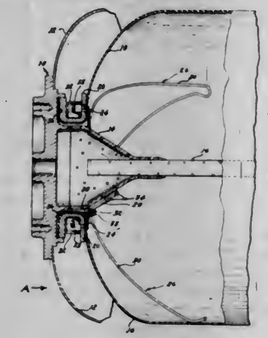
3,286,877
PLASTIC VEGETABLE CONTAINER
Leonard Haimes, 7800 SW. 134th St., Miami, Fla.
Filed May 4, 1964, Ser. No. 364,857
3 Claims. (Cl. 220—83)



1. A basket for packing and shipping small agricultural products comprising
a body having side walls, an open upper end and a bottom wall formed integrally with said side walls for closing the lower end of said body, said side walls being of thin mesh-like construction having a plurality of apertures of regular configuration therein,
reinforcing corner members joining said side walls and being of substantially heavier construction than said side walls with a generally semi-circular cross-section,
generally vertically disposed intermediate stiffening ribs of U-shaped cross-section spaced along said side walls and integral therewith for increasing the compressive resistance of said side walls,
the upper peripheral edge of said body being formed into an outwardly extending channel of generally U-shaped configuration, said entire body being formed of organic thermoplastic material in an integral construction,

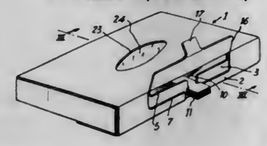
a top of integral construction including a reinforcing frame of configuration corresponding to that of the open upper end of said body, a rigid central handle construction interconnecting two opposing sides of said reinforcing frame and mesh-like web means filling in the space formed by said reinforcing frame and said handle construction,
said top further including first and second locking members extending transversely to said reinforcing frame and said handle and each locking member being secured to a respective end of said handle, each locking member having a plurality of wedge-shaped teeth, and locking aperture means in the peripheral edge of said body for receiving said locking members and engaging therewith.

3,286,878
CONTROLLED FOLDING BLADDER
John R. Schadt, Niagara Falls, Frank A. Chapin and Durwood G. Anderson, Tonawanda, and Anthony J. La Bruna, Buffalo, N.Y., assignors to the United States of America as represented by the Secretary of the Air Force
Filed June 6, 1963, Ser. No. 286,098
6 Claims. (Cl. 220—85)



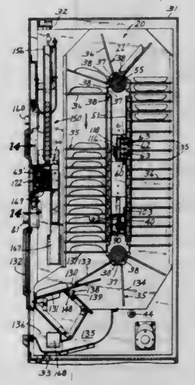
1. A device for controlling slosh in liquid propellant capsule units, said device comprising a tank for containing liquid propellant, a collapsible bladder containable in said tank in collapsed condition when the capsule is fully charged with liquid propellant, a gas inlet to said bladder for inflating said bladder as the propellant diminishes in said tank, and means for effecting controlled folding and unfolding of said bladder along predetermined fold lines.

3,286,879
DEVICE FOR THE PRESENTATION OF STOCKINGS AND SIMILAR HOSIERY ARTICLES
Marc Philippon, Troyes, Aube, France, assignor to Etablissements André Gillier, Troyes, Aube, France
Filed Jan. 22, 1964, Ser. No. 339,511
Claims priority, application France, May 10, 1963, 934,409; Nov. 29, 1963, 955,517
7 Claims. (Cl. 221—36)



1. A package comprising a container having a wall with a laterally elongated slot adjacent the upper portion thereof and a vertically extending slot extending downwardly from the laterally elongated slot, at least one article in said container, a flat rectangular tab of foil material having one end connected to said article, said tab having an opposite end having a lateral notch on each side engaged around the portions of said wall bounding the vertically extending slot and extending through the vertically extending slot and having a portion at the exterior of the container wider than the vertically extending slot for grasping by the fingers of a person's hand, said tab being movable up out of the vertically extending slot to permit its withdrawal together with the article through the laterally elongated slot.

3,286,880
DISPENSING DEVICE FOR VENDING MACHINES
Arthur R. Gross, St. Paul, Minn., assignor to Gross-Given Manufacturing Company, St. Paul, Minn., a corporation of Minnesota
Filed Nov. 18, 1964, Ser. No. 412,157
7 Claims. (Cl. 221—82)

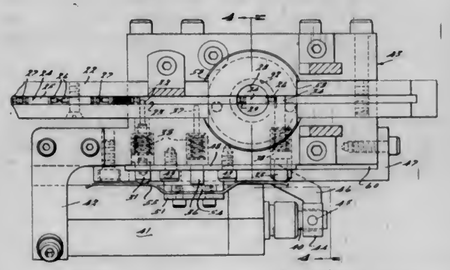


1. A vending machine comprising:
(a) a plurality of magazines for storing units to be selectively dispensed, each magazine including an endless belt having a plurality of trays uniformly spaced thereon and rigidly mounted perpendicular thereto;
(b) motive means;
(c) a carriage mounted for reciprocating motion in the direction of movement of an adjacent portion of each of said endless belts and operatively connected to said motive means for executing a single reciprocation upon said motive means being energized;
(d) means mounted on said carriage including a plurality of connecting members one each engageable with said portion of one of said endless belt and selectively connecting said carriage to a selected one of said endless belts for advancing said selected endless belt to a new position during each reciprocation of said carriage;
(e) an electric switch associated with each of said magazines for selecting the desired unit to be dispensed; and
(f) electrical means adapted to be connected to a source of power and operatively connecting said switches, said motive means, and said connecting means in circuit for energizing said motive means and one of said connecting means when said associated switch is closed, whereby said motive means advances said selected endless belt to a new position.

3,286,881
DEVICE FOR ORIENTING ARTICLES END FOR END

Alfred H. Haberstump, Detroit, Mich., assignor, by mesne assignments, to Clyde Corporation, Troy, Mich., a corporation of Michigan

Continuation of application Ser. No. 321,387, Oct. 30, 1963. This application Oct. 15, 1965, Ser. No. 502,816
27 Claims. (Cl. 221—173)

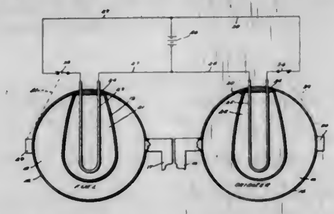


1. In an advancing and orienting device, a supporting element, a turntable carried by said supporting element for changing the end to end position of an article if advanced thereto with the rear end in forward position, said element and turntable having aligned slots through which articles are advanced, said element having an aperture communicating with its slot through which only one end of an article may pass when the turntable is rotated, drive means for said turntable, and clutch means within said drive means which permits the turntable to be held stationary by an article advanced thereto in proper position when the drive means is operated thereafter, said drive means being a rack moved longitudinally for rotating a gear secured to said clutch means.

3,286,882
BOOSTER TANK SYSTEM

Charles N. Tripp, Los Angeles, Calif.

Filed Oct. 18, 1962, Ser. No. 231,520
3 Claims. (Cl. 222—61)
(Granted to National Aeronautics and Space Administration under the provisions of 42 U.S.C. 2457 (a))



1. A fluid delivering device which comprises:
a tank comprising two variable volume chambers, one of said chambers being adapted to contain fuel and having an outlet, the second of said chambers being fully sealed and filled with a heat-expandable material,
heater means operatively connected with the tank to heat and expand said material,
said second chamber increasing in volume upon the heating and expansion of said material therein, and said first chamber proportionally decreasing in volume whereby said fuel is forced therefrom,
and pressure responsive means operatively connected to said heater means and directly referenced to the pressure on the fuel in said first chamber to control actuation of the heater means to control the expansion of the expandable material and thereby maintain a predetermined pressure on the fluid chamber.

3,286,883
ENCLOSURE AND OPERATING MECHANISM FOR AN AEROSOL CAN

Jack Takiff, Los Angeles, Calif., assignor to Mediclean Drug & Chemical Corporation, a corporation of California

Filed Dec. 21, 1964, Ser. No. 419,818
4 Claims. (Cl. 222—173)

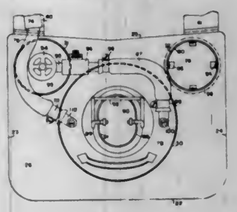


1. An enclosure and operating mechanism for an aerosol can having an upper cap with an outlet nozzle adapted upon depression to spray contents from said can, comprising, in combination: a housing for receiving said can and including a cover for the front of said housing having an opening at a level corresponding to the height of said outlet nozzle so that contents sprayed from said can pass through said opening when said cover is in place; a first actuating lever pivotally mounted intermediate its ends in said housing near a top portion thereof, one end being positioned to effect depression of said nozzle upon upward movement of the other end of said lever; and a second lever pivotally mounted intermediate its ends in said housing extending vertically within said housing, one end of said second lever being positioned to cam said other end of said first lever upwardly when the other end of said second lever is moved, said housing having a side opening in a side portion thereof through which said other end of said second lever projects to enable movement of said second lever from the exterior of said housing, said other end of said second lever being actuable in a direction substantially normal to said side portion.

3,286,884
PORTABLE BEVERAGE DISPENSER

Linwood S. Long, Jr., Houston, Tex., assignor, by mesne assignments, to Creative Vending Corporation, a corporation of Texas

Filed Feb. 8, 1965, Ser. No. 431,010
1 Claim. (Cl. 222—131)



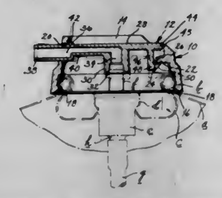
A compact, portable beverage dispenser suitable for mounting on the back of a beverage vendor, and suitable for maintaining and dispensing a hot or cold beverage without auxiliary temperature-control equipment comprising:
a casing having top, bottom, and side portions,
the interior of said casing being filled throughout its length with an insulating material;

a generally cylindrical chamber in said casing of a size convenient for receipt of a beverage container;
a beverage container disposed in said chamber;
a couple of longitudinally extending bores in said casing spaced from said chamber,
a bottle of pressurized gas disposed in one of said bores, said gas being in fluid communication through valve means with said beverage container, for creating a positive pressure in said container,
the other of said bores suitable for reception of a plurality of generally vertically aligned cups adapted to be dispensed one by one by the vendor;
conduit means connectable at one end to said container for permitting the flow of beverage therethrough, and at the other end having valve means for convenient dispensing of beverage by the vendor at selected times; and,
means for securing said dispenser to the back of the vendor.

3,286,885
DISPENSER NOZZLE ASSEMBLY

James K. Huling, Belleville, Ill., assignor to The Clayton Corporation of Delaware, St. Louis, Mo., a corporation of Delaware

Filed Apr. 19, 1965, Ser. No. 449,109
7 Claims. (Cl. 222—182)



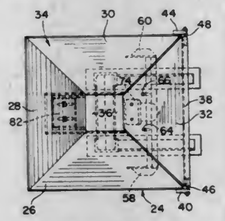
1. A two-member dispensing cap assembly for valved aerosol dispensers, comprising
a stationary circular wall member including means of affixation to such a dispenser, said wall member having a forward aperture and having opposite thereto a projecting stop portion extending inwardly of said wall member, and
a discharge spout member including a downwardly-depressible finger-actuator portion within said circular wall member, further including a nozzle outlet projecting through said aperture of said stationary wall member, said spout member having a downwardly-disposed inlet beneath said finger-actuator portion and communicating with said nozzle outlet,
said actuator spout member further having upper and lower aft-projecting portions extending above and below said inwardly-projecting stop portion of said stationary wall member,
whereby said projecting stop portion positioned between said aft-projecting portions of said spout member holds said actuator spout member in preliminary assembly with said stationary wall member.

3,286,886
HOPPER

Warren C. Burgess, Jr., 27018 Kennedy Ridge Road, North Olmsted, Ohio

Filed Oct. 12, 1964, Ser. No. 403,217
5 Claims. (Cl. 222—196)

1. A funnel shaped chute box or hopper having top and bottom openings, comprising:
(a) a plurality of load bearing sidewalls diverging from the bottom opening to the top opening, at least one of the load bearing sidewalls being hinged to the hopper, the remaining sidewalls being stationary, the sidewalls being exterior walls and directly supporting material fed to the hopper,
(b) resilient means, secured to the hinged side intermediate its top and bottom extremities and coacting with the sides adjacent thereto, for holding the hinged side in funnel forming disposition with the other sides while permitting free and independent movement therefrom, and

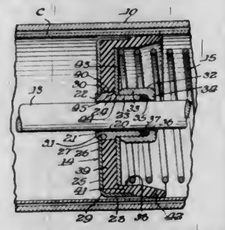


(c) pneumatic free piston vibration inducing means secured to the hinged side adjacent its bottom marginal edge for imparting oscillating movement thereto and said vibration inducing means is characterized by abrupt acceleration and deceleration along a substantially square wave power profile.

3,286,887
PLUNGER ASSEMBLY FOR HAND-OPERATED GREASE GUN

Edwin P. Sundholm, Albert City, Iowa

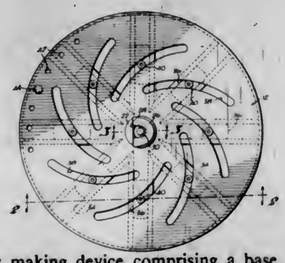
Filed June 24, 1965, Ser. No. 466,729
3 Claims. (Cl. 222—386)



1. In a hand-operated grease gun of the kind having a cylindrical grease container with a rod extending axially therein, said grease gun being adapted for use with both cartridge-packaged greases and bulk-filled greases, the plunger assembly including:
(a) a cylindrical sleeve having a forward end and a rearward end and providing a bore therethrough for slidably receiving said rod;
(b) a guide cup rigidly mounted on the forward end portion of said sleeve,
said cup having a transverse wall providing a central opening therein receiving said forward end portion and a cylindrical wall concentric with said sleeve extending rearwardly from the outer periphery of said transverse wall,
the outside of said cylindrical wall being spaced inwardly from the inside of said grease container for insertion within a grease cartridge;
(c) sealing means carried by said sleeve providing a sliding grease-tight seal with said rod; and
(d) annular sealing means mounted adjacent the rearward end of said guide cup cylindrical wall,
said sealing means having a greater normal outside diameter than the outside diameter of said guide cup cylindrical wall for selectively providing a sliding grease-tight seal around the

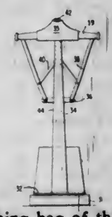
outside of said plunger assembly with either the inside of said grease container or the inside of a grease cartridge.

3,286,888
BOW MAKING DEVICE
Morry Cuttler, Hialeah, Fla. (1801 SW. 82nd Place, Miami, Fla.), and Herbert G. Sanquist, 2231 NE. 192nd St., North Miami Beach, Fla.
Filed Feb. 3, 1966, Ser. No. 524,744
5 Claims. (Cl. 223—46)



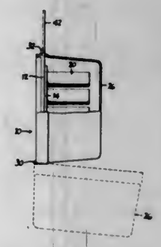
1. A bow making device comprising a base member, a plurality of radial guide tracks on one face of the base member, a center stud on the base member, and a work table journalled on the stud and over the distal surface of the slide tracks, said work table having a plurality of arcuate slots of a common curvature and common length with the radius of curvature of each of the slots being of a length such that the center of the circle on which each of the respective arcuate slots is located is on a common circle concentric to the center of the work table; a plurality of slide blocks captivated between the work table and the base member with one slide block in each of the slide tracks and a pin connected to each of the slide blocks and extending through one of the arcuate slots, means on the center stud adapted to hold and pierce a ribbon, the said pins being moveable in a radial direction to vary the distance between the center stud and the pins.

3,286,889
GARMENT FINISHER
George Schlemon, 3060 Pharr Court NW., Atlanta, Ga.
Filed June 14, 1965, Ser. No. 463,804
4 Claims. (Cl. 223—70)



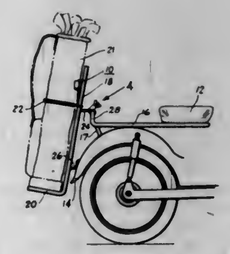
1. A garment finishing bag of the type utilized to remove wrinkles from garments wherein a garment is draped over a portion of said bag and said bag is inflated with a finishing fluid so as to assume the contour of the garment, said bag comprising an elongated body portion and an overlap portion, said overlap portion overlying the lower exterior region of the body portion so as to provide the bag with a double thickness in said lower region, and wherein the overlap portion may be adjusted longitudinally of the body portion to vary the size of the region of double thickness of the bag in accordance with the particular garment being finished.

3,286,890
SHOT GUN CARTRIDGE AND EMPTY SHELL BOX
Eugene E. Hildebrandt, 20993 Lujon Ave., Northville, Mich.
Filed Oct. 21, 1965, Ser. No. 499,659
5 Claims. (Cl. 224—17)



1. A shot cartridge and empty shell box comprising a vertically extending supporting member having vertically extending ribs to provide guideways to receive the rims of cartridges and support the same at right angles to said member, a cover secured to said supporting member by a hinge at the lower part thereof to permit the cover to be lowered with the cover having an opening on a horizontal plane for receiving used cartridges, a latch at the upper part of said member and a clip thereabove for securement of said member to the garment of the user.

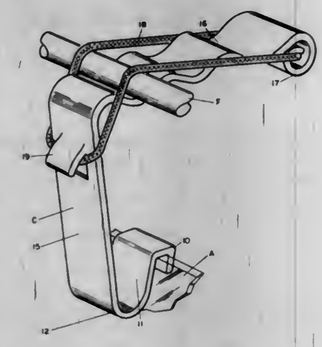
3,286,891
CARRIER ATTACHMENT FOR TWO WHEEL VEHICLES
William Jones, Jr., 244 N. Orange St., Escondido, Calif.
Filed May 3, 1965, Ser. No. 452,798
3 Claims. (Cl. 224—39)



1. A carrier attachment in combination with a two wheel vehicle having a rear fender and a rear luggage carrier comprising,
- a substantially flat L shaped plate for carrying articles such as golf clubs, baggage and the like, being positioned rearwardly of said rear fender and luggage carrier with the short side of said L projecting rearwardly,
- a single first attachment being secured to the center of said plate for securing the lower portion of said plate to the lower portion of said fender,
- a single attachment being secured to the center of said plate for securing the upper portion of said plate to said luggage carrier,
- a single bracket secured to the lateral edge of said upper portion of said plate,

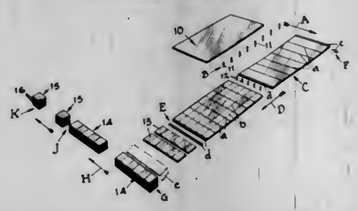
and a single retainer releasably secured to each side of said upper portion of said plate for holding said articles to said carrier.

3,286,892
BRACKET ATTACHMENT FOR MOTOR VEHICLES
Charles J. Marshall, 1407 Santa Barbara St., San Diego, Calif.
Filed Mar. 25, 1965, Ser. No. 442,680
1 Claim. (Cl. 224—42.1)



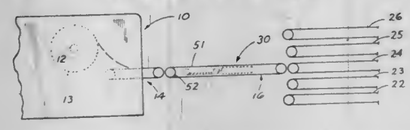
A one-piece carrier for vehicles having a vertically sliding glass windowpane and a hard surface rooftop thereabove comprising a resilient, metallic bracket substantially L-shaped having a hook at the end of the short leg of the L-shaped bracket; said bracket being normally disposed with the hook over the top of the windowpane and the long leg of the L substantially horizontally oriented with the end in engagement with the roof under spring tension due to the resiliency of the bracket, said long leg of the L having corrugations to receive pole-like articles, an elastic strap to hold down articles in the corrugation and means on the bracket securing each end of the strap to the bracket.

3,286,893
METHOD AND APPARATUS FOR AUTOMATIC GLASS CUTTING
James T. Zellers, Jr., Charleston, W. Va., assignor to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Filed Sept. 1, 1965, Ser. No. 484,307
42 Claims. (Cl. 225—2)



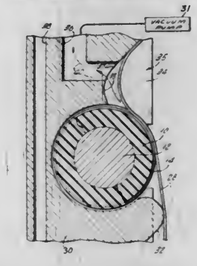
1. A method of separating glass sheets into a plurality of smaller units, comprising scoring a plurality of sheets along a plurality of spaced parallel lines, passing the scored sheets forwardly along a predetermined path parallel to the score lines and automatically stacking them one upon the other to form a stack, with said score lines in superimposed relation, and then breaking the stack group of sheets simultaneously along said score lines.

3,286,894
APPARATUS INCLUDING SHEET BREAKER
Howard C. Mason, Rte. 2, Box 810, Oregon City, Oreg.
Filed June 1, 1965, Ser. No. 460,185
8 Claims. (Cl. 225—103)



1. Sheet-breaker apparatus comprising conveyer means for moving sheet material along a defined path in a given direction through the apparatus; a mounting supported below said path for movement in an arcuate sweep extending about a first axis which extends transversely of said path; and a breaker arm positioned below said path pivotally mounted adjacent one end on said mounting for limited pivotal movement relative to the mounting about a pivot axis substantially parallel to said first axis, said arm being movable on arcuate movement of said mounting in a sweep that extends upwardly through said path, thence forwardly along the direction that a sheet moves when on said conveyer means, and thence downwardly, to return to a position below said path.

3,286,895
MAGNETIC TAPE DRIVING MEANS
Eleuthere Poumakis, East Islip, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Filed July 31, 1964, Ser. No. 386,684
5 Claims. (Cl. 226—95)

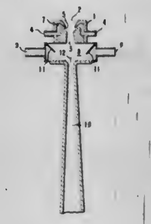


1. A magnetic tape drive assembly comprising,
- a magnetic tape,
- a drive block defining a pocket adjacent to said tape,
- a capstan for driving a magnetic tape positioned to form a part of the wall of said pocket, said capstan having a plurality of circumferentially extending grooves thereon, and
- a vacuum distribution system for applying a vacuum to said pocket thereby creating a suction to draw said tape into said pocket and causing said grooves to act as vacuum ducts to urge said tape into firmer contact with the outer surface of said capstan.

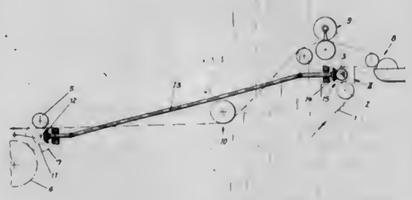
3,286,896
METHOD AND APPARATUS FOR FORWARDING FILAMENTS BY JET MEANS
George Allison Kinney, West Chester, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed July 14, 1964, Ser. No. 382,578
4 Claims. (Cl. 226—97)

1. A jet device for forwarding filaments while maintaining said filaments substantially free from entangle-

ment comprising an aspirator portion and a jet portion, said aspirator portion comprising means defining a main passageway having an entrance and exit for substantially straight-like filament travel, means defining an additional passageway intersecting said main passageway for supplying gas under pressure to said main passageway and arranged at an angle so that the introduction of such gas will provide a suction at the entrance to said main passageway, and said jet portion comprising means defining a channel having a constriction downstream of its inlet and said inlet being operatively connected with the exit of the main passageway of the aspirator portion, the main passageway of the aspirator portion and the channel of the jet portion being axially aligned, and means for introducing low-pressure gas into said channel at a point upstream of the said constriction but below the exit of the main passageway of the aspirator portion.

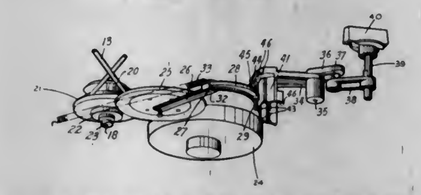


3,286,897
WEB FEEDING APPARATUS FOR TUBE AND BAG MAKING MACHINES
Arno Finke, Lengerich, Westphalia, Germany, assignor to Windmöller & Hölscher
Filed Sept. 8, 1964, Ser. No. 394,870
Claims priority, application Germany, Sept. 25, 1963, W 35,314
2 Claims. (Cl. 226—111)



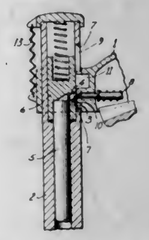
1. Apparatus for the manufacture of paper tube sections from a web material, said apparatus comprising a supply station from which at least one web is unwound, a tube-forming station in which said web is formed into a tube, at least two pairs of continuous feed rolls for unwinding said web from said supply station and for feeding it through said apparatus, one of said pairs of feed rolls being arranged downstream from said tube-forming station, the other being arranged upstream from said tube-forming station and downstream from said supply station, means for driving one pair of said feed rolls, a tooth gearing driving connection interlocking said pairs of feed rolls and including change speed tooth gearing of the positive infinitely variable type, and means for controlling the change speed gearing for varying the power transmission between said pairs of feed rolls to keep said web taut.

3,286,898
MAGNETIC TAPE RECORDERS
Ronald Walker, Norton, Stourbridge, England, assignor to BSR Limited, Old Hill, England, a British company
Filed Oct. 6, 1964, Ser. No. 402,029
Claims priority, application Great Britain, Oct. 10, 1963, 39,922/63
5 Claims. (Cl. 226—188)



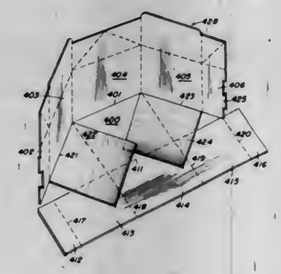
1. In a tape recorder of the type specified having a capstan spindle and co-operating pinch roller between which the tape is engaged, a capstan disc fixed to the capstan spindle, an electric driving motor spindle having thereon a number of different diameter drive pulleys and a jockey pulley, the jockey pulley being selectively engageable with one or another of said drive pulleys and also engageable with said capstan disc; the arrangement comprising a swinging arm fixed upon a vertical spindle for pivoted movement about the axis thereof, spring means urging said spindle upwardly, a two-arm lever pivotally mounted about the junction of its two arms at the one end of said swinging arm, the jockey pulley being mounted on one of said arms, a spring connected at its one end to the other one of said two arms and at its other end to a fixed point, and urging the jockey pulley into engagement with the capstan disc, and a cam having two profiles engaged by said swinging arm, one profile causing swinging movement of said arm to disengage the jockey pulley from the driving motor spindle and the other profile causing vertical movement of the swinging arm to shift the jockey pulley in the axial direction.

3,286,899
STUD DRIVING TOOL
Hans-Dieter Seghezzi, Vaduz, Liechtenstein, and Elwin Burtscher, Vorarlberg, Austria, assignors to Anstalt fur Montage-Technik, Vaduz, Liechtenstein
Filed Sept. 4, 1964, Ser. No. 394,569
Claims priority, application Germany, Sept. 6, 1963, A 43,984
8 Claims. (Cl. 227—10)



1. A stud setting tool for driving anchoring means into solid receiving material by means of propellant gases produced by a cartridge of explosive and comprising a guide tube, a movable piston in the guide tube on which the propellant gases act, a cartridge chamber at one side of the tool and having an opening communicating with the end of the piston in the guide tube, a breech block in the form of a sleeve surrounding the guide tube and open at opposite ends for sliding movement on the guide tube longitudinally thereof from an open to closed cartridge chamber positions, stop means comprising a shoulder on the guide tube to limit the longitudinal movement of the breech block along the guide tube at the breech closing positions, a spring between the breech block and guide tube for opposing said sliding movement of the breech block to cartridge chamber closing position whereby the breech block is yieldingly actuated to open the cartridge chamber and movable against the action of the spring to close the cartridge chamber.

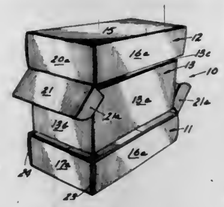
3,286,900
REINFORCED CONTAINER STRUCTURES
Clifford H. Keith, Cincinnati, Ohio, assignor to The Mead Corporation, Dayton, Ohio, a corporation of Ohio
Filed Dec. 17, 1962, Ser. No. 246,873
2 Claims. (Cl. 229—16)



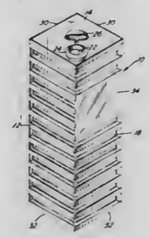
1. A container comprising a series of three foldably connected side walls each having top, bottom and opposed side edges, a pair of side wall flaps each having substantially parallel top, bottom and opposed side edges, said pair of side wall flaps being respectively foldably connected at one of the side edges thereof to the outer side edges of the outer side walls, a first bottom wall having a pair of opposed side edges, said first bottom wall being foldably connected at one of said side edges thereof to the bottom edge of the middle side wall, a series of three foldably connected liner panels each having top, bottom and opposed side edges, the middle liner panel being foldably connected at the bottom edge thereof to the other of said side edges of said bottom wall, all said outer side walls being respectively in coextensively superimposed relationship with said liner panels and said side flaps being in abutting relation at the opposed side edges thereof and being superimposed on said middle liner panel, a pair of reinforcing bottom walls having opposed side edges and being respectively foldably connected at one of said side edges thereof to the bottom edges of said other liner panels, a pair of liner panel flaps each having top, bottom and opposed side edges are respectively foldably connected at one of the side edges thereof to the outer side edges of the other liner panels, said pair of liner panels abutting respectively at the opposed side edges thereof and said middle side wall being superimposed on said mating liner panel flaps.

3,286,901
CONTAINER CONSTRUCTION
Wilbur G. Anderson, Grand Rapids, Mich., assignor, by mesne assignments, to Packaging Corporation of America, a corporation of Delaware
Filed Feb. 1, 1965, Ser. No. 429,276
10 Claims. (Cl. 229—23)

1. A container formed of foldable material comprising a pair of traylike sections disposed in superimposed relation, each section having a base portion delimited by upright wall portions, at least one of said sections having wall portions of multi-ply construction whereby pockets are formed between the plies of said multi-ply wall portions, openings to said pockets being spaced apart, the second of said sections having at least one flap foldably connected to one of said wall portions, said flap being provided with a pair of end tabs foldably connected to opposite ends of said flap; said flap being in face-to-face relation with the one section wall portion intermediate said spaced apart openings to said pockets, and said end tabs are folded relative to said flap and inserted through said openings into said pockets of said other section.

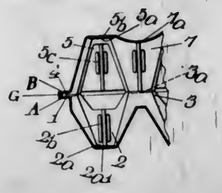


3,286,902
RIGID CONTAINER
Paul H. Hunter, New Brunswick, and Alfred J. Guzzetti, Westfield, N.J., assignors to Union Carbide Corporation, a corporation of New York
Filed Oct. 20, 1964, Ser. No. 405,216
3 Claims. (Cl. 229—2.5)



1. A rigid, leakproof, one-piece container for receiving, storing and dispensing flowable materials which container comprises:
(a) a rigid container body formed from a blank having as an integral part thereof portions adapted to provide a concave top and a concave bottom;
(b) said container body having four faces and one vertical edge sealed to said top and to said bottom and at least two transverse edges sealed to said top and at least two transverse edges sealed to said bottom to form an interiorly substantially sterile container;
(c) two opposing faces of said four faces having a plurality of transverse, parallel, inwardly curving ribs extending across the entire surface of said faces and the other two faces having said ribs extending over only a substantial portion of said faces thereby providing a flat surface space for container labeling;
(d) each of said ribs having a pair of mitered ends in contiguous relation with an adjacent mitered rib end;
(e) each of said mitered rib ends so arranged with respect to said adjacent ribs that joints therebetween are resistant to distortion, and
(f) said top of said container being provided with pouring means.

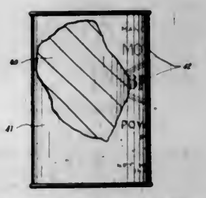
3,286,903
CONTAINER FOR EGGS
Hikoji Noguchi, 10/1,251 Oaza Narahashi, Yamato-machi, Kitatama-gun, Tokyo, Japan
Filed Feb. 9, 1965, Ser. No. 431,307
Claims priority, application Japan, June 22, 1964, 39/49,182
4 Claims. (Cl. 229—2.5)



1. A container for eggs comprising a main body, and a cover body of corresponding dimensions for covering said main body, said main body being hingedly connected to said cover body along corresponding edges thereof, said main body and said cover body being integrally formed together and hingedly connected along an edge, each of said main and cover bodies having walls defining a plurality of egg-receiving partial cavities with corresponding cavities in said cover body being alignable with cavities in said main body when said cover body is positioned over said main body to form a full egg-receiving cavity, said walls of said cover body and said main body sloping from the widest of divergence at the corresponding neat ends of said main and cover bodies outwardly in respective opposite directions toward the outer extremity of each body, said cavities of said main body having said walls acutely sloped for receiving the acute end of an egg, said walls of said cover body having said walls gently sloped for receiving the blunt end of an egg, said walls having means defining a plurality of ribs projecting into each respective cavity and a plurality of recesses in each of said cavities for receiving and gently supporting eggs and for permitting expansion of the walls of said cavities to accommodate eggs of various sizes, means on said main and said cover bodies defining complementary interengageable portions between said cavities for supporting said cover body at a spaced location above said main body and for defining an air space therebetween including a projection formed on said cover body and a recess formed on said main body adjacent each of the corners of said egg receiving cavities, said projections being adapted to interengage in respective ones of said recesses.

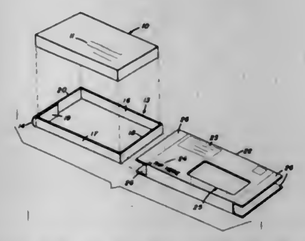
3,286,904
COATED ALUMINUM ARTICLES
Richard D. Vieth, Butler, and Joseph A. Dooley, Cedar Grove, N.J., and Richard Bolstad, Brooklyn, and Elihu J. Aronoff, Glen Oaks, N.Y., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio
Filed Jan. 31, 1964, Ser. No. 341,699
17 Claims. (Cl. 229—4.5)

12. A receptacle of low moisture permeability comprising a hollow cylindrical housing of a porous material and a cylindrical liner contacting the inner walls of said housing, said liner being constructed of helically wound alternating strips of aluminum foil each strip having one surface coated with a copolymer comprising 70% to 80% vinylidene chloride and at least 15% of an acid component selected from the group consisting of acrylic acids and itaconic acid, one of said strips having its lateral edges folded under itself so as to provide a pair of coated edges along the uncoated side of the strip, said coated edges overlapping



and being bonded to the edges of the coated surface of the alternate unfolded strip.

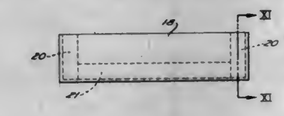
3,286,905
MAILER OVERWRAP WITH TEAR STRIP
Mohammed Karimullah Farukhi, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Nov. 18, 1965, Ser. No. 508,492
4 Claims. (Cl. 229—9)



1. A box wrap for an easily openable package, comprising:
- a relatively stiff inner liner blank cut and scored to form two side panels with a first end panel interposed and having a second end panel at one end and a locking flap at the other end of said blank,
  - said second end panel and said locking flap being superficially sealed together to form a relatively stiff frame-like inner liner encompassing the box;
- a pull tab forming an extension of said second end panel and extending outwardly beyond said superficial sealing region; and
- an outer wrap formed with a top and bottom panel with side panels interposed and integral end panels,
  - said outer wrap being folded around the inner liner frame to cover the box and the inner liner frame and providing an opening exposing said pull tab, and
  - said inner blank being of a construction such that pulling said pull tab to release the superficial seal will rupture said outer wrap whereby the continued pulling of said pull tab will remove said inner blank and dispense the box from said outer wrap.

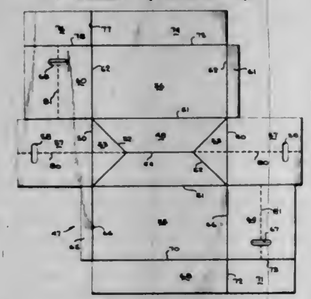
3,286,906
HEAT SEALABLE CONTAINERS
George Glen Rumberger, Kalamazoo, Mich., assignor, by mesne assignments, to Brown Company, New York, N.Y., a corporation of Delaware
Filed Nov. 5, 1963, Ser. No. 321,471
12 Claims. (Cl. 229—37)

1. A heat sealable carton having underlying and outer cover flaps, an adhesive patch comprising a web having a heat-insensitive adhesive layer on one surface bonding said patch to one member of said outer and underlying cover



flaps, and a coating of a thermoplastic adhesive on the other surface of said web.

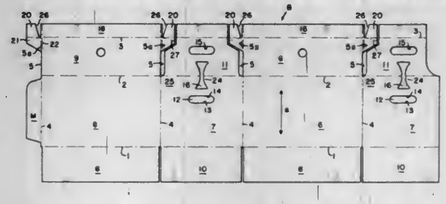
3,286,907
CORRUGATED CONTAINER BLANKS AND CONTAINERS
John M. Crane, New York, N.Y., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed May 15, 1963, Ser. No. 280,622
9 Claims. (Cl. 229—41)



1. A corrugated container blank comprising a substantially rectangular bottom panel bounded by a first pair of opposed fold lines and a second pair of opposed fold lines, an inner end panel joined to the rectangular bottom panel along each of the first pair of opposed fold lines, a side panel joined to the rectangular bottom panel along each of the second pair of opposed fold lines, a first top panel joined to one of the side panels along a first fold line spaced from one of the second pair of opposed fold lines, a second top panel joined to the other of the side panels along a second fold line spaced from the other of the second pair of opposed fold lines, a third pair of spaced fold lines extending between the bottom panel and the second top panel, a fourth pair of spaced fold lines extending between the bottom panel and the first top panel, an outer end panel joined to one fold line of each of the third and fourth pair of fold lines, a securing strip joined to the other fold line of each of the third and fourth pair of fold lines, and an outer end panel flap joined to one of the outer end panels along the respective first and second fold lines.

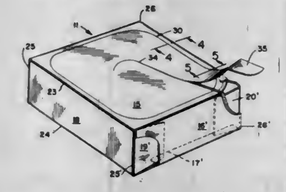
3,286,908
CARTON
Nicholas D. Ellis, La Due, Mo., assignor to Anheuser-Busch, Incorporated, St. Louis, Mo., a corporation of Missouri
Filed Mar. 29, 1965, Ser. No. 443,281
4 Claims. (Cl. 229—44)

1. A carton made from corrugated board, said carton having side walls and end walls, said end walls having a notch therein, said side walls each having a side cover flap hingedly secured thereto, said side cover flaps each having a side cover flange positioned at an angle thereto, said side cover flaps each having small substantially isosceles triangular end cover brackets connected by tabs to said side cover flange for maintaining said side cover flange in angular relation with said side cover flap, said end cover brackets



having a small bottom and a wider top thereby covering only a small portion of said end walls adjacent to said notch when said cover flaps are in closed position and leaving the major portion of the end walls uncovered.

3,286,909
CONTAINER
Edward W. Scharre, Louisville, Ky., assignor to Anaconda Aluminum Company, a corporation of Montana
Filed Aug. 14, 1963, Ser. No. 302,072
6 Claims. (Cl. 229—51)



1. A container comprising a pan for holding the contents therein, and a unitary rigid cover closing the pan opening and surrounding at least the sides of the pan to form both a lid and an outer protective cover, said cover having a rectilinear closure portion sealed about the periphery defining the opening in the pan, end flap portions extending from respective opposite ends of the closure portion, edge portions extending from said end flap portions, side flap porotion extending from respective opposite sides of the closure portion, and wing portions extending laterally from each of the respective side flaps whereby said end flap portions and said edge portions are folded down about the sides of the pan with the wing portions being maintained positioned between the pan and the end portions by folding the respective edge portions under the wing portions.

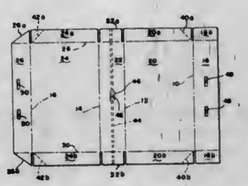
3,286,910
END-LOADED CARRYING CONTAINER
Joseph L. Offenburger, Waukegan, Ill., assignor to Hoerner Boxes Inc., Keokuk, Iowa, a corporation of Delaware
Filed Oct. 30, 1964, Ser. No. 407,661
5 Claims. (Cl. 229—51)

1. An end-loaded type carton made from a single corrugated paperboard blank cut and scored to define a top panel,
- a first side wall,
- a bottom wall,
- a second side wall, and
- an underlap panel, hingedly connected together in a series relation,
- each of said walls and panels having end flaps hingedly connected to their outer edges,
- said blank being adapted to be folded into a rectangular carton with the top panel adhesively secured to the underlap panel,

said top and underlap panels each including a pair of longitudinal slots, axially aligned with the center line of said top wall and the slots in the top panel being aligned with the slots in the underlap panel,

carrying means mounted in said slots,

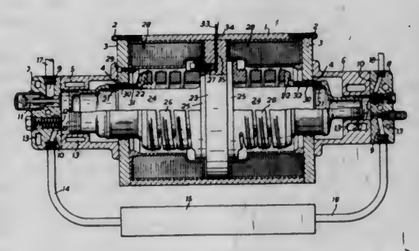
said end flaps on each of said side walls having a perforate score line running diagonally across the end of each flap which engages the top wall flaps,



said side wall flaps being adhesively secured to the top panel and bottom wall end flaps,

a tear strip in said bottom wall and bottom wall end flaps, whereby on removal of said tear strip, the upper side wall can be raised to open the container with the corner on the end flaps of the raised side wall being severed from the end flap along the perforate score line.

3,286,911
COMPRESSORS
Michael Edward Clarke, Kingston, England, assignor to The British Oxygen Company Limited, London, England
Filed Sept. 1, 1965, Ser. No. 484,410
Claims priority, application Great Britain, Sept. 4, 1964, 36,451/64
14 Claims. (Cl. 230—55)



1. A compressor comprising:

a first cylinder;

a second cylinder rigidly connected to and located in alignment with said first cylinder;

two pistons located one in each of said cylinders;

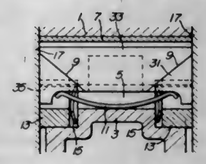
spring means connected to the pistons;

means producing two magnetic fields substantially radial of the axis of the cylinders and through a portion of each piston;

two coils located one in each of the radial magnetic fields and coaxial with and rigidly connected one to each of said pistons and co-operating with said means producing two magnetic fields substantially radially of the axis of the cylinders when electric current is applied to the coils to form two linear motors reciprocating the pistons in antiphase relationship;

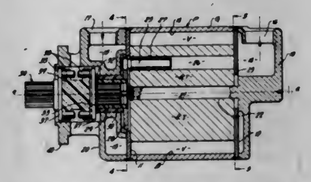
and valve means allowing flow of the gas to be compressed into each cylinder and flow of compressed gas from each cylinder.

3,286,912
GAS-TIGHT SEALING DEVICE FOR ROTARY PISTON ENGINES
Hiroshi Tado, Suita-shi, Japan, assignor to Yanmar Diesel Engine Co., Ltd., Osaka, Japan, a corporation of Japan
Filed Mar. 2, 1966, Ser. No. 531,251
Claims priority, application Japan, Mar. 11, 1965, 40/18,652
1 Claim. (Cl. 230—145)



A gastight sealing device for a rotary piston engine of the type having a casing consisting of a central housing and side housings disposed on opposite sides thereof, a rotary shaft extending through the center of said central housing, and a rotary piston of multicornered structure rotatably supported on an eccentric portion of said rotary shaft, for the purpose of sealing gastight the corner portions of said rotary piston in its axial direction, said device comprising apex sealing means including an axial groove provided in the corner portion of said rotary piston, an apex sealing member of thin-walled structure disposed in said groove and having a suitably curved top end, a support block for supporting said apex sealing member in said groove, said support block being axially split into three sections to form a central sub-block and side sub-blocks, on opposite sides of said central sub-block which contact with each other at their slant faces, said central sub-block supporting said apex sealing member thereon, and a spring disposed at the bottom of said groove for urging the lower ends of said side sub-blocks radially outwardly of said rotary piston.

3,286,913
ROTARY PUMP
Herbert W. Kaatz, Elyria, and Leo Tobacman, Cleveland Heights, Ohio, assignors to Randolph Mfg. Co., Cleveland, Ohio, a corporation of Ohio
Filed July 13, 1964, Ser. No. 382,308
18 Claims. (Cl. 230—152)



1. A rotary sliding vane pump having an axis of rotation comprising a rotor having an axial length and a right circular cylindrical exterior surface concentric of said axis and a small diameter interior cylindrical surface comprising a concentric hollow bearing extending the whole length of the rotor, non-radial vane slots parallel with said axis and opening through said exterior surface and lying approximately tangent to said bearing surface and having their roots proximate said bearing, vanes slidable in said slots, said rotor also having axially extending holes symmetrically disposed about said axis and spaced about midway between said cylindrical bearing surfaces and about mid-way between adjacent vane slots, a ring surrounding said rotor coaxially and symmetrically and of approximately the same length as said rotor and having a non-

circular bore describing two lobes with said rotor and two diametrically interposed arcuate sealing zones in sliding contact with said rotor and having diametrically opposite inlet and outlet ports respectively opening through said bore adjacent said zones and also opening at longitudinally opposite ends of said ring adjacent said zones, said ring having an imperforate exterior of approximately coaxial cylindrical form and with greater wall thickness comprising said ports, inlet and outlet plates slidably engaging the opposite ends of said ring and having ports selectively corresponding to the inlet and outlet ports in the ends of said ring respectively and closing adjacent ports of opposite effect respectively, said intake plate having auxiliary ports opening to the said lobes respectively adjacent said intake ports of said ring, said plates each having an inner central opening smaller than the exterior of said rotor, intake and exhaust housings closing the longitudinal ends of said pump and having air-tight engagement with said plates and each having an annular chamber communicating with the ports in said plates respectively and having external inlet and outlet connections for said chambers respectively disposed within approximately the envelope of the exterior of said ring, said exhaust housing having an integral axial journal for rotatably supporting said rotor for rotation about said axis and disposed in and for substantially the full length of said internal bearing in the rotor, the said central opening in the exhaust plate clearing said journal and opening to said exhaust chamber to the roots of said slots and to said bearing, said inlet housing having an internal bearing aligned on said axis and sealed-off from the said inlet chamber in said housing, a driving disc adjacent the central opening of said exhaust plate and having an axially extending hollow journal rotatably supported in said housing bearing and having symmetrically spaced pintles extending into said holes in said rotor and in driving engagement with said rotor, said hollow journal having internal splines, and a driving coupling having splined engagement therewith, the contour of the interior of said bore comprising sequential segments described by a plurality of equations of the following general form:

$$R=r(k+1\phi+m\phi^2+n\phi^3)+r$$

wherein

R=the distance from the center of the rotor to the inner surface of the bore

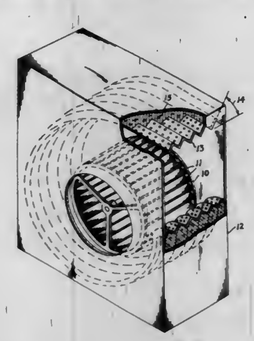
r=the minimum bore radius

ϕ=angular displacement of the rotor and vanes about the axis of rotation of the rotor for any segment of the contour of the bore, and k, l, m and n are constants,

said vanes having height from tip to root approximately equal to the depth of said rotor slots and equal to about 0.7 r and said vanes having maximum extension into the bore equal to about 0.30 r.

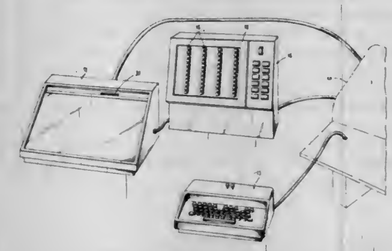
3,286,914
FANS
Peter Baverstock, Lee-on-Solent, England, assignor to Brightside Heating and Engineering Company Limited, Sheffield, England
Filed Oct. 1, 1964, Ser. No. 400,843
Claims priority, application Great Britain, Oct. 29, 1963, 42,510/63
1 Claim. (Cl. 230—232)

In a centrifugal fan, the combination of a casing including a pair of side walls at least one of which is provided with an air inlet opening and also including a marginal wall provided with an air outlet, a rotor mounted in said casing, a scroll in the casing comprising an elongated and longitudinally curved plate surrounding said rotor in spaced relation from said marginal wall with the ends of the plate terminating at said air outlet, said scroll plate being foraminous over its entire area and having a saw-tooth cross-section extending transversely across the full width of the casing between said side walls, said saw-tooth cross-section of the scroll plate defining a set of spaced parallel V-shaped ridges and intermediate V-shaped valleys extending longitudinally of the plate in a circumferential direction around said rotor and



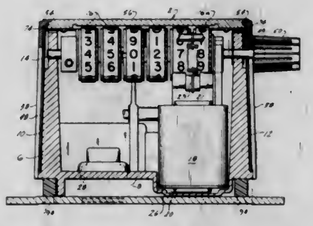
in planes parallel to the plane of rotation of the rotor, and packing of sound-absorbing material provided in the space between said scroll plate and the marginal wall of the casing, said packing also filling the V-shaped valleys existing between the ridges of the plate facing said marginal wall.

3,286,915
PROGRAMMING TERMINAL
Wilbur M. Davis, Brooklyn, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 23, 1964, Ser. No. 377,260
32 Claims. (Cl. 234—17)



1. In a programming system, a prompter unit having therein a program tape bearing thereon notation of computer functions and successive spaced program inquiries concerning data relating to said functions, means in said unit for displaying said notations at a preselected display location, means for advancing said tape to display successive of said notations at said preselected display location, means for halting advance of said tape as each of said notations is displayed at said preselected display location, a data processing unit, means responsive to the entry into said data processing unit of data required by said notation for advancing said tape to display the next notation thereon at said preselected display location and means in said system conjointly operable by the entry of data into said data processing unit and the advance of said tape for manifesting synchronous advance of said tape and the entry of data into said data processing unit.

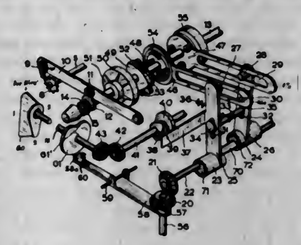
3,286,916
COUNTER AND CRYSTAL ASSEMBLY THEREFOR
Edward M. Stolarz, New York, N.Y., assignor to Redington Counters, Inc., Windsor, Conn., a corporation of Connecticut
Original application June 17, 1963, Ser. No. 288,091, now Patent No. 3,219,268, dated Nov. 23, 1965. Divided and this application Feb. 26, 1965, Ser. No. 435,648
7 Claims. (Cl. 235—1)



1. A counter comprising a counting mechanism having a frame member, a number wheel shaft journaled in the upper portion of said frame member, a plurality of number wheels rotatably mounted on said shaft and having their uppermost portions extending upwardly of the upper margins of said frame member, and means for actuating said number wheels; and a casing assembly in which said frame is received, said casing assembly having a cover member with a top wall portion extending over the top of said frame member and side and end wall portions extending about the sides and ends of said frame member, said top wall portion having a planar upper surface and being comprised in its major part of a crystal member having a transparent window area therein registering with said number wheels, said crystal member having a recess in the lower surface thereof substantially coinciding with said window area and receiving the uppermost portions of said number wheels to permit said number wheels to rotate therein with the periphery of each wheel in close proximity to the upper surface of said top wall portion to provide a wide angle of sight, said window area having its margins spaced inwardly from the margins of said top wall portion with the area therebetween being relatively opaque, means conspicuously outlining the margins of said window area to provide a target frame about the window area and the portion of said number wheels visible through said window area for directing the eye of a reader to the numbers for rapid and accurate reading, and means supporting said crystal member in said cover member.

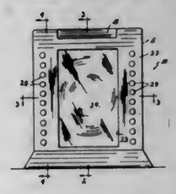
3,286,917
TARIFF AND FARE SELECTOR APPARATUS
Heinz Kelch, Villingen, Black Forest, Germany, assignor to Kienzle Apparate G.m.b.H., Villingen, Black Forest, Germany
Filed May 19, 1965, Ser. No. 457,228
Claims priority, application Germany, May 20, 1964, K 52,991
8 Claims. (Cl. 235—30)

5. In a taximeter, in combination, rotary fare registering means; distance drive means; a plurality of one way clutches assuming an engaged condition connected with said fare registering means when turned in one direction of rotation; a plurality of members respectively connected with said clutches and being angularly reciprocable in drive strokes in said one direction of rotation, and in opposite return strokes; a plurality of variable transmission means respectively connecting said distance drive means with said members; a plurality of drive members respectively connected with said transmission means and being cyclically operated by said distance drive means in different cycles to cyclically move said members in said drive strokes so that said fare registering means are rotated in said one direction by said one way clutches; and



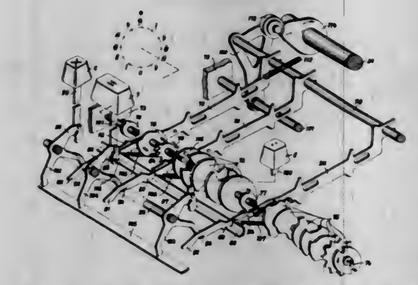
tariff setting control means for simultaneously and equally varying the transmission ratios of all said transmission means.

3,286,918
VOTING METHOD
Martin A. Coyle, 830 High St., Hamilton, Ohio
Continuation of application Ser. No. 105,852, Apr. 17, 1961. This application July 28, 1964, Ser. No. 385,740
2 Claims. (Cl. 235—50)



1. A method of secret voting without the necessity of using a voting booth comprising the steps of:
(1) supplying each voter with an individual ballot having voting indicia thereon comprising a tabulating card sufficiently stiff to resist tearing and bending and of a size and shape to fit a conventional tabulating machine to be used for tabulating a plurality of the individual ballots and to fit into an enclosed voting machine,
(2) inserting by act of the voter an individual ballot into said voting machine,
(3) magnifying the total ballot by means of a magnifying lens incorporated as an integral part of the voting machine while the ballot is within the voting machine and focusing the magnified total ballot at a voting position in front of the machine so that the ballot voting indicia is at once visible exclusively to a voter standing in the voting position,
(4) viewing by act of the voter the total ballot from the voting position,
(5) marking, by act of the voter, the ballot in registered relation to the indicia by suitable means accessible to the voter at the front of the voting machine while the ballot is still housed within the machine and totally visible to the voter,
(6) removing by act of the voter the marked ballot from the voting machine,
(7) depositing by act of the voter the marked ballot into the custody of election officials, and
(8) tabulating a plurality of said individually marked ballots of a plurality of voters by means of a tabulating machine for which said individual ballots are especially adapted, said tabulating machine being a separate machine from the voting machine.

3,286,919
CALCULATING MACHINE, ESPECIALLY FOUR-SPECIES CALCULATING MACHINE
Andreas Metschnabel, and Wilhelm Machmer, Nurnberg, Germany, assignors to Diehl, Nurnberg, Germany
Filed Dec. 13, 1965, Ser. No. 513,459
Claims priority, application Germany, Dec. 12, 1964, D 46,032
6 Claims. (Cl. 235—60)



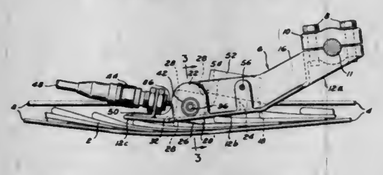
1. A motor driven four species calculating machine having digit input keys and function keys including at least multiplication, division, and result keys, a main drive shaft rotatable through a single rotation for each operation of the machine, a program control shaft having control cams thereon and indexable for controlling the operation of said machine, said control shaft having a zero position and a plurality of indexed positions, at least three differently toothed advancing gears on said control shaft for effecting indexing movement thereof, a slide for each advancing gear, each slide having a tooth for engagement of the pertaining advancing gear in one direction of movement only of the slide, said slides being normally latched in ineffective positions and being operable when released to reciprocate upon each revolution of said main drive shaft and moving in said one direction during the latter portion of the rotary movement of said main drive shaft, means under the control of said multiplication, division and result keys for releasing respective ones of said slides from latched position upon activation of said keys, each slide being effective when reciprocable to act through its pertaining advancing gear to index said control shaft a different amount, and auxiliary advancing means operable for indexing said control shaft from its starting or zero position to an intermediate position independently of said slides, said auxiliary means being connected with said result key so as to be made effective thereby upon the entry of a multiplier by actuation of the result key and being operable during that portion of the rotation of the main drive shaft preceding the said latter portion thereof.

3,286,920
SLIDE RULE
Louis A. Warner, 5223 N. Natoma, Chicago, Ill.
Filed July 15, 1965, Ser. No. 472,092
4 Claims. (Cl. 235—70)



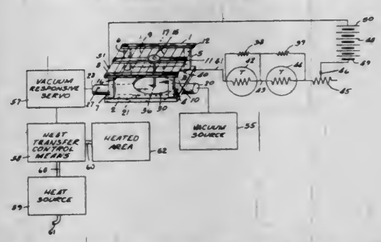
1. A slide rule comprising a body portion, a narrower in width slider portion adapted to slidably fit atop said body portion and a cursor slider, said body portion and said slider portion each having at least one scale thereon for solving mathematical computations and formed of a coiled spring comprising a ribbon having a formed concave-convex cross-section, permanently stressed into a plurality of tightly wound convolutions when said stressed ribbon is in repose, each of said convolutions engaging the preceding convolution when said stressed ribbon is in repose, the convex side of said concave-convex cross-section facing towards the center of the coiled spring, said cursor slider having a pair of slots extending therethrough for receiving and retaining said slider portion in working relationship atop said body portion, whereby mathematical computations can be made by manipulating them and said body portion and said slider portion collapsed by rolling them up.

3,286,921
ARTICLE COUNTING DEVICE
Frank S. Hyer, Duxbury, Mass., and John W. Loeffler, Milwaukee, and Palmer T. Severson, Wauwatosa, Wis., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Feb. 4, 1964, Ser. No. 342,489
6 Claims. (Cl. 235—98)



1. An article counting device comprising:
supporting means for being mounted adjacent a conveyed stream of articles to be counted;
rotatable means mounted on said supporting means and having a plurality of teeth of magnetic material on the periphery thereof extending to intercept said conveyed articles and to be thereby rotated;
means for sensing the rotation of said rotatable means to thereby sense the number of passing articles;
and detent means comprising stationary magnet means mounted adjacent the periphery of said rotatable means for attracting said teeth of magnetic material as they pass to provide a detent action for said rotatable means.

3,286,922
ELECTRO VACUUM TEMPERATURE CONTROL SYSTEM
Rudolph J. Franz, Arlington Heights, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois
Filed Apr. 26, 1965, Ser. No. 450,990
14 Claims. (Cl. 236—9)



1. A temperature control system comprising a continuous bimetal strip having the junction line of its two metals lying generally in a plane and having a plurality of bights and interconnecting segments forming a continuous wave-like element, a supporting frame having a pair of spaced arms, one of said arms being substantially rigidly secured to one alternate set of bights of said

bimetal strip, the other of said arms being substantially rigidly secured to the other set of bights of said bimetal strip, an actuating arm secured to said bimetal strip at a plurality of points located intermediate said pair of supporting arms, said actuating arm being movable by said bimetal strip upon a temperature change of said bimetal strip, circuit means for passing an electric current through said bimetal strip, and means for manually adjusting the amount of current flow, whereby the degree of flexure of said bimetal strip is a function of the ambient temperature and of the heating effect of the current flowing therethrough.

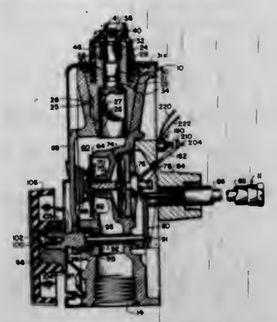
12. In a heating system having a vacuum responsive servo mechanism for controlling the amount of heat delivered to an area to be heated, a conduit arranged to connect said servo mechanism to a vacuum source, means for variably restricting said conduit, an electromechanical transducer connected to said restricting means to actuate the same, said transducer including a bimetal element arranged to be disposed in said area to be heated, said restricting means being movable to a more restrictive position upon a rise in temperature of said bimetal element and to a less restrictive position upon a decrease in temperature, thermistor means arranged to be disposed exterior of said area to be heated, and a source of electric energy connected to space points on said bimetal element serially through said thermistor means, whereby the position of said restricting means, as determined by the position of said bimetal element, is determined by the combined effect of its own ambient temperature and by the ambient temperature of said thermistor means.

3,286,923

THERMOSTATIC CONTROL DEVICE FOR NORMAL AND ABNORMAL CONDITIONS

Wilbur F. Jackson, Rolling Hills, and Henry C. Brauckslek, Buena Park, Calif., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed June 11, 1963, Ser. No. 287,061
13 Claims. (Cl. 236—21)



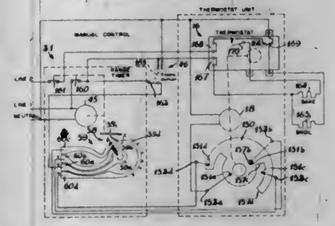
2. In a thermostatic control device, the combination comprising, a casing having inlet and outlet means and flow passage means therebetween, control means in said passage means movable between controlling positions, temperature sensor means in an assembly including a rod and tube thermostat unit and mounting means therefor whereby said assembly is attached to said casing, means defining an operative connection between said control means and said rod and tube thermostat unit whereby said control means is moved between controlling positions in response to normal temperature conditons, thermoelectric means including safety shut-off means in said passage means and electromagnetic means adapted to be energized for holding said safety shutoff means in an open position, thermoelectric circuit means for energizing said electromagnetic means, and means responding to abnormal temperature conditions and being carried by said assembly so as to be in proximity to said rod and tube thermostat unit, and switch means actuated by said means responding to abnormal temperature conditions and being electrically connected in said thermoelectric circuit means for deenergizing said electromagnetic means in response to abnormal temperature conditions.

3,286,924

TIMER ADJUSTED OVEN THERMOSTAT

Jeno D. Banathy, Chicago, Ill., assignor to International Register Company, Chicago, Ill., a corporation of Illinois

Filed Oct. 28, 1963, Ser. No. 319,286
14 Claims. (Cl. 236—46)



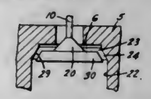
1. In a system for controlling the temperature of an oven, in combination:
(a) a thermostat adapted to be responsive to the temperature of the oven and arranged to control the heat supplied thereto for maintaining said temperature,
(b) a thermostat setting member including a gear member rotatable therewith from an initial position in which no heat is supplied to the oven to another position in which heat is supplied to the oven to maintain a corresponding temperature,
(c) a reversible rotatable gear sector for driving said gear member to rotate said thermostat setting member,
(d) a unidirectional drive motor, and
(e) means for operatively interconnecting said motor and said gear sector for rotating said gear sector in one direction to rotate said thermostat setting member from said initial position to said other position and for rotating said gear sector in the opposite direction to rotate said thermostat setting member back toward said initial position.

3,286,925

QUICK ACTING THERMOSTATIC STEAM TRAP

Ulrich Domm and Werner Föller, Frankenthal, Pfalz, and Rudolf Egelhofer, Borrstadt, Pfalz, Germany, assignors to Klein, Schanzlin and Becker Aktiengesellschaft, Frankenthal, Pfalz, Germany

Original application Aug. 26, 1963, Ser. No. 305,029. Divided and this application Oct. 24, 1965, Ser. No. 504,848
Claims priority, application Germany, Sept. 19, 1961, K 44,748
8 Claims. (Cl. 236—59)



1. A steam trap comprising, in combination, a housing defining a condensate collecting chamber having an inlet passage, an outlet passage spaced from said inlet passage, and partition means between said chamber and said outlet passage and defining a valve seat facing away from said chamber and having a cross section smaller than that of said outlet passage; and valve means comprising a sealing element in said outlet passage movable toward and away from said valve seat between a closed and an open position, said sealing element having a first portion adapted to engage said valve seat in said closed position of said sealing element and defining with the valve seat when said sealing element is out of engagement therewith a first restricted passage increasing in cross section during movement of said sealing element away from said valve seat and decreasing in cross section during movement of said sealing element toward said valve seat, said sealing element having in said outlet passage a second portion of enlarged cross section having a surface spaced from and facing said valve seat, and said enlarged cross section of said second portion being only slightly smaller than that of said outlet passage and defining in said outlet passage about said second portion a second restricted passage, said outlet passage and said second portion of said sealing element being constructed and arranged so that during movement of said sealing element away from said valve seat the cross-sectional area of said second restricted passage increases and during movement of said sealing element toward said valve seat said cross-sectional area of said second restricted passage decreases, and bimetallic means located in said chamber in the path of fluid flowing to said valve seat and operatively connected to said sealing element for moving the latter to said closed position in response to a predetermined temperature of said fluid and against the pressure the fluid exerts against said sealing element in a sense to maintain the latter in the open position, while permitting said sealing elements to move to said open position under the pressure of the fluid when the temperature of the latter drops below said predetermined temperature, whereby during movement of said sealing element to said open position fluid pressure on said surface will cause fast movement of said sealing element to said open position until after discharge of condensate collecting chamber the temperature of the fluid about said bimetallic means will rise causing the latter to move said sealing element toward said closed position, whereupon the cross section of said first restricted passage will become smaller than that of said second restricted passage causing thereby sudden decrease in pressure in the space between said valve seat and said surface of said second portion of said sealing element and fast movement of the sealing element to said closed position.

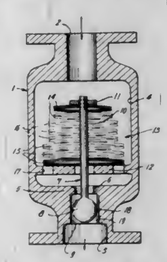
3,286,926

QUICK ACTING THERMOSTATIC STEAM TRAP

Ulrich Domm and Werner Föller, Frankenthal, Pfalz, and Rudolf Egelhofer, Borrstadt, Pfalz, Germany, assignors to Klein, Schanzlin & Becker Aktiengesellschaft, Frankenthal, Pfalz, Germany

Original application Aug. 26, 1963, Ser. No. 305,029. Divided and this application Oct. 24, 1965, Ser. No. 515,283
Claims priority, application Germany, Sept. 19, 1961, K 44,748
11 Claims. (Cl. 236—59)

1. A steam trap comprising, in combination, a housing defining a condensate collecting chamber having an inlet passage, an outlet passage spaced from said inlet passage, and partition means between said chamber and said outlet passage and defining a valve seat facing away from said chamber and having a cross section smaller than that of said outlet passage; and valve means comprising a sealing element in said outlet passage movable toward and away from said valve seat between a closed and an open position, said sealing element having a surface portion adapted to engage the valve seat and defining with the latter during movement of said sealing element away from said valve seat a first restricted passage increasing in cross section during movement of said sealing element away from said valve seat and decreasing in cross section during movement of said sealing element towards said valve seat, said sealing element having in said outlet passage an area of maximum cross section only slightly smaller than the cross section of the outlet passage and defining about said sealing element in said outlet passage a second restricted passage, and metallic means located in said chamber in the path of fluid flowing to said valve seat and operatively connected to said sealing element for moving the latter to said closed position in response to a predetermined temperature of said fluid and against the pressure the fluid exerts against said sealing element in a sense to maintain the latter in said open position, while permitting said sealing element to move to said open position under the pressure of the fluid when the temperature of the latter drops below said predetermined temperature, whereby during movement of said sealing element to said open position said second restricted passage will cause buildup of fluid pressure in a space between said valve seat and said second restricted passage to move said sealing element fast to and to maintain the same in said open position until after discharge of condensate from said condensate collecting chamber the temperature of the fluid about said bimetallic means will rise causing the latter to move said sealing element toward said closed position whereupon the cross section of said first restricted passage will become smaller than that of said second restricted passage causing thereby sudden decrease of pressure in said space and fast movement of said sealing element to said closed position.

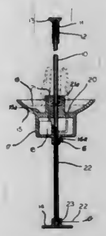


3,286,927

ORNAMENTAL FOUNTAINS

Helmut Zysk, 103 N. 65th St., Milwaukee, Wis.

Filed Apr. 20, 1964, Ser. No. 360,825
3 Claims. (Cl. 239—23)



1. An ornamental fountain comprising:
a hollow basin having a first compartment with an open face and a second compartment, said first compartment receiving and containing fluid;
a pumping means positioned within said second compartment for pumping fluid in an upwardly direction whereupon it eventually flows into said first compartment;

interconnecting means included in said basin for providing a passageway for fluid from said first compartment to said pumping means;

at least one manually actuatable spring-biased pole member fixedly associated with said basin and being capable of releasably securing said ornamental fountain between an upper and a lower surface;

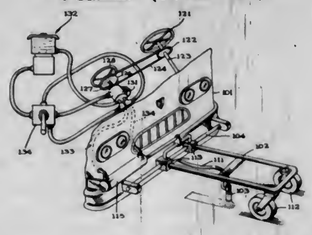
said basin including an opening extending substantially in the center thereof for frictionally receiving said pole member therethrough; and fastening means releasably securing said basin at a pre-determined position along said pole member.

3,286,928

HYDRAULIC COMPENSATION OF HIGHWAY STRIPING EQUIPMENT

Wayne R. Mitchell, Huntingdon, Pa., assignor to Wald Industries, Inc., Huntingdon, Pa., a corporation of Pennsylvania

Filed Nov. 20, 1964, Ser. No. 412,709
4 Claims. (Cl. 239—150)



1. Apparatus for striping a pavement comprising

a truck to carry the striping equipment,

a transverse bar attached to said truck,

a paint spraying means movably attached to said transverse bar for reciprocal movement along said bar within the limits of extensions of longitudinal lines defining the width of said truck,

a hydraulic cylinder attached to said truck and having a piston rod attached to said support means for the movement of said support means along said bar,

a steering wheel assembly mounted in said truck for guiding of said truck,

and a hydraulic valve operatively attached to said steering wheel assembly for rotation therewith in a predetermined ratio between said hydraulic valve and said steering wheel assembly,

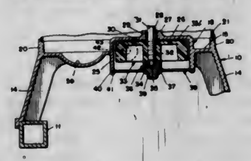
said hydraulic valve hydraulically connected to said hydraulic cylinder so as to control the movement of said piston rod.

3,286,929

OSCILLATING SPRINKLER

Raymond W. Henningsen, Lincolnwood, Ill., assignor to W. D. Allen Manufacturing Co., Chicago, Ill., a corporation of Illinois

Filed Feb. 11, 1964, Ser. No. 344,133
6 Claims. (Cl. 239—242)



1. An oscillating lawn sprinkler comprising, a frame, a sprinkler arm pivotally mounted at one end on said frame, means for oscillating said sprinkler arm including a water motor, said water motor having a housing including an inverted cup shaped body integral with said frame, said body having a vertically extending cylindrical side wall and an upper wall member, a bore in the center of said upper wall member, a bearing mounted in said bore, a water wheel shaft bearingly received in said bearing and having a water wheel secured thereto and received within the housing, said shaft projecting above said housing, a stub shaft portion extending from the lower end of the shaft below said water wheel, a lower wall member secured along the lower edge of said side wall and having an opening in the center thereof, a bearing secured in said opening and having a blind bore for bearingly receiving said stub shaft portion, an inlet orifice in said side wall adapted to be connected to a source of water, and an outlet in the side wall communicating with said sprinkler arm.

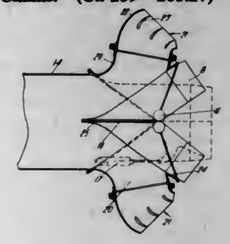
6. An oscillating lawn sprinkler comprising, a frame having a cylindrical turbine housing integral therewith, said housing having an upstanding axis with upper and lower walls and a vertically extending drive shaft bearingly mounted coaxially with the housing axis and extending through said upper wall, a flanged bearing in the upper wall of said housing for receiving said drive shaft, a turbine wheel within said housing on said shaft, a water inlet and a water outlet integral with said frame and in communication with said housing whereby water passing from the inlet to the outlet drives said turbine wheel and drive shaft, a sprinkler arm pivotally mounted on said frame and in communication with said outlet, and means interconnecting said drive shaft and sprinkler arm for oscillating said arm including a worm on said drive shaft in spaced relation to and above said turbine wheel, a horizontal shaft perpendicular to said drive shaft having a worm wheel on one end in engagement with the worm of said drive shaft and a worm on the other end thereof, a crankshaft mounted on said frame below said horizontal shaft and perpendicular thereto and to the drive shaft, a worm wheel on one end of said crankshaft in engagement with the worm on the horizontal shaft and a crank on the other end thereof, said turbine wheel, drive shaft worm and meshing worm wheel being arranged so that rotation of the drive shaft exerts an upward force thereon to cause the turbine wheel to sealingly engage the flanged bearing, and linkage interconnecting said crank and sprinkler arm.

3,286,930

JET PIPE ASSEMBLY

James Alexander Petrie, Littleover, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a company of Great Britain

Filed July 10, 1964, Ser. No. 381,679
Claims priority, application Great Britain, July 17, 1963, 28,368/63
7 Claims. (Cl. 239—265.27)



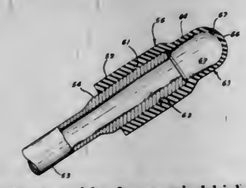
1. A jet pipe assembly for a jet engine, said assembly comprising an engine jet pipe, a plurality of forward propulsion nozzle members mounted adjacent the downstream end of the jet pipe, a plurality of branch pipes each of which is adapted to communicate with the jet pipe and each of which is provided with an additional nozzle which direct the jet gases downwardly, the forward propulsion nozzle members being movable between a first position in which they both collectively form a forward propulsion nozzle through which the jet gases are discharged rearwardly and in which they also simultaneously cut off the said branch pipes from communication with the jet pipe, and a second position in which they collectively blank off the downstream end of the jet pipe and simultaneously deflect the jet gases from the jet pipe into the branch pipes, and means for moving the forward propulsion nozzle members into and between the said first and second positions.

3,286,931

NOZZLE ASSEMBLY FOR WINDSHIELD WASHER SYSTEMS

Edmond F. Webb, Franklin, Mich., assignor to Putnam Equipment Corporation, Cookeville, Tenn., a corporation of Tennessee

Filed Feb. 20, 1964, Ser. No. 346,257
2 Claims. (Cl. 239—284)



2. A nozzle assembly for a windshield washer unit operable to direct cleaning fluid onto the windshield of a vehicle comprising:

(a) a tubular body member having relative angularly disposed sections and a head end directed toward the windshield,

(b) bracket means clamped over at least two of said sections for mounting the nozzle assembly on the vehicle forward of the windshield,

(c) fluid discharge means telescoped over said head end of the body member for rotation thereon, said means having a resilient end wall formed with at least one off-center fluid discharge opening to direct fluid onto said windshield, and

(d) said fluid discharge means having a sleeve section mounted about said head end,

(e) said sleeve section integral with said end wall and having a longitudinal axis extended through said end wall, and

(f) said fluid discharge means being rotatable about said tubular body member and about said longitudinal axis for vertical and lateral adjustment of said fluid discharge opening.

3,286,932

WINTER-SUMMER WINDSHIELD WASHER SYSTEM

Willis L. Kibler, Detroit, Mich., assignor, by mesne assignments, to Putnam Equipment Corporation, Cookeville, Tenn., a corporation of Tennessee

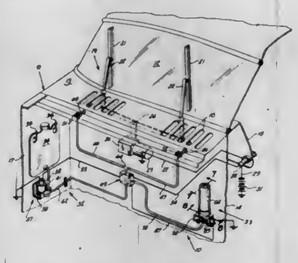
Filed May 25, 1964, Ser. No. 369,682
2 Claims. (Cl. 239—284)

1. A windshield washing system for a vehicle having a windshield and a source of energy comprising:

(a) a first washer unit having a reservoir for storing a first cleaning liquid, pump means for moving the first liquid from the reservoir under pressure and motor means for operating said pump means,

(b) a second washer unit having a container for storing a second cleaning liquid under gas pressure, valve means movable to open and closed positions for controlling the flow of liquid from said container, lever means engageable with said valve means for moving said valve means to the open position, and solenoid means operably connected to said lever means for moving the lever means to a position to open the valve means,

(c) nozzle means for directing liquid to the windshield, and



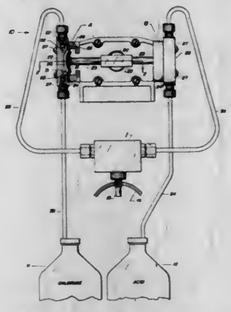
(d) a switch and valve assembly having a switch section and a valve section for selectively connecting the motor means to the source of energy and the pump means in a fluid communicating relation with the nozzle means whereby upon actuation of the motor means the pump means discharges the first cleaning fluid under pressure to said valve section which directs said fluid to the nozzle means, and for selectively connecting the solenoid means to the source of energy and the valve means in a fluid communicating relation with the nozzle means whereby upon actuation of the solenoid means the second fluid is dispensed from said container and directed by the valve section to the nozzle means.

3,286,933

DUPLEX CHEMICAL FEEDING SYSTEM

Harry A. Savage, Miami, Fla., assignor of fifty percent to Donald W. Barlow, Miami, Fla.

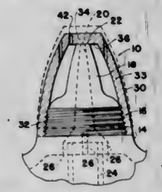
Filed July 13, 1964, Ser. No. 382,098
5 Claims. (Cl. 239—304)



3. A duplex chemical feeding system comprising a pump support having an opening, a motor shaft extending through said opening, an eccentric secured to said motor shaft, a reciprocating block having a cavity, ball bearing means mounted on said eccentric and received by said cavity for reciprocating said block, a plurality of pump shafts extending in opposite directions secured at one end to said reciprocating block, a pump secured at each end of said pump support, said pumps each having a chamber, a flexible diaphragm extending across said chambers, each of said chambers having an inlet and an outlet, pipe means connected at one end to said inlets and said outlets, the other ends of said inlet pipe means communicating with a

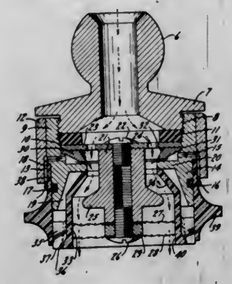
source of chemicals, valve means mounted in said inlets and said outlets, a nozzle block, nozzle means mounted on said block, said nozzle means having concentrically disposed discharge ports, a pair of ducts in said nozzle block connecting said other ends of said outlet pipe means and said discharge ports.

3,286,934
ATOMIZERS
Frank J. Schneller, 627 Whittier, Wichita, Kans.
Filed Aug. 31, 1964, Ser. No. 393,279
4 Claims. (Cl. 239—327)



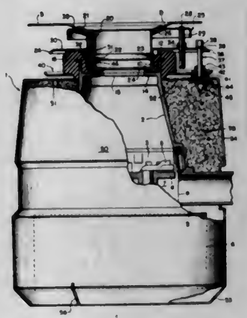
4. An atomizer comprising a flexible walled receptacle having engagement means in an inner portion and in one end portion a nozzle smaller in the outlet end portion than in an inner portion and having a longitudinally extending orifice in a central portion thereof and a surface portion surrounding the outlet of said orifice, a cap for said receptacle having a longitudinal axis, engagement means for positionable engagement with said engagement means on said receptacle, and a surface portion in the end thereof for selective engagement with said surface portion surrounding the outlet of said orifice, and aperture means including at least one aperture in said cap in spaced relation to the portion of the surface of said cap that engages the surface on said nozzle surrounding said orifice, said atomizer in use adapted to be sealed when said engagement means on said cap is in engagement with said engagement means on said receptacle and said surface in said cap is in engagement with said surface around said orifice, and open when the engagement means on said cap and receptacle are positioned to separate said surface on said cap and said surface around said orifice.

3,286,935
COMBINED LIQUID SPRAY AND AERATOR
Webster D. Corlett, River Forest, and Charles G. Mackie, Glen Ellyn, Ill., and Alfred M. Moen, Grafton, Ohio, assignors to Standard Screw Company, Bellwood, Ill., a corporation of New Jersey
Filed Feb. 8, 1965, Ser. No. 430,893
15 Claims. (Cl. 239—428.5)



1. In combination in a spray aerator, means defining an inner path for the discharge of liquid and means defining a plurality of peripherally arranged paths, means within said device for directing fluid selectively to said inner path or to said peripheral discharges, housing means positioned about said discharges and provided with air inlet passages in communication with said discharge passages, and a member overlying said air inlet passages and spaced from said housing means.

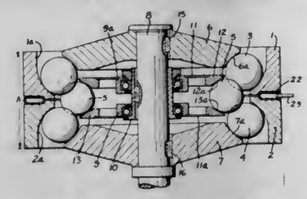
3,286,936
SUPPORTING STRUCTURE FOR WASTE DISPOSAL APPARATUS
Terrence S. McMahon, West Allis, Wis., assignor to General Electric Company, a corporation of New York
Filed Dec. 20, 1963, Ser. No. 332,163
10 Claims. (Cl. 241—100.5)



1. Means for suspending a food waste disposer from a kitchen sink or the like comprising, in combination:
a cylindrical inlet structure having at one end an outwardly flaring flange adapted to overlie sink bowl structure surrounding a drainage opening therein;
an annular clamping ring surrounding said inlet structure below the flange portion thereof;
a first annular support ring surrounding said inlet structure;
means for retaining said support ring on said inlet structure;
screw means threadedly engaging said first support ring for engagement with said clamping ring to urge the latter toward said flange;
a second annular support ring disposed about said inlet structure below said first support ring, and second ring having a plurality of angularly spaced apertures therein;
means including hanger bolts carried by said first support ring and passing through the said apertures of said second ring;
means interposed between said hanger bolts and said second support ring whereby said latter ring is resiliently suspended from said first support ring;
and an annular resilient member interposed between said first and second support rings and engaging with the extenrnal wall of said inlet structure, said resilient member being adapted to receive said food waste disposer for the support thereof on said second support ring.

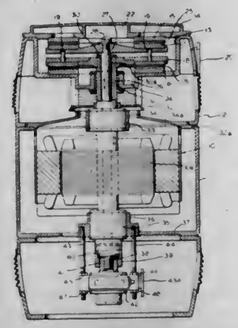
3,286,937
HOMOGENIZER FOR MIXING AND FRAGMENTING SUBSTANCES
Laszlo Lazarus Szego, London, England, assignor to John Robert Berend, London, England
Filed Nov. 21, 1963, Ser. No. 325,415
Claims priority, application Germany, Nov. 27, 1962, S 82,590
11 Claims. (Cl. 241—105)

1. In an apparatus for comminuting and mixing materials, especially different solids, and also solids and liquids, for producing a homogeneous mixture, which includes: a rotatable shaft, disc means connected to said shaft for rotation therewith and provided with a peripheral concave race surface, ring means coaxially arranged with regard to said disc means and having an inner peripheral race surface spaced from the race surface of said disc means and being curved inversely with regard to said concave race surface of said disc means, at least a first series of balls arranged along a circle and interposed between and in contact with the race surface of said disc means



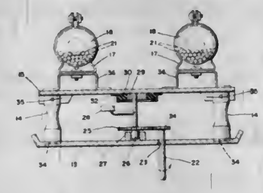
and the race surface of said ring means, and a second series of balls arranged along a circle less in diameter than said first mentioned circle, each of the balls of said second series of balls having a diameter less than the diameter of the balls of said first series of balls, the arrangement being such that each of said smaller diameter balls is in contact with two adjacent balls of said first series but is spaced from the adjacent smaller diameter balls.

3,286,938
VERTICAL REFINER
Lawrence A. Moore and Loyal H. Hess, Beloit, Wis., assignors to Beloit Corporation, a corporation of Wisconsin
Filed Jan. 31, 1964, Ser. No. 341,644
5 Claims. (Cl. 241—162)



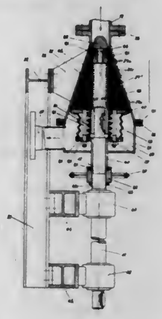
1. A paper stock refiner comprising in combination,
an upper stator having a lower refining surface,
a lower stator having an upper refining surface,
upper and lower rotors between said stators respectively having upper and lower refining surfaces facing the surfaces of the stators and defining refining spaces therebetween,
means rotatably supporting said rotors in a predetermined location between said stators,
means rigidly supporting said stators,
an outer tubular shaft supporting said lower rotor,
an inner shaft coaxial with the outer shaft supporting the upper rotor,
means driving said shaft,
extensions of the lower ends of said shafts,
threads at the lower ends of said shaft extensions having differences in thread lead,
and a nut threadably engaging the threads of said shaft extensions for controllably adjusting the relative positions of said shafts with rotation of the nut relative to the shaft extensions.

3,286,939
VIBRATORY BALL MILL
Igor Karpenko, William H. Engel III, and Richard W. Dye, Baltimore, Md., assignors to The Glidden Company, Cleveland, Ohio, a corporation of Ohio
Continuation of application Ser. No. 128,303, July 25, 1961. This application Nov. 26, 1963, Ser. No. 327,581
2 Claims. (Cl. 241—175)



1. A vibratory ball mill comprising:
a base;
a grinding chamber support connected to said base by a plurality of resilient props;
a driven rotating shaft, loaded with an eccentric weight, said shaft passing from said base to said grinding chamber support in a direction substantially normal to said support at rest, and extending into an eccentric journal flexibly engaged by said support;
said weight describing in rotation a path substantially normal to said shaft;
and a grinding chamber partially filled with solid particulate grinding media, said grinding chamber projected from said support at a position displaced from the axis of rotation of said shaft.

3,286,940
APPARATUS FOR DRESSING CRUDE ASBESTOS
Karl Adolf Oesterheld, Luthe, near Wunstorf, Hannover, Germany
Original application July 18, 1961, Ser. No. 124,923, now Patent No. 3,170,834, dated Feb. 23, 1965. Divided and this application Sept. 9, 1964, Ser. No. 413,665
Claims priority, application Germany, July 20, 1960, O 7,532; May 10, 1961, O 8,052; May 15, 1961, O 8,060
3 Claims. (Cl. 241—259)



1. Apparatus for dressing crude asbestos comprising a housing having an interior conical surface, a working body in said housing having a conical surface opposing

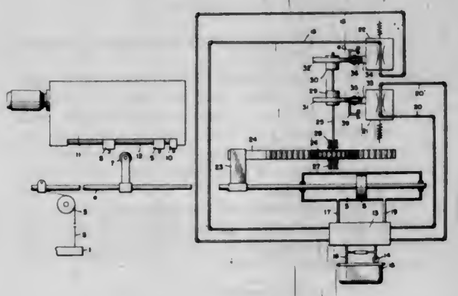
said housing surface, means for journalling said working body for rotation in said housing, the conical surface of said working body being defined by a plurality of elastic members, said elastic members being confined between axially spaced end plates, means for biasingly urging said end plates toward each other, and means for axially adjusting said housing and said working body relative to each other whereby the width of a passage defined by said surfaces can be adjusted in size.

3,286,941

CONTROL DEVICE FOR PROGRAMMED REGULATION OF HYDRAULIC FLUID-OPERATED TRAVERSE MECHANISMS OF SPOOLING, SPINNING AND ESPECIALLY RING TWIST MACHINES

Heinz Schippers, Karl Bauer, and Herbert Turk, Remscheld-Lennep, Germany, assignors to Barmer Maschinenfabrik Aktiengesellschaft, Wuppertal-Oberbarmen, Germany

Filed Dec. 21, 1964, Ser. No. 419,675
Claims priority, application Germany, Dec. 27, 1963, B 74,821
10 Claims. (Cl. 242—26.1)



1. A control device for the regulation of quantity flow of hydraulic fluid in a hydraulic traverse drive system of spooling, spinning, ring twist and like filament processing machines comprising a hydraulic traverse drive system, means for supplying hydraulic fluid thereto and exhausting hydraulic fluid therefrom, quantity regulator means to alter the amount of hydraulic fluid flow in said drive system, cam means activating said quantity regulator means, drive means for moving said cam means, and adjustable stop means for limiting the movement of said cam means to limit thereby the effective cam portion activating said quantity regulator means.

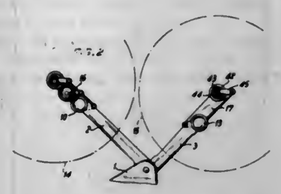
3,286,942

MOTION PICTURE PROJECTOR

Helmut Rube, Endersbach, Germany, assignor to Eugen Bauer G.m.b.H., Stuttgart-Unterturkheim, Germany

Filed Aug. 26, 1964, Ser. No. 392,098
Claims priority, application Germany, Aug. 28, 1963, B 73,288
15 Claims. (Cl. 242—55.11)

1. In a motion picture projector, in combination, a first support; a first rotary shaft rotatably mounted on said first support and adapted to carry a first take-up spool on which a film is wound; drive means for driving said first rotary shaft; and adapter unit including a second support and a second rotary shaft rotatably carried by said second support and adapted to carry a second take-up spool of a diameter greater than said first spool so that said second spool can carry more film than said first spool; and friction transmission means arranged on said second support and connecting said drive means to said second shaft for rotatinig the latter and said second



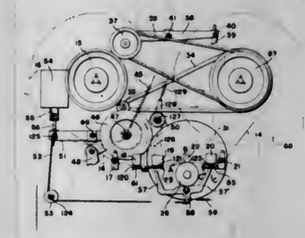
spool therewith in such a manner that the force transmitted by said transmission means is determined by the weight of the film wound on said second spool.

3,286,943

AUTOMATIC RECIPROCATING MAGNETIC TAPE RECORDING AND REPRODUCING APPARATUS

Toshio Morimoto, Osaka, Japan, assignor to Matsushita Electric Industrial Co., Osaka, Japan, a corporation of Japan

Filed June 3, 1963, Ser. No. 285,135
Claims priority, application Japan, June 4, 1962, 37/23,068, 37/29,851; July 20, 1962, 37/40,862; July 27, 1962, 37/42,262
7 Claims. (Cl. 242—55.12)



7. An automatic reciprocating magnetic tape recording and reproducing apparatus for use with a magnetic tape having at least two recording tracks in which the tape is reciprocated to effect uninterrupted recording and reproducing operations comprising a drive pulley, a capstan, an idler wheel adapted to transmit drive power from said drive pulley to said capstan, a flywheel integral with said capstan, a reversing roller arranged between said idler wheel and said flywheel, means for changing the direction of tape travel at an appropriate time during the tape travel and means for moving said reversing roller into and out of engagement with said idler wheel and said flywheel to change the direction of rotation of said capstan, reel pulleys and reel wheels, said reel pulleys being disposed to be brought into engagement with said reel wheels, said reel pulleys being rotatable about shafts respectively secured to said reel wheels, one of said reel pulleys being adapted to be driven by means of a belt, the other reel pulley being adapted to be driven by means of an intermediate wheel, said reel wheels being supported for vertical movement by bearings secured to a base plate and further being provided with a friction member on the face abutting the reel pulley to be brought into engagement with the face of said reel pulley, solenoids provided at the lower end of each of said shafts, one of said solenoids being energized to agree with the travel direction of the tape to effect vertical movement of said reel wheel

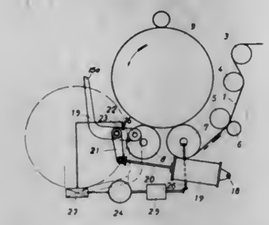
and to frictionally couple only the reel wheel assigned for winding the tape with said reel pulley so that the tape may be wound.

3,286,944

PROTECTIVE AND LOWERING MEANS FOR THE PAPER ROLL OF WINDING MACHINES

Ernst Kusel, Dusseldorf-Lohausen, Germany, assignor to Jagenberg-Werke AG., Dusseldorf, Germany

Filed May 12, 1964, Ser. No. 366,803
Claims priority, application Germany, May 17, 1963, J 23,727
4 Claims. (Cl. 242—66)



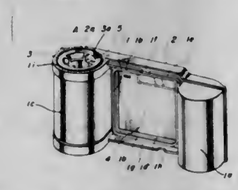
1. In a machine for winding webs of paper, cardboard and similar materials, a roll on which the web is to be wound, a pair of rollers constituting a bed for said roll, means for driving at least one of said rollers for imparting rotary movement to said at least one roller and means defining a protective device during winding and a lowering device for the completely wound roll, said means including a trough-like component pivotally mounted in proximity to the bed for the roll and extending axially of the roll, means operably coupled to said trough-like component operative to swing said component to a raised position for serving as a protective shield during winding and to a lowered position after winding for lowering the completely wound roll to floor level, and means for permitting activation of said driving means only when said trough-like component is in the raised position.

3,286,945

FILM MAGAZINE

Kurt Steisslinger, Stuttgart-Hedelfingen, Germany, assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Sept. 14, 1964, Ser. No. 396,079
Claims priority, application Germany, Sept. 13, 1963, K 45,708
4 Claims. (Cl. 242—71.2)



1. A film magazine comprising:

a front part formed into a semi-cylinder closed at its ends which serve as the front wall of a film supply chamber and into a semi-cylinder which serves as the front wall of a film chamber for housing exposed film;

said film chamber being open and having a film spool disposed therein, said spool being provided with at least one flange and being rotatably supported in said film chamber;

both said semi-cylinders being connected by a front plate having an opening through which film may be exposed when drawn across from one chamber to the other;

a cover for light-tightly closing the open side of said front part, and

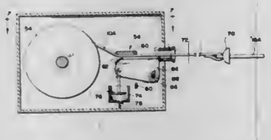
cooperating pawl means and ratchet means disposed between said spool flange and said film chamber and accessibly located on the outside of said film magazine for releasably preventing clock-springing of the exposed film within said film chamber in the unwind direction.

3,286,946

RETRACTABLE SAFETY BELTS

Richard G. Board, Bethesda, Md., and Nelson H. Shapiro, Hyattsville, Md. (7001 Old Cabin Lane, Rockville, Md. 20852)

Filed June 2, 1964, Ser. No. 371,986
7 Claims. (Cl. 242—107.2)



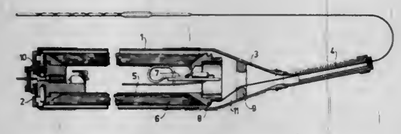
1. A retractable seat belt comprising a strap, means for retracting said strap, said strap being arranged for extension from said retracting means, timing means, and means responsive to said timing means for preventing extension of said strap at a time delayed with respect to the time of initial extension of said strap, said extension-preventing means comprising means for clamping said strap.

3,286,947

WIRE MAGAZINE FOR MISSILES

Carl Julius Erickson, Karlskoga, Sweden, assignor to Aktiebolaget Bofors, Bofors, Sweden, a corporation of Sweden

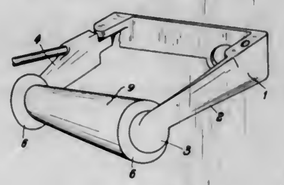
Filed Sept. 16, 1964, Ser. No. 396,854
Claims priority, application Sweden, Oct. 22, 1963, 11,577/63
4 Claims. (Cl. 242—128)



1. A wire magazine for mounting in a missile, controllable by means of a stationary transmitter via electrically conductive thin wires which during the flight of the missile are wound off from the magazine, said magazine comprising a casing continued on one end into a funnel-shaped outlet portion, a wire reel having a wire wound thereupon, said reel being mounted in said casing substantially coaxially therewith and in substantial registry with the wide end of said funnel-shaped outlet portion for unreeling the wire over the periphery of the reel at the end thereof adjacent to the wide end of the outlet portion and guiding the wire while being reeled off through said outlet portion out of the casing, and an annular deflecting member mounted in said outlet portion spaced apart from said reel end in axial direction, said deflecting member constraining the wire into a path closer to the center axis of the casing and the reel than an

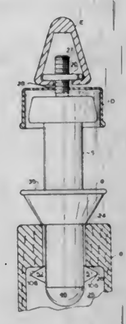
imaginary straight line connecting any point of the periphery of said reel end with the outer end of said outlet portion.

3,286,948
BOBBIN HOLDER FOR WINDING AND TWIST FRAMES
Gustav Franzen, Neersen, and Heinz Stenmans, Grefrath, Germany, assignors to Klaus Nimtz, Krefeld, Germany
Filed Aug. 31, 1964, Ser. No. 393,315
Claims priority, application Germany, Sept. 12, 1963, N 23,744; Apr. 11, 1964, N 24,778
14 Claims. (Cl. 242—129.51)



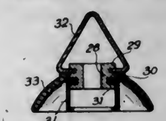
1. A device for the reception of tubular bobbin cores in bobbin holder arms of winding and twist frames, comprising centering plates for a said core and means defining ball and socket connection between the said centering plates and the said arms press-fastening fashion and serving as bearing means for rotatably supporting said centering plates in relation to the said arms..

3,286,949
UNIVERSAL BOBBIN HOLDER
Richard K. Whitehead, Sr., De Kalb County, Ga. (1631 N. Gatewood Road NE., Atlanta, Ga.), and Richard K. Whitehead, Jr., 1365 Monroe Drive NE., Atlanta, Ga.
Filed Dec. 3, 1963, Ser. No. 327,652
12 Claims. (Cl. 242—130.2)



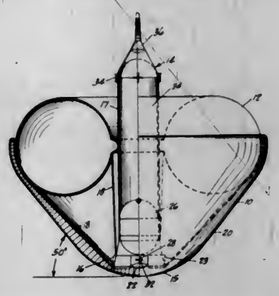
1. A holder for a bobbin, said holder comprising a tubular member, a central body slidably movable within the tubular member relative to a predetermined position, a bobbin holding member mounted on and slidable with the central body and having an inward position when the central body is in the said predetermined position and a plurality of outwardly extending bobbin holding positions when the body is released from the predetermined position, means responsive to a particular motion of the bobbin relative to the tubular member for retaining the central body in the said predetermined position, and means responsive to the said particular motion of the bobbin relative to the tubular member for releasing the central body from the said predetermined position.

3,286,950
ARRANGEMENT FOR DETACHABLY CONNECTING A BOBBIN HOLDER TO A SUSPENSION RAIL, CREEL, OR THE LIKE
Helmut Staufert, Wildunger Strasse 34, Stuttgart-Bad Cannstatt, Germany
Filed Sept. 18, 1964, Ser. No. 397,559
Claims priority, application Germany, Sept. 21, 1963, St 21,106; July 3, 1964, St 22,346
8 Claims. (Cl. 242—130.2)



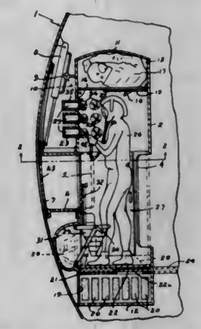
1. In combination: substantially horizontally extending creel means, supporting means for supporting bobbin holder means, said supporting means being provided with a substantially vertical elastically deformable extension having radially extending ears thereon and having a substantially plane side wall portion, said creel means having passage means therein corresponding in contour to the cross-sectional contour of said extension with said radially extending ears thereon, whereby after introduction of said extension through said passage means and rotation of said extension in one direction by approximately 90° said supporting means is suspended on said creel means, and means associated with said creel means and engaging said plane side wall portion in a locking manner in response to the rotation of said extension by approximately 90° in said one direction.

3,286,951
RECOVERY SYSTEM
Robert T. Kendall, Palos Verdes Estates, Calif., assignor to Douglas Aircraft Company, Inc., Santa Monica, Calif.
Filed Sept. 27, 1963, Ser. No. 312,043
10 Claims. (Cl. 244—1)



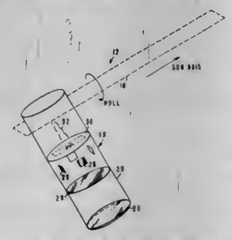
8. A recovery vehicle for recovering an object comprising:
a shield adapted for deployment into a bulbous, bowl-like form having a diameter greater than its depth and less than four times its depth, said shield being completely constructed of a flexible material and stored in an undeployed state;
holding means for retaining said shield and completely encasing said shield in said undeployed state; and
deployment means for extending said shield to said bulbous, bowl-like form and at least partially encompassing said object, said deployment means being the expansion of a gas, said expansion of a gas inflating a portion of said shield thereby causing said shield to extend.

3,286,952
COMBINED EMERGENCY COMPRESSION TUBE AND AIR LOCK WITH LIFE SUSTAINING SYSTEM FOR SPACE VESSELS
Henry W. Seeler, Dayton, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force
Filed Apr. 30, 1964, Ser. No. 364,037
4 Claims. (Cl. 244—1)



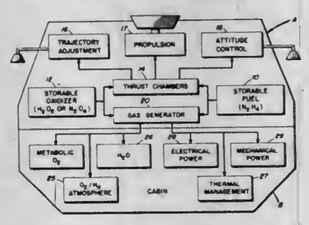
3. A vertical cylindrical compression tube for space vessels comprising a pressure tight cylinder closed at both ends having an access opening in one side thereof to permit an astronaut to enter the interior of the tube, closure door means operable exteriorly and interiorly of the tube for closing and sealing said access opening, a supporting floor for the astronaut disposed horizontally in spaced relation above the bottom of the tube having a vent opening therethrough into said tube above said floor, closure means for said vent opening, an operating connection between said closure door for said access opening and said closure means for closing said vent opening when said access opening is opened, and opening said vent opening when said access opening is closed, and CO_2 absorbent oxygen generating means fixed in said tube below said floor for absorbing CO_2 from an astronaut in said tube and releasing oxygen through said vent opening to provide a life sustaining environment in said tube when said access opening is closed and said vent opening is open.

3,286,953
ROLL ATTITUDE STAR SENSOR SYSTEM
Hugh L. Dryden, Deputy Administrator of the National Aeronautics and Space Administration with respect to an invention of Gerald W. Meisenholder
Filed Aug. 17, 1964, Ser. No. 390,250
16 Claims. (Cl. 244—1)



1. In combination with a vehicle, a sensor mounted thereon for determining the attitude of said vehicle relative to a source of electromagnetic energy, said sensor including means defining a reference plane having a reference axis; cathode means for providing an electron beam at a position related to the magnitude of the angle between said reference axis and a line from said source to the intersection of said reference plane and said reference axis; a target; means for variably deflecting said beam to cause said beam to find said target; and means responsive to said beam finding said target and to the deflection necessary therefor for indicating the attitude of said vehicle.

3,286,954
METHOD AND APPARATUS FOR SUPPORTING LIFE IN OUTER SPACE
Charles J. Swet, Mount Airy, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Oct. 26, 1964, Ser. No. 406,641
12 Claims. (Cl. 244—1)



1. In an apparatus for supporting human life in a space environment,
a source of fuel,
a source of oxidizer,
means for receiving portions of said fuel and oxidizer for hypergolic burning therein,
said hypergolic burning producing oxidizer-rich by-products including gas, and
means for treating said gas to produce potable water and a life-supporting atmosphere.

3,286,955
LOW ALTITUDE AIR DEFENSE SYSTEM AND METHOD
John A. French, Huntsville, and Elbert L. Owen, Harvest, Ala., assignors to the United States of America as represented by the Secretary of the Army
Filed Jan. 28, 1963, Ser. No. 254,511
4 Claims. (Cl. 244—14)

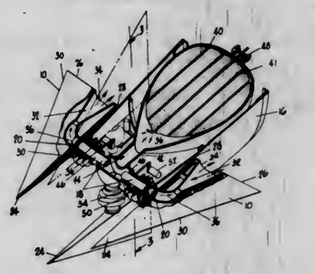


1. A system for detecting and intercepting low altitude aircraft comprising: an elevated acquisition radar for scanning an area of expected attack and thereby detecting the presence of said aircraft prior to its appearance above the horizon; a ground located target tracking radar for tracking said aircraft after its appearance above the horizon, said target tracking radar connected to said elevated radar whereby the initial position of said target tracking radar is controlled by said elevated radar; means responsive to said elevated acquisition radar for launching a missile prior to the appearance of said aircraft above the horizon; a missile tracking radar; and means responsive to said target tracking radar and said missile tracking radar for controlling the course of said missile, whereby said aircraft is intercepeted by said missile.

3,286,956
MISSILE CONTROL SYSTEM

Herschel Nitikman, Chatsworth, Calif., assignor to Douglas Aircraft Company, Inc., Santa Monica, Calif.

Continuation of application Ser. No. 83,830, Jan. 19, 1961. This application July 19, 1965, Ser. No. 477,080
3 Claims. (Cl. 244—14)

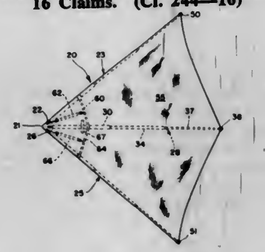


1. A missile control system comprising:
a missile body having a leading portion and a trailing portion;
said missile body having a plurality of control surfaces, said control surfaces including means pivotally mounting said surfaces on said leading portion of said missile body, said control surfaces having a trailing edge portion;
a source of pressurized gas located within said missile body;
reaction thrust producing means located in said control surfaces and formed in said trailing edge portion and adapted to discharge the pressurized gas of said source;
said reaction thrust producing means communicating with said source through said means pivotally mounting said control surfaces, said pivotal mounting means being conduits; and
control means located in said missile body for effecting the pivotal movement of said control surfaces thereby changing the direction of source discharge through said reaction thrust producing means, whereby the deviations of pitch, yaw and roll of the missile body are controlled.

3,286,957
FLEXIBLE WING DEPLOYMENT DEVICE

Charles E. Libbey, Newport News, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed June 30, 1964, Ser. No. 379,417
16 Claims. (Cl. 244—16)

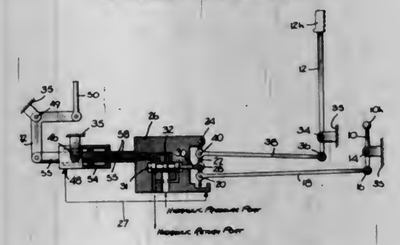


1. A deployable flexible wing comprising: rigid flexible wing superstructure means; flexible wing material fixed to said superstructure to form a lift surface; means rendering said rigid flexible wing superstructure collapsible in at least two dimensions to facilitate packaging before flight; and means for sequentially extending said rigid flexible wing superstructure to form said flexible wing.

3,286,958
CO-PILOT NAVIGATION CONTROL

James R. Moran, Fort Worth, Tex., assignor to Bell Aerospace Corporation, Wheatfield, N.Y., a corporation of Delaware

Filed May 18, 1965, Ser. No. 456,627
6 Claims. (Cl. 244—84)

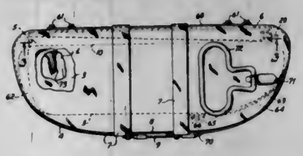


1. In an aircraft having a co-pilot's navigating control stick foreshortened relative to the pilot's navigating control stick whereby said pilot's control stick provides a mechanical advantage over said co-pilot's control stick, said aircraft including a valve controlled hydraulic boost amplifier in a navigation control system between said control sticks and a control surface, the improvement comprising:
first linkage means between said pilot's control stick and said valve, and
second linkage means between said co-pilot's control stick and said valve,
said second linkage means providing a mechanical advantage over said first linkage means whereby said respective control sticks obtain an equal navigational response from an equal angular movement.

3,286,959
POWER DEPLOYED PARACHUTE APPARATUS

Fred B. Stencel, Asheville, N.C., assignor to Stencel Aero Engineering Corporation, Asheville, N.C., a corporation of North Carolina

Filed Apr. 19, 1965, Ser. No. 449,236
12 Claims. (Cl. 244—148)



1. In a power deployed parachute apparatus, the combination of
a parachute canopy;
a canopy container,
said canopy being packed in said container and withdrawable therefrom;
outer container means attachable to the load to be handled by the parachute apparatus,
said canopy container, with said canopy packed therein, being enclosed by said outer container means and said outer container means being openable to free said canopy container for projection away from the load;
suspension line means attached to said canopy and extending from said canopy container,

said suspension line means being stowed in said outer container means and attached to a point which is fixed with respect to the load when said outer container means is attached to the load;
support means secured to said outer container means;
a power projection device secured to said canopy container and releasably disposed on said support means,
said projection device being operative, when actuated, to project the combination of said canopy container, said canopy, and said projection device away from said support means and said outer container means with sufficient momentum to fully deploy said canopy and cause the combination of said canopy container and said projection device to separate from said canopy and travel beyond the same once said canopy has been deployed with said suspension line means in stretched out condition,
the effective length of said suspension line means being such that said suspension line means becomes fully stretched out while the combination of said canopy container and said projection device retains sufficient momentum to cause said canopy to be withdrawn from said canopy container; and
means for opening said outer container means and actuating said projecting device.

3,286,960
COMPRESSOR MOUNTING SPRING

Richard T. Douglas, Farmington, and Ronald R. Wisner, Garden City, Mich., assignors to American Motors Corporation, Detroit, Mich., a corporation of Maryland

Filed June 1, 1964, Ser. No. 371,521
5 Claims. (Cl. 248—20)

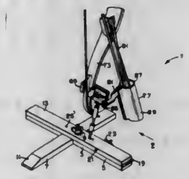
1. Refrigeration apparatus including means for resiliently supporting a motor-compressor unit for the isolation of vibrational forces incident to the operation thereof, and comprising:
a plurality of compression springs having axial and lateral resilience,
means receiving and disposing said springs in axially parallel alignment with the crankshaft of the motor-compressor unit supported thereby,
said springs each including helical wound coils having close wound turns provided at one end and spaced turns providing intermediate the ends thereof,
and the ratio of active close wound and spaced turns providing a relatively low lateral to axial spring rate.

3,286,961
STAND, BOW HOLDER AND QUIVER FOR ARCHERY

Dominick A. Mandolare, 2 Lawnview Ave., Fort Edward, N.Y.

Filed Aug. 21, 1964, Ser. No. 391,260
13 Claims. (Cl. 248—44)

1. A stand, bow holder and quiver for archery; said stand comprising cross pieces, a vertical piece, a brace and screw holes; said bow holder including a sub-assembly of mounting means comprising a shank and said bow holder comprising a main plate, plate and adjustable plate; said quiver comprising a bracket, circular support band and fabric; said cross pieces being joined together, said vertical piece being hinged to one of said cross pieces, said vertical piece being disposed in its upright position by said brace carried on said vertical piece and on one of said cross pieces, said screw holes being formed through said vertical piece and through one of said cross pieces, said shank having a threaded end to engage one of said screw holes to mount said bow holder in a horizontal position on said vertical piece and in a vertical position on said cross piece, said shank being carried by said main

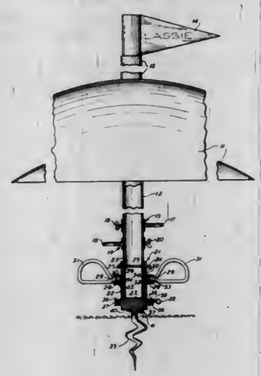


plate, said plate being carried on said main plate and being adjustable relative to said main plate, said adjustble plate being carried on said plate and being adjustable relative to said main plate and relative to said plate, said plate and adjustable plate having raised lipped over portions converging to form thereby an adjustable V holder to removably hold a bow limb, said bracket being adjustably carried on said main plate and by said circular support band, said fabric being secured at its top portion to said circular support band, and said fabric being configured as a cylinder with its bottom end closed to provide thereby a receptacle for holding arrows.

3,286,962
DOG UMBRELLA

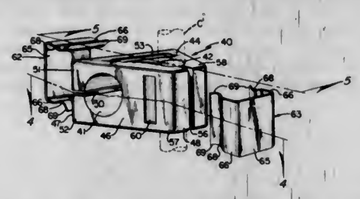
Kenneth A. Warth, 3911 Liberty Ave., North Bergen, N.J.

Filed Nov. 26, 1965, Ser. No. 509,849
8 Claims. (Cl. 248—44)



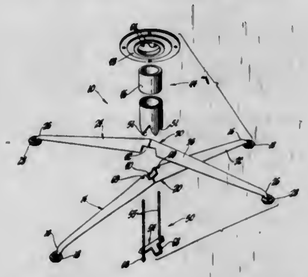
1. A dog umbrella comprising,
(a) a foldable umbrella,
(b) a shaft depending from the umbrella,
(c) a generally helical, tapering skewer detachably secured to the end of the shaft opposite the umbrella,
(d) a pair of diametrically opposed handles on the skewer, and
(e) means on the skewer for securing a dog chain thereto.

3,286,963
RELEASABLE CONNECTOR
Ralph Roger Bergman, 510 S. 43rd St., Boulder, Colo.
Filed Sept. 11, 1964, Ser. No. 395,835
7 Claims. (Cl. 248—74)



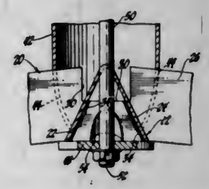
1. A releasable connector for connecting a cylindrical member to a support, said connector comprising a resilient solid body having a supporting end portion and forwardly convergent sides terminating in a common connecting end portion with an opening extending transversely through said body adjacent to the connecting end portion and with an entrance slot extending through the connecting end portion into communication with one side of the opening to divide the connecting end portion into spaced flexible arms surrounding the opening, said arms being movable outwardly away from one another to provide for lateral insertion of a cylindrical member through the slot into the opening, and spring clamping means being dimensioned for disposition over the connecting end portion into direct clamping engagement with the flexible arms to compress the arms inwardly into gripping engagement with the cylindrical member, the convergent sides having aligned grooves adjacent to the connecting end portion on opposite sides of the opening, and said clamping means being engageable with the grooves to compress the flexible arms inwardly about the cylindrical member.

3,286,964
PEDESTAL BASE
Roy F. McMahan, Jr., Harrods Creek, and Robert J. Botkin, Louisville, Ky., assignors to American Metal Products Company, Detroit, Mich., a corporation of Michigan
Filed Oct. 14, 1965, Ser. No. 495,794
21 Claims. (Cl. 248—188.7)



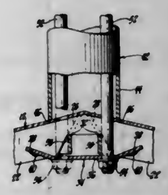
1. A pedestal base of the type suitable for supporting furniture and the like comprising: a leg member having a mid-portion and first and second ends with a bow shape between said ends thereof; support means disposed on said leg member and adapted to be connected to a piece of furniture to be supported by said leg member; and clamp means operatively connected to said support means and engaging said leg member for preventing the straightening of said bow shape of said leg member as forces are applied thereto through said support means.

3,286,965
PEDESTAL BASE
Roy F. McMahan, Jr., Harrods Creek, Ky., assignor to American Metal Products Company, Detroit, Mich., a corporation of Michigan
Filed Mar. 3, 1966, Ser. No. 531,416
9 Claims. (Cl. 248—188.7)



1. A base of the type suitable for supporting furniture and the like comprising a first leg member having a mid portion and first and second ends with a bow shape between said ends; a second leg member having a mid portion and first and second ends with a bow shape between said ends thereof, each of said leg members having a cross section, at least at the mid portion thereof, which includes interconnected diverging sides, said leg members having respective complementary notches with said first leg member disposed in crossed relationship with said second leg member so that each of said leg members is disposed in the notch of the other leg member whereby said diverging sides of one of said leg members abut said diverging sides of the other leg member, and means interconnecting said leg members at the abutments therebetween for preventing said diverging sides from moving together to maintain the bow shapes of said leg members.

3,286,966
PEDESTAL BASE
Robert J. Botkin, Louisville, Ky., assignor to American Metal Products Company, Detroit, Mich., a corporation of Michigan
Filed June 1, 1966, Ser. No. 554,494
17 Claims. (Cl. 248—188.7)



1. A base of the type suitable for supporting furniture and the like comprising: a leg member having a mid-portion and first and second ends with a bow shape between said ends; a tension plate disposed across said mid-portion of said leg member; and means interconnecting said tension plate and said leg member on opposite sides of said mid-portion thereof for increasing the strength of said leg member.

3,286,967
GUN RACK
James B. Ferrell, Rte. 3, Gallatin, Tenn.
Filed Sept. 15, 1964, Ser. No. 396,546
7 Claims. (Cl. 248—201)

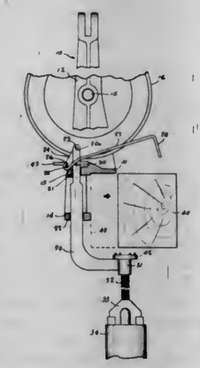
1. A gun rack for supporting a gun in substantially upright position, comprising:
(a) a wall-type support,

(b) a stock bracket having a closed end and an open end for receiving and supporting the butt of said gun,
(c) means for fixing said stock bracket to said support to cause said gun to lean toward said closed end substantially parallel to said support when said gun butt is received in said stock bracket,



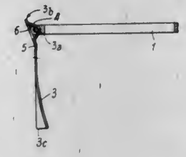
(d) a barrel bracket having a closed end and an open end for receiving said barrel,
(e) means for fixing said barrel bracket to said support spaced above and laterally of the closed end of said stock bracket and less than the length of said gun, the closed end of said barrel bracket being disposed in the same direction as the closed end of said stock bracket.

3,286,968
TRAVELLER ASSEMBLY CROSS ARM BRACKET
Albert K. Jordan and John D. Scott, Woodstock, Ontario, Canada, assignors to Timberland-Ellicott Limited, Woodstock, Ontario, Canada
Filed Apr. 5, 1965, Ser. No. 445,630
Claims priority, application Canada, Mar. 10, 1965, 925,280
3 Claims. (Cl. 248—226)



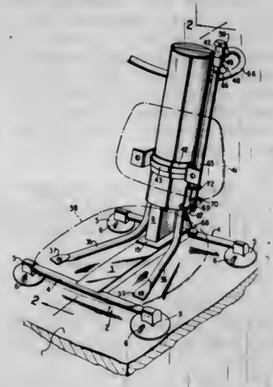
1. A traveller assembly comprising:
(a) a frame including members for supporting at least one sheave, and surfaces for overlying an upper face and for engaging a first vertical face of a horizontal cross-arm,
(b) a support arm slidable in said frame between a lower and an upper location,
(c) a clamp arm including a flange for engaging the other vertical face of the cross-arm, said clamp arm being movable between an unclamped position in which said flange is withdrawn to allow the assembly to be placed over the cross-arm, and a clamping position in which said flange embraces the cross-arm,
(d) means connecting the clamp arm to the support arm and means locating the clamp arm in relation to the frame whereby movement of the support arm towards its upper location urges the clamp arm to unclamped position and movement of the support arm towards its lower location urges the clamp arm to clamping position,
(e) and securing means for movement to engage the undersurface of said cross-arm for clamping the same between said securing means and said overlying frame surface.

3,286,969
BOTTLE SUPPORT
Piero Frescobaldi, deceased, late of Florence, Italy, by Dino Frescobaldi, legal representative, 13 Via S. Spirito, Florence, Italy
Filed Aug. 18, 1964, Ser. No. 391,074
Claims priority, application Italy, Aug. 28, 1963, 4,556/63
4 Claims. (Cl. 248—359)



1. In combination: a bottle having a neck portion and a body portion with a cylindrical outer lateral surface; a support member comprising an integrally formed bridge portion defining an opening the axis of which extends transversely of said support member and perpendicularly with respect to the longitudinal axis of said bottle near one end of said support member; an interrupted ring member partially encircling said body portion and having confronting spaced parallel ear portions at its ends; a pivot pin exetnding freely revolubly through one of said ear portions into threaded engagement with the other ear portion for tightening said ring member into frictional engagement with said body portion, said pin passing through said opening coaxially therewith and freely revolubly with respect to said support member, whereby said support member may be angularly displaced between a retracted position wherein said support member extends generally axially of said bottle in proximity to said lateral surface and an extended position wherein said support member extends outwardly from said lateral surface generally perpendicularly to the axis thereof, said support being widened at its other end to define two spaced corners which, together with the bottom edge portion of said body portion, provide a three point support for said bottle when placed on a horizontal supporting surface with said support member in its extended position, said bottle being maintained in an inclined position from which it may be angularly displaced to pour the contents from said bottle by pivotal movement about an axis defined by a line passing through said corners.

3,286,970
BATHLIFT
John E. Nolan, Jeffersontown, Ky., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 23, 1964, Ser. No. 353,839
4 Claims. (Cl. 248—404)



1. In a bathlift device, a base structure constructed and arranged to seat on the bottom inside wall of a tub, a supporting member extending from said structure, means for swiveling said member on said structure, a reciprocal member mounted on and surrounding and movable up and down on said supporting member, a seat member supported by and extending laterally from said reciprocal member, said reciprocal member having an end wall at its upper end, a piston head member on the upper end of said supporting member and fitting within said reciprocal member, valve means having a body member carried by said reciprocal member adjacent its upper end and having an inlet for connection to a source of fluid under pressure, a conduit connecting the interior of said body member to the interior of said reciprocal member adjacent said end wall, a tubular valve member reciprocal in said body member, said body member and said said valve member being so constructed and arranged that in one position of said valve member a clearance is provided between said body member and said valve member, said clearance providing communication between said inlet and said conduit and in another position said conduit communicates with the interior of said tubular valve member, said interior being an outlet passage in said valve member, means at the upper end of said body member and connected to said valve member to actuate the same, and means adjacent said seat member and connected to said valve member below said body member and operable to actuate said valve member.

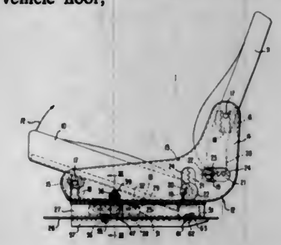
3,286,971
VEHICLE SEAT
Johannes Walter and Ingomar Pelz, both of Sindelfingen, Wurttemburg, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Aug. 16, 1965, Ser. No. 480,007
Claims priority, application Germany, Aug. 27, 1964, D 45,279
25 Claims. (Cl. 248—429)

1. An adjustable seat, especially driver seat for commercial type motor vehicles having a vehicle floor, comprising:

seat frame means having a lower edge portion, cushion means and backrest means on said frame means,

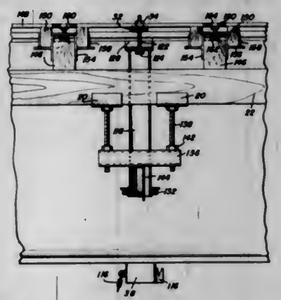
longitudinal adjusting means for adjusting the seat means in the vehicle longitudinal direction including guide rail means normally secured at the vehicle floor and sliding rail means slidably guided within said guide rail means and secured at the lower edge of the seat frame means,

rapid detachable connecting means for readily and rapidly detachably connecting the guide rail means at the vehicle floor,



and intermediate frame means having upper and lower edge portions adapted to be selectively interposed between the guide rail means and the vehicle floor, said itermediate frame means being provided at the lower edge thereof with aperture means for the rapid detachable connecting means arranged at the vehicle floor, and being provided at the upper edge thereof with rapid securing means corresponding in construction and arrangement to the rapid detachable connecting means at the vehicle floor.

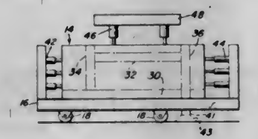
3,286,972
DEVICE FOR SUSPENDING FORMS FROM STRUCTURAL BEAMS
James H. Jackson, 3408 Billups Road, West Chesapeake, Va.
Filed June 19, 1964, Ser. No. 376,465
16 Claims. (Cl. 249—24)



1. A grade board suspension device for adjustably mounting form grade boards relative to an adjacent parallel joist, said device comprising a flat relatively short horizontal plate positionable transversely across said joist, a pair of depending panels secured to opposite edges of said plate so as to form a downwardly opening slot for the reception of the joist, a pair of horizontal panels, one horizontal panel rigid with and extending outwardly from each depending panel in a plane below the horizontal plate for positioning below a grade board, a pair of vertical flanges, one flange rigid with and extending upwardly from each horizontal panel at a point spaced outwardly from the corresponding depending panel so as to form an upwardly opening slot therebetween for the reception of a grade board, a levelling bolt extending vertically and

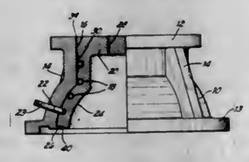
centrally downward through the horizontal plate and into the downwardly opening slot, the lower end of said bolt terminating in a bearing head engageable in abutting relationship against said joist, and thread mens integral with said plate for threadingly receiving said bolt, said thread means enabling a selective extension and retraction of the bolt within the downward opening, so as to vary the height of the horizontal plate above said joist, and thereby the height of the board carrying upwardly opening slots, said levelling bolt bearing head being integral therewith and laterally enlarged relative to said bolt, said bearing head including a downwardly directed flat face providing a stable support surface.

3,286,973
MOLD CLAMPING APPARATUS
Edmund Q. Sylvester, 2749 Landon Road, Shaker Heights, Ohio
Filed Dec. 30, 1964, Ser. No. 422,160
10 Claims. (Cl. 249—82)



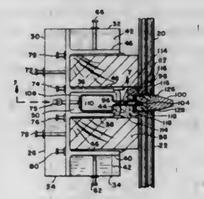
1. A mold structure comprising a block made up of a plurality of sections in mutually abutting engagement, and clamping means retaining the sections in assembly as a unit, the unit including the sections and clamping means being insertable in and removable from said mold, the block sections having a common continuous surface extending throughout the area of all of the sections and defining one surface of a cavity in said mold structure, the clamping means including a mechanical screw threaded jack and spring means in series therewith, the screw threaded jack being of non-yielding character and the spring means being of yielding and constantly biasing character.

3,286,974
CERAMIC MOLD
John Dean, Kenova, W. Va., and Phillip R. Dunn, Macomb, Ill., assignors to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed May 9, 1962, Ser. No. 193,512
6 Claims. (Cl. 249—141)



1. A mold for forming a surface of a ceramic object comprising: a rigid metal case presenting an annular interior surface; a porous conduit forming structure disposed adjacent said surface and communicating with an opening in said mold case; a porous plaster mold cavity presenting a concave interior mold surface and having axially extending side wall portions in radially supported contact with said interior case surface; a transversely extending axial end portion, said side wall portions being of substantially uniform thickness and said end portion being of a thickness greater than said side wall thickness; and air vent means in said axial end portion communicating with an opening in said mold surface.

3,286,975
CLAMP FOR CONCRETE FORMS
Frederick R. Langford, 1313 Luneta Drive, Del Mar, Calif.
Filed July 20, 1964, Ser. No. 383,853
5 Claims. (Cl. 249—192)



1. A forming system comprising in combination:

(A) A plurality of panels whose edges are substantially contiguous and which in combination form a continuous forming surface;

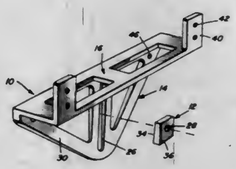
(1) said panels each have at least one flange protruding from the non-forming surface, said flange being adjacent a panel edge;

(B) means cooperating with adjacent flanges of adjacent panels for holding the panels in contiguous relation;

(C) a sealing member disposed between confronting edges of the panels;

(D) and wedging means for spreading the sealing mem ber into sealing relationship with the confronting edges of the panels.

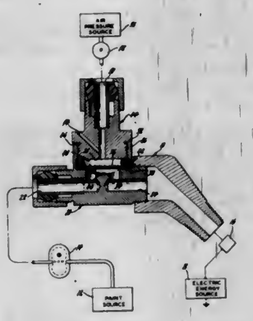
3,286,976
DEVICE FOR SUPPORTING SUSPENDED FORM SYSTEMS FOR USE IN THE CONSTRUCTION OF CONCRETE STRUCTURES
William J. Lynch, 2202 Lorraine Court, Savannah, Ga.
Filed Oct. 20, 1964, Ser. No. 405,122
5 Claims. (Cl. 249—219)



1. A support device for suspended forms comprising a bracket, said bracket including a mounting flange and a support flange, said flanges being integrally connected and orientated at substantially right angles to each other, said bracket being positionable against a vertical surface with the mounting flange generally paralleling the surface and with the support flange projecting substantially horizontally outward from the surface at the upper edge of said mounting flange, said mounting flange including at least one elongated slot therethrough, said slot extending a portion of the distance between the free edge of the mounting flange and the edge thereof connected to the support flange for the adjustable reception of a rod-like anchoring member therethrough, said supporting flange including at least one retaining lug fixed thereto and projecting perpendicularly therefrom adjacent the free edge thereof, said mounting flange including an outer face

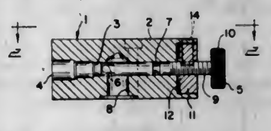
and an inner face, said outer face constituting the surface engaging face, at least that portion of said inner face about said slot diverging relative to the outer face from the free edge of the mounting flange to the supporting flange so as to define a tapered progressively thickening mounting flange section between the free edge of the mounting flange and the supporting flange, and a mounting washer engageable in overlying relation to the diverging portion of the inner face, said washer having an aperture defined therein for reception of a rod-like anchoring member therethrough, said washer being of greater width than said slot so as to preclude passage therethrough, said washer being tapered and including inner and outer faces diverging relative to each other from one edge of the washer to the other, the taper of the washer complementing the taper of the mounting flange portion whereby upon positioning the inner face of the washer against the inner face of the mounting flange, the outer face of the washer will parallel the outer face of the mounting flange.

3,286,977
CONTROLS FOR ELECTROSTATIC SPRAYING APPARATUS
Norman O. Miottel, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 22, 1964, Ser. No. 377,004
5 Claims. (Cl. 251—46)



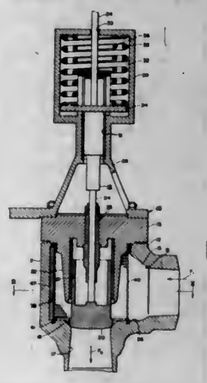
5. A control for liquid spraying material utilized in electrostatic spraying apparatus, the combination of a housing having a valve seat therein, an input and an output both communicating with the valve seat for transferring the liquid material therebetween, a flexible diaphragm mounted in the housing adjacent the valve seat and deflectable from a normal position to an engaged position relative to the valve seat so as to prevent communication between the input and the output, a source of control pressure for deflecting the diaphragm to the engaged position, a sealing element engageable with the flexible diaphragm and operative to prevent commingling of the liquid material and the control pressure, and means connecting the source of control pressure to the diaphragm; the connecting means including an exhaust opening and a sealing element engaging surface for compressing the sealing element a predetermined amount and manually operable means selectively operative to connect the source to the flexible diaphragm so as to cause the flexible diaphragm to be deflected to the engaged position and thereby interrupt communication between the input and output and for disconnecting the source from the diaphragm so that the pressure acting on the diaphragm is relieved by way of the exhaust opening.

3,286,978
LOCKING DEVICE
Zdenek J. Lansky, Winnetka, and Kenneth A. Bracki, Mount Prospect, Ill., assignors to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Apr. 2, 1964, Ser. No. 356,858
11 Claims. (Cl. 251—112)



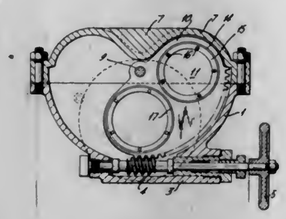
1. A locking device comprising a nut; a screw having threaded engagement with said nut; a body having a bore telescopically receiving an end portion of said screw for axial adjustment in said bore upon turning of said screw in said nut; and lock means in said body bearing laterally on said nut thereby to frictionally lock said screw against turning with respect to said body and said nut.

3,286,979
VALVE STRUCTURE
Robert O. Brown, Springfield, Robert W. Gaul, Chester, Gordon B. Leyland, Media, and Joseph D. Conrad, Jr., Glen Mills, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 16, 1963, Ser. No. 309,078
9 Claims. (Cl. 251—118)



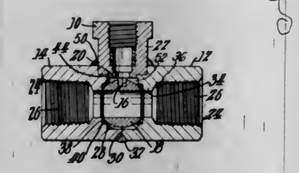
3. A valve comprising
a valve body having a substantially tubular internal wall surface and a transverse wall surface at least partly defining a valve chamber,
said body having a fluid inlet port and a fluid outlet port communicating with said chamber,
one of said ports being disposed in communication with said tubular wall and the other of said ports being disposed in communication with said transverse wall,
an axially movable valve member received in said valve chamber in cooperative association with the port in said transverse wall, and
flow guide means disposed in encompassing relation with said valve member and its associated port,
said flow guide means and said wall surfaces jointly defining a fluid passageway having first and second passageway portions extending in opposite directions from said inlet port and said portions being of continuously and smoothly diminishing cross-section area in the direction of fluid flow therethrough.

3,286,980
FLUID-FLOW CONTROL VALVES
Audrey May Marshall, Pentwyn, Rockfield, Monmouthshire, Wales
Filed Oct. 11, 1963, Ser. No. 315,594
3 Claims. (Cl. 251—302)



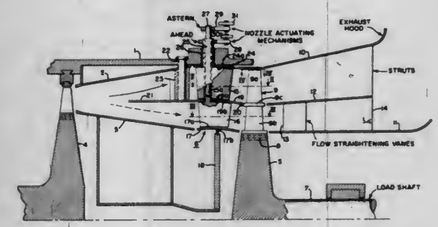
1. A valve, for controlling the flow of fluids, having a housing formed by separable housing parts of which one is provided with a bore defining a passage through the housing for a fluid, releasable means connecting the said housing parts, a plate-like valve member having an opening therethrough and movable from a position in which the said opening registers with the said bore into another position in which the opening is disposed within another of the said housing parts, surfaces on the valve member adapted to close the bore in the said other position of the valve member, packing means on the valve member around the opening in the said valve member positioned to be exposed upon separation of said housing parts, means for moving the valve member from the first-mentioned position into and from said other position and a valve member pivot supported by the said other housing part and removable therefrom without moving the valve member from said other position, whereupon release of said releasable means permits the housing parts to be separated and said packing means to be exposed for inspection.

3,286,981
BALL VALVE
William A. Brice, South Portland, Maine, assignor, by mesne assignments, to Bancroft & Martin, Inc., South Portland, Maine, a corporation of Maine
Filed June 8, 1964, Ser. No. 373,301
3 Claims. (Cl. 251—315)



1. In a welded ball valve of the type in which the seals are in place, the valve is in its open position and a coolant flows through the open valve during welding, a three part housing, two parts being end members butted together and one part being a bonnet member, said members having passageways extending from end to end with their axes intersecting, each end member including an integral internal annular rib between the ends of its passageway, the abutting portions of the end members providing a cylindrical chamber with the proximate rib faces being the end boundaries thereof, the proximate face of each rib having an annular recess spaced radially inwardly of the cylindrical chamber wall, an elastic ring seal of plastic stock in each recess, an approximately spherical valve member in said chamber having a passageway extending through it, said chamber and said valve member being so dimensioned that said member compresses said rings and so fits said chamber as to establish an air gap between it and said cylindrical wall, said end members also having complemental recessed portions in their abutting end defining a side opening in communication with said chamber, said bonnet member being entrant of said side opening, a valve operating means extending axially through and supported by said bonnet member to be turned relative thereto, and weld seams, one joining the abutting ends of the end members and the other joining the bonnet member to said recessed portions, said internal ribs constituting heat conducting shields for said ring seals during the formation of said weld seams.

3,286,982
REVERSIBLE AXIAL FLOW GAS TURBINE
George W. Scheper, Jr., Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Feb. 12, 1965, Ser. No. 432,085
8 Claims. (Cl. 253—73)

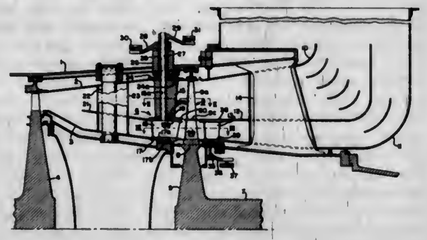


1. A reversible axial flow gas turbine comprising:
a source of hot motive fluid,
a turbine wheel having two concentric circumferential rows of vanes thereon, one of the rows being of reverse blade curvature for effecting rotation opposite that of the other row, and
a variable area nozzle for each of said rows of vanes comprising two concentric circumferential rows of radially extending pivotable nozzle partitions, the partitions in each row being pivotable as a group separately from the partitions in the other row from open to closed position, and
means for separately pivoting said nozzle partition rows to selectively provide forward or reverse rotation of said turbine wheel.

3,286,983
REVERSIBLE AXIAL FLOW GAS TURBINE
George W. Scheper, Jr., Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Nov. 19, 1965, Ser. No. 508,724
4 Claims. (Cl. 253—73)

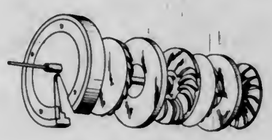
1. A reversible axial flow turbine comprising:
a source of hot motive fluid,
a turbine rotor having first and second circumferential rows of blades thereon, the second row comprising blades of reverse curvature for effecting rotation opposite that of the first row,
means for selectively admitting motive fluid to the first row of blades for effecting forward rotation of the rotor,

first and second adjustable vane rows disposed on either side of the second blade row, the vanes in each of the rows being pivotable as a group from open to closed position,



whereby both vane rows can either be opened to control motive fluid flow through the second blade row for reverse rotation of the turbine rotor or closed to provide closure walls on the inlet and outlet sides respectively of the second blade row for reducing losses during forward rotation of the turbine rotor.

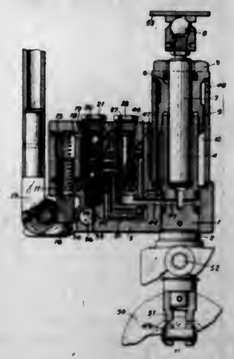
3,286,984
ROTARY TURBINE
Herbert Bachl, Turkenstrasse 40/II, Munich, Germany
Filed Dec. 27, 1965, Ser. No. 516,481
11 Claims. (Cl. 253—79)



1. A rotary turbomachine for low rated speed values having a plurality of stages provided with rotors and guidewheels wherein the working medium flows through the first rotor stage successively in a continuous spiral downstream direction first axially, then radially and then in a predominantly axial direction relative to the rotational axis of the machine, and wherein the working medium, as viewed in a section perpendicular to said rotational axis, flows through channels which are curved forwardly toward the outer periphery of a respective rotor and then rearwardly toward said rotational axis, the fluid leaving said channels at the outer periphery of the rotors in a substantially tangential direction, whereby the initially axial flow currents may be selectively limited to axial components of a predominantly radial, tangential or spiral-shaped flow current.

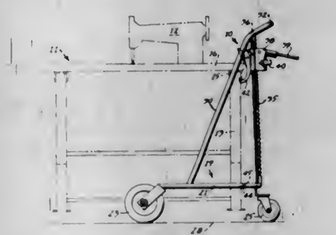
3,286,985
HYDRAULIC LIFTING DEVICE
Eugene Edera, Boynton Beach, Fla.
(18 Midway Road, South Duxbury, Mass.)
Filed July 12, 1965, Ser. No. 471,343
10 Claims. (Cl. 254—2)

1. A hydraulic lifting device comprising: a central vertical shaft having a lifting cylinder; load supporting means connected to said cylinder for raising and lowering a load; a hydraulic fluid reservoir around said cylinder; means sealing in said fluid from the atmosphere; a casting secured to said shaft, said casting including three vertical parallel bores, a first bore having means for pumping said fluid, a second bore having means for directing the flow of said fluid and providing relief for overloads, a third bore having means regulating the flow of said fluid; means communicating between said bores, lifting cylinder and reservoir to permit flow of said fluid therebetween and including a passage below said cylinder; means for reciprocating



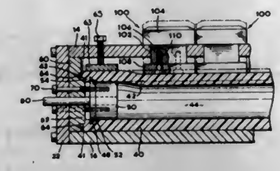
said pumping means to draw in fluid from said reservoir and to discharge said fluid into said passage below said cylinder to cause lifting thereof; and means for returning said fluid from said cylinder to said reservoir to cause lowering of said cylinder.

3,286,986
APPARATUS FOR HOISTING AND TRANSPORTING A TABLE
Verlie E. Blankenship, Bolivar, Tenn., assignor to Cutters Machine Company, Inc., Nashville, Tenn., a corporation of Tennessee
Filed Feb. 1, 1965, Ser. No. 429,561
4 Claims. (Cl. 254—6)



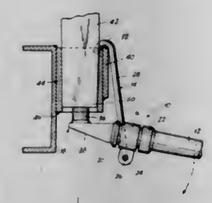
1. An apparatus for hoisting and transporting a table, comprising:
(a) a frame adapted to receive one end of said table, said frame extending longitudinally of said table,
(b) supporting wheels mounted on said frame,
(c) an upstanding rack mounted on said frame,
(d) a jack head including a ratchet and pawl mechanism for step-by-step movement along said rack,
(e) means for actuating said jack head,
(f) hook means on said jack head adapted to engage beneath the top of said table to lift said table upon actuation of said jack head, and
(g) a transverse member fixed to said frame and spaced below and so located with respect to said hook means that said transverse member will guide the lower portion of said table vertically to maintain said table top level while said table is being hoisted and transported.

3,286,987
HYDRAULIC CLAMPING AND TENSIONING MEANS FOR SAW BLADES
Raymond C. Bridges, 55 Rockview Gardens, Concord, Ontario, Canada
Filed Sept. 4, 1964, Ser. No. 394,494
3 Claims. (Cl. 254—51)



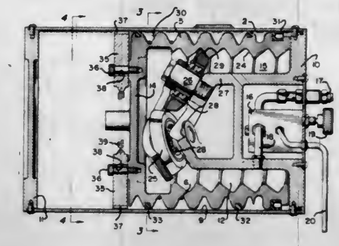
3. In a hydraulic clamping and tensioning device for saw blades, a housing, at least one actuator movable in said housing, an expandable fluid container in said housing, said container having a flexible body, a bore formed in said body, at least one end of said bore being an open end, closure means adapted to close said open end, said closure means comprising, a stopper adapted to fit within said bore, said stopper being formed with an end of greater diameter than said bore, said bore being formed with a groove to receive said end of said stopper, said groove being formed inwardly of the free end of said bore to form a shoulder, means co-operating with said stopper to compress said shoulder to seal said open end of said bore to prevent leakage of said fluid, means for admitting and relieving fluid to and from said bore to cause expansion of said container, said actuator being adapted to follow the movement of said container as it expands within said housing.

3,286,988
TOOL FOR REMOVING TRUCK STAKES
Edward F. Du Faur, 1300 Joliet St., New Orleans, La.
Filed Oct. 29, 1964, Ser. No. 407,392
4 Claims. (Cl. 254—131)



1. A device for removing stakes from sockets held therein by a tapered fit, said device comprising a hand lever having a handle portion and a stake contacting portion and an anchor means constituting a fulcrum for said lever adapted to connect an intermediate portion of said hand lever to a support adjacent said socket whereby said lever may be used as a pry to apply force against said stake to urge it out of said socket, said stake contacting portion having a first broad surface adapted to contact an exposed stake end and a second surface having a dowel element adapted to fit within said socket and contact a protected end of said stake, and means rotatably mounting said stake contacting portion with respect to said fulcrum, to thereby selectively engage said stake with said first or second surface.

3,286,989
BALANCING HOIST
Kenneth R. Bangerter, Ithaca, and Otmar M. Ulbing, Berkshire, N.Y., and Harry S. Bennett, Sayre, Pa., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 19, 1965, Ser. No. 497,884
7 Claims. (Cl. 254—168)

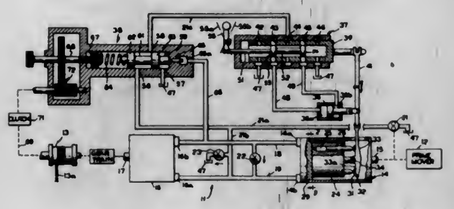


1. A balancing hoist comprising:
a casing containing a cylindrical bore and including means for mounting the casing on a support with the axis of said bore extending substantially horizontally;
a hollow hoist drum contained in said cylindrical bore for rotating in it and moving axially along it;
a hoisting cable wrapped around the exterior of said drum and depending through an opening in said casing;
the inner surface of said drum being provided with an internal female helical thread;
a bracket mounted on said casing and projecting axially into said drum;
a group of rollers rotatively mounted on said bracket and positioned to ride in said helical thread so that said drum is caused to rotate as it moves axially in said bore;
a first cover fixed on an end of said bore and a second cover fixed on an end of said drum to cooperate with the walls of said bore to form a closed fluid chamber;
means for supplying pneumatic pressure to said chamber;
means for controlling and varying the pneumatic pressure in said chamber to provide a selected force in said chamber serving to bias said drum axially in said bore;
said helical thread being arranged to rotate in one direction under said force; and
said hoisting cable being wound on said drum in a direction such that it is wound up on the drum as said drum rotates in said one direction.

3,286,990
HYDRAULIC SYSTEM
Charles O. Weisenbach, Watertown, N.Y., assignor to The New York Air Brake Company, a corporation of New Jersey
Filed May 3, 1965, Ser. No. 452,517
7 Claims. (Cl. 254—172)

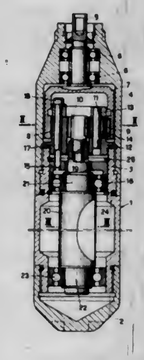
6. A hydrostatic transmission comprising
(a) first and second rotary hydraulic motor-pump units, the first unit being of the overcenter type and having a displacement control element movable between maximum displacement positions at opposite sides of a zero displacement position;
(b) conduit means connecting the two units in a closed transmission circuit having a high pressure side and a low pressure side;
(c) regulating means responsive to the pressure in the high pressure side of the circuit and arranged to posi-

tion the displacement control element so as to maintain said pressure constant at a predetermined value when the first unit is either driving or being driven by the second unit; and



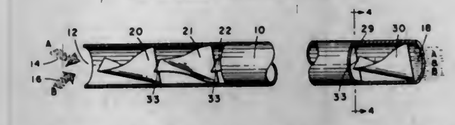
(d) first and second control means connected with the regulating means and alternately effective to vary said predetermined value, the first control means being responsive to operation of the second unit and serving to raise and lower said predetermined value as the second unit moves in opposite directions.

3,286,991
VIBRATOR FOR LOOSE MATERIALS, PARTICULARLY CONCRETE
Olivo Pellegatti, Via Oslavia 27, Milan, Italy
Filed June 4, 1964, Ser. No. 373,138
Claims priority, application Italy, June 14, 1963, 697,919/63
7 Claims. (Cl. 259—1)



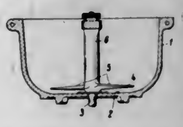
1. A vibrator device comprising a casing constituting a vibrating body, a hollow body adapted for being driven by a flexible drive cable and mounted for rotation relative to the casing, said hollow body having an internal toothed surface, a plurality of pivots secured in fixed position from the casing in an annular array, pinions of identical form mounted on said pivots for rotation thereabout, said pinions being in mesh with the internal toothed surface of the hollow body to be driven thereby, a shaft mounted in the casing for rotation about a predetermined axis, said shaft having a center of gravity which is offset from said axis of rotation to produce vibration of the casing as the shaft rotates, and a further pinion secured with the shaft for coaxial rotation therewith and centrally mounted within the aforesaid pinions and in meshing engagement therewith.

3,286,992
MIXING DEVICE
Constantine D. Armeniades, Cleveland Heights, Ohio, William C. Johnson, Palo Alto, Calif., and Thomas Raphael, Winchester, Mass., assignors to Arthur D. Little Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Nov. 29, 1965, Ser. No. 516,205
11 Claims. (Cl. 259—4)



1. A device for thorough mixing of a plurality of fluids while conveying them, consisting essentially of a hollow cylindrical tube and a plurality of curved sheet-like elements extending in series longitudinally within said tube throughout the length thereof, each element extending to the tube walls throughout its length and dividing said tube into two separated channels, said elements being arranged alternately and in point-contact with each other and having curvature to turn the direction of the flowing fluid, the edges of each element transverse to the tube being positioned at an angle to the contacting edges of the adjacent elements, the total cross-sectional area of said two channels being substantially constant throughout the length of said tube.

3,286,993
KNEADING APPARATUS
Fritz Otto, Hameln (Weser), Germany, assignor to A. Stephan u. Söhne, Hameln (Weser), Germany
Filed May 11, 1964, Ser. No. 366,256
Claims priority, application Germany, May 10, 1963, St 20,586
12 Claims. (Cl. 259—107)

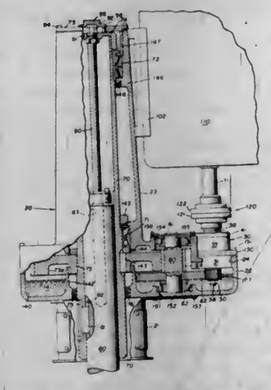


1. In a kneading apparatus for dough and other edible materials, in combination, a container having a bottom wall including a central flat bottom wall portion and a cylindrical side wall extending upwardly from said bottom wall and surrounding a predetermined axis which is substantially perpendicular to said bottom wall; a rotary shaft extending along said axis in the interior of said container and connected to said bottom wall for rotation with respect thereto; and a plurality of kneading blades fixed to and projecting from said shaft in the interior of said container closely adjacent said central flat bottom wall portion thereof, each blade having a rearwardly curved cutting edge and a lower surface directed toward said bottom wall and located in a plane which makes with said bottom wall an angle of up to 10°, and each blade extending over from ½ to ⅔ the distance from said shaft to said side wall.

3,286,994
AGITATING APPARATUS
Lee M. Manna, Morton Grove, Ill., assignor to General American Transportation Corporation, Chicago, Ill., a corporation of New York
Filed Feb. 3, 1965, Ser. No. 430,066
5 Claims. (Cl. 259—135)

1. Agitating apparatus comprising a housing having an upstanding cylindrical bore formed therein, an upstanding cylindrical barrel removably arranged in said bore, said

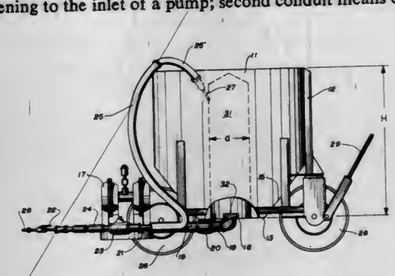
barrel when arranged in said bore being mounted for rotation therein about its own axis disposed concentric with the axis of said bore, an upstanding drive shaft mounted in said barrel for rotation therein about its own axis disposed in substantially parallel laterally offset relation with the axis of said barrel and provided with an outer end projecting to the exterior of said housing, an upstanding driven shaft mounted in said housing for rotation therein about its own axis disposed in substantially parallel laterally offset relation with the axis of said bore, a set of pinions having different diameters and respectively corresponding different numbers of teeth about the circumferences thereof, means for removably securing in place upon said drive shaft any one of said pinions in said set and having a corresponding desired number of teeth about the circumference thereof, a gear rigidly secured in place upon said driven shaft and arranged in lateral cooperating relation with said one pinion secured in place upon said drive shaft, whereby rotation of said barrel in said



bore causes said one pinion to move laterally with respect to said gear so that said one pinion may be moved into proper meshing relation with said gear, means for securing said barrel in place in a corresponding rotary position in said bore when said one pinion is in proper meshing relation with said gear, whereby one predetermined reduction ratio between the speeds of said drive shaft and said driven shaft is established by securing said one pinion in said set to said drive shaft and whereby other predetermined reduction ratios between the speeds mentioned may be established by securing other of said pinions in said set to said drive shaft, motor means carried by said housing, an operative connection between said motor means and the outer end of said drive shaft, an agitator shaft mounted in said housing for rotation therein about its own axis and provided with an outer end projecting to the exterior of said housing, speed reduction mechanism connecting said driven shaft to said agitator shaft, and an agitator carried by the outer end of said agitator shaft.

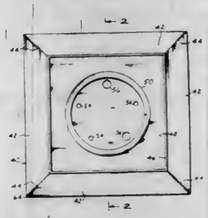
3,286,995
APPARATUS FOR MIXING AND GUNNING SLURRIES
Donald C. Burklo, Columbiana, Ohio, assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed July 12, 1965, Ser. No. 470,967
3 Claims. (Cl. 259—169)

1. Apparatus for mixing and gunning a cementitious slurry comprising: a mixing tank having a tubular wall section, a flat bottom section, a conical bottom section joining said flat bottom section to said tubular wall section, a centrally disposed vertical tube attached to said flat bottom section, and an outlet opening located in the bottom of the tank within said centrally disposed vertical tube, said tube having apertures adjacent the bottom of the tank to provide passageways from the tank to the outlet opening; first conduit means connecting said outlet opening to the inlet of a pump; second conduit means con-



necting the outlet of said pump to the inlet of a two-way valve having two outlets; third conduit means connecting one outlet of said two-way valve to a discharge nozzle; and fourth conduit means connected to the second outlet of said two-way valve and terminating in a section directed downwardly and tangentially into said tank.

3,286,996
CONCRETE MIXER
Edward L. Parr, El Cajon, Calif., assignor to Wendell L. Thompson, Burbank, Calif.
Filed Oct. 18, 1965, Ser. No. 497,066
11 Claims. (Cl. 259—177)



1. A mixer for concrete or the like for use with an engine driven vehicle having an engine driven hub, which hub is provided with threaded studs for receiving wheel retaining nuts, which vehicle includes a wheel including a rim and a central section connected with the rim and is provided with holes alignable with the threadable studs in the hub, the mixer comprising in combination:

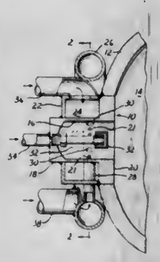
(A) a hopper having an opening at the front end thereof, said hopper being frustum in shape and includes a plurality of side walls, the edges thereof being joined with one another at an abrupt angle;

(B) and means at the rear end of the hopper, said means having holes therein aligned with the threaded studs in the hub for receiving said studs, whereby the hopper is held in position when the nuts are fixed to the studs.

3,286,997
VORTEX FUEL INJECTOR
James D. Ledbetter, Cedar, Grove, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Apr. 18, 1961, Ser. No. 103,826
4 Claims. (Cl. 261—18)

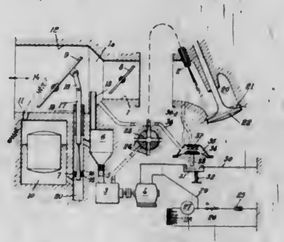
1. A vortex fuel injector for combustion chambers comprising, in combination, a cylindrical vortex chamber mounted on and communicating with a combustion cham-

ber, means communicating with said vortex chamber at circumferentially spaced ports to supply gaseous fuel tangentially thereto to establish a fuel vortex therein, second means communicating with said vortex chamber to supply liquid fuel from a nozzle located along the central axis of said vortex chamber into said vortex, and additional



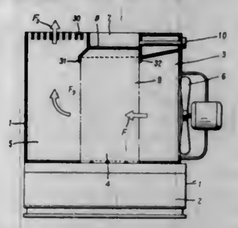
means communicating with said vortex chamber at circumferentially spaced orifices between said first mentioned spaced ports and in the same transverse plane of the vortex chamber to supply liquid fuel tangentially therewithin between its wall and said gaseous fuel to thoroughly mix with both said fuels in said vortex chamber before passing into the combustion chamber.

3,286,998
CARBURETORS FOR INTERNAL COMBUSTION ENGINES
André Louis Mennesson, Neuilly-sur-Seine, France, assignor to Societe Industrielle de Brevents et d'Etudes S.I.B.E., Neuilly-sur-Seine, France, a society of France
Filed Feb. 24, 1964, Ser. No. 346,863
Claims priority, application France, Mar. 26, 1963, 929,326
3 Claims. (Cl. 261—27)



1. An internal combustion engine carburetor which comprises, in combination, an air induction pipe leading to the engine to be fed by the carburetor, valve means for controlling the air flow through said induction pipe, means forming a fuel injection orifice opening into said induction pipe, a fuel chamber, means fixed with respect to said induction pipe forming a fuel receiver in communication with said fuel chamber, means for metering the amount of fuel passing from said fuel chamber to said fuel receiver in accordance with the air flow rate through said induction pipe, a pump located downstream of said fuel receiver for forcing fuel therefrom to said fuel injection orifice, an electric motor operatively connected with said pump for driving it, and means responsive to the pressure in said induction pipe for stopping said electric motor when said pressure is substantially the atmospheric pressure.

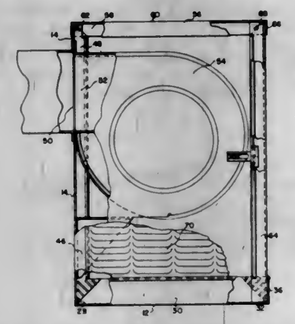
3,286,999
COOLING TOWER
Zenyu Takeda, Nagahama, Japan, assignor to Mitsubishi Plastics Industries Ltd., Chiyoda-ku, Tokyo, Japan
Filed July 2, 1964, Ser. No. 380,008
5 Claims. (Cl. 261—30)



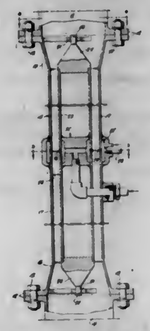
1. A cooling tower for cooling an aqueous liquid comprising, in combination:
(a) a housing having a top portion and a bottom portion;
(b) a plurality of packing members in said housing, each packing member including
(1) a carrier sheet of hydrophobic plastic having two opposite faces vertically extending in said housing in a direction from said top portion to said bottom portion,
(2) each face of said carrier sheet being formed with a plurality of vertically offset horizontally extending bands of corrugations, each band being constituted by a plurality of ribs defining substantially parallel grooves, the grooves of two vertically consecutive bands being obliquely inclined relative to a horizontal plane in opposite directions,
(3) said bands being vertically spaced from each other, and separated by horizontally extending substantially smooth strip portions of said sheet free from grooves,
(4) said strip portions being formed with respective pluralities of projections higher than said ribs, the projections of each strip portion being horizontally spaced from each other and horizontally offset from the projections in a vertically adjacent strip portion;
(c) a surface coating of hydrophilic material on said faces;
(d) feeding means in said top portion for feeding an aqueous liquid to be cooled to the coated faces of said carrier sheet, whereby said liquid flows over said faces in respective films;
(e) collecting means in said bottom portion for collecting the liquid flowing from said faces; and
(f) blower means for passing a stream of air over said films.

3,287,000
EVAPORATIVE COOLER CONSTRUCTION
Adam D. Goettl and John M. Goettl, Phoenix, Ariz., assignors to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed July 1, 1963, Ser. No. 292,021
4 Claims. (Cl. 261—74)

1. In an evaporative cooler construction the combination of: a rectangular box shaped sump pan having a bottom and two opposed pairs of upstanding sides; a frame side portion integral with one of said upstanding sides; two flange portions of said frame side portion substantially contiguous to an opposed pair of said upstanding sides of said sump pan portion, said frame side portion and said flange portions extending a considerable distance above said upstanding sides; and angularly folded portions integral with said upstanding sides and said flange portions; said folded portions disposed and extending upwardly at an angle relative to said upstanding sides and said frame side portion and to an elevation above a liquid containing level in said sump pan; a separate rectanguler inverted box shaped evaporative cooler top structure coupled to said frame side portion and disposed in opposed relation with said sump pan and vertically superimposed thereover; said angularly folded portions having elongated indented portions angularly disposed to break lines of said folded portions whereby precise folding of said folded portions is accomplished when constructing the sump pan and frame side portions in integral relationship with each other and during the forming of a sump pan with sides integral with flange portions of the frame side portions.

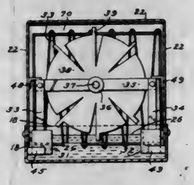


3,287,001
STEAM DESUPERHEATER
Le Roy S. Harris, Huntingdon Valley, Pa., assignor to Schutte and Koerting Company, Cornwells Heights, Pa., a corporation of Pennsylvania
Filed Dec. 6, 1962, Ser. No. 242,880
7 Claims. (Cl. 261—78)



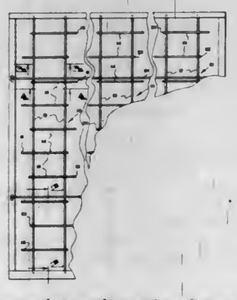
1. A desuperheater comprising a rigid assembly including a supply pipe for superheated steam, a discharge pipe for desuperheated steam, and a rigid desuperheater unit connected between the supply and discharge pipes, said desuperheater unit including an outer tubular section approximately the diameter of the supply and discharge pipes and a core within said tubular section and spaced radially inwardly therefrom to define an annular venturi passage for the flow of steam, means to supply water into said annular venturi passage at approximately the midpoint thereof, said annular passage having a length of between three feet in smaller sizes of about three inch diameter up to about three to six times the pipe diameter in larger sizes up to about twenty inches, and said annular venturi passage having a cross sectional area of between one-quarter to one-half of the supply and discharge pipes.

3,287,002
HUMIDIFIERS
William T. Sevald, 1400 Cedarhill Drive, Royal Oak, Mich.
Filed Jan. 18, 1963, Ser. No. 252,386
6 Claims. (Cl. 261—92)



1. A humidifier comprising, a water pan,
valve means for admitting a supply of water to said pan
a fan over said pan,
tips on said fan for dipping into water in said pan to spray water particles in conjunction with fan rotation, and
float means in said housing for floating on water in said pan for at least partially supporting said fan to position said fan clear of water in the pan and so as to at least partially immerse said fan tips in water in said pan;
said float means locating said fan relative to the actual water level in said pan as supplied by said valve means.

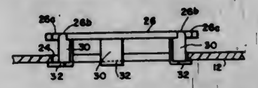
3,287,003
PAD RACK CONSTRUCTION FOR EVAPORATIVE COOLERS
Adam D. Goettl, Scottsdale, Ariz., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed June 18, 1964, Ser. No. 376,088
6 Claims. (Cl. 261—94)



1. In an evaporative cooler pad rack construction the combination of: a pad rack comprising a plurality of rack sub assemblies; a pair of spaced apart longitudinal bars in each sub assembly; substantially U-shaped cross bars fixed to said longitudinal bars, said cross bars spaced apart longitudinally along said longitudinal bars; each cross bar being U-shaped and thereby having a middle portion and a pair of leg portions; said leg portions being at opposite ends of said middle portion and disposed angularly relative thereto, the length of each middle portion being greater than the distance between the bars in each pair of longitudinal bars; each cross bar having one of its leg portions nearer one of said longitudinal

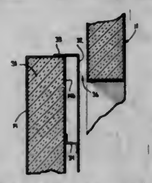
bars than the remaining leg portion of said last mentioned cross member is to the other longitudinal bar of the last mentioned pair of longitudinal bars, each one of said cross bars being staggered with respect to an adjacent cross bar whereby each of said one leg portions is next to one of said remaining leg portions longitudinally along said longitudinal bars.

3,287,004
VALVE MECHANISM FOR FLUID AND LIQUID CONTACT APPARATUS
Irvin Earl Nutter, Tulsa, Okla., assignor of thirty percent to Martha C. Nutter, twenty percent to Dale E. Nutter, and twenty percent to Nancy N. Pantaleoni
Filed Mar. 25, 1960, Ser. No. 17,653
12 Claims. (Cl. 261—114)



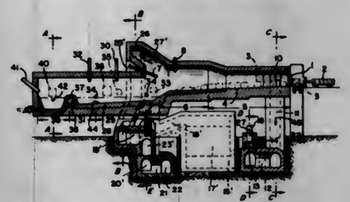
6. In a contact apparatus comprising a plurality of superposed plates having a series of apertures therein and a series of reciprocally movable check valves for said series of apertures movable relative thereto by gaseous pressure exerted from beneath said plates, the improvement comprising a unitary check valve for at least some of said apertures, each of said valves having a head portion, peripheral portions of said valve head portion resting over supporting plate portions when said check valve is in the lowermost position of its reciprocal movement, leg portions formed integrally with and depending from peripheral portions of said head portion, said depending leg portions being receivable within one of said plate apertures and occupying a minute portion of said aperture cross-section when said said valve is in a raised position whereby an insignificant obstruction is afforded by said leg portions to the gaseous pressure rising from beneath said plate, and retaining portions connected to said leg portions extending outwardly away from the center of said valve head portion, said retaining portions extending beneath undersurface portions of said plates defining said apertures when said valves are in the raised position whereby said valves are retained to said plates, portions of each of said leg portions being disposed adjacent to the periphery of the aperture in which disposed in the normal course of valve reciprocal movement whereby jamming of the valve within the plate aperture is substantially obviated.

3,287,005
OVEN CONSTRUCTION FOR MOLTEN SALT SHOWER HEATING
Howard J. Snelson, Columbus, Ohio, assignor of one-half to Amos-Thompson Corporation, Edinburg, Ind., a corporation of Indiana
Filed July 3, 1964, Ser. No. 380,160
3 Claims. (Cl. 263—40)



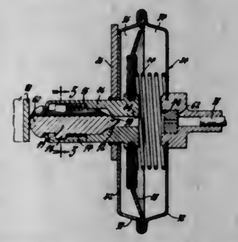
1. In an oven having an access opening and adapted to enclose an article to be subjected to a molten salt shower within the oven for heating the article, a door movable for opening and closing the oven access opening, a plate secured to one margin of said door and extending in parallel spaced relation to the inner surface of the door, said plate shielding said inner surface of the door from deposits of solidified salt and shucking off such deposits to prevent their interference with opening or closing movement of said door.

3,287,006
CONTINUOUS STEEL MAKING FURNACE
Tsuyoshi Kai, Yawata, and Tatsuo Shibata, Orio-Honjo, Japan, assignors to Yawata Iron & Steel Co., Ltd., Tokyo, Japan, a corporation of Japan
Filed Apr. 8, 1963, Ser. No. 271,118
2 Claims. (Cl. 266—11)



1. A continuous steel making furnace comprising a charged raw material heating zone having a charging opening opening into it and having two combustion gas suction ports therein near said charging opening, a melting zone connected to said heating zone and having an upper portion having an oxygen burner, a combustion burner and a preheated air port therein, a fusing zone connected to said melting zone and a refining zone having a molten pig iron charging port, an auxiliary raw material charging port, an operation charging opening and a slag removal opening therein, said fusion zone and refining zone each having at least one burner in an upper portion thereof, a slight projection between said fusion zone and refining zone for partitioning said zones from each other, a finishing zone connected to said refining zone and having an operation opening, a tapping hole and a molten steel temperature adjusting burner therein, a partition wall between said refining zone and said finishing zone having a molten steel passing hole in the lower part thereof, the bottom surfaces of said zones being sloped downwardly from said charging opening to said tapping hole.

3,287,007
THROTTLE CONTROL
Wayne S. Schoeppach, Mount Morris, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 20, 1964, Ser. No. 405,034
4 Claims. (Cl. 267—1)



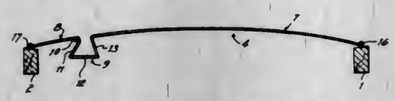
1. A control for an internal combustion engine having a throttle movable between open and closed positions to vary engine speed and having independent means for moving said throttle, comprising a pressure-responsive member adapted to be connected with said throttle to control said throttle near its closed position, means to apply engine vacuum against said member in a throttle closing direction, means biasing said member in a throttle opening direction, and means to admit atmosphere against said member in a throttle opening direction only when said throttle is opened by said independent means.

3,287,008
SHOCK ABSORBERS
Pedro Ruiz Fernández, Barcelona, Spain, assignor to Christian Marie Lucien Louis Bourcier de Carbon, Neuilly-sur-Seine, France
Filed Dec. 2, 1964, Ser. No. 415,322
Claims priority, application Spain, Jan. 23, 1964, 295,641
10 Claims. (Cl. 267—64)



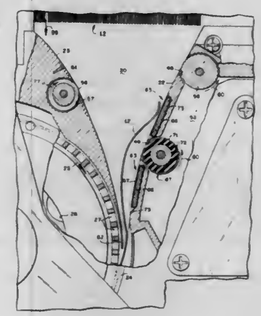
1. A hydro-pneumatic shock absorber having a fluid casing divided into a work chamber adapted to be filled with damping liquid and a compensation chamber adapted to be filled with gas under pressure, a partition separating said chambers and capable of yielding at least in part during operation of the shock absorber, filling and sealing means for said compensation chamber comprising an opening through the wall of said casing, an annular sleeve device mounted within said casing adjacent the opening in the wall thereof, an elastic zone in said sleeve device in general registry with said opening, said zone adapted to yield inwardly of the casing upon external application of gas pressure to the opening and uncover the inner orifice of the opening for the admission of gas, and to close against the inner wall of the casing and seal the orifice upon release of the external application of pressure to seal said opening, by virtue of its elastic recovery and of the pressure of the gas within the chamber.

3,287,009
SPRING CUSHION CONSTRUCTION
John R. Greeno, New Richmond, Ohio, assignor to Cincinnati Specialty Products Company, Cincinnati, Ohio, a corporation of Ohio
Filed June 1, 1965, Ser. No. 460,088
9 Claims. (Cl. 267—111)



8. In a spring cushion construction, spaced frame members, a zigzag spring strip consisting of straight sections interconnected by reversely bent arcuate sections, said spring strip extending across said frame members, said spring strip having a load supporting portion located in a generally horizontal plane and having at one end an attaching portion including at least one arcuate section located in the same general horizontal plane as said load supporting portion, said zigzag spring having a resilient portion located between and interconnecting said load supporting portion and said attaching portion, said resilient portion having greater longitudinal resiliency than said load supporting and attaching portions, said resilient portion comprising at least one downwardly extending arcuate section connected to at least one generally horizontal arcuate section which in turn is connected to at least one upwardly extending arcuate section, said downwardly and upwardly extending sections being connected to said attaching and load supporting portions respectively.

3,287,010
STRIP TRANSFER MEANS FOR RANDOM-ACCESS SYSTEMS
Eliot Stone, Los Angeles, and James L. Deindoerfer, Huntington Beach, Calif., assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Mar. 3, 1965, Ser. No. 436,907
12 Claims. (Cl. 271—10)



11. In an apparatus for providing random access to any one of a group of elongated flat flexible strips wherein any one of said strips is released from said group to move through a V-shaped chamber which guides the strip to a rotating capstan where the strip is rapidly accelerated by said capstan causing the strip to move toward a tangential position with respect to the periphery of said rotating capstan and in so doing slap against a wall in said chamber, the combination with said chamber of a resilient pad disposed on said wall to provide a resilient, energy absorbing area for the accelerated strip to strike.

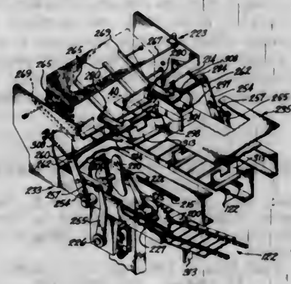
3,287,011
PNEUMATIC SHEET SEPARATING AND DELIVERY MEANS
Grover C. Currie, Jr., Charlotte, N.C., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
Original application Oct. 30, 1962, Ser. No. 234,155, now Patent No. 3,254,470. Divided and this application Feb. 23, 1966, Ser. No. 529,520
4 Claims. (Cl. 271—12)

1. A blank storage and transfer apparatus comprising a surface,
a magazine for supporting a stack of blanks in an upright position, and having a supporting surface above the plane of said first surface,
said magazine having detent means for engaging the lower face of the front blank in the stack of blanks,
an upwardly extending rocker arm pivotal between a position adjacent said magazine and a position removed from said magazine and over said first surface,

means pivotally mounted on said rocker arm for holding said blanks during the transfer from said magazine to said first surface,

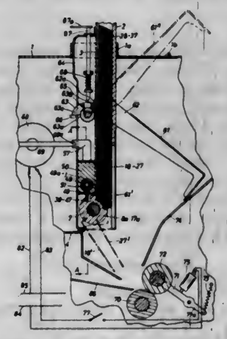
a stationary cam adjacent said rocker arm,

a cam follower mounted on said holding means and biased against said stationary cam,



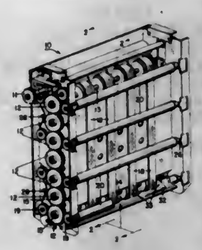
said cam having a surface which causes said holding means to be normal to the magazine when adjacent the magazine and to be normal the first surface when a rocker arm is in the position removed from said magazine, and which allows said holding means to travel in an upward arc when leaving said magazine whereby said blank is carried over said detent means.

3,287,012
SHEET DISPENSERS SUCH AS CASSETTES FROM WHICH SHEETS OF X-RAY FILM ARE ADAPTED TO BE DISPENSED
Edward Cecil Woodcock, Pinner, Middlesex, England, assignor to Agfa Aktiengesellschaft, Leverkusen, Germany
Filed Dec. 3, 1964, Ser. No. 415,652
20 Claims. (Cl. 271—18)



1. A sheet dispenser, such as a cassette from which sheets of X-ray film are adapted to be dispensed, comprising, in combination, a container adapted to contain a plurality of sheets; and discharge means carried by said container for discharging sheets one after the other from the interior of said container, said discharge means including a plurality of separator plates respectively supported for pivotal movement about a common axis and having sheet retaining positions where said plates are situated in the interior of said container respectively between a plurality of sheets to maintain the latter separate from each other, said plates being turnable about said common axis from said sheet retaining positions to sheet releasing positions where said plates release sheets for movement out of the interior of said container.

3,287,013
ROLLER FRAME
Henry N. Fairbanks and Daniel H. Robbins, Rochester, N.Y., assignors to Itek Corporation, Lexington, Mass., a corporation of Delaware
Filed Nov. 12, 1964, Ser. No. 410,605
9 Claims. (Cl. 271—45)



1. Means for transporting offset master sheets through a processing solution, said transporting means comprising:

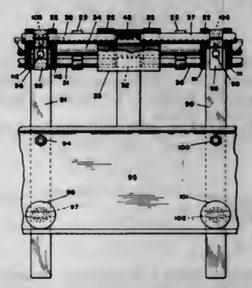
(a) a first assembly comprising drive means including upper and lower pulley shafts coupled by means of a gear train for providing a uniform driving relationship, and a plurality of continuous belts entrained over pulley means on said upper and lower pulley shafts to be driven uniformly thereby;

(b) a second assembly comprising a first plurality of rollers substantially parallel with said upper and lower pulley shafts and arranged on one side of said first assembly so that said first plurality of rollers engage said belts at spaced positions along said belts, said first plurality of rollers being driven by roller gears engaging said gear train;

(c) a third assembly comprising a second plurality of rollers substantialy parallel with said upper and lower pulley shafts and arranged on the other side of said first assembly so that said second plurality of rollers engage said belts at spaced positions along said belts, said second plurality of rollers being driven by roller gears engaging said gear train; and

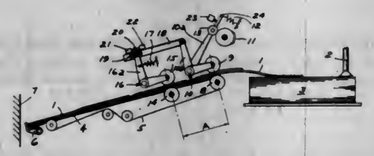
(d) each of said assemblies being separable as a unit.

3,287,014
ADJUSTABLE FEED ROLLER ASSEMBLY
Bruno B. Pasquinelli, Evergreen Park, Ill., assignor to Miehle-Goss-Dexter, Incorporated, Chicago, Ill., a corporation of Delaware
Filed Oct. 9, 1964, Ser. No. 402,871
14 Claims. (Cl. 271—51)



1. In sheet feeding mechanism for feeding sheets seriatim from the top of a pile thereof to sheet conveying means on a feed table spaced from said pile, the provision of a feed roller assembly for supporting and guiding each succeeding sheet across the space between the pile and the feed table including a rotatable shaft disposed horizontally and transversely of the path travelled by the sheets, a plurality of feed rollers mounted on said shaft at spaced intervals across the width of the sheet path, means connecting the feed rollers on one side of the center line of said assembly together to form an integral unit which is constrained to rotate with said shaft being slidable axially thereon, means connecting the feed rollers on the other side of the center line of said assembly together to form a second integral unit which is constrained to rotate with said shaft while being slidably axially thereon, a separate control bracket connected to each of said units for maintaining said units in predetermined positions axially on said shaft, and manually operable means for adjusting said control brackets and therewith said units independently of one another whereby to align a feed roller of each unit with the respective lateral edges of the sheets.

3,287,015
DETECTING DEVICE FOR THE SHEET FEEDER OF A PRINTING PRESS
Friedrich Preuss, Neu-Isenburg, and Walter Rückert, Offenbach (Main), Germany, assignors to Roland Offsetmaschinenfabrik Faber & Schleicher AG, Offenbach (Main), Germany, a firm of Germany
Filed Jan. 21, 1965, Ser. No. 426,943
Claims priority, application Germany, Apr. 23, 1964, R 37,758
14 Claims. (Cl. 271—57)



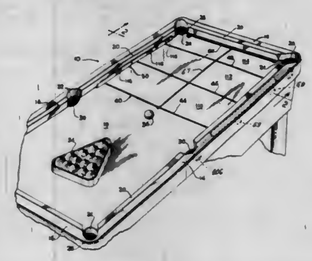
1. In a detecting device for detecting the absence of sheets and the presence of doubled-up sheets fed in the form of a train of overlapping sheets to a printing press, said detecting device comprising two detectors disposed spaced apart in the direction of the sheet travel, each of said detectors being arranged to detect the thickness of the sheet material passing the same and to generate a signal corresponding to the detected thickness, the spacing between the two detectors being equal to the overlap spacing of the sheets within said train of sheets, comparing means comparing said signals and producing an electric control signal in response to a differential above a predetermined value between said compared signals, and control circuit means activated by said electric control signal.

3,287,016
EXERCISING APPARATUS
Sophie Mayer, 321 S. Pickering, Whittier, Calif.
Filed Apr. 16, 1965, Ser. No. 448,675
9 Claims. (Cl. 272—58)



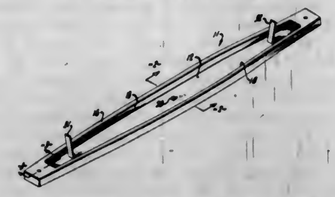
1. An apparatus for facilitating exercise of the various muscles of the body and for facilitating the emission of gases generated as a result of the stimulation of the digestive and eliminative organs of the exercising person during the exercise, comprising: four support legs each having a vertical upper portion and a lower portion at a predetermined angle downwardly directed with respect to the upper portion, the lower portions of two of said legs forming right angles with respect to their upper portions in order to prevent a tilt of the apparatus in a first direction and the lower portions of the other two of said legs forming angles substantially greater than right angles and no more than 150 degree angles with respect to their upper portions in order to permit a very slight tilt of the apparatus in a second and opposite direction; a first inverted substantially U-shaped tubular member slidingly engaging the upper portions of two of said four legs and effectively comprising a first inverted tubular substantially U-shaped upright stirrup; a second inverted substantially U-shaped tubular member slidingly engaging the upper portions of the other two of said four legs and effectively comprising a second inverted tubular substantially U-shaped upright stirrup; said U-shaped members being supported on the vertically upwardly directed portions of said legs in parallel laterally spaced positions with respect to each other so that the openings formed and defined therein by the U-shaped members are laterally spaced and aligned; and a longitudinal horizontal platform engaging each of the vertically upwardly directed upper portions of said four legs at a position below said tubular members so that said tubular members extend vertically above said platform and so that the lower portions of said four legs extend below said platform.

3,287,017
PLAYING ZONE DEFINING POOL TABLE ATTACHMENT
Arthur N. Lehberger, 256 Winfield Terrace, Union, N.J.
Filed May 6, 1964, Ser. No. 365,338
9 Claims. (Cl. 273—14)



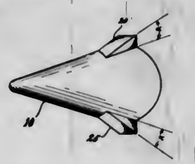
1. In a pool table having a top playing surface rectangular in plan, side and end rails surrounding the playing surface, rubber cushions along the inner surfaces of the rails, pockets at the corners and at the sides, midway the ends thereof, the improvement which consists of a harness superimposed on the playing surface at one end thereof, said harness including opposed perforated angle irons clamped underneath the side rubber cushions of table, a stretchable tape clamped underneath the end rail at said one end of the playing surface, cords extending through the perforations of said angle irons and across the span between said side angle irons in spaced longitudinal arrangement, said cords engaging the playing surface dividing the playing surface into a plurality of retricted transverse playing zones, and a cord extending across said dividing lines to divide the transverse playing zones into a plurality of aligned transverse playing zones, one end of said cord fastened to the center of the tape, the other end of the cord being fastened to the innermost cord, and indicia on the angle irons for indicating certain values for playing balls knocked into said zones.

3,287,018
PADDLE AND BALL GAME WITH BELL GOALS
Lawrence R. Bosch, 2768 Georgetown St., East Palo Alto, Calif.
Filed Mar. 11, 1964, Ser. No. 351,001
3 Claims. (Cl. 273—85)



1. A game comprising a game board having a narrow elongate configuration, said board having a rim extending upwardly about the periphery thereof defining a planar game area, a pair of bells affixed one at each end of said board and substantially filling the game area at opposite ends thereof, a hard ball adapted for disposition in said game area for rolling into contact with said bells to ring same, and a pair of paddles for use by opposing players at opposite ends of the board to strike the ball and roll the same toward the opposite end of the game area, each of said paddles having a width which is less than the lateral width of the game area immediately in front of the bells minus twice the diameter of the ball, so that the ball may pass a paddle centered between the opposite rim sides in front of a bell.

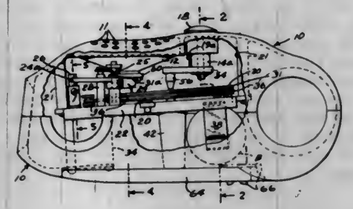
3,287,019
MANEUVERABLE TARGET FOR ANTI-MISSILE SYSTEMS
Norman Robert Arthur, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Apr. 20, 1964, Ser. No. 361,631
6 Claims. (Cl. 273—105.4)



1. A maneuverable target for anti-missile systems, comprising: a re-entry target vehicle; a plurality of flaps affixed on said vehicle at balanced aerodynamic positions, one of said flaps of a rapid ablation material causing, during re-entry, an aerodynamic unbalance to maneuver said target vehicle.

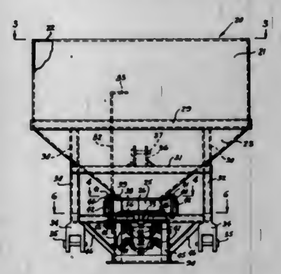
3,287,020
SOUND REPRODUCING DEVICE FOR A DOLL OR THE LIKE
Herbert R. Beebe, Sayville, N.Y., assignor to American Character, Inc., a corporation of New York
Filed Sept. 9, 1963, Ser. No. 307,437
8 Claims. (Cl. 274—9)

1. A battery-operated toy phonograph adapted to be housed in a toy such as a doll, said phonograph comprising a diaphragm, a turntable generally parallel to the diaphragm, a grooved record on said turntable, a stylus arm pivoted for movement in a plane between the turntable and the diaphragm, resilient means lightly urging the stylus arm outward to a position over the beginning of the record grooves, a slide means between the stylus arm and the diaphragm for transmitting vibration to the diaphragm as the stylus arm travels from outer position to inner position, an electric motor for driving the turntable, a cell of the flashlight type, a circuit between the cell and the motor, means mounting the turntable for axial movement away from the stylus arm to free said stylus arm for outward movement to starting position, resilient means urging the turntable toward the stylus arm, a leaf spring switch in said motor circuit and so disposed



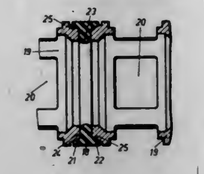
that on movement to the innermost grooves at the end of the record a part of the stylus arm bears against the leaf spring and opens the switch and holds it open to prevent drain of the battery, whereas outward movement of the stylus arm permits the switch to close and operate the motor, and an externally accessible control means to momentarily move the turntable away from the stylus arm when it is desired to start the photograph.

3,287,021
BROADCASTING UNIT FOR SEED OR THE LIKE
Elmer R. Herd, Lucerne, Ind., assignor to Herd Seeder Company, Inc., Lucerne, Ind., a corporation of Indiana
Filed July 29, 1964, Ser. No. 385,938
9 Claims. (Cl. 275—15)



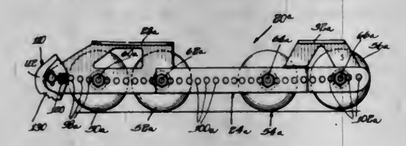
1. A broadcasting unit of the character described comprising in combination, a vertical hopper having a bottom opening, a supporting frame for said hopper including a first pair of spaced vertical uprights, upper and lower horizontal rectangular frames engaging said hopper and a second pair of vertical uprights spaced forwardly of said first pair of uprights, a cylinder beneath said bottom opening, a base plate having an opening therein detachably secured to said cylinder a gear box below said base plate, means adapted for connecting said gear box to the power takeoff of a tractor, a vertical drive shaft extending from said gear box and rotatable thereby, a disc-like plate mounted on said drive shaft below said opening in said base plate, distributing fan blades on said plate, means, including a slidable plate, a remotely positioned operating handle and a linkage including an over center positioned tension spring connecting said plate to said handle to open and close said plate with a snap action, for selectively opening and closing said opening, and means adapted for mounting said unit on a tractor.

3,287,022
DEVICE FOR SEALING AXIALLY MOVABLE ELEMENTS
Herbert Soechting, Vienna, Austria, assignor to Hoerbiger Ventilwerke Aktiengesellschaft, Vienna, Austria
Filed Sept. 16, 1963, Ser. No. 309,268
Claims priority, application Austria, Sept. 25, 1962, A 7,598/62
9 Claims. (Cl. 277—188)



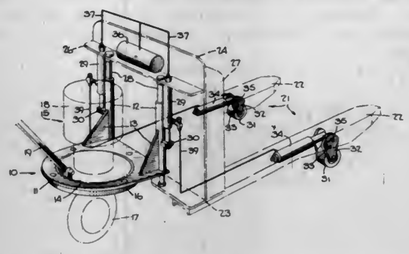
1. A device for sealing axially movable elements in a housing having a member movable therein comprising, a sealing ring of elastic material of approximately T-shape in cross-section in the diametrical plane arranged to lie between and bear radially against the movable member and the housing, and annular supporting elements for axially mounting one on each side of the sealing ring to fix the sealing ring with the leg of the T projecting towards the movable member, each respective axial end face of the supporting elements contacting with the complete annular portion of the respective radial face of said leg of the sealing ring which is intermediate the radially innermost and radially outermost portions of the sealing ring.

3,287,023
ROLLER SKATE
Gordon K. Ware, Chicago, Ill., assignor to The Chicago Roller Skate Company, Chicago, Ill., a corporation of Illinois
Filed July 16, 1964, Ser. No. 383,128
8 Claims. (Cl. 280—11.2)



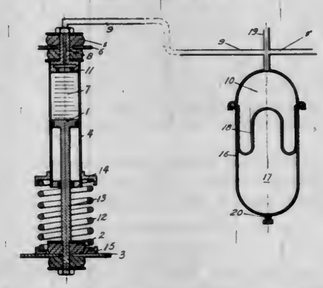
1. A skate structure comprising spaced apart longitudinally extending opposite side frame means respectively including overlapping relatively adjustable forward and rear longitudinally extending portions, said opposite side frame means having a first group of aligned apertures therein adjacent a forward end thereof, a second group of aligned apertures therein intermediate opposite ends thereof, and a third group of aligned apertures therein adjacent a rear end thereof, said apertures being spaced from each other longitudinally of said frame means, a plurality of wheels disposed between said opposite side frame means and spaced longitudinally thereof, and axle means extending through aligned apertures in said opposite side frame means and through said wheels and supporting said wheels and securing said opposite side frame means together, certain of said axle means extending through apertures in overlapping parts of said forward and rear portions of the side frame means and providing the only means connecting the forward and rear portions together.

3,287,024
INDUSTRIAL TRUCK
Bronislaus I. Ulinski, Flossmoor, Ill., assignor to Eaton Yale & Towne Inc., New York, N.Y., a corporation of Ohio
Filed Mar. 24, 1964, Ser. No. 354,316
4 Claims. (Cl. 280—43.12)



1. In an industrial truck, a load platform, means mounting said load platform for vertical movement between a lowered position and an elevated position, two pair of rams, means connecting said rams with said load platform providing simultaneous operation of said rams to elevate said load platform, a source of fluid pressure, means for connecting one side of one pair of said rams to said source of fluid pressure to operate said rams, a hydraulic connection connecting the other side of said one pair of rams with one side of said other pair of rams whereby the rams are connected hydraulically in series and operation of said one pair of rams causes simultaneous operation of said other ram, valve means operable for selectively and simultaneously connecting said one pair of rams and said other pair of rams with said source of fluid pressure and thereby replenish fluid lost from said hydraulic connection, said valve means being closed during elevation of said load platform to disconnect said source of liquid pressure from said hydraulic connection.

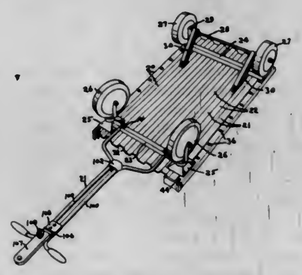
3,287,025
SUSPENSION WITH CONSTANT TRIM AND FREQUENCY
Giampaolo Garcea and Filippo Surace, Milan, Italy, assignors to Alfa Romeo S.p.A., Milan, Italy, a company of Italy
Filed July 10, 1964, Ser. No. 381,762
Claims priority, application Italy, July 18, 1963, 700,987/63
5 Claims. (Cl. 280—124)



1. A motor vehicle wheel suspension system comprising a hydraulic cylinder and piston unit, one end of said unit being fixed to the chassis of said vehicle and the other end of said unit being connected to a wheel of the vehicle, said unit being pressurized to support substantially the entire static load of said vehicle on said

wheel with said vehicle in proper trim for operation, and a compensator element comprising a solid elastic element, said element being connected in parallel with said unit between said chassis and said wheel, said element in the static load condition of said vehicle being substantially free of load, said element having an oscillation frequency characteristic the variation of which as a function of the load imposed on said element is opposed to the oscillation frequency variation of said unit.

3,287,026
FLEXIBLE BED WHEELED VEHICLE
Aaron S. Craven, Jr., 505 Independence Ave., Philadelphia, Pa.
Filed Feb. 4, 1965, Ser. No. 430,387
6 Claims. (Cl. 280—415)



1. A flexible bed wheeled vehicle comprising in combination:

(1) a one piece bed made from substantially uniform thickness sheet material convoluted to form as viewed in cross section a plurality of adjacent ribs comprising alternating crests and troughs, the vertical distance between the top of a crest and the bottom of a trough being many times greater than the sheet material thickness to thereby form a bed which is substantially inflexible about axes orthogonal to said ribs and flexible within limits about axes parallel to said ribs,

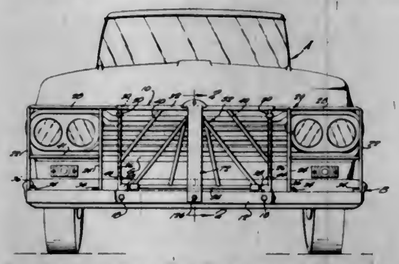
(2) a support structure including only a single pair of spaced apart elongated rigid support beams extending transversely to said crests and troughs of said ribs in underlying relation to said bed with substantially all of said troughs seated upon and supported by said beams, said single pair of beams being disposed respectively proximate to the front and rear ends of said bed and being coupled to one another only through the bed itself so that a line joining one end of one of said beams to the remote end of the other of said beams extends diagonally to the longitudinal extent of said bed ribs, whereby said bed may flex about such diagonal within limits,

(3) means securing said bed to said support structure, and

(4) a plurality of wheels carried by said vehicle in underlying relation to said bed operative to support the latter from an underlying surface.

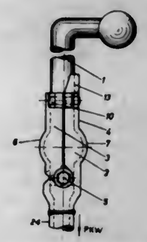
3,287,027
COMBINATION TOW HITCH AND GRILL GUARD
Floyd E. Schuckman, R.F.D., Arnold, Kans.
Filed Oct. 30, 1964, Ser. No. 407,782
6 Claims. (Cl. 280—491)

1. The combination with an automobile having a front radiator grill, a front bumper bar fixedly supported beneath the grill, of a combination comprising a fixed grill guard assembly fixed to and upstanding on the bumper bar, a tow hitch assembly pivoted on the guard assembly, said tow hitch assembly being adapted to occupy an erect retracted position against the guard assembly and to occupy a horizontal forwardly extending position relative to the guard assembly, said grill guard assembly comprising laterally spaced end portions between which the tow hitch assembly is positioned, said grill guard assembly comprising a mounting bar extending along the front of and fixed to the bumper bar, said end portions being fixed to and extending upwardly from the mounting bar, said end portions comprising laterally spaced standards



fixed at their lower ends to the mounting bar, said standards comprising inner standards at the inner ends of said end portions, and horizontal bar means fixed on the upper ends of the standards and extending between the guard end portions, said inner standards having laterally inwardly extending nuts at their lower ends, the tow hitch assembly comprising a horizontal bar having reduced threaded terminals on its ends, said terminals being threaded into the nuts, the threads of the terminals and the nuts being arranged to bind on the depressed and extended position of the tow hitch assembly.

3,287,028
DETACHABLE BALL TYPE COUPLING MEMBER FOR USE IN CONNECTION WITH DRAWBARS FOR AUTOMOBILE TRAILERS
Franz Dörge, Hindenburgstrasse 52, Moglingen, Germany
Filed Oct. 23, 1964, Ser. No. 406,081
Claims priority, application Germany, Nov. 11, 1963, D 42,908
2 Claims. (Cl. 280—495)



1. In a trailer hitch for disengageably coupling a towed vehicle to a towing vehicle and of the type including a relative elongated drawbar connected at one end to one vehicle and having at its opposite end one element of a disengageable ball and socket coupling, with the other element of the ball and socket coupling being connected to the other vehicle: the improvement in which said drawbar comprises first and second relatively elongated sections which are substantially rectilinearly alignable with their inner ends in adjacent relation, the outer end of said first section being connected to said one vehicle and the outer end of the second section having one ball and socket coupling element thereon; said second section, adjacent its inner end, having a zone in which its cross

section differs from that of the remainder of its length; the inner end of said first section having extending therefrom a pair of relatively separable and elongated half-sleeves conjointly forming a relatively elongated substantially complete sleeve conformingly embracing and extending along said second section through a substantial distance from the inner end thereof through and substantially beyond including said zone, which distance is a multiple of the length of said zone, said half-sleeves having surface-to-surface conforming engagement with said second section, including said zone, throughout the length of said zone and throughout said distance; said half-sleeves being hingedly interconnected at said first section for swinging apart of their free ends to disengage said second section; and clamping means, including threaded fastener elements, engaged with the free ends of said half-sleeves, and operable to clamp said half sleeves in tightly embracing relation with said second section.

3,287,029
MULTIPLE CARD
Donald A. Hall, Jr., 820 Anacapa St., San Diego, Calif.
Filed May 19, 1965, Ser. No. 456,974
2 Claims. (Cl. 281—5)



1. A multiple card comprising an elongated strip of paper folded upon itself transversely of the length thereof to form superimposed, attached and exact duplicate cards for use in a voting machine of the type adapted to perforate both cards simultaneously at the will of the operator of the machine, said strip including:

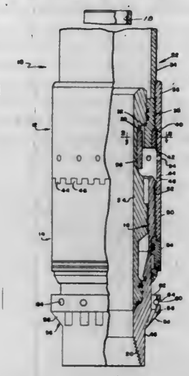
(1) an integral tab connected at one edge of one of the cards, there being a weakened section between said edge of the said one card and the tab;

(2) a second integral tab connected at one edge of the other card, there being a weakened section between said edge of the said other card and the second mentioned card;

(3) an adhesive on at least one of the tabs for joining said tabs after said strip is folded on itself.

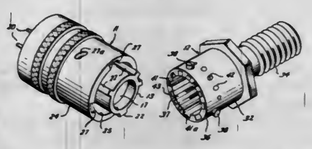
3,287,030
HANGER HAVING LOCKING AND SEALING MEANS
Robert L. Crain and Elwood K. Pierce, Jr., Houston, Tex., assignors to Gray Tool Company, Houston, Tex., a corporation of Texas
Filed Jan. 9, 1963, Ser. No. 250,262
6 Claims. (Cl. 285—18)

1. A hanger and tool for use in suspending a string of tubing or casing in a well structure comprising: a hanger body having an axial bore and an exterior tapered surface intermediate its ends for engaging a complementary surface in the well structure; at least one laterally movable locking element carried by said hanger body for engagement with a recess within the well structure; first thread means on the upper inner extremity of said hanger body; second thread means of opposite rotation from said first thread means on the upper outer extremity of said hanger body; hanger sleeve means engaging said second thread means and including means engageable with said locking element to move the same laterally; a tool body having a bore coaxial with the bore of said hanger body; a tool sleeve connected to said tool body for rotation therewith and for independent longitudinal movement, the lower end of said tool sleeve threadedly engaging said first thread means; and complementary tooth and socket



means on the opposed ends of said hanger sleeve and said tool body whereby rotation of said tool body rotates said tool sleeve and said hanger sleeve and whereby said tool sleeve moves upwardly to disengage from said hanger body and said hanger sleeve moves downwardly to actuate said locking element.

3,287,031
INDEXED KEYED CONNECTION
William H. Simmons and Lyle M. Jenkins, Houston, Tex., assignors to the United States of America as represented by the National Aeronautics and Space Administration
Filed Sept. 21, 1964, Ser. No. 398,132
1 Claim. (Cl. 285—27)

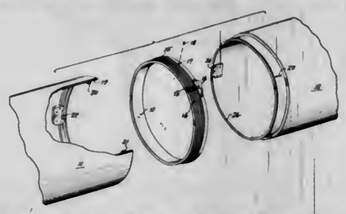


A female coupling comprising an elongated body having a chamber therein adapted to receive a male coupling, said body having a plurality of elongated longitudinally extending slots therein which are spaced about the periphery of said chamber, said slots having one side opening into said chamber, said body also having a plurality of holes each of which extend from outside said body into one of said slots, and plug means removably secured in each of said slots said plug means having a lug thereon extending into said hole.

3,287,032
COUPLING FOR TUBULAR MEMBERS
Jesse L. Kraybill, Claremont, Calif., assignor to General Dynamics Corporation, Pomona, Calif., a corporation of Delaware
Filed Aug. 7, 1964, Ser. No. 388,118
3 Claims. (Cl. 285—39)

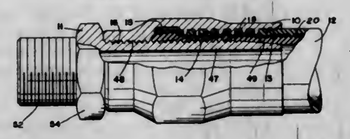
1. A coupling for tubular members comprising: a pair of tubular sections having substantially the same external surface diameters; one of said tubular sections including an internally threaded end portion and a stop member adjacent said internal threads, said stop member being comprised of an annular internally extending flange, said

stop member being provided with a sealing member on the side of said annular flange adjacent said internal threads; the other of said tubular sections being provided with a reduced external diameter end portion, said reduced external diameter end portion including an annular groove and a shoulder portion, said shoulder portion of said reduced external diameter end portion being intermediate said groove and the terminal end of said end portion; a one piece resilient ring having a split therein adapted to be expanded over said shoulder portion and positioned in said groove of said other tubular section and rotatable with respect thereto, said split ring including a portion provided with external threads adapted to engage the internal threads of said one tubular section, said split ring also in-



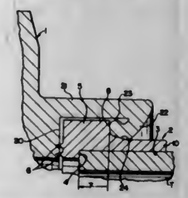
cluding a rim portion having notches therein for turning the same, said rim portion of said split ring having an external surface of substantially the same diameter as the external surface of said tubular sections; and detent means having members connected to said tubular sections for preventing relative rotation therebetween; whereby turning of said split ring when positioned in said groove pulls said one tubular section toward said other tubular section due to the threaded engagement between said split ring and said one tubular section so that at least said sealing member in said stop member of said one tubular section abuts against the terminal end of said reduced diameter end portion of said other tubular member, and the external surfaces of said tubular members and said rim portion of said split ring form a substantially continuous surface.

3,287,033
HOSE COUPLING
William E. Currie, Cleveland Heights, Ohio, assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed May 24, 1963, Ser. No. 283,014
9 Claims. (Cl. 285—40)



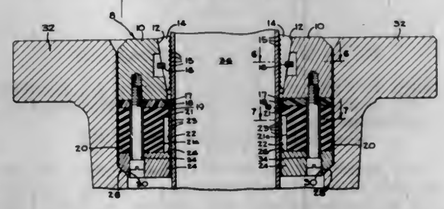
1. A hose coupling for gripping the end of a flexible hose which has inner and outer layers and a reinforcement therebetween, said coupling including a socket and a nipple, said socket having an internally threaded bore open at one end, said thread at said open end being relatively sharp at its minor diameter for cutting a helical slit in said outer layer upon threading of said socket over said hose end, and the threads inward of said sharp thread being relatively blunt at their minor diameter and received in said helical slit, said nipple being insertible in said hose end after threading of said socket onto said hose, said blunt threads having a minor diameter up to the initial outside diameter of said reinforcement and said blunt threads having annular spaces therebetween which are at least as great in diameter as the initial outside diameter of said outer layer, said sharp thread having a minor diameter which gradually decreases from a diameter greater than the initial outside diameter of said reinforcement to the minor diameter of said blunt threads, and said nipple having an outside diameter larger than the inside diameter of said inner layer after insertion of said hose into said socket, whereby upon insertion of said nipple into said hose end, said reinforcement is forced into tight gripping engagement with the minor diameter of said blunt threads and the portions of said reinforcement opposite the spaces between said blunt threads are arched into said spaces to form holding shoulders on said reinforcement engaged by said blunt threads for increasing the effective grip of said socket upon said hose end.

3,287,034
COUPLING FOR TUBES
Kenneth R. Bragg, Manhattan Beach, Calif., assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed May 3, 1962, Ser. No. 192,137
10 Claims. (Cl. 285—115)



1. In combination, an annular tube coupling sleeve having a bore therein and a tube within said bore, said annular sleeve having a pair of axially spaced relatively thick portions and a relatively thin portion between said thick portions, said sleeve having a combination press-fit and shrink-fit about said tube throughout said thin portion and at least one of said thick portions and a press-fit at said other thick portion, said bore being of a smaller diameter at said thick portions than at said thin portion, said thin portion and said tube being radially outwardly bowed between said thick portions.

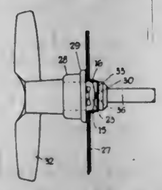
3,287,035
PIPE HANGER
John A. Greenwood, Houston, Tex., assignor, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware
Continuation of application Ser. No. 159,035, Dec. 13, 1961. This application Nov. 1, 1965, Ser. No. 511,577
8 Claims. (Cl. 285—147)



1. In a pipe hanger for use in supporting a pipe in a head member, a junk ring having an upper surface radially extended with respect to the ring's axis and a lower surface adapted to support the hanger in the head member, an annular seal of resiliently deformable material sized to substantially fill the space between the pipe and the head member and having an upper and a lower surface of substantial area, said seal's lower surface supported on the upper surface of said junk ring, said seal having an inner annular wall, a plurality of rigid pipe gripping members,

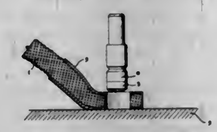
each member of substantial arcuate extent and having one surface supported by and slidably engaging said upper surface of said ring and a second surface upstanding in contacting relation to said inner wall, a slip bowl supported by said seal's upper surface and having a downwardly and inwardly sloping inner surface, and a plurality of slips slidably engaging said inner surface of said slip bowl.

3,287,036
FASTENERS
Clifford Alexander Seckerson, Iver Heath, England, assignor to United-Carr Incorporated, a corporation of Delaware
Filed Jan. 28, 1964, Ser. No. 340,741
Claims priority, application Great Britain, Jan. 31, 1963, 4,090/63
1 Claim. (Cl. 287—20)



A fastener of resilient material having a substantially flat body, an aperture in the body for reception of a shaft, a pair of lugs, which are bent from one side of said body and are disposed in opposite sides of said aperture and each of which is formed with an inwardly directed terminal end for engagement against the shaft and with an outwardly directed projection spaced from the body and at least two pairs of spaced resilient tongues sheared from said body adjacent to said aperture and each of said pairs of tongues adapted to engage a pin extending therethrough and being joined by upstanding flanges extending from said body, said flanges adapted to engage the wall of an aperture formed in a member to prevent rotation between said fastener and said member.

3,287,037
CONTACT DEVICES
Karl Joel Aversten, Lidingo, Sweden, assignor to AGA Aktiebolag, Lidingo, Sweden, a corporation of Sweden
Filed Dec. 17, 1964, Ser. No. 418,967
Claims priority, application Sweden, Jan. 10, 1964, 264/64
3 Claims. (Cl. 287—20.2)



1. A contact device for soldering to a metallic surface comprising a contact shoe having an aperture provided therein into which is inserted a metal stud having a cylinder of solder metal at its forward end, said contact shoe being proportioned to have a minimum volume according to the following formula:

$$W_{min.}=(k)(A)\frac{e^{(1+h^{1/2})}}{\log_e (K/100)}$$

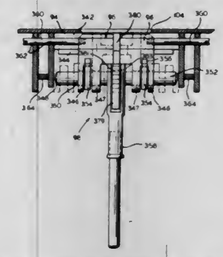
and a maximum volume according to the following formula:

$$W_{max.}=(k)(A)\frac{e^{(1+h^{1/2})}}{\log_e (K/100)}\log_e (K_1/100)$$

wherein, in each formula:

W=the volume of the cable shoe in cm.^{3},
A=the cross-sectional area of the solder metal stud in cm.^{2},
h=the height of the cylinder of metal in cm.,
K=the melting temperature of the solder metal in degrees Kelvin,
K_1=the melting temperature of the cable shoe in degrees Kelvin,
k=a function of the product of the specific heat and the specific gravity of the solder metal; and
e=the base of the natural logarithmic system.

3,287,038
FIFTH WHEEL PLATE FOR RAILROAD CAR FIFTH WHEEL STANDS
James E. Candlin, Jr., Lansing, and William Van Der Sluys, Homewood, Ill., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Original application May 4, 1960, Ser. No. 26,884, now Patent No. 3,183,854, dated May 18, 1965. Divided and this application Oct. 8, 1963, Ser. No. 317,864
4 Claims. (Cl. 287—20.5)

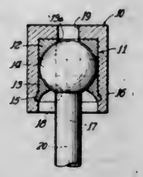


1. A fifth wheel plate structure for a railroad car fifth wheel stand comprising a plate member defining forward and rearward ends with said plate member being formed with an elongate closed perimeter opening adjacent its median portion, said opening extending laterally of said plate member, a pair of jaws mounted in said opening for movement toward and away from each other and laterally of said plate member, said jaws being formed with diametrically opposed kingpin seat portions, means for moving said jaws toward and away from each other, and spaced abutment members carried by said plate structure and disposed between said jaws in opposed relation at the forward and rearward sides of said opening, said abutment members being spaced from each other a distance to receive between them a trailer kingpin and defining opposed wear surfaces against which the kingpin is adapted to bear when a trailer kingpin is received in said opening and said jaws have been applied to the kingpin.

3,287,039
PISTON AND PISTON ROD ASSEMBLY
Herbert N. Underwood, Chicago, and Thomas G. Dietrich, Roselle, Ill., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Original application Mar. 26, 1962, Ser. No. 182,356, now Patent No. 3,191,264, dated June 29, 1965. Divided and this application June 14, 1965, Ser. No. 476,773
2 Claims. (Cl. 287—21)

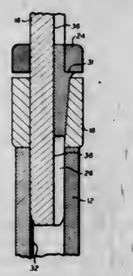
1. A piston and rod assembly comprising:
(a) a piston having a cylindrical bore therein, provided with an annular groove in its lower end,
(b) a socket comprising upper and lower annular bearing parts cylindrically contoured on their outer peripheries and fitted into said cylindrical bore, said upper and lower parts having hemispherical contours on their inner peripheries,

(c) a piston rod having a ball at one end thereof, encompassed by said hemispherical contours of said upper and lower parts, and



(d) an annular flange at the bottom of said lower part in engagement with said annular groove thereby locking the piston rod assembly in said piston.

3,287,040
TELESCOPIC ASSEMBLY AND LOCKING MEANS THEREFOR
Erminio Verticchio, Staten Island, N.Y., assignor to Leo Prager, Inc., New York, N.Y., a corporation of New York
Filed July 7, 1964, Ser. No. 380,775
1 Claim. (Cl. 287—58)



In an adjustable, telescopic assembly,

a first elongated member having a longitudinal bore formed therein,

a second elongated member having an outer surface substantially complementary to said bore along at least a portion thereof and slidable within said bore to a plurality of positions relative to said first member,

said second elongated member having a radially oriented longitudinal groove extending along the outer face of said portion,

a tapered fitting member axially and longitudinally affixed to said first elongated member and having a tapered bore extending from an enlarged bore portion to a narrow bore portion,

said narrow bore portion being coterminous to said bore of the first elongated member,

said tapered bore defining a substantially frustoconical surface portion,

a freely slidable circular member having an axial bore identical to and axially aligned with said bore of said first elongated member and slidably disposed in snug slidable engagement about said outer surface of said second elongated member,

a narrow wedge having a length substantially equal to the longitudinal length of said tapered fitting member,

said wedge slidably disposed in close fitting relationship in said longitudinal groove and rigidly secured to said slidable circular member,

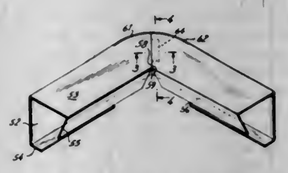
said wedge having a varying radial thickness along its axial length slightly greater than said radial extent of said groove and having an outer frustoconical face complementary to said frustoconical surface portion of said tapered bore of said tapered fitting member for abutting engagement therewith, for locking said second elongated member longitudinally relative said first elongated member,

said frustoconical surface portion of said tapered bore subtending a substantially larger circumferential arc than that subtended by said outer frustoconical face of said wedge,

said second elongated member being locked longitudinally relative said member in a plurality of positions by axially sliding said slidable circular member and said wedge along said second elongated member and said longitudinal groove therein, respectively, until said outer frustoconical face of said wedge snugly abuts said frustoconical surface portion of said fitting tapered member, and

said second elongated member being released with respect to said elongated first member by moving said wedge along said groove away from said tapered fitting member.

3,287,041
FABRICATED CORNER CONSTRUCTION
Milton R. Cohen, 200 E. 71st St., New York, N.Y.
Filed Sept. 4, 1964, Ser. No. 394,543
3 Claims. (Cl. 287—189.36)



3. In an aquarium, a frame of relatively thin material having at least one corner of one-piece construction, said frame, in the area of said corner, comprising a side portion extending along two sides of the aquarium and smoothly around said corner in an arc of substantially uniform radius, a first top portion integral with and extending perpendicularly from that portion of said side portion along one of said aquarium sides, said first top portion terminating along a first line radial to and substantially bisecting said arc of substantially uniform radius and along a second line adjacent substantially one-half of said arc of substantially uniform radius, a second top portion integral with and extending perpendicularly from that portion of said side portion along the other of said aquarium sides, said second top portion terminating along a third line in abutment with said first line and along a fourth line adjacent substantially to other half of said arc of substantially uniform radius, and a tab secured to said first and second top portions for maintaining said portions in abutment along said first and third radial lines.

3,287,042
CLIP FOR HOLDING KNOTS
Roger T. Baer, 742½ N. Branchiforte Ave., Santa Cruz, Calif.
Filed Sept. 29, 1964, Ser. No. 400,075
1 Claim. (Cl. 289—17)

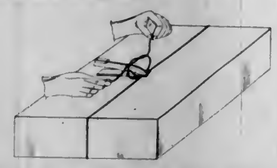
A clip for holding knots or the like comprising in combination:

(a) a substantially flat elongated, rectangular base member;

(b) said base member having a first end and a second end and having upstanding lugs near the center thereof;

(c) a top member overlying said base member and being substantially coextensive therewith and having first and second ends and having downwardly extending lugs near the center thereof;

(d) pivot means extending through the lugs of the base and top members;

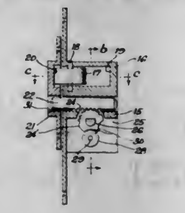


(e) spring means associated with said pivot means, biasing said first ends of the top and base members toward each other;

(f) knurling on the upper surface of the first end of the base member, said base member tapering to a thin edge; and,

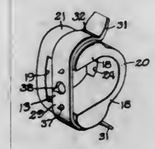
(g) the first end of the top member curving inwardly from both sides to form a pointed nose portion, said pointed nose having an abruptly downwardly curved top portion whereby a knot tied over the top member and pulled will force the clip off the knot.

3,287,043
LATCH MECHANISM
Jose H. Delhase, Versailles, France, assignor of fifty percent to Comatec, Inc., Beverly Hills, Calif., a corporation of California
Filed Sept. 23, 1963, Ser. No. 310,944
Claims priority, application France, Nov. 30, 1962, 917,109, Patent 1,340,036
1 Claim. (Cl. 292—9)



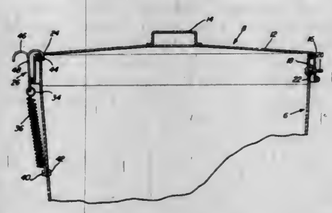
A latching mechanism for attachment to a door and jamb whereby the door and jamb can be held in a stationary relationship with respect to each other, said mechanism including a latching means and a locking means, said locking means comprising a bolt member associated with one part of said mechanism, a second part of said mechanism defining an opening for receiving said bolt, handle means operatively connected to said bolt member for moving the bolt member into said opening, said opening and bolt member being in communication for locking operation when said latching means holds said door and jamb in a stationary relationship, and resilient means for releasably and securely holding said bolt member in a locking position and in an unlocked position, said last mentioned means including a cog wheel operatively associated with said bolt member, said handle means being connected to said cog wheel for rotating said cog wheel between two extreme positions whereby said bolt member can assume said locking position and said unlocked position, a pair of recessed portions defined by said cog wheel, and wherein said resilient means comprises a resilient wheel adapted to be received by said recessed portions, said recessed portions being located whereby said resilient wheel is received by one of said recessed portions when said bolt member is in locking position.

3,287,044
FASTENER FOR LATCHING A DOOR
Axel W. Ahlgren, Rockford, Ill., assignor to Amerock Corporation, Rockford, Ill., a corporation of Illinois
Filed June 1, 1964, Ser. No. 371,677
1 Claim. (Cl. 292—17)



In a fastener for latching a door releasably in a closed position adjacent a frame member, the combination of, a catch body having a front end and two laterally spaced side surfaces, means for mounting said body on said frame member with said side surfaces extending away from the frame member and with said front end paralleling the closed position of said door, a generally U-shaped strike having a crosspiece extending across said front end and formed with a center hole for receiving a fastener, said strike also having a pair of resiliently flexible spring fingers projecting from opposite ends of said crosspiece along opposite sides of said body, said side surfaces and said spring fingers being shaped to fit snugly together whereby said fingers frictionally grip said body and hold said strike in a preselected marking position thereon, and a marking prong on said crosspiece extending away from the latter on the side thereof opposite said front end for marking engagement with said door when the latter is closed, said prong being generally alined with the center of said hole longitudinally of said side surfaces, and said side surfaces and said front end being substantially longer than the width of said crosspiece and said fingers thereby to engage said strike in the selected marking position and also in an offset latching position in which said hole is generally centered on the area of the door marked by said prong.

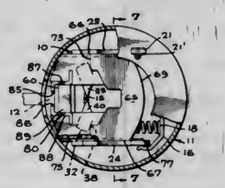
3,287,045
CLAMP FOR RUBBISH CAN COVER
Harold L. Avery, P.O. Box Drawer Q, Groton, Conn.
Filed Apr. 13, 1964, Ser. No. 359,014
2 Claims. (Cl. 292—114)



1. A receptacle comprising an open top can defined by a peripheral wall, and a removable lid receivable over the open top of the can, said lid having a depending mar-

ginal flange which encompasses the upper portion of the can defining wall, said lid having a keeper hole defined therein, said keeper hole being spaced inwardly from the adjoining portion of the lid flange a distance slightly greater than the thickness of the can wall for the reception of a portion of the upper end of the wall therebetween, a keeper hook releasably engageable over the lid flange and through the keeper hole into the open upper end of the can, and resilient biasing means engaged between the hook and the wall portion of the can therebelow so as to effect a direct downward biasing of the lid against a portion of the open end of the can received within the hook.

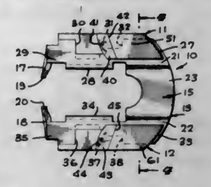
3,287,046
LOW-FRICTION RETRACTOR
Fred J. Russell, 7635 Otis St., South Gate, Calif., and George B. Solovieff, San Clemente, Calif.; said Solovieff assignor to said Russell
Original application Oct. 16, 1961, Ser. No. 145,133. Divided and this application Sept. 14, 1965, Ser. No. 487,261
3 Claims. (Cl. 292—169)



1. In a door lock device, a frame assembly and a spindle rotatably mounted on the frame assembly having a rotationally facing driving area thereon, the combination of a multiple piece retractor slide mounted on said frame for operating a latch bolt assembly comprising a molded nonmetallic low-friction material having surfaces on opposite sides in sliding engagement with the frame assembly, a shoulder in a position of engagement with said driving area, and an end edge on said slide adapted to face in the direction of the latch bolt assembly, said edge having an opening therein, and metal insert means embedded in said slide, said insert means having jaws extending toward each other across said opening and leaving a space therebetween for engagement with said latch bolt assembly.

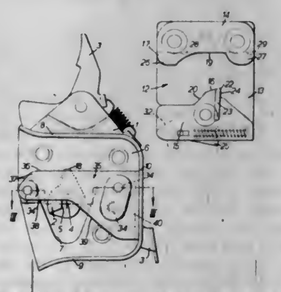
3. In a door lock device, a frame assembly comprising axially spaced parallel transverse faces and diametrically spaced parallel walls connecting said faces, a latch bolt assembly, a spindle rotatably mounted on the frame comprising at least one retractor arm at the inner end extending in a generally radially outward direction relative to the spindle, a rotationally facing driving area on said retractor arm, the combination of a retractor slide mounted in said frame for operating a latch bolt assembly, said retractor slide comprising a metal body having a height and breadth smaller than the height and breadth of the frame, and a molded shoe of nonmetallic low-friction material on each diametrically opposite edge of said slide, each shoe having an edge face extending along and forming an outermost edge face of the retractor slide in sliding engagement with the respective wall of the frame, each said shoe having opposite side elements extending over opposite side faces of the retractor slide to locations wider than the retractor slide and in sliding engagement with respective transverse faces of the frame, and each said shoe having at least one shoulder in contact with the driving area of the retractor arm.

3,287,047
LOW-FRICTION RETRACTOR
Fred J. Russell, 8635 Otis St., South Gate, Calif., and George B. Solovieff, San Clemente, Calif.; said Solovieff assignor to said Russell
Filed Jan. 14, 1966, Ser. No. 536,208
3 Claims. (Cl. 292—169)



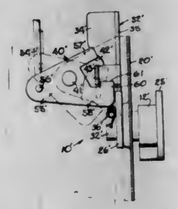
1. A composite reactor for use with a conventional spindle having rotationally facing driving areas thereon, a conventional frame having interior guide surfaces and a conventional latch bolt assembly cooperable therewith, said retractor comprising a metal skeleton having engaging means at the forward end of said retractor adapted to engage said latch bolt assembly, said skeleton including opposite spaced side walls and upper and lower longitudinal edge portions on each of said side walls, upper and lower retractor guides on each side wall forming part of said metal skeleton, each said guide comprising a lug intermediate the forward and rear end of the respective longitudinal edge portion, each respective lug having an edge facing forward for engagement with said driving area and having a laterally outwardly facing side face, and a pair of upper and lower shoes of low-friction synthetic plastic resin material, said shoes having an interlocked engagement with respective upper and lower portions of said metal skeleton, each said shoe having a vertically outwardly facing frame engaging surface between opposite sides and lateral frame engaging side plates located rearwardly of the respective lug, each said side plate having the exposed side surface extending laterally outwardly at least as far as the adjacent side face of the respective lug.

3,287,048
RELEASABLE FASTENING DEVICES
Philip Swingewood Jeavons, Birmingham, England, assignor to Wilmot-Breeden Limited, Birmingham, England, a British Company
Filed Aug. 24, 1964, Ser. No. 391,522
11 Claims. (Cl. 292—216)



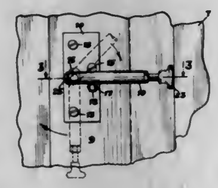
6. A releasable fastening device for a vehicle door having a main body portion comprising a backplate, a rotary latch member mounted on the backplate with a rotational axis at right angles to the backplate, mounting pillars on the backplate, and an anti-burst plate mounted on the pillars so as to be generally parallel to and spaced from the backplate, the anti-burst plate providing anti-burst surfaces arranged both above and below said axis; and a separate keeper portion comprising two spaced members which are undercut so that the anti-burst plate can move behind them on door closure and to provide further anti-burst surfaces for cooperation with said anti-burst surfaces on the anti-burst plate.

3,287,049
VEHICLE LATCH
Harry J. Shay, Rockford, Ill., assignor to L. W. Menzimer, Rockford, Ill., as trustee
Filed Dec. 4, 1963, Ser. No. 327,965
2 Claims. (Cl. 292—229)



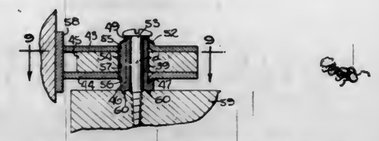
1. In a vehicle door, the combination of, a latch having an operating element movable back and forth along a predetermined path between latched and unlatched positions, a lever fulcrumed to turn about a predetermined axis and having three arms projecting outwardly from and angularly spaced around said axis, a shiftable garnish molding button connected to a first one of said arms and operable to swing said lever from a locked position through an unlocked position to an unlatching position and back, an abutment carried by a second one of said arms and operable as said lever is swung to said unlatching position to engage and turn said operating element to said unlatched position, and a wedging member carried by the third one of said arms and projecting into the path of said operating element when said lever is in said locked position to engage and wedge said element against movement to said unlatched position.

3,287,050
TWO-WAY ADJUSTABLE BRACE FOR MAINTAINING DOORS IN THE FULLY OPENED POSITION
Tony Ferrante, 2219 Van Buren St., Hollywood, Fla.
Filed Mar. 24, 1965, Ser. No. 442,397
7 Claims. (Cl. 292—230)



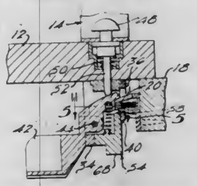
1. A door stop for outwardly swinging hinged doors whereby to maintain the door in a fully opened position, the device comprising a tubular arm that is hingedly connected to a portion of a door jamb and whereby the arm may be swung to engage the inner edge of the door, the arm being swingable in an inoperative position to be freely suspended from the pivot, the arm at its free end being provided with an adjustable yieldable bumper that has engagement with the edge of the door and means to prevent the arm from dropping downwardly when engaged with the door.

3,287,051
MAGNETIC CATCH
Lloyd L. Anderson Rockford, Ill., assignor to Amerock Corporation, Rockford, Ill., a corporation of Illinois
Filed Aug. 10, 1964, Ser. No. 388,493
16 Claims. (Cl. 292—251.5)



5. In a device for selectively holding first and second parts in a predetermined position relative to each other, the combination of, a first member including a permanent magnet and a face disposed substantially in a single plane and facing outwardly, a second member composed of magnetic material and having a surface adapted for engagement with said face whereby the flux path of said magnet extends through said fact to said surface, first means for mounting said first member on one of said parts, second means for mounting said second member on the other of said parts, one of said mounting means including an element rigid with the corresponding member and a seat assembly receiving and engaging said element to permit movement of said corresponding member about at least two perpendicular axes which parallel said face, at least a portion of said seat assembly being resilient and permanently stressed to exert a frictional force on said element thereby to restrain movement of said corresponding member under normal separation of said first and second parts whereby a mechanical force adjusts the two members for full face engagement of said surface and said face and said members thereafter retain their adjusted positions during service use of said device, and means independent of said resilient portion for rigidly attaching said one mounting means to the corresponding one of said parts.

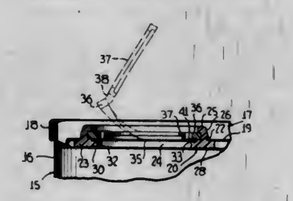
3,287,052
DOOR LATCH AND LOCK
George Wartian, East Detroit, Mich., assignor to Wartian Lock Company, St. Clair Shores, Mich., a corporation of Michigan
Filed Mar. 18, 1965, Ser. No. 440,875
4 Claims. (Cl. 292—254)



4. A door latch and lock comprising a casing adapted to be mounted on one side of a door, a strike pin movably mounted on the door jamb, said casing having a shoulder thereon facing and spaced from the door, said strike pin being disposed behind said shoulder to latch said door when the latter is in its closed position, a handle pivoted in said casing and engageable with said strike pin to move the latter out of engagement with said shoulder to unlatch the door, said casing having an integral cam surface outwardly of said shoulder, said cam surface engaging said strike pin to move the latter out of the path of said shoulder as the door swings closed, a manually operable locking member rotatably mounted in said casing and having a part which, in a locked position thereof, is engageable with said handle to prevent pivoting of said handle and unlatching of said door, said locking

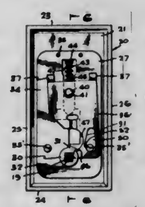
member having a blocking portion thereon engageable with said strike pin when said locking member is in said locked position and the door is open to prevent engagement of said strike pin by said cam surface on said casing as the door is subsequently closed.

3,287,053
PLASTIC CONNECTOR WITH INSERT
Frederick J. Stec, Oak Lawn, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Mar. 5, 1965, Ser. No. 437,448
6 Claims. (Cl. 292—256.63)



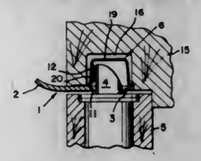
1. A dispensing unit for insertion in an opening in a container comprising a tubular connector having an opening therethrough and including inner and outer walls, means on said outer wall for snap-in locking engagement, said connector being of varying longitudinal section to define a seat surrounding said opening, a closure disc seated on said seat, a radially outwardly extending groove in said inner wall longitudinally adjacent said seat, and a deformable locking ring seated in said groove and releaseably retaining said closure disc on said seat, said locking ring having handle means for facilitating the removal thereof, and means securing said closure disc to said locking ring for removal therewith.

3,287,054
SPINDLE ROTATING PULL MEANS
Fred J. Russell, 8635 Otis St., South Gate, Calif., and George B. Solovieff, San Clemente, Calif.; said Solovieff assignor to said Russell
Filed Mar. 23, 1964, Ser. No. 353,741
4 Claims. (Cl. 292—336.3)



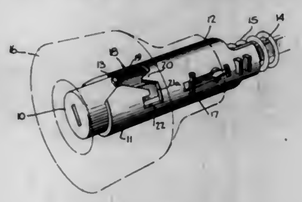
1. A door lock structure including a frame adapted to be mounted on a door, a spindle having a manually actuable handhold thereon, said spindle being rotatably mounted on the structure, a crank arm in nonrotatable engagement with the spindle, a manually actuable thumbpiece pivotally mounted on the frame and a drive portion of said thumbpiece having a path of movement relative to said frame, a slide plate having a vertically movable and laterally yieldable mounting on said frame, a first shoulder on said slide plate in engagement with said drive portion and a second shoulder on said slide plate adjacent said crank arm, said second shoulder being vertically and laterally shiftable against said crank arm upon movement of the slide plate in response to movement of the drive portion of the thumbpiece whereby to rotate said crank arm.

3,287,055
ADJUSTABLE STRIKE
Ernest L. Schlage, Burlingame, Calif., assignor to Schlage Lock Company, a corporation
Filed May 12, 1964, Ser. No. 366,699
5 Claims. (Cl. 292—341.12)



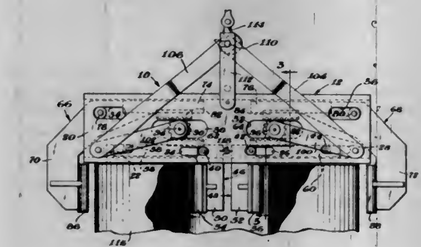
3. In a door strike structure that includes an outer strike plate, a generally planar latch bolt engaging element disposed generally at right angles to said plate, and an inner plate integral with the inner edge of said element,
said element being provided with a horizontally elongated opening to permit deflection of the adjacent portion of said element between said outer plate and said inner plate,
whereby said portion may be deformed outwardly of the slane of said element to provide a horizontally elongated projection reducing the clearance between said portion and the associated side of a latch bolt.

3,287,056
LOCK PUSH BUTTON CONTROL
Mathias M. Check, Strafford, Pa., assignor to Eaton Yale & Towne Inc., a corporation of Ohio
Filed Apr. 20, 1964, Ser. No. 361,028
3 Claims. (Cl. 292—347)



3. In a lock of the class described having a knob, a push button movable on the knob and equipped with a lug, and a substantially L-shaped slot formed for said lug on a part of the knob, said slot including a longitudinal portion in which said lug moves as the push button is depressed to an axially inward locking position, and a transverse portion in aligned relation to said lug when the push button is in said axially inward position and in which portion said lug may be moved incidental to rotation of the button, the improvement that comprises means extending between the longitudinal and transverse portions of the L-shaped slot on said part of the knob whereby to hold said lug against movement from the longitudinal to the transverse slot portion while said button is in said axially inward position, and said slot formed with a portion allowing clearance for movement of said lug past said means when the push button is in a position somewhat displaced longitudinally from said axially inward position, so that a rotating movement then may be utilized for placing the push button in its axially inward position.

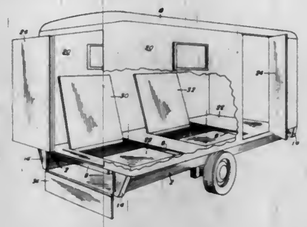
3,287,057
COIL TONGS
Warren H. Gallapoo, Jackson, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Feb. 9, 1965, Ser. No. 431,370
3 Claims. (Cl. 294—81)



1. Coil tong apparatus comprising a hollow rigid frame having plate-like side walls, a top plate and a bottom plate, said side walls having an array of similarly disposed and aligned slots near said bottom plate, a pair of aligned slots near said top plate, and a pair of slots disposed in the central part of each said side walls, two pairs of jaw assemblies, each jaw assembly including an L-shaped member having a base part and a leg part, said base part of each member extending below said bottom plate and having a jaw affixed thereto, the leg part of one L-shaped member of one pair of jaw assemblies extending adjacent to said bottom plate, roller means coupled between said leg parts adjacent to said bottom plate and adjacent slots in said array of slots which are near said bottom plate, the leg part of each of the L-shaped members of the other pair of jaw assemblies being disposed adjacent to said top plate, roller means coupled between each of said leg parts of the L-shaped members which are disposed adjacent to said top plate and said aligned slots which are near said top plate, four rack gear elements, one rack gear element being fixedly secured to the leg part of a respective L-shaped member with said gear elements of one pair of jaw assemblies facing the gear elements of the other pair of jaw assemblies, a pair of pinion gears, said pinion gears each being fixedly coupled onto a shaft and also coupled to the rack gear elements of two jaw assemblies which are facing each other, said shafts each extending through said centrally disposed slots in said side walls, and means coupled to each of said shafts for rotating said pinion gears.

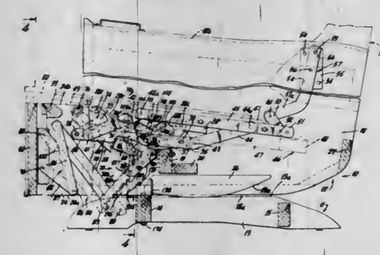
3,287,058
TRAILER VAN CONSTRUCTION
Maynard W. Wells, 3668 Gordon Road, Elkhart, Ind.
Filed Jan. 8, 1964, Ser. No. 336,571
4 Claims. (Cl. 296—37)

1. In a trailer frame construction of the character described, a pair of parallel main support members in horizontal spaced relation and a plurality of pairs of horizontally spaced cross members disposed in perpendicular relation to said main support members, said main support members being of "C" configuration in cross section opening inwardly and having an upper and lower lip portions extending downwardly, a plurality of pairs of cross members disposed in spaced perpendicular relation to said main support members, each member of said pair vertically disposed in spaced relation, the upper member of each of said pair of cross members being integrally joined to the upper lip portions of each of



said main support member and the lower member of each of said pair of cross members being integrally joined to the lower lip portions of each of said main support members.

3,287,059
RECLINER ROCKER LOUNGERS AND HARDWARE THEREFOR
Ernest S. Rosmarin, Roslyn, N.Y. (% Futorian Manufacturing Corp. of New York, Amsterdam, N.Y.)
Filed Nov. 17, 1964, Ser. No. 411,776
8 Claims. (Cl. 297—69)

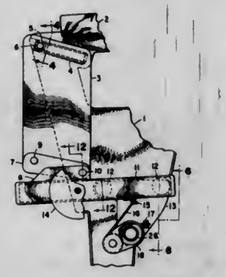


1. In combination, a chair support, a footrest, means to project said footrest relative to said support, from a fully retracted to a projected position of said footrest, spring means to actuate said projecting means to project said footrest from said fully retracted to said projected position, releasable means to lock said projecting means in the fully retracted position of said footrest to prevent projection of said footrest, and manually controlled means to release said locking means to permit said spring means to actuate said projecting means and project said footrest from said fully retracted to said projected position thereof, said spring means being in its greatest loaded condition in the fully retracted position of said footrest and decreasing in load from its greatest loaded condition as said footrest is projected from its fully retracted position.

3,287,060
RETRACTING CHAIR
Gerald F. Thompson, Grand Rapids, Mich., assignor to American Seating Company, Grand Rapids, Mich., a corporation of New Jersey
Filed Aug. 23, 1965, Ser. No. 481,732
6 Claims. (Cl. 297—332)

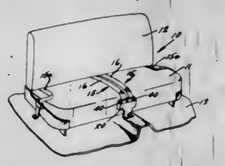
1. In a retracting chair, a fixed frame, a pair of spaced slide channels mounted on said frame for horizontal movement, a seat pivotally mounted on said slide channels and extending therebetween, a cross tube mounted on

said frame, a lever mounted on said tube having an outwardly-extending free end portion, a pulley pivotally mounted on said free end portion, a cable having one end secured to said frame and another secured to said



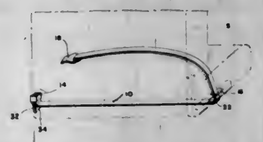
slide channels and extending about said pulley, and spring means carried by said cross tube and engaging said lever for normally urging said lever rearwardly to retract said slide channels but yielding under tension when said slide channels are moved forwardly with said seat.

3,287,061
HOLDER FOR SEAT BELTS
Arthur S. Nicholas, 915 Carrier Creek Blvd., Grand Rapids, Mich.
Filed Oct. 2, 1964, Ser. No. 401,123
2 Claims. (Cl. 297—385)



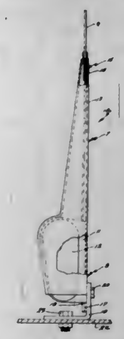
1. In combination with a vehicle having a floor panel and a seat above said floor panel, said seat having a generally upright front wall, a storage pocket for safety belt buckles having a generally tubular body member the upper portion of said body member being shaped to provide a pair of spaced upstanding side walls joined to each other intermediate the ends of said body member and defining an upwardly opening buckle receiving pocket; the remainder of said body member having its walls pressed together to provide an elongated stem integral with the bottom of said pocket, said body member being molded of resilient synthetic resinous material characterized by plastic memory and having sufficient rigidity to stand erect and support the weight of buckles stored in said buckle receiving pocket while said pocket is supported on said stem; an integral foot formed on said stem by the folding of the lower end portion of said stem and extending at a substantial angle to seat against said floor panel and a detachable fastener being mounted through a said foot portion for anchoring said storage pocket to said floor panel; said folding of said foot portion creating a resilient bias firmly pressing one side wall of said buckle receiving pocket against said seat; the lower portion of said stem and said foot portion being resiliently reinforced to assure said resilient bias.

3,287,062
RETRACTABLE SAFETY BELT
Richard G. Board, 3000 Connecticut Ave., Bethesda, Md., and Nelson H. Shapiro, Hyattsville, Md. (7001 Old Cabin Lane, Rockville, Md. 20852)
Filed May 8, 1964, Ser. No. 366,072
7 Claims. (Cl. 297—388)



1. In combination with a vehicle seat, a seat belt outlet disposed at one side of said seat, a seat belt arranged to move through said outlet and having a fastener at an exposed end thereof, releasable means disposed at the opposite side of said seat for retaining said fastener, means for automatically retracting said belt through said outlet when said fastener is released, means operative when said fastener is retained at said opposite side, and independent of the length of belt extended from said retracting means, for restricting extensile movement of said belt through said outlet, and additional means responsive to predetermined increased tension in said belt after operation of said restricting means for clamping said belt at said one side of said seat.

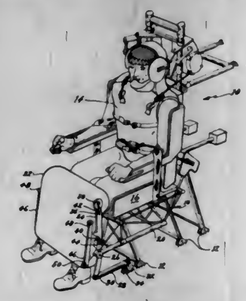
3,287,063
RETRACTOR HOUSING
Arthur S. Nicholas, 1526 Groton Road SE., East Grand Rapids, Mich.
Filed Aug. 7, 1964, Ser. No. 388,242
5 Claims. (Cl. 297—388)



1. In combination, a vehicle safety belt, said belt having a web portion and a connector portion, said web portion including a thick doubled portion adjacent said connector portion, a retractor for said belt biasing said belt into rolled-up storage position, a storage housing for said belt and retractor, said storage housing having a hollow body member, the upper portion of said body member being tubular and forming a throat at the upper end thereof of a size sufficient only to pass said web of said belt, the end of said upper portion forming a stop for said connector portion to limit retraction of said belt and cause said thick doubled portion to be retained therein when retracted; the lower end of said body member being enlarged to form a retractor receiving chamber substantially enveloping said retractor, said chamber having an opening through which said retractor is received into said chamber; the upper end of said retractor chamber communicating with said upper portion and said belt

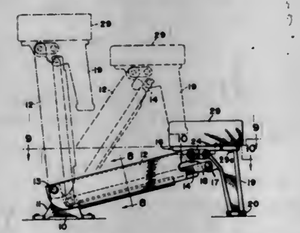
extending therethrough to said retractor; anchor means for attaching said retractor to a supporting surface; and said body member being a single integral piece of a material having limited flexibility, and yet sufficient rigidity to support itself and the weight of the safety belt in a generally upright position.

3,287,064
LEG RESTRAINT STOWING AND POSITIONING LINKAGE
Howard E. Freeman, Grand Prairie, Tex., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force
Filed Feb. 27, 1964, Ser. No. 347,978
3 Claims. (Cl. 297—390)



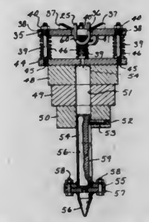
1. A knee and leg restraint system comprising a seat pan mounted on a support structure for movement forwardly and backwardly in a straight line from an unrestrained position to a restraint position, a leg and knee cover and linkage means connecting said seat pan and said cover to cause said cover to move away from said seat pan with its bottom portion canted away from said seat pan when said seat pan is moved to its unrestrained position and to cause said cover to move toward said seat pan and rotate downwardly to exert a pressure upon the knees and legs of a seated astronaut when said seat pan is moved to restraint position.

3,287,065
HORIZONTAL KNEELER
Chester J. Barecki, Grand Rapids, and James R. Shore, Belding, Mich., assignors to American Seating Company, Grand Rapids, Mich., a corporation of New Jersey
Filed Oct. 28, 1965, Ser. No. 505,554
4 Claims. (Cl. 297—426)



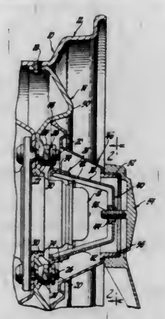
1. In a kneeler structure comprising a kneeler board and kneeler board supports equipped with depending legs and a pair of spaced base supports, link mechanism for maintaining said kneeler board in horizontal position in upper and lower positions, said mechanism comprising a cover link and an enclosed bar link in vertically-spaced, parallel arrangement, the links being connected at their lower ends to said base supports and at their upper ends to said board support, a cross tube connecting the cover links, and a torsion spring mounted within said tube with one end fixed to said tube and the other end rigidly held within the board support.

3,287,066
HAMMERING TOOLS
Roy O. Billings, Box 2611, Milwaukee, Wis.
Filed Feb. 12, 1964, Ser. No. 344,385
5 Claims. (Cl. 299—37)



1. A hammering tool for use in connection with a vertically reciprocable member comprising a weighted housing having means for connection with said vertically reciprocable member and having a vertical bore, a shank telescopically slidably mounted in said bore, means at the upper end of said bore positioned to engage and hammer said shank where the shank telescopes in the bore, said shank having a longitudinal groove therein terminating short of its upper and lower ends, a set screw threaded in said housing and projecting into said shank groove, and a tool carried by the lower end of said shank.

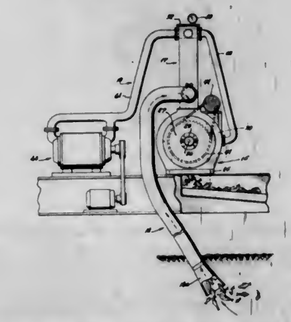
3,287,067
WHEEL COVER
Arnold R. Brown, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 4, 1964, Ser. No. 394,528
4 Claims. (Cl. 301—37)



1. In combination with a vehicle wheel an annular mounting member mounted on said wheel and including a plurality of annularly spaced abutments located in axially outwardly spaced relationship to said wheel, a support member including a plurality of annularly spaced portions normally located in axially inwardly spaced relationship to said abutments, means interconnecting said members and locating said portions in axial alignment with said abutments, a wheel cover including a portion engageable with a portion of a vehicle wheel to axially locate said cover relative to said wheel, and means mounted on said cover and operatively connected to said support member to move said support member axially out-

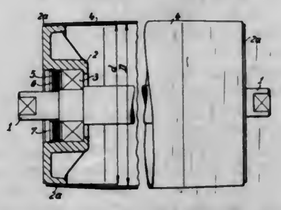
wardly of said mounting member to move said portions thereof into engagement with said mounting member abutments and locate said cover on said wheel.

3,287,068
ARTICLE HANDLING PUMP
Howard J. Kimmerle, Long Beach, Calif., assignor to Harbor Boat Building Co., Terminal Island, Calif., a corporation of California
Filed May 26, 1965, Ser. No. 459,008
13 Claims. (Cl. 302—14)



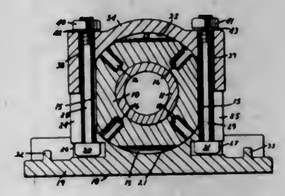
1. An apparatus for raising and conveying articles disposed under the influence of ambient atmosphere comprising means forming a substantially hermetically closed chamber, an article intake conduit having an open end for engagement with the articles and communicating with the chamber, a rotary discharge mechanism associated with the chamber and embodying sectors substantially hermetically sealed with the chamber when a sector is in article receiving position, means including a pump and a line to pull a vacuum in said chamber whereby atmospheric pressure will cause a flow of articles through the intake conduit into the chamber and thence by gravity into the sector which is in article receiving position, and control means to open, shut off, or regulate the vacuum pull exerted in the chamber, said control means comprising a valve in the line, a vertically movable member in the chamber actuatable in one direction by excessive accumulation of articles or a liquid carrier thereof in the chamber and in the other direction by gravity, and a linkage between the member and the valve.

3,287,069
ROLLER FOR SUPPORTING CONVEYOR BELTS
Paul Jonik, Vocklabruck, Austria, assignor to Doubrava K.G., Attnang-Puchheim, Austria
Filed Feb. 25, 1963, Ser. No. 260,634
2 Claims. (Cl. 308—20)



1. A roller for supporting conveyor belts, said roller comprising a shaft, two molded flange members spaced apart in the axial direction of said shaft and rotatably mounted thereon, said flange members being constituted of thermosetting synthetic resin material, and a roller barrel constituted by a metal tube connecting said flange members, said flange members having conical peripheral surfaces which converge outwardly towards the axis of the shaft, said tube including an intermediate portion having an inside diameter exceeding the largest outside diameter of said flange members, and two tapering conical end portions which converge outwardly towards the axis of the shaft and are press-fitted on said peripheral surfaces of said flange members.

3,287,070
SELF-ALIGNING WEAR ADJUSTABLE, BURNER BEARING
Harry H. Rawson, % Washington Machinery & Supply Co., W. 9 Cataldo, Spokane, Wash.
Filed June 8, 1964, Ser. No. 373,347
5 Claims. (Cl. 308—58)

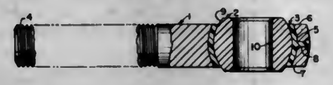


5. A bearing construction for adjustably supporting a cylindrical bushing which rotatably receives a shaft comprising:
a sleeve encircling said bushing and in which said bushing is removably fixed, said sleeve having a portion of its outer surface spherical in shape about a point on the axis of the bushing;
a bearing block having a mounting base by which the block may be secured upon a support such as a framework;
said block having an interior sleeve seating surface conforming to the spherical surface of the sleeve on which the spherical surface is movable;
said block having two exterior parallel channels extending upwardly from the mounting base which channels intersect said interior sleeve seating surface for a short distance down from the top of the block, the lower ends of the channels being enlarged;
a bolt in each channel having its head in the enlarged lower end of the channel;
means on the base engageable with the bolt heads to restrain the bolts from falling out of the channels;
a cap for said block apertured to receive said bolts and having an interior spherical surface conforming to the spherical surface of the sleeve;
said sleeve having a plurality of radial sockets in the spherical surface perpendicular to the axis of said bushing; and
said sleeve including four circumferentially disposed straight slots located ninety degrees apart to receive the bolts seated in said channels.

3,287,071
MOLDED BEARING ASSEMBLY AND METHOD OF MAKING SAME
William S. Tucker, Canaan, N.H., assignor to Miniature Precision Bearings, Inc., Keene, N.H., a corporation of New Hampshire
Filed July 28, 1965, Ser. No. 475,453
12 Claims. (Cl. 308—72)

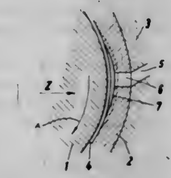
1. A bearing assembly comprising:
(a) a rigid undeformed housing having a wall surface defining an opening therethrough;

(b) an inner bearing member disposed within said opening and spaced from said housing with a minimum degree of diametrical clearance; and
(c) an undeformed, one-piece race of low shrink plastic material molded under relatively low pressure directly within the opening of said housing and in its



as molded condition being in unstressed line-to-line, rotatable circumferential engagement with said inner bearing member and in non-rotative engagement with the wall surface of said opening.

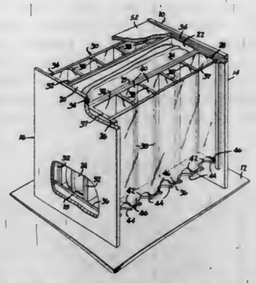
3,287,072
SLIDING FRICTION BEARING HAVING LUBRICATION POCKETS AND SHAFT OUTFITTED THEREWITH
Alfred Buske, Neckarsulm, Wurttemberg, Germany, assignor to Karl Schmidt G.m.b.H., Neckarsulm, Wurttemburg, Germany, a corporation of Germany
Filed Dec. 3, 1963, Ser. No. 327,614
9 Claims. (Cl. 308—122)



1. In combination, a horizontally disposed shaft outfitted with a fixedly positioned radial friction bearing having a circumferentially continuous bearing surface with a lubrication pocket formed as a recess in a side portion thereof, said pocket having at least one peripheral edge for oil discharge from the pocket for lubrication of the bearing, said peripheral edge being substantially continuously inclined with respect to the bearing axis downwardly to a locus of termination adjacent an end of the bearing, means for rotating the shaft so that the shaft journal surface as is passes said pocket can move from a leading edge of the pocket toward said peripheral edge, said locus of said termination of the peripheral edge being located in the low pressure area of incipient film pressure whereby foreign bodies in a lubricant contained in said pocket are deflected toward said end of the bearing.

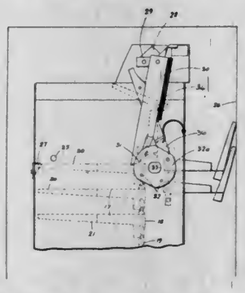
3,287,073
REFRIGERATED FOOD DISPENSER AND STORAGE CONTAINER
Peer Gynt Holtkamp, 1731 Linden Ave., East Lansing, Mich.
Filed June 8, 1964, Ser. No. 373,287
8 Claims. (Cl. 312—36)

1. A device for cooling and dispensing individual pats or containers of butter, spreads, condiments and the like, comprising, in combination, a support frame provided with a coolant receiving receptacle having at least one vertically disposed side wall, a pat dispensing container subdivided into a plurality of elongated compartments each adapted to receive a plurality of prepackaged pats therein and having pat dispensing slots formed adjacent one end of the several compartments, and means for removably mounting the dispensing container in vertical pat dispensing position against at least said one side wall of the support frame and in proximate pat cooling rela-



tion with a suitable coolant medium placed within the receptacle of the support frame.

3,287,074
COIN-FREED VENDING MACHINES
Ernest Ellis Crossley, Ansdell, Lancashire, England, assignor to Ditchburn Vending Machines Limited, Lytham, England, a corporation of Great Britain
Filed July 29, 1964, Ser. No. 385,922
5 Claims. (Cl. 312—97)

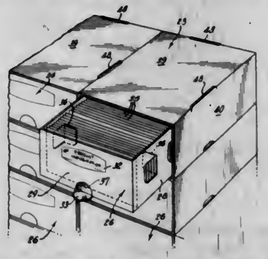


1. A coin-freed vending machine comprising an endless conveyor, a series of shelves projecting from said endless conveyor, means for traversing said endless conveyor in step-by-step fashion, a casing enclosing said conveyor and shelves and a delivery opening in said casing, each of said shelves having an inner portion secured to said endless conveyor and an outer portion articulated on said inner portion, means yieldable under pressure to retain said outer portion of each shelf aligned with the inner portion and stationary means in said casing for engaging and folding said outer portion downwardly relative to said inner portion as each shelf is traversed upwardly from said delivery opening in said casing.

3,287,075
PACKAGE AND CABINET UNIT
Leonard A. Batke, Somerville, and Cleon E. Hammond, Hopewell, N.J., assignors to Ethicon, Inc., a corporation of New Jersey
Filed Dec. 12, 1962, Ser. No. 244,112
7 Claims. (Cl. 312—108)

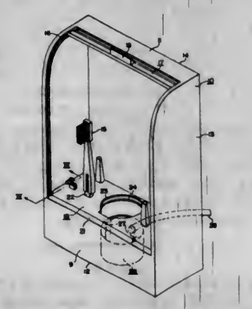
1. A package and cabinet unit which comprises a sleeve of rectangular cross section having an open front end, and a rectangular drawer adapted to be inserted in and withdrawn from the open front end of said sleeve, said sleeve comprising a pair of opposed horizontal side walls and a pair of opposed vertical side walls and said horizontal and vertical side walls being joined at the corners of the sleeve to provide a rectangular slide for

said drawer, the side walls of said sleeve having a plurality of side fold-out tabs and a corresponding plurality of side positioning slots, said side tabs being foldable sideways outwardly from said side walls and being so located with respect to said side slots that the tabs of one sleeve may be inserted in the slots of another to firmly join a plurality of said sleeves and form a self-supporting cabinet with all units facing in the same direction, the side tabs of the sleeves forming the cabinet protruding through the side walls of adjacent sleeves with which they are as-



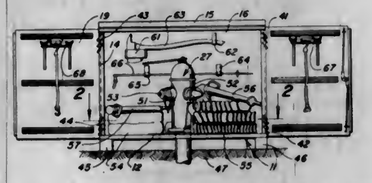
sembled and said side tabs presenting inclined edges which are adapted to provide a cam action with the rear of one of said drawers as the drawer is inserted in one of the sleeves so that movement of the rear of the drawer into contact with one of the inclined tabs presses the side tab against an inside surface of the sleeve and out of the way of the drawer, said fold-out tabs in each sleeve being detachably held flat and aligned with a side of said sleeve prior to assembly of the sleeve in the cabinet and being detachable from this position and foldable outwardly from the sleeve while remaining attached thereto for assembly in the cabinet.

3,287,076
ELECTRIC TOOTHBRUSH STORAGE CASE
Thomas G. Spofford, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 18, 1964, Ser. No. 419,397
10 Claims. (Cl. 312—206)



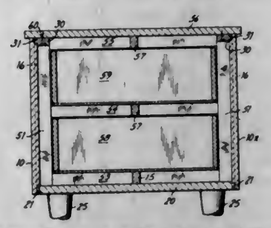
6. A storage case for a power driven toothbrush handle, detachable brushes and a charger for said handle, said case comprising: a box-like structure including a base, a rear wall and a pair of spaced side walls, a shelf spaced above the base to provide therebetween a cavity, a battery charger in said cavity, a rack insertable between said side walls above said shelf and adapted to rest thereon, means on said rack for removably supporting toothbrushes, said shelf and rack having aligned openings therethrough for insertion of a power handle into said charger, and means for locking said rack in said case whereby the rack is capable of resisting vertical displacement upon removal of toothbrushes or power handle, said rack being removable from said case to facilitate cleaning thereof.

3,287,077
HYDRANT HOUSING
Paul V. Metcalfe, 1681 Essex Road, Columbus, Ohio
Filed Feb. 28, 1966, Ser. No. 534,580
13 Claims. (Cl. 312—217)



1. An assembled hydrant accessory house for placing over a previously installed hydrant and for housing said hydrant and accessories comprising:
a metal bottom formed with an opening;
a metal back;
a metal top;
metal ends; and
a plurality of separate bottom plates having semi-circular cut-out portions laid over the opening in the bottom and closing said opening except for the complementary semi-circular cut-out portions which fit closely around the sides of the hydrant when the house is placed over the hydrant with the upper part of the hydrant extending up into the house through the opening in the bottom of the house.

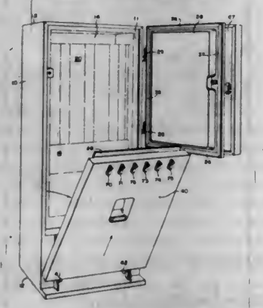
3,287,078
DOVETAIL FURNITURE
William Lew, 27 Pine Drive N., Roslyn, N.Y.
Filed Oct. 13, 1964, Ser. No. 403,536
2 Claims. (Cl. 312—263)



1. A substantially rectangular cabinet of dovetail construction comprising a pair of identical side walls of face to face relationship, each having an edge to edge pair of vertical parallel disposed dovetail channels suitably adjacent the front and suitably adjacent the back edge of said wall and further each having a pair of horizontal parallel disposed dovetail channels suitably adjacent the top and suitably adjacent to the bottom edges of said wall, said horizontal channels each running from the back edge of the wall and terminating in the front dovetail channel, thereby forming a continuous square intercommunicating system of dovetail channels engaging the top, back and bottom edges at two points adapted to slidably receive structural members; a bottom wall structural rectangular member having a pair of opposed dovetail rails disposed in the dovetail channels of said face to face side walls; a pair of front and back rectangular drawer-apertured drawer supporting planar frame members having opposed vertically disposed dovetail rails, each frame member respectively lockingly disposed in the vertical dovetail front and rear channels of said walls; a pair of suitably long support bars each having a single longitudinal dovetail

rail disposed in a respective top dovetail channel of a side wall intermediate said front and back frame members, a top wall disposed on the top edges of said side walls, said frames and said support bars, and means for securing said top wall to said support bars.

3,287,079
REFRIGERATED VENDING CABINET
Iber C. Courson, Longmeadow, Mass., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 28, 1965, Ser. No. 451,577
4 Claims. (Cl. 312—291)

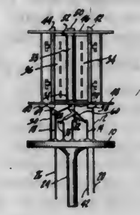


1. A refrigerated vending machine comprising, an upstanding cabinet structure, means dividing said structure into an upper refrigerated compartment and a lower machinery compartment, said cabinet having closed back, side, top and bottom walls together with an open front wall extending from top to bottom, a first door hinged at the side of said cabinet for enclosing an upper portion of the upper compartment of said cabinet, a second door hinged at the bottom wall of said cabinet for enclosing a lower portion of the upper compartment together with the lower compartment of said cabinet, said second door having an interlocking surface along its upper edge adapted to engage a lower edge of said first door when said first door is closed to thereby prevent the second door from being opened while said first door is closed, a sealing gasket extending around the sides of the first door in a manner to seal the opening of the upper portion of the upper refrigerated compartment when said first door is closed, and a sealing gasket extending around the sides and across a lower intermediate portion of the second door in a manner to seal the lower portion of the upper refrigerated compartment when the lower door is closed, the sealing gasket portion extending around the lower side of the first door being adapted to engage the interlocking surface of said second door when said first and second doors are closed.

3,287,080
ELECTRON TUBE MOUNT AND METHOD OF MAKING THE SAME
John Alexander Gausz, Watchung, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed June 27, 1963, Ser. No. 291,084
15 Claims. (Cl. 316—2)

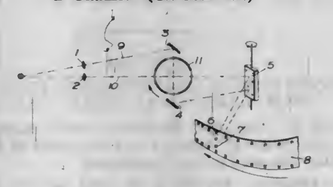
10. Method of salvaging an electron tube mount having a tubular cathode supported by two spaced insulating wafers, an assembly within said cathode comprising a folded insulated heater and a helical insulated spaced between said heater and the inner wall of said cathode, and a stem adjacent to one end of said cathode and having conducting wires fixed to leg portions of said heater and spacer that are bare of insulation and extend from said one end of the cathode, said method comprising:

(a) severing said leg portions adjacent to said conducting wires,
(b) removing said heater and spacer member from the other end of said cathode,
(c) forming an assembly of a new heater and spacer by threading the new heater through the new spacer to cause bare legs of the heater to extend from one end of the assembly and to cause the bare leg of the spacer to extend from the other end of the assembly,



(d) extending said assembly through the other end of said cathode to cause said bare heater legs to protrude from said one end of the cathode and to cause said bare spacer leg to protrude from the other end of the cathode,
(e) fixing said heater legs to two of said conducting wires,
(f) fixing a clip to one of said wafers adjacent to said other end of the cathode, and
(g) fixing said spacer leg to said clip.

3,287,081
APPARATUS FOR DETERMINING SHORT PHYSICAL PHENOMENA AND ARRANGEMENT FOR CARRYING OUT THE METHOD
Eriks Baltacis, Vienna, Austria, assignor to Osterreichische Studiengesellschaft für Atomenergie Ges.m.b.H., Vienna, Austria
Filed Feb. 27, 1964, Ser. No. 347,917
Claims priority, application Austria, Mar. 5, 1963, A 1,733/63
2 Claims. (Cl. 352—84)



1. An apparatus for the determination of short-timed physical phenomena, comprising
means for division of rays constituting the physical phenomenon, thereby providing separate light beams,
rotatable reflecting means intersecting said separate light beams for deflecting the direction of said beams to an intercepting device for said beams,
a rotatable drum shutter between said means for division of rays and said rotatable means in such position as to directly pass or occult one of said light beams,
light redirecting means positioned on diametrically opposite sides of said shutter in the other light path, and
said shutter having $2n$ dovetail-shaped apertures simultaneously passing or occulting both of said beams, whereby a change of the intensity is obtained symmetrically to the horizontal median plane of said apertures.

CHEMICAL

3,287,082

T-ALKYL CHROMATE OR T-CYCLOALKYL CHROMATE TREATED POLYOLEFINS

John R. Caldwell and Russell Gilkey, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 29, 1965, Ser. No. 517,470

7 Claims. (Cl. 8—115.5)

1. As a composition of matter, a shaped crystalline polymerized α-monoolefinic hydrocarbon of improved surface properties, only the surface of which carries a content of a chemically combined trivalent chromium compound formed by contacting the surface with a solution of a chromate ester of a tertiary alkyl or tertiary cyclo-alkyl alcohol and heating the surface.

3,287,083

FORMALDEHYDE MODIFICATION OF CELLULOSE CATALYZED BY A LEWIS ACID SALT AND FORMIC ACID GENERATED IN SITU BY A PEROXIDE

Henry R. Hushebeck, Wilmington, Del., assignor to Joseph Bancroft & Sons Co., Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 10, 1964, Ser. No. 350,653

4 Claims. (Cl. 8—116.4)

1. In a process of methylenating rayon and rayon blends involving reacting the rayon with formaldehyde at elevated temperatures in the presence of an acid catalyst the improvement which comprises employing a composition comprising 80 to 150 pounds 37% formaldehyde, 3 to 18 pounds 35% hydrogen peroxide, 4 to 20 pounds magnesium nitrate hexahydrate and water to make 100 gallons, the weight ratio of the hydrogen peroxide to the magnesium nitrate being 1/0.2 to 1/6, as a pad bath to apply the formaldehyde and catalyst to the rayon.

3,287,084

PROCESS FOR SEPARATING STRONTIUM VALUES FROM RARE EARTH METAL VALUES

Harold H. Van Tuyl, Richland, Wash., assignor to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Mar. 20, 1963, Ser. No. 266,765

6 Claims. (Cl. 23—23)

1. A process for separating strontium values from nonradioactive aqueous acid solutions having a pH value of between 2 and 2.5 containing said values together with rare earth metal values, comprising adding a water-soluble tartrate-anions-containing compound and hydrogen peroxide to said solution; incorporating a lead sulfate precipitate in the solution whereby said strontium values are carried on said lead sulfate; and separating the precipitate from the aqueous solution.

5. A process of separating strontium values from rare earth fission product values contained in an aqueous solution, comprising adding sodium sulfate to the solution; adjusting the pH value to between 2 and 2.5; adding tartaric acid and hydrogen peroxide thereto; incorporating lead nitrate in the solution; adding ethylene glycol whereby a lead sulfate precipitate forms and the strontium values are carried on said precipitate; and separating said precipitate from said solution.

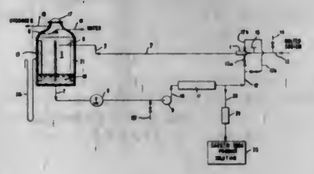
3,287,085

CONVERSION OF SODIUM OR POTASSIUM TO ITS HYDROXIDE OF CYANIDE

William R. Jenks, Memphis, and Norman R. Levins, Hixson, Tenn., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Oct. 15, 1963, Ser. No. 316,282

8 Claims. (Cl. 23—79)



1. The method of producing hydrogen and a hydroxide of a metal of the group consisting of sodium and potassium, said method comprising:

(*a*) continuously cycling a stream of an aqueous solution of said hydroxide at a temperature from about 50° C. to just below the boiling point of said solution in a confined cyclic flow path which includes as a part thereof a pipeline reactor through which said solution is forced, under turbulent flow at a velocity of at least 1.3 ft./sec.;

(*b*) continuously injecting into said stream in said reactor in a direction of flow of said stream therein a molten stream of said metal having initially a diameter not exceeding 1/16 in. at a flow rate such that the relative rates of flow to said reactor of said aqueous solution and said metal will provide a weight ratio of water to metal of at least 35/1, thereby reacting in said reactor said metal and said solution to produce a two-phase stream of hydrogen and a solution of the hydroxide of said metal;

(*c*) continuously passing said two-phase stream into a disengager whereby said hydrogen is separated from said solution stream, and continuously removing the separated hydrogen from said cyclic flow path;

(*d*) continuously withdrawing from said cyclic flow path part of the recycle solution stream as a product solution of said metal hydroxide;

(*e*) continuously feeding the remainder of said recycle solution stream into said reactor at right angle to and symmetrically about said stream of metal at about the point of injection of the latter;

(*f*) and continuously feeding into said recycle solution stream water at such a rate as will maintain substantially constant the water content of said recycle solution stream being fed to said reactor.

4. The modification of the method of claim 1 wherein hydrogen cyanide is continuously fed into the recycle solution stream at a rate not exceeding that stoichiometrically equal to the rate of injection of the metal in step (*b*), whereby the metal hydroxide produced in the reactor is converted by reaction with said hydrogen cyanide to the cyanide of the metal; wherein the product solution withdrawn in step (*d*) and the recycle solution fed into the reactor in step (*e*) are solutions of the cyanide of the metal; and wherein the solution cycled in the flow path is cycled therein at a temperature from about 50° C. up to but not exceeding 80° C.

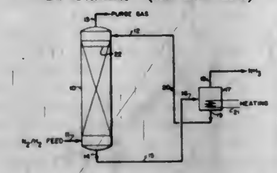
3,287,086

METAL HALIDES AS COMPLEXING AGENTS IN REVERSIBLE CHEMICAL REACTIONS

Robert P. Cahn, Millburn, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed Jan. 27, 1964, Ser. No. 340,269

12 Claims. (Cl. 23—198)



9. An improved process for the synthesis of ammonia from nitrogen and hydrogen gas comprising the following steps in combination:

(A) flowing a gas stream comprising nitrogen and hydrogen upwardly through a reaction zone at ammonia synthesis conditions of temperature and pressure, said reaction zone containing a bed of ammonia synthesis catalyst which catalyst is relatively chemically inert to a reversible ammonia complex forming molten metal halide at said synthesis conditions, wherein said gas stream contacts said catalyst bed thereby forming product ammonia;

(B) flowing a stream of a reversible ammonia complex forming molten metal halide downwardly through said reaction zone so that said rising gas stream and said descending molten metal halide stream are in intimate countercurrent contact with each other, whereby said product ammonia is removed from said gas stream as a molten metal halide-ammonia complex thereby substantially reducing the ammonia partial pressure in said gas stream thus driving the synthesis reaction in the direction of forming more product ammonia.

3,287,087

FLUID BED PROCESS FOR PRODUCING RUTILE PIGMENT AND REDUCING PIGMENT ACCRETION

Arthur Wallace Evans, Alan Edward Callow, and John Peacock, Middlesbrough, England, assignors to British Titan Products Company Limited, Durham, England, a company of the United Kingdom

No Drawing. Filed Feb. 4, 1963, Ser. No. 256,152

Claims priority, application Great Britain, Feb. 5, 1962, 4,416/62

7 Claims. (Cl. 23—202)

6. In a process for producing titanium oxide pigment by the vapor phase oxidation of a titanium tetrahalide selected from $TiCl_4$, $TiBr_4$, and TiI_4 within a fluidized bed of inert solid particles maintained at a temperature of 900 to 1200° C., a process for producing a rutile pigment and reducing the accretion of the pigment on the bed particles which comprises oxidizing the titanium tetrahalide in the presence of a small amount of a zirconium tetrahalide selected from $ZrCl_4$, $ZrBr_4$, and ZrI_4, the halogen in the titanium tetrahalide and in the zirconium tetrahalide being the same.

3,287,088

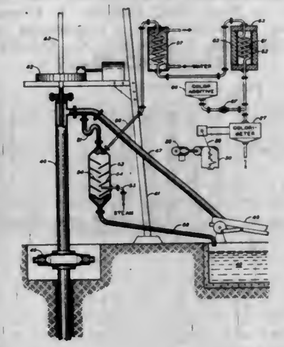
ANALYZING DRILLING FLUID FOR AROMATIC HYDROCARBONS

Delmar O. Seevers, Fullerton, Calif., assignor to Chevron Research Company, a corporation of Delaware

Filed Sept. 24, 1956, Ser. No. 611,708

2 Claims. (Cl. 23—230)

1. The method of continuously recording the presence of aromatics in water absorbed in a drilling fluid during the drilling of a well bore comprising the steps of subjecting a portion of said drilling fluid returning to the earth's surface to agitation in the presence of steam to extract the more volatile constituents therefrom, separating said steam containing said volatile constituents from said drilling fluid, condensing said steam to a liquid containing said volatile constituents, subjecting a continuous stream of said liquid to at least one kiloroentgen of ionizing radiation of



a predetermined dose to convert at least a portion of the aromatics therein to phenolic compounds, colorimetrically detecting said irradiated water to establish the concentration therein of said phenolic compounds, and recording the detected color changes in accordance with the depth in said well bore where said aromatics in water are absorbed into said drilling fluid.

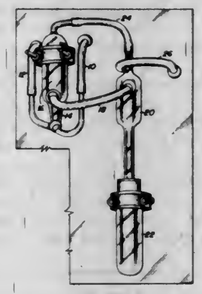
3,287,089

CHEMILUMINESCENCE SAMPLER

Richard L. Wilburn, Salt Lake City, Utah, assignor to the United States of America as represented by the Secretary of the Army

Filed May 28, 1964, Ser. No. 371,145

1 Claim. (Cl. 23—254)



A continuous sampler for detecting and measuring the luminescence produced in a luminol solution due to organo-phosphorous compounds in the air comprising:

a transparent cell having a mixing chamber communicating with the lower end of said cell,

light sensing means adjacent said cell, said means including a photomultiplier tube, an amplifying circuit and a recorder calibrated to measure the amount of said compounds in the air,

an air inlet and a solution inlet connected to said mixing chamber,

a sump connected to said cell for discharging said solution from said cell,

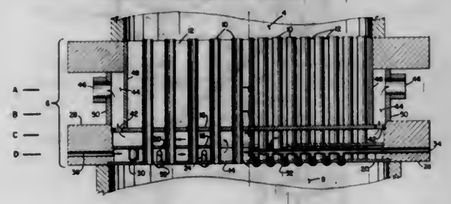
means for equalizing the pressure between said cell and said sump, and

an exhaust connected to said sump for drawing a vacuum through said mixing chamber, said cell and said sump.

3,287,090
GAS DISTRIBUTOR

John Edward Loeffler, Jr., Lyndhurst, Ohio, and Paul R. Prokish, La Porte, Tex., assignors to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware

Filed Jan. 2, 1964, Ser. No. 335,274
8 Claims. (Cl. 23—277)



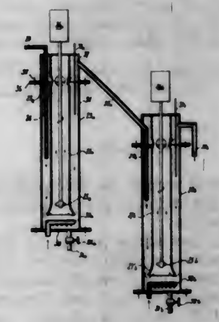
1. In an apparatus for the production of unsaturated hydrocarbons by incomplete oxidation of more saturated hydrocarbons with oxygen in a flame reaction, such apparatus having a mixing chamber for said hydrocarbons and oxygen, a flame chamber into which a plurality of auxiliary streams of oxygen are introduced to stabilize the position of said flame, and having a gas-distributor, flame-arrester, section interconnecting said chambers, and having a plurality of symmetrically-arranged groups of parallel rows of tubular channels opening into said mixing chamber and said flame chamber, a liquid-cooled radiant heat absorber interposed between said mixing chamber and said flame chamber, said absorber having a metal tube sheet forming one boundary of said flame chamber and surrounding the portion of said tubular channels opening into said flame chamber, and means positioned within said absorber for introducing said plurality of auxiliary streams of oxygen into said flame chamber through regularly spaced perforations in said tube sheet between adjacent groups of the openings of said tubular channels into said flame chamber, the improvement in said means comprising tubes in fluid communication with said means for introducing said auxiliary streams of oxygen and inserted in said perforations, radiant heat shielding and auxiliary oxygen-distributing button-like bodies having an essentially hemispherical portion and a cylindrical portion adapted for insertion in said tubes, said hemispherical portion having conduits therein arranged to direct streams of oxygen toward streams of said gaseous mixture issuing from adjacent groups of said tubular channels opening into said flame chamber, said cylindrical portion having a conduit in fluid communication with said conduits in said hemispherical portion and said tubes in said tube sheet.

3,287,091
DEVICE FOR CARRYING OUT A CHEMICAL REACTION

Patrick Nollet, La Celle-Saint-Cloud, and Pierre Sarrat and Roland Vuillemey, Grenoble, France, assignors to Commissariat a l'Energie Atomique, Paris, France

Filed Apr. 18, 1963, Ser. No. 274,032
Claims priority, application France, Apr. 21, 1962, 895,322
2 Claims. (Cl. 23—285)

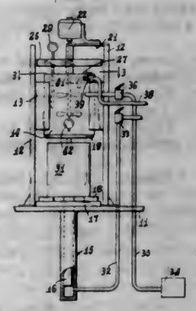
1. A device for carrying out a continuous chemical reaction in a liquid phase between at least one constituent of said phase and a gaseous fluid, said device comprising a sonic venturi-tube injector, a down-stream end for said injector, said down-stream end being immersed in said liquid phase and means for supplying a gaseous phase to said injector at a substantially constant upstream pressure, a vertical cylindrical precipitator chamber, said injector being mounted within said chamber, an inner tube for said chamber coaxial with said chamber, a flared lower extremity for said tube, a feed distributor spaced from and beneath said flared extremity at the bottom of said chamber, a liquid supply conduit connected to said distributor, lateral ports in the top portion of said inner tube, an inlet from said injector in the annular space formed between said chamber and said inner tube and opening beneath said ports and above the lower extremity of said inner tube, an overflow outlet disposed above said ports in said chamber and a rotary stirrer disposed inside said flared end of said inner tube.



3,287,092
APPARATUS FOR PROCESSING POLYURETHANE

John A. Scudder, Chicago, Ill., assignor to Chemechanical, Inc., South Holland, Ill., a corporation of Illinois

Original application Mar. 14, 1962, Ser. No. 179,750. Divided and this application Mar. 5, 1965, Ser. No. 437,416
6 Claims. (Cl. 23—285)



1. Apparatus for degassing and catalyzing a mass of polyurethane which comprises a firmly mounted upstanding open ended cylinder, a vertically adjustable closure for the bottom end of said cylinder, an open topped container of polyurethane seated on said closure, means to raise the closure into tight sealing position against the open bottom of the cylinder to locate the container in said cylinder, a movable closure for sealing the upper end of said cylinder, an impeller arranged in said cylinder and immersed in the material in the container, means connected with the interior of the cylinder effective to lower the atmospheric pressure in said cylinder sufficiently to degas said mass of polyurethane, and an inlet to admit a catalyst into said mass while it is disturbed by the impeller.

3,287,093
NUCLEAR REACTOR FUEL MATERIAL AND A METHOD OF PREPARING THE SAME

Paul A. Nelson, Wheaton, and Martin G. Chasanov, Homewood, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission

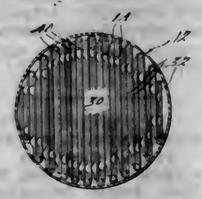
No Drawing. Filed Aug. 6, 1965, Ser. No. 477,981
2 Claims. (Cl. 23—347)

1. A method for making a reactor fuel comprising forming metallic uranium into −14 +25 mesh shot, nitriding the surface of said shot at 700 to 100° C. for one to two hours to convert 50 to 80% of the uranium to uranium mononitride, gradually increasing the temperature past the melting point of uranium, and nitriding the remainder of the uranium at 1250 to 1350° C. to produce a relatively void-free stoichiometric uranium nitride shot.

3,287,094
FLAME ARRESTER

John E. Brownell, Ferndale, Mich., assignor to Fisher Industries, Troy, Mich., a partnership

Filed Sept. 30, 1963, Ser. No. 312,500
5 Claims. (Cl. 48—192)



1. A flame arrester for an internal combustion engine comprising

an elongated one piece arrester element defined by

a plurality of connected sections each of which is oppositely folded relative to an adjacent section to form a stacked arrester element assembly,

and a housing for said arrester element having a configuration complementary thereto when said element is in the folded and nested condition, said arrester element being orientated to traverse said housing so that flow therethrough is between the sections in a direction substantially parallel to the folded ends of the sections.

3,287,095
MANUFACTURE OF GLASS

James Peter Procter, Manchester, Horace Cole, St. Helens, and Brian Yale, Salford, England, assignors to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain

No Drawing. Filed Sept. 19, 1962, Ser. No. 224,852
Claims priority, application Great Britain, Aug. 22, 1958, 27,107/58
2 Claims. (Cl. 65—2)

2. A method of manufacturing filaments of "soda-free" borosilicate glass consisting essentially of a predominating proportion of silica and lesser proportions of oxides selected from the group consisting of calcium oxide, magnesium oxide, aluminum oxide and boron oxide by drawing filaments of molten glass from a bushing, characterised in that the sole boron-containing constituent of the batch employed is aluminum borosilicate, the batch contains a proportion of silica greater than that of any other ingredient, the batch is substantially free from sodium compounds, the batch is maintained at a temperature not greater than 950° C. for a time sufficient to complete chemical reaction between the components while the batch as a whole remains solid, and the reacted batch is then fed direct to the melting chamber of the bushing, where it is heated to a temperature of about 1500° C. in order to melt the batch ingredients and form the molten glass which is subsequently drawn from the bushing as filaments.

3,287,096
METHOD FOR APPLYING A FORMING LUBRICANT TO GLASS FIBERS

Alfred Marzocchi, Cumberland, R.I., and Gerald E. Rammel, North Attleboro, Mass., assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware

No Drawing. Filed June 21, 1965, Ser. No. 465,765
1 Claim. (Cl. 65—3)

A method of making glass fiber bundles to reduce breakage during fabrication processes such as twisting, said method comprising: drawing out molten glass into fibers and promptly coating said fibers with a solution maintained at from approximately 70° F. to approximately 100° F. and consisting essentially of the following:

	Parts by weight
Water	95
Amylopectin, approx.	5
Nonionic lubricant, approx.	2
Octadecyl amine acetate, between approx. 0.00064 and 0.001 mol.	

collecting the fibers into a bundle; drawing the wetted bundle of glass fibers through air at ambient temperature with attendant windage and loss of moisture; and winding the coated bundle of glass fibers on a spool with the wraps in tight engagement with each other.

3,287,097
METHOD AND APPARATUS OF FUSING A COATING TO A METAL SURFACE

Eugene J. Limpel, Thiensville, Wis., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York

Filed Jan. 2, 1962, Ser. No. 163,642
2 Claims. (Cl. 65—40)

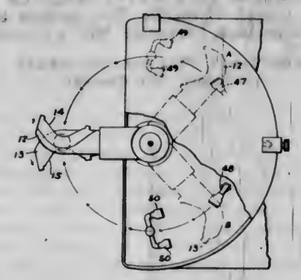


1. In the method of making a glass coated tubular member, the improvement comprising resistance preheating the tubular member with a glass tube disposed therein by passing an electric current through the tubular member, maintaining the temperature of said glass tube at a temperature approaching but below its fusing temperature, simultaneously providing supplemental heat to successive localized portions of said tubular member by inducing heat in the tubular member by bringing the tubular member into a high frequency magnetic field thereby increasing the temperature of the tubular member progressively to the fusion temperature of the glass tube, applying a vacuum between the glass tube and the tubular member to move the glass tube progressively outwardly into firm engagement with the tubular member as the

tube is heated to a plastic condition by the supplemental heat induced therein to bond the glass tube to said tubular member and remove all air and gases from the bonding area, and post heating said glass coated tubular member by passing an electric current therethrough for a predetermined time to slowly cool the glass coated metal member whereby cracking of the glass from the tubular member is eliminated.

2. Apparatus for fabricating a glass coated metal tubular member comprising, in combination, support means for securing the tubular member in a vertical position, means for disposing a glass tube inside said tubular member, resistance heating means adapted to be secured to the tubular member for establishing a current through the tubular member for preheating and post heating of the tubular member, induction heating means for inducing heat in said tubular member by bringing the tubular member into a high frequency magnetic field, said induction heating means being cooperable with said resistance heating means and adapted for relative movement up and down said tubular member to locally increase the temperature of the tubular member to the fusing temperature of the glass tube and to soften the tube to a flowing condition, carrier means for said induction heating means for moving said induction heating means axially of the tubular member, and means for forcing the softened glass tube into contact with the tubular member.

3,287,098
METHOD OF SHEARING CHARGES OF MOLTEN GLASS
William A. Stutske and Walter J. Toepfer, Toledo, Ohio, assignors, by mesne assignments, to Owens-Illinois Inc., a corporation of Ohio
Filed Oct. 3, 1962, Ser. No. 228,044
4 Claims. (Cl. 65—133)



1. The method of shearing successive charges of glass from a molten stream of glass which comprises

rotating shear blades in opposite directions in paths which intersect the molten stream,

accelerating said shear blades rapidly toward said point of intersection from initial rest positions remote from said point of intersection,

thereafter decelerating while continuing the movement of said shear blades as they approach the point of intersection such that the velocities of the shear blades at the point of intersection are less than the velocity achieved between the initial rest positions and the point of intersection.

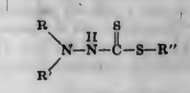
continuing to move the blades past the point of intersection at the lesser finite velocities,

thereafter re-accelerating said shear blades to a velocity greater than the velocity of the blades at the point of intersection,

and stopping said shear blades at their initial positions.

3,287,099
DESTROYING UNDESIRED VEGETATION WITH ALKYL AND BENZYL CARBAZATES
John J. D'Amico, Charleston, W. Va., and Philip C. Hamm., Webster Groves, Mo., assignors to Monsanto Company, a corporation of Delaware
No Drawing. Filed July 30, 1962, Ser. No. 213,158
11 Claims. (Cl. 71—2.3)

1. The method of destroying undesired vegetation which comprises applying thereto a phytotoxic amount of a composition containing as an essential active ingredient a compound of the structure

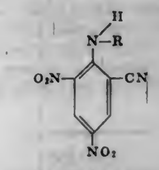


where R is selected from a group consisting of hydrogen, lower alkyl and hydroxy lower alkyl and R' is selected from a group consisting of hydrogen and lower alkyl both R and R' being hydrogen when R'' is a hydrocarbon radical and R'' is selected from a group consisting of lower alkyl, benzyl, o-chlorobenzyl, p-chlorobenzyl, 2,5-dichlorobenzyl, 2,6 - dichlorobenzyl, 3,4 - dichlorobenzyl, 2,3,6-trichlorobenzyl and 2,4,5,6-tetrachlorobenzyl.

10. A herbicidal composition comprising a phytotoxic concentration of propyl dithiocarbazate and a small amount of an organic surface active agent which lowers the surface tension of water.

3,287,100
METHOD FOR CONTROLLING UNDESIRED PLANT GROWTH
Otto Rohr, Neu-Allschwil, Hans Aebi, Riehen, and Ludwig Ebner, Stein, Aargau, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company
No Drawing. Filed Sept. 5, 1963, Ser. No. 306,688
Claims priority, application Switzerland, Sept. 12, 1962, 10,824/62
7 Claims. (Cl. 71—2.3)

1. The method for controlling undesired plant growth, wherein there is applied to the area where the said effect is desired a herbicidal amount of an active compound of the formula



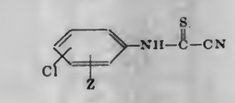
wherein R represents a member selected from the group consisting of hydrogen, lower alkyl and the hydroxyethyl radical.

3,287,101
SYNERGISTIC HERBICIDAL COMPOSITION AND METHOD
Ralston Curtis, Los Altos, and Thomas L. Snell, Hayward, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 8, 1964, Ser. No. 336,390
2 Claims. (Cl. 71—2.3)

2. An improved method for combatting weeds comprising applying to the soil a phytotoxic amount of the synergistic herbicidal composition comprising disodium methylarsonate and a synergistic amount of a material selected from the group consisting of p-chlorophenyl-ω-(N,N-diethylaminoethyl) sulfide and p-chlorophenyl-ω-(N,N-diethylaminoethyl) sulfide hydrochloride.

3,287,102
HERBICIDAL COMPOSITION AND METHOD EMPLOYING THIOOXANILONITRILES
John F. Olin, St. Louis County, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Apr. 6, 1964, Ser. No. 357,739
14 Claims. (Cl. 71—2.3)

1. A herbicidal concentrate composition comprising a herbicidal adjuvent and, as an essential active ingredient, present in a phytotoxic amount a compound of the formula



where Z is chloro or alkyl having from one to four carbon atoms.

3,287,103
METHOD OF CONTROLLING WEEDS
Frank J. Sowa, 9 Besler Ave., Cranford, N.J.
No Drawing. Original application May 26, 1960, Ser. No. 31,828, now Patent No. 3,222,158, dated Dec. 7, 1965. Divided and this application Sept. 8, 1965, Ser. No. 521,465
1 Claim. (Cl. 71—2.3)

The method of controlling weeds which comprises apply thereto a herbicidally effective amount of a composition consisting essentially of one part by weight of an organotin compound selected from the group consisting of:

$$Y_nSnX_{4-n}(Y_2SnO)_a$$

and

$$(YSnO_{1.5})_a$$

wherein *n* is an integer from 1 to 3, Y is selected from the group consisting of alkyl from 1–18 carbon atoms, lower alkenyl, cyclohexyl, arylalkyl where the aryl is phenyl and the alkyl is lower alky, pheny, naphthy, anthracenyl, pyridyl, furyl and thiophenyl; X is a radical attached to the tin by other than a (C═Sn) bond selected from the group consisting of the halide, sulphide, acyloxy of up to 18 carbon atoms, phenoxide, naphthoxide, alkyltinoxy, and mercaptobenzothiazolate; and *a* has a value of at least 2, said compound being dissolved in from 0.25 to 9 parts by weight, of a surfactant having a critical balance of hydrophobic and hydrophilic groups therein whereby said tin compound remains dissolved in said surfactant on standing and does not separate out and the resulting single phase stable solution is soluble in water to give a stable solution, said surfactant having the formula:

$$R(R'O)_{x+y}H$$

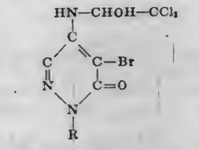
wherein R is a hydrophobic radical selected from the group consisting of alkoxy containing from 8–18 carbon atoms, phenoxy, alkylphenoxy, fatty acid amido containing from 8–18 carbon atoms, abietyl, alkylamino wherein the alkyl contains from 8–18 carbon atoms and fatty acid containing from 12–18 carbon atoms (R'O) is oxyalkylene containing from 2 to 4 carbon atoms; *x* is an integer equal to the total number of hydrophilic oxyalkylene groups required to give a threshold water solubility corresponding to about 1% by weight to the hydrophobic radical at room temperature while *y* is an integer from 1 to 15 except that, in the case where R is one of the indicated amido and amino radicals and includes oxyalkylene $(R'O)_{x+y}$, the sum of the *x*'s equals the number of hydrophilic oxyalkylene groups required to give said threshold water solubility and the sum of the *y*'s is between 3 and 25.

3,287,104
PRESERVATIVE MEDIUM SUITABLE FOR PRESERVING CUT FLOWERS
Percival Ross Biggs, "The Alcove," 9 Toll Road, Rondebosch, Cape Province, Republic of South Africa
No Drawing. Filed Oct. 29, 1963, Ser. No. 319,664
9 Claims. (Cl. 71—2.4)

1. A preservative medium for the preservation of cut flowers comprising about 1000–2000 parts by weight of sucrose as a water-soluble non-ionic nutrient medium; about 10–20 parts by weight of potassium sulphate as a source of potassium and sulphate ions; about 5–50 parts by weight of potassium dihydrogen phosphate as a source of phosphate and potassium ions and for controlling the pH of the medium; traces of boric acid as a source of boron; about 4–17 parts by weight of sodium benzoate as a fermentation and mould inhibitor; about 4–20 parts by weight of sodium meta-bisulphite as a fermentation and mould inhibitor; about 4-20 parts by weight of citric acid for controlling the pH of the medium within the range 2.5–5.5; and about 4–17 parts by weight of 8-hydroxy quinoline potassium sulphate for keeping clear an aqueous solution of the preservative medium.

3,287,105
DERIVATIVES OF PYRIDAZONE
Franz Reicheneder, Ludwigshafen (Rhine), Germany, and Karl Dury, deceased, late of Kirchheimbolanden, Germany, by Johanna Maria Dury, heiress-at-law, Kirchheimbolanden, Germany, and Adolf Fischer, Mutterstadt, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed Jan. 26, 1966, Ser. No. 523,232
Claims priority, application Germany, Feb. 5, 1965, B 80,383
6 Claims. (Cl. 71—2.5)

1. A pyridazone derivative having the formula

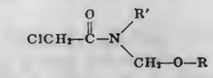


in which R denotes a member selected from the group consisting of phenyl and cycloalkyl having six to eight carbon atoms.

5. A method for controlling unwanted vegetation which comprises treating the vegetation with a phytotoxic amount of a pyridazone derivative as claimed in claim 1.

3,287,106
METHOD FOR INHIBITING THE GROWTH OF GRASS TYPE WEEDS
John P. Chupp, Kirkwood, Mo., assignor to Monsanto Company, a corporation of Delaware
No Drawing. Filed Nov. 15, 1963, Ser. No. 323,915
9 Claims. (Cl. 71—2.7)

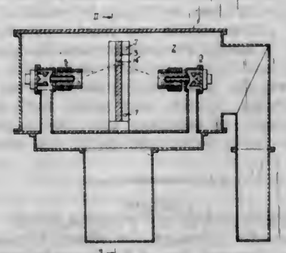
1. The method of inhibiting the growth of grass type weeds in contact with agricultural soils which comprises applying to the soil a herbicidal amount of a compound of the structure:



wherein R is selected from the class consisting of alkyl having up to 12 carbon atoms, alkenyl having up to 12 carbon atoms and alkynyl having up to 12 carbon atoms; and wherein R' is selected from the class consisting of

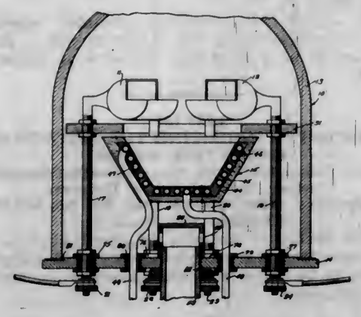
alkyl having from one to four carbon atoms, alkenyl having from two to four carbon atoms and alkynyl having from three to four carbon atoms.

3,287,107
ELECTRON BEAM FURNACES
Norman Frank Eaton, Uplands, Swansea, Wales, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed Aug. 22, 1961, Ser. No. 133,202
Claims priority, application Great Britain, Aug. 20, 1960, 28,990/60
10 Claims. (Cl. 75—10)

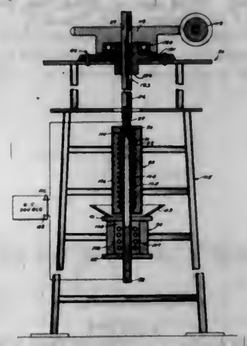


1. A method of treating solid materials by zone melting consisting in applying electron bombardment from an electron gun means to produce a horizontal molten zone, effecting relative vertical movement between the layer of impact of the electrons and the material to cause the molten zone to move vertically to traverse the height of the material and simultaneously vibrating the material mechanically at ultra sonic frequency.

3,287,108
METHODS AND APPARATUS FOR PRODUCING ALLOYS
Johann Karl Hausner, Chicago, Ill., assignor to Hausner Enterprises, Inc., Chicago, Ill., a corporation of Illinois
Filed Jan. 7, 1963, Ser. No. 249,744
14 Claims. (Cl. 75—10)



2. In a method of producing crystallized semi-conductor alloys, the steps of separately heating and vaporizing a plurality of metals to be alloyed within a common vacuum chamber, condensing and alloying the vaporized metals in a cooled condensing region while applying a high voltage electrostatic field between the vaporization and condensing regions, casting the condensed alloy into rods, heating and then cooling the rods while passing an electric current longitudinally through the rods to cause



impurities to move to one end or the other while leaving the central portion in a crystallized purified state.

3,287,109
OXYGEN REMOVAL FROM ALKALI METALS
Robert J. Moolenaar, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed May 31, 1963, Ser. No. 284,342
10 Claims. (Cl. 75—66)

1. The process of removing an alkali metal oxide dissolved in a liquid alkali metal comprising reacting the dissolved alkali metal oxide with a dehydrated comminuted amphoteric oxide which will not react with the liquid alkali metal, while under an inert atmosphere, at a temperature above the melting point but below the boiling point of the alkali metal, and then recovering the so-purified liquid alkali metal.

3,287,110
NON-FERROUS ALLOY AND METHOD OF MANUFACTURE THEREOF
Paul Joseph Scherbner, Boyertown, Pa., assignor to The Beryllium Corporation, Reading, Pa., a corporation of Delaware
No Drawing. Filed May 9, 1962, Ser. No. 193,588
16 Claims. (Cl. 75—129)

3. A method of producing an alloy containing beryllium and having as its base a metal selected from the group consisting of nickel, cobalt and iron, said method comprising the sequential steps of

(1) melting said base metal with a quantity of carbon;
(2) adding to the resulting melt a quantity of an oxide of said base metal sufficient to react therewith and cause the evolution of carbon dioxide and carbon monoxide thereby effecting a first purification;
(3) adding to said first purified melt a quantity of silicon sufficient to react and chemically combine with the oxygen of said melt;
(4) removing from the melt the reaction product of the silicon and oxygen thereby effecting a second purification of the melt;
(5) adding up to 0.5% titanium to the melt to combine with any nitrogen gas present to form titanium nitride;
(6) adding approximately 0.0025% boron;
(7) adding approximately 0.025% of zirconium in the form of pure zirconium sponge;

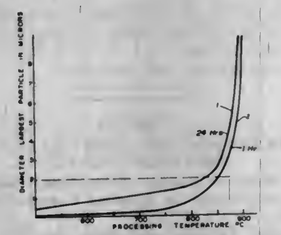
(8) finally adding to the melt the desired additional alloying elements including beryllium.

8. A nickel base alloy characterized by its susceptibility to fabrication without cracking and without the prior necessity to prepare the same by vacuum melting, said alloy consisting of the following elements:

	Percent
Beryllium	0.6–3.0
Titanium	0.0–4.5
Silicon	0.0–1.0
Aluminum	0.05–2.5
Magnesium	0.01–0.05
Chromium	0.0–1.50
Boron	0.0–0.005
Zirconium	0.0–0.05

Nickel, balance.

3,287,111
ZIRCONIUM BASE NUCLEAR REACTOR ALLOY
Harold H. Klepfer, Pleasanton, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Oct. 14, 1965, Ser. No. 496,198
8 Claims. (Cl. 75—177)



1. A zirconium based alloy having a high resistance to corrosion in steam and water at 300 to 500° C., high resistance to hydrogen absorption and low susceptibility to hydrogen embrittlement consisting essentially of not more than 2.3 atomic percent chromium with the remainder zirconium wherein at least a portion of said chromium is dispersed as finely divided particles of $ZrCr_2$.

3. A zirconium based alloy having high resistance to corrosion in steam and water between 300 and 500 degrees C. including high resistance to hydrogen absorption and low susceptibility to hydrogen embrittlement consisting essentially of about 1.7 to 2.3 atomic percent chromium, about 0.1 to 0.2 atomic percent iron with the remainder zirconium wherein at least a portion of said chromium is dispersed as finely divided particles of $ZrCr_2$.

3,287,112
PRODUCTION OF FILTER MEMBRANES
Emil Blaha, Cheltenham, Pa., assignor to Selas Corporation of America, a corporation of Pennsylvania
No Drawing. Filed Nov. 26, 1963, Ser. No. 326,202
7 Claims. (Cl. 75—222)

1. The method of producing a porous membrane of a metal which comprises mixing powdered oxide of the metal with a powdered binder and a solvent for the binder to obtain a thin liquid of uniform consistency, placing a thin layer of the liquid on a support, permitting the solvent to evaporate to leave a layer of binder and metal oxide on the support, heating the support and layer of material thereon to a temperature sufficient to decompose the oxide by driving out the oxygen and burning out the binder, thereby leaving a thin layer of porous metal on the support, and removing the layer of metal from the support as a porous metal membrane.

3,287,113
PROCESS FOR THE SENSITIZATION OF PHOTOCONDUCTORS
Helmut Hoegl, Geneva, Switzerland, assignor, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.
No Drawing. Original application July 24, 1961, Ser. No. 125,984. Divided and this application Jan. 18, 1965, Ser. No. 426,359
Claims priority, application Germany, May 29, 1959, K 37,853
34 Claims. (Cl. 96—1)

1. A sensitized photoconductive layer comprising a photoconductive hydroimidazole and at least one solid, non-resinous, substantially colorless electron-acceptor.

3,287,114
PROCESS FOR THE SENSITIZATION OF PHOTOCONDUCTORS
Helmut Hoegl, Geneva, Switzerland, assignor, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.
No Drawing. Original application July 24, 1961, Ser. No. 125,984. Divided and this application Jan. 18, 1965, Ser. No. 426,361
Claims priority, application Germany, May 29, 1959, K 37,853
30 Claims. (Cl. 96—1)

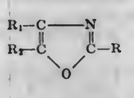
1. A sensitized photoconductive layer comprising at least one solid, non-resinous, substantially colorless electron-acceptor, and a compound having the formula

$$R—NH_2$$

in which R is selected from the group consisting of a carbocyclic fused ring group having at least three fused rings, at least two of which are fused benzene rings, and a carbocyclic fused ring group having at least three fused rings, one of which has an oxygen substituent.

3,287,115
PROCESS FOR THE SENSITIZATION OF PHOTOCONDUCTORS
Helmut Hoegl, Geneva, Switzerland, assignor, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.
No Drawing. Original application July 24, 1961, Ser. No. 125,984. Divided and this application Jan. 18, 1965, Ser. No. 426,364
Claims priority, application Germany, May 29, 1959, K 37,853
34 Claims. (Cl. 96—1)

1. A sensitized photoconductive layer comprising at least one solid, non-resinous, substantially colorless electron-acceptor and a compound having the formula



in which R stands for a residue selected from the group consisting of hydrogen, aryl, alkenyl, alkyl, and heterocyclic groups, R_1 stands for a residue selected from the group consisting of hydrogen, alkyl, alkylated aminoaryl and aryl groups, and R_2 stands for a residue selected from the gruop consisting of hydrogen and an aryl group, the compound containing at least two aryl groups.

3,287,116
PROCESS FOR THE SENSITIZATION OF PHOTOCONDUCTORS

Helmut Hoegl, Geneva, Switzerland, assignor, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.

No Drawing. Original application July 24, 1961, Ser. No. 125,984. Divided and this application Jan. 18, 1965, Ser. No. 426,383
Claims priority, application Germany, May 29, 1959, K 37,853
34 Claims. (Cl. 96—1)

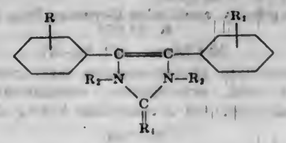
1. A sensitized photoconductive layer comprising a photoconductive 1,3,4-triazole and at least one solid, non-resinous, substantially colorless electron-acceptor.

3,287,117
PROCESS FOR THE SENSITIZATION OF PHOTOCONDUCTORS

Helmut Hoegl, Geneva, Switzerland, assignor, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.

No Drawing. Original application July 24, 1961, Ser. No. 125,984. Divided and this application Jan. 18, 1965, Ser. No. 426,384
Claims priority, application Germany, May 29, 1959, K 37,853
34 Claims. (Cl. 96—1)

1. A sensitized photoconductive layer comprising at least one solid, non-resinous, substantially colorless electron-acceptor and a compound having the formula



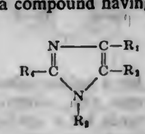
in which R and R_1 are selected from the group consisting of hydrogen, halogen, alkoxy, alkyl, and amino radicals, and an organic linkage forming a fused heterocyclic ring, R_2 and R_3 are selected from the group consisting of hydrogen, alkyl, and phenyl groups containing no strongly negative substituents, and R_4 is selected from the group consisting of oxygen and sulfur.

3,287,118
PROCESS FOR THE SENSITIZATION OF PHOTOCONDUCTORS

Helmut Hoegl, Geneva, Switzerland, assignor, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.

No Drawing. Original application July 24, 1961, Ser. No. 125,984. Divided and this application Jan. 18, 1965, Ser. No. 426,385
Claims priority, application Germany, May 29, 1959, K 37,853
30 Claims. (Cl. 96—1)

1. A sensitized photoconductive layer comprising at least one solid, non-resinous, substantially colorless electron-acceptor and a compound having the formula



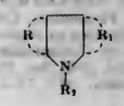
in which R_1 and R_2 are selected from the group consisting of aryl and hetero cyclic groups, R_3 is selected from the group consisting of hydrogen and alkyl groups, and R_4 is selected from the group consisting of hydrogen, aryl and heterocyclic groups.

3,287,119
PROCESS FOR THE SENSITIZATION OF PHOTOCONDUCTORS

Helmut Hoegl, Geneva, Switzerland, assignor, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.

No Drawing. Original application July 24, 1961, Ser. No. 125,984. Divided and this application Jan. 18, 1965, Ser. No. 426,358
Claims priority, application Germany, May 29, 1959, K 37,853; July 28, 1960, K 41,311
30 Claims. (Cl. 96—1.5)

1. A sensitized photoconductive layer comprising at least one solid, non-resinous, substantially colorless electron-acceptor, and a compound having the formula



in which R and R_1 are fused ring ortho-arylene groups, at least one of the rings having a primary amine group attached thereto, and R_2 is selected from the group consisting of hydrogen and lower alkyl.

3,287,120
PROCESS FOR THE SENSITIZATION OF PHOTOCONDUCTORS

Helmut Hoegl, Geneva, Switzerland, assignor, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.

No Drawing. Original application July 24, 1961, Ser. No. 125,984. Divided and this application Jan. 18, 1965, Ser. No. 426,362
Claims priority, application Germany, May 29, 1959, K 37,853
52 Claims. (Cl. 96—1.5)

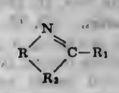
1. A sensitized photoconductive layer comprising at least one solid, non-resinous, substantially colorless electron-acceptor, and a photoconductive 1,3,4-oxadiazole.

3,287,121
PROCESS FOR THE SENSITIZATION OF PHOTOCONDUCTORS

Helmut Hoegl, Geneva, Switzerland, assignor, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.

No Drawing. Original application July 24, 1961, Ser. No. 125,984. Divided and this application Jan. 18, 1965, Ser. No. 426,363
Claims priority, application Germany, May 29, 1959, K 37,853
30 Claims. (Cl. 96—1.5)

1. A sensitized photoconductive layer comprising a compound having the formula



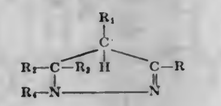
in which R is an ortho-arylene group, R_1 is selected from the group consisting of aryl and heterocyclic groups, and R_2 is selected from the group consisting of oxygen, sulfur, and imino; and at least one solid, non-resinous, substantially colorless electron-acceptor.

3,287,122
PROCESS FOR THE SENSITIZATION OF PHOTOCONDUCTORS

Helmut Hoegl, Geneva, Switzerland, assignor, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.

No Drawing. Original application July 24, 1961, Ser. No. 125,984. Divided and this application Jan. 18, 1965, Ser. No. 426,372
Claims priority, application Germany, May 29, 1959, K 37,853
32 Claims. (Cl. 96—1.5)

1. A sensitized photoconductive layer comprising at least one solid, non-resinous, substantially colorless electron-acceptor and a compound having the formula



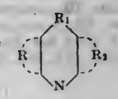
in which R is selected from the group consisting of hydrogen, alkyl, aryl and aralkenyl groups, R_1 is selected from the group consisting of hydrogen, alkyl and aryl groups, R_2 is selected from the group consisting of hydrogen, aryl and heterocyclic groups, R_3 is selected from the group consisting of hydrogen and aryl groups, and R_4 is an aryl group, at least one of R, R_1, R_2, and R_3 being an aryl group.

3,287,123
PROCESS FOR THE SENSITIZATION OF PHOTOCONDUCTORS

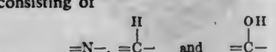
Helmut Hoegl, Geneva, Switzerland, assignor, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.

No Drawing. Original application July 24, 1961, Ser. No. 125,984. Divided and this application Jan. 18, 1965, Ser. No. 426,386
Claims priority, application Germany, May 29, 1959, K 37,853; July 28, 1960, K 41,311
30 Claims. (Cl. 96—1.5)

1. A sensitized photoconductive layer comprising at least one solid, non-resinous, substantially colorless electron-acceptor, and a compound having the formula



in which R and R_2 are selected from the group consisting of fused ring arylene groups, alkylamino substituted fused ring arylene groups, and amino substituted fused ring arylene groups, each of R and R_2 containing not in excess of two fused rings, and R_1 is selected from the group consisting of



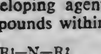
radicals.

3,287,124
SULFONE-HYDROXYLAMINES AS PHOTOGRAPHIC DEVELOPERS

Milton Green, Newton Highlands, Mass., and Adnan A. Sayigh, North Haven, and Henri Ulrich, Northford, Conn., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed June 26, 1963, Ser. No. 290,617
11 Claims. (Cl. 96—29)

1. As a new developer composition, an aqueous solution comprising an alkaline material, a silver halide solvent, and a silver halide developing agent selected from the group consisting of compounds within the formula:



wherein at least one of R^1 and R^2 is an alkyl group containing an intralinear $—SO_2—$ group, and the other of said R^1 and R^2 is selected from the group consisting of alkyl groups and alkyl groups containing an intralinear $—SO_2—$ group, R^1 and R^2 when taken together comprise the atoms necessary to complete a heterocyclic radical containing said $—SO_2—$ and said



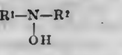
groups.

3,287,125
AMINOALKYL HYDROXYLAMINES AS PHOTOGRAPHIC DEVELOPERS

Milton Green, Newton Highlands, Mass., and Adnan A. Sayigh, North Haven, and Henri Ulrich, Northford, Conn., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed June 26, 1963, Ser. No. 290,618
15 Claims. (Cl. 96—29)

1. As a new developer composition, an aqueous solution comprising an alkaline material, a silver halide solvent, and a silver halide developing agent selected from the group consisting of compounds within the formula:



wherein at least one of R^1 and R^2 is selected from the group consisting of alkyl groups containing an intralinear amino nitrogen atom, and the other of said R^1 and R^2 is selected from the group consisting of alkyl groups and alkyl groups containing an intralinear amino nitrogen atom.

3,287,126
PHOTOGRAPHIC PRODUCTS, PROCESSES AND PROCESSING COMPOSITIONS CONTAINING A GLUCOSIDE OF A PHENOLIC HYDROXYL COMPOUND

Howard G. Rogers, Weston, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed Dec. 28, 1962, Ser. No. 247,864
13 Claims. (Cl. 96—29)

1. The process of forming color images by diffusion transfer, comprising the steps of applying an alkaline processing composition to an exposed photosensitive element, said processing composition containing a glucoside of a phenolic hydroxyl compound, forming an imagewise distribution of diffusible dye developer in said photosensitive element as a function of said development, transferring to a superposed image-receiving layer a quantity of said diffusible dye developer sufficient to form a visible color image thereon, reducing the pH of said image-receiving layer after said transfer has been effected from a pH in excess of 12 to a pH below about 11, and thereafter separating said image-receiving layer from said superposed relationship.

3,287,127
PHOTOGRAPHIC PROCESSES USING A STABILIZING COMPOSITION COMPRISING A GLUCOSIDE OF A PHENOLIC HYDROXYL COMPOUND

Samuel Dershowitz, Brookline, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed Dec. 28, 1962, Ser. No. 247,868
20 Claims. (Cl. 96—29)

1. In a process of forming a photographic image in color wherein an exposed silver halide emulsion is developed in the presence of a dye developer to provide a

predetermined distribution of unoxidized dye developer, said dye developer being a compound which is both a dye and a silver halide developing agent, and wherein at least part of said distribution of said unoxidized dye developer is transferred from said emulsion to a superposed image-receiving layer to provide a dye image thereon, the improvement which comprises increasing the stability of said dye image by treating said dye images, subsequent to their formation, with a stabilizing composition comprising a glucoside of a phenolic hydroxyl compound.

3,287,128
LITHOGRAPHIC PLATES AND COATINGS

Myron N. Lugasch, deceased, late of Columbus, Ohio, by Phyllis T. Lugasch, widow and heir, Scranton, Pa., assignor, by mesne assignments, to Martin Marietta Corporation, New York, N.Y., a corporation of Maryland

No Drawing. Filed Apr. 22, 1963, Ser. No. 274,868
22 Claims. (Cl. 96—33)

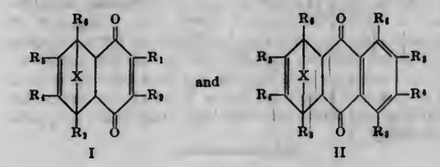
17. In the method of preparing a deep-etched lithographic plate which comprises applying a photosensitive coating composition to a base plate, hardening at least a portion of said coating by exposing selected areas of the coating to light, dissolving the unhardened portions of the coating, deep-etching the uncoated portions of the base plate, applying a lithographic ink and removing the remaining portions of the coating from the base plate whereby the image areas of the lithographic plate are rendered olephylic and the non-image areas are rendered hydrophylic, the improvement which comprises using as the photosensitive coating composition an aqueous solution of a water-soluble hydroxyalkyl ether of cellulose in which the alkyl groups contain from two to five carbon atoms, and a water-soluble salt of an aromatic diazide, said hydroxyalkyl ether of cellulose exhibiting in 2% aqueous solution at 25° C. a viscosity of less than 200 centipoises.

3,287,129
LIGHT-SENSITIVE PHOTOGRAPHIC ELEMENTS CONTAINING DEVELOPING AGENT PRECURSORS

William W. Rees, Elliott Frauenglass, and John W. Gates, Jr., Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Jan. 16, 1963, Ser. No. 251,750
20 Claims. (Cl. 96—35)

1. A photographic element comprising a support and a photographic silver halide emulsion layer, and integral with said photographic element a water-permeable hydrophilic colloid layer containing a compound selected from the class of compounds represented by the following general formulas:



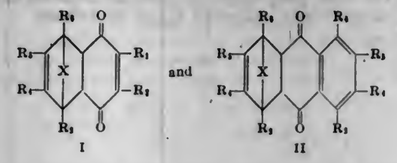
I

and

II

wherein R_1 and R_2 represent a member selected from the class consisting of hydrogen, an alkyl group from 1 to 20 carbon atoms, an aryl group, hydroxy, a sulfonic acid group, halogen, amino and a substituted thio group —S—Y, wherein Y represents a member selected from the class consisting of an isocyclic group and a heterocyclic group, wherein R_3, R_4, R_5 and R_6 represent a member selected from the class consisting of hydrogen, halogen, an aryl group, and a lower alkyl group; X represents a member selected from the class consisting of a hydrogen on each of the 5 and 8 carbon atoms, a methylene attached to the 5 and 8 carbon atoms, an ethylene group attached to the 5 and 8 carbon atoms and methylene and ethylene groups substituted with a member selected from the class consisting of a halogen, an aryl group and lower alkyl groups, said methylene and ethylene groups attached to the five and eight carbon atoms.

14. A process for forming a photoresist comprising exposing a photographic silver halide emulsion layer containing a compound selected from the class of compounds represented by the following general formulas:



I

and

II

wherein R_1 and R_2 represent a member selected from the class consisting of hydrogen, an alkyl group from 1 to 20 carbon atoms, an aryl group, hydroxy, a sulfonic acid group, halogen, amino and a substituted thio group —S—Y, wherein Y represents a member selected from the class consisting of an isocyclic group and a heterocyclic group, wherein R_3, R_4, R_5 and R_6 represent a member selected from the class consisting of hydrogen, halogen, an aryl group and a lower alkyl group; X represents a member selected from the class consisting of a hydrogen on each of the 5 and 8 carbon atoms, a methylene attached to the 5 and 8 carbon atoms, an ethylene group attached to the 5 and 8 carbon atoms and methylene and ethylene groups, said methylene and ethylene groups attached to the five and eight carbon atoms substituted with a member of the group selected from the class consisting of a halogen, an aryl group, and lower alkyl groups, developing in an alkaline bath, and removing the untanned areas in warm water.

3,287,130
PROCESS OF CATHODE-RAY TUBE SCREENING COMPRISING A BACKWARD EXPOSURE STEP

Sam H. Kaplan, Chicago, Ill., assignor to The Rauland Corporation, Chicago, Ill., a corporation of Illinois

Filed Aug. 25, 1964, Ser. No. 391,984
1 Claim. (Cl. 96—35)

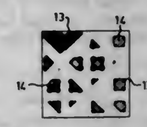


In the screening of a cathode-ray tube, having a shadow mask with smaller sized apertures at the periphery than in the center, in which the screen area of a transparent support is coated with a phosphor material and a photosensitive resist and in which the entirety of said screen area is forwardly exposed through said mask to actinic radiation to which said resist is responsive, the step of non-uniformly and backwardly exposing the peripheral portion of said screen area to actinic radiation to which said resist is responsive by projecting said actinic radiation through said support upon only said peripheral portion of said screen area.

3,287,131
METHOD OF PRODUCING A POSITIVE ASSEMBLAGE SUITABLE FOR THE PREPARATION OF A ROTOGRAVURE PLATE

Anton Wilhelm Jemseby, Allfarvagen 29, Taby, Sweden

Filed Dec. 28, 1962, Ser. No. 247,979
Claims priority, application Sweden, Jan. 5, 1962, 134/62
7 Claims. (Cl. 96—45)



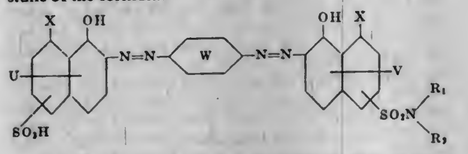
1. In a method of photographically producing from a transparent continuous-tone negative a positive image assemblage suited in superposition with a doctor screen image, having mutually equally large screen apertures, for the preparation of a rotogravure plate, the steps of preparing at least one positive halftone separation image of the continuous-tone negative by printing the continuous-tone negative on photosensitive material of the positive image assemblage through a halftone screen, and preparing at least one continuous-tone separation image of the continuous-tone negative by dividing, when printing the continuous-tone negative on photosensitive material of the positive image assemblage, the image surface of said continuous-tone separation by means of a dividing screen, printed together with the continuous-tone negative on said material, into individual continuous-tone image surface portions of varying density each having a smaller area than the area of one of the screen apertures of the doctor screen image.

3,287,132
SILVER DYE BLEACH DYESTUFFS AND THEIR USE IN COLOUR PHOTOGRAPHY

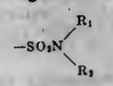
Francis George Hunt, Huddersfield, England, assignor to Ilford Limited, Ilford, England, a British company

No Drawing. Filed Sept. 5, 1963, Ser. No. 306,685
Claims priority, application Great Britain, Sept. 24, 1962, 36,242/62
11 Claims. (Cl. 96—53)

1. A process for the production of a cyan dyestuff image in a photographic silver halide emulsion layer which comprises including in contact with said emulsion a cyan dyestuff selected from the class consisting of dyestuffs of the formula:



where X is selected from the class consisting of halogen, hydroxyl, amino, substituted amino and hydrogen, U is selected from the class consisting of hydrogen, sulphonic acid and alkali metal sulphonate, V is selected from the class consisting of hydrogen and the grouping:



and R_1 and R_2 taken separately are each selected from the class consisting of hydrogen, alkyl, substituted alkyl, cycloalkyl, aralkyl and aryl and taken together constitute, with the nitrogen atom to which they are attached, a cyclic grouping, and the said dyestuffs in which the ring W carries at least one substituent selected from the class consisting of halogen, alkyl, alkoxy, sulphonic acid and alkali metal sulphonate, the number of sulphonic groups in the ring W being not greater than 1, forming a latent silver image in said emulsion layer, developing said image, subjecting the developed image to treatment which bleaches the silver image and simultaneously bleaches the said dyestuff in situ therewith, and removing any residual silver and silver salts from the product.

3,287,133
PHOTOGRAPHIC DYE DEVELOPER DISPERSIONS UTILIZING WATER-SOLUBLE SULFITES

Carl J. Williams, Jr., Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Mar. 1, 1963, Ser. No. 262,167
16 Claims. (Cl. 96—77)

10. A photographic composition comprising an organic hydrophilic colloid containing substantially uniformly dispersed therein finely-divided droplets of a water-immiscible organic solvent boiling above about 175° C., and dissolved in said solvent a photographic dye developer having in the same molecule both the chromophoric system of a dye and a hydroquinonyl moiety capable of developing photographic silver halide, said dye developer having been treated with a water-soluble sulfite.

15. A photographic element comprising a support having coated thereon at least one silver halide emulsion layer having contiguous thereto a layer of the photographic composition defined by claim 10.

3,287,134
PHOTOGRAPHIC LAYERS AND THEIR PREPARATION

Paul Kainrath, Langen, Günther Herbert, Sprendlingen, and Heinz Schiller, Langen, Germany, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 9, 1964, Ser. No. 350,529
8 Claims. (Cl. 96—77)

1. A photographic element having a light-sensitive silver halide layer and comprising at least one water-permeable, macromolecular organic colloid layer having dispersed therethrough

(1) a lipophile organic photographic adjuvant compound containing at least one aliphatic carbon chain of at least 5 carbon atoms and being selected from the group consisting of:
  (a) color formers capable of forming upon chromogenic development of exposed silver halide grains with a primary aromatic amine color developing agent a dye selected from the group consisting of quinoneimine and azomethine dyes,
  (b) light-filter dyes capable of absorbing light in the visible and ultraviolet regions of the spectrum,
  (c) antioxidants capable of reducing the oxidation of latent silver images; and

(2) a triglyceride of a mixture of long chain aliphatic monocarboxylic acids of at least 8 carbon atoms and being liquid at 90° C.

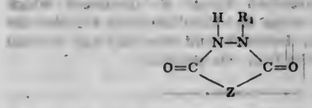
3,287,135
ANTIFOGGANTS FOR SILVER HALIDE EMULSIONS ON A LINEAR POLYESTER SUPPORT

Albert E. Anderson and William W. Rees, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Sept. 25, 1964, Ser. No. 399,394
9 Claims. (Cl. 96—87)

1. A photographic element comprising a silver halide emulsion coated on a linear polyester film support, which polyester contains contaminants which tend to cause

fogging of the silver halide emulsion, said emulsion containing a fog-stabilizing quantity of a compound selected from the group consisting of hydantoin; parabanic acid; compounds having the following general formula:



wherein Z represents the atoms required to complete a heterocyclic ring, and R_1 is selected from the group consisting of H, alkyl, substituted alkyl, aryl and substituted aryl; and the monoacyl and diacyl derivatives of compounds having the above formula.

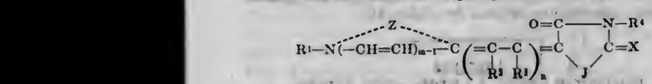
3,287,136

LIGHT-DEVELOPABLE SILVER HALIDE EMULSIONS

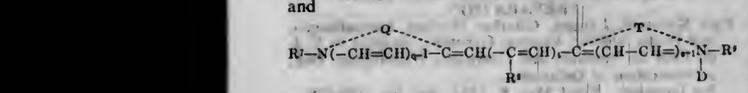
Clarence E. McBride, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Sept. 2, 1964, Ser. No. 394,062
15 Claims. (Cl. 96—106)

1. A light-developable, direct-print silver halide emulsion sensitized with a spectral sensitizing dye and wherein the silver halide grains of said emulsion are formed in the presence of lead ions, said spectral sensitizing dye having a formula selected from the group consisting of



and

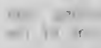


wherein:

(A) R^1, R^7 and R^9 are each selected from the group consisting of
  (1) an alkyl radical, and
  (2) an aryl radical;

(B) R^2, R^3, R^4 and R^8 are each selected from the group consisting of
  (1) an alkyl radical,
  (2) an aryl radical, and
  (3) a hydrogen atom;

(C) J is selected from the group consisting of
  (1) an oxygen atom,
  (2) a sulfur atom,
  (3) a selenium atom,
  (4) a group having the formula



wherein R^5 can be any of the substituents of R^4, and
  (5) a group having the formula



wherein R^6 can be any of the substituents of R^4;

(D) Q, T and Z each represent the atoms required to complete a basic heterocyclic nucleus, Z being other than the atoms required to complete a thiazoline group when J is a sulfur atom;

(E) *m*, *q* and *s* are each positive integers of 1 to 2;

(F) *n* and *t* are each positive integers of 0 to 2;

(G) D is an acid anion; and

(H) X is selected from the group consisting of a sulfur atom and a selenium atom.

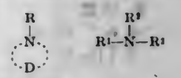
3,287,137

LIGHT-DEVELOPABLE SILVER HALIDE EMULSIONS

Clarence E. McBride, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 23, 1964, Ser. No. 406,165
19 Claims. (Cl. 96—107)

1. A light-developable, direct-print silver halide emulsion containing a nitrogen-containing halogen acceptor and wherein the silver halide grains of said emulsion have been formed in the presence of lead ions, said halogen acceptor having a formula selected from the group consisting of



wherein the substituents:

(A) R, R^1 and R^3 are each selected from the group consisting of a hydrogen atom, an alkyl radical, an aryl radical and an acyl radical;

(B) R^2 is a nitrogen-containing radical selected from the group consisting of a thiocarbamyl radical and an amino radical; and

(C) D represents the atoms necessary to complete a heterocyclic nucleus having 5 to 6 atoms including at least two nitrogen atoms and at least one divalent radical having the formula



wherein X is selected from the group consisting of and oxygen atom, a sulfur atom, a selenium atom and an imino radical;

except that when a nitrogen atom comprising one of said substituents is attached directly to a nitrogen atom of one of said formulas, the halogen acceptor contains at least one hydrogen atom attached to at least one of said nitrogen atoms.

3,287,138

METHOD FOR SEPARATING FLOUR FROM ADMIXTURE WITH LARGER CEREAL PARTICLES

Walter W. Pearson and Ross F. Brian, Danville, Ill., assignors to Lauhoff Grain Company, Danville, Ill., a corporation of Illinois

No Drawing. Filed Nov. 18, 1963, Ser. No. 324,180
9 Claims. (Cl. 99—93)

2. A method for separating cereal flour from larger cereal particles resulting from the dry milling of cereal grain; said flour adhering to said particles by oil disposed on the surface of said larger cereal particles, comprising the steps of adding a solvent for said oil to the cereal flour-cereal particle mixture which destroys the adhesive property of the oil and is inert to the flour and larger cereal particles; said solvent being present in adequate amount to separate said cereal flour from the larger cereal particles; and separating said cereal flour from said larger cereal particles by removing said flour from said larger cereal particles in said solvent.

3,287,139

CODRIED LIQUID EGG WHITE-CARBOXYMETHYLCELLULOSE COMPOSITION, PROCESS FOR THE PREPARATION THEREOF AND FOOD MIX UTILIZING SAME

Alexander J. Ganz, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Mar. 5, 1964, Ser. No. 349,734
6 Claims. (Cl. 99—94)

1. Process of preparing a new composition of matter comprising substantially drying a mixture of liquid egg white and carboxymethylcellulose.

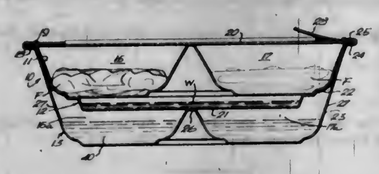
4. A nonshortening cake composition comprising flour, sugar and codried egg white-carboxymethylcellulose.

3,287,140

SELF-HEATING FROZEN FOOD PACKAGE

Jacob Brussell, 41 E. 8th St., Hialeah, Fla.

Filed Apr. 11, 1966, Ser. No. 549,090
5 Claims. (Cl. 99—192)



1. In a self-heating frozen food package, the combination comprising an upper metallic food tray with frozen food therein, an intermediate metallic pan and a lower metallic fuel tray all secured together in vertically spaced arrangement to provide a unitary structure having an upper food compartment, an intermediate compartment and a lower fuel compartment, a removable cover on said food tray, an amount of fuel in said fuel tray of such quantity as to furnish, when ignited, just sufficient heat through said intermediate compartment to prepare a given quantity and kind of frozen food in said food compartment for eating, and a plurality of openings in said fuel tray providing access to ignite said fuel and admitting air for its combustion.

3,287,141

WERNER CHROMIUM COMPLEXES AND METHODS FOR THEIR PREPARATION

Adam A. Bartz, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 5, 1965, Ser. No. 477,605
9 Claims. (Cl. 106—13)

1. A composition of a Werner complex stable against gel formation having a total water content of from 8 to 50% by weight water, the remainder consisting essentially of (a) a Werner complex of chromium and a carboxylic acid containing substituted polar groups having a basicity of 33⅓%, a ratio of chromium atoms to acido groups from 1:1 to 10:1, and said complex being further characterized by having a ratio of coordinated water to chromium atoms of from at least 2:1 up to 4:1; and (b) a monohydric aliphatic alcohol containing 1 to 4 carbon atoms.

3,287,142

PROTECTIVE COATING COMPOSITION

Paul Russell, Jr., Springfield, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 22, 1963, Ser. No. 296,494
4 Claims. (Cl. 106—14)

1. A protective coating composition consisting essentially of 25–5 parts by weight vehicle of aqueous sodium silicate and 75–95 parts by weight pigment of a finely divided zinc powder and barium metaborate, said pigment having a zinc/barium metaborate weight ratio of about 75/25 to 95/5, said sodium silicate solution consisting essentially of about 90–40 parts by weight sodium silicate and about 10–60 parts by weight water.

3,287,143

GAS-TIGHT REFRACTORY ARTICLE AND METHOD OF MAKING SAME

Paul J. Yavorsky, Bedford, Ohio, assignor to Zirconium Corporation of America, Solon, Ohio, a corporation of Ohio

Filed Aug. 30, 1961, Ser. No. 135,046
10 Claims. (Cl. 106—55)

1. An aqueous ceramic slurry adapted for forming a fired refractory gas-tight article, said slurry having a pH of about 7 to 9 and a specific gravity of about 1 to 3 and comprising (1) about 100 parts by weight of a relatively fine refractory material having a grain size of about 1 to 90 percent less than 1 micron and 10 to 99 percent less than 40 microns and greater than 1 micron, said refractory material consisting essentially of an oxide of an element of Group IV*b* of the Periodic Arrangement of the Elements and having an atomic weight of about 47 to 233, (2) about 0.01 to 3 parts weight of a low temperature binding agent which reacts with calcium ions comprising an alginate selected from the group consisting of an alkali metal alginate, ammonium alginate and an alkylene glycol alginate in which the alkylene group has from 2 to 4 carbon atoms, (3) about 0.01 to 0.35 part by weight of an alkaline buffer, and (4) about 20 to 200 parts by weight of water.

3,287,144

CARBON-IMPREGNATED REFRACTIVE MAGNESIA BODIES AND METHOD OF PREPARING THE SAME

Friedrich Hodl, Vienna, and Georg Bouvier, Leoben, Austria, assignors to Veitscher Magnesitwerke-Actien-Gesellschaft, a corporation of Austria

No Drawing. Filed Aug. 4, 1964, Ser. No. 387,495
Claims priority, application Austria, June 20, 1961
A 4,760/61
7 Claims. (Cl. 106—56)

1. A refractory structural element consisting essentially of

(a) integrally bonded sintered grains of refractory material,
  (1) said grains consisting of magnesia having a maximum content of impurities of 2.5% Fe_2O_3, 0.5% Al_2O_3, 2% SiO_2, 5% CaO, and containing at least 93% but less than 96% magnesium oxide,
  (2) said sintered grains having an intragranular porosity of not more than 8%, and
  (3) defining therebetween pores in said element,
  (4) the intergranular porosity of said element being between 12 and 22% by volume; and

(b) a carbonaceous material substantially uniformly distributed in said pores over the cross section of said element and substantially completely filling said pores.

3,287,145

CHEMICAL ADMIXTURE FOR HYDRAULIC CEMENTITIOUS MIXTURES

Herman Christian Fischer, Neshanic Station, N.J., assignor, by mesne assignments, to Union Carbide Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Aug. 10, 1965, Ser. No. 478,756
18 Claims. (Cl. 106—90)

1. A cement composition comprising an hydraulic cement and from about 0.03 to about 0.3 percent, based on the weight of said hydraulic cement, of a water-reducing admixture; said admixture consisting essentially of the product resulting from the intimate mixing at room temperature and atmospheric pressure of (1) a nitrogen base with (2) about 0.5 to about 4.0 parts per part of said nitrogen base by weight of an alkyl aryl polyoxyethylene ether wherein the alkyl aryl moiety is a benzene ring

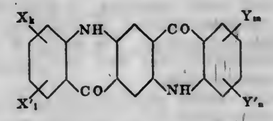
substituted by at least one alkyl group of 4 to 18 carbon atoms and the number of oxyethylene units in the molecule is from about 6 to about 30.

3,287,146
PROCESS FOR PREPARING STRUCTURAL ELEMENT FROM SOIL AND BINDER
Dilworth T. Rogers, Summit, and John C. Munday, Cranford, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Nov. 15, 1963, Ser. No. 324,075
7 Claims. (Cl. 106—281)

1. A process for preparing a structural element of high compressive and tensile strengths which comprises the steps:
(a) intimately mixing a substantially dry finely divided soil containing less than about 5% moisture with a bituminous binder, said bituminous binder being present in the resulting admixture in an amount in the range of about 3 to 30 wt. percent based on said soil;
(b) compacting said admixture to about 90 to 98% of its theoretical density; and
(c) curing the compacted admixture in air at a temperature in the range of about 250° F. to 500° F. for a period of time in the range of from about 1 to 80 hours.

3,287,147
PROCESS FOR MANUFACTURE OF QUINACRIDONE PIGMENT COMPOSITIONS
Donald Graham Wilkinson, Manchester, England, assignor to Imperial Chemical Industries Limited, Millbank, London, England, a corporation of Great Britain
No Drawing. Filed June 24, 1963, Ser. No. 290,216
Claims priority, application Great Britain, July 5, 1962, 25,903/62
2 Claims. (Cl. 106—288)

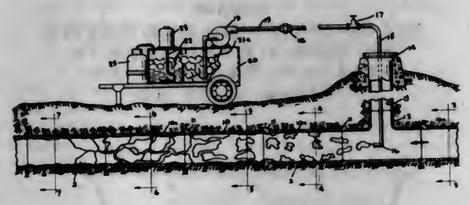
1. A process for the manufacture of a pigment composition consisting essentially of at least 2 different linear quinacridones of the formula



where X, X', Y and Y' are radicals selected from the group consisting of Cl, Br, an alkyl group having 1–4 carbon atoms and an alkoxy group having 1–4 carbon atoms, and wher *k*, *l*, *m* and *n* are integers from 0–1, said composition being characterised in that the X-ray diffraction pattern is different from the sum of the X-ray diffraction patterns of its constituent quinacridones, and process comprising heating under pressure at between 150° and 300° C. a neutral aqueous paste of the constituent linear quinacridones.

3,287,148
METHOD FOR SEALING GAS MAINS
Edward O. Hilbush, Jr., West Chester, Pa., assignor to West Chester Chemical Company, Inc., a corporation of Pennsylvania
Filed Mar. 1, 1963, Ser. No. 262,065
10 Claims. (Cl. 117—2)

1. The method of sealing leaks in conduits for gas without removing same from service which comprises the steps of foaming a liquid sealant compatible with the gas passing through said conduit and capable of being condensed to form a sealing film, introducing said foamed sealant to the bore of a conduit without removing said conduit from service, and directing the foamed sealant in the direction of flow of the gas in said conduit to an area of leakage in the conduit whereby the foamed sealant

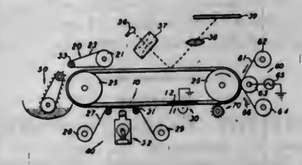


condenses to form a seal on the inner surface of said conduit in the leakage area.

3,287,149
REPULPABLE PRINTED PAPER HAVING WATER RESISTANT COATING
Joseph A. Dooley, Belleville, Richard D. Vieth, Kinnelon, and Harry Burrell, North Caldwell, N.J., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio
No Drawing. Filed Jan. 22, 1963, Ser. No. 253,039
6 Claims. (Cl. 117—15)

1. A repulpable coated paper comprising a paper substrate having printing thereon and a water resistant coating over the printing, said coating consisting essentially of the copolymerization product of styrene and the half-ester formed by the half esterification of 1 mole of an alpha-beta unsaturated dicarboxylic acid selected from the group consisting of maleic and fumaric acids with from 1.1 to 5.0 moles of a lower alkanol, from 0.5 to 2.2 moles of styrene being copolymerized for each mole of said acid.

3,287,150
CASCADE DEVELOPMENT PROCESS WITH TWO-COMPONENT DEVELOPER
Ernest H. Lehmann, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Continuation of application Ser. No. 210,738, July 18, 1962. This application Feb. 10, 1965, Ser. No. 433,542
9 Claims. (Cl. 117—17.5)



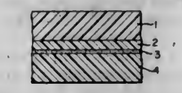
1. A cascade development process for xerographic images comprising:
(a) gravity-cascading a two-component developer consisting essentially of ferromagnetic carrier particles having diameters in the range of 44 to 275 microns and electroscopic nonmagnetic resinous toner particles across a surface carrying a latent electrostatic image to deposit a predominance of toner particles and some carrier particles in the image areas; and,

(b) sweeping said surface with a closely spaced magnetic device to effect the removal of residual carrier particles from all areas of said surface including said developed image.

3,287,151
METHOD OF MAKING LUMINESCENT SCREENS
Alfred E. Bishop and Edith E. Mayaud, Lancaster, Pa., assignors to Radio Corporation of America, a corporation of Delaware
No Drawing. Filed Dec. 7, 1962, Ser. No. 242,902
9 Claims. (Cl. 117—33.5)

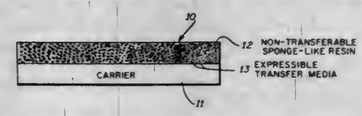
1. The method of making a luminescent screen comprising the steps of:
(a) forming a suspension of phosphor particles in a liquid suspension medium containing a gellable binder which is substantially entirely ungelled,
(b) making said suspension to have a degree of dispersion above that at which flocculation visible to the naked eye occurs,
(c) depositing a quantity of said suspension on a substrate with the dispersion of said suspension maintained at said degree of dispersion, and
(d) permitting said phosphor particles to settle on said substrate without substantially increasing the aggregation of said phosphor particles before said phosphor particles have settled on said substrate,
(e) gelling said binder, and
(f) then removing the supernatant suspension medium.

3,287,152
PROCESS FOR PREPARING A PHOTOPOLYMERIZABLE ELEMENT
Francis Peter Alles, Basking Ridge, and Charles Walter Smith, Red Bank, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Original application July 26, 1962, Ser. No. 212,681, now Patent No. 3,186,844, dated June 1, 1965. Divided and this application Aug. 17, 1964, Ser. No. 390,162
2 Claims. (Cl. 117—34)



1. A process for preparing a thin, flexible photopolymerizable element for use in preparing shallow relief, high-precision printing plates which comprises:
(1) coating a surface of a thin, flexible support layer with from about 0.0001 to 0.001 inch of a thermally curable copolyester adhesive composition;
(2) drying and partially thermal curing said adhesive composition at about 100–150° C. for about 2 to 20 minutes;
(3) coating thereover a barrier layer from about 0.0005 to 0.003 inch in thickness of photopolymerizable composition of an addition polymerizable, ethylenically unsaturated compound and an addition polymerization initiator activatable by actinic radiation;
(4) partially polymerizing the composition of step (3) by exposure to actinic radiation; and,
(5) coating thereover a thin layer of a photopolymerizable composition of an addition polymerizable, ethylenically unsaturated compound and an addition polymerization initiator activatable by actinic radiation.

3,287,153
PRESSURE SENSITIVE SPONGE-LIKE TRANSFER DEVICE
Armand R. Schwarz, Elmwood, and Frank X. Flaherty, West Hartford, Conn., assignors, by mesne assignments, to Royal Typewriter Company, Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 22, 1963, Ser. No. 303,914
4 Claims. (Cl. 117—36.1)



1. A pressure sensitive transfer sheet comprising a flexible carrier member having a sponge-like non-transferable resinous layer, and transfer media releasably retained in the pores of said resinous layer, said transfer media comprising a non-drying low vapor pressure fluid, said resinous layer comprising a resin having

	Percent
Vinyl chloride	55–75
A dihydrocarbon maleate, chloromaleate or fumarate containing 6–24 atoms of carbon or a mixture of esters of this type	14–35
A monohydrogen monoalkyl maleate chloromaleate or fumarate containing 5–14 carbon atoms or a mixture of esters of this type	5–10
Trichloroethylene	1.5–6.5

said resin and fluid being in a ratio of substantially 1:1 by weight, said transfer media including a quantity of an alkyl-aryl sulfonic compound and a quantity of coloring material.

3,287,154
PRESSURE RESPONSIVE RECORD MATERIALS
Howard C. Haas, Arlington, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
No Drawing. Filed Dec. 13, 1965, Ser. No. 513,541
13 Claims. (Cl. 117—36.9)

11. Pressure-sensitive record material comprising at least a first and second surface in superposed relationship, said first surface comprising alkaline colloidal silica and a first reactant and said second surface comprising a second reactant dissolved in a high di-electric, highly polar organic liquid which is a solvent for both said first reactant and said second reactant, said second reactant and said liquid being contained within pressure-rupturable capsules of polymeric material, said reactants normally being held insulated from contact with each other by reason of at least said second reactant being contained within said pressure-rupturable capsules, the walls of said capsules being impervious to both of said reactants, said reactants comprising dithiooxamide and a mixture of copper acetate and nickel acetate, whereby writing and marking pressures on said record material instantly produce dense, black marks at points of pressure on at least said first surface.

3,287,155
PROCESS FOR IMPREGNATING GLASS FIBER MAT WITH METHYL METHACRYLATE POLYMER
George Edward Munn, Liftwood, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Nov. 8, 1962, Ser. No. 236,407
The portion of the term of the patent subsequent to Apr. 2, 1980, has been disclaimed
2 Claims. (Cl. 117—54)

2. A process which comprises impregnating a glass fiber mat with a methyl methacrylate monomer-polymer syrup

containing from 5 to 50% by weight of methyl methacrylate polymer and complementally from 95 to 50% by weight of methyl methacrylate, said syrup having a bulk viscosity in the range of 0.5 to 50 poises, and containing methyl methacrylate polymer having an inherent viscosity of 0.25 to 1.0, said syrup having admixed therein, 0.01 to 1.0% by weight of a mercaptan, up to 300 parts/million of copper in dissolvable form, and 0.01 to 2.0% of a peroxide curing agent, said fiber mat having $SnCl_2$ coated thereon in quantity of 15 to 250 parts/million parts of said syrup, and removing from the resultant mat, the excess of impregnating liquid, which is unretained by the mat, said excess liquid being sufficiently stable to be thus recovered, and re-used for the impregnation of $SnCl_2$-coated glass fiber mat.

3,287,156

LEAK-INDICATING COATINGS FOR MISSILES AND ROCKETS

James R. Griffith, Riverdale Heights, Md., assignor to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed Dec. 27, 1962, Ser. No. 247,767
3 Claims. (Cl. 117—72)

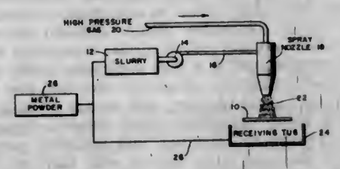
1. A leak indicating system including a vessel for storing propellant fuels and oxidizers which comprises an under-coating on the exterior side of said vessel and a cover-coating on said under-coating, each of said coatings comprising a light-colored solid organic material selected from the group consisting of cellulose base lacquers and solvent-type resins, the under-coating containing phenosafranine dispersed therein and the cover-coating containing phenolphthalein dispersed therein.

3,287,157

METHOD OF PLATING METAL ARTICLE WITH METAL

Carl F. Brown, Jr., Huntingdon, Pa., and Gunther F. Florstedt, Ridgewood, N.J., assignors to Prismo Safety Corporation, Huntingdon, Pa., a corporation of Pennsylvania

Filed Oct. 10, 1962, Ser. No. 229,549
2 Claims. (Cl. 117—102)



1. A method of mechanically plating metallic articles which comprises blasting at ordinary temperatures at a high velocity against said metallic articles to be plated an aqueous slurry comprising 1–7 parts of a mixture of a finely divided material to be plated onto the article and spheroidal glass beads and 1 to 4 parts of water, said finely divided material being selected from the group consisting of zinc, tin, lead, aluminum, cadmium, copper, nickel, magnesium, silver, gold, bronze, chrome, molybdenum disulfide and graphite, said glass beads having a diameter from 1–60 mils and a density greater than 3.1, the ratio of said glass beads to said finely divided material in said mixture being between 2:1 and 15:1.

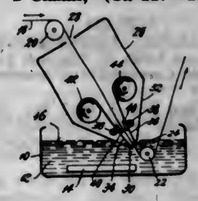
2. A method in accordance with claim 1, wherein said slurry is hydraulically pumped to a spray nozzle and the blasting is caused by high pressure gas also fed to the nozzle, collecting said slurry after contact with said articles to be plated and recycling said slurry after replenishing with additional finely divided material to said spray nozzle.

3,287,158

COATING OF METAL WITH OTHER METALS

Marshall G. Whitfield, Brookfield, Conn. (% Whitfield Laboratories, Inc., P.O. Box 293, Bethel, Conn.)

Filed Aug. 9, 1962, Ser. No. 218,801
2 Claims, (Cl. 117—114)



1. The method of coating an elongate metallic member with a molten metallic substance, which includes the steps of:

(a) passing the member lengthwise into a bath of said molten metallic substance at a place of entry,
(b) rotatably supporting a thin, coiled metallic confining strip adjacent said bath,
(c) guiding the free end portion of said coiled confining strip independently of the said member and near the place of entry of the member into the bath and in a position broadside to and spaced from the member, to confine surface portions of the bath at a side of the metallic member so as to minimize the deposit of film from the bath onto the member as the latter enters the bath, and
(d) periodically feeding additional portions of said confining strip from the coiled supply thereof lengthwise toward the bath surface as the strip is consumed, to maintain the said confinement.

3,287,159

PROCESS FOR FORMING AN IRON-CHROMIUM-ALUMINUM COATING ON A FERROUS ARTICLE

Harold E. Bellis, North Tonawanda, N.Y., and Giles F. Carter, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 15, 1965, Ser. No. 496,709
4 Claims. (Cl. 117—114)

1. A process for forming a ferritic alloy coating on a ferrous metal article, the top 0.3 mil of said coating having a composition consisting essentially of iron, at least 12% by weight chromium, and from about 0.08% to 4% by weight of aluminum, comprising immersing said article in a molten bath maintained at a temperature between about 800° C. and the melting point of said article containing calcium as a metal transfer agent and having incorporated therein at least 0.25% by weight chromium based on the amount of calcium in said bath and a concentration of dissolved aluminum from about 0.04% to 3% by weight based on the amount of calcium in said bath.

3,287,160

TETRAFUNCTIONAL SILYL - OXYMETHYLENE COMPOUNDS AS CURING AGENTS FOR EPOXY RESINS

Hans H. Ender, Buffalo, N.Y., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed July 12, 1962, Ser. No. 209,282
11 Claims. (Cl. 117—132)

1. Organosilicon compounds represented by the formula:

$$Si[(OCH_2)_nOR]_4$$

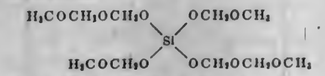
wherein each n is integer having a value from one to about five, and each R is an alkyl group containing from one to about four carbon atoms.

9. A process for curing epoxy resins which comprises forming a mixture of an epoxy resin selected from the class consisting of epoxy resin derivatives of diglycidyl ethers of polyhydric phenols, blends of epoxy resin derivatives of diglycidyl ethers of polyhydric phenols with polyphenol compounds, and epoxy resin derivatives of cyclohexene epoxide, from about 5 to about 30 weight percent (based on the weight of said resin) of an organosilicon compound represented by the formula

$$Si[(OCH_2)_nOR]_4$$

wherein n is an integer having a value from one to about five and each R is an alkyl group containing from one to about four carbon atoms, and from about 0.05 to about 1.0 weight percent (based on the weight of said resin) of a carboxylic acid salt of a metal selected from the class consisting of lead, tin, zirconium, iron, cadmium, titanium, calcium and manganese, the carboxylic acid radicals in said salts each containing from 2 to about 14 carbon atoms, and heating said mixture at a temperature between about 50° C. and about 250° C.

11. Steel coated with the heat cured composition comprising 3,4-epoxy-6-methylcyclohexylmethyl-3,4-epoxy-6-methylcyclohexanecarboxylate, about 11 weight percent (based on said epoxide) of an organosilicon compound having the formula



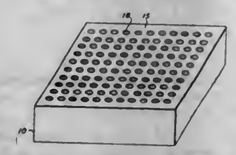
and about 1 weight percent (based on said epoxide) of stannous octoate.

3,287,161

METHOD FOR FORMING A THIN FILM RESISTOR

Frederick A. Schwertz, Pittsford, and John J. Kinsella, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Oct. 1, 1962, Ser. No. 227,328
2 Claims. (Cl. 117—212)



1. The method for forming a uniform thin film electrical resistor having a low temperature coefficient of resistance comprising:

(a) providing a dielectric substrate;
(b) forming on a surface of said substrate a uniform pattern of minute peaks and valleys;
(c) depositing on said surface a metallic layer having a negative temperature coefficient; and
(d) substantially uniformly abrading said surface whereby a planar surface results, increasing the resistance of said layer and causing the temperature coefficient of resistance of said layer to approach zero.

3,287,162

SILICA FILMS

Ting Li Chu and John Gavaler, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Jan. 27, 1964, Ser. No. 340,529
10 Claims. (Cl. 117—230)

1. The method comprising placing a wafer of semiconductive silicon and aqueous hydrofluoric acid in a reaction zone, said aqueous hydrofluoric acid having a concentration of hydrogen fluoride of from about 10 to 70 percent and heating the acid to a temperature of about 300° C. to 800° C. to develop a steam pressure therein whereby an oxide film is grown on the wafer of semiconductive silicon.

3,287,163

ELECTRIC CELL

Karl Steffens, Hagen-Vorhalle, Germany, assignors to Varta Aktiengesellschaft, Hagen, Westphalia, Germany

Filed Jan. 30, 1964, Ser. No. 341,173
8 Claims. (Cl. 136—6)

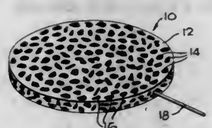
1. An electric cell, particularly an electric storage battery cell, in which electrodes of the same polarity are connected in parallel to each other by connecting bars, at least one connecting bar between two electrodes being provided with a slot engaging the connecting bar of at least one additional electrode.

3,287,164

ELECTRODE AND BATTERY

Frank C. Arrance, Costa Mesa, Calif., assignor to Douglas Aircraft Company, Inc., Santa Monica, Calif., a corporation of Delaware

Filed Jan. 27, 1965, Ser. No. 428,299
10 Claims. (Cl. 136—9)



1. A battery electrode structure, which comprises a porous conductive metal matrix selected from the group consisting of nickel, copper, silver, stainless steel and nickel alloys impregnated with active electrode paste material selected from the group consisting of silver, zinc, cadmium and nickel electrode materials, said porous conductive metal matrix being formed of an interconnected honeycomb of cells impregnated with said active electrode paste material, the pore diameters ranging from about 0.008 to about 0.100 inch, there being about 8 to about 50 such pores per lineal inch of matrix, said metal matrix being a minor proportion of the total weight of said electrode structure.

3,287,165

HIGH CAPACITY LEAD ACID BATTERY WITH LEAD CALCIUM NEGATIVE GRIDS

Henry E. Jensen, Lafayette Hill, Pa., assignor to Eltra Corporation, Toledo, Ohio, a corporation of New York

No Drawing. Filed Dec. 3, 1964, Ser. No. 415,790
1 Claim. (Cl. 136—65)

A storage battery of high capacity for deep cycle service, comprising Fauré type positive and negative plates, the grids of the positive plates consisting essentially of an alloy of lead and antimony, said antimony in the range of 3% to 10% by weight, and the grids of the negative plates consisting of an alloy of lead and calcium, said calcium in the range of .01% to .10% by weight.

3,287,166

BATTERY ELECTRODE AND BATTERY, AND PROCESS FOR PREPARING SAID ELECTRODE

Frank C. Arrance, Costa Mesa, Calif., assignor to Douglas Aircraft Company, Inc., Santa Monica, Calif., a corporation of Delaware

Filed Jan. 27, 1965, Ser. No. 428,381
20 Claims. (Cl. 136—68)

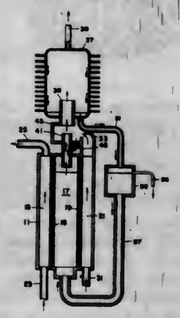
1. A battery comprising electrode structure for a high energy density battery, which comprises a high porosity

electrode formed of electrode material selected from the group consisting of silver, zinc, cadmium and nickel, said electrode formed of an interconnected honeycomb of



pores, said unfilled pores having a pore diameter in the range of about 0.008 to about 0.100 inch, and about 8 to about 50 pores per lineal inch.

3,287,167
METHOD AND APPARATUS FOR CONTROLLING OPERATIONS OF FUEL CELLS
Malcolm A. Weiss, Union, and Lindsay I. Griffin, Jr., New Providence, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Oct. 18, 1961, Ser. No. 145,893
13 Claims. (Cl. 136—86)



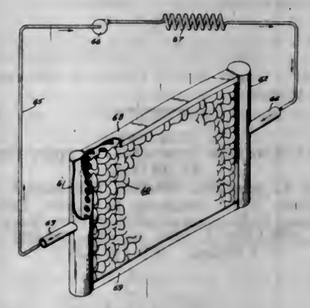
1. The method of controlling operation of a fuel cell which consumes hydrogen-containing fuel and thereby produces water and which utilizes an aqueous electrolyte wherein at least part of said water is produced, which method comprises operating said cell under elevated temperature conditions such that water is removed from said electrolyte faster than it is produced therein, and such that at least part of said removed water is in vapor form, subjecting the removed water vapor to heat exchange to condense at least part of said vapor, returning condensed water from said condensation to said electrolyte, and controlling said water return so as to keep the water inventory in said electrolyte substantially constant.

3,287,168
FUEL CELL ELECTRODE AND PREPARATION THEREOF
Glenn A. Marsh, Crystal Lake, Ill., assignor, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed Sept. 19, 1962, Ser. No. 224,727
11 Claims. (Cl. 136—86)

8. An electrode produced by passing a direct electric current to a noble metal support through an aqueous platinum plating solution consisting essentially of hydrochloric acid, platinic chloride, and lead ions in an amount of about 0.06–0.07 times the concentration of platinic chloride, said lead ions resulting from the presence in said solution of a soluble lead compound, said electric current being maintained at a current density between about 50–125 milliamperes per square centimeter of said support, and the temperature of said plating solution being maintained sufficiently high to insure solubility of said lead compound.

9. In a fuel cell comprising an electrolyte containing a reductant and two electrodes disposed therein in spaced relationship, and means for introducing a free oxygen-containing gas in said electrolyte in effective proximity to one of said electrodes, the improvement wherein the second electrode is the electrode of claim 8.

3,287,169
FUEL CELL HAVING A HOLLOW FORAMINOUS ELECTRODE
Alfred N. Rogers, Broomall, Pa., assignor to Baldwin-Lima-Hamilton Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 9, 1965, Ser. No. 446,960
8 Claims. (Cl. 136—86)



1. A fuel cell comprising a casing containing an electrolyte and having separate oxidizing gas and fuel gas cavities separated from said electrolyte by gas diffusion electrodes, at least one of said electrodes comprising a foraminous body formed of substantially hollow strands of an electrically conductive material selected from the group consisting of metals and metal alloys united at their points of contact, means for introducing a coolant fluid to the interior of said hollow strands of said electrode, means for withdrawing coolant fluid from said hollow strands, and means for circulating said fluid coolant between cooling means for said coolant fluid and said electrode.

3,287,170
VOLTAIC CELL HAVING A SILVER OXIDE POSITIVE ELECTRODE AND A MANGANESE NEGATIVE ELECTRODE
Peter S. Litt, Albuquerque, N. Mex., assignor of twelve percent each to Walter B. Hobbs, Ralph K. Ball, and Watson D. Harbaugh, all of Evanston, Ill.
Filed June 29, 1962, Ser. No. 207,161
2 Claims. (Cl. 136—100)

1. A voltaic cell comprising:
a silver oxide electrode,
a manganese electrode,
and an electrolyte selected from the group consisting of $CaSO_4 \cdot 2H_2O$ and $Al_2(SO_4)_3 \cdot 9H_2O$, said electrolyte being in the form of a water slurry.

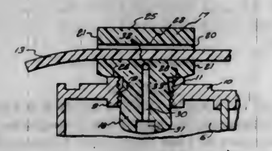
3,287,171
PLATINUM-RHENIUM ANODIC OXIDATION CATALYST
Eugene L. Holt, Forest Hills, N.Y., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Mar. 27, 1963, Ser. No. 268,439
4 Claims. (Cl. 136—120)

1. A platinum-rhenium anodic oxidation catalyst prepared by coreducing a solution of a platinum salt and a rhenium salt with an alkali metal borohydride.

3,287,172
ELECTRODE AND METHOD FOR PREPARATION THEREOF
Joseph A. Shropshire, Scotch Plains, and Charles E. Thompson, Fanwood, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed May 29, 1962, Ser. No. 198,677
5 Claims. (Cl. 136—122)

1. In the preparation of a non-sacrificial carbon electrode impregnated with a noble metal catalyst which preparation comprises soaking a carbon structure in an aqueous solution of a water-soluble compound containing said noble metal and subsequently heating the resulting impregnated carbon structure, the improvement which comprises heating said impregnated carbon structure in an atmosphere consisting essentially of hydrogen gas at a temperature in the range of about 1200° to 1800° F. until the noble metal component of said compound is reduced to elemental noble metal.

3,287,173
BATTERY CLOSURE
Ivan E. Cox, 4740 Broadway, and Russell W. Fritts, 2320 Gillham Road, both of Kansas City, Mo.
Filed July 30, 1964, Ser. No. 386,359
2 Claims. (Cl. 136—177)

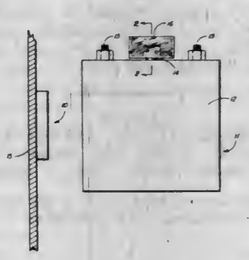


1. In a closure for storage batteries a flexible rubber band and flexible closure members mounted on said band, said closure members each having a body portion provided with a transverse slot therethrough, through which said band extends, said slots being rectangular in cross section and having flat parallel top and bottom walls and convexly curving side walls to provide slots that are of uniform height and gradually decreasing width from each end thereof to a mid-portion of minimum width, said closure members having depending plug portions having peripheral flexible ribs thereon spaced from the lower ends thereof, said closure members each having a vent passage therethrough.

3,287,174
PREVENTION OF PRESSURE BUILD-UP IN ELECTROCHEMICAL CELLS
Thomas J. Hennigan, Chillum Terrace, Paul C. Donnelly, Greenbelt, and Charles F. Palandati, Jr., Hyattsville, Md., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Nov. 12, 1963, Ser. No. 323,182
2 Claims. (Cl. 136—179)

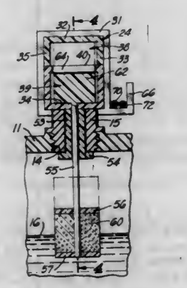
1. In a closed chamber housing an electrochemical cell which produces a pressure build-up in said chamber from hydrogen gas evolved as a by product of its electrochemical reaction, the improvement comprising: a plastic holder; powdered palladium oxide coated on said holder; said plastic holder with said palladium oxide coated thereon positioned in said closed chamber, whereby said hydrogen gas reacts with said palladium in the following manner:

$$PdO + H_2 \rightarrow Pd + H_2O$$



thereby eliminating any accumulation of hydrogen gas and preventing any pressure build-up due to hydrogen accumulation.

3,287,175
BATTERY ACID LEVEL INDICATOR
John B. Teed, 2258 W. Court St., San Bernardino, Calif.
Filed Oct. 10, 1963, Ser. No. 315,209
5 Claims. (Cl. 136—182)



1. In combination, a battery having a case divided into a plurality of electrolyte-containing cells, each of which has a filler opening;
a housing mounted on the top of the battery case above said filler openings;
said housing having a light-conducting channel provided therein which extends from one end of the housing to the other;
a lamp mounted at one end of said housing to direct rays of light along said channel to the other end of the housing;
a photoelectric cell mounted at said other end of said housing in a position to be energized by rays of light from said lamp passing through said light-conducting channel;
a plurality of floats disposed one in each of said cells, each of said floats having a stem projecting upwardly through its filler opening;
an opaque flag carried at the upper end of each of said stems, said flags being normally positioned above said light-conducting channel when the electrolyte level of the associated cell is above the safe level, and said flag descending into said light-conduct-

ing channel when the electrolyte level drops below said safe level;

any one of said flags being operable to interrupt the rays of light from said lamp to said photoelectric cell when the electrolyte level of the associated cell drops below the safe level;

an electrically actuated indicating device; and

a transistor operatively connected to said indicating device to actuate the same;

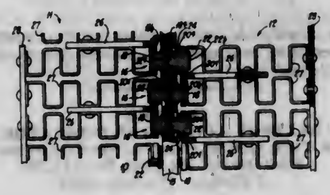
said transistor being connected to said photoelectric cell and energized thereby to actuate said indicating device when the rays of light from said lamp are interrupted by one of said flags.

3,287,176

THERMOELECTRIC APPARATUS

John C. McAlvay, Racine, Wis., assignor to Webster Electric Company, Racine, Wis., a corporation of Delaware

Filed Oct. 15, 1962, Ser. No. 230,354
14 Claims. (Cl. 136—204)



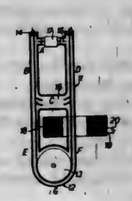
14. A thermoelectric device comprising a first element holder provided with an internal bore, a sleeve-shaped thermoelectric element tightly positioned within said bore, and a second element holder provided with an external extension tightly positioned within said element, said holders subjecting said element to radial compression and defining a thermoelectric circuit radially therethrough.

3,287,177

HEAT TREATMENT OF STRIP MATERIAL

James Birkett Ingall, Sutton Coldfield, England, assignor to Birlec-Efco (Melting) Limited

Filed Oct. 7, 1963, Ser. No. 314,405
13 Claims. (Cl. 148—13)



1. A method for the continuous heat treatment of elongate metal material, which comprises the steps of passing the material longitudinally through a bath of fluid heat transfer medium, heating the fluid to heat the material in turn by thermal conduction in an intermediate portion of the materials path through the bath, and circulating the fluid in the remaining portions of the bath from the portion of the bath last encountered by the material to the portion thereof first encountered thereby to transfer heat from the outgoing material to the ingoing material.

3,287,178

CORROSION-PROOFING COMPOSITION INCLUDING PHOSPHATE ESTERS

Robert G. Wurstner, Richmond Heights, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Filed May 23, 1963, Ser. No. 282,560
12 Claims. (Cl. 148—6.16)

1. A liquid corrosion-proofing composition adapted to form a protective coating on metal articles which comprises the combination of:

(A) the product obtained by mixing one mole of at least one aliphatic amine containing at least about 6 carbon atoms with from about 0.25 to about 2 moles of aqueous chromic acid and heating the mixture to remove substantially all water present, and

(B) a mixture of phosphate esters prepared by the process which comprises the reaction of:

(a) one mode of a phosphorus-containing reagent selected from the group consisting of phosphorus pentoxide and phosphoric acids with

(b) from about 1 to about 10 moles of an alkylphenol at a temperature of at least about 40° C.

3,287,179

PROCESS FOR PREPARING ALUMINUM SURFACES PRIOR TO PLATING

Theodore Frank, 63—09 Bay Parkway, Brooklyn, N.Y., and Murray Goldwasser, 75—55 181st St., Flushing, N.Y.

No Drawing. Filed Jan. 4, 1963, Ser. No. 249,318
4 Claims. (Cl. 148—6.21)

1. A composition of matter comprising by weight an aqueous solution of 5 to 50% of a salt of an alkali metal, 1.9 to 20% of a salt of a chromic acid, 3 to 26% of a third salt of an acid selected from the group consisting of chloric and perchloric, and a small percentage of a wetting agent.

3,287,180

METHOD OF FABRICATING COPPER BASE ALLOY

George H. Eichelman, Jr., and Irwin Broverman, Cheshire, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Dec. 5, 1963, Ser. No. 328,184
13 Claims. (Cl. 148—11.5)

8. The method of fabricating a high strength aluminum bronze alloy containing from 9.0 to 11.8 percent aluminum and the balance essentially copper, which comprises: hot rolling an alloy having the aforesaid composition at a temperature of from 1850° F. to 1000° F.; holding said alloy at a temperature of from 1100° F. to 1050° F. for at least two minutes; cold rolling said alloy at a temperature of below 500° F.; and annealing the alloy at a temperature of from 1000° F. to 1400° F.

3,287,181

TREATMENT OF INTERGRANULAR SULFUR CORROSION IN METALS

Bernard Steverding, Huntsville, Ala., assignor to the United States of America as represented by the Secretary of the Army

No Drawing. Filed Nov. 7, 1963, Ser. No. 322,256
12 Claims. (Cl. 148—20.3)

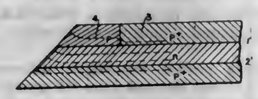
9. A method of making metals resistant to sulfur corrosion comprising; exposing said metals to sulfur vapor, heating said metals to a temperature of between about 500° C. and about 1100° C. at a pressure of from about 10^{-3} mm. Hg to about 10^{-6} mm. Hg for a period of time of between about 1 hour and about 48 hours.

3,287,182

SEMICONDUCTOR ARRANGEMENT

Günter Köhl, Konigstein, Taunus, Germany, assignor to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany

Filed Sept. 25, 1964, Ser. No. 399,320
Claims priority, application Germany, Sept. 25, 1963, L 45,951
3 Claims. (Cl. 148—33.5)



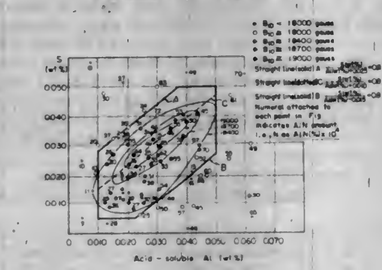
1. A semiconductor arrangement having at least three layers of alternating conduction type including a weakly extrinsic doped layer between two more heavily doped layers such that two adjacent pn-junctions are formed by the arrangement, at least one of said more heavily doped layers being provided with a weakly doped lateral edge zone which entirely surrounds said layer thereby increasing the reverse voltage characteristic for the pn-junction adjacent said edge zone.

3,287,183

PROCESS FOR PRODUCING SINGLE-ORIENTED SILICON STEEL SHEETS HAVING A HIGH MAGNETIC INDUCTION

Satoru Taguchi, Akira Sakakura, and Hironori Takashima, Kitakyushu, Fukuoka, Japan, assignors to Yawata Iron & Steel Co., Ltd., Tokyo, Japan, a corporation of Japan

Filed June 22, 1964, Ser. No. 376,627
4 Claims. (Cl. 148—111)



1. A process for producing single-oriented silicon steel sheet of (110)[001] orientation, in which a silicon steel ingot composed of 0.025 to 0.085 wt. percent C, 2.5 to 4.0 wt. percent Si, 0.010 to 0.050 wt. percent acid-soluble Al and 0.005 to 0.050 wt. percent S and the rest being iron is hot-rolled to produce a hot-rolled steel sheet, said hot-rolled steel sheet is subjected to an annealing and cold-rolling to obtain a steel sheet of final thickness, said steel sheet of final thickness is thereafter subjected to an annealing for decarburization and further for secondary recrystallization, comprising the steps of hot-rolling a material, in which the ratio of S and acid-solution Al is made to be

$$\frac{S(\%)}{\text{acid-soluble Al}(\%)+0.025 \text{ to } -0.015}=0.8$$

to make the thickness of said material to 1.5 mm. to 7 mm., cold-rolling the thus hot-rolled steel sheet at a reduction in thickness of 5 to 40%, annealing the cold-rolled sheet at a temperature ranging from 950 to 1200° C. for 30 seconds to 30 minutes and then finally cold-rolling the thus annealed steel sheet at a reduction in thickness of 81 to 95%.

3,287,184

METHOD OF PRODUCING LOW CARBON ELECTRICAL SHEET STEEL

Pun K. Koh, Allentown, Pa., assignor, by mesne assignments, to Bethlehem Steel Corporation, a corporation of Delaware

No Drawing. Filed Oct. 22, 1963, Ser. No. 318,100
2 Claims. (Cl. 148—113)

1. A method of manufacturing a silicon electrical steel sheet comprising:

(a) hot rolling an ingot consisting essentially, by weight, of 0.50% to 2.00% silicon, 0.01% to 0.25% carbon, balance iron, to an intermediate gauge of from about 0.070 inch to about 0.085 inch;

(b) decarburizing the hot rolled sheet in a furnace in a temperature range of from about 1300° F. to about 1350° F. for at least 24 hours in a controlled atmosphere of wet 100% hydrogen, purging the furnace of said wet 100% hydrogen atmosphere, substituting therefor an atmosphere of dry 100% hydrogen, raising the temperature of the furnace to from about 1650° F. to 1850° F. without cooling the sheet, holding the decarburized sheet in the temperature range of from about 1650° F. to about 1850° F., for at least 24 hours, and cooling the sheet to room temperature;

(c) cold rolling the decarburized and annealed sheet to the required final gauge in one cold rolling operation;

(d) annealing the cold rolled sheet at a temperature of from about 1350° F. up to about 1850° F. for at least 24 hours in a batch-type furnace in a controlled atmosphere of dry 100% hydrogen, furnace cooling the sheet at 50° F./hr. to a temperature of from about 900° F. to about 1100° F. and holding the sheet at this temperature for at least 2 hours in a controlled atmosphere of dry 100% hydrogen.

3,287,185

PROCESS FOR IMPROVING ALLOYS BASED ON ALUMINUM, ZINC AND MAGNESIUM, AND ALLOYS OBTAINED THEREBY

Pierre Vachet, Meudon, and Guido-Edgar Perrier, Chambery, France, assignors to Pechiney-Compagnie de Produits Chimiques et Electrometallurgiques, Paris, France

No Drawing. Filed Nov. 14, 1963, Ser. No. 323,584
Claims priority, application France, Nov. 15, 1962, 915,526
5 Claims. (Cl. 148—159)

1. In a process of heat treating an aluminum-zinc-magnesium alloy wherein said alloy is solution heat treated followed by quenching or air cooling and artificial aging at a temperature within the range of 100–180° C. for a time within the range of 6 and 48 hours, the improvement comprising the addition of cadmium as an essential alloying element in an amount within the range of 0.005 to 0.5 percent to reduce the time required for artificially aging said alloy.

3,287,186

SEMICONDUCTOR DEVICES AND METHOD OF MANUFACTURE THEREOF

Robert M. Minton, Franklin Township, Somerset County, and Richard Glicksman, North Plainfield, N.J., assignors to Radio Corporation of America, a corporation of Delaware

Filed Nov. 26, 1963, Ser. No. 326,098
14 Claims. (Cl. 148—174)

1. The method of fabricating a semiconductor junction device, comprising the steps of applying a mask of dielectric material having a peripheral notch to a limited area on one face of a given conductivity type crystalline semiconductive body;

depositing a layer of opposite conductivity type crystalline semiconductive material on the unmasked

portion of said major face within said notch to form a rectifying barrier between said semiconductive layer and said body;

depositing a metallic layer over said mask and over said opposite conductivity type layer within the peripheral notch of said mask; and,

leaving said mask in situ while removing a portion of said opposite type semiconductive layer within said notch to reduce the area of said rectifying barrier.

3,287,187
METHOD FOR PRODUCTION OF SEMICONDUCTOR DEVICES

René Rosenheinrich, Ebermannstadt, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

Filed Jan. 29, 1963, Ser. No. 254,783
Claims priority, application Germany, Feb. 1, 1962, S 77,827
8 Claims. (Cl. 148—187)

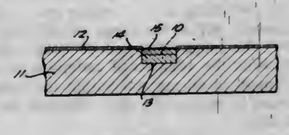


1. The method of producing a semiconductor junction device having a substantially monocrystalline semiconductor body with regions of respectively different conductance thereon, which comprises coating one surface region of said body with a doping substance for one type of conductance, coating another region of said body with another doping substance for the other type of conductance, vapor-depositing upon said body and said respective dopant coatings a layer of oxide of the same semiconductor material of which said body consists, and then diffusing said doping substances from beneath said oxide layer into the semiconductor body by heating the body.

3,287,188
METHOD FOR PRODUCING A BORON DIFFUSED SILICON TRANSISTOR

Leslie Moles, Newport Beach, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Nov. 1, 1963, Ser. No. 320,638
1 Claim. (Cl. 148—187)



A method for producing a boron diffused silicon transistor which comprises the steps of introducing a substrate slice of silicon into a heating zone, introducing a boron trioxide source of doping material into the heating zone a predetermined distance from the silicon substrate slice, heating the silicon substrate slice and the boron trioxide source at a predetermined temperature for a predetermined period of time, removing the boron trioxide source from the heating zone, forming a silicon dioxide diffusion masking layer on the slice, and heating the boron doped silicon substrate slice at a predetermined temperature for a predetermined time to produce the desired depth and concentration of boron doping in the resulting diffused silicon transistor boron diffused base structure.

3,287,189
COATED EXPLOSIVE COMPRISING AMMONIUM NITRATE

John S. Wilson, Elberton, Ga., Kirby T. Rapstein and Frank D. Patrick, Freeport, and Charles F. Schrieber, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 2, 1964, Ser. No. 348,853
4 Claims. (Cl. 149—8)

1. A process for preparing a water-resistant ammonium nitrate based explosive composition which comprises,

(a) blending porous particulate ammonium nitrate with a member selected from the group consisting of alkaline earth metal- and earth metal salts of aliphatic carboxylic acids, the amount of said salt ranging from about 0.5 to about 2 weight percent based on the weight of said ammonium nitrate, said salt having from about 8 to about 24 carbon atoms in the aliphatic group,

(b) adding a petrolic liquid to the blend of said fatty acid salt and said ammonium nitrate, the amount of said petrolic liquid ranging from about 4 to about 8 weight percent of the total mixture,

(c) mixing said petrolic liquid and the blend of said fatty acid salt and particulated ammonium nitrate thereby to provide in situ in and on said ammonium nitrate a protective, water resistant coating, and

(d) admixing the so-prepared water resistant coated porous ammonium nitrate with an aqueous solution of ammonium nitrate, said solution ranging in ammonium nitrate concentration from about 60 weight percent of said solution up to the saturation level and the total amount of water at a maximum is about 15 weight percent of the total explosive composition.

4. A pourable, slurry-type water resistant ammonium nitrate based explosive composition which comprises;

(a) on a weight basis from about 0.6 to about 1.8 percent of a member selected from the group consisting of alkaline earth metal and earth metal aliphatic carboxylic acid salt, the aliphatic group of said salt having from about 8 to about 24 carbon atoms;

(b) from about 2.5 to about 8 percent liquid hydrocarbon fuel,

(c) from about 9 to about 15 percent water,

(d) a maximum of about 3 percent thickening agent, and

(e) balance, porous particulate ammonium nitrate, said composition being further characterized in that a portion of said ammonium nitrate is blended with said aliphatic carboxylic acid salt and said liquid hydrocarbon thereby to form a water resistant coating in and on said particulate ammonium nitrate and the remainder of said ammonium nitrate is dissolved in said water forming a solution ranging from about 60 percent to saturation with respect to said ammonium nitrate, said solution being admixed with said water resistant coating containing particulate ammonium nitrate.

3,287,190
EXOTHERMIC COATED NITRATED CELLULOSE TAPE

Roger A. Long, Escondido, Calif., assignor to Whittaker, Corporation, Los Angeles, Calif., a corporation of California

No Drawing. Filed May 18, 1964, Ser. No. 368,346
18 Claims. (Cl. 149—12)

5. An exothermic material comprising a nitrated substrate and a coating comprising an exothermic system and a nitrated cellulose binder, said exothermic system comprising magnesium, nickel oxide and manganese monoxide combined in exothermic proportions.

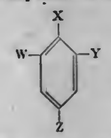
3,287,191
ETCHING OF PRINTED CIRCUIT COMPONENTS

Paul F. Borth, Park Forest, Ill., assignor to Photo-Engravers Research Inc., Savannah, Ga., a corporation of Georgia

Filed July 23, 1963, Ser. No. 297,147
9 Claims. (Cl. 156—3)



1. In the etching of a printed circuit component characterized by the use of a metal more noble than copper deposited on copper, wherein it is desired to etch away undesired copper, the improvement which comprises etching said component with an aqueous ferric chloride etching solution additionally containing a mixture of agents consisting essentially of (1) a member of the group consisting of ethylene thiourea and substituted ethylene thiourea, and (2) a film modifier which forms in said ferric chloride solution a compound of the formula:



wherein, W, X, Y and Z are each selected from the group consisting of nitroso, amino, lower alkyl substituted amino, acid radical of a lower fatty acid, hydroxy, and hydrogen with the proviso that at least two of W, X, Y and Z are other than hydrogen and are in ortho or para relation.

3,287,192
METHOD OF PRODUCING SELF-ADHESIVE LABELS, LETTERS, CHARACTERS AND SYMBOLS

Armin Pohlenz, 112 Bergstrasse, Lahr, Baden, Germany

Filed July 25, 1963, Ser. No. 297,631
2 Claims. (Cl. 156—3)



1. A method of producing self-adhesive accurate patterns of metal foil, free from burrs and flashes comprising, in combination, the steps of:

imprinting patterns on the front side of a metal foil;

applying etching resist to said patterns on the front side of the metal foil after the patterns have been imprinted; applying to the back side of said metal foil a reactivatable adhesive,

covering said adhesive with a backing sheet having a weak cohesive property for said adhesive, to complete the formation of a blank,

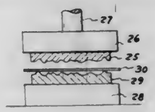
etching the areas of the metal foil which are not covered with the resist all the way down to the surface of the reactivatable adhesive, to decompose and remove the parts of the metal foil not covered by said etching resist, simultaneously washing off the etching resist and removing the adhesive which underlies the etched areas with a solvent therefore, thereby completely removing the resist and adhesive, covering the front side of said patterns with an adhesive holding foil having a stronger adhesive property than that of said backing sheet and

removing said plastic backing.

3,287,193
METHOD OF REPRODUCING A TEXTURED SURFACE PAINTING

Max Klein, Ferndale, Mich., assignor to Max Klein, Inc., Oakland, Mich., a corporation of Michigan

Filed Dec. 30, 1964, Ser. No. 422,233
2 Claims. (Cl. 156—59)



1. In a method of reproducing, as to texture and color, a conventional oil painting on canvas having brushmarks and pallet knife type textured hills and valleys upon the surface of the painting; the steps of,

first, imprinting a final sheet with the boundaries of the zones to be colored, thus reproducing thereon the color zones of the painting, and printing numbers on such zones;

second, forming a die from the surface contour of the painting, with the die surface duplicating the texture of the painted surface;

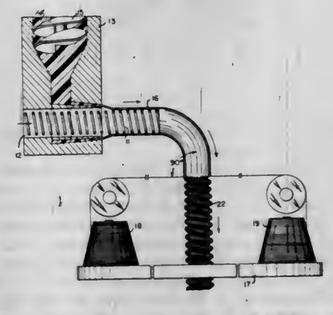
third, pressing the die to the imprinted final sheet to mold the contour of the painting onto the imprinted final sheet; and

fourth, spreading paint upon the contoured surface of the imprinted and molded final sheet to thereby duplicate thereon the painting, including its colors and surface texture.

3,287,194
METHOD OF MAKING A FLEXIBLE CORRUGATED CONDUIT

Russell B. Waddell, Jr., Waynesville, N.C., assignor to Dayco Corporation, Dayton, Ohio, a corporation of Ohio

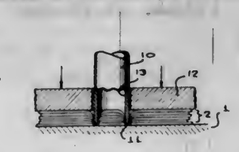
Original application Apr. 17, 1962, Ser. No. 188,042. Divided and this application Jan. 11, 1965, Ser. No. 435,769
7 Claims. (Cl. 156—144)



1. The method of manufacturing a flexible externally corrugated conduit comprising the steps of forming a reinforcing coil having axially spaced turns, forming a tubular elastomeric member about said coil, and tightly braiding

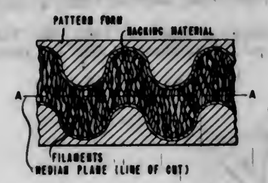
a fiber cover about and exerting a radially inward force on said tubular elastomeric member to force said member to embrace and surround said coil and to unify the components of said conduit and form corrugations therein.

3,287,195
METHOD OF PRESSURE WELDING THERMOPLASTIC FILM
Thomas E. Piazze, Mount Vernon, Ohio, assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Nov. 17, 1961, Ser. No. 153,148
12 Claims. (Cl. 156—251)



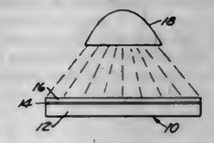
1. A method of forming a joint between superposed thermoplastic sheets comprising the steps of (1) placing a plurality of thermoplastic sheets in stacked relation to each other on a support member; (2) applying a hollow punch member having a rounded working edge to a localized area of said stacked sheets; (3) joining portions of at least some of said sheets in interlocked relation by application of force through said punch member (4) forming heat welds between said interlocked portions by continued application of force through said punch members; (5) at least partially severing said stacked sheets in said localized area from the remaining area of the stacked sheets.

3,287,196
METHOD OF STYLING TEXTILES BY CONTOUR SCULPTURING
Charles Richard Koller, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Nov. 23, 1962, Ser. No. 239,698
6 Claims. (Cl. 156—254)



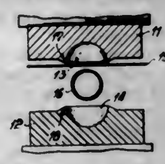
1. Method for the production of surface styled pile articles which comprises:
(a) providing a resilient porous, self-supporting material having a body formed of a plurality of contorted filamentary structures which are overlapping and are aligned in generally the same direction, said body constituting a network wherein at least a major proportion of the filamentary structures contact each other throughout the three dimensions of the body, the fiber density of the body being below 25 lbs./ft.^{3}, said material having two substantially parallel planar surfaces, the planes of which would be intersected by the average direction of filament alignment by an angle of at least 30°,
(b) displacing isolated volumes of said material such that said planar surfaces become patterned undulating surfaces which are non-intersecting with the median plane defined thereby and which are separated by a substantially constant thickness dimension as measured in a direction perpendicular to said median plane at the point of maximum displacement, and
(c) slicing the resulting material along said median plane.

3,287,197
PROCESS FOR PERMANENTLY CLADDING AN INORGANIC SURFACE WITH PLASTIC AND PRODUCT MADE THEREBY
Louis A. Errede, Roseville, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Jan. 25, 1963, Ser. No. 253,943
22 Claims. (Cl. 156—272)



1. A process for permanently cladding an inorganic surface with plastic which comprises intimately contacting (1) an inorganic surface primed with an organic material containing ultraviolet light sensitive groups which are activated by ultraviolet light in wavelengths of between about 2000 A. and 3600 A. with (2) a thermoplastic polymer cladding layer, said polymer being selected from the group consisting essentially of carbon and hydrogen, carbon and halogens wherein at least some of the halogens are other than fluorine, and combinations of carbon with hydrogen and halogen, and (3) subjecting the laminate so formed to ultraviolet irradiation of wavelengths in the range of about 2000 A. to 3600 A. while maintaining intimate contact at the interface between the primed inorganic surface and the cladding layer and at a temperature between about 100° C. and 200° C. for a period of time sufficient to permanently adhere said cladding layer and said primed inorganic surface to one another.

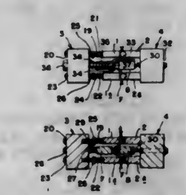
3,287,198
APPARATUS FOR APPLYING MEMBERS, AS LABELS, PLATENS, OR THE LIKE TO HOLLOW BODIES IN A BLOWING PROCESS
Werner Battenfeld, Meinerzhagen, Westphalia, Germany, assignor to Firma Gebr. Battenfeld, Meinerzhagen, Westphalia, Germany, a corporation of Germany
Original application June 16, 1964, Ser. No. 377,175. Divided and this application Dec. 21, 1964, Ser. No. 429,698
Claims priority, application Germany, Apr. 12, 1960, B 57,457, Patent 1,168,053
3 Claims. (Cl. 156—518)



1. An apparatus for applying labels to a blow molded plastic article during the molding of said article in a hollow mold comprising
at least two mold parts to form in closed position a complete hollow mold and receiving an extruded plastic hose therein,

at least one of said mold parts having a cylindrical opening extending from the inside of said mold to its outer periphery,
a stamp having an outer diameter substantially identical with the inner diameter of said opening and reciprocating in said opening and operating as punch for cutting out labels from a sheet of label material,
said stamp feeding the cut portion of said sheet material through said opening into said mold to engage said portion with the outer face of said extruded plastic hose, and
means for sliding off from said stamp the remaining portion of said sheet of label material from which said label portion has been cut out during the withdrawal stroke of said stamp from said opening.

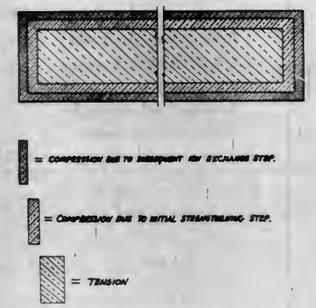
3,287,199
JAW ASSEMBLY FOR CONTAINER FORMING AND FILLING MACHINE
Norman A. Virta, Mount Prospect, Ill., assignor to Triangle Package Machinery Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 24, 1963, Ser. No. 318,578
5 Claims. (Cl. 156—583)



1. A jaw assembly for a packaging machine wherein a heat sealable web of film is formed into a container, then filled and sealed, said assembly comprising,
(a) spaced pairs of clamping jaws
(1) spaced longitudinally of said web of film and
(2) adapted to clamp the film therebetween,
(b) means to effect slack in that portion of the film between said spaced pairs of clamping jaws,
(c) sealing means for sealing the film in said slack portion thereof between said spaced pairs of clamping jaws, said sealing means including,
(1) a pair of sealer jaws movable toward each other into sealing position wherein the film is gripped therebetween, and
(d) means for maintaining said sealer jaws separated until after said clamping jaws clamp the film therebetween and attain substantially the maximum clamping pressure thereof.

3,287,200
METHOD OF STRENGTHENING GLASS BY ION EXCHANGE AND ARTICLES THEREFROM
Albert R. Hess, Pittsburgh, George E. Sleighter, Natrona Heights, and Fred M. Ernsberger, Pittsburgh, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 4, 1962, Ser. No. 228,255
6 Claims. (Cl. 161—1)

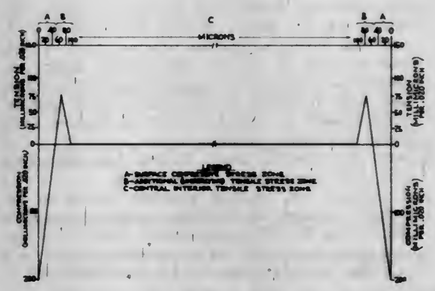
1. A method of strengthening a glass article containing an alkali-metal which comprises tempering the glass to place a compression zone in the surface of the article and thereafter placing a higher compression in the surface of the article to a lesser depth than the depth of said compression zone by replacing the alkali-metal ions in said lesser depth of the compression zone by larger alkali-metal ions by contacting the glass with a source of larger alkali-metal ions while retaining the glass at a temperature below the strain point of the glass until the higher degree of compression is imparted to such lesser depth



by said replacement, the ultimate strength of the article after said ion replacement being greater than that imparted by the initial tempering step.

6. A glass article produced by the method of claim 1.

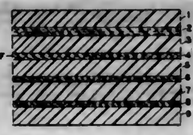
3,287,201
METHOD OF STRENGTHENING GLASS BY ION EXCHANGE AND ARTICLE MADE THEREFROM
Raymond S. Chisholm, Pittsburgh, George E. Sleighter, Natrona Heights, and Fred M. Ernsberger, Pittsburgh, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 7, 1963, Ser. No. 249,790
8 Claims. (Cl. 161—1)



1. A method of strengthening an alkali metal containing glass which comprises replacing the alkali metal ions in a surface of the glass by smaller electropositive metal ions selected from the group consisting of the ions of alkali metals, copper, silver and hydrogen by contacting the glass with a source of said smaller electropositive metal ions while retaining the glass at a temperature above the strain point of the glass, reducing the temperature of the glass below the strain point after said replacement, and thereafter replacing said smaller electropositive metal ions with larger electropositive metal ions selected from the group consisting of the ions of alkali metals, copper and silver by contacting the glass with a source of said larger electropositive metal ions while retaining the temperature of the glass below the strain point of the glass until the surface is placed in compression by said latter replacement.

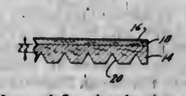
8. A strengthened glass article having a stress pattern substantially as shown in the single figure in the drawing.

3,287,202
PLASTIC-METAL LAMINATES
John V. Petriello, North Babylon, N.Y., assignor to Dilectrix Corporation, Farmingdale, N.Y.
Filed June 1, 1962, Ser. No. 199,540
7 Claims. (Cl. 161—60)



1. Gas and liquid permeation barrier means consisting of a composite film structure derived from fused polytetrafluoroethylene comprising a cross-sectional arrangement with first alternating layers having parallel metallic flakes serving as a permeation barrier, and second alternating layers of unadmixed resin to provide a non-rigid and flexible structure, said flakes being arranged parallel to the film sides and to each other.

3,287,203
HARDWOOD FLOORING
Armin Elmendorf, Palo Alto, Calif., assignor to Elmendorf Research Incorporated, a corporation of California
Filed Mar. 14, 1962, Ser. No. 179,709
3 Claims. (Cl. 161—123)



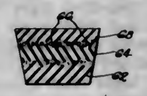
1. A prefinished wood flooring having a dent resistance exceeding that of flooring hardwood and which flooring is adapted for bonding to a subfloor by pressure momentarily applied and which flooring requires no refinishing after installation, including,

a ligno-cellulosic fibrous base having a hardness resulting due to a density of from about 0.85 to 1.15, said base having a thickness between about ⅛ inch and 1/20 inch to provide serviceability under extended use together with adequate flexibility to allow said base to follow the undulations in a subfloor when bonded to a subfloor with an adhesive while using momentary pressure,

a layer of hardwood veneer, thinner than about 0.04 inch, said veneer bonded to said base,

and a clear wear resistant covering bonded to the veneer, said covering consisting essentially of a resin film having flexibility and softness sufficient to provide adequate traction for the installed flooring, and said film having a thickness of at least 0.005 inch.

3,287,204
ELASTOMERIC-GLASS FIBER PRODUCTS AND PROCESS AND ELEMENTS FOR USE IN SAME
Alfred Marzocchi, Cumberland, R.I., assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Aug. 22, 1962, Ser. No. 218,724
12 Claims. (Cl. 161—175)



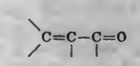
12. A glass fiber reinforcement for elastomeric-glass fiber products comprising a bundle formed of a plurality of glass fibers, a first coating on the individual glass fiber surfaces containing an anchoring agent for integrating an elastomeric material with the glass fiber surfaces, an elastomeric composition impregnating the bundle of glass fibers coated with the anchoring agent substantially to coat the individual glass fibers with a second coating and a third coating in the form of an interfacial bonding agent on the impregnated bundle of glass fibers for integrating the elastomer of the product with the elastomeric material impregnating the bundle of glass fibers.

3,287,205
LOW TEMPERATURE BONDING THERMOPLASTIC POLYHYDROXYETHER ADHESIVE COMPOSITIONS
Thomas E. Bugel, Metuchen, N.J., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Sept. 24, 1962, Ser. No. 225,850
13 Claims. (Cl. 161—192)

11. A structural element having improved bond strength comprising at least one steel adherend and at least one stainless steel adherend said adherends being bonded together with an adhesive composition comprising a mixture of from 50 to 98 parts by weight of thermoplastic polyhydroxyether reaction product of substantially equimolar amounts of a dihydric phenol and epichlorohydrin, said thermoplastic polyhydroxyether having a degree of polymerization of at least 30, and from 2 to 50 parts by weight of poly(vinyl alkyl ether) wherein the alkyl group contains from 1 to 12 carbon atoms inclusive per 100 parts by weight of the mixture.

3,287,206
SIZE CONTAINING ROSIN, TERPENE RESIN AND REACTION PRODUCT OF AN ACIDIC COMPOUND WITH A TERPENE RESIN AND USE OF THE SIZE FOR SIZING PAPER
Paul H. Aldrich, Greenville, Del., and Herman I. Enos, Jr., Fairville Hills, Pa., assignors to Hercules Incorporated, a corporation of Delaware
No Drawing. Filed Nov. 16, 1964, Ser. No. 411,558
12 Claims. (Cl. 162—168)

1. A paste size comprising an aqueous dispersion of rosin, from about 0.5% to about 45% by weight, based on the weight of rosin, of a terpene hydrocarbon resin consisting of the polymerization products of terpene hydrocarbons and from about 0.5% to about 50% by weight, based on the weight of terpene hydrocarbon resin, of the reaction product of an acidic compound containing the

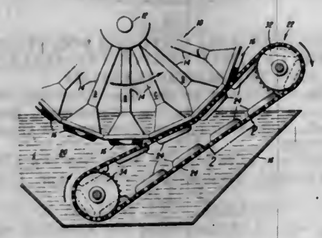


group with a terpene hydrocarbon resin consisting of the polymerization products of terpene hydrocarbons, said dispersion being partially neutralized with aqueous alkali.

3,287,207
METHOD OF DISTRIBUTING SILICEOUS FILLERS UNIFORMLY THROUGHOUT A WATER-LAID WEB WHILE THE WEB IS ON THE FOURDRINIER WIRE
Ralph O. Treat, Havre de Grace, Md., assignor to J. M. Huber Corporation, Locust, N.J., a corporation of New Jersey
Filed Apr. 17, 1964, Ser. No. 360,582
3 Claims. (Cl. 162—186)

1. A method of distributing siliceous filler pigments of a particle size of from 0.01 to 0.6 micron substantially uniformly throughout a moving web on a Fourdrinier papermaking machine which consists essentially of spraying an aqueous slurry of said filler pigments to said moving web from a height of from about 6 inches to about 4 feet above the moving web at a spray pressure of from about 3 p.s.i.g. to about 20 p.s.i.g. from spray nozzles positioned above the moving web and intermediate the headbox and the first vacuum box of the papermaking machine wherein the solids content of the moving web is such that the filler is uniformly drawn substantially completely therethrough and is substantially completely retained therein, thereby distributing said filler pigment uniformly throughout said moving web.

3,287,208
ARTICLE PRESS METHOD AND APPARATUS FOR PULP MOLDING MACHINES
William S. Peppler, Chappaqua, N.Y., assignor to Diamond International Corporation, a corporation of Delaware
Filed Nov. 15, 1963, Ser. No. 324,082
7 Claims. (Cl. 162—227)



1. In the method of suction molding pulp articles wherein a series of shaped pulp molds is passed through a vat containing a slurry of pulp and wherein vacuum is applied to the molds to effect the deposition of pulp thereon and comprising applying pressure to the pulp deposit on each shaped mold in sequence while said pulp deposit is submerged beneath said pulp slurry, and maintaining application of pressure until said each mold has passed out of said pulp slurry, the improvement comprising applying said pressure to essentially the entire surface of said pulp deposit with a hard and flexible complementary shaped pressure exerting surface, flexing each said pressure exerting surface after each adjacent mold has left said pulp slurry to permit air to enter between said pulp deposit and said pressure exerting surface, and removing said pressure exerting surface from said pulp deposit.

2. In a pulp molding apparatus including a pulp slurry vat, a series of shaped pulp molds mounted on carrier means to pass through said vat, a vacuum means for applying suction through said molds, and pressure applying means at least partially extending into said vat and into the slurry contained therein and provided adjacent and in facing relationship to said pulp molds at a position corresponding to a segment of the travel of said molds partially through said vat, and partially above said vat the improvement wherein said pressure applying means comprises a series of surfaces, each surface being shaped complementary to the shape of said pulp molds, said pressure applying means further comprising aligning means for maintaining said complementary surfaces in position and for urging each said complementary surface against a pulp deposit on a corresponding complementary mold, each said surface being hard and flexible whereby said surface may flex for permitting air to enter between said pulp deposit and said surface to permit separation thereof.

3,287,209
CONTROL OF NEMATODES
Richard W. Simmons, Aaron E. Markham, and Ellis G. King, Bellingham, Wash., assignors to Georgia-Pacific Corporation, Portland, Oreg., a corporation of Georgia
No Drawing. Filed Dec. 16, 1963, Ser. No. 330,548
38 Claims. (Cl. 167—22)

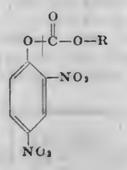
1. A process for controlling soil-dwelling, plant parasitic nematodes in a nematode infestible plant growing medium, which comprises mixing into the nematode infestible plant growing medium a sufficient amount of a halogenated, sulfonated lignin to kill a substantial portion of the nematodes, said halogenated, sulfonated lignin-containing a toxic amount of organically combined halogen selected from the group consisting of chlorine and bromine.

3,287,210
ANTIMONY COMPOUNDS AND COMPOSITIONS AND METHOD FOR PROTECTING AGAINST MICROORGANISMS
John R. Leebrick, Roselle Park, N.J., assignor to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 26, 1962, Ser. No. 247,378
25 Claims. (Cl. 167—30)

1. A method for protecting a medium susceptible to attack by microorganisms which comprises applying to the locus to be protected an effective amount of a compound R_mSbX_{5-m} wherein R is selected from the group consisting of alkyl, alkenyl, monocarbocyclic aryl, alkynyl, cycloalkyl, and cycloalkenyl, X is selected from the group consisting of chloride, acrylate, pentachlorophenate, and quinolinolate, and *m* is an integer less than 5.

3,287,211
CONTROLLING MITES WITH CERTAIN ALKYL-(2,4-DINITROPHENYL) CARBONATES
Karoly Szabo, Orinda, and Jack P. Orr, Mountain View, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 26, 1965, Ser. No. 435,679
3 Claims. (Cl. 167—30)

1. The method of controlling mites comprising applying thereto an effective amount of a compound of the formula



wherein R is lower alkyl, containing from 1 to 10 carbon atoms, inclusive.

3,287,212
METHOD OF REPELLING CHEWING INSECT LARVAE
Jack D. Early, Bethesda, Md., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed June 14, 1965, Ser. No. 463,854
4 Claims. ((Cl. 167—30)

1. The method of repelling chewing insect larvae of the order Lepidoptera which comprises applying to said larvae 3,4-dichloro-N-methyl - N-nitrosoaniline in an amount sufficient to repel said chewing insect larvae.

3,287,213
METHOD OF COMBATTING ARACHNIDS AND FUNGI
Armand August Florent Busschots, Saint Truiden, Belgium, assignor to Janssen Pharmaceutica N.V., a corporation of Belgium
No Drawing. Filed July 29, 1965, Ser. No. 475,847
5 Claims. (Cl. 167—30)

1. The method of combatting pests selected from the group consisting of arachnids and fungi which comprises subjecting said pests to the action of di-(p-chlorophenyl)-cyclopropyl-methanol.

3,287,214

SURFACE DISINFECTANT AND SPACE DEODORANT AEROSOL SPRAY COMPOSITIONS

Frederick G. Taylor, Bloomfield, and Robert F. Prindle, Mountain Lakes, N.J., assignors to Sterling Drug Inc., a corporation of Delaware

Filed July 20, 1964, Ser. No. 383,690
10 Claims. (Cl. 167—39)

1. A single phase liquid composition especially adapted for discharge from a pressurized container to thereby form a combination surface and space aerosol spray which will deodorize a room and which when sprayed on a surface will leave a continuous wet film that will remain a sufficient time to disinfect comprising:

(1) from about 0.01% to about 5% based on the weight of the composition of active material said active material being:

(a) from about 20% to about 75% of germicide based on the weight of the active material and

(b) from about 80% to about 25% respectively of deodorant based on the weight of the active material, and

(2) from about 99.99% to about 95% respectively based on the weight of the composition of a miscible or single phase liquid solvent system for the active material, said solvent system being:

(c) water,

(d) a saturated monohydric aliphatic hydrocarbon alcohol having from 2 to 4 carbon atoms and

(e) a liquified normally gaseous propellant selected from the group consisting of dichlorodifluoro-methane, mixtures of dichlorodifluoromethane with up to 70% by weight of dichlorotetrafluoroethane and mixtures of dichlorodifluoromethane with up to 97.5% by weight of monochlorodifluoroethane.

the relative amounts of said water, alcohol and propellant in the solvent system being such that said composition has a vapor pressure of from 30 to 70 pounds per square inch gauge at 70° F., the propellant is present to the extent of at least about 15% by weight, and the weight ratio of alcohol to water is between about 90:10 and 77:23.

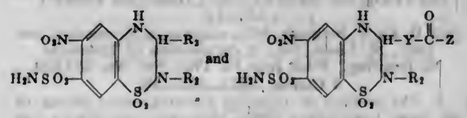
3,287,215

6-NITRO-2-SUBSTITUTED-BENZOTHIADIAZINES

Jerry E. Robertson, Frank Di Pierro, and John H. Biel, Milwaukee, Wis., assignors to Colgate-Palmolive Company, a corporation of Delaware

No Drawing. Filed June 15, 1961, Ser. No. 117,288
20 Claims. (Cl. 167—65)

1. A member of the group consisting of compounds of the formulas



and

wherein R_2 is a member of the group consisting of lower alkyl, halo-lower alkyl, lower alkenyl, lower alkynyl, di-lower alkyl amino-lower alkyl, phenyl, phenyl-lower alkyl and phenyl-lower alkenyl groups, R_3 is a member of the group consisting of hydrogen, lower alkyl, halo-lower alkyl, phenyl-lower alkyl, cycloalkyl-lower alkyl, in which the cycloalkyl has 5 to 7 carbon atoms, cycloalkenyl-lower alkyl, in which the cycloalkenyl has 5 to 7 carbon atoms, and cycloalkadienyl-lower alkyl groups, in which the cycloalkadienyl has 5 to 7 carbon atoms, Y is a member of the group consisting of a single chemical bond and lower alkylene groups and Z is a member of the group consisting of lower alkyl, phenyl, phenyl-lower and halo-lower alkyl groups.

20. A pharmaceutical composition in unit dosage form containing 5 to 500 mgm. of a compound of claim 1.

3,287,216

HYPOTENSIVE DIURETIC ALUDRINOCHROME ISONICOTINIC ACID HYDRAZONE SOLUTIONS

Norman Bansel, Laurelton, N.Y., assignor to Chem Research Company, Laurelton, N.Y., a partnership

No Drawing. Filed Aug. 2, 1961, Ser. No. 128,683
4 Claims. (Cl. 167—65)

1. A hypotensive diuretic composition comprising an aqueous solution of at least 1.5 parts by weight of a non-toxic, water soluble salt of 3-hydroxy-2-naphthoic acid and one part by weight of the isonicotinic acid hydrazone of aludrinochrome, said part of naphthoic acid related to said part of said hydrazone, said solution containing at least 1 mg. per cc. of the aludrinochrome derivative.

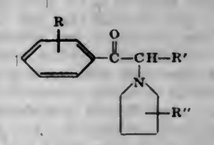
3,287,217

COMPOSITIONS AND METHODS FOR STIMULATING THE CENTRAL NERVOUS SYSTEM AND INCREASING THE BLOOD PRESSURE

Ernst Seeger, Biberach an der Riss, Germany, assignor, by mesne assignments, to Boehringer Ingelheim G.m.b.H., Ingelheim (Rhine), Germany, a corporation of Germany

No Drawing. Filed May 10, 1963, Ser. No. 279,605
Claims priority, application Germany, Apr. 7, 1960, T 18,199
12 Claims. (Cl. 167—65)

7. The method of stimulating the central nervous system and increasing the blood pressure in humans, which comprises administering to said humans from 10 to 50 mgm. of a compound selected from the group consisting of α-pyrrolidyl ketones of the formula



wherein

R is selected from the group consisting of hydrogen, methyl, methoxy, hydroxyl and chlorine,

R′ is alkyl of 2 to 4 carbon atoms, inclusive, and

R″ is selected from the group consisting of hydrogen and methyl,

and their non-toxic, pharmacologically acceptable acid addition salts, and a physiologically compatible inert carrier.

3,287,218

ANTIBACTERIAL COMBINATION OF FUSIDIC ACID OR DIHYDROFUSIDIC ACID WITH NOVOBIOCIN OR DIHYDRONOVOBIOCIN

Leif Tybring, Gentofte, Denmark, assignor to Lovens Kemiske Fabrik Produktions-Aktieselskab, Ballerup, Denmark, a Danish company

No Drawing. Filed July 8, 1963, Ser. No. 293,257
Claims priority, application Great Britain, July 10, 1962, 26,525/62
2 Claims. (Cl. 167—65)

1. The method for combatting strains of *Staph. aureus* bacteria which show decreased susceptibility to fusidic acid, dihydrofusidic acid, novobiocin, and dihydrononvobiocin, which comprises contacting a liquid supporting the growth of said bacteria, with (a) at least 1 μgm./ml. of a member selected from the group consisting of fusidic acid, dihydrofusidic acid, and the non-toxic salts of these acids with pharmaceutically acceptable bases; and (b) at least 1 μgm./ml. of a member of the group consisting of novobiocin, dihydronovobiocin, and their non-toxic salts with pharmaceutically acceptable bases.

3,287,219

METHOD OF HEALING BONE FRACTURES

Charles J. Nemanick, 7256 S. Roland Drive, Pasadena Hills, Mo.

No Drawing. Filed Aug. 5, 1963, Ser. No. 300,046
8 Claims. (Cl. 167—72)

1. The method of promoting the healing of bone fractures in human beings and animals which comprises administering thereto by means of oral administration between approximately 0.1 and 114.28 micrograms of fluoride ion daily per kilogram of body weight.

3,287,220

ANTI-ASTHMATIC COMPOSITION AND METHODS

Gustav J. Martin, Philadelphia, Pa., assignor to William H. Rorer, Inc., Fort Washington, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 12, 1964, Ser. No. 351,522
6 Claims. (Cl. 167—73)

1. A composition adapted to relieve the symptoms of diseases of the tracheobronchial tree comprising by weight 4 to 16 parts bromelain in combination with 2 to 8 parts phenobarbital, 5 to 20 parts ephedrine sulfate, 25 to 100 parts theophylline, 30 to 120 parts potassium glutamate and 70 to 280 parts calcium glutamate.

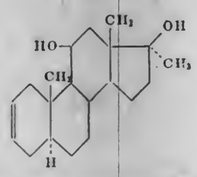
3,287,221

THERAPEUTIC UTILIZATION OF 17α-METHYL-Δ²-5α-ANDROSTENE-11β,17β-DIOL

Georges Muller, Nogent-sur-Marne, and André Poittevin, Les Lilas, France, assignors to Roussel-Uclaf, Paris, France, a corporation of France

No Drawing. Filed July 30, 1964, Ser. No. 386,432
Claims priority, application France, Aug. 5, 1963, 943,787
9 Claims. (Cl. 167—74)

9. A method for the treatment of anabolic deficiencies in warm-blooded animals which comprises administering to the warm-blooded animal a daily dose of from 70 γ/kg. to 600 γ/kg. of a 17α-methyl steroid of the formula



3,287,222

METHOD FOR PREPARATION OF SYNTHETIC FIBER MEDICAL DRESSING IMPREGNATED WITH THERAPEUTIC

Raymond Larde, Coubron, and Andre Queuille, Noisy-le-Sec, France, assignors to Roussel-UCLAF, S.A., Paris, France, a corporation of France

No Drawing. Filed Mar. 12, 1963, Ser. No. 264,712
Claims priority, application France, Mar. 16, 1962, 891,342
8 Claims. (Cl. 167—84)

1. A process for the preparation of a synthetic hydrophobic fiber medical dressing impregnated with a therapeutic agent which comprises impregnating the synthetic hydrophobic fiber medical dressing with an inert solvent containing the therapeutic agent, a thickening agent and a plasticizing agent, draining the excess liquid from the synthetic hydrophobic fiber medical dressing and drying the synthetic hydrophobic fiber medical dressing impregnated with the therapeutic agent.

3,287,223

NONSTICKY ALUMINUM-CONTAINING ANTIPERSPIRANT

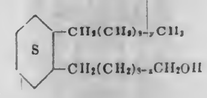
Fred C. Theile, North Caldwell, and Peter Sgaramella, Pompton Plains, N.J., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Mar. 10, 1964, Ser. No. 350,925
1 Claim. (Cl. 167—90)

A nontacky antiperspirant composition comprising, in parts by weight:

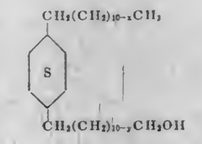
Saturated cyclic alcohol as hereinafter defined	4.00
Anhydrous ethyl alcohol	79.70
Aluminum chlorohydroxide (50% aqueous)	12.00
Dipropylene glycol	2.60
Perfume	1.50
Quaternary ammonium wetting agent	.20

said saturated cyclic alcohol being selected from the group consisting of the isomeric C_{16} mixture represented by the formula



where $(x+y)=8$

and the homologous C_{20} cyclic alcohols conforming to the formula



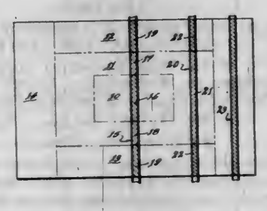
where $(x+y)=10$

3,287,224

LARGE FAST NUCLEAR REACTOR

Walter B. Loewenstein, Elmhurst, Ill., assignor to the United States of America as represented by the United States Atomic Energy Commission

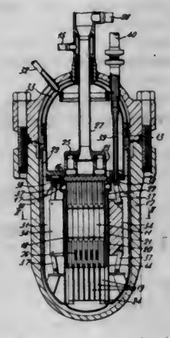
Filed Jan. 6, 1966, Ser. No. 519,163
3 Claims. (Cl. 176—18)



1. A sodium-cooled fast breeder reactor having a core size of at least 800 liters comprising a central core of

uranium-233 dispersed in thorium-232, an outer core of plutonium dispersed in uranium-238 surrounding said inner core, and a blanket of depleted uranium surrounding said outer core, the reactor operating predominantly on the plutonium-uranium-238 cycle.

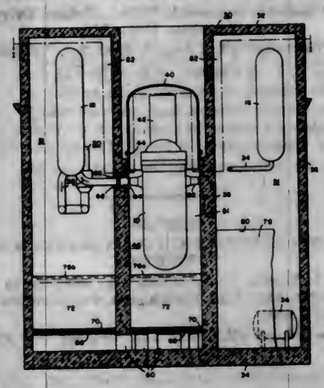
3,287,225
NUCLEAR REACTORS
Ronald Tunstall Ackroyd, Upton-by-Chester, Allan Barker, Chester, John Erskine Mann, Liverpool, and Maurice Arthur Perks, Warrington, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed June 2, 1965, Ser. No. 460,706
Claims priority, application Great Britain, June 2, 1964, 22,862/64
10 Claims. (Cl. 176—33)



1. In a nuclear reactor having a core, the combination comprising walling around said core to form a compartment for holding a mass of liquid reflector in a layer surrounding substantially continuously the radial periphery of said core, means for the charging of liquid reflector into the compartment, solid reflector material adapted to occupy selectively either one of two positions in the compartment, said material in a first one of said positions displacing liquid reflector in the compartment from an inward layer surrounding substantially continuously the radial periphery of said core and in the second position displacing liquid reflector in the compartment from a layer likewise surrounding substantially continuously the radial periphery of said core but outward of said inward layer, and means for driving the solid reflector material to said positions.

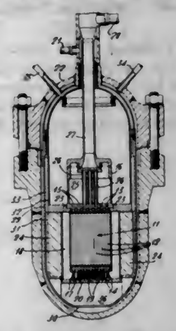
3,287,226
PRESSURE SUPPRESSING ARRANGEMENT FOR NUCLEAR REACTOR SYSTEM
William A. Webb, Penn Township, Allegheny County, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 7, 1962, Ser. No. 178,023
8 Claims. (Cl. 176—37)

6. A pressure-suppressing arrangement comprising a plurality of closed compartments with at least one of said compartments having a nuclear reactor vessel disposed therein and from which a pressurized fluid may escape, a pool of liquid disposed in said one compartment, said liquid being separate from said fluid, and open communicating means below the level of said liquid and in the lower portion of said one compartment for freely relieving



said escaped fluid and said liquid from said one compartment to the remainder of said compartments.

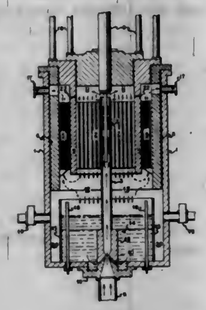
3,287,227
NUCLEAR REACTORS
Ronald Tunstall Ackroyd, Upton-by-Chester, Maurice Arthur Perks, Warrington, John Erskine Mann, Liverpool, and Allan Barker, Chester, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed June 11, 1965, Ser. No. 463,282
Claims priority, application Great Britain, June 19, 1964, 25,457/64
7 Claims. (Cl. 176—40)



1. A fast nuclear reactor having a core which is cooled by supercritically pressurised aqueous coolant and which has epithermal neutron absorber for counteracting reactivity gain on flooding, characterised in that the epithermal absorber is concentrated in a part of the core where in normal operation the coolant density is less than elsewhere in the core.

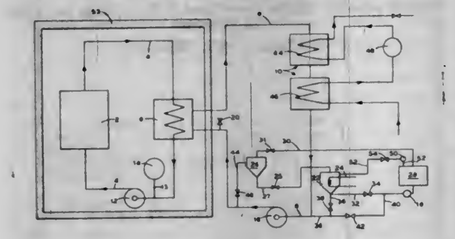
3,287,228
BOILING WATER NEUTRONIC REACTOR
George E. Gorker, Cincinnati, Ohio, assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Sept. 28, 1965, Ser. No. 491,064
4 Claims. (Cl. 176—54)

1. A boiling water neutronic reactor comprising a nuclear-fueled evaporator core, a water inlet plenum chamber above said evaporator core, a steam separation plenum chamber below said evaporator core, water from said inlet plenum chamber passing downwardly through said evaporator core and discharging as a mixture of steam and water into said steam separation plenum chamber, a water collection basin disposed below said steam separation



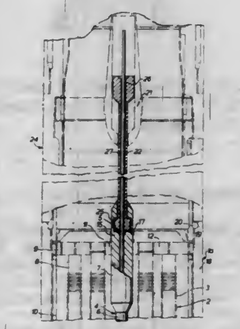
plenum chamber for collecting unevaporated water passing through said steam separation plenum chamber, means for determining the water level in said water collection basin, and means for returning water from said water collection basin to said water inlet plenum chamber.

3,287,229
STEAM GENERATING PLANT
Martin C. Peters, London, England, assignor to Babcock & Wilcox Limited, London, England, a corporation of Great Britain
Filed July 31, 1963, Ser. No. 298,875
Claims priority, application Great Britain, Aug. 3, 1962, 29,900/62
6 Claims. (Cl. 176—65)



1. A steam generating plant comprising a primary coolant circuit and a secondary coolant circuit, a nuclear reactor and a first heat exchanger positioned in said primary coolant circuit, a liquid alkali metal primary coolant operating at superatmospheric pressure circulating through said primary coolant circuit absorbing heat within said nuclear reactor and releasing heat within said first heat exchanger, a second heat exchanger and said first heat exchanger positioned in said secondary coolant circuit, tubular vapor generating surfaces disposed within said second heat exchanger, an elastic fluid secondary coolant containing a suspension of particles of solid material circulating through said secondary coolant circuit absorbing heat from said primary coolant within said first heat exchanger and giving up heat within said second heat exchanger as it flows over said tubular vapor generating surfaces, said secondary coolant operating at a superatmospheric pressure which is less than that of the pressure of the primary coolant, a vaporizable liquid circulating through said tubular vapor generating surfaces in said second heat exchanger to receive heat from said secondary coolant and to be vaporized in the course of its flow through said second heat exchanger, said vaporizable liquid operating at a vapor pressure in said heat exchanger which is greater than the pressure of said secondary coolant, whereby the particles of solid material in the elastic fluid secondary coolant are adapted to convey heat from said first heat exchanger to said second heat exchanger and the elastic fluid and the solid material therein are inert to fluid inadvertently leaking into the secondary coolant circuit in the first and second heat exchangers.

3,287,230
NUCLEAR FUEL ELEMENT STRINGER ASSEMBLY WITH IMPROVED COUPLING DEVICE
Ernest Edward Jerkins and Donald Garden Taylor, Culcheth, Warrington, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed Dec. 2, 1963, Ser. No. 327,216
Claims priority, application Great Britain, Dec. 10, 1962, 46,544/62
4 Claims. (Cl. 176—77)

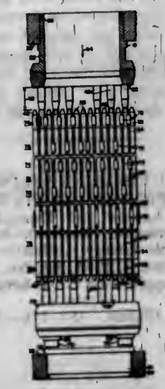


1. A fuel element stringer comprising end stacked fuel element assemblies, each fuel element assembly comprising an upright disposed sleeve, a cluster of elongate fuel members disposed upright in parallel array within the sleeve, means carried by said sleeve to support the fuel members, a tubular member slidably retained by the means carried by said sleeve to support the fuel members, said tubular member being coaxial with said sleeve, and hollow coupling means at each end of each tubular member, said stringer comprising said fuel members joined end to end by said coupling means, and withdrawable inner locking means within said tubular members extending through said hollow coupling means to secure them in the coupled position.

3,287,231
FUEL ELEMENT ASSEMBLY FOR A NEUTRONIC REACTOR
Erling Frisch, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 635,911, Jan. 23, 1957. This application May 15, 1961, Ser. No. 124,250
10 Claims. (Cl. 176—78)

1. A fuel rod assembly adapted for use in a neutronic reactor, said assembly comprising a plurality of elongated fuel rods, some of said rods being longer than others and at each end of said assembly having their ends protruding outwardly of the ends of the others of said rods; a plurality of short connectors interposed between said rods and each being rigidly joined to each of the adjacent ones of said rods, said connectors together securing all of said

rods laterally and spacedly in rigid engagement to one another; a flow-conducting and assembly-supporting member disposed adjacent each end of said assembly; and



means for rigidly securing each of said last-mentioned members only to the adjacent ends respectively of said outwardly protruding rods.

3,287,232
METHOD OF PRODUCING 3'- and 2'-NUCLEOTIDES
Koji Mitsugi and Teruo Shiro, Kawasaki-shi, Kanagawa-ken, Shinji Okumura, Yokohama-shi, Kanagawa-ken, Kazuo Komagata, Tokyo, Hideo Katagiri, Kyoto-fu, Yoshio Tsuchiya, Yokohama-shi, Kanagawa-ken, and Masahiro Takahashi, Tokyo, Japan, assignors to Ajinomoto Co., Inc., Tokyo, Japan
No Drawing. Filed Mar. 24, 1964, Ser. No. 354,827
Claims priority, application Japan, Nov. 19, 1962, 37/50,791; Feb. 28, 1963, 38/8,744; Apr. 9, 1963, 38/17,468
19 Claims. (Cl. 195—28)

1. A method of producing 3'-nucleotides and mixtures thereof with the corresponding 2'-nucleotides which comprises:

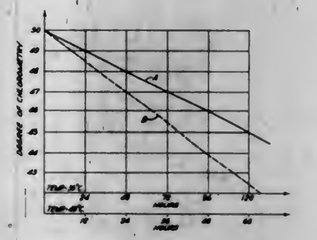
(a) culturing a microorganism selected from the species *Escherichia coli, Escherichia freundii, Escherichia intermedia, Aerobacter aerogenes, Aeromonas punctata, Proteus mirabilis, Proteus vulgaris,* and *Proteus rettgeril* on an aqueous medium containing a carbon source and a nitrogen source, whereby a phosphotransferase enzyme is produced by said microorganism;

(b) incubating a nucleoside in the presence of said enzyme and a phosphate donor until said nucleotides are formed; and

(c) recovering said nucleotides.

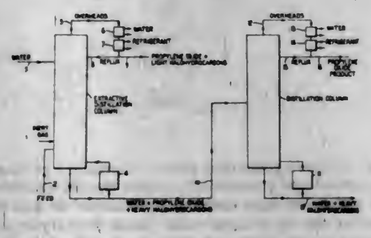
3,287,233
PROCESS FOR MANUFACTURE OF JAVEL EXTRACTS
Jean Aigueperse, Grenoble, and Jean Barjhoux, Vizille, France, assignors to Societe d'Electro-Chimie, d'Electro-Metallurgie et des Acieries Electriques d'Ugine, Paris, France, a corporation of France
Filed Dec. 19, 1963, Ser. No. 331,723
Claims priority, application France, Dec. 20, 1962, 919,295
4 Claims. (Cl. 252—187)

1. A method for preparation of Javel extracts of substantially 30–70 chlorometric degrees, of a density between substantially 1.07 and 1.22, and of a molar ratio of NaOCl/NaCl between substantially 1.0 and 6.0 comprising preparing a concentrated Javel extract of substantially about 70–140 chlorometric degrees at a temperature less than 35° C. by contacting gaseous chlorine and an aqueous solution of sodium hydroxide, during preparation of said concentrated Javel extract separating a



part of sodium chloride, which forms during said preparation, from said concentrated extract, thereafter diluting said concentrated Javel extract with water in an amount sufficient to obtain said Javel extract of a given chlorometric degree between 30–70.

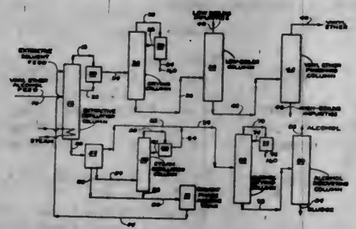
3,287,234
EXTRACTIVE DISTILLATION OF PROPYLENE OXIDE CONTAINING HALOHYDROCARBON IMPURITIES
Derek Kenneth Vincent Steel and Peter Smith, both of Norton-on-Tees, England, assignors to Imperial Chemical Industries Limited, Millbank, London, England, a corporation of Great Britain
Filed July 12, 1965, Ser. No. 470,985
Claims priority, application Great Britain, Aug. 15, 1960, 28,190/60
6 Claims. (Cl. 203—49)



1. A process for the purification of propylene oxide from mixture thereof with a light halohydrocarbon impurity obtained in the preparation of the propylene oxide by dehydrohalogenation of propylene chlorohydrin, which comprises subjecting said mixture to a first distillation step in which the impure propylene oxide is distilled by an extractive distillation in a column into which water as an extractant is admitted at an upper feed point, and the impure mixture is admitted at a lower feed point, removing an aqueous solution substantially free from the light halohydrocarbon impurity as a bottom product, distilling the bottom product in a second distillation column and removing the propylene oxide substantially water free as the top product.

3,287,235
SEPARATION OF ALKYL VINYL ETHERS FROM ALKANOLS BY EXTRACTIVE DISTILLATION WITH WATER OR WATER AND PHENOL
Max Statman, Longview, Tex., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Feb. 28, 1963, Ser. No. 261,757
7 Claims. (Cl. 203—55)

1. A process for separating alkyl vinyl ether from a mixture including such alkyl vinyl ether and an alkanol which process comprises subjecting said mixture to extractive distillation in the presence of an extractive solvent



selected from the group consisting of water and a water-phenol mixture and recovering a substantial portion of said alkanol in said extractive solvent.

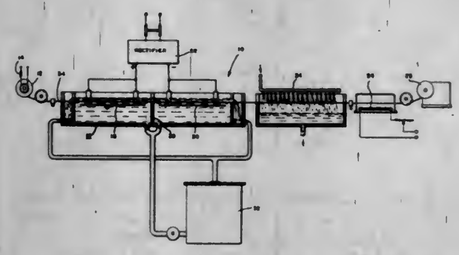
3,287,236
ELECTRODEPOSITION OF COPPER AND SOLUTIONS THEREFOR
Robert Brugger, Bernhausen, near Stuttgart, and Günter Voss, Heepen, Germany, assignors to Langbein-Pfanhauser Werke A.G., Neuss (Rhine), Germany
No Drawing. Filed Feb. 14, 1964, Ser. No. 344,838
6 Claims. (Cl. 204—52)

6. A method of producing a bright, smooth, pore-free, and ductile copper coating on a conductive object which comprises making said object a cathode in an electrolyte containing a source of copper ions selected from the group consisting of copper sulfate and copper fluoborate, a source of hydrogen ions selected from the group consisting of sulfuric acid and hydrofluoric acid, and a brightening agent, said sources and said agent being dissolved in said solution, said agent being selected from the group consisting of N-(tetrahydropyranyl-2) amides of carboxylic and thiocarboxylic acids, and N-(tetrahydropyranyl-2)-N-(propane-ω-sulfonic acid) amides of carboxylic and thiocarboxylic acids, the concentration of said brightening agent in said electrolyte being between 0.2 and ten millimoles per liter, and the temperature of said electrolyte being between 10° C. and 50° C.

3,287,237
SURFACE TREATMENT OF BRIGHT ANNEALED STRIP
Joseph W. Wilton, Wallingford, Conn., assignor to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania
No Drawing. Filed Feb. 6, 1964, Ser. No. 343,153
9 Claims. (Cl. 204—140)

1. The method of providing a bright stainless steel surface which is resistant to corrosive pitting which stainless steel has been bright annealed by heating in the presence of a reducing atmosphere which method comprises, immersing said steel in an aqueous solution consisting essentially of an organic acid selected from the group consisting of acetic, formic, citric, monochloracetic and picric, said acid being of sufficient concentration to pass a current density of at least 0.1 ampere per square inch of surface area of immersed steel, maintaining said solution at a temperature within the range between 40° F. and 120° F., and rendering said steel anodic at a current density of from 0.1 to 1.0 ampere per square inch of surface area of immersed steel.

3,287,238
METHOD OF ELECTROPOLISHING TUNGSTEN WIRE
Alfons A. Latawiec, Garwood, and George H. Lockwood, Bloomfield, N.J., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 7, 1963, Ser. No. 286,392
5 Claims. (Cl. 204—140.5)



1. The method of electropolishing tungsten wire to remove physical surface irregularities and surface impurities therefrom and to provide the wire with a smooth surface which has a high luster, which method comprises:

(a) passing the wire to be cleaned at a predetermined rate of speed through an electrolytic bath containing an aqueous solution of from 5% to 25% by weight of at least one of the group consisting of sodium hydroxide and potassium hydroxide, and from 10% to 40% by weight of at least one of the group consisting of sodium tartrate and potassium tartrate;

(b) first making the wire a cathode for a predetermined period of time as it passes through the electrolytic bath to form atomic hydrogen at the wire surface and remove surface impurities therefrom;

(c) thereafter making the wire an anode as it passes through the electrolytic bath to form a film of reaction products on the wire surface through oxidization of the wire surface and reaction of the formed oxide with the electrolyte, with the formed film of reaction products being thicker in any surface depressions in the wire than at any surface projections on the wire;

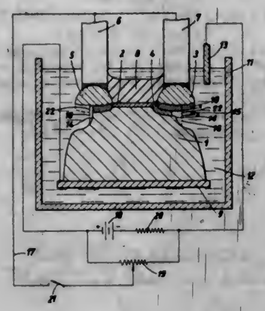
(d) continuing to maintain the wire an anode as it passes through the electrolytic bath until the wire has a substantially uniform surface; and

(e) after electropolishing, removing from the wire any residual film of reaction products which remain on the wire surface.

3,287,239
METHOD FOR MAKING A SEMICONDUCTOR DEVICE
Ernst Fröschle, Stuttgart-Sillenbuch, Germany, and Christian Steppat, Bells Corners, Ontario, Canada, assignors to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany
Filed Apr. 16, 1963, Ser. No. 273,359
Claims priority, application Germany, Apr. 16, 1962, T 21,976
13 Claims. (Cl. 204—143)

1. In a method of making a mesa etched asymmetrical semiconductor device of the type wherein the semiconductor body has the conductivity type of the collector zone, which collector zone has a collector electrode con-

nected directly thereto, and has a base zone disposed between said collector zone and an emitter zone, the improvement comprising electrolytically etching said device by applying an etching potential to said collector elec-



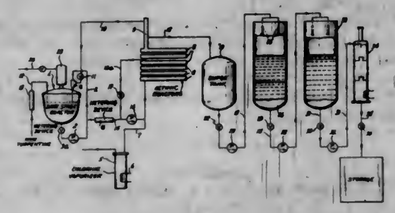
trode while maintaining the zones produced in the semiconductor body at least partially short-circuited during etching by means of an electrical connection which is independent of the presence of any etching medium.

3,287,240
PRODUCTION OF VINYL CHLORIDE
Shigeru Tsutsumi, 204 Okashinmachi, Hirakata, Japan
No Drawing. Filed Oct. 1, 1962, Ser. No. 227,576
Claims priority, application Japan, Oct. 11, 1961, 36/36,855
4 Claims. (Cl. 204—163)

1. A method for the production of vinyl chloride which comprises reacting chlorine with ethylene under absolute pressure of up to 460 mm. Hg inclusive at a temperature ranging from 300° to 400° C., said ethylene being in molar excess in relation to the chlorine.

2. The process of claim 1 in which the reaction is carried out under irradiation with ultra violet rays.

3,287,241
CHLORINATION OF TURPENTINE
James T. Smith, Mission, Tex., assignor to Mission Chemical Company, a corporation of Texas
Filed Nov. 21, 1962, Ser. No. 239,244
8 Claims. (Cl. 204—163)

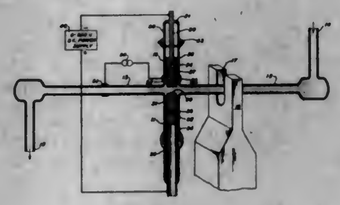


1. A process of preparing a chlorinated terpene insecticidal composition by the direct chlorination of turpentine containing a major proportion of α-pinene and a minor proportion of at least one spontaneously chlorinatable terpene, comprising feeding chlorine gas into a body of said turpentine to obtain a body of partially chlorinated product having a specific gravity of at least about 1.15; continuously withdrawing a portion of said partially chlorinated product while continuing the feeding of chlorine gas into said body of partially chlorinated product and replacing it with turpentine, the rates of withdrawal and replacement being such that there is established an equilibrium at which the specific gravity of the reaction mixture is between about 1.27–1.30; flowing said withdrawn partially chlorinated product in contact with an excess of chlorine gas while subjecting it to heat and actinic radiation to further chlorinte said product to produce a chlorinated terpene composition having a chlorine content between about 62.5% to about 66% by weight; separating said excess chlorine and HCl formed during actinic chlorination from said composition; and feeding said separated chlorine and HCl into said body of partially chlorinated product.

3,287,242
SYNTHESIS OF HIGH POLYMERS IN ELECTRICAL DISCHARGES
Marvin C. Tobin, Westport, Conn., and William G. Deichert, Flushing, N.Y., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine
No Drawing. Filed May 19, 1961, Ser. No. 111,144
1 Claim. (Cl. 204—165)

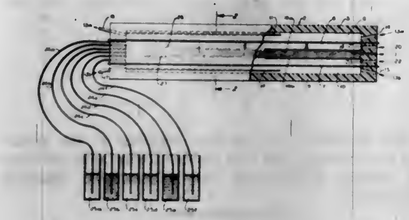
An amorphous, solid, thermally-stable to temperatures up to about 350° C., cross-linked propylene oxide homopolymer, said homopolymer being prepared by: subjecting propylene oxide to a field induced by an electric discharge created by providing a voltage across said field of between about 1000 volts and about 40,000 volts at from about 20 to about 100 cycles per second whereby the liquid propylene oxide solidifies, and thereafter recovering said propylene oxide homopolymer.

3,287,243
DEPOSITION OF INSULATING FILMS BY CATHODE SPUTTERING IN AN RF-SUPPORTED DISCHARGE
Joseph R. Ligenza, Califon, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 29, 1965, Ser. No. 446,470
9 Claims. (Cl. 204—192)



1. A method for depositing an insulating film on a solid substrate which comprises the steps of contacting an anode substrate and a cathode body composed of a material selected from the group consisting of silicon, beryllium and aluminum, said anode and cathode spaced at a distance of 0.5 cm. to 5 cm. with a moderate density gas plasma, said plasma characterized by a gas pressure of 0.1 mm. to 10 mm. said gas selected from the group consisting of oxygen, nitrogen and methane, and further characterized by a positive ion saturation current density in the range 0.1 to 100 ma./cm.^{2}, impressing a D.C. voltage of at least 125 volts between said anode and cathode and applying an RF signal with a frequency in excess of 50 kc. and a voltage in excess of said D.C. voltage to the interface between the cathode and the plasma so as to permit continued uniform deposition of the insulating film on the substrate.

3,287,244
STABLE FLOW SEPARATION AND ANALYTICAL METHOD
Howard C. Mel, 1400 Scenic Ave., Berkeley, Calif.
Filed Mar. 23, 1960, Ser. No. 17,017
6 Claims. (Cl. 204—180)



2. A method of continuously separating within an elongated separation chamber at least one dispersed component from a liquid dispersing phase carrying said component consisting of introducing said component in its liquid dispersing phase into one end of said chamber in a continuous stream at a laminar flow rate;

exposing said stream to a force field means acting transversely on the stream with respect to the direction of flow of the stream through the chamber;

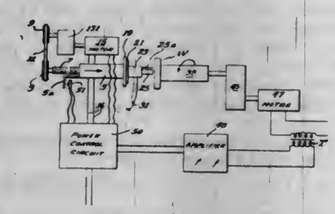
isolating said stream from said force field means within the chamber by semipermeable membrane means;

introducing at said laminar flow rate into said chamber between said stream and said membrane means and in contact with said stream at least one spacer fluid differing from said dispersing phase in a physical property to establish a stable free boundary with said dispersing phase;

said force field causing said component to migrate in accord with its mobility in said force field transversely with respect to said stream and to form a segregated band at said stable free boundary;

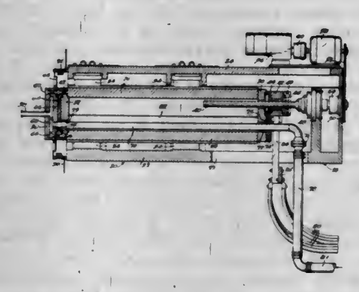
and separately withdrawing said spacer fluid, the component collected at said boundary and the remnant of said stream from said chamber.

3,287,245
METHOD AND APPARATUS FOR USE IN ELECTROLYTIC MACHINING
Lynn A. Williams, Winnetka, Ill., assignor to Anocut Engineering Company, a corporation of Illinois
Filed June 19, 1961, Ser. No. 117,965
7 Claims. (Cl. 204—224)



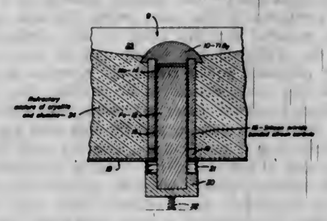
1. In a device for removing material from an electrically conductive and electro-chemically erodible workpiece by electrolytic action, the combination of an electrode having a conductive working face, said workpiece being mounted and rotated about its longitudinal axis, means for moving said electrode face toward the workpiece at a predetermined rate, control means operable in conjunction with said means for moving said electrode for establishing and maintaining a predetermined gap between said face and the workpiece as said face is advanced toward the same, said working face defining a sector generated about an axis coincident with the axis of rotation of said workpiece, said sector having an arcuate width at any given radial distance which is inversely proportional to the angular velocity of a point on said workpiece at the same radial distance, so that the time required for any point on the workpiece to traverse the width of said sector will be the same, a source of electrical power connected between said electrode and the workpiece so as to establish the former as a cathode, and the latter an anode, and means for pumping fluid electrolyte to and through said gap so as to provide a high density current carrying path between said face and a portion of the rotating workpiece immediately adjacent thereto, whereby material is removed from said workpiece in accordance with the contour of said face, the rotation of said workpiece, and to a depth corresponding to the travel of said electrode toward said workpiece once said gap has been established.

3,287,246
ELECTROLYTIC SHAPING AND CAVITY SINKING APPARATUS
Lynn A. Williams, Winnetka, and Leonard Malkowski, La Grange, Ill., assignors to Anocut Engineering Company, Chicago, Ill., a corporation of Illinois
Filed June 11, 1962, Ser. No. 201,679
18 Claims. (Cl. 204—224)



1. In an apparatus for electrolytically shaping an electrically conductive and electrochemically erodable workpiece in a work area, the combination comprising, a drivehead assembly including a ram and an elongated hollow shaping electrode mounted on one end thereof, said electrode extending into the work area, said ram being supported and guided at axially spaced positions for axial movement thereof, means connected to the second end of said ram for moving said ram toward and away from the workpiece, said ram including means at said first end thereof forming a hollow manifold chamber, means including conduit means extending through said ram to supply electrolyte under pressure to said chamber from said second end of said ram, means to conduct electrolyte under pressure from said chamber to the work gap between said electrode and the workpiece, and means including bus bar means extending through said ram to supply high density, direct current to said electrode from said second end of said ram, electrolyte supply hose connected to said conduit means adjacent said second end of said ram, and a plurality of high current capacity cables connected to said bus bar means adjacent said second end of said ram, whereby the work area is free of electrolyte supply hoses and current supply cables for said electrode.

3,287,247
ELECTROLYTIC CELL FOR THE PRODUCTION OF ALUMINUM
John L. Dewey, Florence, Ala., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed July 24, 1962, Ser. No. 215,234
3 Claims. (Cl. 204—243)

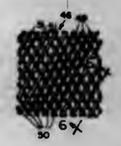


1. An electrolytic cell for the reduction of alumina to produce aluminum, comprising a pot shell, a lining of electrically insulative refractory material within said shell to contain a bath of dissolved alumina and an underlying pad of molten aluminum, a composite electrode having a stem portion comprising a metal bar which terminates inwardly of the cell within said lining in close proximity to the pad of molten aluminum, and having a refractory hard metal current collector attached to the inner terminal end of said stem portion, said collector projecting through the lining to be at least partially exposed to the pad of molten aluminum in the cell, an annular sleeve around said bar and spaced therefrom, said current collector contacting the adjacent end of said sleeve to form a seal therebetween, said sleeve serving to block ingress of molten contents of the cell along the bar surfaces inwardly of said lining, the opposite end of the bar from said collector extending beyond said sleeve and through an opening in the shell, and means adjacent said opening for excluding air from said sleeve.

3. In an electrolytic cell for the production of aluminum, having a chamber adapted to contain the molten contents of the cell including a pad of molten aluminum, and having a bottom lining of the cell defining said chamber and providing an interior surface disposed in contact with substantially the entire lower surface of said molten contents, the improvement comprising: an electrode entering the cell through said interior surface of the lining, having a stem portion composed of an elemental metal or alloy thereof terminating inwardly of the cell within said lining in close proximity to the pad of molten aluminum, said electrode also having a refractory hard metal end portion providing a surface in contact with said molten contents of the cell; and a protective sleeve around the electrode to block ingress of molten contents along the electrode surfaces inwardly of said lining, said sleeve being protected against oxidation by a surface coating composed of cryolite in phosphoric acid.

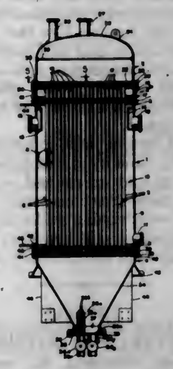
3,287,248
ELECTROCHEMICAL CELL INCLUDING A TUBULAR FORAMINOUS PARTITION
David G. Braithwaite, Chicago, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware
Filed Aug. 31, 1962, Ser. No. 220,699
12 Claims. (Cl. 204—260)

1. In an electrolytic cell having a first electrode in the form of a tube and a second electrode in the form of particles, and a foraminous partition in contact with the inner surface of said first electrode and the outer boundaries of said particles, said foraminous partition comprising a tubular, chemically inert, electrically non-conductive material having openings therein formed from filaments overlapping one another, said filaments running obliquely with respect to the longitudinal axis of



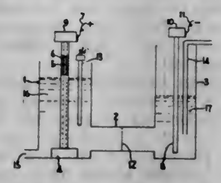
said first electrode, and secured together at the points where they overlap, and said tubular foraminous partition being flexible transversely but substantially inflexible longitudinally.

3,287,249
ELECTROCHEMICAL CELL FOR THE PRODUCTION OF ORGANO METALLIC COMPOUNDS
David G. Braithwaite, Chicago, Ill., Joseph S. D'Amico, Lake Jackson, Tex., Peter L. Gross, Riverside, Ill., and William Haenzel, Lake Jackson, Tex., assignors to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware
Filed Aug. 31, 1962, Ser. No. 220,700
15 Claims. (Cl. 204—260)



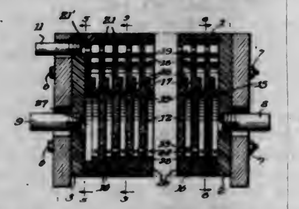
1. An electrochemical cell comprising
(a) a hollow main shell having end plates at opposite ends, said plates having aligned apertures therein,
(b) a multiplicity of individual tubular electrodes in said main shell each having opposite ends disposed in said apertures, each having a space on the outside thereof within said main shell providing a zone for heat exchange and each having a tubular, liquid permeable, chemically inert, electrically non-conducting partition on the inside thereof adapted to hold a particulate material,
(c) upper and lower hollow end closure members at opposite ends of said main shell,
(d) means electrically insulating said end closure members from said main shell,
(e) means connecting said lower hollow end closure member to a source of positive potential whereby said particulate material is rendered anodic, and
(f) means connecting said tubular electrodes to a source of negative potential through said main shell whereby the current passes through at least one of said end plates and renders said tubular electrodes cathodic.

3,287,250
ALKALI-CHLORINE CELL CONTAINING IMPROVED ANODE
Thorowgood Taylor Broun, Jr., Corpus Christi, Tex., and Howard H. Hoekje, Akron, and Aleksandrs Martinsons and Paul P. Anthony, Wadsworth, Ohio, assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Original application May 28, 1962, Ser. No. 198,216, now Patent No. 3,250,691. Divided and this application Jan. 20, 1964, Ser. No. 345,551
4 Claims. (Cl. 204—263)



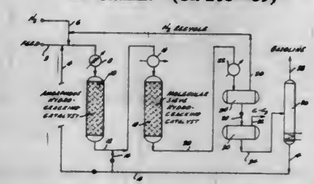
1. In an electrolytic alkali-chlorine cell having an anode and a cathode connected to a power source the improvement wherein said anode has a platinum surface, said platinum surface having been previously exposed as a cathode to an electrolyte inert to the platinum surface.

3,287,251
BI-POLAR ELECTROCHEMICAL CELL
Frederick H. Horne, 541 Prospect, Lake Bluff, Ill., and Robert Blevitzky, Evanston, Ill.; said Blevitzky assignor to said Horne
Filed Apr. 2, 1962, Ser. No. 184,355
5 Claims. (Cl. 204—270)



1. A bi-polar multi-cell electrochemical apparatus for fluid electrolysis, comprising a housing having an inlet and an outlet therein, the housing being constructed to form a fluid path operatively connecting said inlet and outlet for the passage of fluid through the housing, a plurality of flat, substantially plate-like modular elements including disc-like electrodes interposed in spaced relation in said fluid path and forming a plurality of individual cells operatively connected in series, means for connecting the outermost electrodes to a current supply source, said housing constructed in the form of modular elements operatively disposed between spaced end elements, said modular elements each including a disc-like electrode provided with an opening carried thereby through which the fluid for fluid electrolysis passes to the succeeding cells through openings in each of said disc-like electrodes, each modular element provided with oppositely disposed substantially parallel end faces each adapted to abut an adjacent element, said end faces being constructed to receive and cooperate with gasket means disposed between abutting end faces to effect a fluid-tight seal therebetween, means operatively connected to each cell for withdrawing liberated gas therefrom, said means for withdrawing liberated gas comprising a de-entraining chamber including baffle means associated with each cell provided with a gas port and operatively communicating therewith for the separation of liberated gas from the liquid and froth, said housing provided with a fluid passage therein for each de-entraining chamber operatively communicating with liquid in such cell to effect a liquid return from said chamber to said liquid.

3,287,252
HYROCRACKING PROCESS UTILIZING TWO DIFFERENT TYPES OF CATALYST
Dean Arthur Young, Yorba Linda, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed May 10, 1962, Ser. No. 193,791
17 Claims. (Cl. 208—59)

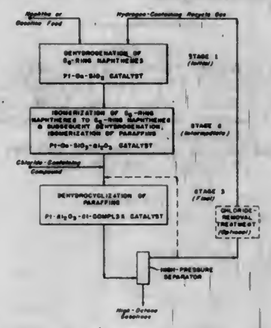


7. A process for hydrocracking a hydrocarbon feedstock containing both paraffinic and aromatic hydrocarbons, which comprises: first subjecting said feedstock plus added hydrogen to catalytic hydrocracking in a first zone at a liquid hourly space velocity between about 0.5 and 30, under hydrocracking conditions in contact with a catalyst consisting essentially of a pelleted, amorphous solid cracking base upon which is deposited a small proportion of a hydrogenating component to effect a selective hydrocracking of aromatic hydrocarbons in said feedstock, then subjecting the effluent from said first contacting zone to a second contacting, at a space velocity between about 0.5 and 30 and under hydrocracking conditions, with a catalyst consisting essentially of a separately pelleted, crystalline, zeolitic molecular sieve cracking base composed essentially of silica and alumina wherein the SiO_2/Al_2O_3 mole-ratio is at least about 3, and upon which is deposited a small proportion of a hydrogenating component, and recovering desired low-boiling hydrocarbons from said second contacting, the hydrogenating component on each of said catalysts being selected from the class consisting of the Group VI–B and Group VIII metals.

3,287,253
PROCESS FOR REFORMING A NAPHTHA FRACTION IN THREE STAGES TO PRODUCE A HIGH OCTANE GASOLINE
Keith W. McHenry, Jr., Park Forest, Ill., and Herman S. Seelig, Valparaiso, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana
Filed Dec. 20, 1965, Ser. No. 516,746
12 Claims. (Cl. 208—65)

1. In a process for reforming petroleum hydrocarbons boiling in the gasoline and naphtha ranges by passing preheated hydrocarbon vapors and recycled hydrogen-containing gas through a plurality of stages under reforming conditions, the improvement which results in greater product selectivity and which comprises contacting in an initial stage under reforming conditions the preheated hydrocarbons and recycled hydrogen-containing gas with a catalyst which comprises a dehydrogenation component on a halogen-non-retaining, non-acidic support and which promotes the dehydrogenation of naphthenes; contacting in an intermediate stage under reforming conditions the effluent from said initial stage with a catalyst which comprises a dehydrogenation component on an acidic support and which promotes the isomerization of cyclopentanes, the dehydrogenation of resultant cyclohexanes, and the isomerization of paraffins; contacting in a final stage the effluent from said inter-

mediate stage under reforming conditions with a catalyst which comprises a dehydrogenation component on an alumina-containing support and which promotes the de-



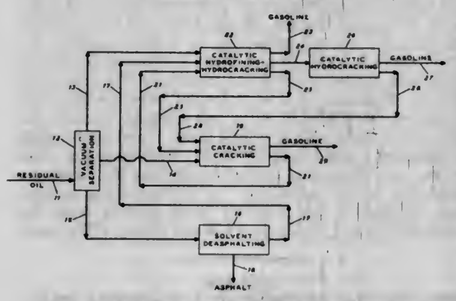
hydrocyclization of paraffins; separating the total effluent from said final stage into hydrogen-containing gas and high-octane liquid products; and recycling at least a part of said hydrogen-containing gas to said initial stage.

3,287,254

RESIDUAL OIL CONVERSION PROCESS

Norman J. Paterson, San Rafael, Calif., assignor to Chevron Research Company, a corporation of Delaware

Filed June 3, 1964, Ser. No. 372,253
6 Claims. (Cl. 208—68)



1. A process for converting heavy residual oil predominantly to gasoline employing in combination at least one vacuum separation unit, at least one solvent extraction unit, at least one catalytic cracking unit, at least two catalytic hydrogenation units, and at least one catalytic hydrocracking unit; comprising:

passing heavy residual oil selected from the group consisting of heavy crude oil, topped crude oil, and atmospheric reduced crude oil to a vacuum separation unit and therein separating the heavy residual oil into a light vacuum gas oil, a heavy vacuum gas oil, and a residuum;

passing residuum so-obtained to a solvent extraction unit and therein separating the residuum by solvent extraction into a deasphalted residual oil and an asphaltic residue;

passing heavy vacuum gas oil so-obtained to a catalytic cracking unit, therein subjecting the heavy vacuum gas oil to catalytic cracking conditions, and recovering cracked products including gasoline and heavy cracked cycle oil;

passing light vacuum gas oil so-obtained, deasphalted residual oil so-obtained, and heavy cracked cycle oil so-obtained to the catalytic hydrogenation units, therein subjecting the respective oils to catalytic hydrogenation conditions, in one of said units subjecting at least said deasphalted residual oil to catalytic hydrogenation conditions causing substantial hydrocracking conversion of from 30 to 70% of said deasphalted oil to distillate oil boiling below 900° F., recovering products including a distillate gas oil hydrocrackate, and in another of said units subjecting at least said distillate gas oil hydrocrackate to catalytic hydrogenation conditions causing substantially complete conversion of organic nitrogen in the oil passed thereto to NH_3, and recovering hydrogenated products including gasoline, a low nitrogen content hydrogenated gas oil, and a high nitrogen content hydrogenated residual oil;

passing high nitrogen content hydrogenated residual oil so-obtained to the catalytic cracking unit wherein said heavy vacuum gas oil is treated, for cracking therein and recovery of cracked products including gasoline and said heavy cracked cycle oil;

and passing low nitrogen content hydrogenated gas oil so-obtained to a catalytic hydrocracking unit, therein subjecting the hydrogenated gas oil to catalytic hydrocracking conditions, and recovering hydrocracked products including gasoline.

3,287,255

CRYSTALLINE SYNTHETIC ZEOLITES FOR THE HYDROCRACKING OF HYDROCARBONS

Leo Broussard, William Judson Mattox, William Floyd Arey, Jr., and Warren Alfred Knarr, Baton Rouge, and Sebastian Marc Laurent, Greenwell Springs, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Mar. 18, 1964, Ser. No. 352,984
17 Claims. (Cl. 208—111)

11. A process for hydrocracking hydrocarbons which comprises contacting said hydrocarbons with a hydrocracking catalyst at a temperature of about 500 to 1,000° F., a pressure of about 500 to 3,000 p.s.i.g., a space velocity of 0.2 to 20 v./v./hr., in the presence of hydrogen at a rate of about 500 to 20,000 s.c.f. per barrel of feed, said hydrocracking catalyst comprising a hydrogenating metal and a crystalline alumino-silicate zeolite having a faujasite structure composed of a crystal framework characterized by cage and bridge cation positions as herein described and comprising silicon ions, aluminum ions, oxygen ions, alkali metal ions, and hydrogen-containing ions, said alkali metal ions and hydrogen-containing ions predominantly occupying the bridge and cage positions respectively, wherein the electron density at the bridge position is about 1.0 to 2.0 electrons per cubic angstrom and the electron density at the cage position is less than about 25% of the value corresponding to complete occupancy of the cage position with alkali metal ion.

3,287,256

HYDROCRACKING PROCESS AND CATALYST ACTIVATION

Dean Arthur Young, Yorba Linda, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed June 11, 1964, Ser. No. 374,263
17 Claims. (Cl. 208—111)

9. A process for hydrocracking a hydrocarbon feedstock containing both paraffinic and aromatic hydrocarbons which comprises subjecting said feedstock plus added hydrogen to hydrocracking conditions of temperature and pressure in contact with a catalyst comprising a zeolitic, alumino-silicate molecular sieve cracking base combined with a small proportion of a Group VIII metal hydrogenating promoter, said cracking base comprising a substantial proportion of ion-exchange sites selected from the class consisting of decationized exchange sites, hydrogen ion-satisfied exchange sites, and divalent metal-satisfied exchange sites, said catalyst having been prepared by ion-exchanging said Group VIII metal into an ammonium form of said zeolitic cracking base, followed by (a) sulfiding of the ion-exchanged composite with hydrogen sulfide at a temperature below about 400° F., (b) oxidizing the sulfided catalyst at a temperature below about 400° F. by contact with a gaseous oxidizing agent, and (c) reducing the oxidized catalyst in hydrogen at an elevated temperature to convert zeolitic ammonium ions to hydrogen ions.

3,287,257

ACTIVATION OF HYDROCARBON CONVERSION CATALYSTS EMPLOYED IN THE HYDROCRACKING OF HYDROCARBONS

Rowland C. Hansford, Yorba Linda, and Robert H. Hass, Fullerton, Calif., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Aug. 18, 1964, Ser. No. 390,455
12 Claims. (Cl. 208—111)

6. A hydrocracking process with intermittent catalyst regeneration and activation which comprises:

(1) contacting a high-boiling mineral oil feedstock plus added hydrogen with a hydrocracking catalyst at elevated temperatures and pressures to give a substantial conversion to lower boiling hydrocarbons, and continuing such contacting for an extended period of time until the catalyst is substantially deactivated by the deposition of carbonaceous deposits, said catalyst comprising a minor proportion of a Group VIII noble metal hydrogenating component deposited upon an alumino-silicate molecular sieve zeolite cracking base having a SiO_2/Al_2O_3 mole-ratio between about 3 and 10, and wherein the zeolitic cations thereof comprise hydrogen ions and/or divalent metal ions;

(2) subjecting the deactivated catalyst to oxidative regeneration at elevated temperatures to burn off carbonaceous deposits, employing oxidizing conditions such that at least a portion of the regeneration is carried out with a partial pressure of water vapor in excess of about 0.5 p.s.i.a., whereby a substantial agglomeration of said noble metal component occurs;

(3) subjecting the regenerated catalyst from step (2) to a sulfiding step by contact with a gaseous sulfiding agent at temperatures which, for at least the terminal portion of the contacting, are above about 500° F.

(4) subjecting the sulfided catalyst from step (3) to a second oxidation step in contact with oxygen-containing gases at elevated temperatures between about 600° and 1200° F. while maintaining the partial pressure of water vapor below about 0.5 p.s.i.a.;

(5) reducing the oxidized catalyst from step (4) with hydrogen at elevated temperatures; and

(6) resuming said hydrocracking contacting step as defined in step (1) with the reduced catalyst from step (5).

3,287,258

HYDROCARBON CONVERSION PROCESS START-UP PROCEDURE

Harold F. Mason, Berkeley, Calif., assignor to Chevron Research Company, a corporation of Delaware

No Drawing. Filed Apr. 13, 1964, Ser. No. 359,403
1 Claim. (Cl. 208—143)

In the starting up of a process wherein a liquid hydrocarbon is treated with hydrogen at a temperature between about 450° and 900° F., a pressure between about 250 and 10,000 p.s.i. and a liquid hourly space velocity of from 0.1 to 4.0 in a reactor containing a bed of hydrogenation catalyst comprising a compound of nickel, and wherein gases are seperated from the effluent from said reactor, the improvement which comprises passing a purge gas through said catalyst bed at a temperature below 300° F. with said catalyst in the oxide form, contacting said catalyst with a sulfiding agent at a temperature below 300° F., until a compound of sulfur appears in said separated gases, maintaining sufficient sulfiding agent in contact with said catalyst to maintain a compound of sulfur in said separated gases at least until said catalyst is contacted with a sulfur-containing hydrocarbon feed, contacting said catalyst with a sulfur-containing hydrocarbon feed and hydrogen at a temperature from 300° to 400° F., and increasing the temperature to reaction temperature while continuing the flow of said feed.

3,287,259

ELECTRICAL INSULATING OIL

Gerald D. Staffin, Westfield, and James E. Kehoe, Clark, N.J., and Carl J. Rizzuti, New York, N.Y., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Dec. 17, 1963, Ser. No. 331,129
10 Claims. (Cl. 208—264)

1. A process for producing an oil useful as a cable oil which comprises:

(a) catalytically hydrofining an aromatic-containing oil boiling from 600° to 1000° F. to produce a hydrofined oil in a first hydrofining zone operating at a temperature of from 500° to 700° F., a pressure of from 500 to 900 p.s.i.g., a feed rate of from 0.5 to 3 volumes of oil per volume of catalyst per hour and in the presence of from 200 to 1500 standard cubic feet of hydrogen per barrel of oil,

(b) withdrawing said hydrofined oil as an effluent from said first hydrofining zone and passing at least an aromatic-containing portion of said withdrawn hydrofined oil to a second hydrofining zone,

(c) catalytically hydrofining said aromatic-containing portion of said withdrawn hydrofined oil in a second hydrofining zone to produce a major proportion of doubly hydrofined aromatic cable oil having a boiling point within the range between about 600° to 1000° F., said second hydrofining zone operating at a temperature of from 500° to 700° F., a pressure of from 500 to 900 p.s.i.g., a feed rate of from 0.5 to 3 volumes of oil per volume of catalyst per hour, and in the presence of from 200 to 1500 cubic feet of hydrogen per barrel of oil, and

(d) recovering subsequent to second hydrofining zone an aromatic cable oil having a boiling point within the range between about 600° and 1000° F.

3,287,260

SOLVENT SEPARATION OF HIGHLY CONCENTRATED AROMATIC EXTRACTS

Howard H. Gross, Pleasantville, N.Y., and Randlow Smith and Homer L. Spencer, Jr., Houston, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

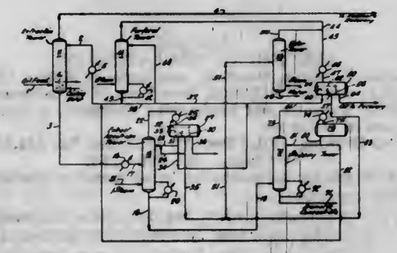
Filed Mar. 1, 1963, Ser. No. 262,116
8 Claims. (Cl. 208—321)

1. A method for the separation of an aromatic rich fraction from a liquid hydrocarbon mixture which comprises:

contacting said mixture with a solvent comprising liquid furfural in an extraction zone separating a raffinate mix comprising a hydrocarbon phase containing dissolved furfural and an extract mix comprising a furfural phase containing dissolved hydrocarbons containing 70 to 85 volume percent aromatic hydrocarbons,

distilling at least a part of said extract mix in a first distillation zone in the presence of added steam in an amount within the range of 0.05 to 3.0 weight percent of said extract mix separating a first distillate com-

prising water, nonaromatic hydrocarbons and furfural and a first bottoms liquid comprising furfural and hydrocarbons containing at least 90 volume percent aromatic hydrocarbons, separating said first distillate into a hydrocarbon-rich phase comprising at least a portion of said non-aromatic hydrocarbons, a water-rich phase, and a furfural-rich phase comprising furfural containing dissolved oil and water, separating at least a portion of said dissolved oil and water from said furfural-rich phase forming a treated furfural-rich phase,



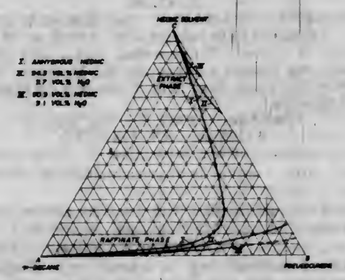
passing said treated furfural-rich phase to said extraction zone as a portion of said solvent,

distilling at least a part of said first bottoms liquid in a second distillation zone separating a second distillate comprising furfural in the absence of a liquid water phase and a second bottoms liquid comprising said hydrocarbons containing at least 90 volume percent aromatic hydrocarbons said second distillate containing less than 0.1 volume percent dissolved water and less than 1.0 volume percent dissolved oil, and passing said second distillate to said extraction zone as a portion of said solvent.

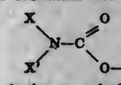
3,287,261
SELECTIVE EXTRACTION OF C_8–C_{11} AROMATIC HYDROCARBONS

Yu-Tang Hwang, Crystal Lake, Ill., assignor, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California

Continuation of application Ser. No. 269,559, Apr. 1, 1963. This application Mar. 28, 1966, Ser. No. 539,607
15 Claims. (Cl. 208—330)



1. A process for recovering C_8–C_{11} aromatic hydrocarbons from a petroleum feedstock comprising aromatic and non-aromatic hydrocarbons in the C_8–C_{11} aromatic hydrocarbon boiling range and which is essentially free of C_6–C_8 aromatic hydrocarbons, which comprises contacting said feedstock with a solvent composition comprising 3.0 to 8.0% by weight of water and a stable polar-substituted ester of carbamic acid having the formula

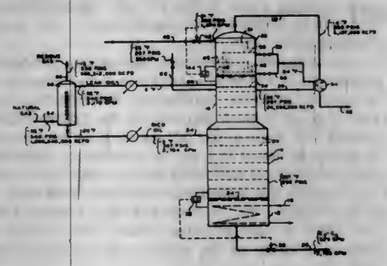


wherein X is a substituent of the group consisting of hydrogen alkyl, cycloalkyl, alkaryl, aryl, polar-substituted alkyl, polar-substituted alkaryl, and heterocyclic groups each having 1 to 10 carbon atoms, X′ is a substituent of the group consisting of hydrogen, alkyl, cycloalkyl, alkaryl aryl, polar-substituted alkyl, polar-substituted aryl, polar-substituted alkaryl, and heterocyclic groups each having 1 to 10 carbon atoms, and Y is a polar-substituted alkyl, aryl, alkaryl, cycloalkyl and heterocyclic group each having 1 to 10 carbon atoms, said polar-substituents being of the group consisting of hydroxy, alkoxy, cyano, acetamido, carboalkyloxy, nitro, chloro, fluoro, bromo, iodo, morpholino, pyridinyl, and piperidinyl groups, separating the composite mixture into two components consisting of a raffinate and an extract predominating in in C_8–C_{11} aromatic hydrocarbons and recovering said C_8–C_{11} aromatic hydrocarbons from said extract.

3,287,262
PROCESS AND APPARATUS FOR ABSORBING NATURAL GASOLINE

Maurice W. Jones, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Jan. 14, 1964, Ser. No. 337,679
7 Claims. (Cl. 208—341)



1. In a process for absorbing natural gasoline from raw natural gas comprising the steps of:

(1) contacting said raw natural gas with pre-saturated lean oil to separately recover a rich oil containing a natural gasoline fraction and a residue gas;

(2) passing the rich oil of step (1) to a de-ethanizer and separately recovering an ethane-rich stream and a de-ethanized rich oil;

(3) passing the ethane-rich stream of step (2) to a pre-saturator;

(4) contacting lean oil with said ethane-rich stream in the pre-saturator of step (3) to separately recover an unabsorbed light gas stream and a pre-saturated lean oil stream; and

(5) passing the pre-saturated lean oil stream of step (4) to step (1) as lean oil feed thereto; the improvement comprising the steps of:

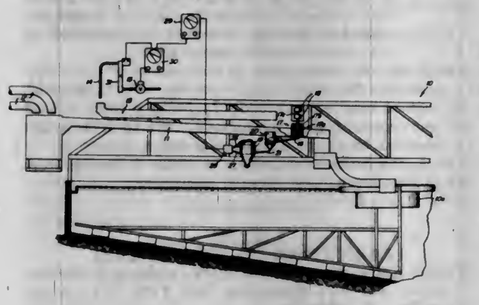
(a) passing the ethane-rich stream of step (2) in indirect heat exchange with the unabsorbed light gas stream from step (4) to cool said ethane-rich stream before passing same to step (4); and

(b) passing the cooled ethane-rich stream of step (a) into said pre-saturator at different tray levels therein.

3,287,263
METHOD OF AND APPARATUS FOR CONTROLLING ADDITION OF REAGENTS TO THE FEED OF PHASE SEPARATION VESSELS

Willard M. Johnson, Moab, Utah, Louis B. Carr, Cloudcroft, N. Mex., and Lewis A. Painter, Kirkwood, Mo., assignors to Atlas Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 11, 1963, Ser. No. 250,899
10 Claims. (Cl. 210—48)



1. A method of controlling the addition of a reagent to the feed of a continuously-fed settling vessel for liquid-solids phase separation, comprising:

continuously withdrawing a sample of the final feed material from the final feed stream to such apparatus;

continuously flowing said sample into a relatively small, gravity-separation vessel for representative phase separation;

separately discharging the separated liquid and solids phases of the sample from the gravity-separation vessel on a continuous basis at a volumetric ratio predetermined by conditions desired in said settling vessel;

sensing changes in the interface level between said liquid and solids phases of said sample in the separation vessel;

and adjusting the reagent addition in accordance with variations in said interface level.

3,287,264
COATING COMPOSITIONS

Harry Hyman Topper, Manchester, England, assignor to Imperial Chemical Industries Limited, Millbank, London, England, a corporation of Great Britain

No Drawing. Filed Mar. 18, 1964, Ser. No. 352,961
Claims priority, application Great Britain, Nov. 28, 1958, 38,442/58; Nov. 12, 1962, 42,618/62
27 Claims. (Cl. 252—28)

1. A process for shaping metal which comprises subjecting to deformation by pressure against a solid surface metal which has been coated by applying to its surface a solution containing from about 1% to 20% by weight of a lubricating coating composition in an organic solvent and removing the solvent, said lubricating coating composition consisting essentially of a copolymer of at least one member of the group consisting of esters of acrylic acid and methacrylic acid together with a minor amount of an ethylenically-unsaturated carboxylic acid selected from the group consisting of acrylic, methacrylic, crotonic, maleic and fumaric acid, said carboxylic acid improving the adhesion of said copolymer to said metal.

7. A process as set forth in claim 1 in which said solution contains from about 1% to 35% by weight of said composition of a mineral lubricant.

8. A process as set forth in claim 7 in which said mineral lubricant is graphite.

3,287,265
LUBRICATING OIL AND ADDITIVE

Warren L. Perlstein, Orchard Lake, Mich., assignor, by mesne assignments, to International Lead Zinc Research Organization, Inc., New York, N.Y., a corporation of New York

No Drawing. Filed Apr. 1, 1963, Ser. No. 269,786
7 Claims. (Cl. 252—42.7)

1. A hydrocarbon lubricating oil, and an additive therefor consisting of an organolead compound chosen from those represented by the formula:

$$Ph_nPb(SR)_{4-n}$$

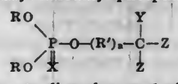
where Ph stands for a phenyl group, R is a member of one of the groups of the class consisting of alkyl, acyl, mono- and dicyclic aryl, aralkyl, alkyl esterified carboxyalkyl, arylthiazolyl and aryloxazolyl, and n is either 2 or 3, the amount of said additive being sufficient to improve the lubricating properties of said oil.

3,287,266
LUBRICATING COMPOSITION

Derek Southern, Heswall, Wirral, Francis H. Waight, Little Sutton, Wirral, and Alexander C. B. MacPhail, Eastham, Wirral, England, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 30, 1964, Ser. No. 355,949
Claims priority, application Great Britain, Apr. 23, 1963, 15,953/63
10 Claims. (Cl. 252—46.7)

1. A lubricating oil composition comprising a major proportion of a base lubricating oil and from 0.1 to 10% by weight of a diaryl haloalkyl phosphate of the formula



wherein R is mono- to di-nuclear aryl which is substituted with from 0 to 5 alkyl groups having 1 to 10 carbon atoms; X is a chalcogen having an atomic number of from 8 to 16; R′ is non- to di-alkyl methylene, where alkyl has 1 to 4 carbon atoms; n is an integer from 1 to 6; Y is non- to per-chloroalkyl having 1 to 2 carbon atoms; and Z is mono- to tri-chloromethyl.

3,287,267
ANTIRUST OIL

Shigeru Yonezaki and Shoji Shimada, both of Kitakyushu, Japan, assignors to Yawata Iron & Steel Co., Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Dec. 28, 1964, Ser. No. 421,635
Claims priority, application Japan, Feb. 14, 1961, 36/5,063
2 Claims. (Cl. 252—47.5)

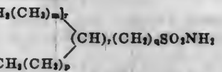
1. An antirust lubricating oil composition which consists essentially of (1) an oil, (2) about 2 to 10 weight percent of sorbitan monooleate, and (3) about 0.01 to 5 weight percent of at least one member selected from the group consisting of

(a) straight chain alkyl sulfonamide of the formula

$$CH_3(CH_2)_nSO_2NH_2$$

wherein n is an integer of from 7 to 19,

(b) aliphatic sulfonamide having from 8 to 20 carbon atoms of the formula



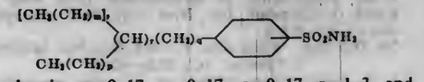
wherein m=0–17, p=0–17, r=1–3, q=0–17, and $m+p+q+r$=5–17,

(c) a straight chain alkylbenzene sulfonamide of the formula



wherein n is an integer of from 7 to 19, and

(d) branch chain alkylbenzene sulfonamide, having from 11 to 26 carbon atoms of the formula



wherein m=0–17, p=0–17, q=0–17, r=1–3, and $m+p+q+r$=5–17.

3,287,268
CUTTING OIL CONTAINING DEFOAMANT

Frederick E. Tice, Bayonne, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Nov. 21, 1963, Ser. No. 325,483
4 Claims. (Cl. 252—48.4)

1. An improved cutting oil having a reduced tendency to form foam which comprises a major proportion of a lubricating oil having a viscosity at 100°F. within the range between about 90 to 500 SUS, about 0.05 to 10 weight percent of an oil-soluble compound selected from the group consisting of sulfurized compounds and chlorinated compounds, and about 0.05 to 0.5 volume percent of a mixture of (a) an alkenyl succinic acid and (b) the monoester of an alkenyl succinic acid and a glycol containing 2 to 4 carbon atoms; wherein said alkenyl groups in said acid and in said ester each contain about 8 to 30 carbon atoms.

3,287,269
OXIDATION INHIBITOR FOR LUBRICATING COMPOSITION

Harold W. Adams, Dayton, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force

Filed July 12, 1960, Ser. No. 42,446
20 Claims. (Cl. 252—49.6)

3. A fluid ester lubricating composition consisting essentially of as the base lubricant an ester derived from a carboxylic acid having from 2 to 10 carbon atoms which is blended with a mixture of about 0.75 to 1.0 part by weight of 5-ethyl-10,10-diphenylphenazasiline and 0.5 to 2.0 parts by weight of N-phenyl-1-naphthylamine wherein said mixture is present in an amount sufficient to impart oxidative stability to said base lubricant.

3,287,270
LUBRICANTS AND FUELS CONTAINING BOROXAROPHENANTHRENE COMPOUNDS

Leo J. McCabe, Glassboro, N.J., and Robert F. Bridger, Yardley, Pa., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed May 5, 1964, Ser. No. 365,184
20 Claims. (Cl. 252—49.6)

1. An organic composition selected from the group consisting of lubricants and fuel compositions containing an effective amount, sufficient to improve the oxidation resistance thereof, of a 9,10-boroxarophenanthrene compound.

3,287,271
COMBINED DETERGENT-CORROSION INHIBITORS

Frank A. Stuart, Orinda, and Warren Lowe, Berkeley, Calif., assignors to Chevron Research Company, a corporation of Delaware

No Drawing. Filed Jan. 21, 1965, Ser. No. 427,176
9 Claims. (Cl. 252—49.9)

1. A lubricating oil composition comprising an oil of lubricating viscosity, and a product obtained by (1) reacting at a temperature in the range of from about 200° F. to 500° F:

(a) an alkenyl succinic anhydride having from 30 to 200 carbon atoms in the alkenyl radical, with

(b) an alkylene polyamine having from 1 to 2 primary amino groups, from 2 to 20 carbon atoms and from 1 to 11 nitrogen atoms;

wherein the mole ratio of the polyamine to the anhydride is from about 0.5:1 to about 1:1;

followed by (2) reacting at a temperature in the range of about 200° to 300° F.,

(a) the product of (1) with

(b) an aromatic dicarboxylic acid of from 8 to 14 carbon atoms having from 0 to 2 alkyl substituuents and wherein the carboxyl groups are bonded to annular carbon atoms separated by at least one annular carbon atom;

such that the weight ratio of the product of (1) to the dicarboxylic acid of (2) is less than 200:1, the product of reaction (1) and (2) being present in said oil composition in amount of 0.001 to 0.75 weight percent based on dicarboxylic acid content.

9. A composition according to claim 1 having from 0.1 to 3 weight percent tricresyl phosphate.

3,287,272
LUBRICATING OIL COMPOSITION

William Katzenstein, Bethlehem, Pa., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 18, 1964, Ser. No. 368,415
20 Claims. (Cl. 252—51.5)

1. A lubricating composition comprising a major amount of hydrocarbon lubricating oil having dissolved therein from about 0.1 to about 50 weight percent of an alkylated polymer prepared by the simultaneous polymerization and alkylation of one mole of at least one heterocyclic N-vinyl monomer selected from the class consisting of N-vinyl-2-oxazolidone, N-vinyl-3-morpholinone, N-vinyl succinimide, N-vinyl piperidine, N-vinyl diglycolylimide, N-vinyl glutarimide and monomers of the following formulae:

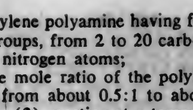
(1)



(2)

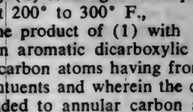


(3)



and

(4)



wherein R represents an alkylene bridge of from 2 to 4 carbon atoms to complete a 5-, 6- and 7-membered heterocyclic ring system, R_1 represents a member selected from the class consisting of hydrogen and methyl, R_2 represents a member selected from the class consisting of hydrogen, alkyl of from 1 to 12 carbon atoms and phenyl, m is an integer of from 1 to 4, n is an integer of from 1 to 4 and wherein y is an integer of from 2 to 3, and by the alkylation of one mole of the polymer of at least one of said heterocyclic N-vinyl monomers, with 0.5 to 12 moles of an α-olefin of from 8 to 42 carbon atoms in solution of an organic solvent common to said monomer, polymer

and α-olefin in the presence of 0.025 to 0.30 mole of an organic peroxide catalyst per mole of said α-olefin at a temperature ranging from 80° to 200° C.

3,287,273
LUBRICITY ADDITIVE-HYDROGENATED DICARBOXYLIC ACID AND A GLYCOL

Michael J. Furey, Berkeley Heights, and John K. Appeldoorn, Bernardsville, N.J., and Albin F. Turbak, Danville, Ill., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Sept. 9, 1965, Ser. No. 486,221
15 Claims. (Cl. 252—56)

1. A new composition of matter, suitable for addition to a composition selected from the group consisting of hydrocarbon liquids and synthetic ester lubricants, which comprises an ester, formed by reacting an oil-insoluble glycol having between about 2 and about 8 carbon atoms per molecule with a hydrogenated dimer of a C_{12} to C_{18} unsaturated monocarboxylic acid, said ester being selected from the group consisting of monomeric esters having the formulae:

HOOC—R—COOR′—OH

HO—R′—OOC—R—COO—R′—OH

and esters formed by reacting a hydrogenated dimer of said carboxylic acid with said glycol in the mole ratio of 2 to 1 respectively, wherein R is the hydrocarbon radical of the said dimer acid and R′ is the hydrocarbon radical of said glycol.

7. A composition of matter comprising a major amount of a liquid selected from the group consisting of hydrocarbon liquids and synthetic ester lubricants, and a minor amount of the composition of claim 1.

3,287,274
HYDRAULIC BRAKE FLUID BASE

Gayle D. Edwards and Clifford L. Lambert, Jr., Austin, Tex., assignors to Jefferson Chemical Company, Inc., Houston, Tex., a corporation of Delaware

No Drawing. Filed May 27, 1963, Ser. No. 283,622
9 Claims. (Cl. 252—73)

1. A method for preparing a brake fluid solvent which comprises

(A) reacting

(a) methanol in the presence of an alkoxylation catalyst with

(b) from 1.0 to 1.6 mols of ethylene oxide followed by

(c) from 0.9 to 1.4 mols of propylene oxide at a temperature of 80 to 160° C. and a pressure of up to 200 p.s.i.g.,

(B) neutralizing the alkoxylation catalyst,

(C) filtering the mixture so produced to remove insoluble salts,

(D) distilling the filtrate to obtain an overhead product Fraction A comprising from about 15 to about 22 wt. percent of said filtrate and a first residue fraction having a reflux boiling point of about 420° F.,

(E) further distilling said first residue fraction to obtain an overhead product Fraction B free of nonvolatile components and a second residue fraction comprising from about 4 to about 10 wt. percent of said first residue fraction, and

(F) blending from 0 to about 60 wt. percent of said Fraction A with from 100 to about 40 wt. percent of said Fraction B to obtain thereby said brake fluid solvent.

5. A brake fluid base comprising 55 to 75 wt. percent solvent, 8 to 22 wt. percent rubber swell inhibitor selected from the class consisting of propylene glycol, dipropylene glycol, ethylene glycol, diethylene glycol and hexylene glycol and 15 to 25 wt. percent lubricant selected from the class consisting of castor oil, and polyoxyalkylene ethers, wherein said solvent is obtained by

(A) reacting methanol with 1.0 to 1.6 mols of ethylene oxide followed by 0.9 to 1.4 mols of propylene oxide in the presence of an alkoxylation catalyst at a temperature of 80 to 160° C. and a pressure of up to 200 p.s.i.g.,

(B) neutralizing said alkoxylation catalyst,

(C) filtering the mixture to remove insoluble salts,

(D) distilling the filtrate to obtain an overhead product Fraction A comprising from about 15 to about 22 wt. percent of said filtrate and a first residue fraction having a reflux boiling point of about 420° F.,

(E) further distilling said first residue fraction to obtain an overhead product Fraction B free of nonvolatile components and a second residue fraction comprising from about 4 to about 10 wt. percent of said first residue fraction, and

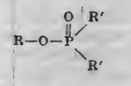
(F) blending from 0 to about 60 wt. percent of said Fraction A with from 100 to about 40 wt. percent of said Fraction B to obtain thereby said solvent.

3,287,275
INHIBITION OF CORROSION OF HYDRAULIC FLUIDS

Christian A. Seil, Santa Monica, Calif., assignor to Douglas Aircraft Company, Inc., Santa Monica, Calif., a corporation of Delaware

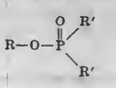
No Drawing. Filed Dec. 30, 1963, Ser. No. 334,646
12 Claims. (Cl. 252—75)

1. A hydraulic fluid consisting essentially of an aryl dialkyl phosphinate having the formula



where R is an aryl group selected from the class consisting of phenyl and naphthyl, and R′ is an alkyl group containing from 4 to 8 carbon atoms, and about 0.01% to about 3% of 2-iodobiphenyl by weight of said composition as a corrosion inhibitor.

3. A hydraulic fluid consisting essentially of an aryl dialkyl phosphinate having the formula



where R is an aryl group selected from the class consisting of phenyl and naphthyl, and R′ is an alkyl group containing from 4 to 8 carbon atoms, and about 0.01% to about 3% of a combination of approximately equal amounts of 2-iodobiphenyl and hexaphenyl di tin by weight of said composition as a corrosion inhibitor.

3,287,276
STABLE MIXTURE CONTAINING DITHIONITES

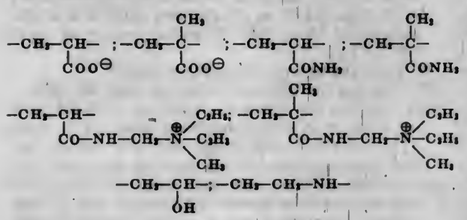
Franz Poschmann and Alfons Janson, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Dec. 5, 1963, Ser. No. 328,163
Claims priority, application Germany, Dec. 11, 1962, B 69,932
2 Claims. (Cl. 252—105)

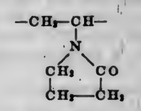
1. A dry mixture consisting essentially of

(a) 95 to 99% by weight of a dithionite selected from the group consisting of sodium dithionite and zinc dithionite and, as a stabilizer for said dithionites to prevent decomposition under the influence of water and moisture,

(b) 1 to 5% by weight of a water-soluble, macromolecular polymer containing the following units as building blocks:



and



3,287,277
LIQUID DETERGENT
John Henderson Barbour, 113 Poplar Ave., Raumati South, Wellington, New Zealand
No Drawing. Filed Feb. 20, 1964, Ser. No. 346,072
8 Claims. (Cl. 252—106)

1. A liquid detergent composition consisting essentially of a liquid milk product having a fat content of not more than approximately 2.5% by weight and selected from the group consisting of rennet whey, lactic acid casein whey, buttermilk, skim milk, reconstituted rennet whey, reconstituted lactic acid casein whey, reconstituted buttermilk and reconstituted skim milk, and having incorporated in said liquid milk product up to about 2% by volume of a bactericide selected from the group consisting of methyl p-hydroxy benzoate, propyl p-hydroxy benzoate, formaldehyde acetamide and formalin, about 15% to 20% by volume of a surface active agent selected from the group consisting of alkyl benzene sulphonic acids and alkali metal salts thereof; and an alkaline substance compatible with said liquid milk product and present in sufficient quantity to adjust the pH of the detergent composition to between 6.0 and 7.5.

3,287,278
FAST REACTOR FUEL
Roy E. Thoma, Oak Ridge, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed July 1, 1965, Ser. No. 469,010
1 Claim. (Cl. 252—301.1)

A fast reactor fuel composition comprising substantially 30 mole percent of a metal chloride selected from the group consisting of UCl_3, $PuCl_3$ and mixture thereof, substantially 40 mole percent KCl, and substantially 30 mole percent NaCl, said fuel composition having a liquidus temperature below about 485° C.

3,287,279
PREPARATION OF A FILTERABLE CO-PRECIPITATE OF PLUTONIUM AND URANIUM
Ward L. Lyon, Fremont, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Aug. 11, 1965, Ser. No. 479,019
8 Claims. (Cl. 252—301.1)

1. In a process for producing a homogeneous plutonium-oxide-uranium oxide fuel composition the steps comprising producing an acidic feed solution containing plutonium and uranium in a mole concentration ratio between about 0.7 and 1.5, co-precipitating said plutonium and uranium as a hydrous oxide mixture from said feed solution by increasing the alkalinity thereof, filtering, washing and drying said precipitate to produce a homogeneous plutonia-urania admixed fissile material for fuel element fabrication.

3,287,280
HYDRODESULFURIZATION CATALYST AND PROCESS FOR PREPARING THE SAME
Joseph Dennis Colgan, Ozone Park, and Nicholas Chomitz, Yonkers, N.Y., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed June 14, 1963, Ser. No. 287,799
4 Claims. (Cl. 252—435)

1. A method of preparing a catalyst comprising impregnating a calcined formed alumina base with a phosphoric acid solution of molybdenum and nickel salts capable of being converted to their oxides upon calcination, said impregnation solution containing sufficient acid to solubilize the salts and to contain at least about .2 mole of acid per mole of molybdenum but insufficient to add more than 10% phosphoric aicd residues to the final catalyst composition, said impregnating solution containing sufficient molybdenum and nickel salt to impart from 8 to about 20% of molybdenum as the oxide and 1 to about 5% of nickel as its oxide, and thereafter calcining the impregnated alumina to convert the molybdenum and nickel salts to their oxides.

3,287,281
ZEOLITE AGGLOMERATES AND THE PREPARATION THEREOF
Walter L. Haden, Jr., Metuchen, and Frank J. Dzierzanowski, Somerset, N.J., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Nov. 19, 1962, Ser. No. 238,797
16 Claims. (Cl. 252—455)

2. A method for agglomerating a zeolite into hard, water-stable particles which comprises mixing finely divided particles of an acid-resistant zeolite in the presence of water with (1) an alkali metal hydroxide, (2) a source of alkali reactive silica in the form of a finely divided solid material, said alkali reactive silica being selected from the group consisting of hydrated silica, amorphous silica, clay and the silica residue obtained by acid leaching a silicate mineral originally having a continuous silica network, and (3) a finely divided source of a material selected from the group consisting of alkaline earth metal oxide and alkaline earth metal hydroxide, said ingredients (1), (2) and (3) being added in amounts sufficient to provide attrition-resistant bonded agglomerates which maintain their form in the presence of acid solution, forming the mixture into agglomerates and drying the agglomerates to effect their hardening.

3,287,282
HYDROGEN ZEOLITE Y HAVING IMPROVED HYDROTHERMAL STABILITY
Vernon E. Stiles, Fullerton, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California
No Drawing. Filed Dec. 7, 1962, Ser. No. 242,900
4 Claims. (Cl. 252—455)

1. A method for the manufacture of a relatively hydrothermally stable hydrogen zeolite of the Y crystal type, having a SiO_2/Al_2O_3 mole-ratio between about 4 and 6, which comprises:

(A) forming a mixture comprising water, sodium aluminate, sodium hydroxide and silica hydrosol, said

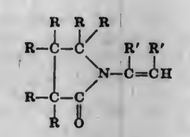
mixture having a molar composition within one of the following ranges:

	Range 1	Range 2	Range 3
Na_2O/SiO_2	0.2–0.4	0.4–0.6	0.6–0.8
SiO_2/Al_2O_3	8–40	10–30	7–30
H_2O/Na_2O	25–60	20–60	20–60

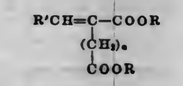
(B) aging said mixture at about 0–40° C. for about 1–60 hours;
(C) digesting the aged mixture at about 80–110° C. for about 12–60 hours to produce a crystalline sodium zeolite-mother liquor mixture.
(D) allowing said sodium zeolite-mother liquor mixture to age at a temperature between about 10–40° C. for about 4–48 hours;
(E) separating said sodium zeolite from its mother liquor;
(F) contacting the separated sodium zeolite with an aqueous solution of ammonium nitrate to replace by ion-exchange at least about 60% of the zeolitic sodium ions with ammonium ions, thus forming an ammonium zeolite; and
(G) calcining said ammonium zeolite in order to produce the specified hydrogen Y zeolite.

3,287,283
LUBRICANTS CONTAINING COPOLYMERS OF UNSATURATED ESTERS OF DICARBOXYLIC ACID AND N-VINYLBUTYROLACTAM
Stephen J. Metro, Scotch Plains, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Jan. 9, 1964, Ser. No. 336,622
5 Claims. (Cl. 252—51.5)

1. An aviation lubricating oil composition comprising a major amount of a carboxylic acid ester lubricating oil, and dissolved therein as a sludge dispersant, about 0.1 to 10.0 wt. percent, based on the weight of the total composition, of a copolymer consisting essentially of (*a*) N-vinylbutyrolactam having the general formula:

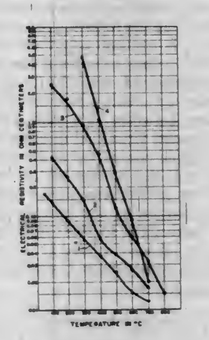


wherein R and R' are selected from the group consisting of hydrogen and C_1 to C_8 alkyl groups, and (*b*) a diester of an α-alkylene dicarboxylic acid having the general formula:



wherein *n* is 0 to 2, R is a branched chain C_5 to C_{13} alkyl group having a C_1 to C_2 branch on the number 2 carbon atom and R' is selected from the group consisting of hydrogen and C_1 to C_2 alkyl groups, said ester having a total of 15 to 34 carbon atoms, said copolymer having a molecular weight of about 1,000 to 10,000 and being formed by copolymerizing about 20 to 0.1 molar proportions of said ester per molar proportion of said butyrolactam.

3,287,284
CERAMIC REFRACTORY BODIES
Emmerson K. Norman, Horseheads, N.Y., assignor to Corhart Refractories Company, Louisville, Ky., a corporation of Delaware
Filed May 18, 1964, Ser. No. 368,009
4 Claims. (Cl. 252—518)



1. A sintered ceramic body consisting essentially of tin oxide and, based on the total body composition, 0.1% to 0.5% by weight of copper oxide, 0.5% to 1.0% by weight of zinc oxide and 0.7% to 1.2% by weight of antimony oxide.

3,287,285
CHAIN EXTENDED STANNOSILOXANES AND METHOD
Stuart B. Eglin, Los Angeles, and Abraham L. Landis, Northridge, Calif., assignors to Hughes Aircraft Company, a corporation of Delaware
No Drawing. Filed Oct. 17, 1963, Ser. No. 317,032
4 Claims. (Cl. 260—2)

1. A method for the production of a chain extended essentially linear silanol terminated stannosiloxane elastomer polymer having an average molecular weight of not less than 1500 and with repeating units in the polymer chain being selected from the groups consisting of dialkylstanno group, having one to four carbon atoms in the alkyl group, and diorganosiloxy group selected from the group consisting of an alkyl group of one to four carbon atoms, phenyl, vinyl, allyl, and mixtures of the same, which comprises the steps of; reacting (1) a diorganodichlorosilane wherein the organic radical is selected from the group consisting of alkyl group of one to four carbon atoms, vinyl, allyl, phenyl and mixtures of the same, and (2) a dialkyltin dichloride wherein the alkyl radical contains one to four carbon atoms; said reaction being accomplished with water by interfacial cohydrolysis in the presence of alkali hydroxide and a soluble detergent to produce a silanol terminated stannosiloxane polymer; reacting said polymer with (3) a diorganodichlorosilane wherein the organo portion is selected from the group consisting of an alkyl of one to four carbon atoms, phenyl, vinyl, allyl, and mixtures of the same, in the presence of a tertiary amine, hydrolytically condensating the reaction product of (1), (2) and (3), aging the said product in a moist atmosphere, and obtaining a said stannosiloxane polymer.

3,287,286

CONTINUOUS PRODUCTION OF FINELY PARTICLED EXPANDABLE STYRENE POLYMERS

Helmut Ohlinger, Wolfgang Guenther, Winfried Single, Karl Buchholz, and Hans Wild, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Aug. 20, 1963, Ser. No. 303,429
Claims priority, application Germany, Aug. 29, 1962, B 68,612
4 Claims. (Cl. 260—2.5)

1. A process for the production of finely particled expandable polystyrene wherein styrene and an organic compound selected from the group consisting of aliphatic hydrocarbons and perchlorofluorocarbons which has a boiling point lower than the softening point of polystyrene, but above —45° C. is continuously introduced at the top of a pressure vessel having a diameter less than its height, the styrene is polymerized with the temperature at the top of the pressure vessel being between 70° and 130° C. and at the bottom between 170° and 230° C. and the pressure in the pressure vessel being more than the vapor pressure of the organic compound and styrene at the temperature prevailing at the bottom of the vessel, the composition comprising polystyrene and organic compound is continually discharged at the bottom of the pressure vessel at a rate equivalent to that at which the styrene and organic compound are supplied at the top of the pressure vessel, and the composition is cooled to 20° to 65° C. and then reduced in size.

3,287,287

EXPANDABLE, CROSS-LINKABLE POLY (EPIHALOHYDRIN) COMPOSITION

William D. Willis, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Jan. 31, 1964, Ser. No. 341,728
13 Claims. (Cl. 260—2.5)

1. As a new composition of matter, an expandable, cross-linkable poly(epihalohydrin) composition consisting essentially of a blend of a polymer of epihalohydrin having a weight average molecular weight of at least about 40,000 and from about 0.5% to about 10% by weight of said polymer of an ammonium salt which thermally decomposes at temperatures below about 375° F., and up to about 10% by weight of said polymer of a blowing agent.

3,287,288

LOW FRICTION COMPOSITION CONTAINING A RESINOUS BINDER AND DEGRADED POLYTETRAFLUOROETHYLENE PARTICLES

Victor G. Reiling, Dayton, Ohio, assignor to The Duriron Company, Inc., Dayton, Ohio, a corporation of New York

No Drawing. Continuation of application Ser. No. 117,267, June 15, 1961. This application Sept. 21, 1964, Ser. No. 398,114
2 Claims. (Cl. 260—4)

1. A composition of matter consisting essentially of finely divided degraded polytetrafluoroethylene resin particles and a parent material therefor, said parent material being selected from the group consisting of thermosetting and thermoplastic resins and combinations thereof, said degraded polytetrafluoroethylene resin being formed by heating polytetrafluoroethylene resin starting material at a temperature in excess of 785° F. for a period of time sufficient to cause appreciable degradation of said polytetrafluoroethylene starting material to a point such that the tensile strength of the degraded polytetrafluoroethylene is permanently substantially less than that of the starting material, and said degraded resin particles being present in an amount of 5 to 50% by volume of said parent resin and being uniformly and evenly distributed throughout said parent for reducing the surface friction thereof.

3,287,289

PLASTICIZERS FOR RADIATION SENSITIVE SYSTEMS

Meyer Ream and William F. Fowler, Jr., Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed June 11, 1962, Ser. No. 201,265
8 Claims. (Cl. 260—8)

1. A composition of matter consisting essentially of a mixture of:

(A) gelatin, and

(B) a copolymer of

(1) at least one acid selected from the group consisting of acrylic acid and methacrylic acid, and

(2) at least one ester selected from the group consisting of n-butyl acrylate, tertiary butyl acrylate, n-amyl acrylate, and n-hexyl acrylate,

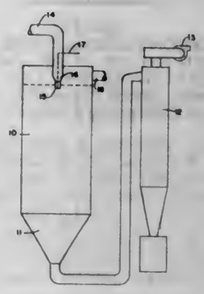
wherein the acid constitutes about 5 to about 24 mole percent of the copolymer.

3,287,290

SPRAY-DRIED VINYL ACETATE DIBUTYL MALEATE COPOLYMER, WITH PIGMENT, THICKENER, DISPERSING AGENT AND PLASTICIZER

Walter J. Bray, Jr., Longmeadow, Mass., assignor, by mesne assignments, to Monsanto Company, a corporation of Delaware

Filed Dec. 3, 1962, Ser. No. 243,970
1 Claim. (Cl. 260—17)



A free flowing spray dried powder produced by spray drying an aqueous paint dispersion, said powder being reconstitutable to the aqueous paint dispersion by dispersing in water, and said powder comprising, in parts by weight:

(a) 134 parts copolymer of vinyl acetate with dibutyl maleate in a 75 to 25 weight ratio

(b) 149 parts titanium oxide pigment, and pigment extenders consisting of 109 parts clay, 50 parts calcium silicate and 61 parts calcium carbonate

(c) 4 parts methyl cellulose thickener

(d) dispersing agent consisting of 5 parts sodium salt of polycarboxylated condensed naphthalene and 2 parts block copolymer of ethylene oxide-propylene oxide

(e) 20 parts dibutyl phthalate plasticizer.

3,287,291

DIORGANOSILOXANES CURED WITH AN ALKOXY END-BLOCKED SILYL TETRAFORMAL

Hans H. Ender, Buffalo, N.Y., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed July 12, 1962, Ser. No. 209,283
12 Claims. (Cl. 260—18)

1. A composition of matter curable to an elastomer at room temperature which is stable when maintained under

refrigeration in a closed container and which comprises (1) 100 parts by weight of a diorganopolysiloxane fluid having an average of about two silicon bonded hydroxy groups per molecule, said fluid being an essentially linear diorganopolysiloxane consisting essentially of units of the formula:



wherein R and R′ are monovalent organic radicals containing from 1 to about 18 carbon atoms, said fluid having a viscosity of from 100 centipoises to 2,000,000 centipoises at room temperature and having an organic group to silicon atom ratio of from about 1.95:1 to 2:1 and (2) from 0.1 to 10 parts by weight of an organosilicon compound of the formula:

$$Si[(OCH_2)_nOR]_4$$

wherein each n is an integer having a value from one to about five, and each R is an alkyl group containing from one to about four carbon atoms.

10. The cured composition obtained from a mixture of ingredients comprising (1) 100 parts by weight of a diorganopolysiloxane fluid having a hydroxy group bonded to each of the terminal silicon atoms thereof, said fluid being an essentially linear diorganopolysiloxane consisting essentially of units of the formula:



wherein R and R′ are monovalent organic radicals containing from 1 to about 18 carbon atoms, said fluid having a viscosity of from 100 centipoises to 20,000,000 centipoises at room temperature and having an organic group to silicon atom ratio of from about 1.95:1 to 2:1, (2) from 0.1 to 10 parts by weight of an organosilicon compound of the formula:

$$Si[(OCH_2)_nOR]_4$$

wherein each n is an integer having a value from one to about five, and each R is an alkyl group containing from one to about four carbon atoms, and (3) from 0.05 to 5 parts by weight of a metal salt of a carboxylic acid wherein the metal is selected from the class consisting of lead, tin, zirconium, iron, cadmium, titanium, calcium and manganese.

3,287,292

PROCESS FOR PREPARING COPOLYMERS AND TO THE RESULTING PRODUCT OF POLYESTERS CONTAINING POLYMERIZABLE GROUPS AND α,β-ETHYLENICALLY UNSATURATED COMPOUNDS

Horst Dalibor, Harksheide, near Hamburg, Germany, assignor to Reichhold Chemicals, Inc., White Plains, N.Y.

No Drawing. Filed Nov. 4, 1964, Ser. No. 408,760
Claims priority, application Germany, June 27, 1960, R 28,218; Nov. 7, 1963, R 36,506
2 Claims. (Cl. 260—22)

1. A process for the preparation of copolymers of polyesters containing polymerizable groups and α,β-ethylenically unsaturated compounds, which is characterized in that

(a) 10 to 90% by weight of polyesters obtained by esterification or re-esterification of (1) at least one member of a group consisting of saturated and unsaturated natural oils and fats and their fatty acids and synthetic fatty acids, having 5 to 22 carbon atoms, with (2) at least one polyalcohol having 2 to 6 carbon atoms and (3) at least one member of a group consisting of saturated and unsaturated dicarboxylic acids, these having been selected and reacted in such a manner that a polyester, having an acid number from 3 to 40 and of average molecular weight of about 600 to 2500, is obtained, wherein component (1) is present in an amount of 30 to 70% by weight and the dicarboxylic acid (component 3) is present in amounts of 30 to 70% by weight, and

(b) 10–90% by weight of mixtures consisting of *b′* and *b″*, *b′* being α,β-ethylenically unsaturated compounds that contain no reactive hydrogen atoms, singly or in the form of mixtures, and

b″ being α,β-ethylenically unsaturated compounds that contain at least one reactive hydrogen atom, singly or in the form of mixtures, wherein

b′, either singly or in the form of mixtures, consists of 50 to 90% by weight of α,β-ethylenically unsaturated compounds that contain no reactive hydrogen atoms, and

b″ comprises 10 to 50% by weight of an α,β-ethylenically unsaturated compound having at least one reactive hydrogen atom and includes at least one compound containing an alcoholic hydroxyl group, said compound comprising an ester selected from a group consisting of 2-hydroxyethylacrylate, 2-hydroxypropylacrylate, 3-hydroxybutylacrylate, 6-hydroxyhexylacrylate and the corresponding methacrylates and ethacrylates and phenylacrylates, 2-hydroxypropylbutylmaleinate and di-(2-hydroxypropyl)-maleinate and fumarate, 2-hydroxy-3-chloropropylacrylate, 2-hydroxy-1-phenylethacrylate, 2,3-dihydroxypropylacrylate and the corresponding methacrylates and ethacrylates and phenylacrylates and mixtures thereof,

are copolymerized by heating in the presence of a solvent and polymerization promoter,

said solvent being substantially inert and participating in the reaction to only an insignificant extent and said promoter being such as to break up into radicals at the selected reaction temperature to thus initiate the polymerization,

the percentages by weight of components (a) and (b) being calculated on the basis of the sum of (a) and (b).

3,287,293

PROCESS FOR PREPARING COPOLYMERS FROM POLYESTERS CONTAINING POLYMERIZABLE GROUPS AND α,β-ETHYLENICALLY UNSATURATED COMPOUNDS AND PRODUCT

Horst Dalibor, Harksheide, near Hamburg, Germany, assignor to Reichhold Chemicals, Inc., White Plains, N.Y.

No Drawing. Filed Oct. 30, 1964, Ser. No. 407,874
Claims priority, application Germany, June 27, 1960, R 28,218
7 Claims. (Cl. 260—22)

1. Process for preparing copolymers from polyesters containing polymerizable group and α,β-ethylenically unsaturated compounds, characterized in that

(a) polyesters, obtained from aliphatic monocarboxylic acids, polyalcohols and dicarboxylic acids, are copolymerized with

(b) mixtures consisting of (1) olefinically unsaturated compounds that have no reactive hydrogen atoms and (2) olefinically unsaturated compounds that have reactive hydrogen atoms, wherein the olefinically unsaturated compounds (2) contain unsaturated ether radicals in addition to hydroxyl groups.

3,287,294
ALKYLOLATED ACRYLAMIDE INTERPOLYMERS COMPRISING VINYL STEARATE

Kazys Sekmakas and Frank Ragne, Chicago, Ill., assignors to De Soto Chemical Coatings, Inc., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Dec. 11, 1961, Ser. No. 158,552
12 Claims. (Cl. 260—22)

1. An organic solvent-soluble, heat-hardenable resinous interpolymer comprising:

(A) an amide of an ethylenically unsaturated carboxylic acid;

(B) vinyl stearate; and

(C) at least one other ethylenically unsaturated compound copolymerizable with said amide and said vinyl stearate; said interpolymer having amido hydrogen atoms replaced by the structure



in which R is selected from the group consisting of hydrogen, furyl, and saturated lower aliphatic hydrocarbon radicals containing up to 10 carbon atoms and R_1 is selected from the group consisting of hydrogen, and alkyl and alkoxy alkyl radicals containing up to 10 carbon atoms in the radical.

3,287,295
ALKYD RESINS FROM POLYHYDRIC ALCOHOLS OF AT LEAST FOUR HYDROXYLS, POLYCARBOXYLIC ACIDS, STYRENE/ALLYL ALCOHOL COPOLYMERS, AND ALKYD MODIFIERS

Frank J. Hahn, Springfield, Mass., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Mar. 30, 1962, Ser. No. 183,764
5 Claims. (Cl. 260—22)

1. A short to medium oil alkyd resin comprising the reaction product of 3 to 25% by weight of a polyhydric alcohol having the functionality of at least 4 reactive hydroxyl groups, 5 to 40% by weight of a polycarboxylic anhydride, 10 to 60% by weight of a styrene-allyl alcohol copolymeric polyol and between 25 to 60% by weight of an alkyd modifier selected from the group consisting of fatty acids, mono- and higher esters between polyhydric alcohols and fatty acids, and mixtures of the same.

3,287,296
BITUMINOUS SURFACING COMPOSITION

Eugene Wittner, Florissant, Mo., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 12, 1962, Ser. No. 209,303
13 Claims. (Cl. 260—22)

1. A composition consisting essentially of (1) a bituminous material and (2) a polyester prepared from (A) a bituminous-compatible polyol and (B) pyromellitic dianhydride.

3,287,297
COATING COMPOSITIONS COMPRISING VINYL CHLORIDE POLYMERS AND DRYING OIL ACID ESTERS OF LIQUID POLYEPOXIDES

Hans Anselm, Grafelfing, Peter Ludwig, Deisenhofen, and Walter Keil, Munich, Germany, assignors to Consortium für Elecktrochemische Industrie G.m.b.H., Munich, Germany

No Drawing. Filed July 27, 1962, Ser. No. 213,030
Claims priority, application Germany, Aug. 4, 1961, C 24,800
1 Claim. (Cl. 260—23)

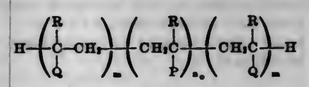
A coating composition comprising a pasty mixture of a polymer selected from the group consisting of vinyl chloride homopolymers and vinyl chloride-vinyl acetate copolymers containing up to 50% vinyl acetate component, said polymer having a uniform grain size in the range of about 1–60μ, and an ester of a self drying fatty acid prepared by esterification of 0.15–1.00 equivalent of self drying fatty acid with 1 equivalent of a liquid polyepoxide, said polymer constituting 20 to 70% by weight of the polymer-ester mixture.

3,287,298
OXYGEN-CONVERTIBLE BLOCK COPOLYMERS OF POLYMERIC DIANIONS

Gaetano F. D'Alelio, South Bend, Ind., assignor, by direct and mesne assignments, to Dal Mon Research Co., Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed Dec. 28, 1962, Ser. No. 248,150
21 Claims. (Cl. 260—23)

1. A block copolymer having the structure



wherein

n_o represents an integer having a value of at least 4;

m represents an integer having a value of at least 1;

R is a radical selected from the group consisting of —H, —CH_3 and —CN;

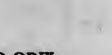
P is a radical selected from the group consisting of —Ar, —Ar—Y′ and —CO—Y″;

Q is a radical selected from the group consisting of —$COOR_d$, —COO—Y—$OOCR_d$, Ar—Z—CH_2R_d and —Ar—Z—R_d;

—Ar is a radical selected from the class consisting of aryl radicals containing 6 to 12 carbon atoms and derivatives thereof in which each derivative group is selected from the class consisting of alkyl, cycloalkyl and aryl groups containing no more than 12 carbon atoms;

—Ar′— is a divalent radical selected from the class consisting of arylene radicals containing 6 to 12 carbon atoms and derivatives thereof in which each derivative group is selected from the class consisting of alkyl, aryl, cycloalkyl, alkoxy, aryloxy, thioalkyl, and thioaryl radicals containing no more than 12 carbon atoms;

—Y′ represents a radical selected from the class consisting of —OR^{IV}, —SR^{IV}, —$COOR^{IV}$, —CN, —$O(CR_2^V)_nCOOR^{IV}$, —$S(CR_2)_n^VCOOR^{IV}$, —$(CR_2^V)_nCOOR^{IV}$, —$(CR_2^V)_nOR^{IV}$, —$(CR_2^V)_nSR^{IV}$, —$(CR_2^V)_nCON(R^{IV})_2$, —$O(CR_2^V)_nCON(R^{IV})_2$, —$NR^V(CR_2^V)_nCOOR^{IV}$, —$(OCR_2^VCR_2^V)_n$ OR^{IV}, —$CO(OCR_2^VCR_2^V)_nOR^{IV}$, —$N(COOR^{IV})_2$,



—$N[CR_2^V)_nCOOR^{IV}]_2$, and —SO_2OR^{IV};

—Y″ is selected from the group consisting of —OR^{IV}, $O(CR_2^V)COOR^{IV}$, —$S(CR_2^V)COOR^{IV}$, —$O(CR_2^V)_nOR^{IV}$, —$N(R^{IV})_2$, —$O(CR_2^V)_nCON(R^{IV})_2$, —$OCR_2^V(CR_2^V)_nN(R^{IV})_2$, —$S(CR_2^V)_nCON(R^{IV})_2$, —$SCR_2^{IV}(CR_2^{IV})_nN(R^{IV})_2$,



and —$(OCR_2^VCR_2^V)_nOR^{IV}$;

n represents a numerical value of 1 to 10;

R_d is an unsaturated aliphatic hydrocarbon radical containing no less than 16 and no more than 24 carbon atoms, and consisting of a terminal —CH_3 group, at least one and no more than 4 —CH=CH— groups, and the remainder consisting of —CH_2— groups;

—Y— is a polyvalent hydrocarbon radical of no more than 20 carbon atoms having a valency of at least 2 and no more than 6, the valencies in excess of those shown in the formula —COO—Y—$OOCR_d$ being occupied by groups selected from the class of R_dCOO—, R^aO— and R^aCOO— groups, in which R^a is a hydrocarbon radical containing no more than 24 carbon atoms;

—Z— is a divalent hydrocarbon radical connecting the —R_d group to the —Ar— group and containing therein groups selected from the class consisting of hydrocarbon, ester and amino groups containing no more than 18 carbon atoms;

R^{IV} is a hydrocarbon radical selected from the class consisting of saturated ailphatic and cycloaliphatic radicals and aryl radicals, containing 1 to 12 carbon atoms; and

R^V is a radical selected from the class of hydrogen and —R^{IV}.

3,287,299
VINYL HALIDE RESIN STABILIZERS COMPRISING PHOSPHITES PREPARED FROM POLYOLS, SECONDARY PHOSPHITES AND TERTIARY PHOSPHITES

Chrysosthenis M. Canarios, New Providence, N.J., assignor, by mesne assignments, to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Filed July 29, 1963, Ser. No. 298,495
27 Claims. (Cl. 260—23)

1. A liquid, solvent-free stabilizer for vinyl halide resin compositions which comprises (*a*) a mixture of tertiary organic phosphites that is the product obtained by heating (i) a polyhydric alcohol selected from the group consisting of pentaerythritol, sorbitol, mannitol, trimethylolethane, trimethylolpropane, and mixtures thereof, (ii) a secondary organic phosphite, and (iii) a tertiary organic phosphite in the amounts of approximately 0.5 mole to 5 moles of said secondary organic phosphite and 2 moles to 15 moles of said tertiary organic phosphite per mole of said polyhydric alcohol at a temperature between approximately 100° C. and 180° C. until a substantially clear solution is obtained; (*b*) monocarboxylic acid salts of at least two metals selected from the group consisting of barium, cadmium, zinc, lead, and tin; and (c) a phenolic compound in the amounts of approximately 2 parts to 10 parts by weight of said phenolic compound and approximately 35 parts to 60 parts by weight of said monocarboxylic acid salts per 100 parts by weight of said mixture of tertiary organic phosphites.

3,287,300
MONOCARBOXYLIC ACID ADDED TO VINYL ESTER POLYMER EMULSION TO LOWER THE COALESCENCE TEMPERATURE

Hendricus A. Oosterhof and Klaas Ruyter, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 9, 1964, Ser. No. 350,517
Claims priority, application Netherlands, Mar. 11, 1963, 290,023
5 Claims. (Cl. 260—23)

1. A process for preparing polyvinyl ester emulsions having depressed film-forming temperatures which comprises adding from 0.1% to 20% of an aliphatic monocarboxylic acid having from 9 to 22 carbon atoms in the molecule based on the weight of polymer to an aqueous emulsion of a polymer of a vinyl ester.

3,287,301
RECOVERY OF OLEFIN POLYMERS FROM SOLUTIONS THEREOF

Frederick L. Fysh and Hugh K. Coulthart, Sarnia, Ontario, Canada, assignors to Polymer Corporation Limited, Sarnia, Ontario, Canada, a body corporate

Filed Apr. 23, 1962, Ser. No. 189,456
Claims priority, application Canada, Apr. 26, 1961, 822,140
12 Claims. (Cl. 260—23.7)

1. In a method of recovering solid crumbs of an olefin polymer from a slurry of said crumbs in an aqueous medium, the steps of introducing into a solution of said polymer in an inert organic solvent a minor proportion up to about 1% by weight of the resultant dry polymer product of a mixture of a rosin acid selected from the group consisting of pimaric acid, abietic acid, isomers of abietic acid and mixtures thereof and a fatty acid having from 18 to 20 carbon atoms the said proportion of said mixture introduced being selected to improve the resistance of said polymer to discoloration on aging while maintaining a desired average size of said crumbs, and subsequently rapidly mixing the solution with a bot aqueous medium to effect volatilisation of the organic solvent and formation of the said slurry.

3,287,302
POLYMERIZATION CATALYST COMPOSITIONS AND METHOD OF UTILIZING

Herman B. Wagner, Perkasie, Pa., assignor to Tile Council of America, Inc., New York, N.Y., a corporation of New York

No Drawing. Continuation of application Ser. No. 597,098, July 11, 1956. This application Jan. 21, 1963, Ser. No. 252,603
4 Claims. (Cl. 260—28)

1. A method of polymerizing an epoxy type resin in the presence of a boron halide catalyst which normally causes the polymerization to occur almost instantaneously, said method comprising, absorbing the catalyst in liquid form, within a porous, particulate, inert substance; coating the particles of said inert substance with a paraffin wax, mixing the coated particles with said epoxy resin which is in liquid, unpolymerized form; and permitting the polymerization reaction to occur with evolution of heat at a retarded rate as the catalyst is slowly released from said particles.

3,287,303
EPOXY RESIN-AMINE COMPLEX ADHESIVE COMPOSITION AND PROCESS OF PREPARING SAME

Herman B. Wagner, Perkasie, Pa., assignor to Tile Council of America, Inc., New York, N.Y., a corporation of New York

No Drawing. Filed June 24, 1964, Ser. No. 377,530
14 Claims. (Cl. 260—29.2)

1. An epoxy resin bonding composition adapted to be hardened at room temperature which comprises:

(a) an epoxy resin in admixture with a stable polyamine metal-salt complex epoxy resin hardener, said epoxy resin having at least two functional epoxy groups capable of entering into a cross-linking reaction with amino nitrogen, a solid finely divided, inert carrier; said stable polyamine-metal salt complex epoxy resin hardener being the reaction product of an aliphatic polyamine containing at least two amino nitrogens attached to aliphatic carbon atoms and a metal salt of an acid, said metal salt being a member selected from the group consisting of halides, nitrates, sulfates and phosphates, the metal cation of which is capable of forming a stable complex with the amino groups of the polyamine; and is selected from the group consisting of calcium, zinc, copper, silver and nickel; said epoxy resin and said epoxy resin hardener being mixed in substantially stoichiometric proportions; and

(b) between about 5 and 30 percent by weight of water based on the weight of the epoxy resin and hardener admixture.

3,287,304
ACRYLONITRILE COPOLYMERS AND COMPOSITIONS

Yoshisato Fujisaki, Numazu-shi, and Chozo Nakayama, Toshio Ohfuka, and Hideo Sato, Fuji-shi, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

No Drawing. Filed Jan. 3, 1963, Ser. No. 249,131
7 Claims. (Cl. 260—29.6)

1. A composition comprising a copolymer of about 80 to 99.8% by weight of acrylonitrile, about 0.2 to 5% by weight of at least one component selected from the group consisting of α-sulfoacrylonitrile and water-soluble salts thereof and 0 to about 19.8% by weight of at least one component selected from other ethylenically unsaturated compounds.

4. A process for producing a polymeric material which comprises copolymerizing 80 to 99.8% of acrylonitrile, with 0.2 to 5% by weight of at least one member selected from the group consisting of α-sulfoacrylonitrile and water-soluble salts thereof and 0 to about 19.8% by weight of at least one other ethylenically unsaturated compound copolymerizable therewith, in an aqueous medium with a pH of 1.5 to 4.0 at a temperature of 20° to 800 C.

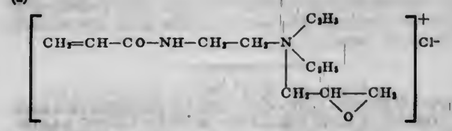
3,287,305
CATIONACTIVE DISPERSIONS OF FINELY DIVIDED WATER-INSOLUBLE CATIONACTIVE POLYMERS CONTAINING QUATERNARY AMMONIUM GROUPS

Arthur Maeder, Therwil, Basel-Land, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed Jan. 7, 1963, Ser. No. 249,597
Claims priority, application Switzerland, Oct. 30, 1953, 98,107; Oct. 11, 1954, 11,199
6 Claims. (Cl. 260—29.6)

1. In a stable aqueous cationactive dispersion, copolymerization product of

(a)



and (b) styrene.

3,287,306
PREPARATION OF WATER-SOLUBLE ARYLMETHYLENE SULFONIUM POLYMERS

Melvin J. Hatch and Gerald R. Geyer, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 1, 1963, Ser. No. 262,184
5 Claims. (Cl. 260—29.6)

1. A process for the preparation of water-soluble and uniformly water-dispersible arylmethylene sulfonium polymers which comprises the steps of:

(A) preparing a first solution containing from about 5 to 60 weight percent of a chloromethylated arylvinyl polymer in an organic transfer-solvent, said polymer having

(1) an average of from about 0.4 to 1.0 chloromethyl groups per aryl nucleus, and

(2) an average molecular weight of from about 5,000 to 200,000

said organic transfer-solvent being soluble to at least 15 weight percent in water, and capable of dissolving at least 5 weight percent water;

(B) maintaining said solution at a temperature of between about 30° to 70° C. while adding from about 1 to 50 weight percent in excess of the amount of an organic sulfide theoretically necessary to react with the chloromethyl groups of said polymer, said sulfide addition being at a rate to maintain a visually clear solution; and

(C) adding an amount of water sufficient to yield a final solution containing from about 5 to 40 weight percent solids, said water being added within about 6 hours after said sulfide addition at a rate to maintain an essentially one phase reaction solution which is maintained at a temperature of between about 30° to 70°C.

whereby a water-soluble to uniformly water-dispersible arylmethylene sulfonium polymer is produced.

3,287,307
METHOD FOR PREPARATION OF THE SOLUTION OF ACRYLONITRILE POLYMER

Masakazu Taniyama, Ichiro Kanda, Michiaki Nakajima, and Makoto Amiya, Kitajima-machi, Japan, assignors to Toho Rayon Kabushiki Kaisha, Chuo-ku, Tokyo, Japan, a corporation of Japan

No Drawing. Filed Mar. 29, 1965, Ser. No. 443,650
8 Claims. (Cl. 260—29.6)

1. A method for the preparation of a spinning solution of acrylonitrile polymer selected from the group consisting of a copolymer of at least 85% acrylonitrile and up to 15% of methyl acrylate and a terpolymer of at least 85% acrylonitrile and up to 15% of methyl acrylate and allyl alcohol, comprising polymerizing the monomeric system of said polymer in an aqueous zinc chloride solution having a concentration of about 48 to 60%, and the monomer concentration is about 5 to 20% by weight based on the weight of the aqueous salt solution, at a temperature between 5° C. to 80° C., characterized in that polymerization is carried out in contact with an initiator comprising an oxy acid of chlorine in an amount of 0.01 to 0.1 percent by mol of the mol of monomer, reducing sulfoxy compounds in an amount of more than 10 times by mol of the mol of oxy acids of chlorine and cupric ion in an amount of 0.125 to 1 percent by mol of the mol of the monomer.

3,287,308
NOVEL INKS OF HIGH VINYLIDENE CHLORIDE-CONTENT COPOLYMERS

Paul D. Whyzmuzis, Clifton, N.J., and Howard Roth, Ridgewood, Richard Bolstad, Brooklyn, and Elihu J. Aronoff, Glen Oaks, N.Y., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio

No Drawing. Filed Jan. 31, 1964, Ser. No. 341,752
8 Claims. (Cl. 260—31.2)

1. A vinylidene chloride-vinyl acid copolymeric ink composition comprising pigment dispersed in a solution, in a saturated C_1 to C_4 aliphatic alcohol, of

(A) a copolymer comprising at least 70% vinylidene chloride and a major portion of the remainder of the copolymer being an acid selected from the group consisting of acrylic acid, methacrylic acid and itaconic acid, and

(B) 4,4-bis(4-hydroxyphenyl) pentanoic acid, the weight of said 4,4-bis(4-hydroxyphenyl) pentanoic acid equaling from 10 to 50% the weight of the copolymer.

3,287,309
PROCESS FOR INCORPORATING ADDITIVES

Costas H. Basdekis, Longmeadow, and Ronald H. Dahms and Wesley E. Gould, Jr., Springfield, Mass., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Mar. 13, 1963, Ser. No. 264,775
14 Claims. (Cl. 260—34.2)

1. In a process for incorporating a liquid additive into a solid, thermoplastic polymer of a monomer of the

group consisting of an olefin, a monovinylidene aromatic hydrocarbon, an ar-halo monovinylidene aromatic hydrocarbon, an alkyl acrylate, an alkyl methacrylate, acrylonitrile, methacrylonitrile, and mixtures thereof, the steps comprising: mixing a liquid organic additive selected from the group consisting of lubricants, plasticizers, pneumatogens, flame retardants and stabilizers for the polymer with a normally solid, thermoplastic, polymeric drier having a Staudinger average molecular weight below about 35,000, said mixing being conducted at a temperature above the melting temperature of the drier and below the decomposition temperature of the liquid additive and the amounts of the components being selected to form a concentrate solution containing about 40 to 65 per cent by weight of the liquid additive; cooling the concentrate solution to form a solid; particulating said solid concentrate; and blending said particulated concentrate with the solid thermoplastic polymer, said liquid additive being compatible with the solid thermoplastic polymer, and said polymeric drier being a polymer which is compatible with the solid thermoplastic polymer and of lower molecular weight than said solid thermoplastic polymer.

3,287,310
RANDOM SILOXANE COPOLYMERS CONTAINING PHENYLENE AND PHENYL ETHER CHAIN LINKAGES

George M. Omietanski, Tonawanda, N.Y., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Sept. 29, 1961, Ser. No. 141,622
10 Claims. (Cl. 260—37)

1. A random copolymeric organopolysiloxane gum having an intrinsic viscosity number in benzene at 25° C. of at least 0.5 deciliter per gram and a molecular weight of from about 100,000 to about 3,000,000 comprised of

(a) from 5 to 95 mole percent units of the formula:



(b) from 5 to 95 mole percent units of the formula:



(c) from 0 to 25 mole percent units of the formula:



and (d) from 0 to 1 mole percent units of the formula:



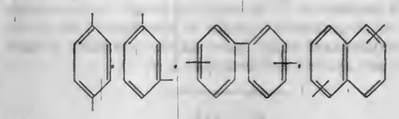
wherein R is a monovalent hydrocarbon radical and R′ is an olefinically unsaturated monovalent hydrocarbon radical.

3,287,311
POLYIMIDE CONTAINING TiO_2, ARTICLES, AND PROCESS OF MAKING

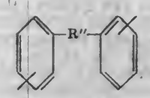
Walter Murray Edwards, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 3, 1963, Ser. No. 249,127
11 Claims. (Cl. 260—37)

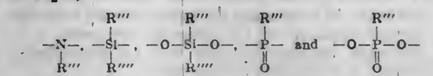
1. A process which comprises mixing at least one diamine having the structural formula $H_2N—R'—NH_2$ wherein R′ is a divalent radical selected from the group consisting of



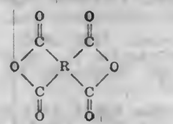
and



where R″ is selected from the group consisting of an alkylene chain having 1–3 carbons atoms, —O—, —S—, —SO_2—,



where R‴ and R⁗ are selected from the group consisting of alkyl and aryl; with at least one tetracarboxylic acid dianhydride having the structural formula



wherein R is a tetravalent organic radical containing at least 2 carbon atoms, no more than 2 carbonyl groups of said dianhydride attached to any one carbon atom of said tetravalent radical; in a solvent for at least one of said diamine and said dianhydride under conditions to form a polyamide-acid; adding titanium dioxide particles to form a shapeable polymeric composition having said titanium dioxide particles dispersed uniformly therein; shaping said composition into a shaped article; and converting the polymer in said polymeric composition to polyimide.

3,287,312
PREPARATION OF FLAME-RESISTANT CROSS-LINKED POLYETHYLENE COMPOSITIONS

Ting Hung Ling, Marion, Ind., assignor, by mesne assignments, to Anaconda Wire and Cable Company, a corporation of Delaware

No Drawing. Filed July 10, 1962, Ser. No. 208,910
16 Claims. (Cl. 260—41)

1. A process for preparing a flame-resistant cross-linked polyethylene composition which comprises uniformly blending a normally solid polymer of ethylene with from about 4 to about 20 percent by weight of an inorganic fluoroborate selected from the group consisting of ammonium fluoroborate, sodium fluoroborate, potassium fluoroborate, calcium fluoroborate, magnesium fluoroborate, barium fluoroborate, and strontium fluoroborate, and generating free radicals within the resulting mixture to induce cross-linking of the polymer chains.

3,287,313
SHAPED ARTICLES CONTAINING POLYVINYL ALCOHOL, BENTONITE AND STEARAMIDE

Saburo Imoto, Kurashiki-shi, Japan, assignor to Kurashiki Rayon Co., Ltd., Kurashiki-shi, Japan, a corporation of Japan

No Drawing. Filed Dec. 5, 1962, Ser. No. 242,357
Claims priority, application Japan, Dec. 7, 1961, 36/43,925
6 Claims. (Cl. 260—41)

1. An article of manufacture comprising a shaped composition having high tensile strength, low elongation and

high water resistance consisting essentially of from 25 percent to 80 percent by weight of polyvinyl alcohol, from 20 percent to 75 percent by weight of bentonite, and up to 10 percent by weight of stearamide, all of the weight percentages being based on the combined weight of polyvinyl alcohol and bentonite.

3,287,314

FERROCENE AND ITS DERIVATIVES AS PHOTOSTABILIZERS FOR SYNTHETIC RESIN

Robert M. Van Vliet, 6922 Rushton Drive, Dayton, Ohio

No Drawing. Filed Apr. 17, 1962, Ser. No. 188,283
6 Claims. (Cl. 260—45.75)

1. A photostable composition comprising

(1) a resin selected from the group consisting of poly vinyl butyral and melamine resins, and

(2) .01% to 5% by weight, based upon the weight of the resin, of a ferrocene derivative selected from the group consisting of 1,1'-dibenzoyl ferrocene, 1,1'-ferrocene dicarboxylic acid and 1,1'-diethylferrocenate as a stabilizer for the resin.

3,287,315

ELASTOMERIC COMPOSITIONS CONTAINING ADHESION INDUCING AGENTS

Richard E. Connor, Haddonfield, N.J., and John C. Kitching, Philadelphia, Pa., assignors to H. K. Porter Company, Inc., Pittsburgh, Pa., a corporation of Delaware

Original application Feb. 9, 1961, Ser. No. 88,152, now Patent No. 3,112,772. Divided and this application July 22, 1963, Ser. No. 300,952
4 Claims. (Cl. 260—45.7)

1. In an uncured elastomeric composition comprising a polychloroprene hydrocarbon, an alkaline earth metal oxide, a vulcanizing agent and an accelerator, that improvement which comprises including in the composition of from 10% to 25% of an adhesion inducing agent selected from the group consisting of lead acetate, lead subacetate and lead carbonate.

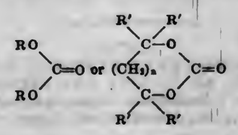
3,287,316

PROCESS FOR THE PRODUCTION OF FILAMENTS OR FILMS BY SHAPING LINEAR POLYCARBONATES OF HIGH MOLECULAR WEIGHT

Béla von Falkai, Artur Prietzschk, Wolfgang Rellensmann, Alfred Reichle, and Horst Wieden, Dormagen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Mar. 31, 1964, Ser. No. 356,053
Claims priority, application Germany, Apr. 11, 1963, F 39,471
5 Claims. (Cl. 260—47)

1. In the process of producing shaped articles by shaping a linear polycarbonate of di-(4-hydroxy phenyl)-2,2-propane from its solution, the improvement which comprises adding to said polycarbonate solution prior to the shaping thereof an organic carbonate of the formula



in which R is a member of the group consisting of alkyl, aryl and aralkyl and R' is a member of the group consisting of hydrogen and R, *n* being an integer from 0 to 6, in an amount between 10 and 40% by weight, based on the weight of the dissolved polycarbonate.

3,287,317

PROCESS FOR MANUFACTURING PHENOLIC RESINS

Moise Lerer, Paris, France, assignor to Institut Francais du Petrole, des Carburants et Lubrifiants, Rueil-Malmaison, Seine-et-Oise, France

No Drawing. Filed Dec. 4, 1961, Ser. No. 156,959
Claims priority, application France, Dec. 6, 1960, 846,378; Mar. 8, 1961, 855,147
5 Claims. (Cl. 260—57)

1. A process for manufacturing phenolic resins, which process comprises reacting phenols with saturated heavy residue products boiling above about 133° C. under atmospheric pressure obtained by reacting isobutene with formaldehyde in the presence of an acid catalyst and at a temperature lower than 120° C., said process being carried out at a temperature between about 50 and about 200° C.

3,287,318

SUBSTANTIALLY NEUTRAL ELECTROPHILIC SALTS AS CURING CATALYST FOR AMIDE-ALDEHYDE RESINS

Stewart W. Gloyer and Harold G. Bittle, Gibsonia, and Charles V. Semroc, Natrona Heights, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Aug. 10, 1961, Ser. No. 130,465
12 Claims. (Cl. 260—72)

1. A heat-hardenable, resinous composition comprising:

(a) from about 0.5 to about 5 percent by weight, based on the total of (a) and (b) herein, of a substantially neutral electrophilic metal salt; and

(b) from about 99.5 to about 95 percent by weight, based on the total of (a) and (b) herein, of an interpolymer of a polymerizable ethylenically unsaturated carboxylic acid amide with at least one other monomer having a $CH_2{=}C<$ group, said interpolymer containing from about 2 percent to about 50 percent by weight of said amide and being characterized by having amido hydrogen atoms replaced by the structure:



where R is a member selected from the class consisting of hydrogen, furyl, and a saturated lower aliphatic hydrocarbon radical, and R_1 is a member selected from the class consisting of hydrogen, alkyl, and benzyl radicals containing from about 1 to about 12 carbon atoms.

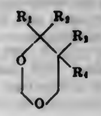
3,287,319

COMPLEX POLYESTERS OF POLYCARBOXYLIC ACIDS WITH HYDROXYL COMPOUNDS AND METADIOXANES

Moise Lerer, Paris, France, assignor to Institut Francais du Petrole, des Carburants et Lubrifiants, Rueil-Malmaison, France

No Drawing. Filed Apr. 23, 1963, Ser. No. 274,915
Claims priority, application France, Apr. 25, 1962, 895,630
7 Claims. (Cl. 260—75)

1. A process for manufacturing complex esters comprising the step of reacting (a) a member of the group consisting of polycarboxylic acids containing from 2 to 20 carbon atoms, 0 to 3 carbon to carbon double bonds and 2 to 4 carboxyl groups in their molecule and the anhydrides and esters thereof, with (b) a metadioxane of the formula



wherein one of the R_1, R_2, R_3, and R_4 radicals is selected from the group consisting of hydrogen, alkyl radicals of 1–18 carbon atoms and monohydroxyalkyl radicals of 1–18 carbon atoms, and the others are selected from the group consisting of hydrogen and alkyl radicals of 1–18 carbon atoms, and (c) a polyhydric alcohol containing 2–20 carbon atoms and 2–5 hydroxy groups per molecule, wherein for each acid equivalent of compound (a), there is used 0.25 to 3 metadioxanic equivalents of compound (b) and 0.1 to 2 OH alcoholic equivalents of compound (c) the sum of the metadioxanic and OH equivalents being equal to at least 1.

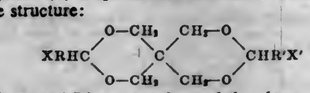
3,287,320

SPIROBI(META-DIOXANE) POLYESTER RESINS

Robert E. Leech and Julian K. Rose, South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed July 18, 1958, Ser. No. 749,323
10 Claims. (Cl. 260—75)

1. Process for the production of resinous cross-linked polyesters which comprises forming a polyester intermediate characterized by solubility in benzene, acetone, and dioxane by heating and condensing at temperatures within the range between about 125° C. and 275° C. in an inert atmosphere (1) a spirobi(meta-dioxane) compound having the structure:



wherein R and R' are members of the class consisting of the divalent aliphatic radicals of the formula C_nH_{2n} wherein *n* is an integer from 2 to 18, and the divalent cyclohexane group; and X and X' are —$COOR^2$ radicals wherein R^2 designates a member of the class consisting of hydrogen and the alkyl radicals having one to fourteen carbon atoms; and (2) a member of the class consisting of the alkanediols of the structure $C_mH_{2m}(OH)_2$ where *m* is an integer from 2 to 10 and the polyoxyalkylene diols of the structure

$$HOCH_2CHR^3(OCH_2CHR^3)_pOH$$

where R^3 is of the class consisting of hydrogen and the methyl radical, and *p* is an integrer from 1 to 3; the said diol and spirobi(meta-dioxane) compound being reacted in the range of molar ratios of from 1:1 to 5:1, said diol having a boiling point higher than that of by-product R^2OH, removing the by-product R^2OH as formed and discontinuing the condensation when substantially all formation and evolution of the R^2OH has ceased, and thereafter cross-linking said intermediate polyester by heating said polyester to temperatures of from about 125° C. to 275° C. thereby forming a resinous cross-linked polyester characterized by insolubility in benzene, acetone and dioxane.

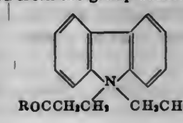
3,287,321

FLUORENE POLYAMIDES

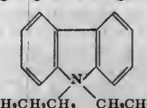
Samuel C. Temin, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware

No Drawing. Filed Aug. 16, 1960, Ser. No. 49,855
7 Claims. (Cl. 260—78)

1. A clear, transparent condensation-type linear polyamide, characterized by an intrinsic viscosity of at least 0.4 in a solution of 90 parts phenol and 10 parts ethanol at 35° C. and a glass transition temperature above 120° C., of (A) a bifunctional organic dicarboxylic acid compound selected from the group consisting of



and ROC—Z—COR, wherein R is a member selected from the group consisting of halogen, hydroxy and lower alkoxy, and Z is a member selected from the group consisting of phenylene and normal alkylene chains having from 6–10 carbon atoms; and (B) an organic diamine selected from the group consisting of



and $H_2N—CH_2—Z'—CH_2—NH_2$, wherein Z' is a member selected from the group consisting of phenylene and normal alkylene chains having from 4–8 carbon atoms; at least one of the members selected from (A) and (B) being a compound containing a fluorine nucleus.

3,287,322

VACUUM-THERMAL TREATMENT OF POLYMERIZED CAPROLACTAM TO REDUCE THE CONTENT OF LOW MOLECULAR WEIGHT CONSTITUENTS THEREIN

Hans Joachim Zimmer, Kronberg, Taunus, Dietrich Natus, Frankfurt am Main, Hans-Ferdinand Geisler, Kronberg, Taunus, and Helmut Langanke, Offenbach (Main), Germany, assignors to Hans J. Zimmer, Frankfurt am Main, Germany

No Drawing. Filed Dec. 21, 1960, Ser. No. 77,271
Claims priority, application Germany, Jan. 29, 1960, Z 7,781
4 Claims. (Cl. 260—78)

1. Process for the treatment, prior to spinning, of high molecular weight polymerized caprolactam to reduce the content of low molecular weight monomeric and oligomeric caprolactam constituents therein to at most about 2.5% thereof, which comprises subjecting resinous polymerized caprolactam, containing therein more than 2.5% by weight of low molecular weight monomeric and polymeric caprolactam constituents, at a temperature above the melting point thereof to vacuum treatment at a pressure of up to about 0.6 torr for a period between about 15–100 minutes to remove the volatile constituents present, followed by thermal treatment at a temperature above the melting point of the caprolactam polymer and at a pressure above about 0.6 torr for a period of between about 1–4 hours, to attain an equilibrium ratio of monomeric caprolactam to oligomeric caprolactam in the ratio range of substantially about 60:40 to 70:30, and repeating the vacuum treatment followed by thermal treatment at least one more time, whereby to obtain a total content of monomeric and oligomeric caprolactam constituents of at most about 2.5% by weight of the resinous polymerized caprolactam with the equilibrium ratio of monomeric caprolactam to oligomeric caprolactam after the last thermal treatment being within the ratio range of substantially about 60:40 to 70:30.

3,287,323

PROCESS FOR THE PRODUCTION OF A HIGHLY ORIENTABLE, CRYSTALLIZABLE, FILAMENT-FORMING POLYAMIDE

Stephanie Louise Kwolek, Wilmington, Del., and Paul Winthrop Morgan, West Chester, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 25, 1963, Ser. No. 275,506
1 Claim. (Cl. 260—78)

Method for the production of a highly orientable, crystallizable, filament-forming polyamide, said method comprising the steps of

(1) forming an anhydrous condensation mixture consisting of (a) a diacid chloride of an acid selected from the group consisting of adipic acid, suberic acid and sebacic acid, together with (b) a stoichio-

metric equivalent, based on the said diacid chloride, of meta-phenylene diamine, and (c) an organic, acid accepting diluent selected from the group consisting of N-methylpyrrolidone, dimethylacetamide and hexamethylphosphoramide and which is present in such an amount to provide a final concentration of 5–35% by weight of polyamide therein, said mixture being formed by addition of said diacid chloride to a solution of said diamine in said diluent while maintaining the said condensation mixture under continuous agitation in the absence of oxygen at a temperature between —20 and 25° C. until completion of said addition,

(2) continuing said agitation in the absence of water and at a temperature not above 30° C. until a polyamide is formed having an inherent viscosity of at least 0.8, as measured at 30° C. in m-cresol solvent at a concentration of 0.5 gram polymer per 100 ml. solvent, and

(3) separating the polyamide thusly formed.

3,287,324

POLY-META-PHENYLENE ISOPHTHALAMIDES

Wilfred Sweeny, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed May 7, 1965, Ser. No. 454,086
9 Claims. (Cl. 260—78)

1. Polycarbonamide having an inherent viscosity of at least 0.8 in sulfuric acid at 30° C. at a concentration of 0.5 gram of polymer per 100 cc. of solution, the said polycarbonamide being of the class consisting of (*a*) an alpha polymetaphenylene isophthalamide characterized by relatively high solubility and (*b*) a beta polymetaphenylene isophthalamide characterized by relatively low solubility, the said polycarbonamide consisting of repeating units of which at least about 85% are of the formula



wherein the hexagon represents the benzene nucleus, R is a substituent which is non-amide forming at room temperature via reaction with a member from the class consisting of amino hydrogen and carbonyl halide.

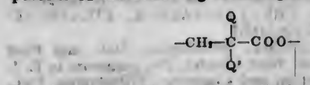
3,287,325

NOVEL CARBONYL AMINO SUBSTITUTED LACTONES AND POLYMERS THEREOF

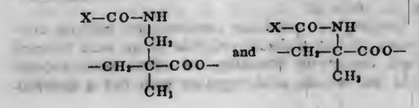
Meurig Wyn Williams, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 22, 1965, Ser. No. 466,123
6 Claims. (Cl. 260—78.3)

4. A copolyester having between about 90–99.5 mol percent of the following recurring structural unit



wherein Q and Q' are alkyl radicals of from 1–4 carbon atoms which may be joined by a carbon-to-carbon bond to form an alicyclic ring and between about 0.5 to 10 mol percent of at least one of the following recurring structural units



and

wherein X is selected from the group consisting of hydrogen and arylmethoxy.

3,287,326

GLYCEROL DERIVATIVES OF AZELAALDEHYDIC ACID AND POLY(ESTER-ACETALS) THEREFROM

William R. Miller, John C. Cowan, and Everett H. Pryde, Peoria, Ill., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Original application Aug. 29, 1963, Ser. No. 305,556. Divided and this application Aug. 11, 1965, Ser. No. 485,668
2 Claims. (Cl. 260—78.3)

2. The crystalline polyester melting at 61.5–62.5° C. and having a molecular weight of 6000, said polyester being the homopolymer obtained by refluxing the monomeric glyceryl acetal of methyl azelaaldehydate at 160–210° C. and at 0.1–0.04 mm. pressure for 13 hours with constant nitrogen ebullition and in the presence of at least 1 percent by weight of the monomer of calcium oxide catalyst, then adding additional calcium oxide and refluxing at 200–259° C. for 1 hour.

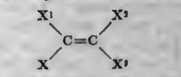
3,287,327

COPOLYMERS OF BICYCLO[2.2.1]HEPTA-2,5-DIENE

Nathan L. Zutty, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

Filed July 27, 1961, Ser. No. 127,292
29 Claims. (Cl. 260—78.5)

1. A normally solid copolymer of bicyclo[2.2.1]hepta-2,5-diene and at least one polymerizable, ethylenically unsaturated compound represented by the formula:



wherein X is a member selected from the group consisting of a hydrogen atom and a halogen atom; X^1 is a member selected from the group consisting of a hydrogen atom, a halogen atom, and a carbalkoxy radical having from 1 to 5 carbon atoms in the alkoxy radical thereof; X^2 is a member selected from the group consisting of a hydrogen atom, a halogen atom, a methyl radical, and a cyano radical; and X^3 is a member selected from the group consisting of a halogen atom, a carbalkoxy radical having from 1 to 5 carbon atoms in the alkoxy radical thereof, a saturated aliphatic acyloxy radical having from 1 to 5 carbon atoms in the alkyl radical thereof, and a cyano radical, the infrared transmission spectrum of said copolymer being characterized by the presence of an absorption band at 12.4μ and the essential absence of absorption bands due to olefinic unsaturation at 6.35μ and 14.1μ.

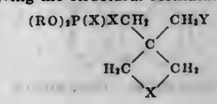
3,287,328

ORGANOPHOSPHORUS COMPOUNDS DERIVED FROM BIS(HALOMETHYL) OXETANES AND THIETANES

Richard L. McConnell and Harry W. Coover, Jr., both of Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Original application Sept. 10, 1959, Ser. No. 839,053, now Patent No. 3,041,350, dated June 26, 1962. Divided and this application Apr. 10, 1962, Ser. No. 190,996
5 Claims. (Cl. 260—79)

1. As a composition of matter, a solid resinous polymer prepared by the polymerization of an organophosphorous compound having the structural formula:



wherein R is a lower alkyl radical containing from 1 to 4 carbon atoms, X is selected from the group consisting of oxygen and sulfur and Y is a halogen selected from the group consisting of chlorine, bromine and iodine in the presence of boron trifluoride etherate catalyst.

3,287,329

POLYSULFONES AND PROCESSES FOR THE PREPARATION THEREOF

Manuel Slovinsky, Fanwood, N.J., assignor to Celanese Corporation of America, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 19, 1963, Ser. No. 266,210
13 Claims. (Cl. 260—79.3)

1. A normally solid polysulfone of sulfur dioxide and at least one compound having a monoethylenically unsaturated furan ring, said polysulfone consisting essentially of recurring —SO_2— units interspersed with recurring dihydrofuran units having the structure



wherein all substituents attached to the carbon atoms are hydrogen.

3,287,330

POLYETHER POLYMERS HAVING UNSATURATED SIDE CHAINS

James G. Burt, Oxford, Pa., and Henry C. Walter, Brandywine Hundred, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 6, 1958, Ser. No. 713,538
16 Claims. (Cl. 260—79.5)

15. A cured elastomer obtained by heating a polyalkyleneether polymer to a temperature of at least about 125° C. with sulfur in the presence of vulcanization accelerators, said polymer being a millable, sulfur-curable polymer having a molecular weight of at least about 30,000 and consisting essentially of the recurring units ~~(G—O)~~ wherein G is a radical selected from the group consisting of an alkylene radical and a substituted alkylene radical wherein the substituents are free of any Zerewitinoff active hydrogen atoms and have a molecular weight of not greater than about 250, with the proviso that at least about one-third of the G's be tetramethylene radicals and that there be an average of at least one G for every 10,000 units of molecular weight of polymer, having a side chain which contains a non-aromatic, carbon-to-carbon unsaturated group, said side chain having a molecular weight of not greater than about 250.

3,287,331

SUSPENSION POLYMERIZATION PROCESS WHEREIN A HYDROXYALKYL ALKYLENE DIAMINE IS USED TO IMPROVE HAZE LEVEL

Yoonchai Lee, Springfield, and Leo P. Paradis, Wilbraham, Mass., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Apr. 10, 1963, Ser. No. 271,859
6 Claims. (Cl. 260—80.5)

1. In a suspension polymerization process for polymerizing a polymerizable material comprising a monovinylidene aromatic hydrocarbon and an unsaturated nitrile of the group consisting of acrylonitrile, methacrylonitrile, and mixtures thereof in an aqueous system in the presence of a free radical polymerization initiator and a water-soluble suspending agent, the improvement which comprises conducting the polymerization in the presence of about 0.05–0.5%, based on the weight of the polymerizable material, of a hydroxyalkyl alkylene diamine corresponding to the formula:

$$(R—CH_2)_2N—(CH_2)_n—N(CH_2—R)_2$$

wherein each R is independently selected from the group consisting of hydroxymethyl and hydroxyethyl radicals and *n* represents an integer of 2–6.

3,287,332

METHOD FOR THE PRODUCTION OF PETROLEUM RESIN

Osamu Saeki, Niihama-shi, Tameo Wakamatsu, Nishinomiya-shi, and Shinsaku Moriwaki, Toyonaka-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed Sept. 6, 1962, Ser. No. 221,859
Claims priority, application Japan, Sept. 9, 1961, 36/33,009
3 Claims. (Cl. 260—82)

1. A method for the production of petroleum resin which comprises contacting a petroleum fraction having a boiling point of about 40–185° C. and comprising olefinic, diolefinic, paraffinic hydrocarbons including cyclopentadiene, said hydrocarbons containing at least four carbon atoms, which petroleum fraction is the product obtained by steam cracking of a petroleum fraction selected from the group consisting of naphtha, kerosene and gas oil at a temperature of 500° C. to 1000° C. under a comparatively low pressure in the presence of steam for a short period of time, followed by the removal of hydrocarbons having less than four carbon atoms, with at least one tetrachloride of tin, titanium, zirconium, germanium or hafnium in an amount of 0.005–2.0 percent (wt.) at a temperature of —40° C. to 70° C. for a few minutes up to about thirty minutes, thereby producing preliminary polymerization, then contacting the reaction product with aluminum trihalide in an amount of 0.5–2.0 percent (wt.) at a temperature of —40° C. to 70° C. for about ten minutes to several hours, thereby producing further polymerization, and separating the produced resin from the reaction product.

3,287,333

PROCESS FOR PREPARING A CONJUGATED DIENE-VINYL-AROMATIC BLOCK COPOLYMER WITH A LITHIUM-CONDENSED AROMATIC RING COMPOUND CATALYST

Robert P. Zelinski, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Dec. 26, 1961, Ser. No. 162,636
10 Claims. (Cl. 260—83.7)

1. A process for preparing a block copolymer formed of a central copolymer block and two terminal homopolymer blocks which process comprises the steps of polymerizing a mixture of (1) a conjugated diene selected from the group consisting of 1,3-butadiene, isoprene and piperylene, and (2) a vinyl-substituted aromatic hydrocarbon with an initiator comprising the reaction product obtained by reacting at least 2 grams atoms of lithium per mole of a condensed ring aromatic compound selected from the group consisting of naphthalene and phenanthrene, and alkyl derivatives of these compounds in an aliphatic monoether having the formula ROR, wherein each R is an alkyl group containing 2 to 12 carbon atoms, inclusive, said polymerizing occurring in the presence of a hydrocarbon diluent selected from the group consisting of paraffinic, cycloparaffinic and aromatic hydrocarbons and the amount

of said ether present in the polymerization being less than about 1.75 parts of ether per 100 parts of said mixture of a conjugated diene and a vinyl-substituted aromatic hydrocarbon; and recovering the block copolymer product so produced.

3,287,334

POLYMERIZATION CATALYST SYSTEMS COMPRISING TRIETHYL ALUMINUM AND DICHLOROTITANIUM PHTHALOCYANINE, WITH OR WITHOUT AN AMINE

Edward L. Kropa, Columbus, Ohio, assignor, by mesne assignments, to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Apr. 20, 1961, Ser. No. 104,243
4 Claims. (Cl. 260—86.7)

1. The process of polymerizing a member of the group consisting of methyl methacrylate, styrene and mixtures thereof which comprises subjecting said group member in an inert atmosphere in a liquid hydrocarbon reaction medium at a temperature in the range 25–125° C. to the action of a catalytic amount of a catalyst consisting essentially of the reaction product formed by admixing dichlorotitanium phthalocyanine and aluminum triethyl in a mole ratio in the range 1:1 to 20 respectively.

3,287,335

POLYMERIZATION OF OLEFIN WITH POLAR MONOMERS IN THE PRESENCE OF ZIEGLER TYPE CATALYST SYSTEMS

Dagobert Engelbert Stuetz, Metuchen, N.J., assignor to Celanese Corporation of America, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 3, 1964, Ser. No. 380,992
10 Claims. (Cl. 260—86.7)

1. A substantially linear copolymer of at least one monoethylenically unsaturated alpha olefin having from 2 to 8 carbon atoms and a monoethylenically unsaturated polar monomer selected from the group consisting of vinyl alkanoates having up to about 18 carbon atoms, and alkyl acrylates wherein said alkyl group has up to about 6 carbon atoms, said copolymer being the product resulting from a process comprising:

(A) gradually adding said polar monomer to a reaction zone comprising said alpha olefin and a catalyst system consisting essentially of

(1) from about 10 to about 160 moles, per 1000 liters of reaction zone, of at least one compound of an element of Group IIIb of the Periodic Table (Mendeléeff), said compound being selected from the group consisting of the alkyls, aryls and alkyl halides;

(2) from about 0.1 to about 5 moles, per mole of said component (1), of a compound of at least one element of Groups IVa, Va, VIa, VIIa and VIII of the Periodic Table (Mendeléeff), said compound being selected from the group consisting of the halides, oxyhydrocarbons, oxyhalides, and oxides, said element having a valence above its most reduced state; and

(3) from about 0.1 to about 3 moles, per mole of said component (1) of a compound selected from the group consisting of lithium, sodium, potassium, beryllium and magnesium alkyls having up to about 6 carbon atoms;

said addition of polar monomer to said reaction zone being at a rate of between about 0.01 and 1.0 millimole per millimole of said catalyst component (2) per minute; and

(B) copolymerizing said monomers at a temperature between about 20° and 120° C. and a pressure between about 100 and 500 p.s.i.g.

3,287,336

PROCESS FOR CHLORINATING VINYL CHLORIDE POLYMERS WITH AN OXYGEN CATALYST

John Heyward Taylor, Widnes, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Oct. 15, 1962, Ser. No. 230,698
Claims priority, application Great Britain, Oct. 18, 1961, 37,362/61
7 Claims. (Cl. 260—87.1)

1. A process for the manufacture of chlorinated vinyl chloride polymers selected from the group consisting of vinyl chloride homopolymers and vinyl chloride/vinyl acetate copolymers containing at least 70% by weight vinyl chloride, which comprises introducing chlorine gas into an aqueous dispersion of said vinyl chloride polymer in the presence of an oxygen catalyst consisting essentially of at least one member selected from the group consisting of molecular oxygen, hydrogen peroxide, a lower alkyl hydroperoxide and a di-lower alkyl peroxide and at a chlorination temperature of 54 to 85° C.

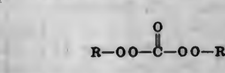
3,287,337

ESTERS OF DIPEROXY CARBONIC ACID AND POLYMERIZATION PROCESSES EMPLOYING THE SAME

James E. Guillet and Edmund B. Towne, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 14, 1962, Ser. No. 244,594
8 Claims. (Cl. 260—89.1)

1. The process of polymerizing an unsaturated polymerizable compound containing a $CH_2{=}C<$ group which comprises polymerizing said compound at a temperature in the range of about 0° C. to about 250° C. in the presence of an organic peroxide having the formula:



where each R is a member selected from the group consisting of aliphatic, cycloaliphatic and aromatic radicals of 6 to 20 carbon atoms.

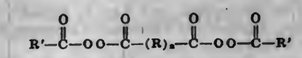
3,287,338

ANHYDRIDES OF DIPEROXY DICARBOXYLIC ACIDS AND THEIR USE AS POLYMERIZATION CATALYSTS

James E. Guillet, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 14, 1962, Ser. No. 244,592
5 Claims. (Cl. 260—89.1)

1. The process of polymerizing an unsaturated polymerizable compound containing a $CH_2{=}C<$ group which comprises polymerizing said compound at a temperature in a range of about 0° C. to about 250° C. in the presence of an organic peroxide having the formula:



where each R is a member selected from the group consisting of divalent aliphatic, cycloaliphatic and aromatic radicals containing 1 to 20 carbon atoms, each R′ is a member selected from the group consisting of the monovalent aliphatic, cycloaliphatic, and aromatic radicals containing 4 to 20 carbon atoms and n is a whole integer from 0 to 1.

3,287,339

PROCESS FOR THE POLYMERIZATION OF FLUORINATED OLEFINS AND POLYMERIC PRODUCTS OBTAINED THEREFROM

Dario Sianesi and Gerardo Caporiccio, Milan, Italy, assignors to Montecatini Società Generale per l'Industria Mineraria e Chimica, Milan, Italy, a corporation of Italy

Filed May 28, 1962, Ser. No. 198,025
Claims priority, application Italy, May 31, 1961, 10,143/61
18 Claims. (Cl. 260—92.1)



1. A process for preparing fluorine-containing olefin polymers which comprises polymerizing a monomer feed material selected from the group consisting of monomers and monomeric mixtures containing at least one fluoromonoolefin containing from about 2 to 8 carbon atoms at a temperature between —30° C. and 150° C. under a pressure between atmospheric pressure and 60 atmospheres in the presence of a catalyst obtained from the reaction of an organo aluminum compound and a transition metal compound selected from the group consisting of compounds of the formula $Mt(OR)_n$, $Mt(OR)_{n-1}X$, $Mt(OR)_{n-2}Ac_2$, $Mt(OR)_a(OR')_b$, $MtOAc_{n-2}$, and, $Mt(Ac)_n$,

wherein Mt is the transition metal having a valence n, and is selected from the group consisting of titanium and vanadium; $a+b=n$;

O is oxygen;
X is halogen;
Ac represents the acetylacetonate group;
R is selected from the group consisting of lower alkyl and aryl groups; and
R′ is a halogen-containing alkyl radical.

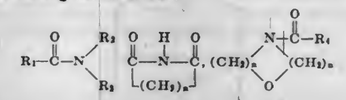
3,287,340

METAL-TITANIUM HALIDE-NITROGEN CONTAINING ORGANIC COMPOUND CATALYST FOR OLEFIN POLYMERIZATION

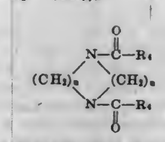
Harry W. Coover, Jr., and Frederick B. Joyner, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 13, 1961, Ser. No. 102,661
The portion of the term of the patent subsequent to Jan. 24, 1978, has been disclaimed and dedicated to the Public
18 Claims. (Cl. 260—93.7)

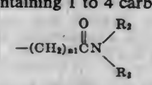
1. In the polymerization of alpha-monoolefinic hydrocarbon material containing 3 to 10 carbon atoms to form solid crystalline polymer, the improvement which comprises catalyzing the polymerization with a catalytic mixture containing a metal selected from the group consisting of sodium, potassium, lithium, magnesium and zinc, a halide of a transition metal selected from the group consisting of titanium, vanadium, zirconium, chromium and molybdenum and a third component selected from the amides having the formulas:



and



wherein R_1 is a radical selected from the group consisting of hydrogen, alkyl radicals containing 1 to 20 carbon atoms, phenyl, carboxyl, alkoxy, $—N(R)_2$ wherein R is an alkyl radical containing 1 to 4 carbon atoms and



wherein n_1 is an integer of 1 to 4, and wherein each of R_2 and R_3 is a radical selected from the group consisting of hydrogen, alkyl radicals containing 1 to 8 carbon atoms, phenyl and cyclohexyl and R_4 is a radical selected from the group consisting of alkyl radicals containing 1 to 4 carbon atoms and phenyl and n is an integer of 1 to 4.

3,287,341

PROCESS FOR POLYMERIZING PROPYLENE

Joseph H. Tazewell, Akron, and Robert J. Reid, Canal Fulton, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Aug. 6, 1962, Ser. No. 214,822
2 Claims. (Cl. 260—93.7)

1. Process of polymerizing propylene monomer which comprises contacting said monomer with a catalyst produced by mixing together

Metallic sodium

plus

A titanium chloride which is an intensively ground reaction product of titanium tetrachloride and aluminum metal in the mole ratio of 3 mols of titanium tetrachloride to 1 gram-atom of aluminum, said reaction product having the formula Ti_3AlCl_{12}

plus

Tetrakis-(dimethylamino)silane,

the polymerization taking place in the presence of hydrogen and in the presence of a polymer-structure-modifier comprising

An alkyl zinc compound in which the alkyl groups contain up to 8 carbon atoms

said sodium being employed to the extent of at least 1.0 mol of the sodium per mol of said titanium chloride, said tetrakis-(dimethylamino) silane being used to an extent sufficient to provide from 0.01 to 10 gram-atoms of amino nitrogen per mol of sodium metal, said hydrogen being supplied to the extent of .0001 to .05 mol per mol of propylene and said alkyl zinc being suplied to the extent of from .005 to .075 mol per mol of said titanium chloride.

3,287,342

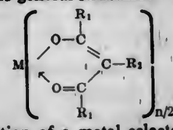
PROCESS FOR VISBREAKING POLYOLEFINS

Roger J. Walton, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed May 9, 1963, Ser. No. 279,342
11 Claims. (Cl. 260—93.7)

2. In a process wherein a normally solid polymer of a mono-1-olefin is subjected to visbreaking, the improvement comprising carrying out said visbreaking at a temperature in the range of 375° to 900° F. in the presence of an additive added to and admixed with said polymer in

an amount sufficient to accelerate said visbreaking, said additive having the general structure:



where M is a cation of a metal selected from the group consisting of the metals of Groups IB, IIB, IIIA, IVA, IVB, VB, VIB, VIIB, and the first period of Group VIII, *n* is the coordination number of said metal, R_1 is a radical selected from the group consisting of alkyl, aryl, cycloalkyl, and combinations thereof, and R_2 is selected from the group consisting of hydrogen and said R_1 radicals.

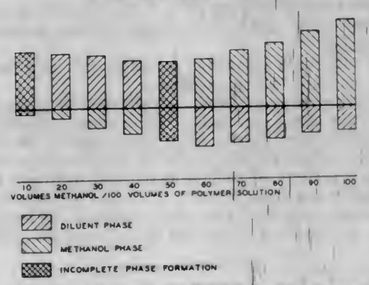
3,287,343
PURIFICATION OF POLYOLEFINS

Abraham Kutner, Newark, Del., assignor to Hercules Incorporated, a corporation of Delaware
No Drawing. Filed Dec. 10, 1963, Ser. No. 329,392
5 Claims. (Cl. 260—93.7)

1. In the process for removing catalyst residues from a polyolefin which has been obtained by polymerizing an olefin in the presence of a catalyst comprising a compound of a metal selected from the group consisting of the metals of Groups IV–B and V–B of the Periodic Table in combination with an organometallic compound of a metal of Group III–A of the Periodic Table in the presence of an inert liquid diluent wherein the slurry of solid polymer in diluent that is obtained from the polymerization is treated with an alkanol to solubilize the catalyst residues, following which the polymer is separated from the slurry and washed with an inert liquid hydrocarbon, the improvement which comprises adding to the alkanol-treated slurry prior to separation of the polymer an alkanoic acid having from 3 to about 22 carbon atoms in the amount of about 0.5 to about 1.5 moles per mole of total metal in the slurry to render the slurry insensitive to air and moisture.

3,287,344
REMOVAL OF CATALYST RESIDUES FROM CARBOXY-TELECHELIC POLYMERS

Charles W. Strobel, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Nov. 19, 1962, Ser. No. 238,518
2 Claims. (Cl. 260—94.7)



1. A process for the purification and recovery of carboxy telechelic polybutadiene from a solution of said polymer in cyclohexane, wherein the polymer concentration in said cyclohexane ranges from 5 to 10 weight percent, said solution also containing organo alkali metal catalyst inorganic residue which comprises: admixing with said solution methanol in the range of 20 to 40 and 60 to 100 volumes of methanol per 100 volumes of polymer solution, so as to form two phases therewith and which will substantially remove said catalyst residue from the polymer solution to the resulting methanol phase; and recovering polybutadiene substantially freed of said residue from the resulting cyclohexane phase.

3,287,345
NON-ABSORPTIVE FIBROUS CARRIER WITH UREA AND ITS USE IN SEPARATION OF HYDROCARBONS

Charles H. Middlebrooks and Earle C. Makin, Jr., St. Louis, Mo., assignors to Monsanto Company, a corporation of Delaware
No Drawing. Filed Mar. 12, 1964, Ser. No. 351,528
12 Claims. (Cl. 260—96.5)

1. A process for preparing a bed of a carrier material having dispersed therethrough a solid amide which comprises immersing a bed of an inert solid non-porous, non-absorptive carrier selected from the group consisting of fibrous aluminum silicate and fibrous glass with a liquid solvent solution of an amide selected from the group consisting of urea and thiourea, introducing into admixture with said liquid solvent solution of said amide while said bed is immersed therein a liquid capable of forming a solid adduct with said amide which liquid is at least partially insoluble in said solvent, thereby uniformly dispersing an adduct of said amide and said liquid capable of forming a solid adduct with said amide throughout said bed, removing said solvent and any excess liquid capable of forming an adduct and then decomposing said adduct in situ, and removing the released adduct forming material, thereby uniformly dispersing said solid amide throughout said bed.

9. A process for separating a mixture of organic compounds having straight carbon atom chains and organic compounds having branched carbon atom chains comprising passing a mixture of said organic compounds through a complexing bed of a solid amide selected from the group consisting of urea and thiourea dispersed on and throughout an inert, non-absorptive, non-porous, fibrous carrier selected from the group consisting of fibrous aluminum silicate and fibrous glass and thereafter recovering an organic compound from the complexing bed by decomposing the solid amide adduct by passing through the bed a hydrocarbon at a temperature sufficiently high to decompose the adduct and above the adduct forming temperature of the hydrocarbon.

3,287,346
ASPARAGYL OCTAPEPTIDES AND ACID ADDITION SALTS THEREOF

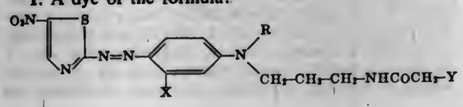
Robert Schwyzer, Riehen, and Bernhard Riniker, Reinach, Basel-Land, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed June 5, 1963, Ser. No. 285,616
Claims priority, application Switzerland, June 20, 1962, 7,417/62; Mar. 1, 1963, 2,682/63
9 Claims. (Cl. 260—112.5)

1. L - β - asparagyl-L-α-amino-(amino-lower alkyl)-acetyl - L - α-amino-lower alkyl-acetyl-L-tyrosyl-L-α-amino-lower alkyl-acetyl-L-histidyl-L-prolyl-L-phenylalanine.

3,287,347
WATER-INSOLUBLE NITROTHIAZOLE AZO DYES

Erwin Hahn, Viernheim, and Hans Guenter Wippel and Guenter Lange, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed Oct. 20, 1964, Ser. No. 405,249
Claims priority, application Germany, Oct. 23, 1963, B 73,976
4 Claims. (Cl. 260—158)

1. A dye of the formula:



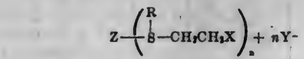
wherein:

R represents a group selected from the class consisting of alkyl having 1 to 4 carbon atoms, hydroxyethyl, acetoxyethyl, methoxyethyl and 2,3-diacetoxypropyl,
X represents a member selected from the class consisting of hydrogen, chlorine, methyl and acetylamino, and
Y represents a member selected from the class consisting of hydrogen and cyano.

3,287,348
S-ALKYL-2-HALOETHYLSULFONIUM DYESTUFFS

David Taber, Pittsburgh, Pa., assignor to American Aniline Products, Inc., a corporation of Maryland
No Drawing. Filed Apr. 30, 1963, Ser. No. 277,017
5 Claims. (Cl. 260—180)

1. A dyestuff of the formula:

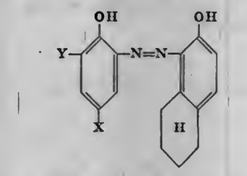


wherein Z is a water-insoluble dyestuff moiety selected from the group consisting of azo, anthraquinone, phthalocyanine and nitro; R is lower alkyl; X is chlorine or bromine; Y is a member selected from the group consisting of X, iodine, and RSO_4, and *n* is an integer having a value of from 1 to 4, the thio radical being directly linked to an aromatic carbon atom of the Z moiety.

3,287,349
2-HYDROXY-3-CARBOXAMIDO-BENZENE-AZO-2-HYDROXY - 5,6,7,8 - TETRAHYDRONAPHTHALENE DYESTUFFS

Ermanno Gaetani and Ugo Moiso, Milan, Italy, assignors to Aziende Colori Nazionali Affini ACNA S.p.A., a corporation of Italy
No Drawing. Filed May 8, 1962, Ser. No. 193,323
Claims priority, application Italy, May 12, 1961, 8,822/61
13 Claims. (Cl. 260—202)

1. A monoazo dye having the formula



wherein "X" is selected from the group consisting of chlorine, and a NO_2 group, and "Y" is selected from the group consisting of a carboxylamino radical containing from 1 to 4 carbon atoms, a carboxylamino radical containing from 1 to 4 carbon atoms and further containing chlorine in the hydrocarbon chain, and an alkoxy-carboxylamino radical containing from 1 to 4 carbon atoms.

3,287,350
PROCESS FOR OBTAINING TAMARIND SEED JELLOSE

Yoji Deguchi, Nishinomiya-shi, and Toshie Shiba, Neyagawa-shi, Japan, assignors to Dainippon Pharmaceutical Co., Ltd., Osaka, Japan, a corporation of Japan
No Drawing. Filed Aug. 3, 1964, Ser. No. 387,205
Claims priority, application Japan, Aug. 17, 1963, 38/44,194
2 Claims. (Cl. 260—209)

1. Process for tamarind seed jellose from an aqueous extract obtained by treating seeds of *Tamarindus indica* Linn. with hot water which comprises adding to said extract at least one sulfate selected from the group consisting of sodium sulfate, ammonium sulfate, magnesium sulfate and aluminum sulfate thereby coagulating the jellose, separating the resulting coagulate from the extract and recovering the jellose therefrom.

3,287,351
ORGANIC NUCLEOTIDE DERIVATIVES AND METHOD OF MANUFACTURING THE SAME

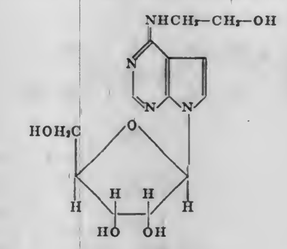
Louis Cantineau, Blois, and Georges Bernet, Paris, France, assignors to Société Civile de Recherches Scientifiques et Industrielles "Sodersi," Paris, France, a company of France
No Drawing. Filed Nov. 22, 1963, Ser. No. 325,747
Claims priority, application France, Nov. 23, 1962, 916,372, 916,373
1 Claim. (Cl. 260—211.5)

A composition of matter composed at least in part of at least one deoxyribonucleate selected from a group consisting of pyridoxine, pyridoxal, pyridoxamine, hydroxocobalamine, choline, betaine, urethane, 1,4 - dimethanesulfonoxylbutane, methyl - bis - β - chloroethylamine, β-naphthyl - bis - chloroethylamine, triethylenemelamine, triethylenephosphoramide, thiotriethylenephosphoramide, N - methyldesacetyl - colchicine, N - desacetylthiocolchicine, hydroxocobalamine, tetracycline, oxytetracyline, framycetin, erythromycin, polymyxin, streptomycin, neomycin, benzylpenicillin ester, oestradiol, testosterone, androstenediol, desoxycorticosterone, aldesterone, cortisone, hydrocortisone, pregnenolone, and norandrostenolone deoxyribonucleates.

3,287,352
N^6-(2-HYDROXYETHYL)TUBERCIDIN AND PROCESS THEREFOR

Paul F. Wiley, Texas Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed Oct. 12, 1964, Ser. No. 403,374
2 Claims. (Cl. 260—211.5)

1. N^6-(2-hydroxyethyl)tubercidin having the follow- formula:



3,287,353
DISPERSANTS USED IN THE PREPARATION OF HYDROXYETHYL CELLULOSE

Joseph P. Stidham, Hopewell, Va., assignor to Hercules Incorporated, a corporation of Delaware
No Drawing. Filed Apr. 23, 1964, Ser. No. 362,193
3 Claims. (Cl. 260—231)

1. Process of preparing hydroxyethyl cellulose comprising agitating cellulosic material in particulate form in a mixture of alkali, water, a hydroxyethylating agent and a liquid dispersant consisting essentially of isopropyl alcohol and tertiary butyl alcohol in admixture, and obtaining the hydroxyethyl cellulose thus produced in substantially the same particulate form as the starting cellulosic material, the isopropyl alcohol-tertiary butyl alcohol mixture consisting of about 2%–25% by weight thereof of isopropyl alcohol.

3,287,354
PREPARATION OF DIAZIRINES FROM CARBONYLS

Julius J. Fuchs, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 8, 1964, Ser. No. 402,639
3 Claims. (Cl. 260—239)

1. A process for the preparation of diazirines of the following formula:

(1) 

wherein

R_1 is phenyl, unsubstituted alkyl of from 1 through 6 carbon atoms, and alkyl of from 1 through 6 carbon atoms substituted with a substituent selected from the group consisting of cyano and alkoxy of 1 through 4 carbon atoms;

R_2 is hydrogen or

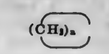


wherein

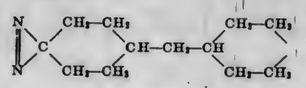
R_3 is hydrogen, unsubstituted alkyl of from 1 through 6 carbon atoms, and alkyl of from 1 through 6 carbon atoms substituted with a substituent selected from the group consisting of cyano and alkoxy of 1 through 4 carbon atoms;

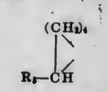
R_4 is hydrogen or methyl;

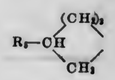
provided that R_1 and R_2 can be taken together and are of the following formulae:

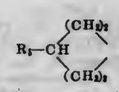
(2) 

wherein n is a positive integer greater than 1 and less than 15;

(3) 

(4) 

(5) 

(6) 

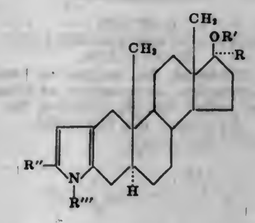
wherein R_5 is alkyl of from 1 through 4 carbon atoms, or alkoxy of 1 through 4 carbon atoms, with the limitation that there will be no more than a total of 18 carbon atoms in the diazirine; said process comprising reacting the corresponding carbonyl compound with gaseous ammonia and chlorine at a temperature of from about —25° C. to about 100° C. to form the corresponding diaziridine and continuing said reaction for a time sufficient to form the diazirine and recovering the diazirine compound thus formed.

3,287,355
[3,2-b]PYRROL ANDROSTANES AND PROCESS THEREFOR

Robert G. Christiansen, Schodack, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 21, 1962, Ser. No. 239,355
14 Claims. (Cl. 260—239.5)

1. A compound of the following formula



wherein R is selected from the group consisting of hydrogen, lower-alkyl, lower-alkenyl and lower-alkynyl; R' is selected from the group consisting of hydrogen and lower-carboxylic acyl; R'' is selected from the group consisting of hydrogen and lower-alkyl; and R''' is selected from the group consisting of hydrogen, lower-alkyl and phenyl-lower-alkyl.

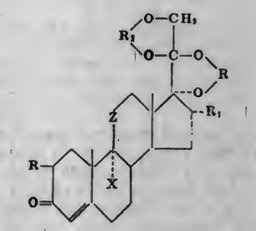
3,287,356
DIHALOALKYLATION OF KETO STEROIDS

Glen E. Arth, Cranford, N.J., Alexander H. Todd, Cambridge, England, and Thomas B. Windholz, Westfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

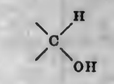
No Drawing. Filed Apr. 13, 1962, Ser. No. 187,221
14 Claims. (Cl. 260—239.55)

1. 17α,20,20,21 - bismethylenedioxy - 2 - formyl-3-difluoromethoxy-2,4-pregnadiene-11-one.

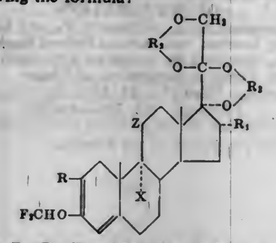
9. The process which comprises reacting a compound having the formula:



wherein R is selected from the group consisting of formyl and carbomethoxy, R_1 is selected from the group consisting of lower alkyl and hydrogen, R_2 is lower alkyl, Z is selected from the group consisting of >R=O and



and X is selected from the group consisting of hydrogen and fluorine, with difluorochloromethane in an alkaline medium to form the corresponding difluoromethoxy compound having the formula:



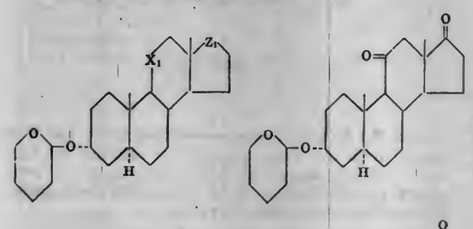
wherein R, R_1, R_2, Z and X are as defined above.

3,287,357
NOVEL STEROIDS OF THE ANDROSTANE SERIES

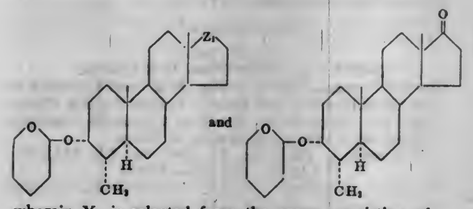
William J. Wechter and Fred Kagan, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Dec. 16, 1963, Ser. No. 330,560
11 Claims. (Cl. 260—239.55)

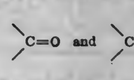
7. Compounds of the formulae



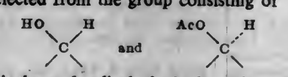
and



wherein X_1 is selected from the group consisting of



and Z_1 is selected from the group consisting of



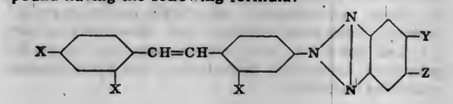
wherein Ac is the acyl radical of a hydrocarbon carboxylic acid containing from 1 to 12 carbon atoms, inclusive.

3,287,358
STILBYLBENZOTRIAZOLE BRIGHTENERS

Sigmund C. Catino, Castleton, and Albert F. Strobel, Delmar, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 22, 1963, Ser. No. 318,065
6 Claims. (Cl. 260—240)

1. A fluorescent stilbylbenzotriazole brightener compound having the following formula:



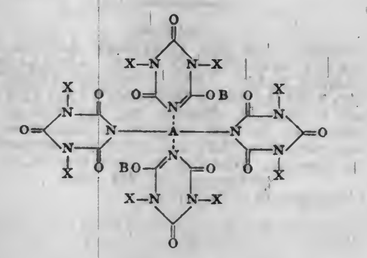
wherein X represents a member selected from the group consisting of hydrogen and chlorine, Y represents lower alkoxy, Z represents a member selected from the group consisting of methyl and lower alkoxy, and wherein Y and Z jointly represent methylenedioxy.

3,287,359
COMPLEX METAL DICHLORO-CYANURATES

Edwin A. Matzner, St. Louis, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Sept. 4, 1962, Ser. No. 221,307
16 Claims. (Cl. 260—242)

1. A complex metal halocyanurate having the formula



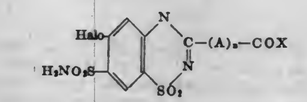
where A is a divalent metal selected from the group consisting of magnesium and zinc and B is an alkali metal selected from the group consisting of potassium and rubidium and X is a halogen atom, and hydrates thereof.

3,287,360
3-CARBOXY-BENZOTHIADIAZINE DERIVATIVES

Frederick C. Novello, Berwyn, Pa., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Dec. 27, 1960, Ser. No. 78,267
12 Claims. (Cl. 260—243)

12. A compound having the structure



wherein

A is lower alkylene;

n represents zero and one; and

X is selected from the group consisting of
hydroxy,
lower alkoxy,
lower alkenyloxy,
O-alkali metal,
amino, and
hydrazino.

3,287,361
DERIVATIVES OF BENZOTHIADIAZINE-1,1-DIOXIDES

Jerry E. Robertson, Milwaukee, Wis., assignor to Colgate-Palmolive Company, a corporation of Delaware

No Drawing. Filed Apr. 27, 1961, Ser. No. 105,908
2 Claims. (Cl. 260—243)

1. 2-(phenyl-lower alkyl)-6-halo-3,4-dihydro-3-(lower alkanone) - 7-sulfamyl - 1,2,4 - benzothiadiazine-1,1-dioxide.

2. 2-(phenyl-lower alkyl) - 6 - trifluoromethyl-3,4-dihydro - 3 - (lower alkanone)-7-sulfamyl-1,2,4-benzothiadiazine-1,1-dioxide.

3,287,362
SUBSTITUTED 3-OXO-3,4-DIHYDRO-1,2,4-BENZOTHIADIAZINE 1,1-DIOXIDES AND A METHOD FOR THEIR PREPARATION

Richard Hürmer, Les Charmettes, Le Mee-sur-Seine, France, and Jean Vernin, Trogerstr. 54/III, Munich, Germany

No Drawing. Filed May 25, 1962, Ser. No. 197,616
6 Claims. (Cl. 260—243)

1. 2-p-trifluoromethylphenyl-3-oxo-3,4-dihydro - 1,2,4-benzothiadiazine-1,1-dioxide.

2. 2-o-toluidino-3-oxo-3,4-dihydro - 1,2,4 - benzothiadiazine-1,1-dioxide.

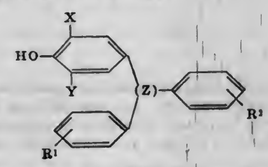
3. 2-cyclopentyl-3-oxo-3,4-dihydro - 1,2,4 - benzothiadiazine-1,1-dioxide.

3,287,363
1-(MONO AND BIS TERTIARY AMINO-4-HYDROXY-MONOCARBOCYCLIC ARYL)-1-(MONOCARBOCYCLIC ARYL)-2-(MONOCARBOCYCLIC ARYL)-ETHANES, ETHYLENES AND ETHANOLS

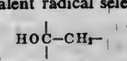
Frank P. Palopoli, Glenside, Pa., and Vernon J. Fell, Jamestown, N. Dak., assignors to Richardson-Merrell Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 21, 1963, Ser. No. 317,795
21 Claims. (Cl. 260—246)

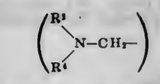
1. Compounds of the formula



wherein Z is a polyvalent radical selected from



>C=CH—, and >CH—CH_2—; X is



wherein R^3 and R^4 are lower alkyl having from one to five carbon atoms and R^3 and R^4 taken together form a heterocyclic ring selected from the group consisting of morpholino, piperidino, N-methylpiperazino, and pyrrolidino; Y is selected from hydrogen and X; and R^1 and R^2 are selected from hydrogen, lower alkyl, lower alkoxyl, halogen and trifluoromethyl.

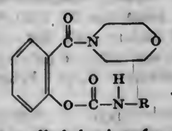
11. 1-[3,5-bis(morpholinomethyl)-4-hydroxyphenyl]-1-2-diphenylethanol.

3,287,364
N-LOWER ALKYL CARBAMATES OF SALICYLOYLMORPHOLIDE

Richard S. P. Hsi, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Jan. 13, 1964, Ser. No. 337,182
3 Claims. (Cl. 260—247.2)

1. A lower-alkylcarbamate of salicyloylmorpholide of the formula:



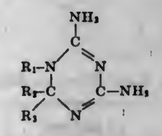
wherein R is lower-alkyl having from 1 to 6 carbon atoms, inclusive.

3,287,365
NOVEL DIHYDRO-s-TRIAZINES AND METHOD OF PREPARATION

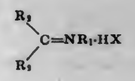
Howard Newman, Spring Valley, N.Y., and Edward Leslie Moon, Trenton, and Jackson Pollard English, Princeton, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Dec. 24, 1963, Ser. No. 333,174
7 Claims. (Cl. 260—249.9)

5. A process for the preparation of a dihydro symmetrical triazine compound of the formula:



wherein R_1 is selected from the group consisting of phenyl, halo-ring-substituted phenyl, benzyl, lower alkoxy-ring-substituted benzyl and chloro-ring-substituted benzyl; R_2 is a radical selected from the group consisting of lower alkyl and phenyl; and R_3 is hydrogen and lower alkyl, comprising: treating an imino compound of the formula:



wherein R_1, R_2 and R_3 are as described above and X is selected from the group consisting of chlorine and bromine, with dicyandiamide in the presence of an inert solvent, and recovering desired triazine of the above-identified formula in good yield and purity.

3,287,366
NOVEL 1,2-DIHYDRO-s-TRIAZINES

Howard Newman, Spring Valley, N.Y., and Edward Leslie Moon, Trenton, and Jackson Pollard English, Princeton, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Dec. 24, 1963, Ser. No. 333,185
5 Claims. (Cl. 260—249.9)

1. The compound: 4-amino-6-benzylamino-1,2-dihydro-2,2-dimethyl-s-triazine hydrochloride.

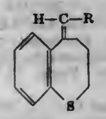
5. The compound: 4-amino-6-(3,4-dimethoxybenzylamino)-1,2-dihydro-2-phenyl-s-triazine hydrochloride.

3,287,367
DIHYDROBENZOTHIEPINS

Richard J. Mohrbacher, Fort Washington, Pa., assignor to McNeil Laboratories, Incorporated, a corporation of Pennsylvania

No Drawing. Filed June 8, 1965, Ser. No. 462,396
13 Claims. (Cl. 260—327)

1. A member selected from the group consisting of dihydrobenzothiepins having the formula



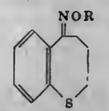
wherein R is a member selected from the group consisting of cyano, aminomethyl, diloweralkylaminoloweralkyl, carboxyl, loweralkoxycarbonyl and diloweralkylcarbamoyl; and non-toxic, acid addition salts and loweralkyl quaternary ammonium derivatives of the basic nitrogen-containing members.

3,287,368
DIHYDROBENZOTHIEPIN-5(2H)-ONE OXIMES

Richard J. Mohrbacher, Fort Washington, Pa., assignor to McNeil Laboratories, Incorporated, a corporation of Pennsylvania

No Drawing. Filed June 8, 1965, Ser. No. 462,412
8 Claims. (Cl. 260—327)

1. A member selected from the group consisting of dihydrobenzothiepin-5(2H)-one oximes having the formula



wherein R is a member selected from the group consisting of hydrogen, loweralkyl-carbonyl, phenyl carbonyl, benzene sulfonyl, p-toluenesulfonyl and p-bromobenzenesulfonyl.

3,287,369
2',3,3',4,5',6'-HEXAHYDROSPIRO[1-BENZOTHIEPIN-4,2'-(BENZOTHIEPINO-[5,4-b]-4H-PYRAN)]-5(2H)-ONE

Richard J. Mohrbacher, Fort Washington, Pa., assignor to McNeil Laboratories, Incorporated, a corporation of Pennsylvania

No Drawing. Filed June 8, 1965, Ser. No. 462,413
1 Claim. (Cl. 260—327)

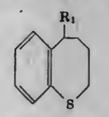
2',3,3',4,5',6' - hexahydrospiro[1 - benzothiepin-4,2'-(1 benzothiepino-[5,4-b]-4H-pyran)]-5(2H)-one.

3,287,370
TETRAHYDROBENZOTHIEPINS

Richard J. Mohrbacher, Fort Washington, and Vasken Paragamian, Glenside, Pa., assignors to McNeil Laboratories, Incorporated, a corporation of Pennsylvania

No Drawing. Filed June 8, 1965, Ser. No. 462,414
19 Claims. (Cl. 260—327)

1. A member selected from the group consisting of tetrahydrobenzothiepins having the formula



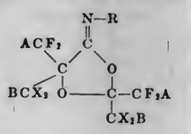
wherein R_1 is a member selected from the group consisting of amino, loweralkylamino, diloweralkylamino, aminoloweralkoxy, loweralkylaminoloweralkoxy, diloweralkylaminoloweralkoxy, loweralkylcarbonylaminoloweralkoxy, formamido, N-loweralkyl formadio, loweralkylcarbonylamino and N-loweralkyl loweralkylcarbonylamino; and non-toxic acid addition salts and lower-alkyl quaternary ammonium derivatives of the basic nitrogen containing compounds.

3,287,371
4-IMINO-2,2,5,5-TETRAKIS (FLUOROALKYL)-1,3-DIOXOLANES AND THEIR PREPARATION FROM FLUOROKETONES AND ALKYL ISOCYANIDES

William J. Middleton, Wilmington. Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 26, 1965, Ser. No. 435,740
20 Claims. (Cl. 260—340.9)

1. An iminodioxolane of the formula



wherein:

A is selected from the group consisting of fluorine, chlorine, and in combination with B in the two groups attached to the same carbon in the dioxolane ring, $-CF_2-$;

B is selected from the group consisting of fluorine, and, in combination with A in the two groups attached to the same carbon in the dioxolane ring, $-CF_2-$;

X is selected from the group consisting of fluorine and chlorine; and

R is selected from the group consisting of alkyl and cycloalkyl of up to 20 carbons.

11. The process of preparing an iminodioxolane of claim 1 which comprises reacting, at a temperature in the range of about —120° to 200° C.,

a ketone of the formula ACF_2COCX_2B wherein: A is selected from the group consisting of fluorine, chlorine, and, in combination with B, $-CF_2-$; B is selected from the group consisting of fluorine and, in combination with A, $-CF_2-$; and X is selected from the group consisting of fluorine and chlorine; with

an isocyanide of the formula RNC, wherein R is selected from the group consisting of alkyl and cycloalkyl of up to 20 carbons.

3,287,372
PROCESS AND INTERMEDIATES FOR MANUFACTURE OF 2-(DIALKYLMETHYL) - 5 - ALKYL-2-CYCLOHEXEN-1-ONES

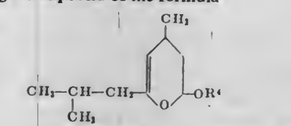
Kent C. Brannock and Herman E. Davis, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed July 9, 1964, Ser. No. 381,558
12 Claims. (Cl. 260—345.9)

5. The process which comprises:

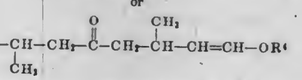
(I) preparing a compound of the formula

(a)



or

(b)



by heating 6-methyl-2-hepten-4-one with an alkoxy vinyl ether of the formula

$CH_2=CH-OR^4$

in which R^4 is alkyl of 1 to 4 carbon atoms;

(II) preparing 3,7-dimethyl-5-oxooctanal by contacting the compound prepared in Step (I) with a dilute aqueous solution of an acid; and

(III) contacting the 3,7-dimethyl-5-oxooctanal with a dilute aqueous solution of a base and obtaining menthenone.

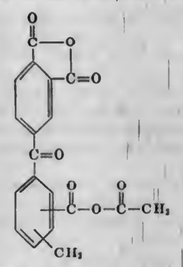
3,287,373
PROCESS FOR PREPARING BENZOPHENONE ACIDS AND ANHYDRIDES AND ANHYDRIDES RESULTING THEREFROM

John H. McCracken, Pitcairn, and Johann G. D. Schulz and Arthur C. Whitaker, Pittsburgh, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Dec. 10, 1963, Ser. No. 329,394
6 Claims. (Cl. 260—346.3)

1. A process for preparing a mixture of benzophenone 4-methyl, 3,3',4'-tricarboxylic acid and benzophenone 3-methyl, 4,3',4'-tricarboxylic acid which comprises oxidizing 3,4,3',4'-tetramethylbenzophenone in the presence of chromium trioxide at a temperature of about 50° to about 150° C. for about 0.1 to about 10 hours.

5. An anhydride of the structural formula:



wherein the methyl substituent and the substituent adjacent thereto are located in the 3' and 4' position relative to the carbonyl bridge.

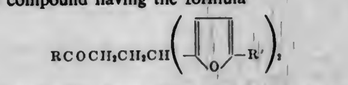
3,287,374

NOVEL FURAN COMPOUNDS AND PROCESSES FOR PREPARATION

Andrew P. Dunlop, Riverside, and Daniel S. P. Eftax, Barrington, Ill., assignors to The Quaker Oats Company, Chicago, Ill., a corporation of New Jersey

No Drawing. Filed Aug. 15, 1963, Ser. No. 302,435
4 Claims. (Cl. 260—347.4)

1. A compound having the formula



wherein R is lower alkyl having less than 5 carbons and R' is selected from the class consisting of hydrogen and lower alkyl having less than 5 carbons.

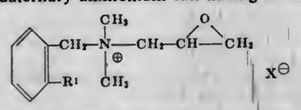
3,287,375

N,N-DIMETHYL-N-(2,3-EPOXYPROPYL)-o-SUBSTITUTED BENZYLAMMONIUM SALTS

Donald Neil McGregor, Syracuse, N.Y., assignor to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 6, 1964, Ser. No. 380,671
6 Claims. (Cl. 260—348)

1. A quaternary ammonium salt having the formula



wherein R^1 is a member selected from the group consisting of fluoro, chloro, bromo, iodo and lower alkyl and $X^{\ominus}$ is a therapeutically acceptable anion.

3,287,376

CHLORO ORGANO POLY(SULFONAZIDE)S

Norman R. Newburg, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Oct. 15, 1962, Ser. No. 230,724
4 Claims. (Cl. 260—349)

1. A chlorinated poly(sulfonazide) having the general formula

$$R(Cl)_x(SO_2N_3)_y$$

where R is an organic radical selected from the group consisting of aliphatic and cycloaliphatic radicals and containing at least 5 carbon atoms and x is an integer of at least 1 and y is an integer of at least 2.

4. The process of preparing a chloro poly(sulfonazide) having the general formula

$$R(Cl)_x(SO_2N_3)_y$$

where R is an organic radical selected from the group consisting of aliphatic and cycloaliphatic radicals and containing at least 5 carbon atoms and x is an integer of at least 1 and y is an integer of at least 2, which comprises passing chlorine and sulfur dioxide into a solution, in a chlorinated aliphatic hydrocarbon, of a mixture of aliphatic and cycloaliphatic hydrocarbons in the presence of ultraviolet light for a period of time sufficient to introduce into said hydrocarbons at least one chlorine and two sulfochloro groups per molecule of said hydrocarbons, and reacting a solution of the product in a solvent selected from acetone and chlorinated aliphatic hydrocarbons with an alkali metal azide to convert the sulfochloro groups to sulfonazide groups.

3,287,377

19-OXYGENATED STEROIDS FROM 5α-HALOGEN-6β:19-OXIDO-STEROIDS

Albert Wettstein, Riehen, and Georg Anner, Karl Heusler, and Jaroslav Kalvoda, Basel, and Hellmut Ueberwasser, Riehen, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 7, 1962, Ser. No. 222,186
Claims priority, application Switzerland, July 15, 1960, 8,133/60; Oct. 28, 1960, 12,107/60; Dec. 23, 1960, 14,393/60; Apr. 5, 1961, 3,990/61; June 2, 1961, 6,481/61; Sept. 12, 1961, 10,580/61
9 Claims. (Cl. 260—397.2)

1. Process for the manufacture of 19-oxygenated Δ^5-steroids wherein a 5α-halogen-6β:19-oxido-steroid is treated with zinc and a lower fatty acid.

9. 19-hydroxy cholesterol.

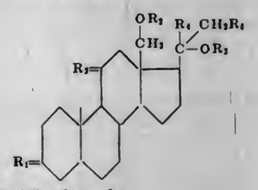
3,287,378

18-OXYGENATED STEROIDS AND PROCESS FOR THEIR MANUFACTURE

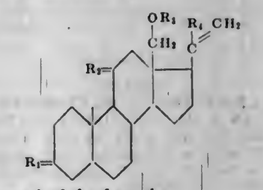
Oskar Jeger, Zurich, Duilio Arigoni, Zollikerberg, and Georg Anner and Charles Meystre, Basel, and Albert Wettstein, Riehen, Switzerland, assignors to Ciba Corporation, a corporation of Delaware

No Drawing. Filed Feb. 9, 1960, Ser. No. 7,542
Claims priority, application Switzerland, Feb. 12, 1959, 69,475/59; Apr. 23, 1959, 72,443/59; May 29, 1959, 73,754/59; Dec. 22, 1959, 82,233/59
26 Claims. (Cl. 260—397.3)

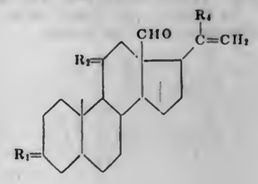
1. A member selected from the group consisting of a compound of the formula:



a compound of the formula:



and a compound of the formula:



and derivatives thereof which have a double bond extending from the 5-carbon atom, in which formulae R_1 represents a member selected from the group consisting of a hydrogen atom together with a free hydroxyl group, a hydrogen atom together with an esterified hydroxyl group, a hydrogen atom together with an etherified hydroxyl group, an oxo group, an etherified enolized oxo group, an esterified enolized oxo group, and a ketalized oxo group, R_2 represents a member selected from the group consisting of 2 hydrogen atoms, a hydrogen atom together with a free hydroxyl group, a hydrogen atom together with an esterified hydroxyl group and an oxo group, R_3 a member selected from the group consisting of a hydrogen atom and an acyl group, R_4 a member selected from the group consisting of a hydrogen atom and a methyl group, R_5 a member selected from the group consisting of a hydrogen atom and an acyl group, R_6 a member selected from the group consisting of a hydrogen atom, a hydroxyl group and an acyloxy group, said esters being derived from carboxylic acids having from 1 to 20-carbon atoms selected from the aliphatic, aromatic, cycloaliphatic, araliphatic and aliphatic-cycloaliphatic series and the said ethers being derived from alcohols having from 1 to 8 carbon atoms selected from the aliphatic, heterocyclic and araliphatic series and said ketals being derived from lower alkylenediols said double bond extending from the 5-carbon atom being a 4:5-double bond when R_1 represents a member selected from the group consisting of a hydrogen atom together with a free hydroxyl group, a hydrogen atom together with an esterified hydroxyl group, a hydrogen atom together with an etherified hydroxyl group, an oxo group, and a 5:6-double bond when R_1 is a member selected from the group consisting of an etherified enolized oxo group, an esterified enolized oxo group, and a ketalized oxo group.

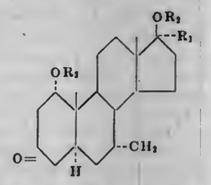
3,287,379

7α-METHYL-5α-ANDROSTANOLONE DERIVATIVES

Josef Hader, Friedmund Neumann, and Rudolf Wiechert, all of Berlin, Germany, assignors to Schering A.G., Berlin, Germany

No Drawing. Filed Aug. 26, 1965, Ser. No. 482,892
Claims priority, application Germany, Aug. 26, 1964, Sch 35,682
4 Claims. (Cl. 260—397.4)

1. 5α-androstanolone derivatives of the general formula



wherein R_1 is hydrogen o ra lower alkyl group and R_2 and R_3 are hydrogen or residues of physiologically acceptable acids.

3,287,380

14-HYDROXY STEROIDS

Takuichi Miki, Amagasaki, and Kentaro Hiraga, Ikeda, Japan, assignors to Takeda Chemical Industries, Ltd., Higashi-ku, Osaka, Japan

No Drawing. Filed Oct. 28, 1964, Ser. No. 407,249
Claims priority, application Japan, Nov. 1, 1963, 38/59,007
11 Claims. (Cl. 260—397.45)

1. 13-substituted 14-hydroxygona-1,3,5(10),9-tetraen-17-one, wherein the 13-substituent is selected from the group consisting of alkyl of 1 to 4 carbon atoms, phenyl and benzyl.

3,287,381

PROCESS FOR THE PREPARATION OF SULFONATED AROYL ACETARYLIDES

Arthur Henri De Cat, Mortsel-Antwerp, and Raphael Karel Van Poucke, Mechelen, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel-Antwerp, Belgium, a Belgian company

No Drawing. Filed Oct. 24, 1963, Ser. No. 318,487
Claims priority, application Great Britain, Apr. 5, 1955, 9,900/55
9 Claims. (Cl. 260—401)

1. Process for the preparation of a sulfonated aroyl acetarylide of the following formula:

$$X—NH—Ar—CO—CH_2—CO—NH—Y—SO_3Me$$

wherein, X is a radical of the group consisting of alkanoyl, alkyl sulfonyl, alkenoyl, and alkenyl sulfonyl of from 10–25 carbon atoms, at least 5 of these carbon atoms being arranged in a linear chain; Ar is phenylene, Y is a member selected from the group consisting of phenylene, alkyl substituted phenylene and alkoxy substituted phenylene, Me is a member selected from the group consisting of a hydrogen atom and an alkali metal atom; comprising the steps of

(a) condensing an aroyl acetic ester of the following formula:

$$O_2N—Ar—CO—CH_2COOR''$$

wherein, R'' is a lower alkyl group with a compound of the formula

$$H_2N—Y—SO_2F$$

(b) reducing with hydrogen in the presence of a nickel catalyst,

(c) condensing the resulting compound with a member selected from the group consisting of an aliphatic acid chloride, an aliphatic carboxylic acid anhydride, and an aliphatic sulfonic acid chloride, said aliphatic portion being selected from the group consisting of alkyl and alkenyl of from 10–25 carbon atoms, at least 5 of these carbon atoms being arranged in a linear chain, and

(d) hydrolyzing the resulting compound in the presence of an alkali metal hydroxide.

3,287,382

VITAMIN A ACID ESTER OF VITAMIN A

Pieter Henri van Leeuwen, Van Houtenlaan, Weesp, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 23, 1963, Ser. No. 274,914
Claims priority, application Netherlands, Apr. 27, 1962, 277,834, 277,835
1 Claim. (Cl. 260—410)

The vitamin A acid ester of vitamin A.

3,287,383

PRODUCTION OF HYDROXY ESTERS BY CATALYTIC HYDROGENATION OF ALDEHYDIC PEROXIDES

Robert H. Perry, Jr., Springfield, N.J., assignor, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware

No Drawing. Filed July 12, 1965, Ser. No. 471,446
15 Claims. (Cl. 260—410.9)

1. A method of preparing a hydroxy ester having the hydroxy group in the acid moiety which comprises

contacting an aldehydic peroxide, formed by monoozonolysis of a cyclic olefin having from 5 to 22 ring carbon atoms in a C_1 to C_{10} alkanol,

with hydrogen and a hydrogenation catalyst,

under hydrogenation conditions including a temperature of 75° C. to 150° C. and a pressure of 390 to 2500 p.s.i.g., for a time period sufficient to allow the desired reaction to take place.

3,287,384

ORTHO ESTERS OF ALUMINUM, SILICON OR TITANIUM WITH A METAL SOAP OF A HYDROXY-FATTY ACID

John A. Kearney, Pennsauken, N.J., assignor to E. F. Houghton & Co., Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Original application Jan. 11, 1961, Ser. No. 81,955, now Patent No. 3,158,573, dated Nov. 24, 1964. Divided and this application May 9, 1963, Ser. No. 279,313

5 Claims. (Cl. 260—414)

1. An alkoxy silicate ester of a metal soap of monohydroxystearic acid in which said metal is selected from the group consisting of sodium, potassium, lithium, calcium, zinc, strontium, barium and aluminum and each alkoxy group contains from 1 to 8 carbon atoms.

4. Aluminate triester of lithium monohydroxystearate.

5. Titanate tetraester of lithium monohydroxystearate.

3,287,385

PROCESS FOR SOAP MAKING

Pierre Godet, L'Isle-Adam, and Jean-Louis Joux, Epinay-sur-Seine, France, assignors to Colgate-Palmolive Company

Filed Apr. 25, 1963, Ser. No. 275,748
Claims priority, application France, Apr. 27, 1962, 895,995
16 Claims. (Cl. 260—417)

1. A process for producing soap and glycerine lye by the reaction of fatty materials and caustic in an aqueous solution under agitation, which comprises concurrently passing fatty materials and aqueous caustic solution through a reaction zone; pulsing the reaction mixture in the reaction zone, giving to the totality of the liquids present in the zone an alternative pulsation movement such that there are flooding conditions in the reaction zone, thereby effecting the reaction of the fatty material and the caustic; and collecting soap and glycerine lye at the end of said reaction zone.

3,287,386

PROCESS FOR THE PRODUCTION OF TIN ALKYL COMPOUNDS

Wilhelm Paul Neumann, Mulheim (Ruhr), Germany, assignor to Karl Ziegler, Mulheim (Ruhr), Germany

No Drawing. Filed Apr. 26, 1960, Ser. No. 24,670
Claims priority, application Germany, Apr. 30, 1959, Z 7,297
1 Claim. (Cl. 260—429.7)

Process for the production of tin alkyl compounds which comprises reacting tin tetrahalide with an aluminum compound selected from the group consisting of aluminum trialkyls, dialkyl aluminum monohalides, monoalkyl aluminum dihalides and alkyl aluminum sesquihalides in the presence of a tertiary amine having the formula NR'_3 wherein R' represents a member selected from the group consisting of alkyl radicals having up to 8 carbon atoms and cycloalkyl radicals pyridine and quinoline and recovering the tin alkyl compound formed by replacement of at least one of the halogen atoms of the tin tetrahalide with an alkyl radical.

3,287,387

PROCESS FOR THE PRODUCTION OF AROMATIC ISOCYANATES

William I. Denton, Cheshire, and Philip D. Hammond and Judson A. Wood, North Haven, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

Filed July 29, 1963, Ser. No. 298,314
19 Claims. (Cl. 260—453)

1. In a process for continuously producing aromatic isocyanates by reaction of phosgene and an aromatic primary amine, the improvement which comprises continuously introducing liquid phosgene into a reactor and continuously introducing a solution of an aromatic primary amine in an inert organic solvent in a separate stream into the same said reactor and therein continuously reacting with mixing under superatmospheric pressure and at a temperature between about 110° C. and about 195° C. the said phosgene and the said amine thereby forming the corresponding isocyanate, continuously withdrawing from the reactor an inert organic solvent solution of the said isocyanate together with the excess phosgene and the hydrogen chloride formed during the reaction, and thereafter continuously recovering the said isocyanate, the amount of phosgene employed being at least 1.75 moles per NH_2 group on the amine.

3,287,388

PROCESS FOR PREPARING ARYLFLUOROFORMATES AND ARYLFLUOROTHIOLFORMATES

Karl O. Christe and Attila E. Pavlath, Berkeley, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 7, 1963, Ser. No. 300,638
1 Claim. (Cl. 260—455)

A process for producing substituted aromatic compounds selected from the group consisting of phenyl and naphthyl compounds having at least one substituent selected from the group consisting of fluoroformyl (—OCOF) and fluorothiolformyl (—SCOF), comprising contacting at a temperature range of about 20° C. to about 250° C. a substituted phenyl or naphthyl compound having bonded directly to an aromatic carbon atom at least one substituent selected from the group consisting of chloroformyl (—OCOCl) and chlorothiolformyl (—SCOCl), with an inorganic fluoride selected from the group consisting of sodium fluoride, sodium bifluoride, potassium fluoride and potassium bifluoride, and isolating the resulting fluorine containing compound.

3,287,389

COMPLEXES OF SO_3 WITH NITRILES, METHOD OF PREPARATION THEREOF AND METHOD OF SULFONATION OR SULFATION THEREWITH

George L. Broussalian, Overland, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Sept. 14, 1962, Ser. No. 223,838
18 Claims. (Cl. 260—458)

1. A complex of sulfur trioxide and a nitrile compound in which the nitrile serves only as a carrier for the sulfur trioxide and from which the sulfur trioxide can be recovered at temperatures below —5° C. in chemically unmodified form, said nitrile being one in which the nitrile group is attached to a hydrocarbon radical containing from one to fifteen carbon atoms, said hydrocarbon radical being selected from the group consisting of saturated and monoethylenically unsaturated aliphatic radicals, alicyclic radicals, monocyclic aryl radicals, and aralkyl radicals.

11. In a process for sulfonating an organic compound with sulfur trioxide, the improvement which comprises supplying sulfur trioxide for the sulfonating reaction at a temperature below about —5° C. in the form of a complex of sulfur trioxide with a nitrile compound in which the nitrile serves only as a carrier for the sulfur trioxide and from which the sulfur trioxide can be recovered at temperatures below —5° C. in chemically unmodified form, said nitrile being one in which the nitrile group is attached to a hydrocarbon radical containing from one to fifteen carbon atoms, said hydrocarbon radical being selected from the group consisting of saturated and monoethylenically unsaturated aliphatic radicals, alicyclic radicals, monocyclic aryl radicals, and aralkyl radicals.

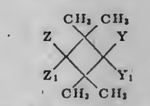
3,287,390

2,2,4,4-TETRAMETHYLCYCLOBUTYL COMPOUNDS

George I. Poos, Ambler, and John T. Suh, Flourtown, Pa., assignors to McNeil Laboratories, Incorporated, a corporation of Pennsylvania

No Drawing. Filed Aug. 21, 1961, Ser. No. 132,541
9 Claims. (Cl. 260—456)

1. A member selected from the group consisting of 1-phenyl-1-hydroxy-3-di - (lower alkyl) - amino-2,2,4,4-tetramethylcyclobutane and a chemical compound having the formula:



wherein Z is a member selected from the group consisting of hydroxy, diphenylacetoxy, benziloyloxy and benzenesulfonamido; Y is a member selected from the group consisting of di-(lower alkyl)-amino, benzenesulfonamido, cyanamido, ureido and chloroformamido, provided that when said Y is di-(lower alkyl)-amino Z is other than hydroxy; Z_1 and Y_1 are each hydrogen; and Z and Z_1 taken together represent oxo in which case Y is p-tolylsulfonyloxy.

3,287,391

PREPARATION OF ALKOXY AND ARYLOXY BOROXINES

Russell S. Towers, Adrian, Mich., assignor to Stauffer Chemical Company, Weston, Mich., a corporation of Delaware

No Drawing. Filed Apr. 6, 1964, Ser. No. 357,799
8 Claims. (Cl. 260—462)

1. The method comprising reacting boric oxide and a borate of the formula $B(OR)_3$ in which each R is a monovalent hydrocarbon radical containing up to about six carbon atoms in contact with water present in an amount equal to from about 1.9 to about 3.5 percent by weight based on the weight of the boric oxide at a temperature ranging from about 125° C. to the decomposition temperature of the borate, whereby the corresponding boroxine is produced.

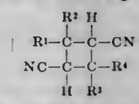
3,287,392

CYCLOBUTANE DERIVATIVES

Edward U. Elam, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 9, 1963, Ser. No. 329,259
2 Claims. (Cl. 260—464)

1. A compound of the following structural formula



wherein R^1, R^2, R^3 and R^4 are lower alkyl groups and in which the cyano groups are positioned on opposite sides of the plane of the cyclobutane ring of said compound.

2. Trans 2,2,4,4-tetramethyl-1,3-cyclobutanedicarbonitrile.

3,287,393

METHOD OF PREPARING 2-CHLORO-6-NITRO-BENZONITRILE

Stig Hjalmar Johannes Åkerström, Karlskoga, Sweden, assignor to Aktiebolaget Bofors, Bofors, Sweden, a corporation of Sweden

Filed Apr. 22, 1963, Ser. No. 274,631
11 Claims. (Cl. 260—465)

1. Method of producing 2-chloro-6-nitro-benzonitrile which comprises the steps of:

(A) reacting 2-chloro-6-nitro-toluene with (1) a di-lower alkyl oxalate in the presence of (2) an alkali metal lower alkoxide; and (3) a solvent which is a member of the group consisting of lower alkanols, lower alkyl ethers and hydrocarbons, thereby to form an alkali metal enolate of a lower alkyl ester of β-(2-chloro-6-nitro-phenyl)pyruvic acid;

(B) rearranging said lower alkyl ester of β-(2-chloro-6-nitro-phenyl)pyruvic acid to the keto tautomer thereof;

(C) hydrolyzing said keto tautomer to form an alkali metal salt thereof;

(D) acidifying said alkali metal salt to form the free acid;

(E) reacting said free acid with nitrous acid to form β-(2-nitro-6-chloro - phenyl)-β-hydroxyiminopyruvic acid; and

(F) oxidizing said β-(2-nitro-6-chloro-phenyl)-β-hydroxyiminopyruvic acid in the presence of an oxidizing agent selected from the group consisting of nitrous and nitric acids to form 2-chloro-6-nitro-benzonitrile.

3,287,394

CATALYTIC SYNTHESIS OF UNSATURATED NITRILES

Howard S. Young and Edgar L. McDaniel, both of Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Original application May 4, 1964, Ser. No. 364,834. Divided and this application Sept. 30, 1965, Ser. No. 509,459
6 Claims. (Cl. 260—465.3)

1. A process for preparing acrylonitrile or methacrylonitrile which comprises reacting a mixture containing an olefin from the group of propylene or isobutylene, respectively, ammonia and oxygen; said mixture containing about 0.1 to about 5 moles of ammonia and about 0.1 to about 5 moles of oxygen per mole of said olefin; in the vapor phase at a temperature of about 300° C. to about 600° C. in the presence of a solid calcined catalyst which consists essentially of (1) about 5 to about 60 weight percent of dodecamolybdophosphoric acid and (2) about 1 to about 20 weight percent arsenic oxide, calculated as As_2O_5, supported on (3) about 30 to about 94 weight percent of an inert carrier; the amount of dodecamoylbdophosphoric acid being greater than the amount of arsenic oxide; said catalytic mixture having been calcined at a temperature of about 200° C. to about 600° C.

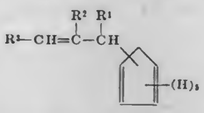
3,287,395

DIELS-ALDER REACTION PRODUCTS

Wen-Hsuan Chang, Gibsonia, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed May 2, 1963, Ser. No. 277,438
6 Claims. (Cl. 260—468)

1. The Diels-Alder adduct of an alkenyl substituted cyclopentadiene having the structure:



wherein R^1, R^2 and R^3 are members of the class consisting of hydrogen, monocyclic aryl and lower alkyl groups, and a member of the class consisting of an alpha, beta-ethylenically unsaturated carboxylic acid and an alpha, beta-ethylenically unsaturated anhydride, said acid and anhydride containing from about 4 to about 7 carbon atoms.

5. The Diels-Alder adduct of allylcyclopentadiene and maleic acid.

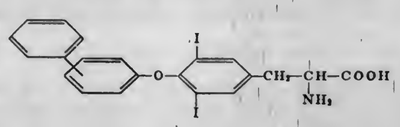
6. The Diels-Alder adduct of methallylcyclopentadiene and maleic acid.

3,287,396
PHENYLDESOXYTHYRONINES

Benjamin Blank, Trevose, and James F. Kerwin, Broomall, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Jan. 11, 1963, Ser. No. 250,763
5 Claims. (Cl. 260—471)

1. Compounds of the formula:

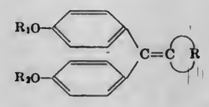


3,287,397
P,p' SUBSTITUTED BENZHYDRYLIDINE CYCLOALKANES

Knut Gunnar Olsson, Hans Erik Alfred Wahlstam, and Bertil Sundbeck, all of Celsiusgatan 35, Malmo, Sweden, and Ernst Herbert Bárány, Hallbygatan 28A, and Jean Francois Miquel, Studentvagen, 1A, both of Uppsala, Sweden

No Drawing. Filed Nov. 15, 1961, Ser. No. 152,625
Claims priority, application Great Britain, Nov. 22, 1960, 40,123/60
9 Claims. (Cl. 260—479)

1. Compounds containing a cycloalkyl group, corresponding to the following formula:



wherein R is a member selected from the group consisting of unsubstituted saturated straight and branch-chained alkylene radicals containing from 4 to 8 carbon atoms wherein said R together with the carbon atom to which it is attached forms a ring containing from 5 to 6 carbon atoms, and R_1 and R_2 are selected from the group consisting of hydrogen, alkyl radicals containing from 1 to 6 carbon atoms, alkenyl radicals containing from 2 to 6 carbon atoms, phenyl alkyl radicals in which the alkyl radical contains from about 1 to about 3 carbon atoms, and pharmaceutically acceptable acyl radicals.

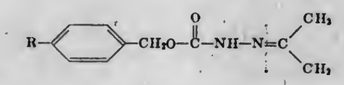
9. The compound p,p'-dimethoxybenzhydrylidene (4-methyl cyclohexane).

3,287,398
PARA SUBSTITUTED BENZYL-1-ISOPROPYLIDENE-CARBAZATES

André Allais and Pierre Girault, Paris, France, assignors to Roussel-Uclaf, S.A., Paris, France, a corporation of France

No Drawing. Filed Sept. 20, 1963, Ser. No. 310,487
Claims priority, application France, Oct. 1, 1962, 910,894; Dec. 28, 1962, 920,019, Patent M 2,467; June 11, 1963, 937,718
5 Claims. (Cl. 260—482)

1. Compounds having the formula



wherein R is selected from the group consisting of hydrogen, halogen and a lower alkoxy radical having 1 to 4 carbon atoms.

3,287,399
PROCESS FOR PREPARING ESTERS OF HALO-ALCOHOLS AND LOWER ALPHA-UNSATURATED ACIDS

Wolf Karo, Huntingdon Valley, Pa., and Milton W. Kline, Leominster, Mass., assignors to The Borden Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Jan. 9, 1964, Ser. No. 336,634
9 Claims. (Cl. 260—486)

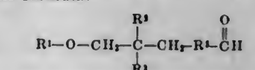
1. In esterifying a fluorine substituted monohydric aliphatic saturated C_{2-15} alcohol having halogen atoms selected from the class consisting of fluorine and chlorine substituted for the hydrogen atoms on at least the carbon adjacent the carbinol group of said alcohol, with an alpha-unsaturated C_3–C_5 ethenoid bond polymerizable acid, the process which comprises (1) forming a mixture of said alcohol and said acid with polyphosphoric acid in amount to dissolve said alcohol and said acid, catalyze the reaction between the alcohol and acid and prevent the alcohol from distilling with the resulting ester and (2) distilling the resulting ester from said mixture.

3,287,400
PROCESS FOR PREPARING 2,2-DIALKYL-OMEGA-FORMYL ALCOHOLS AND THEIR ESTERS

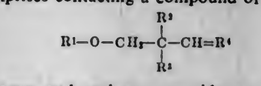
Hugh J. Hagemeyer, Jr., David C. Hull, and Milton A. Perry, Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed July 16, 1963, Ser. No. 295,511
7 Claims. (Cl. 260—491)

1. The process of preparing an omega formyl compound of the formula:



which comprises contacting a compound of the formula:



with hydrogen and carbon monoxide at elevated temperature and pressure in the presence of a hydroformylation catalyst; wherein R^1 is selected from the group consisting of hydrogen and an acyl group having up to about 8 carbon atoms; each of R^2 and R^3 is an alkyl group having 1 to about 8 carbon atoms; R^4 is an alkylidene group having 2 to about 8 carbon atoms and R^5 is an alkylene group having 2 to about 8 carbon atoms.

3,287,401
PREPARATION OF ESTERS FROM ALDEHYDES WITH A MOLYBDENUM COMPOUND AS CATALYST

Lloyd Albert Pine and Henry George Ellert, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Feb. 14, 1964, Ser. No. 344,836
8 Claims. (Cl. 260—494)

1. A process for producing esters which comprises contacting an alpha-lower alkyl substituted aliphatic aldehyde reactant having from 4 to 15 carbon atoms with 10 to 100 weight percent based on the reactant of a molybdenum catalyst selected from the group consisting of molybdenum sulfide, molybdenum oxide and sulfided cobalt molybdate at a temperature of from about 200° to 600° F., said process being carried out substantially in the absence of hydrogen.

3. A process for producing esters which comprises contacting an alpha-lower alkyl substituted aliphatic aldehyde having 4 to 15 carbon atoms with an aliphatic monohydroxylic alcohol containing from 1 to 12 carbon atoms at a temperature of from about 200° to 600° F. in the presence of from about 10 to 100 weight percent of a molybdenum catalyst based on the total amount of aldehyde and alcohol employed, said molybdenum catalyst being selected from the group consisting of molybdenum sulfide, molybdenum oxide and sulfided cobalt molybdate.

3,287,402
SYNTHESIS OF VINYL ESTERS IN THE PRESENCE OF A CRYSTALLINE ALUMINOSILICATE CATALYST

Phillip S. Landis, Woodbury, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed May 25, 1964, Ser. No. 370,053
7 Claims. (Cl. 260—498)

1. In a method for the production of vinyl esters by the reaction of acetylene with a carboxylic acid, the improvement which comprises carrying out the reaction in the presence of a catalyst composition comprising a crystalline aluminosilicate having the formula:

$$\frac{y}{n}M\,O:Al_2O_3:wSiO_2:yH_2O$$

in which M represents a cation of a metal selected from the group consisting of iron, magnesium, zinc, nickel, cadmium, copper and mercury having a valence of n; w is a number of 1 to 10; and y is a number of 0 to 10 representing the moles of water per mole of Al_2O_3.

3,287,403
PREPARATION OF NAPHTHALENE DICARBOXYLIC ACIDS

Edward J. McNelis, Wallingford, and Herbert L. Johnson, Media, Pa., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Oct. 4, 1962, Ser. No. 228,259
11 Claims. (Cl. 260—515)

1. A process for the dehydrogenation of dihydronaphthalene dicarboxylic compounds selected from the group consisting of dihydronaphthalene dicarboxylic acids and alkali metal dihydronaphthalene dicarboxylates which comprises heating said compounds in the absence of sulfur to a temperature of 150–350° C. to form naphthalene carboxylic acid compounds.

8. A process for producing naphthalene-2,6-dicarboxylic acid which comprises (1) heating a dihydronaphthalene dicarboxylic acid other than the 2,6-acid in the absence of sulfur to a temperature in the range of 250–300° C. whereby hydrogen is evolved and naphthalene dicarboxylic acid is formed; (2) converting the naphthalene dicarboxylic acid to corresponding alkali metal disalt in which the alkali metal is selected from the group consisting of potassium, cesium and rubidium; (3) heating said alkali metal disalt in the presence of a catalyst selected from the group consisting of oxides and salts of cadmium, zinc and mercury to a temperature in the range of 350–530° C.; (4) and acidifying the resulting alkali metal disalt to form naphthalene-2,6-dicarboxylic acid.

3,287,404
PROCESS FOR SEPARATING 2-METHOXY-3,6-DICHLOROBENZOIC ACID FROM AN AQUEOUS MIXTURE COMPRISING SAID ACID AND ITS ISOMERS

Delbert L. Hanna, Oak Park, Ill., assignor to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Aug. 20, 1963, Ser. No. 303,437
11 Claims. (Cl. 260—521)

1. A process for the purification of the water-soluble salts of 2-methoxy-3,6-dichlorobenzoic acid from an aqueous mixture comprising the water soluble salts of said acid and its isomers which comprises forming the calcium salts of said acid and its isomers at a pH of from about 5 to about 10 by reacting said mixture with a calcium halide and removing the resulting solid.

3,287,405
PRODUCTION OF CARBOXYLIC ACIDS BY THE ALKALI FUSION OF 1,2-EPOXYCYCLOALKANES

Arnold J. Morway, Clark, Jeffrey H. Bartlett, New Providence, and Samuel B. Lippincott, Springfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Oct. 31, 1961, Ser. No. 148,858
4 Claims. (Cl. 260—537)

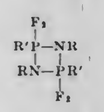
1. A process for preparing alkali metal salt of aliphatic carboxylic acid which comprises dispersing sodium hydroxide pellets and potassium hydroxide pellets in a white oil, heating the resulting dispersion to a temperature of about 525° to 625° F., slowly adding an 1,2-epoxycycloalkane containing 5 to 20 carbon atoms to said dispersion over a period of about ½ to 15 hours while vigorously stirring and maintaining a reaction temperature of about 525° F. to 625° F., and cooling to thereby form a product containing alkali metal salt of carboxylic acid.

3,287,406
FLUORINE-CONTAINING 1,3,2,4-DIAZADIPHOSPHETADINES

Reinhard Schmutzler, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 14, 1963, Ser. No. 301,985
9 Claims. (Cl. 260—543)

1. A compound having the structure



wherein R is selected from the group consisting of methyl and ethyl and R' is selected from the group consisting of monovalent organic alkyl, cycloaliphatic and aromatic radicals containing not more than 20 carbon atoms and fluorine.

6. A process of the preparation of 1,3,2,4-diazadiphosphetidines which comprises reacting in the absence of atmospheric moisture at least one compound having the structure PR'_bF_a, wherein R' is selected from the group consisting of monovalent organic alkyl, cycloaliphatic and aromatic radicals containing not more than 20 carbon atoms and fluorine, a is 4 through 5, and b is zero through 1, and the sum of a and b is 5, with at least one compound having the structure $R_3SiN(R)SiR_3$, wherein R is selected independently from the group consisting of methyl and ethyl, at a temperature from about 0° C. to about 150° C.

3,287,407
PURIFICATION OF UREA

Umberto Zardi, Milan, Italy, assignor to Montecatini Società Generale per l'Industria Mineraria e Chimica, Milan, Italy

Filed Nov. 23, 1962, Ser. No. 239,464
Claims priority, application Italy, Nov. 28, 1961, 21,406/61
2 Claims. (Cl. 260—555)

1. A process for producing high purity urea, with a low biuret and ammonia content, which comprises mixing with substantially anhydrous molten urea containing biuret and free ammonia, 0.5 to 3 g. dry ammonia per kilogram of urea at a pressure of two to fifteen atmospheres, passing said mixture through an ammoniation zone at 120° C. to 150° C. and two to fifteen atmospheres for a dwell time of about 30 to 900 seconds in said ammoniation zone and stripping residual ammonia by hot air at about atmospheric pressure to give urea with a reduced biuret and ammonia content.

3,287,408
PROCESS FOR RENDERING UREA ANTI-CAKING

Preston L. Veltman, Severna Park, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

Filed Sept. 17, 1963, Ser. No. 309,562
12 Claims. (Cl. 260—555)

1. A process for preparing substantially free-flowing, non-caking particulate urea comprising:

(a) agitating a bed of particulate urea in a contacting zone and maintaining said bed at a temperature ranging from about the boiling point of water at the pressure prevailing in said zone to about 2–3° C. above said boiling point and at least about 3–5° C. below the melting point of said urea while passing saturated steam maintained at about the temperature of said urea bed through said bed, at the rate of about 1–25 g. of steam per kg. of said urea;

(b) purging condensed water from the thus treated urea by passing a stream of a substantially dry inert gas through said bed at the rate of about 30–1500 liters of said gas per kg. of said urea while maintaining the temperature of said bed within said range; and

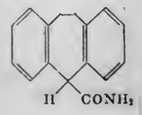
(c) recovering the thus treated urea.

3,287,409
5H-DIBENZO[a,d]CYCLOHEPTENE-5-CARBOXAMIDE

Frederick Leonard, Yonkers, and André Gagneux, Hartsdale, N.Y., assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Filed July 23, 1962, Ser. No. 211,847
1 Claim. (Cl. 260—558)

A compound of the formula



3,287,410
METHOD OF PREPARING ALIPHATIC AMINES

Zdzislaw W. Dudzinski, Hasbrouck Heights, N.J., and Reginald L. Wakeman, Philadelphia, Pa., assignors, by mesne assignments, to Millmaster Onyx Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Apr. 22, 1963, Ser. No. 274,801
8 Claims. (Cl. 260—583)

1. The method of making amines which comprises the steps of sulfating an alpha olefin and neutralizing the sulfated olefin with a base selected from the group consisting of ammonia, primary amines and secondary amines, and then reacting the resulting product with an excess of the selected base under heat and pressure to produce an amine having N directly linked to the penultimate carbon atom of the starting hydrocarbon.

3,287,411
PROCESS OF MAKING ALIPHATIC AMINES

Reginald L. Wakeman, Philadelphia, Pa., and Frederick H. Low, New York, N.Y., assignors, by mesne assignments, to Millmaster Onyx Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Sept. 5, 1963, Ser. No. 306,701
4 Claims. (Cl. 260—585)

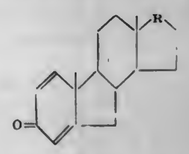
1. The method of making an aliphatic amine from a monochlorinated aliphatic linear saturated hydrocarbon containing 10 to 34 carbon atoms and having the chlorine radical attached to carbon atom number 2 which comprises the step of reacting said monochlorinated hydrocarbon with a base selected from the group consisting of ammonia, a primary amine and a secondary amine at a temperature between 125 and 250° C., acidifying the reaction product, extracting the unreacted material from the reaction mixture, adding a base to make the mixture alkaline and to liberate the free amine formed in the reaction, and extracting the free amine from the mixture.

3,287,412
$\Delta^{1,2}$-B-NORTESTOSTERONES

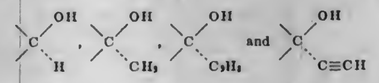
Louis R. Fare, Willingboro, and Kenneth G. Holden, Stratford, N.J., and Joseph R. Valenta, Philadelphia, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 10, 1964, Ser. No. 350,641
2 Claims. (Cl. 260—586)

1. A compound of the formula:



in which R is a member selected from the group consisting of

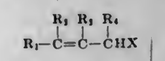


3,287,413
HYDROLYSIS OF ALLYLIC HALIDES

Lawrence J. Hughes, Hitchcock, Tex., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Dec. 27, 1963, Ser. No. 334,009
8 Claims. (Cl. 260—593)

1. The method of producing carbonyl compounds which comprises contacting an allylic halide of the formula



in which X is a halogen and R_1, R_2, R_3, and R_4 are chosen from the group consisting of hydrogen, alkyl, aryl, and aralkyl radicals but only one of R_1 and R_2 is aryl, in the vapor phase in admixture with steam in a mole ratio from about 1:1 to about 1:10 with a Lewis-acid-type catalyst at a temperature from about 200° to about 400° C.

3,287,414
METHOD FOR PREPARING STABILIZED FORMALDEHYDE

Kenichi Fukui and Tsutomu Kagiya, Kyoto, Hisao Yokota, Kobe, Yozo Ohtsuka, Osaka, Masatsune Kondo, Ikeda-shi, and Seizo Nakashio, Nishinomiya-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., and Sumitomo Atomic Energy Industries, Ltd., Osaka, Japan, both corporations of Japan

No Drawing. Filed Oct. 18, 1963, Ser. No. 317,156
Claims priority, application Japan, Feb. 13, 1963, 38/7,757
3 Claims. (Cl. 260—606)

1. A stabilized composition comprising formaldehyde and between 0.001% to 50% by weight based on the amount of formaldehyde of a weak acid anhydride selected from the group consisting of carbon dioxide, maleic anhydride, itaconic anhydride, acetic anhydride, succinic anhydride, and mixtures thereof.

3,287,415
BORON ALKYLS, AND A PROCESS FOR THE PRODUCTION OF BORON HYDROCARBONS

Roland Köster, Mulheim (Ruhr), Germany, assignor to Studiengesellschaft Kohle m.b.H., Mulheim (Ruhr), Germany, a corporation of Germany

No Drawing. Filed Apr. 28, 1958, Ser. No. 731,126
Claims priority, application Germany, Apr. 29, 1957, Z 6,105
15 Claims. (Cl. 260—606.5)

1. Process for the production of boron hydrocarbons, which comprises heating a trialkyl amine borane, in which alkyl represents a lower alkyl group, with an unsaturated hydrocarbon having at least one C=C bond in the absence of oxygen and moisture to a temperature higher than 100° C. and thereafter separating the amine and boron hydrocarbon present in the reaction product by distillation.

15. A boron heterocycle having a boron in the carbocyclic ring prepared by heating a trialkyl amine borane in which alkyl represents a lower alkyl group with an unsaturated hydrocarbon having at least two C=C bonds in the absence of oxygen and moisture to a temperature higher than 100° C.

3,287,416
HALOGEN CONTAINING ORGANOBORON COMPOUNDS AND METHOD OF PREPARATION

Jack Bobinski, Rockaway, and Nelson N. Schwartz, Morristown, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Oct. 21, 1960, Ser. No. 64,216
11 Claims. (Cl. 260—606.5)

1. A method for the production of an organoboron compound useful as a fuel which comprises reacting a borane selected from the group consisting of bis(nitrile)-decaboranes and bis(nitrile)alkyldecaboranes with an acetylenic compound selected from the group consisting of mono- and dihalogenated alkynes containing from two to ten carbon atoms the bis(nitrile)decaboranes being the reaction products of decaborane with a nitrile of an unsubstituted aliphatic carboxylic acid having from 1 to 6 carbon atoms, and the bis(nitrile)alkyldecaboranes being the reaction products of a lower alkyldecaborane with an alkyl cyanide containing from 1 to 4 carbon atoms in the alkyl group.

9. Compounds of the class

$$(RC{=})(R'C{=})B_{10}H_{12-n}R''_n$$

wherein R and R' are selected from the class consisting of hydrogen, alkyl radicals and haloalkyl radicals and the total number of carbon atoms in R and R' being from 1 to 8, R'' is a lower alkyl radical and n varies from 0 to 4.

3,287,417
BIS-(SUBSTITUTED THIOL)DICHLOROMETHANES

Harry Bender, El Cerrito, and Harold M. Pitt, Lafayette, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 6, 1963, Ser. No. 321,693
6 Claims. (Cl. 260—609)

1. Bis-(substituted thiol)dichloromethanes corresponding to the formula $R—S—CCl_2—S—R'$ wherein R is selected from the group consisting of alkyl, cycloalkyl, chloroalkyl and chloroalkenyl, and R' is selected from the group consisting of chloroalkyl, chloroalkenyl, cyclochloroalkyl and phenylchloroalkyl, said dichloromethanes containing a total of about 5 to about 11 carbon atoms, inclusive.

3,287,418
FLUORINATED ORGANIC ETHERS

Murray Hauptschein, Glenside, Pa., and Milton Braid, Haddon Heights, N.J., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed May 29, 1962, Ser. No. 198,464
6 Claims. (Cl. 260—614)

1. A fluorinated nitroether of the general formula:

$$A—R^1—OCF_2CHRNO_2$$

where A is selected from the class consisting of hydrogen and $—OCF_2CHRNO_2$ radicals; where R^1 is an alkylene radical having from 1 to 20 carbon atoms, and where R is selected from the class consisting of hydrogen fluorine, perfluoroalkyl radicals and perfluorohydroalkyl radicals having from 1 to 10 carbon atoms.

6. A method for preparing fluorinated nitroethers which comprises the step of reacting at a temperature of from 0° C. to 200° C. an alcohol selected from the class consisting of monohydroxy and dihydroxy alkanols having from 1 to 20 carbon atoms with a fluorinated alkyl nitroiodide of the formula:

$$ICF_2CHRNO_2$$

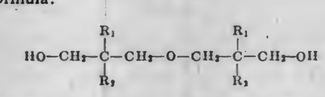
where R is selected from the class consisting of hydrogen, fluorine, perfluoroalkyl radicals and perfluorohydroalkyl radicals having from 1 to 10 carbon atoms.

3,287,419
3,3'-OXYBIS(2,2-DISUBSTITUTED-1-PROPANOLS)

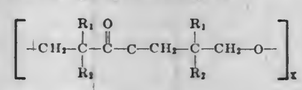
Roy B. Duke, Jr., and Milton A. Perry, Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Aug. 16, 1962, Ser. No. 217,267
11 Claims. (Cl. 260—615)

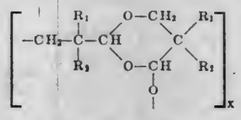
1. A process for preparing 3,3'-oxbyis(2,2-disubstituted-1-propanols) represented by the following structural formula:



wherein each R_1 and R_2 represents a member selected from the group consisting of an alkyl group having from 1–6 carbon atoms, a cyclohexyl radical, and phenyl radical; which process comprises hydrogenating in the presence of a hydrogenation catalyst, at a temperature of from 30–300° C., a polymeric product having a structure selected from the group consisting of



and



wherein R_1 and R_2 are as above defined and X is a whole number of from 4 to about 15; and having a molecular weight of from about 1000 to about 3000.

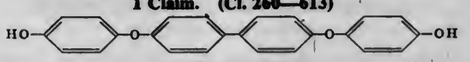
3,287,420
GLYCOL MONOVINYL ETHER

Sam H. Johnson, Jr., Max Statman, and Alden E. Blood, Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Apr. 26, 1963, Ser. No. 275,918
1 Claim. (Cl. 260—615)

2,2,4-trimethyl-3-hydroxypentyl vinyl ether.

3,287,421
DIHYDROXY POLYAROMATIC ETHER
Daniel W. Fox, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York
No Drawing. Original application July 19, 1956, Ser. No. 598,768, now Patent No. 3,148,172, dated Sept. 8, 1964. Divided and this application Sept. 26, 1963, Ser. No. 314,833
1 Claim. (Cl. 260—613)



3,287,422
ONE-STEP PROCESS OF ACID ACTIVATING MINERAL CLAYS AND ALKYLATING PHENOLIC COMPOUNDS IN THE PRESENCE OF AN ALKENE HYDROCARBON
Harry Kaplan, Westfield, N.J., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 29, 1961, Ser. No. 163,045
9 Claims. (Cl. 260—624)

1. The process of acid activating a silica-alumina clay in the presence of a mono-olefinic hydrocarbon and alkylating a phenolic compound with the activated clay which comprises activating for a period of time ranging from ½ to 5 hours a freely moving suspension of a raw silica-alumina clay and a mono-olefinic hydrocarbon of from 6 to 18 carbon atoms with sulfuric acid at a temperature of from ambient to the boiling point of the mono-olefinic hydrocarbon, adding to said suspension a phenolic compound and alkylating the same at a temperature of from 60° to 120° C., said phenolic compound containing from 1 to 3 benzene rings and from 1 to 3 hydroxy groups.

3,287,423
PREPARATION OF CYCLIC ALCOHOLS BY OXIDATION IN THE PRESENCE OF BORIC ACID
Johannes W. M. Steeman and Johan P. H. von den Hoff, Geleen, Netherlands, assignors to Stamicarbon N.V., Heerlen, Netherlands
No Drawing. Filed Dec. 17, 1962, Ser. No. 244,894
Claims priority, application Netherlands, Dec. 21, 1961, 272,850; Jan. 17, 1962, 273,665; Feb. 7, 1962, 274,511
11 Claims. (Cl. 260—631)

1. In a process for the preparation of a cyclic alcohol by the oxidation of a saturated cyclic hydrocarbon selected from the group consisting of cyclopentane, cyclohexane, cycloheptane, cyclooctane and cyclododecane by preparing a suspension of boric acid in said hydrocarbon and then contacting said suspension with molecular oxygen at a temperature of 100 to 300° C. followed by hydrolysis of the resulting oxidation product, the improvement which comprises preparing said suspension by mixing said hydrocarbon with an aqueous solution of boric acid and then evaporating all of the water from said mixture to leave behind a suspension of solid boric acid in said hydrocarbon.

3,287,424
METHOD OF FLUORINATING ORGANIC COMPOUNDS EMPLOYING ARSENIC TRIFLUORIDE
Harry A. Pacini, Richmond, Attila E. Pavlath, Berkeley, and Eugene G. Teach and Francis H. Walker, El Cerrito, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 25, 1963, Ser. No. 311,317
9 Claims. (Cl. 260—651)

1. The process for replacing at least one halogen atom in an organic compound selected from the group consisting of bromine and chlorine with a fluorine atom to produce fluorine-containing compounds comprising reacting under substantially anhydrous conditions organic compounds containing 1 to 6 sp^3 hybrid carbon atoms, inclusive, having said halogen atoms bonded to at least one of said carbon atoms, with a mixture consisting of at least a stoichiometric quantity of arsenic trifluoride and a catalytic amount of at least one member selected from the group consisting of antimony pentahalide, niobium pentahalide, tantalum pentahalide and arsenic chlorofluoro complex $[AsCl_4^+AsF^-]$ at temperatures between about 20° C. and about 250° C. and recovering the fluorine-containing organic compound produced thereby.

3,287,425
FLUORINATED COMPOUNDS AND THEIR PREPARATION
John T. Maynard, Brandywine Hundred, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Mar. 7, 1961, Ser. No. 93,860
14 Claims. (Cl. 260—653.3)

1. A compound selected from the group consisting of 2-hydroheptafluorobutene-2 and 2-hydroheptafluorobutene-1.

4. A process for preparing 2-hydroheptafluorobutenes which comprises heating hexachloro-1,3-butadiene with potassium fluoroide in an organic carboxylic acid amide solvent at a temperature of from about 150 to 200° C.

8. A process of continuously preparing fluorinated compounds containing from about 3 to 12 carbon atoms from polychlorinated aliphatic and cycloaliphatic hydrocarbon compounds wherein at least 50% of the chlorine atoms thereof are replaced by fluorine atoms which comprises maintaining at about 150° to 250° C. an agitated suspension of an alkali metal fluoride wherein the alkali metal is selected from the group consisting of potassium, cesium and rubidium in a solvent having a boiling point of at least about 150° C., which solvent is selected from the group consisting of lower carboxylic acid amides, lower alkyl sulfoxides, lower alkyl sulfones, cyclic alkylene sulfones containing from 5 to 6 members in the ring, cyclic alkylene carbonates containing from 5 to 6 members in the ring, lactones containing from 5 to 7 atoms in the ring, and lactams containing from 5 to 7 atoms in the ring; continuously adding to said suspension a polychlorinated hydrocarbon compound which contains from about 3 to 12 carbon atoms and continuously removing the formed fluorinated compound as a vapor; said polychlorinated hydrocarbon compound being an aliphatic or cycloaliphatic hydrocarbon compound wherein at least 50 percent of the hydrogen atoms have been replaced by chlorine.

3,287,426
FLUORINATION WITH SiF_4
Karl O. Christe and Attila E. Pavlath, Berkeley, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed July 1, 1963, Ser. No. 292,100
2 Claims. (Cl. 260—653.8)

1. A process for the preparation of halogenated organic compounds in which at least one halogen atom is fluorine and any other halogen is chlorine, which comprises bringing a chlorinated organic compound starting material, selected from the group consisting of perhalomethanes, chloroform, tetrachloroethylene and hexachloropropene, in contact at a temperature of at least 300° C. with silicon tetrafluoride, and isolating said fluorine-containing organic compound formed by this substitution reaction.

3,287,427
DISPROPORTIONATION OF CYCLIC OLEFINS
Frederick J. Karol, Somerset, and Wayne L. Carrick, East Brunswick, N.J., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Jan. 30, 1964, Ser. No. 341,398
14 Claims. (Cl. 260—666)

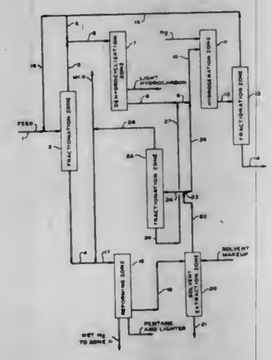
1. A process for the disproportionation of cyclic olefins having 6 carbon atoms in the ring and unsubstituted

sites available on said ring for hydrogen transfer which consists essentially of contacting said cyclic olefin with less than a stoichiometric amount of a halide of a platinum metal and then recovering the disproportionation products.

3,287,428
SEPARATION OF CYCLOHEXADIENE ISOMERS
David W. Peck, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Apr. 10, 1964, Ser. No. 358,941
12 Claims. (Cl. 260—666)

1. The method for separating isomers of cyclohexadiene which comprises contacting a mixture containing said isomers at temperatures not in excess of 75° C. with an aqueous solution containing 0.03–0.06 gram atom argentous ion per mole of water at a ratio of from 0.1 to about 5 grams of argentous ion per mole of cyclohexadiene and thereafter recovering an aqueous phase enriched in 1,3-cyclohexadiene and an organic phase enriched in 1,4-cyclohexadiene.

3,287,429
HYDROCARBON PRODUCTION
John T. Cabbage and Paul D. Hann, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Sept. 8, 1964, Ser. No. 394,772
4 Claims. (Cl. 260—666)



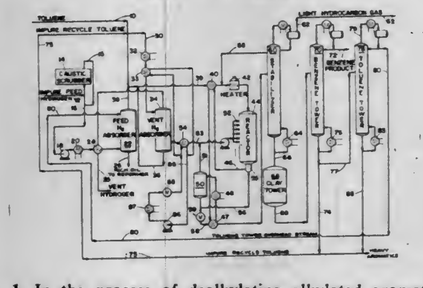
1. A method for producing high purity cyclohexane comprising providing a first material containing iso and normal hexanes and a second material containing cyclohexane, benzene, methylcyclopentane and dimethylparaffins which are difficult to separate from cyclohexane, passing said first material to a dehydrocyclization zone and therein in the presence of a dehydrocyclization catalyst converting iso and normal hexanes to benzene to produce a first benzene-rich stream, passing said second material to a reforming zone and therein in the presence of a reforming catalyst converting cyclohexane and methylcyclopentane to benzene to produce a second benzene-rich stream containing said difficult-to-separate paraffins, passing said second benzene-rich stream to a solvent extraction zone and therein contacting said stream with a solvent which is selective to aromatics and naphthenes to remove said difficult-to-separate paraffins from said stream and to produce a benzene-rich extract, adding such benzene-rich extract to said first benzene-rich stream, contacting the composite stream produced by said adding of said benzene-rich extract to said first benzene-rich stream with hydrogen in the presence of a hydrogenation catalyst to convert benzene to cyclohexane, and recovering from the hydrogenation effluent a high purity cyclohexane.

3,287,430
INHIBITING POLYMERIZATION
Paul Gordon Haines and Harry Elmer Albert, Lafayette Hill, and Alfred Case Whiton, Blue Bell, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Sept. 15, 1964, Ser. No. 396,732
6 Claims. (Cl. 260—666.5)

1. A composition comprising a monomeric vinyl aromatic compound containing an amount of N-cyclohexylhydroxylamine sufficient to inhibit polymerization of said vinyl aromatic compound.

4. The method of preventing polymerization of a monomeric vinyl aromatic compound which comprises incorporating in said vinyl aromatic compound an amount of N-cyclohexylhydroxylamine sufficient to inhibit polymerization.

3,287,431
HYDRODEALKYLATION WITH AZEOTROPE RECYCLE
Stanford I. Feigelman, Philadelphia, Pa., assignor to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Sept. 13, 1965, Ser. No. 486,845
3 Claims. (Cl. 260—672)



1. In the process of dealkylating alkylated aromatic hydrocarbons at a conversion rate of at least 60 percent per pass to produce benzene wherein the alkylated aromatic hydrocarbons are contacted in a reaction zone at a temperature between 1100° F. and 1500° F. and at a pressure between about 500 p.s.i.g. and 800 p.s.i.g. with a hydrogen-rich gas, said contacting being carried out in the substantial absence of solids having surfaces which would tend to catalyze the reaction, the reaction quenched with hydrogen to maintain a temperature difference in the reaction zone between maximum and minimum reaction temperatures of not to exceed about 200° F., the reaction effluent from the reaction zone cooled to stop the reaction, and the benzene is separated from hydrogen in a flash chamber, from light hydrocarbon gases in a first fractionating zone and from unreacted alkylated aromatic hydrocarbons in a second fractionating zone. the improvement which comprises removing from said first fractionating zone a side-stream of benzene together with hydrocarbon compounds which form azeotropic boiling mixtures with the benzene and returning the mixture of benzene and hydrocarbon compounds to said reaction zone.

3,287,432
SELECTIVE SORPTION PROCESS
Eugene E. Sensel, Beacon, N.Y., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
Original application Apr. 11, 1957, Ser. No. 652,147. Divided and this application June 8, 1962, Ser. No. 201,204
6 Claims. (Cl. 260—676)

1. Process for the separation of a straight chain hydrocarbon from a non-straight chain hydrocarbon in admixture therewith which comprises contacting said admix-

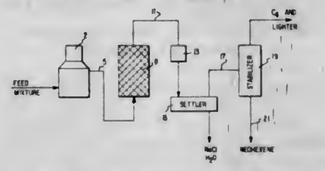
ture in vapor phase with a dehydrated crystalline zeolite of type A structure having 0.25 to 0.95 of its exchangeable cation content as divalent manganese to adsorb said straight chain hydrocarbon therefrom, discontinuing said contact when about 80 to about 95% of the saturation capacity of said crystalline zeolites for said straight chain hydrocarbon is reached, desorbing said adsorbed straight chain hydrocarbon, discontinuing said desorbing when about 80–90% of the adsorbed straight chain hydrocarbon has been desorbed and repeating said contacting and desorbing steps.

3,287,433

PROCESS FOR THE SEPARATION OF MIXTURES OF TERTIARY BUTYL CHLORIDE AND 3,3-DIMETHYLBUTENE-1

Emmett H. Burk, Jr., Hazel Crest, and Byron W. Turnquest and Calvin J. Bragg, Chicago, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

Filed Jan. 15, 1964, Ser. No. 337,783
5 Claims. (Cl. 260—677)



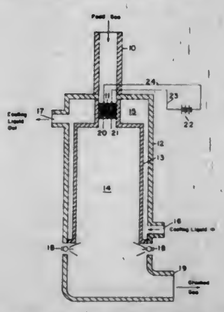
1. A method for the separation of a mixture consisting essentially of tertiary butyl chloride and 3,3-dimethylbutene-1 which comprises contacting said mixture in the vapor phase with elemental iron at a temperature of about 500 to 900° F. to convert the tertiary butyl chloride to isobutylene and hydrogen chloride and removing said hydrogen chloride and isobutylene.

3,287,434

PROCESS FOR THE PARTIAL COMBUSTION OF HYDROCARBONS TO PRODUCE ACETYLENE

Walter H. Stanton, George O. Hunt, Jr., and Walter B. Howard, Texas City, Tex., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed Sept. 24, 1963, Ser. No. 311,158
7 Claims. (Cl. 260—679)



1. In a process for the partial combustion of a paraffinic hydrocarbon to produce acetylene wherein a gas mixture of said paraffinic hydrocarbon and an oxygen-containing stream are discharged through a burner block into a combustion zone, the improvement comprising preheating said gas mixture above the ignition temperature of said gas mixture in said burner block during passage therethrough and discharging the resulting preheated gas mixture into said combustion zone before the end of the flame induction period of said preheated gas mixture.

3,287,435

PRODUCTION OF ACETYLENE

Karl Buschmann, Neustadt, Weinstrasse, and Otto Frey and Hermann Meyer, Ludwigshafen (Rhine), and Walter Teltschik, Frankenthal, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Jan. 21, 1964, Ser. No. 339,083
Claims priority, application Germany, Feb. 16, 1963, B 70,767
6 Claims. (Cl. 260—679)

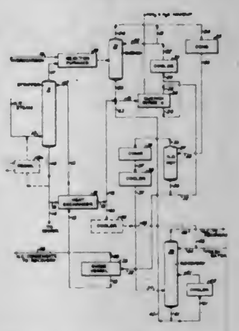
1. A process for the production of acetylene from hydrocarbons by the action of high temperatures, quenching the hot cracked gas containing acetylene and separating carbon black from the gas with an aromatic hydrocarbon oil, wherein a member selected from the group consisting of naphthalene and an α-halonaphthalene is used as the aromatic hydrocarbon oil.

3,287,436

RECOVERY OF H_2S AND NH_3 FROM OLEFIN CRACKING

Brian J. Ozero, New York, N.Y., assignor to Halcon International, Inc., a corporation of Delaware

Filed Oct. 4, 1963, Ser. No. 314,047
11 Claims. (Cl. 260—680)



1. A process for recovering a source of SH radicals from the reaction product of a reaction step carried out in the presence of SH radicals as catalyst and an inert diluent, and recycling the sulfur-containing material and diluent to said reaction step, which process comprises contacting said reaction product with aqueous ammoniacal solution whereby most of the sulfur-containing material is absorbed by said aqueous solution, separating and stripping the sulfur-rich aqueous solution with the diluent which functions as a volatile inert stripping agent to form a vapor mixture containing the source of SH radicals together with diluent and ammonia, and passing said vapor mixture to said reaction step.

3,287,437

CRACKING PROMOTERS

Kenneth J. Frech, Kent, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Continuation of application Ser. No. 59,205, Sept. 29, 1960. This application Apr. 19, 1965, Ser. No. 449,279
17 Claims. (Cl. 260—680)

1. A process to produce isoprene which comprises mixing (1) at least one olefin selected from the group consisting of 2-methyl pentene-2; 3-methyl pentene-2; 2-ethyl butene-1; 3,3-dimethyl butene-1; 2,3-dimethyl butene-1; 2-methyl hexene-2; 3-methyl hexene-2; and 3,3-dimethyl pentene-1, and (2) about 4 to about 20 mol percent, calculated on the total mols of olefins, of a promoter

comprising a mixture of bromine and at least one refractory olefin selected from the group consisting of 2,3-dimethyl butene-2; 2-methyl butene-2 and isobutylene in which the mol ratio of bromine to said refractory olefin ranges from about 10/1 to about 1/25, subjecting the resulting mixture to temperatures ranging between 500° C. and 800° C. for times ranging from about 0.05 to about 1 second and at pressures not exceeding about 100 pounds per square inch, to cleave the carbon-to-carbon single bond which is in the position beta to the double bond of said olefin in (1) above, to form isoprene and recovering said isoprene.

3,287,438

MODIFIED CRACKING PROCESS

Kenneth J. Frech, Tallmadge, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Apr. 19, 1966, Ser. No. 543,540
9 Claims. (Cl. 260—680)

1. The method of preparing butadiene which comprises forming a mixture of (a) at least one olefin from the group consisting of pentene-2, hexene-2; 3-methyl pentene-1; and 3-methyl butene-1 and (b) a cracking promoter comprising a mixture of (1) at least one material from the group of benzene, toluene, and xylene and (2) hydrogen sulfide, the materials of each of group (1) and (2) being present in said mixture in an amount of at least one mol percent based on the olefin, said ratio of the materials in (1) to the material in (2) ranging from about 1/1 to about 20/1, subjecting said mixture to temperatures ranging from about 400° C. to about 900° C. for periods of time varying from about 0.05 to about 0.5 second and at pressures not greater than about 100 p.s.i., to cleave the carbon-to-carbon single bond which is in the position beta to the double bond of said olefin, thereby forming butadiene and recovering said butadiene.

3,287,439

HYDROCARBON CONVERSION PROCESS

Robert M. Suggitt, Fishkill, and John H. Estes, Wappingers Falls, N.Y., and Kenneth D. Ashley, Sarasota, Fla., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 30, 1963, Ser. No. 276,981
3 Claims. (Cl. 260—683.68)

1. The method of isomerizing a paraffinic hydrocarbon selected from the group consisting of butanes, pentanes and hexanes which comprises contacting said hydrocarbon at isomerization conditions including a temperature within the range of about 200 to 400° F., a liquid hourly space velocity within the range of 0.5 to 2.0 and a hydrogen to hydrocarbon mole ratio within the range of about 0.10:1 to 5.0:1 with a catalyst consisting essentially of alumina, platinum, fluorine, and chlorine, wherein at least a part of said fluorine and said chlorine is introduced into said catalyst by contacting a composite of platinum and alumina with dichlorodifluoromethane at a temperature within the range of about 300 to 650° F.

3,287,440

PROCESS FOR THE CROSS-LINKING OF UNSATURATED COPOLYMERS AND ETHYLENE-PROPYLENE TERPOLYMERS

Arnold Giller, Weben, Taunus, Germany, assignor to Chemische Werke Albert, Wiesbaden-Biebrich, Germany, a corporation of Germany

No Drawing. Filed Oct. 22, 1964, Ser. No. 405,818
Claims priority, application Germany, May 14, 1962, C 26,983; Aug. 27, 1962, C 27,790; May 11, 1963, C 29,915; Jan. 29, 1964, C 31,998; Jan. 31, 1964, C 32,017
41 Claims. (Cl. 260—846)

1. The method of vulcanizing ethylene-propylene terpolymers, the third component of which is at least one multiple olefinically unsaturated compound having 4 to 14 carbon atoms, with a phenol aldehyde resin which comprises vulcanizing an elastomer composition of said ethylene-propylene terpolymer, a phenol aldehyde resin, a filler and a complex compound of the general formula $X_mMe(R_1OR_2)_n$, wherein, in the said formula, X is a halogen, Me is a heavy metal of a specific gravity greater than 4, m and n are integers from 1 to 4 each and R_1 and R_2 are radicals selected from the group consisting of hydrogen and radicals having from 1 to 14 carbon atoms being monovalent hydrocarbon radicals, monovalent hydrocarbon radicals interrupted by an ether oxygen atom, and bivalent derivatives of that radical in which the two valences are bound to R_1 and R_2 so as to form a ring with the group R_1OR_2.

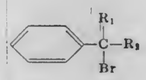
14. A process for cross-linking unsaturated copolymers which comprises vulcanising

(1) at least one unsaturated copolymer selected from the group consisting of (I) copolymers of at least one multiple olefinically unsaturated compound with at least one straight-chained mono-olefinic hydrocarbon, (II) copolymers of a multiple olefinically unsaturated compound with a mono-olefinic hydrocarbon component containing up to 90 mol percent, calculated on the total mono-olefin component, of at least one branched mono-olefinic hydrocarbon, the remaining portion being at least one straight chained mono-olefinic hydrocarbon, and (III) copolymers of at least one cyclic multiple olefinically unsaturated compound containing at least 10 mol percent of a cyclic compound with at least one branched mono-olefinic hydrocarbon, the multiple olefinically unsaturated compound of said copolymers (I) to (III) being copolymerized therein in an amount of not more than 10 mol percent,

(2) 1 to 15 parts by weight of at least one phenol aldehyde resin, calculated per 100 parts by weight of copolymer, the aldehyde component of which phenol aldehyde resin contains from 1 to 7 carbon atoms, in the presence of

(3) a halogen donor together with a compound selected from the group consisting of oxides and salts of weak acids of metals of groups II and III of the periodic table and heavy metals other than those belonging to groups II and III and having a specific gravity greater than 4 which metal compound is reactive with said halogen donor at a temperature above 70° C. in amounts capable of forming 0.1 to 12% by weight of the metal halide, based on the weight of the copolymer, the halogen of the halides having an atomic weight of at least 35, the phenol aldehyde resin containing in addition to groups selected from the group consisting of free phenolic hydroxy and esterified phenolic hydroxy, groups selected from the group consisting of free alcoholic hydroxy, etherified alcoholic hydroxy, esterified alcoholic hydroxy and halomethyl.

37. A process as claimed in claim 14, wherein the halogen donor has the structure



in which R_1 is a radical selected from the group consisting of hydrogen, bromine and phenyl and R_2 is a radical selected from the group consisting of bromine and phenyl.

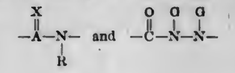
3,287,441

MELT-SPINNABLE COMPOSITION OF A POLY(N-VINYL AMIDE) AND A POLYMER FROM THE CLASS CONSISTING OF POLYAMIDES, POLYUREAS, AND POLYURETHANES

Eugene Edward Magat, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 8, 1965, Ser. No. 462,392
10 Claims. (Cl. 260—857)

1. In a single phase melt-spinnable composition consisting essentially of (1) a synthetic linear fiber-forming condensation polymer from the class consisting of a polyamide, a polyurethane and a polyurea, the said polymer being characterized by recurring amide nitrogen interunit linkages as an integral part of the polymer chain, the said amide nitrogen interunit linkages having the formula from the class consisting of

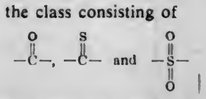


and

wherein



is a member of the class consisting of



and R is hydrogen, lower alkyl and lower alkylene when the diamine has a ring structure and G is a member of the class consisting of hydrogen and lower alkyl and (2) a linear water-soluble poly(N-vinyl amide) from the class consisting of poly(N-vinyl pyrrolidone) and poly(N-methyl, N-vinyl formamide), the said poly(N-vinyl amide) being thermally stable at melt-spinning temperatures.

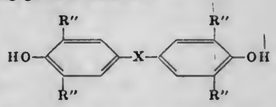
3,287,442

POLYCARBONATE ELASTOMERS

John R. Caldwell and Winston J. Jackson, Jr., Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 18, 1962, Ser. No. 231,589
16 Claims. (Cl. 260—858)

1. A highly elastic polycarbonate comprising the reaction product derived from (A) at least one compound selected from the class consisting of bisphenols having the following general formula:



wherein R'' is a member selected from the group consisting of hydrogen atoms, halogen atoms, and alkyl groups containing from 1 to 4 carbon atoms and X is a gem-bivalent radical selected from the group consisting of radicals having the following general formulas:



and (B) at least one member of average molecular weight about 500 to about 5000 of the group consisting of hydroxy-terminated and chloroformate-terminated polyethers, polyformals, polyesters, aliphatic polycarbonates, and poly(etherurethanes) and (C) phosgene, the final elastic polymer being one in which the bisphenol units are present in an amount corresponding to 15–17 weight percent of the final polymer.

3,287,443

PREPARATION OF BLENDS OF VINYL CHLORIDE RESINS AND GRAFT COPOLYMERS OF STYRENE, ACRYLONITRILE AND METHYL METHACRYLATE ONTO DIENE POLYMERS

Kazuo Saito, Masaaki Yoshino, and Shunichi Yoshioka, Kobe, Japan, assignors to Kanegafuchi Chemical Industry Company, Limited, Osaka, Japan, a corporation of Japan

No Drawing. Filed Dec. 16, 1963, Ser. No. 330,642
Claims priority, application Japan, Dec. 24, 1962, 37/58,681; May 17, 1963, 38/24,419
6 Claims. (Cl. 260—876)

1. A method of manufacturing compositions of the vinyl chloride series which comprises utilizing an aqueous dispersion of polymer particles selected from the group consisting of a homopolymer of butadiene-1,3 and copolymers consisting of at least 70% by weight of butadiene-1,3 and up to 30% by weight of monoethylenically unsaturated compounds copolymerizable therewith, at least 80% by weight of the dispersion particles of the polymer having a particle diameter of from 0.02 to 0.2 microns; polymerizing a monomeric mixture in the aqueous dispersion at a pH of from 4.0 to 9.5 and at weight ratios of 80 to 30 parts monomeric mixture to 20 to 70 parts of the particles in the system, the monomeric mixture consisting of 10% to 50% by weight acrylonitrile monomer, 30% to 80% by weight vinyl aromatic hydrocarbon monomer, and 10% to 45% by weight methyl methacrylate monomer; and admixing 10 to 40 parts by weight of the obtained graft polymerization product with 90 to 60 parts by weight of resin of the vinyl chloride series which is selected from the group consisting of homopolymers of vinyl chloride and copolymerization products of at least 70% by weight vinyl chloride and up to 30% by weight monomers of ethylenically unsaturated compounds copolymerizable therewith.

3,287,444

PRODUCTION OF THERMOPLASTIC POLYMERIC MATERIALS

Kenneth Stafford Ennor, Welwyn, and Brian Philip Griffin, Welwyn Garden City, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Dec. 3, 1962, Ser. No. 241,567
Claims priority, application Great Britain, Dec. 28, 1961, 44,008/61
1 Claim. (Cl. 260—879)

Polymethyl methacrylate composition particles, which are substantially spherical in shape and have a weight average particle size of 50 to 500 microns, having reduced tendencies to craze on exposure to aqueous detergents, produced by a suspension polymerization process which comprises stirring methyl methacrylate containing from 0 to 10% by weight of ethyl acrylate in an aqueous phase containing a dispersing agent to form a suspension of droplets of methyl methacrylate in said aqueous phase, there also being present in intimate contact with the suspended monomeric constituents of the system a polymeric material which is selected from the group consisting of polybutadiene homopolymer and rubbery copolymers of butadiene-1,3 with copolymerizable monoethylenically unsaturated monomers, said polymeric material being at least 50% insoluble in methyl ethyl ketone at 20° C. for 24 hours and forming less than 50% by weight of the combined weights of the said polymeric material, methyl methacrylate and ethyl acrylate and maintaining said suspended monomer under polymerization conditions whereby polymerization proceeds within the monomer droplets until polymerization of the monomer is substantially complete.

3,287,445

IMPACT-RESISTANT GRAFT POLYMER OF STYRENE ONTO A POLYMERIC p-ISOPROPYL-2-METHYLSTYRENE/ALKYL ACRYLATE SUBSTRATE

Karl-Heinz Ott, Cologne-Stammheim, Karl-Heinrich Knapp, Leverkusen, Harry Rohr, Cologne, and Karl Dinges, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Dec. 17, 1963, Ser. No. 331,093
Claims priority, application Germany, Dec. 22, 1962, F 38,631
6 Claims. (Cl. 260—881)

1. A process for the production of an impact-resistant thermoplastic graft copolymer which comprises polymerizing in the presence of a free radical forming monomeric catalyst (A) 5 to 30% by weight, based on solids content, of an emulsion of a saturated copolymer grafting substratum of 1 to 30% by weight of p-isopropyl-α-methylstyrene and 99 to 70% by weight of an ester selected from the group consisting of alkylacrylate having 2–10 carbon atoms in the alkyl group and alkylmethacrylate having 3–10 carbon atoms in the alkyl group, and (B) 95 to 70% by weight, based on solids content, of at least one monomer selected from the group consisting of styrene, α-methylstyrene, styrene alkylated on the nucleus, halogenated styrene and mixtures of said styrenes with up to about 30% by weight of at least one member selected from the group consisting of acrylonitrile and methacrylonitrile, the p-isopropyl-α-methylstyrene content of said grafting substratum being in such proportion that said graft copolymer contains at least 0.3% by weight thereof.

3,287,446

HIGHLY TRANSPARENT COMPOSITE FILM COMPRISING DIFFERING VINYLIDENE CHLORIDE COPOLYMERS

Walter T. Koch, Drexel Hill, Pa., assignor, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware

No Drawing. Filed Apr. 17, 1963, Ser. No. 273,576
9 Claims. (Cl. 260—898)

5. A method of preparing a coating composition for clear organic films comprising copolymerizing from about 92 to 99% by weight of vinylidene chloride and at least one other monomer copolymerizable therewith in an emulsion polymerization reaction, drying the reacted emulsion polymerization mixture, and introducing the dried residue of said emulsion polymerization comprising solid resin particles having a size of from 0.1 to about 5 microns into a coating lacquer which contains as the film-forming ingredient a copolymer of from about 75 to less than about 92% by weight of vinylidene chloride and at least one other monomer copolymerizable therewith, said residue incorporated into said lacquer in an amount of about 0.2 to 2% based on the weight of the coating composition.

8. The method of claim 5 wherein the monomer copolymerizable with vinylidene chloride is acrylonitrile.

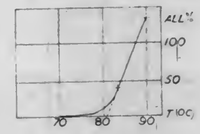
3,287,447

POLYVINYL CHLORIDE COMPOSITIONS

Alphonse Faure, Lyon, France, assignor to Rhone-Poulenc S.A., Paris, France, a French body corporate

Filed Feb. 24, 1964, Ser. No. 349,527
Claims priority, application France, Feb. 22, 1963, 925,740; Apr. 8, 1963, 930,771
7 Claims. (Cl. 260—899)

1. Polyvinyl chloride compositions comprising a homogenous mixture of 2 to 95% by weight of polyvinyl chloride prepared by the polymerization of vinyl chloride at 40° to 80° C. and 98 to 5% by weight of polyvinyl chloride prepared by the polymerization of vinyl chloride at —30° to 0° C., both the said polyvinyl chlorides having an AFNOR viscosity number between 80 and 600.



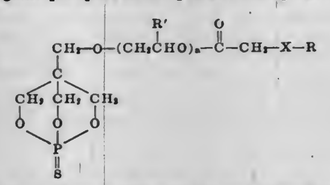
3,287,448

ESTERS OF 1-HYDROXYMETHYL-4-PHOSPHA-3,5,8-TRIOXABICYCLO[2.2.2]OCTANE - 4 - SULFIDE AND ITS ALKOXYLATED DERIVATIVES

Rudi F. W. Ratz, Hamden, Conn., assignor to Olin Mathieson Chemical Corporation, New Haven, Conn., a corporation of Virginia

No Drawing. Filed Apr. 22, 1963, Ser. No. 274,798
10 Claims. (Cl. 260—937)

1. Organic phosphorus compounds having the formula



wherein *n* is an integer from 0–10, and wherein X is selected from the class consisting of oxygen and sulfur, and wherein R is selected from the class consisting of phenyl, phenyl having a lower alkyl substituent, halogenated phenyl, nitrated phenyl, cyanophenyl, aminophenyl and chlorosulfonylphenyl, and wherein R' is selected from the class consisting of hydrogen and a methyl group.

3,287,449

PREPARATION OF ARYL PHOSPHITES

Charles F. Baranauckas and Irving Gordon, Niagara Falls, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Nov. 30, 1962, Ser. No. 241,164
5 Claims. (Cl. 260—976)

1. A process for preparing a triaryl phosphite, wherein the aryl radicals are the same, which comprises heating a phenol having from 6 to 18 carbon atoms to a temperature from about 75 degrees below the boiling point to the boiling point of said phenol, passing said phenol and a trivalent phosphorus chloride having the formula

$$R_xPCl_{(3-x)}$$

wherein R is a hydrocarbon aryl radical having from 6 to 18 carbon atoms and *x* is 0 to 2, through a zone maintained at a temperature from about 75 degrees below the boiling point to the boiling point of the phenol, whereby a product substantially free of chlorine is obtained.

3,287,450

CERTAIN MORPHOLINO-SUBSTITUTED 4-KETO-1,2,3,4-TETRAHYDROQUINOLINES

James W. Bolger, Canoga Park, Calif., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

No Drawing. Filed Aug. 19, 1964, Ser. No. 390,746
2 Claims. (Cl. 260—247.5)

1. 4-keto-1-lower alkyl-3-morpholinomethyl-1,2,3,4-tetrahydroquinoline.

3,287,451
PROCESS FOR THE PREPARATION OF 2,3-DICHLOROPYRAZINE

Adolfo Carrara, Anselmo Leone, and Danilo Fabris, Turin, Italy, assignors to Società Farmaceutici Italia, Milan, Italy, a corporation of Italy

No Drawing. Filed Nov. 9, 1964, Ser. No. 409,980
Claims priority, application Italy, Nov. 11, 1963, 23,058/63
5 Claims. (Cl. 260—250)

1. A process for the preparation of 2,3-dichloropyrazine, which comprises reacting piperazine hexahydrate dissolved in water with phosgene, in the presence of an acid acceptor, in a chlorinated lower aliphatic hydrocarbon at a temperature between −10° and +20° C., preferably between −5° and 0° C., to yield N,N'-bis-chlorocarbonyl-piperazine which in turn is reacted with chlorine at a temperature of from 150° to 170° C., in the presence of catalytic amounts of a compound selected from the group consisting of aluminum chloride, ferric chloride and antimony chloride, for 9 to 15 hours to yield 2,3-dichloropyrazine.

3,287,452
SYNTHESIS OF ADENINE AND OF 4,5-DICYANOIMIDAZOLE

Hachiro Wakamatsu, Tokyo, Tadaomi Saito, Kawasaki-shi, Kanagawa-ken, Izumi Kumashiro, Yokohama-shi, Kanagawa-ken, and Tadao Takenishi and Yoshitaka Yamada, Tokyo, Japan, assignors to Ajinomoto Co., Inc., Tokyo, Japan

No Drawing. Filed Mar. 17, 1964, Ser. No. 352,634
Claims priority, application Japan, Sept. 5, 1963, 38/46,584; Mar. 20, 1963, 38/13,284; Feb. 26, 1964, 39/10,145
13 Claims. (Cl. 260—252)

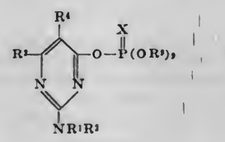
1. A method of producing adenine and 4,5-dicyanoimidazole which comprises reacting a source of hydrogen cyanide with ammonia in the liquid state in the absence of an amount of water greater than ten mole percent of the combined amounts of said hydrogen cyanide and said ammonia at a temperature of 60° to 150° C., the mole ratio of said ammonia to said hydrogen cyanide being at least two to one.

3,287,453
AMINOPYRIMIDINE PHOSPHATE AND THIOPHOSPHATE DERIVATIVES

Gordon Victor McHattie, Macclesfield, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Mar. 19, 1964, Ser. No. 353,242
Claims priority, application Great Britain, Mar. 28, 1963, 12,338/63
6 Claims. (Cl. 260—256.5)

1. A pyrimidine derivative of the formula



wherein R^1, R^2 and R^5 are selected from alkyl and alkenyl of up to 6 carbon atoms, or wherein the $-NR^1R^2$ group is an alkyleneimino ring of 5 to 6 ring atoms, wherein R^3 and R^4 are selected from hydrogen and alkyl and alkenyl of up to 6 carbon atoms, and wherein X is selected from oxygen and sulphur.

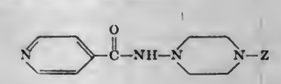
4. O,O-diethyl - O - (5-n-butyl - 2 - dimethylamino-4-methylpyrimid-6-yl) phosphorothionate.

3,287,454
1-SUBSTITUTED 4-ISONICOTINOYLAMINO-PIPERAZINES

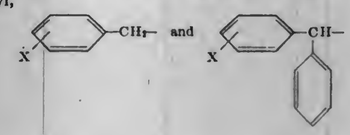
Calvin H. Lovell, Morton Grove, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Nov. 4, 1964, Ser. No. 408,729
5 Claims. (Cl. 260—268)

1. A compound of the formula



wherein Z is selected from the group consisting of methyl, phenyl,



wherein X is selected from the group consisting of hydrogen, chlorine, methyl, and methoxy.

3,287,455
METAL PYRIDINE COMPOUNDS

Irving Malkin, University Heights, and Kirman Taylor and Frank W. Hengeveld, Painesville, Ohio, assignors to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed Dec. 3, 1962, Ser. No. 241,555
10 Claims. (Cl. 260—270)

1. Trichlorotris(4-vinylpyridine)chromium III.

3,287,456
BISMUTH IODIDE COMPLEX OF SALTS OF RACEMIC 2-DEHYDROEMETINE

Arnold Brossi, Verona, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed July 13, 1964, Ser. No. 382,340
Claims priority, applications Switzerland, July 22, 1963 and June 2, 1964, 9,118/63
1 Claim. (Cl. 260—270)

The bismuth iodide complex of the hydroiodic acid addition salt of racemic 2-dehydroemetine.

3,287,457
PROCESS FOR MANUFACTURING BETA PHASE QUINACRIDONE

James F. Higgins, Livingston, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Jan. 10, 1964, Ser. No. 336,959
4 Claims. (Cl. 260—279)

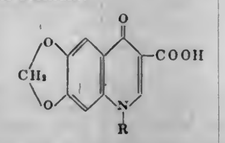
1. A method for preparing beta phase quinacridone which comprises dispersing 6,13-dihydroquinacridone in a solution comprising, by weight, 52 to 59% water, 31 to 39% methanol and 8 to 11% sodium hydroxide and effecting reaction between the said dihydroquinacridone and sodium hydroxide while maintaining the temperature of the solution below about 40° C., adding an oxidizing agent selected from the group of nitro compounds consisting of a salt of nitrotoluene sulfonic acid, nitrophthalic acid, and nitrobenzene-m-sulfonic acid and nitrobenzene to the solution and heating said solution and recovering beta phase quinacridone.

3,287,458
1,4 - DIHYDRO-1-LOWER ALKYL-6,7-METHYLENEDIOXY - 4 - OXO - 3 - QUINOLINE-CARBOXYLIC ACID

Daniel Kaminsky, East Paterson, and Robert I. Meltzer, Rockaway, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed Apr. 27, 1966, Ser. No. 546,158
14 Claims. (Cl. 260—287)

1. A compound selected from the group consisting of those having the formula:



wherein R is a member of the group consisting of lower alkyl, cycloalkyl, hydroxy lower alkyl, phenyl lower alkyl, carboxy lower alkyl and lower alkenyl and the alkali metal salts thereof.

13. 1 - (2 - hydroxyethyl) - 1,4 - dihydro - 6,7 - methylenedioxy-4-oxo-3-quinoline-carboxylic acid.

3,287,459
CARBOSTYRILS, COUMARINES AND THIOCOUMARINES

Hans Willi Zimmer, Cincinnati, Ohio, and James M. Holbert, Lookout Mountain, Tenn., assignors to The Chattanooga Medicine Company, Chattanooga, Tenn., a corporation of Tennessee

No Drawing. Filed Oct. 23, 1961, Ser. No. 147,065
4 Claims. (Cl. 260—289)

1. A compound selected from the group consisting of 3 - (2 - hydroxyethyl) - carbostyril, 3-(2-hydroxyethyl)-4-bromocoumarine, 3-(2-hydroxyethyl)-4-bromothiocoumarine, 3-(2-hydroxyethyl)-4-bromocarbostyril, and 3-(2-bromoethyl)-carbostyril.

3,287,460
HYDROGENATION PROCESS FOR THE PREPARATION OF PIPERIDYL-(4)-ETHERS

Max Thiel and Kurt Stach, Mannheim, Germany, assignors to C. F. Boehringer & Soehne G.m.b.H., Mannheim-Waldhof, Germany, a corporation of Germany

No Drawing. Filed Dec. 28, 1962, Ser. No. 247,842
Claims priority, application Germany, Jan. 3, 1962, B 65,401
13 Claims. (Cl. 260—293.3)

1. The process of preparing compounds having the formula



wherein R represents alkyl having from 2 to 3 carbon atoms, which comprises hydrogenating a member selected from the group consisting of pyridyl-(4)-ethers and the corresponding N-oxides, the free base having the formula



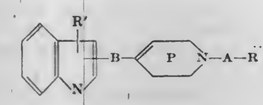
wherein R is as above defined in the presence of a ruthenium catalyst.

3,287,461
INDOLYLETHYLPIPERIDEINE DERIVATIVES

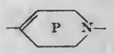
Allan Poe Gray, Decatur, Ill., assignor to Neisler Laboratories, Inc., Decatur, Ill., a corporation of Delaware

No Drawing. Original application Apr. 1, 1960, Ser. No. 19,157, now Patent No. 3,136,770, dated June 9, 1964. Divided and this application Aug. 30, 1963, Ser. No. 305,863
3 Claims. (Cl. 260—296)

1. A compound selected from the group consisting of (I) compounds of the formula:



wherein R' is a pyrrole substituent selected from the group consisting of hydrogen and lower alkyl of from 1 to 5 carbon atoms; B is 1,2-lower-alkylene of up to 5 carbon atoms;



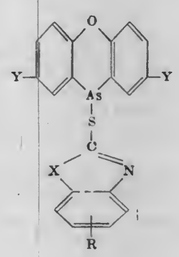
is the piperideine radical; A is alkylene containing a total of up to 10 carbon atoms and R is an unsubstituted aromatic carbocyclic containing a total of up to 10 nuclear carbon atoms; and (II) pharmaceutically acceptable acid addition salts of (I).

3,287,462
CERTAIN 10-BENZAZOLYLTHIO PHENOXARSINE DERIVATIVES

Joseph E. Dunbar, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 3, 1965, Ser. No. 461,166
6 Claims. (Cl. 260—300)

1. The compound corresponding to the formula



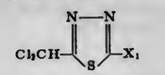
wherein each Y represents a member of the group consisting of chloro, hydrogen and methyl; X represents a member of the group consisting of oxygen, imino and sulfur; and R represents a member of the group consisting of halo, alkyl, alkoxy, phenylmonohalophenyl, monoalkylphenyl and monoalkoxyphenyl, in which halo represents a member of the group consisting of chlorine, bromine and fluorine, and in which alkyl and alkoxy represent an alkyl or alkoxy group containing from 1 to 4 carbon atoms, inclusive.

3,287,463
CERTAIN 3-CHLOROMETHYL- AND 3-PHENYL-1,3,4-THIADIAZOLES

Kurt Rufenacht, Basel, Switzerland, assignor to J. R. Geigy A.-G., Basel, Switzerland

No Drawing. Filed Sept. 27, 1963, Ser. No. 311,952
Claims priority, application Switzerland, Oct. 4, 1962, 11,656/62
3 Claims. (Cl. 260—302)

1. A compound of the formula



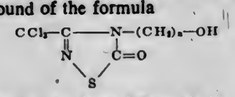
wherein X_1 is a member selected from the group consisting of lower alkylthio, lower alkoxy, alkenyloxy with from 3 to 4 carbon atoms and alkenylthio with from 3 to 4 carbon atoms.

3,287,464
NEW THIADIAZOLINONE COMPOUNDS AND PROCESSES FOR THEIR PRODUCTION

Venkatachala L. Narayanan, Highland Park, and Jack Bernstein, New Brunswick, N.J., assignors to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

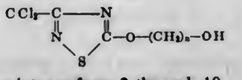
No Drawing. Filed Aug. 12, 1965, Ser. No. 479,281
7 Claims. (Cl. 260—302)

1. A compound of the formula



wherein n is an integer from 2 through 10.

3. A compound of the formula



wherein n is an integer from 2 through 10.

5. A process for preparing a compound of claim 1 which comprises heating a compound of claim 3.

7. A process for preparing a compound of claim 3, which comprises interacting 3-trichloromethyl-5-chloro-1,2,4-thiadiazole with a compound of the formula

$$HO-(CH_2)_n-OH$$

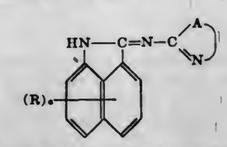
wherein n is an integer from 2 through 10.

3,287,465
CERTAIN 2-HETEROCYCLIC IMINOBENZ[c,d] INDOLE DYESTUFFS

Alfred Brack, Harald Gleinig, and Roderich Raue, Leverkusen, and Helmut Kleiner, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Mar. 13, 1964, Ser. No. 351,836
Claims priority, application Germany, Apr. 20, 1963, F 39,535
9 Claims. (Cl. 260—305)

1. A dyestuff of the formula



wherein R stands for a member selected from the class consisting of hydrogen, halogen, lower alkyl, lower alkoxy, lower alkylthio, nitro, hydroxyl, ureido, lower alkyl substituted ureido, phenylureido, lower alkylsulphonylamino, lower alkyl phenylsulphonylamino, lower alkylsulphonyl, carbonamide and sulphonamide groups, n stands for an integer ranging from 1 to 2, and



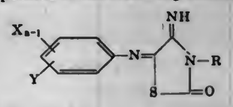
stands for a monovalent heterocyclic radical selected from the group consisting of thiazolyl, benzthiazolyl, triazolyl, benzoxazolyl, benzimidazolyl, pyrimidinyl, pyridinyl, quinolinyl, iso-quinolinyl, thiadiazolyl, and any of said heterocyclic radicals substituted 1–2 times with a substituent from the group consisting of chloro, bromo, lower alkyl, lower alkoxy, lower alkylsulphonyl, nitro, and phenyl.

3,287,466
CERTAIN 3-ALKYL-4-IMINO-5-(ARYLIMINO)-2-THIAZOLIDINONE COMPOUNDS

Hein L. Klopping, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 12, 1964, Ser. No. 403,373
9 Claims. (Cl. 260—306.7)

1. The compounds of the following formula:



wherein

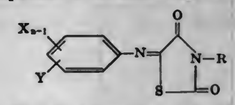
R is selected from the group consisting of hydrogen, and alkyl of one through four carbon atoms; X is halogen, and n is a positive integer less than 3; and Y is selected from the group consisting of hydrogen, halogens, alkyl of 1 through 4 carbon atoms, alkoxy of 1 through 4 carbon atoms, trifluoromethyl and nitro.

3,287,467
CERTAIN 3-LOWER ALKYL-5-(ARYLIMINO)-2,4-THIAZOLIDINEDIONE COMPOUNDS

Henry J. Gerjovich, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 19, 1965, Ser. No. 473,201
13 Claims. (Cl. 260—306.7)

1. The compounds of the following formula:



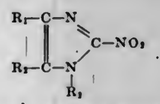
wherein R is alkyl of one through four carbon atoms; X is halogen; n is a positive integer less than 3; and Y is hydrogen, halogen, alkyl of 1 through 4 carbon atoms, alkoxy of 1 through 4 carbon atoms, trifluoromethyl or nitro.

3,287,468
2-NITROIMIDAZOLES AND PROCESS

Alden Gamaliel Beaman, North Caldwell, and Robert Duschinsky, Essex Fells, N.J., and William Paul Tautz, New York, N.Y., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

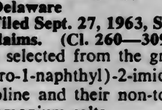
No Drawing. Filed Nov. 17, 1964, Ser. No. 411,714
10 Claims. (Cl. 260—309)

1. A process for the preparation of a compound of the formula:



(I)

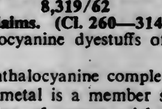
wherein R_1, R_2, and R_3 are each selected from the group consisting of hydrogen and lower alkyl, comprising reacting a compound selected from the group consisting of a compound of the formula:



(II)

wherein R_1, R_2, and R_3 have the above meaning, and an acid addition salt thereof, with an alkali metal nitrite in an aqueous reaction medium having a pH less than about 8 at a temperature above about 40° C. when the pH is between about 2 and about 8, and below about 50° C. when the pH is less than about 2 to form a compound of Formula I above.

6. A process for the preparation of a compound of the formula:



(I)

wherein R_1, R_2, and R_3 are each selected from the group consisting of hydrogen and lower alkyl, comprising reacting a compound selected from the group consisting of a compound of the formula:



(II)

wherein R_1 to R_3 have the above meaning, and an acid addition salt thereof, with an alkali metal nitrite in the presence of a water soluble copper salt having an anion selected from the group consisting of sulfate and nitrate in an aqueous reaction medium having a pH less than about 8 to form a compound of Formula I above.

8. A compound selected from the group consisting of (*a*) a compound of the formula:

wherein R_2 and R_3 are each selected from the group consisting of hydrogen and lower alkyl, and (*b*) when R_3 is hydrogen, a salt of (*a*) with a strong pharmaceutically acceptable base.

3,287,469
NAPHTHYL- AND INDANYLIMIDAZOLINES

John Harvey, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 27, 1963, Ser. No. 312,837
7 Claims. (Cl. 260—309.6)

1. A compound selected from the group consisting of 2-(5,6,7,8-tetrahydro-1-naphthyl)-2-imidazoline and 2-(4-indanyl)-2-imidazoline and their non-toxic acid addition and quaternary ammonium salts.

3,287,470
METAL PHTHALOCYANINE DYESTUFFS

André Pugin, Riehen, near Basel, and Jean Rody, Basel, Switzerland, assignors to J. R. Geigy A.-G., Basel, Switzerland

No Drawing. Filed July 1, 1963, Ser. No. 292,104
Claims priority, application Switzerland, July 10, 1962, 8,319/62
7 Claims. (Cl. 260—314.5)

1. Metal phthalocyanine dyestuffs of the formula wherein

Pc is a metal phthalocyanine complex dyestuff radical in which the metal is a member selected from the group consisting of copper, nickel and cobalt,

each of A_1, A_2, A_3 and A_4, independently, is alkyl with from 1 to 12 carbon atoms,

each of a, b, c and d, independently, is an integer ranging from 1 to 2,

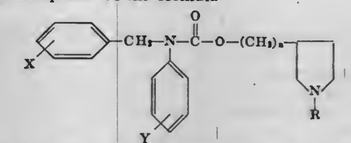
each of m, n, p, q, r, s, t and u, taken independently, is an integer ranging from 2 to 3.

3,287,471
PYRROLIDINYL N-PHENYL-N-BENZYLCARBAMATES

John W. Cusic, Skokie, and Henry W. Sause, Deerfield, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed May 5, 1964, Ser. No. 365,196
6 Claims. (Cl. 260—326.3)

1. A compound of the formula

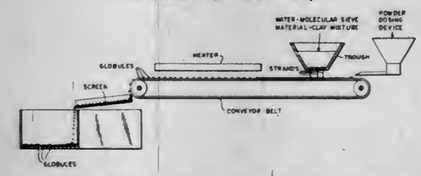


wherein X is selected from the group consisting of hydrogen, methyl, and halogen; Y is selected from the group consisting of hydrogen, methyl, and halogen; n is a whole number between 0 and 1 inclusive; and R is lower alkyl.

3,287,472
METHOD OF MAKING MOLECULAR SIEVES

Friedrich Wolf, Leipzig, Helmut Fürtig, Jessnitz, and Paul Blühmke and Dieter Borchhardt, Wolfen, Germany, assignors to VEB Farbenfabrik Wolfen, Wolfen, Kreis Bitterfeld, Germany

Filed Apr. 13, 1964, Ser. No. 360,475
2 Claims. (Cl. 264—13)



1. Method of making spherically shaped bonded zeolitic molecular sieves using clay as bonding agent, which comprises mixing water, molecular sieve material and clay in such proportions that a viscous mixture is formed which is in flowing condition wherein the mixture behaves like a liquid under slight mechanical stress or gravity, and like a solid body upon impact and in a state of rest; and causing the thus formed viscous mixture to flow through apertures of about 2–10 mm. diameter at a rate such that continuous strands flow through said apertures onto a moving surface covered with a pulverulent medium, the speed of movement of said surface being such that the strands after reaching the same are divided into globules which are covered by the pulverulent medium, whereby independent globules of substantially constant diameter are formed.

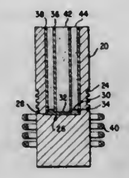
3,287,473
METHOD OF MOLDING BI-CELLULAR THERMOELECTRIC COUPLES

Clarence A. Boyce, Jr., and Michael E. Wasilisin, Baltimore, Md., assignors to Martin-Marietta Corporation, Baltimore, Md., a corporation of Maryland

Filed Dec. 26, 1961, Ser. No. 161,994
4 Claims. (Cl. 264—25)

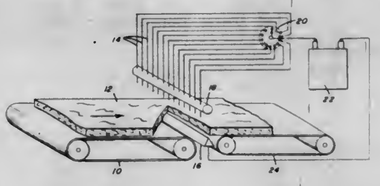
4. A method of forming a thermoelectric couple comprising the steps of positioning insulation means on a metallic base member to form a pair of chambers there-

with, placing the resulting assembly within a crucible, depositing thermoelectric materials in powdered form in said chambers, heating said crucible to effect a melting of said materials, and moving said crucible relative to the heat source to cause solidification of said thermo-



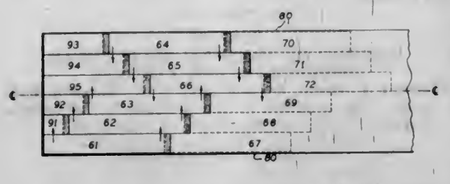
electric materials from said base member outwardly whereby said thermoelectric materials are bonded to said base member and the impurities in said thermoelectric materials are segregated in the portion of said thermoelectric materials remote from said base member.

3,287,474
METHOD OF PREPARING NON-WOVEN FABRICS
Robert C. Harrington, Jr., Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Aug. 20, 1963, Ser. No. 303,321
5 Claims. (Cl. 264—25)



1. A method of preparing a bonded non-woven fibrous sheet comprising the steps of forming a heat fusible binder material and fibers into a mat, placing said mat between at least two high voltage electrodes, and producing high voltage electrical sparks between said high voltage electrodes and through said web thereby inducing internal heating of said web so that the heat fusible binder material is cured thus producing a bonded non-woven fibrous sheet.

3,287,475
METHOD OF CONSTRUCTING CONTINUOUSLY REINFORCED CONCRETE SLABS
Adolph C. Weber, Creve Coeur, Mo., assignor to Laclede Steel Company, St. Louis, Mo., a corporation of Missouri
Filed May 6, 1963, Ser. No. 278,167
6 Claims. (Cl. 264—34)



1. In the art of constructing substantially continuously longitudinally reinforced concrete slabs, the method comprising:
(a) erecting spaced side forms for confining concrete;
(b) providing a plurality of flat wire mats which are substantially longer than they are wide, whose width is less than the distance between the side forms, and wherein the longitudinal wires are deformed to provide spaced protuberances throughout their length;
(c) laying the mats between the side forms with their longer dimension substantially parallel with the side forms so that each mat overlaps its sidewise and endwise neighbors, the overlapping ends of endwise neighbors being lapped sidewise by a neighbor of both; and, while the mats are thus overlapped and lapped, pouring and finishing a layer of concrete on and above them.

3,287,476
CERAMIC PRODUCT AND PROCESS
Francis H. Snyder, Newtown, Conn., assignor, by mesne assignments, to Tredco, Ltd., Houston, Tex., a limited partnership of Texas
No Drawing. Filed Mar. 10, 1961, Ser. No. 94,673
2 Claims. (Cl. 264—36)

1. The method of repairing discontinuities in ceramic ware which comprises applying to the opening between the two portions of the article to be repaired a quantity of moist compatible clay, said clay having intimately distributed within its body, a small amount of glass fiber staple, firmly pressing said clay into intimate contact with the portions to which its applied, drying the assembly and firing it.

3,287,477
PROCESS AND APPARATUS FOR EXTRUDING A FOAMED PLASTIC
Paul E. Vesilind, Beaver, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
Filed June 17, 1963, Ser. No. 288,309
14 Claims. (Cl. 264—53)



1. An extrusion process comprising helically and longitudinally advancing a mass of plastic material through a cylindrical zone having a uniform diameter, whereupon said mass becomes molten due to the pressure and working thereon, dividing said mass into a plurality of small streams, said streams having a velocity which is greater than the velocity of the mass prior to being divided, injecting an additive into said streams, thereafter combining said streams, and forming said mass into a predetermined configuration.

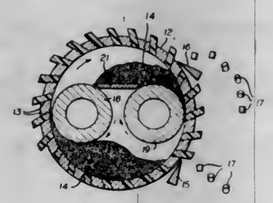
3,287,478
METHOD OF SINTERING ALUMINUM NITRIDE REFRACTORIES
Michael S. Pallen and George T. Poglud, Milwaukee, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
No Drawing. Filed Oct. 30, 1964, Ser. No. 407,848
14 Claims. (Cl. 264—63)

1. The method of producing refractory bodies comprising the steps of:
(a) producing a pressed form of the refractory body desired from powders selected from the group consisting of aluminum nitride and solid solution of aluminum nitride-silicon carbide and containing from 2.5 to 20 weight percent water;
(b) heating said body slowly in an inert atmosphere, until the water has been driven from said body;
(c) further heating said body in said inert atmosphere to a final temperature in the range of from about 1600 to 2200° C;
(d) maintaining said final temperature for a period of from five mintues to two hours;
(e) cooling said body; and
(f) removing a thin layer of powder which remains on the surface of the body after sintering.

3,287,479
METHOD OF PREPARING A WOOD PARTICLE BOARD
Edward A. Naudain, Newark, Del., assignor to Hercules Incorporated, a corporation of Delaware
No Drawing. Filed Sept. 13, 1963, Ser. No. 308,697
3 Claims. (Cl. 264—122)

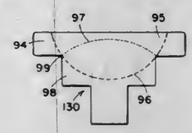
1. The method of preparing a wood particle board from porous wood particles, which comprises coating the wood particles first with a thermoplastic resin in an amount in the range of about 1% to about 10% of the weight of the particles sufficient to size the particles, heating to a temperature in the range of about 200° F. to about 450° F. to melt the resin and drive off occluded water until the water content of the particles is reduced to less than about 5%, cooling to a temperature below the melting point of said resin to obtain sized wood particles of substantially reduced porosity, coating said sized wood particles with a thermosetting resin in an amount in the range of about 3 to 18% of the wood particles and heating the coated sized wood particles under compression at a temperature in the range of about 200° F. to about 400° F. until a pressed wood particle board is produced.

3,287,480
PELLETIZING PLASTICS
Harry Wechsler and Milton W. Kline, both of Leominster, Mass., assignors to The Borden Company, a corporation of New Jersey
Filed Mar. 31, 1964, Ser. No. 356,123
7 Claims. (Cl. 264—122)



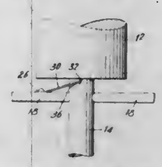
1. In compounding a powdered resin selected from a group consisting of polyvinyl chloride and copolymers of vinyl chloride and an ethenoid comonomer with a chemically inert, substantially non-volatile liquid solvent serving as a plasticizer for the resin, the process which comprises:
(1) forming a mixture, in dry form, of about 100 parts of said resin and 5–60 parts of the plasticizer,
(2) compressing said mixture, at a temperature of incipient fusion of said resin in contact with said plasticizer, into shape-retaining pellets that have an overall bulk density at least about ⅓ higher than said mixture before said compression, and
(3) heating said pellets at a temperature of fluxing until the resulting mass is substantially uniform.

3,287,481
PROCESS FOR MOLDING ARTICLES HAVING PEARLESCENT LUSTER
George Trojanowski, East Meadow, and Lawrence Brandt, Huntington, N.Y.; said George Trojanowski, now by Judicial change of name, George Trojan, assignors to Oceana International, Inc., New York, N.Y., a corporation of New York
Original application Dec. 5, 1960, Ser. No. 73,774, now Patent No. 3,216,060, dated Nov. 9, 1956. Divided and this application Sept. 24, 1964, Ser. No. 405,640
2 Claims. (Cl. 264—139)



1. Process for the manufacture of articles having a pearlescent luster which comprises providing a mold part having therein a cavity corresponding to the size of the article to be molded and having at its open end an enlargement in the form of a flange of such extent that the lustrous region within the molded article to be formed in said cavity will extend to at least the actual periphery of said article when finished, molding an addition type resin containing a pearlescence-producing substance therein in said cavity, removing the molded article from the mold, and cutting away the flange material at the face of the article to expose a face having a pearlescent luster over the whole area thereof.

3,287,482
PARISON CUTTING METHOD AND APPARATUS
Arthur H. Wnek, Whippany, Stowe Richards, Stanton, Herbert M. Case, Somerville, and Bruce G. Rook, Wyckoff, N.J., assignors to Union Carbide Corporation, a corporation of New York
Filed Feb. 12, 1963, Ser. No. 258,016
7 Claims. (Cl. 264—150)

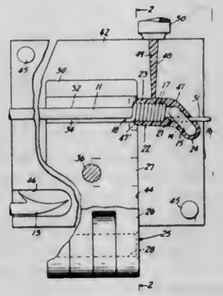


1. In a molding process in which a parison is continuously extruded from a die, cut with a cutting blade from said die and grasped by lowering jaws for lowering to a mold the improvement comprising lowering at least a portion of the blade in concert with said jaws while resiliently maintaining the cutting edge of said blade in contact with the face of said die throughout the cutting operation, maintaining said blade substantially parallel to the direction of extrusion to present a narrow edge to the oncoming extrudate as it is cut and providing an aperture in said blade below the cutting edge of sufficient area to allow the passage of said parison and thereby minimize the blockage of said die during said cutting step.

5. In a molding apparatus comprising a die adapted to continuously extrude a parison, a cutting blade for cutting said parison from said die and lowering jaws for grasping said parison and lowering it to a mold, said blade being mounted to lower in concert with said jaws, the improvement comprising means for resiliently maintaining the cutting edge of said blade in contact with the face of said die while moving said blade across the die face during the cutting operation and for maintaining said blade substantially parallel with the direction of extrusion, said blade

having an aperture below the cutting edge to permit passage of the extrudate therethrough and minimize the blockage of said die during said cutting operation.

3,287,483
METHOD OF PRODUCING SNELLED FISH HOOKS
Louis H. Morin, Bronx, N.Y., assignor of one-fourth to Madeline F. McGill, Denver, Colo., and one-fourth to J. R. Hanna, Bronxville, N.Y.
Filed Mar. 28, 1963, Ser. No. 268,766
7 Claims. (Cl. 264—161)



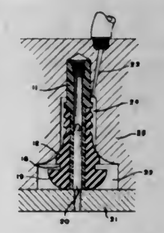
1. The method of producing snelled fish hooks, which comprises first rotating a fish hook in a holder to wind the snell on the shank of a fish hook adjacent an eye at one end of said shank, extending the windings on the fish hook beyond said holder, then moving a pair of molding dies into engagement with said holder and enveloping said eye and winding on said shank, then pressure injecting plastic material into a cavity of said dies to form a molded body of plastic material encapsulating said eye and snell winding, and then separating the dies and trimming the molded body to form a final end product.

3,287,484
METHOD OF MAKING CANDLES
Charles S. Justus, Alamo, Calif.
(494 Fensalir Ave., Pleasant Hill, Calif.)
Filed Sept. 3, 1964, Ser. No. 394,296
4 Claims. (Cl. 264—245)



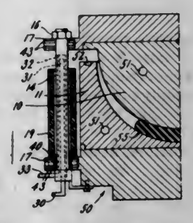
1. A method of making candles comprising the steps of heating an interior surface of a candle defining mold to a predetermined temperature, applying colored wax having a melting point less than said predetermined temperature to said surface in a predetermined pattern, introducing melted wax of a different color to said mold to fill same and form a candle therein, cooling said surface of said mold, and removing said candle from said mold.

3,287,485
METHOD OF PROVIDING A FLUID TIGHT SEAL BETWEEN TWO RIGID COMPONENTS
Georgie P. McCord, Oaklandon, Ind., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Original application Mar. 21, 1963, Ser. No. 266,922, now Patent No. 3,191,655, dated June 29, 1965. Divided and this application Sept. 19, 1963, Ser. No. 309,930
2 Claims. (Cl. 264—263)



1. The method of obtaining a fluid-tight seal between two rigid components, comprising
positioning a first rigid component and a cured elastomeric component in a mold cavity in annular contacting relationship one with the other and with an empty space constituting part of said mold cavity in annular contacting relationship with said elastomeric component,
injecting plastic material, capable of setting to a rigid condition at room temperature, into said empty space until it has filled same and has caused said elastomeric component to be tightly compressed against said first rigid component, and
causing the plastic material so injected to set to form the second rigid component.

3,287,486
MOLDING APPARATUS AND METHOD EMPLOYING THERMAL EXPANSION AND CONTRACTION
Herbert F. Jurgeleit, Oceanside, N.Y., and Max M. Austin, Granger, Ind., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 15, 1963, Ser. No. 272,969
27 Claims. (Cl. 264—325)

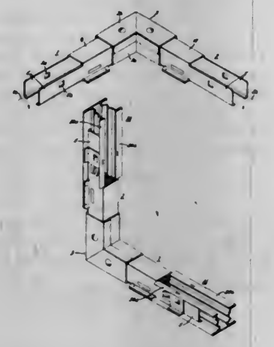


1. A pressing process comprising the steps of (1) heating in unison a first plurality of thermally responsive strain devices connecting a pair of pressing elements to elongate the devices, (2) taking up the gaps formed between a pressing element and the head portions of the devices of the first plurality in step (1), (3) cooling in unison the devices of the first plurality to reduce the elongation and press the pair of pressing elements towards each other, (4) heating in unison a second plurality of thermally responsive strain devices connecting the pair of pressing elements to elongate the devices, (5) taking up the gaps formed between a pressing element and the head portions of the devices of the second plurality in steps (3) and (4), (6) cooling in unison the devices of the second plurality to reduce the elongation and further press the pair of pressing elements towards each other.

11. A pressing apparatus comprising at least two pressing elements adapted to exert closing pressure, a plurality of sets of elongated thermally responsive strain devices, means for each set for heating the devics therof in unison, means adapted to control the heating means to heat the devices of a successive set after the devices of a preceding set have commenced cooling, and means to take up the gaps caused between head portions of the devices of a particular set and a pressing element by the thermal axial elongation of the devices of that particular set the thermal axial contraction of the devices of another set; whereby there is a continuous exertion of restraining pressure by cool devices to prevent retreat of the pressing elements from one another during heating of other devices.

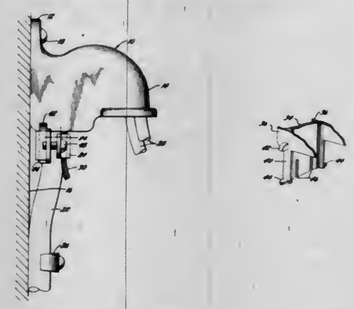
ELECTRICAL

3,287,487
UNIVERSAL BUSWAY ELBOW
Joseph A. Fehr, Jr., Simsbury, Conn., assignor to General Electric Company, a corporation of New York
Filed Feb. 28, 1964, Ser. No. 348,053
6 Claims. (Cl. 174—71)



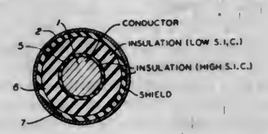
1. A universal busway elbow fitting comprising:
(a) a pair of socket assemblies,
(b) each of said assemblies comprising:
(i) an elongated metal enclosure mmeber having a substantially square internal transverse cross section,
(ii) a socket base mounted within said enclosure member and provided with a transverse positioning web of square configuration approximately equal to said internal square cross section,
(iii) a plurality of electrical sockets housed in one of said socket bases and an equal number of sockets housed in the other of said socket bases,
(c) a plurality of flexible insulated electrical conductors interconnecting corresponding sockets in both of said bases,
(d) a combined housing for said flexible conductors and clamping means for securing said metallic enclosure members in predetermined angular relationship comprising an open ended L shaped trough base member having a square channel cross section for receiving in each of its open ends a corresponding one of the adjacent end portions of said enclosure members, said combined housing and clamping means also comprising an L shaped cover for said base member and means for fastening said cover to said base member.

3,287,488
SERVICE CABLE ENTRANCE FITTING
Raymond F. Piasecki and Richard Samer, Hazlet, N.J., assignors to The Thomas & Betts Co., Incorporated, Elizabeth, N.J., a corporation of New Jersey
Filed Feb. 17, 1964, Ser. No. 345,504
4 Claims. (Cl. 174—81)



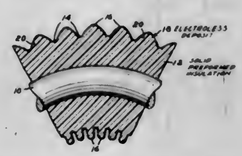
1. A service cable entrance fitting for non-metallic sheathed service entrance cable comprising a hood member of high impact plastic material having an internal partition extending in the plane thereof and partially dividing the interior of said hood member, said hood member having a wall engaging edge face extending normal thereto with one end portion thereof extending above the closed end of said hood member and having a key-hole opening therethrough adapted for receiving the head of a mounting screw therethrough whereby to hang said hood member on the shank thereof, said wall engaging edge face being recessed below said opening and terminating in a depending end portion laterally off-set from the marginal edge portions of said wall engaging edge face, a plurality of open ended slots formed inwardly of the depending end portion of said edge face whereby the opposite marginal portions thereof are adapted to flex under compression toward each other to snap between the bent end portions of a complimentary half of a U-shaped, adjustable split clamp, and a plurality of spaced projections integral with the opposite margins of said depending end portion adapted to co-act with the bent end portions of the clamp portion frictionally secured to said depending end portion for preventing endwise movement thereof relative to the depending end portion of said hood member.

3,287,489
INSULATED HIGH VOLTAGE CABLES
Andrew Hvizd, Jr., Ansonia, Conn., assignor to The Kerite Company, Seymour, Conn., a corporation of Connecticut
Filed Sept. 8, 1964, Ser. No. 394,703
6 Claims. (Cl. 174—102)



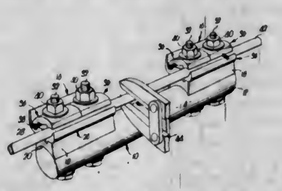
1. An insulated high voltage cable comprising the combination with a central core of metal of high conductivity and an outer metallic shield of high conductivity, of laminar insulation located between the core and the shield and including a thick layer of insulating material of specific inductive capacity not greater than 4.5, and a thin layer of insulating material of specific inductive capacity not less than 10 covering at least one face of said first-named layer of insulating material.

3,287,490
GROOVED COAXIAL CABLE
Malor Wright, Lexington, Mass., assignor to United-Carr Incorporated, Cambridge, Mass., a corporation of Delaware
Filed May 21, 1964, Ser. No. 369,198
1 Claim. (Cl. 174—102)



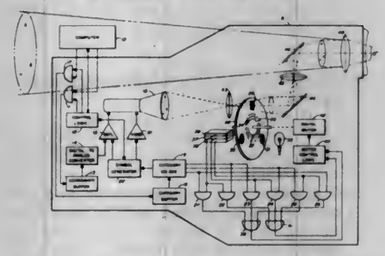
A coaxial cable comprising a flexible inner conductor, a solid dielectric of homogeneous polymeric material having convolutions preformed on its outer surface, said dielectric surrounding said inner conductor, and a continuous uninterrupted electroless deposit of a conductive material on the external surface of said dielectric.

3,287,491
INSULATED SECTIONALIZING SPACER
David C. Hubbard, Charles Clifton Cagle, Miller H. Fink, and Clarence H. Le Vee, all of Centralia, Mo., assignors to A. B. Chance Company, Boone County, Mo., a corporation of Missouri
Filed Jan. 27, 1964, Ser. No. 340,166
2 Claims. (Cl. 174—138)



1. Electrical transmission line sectionalizing apparatus for facilitating coupling of electrically conductive means to opposed ends of the sectionalized line, said apparatus comprising:
an elongated, rigid body of synthetic resin material, said body having a convex outer surface;
a pair of electrically conductive anchoring brackets spaced along the body, each bracket having an irregular surface adapted to receive a respective end of said line and of the conductor means thereon to facilitate gripping thereof, each irregular surface being configured to present a pair of longitudinally extending, transversely arcuate grooves, each groove having a plurality of longitudinally extending serrations therein;
a spacer block for each of said brackets respectively, each block being disposed between the corresponding bracket and said outer surface of the body, each block having a concave surface for complementally engaging the convex surface of said body;
a pair of fasteners for each of said brackets rigidly securing the respective brackets and corresponding spacers to the body, said fasteners projecting outwardly beyond the irregular surfaces of the brackets;
a first clamp for each of said brackets operably coupled with one of the fasteners of a respective bracket for operating said first clamps, each first clamp having a gripping surface thereon disposed to cooperate with the irregular surface on the corresponding brackets, the first clamps being adapted to frictionally hold corresponding ends of said line and to electrically and mechanically couple the ends with the respective brackets; and
a second clamp for each of said brackets operably coupled with the other of said fasteners of the respective bracket for operating said second clamps, each second clamp having a gripping surface thereon disposed to cooperate with said irregular surface on the corresponding brackets, the second clamps being adapted to electrically and mechanically couple said conductor means with the respective brackets.

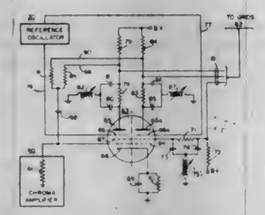
3,287,492
REAL TIME COLOR-CODED TACTICAL DISPLAY
Warren E. Milroy, San Diego, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed June 10, 1963, Ser. No. 286,873
6 Claims. (Cl. 178—5.4)



1. A system for displaying a plurality of categories of digitally coded information to a viewer in visually distinguishable forms commensurate with each respective category comprising;
a cathode ray tube having beam deflection means and beam intensity control means,
digital-to-analog conversion means connected to receive and convert said digitally coded information for controlling said beam deflection means,
symbol generator means arranged to receive said digitally coded information and responsive thereto for producing signals to cause said beam deflection means and said beam intensity control means to visually display symbolic information on the face of said cathode ray tube in accordance with said received coded information,

decoding means connected to receive said digitally coded information for producing outputs correlated to the category data of said received digitally coded information,
optical means interposed between said viewer and said cathode ray tube display or visually distinguishing each of said categories responsive to an input control signal, and
logic means arranged to receive said decoding means outputs for producing input control signals correlated to said categories, said means including means for developing signals indicative of the position of said optical means.

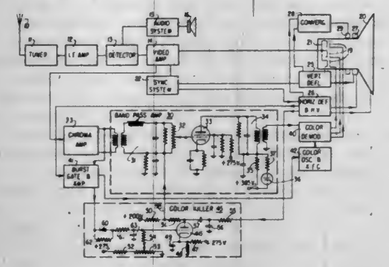
3,287,493
COLOR DEMODULATOR
Lin Kao, Evanston, and Leonard Dietch, Skokie, Ill., assignors to Admiral Corporation, Chicago, Ill., a corporation of Delaware
Filed Aug. 21, 1964, Ser. No. 391,206
10 Claims. (Cl. 178—5.4)



1. Demodulator means for demodulating a coded signal consisting of two phase displaced amplitude modulations of a suppressed carrier, said modulations including matrixed combinations of A information, B information and C information; said demodulator means including: a primary input circuit; two secondary input circuits; two primary output circuits and a secondary output circuit, means impressing a first signal on said primary input circuit; means impressing second and third signals on said secondary input circuits respectively; said first signal on the one hand and said second and third signals on the other hand coacting to accomplish demodulation of said A information and said B information, whereby said A information and said B information appear in respective ones of said primary output circuits; and means matrixing a portion of the output from said primary output circuits and coupling the resultant to said primary input circuit for amplification between said primary input circuit and said secondary output circuit to thereby yield said C information in said secondary output circuit.

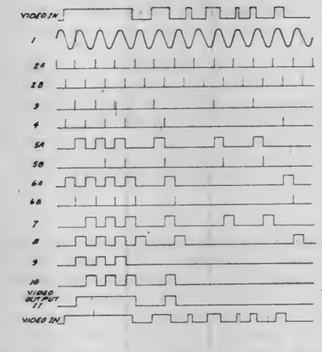
3,287,494
INDICATOR FOR COLOR TELEVISION RECEIVERS
Rolf E. Spies, Lyons, and Robert B. Hansen, Arlington Heights, Ill., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Continuation of application Ser. No. 283,448, May 27, 1963. This application Feb. 17, 1966, Ser. No. 537,595
8 Claims. (Cl. 178—5.4)

1. A television receiver including in combination, a color producing cathode ray tube, means for applying signals to said tube to provide monochrome reproduction in response to received monochrome signals and to provide color reproduction in response to received color signals which include chroma signal components and a color reference component, said means including selecting means for deriving the color reference component from received color signals, a translating stage for passing chroma signal components of received color signals for controlling the colors of the reproduced image, means coupled to said selecting means and to said translating stage for disabling the latter in the absence of the color



reference component, and indicator means coupled to said translating stage and operative when said translating stage is operative to indicate the reception of a color signal.

3,287,495
APPARATUS FOR ELIMINATION OF NOISE AND FAINT OBJECTS FROM A VIDEO SIGNAL
David S. Willard, High Rolls, N. Mex., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Apr. 12, 1965, Ser. No. 447,583
2 Claims. (Cl. 178—7.1)



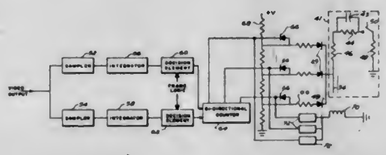
1. In an apparatus for electronic rejection of both electrical noise and elimination of undesired faint objects such as faint stars comprising a video input signal from which said electrical noise is to be eliminated, an oscillator generating a sine wave signal of preselected frequency, means to generate two sets of pulses, the first set of pulses being representative of positive crossings from zero, one crossing being of said sine wave signal and the second set of negative crossings, first and second AND gates, each having two inputs, said first AND gate receiving said video signal and said first set of pulses to provide first coincident output pulses and said second AND gate receiving said video signal and said second set of pulses to provide second coincident output pulses, first and second flip-flop circuits, each having two inputs and two outputs, said first flip-flop circuit receiving said first coincident pulses and said second set of pulses to provide at one of said outputs controlled width element signals and at the other of said outputs a pulse signal representative of the "off" position of each of

said controlled width element signals, said second flip-flop circuit receiving said second coincident pulses and said first set of pulses to provide at one of said outputs alternate controlled width element signals and at the other of said output pulses representative of the "off" position of said alternate controlled width element signals, third and fourth flip-flop circuits, each having two inputs and one output, said third flip-flop circuit receiving said first set of pulses and said pulses representative of the "off" position of said controlled width element signals to provide an output signal identical to said controlled width element signals however being delayed one element, said fourth flip-flop circuit receiving said second set of pulses and said pulses representative of the "off" position of said alternate controlled width element signals to provide an output signal identical to said alternate controlled width element signal however being delayed one element, third and fourth AND gates, each having two inputs and one output, said third AND gate receiving said controlled width element signal and said output signal from said fourth flip-flop circuit, said fourth AND gate receiving said alternate controlled width element signal and said output signal from said third flip-flop circuit, and an OR circuit receiving simultaneously the output signals from said third and fourth AND gates to provide an output video signal free of electrical noise.

3,287,496
DIGITAL TELEVISION CAMERA CONTROL SYSTEM

James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Leonard R. Malling

Filed Nov. 5, 1963, Ser. No. 321,656
9 Claims. (Cl. 178—7.2)



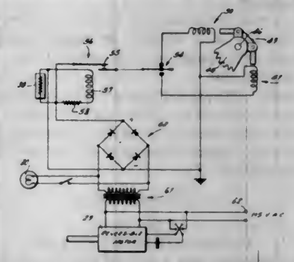
1. In combination with a television camera tube which provides a video output signal whose voltage level is proportionately related to the light intensity available from the camera tube field of view by a scale factor, means for limiting extreme voltage excursions of said output signal even in the presence of extreme variations in said light intensity, said means including a bi-directional counter; means responsive to the peak output signal level in successive time periods for incrementing said counter for each period in which said peak output signal exceeds a first threshold level and for decrementing said counter for each period in which said peak output signal is below a second threshold level; and feedback means responsive to each state of said counter for establishing a different scale factor.

3,287,497
TRACKING DEVICE

Frank G. Back, Lattingtown, N.Y.
(55 Sea Cliff Ave., Glen Cove, N.Y.)

Filed May 14, 1963, Ser. No. 280,358
7 Claims. (Cl. 178—7.88)

1. A tracking device for television cameras and the like comprising, a base, a plurality of lenses carried by the base, an angularly disposed rotatable mirror adjacent to the image end of said lenses, means to direct light entering the lenses toward the mirror, means to rotate the mirror from a non-transmitting position to one where light from one of the lenses is received and reflected to a focal plane, a photosensitive transducer for receiving light from the same source as said lenses, circuit means coupled to said

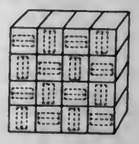


transducer for returning the mirror to its non-transmitting position whenever the light intensity received by the transducer is above a predetermined value.

3,287,498
LOADING COIL SET EMBEDDED IN A CAST BODY

Werner Paul Raub, Tumba, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden

Filed Jan. 14, 1963, Ser. No. 251,355
Claims priority, application Sweden, Jan. 17, 1962, 473/62
4 Claims. (Cl. 178—46)



1. A loading assembly for electric cables, said assembly comprising a plurality of modules disposed in several superimposed layers, each of said modules including a row of loading coils embedded in a hardened thermosetting insulation material of substantially rectangular configuration, the lengthwise center axis of said row of coils being in substantial registry with the lengthwise center axis of said module and the center axis of individual coils in the row being perpendicular to the lengthwise center axis of the module, the center axes of each two adjacent coils in the same layer of modules and in each two superimposed layers of modules being disposed in mutually orthogonal relationship.

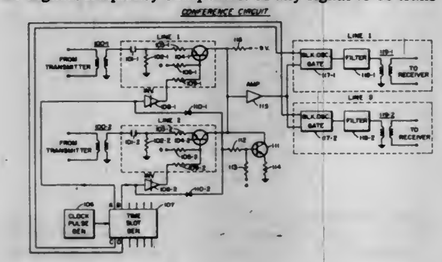
3,287,499
CONFERENCE CIRCUIT

Barrie Brightman, Webster, and Donald C. Rimlinger, Holcomb, N.Y., assignors, by mesne assignments, to Stromberg-Carlson Corporation, Rochester, N.Y., a corporation of Delaware

Filed July 1, 1963, Ser. No. 291,681
3 Claims. (Cl. 179—1)

1. A conference circuit for a plurality of lines, each of said lines having a transmitting portion for transmitting a signal and a receiving portion for receiving a signal; said conference circuit comprising a common amplifier; a plurality of individual input means each of which includes input gate means for normally individually applying the signal from the transmitting portion of the line of a conference as a common input to said amplifier; a plurality of individual output means each of which includes a low-pass filter, normally closed output gate means responsive to the opening thereof for applying the common output of said amplifier to the input of said filter, and means for individually applying the output of said filter

to the receiving portion of a separate one of said lines; time slot generating means for generating a different time slot for each of said lines which recur in a repetitive time frame having a repetition rate which is greater than twice the highest frequency component of any signal to be trans-

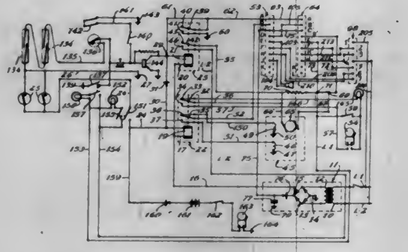


mitted, and time slot coupling means for blocking the input gate means and opening the output gate means individual to each line during the time slot which is individual thereto; the upper cut-off frequency of said low-pass filter being between said time frame repetition rate and said highest frequency.

3,287,500
FIRE-INTRUSION AUTOMATIC TELEPHONE DIAL ALARM DEVICE

James E. Moore, Jr., Ramsey, Minn., assignor to Lindsay Controls, Inc., St. Paul, Minn., a corporation of Minnesota

Filed Aug. 24, 1962, Ser. No. 219,209
9 Claims. (Cl. 179—5)

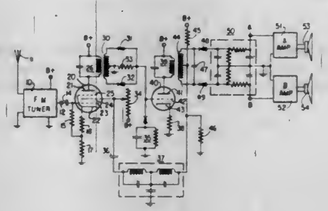


1. A dual alarm system for use with a dial telephone circuit including:
means for coupling to a source of a.c. power;
means for coupling to a source of d.c. power;
a magnetic reproducing unit for alternatively reading a selected one of at least two messages pre-recorded on a dual channel recording tape, each of said messages including manifestations of a telephone number to be dialed, said reproducing unit including a tape drive motor and first and second alternatively operable transducers, each of said transducers associated with a respective one of said dual channels;
a first sensing circuit including at least a first sensor for detecting a first abnormal condition, a first relay coupled intermediate said first sensor and said means for coupling to a source of d.c. power for activating said first relay when said first sensor detects said first abnormal conditions;
a second sensing circuit including at least a second sensor for detecting a second abnormal condition, a second relay coupled intermediate said second sensor and said means for coupling to a source of d.c. power for activating said second relay when said sensor detects said second abnormal conditions;
circuit means coupled intermediate said first and second relays for activating said second relay when said first relay is activated, said circuit means including inhibiting means for maintaining said first relay inactive when said second relay is activated;
a pulsing circuit for coupling to a telephone line for providing a series of pulses at intervals correpsonding to those produced by a telephone dial and indicative of said telephone numbers to be dialed, said pulsing circuit including means for making and breaking the telephone circuit;
a first transducer selection circuit coupled to said first transducer and to said pulsing circuit, including a first normally open switch activated by said first relay for providing signals to said pulsing circuit for dialing a first number indicative of said first abnormal condition;
a motor activating circuit coupled to said tape drive motor and said means for coupling to a source of a.c. power, including a first normally open switch activated by said second relay for providing said power to said tape drive motor;
means for receiving a reference potential;
a latching circuit coupled to said second relay and said means for receiving a reference potential and including a first normally open switch actuated by said second relay, said latching circuit for maintaining said second relay in the activated state; and
a second transducer selection circuit coupled to said second transducer and said pulsing circuit including a first normally closed switch actuatable by said first relay, and operative when said first relay is inhibited by said inhibiting means from becoming activated for providing signals to said pulsing circuit from said second transducer for dialing said second number indicative of said second sensed abnormal condition.

3,287,501
MULTIPLEX DETECTOR CIRCUIT

Richard J. Rabeler, Northbrook, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware

Filed June 25, 1963, Ser. No. 290,513
4 Claims. (Cl. 179—15)



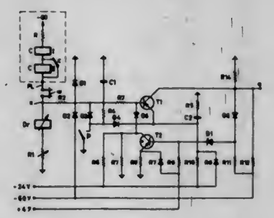
1. A demultiplexer for deriving separate A and B signals from a composite signal including an A+B component, a suppressed carrier amplitude modulation A—B component and a pilot component representative of said carrier; a pair of electron discharge devices; a first of said electron discharge devices having an input circuit consisting of a cathode and control grid and two output circuits a first of which consists of said cathode and an anode and a second of which consists of said cathode and a screen grid; means coupling said composite signal to said input circuit; tuned circuit means, responsive to said pilot component, connected in said first of said output circuits; demodulation means coupled to said second of said output circuits; said second electron discharge device regenerating said carrier under control of said pilot component and having an output circuit coupled to said demodulation

means, whereby said regenerated carrier is reinserted in proper phase into said composite signal and said A and B signals are separately derived.

3,287,502
VOLTAGE-VARIATION-RATE BUSY TEST

Josef Röhrig, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin and Munich, Germany, a corporation of Germany

Filed July 1, 1963, Ser. No. 293,230
Claims priority, application Germany, July 4, 1962, S 80,238
2 Claims. (Cl. 179—18)

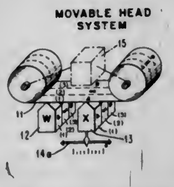


1. A circuit arrangement for communication systems, especially telephone systems, wherein test lines are for testing purposes connected with testing means to form test circuits therewith, the respective test circuit comprising a complex resistance including the involved test line and a test line equivalence branch, wherein the ratio of resistance of said branch to the resistance of the respective test line indicates the operating condition of the latter as to the idle or busy condition thereof, said test circuit further comprising time-differentiating test circuit means, whereby the operating condition of a test line which is being tested is indicated by the voltage appearing at the differentiating test means in accordance with the steepness of voltage variation resulting at the test circuit according to the prevailing operating condition of the respective test line.

3,287,503
AUDIO INSTRUCTION EDITING SYSTEM

Carl C. Kling, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 31, 1962, Ser. No. 248,351
16 Claims. (Cl. 179—100.2)

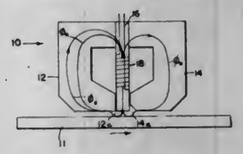


1. A phrase editing system comprising:
(a) means to record on the tape during a mimic pass a series of phrases;
(b) means to record on the tape during the same mimic pass a selection marker (asterisk) associated with selected ones of said series of phrases; and
(c) means responsive to the selection marker to replace each selected phrase with the next adjacent unselected phrase.

3,287,504
HIGH FREQUENCY MAGNETIC READOUT HEAD

Richard E. Morley, Bedford, Mass., assignor to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware

Filed Nov. 13, 1962, Ser. No. 236,915
1 Claim. (Cl. 179—100.2)

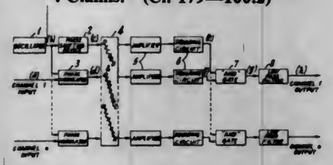


A magnetic record transducer comprising:
(a) a magnetic core including first and second circuits formed with a common leg and a pair of confronting pole pieces defining a first and a second magnetic gap in the magnetic circuits adjacent the common leg, the width of the first magnetic gap differing from width of the second magnetic gap; and
(b) a coil disposed about the common leg of said core, said core being disposed to link said circuits with flux from a recorded signal such that the flux in said first circuit induces a voltage in said coil of opposite sense to that induced by the flux in said second circuit, thereby suppressing the lower frequency components of said voltage which are induced by the flux in both circuits and emphasizing the higher frequency components of said voltage which are induced only by the flux in the circuit with the narrower gap.

3,287,505
MAGNETIC RECORDING AND REPRODUCING SYSTEM

Masahiko Fukamachi, Tokyo, Japan, assignor to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan

Filed Jan. 15, 1963, Ser. No. 251,622
4 Claims. (Cl. 179—100.2)



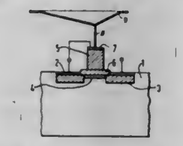
1. A magnetic recording and reproducing system comprising
a reference signal channel and an information signal channel,
an oscillator in said reference channel for producing oscillations,
a phase shifting device in said reference channel for shifting the phase of oscillations from said oscillator to thereby provide a reference signal,
a phase modulator in said information channel to receive oscillations from said oscillator and also an information signal to thereby produce an information modulated signal,
signal recording means common to both of said channels, said signal recording means including means for recording said reference signal and said information modulated signal on separate tracks of a recording medium,
signal reproducing means common to both of said channels and associated with said recording means for reproducing said reference signal and said information modulated signal,

means in said reference channel for converting said reproduced reference signal into square waves,
means in said information channel for converting said reproduced information modulated signal into square waves,
an AND gate for receiving said square waves from each of said channels to produce a signal in the output thereof when said square waves are simultaneously applied thereto,
and means for removing relatively high frequency components from the signal from said AND gate to thereby produce an output signal which is a facsimile of said information signal.

3,287,506
SEMICONDUCTOR-BASED ELECTRO-ACOUSTIC TRANSDUCER

Alfons Hähnlein, Nieder-Ramstadt, Germany, assignor to Siemens & Halske Aktiengesellschaft, Munich, Germany

Filed Dec. 14, 1964, Ser. No. 417,969
Claims priority, application Germany, Dec. 14, 1963, D 43,175
8 Claims. (Cl. 179—110)



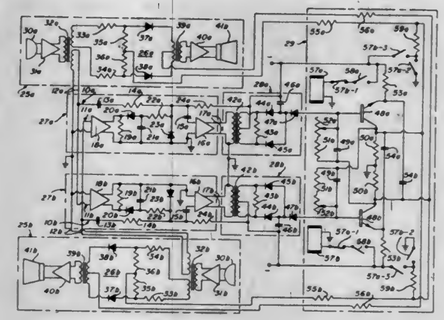
1. A semiconductor-based electroacoustic transducer comprising a high-resistivity semiconductor block having a source electrode and a sink electrode spaced apart thereon, the semiconductor having a spatially limited variable cross section current channel in the semiconductor surface serving as a current path between said electrodes, a piezoelectric crystal so mounted adjacent the inversion zone that electrostatic induction causes direct interaction between the size of said current channel and the electric field of the piezoelectric crystal, and sound translating means connected to said crystal and operable to do one of: (*a*) translate sound vibrations into force variations exerted on said crystal; and, (*b*) translate variations in the size of said current channel into sound vibrations.

3,287,507
ELECTRICAL CONTROL CIRCUIT

Gilles J. Overtveld, Ottawa, Ontario, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada

Filed May 17, 1963, Ser. No. 281,274
4 Claims. (Cl. 179—170.6)

1. A two-way communications system comprising: a first and a second channel, said first channel having a first and a second electroacoustic transducer for coupling a first speech signal thereto and therefrom respectively, said first transducer adapted to convert the first speech signal to a first signal voltage; said second channel having a third and a fourth electroacoustic transducer for coupling a second speech signal thereto and therefrom respectively, and third transducer adapted to convert to second speech signal to a second signal voltage; each of said channels including a switching network for controlling the signal transmission therethrough; a first control circuit for producing a first unidirectional voltage which is directly proportional to the ratio of the first and second signal voltages; a second control circuit for producing a second unidirectional voltage which is directly proportional to the ratio of the second and first signal voltages, the levels of said first and second unidirectional voltages being substantially independent of the absolute levels of the first and second signal voltages; means responsive to said first and second unidirectional voltages for controlling the switching networks, so as to open and close the first and second channels respectively when the first unidirectional voltage exceeds a

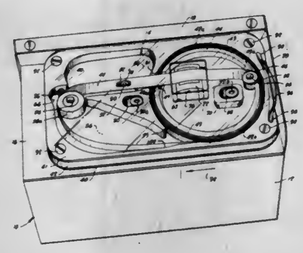


predetermined amplitude, and so as to open and close the second and first channels respectively when the second unidirectional voltage exceeds a predetermined amplitude.

3,287,508
SOUND REPRODUCING DEVICE HAVING A REPLACEABLE ENDLESS TAPE CARTRIDGE

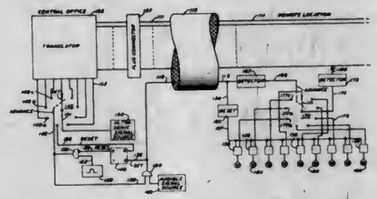
Jimmie H. Morrison, 770 Iowa St., Norman, Okla.

Filed Nov. 1, 1961, Ser. No. 149,417
12 Claims. (Cl. 179—100.2)



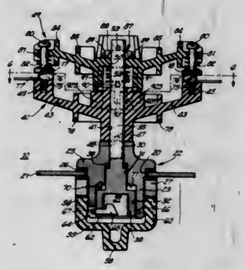
1. In an endless magnetic tape device, the combination of:
a fixed, annular tape coiling guide forming a circular channel and having an open center portion and an opening in one side thereof for passing an endless tape coiled around the guide into the open center portion said circular channel being defined by an annular inner member and a concentric, substantially annular outer member extending substantially more than 180° around the periphery of said annular inner member whereby when a tape is coiled in said circular channel, it is confined and guided over a major portion of the circular channel by said inner and outer members;
drive means for pulling the innermost coil of an endless tape coiled around the guide through the opening and diametrically across the open center portion and across the opposite side of the guide and returning the tape as the outermost coil about the coiling guide; and
a pickup head disposed in the open center portion for operative engagement with a tape as it is pulled through the open center portion by the drive means.

3,287,509
APPARATUS TO VISUALLY IDENTIFY CABLE PAIRS IN A MULTIPAIR CABLE BY CABLE PAIR ENCODING MEANS
Clarence E. Bohnenblust, Saratoga, Calif., assignor to American Telephone and Telegraph Company, New York, N.Y., a corporation of New York
Filed Oct. 10, 1963, Ser. No. 315,129
7 Claims. (Cl. 179—175.3)



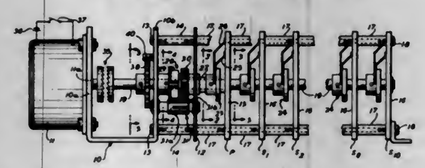
7. A conductor pair identification system for a cable including a plurality of conductor pairs and having a first and a second termination, said system comprising means at said first termination to generate a series of pulse signals, means to select a unique arrangement of pulse signals from said series of pulse signals indicative of the identity of each individual conductor pair, means to apply each said unique arrangement to the one of said conductor pairs it identifies, detector means coupled to a selected one of said conductor pairs at said second termination for detecting said unique arrangement of pulse signals, means for storing said unique arrangement of pulse signals thus detected, and means for displaying the contents of said storing means.

3,287,510
DUAL VOLTAGE TRANSFORMER SWITCH
Eugene J. Lehman, Zanesville, Ohio, assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Mar. 9, 1965, Ser. No. 438,265
15 Claims. (Cl. 200—6)



1. In an electrical switch connected to two current carrying conductors, the combination of two sets of four stationary contacts, means for supporting said stationary contacts, three electrical windings separately connected at their respective ends across three consecutive contacts of each of said two contact sets, the windings respectively connected at one of their ends to the middle contact of the three consecutive contacts of each of said sets being connected at their other ends to an outside contact of the three consecutive contacts of the other of said sets, the two said current carrying conductors separately connected to the middle contact of the three consecutive contacts of each of said contact sets, the fourth contact of each set being separately connected to the most adjacent contact of the same set, said fourth contact of each set being located with respect to the other fourth contact at opposite ends of the said three consecutive contacts of said fourth contact's respective set, said switch having first and second movable conductive members, means for supporting and moving said movable conductive members, said movable conductive members each being respectively adapted in a first position to electrically common the three consecutive contacts of one of said sets, whereby the said windings are connected in parallel, and said conductive members being operable to a second position wherein each said member respectively electrically commons said fourth contacts of one set and the nearest adjacent contact of the other set, whereby said windings are connected in series.

3,287,511
CASCADE SWITCH WITH IMPROVED INTERMITTENT COUPLING AND MOTIVE STRUCTURE
Pierre P. Schwab, River Edge, N.J., assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware
Filed Apr. 27, 1965, Ser. No. 451,158
5 Claims. (Cl. 200—14)

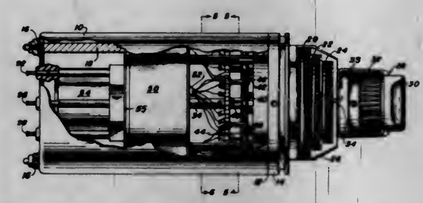


1. A cascade switch comprising a primary selector switch and a plurality of secondary selector switches each including a rotor and a plurality of cooperable switch contacts, said primary switch having a number of switch contacts at least as great as the number of said secondary switches and said secondary switches having identical numbers of equally spaced switch contacts, circuit means connecting the switch contacts of said primary switch respectively to the rotors of said secondary switches, stepping means for advancing in unison the rotors of said secondary switches by successive switch contact intervals through successive switch cycles, means coupled to said stepping means for advancing said primary switch from one switch contact to the next at the completion of each cycle of advance movement of said secondary switches, all of said primary and secondary switches being coaxially arranged, a common shaft for said secondary switches, a sleeve shaft for said primary switch rotatably mounted on said common shaft, and a step type coupling between said shafts for advancing said sleeve shaft from one switch contact to the next responsive to the last step advance of said common shaft in each complete revolution of movement thereof.

3,287,512
MULTIPLE INDEPENDENT OPERABLE SWITCH MECHANISMS WITH IMPROVED KNOB AND INDICATING APPARATUS
Elmer P. Gertsch and Richard M. Bloniarz, both of Los Angeles, Calif., assignors, by mesne assignments, to The Singer Company, New York, N.Y., a corporation of New Jersey
Continuation of application Ser. No. 842,770, Sept. 28, 1959. This application Aug. 5, 1965. Ser. No. 487,347
10 Claims. (Cl. 200—14)

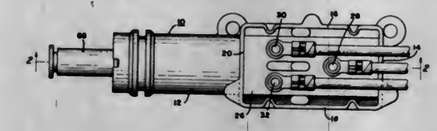
1. A compartmentalized electrical device, comprising an elongate housing therefor, a centrally located shaft within said housing extending lengthwise thereof and mounted for rotation with respect thereto, a first rotary knob secured to said centrally located shaft at one end thereof, a first electrical component having a rotary element attached to the other end of said centrally located

shaft and operated thereby, a support plate mounted within said elongate housing transverse of the length thereof and dividing said housing into two compartments, said first electrical component being mounted on said support plate and extending into a first of said compartments, and with their rotary element axes disposed parallel to but spaced radially from said centrally located shaft, a plurality of other electrical components each having a rotary element and being mounted within the other of said compartments, said other electrical components being spaced



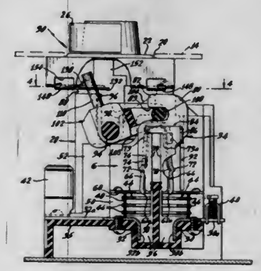
circumferentially about said central axis and in substantial alignment with one another lengthwise of said elongate housing, a rotary control knob for the rotary element of each of said other electrical components, said rotary control knobs each being mounted on a respective shaft coaxial with said centrally located shaft, and drive means independently connecting each of said rotary elements of said other electrical components to a respective one of said coaxial shafts whereby rotation of each of the rotary control knobs causes corresponding rotation of the rotary element connected thereto.

3,287,513
ROLLER DETENT MECHANISM FOR CONTROL APPARATUS
Forest R. McFarland, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 17, 1963, Ser. No. 316,966
7 Claims. (Cl. 200—16)



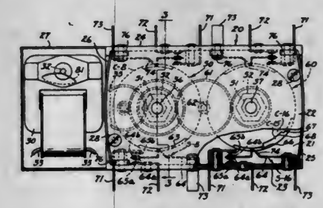
1. A detent mechanism for control apparatus comprising, a support, a shiftable element slidable with respect to said support, a spring finger supported in cantilever fashion by said support having an abutment section located intermediate its ends, said shiftable element having a recess defined by spaced wall means, a laterally extending roller located in said recess engaging one face of said spring finger, said roller engaging a wall of said recess whereby it is held against said spring finger by said shiftable element, said spring finger extending across the path of movement of said roller, one of said wall means forcing said roller into engagement with and past said abutment section of said spring finger when said shiftable element is moved in one direction and the other of said wall means shifting said roller in an opposite direction over said face of said spring finger when said shiftable element is moved in an opposite direction, said spring finger applying a reactive force to said shiftable element through said roller when it engages said abutment section, said spring finger being bent away from said control element to reduce said reactive force when said roller is shifted past said abutment section, said wall means being spaced from each other a distance greater than the diameter of said roller whereby said roller can roll between said shiftable element and said face of said spring finger.

3,287,514
CIRCUIT INTERRUPTERS WITH IMPROVED SNAP ACTING OPERATING MECHANISM
Anatole Bachman, Willowdale, Ontario, Canada, assignor to Federal Pacific Electric Company, a corporation of Delaware
Filed Sept. 4, 1964, Ser. No. 394,474
10 Claims. (Cl. 200—17)



1. A circuit interrupter including a casing having a base lying in a given plane and upstanding walls defining a plurality of pole spaces, a pair of stationary contacts mounted on said base in each of said pole spaces, movable contacts in each of said pole spaces, said movable contacts being movable in a direction perpendicular to the plane of said base from a position engaging said stationary contacts to a remote position, operating mechanism for said interrupter mounted on said casing, said operating mechanism including overcentering spring means, said overcentering spring means being operable in a plane parallel to the plane of said base, and means interconnecting said movable contacts and said operating mechanism for snap acting conjoint reciprocating movement of said movable contacts between said engaged and remote positions.

3,287,515
PROGRAM TIMING AND SWITCHING CONTROL MECHANISMS
George A. Godwin, Carmel, Ind., assignor, by mesne assignments, to Small Business Administration, Indianapolis, Ind.
Filed Oct. 15, 1963, Ser. No. 316,262
17 Claims. (Cl. 200—38)



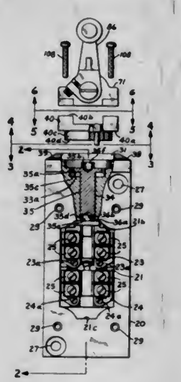
1. A time switch mechanism comprising a drive motor, a speed-change reduction gear transmission driven by said motor, a cam shaft driven by said gear transmission, a plurality of cams mounted on said cam shaft for rotation therewith, at least a corresponding plurality of electrical switches respectively mounted adjacent said cams for actuation by rotation thereof for controlling the operation of a machine, said transmission compris-

ing a power input terminal gear connected in driven relationship with said motor, a power output terminal gear connected in driving relationship with said cam shaft, a pair of speed reduction gear trains of different speed reduction values, corresponding end gears of both of said gear trains being constantly in driven relationship with one of said input and output gears, said gear trains including a common shiftable gear at the opposite ends thereof, and means mounting said shiftable gear for limited arcuate movement, about one of said terminal gears and in mesh therewith, between one position in which the shiftable gear is operative as an end gear of one only of said gear trains and a second position in which it is operative as an end gear of the other one only of said gear trains.

3,287,516
EXPLOSION RESISTANT LIMIT SWITCH

Erik J. Nielsen, Mequon, Wis., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan

Filed Aug. 21, 1964, Ser. No. 391,159
10 Claims. (Cl. 200—47)



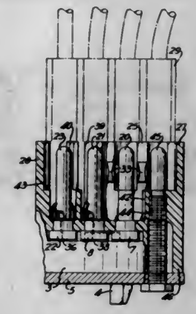
4. In an explosion resistant limit switch, the combination comprising: a housing having an internal cavity containing switching units for the limit switch, an adapter nonrotatably mounted on an end of the housing, a selected one of a plurality of different type external operators nonrotatably mounted on the adapter in any one of a plurality of angular positions relative to said end of the housing, each of said operators having an externally operated member, and means including a plurality of spaced bores in the adapter and a plunger carried by the housing and having a flanged end aligned with the bores for transmitting movement of the member to the switching units in the cavity.

3,287,517
ELECTRIC SWITCH WITH TERMINAL SOCKET

Dudley H. Campbell, St. Marys, Pa., assignor to Stackpole Carbon Company, St. Marys, Pa., a corportion of Pennsylvania

Filed Nov. 26, 1965, Ser. No. 509,806
10 Claims. (Cl. 200—50)

1. An electric switch comprising a housing having an insulating base, a pair of fixed contacts in the housing mounted on the base, a bridging contact movably disposed in the housing, manually operable means for moving the bridging contact into and out of engagement with the fixed contacts, terminal posts connected to said fixed contacts and projecting from the outer side of the base, a pair of side walls projecting from the outer side of the base parallel to said posts between them and also projecting laterally away from one edge of said base, and an end wall connecting the outer ends of the projecting side walls and spaced from said base, said walls forming a socket, the socket being provided between said end wall and base with an internal insulating block integral there-

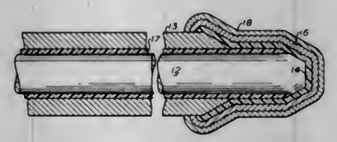


with and having a passage therethrough parallel to and in line with said terminal posts, the passage being formed for removably receiving a grounding terminal post connected to a metal support for the switch and extending into the socket from said passage, and said socket being adapted to receive a separate electric plug provided with a row of openings for receiving the terminal posts.

3,287,518
SENSOR FOR DETECTING TRANSIENT SHOCK PHENOMENA

Darwin R. Henley, Newark, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Oct. 8, 1964, Ser. No. 402,663
8 Claims. (Cl. 200—61.08)



1. A sensor apparatus for detecting rapid shocks incident thereon, comprising

(a) a generally cylindrical, electrically conducting wire having a first end,

(b) a uniform vapor-deposited film of dielectric material disposed on the surface defined by said first end of said wire, said film of dielectric being capable to withstand a high voltage gradient thereacross and being subject to failure upon impact of a shock thereon,

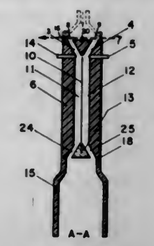
(c) a uniform foil of electrically conducting material disposed upon the face of said film distal said first end of said wire, and

(d) at least two terminal means connected to said wire and said foil respectively, said terminal means being adapted to be connected to electronic short circuit detecting equipment, whereby the impact time of a shock upon said sensor producing failure of said film may be determined.

3,287,519
STOP MOTION DEVICES

James H. Coulliette, 4412 Alhambra Circle, Coral Gables, Fla.

Filed May 12, 1964, Ser. No. 366,698
9 Claims. (Cl. 200—81.9)

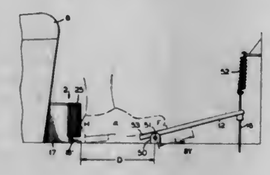


1. A stop motion device constituted by a fluid actuated electrical switch which comprises: a body member, a through passageway extending through said body member from one surface thereof to another, an electrical switching means comprising a movable vane extending axially along the length of said passageway and dividing a portion thereof into separate axial channels, spaced apart openings in said one surface leading into different ones of said channels, fluid pumping means to induce a fluid flow through said passageway, said vane being movable in either of opposite directions in response to a flow differential in said channels, electrical contact means in each of said channels and spaced from said vane and actuable in accordance with the movements of said vane.

3,287,520
FOOT-ACTUATED SWITCH ASSEMBLY

Philip H. Stevens, Syracuse, David O. Chase, Camillus, and Alan W. Brownlie, Syracuse, N.Y., assignors to The Raymond Corporation, Greene, N.Y., a corporation of New York

Filed Apr. 5, 1965, Ser. No. 445,602
8 Claims. (Cl. 200—86.5)

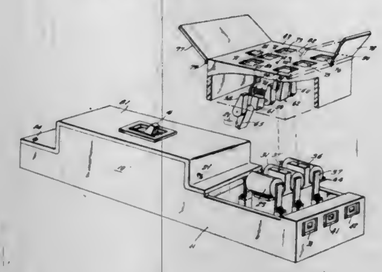


1. In a vehicle having electrically-powered motive means, the combination of an accelerator pedal operatively connected to control said motive means by depression of said pedal to vary the speed of said vehicle, said pedal mounted to rotate about a pivot axis upon depression and require at least a predetermined torque applied to said pedal about said axis by a fore portion of one foot of a vehicle operator to effect depression of said pedal; and a directional pedal assembly operatively connected to control said motive means to vary the direction of travel of said vehicle, said assembly disposed behind and in alignment with said accelerator pedal and located to be operated by the heel portion of said foot, said assembly spaced from said axis a distance sufficient to prevent said operator from applying said predetermined torque to said accelerator pedal with said fore portion when said heel portion is in operable engagement with said assembly.

3,287,521
HOUSING AND INTERLOCK FOR BOLT CONNECTED CURRENT LIMITING FUSES

Carl E. Gryctko, Haddon Heights, N.J., and William Harold Edmunds, Bloomfield Hills, Mich., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Apr. 3, 1964, Ser. No. 357,138
13 Claims. (Cl. 200—114)



1. In combination: a fuse and a circuit breaker; said circuit breaker being contained in a first housing; said fuse being contained in a second housing; fastening means securing said fuse to said second housing such that said second housing carries said fuse as an integral unit; said first housing including means for mounting thereto said second housing, including said fuse, as an integral unit; said fuse having a first and second terminal; said first housing having a first and second terminal for electrically receiving said first and second terminals of said fuse respectively, to electrically connect said current limiting fuse in series with said circuit breaker; said first terminal of said first housing electrically connected to said circuit breaker; a first and second bolt means; said first bolt means electrically connecting said first fuse terminal to said first terminal of said first housing; said second bolt means electrically connecting said second fuse terminal to said second terminal of said first housing; said first and second bolt means also serving to fasten said second housing to said first housing; said second housing including an exterior housing portion overlying the area including said bolted connections of said terminals; said second housing including access means externally communicating with said bolted connections, for permitting the insertion of a bolt tightening tool; said second housing exterior housing portion having a member movable between a first and second position while said second housing is mounted to said first housing; said member when in said first position blocking the external communication of said access means; said member when in said second position allowing the external communication of said access means, whereby the movement of said member from said first to second positions provides external access for the insertion of a bolt tightening tool.

3,287,522
CIRCUIT BREAKER WITH SPRING-BIASED TOGGLE LINK

Robert T. Casey, Southington, Conn., assignor to General Electric Company, a corporation of New York

Filed June 28, 1965, Ser. No. 467,354
6 Claims. (Cl. 200—116)

1. An electric circuit breaker comprising:

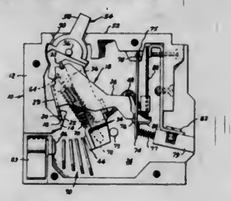
(a) a support;

(b) a stationary contact supported in fixed relation on said support;

(c) a releasable cradle member pivotally supported on said support;

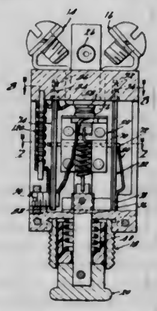
(d) a movable contact member;

(e) means pivotally supporting said movable contact member on said releasable cradle member at a predetermined point;
(f) a manually operable handle member;
(g) means pivotally supporting said manually operable handle means on said support for rotation about a predetermined axis of rotation;



(h) spring means connected between a first point on said manually operable handle member eccentric to said axis of rotation and a second point on said movable contact member spaced from said predetermined point, said spring means urging said first point and said second point apart;
(i) latch means normally restraining said cradle member from rotation about its pivotal support;
(j) current responsive means carried by said support;
(k) means connecting said current responsive means to said latch means, said current responsive means causing release of said latch means upon the occurrence of predetermined current conditions therethrough.

3,287,523
PUSH BUTTON TYPE CIRCUIT BREAKER WITH CROSS-SLIDE
John MacDonald, Jackson, and Thomas W. Butler, Jr., Ann Arbor, Mich., assignors to Mechanical Products, Inc., Jackson, Mich., a corporation of Delaware
Filed Nov. 30, 1965, Ser. No. 510,496
5 Claims. (Cl. 200—116)



1. An electrical circuit breaker comprising
an insulating housing,
a pair of terminals extending exteriorly of said housing,
a fixed contact connected to one of said terminals,
an elongated current responsive bimetallic element in said housing having its end supported thereby, one end of said current responsive bimetal being electrically connected to the other of said terminals,
a latch supported by said housing,
a plunger having a movable electrical contact thereon engageable with said fixed contact and electrically connected to the other end of said current responsive bimetal to complete an electrical circuit through said circuit breaker,
a slide carried by said plunger and extending generally normally to said current responsive element, said slide having one end engaged with an intermediate portion of said current responsive bimetal and the other end engaged with said latch, means supporting said slide for movement upon deflection of said current responsive bimetal thereby to affect effecting disengagement of said slide from said latch permitting said plunger to move to the contacts open condition, and a manual operator engageable with said plunger to bias said plunger and movable contact to the contacts closed condition, said manual operator having means engageable with said slide to effect movement thereof relative to said latch to effect manual opening of said contacts.

3,287,524
SAND-TEFLON MEANS TO IMPROVE LOW CURRENT INTERRUPTION PERFORMANCE OF HIGH VOLTAGE CURRENT LIMITING TYPE FUSES
Ronald F. Huber, Evanston, and Ramanlal R. Vadnagara, Chicago, Ill., assignors to Joslyn Mfg. and Supply Co., Chicago, Ill., a corporation of Illinois
Filed Oct. 28, 1964, Ser. No. 407,051
1 Claim. (Cl. 200—120)

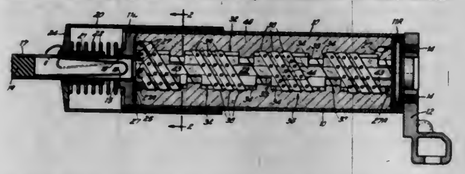


A high voltage current limiting fuse comprising a casing of insulating material, a pair of terminal elements closing the ends of said casing, a uniform fuse link of round wire free of M-effect material conductively interconnecting said terminal elements, sleeve means of Teflon spaced around a portion of said fuse link, sleeve means of glass cloth provided over the above mentioned sleeve means, end enclosure means closing the ends of said Teflon sleeve, and a pulverulent arc-quenching filler surrounding said fuse link and said sleeve means within said casing.

3,287,525
TERMINAL MEANS FOR FUSIBLE ELEMENT OF CURRENT LIMITING FUSE
Harvey W. Mikulecky, Racine, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Feb. 26, 1965, Ser. No. 435,436
7 Claims. (Cl. 200—120)

1. In a high amperage current limiting fuse, a tubular insulating casing, an inert granular material of high dielectric strength within said casing, an insulating spider extending parallel to the axis of said casing and embedded in said inert granular material and having peripherally spaced apart, radially protruding portions extending longitudinally thereof, a plurality of silver ribbons helically wound in parallel spaced apart relation on said

radially protruding portions of said spider and being embedded in said granular inert material, and a metallic terminal on each end of said casing, said metallic terminals each including a portion extending axially with respect to said casing and engaging said ribbons, said ribbons engaging and electrically connected to said axial-



ly extending portions at points spaced axially thereon with respect to said casing so that all of the arcs formed upon vaporization of said ribbons, incident to high magnitude fault current carried by said fuse, terminate on said axially extending terminal portions and do not tend to merge together and cause excessive arc heating.

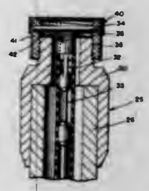
3,287,526
ELECTRIC FUSE ELEMENT HAVING COOLING TABS
Thomas F. Brandt, Swarthmore, Pa., assignor to General Electric Company, a corporation of New York
Filed Jan. 17, 1966, Ser. No. 521,093
4 Claims. (Cl. 200—120)



1. In an electric fuse comprising a hollow casing of insulating material, conductive end members at opposite ends of said casing, an arc-extinguishing filler within said casing, and a conductive fuse element of ribbon form imbedded within said filler and electrically connecting said end members;
(a) said fuse element having a plurality of regions of reduced cross-section located at spaced apart locations along its length,
(b) each reduced cross-section region comprising a pair of notches in the opposite edges of said ribbon and a hole between said notches forming a pair of spaced-apart restricted necks at opposite sides of said hole between the hole and said notches,
(c) and tab means integrally attached to said ribbon at edge regions of said hole located between said necks, said tab means being formed of the ribbon material that occupied said hole prior to formation of the hole,
(d) said tab means being displaced from the plane of said ribbon into a position extending transversely of said plane and having an area along one of its major surfaces substantially equal to the arc of said hole.

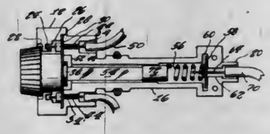
3,287,527
FUSE HAVING A FUSE HEAD RETAINER MOUNTED IN A CLOSURE SLEEVE
Donald O. Misare, Riverside, Ill., assignor to Joslyn Mfg. and Supply Co., Chicago, Ill., a corporation of Illinois
Filed Jan. 6, 1965, Ser. No. 423,762
4 Claims. (Cl. 200—127)

1. A fuse construction comprising a fuse tube having a terminal structure at one end; a fuse link capable of interruptions upon abnormal amperage faults and extending through the fuse tube and provided with a disc shaped head at one end of said tube; and a retainer threadingly engaging the terminal structure to retain said head to provide electrical connection thereto; said retainer including an internally threaded sleeve and a pin



secured transversely through said sleeve near one end thereof with said sleeve threaded on said terminal structure and said pin bearing on said head whereby said head is retained from flying outward upon explosive interruption of said fuse link in response to high current faults.

3,287,528
SCREWLESS TERMINAL FUSEHOLDER
Christopher B. Boone, 23 Christine Drive, Shelton, Conn.
Filed July 29, 1965, Ser. No. 475,801
4 Claims. (Cl. 200—129)



1. A screwless terminal fuseholder comprising a casing of non-conductive material, said casing including integral consecutively disposed hollow, intermediate, elongated and enlarged part retaining portions, a first stud receiver contact plate in said hollow portion, at least one pair of resilient clinching tongues, means in said hollow portion transverse to the plane of the stud-receiver contact plate and in alignment with said clinching tongues, for the insertion of a wire end into clamping engagement in said first contact stud receiver plate, said first contact stud receiver plate having a central aperture therein to allow the insertion of a fuse cartridge, a second stud receiver contact plate in said enlarged part retaining portion, said second plate being provided with a pair of clinching tongues for securing another wire end, a spring in said elongated portion in contact engagement with said second stud receiver plate, said first stud receiver plate being provided with means for securing one end of a cartridge fuse in contact engagement with said spring and another end of said cartridge fuse in contact engagement with said first stud receiver contact plate.

3,287,529
PLUG FUSE
Charles Richard Dirom Kindersley, deceased, late of Georgetown, Ontario, Canada, by The Royal Trust Company, administrator, Toronto, Ontario, Canada, and Joseph F. Duffield, Georgetown, Ontario, and John Richard Glynn, Limehouse, Ontario, Canada, assignors to Smith & Stone Limited, Toronto, Ontario, Canada, a company of Ontario
Filed Nov. 12, 1964, Ser. No. 410,809
12 Claims. (Cl. 200—130)

1. A plug fuse comprising:
(1) a hollow base moulded in insulating material, said base including:
(a) an open end for receiving a contact assembly, and a closed end, said closed end having a first contact receiving aperture therein,

(b) closure receiving and retaining means adjacent said open end,

(c) shell contact locating means, adapted to space a concentrically disposed shell contact away from said body over a substantial length of said shell contact thereby providing an annulus,

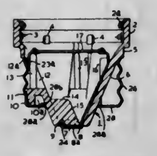
(d) a first vent aperture in said base providing for substantially unrestricted passage of gas from the interior of said base into said annulus, and,

(e) a second contact receiving aperture in said base;

(2) a shell contact received by said shell contact receiving means, said shell including:

(a) a hollow cylindrical portion having thread engaging means on the outer surface thereof, and

(b) an inturned flange portion at one end of said cylindrical portion, defining at and with said closed end of said base, firstly, a longitudinal limit of said annulus, and secondly, a non-radial escape passage for gas flow from said annulus, the other end of said cylindrical portion forming with said base a substantially gas-tight joint,



(3) a fuse element comprising:

(a) a first portion including one end,

(b) an intermediate portion integrally attached to said first portion,

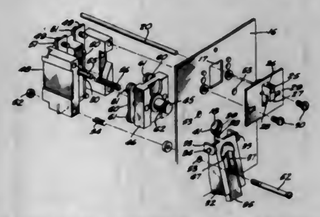
(c) a second portion including said other end, and

(d) a bridge portion initially integrally attached to said second and intermediate portions, said part of said fuse element being electrically connected to said intermediate and second portions, said bridge portion being adapted for severance from said second and intermediate portions thereby to provide a path for the passage of current between said intermediate and second portions; said one end being located in said first contact receiving aperture and retained therein by a first contact retaining means, said one end forming at least part of a center contact, the other end of said fuse element being located in said second contact receiving aperture and retained therein by said shell contact, said shell contact making an electrical connection with said other end, at least a part of fuse element comprising fusible metal; and

(4) a closure for reception in said base and retention therein by said closure retaining means.

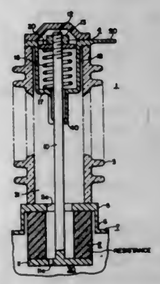
3,287,530
ELECTRICAL SWITCH WITH IMPROVED PLUNGER RELEASE MECHANISM
Wilfred P. Dawson, 1100 E. Ash, Unit H, Fullerton, Calif.
Filed June 28, 1965, Ser. No. 467,364
4 Claims. (Cl. 200—142)

1. In a switching device having a release mechanism operable at elevated temperatures to interrupt an electrical circuit to a kiln in response to the displacement of an actuating rod coupled to said kiln, a switch comprising a ceramic body defining in a first plane an E-type configuration forming first and second spaced apart channels parallelly arranged and having a back surface defining a second plane intersecting said first plane at right angles; means for spring mounting said body to said switching device; conductive inserts disposed partially in said channels at each end thereof and including stationary contacts at one end by said back surface and terminal connectors at the other outwardly extending ends; a plunger formed of ceramic material and including a metallic post extending outwardly from the center of said plunger and two thin rods each having a head and extending outwardly in a direction opposite that of said post on either side thereof in said first plane at the center of corresponding first and second channels, said post including a bore extending partially therethrough from said plunger; moveable conductive members having contacts formed at each end and including an opening intermediate said ends having a diameter larger than that of said thin rods and smaller than that of said head for



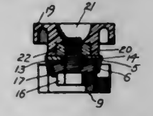
mounting one of said moveable conductive members on each of said thin rods; a compressible spring carried on each of said thin rods intermediate said corresponding moveable member and said plunger for urging said member against said head; a guide pin centrally positioned on said ceramic body and extending parallel to said first plane and at right angles to said second plane, said guide pin having a diameter slightly less than that of said bore; and a plunger return spring carried on said guide pin to store energy received when said plunger is depressed inwardly along said guide pin to engage said moveable spring biased contacts with said stationary contacts and to utilize the energy stored to move said plunger outwardly to interrupt said electrical circuit when said actuating rod acuates said release mechanism.

3,287,531
TERMINAL BUSHING HAVING IMPEDANCE MEANS ASSOCIATED THEREWITH
Yoshimasa Yonezawa and Toshio Tanabe, Kashio, Takarazuka-shi, Japan, assignors to Mitsubishi Denki Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
Filed Sept. 30, 1964, Ser. No. 400,477
Claims priority, application Japan, Dec. 30, 1963, 38/98,915
7 Claims. (Cl. 200—144)



1. A live-tank high-power circuit interrupter including a metallic enclosing tank structure and a pair of interiorly-extending terminal bushings, insulating supporting means for supporting said live-tank up in the air away from ground potential, main contact means and serially-related disconnecting contact means disposed interiorly of said live metallic enclosing tank, operating means for opening said main contact means and said serially-related disconnecting contact means in sequence, impedance means shunting said main contact means and providing a continued current path following opening of the main contact means, one of the terminal bushings having exterior and interior casing elements on opposite sides of the tank structure, said interior casing element being wholly composed of resistance material, and said interior casing element wholly providing said impedance means.

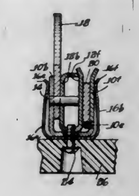
3,287,532
BATTERY SWITCH
Joseph James Boseley, 45–47 Meeks Road, Marrickville, near Sydney, New South Wales, Australia
Filed May 10, 1965, Ser. No. 454,622
1 Claim. (Cl. 200—158)



A battery isolating switch device comprising two conducting bar members termed first and second bar members, placed one over the other with insulation between to insulate them one from the other, said first bar member having means for a fixture to a battery terminal, post or other supply source and the second bar member having means for connection to a supply cable or the like, a contact bolt rigidly secured to the second bar member and passing through an insulated orifice in the first bar member and having a threading thereon with the end projecting beyond said first bar member, and a contact making switch knob with a threaded orifice extending therethrough by which it is screwed onto the projecting end of the said contact bolt into or out of contact with the first bar member to effect the making or breaking of the electrical connection between the said bar members, said switch knob being removable from the threaded end of the projecting contact bolt so as to render the switch inoperative and the electrical circuit broken until the said switch knob is replaced and tightened to establish the said circuit, the first bar member having downturned side flanges extending lengthwise thereof and forming a channel under said first bar member in which the second bar member is fitted with the insulation interposed between the adjacent faces of said bar members, the orifices in said bar members being arranged in register, and also with an orifice in said insulating material and through which orifices the said contact bolt passes, the insulation consisting of a plate of insulating material formed to fit between the downturned side flanges of the first bar member, the plate of insulating material having downturned flanges at opposite sides to extend over the adjacent side edges of the second bar member, the plate of insulating material having a collar extending from one face and positioned to fit through the orifice in the first bar member to insulate the contact bolt therefrom, and a transverse upturned shield flange at the end where connection is to be made to a supply cable or the like.

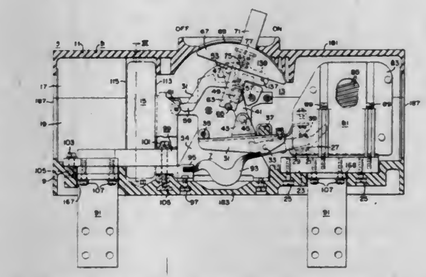
3,287,533
MOUNTING MEANS FOR SWITCH BLADE AND BLADE-SHAPED FUSE TERMINAL
Tadeusz J. Rys, Lexington, Ky., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed June 16, 1965, Ser. No. 464,348
6 Claims. (Cl. 200—162)

1. Mounting means for mounting a pivotable switch blade and a blade-shaped terminal of a cartridge fuse in electrically connected relationship, said mounting means comprising a generally U-shaped first mounting member having a bight portion and a pair of spaced first and second leg portions, said first leg portion having a hole extending therethrough, a second mounting member disposed between said leg portions in spaced relationship thereto and secured to said bight portion, there being a space between said first leg portion and a first side wall portion of said second mounting member for receiving a switch blade and there being a space between a second



side wall portion of said second mounting member and said second leg portion for receiving a blade-shaped terminal of a cartridge fuse, said first side wall portion of said second mounting member having a hole extending therethrough and aligned with said hole in said first leg portion, and a pivot pin for a switch blade, said pivot pin being received in said holes and said second side wall portion of said second mounting member preventing axial movement of said pivot pin into said space for receiving a blade-shaped terminal of a cartridge fuse.

3,287,534
CIRCUIT INTERRUPTER STRUCTURE WITH IMPROVED TERMINAL MEANS
Albert R. Cellerini, Beaver, and Louis N. Ricci, Chippewa Township, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 30, 1963, Ser. No. 305,792
15 Claims. (Cl. 200—168)



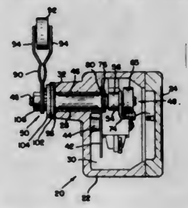
1. A circuit interrupter comprising an insulating housing, said housing comprising a front, a back and side wall means, said housing having a first opening in the front thereof, a circuit-interrupter mechanism disposed within said housing and comprising an operating handle extending from said first opening, such mechanism comprising a pair of contacts, said handle being manually operable to open and close said contacts, an arc-extinguishing unit for extinguishing arcs drawn between said contacts, said back having a second opening therein under said arc-extinguishing unit, a main conductor supported within said housing in proximity to said second opening and between said second opening and said arc-extinguishing unit, one of said contacts being fixedly supported on said main conductor, a unitary terminal conductor, and means connecting said unitary terminal conductor directly to said internal main conductor at said second

opening with said unitary external terminal conductor extending away from said housing beyond the back of said housing whereby said unitary external terminal conductor is accessible for direct connection to a bus bar.

3,287,535
SWITCH ACTUATOR AND COUPLING MEANS THEREFOR

Werner R. Bauer, Columbus, Ohio, assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed July 29, 1965, Ser. No. 475,642
8 Claims. (Cl. 200—168)



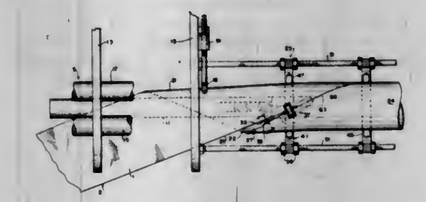
1. In combination:
a casing having a switch cavity with a cylindrical shaft bearing means extending from said cavity to an outer surface of said casing;
a switch means in said cavity having switch actuatable means to change circuit control means in said switch means;
a shaft rotatably oscillatable in said bearing and having a cavity shaft end extending into said cavity and having an outside shaft end extending outside said casing;
an actuating arm means loosely rotatable about and extending laterally from said shaft, having a rotatably oscillatable bearing around said shaft, and having means to actuate and deactuate said switch actuatable means;
a spring engaging lever rigidly secured to said actuating arm means;
a coil spring surrounding said cavity shaft end with one spring end secured to said cavity shaft end and with the other spring end engaging said spring engaging lever;
an arm rotating lever means fixed to said shaft and engaging and disengaging said actuating arm means oscillatably to rotate said arm means about said shaft;
and shaft oscillating means secured to said outside end of said shaft;
said outside shaft end insertable through said bearing means from said cavity outward to the outside of said casing while said actuating arm means, said spring engaging lever, said coil spring, and said arm rotating lever means are carried by said shaft, said shaft oscillating means securable to said outside shaft end after said outside shaft end has been inserted through said bearing means.

3,287,536
METHOD AND APPARATUS FOR FORMING SPIRAL PIPE

James E. Fay, Middletown, Ohio, assignor to Fay Pipe and Pile Co., Inc., Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 24, 1965, Ser. No. 442,391
9 Claims. (Cl. 219—62)

1. A method for continuously producing spiral pipe from a sheet material comprising,
(a) feeding the sheet material into a sheet working unit adapted to form a deformed spiral loop;
(b) forming a deformed spiral loop having its advanced edges held in a spaced-apart relationship due to the deformation of the loop;
(c) heating the advanced edges of the deformed spiral loop;
(d) feeding the deformed spiral loop having its advanced edges heated into a reforming and joining unit capable of reforming the deformed loop and joining its edges together;
(e) reforming the deformed loop as it is fed into the reforming joining means;

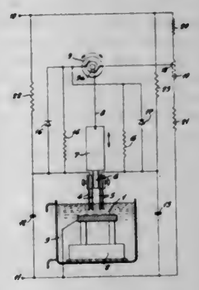


(f) joining the advanced edges of the spiral loop before said edges have passed through the vertical plane which passes through the center line of the spiral pipe being formed, said joining being accomplished by press forging wherein forces are applied to the edges in directions substantially perpendicular to the surface of the spiral loop, and
(g) controlling the circumference of the spiral loop as it is reformed and its edges are joined,
whereby a spiral pipe is continuously formed.

3,287,537
MACHINING BY SPARKING

Pierre Marcel René Chenel, Enghien les Bains, and Maurice Nedelec, Paris, France, assignors to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France, a corporation of France

Filed Nov. 12, 1963, Ser. No. 323,043
Claims priority, application France, Nov. 15, 1962, 915,513
6 Claims. (Cl. 219—69)

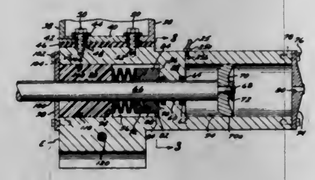


1. A spark-machining apparatus for producing perforations of small cross-section in a metallic workpiece comprising a tank adapted to contain a dielectric liquid, means for supporting said workpiece within said tank, two sets of wire electrodes of small cross-section having the ends thereof cooperating with said workpiece, each set being insulated from the other, a common carrier for said electrodes, a single power source connected through a separate voltage-dropping impedance to a separate spark discharge circuit connected between each set of wire electrodes and said workpiece to generate spark discharges between said ends of said wire electrodes and said workpiece to disintegrate the metal of the workpiece at the points of said discharges, and means for controlling the movement of said carrier to maintain substantially constant the displacement of said ends of the electrodes from the part of the workpiece undergoing machining comprising an electric motor which is variably controlled through separate blocking rectifiers by the average spacings of the ends of either set of electrodes from the operation of the workpiece undergoing machining.

3,287,538
SPOT WELDER

Edward Dicks, 6863 Delta Ave., Long Beach, Calif.

Filed June 3, 1965, Ser. No. 460,891
9 Claims. (Cl. 219—89)

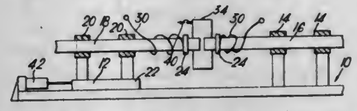


1. A spot welder of the type which includes an upper housing that supports a forwardly extending first water-cooled electrode, a lower metallic housing having two longitudinally aligned first and second cylinders therein that are separated by a wall in which a centrally disposed bore is formed, a piston slidably mounted in said first cylinder, a metallic piston rod slidably mounted in said bore and connected on a first end thereof to said piston, which piston rod extends forwardly through said second cylinder, a second water-cooled electrode mounted on the forward extremity of said piston rod, a valve for controlling the flow of compressed air to and from said first cylinder to move said second electrode relative to said first electrode, means for connecting a first conductor of an electric circuit to said first electrode, which spot welder is characterized by:
(a) a plurality of metallic arcuate segments that have a high degree of electrical conductivity that are disposed in said second cylinder, which segments encircle said piston rod and are in contact therewith, said segments having flat rear faces that abut against the forward face of said wall, and outwardly and rearwardly tapering forward faces;
(b) an outwardly and rearwardly tapering ring that encircles said piston rod in said second cylinder and engages said forward faces of said segments, with said ring when forced rearwardly moving said segments into pressure contact with said piston rod;
(c) an apertured plug disposed in a fixed position in the forward end of said second cylinder, which plug slidably engages said piston rod extending longitudinally therethrough;
(d) spring means in said cylinder disposed between said plug and ring which at all times maintains a substantial rearwardly directed force on said ring;
(e) electrically insulated means for supporting said lower housing from said upper housing; and
(f) means for connecting a second conductor of said electric circuit to said lower housing, with said housing, segments and piston rod cooperatively supplying electric energy from said electric circuit to said second electrode to permit the welding of two or more work pieces when disposed between said first and second electrodes and in contact therewith.

3,287,539
TUBE WELDING BY ROTATING ARC

Alan Ernest Stevens, Wokingham, England, assignor to Foster Wheeler Corporation, New York, N.Y., a corporation of New York

Filed Mar. 23, 1966, Ser. No. 536,793
5 Claims. (Cl. 219—100)



1. A method of making a ring-shaped butt weld between two tubes comprising the steps of holding said tubes axially aligned with a space between their ends to be welded, surrounding at least part of each tube with a coil, connecting one end of each of said coils to the tube it surrounds and supplying a source of welding current between the other ends of said coils, striking an arc between said ends of said tubes, so that the magnetic field produced by said coils causes said arc to travel around said space between said ends of said tubes to heat said ends, switching off said welding current and immediately bringing said ends of said tubes together to unite them.

3,287,540
METHOD AND COMPOSITION FOR JOINING OF ALUMINUM AND DISSIMILAR METALS

Thomas J. Connelly, Buffalo, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed May 19, 1964, Ser. No. 368,692
13 Claims. (Cl. 219—118)

1. The method of joining aluminum to dissimilar metal which comprises: (A) forming a molten flux composition on a bright surface of a dissimilar metal selected from the group consisting of iron, nickel, copper, chromium, zinc, and mixtures thereof, said flux composition consisting essentially of in the following proportions based on the weight of the base metals:
(a) .35 to 1.55 parts tin,
(b) .15 to .75 part zinc,
(c) 1.25 to 5.5 parts lead;
provided at least one member from the group of (a), (b) and (c), above, is in the form of a salt of the metal and at least one other member in the metallic form; (B) forming a thin metal deposit from said flux on the surface of the dissimilar metal, (C) disposing aluminum metal free of oxides adjacent the flux coating, (D) applying an electric arc from an electrode to melt the aluminum metal and flux coating while controlling the electric arc and heat generated thereby to avoid burning off of the flux coating, (E) shielding said aluminum metal and flux coating while in the molten state from the atmosphere with a blanket of an inert gas and (F) flowing said molten aluminum metal to the molten flux coating while continuing said inert gas shielding and arc control to join said aluminum metal to said dissimilar metal.

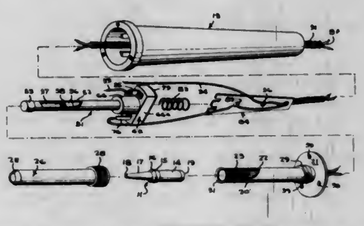
3,287,541
TEMPERATURE CONTROLLED SOLDERING IRON

Carl E. Weller and Donald R. Fegley, Easton, Pa., and Alden J. Brassaw, Phillipsburg, N.J., assignors to Weller Electric Corporation, Easton, Pa., a corporation of Pennsylvania

Filed July 13, 1964, Ser. No. 382,156
10 Claims. (Cl. 219—241)

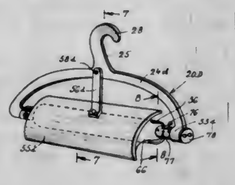
1. An electric soldering iron having a soldering tip, a thermomagnetic element positioned to be heated in response to the temperature of the tip, an electric heating element in thermal communication with the tip, the improvement of a control sub-assembly for regulating cur-

rent supplied to the heating element comprising, a non-magnetic elongated guide tube having an end adapted to be located adjacent the thermomagnetic element, a magnet slidably disposed in the tube adjacent the end, the thermomagnetic control element having a permeability which varies upon variation of its temperature to provide a magnetic force between the magnet and the thermomagnetic control element which diminishes as the temperature of the thermomagnetic control element increases, stationary magnetic means fixed in the tube for withdrawing the magnet through a selected stroke away from the thermomagnetic element by magnetic attraction of the magnet therefor when the temperature of the thermomagnetic element surpasses a selected value, an



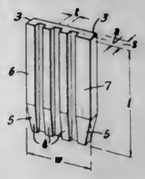
integral substantially T shaped switch housing mounted on the guide tube at one end thereof remote from the thermomagnetic element, switching means disposed in the switch housing having a movable contact member, an elongated connecting member extending between the magnet and the movable contact member for moving the latter in selected relation to movement of the magnet, the means for withdrawing said magnet through a selected stroke comprising a magnetic bushing longitudinally apertured to accommodate the elongated member therethrough and of generally cylindrical shape conforming substantially to the internal diameter of the guide tube whereby when the magnet slidably withdraws through a selected stroke current is interrupted to the heating element.

3,287,542
HEATED HANGER PRESSER
Dorothea M. Weitzner, 8 E. 62nd St., New York, N.Y.
Filed Nov. 8, 1965, Ser. No. 506,785
3 Claims. (Cl. 219—244)



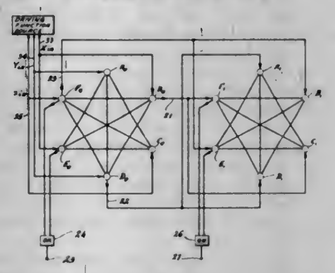
1. An electrically heated device of the type described, comprising a generally flat body having an arcuate bow defining a support for a garment, a hook centrally located at one edge of said bow to serve as a support for said body, short crossbars extending inwardly of opposite ends of said bow toward each other in axial alignment, a cylindrical assembly carried by at least one of said crossbars to serve as another support for another garment, said assembly comprising a rotatably hollow roller, an electrical resistance heater element located inside of said roller, electrical conductors connected to the heater element for applying electrical voltage to said element to heat the roller, whereby the roller can be used as a garment pressing means and a cylindrically curved plate secured to said body with a concave side facing said roller to guide an article between the roller and plate for pressing said article.

3,287,543
TICKET SYSTEMS
John Wolfgang Halpern, 31 Airedale Road, London, England
Filed June 24, 1963, Ser. No. 290,051
Claims priority, application Great Britain, Apr. 20, 1956, 12,146/56; July 4, 1956, 20,695/56; Jan. 2, 1957, 129/57
4 Claims. (Cl. 235—61.12)



1. A fare ticket for an automatic value-fee-or fare counting ticket system, including entry and exit registry machines for reading, recording and computing, comprising a non-magnetic plate of rigid material having at least one continuous rectilinear recessed track formed in one face of the plate and extending orthogonally from one edge of the plate to an opposite edge, said recessed track being provided with a continuous surface of magnetically susceptible matter, adapted to have recorded thereon magnetic impressions of continuous and non-discrete nature during movement of the ticket past a recording head, said recessed track being capable of receiving sensory organs protruding into them for reading and erasing during the passage of the ticket through a registry machine, the surfaces of one end of said ticket being tapered in order to facilitate its insertion into a registry machine.

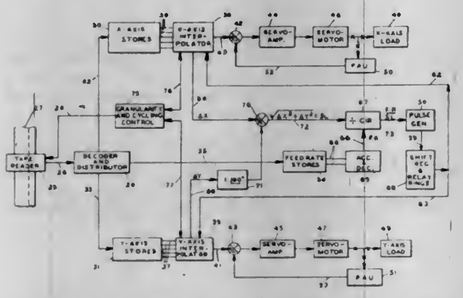
3,287,544
BIDIRECTIONAL COUNTER
Larkin Burneal Scott, Fort Worth, Tex., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed Mar. 11, 1963, Ser. No. 264,139
9 Claims. (Cl. 235—92)



1. A positive memory bidirectional counter stage for a number system having the radix R comprising:
a multistable switching device arranged to form a stage of a counter and to switch through different stable states in response to an N state driving function where N is greater than 2,
said device having $R \times N$ electrical networks providing $R \times N$ stable states,
each of said networks adapted for receiving a plurality of input signals at input terminals thereof and for

providing at an output terminal thereof an indication of a predetermined combination of input signals, and
circuit means for applying the N state driving function to each of the networks and for coupling the output terminal of each of said networks to an input terminal of a plurality of other networks in a manner for causing each of said networks to successively switch in a predetermined sequence for R occurrences of the driving function.

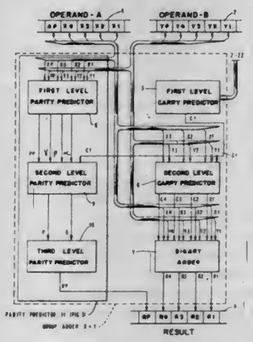
3,287,545
AUTOMATIC CONTROL SYSTEM
Lonnie A. Burnett, Cincinnati, Ohio, Herbert M. Fuldner, Fort Thomas, Ky., and Norman D. Neal and John W. Wilson, Cincinnati, Ohio, assignors to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed Feb. 26, 1962, Ser. No. 175,400
24 Claims. (Cl. 235—151.11)



1. Apparatus for producing signals suitable to control the displacement of a movable element comprising:
(a) a source of input signals representing values of a function at relatively widely spaced intervals of a variable of the function,
(b) interpolating means having a plurality of input terminals for receiving signals from said source and a plurality of output terminals which are greater in number than said input terminals for producing output signals which are representative of intermediate values of a function,
(c) an output conductor,
(d) means for selectively connecting said output terminals to said output conductor,
(e) and static means for controlling the operation of said connecting means to connect said output terminals to said output conductor in a prearranged sequence and including
(1) an electronic commutating device for sequentially operating said connecting means,
(2) a variable frequency pulse generator,
(3) and means for driving said commutating device at a rate proportional to the pulse rate of said generator.

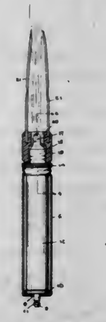
3,287,546
PARITY PREDICTION APPARATUS FOR USE WITH A BINARY ADDER
Alan R. Geller, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Feb. 27, 1963, Ser. No. 261,351
13 Claims. (Cl. 235—153)

8. A parity predictor comprising:
a source of grouped binary operands;
an adder, connected to said source, for deriving during a first time from each group of operands an input carry to another group, deriving during a second time from each group of operands and the input carry to each group of operands binary carries for each group, and deriving during a third time from each group of operands and the binary carries for each group binary sums for each group;
first parity prediction circuits, connected to said source for deriving, during said first time, from each group of operands a number of first partial parities;



second parity prediction circuits, connected to said first parity prediction circuits and to said adder, for deriving during said second time from said first partial parities and from said input carries to each corresponding group a tentative sum parity bit and an adjustment bit for each group;
sum parity circuits, connected to said second parity prediction circuits for adjusting said parity bits during the derivation of said group binary sums in said third period in accordance with said adjustment bits; and
utilization means, connected to said adder and to said sum parity circuits for associating each parity bit with the sum for its corresponding group.

3,287,547
ILLUMINATED TWEEZER
Albert W. Spedding, 517 S. 21st Ave., Hollywood, Fla.
Filed June 10, 1964, Ser. No. 373,962
1 Claim. (Cl. 240—6.46)



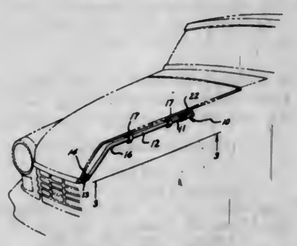
An illuminated tweezer having a handle forming barrel open at its upper end and threaded, a coupling device having a lower extension that is threaded to engage the threads of the barrel, the coupling also having an upwardly extended cylindrically and threadedly formed socket for receiving a threaded ferrule of an incandescent lamp, a non-metallic sleeve having an axial opening throughout

and with the lower end of the opening threaded to receive the threaded socket, a pair of opposed flexible prongs molded into the top of the sleeve and with the terminal ends of the prong being in normally spaced relation and biased together by pressure exerted upon the outer sides of the prongs, means in the barrel for energizing the lamp and whereby the lamp when energized will project a light beam between the prongs and to illuminate an area at the terminal ends of the prongs, the sleeve and its axial opening and the threads of the opening and the lower ends of the prongs being simultaneously molded, the coupling device being stamped from metal and having a circumferentially knurled ring carrying the upwardly extended threaded socket and the lower threaded extension, the barrel forming housing for electrical batteries, the bottom of the barrel being apertured to receive an outwardly extending button that is fixed to a disk in the barrel and with the disk normally resting upon the bottom of the barrel, a coil spring seated into the coupling and bearing upon the positive end of the batteries and to bias the batteries downwardly toward the disk and away from an axial terminal of the lamp, the button projecting downwardly from the barrel through the aperture, the button being cylindrical, and circumferentially grooved so that the button when forced inwardly with the disk may be shifted laterally to engage the groove at a marginal edge of the aperture, the movement of the button inwardly, simultaneously shifting the batteries upwardly to engage the contact of the lamp.

3,287,548
HIGHWAY SAFETY LIGHT FOR AUTOMOTIVE VEHICLES

Paul G. Kompler, 1551 Ohio Ave., Whiting, Ind.

Filed July 9, 1964, Ser. No. 381,360
1 Claim. (Cl. 240—7.1)



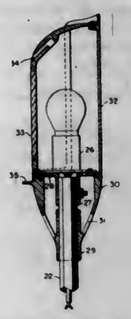
A highway safety light for automotive vehicles, comprising a transparent electric light secured to one end of a light supporting tube that has its other end hingedly secured by a spring hinge to the underside of the edge of the hood of an automotive vehicle by means of a flat spring hinge in such a manner as to permit the said transparent light to extend vertically upward, above the top of the said automotive vehicle, when the said hood is in an open position, and the said electric light being connected to the electric system of the said automotive vehicle, and a pair of spaced U-shaped clips secured to the underside of the said hood, the said clips being adapted to hold the said light supporting tube when the said hood is closed.

3,287,549
WARNING LIGHT ASSEMBLY

Harry E. Lantery, Wollaston, Mass., assignor to Imagineers, Inc., Wollaston, Mass., a corporation of Massachusetts

Filed Dec. 19, 1963, Ser. No. 331,754
2 Claims. (Cl. 240—8.1)

1. A warning light device for vehicles, comprising a mast arranged to be mounted in upright non-rotative position on a vehicle and carrying at its upper end an apertured supporting plate, a lamp bulb mounted on the plate, an upper housing surrounding the bulb, having a colored glass panel in its rear side and a ventilating passage above said panel, and a lower housing below said supporting plate surrounding the top of the mast and having ventilating apertures cooperating with those of the upper housing for circulating a cooling draft about the lamp bulb, the lower housing being provided with an outstanding flange located in position to cut off downwardly directed rays from the enclosed light bulb.



3,287,550
VEHICLE LIGHT

James E. Sarazin, 208 2nd Ave., Pittsfield, Mass.

Filed Aug. 27, 1964, Ser. No. 392,407
2 Claims. (Cl. 240—8.2)



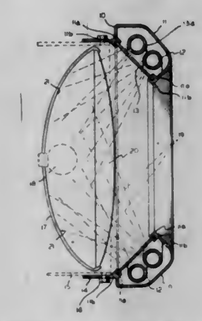
1. An auxiliary lighting system for automotive vehicles comprising in combination with an automotive vehicle, an auxiliary lamp, a generally elliptically-shaped substantially horizontally-disposed well provided in one of the vehicle fenders, said well being disposed rearwardly of and in substantial axial alignment with one of the vehicle headlights, said auxiliary lamp being mounted in said well so as to be disposed inside the plane of the fender and so as to project beams of light obliquely outwardly rearwardly and downwardly relative to the vehicle.

3,287,551
FOG LIGHTS

James Vin Dick, W–156, N–8027 Pilgrim Road, Menomonee Falls, Wis.

Filed May 8, 1964, Ser. No. 365,981
4 Claims. (Cl. 240—41.1)

1. A fog light construction for use in combination with a conventional motor vehicle headlight assembly having a reflector disposed in and contained by an annular housing, said construction comprising: a frame having an annular body portion bent around a central opening to provide an opaque frontal section, an opaque rim section, and an open rearward section, said frontal section and said rim section coacting to define an annular chamber to encase at least one circular shaped fog light therein, said body portion having holding means on the inner surface thereof for receiving and holding a circular shaped fog light therein in detachable spaced relationship thereto, said frame further having a rearwardly extending generally cylindrical sleeve for receiving therein and circumscribing the annular housing of the headlight assembly; securing means for detachably securing said sleeve to said annular housing when said sleeve is in said circumscribing relationship thereto; at least one circular shaped fog light removably mounted in said holding means behind said opaque frontal section and in direct communicative relationship, via said open rearward section, with the reflector of the headlight assembly, means

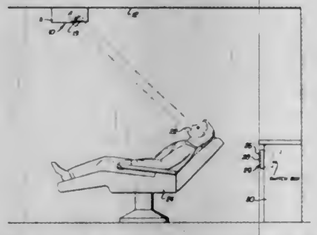


for selectively energizing said fog light to cause illumination thereof independently of the illumination of the headlight assembly; and control means for activating said energizing means to illuminate said fog light and cause light therefrom to pass through said open rearward section on to the reflector of the headlight assembly and, hence, by reflection, forwardly through said central opening.

3,287,552
REMOTE CONTROLLED LIGHTING SYSTEM

Jack Drandell, Los Angeles, Calif., assignor of one-half to Leo C. Ward, Los Angeles, Calif.

Filed Nov. 15, 1963, Ser. No. 323,950
2 Claims. (Cl. 240—41.15)



2. A remote controlled lighting system for projecting light into the mouth of a patient reclining in a dentist chair comprising:

a housing;

an elongated rack having pairs of openings;

a pair of arms connected to said rack and pivoted within said housing for rotatably mounting said rack about an axis of rotation;

pairs of light units wherein each unit is capable of projecting a beam of light;

means connected to the rack positioning each light unit adjacent a respective opening with each beam of light projectable therethrough and said means also for angularly adjusting the central axis of each beam so that the beam axes can be converged to a selected common point within the patient's mouth;

the distance between the openings within each pair of light units being substantially equal and approximately one-half the distance between pairs;

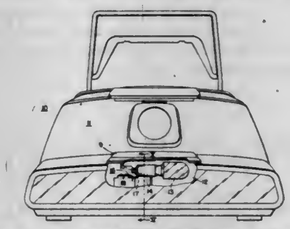
reversible motor means within said housing for energizing said pair of arms for rotating said light means about the axis of rotation to swing the selected common point in an arc which is in a plane substantially normal to said axis of rotation; and

remote control means for selectively energizing said motor.

3,287,553
MOUNTING MECHANISM

Robert S. Waters, Lexington, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 30, 1964, Ser. No. 386,231
9 Claims. (Cl. 240—52)

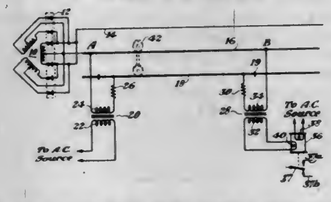


3. Means mounting a light bulb and socket for movement between a first position in which said bulb and socket are disposed in a confining enclosure where separation of the bulb and socket is difficult and a second position where said bulb is readily accessible for separation thereof from the socket, said means comprising: a flexible member, a socket holding member, and means for supporting said members in cooperative relationship, said flexible member being adapted to retain said holding member in the first position within said enclosure, said flexible member being further adapted to temporarily retain said holding member in the second position whereby removal of said bulb is unobstructed by the confining enclosure, one of said members having means for cooperating with the other of said members for limiting movement of said socket holding member to substantially 90°

3,287,554
RAILWAY TRACK CIRCUIT APPARATUS

Crawford E. Staples, Edgewood, Pa., assignor to Westinghouse Air Brake Company, Swissvale, Pa., a corporation of Pennsylvania

Filed Nov. 1, 1963, Ser. No. 320,864
12 Claims. (Cl. 246—35)



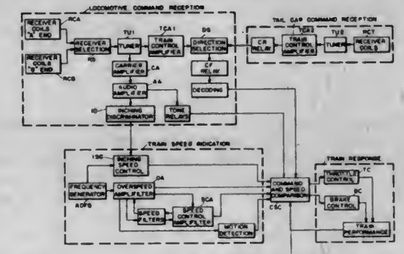
1. A track circuit for direct current propulsion territory where propulsion power is obtained from a static rectification unit with a plurality of rectifiers for rectifying alternating current of a given frequency, the output of said rectification unit being connected across an electrically continuous one of a pair of track rails and an additional conducting member adjacent to said track rails, the other of said track rails being divided into insulated sections, an insulated section of rail and a portion of the continuous rail forming a block section, said track circuit comprising:

(a) an alternating current signaling source of said given frequency connected to the track rails at one end of said block section;

(b) a transformer having the primary thereof connected to the track rails at the other end of said block section;

(c) a track relay connected to the secondary of said transformer and being responsive to alternating current of said given frequency, said transformer being saturable at a value of direct current in said block section in excess of that amount of direct current normally flowing in said block section during periods of nonoccupancy thereof such that said track relay will be energized in response to current from said signaling source when said block section is unoccupied but when the track rails are shunted by the wheels of a train said track relay will not be energized in response to direct current propulsion power surges or ripple from said rectification unit caused by the misfiring of one of said rectifiers.

3,287,555
AUTOMATIC VEHICLE CONTROL SYSTEM
Waltrus L. Livingston and J. Donald Hughson, Rochester, N.Y., assignors to General Signal Corporation, Rochester, N.Y., a corporation of New York
Filed Feb. 1, 1963, Ser. No. 255,624
18 Claims. (Cl. 246—187)



1. The combination with a variable speed power unit equipped with governor means which adjusts the loading on said power unit each time the speed setting on said power unit is changed to produce a different power output from said power unit, of

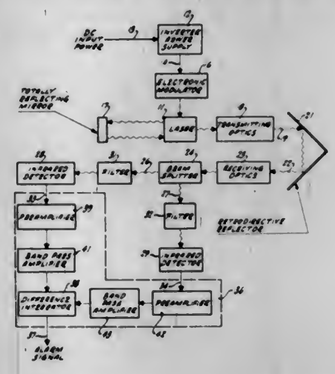
(a) registering means for registering a desired speed setting for said power unit,

(b) stepping means responsive to the registration of said registering means for adjusting the speed setting on said power unit, and

(c) control means responsive to the condition of said governor means effective to permit said stepping means to adjust said speed setting on the power unit from a first to a second value during the adjustment of said speed setting to the desired setting registered by said registering means only after said governor means has properly adjusted the loading on said power unit for said first speed value.

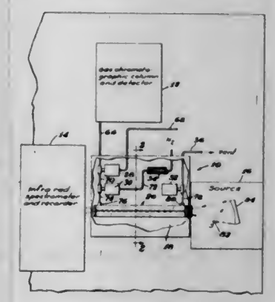
3,287,556
LASER LONG-PATH INFRARED MULTIWAVELENGTH ABSORPTION SPECTROMETER
James L. Good, Belmont, Calif., assignor to Textron Inc., Belmont, Calif., a corporation of Rhode Island
Filed Dec. 2, 1963, Ser. No. 327,327
7 Claims. (Cl. 250—43.5)

1. A long-path infrared differential absorption spectrometer comprising a laser generating an infrared radiation beam having a plurality of predetermined constituent wavelengths, electronic modulating means coupled to said laser to modulate said beam, a retrodirective reflector spatially separated from said laser, transmitting optical means for directing said beam through space upon said reflector, receiving optical means receiving a return beam from said reflector, optical beam splitter means associated with said receiving optical means separating said return beam into its constituent wavelengths, infrared radiation detector means receiving the respective constituent wave-



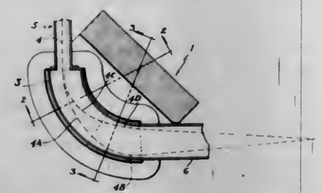
lengths from said beam splitter means and generating electrical signals correspondingly indicative of the intensity levels thereof, and means comparing said electrical signals for indicating differences between the intensity levels of said constituent wavelengths.

3,287,557
OPTICAL ABSORPTION CELL FOR GAS CHROMATOGRAPH EFFLUENT ANALYSIS HAVING GAS HEATING MEANS
Arnold M. Bartz, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Mar. 2, 1964, Ser. No. 348,682
4 Claims. (Cl. 250—43.5)



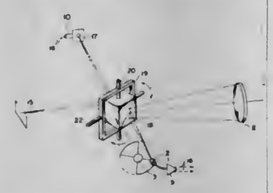
1. An infrared absorption cell assembly for use with a spectrometer, comprising an elongated bar-like member having a walled slot extending axially through it from end to end, said slot being long as compared with its maximum cross-sectional dimension, the walls of the slot being highly polished, each end of said slot in said bar-like member having an infrared transmitting closure element sealed thereto, means for introducing flowable gas-like material into said slot, means for withdrawing a vapor sample from said slot at a position remote from said means communicating with said slot for introducing flowable gas-like material, means for sequentially applying vapor samples to and retaining said samples in said slot for predetermined time intervals and then urging a purge gas through said slot, and means for heating said bar-like member and said means for sequentially applying and retaining vapor samples in said slot and for urging a purge gas through said slot.

3,287,558
CHARGED PARTICLE DEFLECTING DEVICE CONSISTING OF SEQUENTIALLY POSITIONED UNIFORM AND NON-UNIFORM MAGNETIC FIELD SECTORS
James H. Bly, Lexington, and Harald A. Enge, Winchester, Mass., assignors to High Voltage Engineering Corporation, Burlington, Mass., a corporation of Massachusetts
Filed Sept. 8, 1961, Ser. No. 136,928
1 Claim. (Cl. 250—49.5)



Magnetic apparatus for bending beams of charged particles comprising means for producing a magnetic field transverse to the plane defined by an arcuate beam trajectory, said magnetic field intersecting said plane over two permissibly contiguous areas including said trajectory and having respectively anterior and posterior positions along said trajectory, said magnetic field being uniform in said anterior area in the vicinity of said trajectory and the intensity of said magnetic field in said posterior area in the vicinity of said trajectory increasing approximately in proportion to the *n*th power of the distance from a common axis perpendicular to said plane towards the outer periphery of said trajectory.

3,287,559
INFRARED THERMOGRAM CAMERA AND SCANNING MEANS THEREFOR
Robert Bowling Barnes, Stamford, Conn., assignor to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware
Filed Oct. 4, 1963, Ser. No. 313,863
10 Claims. (Cl. 250—65)



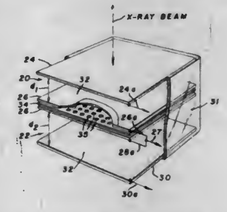
1. In a thermograph in which a fixed infrared detector is scanned across an object to be thermographed in the form of a raster, the infrared detector output is transformed into proportional visible light, and the visible light thus produced is scanned across a photographically sensitive surface to produce a picture in raster form corresponding to the temperature of the object to be scanned, the improvement which comprises, in optical alignment,

(a) a prism-shaped element with an even number of externally reflecting surfaces and means for continuously rotating the element about its axis, the element being oriented so that the infrared detector is scanned across the object to be thermographed in a series of horizontal lines by rotation of the element,

(b) means for tilting the prism-shaped element about an axis at right angles to the angle of rotation to produce vertical displacement of the horizontal lines,

(c) the visible light source which varies in proportion to the infrared detector output being positioned and provided with optical means so that its radiations strike an opposite face of the scanning prism-shaped element from that scanning the infrared detector, and are reflected from said face onto the photographic surface.

3,287,560
DEVICE FOR MEASURING THE TOTAL RADIATION ENERGY OVER A WIDE SPECTRUM USING SERIALLY ARRANGED DETECTORS
Russell H. Morgan, Baltimore, Md., assignor to Picker X-Ray Corporation, Waite Manufacturing Division, Inc., Cleveland, Ohio, a corporation of Ohio
Filed May 17, 1960, Ser. No. 29,631
19 Claims. (Cl. 250—83.6)

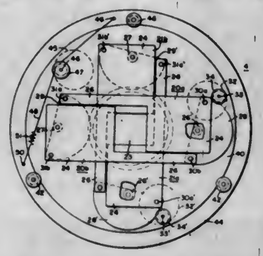


1. A device for measuring the energy of radiation of substantial spectrum regardless of the wave length distribution within said spectrum, comprising a pair of serially arranged ionization chambers, each containing a gas which forms ions under the influence of incident radiation, said chambers having electrode means for producing a differential electrical output therefrom in response to the ionization of the gas of said chambers, said chambers being separated by a layer of material which attenuates the incident radiation, said layer having an attenuation characteristic for photon energy within said spectrum which complements the response characteristics of said chambers for such energy to cause said output to vary as a function of the energy of the incident radiation regardless of the wave length distribution within said spectrum, the ratio of said output to the energy of the radiation through said chambers being substantially constant over said spectrum.

3,287,561
X-RAY SHUTTER APPARATUS WITH ROTARY MOUNTING MEANS AND SPECIFIC MEANS FOR ROTATING THE SHUTTER APPARATUS THEREON
William R. Ingles, Houston, Tex., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 11, 1964, Ser. No. 374,400
2 Claims. (Cl. 250—105)

1. X-ray apparatus comprising shutter means defining an elongated aperture which dictates the cross-sectional shape of an X-ray beam, and rotary mounting means for said shutter means to permit selective rotarywise orientation of said shutter means, wherein said rotary mounting means is in the form of a circular member and said apparatus includes roller support means engaging the outer rim of said member for rotatable support thereof, a motor mechanism mounted on said member, a pulley mounted on said mechanism and rotated by same, and a ten-

sioned flexible cable means anchored at both ends at spaced points on said apparatus and passing around said pulley to cause said pulley to travel along said cable



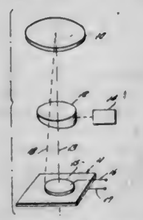
means during pulley rotation and cause said motor mechanism and thereby said mounting means to turn on an axis prescribed by said roller support means.

3,287,562

PHOTOSENSITIVE SCANNING MEANS FOR ROTATING AN IMAGE WITH RESPECT TO A LIGHT MODULATOR

James J. Connors, Jr., Huntington Station, and John W. Barnes, Floral Park, N.Y., assignors to Kollsman Instrument Corporation, Elmhurst, N.Y., a corporation of New York

Filed Feb. 28, 1964, Ser. No. 348,019
8 Claims. (Cl. 250—203)



1. A scanning system for a light tracking device comprising objective means for forming an image of a light source to be tracked, an image rotating means for continuously circularly rotating said image in a circular path at a predetermined frequency, and a fixed light detector means; said image rotating means being interposed between said objective means and said light detector means; said light detector means being symmetrically disposed about the optical axis of said objective means; said light detector means being positioned in the focal plane of said objective means; said light detector having a uniform central body portion and a non-circular periphery which includes a first radius portion and a second radius portion different from said first radius portion; said first radius portion being smaller than the radius of the circular path tracked by said image; said second radius portion being larger than the radius of the circular path tracked by said image.

3,287,563

SPATIAL COHERENT REPRODUCING SYSTEM

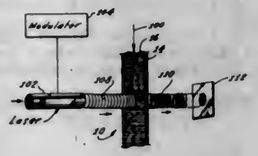
Kenneth Clunis, Manhattan Beach, Calif., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Nov. 7, 1962, Ser. No. 236,027
15 Claims. (Cl. 250—219)

1. In combination in a system for reproducing information recorded at successive positions on a thermoplastic medium in the form of physical deformities on the surface of the medium,

first source means for producing light energy having characteristics of presenting a series of wave fronts with substantially all the energy in each wave front in phase to have light energy with substantial spatial coherence,

second means operatively coupled to the medium for moving the medium in a particular direction,



the first source disposed relative to the medium for directing the light energy toward the medium as the medium moves in the particular direction to illuminate the successive positions on the medium to provide variations in the characteristics of the light energy in accordance with the physical deformities on the surface of the medium, and

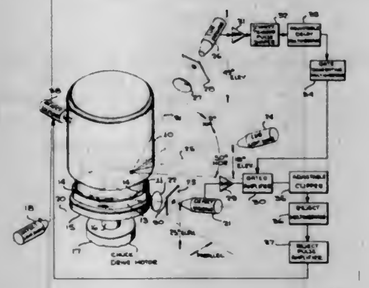
third means disposed relative to the medium and responsive to the variations in the characteristics of the light energy to produce an output indication in accordance with the variations in the characteristics of the light energy.

3,287,564

PHOTOELECTRIC GLASSWARE INSPECTING DEVICE

Ernest M. Gore, Chicago, and Henry Keinanen, Oak Lawn, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Dec. 31, 1962, Ser. No. 248,547
21 Claims. (Cl. 250—222)



6. A photoelectric inspection device for inspecting glassware having a closure thereon for defects disposed immediately adjacent areas covered by a closure, said inspection device comprising a first photoelectric detector means for sequentially detecting the combined light reflective effects of the shape of a closure at a point of engagement with the glassware and then any defects that may exist in the glassware at the particular point, a second photoelectric detector means for detecting the light reflective effects of another portion of the closure, an electrical system electrically coupling the outputs of said first and second detector means in inhibiting relation whereby the output of said first photoelectric detector means is inhibited when affected by a closure and the effective output signal thereof is that resulting from the light reflecting from defects in the glassware, a rotary support for rotating the glassware relative to said photoelectric detector means to provide

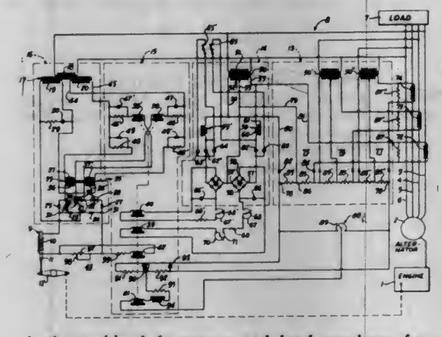
for a complete circumferential inspection of the portion of the glassware to be inspected, and glassware ejecting means electrically coupled to said electrical system and positioned adjacent said rotary support for operation by the effective output signal to eject glassware having detected defects from said rotary support.

3,287,565

ELECTRICAL RESPONSIVE CONTROLS FOR PRIME MOVER DYNAMO PLANTS

Albert E. Lewis, Euclid, Ohio, assignor, by mesne assignments, to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York

Filed July 17, 1963, Ser. No. 295,624
7 Claims. (Cl. 290—40)



1. A combined frequency and load regulator for an alternating current source,

(a) an electroresponsive control for adjusting the frequency and current output of said source,

(b) a control unit including a magnetic amplifier having control windings for actuating said electroresponsive control and a plurality of saturating winding means including a pair of frequency control windings and a load current control winding,

(c) a frequency detecting circuit including a pair of tuned circuits connected to the output of the current source, one of said circuits being tuned to a frequency above the regulated frequency and connected to one of said frequency control windings and the second of said circuits being tuned to a frequency below the regulated frequency and connected to the second of said frequency control windings,

(d) a load detecting circuit including a pair of additive rectifying circuits one of which includes a signal proportional to the load current and providing a load proportional output signal means, and

(e) a frequency droop adjustment potentiometer circuit connecting said output signal means to said load current control winding and being presettable to determine the frequency characteristic between no-load and load conditions of the alterating current source.

3,287,566

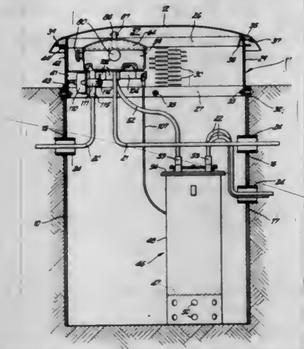
HOUSING FOR UNDERGROUND DISTRIBUTION APPARATUS

Richard J. Lang, Cleveland, Ohio, and Mike P. Crivello, St. Francis, and Ronald J. Bertling, Grafton, Wis., assignors to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware

Filed Dec. 23, 1963, Ser. No. 332,811
9 Claims. (Cl. 307—17)

1. In an underground electrical distribution system for residential service, in combination, a tubular open-ended vault of bituminized fiber disposed in the earth with its axis vertical and its upper end at ground level and having

conductor passage means extending therethrough, an open-ended metallic cylindrical sidewall section disposed above ground level and affixed to said vault adjacent the upper end thereof and having a plurality of louvers therein, a cover removably secured to and closing the open upper end of said sidewall section, a distribution transformer disposed within said vault below ground level and having a sealed casing enclosing a primary and a secondary winding and being provided with a peripherally continuous sidewall and a bottom wall secured to said sidewall above the lower end thereof, whereby the cooling characteristics of said transformer are not affected by debris within said vault up to the level of said bottom wall, a sectionalizing switch having three spaced apart stationary contacts and a manually operable movable



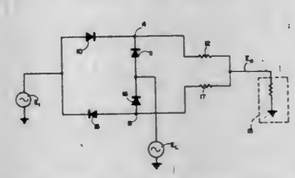
contact to electrically bridge any two of said stationary contacts and also to electrically bridge all three of said stationary contacts, a primary tap cable electrically connected at one end to the first of said stationary contacts and at the other end to said primary winding within said transformer casing, means affixed to said sidewall section for mounting said switch within said sidewall section above ground level, incoming and outgoing underground primary cables extending through said conductor passage means in said vault and being electrically connected to the second and third of said switch stationary contacts respectively, and a secondary underground cable extending through said conductor passage means into the interior of said vault and being electrically connected to said secondary winding within said transformer casing.

3,287,567

LOWER-VALUE VOLTAGE LIMITER

Bernard N. Gaon, Orange, Calif., assignor to North American Aviation, Inc.

Filed Sept. 30, 1963, Ser. No. 312,568
7 Claims. (Cl. 307—72)



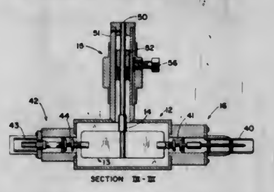
1. A lower value voltage limiter comprising

one pair of unidirectional conducting devices connected to one common junction, each device having two terminals and being poled for forward conduction in the same direction with respect to said one junction,

a current limiting resistor coupling said common junction to a load,

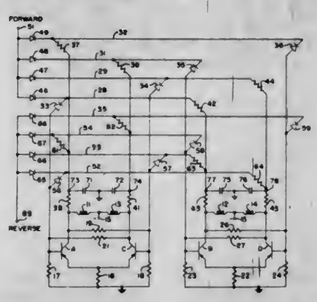
one of said devices adapted to be connected to an input signal source tending to provide conduction of current therethrough at least part of the time,
and a reference signal source connected to the other of said devices tending to provide current therethrough at least during the time said input signal tends to provide current through said one device, whereby current is provided to said low impedance summing network from said input signal source or said reference signal source, whichever is greater in amplitude.

3,287,568
PARAMETRIC UP-CONVERTER WITH D.C.-ISOLATED IRIS AS VARACTOR-HOLDER
Johann Osterwalder, Ottawa, Ontario, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada
Filed Feb. 24, 1965, Ser. No. 434,982
8 Claims. (Cl. 307—88.3)



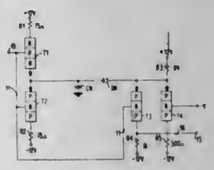
1. A non-linear impedance device comprising a waveguide having a capacitive iris located therein; means for coupling a first signal to one end of the waveguide; means for coupling a second signal from the other end of the waveguide; a semiconductor diode located in the same plane as the iris and having one electrode connected to said iris; a tuning element connected to the other electrode of the diode for series tuning the diode; an input signal circuit connected to the iris for coupling a third signal thereto; the third signal frequency being equal to the difference between the first and second signal frequencies, and also being below the cut-off frequency of the waveguide; and means for electrically isolating the iris from the waveguide at the third signal frequency.

3,287,569
MATRIX FOR CONTROL OF STEP MOTORS
Duane A. Carney, Santa Clara, Calif., assignor, by mesne assignments to the United States of America as represented by the Secretary of the Navy
Filed June 20, 1962, Ser. No. 204,307
8 Claims. (Cl. 307—88.5)



1. A circuit for controlling the direction of rotation of a bidirectional step motor comprising:
a first input circuit to receive forward control pulses,
a second input circuit to receive backward control pulses,
a pair of flip-flops, and
a logic matrix having a forward channel connected to said first input circuit and a reverse channel connected to said second input circuit, each of said channels sensing the pre-signal status of said flip-flops by sensing their respective output voltages, said forward channel being connected to said flip-flops to switch said flip-flops alternately in a first progression of states moving in a first direction by a succession of forward control pulses received on said first input circuit and said second channel being connected to said flip-flops to switch said flip-flops alternately in a second progression of states moving in a direction opposite said first progression by a succession of backward control pulses received on said second input circuit.

3,287,570
PEAK DETECTING CIRCUIT
Melvin G. Wilson, Rochester, Minn., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Jan. 28, 1963, Ser. No. 254,054
12 Claims. (Cl. 307—88.5)

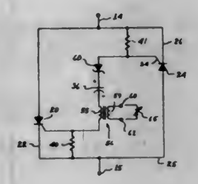


1. Apparatus for indicating the occurrence of a peak level of a voltage signal comprising:
a pair of current conducting devices having inputs commonly connected for receiving said voltage signal;
a capacitor commonly connected to the outputs of said current conducting devices whereby one current conducting device charges said capacitor as said voltage signal has a positive excursion and the other current conducting device discharges said capacitor during the negative excursion of said voltage signal;
a peak indicating current conducting device having an input connected to receive said voltage signal and an output for indicating the time the peak level of said voltage signal occurs, said peak indicating current conducting device provides an indication of a voltage peak when it switches from a state of conduction to a non-conducting state; and
a unidirectional current conducting device connected between said capacitor and said peak indicating current device to prevent said peak indicating current conducting device from charging said capacitor so that the current conducted by said peak indicating current is independent of the state of said capacitor and to permit the capacitor to facilitate turn off of said peak indicating current conducting device just after said voltage signal reaches a peak.

3,287,571
SOLID STATE A.-C. CONTACT UTILIZING SILICON CONTROLLED RECTIFIERS
Richard L. White, Glendora, Calif., assignor to Dickson Electronics Corporation
Filed Dec. 18, 1963, Ser. No. 331,597
8 Claims. (Cl. 307—88.5)

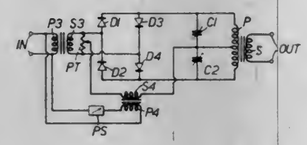
1. A solid state A.-C. contact comprising:
(*a*) a first and a second input terminal,

(*b*) a first translating means having a first element comprising an anode, a second element comprising a cathode, and a control element,
(*c*) a second translating means having a first element comprising a cathode, a second element comprising an anode, and a control element,
(*d*) means connecting the anode of said first translating means and the cathode of the second translating means to said first input terminal,



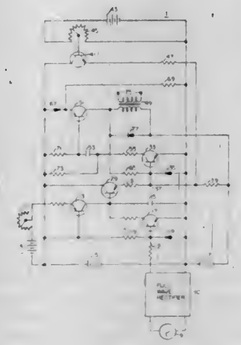
(*e*) means connecting the cathode of said first translating means and the anode of said second translating means to said second input terminal,
(*f*) a control circuit including a capacitor connected between the control element of said first translating means and the control element of said second translating means, said capacitor also being series connected to said first and second input terminals
(*g*) and means for opening and closing said control circuit including of said capacitor.

3,287,572
FREQUENCY DOUBLERS EMPLOYING DIODE BRIDGE AND PHASE SHIFTER CIRCUIT AT THE INPUT
Robert Stanley Robson, Chelmsford, Essex, England, assignor to The Marconi Company Limited, Strand, London, England, a British company
Filed Jan. 23, 1964, Ser. No. 339,645
Claims priority, application Great Britain, Feb. 18, 1963, 6,420/63
5 Claims. (Cl. 307—88.5)



1. A frequency doubler comprising four diodes coupled together in series in the same polarity in a closed loop, two impedances coupled together in series across an adjacent pair of said four diodes, a tapped impedance coupled between the junction of said adjacent pair of diodes and the junction of the other pair of said diodes, input means for applying an input signal between the junction of said adjacent pair of diodes and the junction of the other pair of said diodes, phase shifting means connected to said input means for producing at the output thereof a signal of the same frequency as said input signal but in phase quadrature therewith, the output of said phase shifting means being applied between the junction point of said two impedances and the tap of said tapped impedance, thereby producing a frequency doubled output across said two impedances.

3,287,573
PULSE GENERATOR CIRCUIT FOR PROVIDING LINEAR ADVANCING OR RETARDING OF PULSE GENERATION BY MAGNITUDE OF INPUT SIGNAL
Robert E. Mierendorf, Milwaukee, Wis., assignor to The Louis Allis Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Mar. 9, 1964, Ser. No. 350,470
4 Claims. (Cl. 307—88.5)



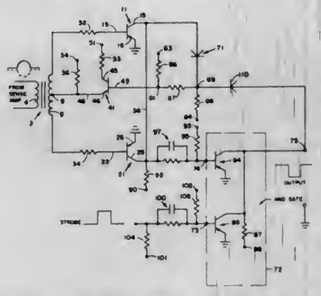
1. A pulse generator circuit wherein the point of pulse generation may be advanced or retarded in accordance with the magnitude of an input signal comprising:
(a) a power supply;
(b) a pulse transformer having input terminals, connected to said power supply;
(c) first transistor means connected to said pulse transformer to provide current thereto from said power supply when said first transistor means is in the on state;
(d) means connected to said first transistor means to turn on said first transistor means comprising,
second transistor means connected to said first transistor means to turn on said first transistor means when said second transistor means is in the conducting state,
means connected to said second transistor means to provide a saw-tooth current signal tending to place said second transistor means in the conducting state,
means connected to said second transistor means to provide a constant current signal tending to place said second transistor means in the non-conducting state,
means responsive to the input signal connected to said second transistor means to provide a signal proportional to the input signal to combine with said saw-tooth current signal to produce a signal to overcome said constant current signal to place said second transistor means in the conducting state when said combined signal exceeds said constant current signal, and
means connected to said second transistor means and to said pulse transformer to provide rapid turn-on of said second transistor means when current appears in said transformer; and
(e) means connected to said first transistor means to turn off said first transistor means after a short pulse of current has been generated at the output terminals of said transformer.

3,287,574

REGENERATIVE AND-GATE CIRCUIT PRODUCING OUTPUT DURING SHAPING-PULSE INPUT UPON COINCIDENCE WITH BUT REGARDLESS OF CONTINUOUS PRESENCE OF OTHER INPUT

Glenn E. Jenkins, St. Paul, Minn., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Mar. 11, 1964, Ser. No. 351,262
10 Claims. (Cl. 307—88.5)



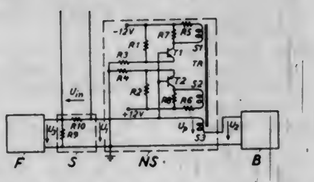
1. A regenerative shaper for gate circuits comprising in combination: an AND gate having first and second input circuits, and an output circuit; means for providing a strobe signal which is connected to said first input circuit of the AND gate; signal means connected to an input circuit of a control means; said control means having an output circuit connected to the second input circuit of the AND gate; and means connecting said output circuit of the AND gate to the input circuit of said control means, so that said AND gate will have an output upon coincidence of signals on both of its input circuits and will have the output for the entire time of the strobe signal regardless of the time of a signal from said signal means.

3,287,575

LEVEL REGENERATING ARRANGEMENT FOR THE TRANSMISSION OF BIPOLAR SIGNALS

Walter Herbert Erwin Widl, Bandhagen, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden

Filed June 18, 1964, Ser. No. 376,071
Claims priority, application Sweden, July 23, 1963, 8,134/63
3 Claims. (Cl. 307—88.5)



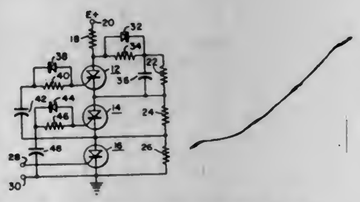
1. Apparatus for regenerating a direct voltage level in response to receiving alternating voltage signals, comprising: a limiting amplifier including an input and an output for transmitting signals of first or second levels; a voltage-summing circuit including a first input for receiving the alternating voltage signals, a second input and an output for transmitting signals representing the sum of voltages received at the inputs; a low-pass filter means including an input connected to the output of said limiting amplifier and an output connected to the second input of said summing circuit; a transistor amplifier means including an input connected to the output of said voltage-summing circuit and an output; and a transformer including primary winding means connected to the output of said transistor amplifier means and a secondary winding serially connected between the output of said voltage-summing circuit and the input of said limiting amplifier; said transistor amplifier means being conductive only when the voltage of the signal transmitted from the output of said voltage-summing circuit exceeds a given amplitude, whereby said secondary winding produces a pulse voltage in response to the conduction of said transistor amplifier means.

3,287,576

SEMICONDUCTOR SWITCHING CIRCUIT COMPRISING SERIES-CONNECTED GATE CONTROLLED SWITCHES TO PROVIDE SLAVE CONTROL OF SWITCHES

John W. Motto, Jr., Greensburg, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 23, 1964, Ser. No. 384,686
10 Claims. (Cl. 307—88.5)



1. An electrical circuit adapted to be operated from a source of supply voltage comprising in combination: a plurality of gate controlled switches capable of being turned on and off by a control pulse of positive and negative polarity, respectively, each said plurality of gate controlled switches having a gate, an anode and a cathode electrode; means for coupling all said plurality of gate controlled switches together in a series circuit; a load impedance coupled to said series circuit; circuit means coupling said load impedance and said series circuit across said source of supply voltage; a pair of input terminal means coupled to the gate electrode of one of said plurality of gate controlled switches for applying a control pulse thereto; a capacitor charging circuit coupled to the gate electrode of all other said plurality of gate controlled switches and being selectively coupled to an adjacent switch of said plurality of switches for charging to substantially a predetermined fraction of the magnitude of said source of supply voltage; a capacitive discharge circuit coupling said all other gate controlled switches for discharging in succession rendering each of said plurality of gate controlled switches conductive in succession beginning from said one switch upon having been triggered on by a positive pulse applied to said pair of input terminals, said charging circuit being adapted to successively turn-off all other said plurality of gate controlled switches when said one switch is turned off by a negative pulse applied to said pair of input terminals.

3,287,577

LOW DISSIPATION LOGIC GATES

Roland Y. Hung, Laurel, and Hung C. Lin, Silver Spring, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

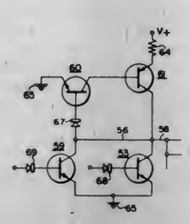
Filed Aug. 20, 1964, Ser. No. 390,788
21 Claims. (Cl. 307—88.5)

1. A circuit comprising:

a plurality of input semiconductor devices each having an input electrode to which input signals are applied and a second electrode, each second electrode being connected to a common point;

control means connected to said common point and responsive to the voltage developed thereat for allowing current flow to said common point when said voltage is above a predetermined value and for substantially cutting off current flow when below said value; and

means for connecting said control means to a source of operating potential.

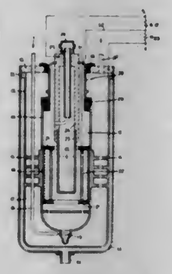


3,287,578

THERMIONIC ENERGY CONVERTER

Werner Oldekop, Erlangen, and Erika Eberth, Forchheim, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, and Erlangen, Germany, a corporation of Germany

Filed Dec. 28, 1960, Ser. No. 79,076
The portion of the term of the patent subsequent to June 18, 1983, has been disclaimed
9 Claims. (Cl. 310—4)



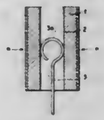
1. A thermionic energy converter comprising a vacuum vessel containing plasma, an emitter electrode and a collector electrode spaced from each other in said yessel, heating means for said emitter electrode, cooling means for said collector electrode, electrode means for reflecting heat radiation from said emitter electrode and for shielding said collector electrode from the heat radiation issuing from said emitter electrode, said electrode means including a third electrode located intermediate said emitter electrode and said collector electrode and dividing the vacuum space between them into two series-connected cell portions, one of said cell portions comprising the emitter electrode and said third electrode, the other of said cell portions comprising said third electrode and said collector electrode, and a pair of resistors, circuit means connecting said resistors across said cell portions so that said resistors have respective voltage drops substantially proportional to the work functions of the electrodes to which said resistors are connected, one of said resistors being connected to said emitter electrode and to said third electrode, the other of said resistors being connected to said collector electrode and to said third electrode.

3,287,579

TUBULAR ELECTROSTRICTIVE RESONATOR-TYPE TRANSDUCER

Manfred Börner and Ewald Dürre, Ulm, Wolfgang Hirsch, Neu-Ulm, Günter Semmler, Ulm, and Hans Schüssler, Belmerstetten, Germany, assignors to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany

Filed Dec. 8, 1964, Ser. No. 416,840
Claims priority, application Germany, Dec. 11, 1963, T 25,270
7 Claims. (Cl. 310—8.2)



1. An arrangement comprising, in combination:

(a) a tubular electrostrictive resonator-type transducer having a bore which is provided with a conductive coating, said transducer having a vibratory nodal plane; and

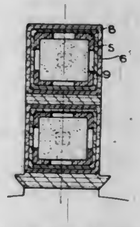
(b) lead-in means electrically contacting said coating and mechanically engaging the same exclusively substantially in said vibratory nodal plane of said transducer, said lead-in means comprising a wire and an element which is connected to said wire and mechanically engages said transducer, said element being a resilient and generally circular arched plate having, in unstressed state, an outside diameter which is larger than the inside diameter of said bore, in consequence of which said plate, when in said bore, will resiliently press against said transducer.

3,287,580

ELECTRICAL MACHINES

Bohdan Broniewski, La Celle-Saint-Cloud, and Andre Edouard Wolfhugel, Belfort, France, assignors to Societe Generale de Constructions Electriques et Mecaniques (ALSTHOM), Paris, France, a French body corporate

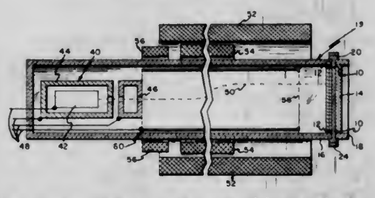
Filed Nov. 22, 1963, Ser. No. 325,545
Claims priority, application France, Nov. 29, 1962, Patent 1,349,988
6 Claims. (Cl. 310—58)



1. In an electrical machine, a coil consists of a plurality of conductor bars mounted in slots in the magnetic circuit of the machine, each conductor bar comprising a plurality of small diameter wires, of substantially pure metal or alloy, twisted together to form a single assembly of generally circular cross-section with each wire occupying various different positions within said bar along its length, a first insulator adapted primarily to electrically insulate the individual wires from each other, a second insulator, primarily a superior thermal insulator, surrounding said bar, passages extending along the bar adjacent said assembly in said second insulator, for circulating a very low temperature liquid coolant for cooling said bar, and substantially reducing the electrical resistance thereof, a third insulator, primarily a superior

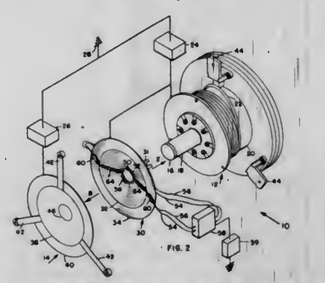
thermal insulator, surrounding said second insulator, and a fourth insulator surrounding said third insulator and adapted primarily to electrically insulate the assembly from the magnetic material of the machine, said second and third insulators having very low coefficients of thermal conductivity to minimize heat transfer between the coolant and said magnetic material of the machine.

3,287,581
X-RAY VIDICON TUBE HAVING SCREEN HERMETICALLY SEALED TO ENVELOPE
Martin Rome and Harold O. W. Jordan, Stamford, Conn., assignors to The Machlett Laboratories, Incorporated, Springdale, Conn., a corporation of Connecticut
Filed Apr. 30, 1962, Ser. No. 191,085
1 Claim. (Cl. 313—59)



An X-ray vidicon tube comprising a glass envelope having one open end shaped to an annular configuration, and a window assembly mounted over said open end of the envelope comprising a metal ring and a beryllium disc sealed throughout its periphery within the ring, the ring having inner and outer surface configurations substantially the same as the annular open end of the envelope and superimposed thereon, brazing material sealing the ring to the open end of the envelope, metal means encircling the brazing material, an X-ray sensitive target on the inner surface of the window assembly, and an electron beam-forming device in the envelope for scanning the target with electrons.

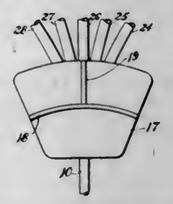
3,287,582
APPARATUS FOR INCREASING ION ENGINE BEAM DENSITY
Lionel V. Baldwin, Fort Collins, Colo., and Virgil A. Sandborn, Chelmsford, Mass., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Jan. 4, 1963, Ser. No. 249,542
1 Claim. (Cl. 313—63)



In an ion beam generating apparatus of the type having a porous electrode at a positive potential forming an ion emitter spaced from an ion accelerator electrode at a negative potential with an apertured focusing electrode having a positive potential positioned therebetween whereby an ion beam is emitted from the porous electrode through the aperture of the focusing electrode at space charge limited operation, the improvement comprising a filament in the ion beam within the aperture of the focusing electrode having a positive potential within a few hundred volts of the positive potential of the porous electrode corresponding to the space charge potential adjacent said aperture, and

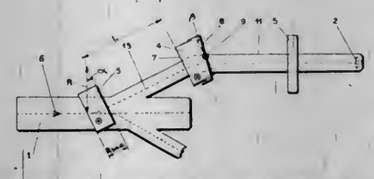
means for supplying a heating current to said filament for heating the same so that electrons are emitted therefrom to move at a high velocity along the path of the ion beam in the opposite direction to impinge on the porous electrode for increasing the density of the ion beam with locally sputtered secondary electrons.

3,287,583
CHARGED PARTICLE BEAM SWITCHING APPARATUS
John C. Herrera, Stoneham, Mass., assignor to High Voltage Engineering Corporation, Burlington, Mass., a corporation of Massachusetts
Filed Jan. 28, 1964, Ser. No. 340,704
1 Claim. (Cl. 313—75)



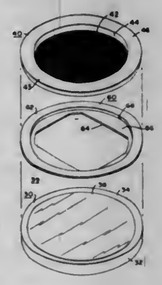
Charge particle beam switching apparatus including first and second magnet means in close parallel relationship adapted to deflect a charged particle beam passing therethrough to any of a plurality of courses of travel, each of said magnet means having at least one arcuate groove therein, said arcuate groove being disposed on the inner adjacent surfaces of said magnet means and positioned such that said charged particle beam will be normal thereto at each of said courses of travel, and a metal vacuum chamber disposed between said magnet means, said vacuum chamber being adapted to contain said charged particle beam and having outwardly protruding arcuate flanges on the surfaces thereof proximate to said magnet means, said flanges being co-extensive with said arcuate grooves and mating therewith.

3,287,584
FOCUSING ARRANGEMENT FOR GUIDING PARTICLES FROM AN ACCELERATOR DEVICE TOWARD A LATERALLY SHIFTED TARGET
Jacques Pinel, Paris, France, assignor to Compagnie Generale de Telegraphie Sans Fil, Paris, France
Filed Feb. 11, 1960, Ser. No. 8,043
Claims priority, application France, Mar. 3, 1959, 788,192
17 Claims. (Cl. 313—84)



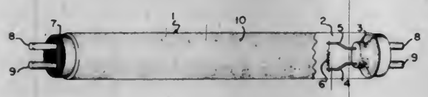
8. A focusing system for focusing a beam of charged particles derived from a particle accelerator onto a predetermined target positioned outside of the trajectory of said particles within said accelerator, comprising means for guiding said beam to pass through said target including focusing means for focusing said beam at said target with respect to energy and with respect to two orthogonal planes.

3,287,585
TARGET ELECTRODE ASSEMBLY FOR AN ELECTRON DISCHARGE DEVICE
Robert B. Randels, Painted Post, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 15, 1963, Ser. No. 265,425
8 Claims. (Cl. 313—89)



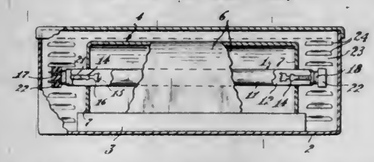
4. A target assembly for an electron discharge device comprising a target member including a support ring and a membrane supported thereon, a mesh electrode member including a support ring and a mesh supported thereon, spacer means positioned between said target member and said mesh electrode, said spacer means providing a substantially rectangular opening with the portion of the surface adjacent the edges of said opening spacing said mesh and membrane, said surface being wavy in form to provide a plurality of alternate point support spacer surfaces between said membrane and said mesh.

3,287,586
PLANT GROWTH LAMP
Elwood D. Bickford, Topsfield, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Oct. 1, 1963, Ser. No. 312,920
5 Claims. (Cl. 313—109)



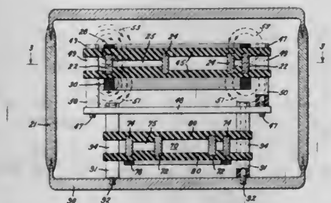
1. A plant growth stimulating lamp comprising an elongated sealed tube of light-transmitting material, an electrode at each end thereof, a filling of inert gas at low pressure and a quantity of mercury therein, and on the interior surface of said envelope a fluorescent coating adapted, when excited by a discharge between said electrodes, to emit radiation having a spectral energy distribution such that the ratio of 560–700 millimicrons radiation to 400–500 millimicrons radiation is between about 1.5 to 2.5 and to 700–800 millimicrons radiation is between about 4.8 to 6.8, the ratio of 400–500 millimicrons radiation to 700–800 millimicrons radiation is between about 2.5 to 3.5, and the ratio of 560–800 millimicrons radiation to 400–500 millimicrons radiation is between about 1.7 to 2.7.

3,287,587
HIGH TEMPERATURE FLUORESCENT LAMP WITH REFLECTOR HAVING MERCURY AMALGAMATIVE MATERIAL ON ITS ELECTRODE STEMS
Richard A. Menelly, Danvers, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Dec. 31, 1964, Ser. No. 422,673
2 Claims. (Cl. 313—113)



1. A high temperature fluorescent lamp installation comprising a housing, a light compartment within said housing including a reflector, a mercury filled fluorescent lamp extending through said reflector with at least one end of the lamp outside said reflector, said lamp including a stem sealing said one lamp end and extending toward the other lamp end, and a deposit of mercury-amalgamative metal on a portion of the surface of said stem, and means to support the lamp with said portion outside said reflector, whereby said deposit is exposed to a temperature lower than that of the lamp portion within the reflector so as to reduce the vapor pressure of the mercury by amalgamation therewith, thereby to increase the light output of the lamp portion within the reflector.

3,287,588
SPARK GAP TYPE OF SURGE ARRESTOR FOR A D.-C. SYSTEM
Thomas H. Lee and Tseng W. Liao, Media, Pa., assignors to General Electric Company, a corporation of New York
Filed Sept. 17, 1964, Ser. No. 397,215
10 Claims. (Cl. 313—154)



5. A surge arrestor for a D.C. circuit comprising:

(a) a pair of spaced-apart electrodes defining a gap therebetween,

(b) means adapted to electrically connect said electrodes into said D.C. circuit,

(c) each of said electrodes comprising an arc-initiation portion and first and second arc-running portions respectively located at opposite sides of said arc-initiation portion,

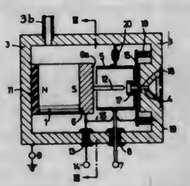
(d) means for causing an arc to be established between said arc-initiation portions in response to a voltage surge of a predetermined minimum magnitude appearing on said D.C. circuit,

(e) means for propelling an arc established between said arc-initiation portions as a result of a lightning surge along said second arc-running portions during the passage of lightning discharge current,

(f) means for propelling an arc carrying power follow current after passage of said lightning discharge current along said first arc-running portions in a direction away from said arc-initiation portions,

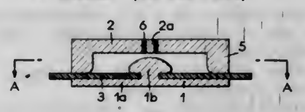
(g) and means for developing as said power follow current arc moves along said first arc-running portions an increasing arc voltage that forces the power follow current toward zero.

3,287,589
ELECTRON-COLLISION ION SOURCE, PARTICULARLY FOR ELECTRIC MASS SPECTROMETERS
Karl-Georg Günther, Nurnberg, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed Mar. 7, 1961, Ser. No. 94,070
Claims priority, application Germany, Mar. 8, 1960, S 67,465
12 Claims. (Cl. 313—161)



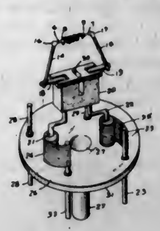
1. An electron-collision ion source of the cold-cathode type for use in gas under vacuum pressure in a mass spectrometer, comprising cathode structure having an extraction channel through which ions may pass into the space where they are to be utilized, anode means coaxially related to said extraction channel, said cathode structure comprising electric-field concentrating means having its maximum field density near said extraction channel at the anode side thereof, said extraction channel and said concentrating means having respective portions on opposite sides of said anode means along the axis of said extraction channel, and magnet means having a magnetic pole end near said extraction channel, whereby said electric and magnetic fields spatially and temporally fix the discharge plasma near said extraction channel.

3,287,590
ELECTRIC SPARK GAP WITH INSULATION WHICH MAINTAINS ITS HIGH INSULATIVE CHARACTER THROUGHOUT ITS OPERATION
Thierry André, Paris, France, assignor, by mesne asignments, to European Atomic Energy Community (Euratom), Brussels, Belgium
Filed Oct. 16, 1962, Ser. No. 230,939
Claims priority, application France, Oct. 20, 1961, 876,572
4 Claims. (Cl. 313—180)



1. An electric spark-gap with insulation which maintains its resistance to the passage of electric current, comprising: a first electrode; and insulating plate surrounding said first electrode and extending radially outwardly therefrom; and a second electrode spaced from said first electrode, said insulating plate being formed of a vaporizable material such that a fine surface layer thereof in the vicinity adjacent to said first electrode will be vaporized under the action of heat generated by an electric discharge between the two electrodes and said vapor will be blown from said vicinity together with any foreign matter torn from said two electrodes during said electric discharge by the pressure resulting from said electric discharge whereby the surface of said insulating plate is scoured clean in said vicinity.

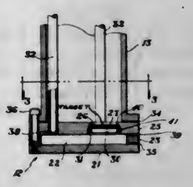
3,287,591
TANTALUM CARBIDE INCANDESCENT LAMP AND METHOD OF MANUFACTURE THEREOF
Howard B. Sloan, Topsfield, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Dec. 13, 1961, Ser. No. 159,100
4 Claims. (Cl. 313—271)



1. A lamp mount including a tantalum carbide coil, a leg cemented to each end of said coil and extending outwardly from it, and a support wire cemented to the otherwire free end of said leg.

4. The method of making an electric lamp mount, said method comprising fixing the ends of a tantalum carbide filament coil to outwardly extending legs by a cement of tantalum carbide powder in a binder, cementing a different portion of said legs to filament support wires, and then heating the resultant mount at a temperature sufficient to carburize said coil in an atmosphere of a hydrocarbon and hydrogen and to remove the binder and sinter the cement to bond the coil to the legs, and the legs to the support wires.

3,287,592
PARTICLE ACCELERATOR ASSEMBLY HAVING A BERYLLIUM-TRITIUM COMPOSITE TARGET
Jule J. Hirschfield, Brookline, and Bernard A. McDewell, Billerica, Mass., assignors to High Voltage Engineering Corporation, Burlington, Mass., a corporation of Massachusetts
Filed Dec. 14, 1961, Ser. No. 159,360
1 Claim. (Cl. 313—330)



In combination with a particle accelerator adapted to generate a charged particle beam, means for generating high energy neutrons comprising

(1) A composite target assembly having demountable target members, said target assembly constituting a vacuum tight closure of the output aperture of said particle accelerator and being in substantially transverse relationship with said charged particle beam, said target assembly including:

(a) a frame member having a plurality of circular apertures therein, said apertures being threaded and having an inner flange therearound,

(b) a plurality of disc target members each adapted to reside within one of said apertures in abutting relationship to the flange portion thereof, said disc target members comprising one beryllium target and at least two tritium targets,

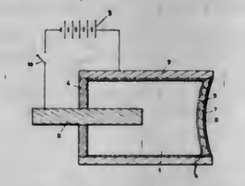
(c) an annular vacuum seal member associated with each said aperture adapted to hermetically seal a target therein, and

(d) an annular threaded nut associated with each said aperture adapted to secure a target in compressed relationship to its associated vacuum seal;

(2) means for transversely displacing said target assembly to selectively place discrete target members in intercepting relationship with said charged particle beam, and;

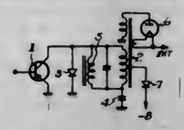
(3) means for circulating a coolant fluid in contiguous relationship to said target assembly.

3,287,593
COLD CATHODE ELECTRON DISCHARGE DEVICE
Daniel Charles and Serge Veron, Paris, France, assignors to CSF—Compagnie Generale de Telegraphie Sans Fil, Paris, France
Filed Dec. 12, 1961, Ser. No. 158,737
Claims priority, application France, Dec. 21, 1960, 847,559
4 Claims. (Cl. 313—346)



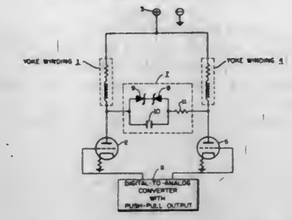
1. A cold cathode structure comprising a gas-tight envelope including a metallic portion and a window transparent to light, said envelope being filled with a rarified gas, a photo-emissive coating on the outer surface of said window, an electrode disposed within said envelope, and means for establishing a difference of potential between said inner electrode and said metallic portion of the envelope, thereby to produce luminescent electric discharges in said gas.

3,287,594
HORIZONTAL DEFLECTION DEVICE
Minoru Wada, Kawasaki, Japan, assignor to Nippon Columbia Kabushikikaisha (Nippon Columbia Co., Ltd.), Kawasaki, Japan, a corporation of Japan
Filed June 25, 1963, Ser. No. 290,487
Claims priority, application Japan, July 9, 1962, 37/28,849
3 Claims. (Cl. 315—27)



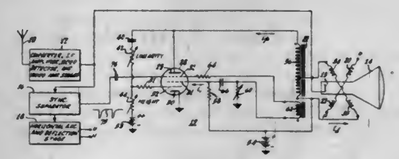
1. A horizontal deflection device comprising a horizontal deflection transformer having a primary winding, a capacitor connected between one end of said primary winding and a reference potential, an amplifier including a transistor having a base electrode, an emitter electrode, and a collector electrode, with a pair of said electrodes forming an input and another pair of said electrodes forming an output, with one of said electrodes being common to both the input and the output, the output of said amplifier being connected across said primary winding and said capacitor, a horizontal deflection coil connected to said transformer, a damper diode connected in parallel with the output of said amplifier, a source of potential, and a boost diode connected between one electrode of said transistor which forms part of the output thereof and said source of potential for boosting the voltage across said capacitor.

3,287,595
CONTROL CIRCUIT FOR DAMPING TRANSIENTS IN ELECTROMAGNETIC DEFLECTION YOKES
Richard C. Entenmann, San Diego, Calif., assignor, by mesne assignments, to Stromberg-Carlson Corporation, Rochester, N.Y., a corporation of Delaware
Filed Nov. 5, 1963, Ser. No. 321,455
5 Claims. (Cl. 315—27)



5. A circuit for sharply reducing the effect of transients in a push-pull cathode-ray tube driving circuit employing electromagnetic yokes comprising a first and second point of fixed potential, a first circuit coupled between said first and second points of fixed potential and including a first current control device and a first yoke winding connected in series, a second circuit coupled between said points of fixed potential and including a second current control device and a second yoke winding connected in series, means coupled to said control devices in regulation thereof for adjusting the current through said first yoke in a first direction and adjusting the current through said second yoke in a second direction simultaneously at a high rate resulting in the formation of transient voltage pulses across said yoke windings, damping circuit means forming an underdamped oscillatory circuit with said yoke winding coupled between said first and second yoke windings and including a resistor and a capacitor in series and means coupled in shunt with said capacitor for discharging said capacitor in response to increase in voltage across said capacitor to a predetermined level as a result of the manifestation of said transients.

3,287,596
SINGLE TUBE VERTICAL DEFLECTION CIRCUIT FOR A TELEVISION RECEIVER
Roland N. Rhodes and John B. Beck, Indianapolis, Ind., assignors to Radio Corporation of America, a corporation of Delaware
Filed Feb. 20, 1964, Ser. No. 346,321
9 Claims. (Cl. 315—27)



1. In a television receiver, a deflection circuit arrangement comprising:

an electron beam deflection winding;

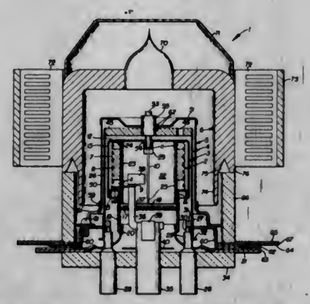
an electron discharge device having anode and cathode electrodes and a plurality of electrodes spaced intermediate said anode and cathode;

means for coupling said deflection winding to said anode and cathode electrodes; and

a control circuit coupled to electrodes of said device for causing the deflection circuit to oscillate and to generate a current of periodically recurring sawtooth waveforms in said deflection winding;

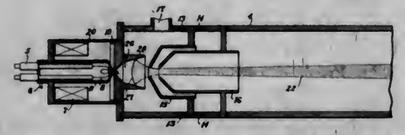
said control circuit including means (1) for generating a voltage (e_1) in accordance with the flow of current to a first intermediate electrode, (2) means for generating a varying voltage (e_2), and (3) means for combining and applying these voltages to a second intermediate electrode.

3,287,597
VACUUM TUBE WITH STRUCTURALLY INTEGRATED BY-PASS CAPACITOR
William D. Smith, Santa Clara, Calif., assignor, by mesne assignments, to Varian Associates, a corporation of California
Filed Dec. 24, 1962, Ser. No. 246,719
8 Claims. (Cl. 315—71)



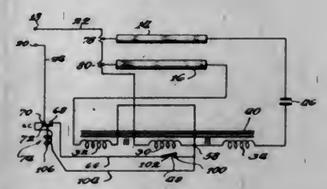
2. An electron tube comprising cylindrical electrodes including a cathode, a control grid, a screen grid and an anode, terminals for said tube comprising a metal ring projecting outside said tube and connected internally to said cathode, a completely metal ring structure projecting outside said tube and connected internally to said screen grid, a thin ceramic ring-shaped wafer sandwiched between said ring and ring structure in abuting relationship and forming therewith a by-pass capacitor, the external diameter of each of said ring and ring structure being at least as great as that of said wafer, and the minimum air gap between said ring and ring structure being greater than the thickness of said wafer.

3,287,598
ION SOURCE HAVING AN EXPANSION CUP FOR EFFECTING BEAM DIVERGENCE
Norman B. Brooks, Carlisle, Mass., assignor to High Voltage Engineering Corporation, Burlington, Mass., a corporation of Massachusetts
Filed Jan. 2, 1964, Ser. No. 335,132
4 Claims. (Cl. 315—111)



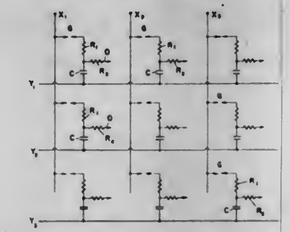
1. An ion source comprising an ionization chamber, means for supplying thereto a quantity of gas to be ionized, means for ionizing said gas, an evacuated plasma forming chamber, an apertured anode member, an extractor electrode at a high potential with respect to that of said anode member, said anode member comprising a common partition between said ionization chamber and said evacuated plasma forming chamber, said anode member having an aperture therein of a size commensurate to the ion beam current requirements of said ion source, said ion source producing a concentration of ions at said aperture sufficiently great so that there would be a tendency for space charge repulsion to produce a highly divergent beam upon extraction of positive ions at that point, a cylindrical member contiguous to and coaxially aligned with the aperture in said anode member and protruding into said ion beam forming chamber, said cylindrical member being at the same electrical potential as that of said anode member and being of sufficient length to form a region free of influence of the field effect of the extractor electrode until such time as said plasma has diffused to a sufficient extent to reduce space charge effects in the ion beam to be extracted therefrom, said cylindrical member thus providing a drift space adapted to allow expansion of plasma passing therethrough and having the shape of a frustum whose diameter increases in the direction away from said plasma forming chamber, so as to establish a uniform concave plasma boundary therein, and a focusing electrode.

3,287,599
FAULT INDICATING FLUORESCENT BALLAST APPARATUS
Albert E. Feinberg, Chicago, and Fred W. Abrahams, Skokie, Ill., assignors to Advance Transformer Co., Chicago, Ill., a corporation of Illinois
Filed Apr. 6, 1964, Ser. No. 357,498
5 Claims. (Cl. 315—126)



1. A fluorescent lamp and ballast system comprising: a transformer having a primary winding and at least one secondary winding inductively coupled to the primary winding, at least one fluorescent lamp connected in circuit with the secondary winding to be ignited and operated by the transformer, leads extending from two terminals of the primary winding and adapted to be connected respectively to two terminals of an A.C. power source, and one lead having an automatic reset thermostatic switch series connected therein and disposed adjacent said transformer to be sujected to the heat generated therein so that abnormal heat from said transformer will open said thermostatic switch, with respect to a fixed contact thereof, at a predetermined temperature and thereby open said lead to said primary winding to deenergize said transformer and extinguish said lamps, following which the switch will close after the transformer has cooled to a second lower temperature once more closing said lead to said primary winding energizing said transformer and reigniting said lamp unless otherwise prevented from doing so, a relay having normally closed contacts in series with said switch in said one lead and the relay having a solenoid connected in a circuit by-passing the switch and contacts, the solenoid impedance being substantially higher than the impedance of the primary winding whereby upon opening of said switch current will flow in said solenoid in series with said primary winding, the solenoid being mechanically connected to open said contacts when energized, and the solenoid adapted to draw a current smaller than required to energize the transformer but sufficient to keep the solenoid energized so that the subsequent closing of the switch will not affect the primary winding until the solenoid is deenergized and means for deenergizing the solenoid comprising circuit interrupting means in the series circuit of the primary winding and solenoid.

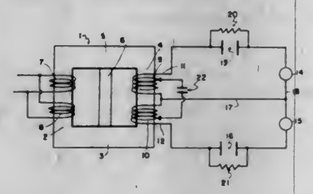
3,287,600
STORAGE CIRCUIT FOR FERROELECTRIC DISPLAY SCREEN
Henry L. Cox, Jr., Baltimore, Md., and Juris A. Asars, Monroeville, Pa., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Nov. 19, 1962, Ser. No. 238,812
1 Claim. (Cl. 315—169)



In a display system utilizing a display screen formed of electroluminescent ferroelectric signal storage elements which are disposed in rows and columns to be scanned by information signals, the improvement comprising,

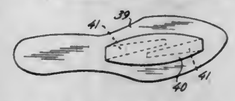
(a) first bus lines for supplying information potential to said signal storage elements,
(b) second bus lines for supplying switching potential to said signal storage elements,
(c) a storage circuit for each storage element comprising in series, a resistance, an air gap and a capacitor interconnecting said first and second bus lines and
(d) said air gap being formed between two electrodes which are spaced apart 2 to 8 microns and operative to transmit information current from the first bus lines to the storage elements when a switching potential of between 350 and 400 volts is supplied to the capacitors of the storage circuits through the second bus lines.

3,287,601
TWO-LAMP MERCURY BALLAST
Anthony R. Collucci, Ipswich, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Dec. 18, 1963, Ser. No. 331,480
2 Claims. (Cl. 315—187)



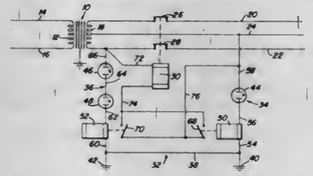
1. A circuit for starting and operating electric discharge lamps comprising a transformer having at least one primary winding and at least two secondary windings, each of said secondary windings having a capacitor and an electric discharge lamp connected in series with it, the two secondaries being both on the same leg of the transformer so that current flow through one secondary will increase the flux through the other, and a third capacitor, said third capacitor being connected across at least part of said two secondary windings to raise the starting voltage.

3,287,602
CONDUCTIVE SHOE AND REPAIR INSERT THEREFOR
Jack Meltzer, 544 N. Laurel Ave., Hollywood, Calif.
Filed Aug. 19, 1964, Ser. No. 390,563
2 Claims. (Cl. 317—2)



1. An insert for a completed shoe, the shoe being of a kind in which the foot-engaging top surface of the sole structure has a conductive part in electrical contact with a conductive outer sole, said insert comprising a substantially flat non-conductive element contoured to fit snugly within the completed shoe in overlying relation to said foot-engaging top surface of the sole structure, a pair of spaced slits in said insert, and a flat flexible conductive element having a midportion lying flat on the upper face of said insert and opposite ends extending downwardly through said slits and lying flat on the nether face of said insert, said ends being adapted to establish contact with the conductive part of the top surface of the sole structure of the completed shoe.

3,287,603
GROUND FAULT PROTECTIVE CIRCUITRY
Peter A. Sosnoski, 500 State St., Shamokin, Pa.
Filed Oct. 23, 1963, Ser. No. 318,380
12 Claims. (Cl. 317—18)

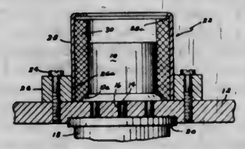


1. A protective system for an alternating current power supply having a plurality of current carrying power lines at relatively high potentials relative to ground, comprising; a current limiting circuit having at least two monitoring branches establishing return current paths from ground to said power supply, high impedance means in each of said branches for indicating and limiting flow of current through said return current paths, circuit breaker means electrically connected to one of said power lines independently of the current limiting circuit for interrupting current flow in said power lines when energized, and current responsive means in series with said high impedance means in said current limiting circuit for energizing the circuit breaker means in response to flow of excessive current in at least one of the return current paths, said high impedance means being operative to substantially equalize current flow from ground through said return current paths to identify the power line that is grounded.

3,287,604
HEAT DISSIPATING CLAMP FOR USE ON ELECTRICAL APPARATUS
Chester J. Mroz, Berwyn, Pa., and Herman H. Koller, Amsterdam, N.Y., assignors to the United States of America as represented by the Secretary of the Air Force
Filed Apr. 20, 1964, Ser. No. 361,632
1 Claim. (Cl. 317—100)

In a clamp for retaining an outwardly flanged heat generating electrical element onto an electrical apparatus, the combination with said electrical element and said

apparatus of and comprising: a heat conductive metallic flange member having a bore surrounding said electrical element and for joining the electrical apparatus, a heat conductive metallic sleeve member coaxial within the bore of said flange member and having a first end joined to said flange member and having a second end extending from said flange member with an inwardly rolled flange forming the terminus of the second end, said heat conductive metallic flange member being of a thickness substantially greater than the metal thickness of said heat conductive metallic sleeve member to provide a sink for absorbing



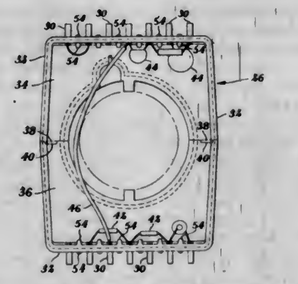
heat, and a heat conductive resilient liner circumferentially surrounding the portion of the electrical element above the outward flange thereon and being coaxially retained within said sleeve member and abutting against the inwardly rolled flange at the second end of said sleeve member longitudinally engaging with the lower end of said heat conductive liner the flange on the electrical element to resiliently bias the electrical element toward the electrical apparatus and to conduct heat from the electrical element to said sleeve member and said flange member, said heat conductive resilient liner being a metallic mesh.

3,287,605

DEFLECTION YOKE ASSEMBLY WITH TERMINAL HOUSING

Kenneth W. McGlashan, Burlington, Iowa, assignor to Advance Ross Electronics Corporation, a corporation of Illinois

Filed Oct. 5, 1964, Ser. No. 401,586
7 Claims. (Cl. 317—101)



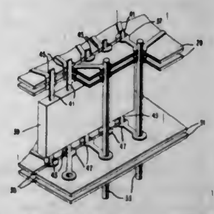
1. An improved deflection yoke assembly with terminal housing comprising the combination of a supporting liner formed of electrical insulation material and shaped to fit around the neck of a cathode ray tube, reflection windings positioned upon and supported by said liner, and a terminal housing at one end of said liner, said terminal housing comprising a base member having a plurality of side walls defining an enclosure therewithin and a mating cover member shaped to fit over and close said enclosure, an array of terminal pins aligned on at least one side wall of said base member, said terminal pins enabling electrical connections to be made between said deflection windings and other electrical components of the deflection circuitry, the alignment of said terminal pins enabling said electrical connections to be secured by dip soldering of the terminal array, and means on said terminal housing base and cover members for permitting the mating thereof in a predetermined manner only to enable said terminal pins to properly be identified and the correct electrical connections made thereto.

3,287,606

PACKAGING DEVICE FOR READILY RECEIVING AND REMOVING ELECTRICAL COMPONENTS HAVING A PLURALITY OF CONNECTING LEADS

Leon Schwartz, Philadelphia, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Dec. 16, 1964, Ser. No. 418,721
2 Claims. (Cl. 317—101)



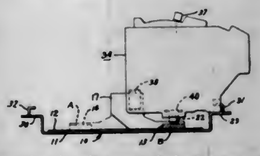
1. An electronic circuit package comprising:
(a) at least first and second printed circuit boards, each having terminal means for having electrical devices connected thereto, each of said printed circuit boards having substantially long slits cut therein with said slits commencing at the periphery thereof;
(b) a plurality of electrical devices, each having at least first and second sides lying opposite from each other and each of said sides having at least two electrical connecting leads, each of said electrical devices having the electrical connecting leads of its first side disposed in an assigned slit of said first printed circuit board and having the electrical connecting leads of its second side disposed in an assigned slit of said second printed circuit board, said electrical connecting leads of said first and second sides being respectively connected to said first and second printed circuit boards in proximity to their respectively assigned slots; and
(c) riser pins rigidly connected to said first and second printed circuit boards to hold said printed circuit boards displaced from one another and simultaneously being connected to the printed circuits of said printed circuit boards to make electrical connections between the printed circuits of said first printed circuit board and printed circuits of said second printed circuit board.

3,287,607

PANELBOARD AND CIRCUIT BREAKER

Lewis W. Jacobs, West Hartford, and Robert J. Sabatella, Southington, Conn., assignors to General Electric Company, a corporation of New York

Filed Dec. 24, 1964, Ser. No. 420,882
3 Claims. (Cl. 317—119)



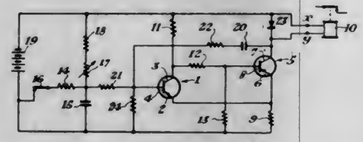
1. An electric circuit control device panel board comprising a generally planar base, two bus bars supported in insulated relation on said base and connectable to different sources of electrical energy, a plurality of electrical blade contacts supported on said bus bars and disposed in parallel central alignment on said panel board generally normal to the plane of said base, a plurality of upstanding secondary electrical contacts supported on said bus bars and laterally disposed relative to said blade contacts in regularly spaced alignment, and a plurality of circuit breakers enclosed in insulating casings having side walls of substantially the same outside dimensions and including at least one two-pole circuit breaker having first resilient contact means disposed near one end of the bottom wall of its insulating casing to receive a blade contact supported in electrical connection with one of said bus bars and having second resilient contact means disposed within the bottom wall of its insulating casing to receive an upstanding secondary contact in electrical connection with the other of said bus bars.

3,287,608

TIME DELAY CONTROL CIRCUIT

Adolf G. Pokrant, Braddock Hills, Pa., assignor to Westinghouse Air Brake Company, Swissvale, Pa., a corporation of Pennsylvania

Filed June 3, 1963, Ser. No. 285,047
1 Claim. (Cl. 317—142)



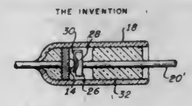
In a time delay control device for switching electrical power from a power source to an inductive load whose inductance is subject to abrupt variation during the first moments of application of power thereto;
(a) said time delay control device including a first transistor having a base, a collector and an emitter,
said collector electrically connected to said inductive load and said emitter electrically connected to said power source,
said transistor in a normally conducting condition through which current is applied to said inductive load,
(b) a normally nonconducting second transistor having a base, a collector and an emitter,
said emitter of said second transistor and said emitter of said first transistor electrically interconnected,
said collector of said second transistor electrically connected to said base of said first transistor,
(c) time delay means controlled by a time initiating signal, said time delay means electrically connected to said power source and to said base of said second transistor,
said time delay means causing said second transistor to begin conduction at a predetermined time interval following occurrence of said time initiating control signal,
said time delay means simultaneously causing said first transistor to become nonconducting through said electrical connection between said second transistor collector and said first transistor base, thereby switching off current to said inductive load from said power source,
(d) restoring means electrically connected to said base of said second transistor and said electrical connection between said first transistor base and said second transistor collector, said restoring means including in part said time delay means,
said restoring means restoring said second transistor to its normally nonconducting condition and said first transistor to its normally conducting condition, thereby switching on current to said inductive load,
(e) a feedback network comprising a resistor and a capacitor in series electrically connected between said collector of said first transistor and said base of said second transistor,
said feedback network providing an inductive load transient voltage suppression function in that said capacitor which is charged to a voltage level, impresses a voltage upon said base of said second transistor of sufficient magnitude and duration to maintain said second transistor nonconducting,
said charged capacitor is effective during the initial moments of said first transistor's conduction when said inductive load is receiving power through said first transistor and the current in said first transistor is changing due to variations of inductance, said charged capacitor thereby prevents periods of conduction of said second transistor due to voltage transients caused by said variations of inductance of said inductive load and said changing current in said first transistor when the inductive load is initially caused to be energized.

3,287,609

CONTACT ASSEMBLY

Harold A. Bennett and Robert W. Martin, both of Ridgefield, Conn., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed July 14, 1964, Ser. No. 382,448
3 Claims. (Cl. 317—234)



1. A semiconductor device comprising a diode element with one of its electrodes formed with a boss, a contact member with a recess large enough to permit at least part of said boss to be inserted there into, an unapertured flexible electrically conductive blade secured to said contact member at one side of said recess and bridging said recess, means so supporting rigidly said diode element and said contact member that said boss bears against said blade and bends it into said recess, and means bringing electrical leads respectively to the other of said diode element electrodes and to said contact member.

3,287,610

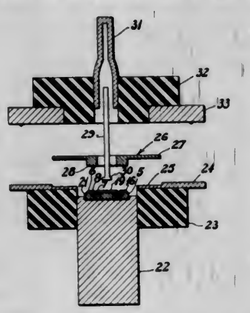
COMPATIBLE PACKAGE AND TRANSISTOR FOR HIGH FREQUENCY OPERATION "COMPACT"

Robert L. Reber, Eatontown, N.J., assignor to The Bendix Corporation, Eatontown, N.J., a corporation of Delaware

Filed Mar. 30, 1965, Ser. No. 443,892
1 Claim. (Cl. 317—234)

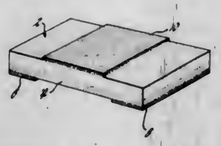
A semiconductor device and housing comprising a disc of semiconductor material having a ring-shaped base region and a ring-shaped emitter region diffused therein, said emitter overlying said base and concentric therewith, contact rings on said base and said emitter, a plurality of inwardly extending radial arms connected to said emitter contact ring, a plurality of outwardly extending radial arms connected to said base contact ring, oxide insulating means insulating said radial arms from said semiconductor material, a plurality of concentric rings of conducting material connected to said outwardly extend-

ing radial arms, a plurality of concentric rings of conducting material connected to said inwardly extending radial arms, said housing having a mounting block for mounting said disc of semiconductor material, a ring of insulating material surrounding said block, a washer of conducting material secured to said insulating ring contacting said plurality of rings connected to said outwardly



extending radial arms, a second ring of insulating material, a second conducting washer secured thereto and to said first washer to provide a unitary structure, a tubulation secured to said second ring of insulating material, and a pin of conducting material extending through and secured to said tubulation and having a head thereon contacting said innermost concentric ring.

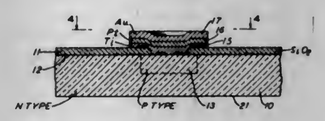
3,287,611
CONTROLLED CONDUCTING REGION GEOMETRY IN SEMICONDUCTOR DEVICES
Robert R. Bockemuehl, Birmingham, and James E. Kauppila, Southfield, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 17, 1961, Ser. No. 132,083
2 Claims. (Cl. 317—235)



1. In a photosensitive field-effect transistor, a unitary, elongated body of relatively pure high energy gap, low mobility, photoconductive-type material, a relatively thin surface diffusion zone on said body having a generally balanced concentration of donor and acceptor impurities enhancing photoconductivity of said zone, source and drain ohmic contacts to said zone, and a gate electrode in blocking contact with said diffusion zone for regulating current flow in the diffusion zone.

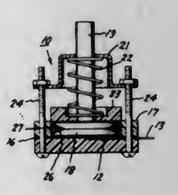
3,287,612
SEMICONDUCTOR CONTACTS AND PROTECTIVE COATINGS FOR PLANAR DEVICES
Martin P. Lepselter, Franklin Park, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 17, 1963, Ser. No. 331,168
7 Claims. (Cl. 317—235)

1. A semiconductor device comprising a body of silicon of one conductivity type having a major plane surface, a zone of opposing conductivity type adjoining a portion of said surface, said zone being defined by a PN junction whose edge intersects said surface, a layer of silicon exide on said major surface and overlying said PN junction edge, said oxide layer having an opening therethrough to expose a portion of the surface of said zone, a layer of titanium in contact with the exposed surface within said opening and overlying the adjacent portion of



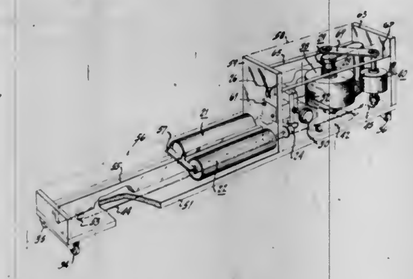
the oxide layer, a second metal layer of platinum overlying the titanium layer and extending beyond the projection of the entire edge of said PN junction, and a third metal layer of gold completely overlying said platinum layer.

3,287,613
VARIABLE CAPACITOR
John C. Devins, Burnt Hills, N.Y., assignor to General Electric Company, a corporation of New York
Filed Oct. 1, 1964, Ser. No. 400,717
6 Claims. (Cl. 317—249)



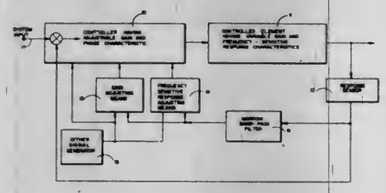
1. A variable capacitor construction comprising in combination:
(*a*) a stator capacitor electrode,
(*b*) a rotor capacitor electrode disposed in juxtaposition to said stator electrode,
(*c*) a thin sheet of solid dielectric material disposed between said electrodes with each electrode contiguous thereto,
(1) said rotor electrode being rotatable relative to said stator electrode to effect for the assembly of said electrodes and the dielectric sheet a value of capacity ranging from a minimum to a maximum value,
(*d*) a lubricant material covering at least the portion of said dielectric sheet contiguous with said electrodes,
(1) said lubricant material being a liquid having a viscosity of less than about 100 centistokes, and having a value for tangent δ of less than about 0.01,
(*e*) means in contact with said rotor electrode for urging the assembly of electrodes and said dielectric sheet into more intimate contact,
(*f*) means girding said rotor electrode for preventing the entry of air between said rotor electrode and said dielectric sheet, and
(*g*) an area recessed into the face of said rotor electrode in contact with said dielectric sheet,
(1) said recessed area containing lubricant material and having a depth of sufficient magnitude that the distance between the stator electrode and the bottom of said recessed area will result in a very low value of capacity with said stator electrode, dielectric sheet and recessed area being arranged in juxtaposition.

3,287,614
PORTABLE, SELF-POWERED, CORONA CHARGING APPARATUS
Milton M. Sowiak, Mercerville, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed May 27, 1963, Ser. No. 283,163
9 Claims. (Cl. 317—262)



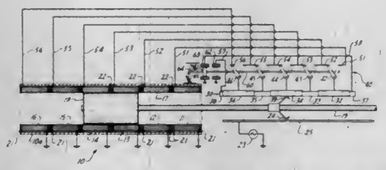
1. A battery-powered corona charging apparatus comprising:
elongated electrode means;
battery-powered circuit means for producing pulses of an amplitude of at least 5 kilovolts and of a frequency of at least one kilocycle;
means for applying said pulses to said electrode means.

3,287,615
SELF-ADAPTIVE CONTROL APPARATUS
Richard K. Smyth, Fullerton, Calif., assignor to North American Aviation, Inc.
Filed Oct. 1, 1963, Ser. No. 313,105
8 Claims. (Cl. 318—28)



1. In a control system having a controller and a controlled element,
means for compensating for variations in the response characteristics of said controlled element, comprising:
a source of fixed frequency input signals coupled to the input of said controller;
a narrow band-pass filter responsive to that component of a sensed output of said controlled element corresponding to the fixed frequency input from said source;
first amplitude sensitive control means having a first and second input connected to said source and said narrow bandpass filter respectively for adjusting the gain of said system; and
second phase-sensitive control means having a first and second input connected to said source and said narrow band-pass filter respectively for oppositely adjusting a pole and zero of the frequency-sensitive response of said system.

3,287,616
SOLENOID MOTOR
Dalph C. McNeil, 43 Pine St., Brookville, Pa.
Filed Aug. 12, 1963, Ser. No. 301,432
7 Claims. (Cl. 318—37)



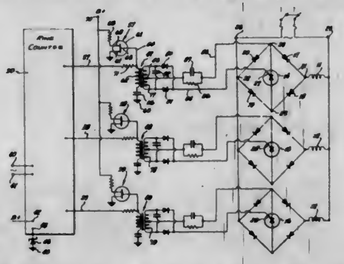
1. A reciprocating stroke motor apparatus having at least three serially-axially-aligned electric solenoids that surround a common hollow core and having a magnetizable plunger positioned within the hollow core and movable throughout the length of the solenoids and that operates solely on one potential side of a source of electric current to accomplish reciprocating movement of the plunger which comprises, a mechanical output means operatively-connected to said plunger for movement therewith, first switch means for the one potential side that is responsive to the position of said mechanical output means for selectively controlling the electrical energization of the solenoids, said first switch means having a plurality of individual electric lead switches that are serially arranged for sequential operation by said output means as a function of its position, second switch means for the one potential side that electrically-connects each of the lead switches of said first switch means to respective ones of said solenoids in a similarly oriented sequence whereby sequential operation of the lead switches of said first switch means will be associated with sequential positioning of the plunger within the hollow core, said second switch means having a plurality of electric reversing switches electrically-connected between the lead switches of said first switch means and the solenoids to provide selected association of the lead switches of said first switch means and said solenoids whereby at least two of the lead switches of said first switch means can be selectively electrically-connected to each one of a pair of adjacent solenoids, and operating means mechanically-connecting at least a pair of the reversing switches of said second switch means together for simultaneously moving them between a forward plunger movement inducing position and a backward plunger movement inducing position.

3. A reciprocating stroke motor apparatus as defined in claim 1 wherein, the lead switches of said first switch means include front and back end switches; a pair of electric actuator solenoids, one of which is electrically-connected with the front end switch and the other of which is electrically-connected with the back end switch; and said actuator solenoids are mechanically-connected to said operating means for moving it and the reversing switches between the forward and backward plunger movement inducing positions.

3,287,617
VARIABLE FREQUENCY POWER SUPPLY FOR DYNAMOELECTRIC MACHINES
Horace M. Robinson, Los Angeles, Calif., assignor to Space Ships, Incorporated, Los Angeles, Calif., a corporation of Nevada
Continuation of abandoned application Ser. No. 117,880, June 19, 1961. This application Oct. 2, 1964, Ser. No. 403,438
17 Claims. (Cl. 318—138)

1. In apparatus for producing several outputs of a common source respectively modulated in out-of-phase relationship; a circuit means for producing at a variable

rate pulses in sequence at a plurality of outputs; a corresponding plurality of switching devices; a reversible motor having a plurality of coil sections; circuit means for connecting the switching devices to said coil sections; a plurality of transformers; oscillators for driving the transformers; circuit means for operating the oscillators dur-

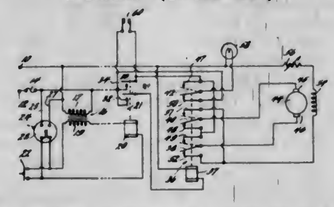


ing the existence of pulses from said circuit outputs respectively; separate rectifier means driven by the transformers; means for smoothing pulsations at said rectifier means; and circuit means for controlling said switching devices in accordance with the smoothed rectified output of said transformers to drive said motor selectively in either direction and with positive torque at zero speed.

3,287,618
CLOSURE OPERATOR

Thomas M. Stephens, Menlo Park, Calif., assignor to The Dalton Foundries, Incorporated, Warsaw, Ind., a corporation of Indiana

Continuation of application Ser. No. 163,705, Jan. 2, 1962. This application Aug. 4, 1965, Ser. No. 480,240
2 Claims. (Cl. 318—267)

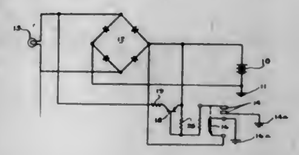


1. In a closure operator, the combination of a first control circuit including voltage supply means, a normally open switch means connected across said voltage means, relay means for actuation by said voltage means through said switch means, a second control circuit including first contact means for connecting said second circuit to said first circuit upon energization of said relay means, a reversible motor, a normally open speed responsive switch to be actuated when said motor reaches a predetermined operating speed, two state switching means having contacts alternately positioned in the two states by successive operations of said relay means, means connected by said two state switching means for respectively operating said motor to close and open said closure in said alternate positions, and a third control circuit including a second contact means interconnected with said switching means for alternatively connectng and disconnecting said third circuit to and from said first circuit upon energization of said relay means, a lamp connected by said second contact means for energization when said switching means is in that alternate position where the motor is normally connected for opening the closure, whereby said lamp may be turned on and off in both closed and open positions of the closure by momentarily closing said switch means for a period less than the period required for said motor to reach said predetermined speed to thereby energize said third circuit but not said second circuit by preventing the closure of said speed responsive switch in said second circuit.

3,287,619
PERMANENT MAGNET GENERATOR OUTPUT CONTROL

Bob O. Burson, Longmeadow, Mass., assignor, by mesne assignments, to Elci Products Corporation, Carolina, Puerto Rico, a corporation of Puerto Rico

Filed Aug. 14, 1962, Ser. No. 216,783
8 Claims. (Cl. 321—16)

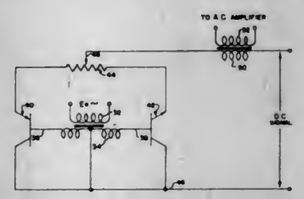


3. In a device of the character described, a permanent magnet type alternator, rectifying means operatively connected to said alternator, and means for shorting one-half of said rectifying means such as to regulate by shunting the alternating current side of said rectifying means, said means comprising a zener diode connected to an output of the rectifying means, high gain transistor means positioned after said zener diode, and low gain high power transistor means connected to one of the outputs of the alternator and to one of the outputs of the rectifying means, said high gain transistor and said low gain high power transistor being operatively connected to each other.

3,287,620
CHOPPER CIRCUIT

Alfons A. Tuszynski, Buffalo, N.Y., assignor, by mesne assignments, to Esterline-Angus Instrument Company, Inc., Indianapolis, Ind., a corporation of Delaware

Filed June 13, 1962, Ser. No. 202,327
5 Claims. (Cl. 321—44)



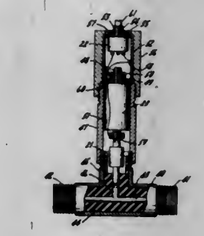
1. In a chopper having a pair of conductors adapted for connection to a D.C. signal source,
- a potentiometer having a movable tap connected to one of said conductors and having a resistive portion,
- A.C. output load means connected to said movable tap,
- semiconductor switching means connecting the opposite ends of said resistive portion to the other conductor only when said switching means is closed, and
- means for alternately opening and closing said switching means,
- said semiconductor switching means being effective, when closed, to apply voltages of opposite polarity to the opposite ends of said resistive portion whereby said movable tap may be positioned at a point on said resistive portion which is at zero potential when said semiconductor switching means is conducting,

said A.C. output means being connected to said tap in such a manner as to be responsive to changes of current flow through said movable tap in response to operation of said switching means.

3,287,621
SELF-BIASING VARACTOR FREQUENCY MULTIPLIER

Tommy S. Weaver, Arnold, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Feb. 8, 1963, Ser. No. 257,352
2 Claims. (Cl. 321—69)

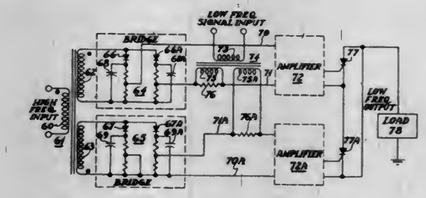


1. A self-biasing varactor frequency multiplier circuit for a coaxial line having an input portion wtih a filter and a double-stub tuner for filtering and tuning the signal at the input fundamental frequency and having an output portion with a filter and a double-stub tuner for filtering and tuning the signal at the multiplied output frequency, the invention which comprises:
- a coaxial line T-coupler housing for coupling the input and output coaxial line portions in alignment;
- an electrically conductive cylindrical extension detachably supported on the lateral leg of the T-coupler housing retaining a capacitor with aligned terminals therein;
- a varactor diode having a cathode terminal engaging said coaxial line for said T-coupler housing and an anode terminal engaging one terminal of said capacitor;
- an electrical insulating disc having a central opening for receiving the other terminal of said capacitor and a peripheral portion thereof resting on said cylindrical extension for supporting said capacitor in said cylindrical extension;
- an electrically conductive inverted cylindrical cup having an opening in the bottom thereof engaging said peripheral portion of said insulating disc;
- a potentiometer detachably fixed in the opening of said inverted cylindrical cup, one terminal of said potentiometer and the other terminal of said capacitor being coupled to said inverted cylindrical cup to ground same and a second terminal of said potentiometer being coupled by conductor means to said one terminal of said capacitor; and
- an electrically conductive retaining cylindrical member having an inwardly directed shoulder on the upper end thereof in compressive engagement with said inverted cylindrical cup and the lower end threadedly engaging said cylindrical extension detachably retaining said varactor diode, said capacitor, and said potentiometer on said coaxial line T-coupler housing with the adjustable tap of said potentiometer extending to the exterior of said inverted cylindrical cup and said retaining cylindrical member whereby a frequency signal being conducted over the coaxial line of said coaxial line T-coupler housing will have harmonics generated therefrom by said varactor diode and the bias voltage produced by the rectification characteristics of said varactor diode is adjustable by said potentiometer to effect optimum efficiency of said harmonic generation.

3,287,622
STATIC FREQUENCY CONVERTER FOR PRODUCING A CONSTANT OUTPUT FREQUENCY FROM A VARIABLE FREQUENCY INPUT

Robert C. Eckenfelder, Point Pleasant, and Leo B. Bourgeault, Spring Lake Heights, N.J., assignors to The Bendix Corporation, Eatontown, N.J., a corporation of Delaware

Filed June 14, 1963, Ser. No. 287,813
4 Claims. (Cl. 321—69)

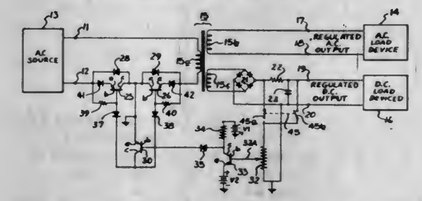


2. A static frequency converter for converting a high frequency input to a low frequency output, comprising a source of high frequency, a low frequency output, a pair of substantially similar parallel circuits, each of said parallel circuits including a bridge circuit having a saw-toothed output, means for connecting said parallel circuits to said source of high frequency in opposite polarity, SCR's connecting said parallel circuit to said low frequency output, and means for connecting a low frequency modulating signal to said circuits in opposite polarity to modulate said saw-toothed output to turn on said SCR's alternately in accordance with said low frequency modulating signal.

3,287,623
VOLTAGE REGULATOR

James P. Valancius, Chicago, Ill., assignor to Packard Instrument Company, Inc., Lyons, Ill., a corporation of Illinois

Filed July 29, 1963, Ser. No. 298,334
7 Claims. (Cl. 323—22)

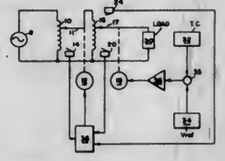


1. In a voltage regulator having an input circuit adapted to be connected to an A.-C. supply and having an output circuit, the combination which comprises a pair of transistors having their emitter-collector circuits connected in bucking relationship between the input and output circuits for regulating the effect of the A.-C. supply so that an output voltage is provided in the output circuit having an instantaneous amplitude determined by the impedances of the transistors, means for allowing current to bypass one transistor when the other is conducting, and feedback means associated with the output circuit for controlling the impedance of the transistors in accordance with the instantaneous output voltage provided, the transistors limiting the output to a desired level in response to operation of the feedback means.

3,287,624
TAP CHANGING TRANSFORMER VOLTAGE REGULATING SYSTEM

John A. Perry, Lansing, Ill., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

Filed Oct. 22, 1963, Ser. No. 317,992
11 Claims. (Cl. 323—43.5)



1. In an apparatus for automatic voltage control including first and second variable impedance devices for interconnection between a power supply and an electrical load whereby the voltage applied by said power supply to said load is a function of the impedance of each said device, the improvement which includes

(a) a first sensing device associated with said second variable impedance device to be actuated thereby at a predetermined maximum effective impedance thereof,

(b) a second sensing device associated with said second impedance device to be actuated thereby at a predetermined minimum effective impedance thereof,

(c) a drive mechanism connected to said first impedance device actuable to change the effective impedance of said first impedance device,

(d) said first sensing device being connected to said drive mechanism to actuate said device mechanism to increase the effective impedance of said first impedance device upon actuation of said first sensing device,

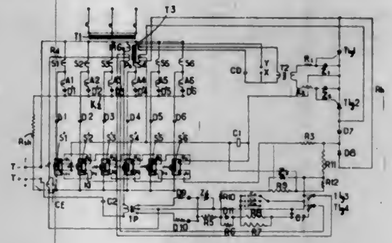
(e) said second sensing device being connected to said drive mechanism to actuate said drive mechanism to decrease the effective impedance of said first impedance device upon actuation of said second sensing device, and

(f) said first and second sensing devices being connected to said drive mechanism to actuate said drive mechanism to maintain said first and second impedance devices at said predetermined maximum and minimum effective impedances thereof, respectively, upon actuation of said first and second sensing devices.

3,287,626
PHASE SHIFTING NETWORKS

William L. Sprague, Royal Oak, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Mar. 28, 1962, Ser. No. 183,270
6 Claims. (Cl. 323—122)

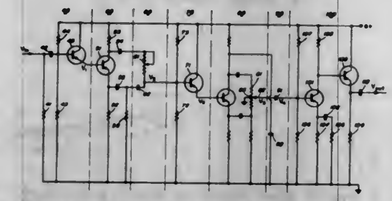




3,287,627
WIDE RANGE PHASE SHIFTER

Barry W. Pochilman, Linthicum, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Mar. 9, 1964, Ser. No. 350,622
2 Claims. (Cl. 323—122)



1. A phase shift circuit comprising

a first phase splitter having two outputs;

a first phase shift network connected to the first phase splitter, said first phase shift network being a series combination of a capacitor and variable resistor connected across both outputs of the first phase splitter, whereby the phase output of the phase shift network varies according to the relation

$$-2\tan^{-1} RC\omega$$

where ω is the signal frequency and R and C are the resistance and capacitance of the series combination;

a second phase splitter connected to the first phase shift network and having two outputs;

a second phase shift network connected to the second phase splitter, said second phase shift network being a potentiometer having a grounded center tap and having its two ends connected to the two outputs of the second phase splitter whereby positive and negative phase shift is available on opposite sides of the center tap;

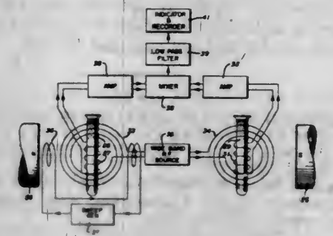
means connected to one side of the center tapped potentiometer to introduce a first predetermined phase shift into that side; and

means connected to the arm of the potentiometer to introduce a second predetermined phase shift into the output of the potentiometer.

3,287,629
GYROMAGNETIC RESONANCE METHODS AND APPARATUS

Russell H. Varian, Cupertino, Calif., assignor to Varian Associates, San Carlos, Calif., a corporation of California

Original application Aug. 29, 1956, Ser. No. 606,820. Divided and this application July 15, 1963, Ser. No. 301,225
21 Claims. (Cl. 324—.5)



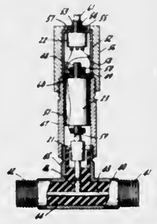
1. The method of employing gyromagnetic precession in a polarizing field for the control of a process which comprises passing at least a portion of one of the sub-

said A.C. output means being connected to said tap in such a manner as to be responsive to changes of current flow through said movable tap in response to operation of said switching means.

3,287,621
SELF-BIASING VARACTOR FREQUENCY MULTIPLIER

Tommy S. Weaver, Arnold, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Feb. 8, 1963, Ser. No. 257,352
2 Claims. (Cl. 321—69)



1. A self-biasing varactor frequency multiplier circuit for a coaxial line having an input portion wtih a filter and a double-stub tuner for filtering and tuning the signal at the input fundamental frequency and having an output portion with a filter and a double-stub tuner for filtering and tuning the signal at the multiplied output frequency, the invention which comprises:

a coaxial line T-coupler housing for coupling the input and output coaxial line portions in alignment;

an electrically conductive cylindrical extension detachably supported on the lateral leg of the T-coupler housing retaining a capacitor with aligned terminals therein;

a varactor diode having a cathode terminal engaging said coaxial line for said T-coupler housing and an anode terminal engaging one terminal of said capacitor;

an electrical insulating disc having a central opening for receiving the other terminal of said capacitor and a peripheral portion thereof resting on said cylindrical extension for supporting said capacitor in said cylindrical extension;

an electrically conductive inverted cylindrical cup having an opening in the bottom thereof engaging said peripheral portion of said insulating disc;

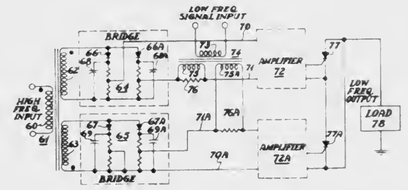
a potentiometer detachably fixed in the opening of said inverted cylindrical cup, one terminal of said potentiometer and the other terminal of said capacitor being coupled to said inverted cylindrical cup to ground same and a second terminal of said potentiometer being coupled by conductor means to said one terminal of said capacitor; and

an electrically conductive retaining cylindrical member having an inwardly directed shoulder on the upper end thereof in compressive engagement with said inverted cylindrical cup and the lower end threadedly engaging said cylindrical extension detachably retaining said varactor diode, said capacitor, and said potentiometer on said coaxial line T-coupler housing with the adjustable tap of said potentiometer extending to the exterior of said inverted cylindrical cup and said retaining cylindrical member whereby a frequency signal being conducted over the coaxial line of said coaxial line T-coupler housing will have harmonics generated therefrom by said varactor diode and the bias voltage produced by the rectification characteristics of said varactor diode is adjustable by said potentiometer to effect optimum efficiency of said harmonic generation.

3,287,622
STATIC FREQUENCY CONVERTER FOR PRODUCING A CONSTANT OUTPUT FREQUENCY FROM A VARIABLE FREQUENCY INPUT

Robert C. Eckenfelder, Point Pleasant, and Leo B. Bourgeault, Spring Lake Heights, N.J., assignors to The Bendix Corporation, Eatontown, N.J., a corporation of Delaware

Filed June 14, 1963, Ser. No. 287,813
4 Claims. (Cl. 321—69)

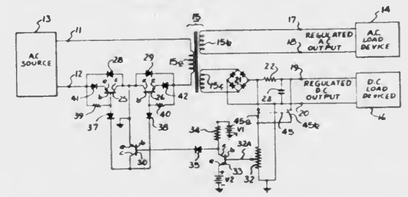


2. A static frequency converter for converting a high frequency input to a low frequency output, comprising a source of high frequency, a low frequency output, a pair of substantially similar parallel circuits, each of said parallel circuits including a bridge circuit having a saw-toothed output, means for connecting said parallel circuits to said source of high frequency in opposite polarity, SCR's connecting said parallel circuit to said low frequency output, and means for connecting a low frequency modulating signal to said circuits in opposite polarity to modulate said saw-toothed output to turn on said SCR's alternately in accordance with said low frequency modulating signal.

3,287,623
VOLTAGE REGULATOR

James P. Valancius, Chicago, Ill., assignor to Packard Instrument Company, Inc., Lyons, Ill., a corporation of Illinois

Filed July 29, 1963, Ser. No. 298,334
7 Claims. (Cl. 323—22)

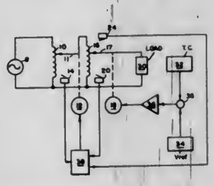


1. In a voltage regulator having an input circuit adapted to be connected to an A.-C. supply and having an output circuit, the combination which comprises a pair of transistors having their emitter-collector circuits connected in bucking relationship between the input and output circuits for regulating the effect of the A.-C. supply so that an output voltage is provided in the output circuit having an instantaneous amplitude determined by the impedances of the transistors, means for allowing current to bypass one transistor when the other is conducting, and feedback means associated with the output circuit for controlling the impedance of the transistors in accordance with the instantaneous output voltage provided, the transistors limiting the output to a desired level in response to operation of the feedback means.

3,287,624
TAP CHANGING TRANSFORMER VOLTAGE REGULATING SYSTEM

John A. Perry, Lansing, Ill., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

Filed Oct. 22, 1963, Ser. No. 317,992
11 Claims. (Cl. 323—43.5)



1. In an apparatus for automatic voltage control including first and second variable impedance devices for interconnection between a power supply and an electrical load whereby the voltage applied by said power supply to said load is a function of the impedance of each said device, the improvement which includes

(a) a first sensing device associated with said second variable impedance device to be actuated thereby at a predetermined maximum effective impedance thereof,

(b) a second sensing device associated with said second impedance device to be actuated thereby at a predetermined minimum effective impedance thereof,

(c) a drive mechanism connected to said first impedance device actuable to change the effective impedance of said first impedance device,

(d) said first sensing device being connected to said drive mechanism to actuate said device mechanism to increase the effective impedance of said first impedance device upon actuation of said first sensing device,

(e) said second sensing device being connected to said drive mechanism to actuate said drive mechanism to decrease the effective impedance of said first impedance device upon actuation of said second sensing device, and

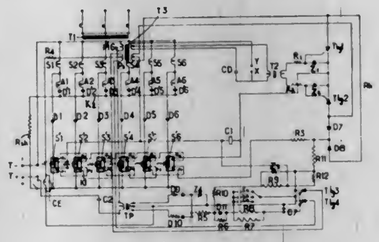
(f) means associated with said drive mechanism actuatable to interrupt periodically the change of the effective impedance of said first impedance device upon actuation of said drive mechanism.

3,287,625
MAGNETIC AMPLIFIER CIRCUITS, ESPECIALLY FOR ARC-WELDING EQUIPMENTS

Robert Malatier and Richard Theuret, both of 33 Place du 1er Mai, Dijon, France

Filed Sept. 24, 1963, Ser. No. 311,127
Claims priority, application France, Sept. 24, 1962, 910,258; Sept. 17, 1963, 947,776
6 Claims. (Cl. 323—89)

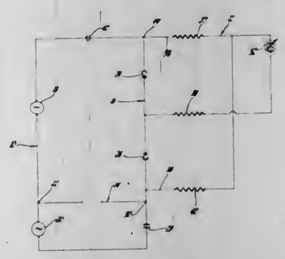
1. In an arc welding system supplying a direct current output through load terminals to form a welding arc; an alternative current source; a first transformer having a three-phase primary, secondary windings and rectifying device thereon to supply a rectified output; a magnetic amplifier supplying said direct current welding output from said rectified output, said magnetic amplifier having load windings, control windings and polarization windings; the improvement comprising a circuit, comprising, in combination, at least one grid-controlled solid state thyratron with an anode therein supplying said control windings of said magnetic amplifier, and a phase shifting network having a winding with a central tapping in which the current is in phase with said anode of said solid state thyratron, said winding of said phase shifting network forming part of a group comprising an auxiliary transformer and at least one variable resistor for varying the phase angle of the current supplying said grid of said solid state thyratron through said auxiliary transformer to provide a rectified control current to said control windings of said magnetic amplifier, means for electrically connecting said winding and central tapping with said auxiliary transformer and means for electrically connecting the other end of said winding through said at least one variable resistor to said auxiliary transformer whereby the number of ampere-turns of said control windings may be modified to vary the intensity of said direct current welding output.



3,287,626
PHASE SHIFTING NETWORKS

William L. Sprague, Royal Oak, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Mar. 28, 1962, Ser. No. 183,270
6 Claims. (Cl. 323—122)

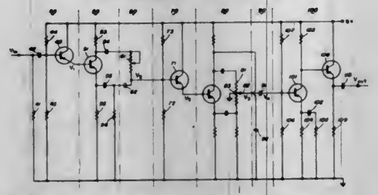


1. A network converting an input signal of a predetermined frequency to a phase shifted output signal of the same frequency comprising a pair of serially connected voltage sources having a common junction therebetween and arranged so as to provide the input signal, a phase shifter including serially connected resistive and reactive means arranged in series with the voltage sources and also having a common junction therebetween, the resistive means including a pair of unidirectional conducting devices of similar characteristics, and means applying a control signal of a frequency that is substantially less than the input signal frequency to the devices so as to vary the resistance thereof, the devices being arranged in series opposed relation so as to substantially eliminate the influence of the alternations of the input signal on the resistance of the devices and thereby develop at the common junctions an output signal that is phase shifted relative to the input signal in accordance with the magnitude of the control signal.

3,287,627
WIDE RANGE PHASE SHIFTER

Barry W. Poehlman, Linthicum, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Mar. 9, 1964, Ser. No. 350,622
2 Claims. (Cl. 323—122)



1. A phase shift circuit comprising

a first phase splitter having two outputs;

a first phase shift network connected to the first phase splitter, said first phase shift network being a series combination of a capacitor and variable resistor connected across both outputs of the first phase splitter, whereby the phase output of the phase shift network varies according to the relation

$$-2 \tan^{-1} RC\omega$$

where ω is the signal frequency and R and C are the resistance and capacitance of the series combination;

a second phase splitter connected to the first phase shift network and having two outputs;

a second phase shift network connected to the second phase splitter, said second phase shift network being a potentiometer having a grounded center tap and having its two ends connected to the two outputs of the second phase splitter whereby positive and negative phase shift is available on opposite sides of the center tap;

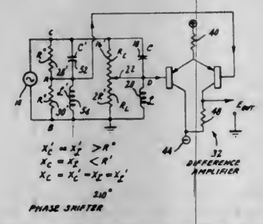
means connected to one side of the center tapped potentiometer to introduce a first predetermined phase shift into that side; and

means connected to the arm of the potentiometer to introduce a second predetermined phase shift into the output of the potentiometer.

3,287,628
VARIABLE PHASE SHIFTER HAVING GREATER THAN 180° RANGE UTILIZING FIXED REACTANCES AND POTENTIOMETER TO EFFECT PHASE SHIFT

Francis P. Kelper, Jr., Oreland, Pa., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Nov. 22, 1963, Ser. No. 325,647
5 Claims. (Cl. 323—123)

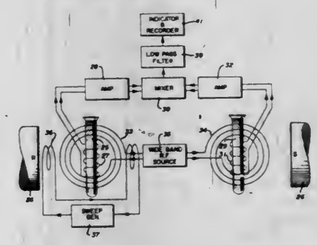


1. A phase shifter for variably shifting the phase of a signal throughout a range in excess of 180° comprising: a source of an alternating current signal, one terminal of which is connected to a point at reference potential, said source being connected across the parallel combination of (1) two series-connected resistances, (2) a series-connected first capacitor and first inductor, (3) a potentiometer, and (4) a series-connected second capacitor and second inductor, the junctions of said two series connected resistances and said series-connected first capacitor and first inductor being joined and constituting a first terminal, said potentiometer including a wiper contact, said wiper contact of said potentiometer and the junction of said series-connected second capacitor and inductor being joined and constituting a second terminal, whereby adjustment of said wiper contact will shift the phase of a signal appearing across said terminals through a range in excess of 180°, and a difference amplifier having inputs connected across said first and second terminals, said difference amplifier being arranged to reference the signal appearing across said terminals to said point at reference potential.

3,287,629
GYROMAGNETIC RESONANCE METHODS AND APPARATUS

Russell H. Varian, Cupertino, Calif., assignor to Varian Associates, San Carlos, Calif., a corporation of California

Original application Aug. 29, 1956, Ser. No. 606,820. Divided and this application July 15, 1963, Ser. No. 301,225
21 Claims. (Cl. 324—.5)



1. The method of employing gyromagnetic precession in a polarizing field for the control of a process which comprises passing at least a portion of one of the substances of the process through the coupled portions of the output-input networks of a gyromagnetic oscillator, taking a portion of the output signal, if any, emanating from the gyromagnetic oscillator, and deriving from said output signal a control signal for controlling certain portions of the process.

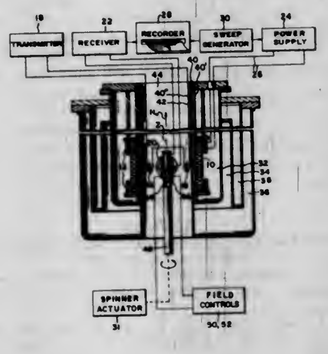
3,287,630
APPARATUS FOR IMPROVING THE UNIFORMITY OF MAGNETIC FIELDS

Robert E. Gang, Sunnyvale, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Mar. 2, 1964, Ser. No. 348,442
9 Claims. (Cl. 324—.5)

1. In a spectrometer, the combination of: a sample secured in a container having a major axis; a superconducting solenoid for providing a magnetic field having a major component substantially in alignment with the major axis of said container; a first pair of spaced coils for providing first order gradient corrections, coaxially aligned with such container, and connected in current opposition; a second pair of spaced coils for providing second order gradient corrections, coaxially aligned with said container and additively current connected; a third pair of coils coaxially aligned with said container and additively current connected for minimizing the zero order component developed by said second pair of coils; first

and second sets of coils for providing first order gradient corrections, each set comprising four correcting coils substantially symmetrically disposed about the center of said sample, two of such coils being 180° apart located over such center, the other two coils being 180° apart located



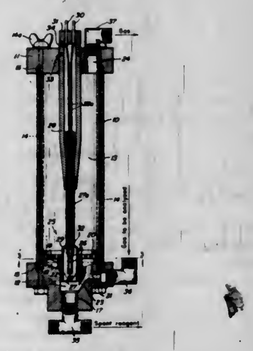
below such center, the first and second sets being disposed 90° apart around such cylinder; means for supplying electrical power to said coil pairs and sets; and means for separately controlling the electrical power supplied to each of said coil pairs and coil sets.

3,287,631

METHOD AND APPARATUS FOR MEASURING THE ELECTRICAL CONDUCTIVITY OF GAS-IMPREGNATED LIQUIDS WITH SHIELDED ELECTRODES

Allison B. Stout, Jr., Salt Lake County, Utah, assignor to Kennecott Copper Corporation, New York, N.Y., a corporation of New York

Filed Oct. 11, 1962, Ser. No. 229,787
16 Claims. (Cl. 324—30)



14. An electrical conductivity measurement cell, comprising means defining a chamber for the retention of liquid; means for introducing liquid into and discharging liquid from the chamber; means for dispersing a gas through liquid in the chamber; electrodes within the chamber; and a shield against turbulence on the electrodes positioned within the chamber, said shield surrounding the electrodes.

3,287,632

MOBILE INSPECTION DEVICE FOR TESTING METALLIC MEMBERS FOR LONGITUDINAL AND TRANSVERSE DISCONTINUITIES

David R. Tompkins, Houston, Tex., assignor to Plastic Applicators, Inc., a corporation of Texas

Filed Apr. 20, 1964, Ser. No. 360,947
2 Claims. (Cl. 324—37)



1. A mobile pipe inspection device comprising:

(a) a vehicle having an interior portion providing all weather protection therein, there being an opening to the exterior of the vehicle,

(b) rack means aligned with the opening for receiving pipe thereon,

(c) means for translating pipe on the rack means into the interior portion of the vehicle,

(d) means in the vehicle for magnetizing a substantial longitudinal portion of the pipe,

(e) means in the vehicle for sensing magnetic field variations adjacent the outer surface of the pipe,

(f) means in the vehicle for indicating magnetic field variations sensed by the sensing means,

(g) means for circumferentially magnetizing the pipe,

(h) means in the vehicle for sensing magnetic field variations adjacent the outer surface of the circumferentially magnetized pipe, said means being connected to the indicating means for indicating variations detected thereby, and

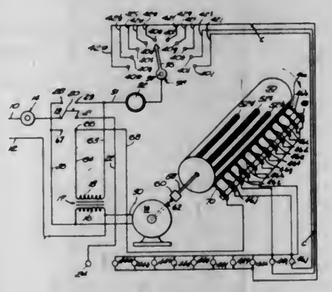
(i) means for translating inspected pipe from the interior portion of the vehicle.

3,287,633

APPARATUS INCLUDING ROTARY DRUM MEANS FOR TESTING A PLURALITY OF ELECTRICAL CIRCUITS

George Joseph Mollo, 80 Brae St., North Providence, R.I.

Filed Apr. 28, 1964, Ser. No. 363,122
5 Claims. (Cl. 324—51)



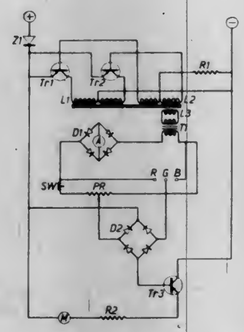
1. Apparatus for sequentially testing a plurality of electrical conductors for isolation from an electrically conductive enclosure comprising, a source of test current connected at one side to ground, a plurality of connecting posts, said connecting posts being electrically isolated from each other, each said connecting post being arranged to receive a one of said conductors to be tested, a circuit including a selector switch having a plurality of contact points, each said contact point being connected with an associated connecting post, a test indicator connected to said source and in series with said selector switch, a receptacle connectable with said conductive enclosure to thereby connect said enclosure to ground, a rotary drum, means for rotating said drum, said drum having a plurality of electrically conductive bars thereon connected to ground, a plurality of contact elements arranged in alignment to be engaged successively by said bars as said drum is rotated, said contact elements being each connected to an individual one of said connecting posts, means for directing current from the opposite side of said current source through said test indicator and said selector switch to said contact elements to test said conductors for isolation, said selector switch being operable to direct current to each of said conductors sequentially for testing, said bars being operable through periodic contact with said contact elements to periodically energize and deenergize said circuit to thereby intermittently actuate said indicator when a conductor under test is isolated from said enclosure, said indicator being actuated continuously by current leakage across said enclosure to ground when said conductor under test is in electrical contact with said enclosure.

3,287,634

APPARATUS FOR FINDING FAULTS IN TEMPERATURE DETECTORS INCLUDING TRANSISTOR MEANS HAVING A CURRENT MEASURING DEVICE IN THE EMITTER CIRCUIT

Jack B. Collins, Isleworth, England, assignor of one-half to Wilkinson Sword Limited, and one-half to Graviner Manufacturing Company Limited, both of London, England, both British companies

Filed May 6, 1963, Ser. No. 278,132
Claims priority, application Great Britain, May 8, 1962, 17,569/62
2 Claims. (Cl. 324—52)



1. In electrical testing apparatus for finding the approximate location of a leakage path between two conductors of an elongated temperature detector in which the conductors are spaced apart by a material having a substantial temperature coefficient of resistance,

a source of alternating current,

first current measuring means,

first, second and third detector-connection terminals, said first terminal being electrically connected to one end of one of said two conductors, said second terminal being electrically connected to an opposite end of said one of the two conductors, and said third terminal being electrically connected to the other one of said two conductors, said source of alternating current and said first current measuring means being electrically connected in series between said first terminal and said second terminal,

a circuit breaker,

a potentiometer having a slider arm movable to vary the potential developed at said slider arm, said circuit breaker and said potentiometer being electrically connected in series between said first terminal and said second terminal,

a rectifier bridge having a pair of alternating current input terminals and a pair of rectified current output terminals, one of said input terminals being connected to said slider arm and the other of said input terminals being connected to said third detector-connection terminal,

a transistor having a base electrode, an emitter electrode and a collector electrode,

a unidirectional current supply having first and second supply terminals, said collector electrode being electrically connected to said first supply terminal, said base electrode being electrically connected to one of said rectified current output terminals, the other of said rectified current output terminals being electrically connected to said second supply terminal,

second current measuring means,

and

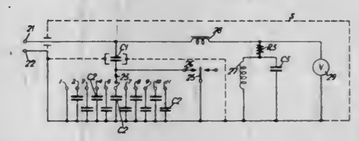
a resistor load, said resistor load and said second current measuring means being electrically connected in series between said emitter electrode and said second supply terminal.

3,287,635

ELECTRICAL DISCHARGE SIMULATOR FOR INSULATION TESTING INCLUDING RELAY MEANS CONNECTED ACROSS SERIES CAPACITORS

George Mole, Leatherhead, England, assignor to E.R.A. Patents Limited, Leatherhead, England, a British company

Filed May 9, 1963, Ser. No. 279,215
Claims priority, application Great Britain, May 14, 1962, 18,464/62
3 Claims. (Cl. 324—54)



1. A discharge simulator for insulation testing purposes comprising:

a pair of terminals affording connection across insulation to be tested;

a pair of series connected capacitor means connected across said terminals to be charged by an A.C. potential applied to the insulation under test;

an electromagnetic relay of the type having normally open contacts which are effectively free from bounce and which pass from the non-conducting to the conducting condition in less than 0.1 microsecond;

phase shift means connecting the winding of said relay across said terminals;

means connecting said contacts across one of said capacitor means so as to short-circuit and discharge said one capacitor means whenever said relay is energized to a predetermined value of said applied A.C. potential;

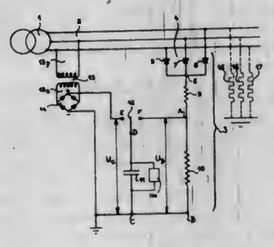
and means connected across said terminals for indicating the voltage applied thereto.

3,287,636

METHOD AND APPARATUS INCLUDING CONDENSER MEANS FOR MEASURING THE INSULATION FROM EARTH OF ELECTRICAL NETWORKS

Claude Gagniere, Nogent-sur-Oise, France, assignor to Charbonnages de France, Paris, Seine, France, a public institution of France

Filed July 19, 1963, Ser. No. 296,244
Claims priority, application France, July 24, 1962, 904,906
8 Claims. (Cl. 324—54)



1. A method of measuring the insulation resistance to earth of an alternating electrical network with an insulated neutral permitting a faithful indication to be obtained which can be transmitted to a distance, irrespective of the variations of voltage of said network, said method consisting of:

supplying at the terminals of a first circuit a voltage proportional to the voltage of said network;

causing a polarized current to flow in an electrical coupling circuit between the phases of the network and earth;

deriving from said coupling circuit a voltage proportional to the current flowing in said coupling circuit and supplying said voltage to the terminals of a second circuit;

connecting a condenser to the terminals of said first circuit and charging said condenser to the value of the voltage proportional to the network voltage;

connecting said condenser to the terminals of said second circuit and discharging said condenser to the value of the voltage proportional to that of the current flowing in the polarized coupling circuit between the phases of the network and earth;

measuring the time taken for the condenser to discharge into said second circuit;

and utilizing the discharge time of said condenser as a function of the insulation resistance of the network.

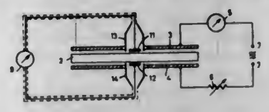
3,287,637

HIGH FREQUENCY CURRENT MEANS INCLUDING CAPACITIVE PROBE MEMBERS FOR DETERMINING THE ELECTRICAL RESISTANCE OF A SEMICONDUCTOR LAYER

Wolfgang Keller, Pretzfeld, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

Filed July 10, 1963, Ser. No. 294,116
Claims priority, application Germany, July 17, 1962, S 80,435
2 Claims. (Cl. 324—62)

1. Device for determining the resistance of thin semiconductor layers, said device comprising a semiconductor specimen, two electrodes having respective planar and parallel surfaces spaced from each other a distance larger than the thickness of said semiconductor specimen, said specimen being inserted between the electrode surfaces in spaced relation thereto, said two electrodes having respective openings opposite each other, two capacitive probe members located in said respective openings and insulated from said electrodes, said probe members being spaced from each other a distance larger than said thickness so as to also remain out of contact with



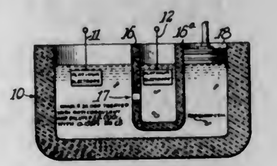
the inserted specimen, shielding means surrounding said respective probe members for shielding them from said electrodes, high-frequency current supply means connected across said two electrodes and comprising current measuring means, and high-frequency voltage measuring means connected across said two probe members.

3,287,638

METHOD OF COUNTING ERYTHROCYTES UTILIZING HIGH FREQUENCY CURRENT

Victor W. Bolie, Ames, Iowa, assignor to Iowa State University Research Foundation, Inc., Ames, Iowa, a corporation of Iowa

Filed Oct. 2, 1962, Ser. No. 227,796
1 Claim. (Cl. 324—71)



In a method for counting erythrocytes, the steps of diluting blood to about 50,000 to 1 with anti-coagulated treated isotonic saline to provide a solution of erythrocytes of known impedance, flowing said solution with the erythrocytes contained therein from the region of one electrode to another electrode through an aperture having an area of the order of 10^{-2} square millimeters at a flow rate of the order of 0.01 milliliter per second while applying an electrical excitation to said electrodes of the order of 100 kcs., sensing the impedance variation between the electrodes, developing a pulse for each increase in impedance, and counting said pulses.

3,287,639

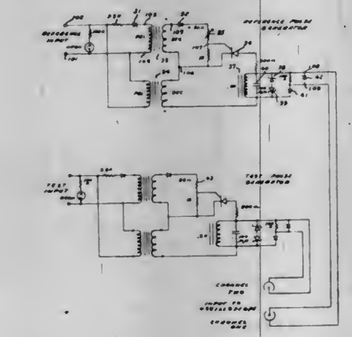
PRECISION A.C. PHASE SENSOR

Marion L. Vail, 1348 Ironwood Drive, Fairborn, Ohio

Filed Oct. 8, 1964, Ser. No. 402,670
2 Claims. (Cl. 324—91)

1. Apparatus for the measurement of the phase relationship of a nominal 60 hertz voltage being tested and a nominal 60 hertz reference voltage, the said apparatus comprising:

(a) a first pulse generator means including a 400 hertz transformer having a primary and a secondary winding; a first diode connected in series with the said 400 hertz transformer primary winding; means for connecting the said primary winding and series connected diode across the said reference voltage; a silicon controlled rectifier having an anode, a cathode, and a control electrode; a second diode; a manually variable resistive voltage divider means; means for connecting in series relationship the said 400 hertz transformer secondary winding, the said second diode, and the said manually variable resistive voltage divider means; connecting means cooperating with the said manually variable voltage divider means and the said control electrode and cathode of the silicon controlled rectifier providing a manually adjustable control voltage between the control electrode and the cathode of the said silicon controlled rectifier; a 60 hertz transformer having a primary winding and a secondary winding; an inductive-capacitive parallel resonant circuit; means for connecting the said resonant circuit, the said secondary winding of the 60 hertz transformer, and the anode and cathode of the silicon controlled rectifier in series relationship; Zener diode means connected in parallel with the said parallel resonant circuit to provide a flat-topped pulse; a series-parallel network comprising a third diode connected in series with a parallel connected fourth diode and resistance for providing a unidirectional pulse; connecting means for connecting the said series parallel network in parallel with the said Zener diode means; connecting means cooperating with the said parallel connected diode and resistance for providing a reference output pulse whereby the said reference output pulse whereby the said reference output pulse has a manually variable determined phase delay with respect to the said reference voltage;



(b) a second pulse generator means including a 400 hertz transformer having a primary and a secondary winding; a first diode connected in series with the said 400 hertz transformer primary winding; means for connecting the said primary winding and series connected diode across the said voltage being tested; a silicon controlled rectifier having an anode, a cathode, and a control electrode; a second diode; resistive voltage divider means; means for connecting in series relationship the said 400 hertz transformer secondary winding, the said second diode and the said resistive voltage divider means; connecting means cooperating with the said voltage divider means and the said control electrode and cathode of the silicon controlled rectifier providing a control voltage between the control electrode and the cathode of the said silicon controlled rectifier; a 60 hertz transformer having a primary winding and a secondary winding; an inductive-capacitive parallel resonant circuit; means for connecting the said resonant circuit, the said secondary winding of the hertz transformer, and the anode and cathode of the silicon controlled rectifier in series relationship; Zener diode means connected in parallel with the said parallel resonant circuit to provide a flat-topped pulse; a series-parallel network comprising a third diode connected in series with a parallel connected fourth diode and resistance for providing a unidirectional pulse; connecting means for connecting the said series-parallel network in parallel with the said Zener diode means; connecting means cooperating with the said parallel connected fourth diode and resistance for providing a test output pulse whereby the said test output pulse has a determined phase delay with respect to the said voltage being tested; and

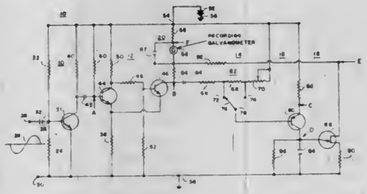
(c) indicating means having a common time base cooperating with the said first pulse generator and the said second pulse generator for displaying the said reference output pulse and the said test output pulse whereby the phase relationship between the voltage being tested and the reference voltage is indicated.

3,287,640

PULSE COUNTING CIRCUIT WHICH SIMULTANEOUSLY INDICATES THE OCCURRENCE OF THE *n*TH PULSE

Jon Richard Rebage, Madison, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Mar. 12, 1963, Ser. No. 264,731
6 Claims. (Cl. 324—113)



1. In combination:

a. a voltage source having first and second terminals;

b. indicating means connected in series with said source terminals for indicating the magnitude of current passing through said indicating means;

c. first current control means including a first transistor connected in series with said indicating means between said source terminals;

d. an input signal comprising a source of periodic varying voltage;

e. first transistor biasing means responsive to said input signal and coupled to said first transistor for abruptly varying the conduction of said first transistor from substantially fully conductive to substantially non-conductive once each cycle of said input signal so as to cause said first transistor to develop an output between fixed amplitude limits;

f. electrical differentiation means comprising a capacitor and electrical resistance in series having the free end of the capacitor coupled to the junction of said indicating means and said first transistor and the free end of the resistor coupled to one of said voltage source terminals for providing a pulse of current for each cycle of varying conduction of said first transistor;

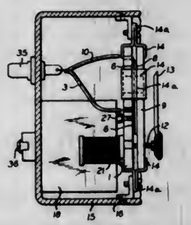
g. second current control means including impedance means connected in series with said indicating means between said source terminals and responsive to an electrical input for producing an abrupt change in impedance;

h. integrating control means responsive to the output of said differentiation means for providing an electrical input to said impedance means in response to a predetermined number of said pulses from said differentiation means.

3,287,641
ELECTRIC MEASURING INSTRUMENT WITH A PRINTED CIRCUIT AND ELECTROLUMINESCENT SCALE

Heinrich Henss, Oberhochstadt, Taunus, Germany, assignor to VDO Tachometer Werke Adolf Schindling G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany

Filed Jan. 16, 1963, Ser. No. 251,927
Claims priority, application Germany, Jan. 19, 1962, V 21,912
6 Claims. (Cl. 324—122)



1. In an indicator for measuring instruments having a dial,

a carrier plate of insulating material,

an electric measuring mechanism including a conductor network printed on one face of said carrier plate, to form a first printed circuit, and

said mechanism and circuit elements thereof being supported on said one face of said carrier plate,

an electroluminescent dial secured to the other face of said carrier plate and comprising indicia dial marks forming a first electrode printed on said other face of said carrier plate, to form a second printed circuit, and said dial marks being electrically connected by printed connecting lines to energizing means,

a second transparent electrode disposed opposite said first electrode and connected to said energizing means,

an electroluminescent layer forming indicia dial marks overlying said first-mentioned indicia dial marks,

said electroluminescent dial marks being disposed between said first and said second electrodes, and

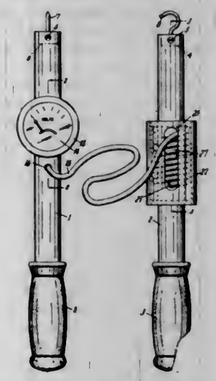
pointer means movable by said mechanism across said electroluminescent dial.

3,287,642
HIGH VOLTAGE MEASURING PROBES WITH INTERCONNECTING WIRE STORAGE REEL

Leon L. Simkins, Kalamazoo, Mich., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Mar. 19, 1962, Ser. No. 180,696
1 Claim. (Cl. 324—149)

Voltage test apparatus for high voltage transmission lines and equipment comprising a pair of elongated tubular rods of electrically insulating material having handle grips on their lower ends, a voltage indicating device supported intermediate of the ends of one of said rods and having terminals projecting into the rod, an insulated wire connected to a terminal of said device and extended through a hole in the side of said one rod and through another hole in the side of the other of said rods, a metallic contact block within said other rod connected to the other end of said wire, an annular collar of insulating material positioned around the lower end of said contact block and supported on said wire where the wire passes through said other rod, a wire coiling sleeve positioned around said other rod and defining a longitudinal slot passing said wire whereby the wire supports the sleeve on the rod, spacer rings in the ends of said sleeve freely rotatable about said other rod and spacing said sleeve from the rod by slightly more than the thickness of said wire whereby rotation of the sleeve on the rod causes the wire to pass through the slot and be wound around the rod within the sleeve, metal contact plugs removably secured in the upper ends of said rods, contact springs

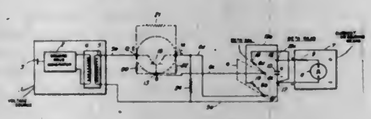


on the inner ends of said plugs, external contacts including a hook and a prod on the outer ends of said plugs, and cylindrical casings enclosing resistance elements mechanically supported within said rods and electrically connected between said springs and another terminal on said indicating device and said contact block.

3,287,643
METHOD AND APPARATUS FOR MEASURING THE BETA PARAMETER OF AN IN-CIRCUIT TRANSISTOR WITHOUT THE APPLICATION OF D.C. BIASING THERETO

Bernard Reich, Wanamassa, N.J., Michael A. Benanti, Brooklyn, N.Y., and William R. Orloff, Inglewood, Lansdale, Pa., assignors, by mesne assignments, to American Electronic Laboratories, Inc., Colmar, Pa., a corporation of Pennsylvania

Filed Apr. 8, 1963, Ser. No. 271,366
12 Claims. (Cl. 324—158)



1. The method of measuring the beta parameter of a transistor having base, emitter and collector electrodes connected in circuit with other electrical components, said method comprising the steps of:

connecting an impedance between collector and base electrodes, said impedance being small compared to the impedance of said other electrical components,

applying a voltage signal from an alternating voltage source having a negligible D.C. impedance, compared to the impedances of said other electrical components, to the emitter and base electrodes,

adjusting the amplitude of said signal to produce a rectified collector electrode current with a predetermined D.C. component, said rectified current having a peak value smaller than the collector-base saturation current for said transistor, and being provided in the absence to said transistor of a D.C. voltage component from a source external to the transistor applied for biasing purposes,

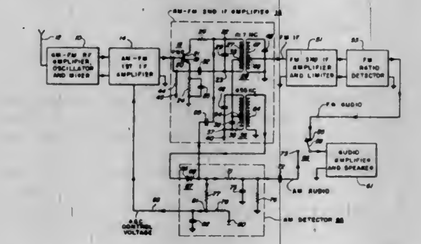
and measuring the D.C. component of the base electrode current while maintaining said collector electrode current,

whereby, knowing the amplitude of said D.C. component of collector electrode current, the beta parameter of said transistor depends on the magnitude of the D.C. component of said base electrode current and may be indicated directly by the last said measurement.

3,287,644
AUTOMATIC GAIN CONTROLLED PLURAL WAVE BAND RADIO RECEIVER

Dwight J. Poppy, Chicago, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware

Filed May 20, 1963, Ser. No. 281,575
7 Claims. (Cl. 325—316)



1. A plural wave band radio receiver for utilizing a first carrier wave amplitude-modulated with audio information and having a carrier frequency lying within a first wave band, and for also utilizing a second carrier wave modulated with audio information and having a carrier frequency lying within a second wave band above said first wave band in the frequency spectrum, comprising:

a first amplifying channel having a first tuned circuit for developing thereacross, during a certain interval and in response to the reception of said first carrier wave, an amplitude-modulated carrier signal having a predetermined carrier frequency and having a peak amplitude determined by the strength of said first carrier wave;

a second amplifying channel having a second tuned circuit for developing thereacross, during another interval and in response to the reception of said second carrier wave, a modulated carrier signal having a carrier frequency which is higher than said predetermined carrier frequency and having a predetermined peak amplitude determined by the strength of said second carrier wave;

an amplitude modulation detector, including only one unidirectional conductive device, coupled to said first tuned circuit and including an audio output circuit for developing, during said certain interval and in response to said amplitude-modulated carrier signal, an audio signal representing the audio information carried by said first carrier wave, and including a filter network for developing a D.C. control potential of a magnitude determined by the average peak amplitude of said amplitude-modulated carrier signal;

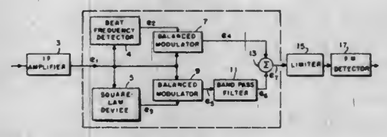
means, including a capacitor, coupling said second, tuned circuit to said unidirectional conductive device for applying, during said other interval said modulated carrier signal with substantially said same predetermined peak amplitude to said amplitude modulation detector to produce in said filter network a D.C. control potential of a magnitude determined by the average peak amplitude of said modulated carrier signal, said capacitor presenting a relatively high impedance at said predetermined carrier frequency to effectively decouple said second tuned circuit from said amplitude modulation detector during the reception of said first carrier wave;

and means for utilizing said D.C. control potentials to automatically control the gain of said radio receiver.

3,287,645
WEAK SIGNAL BOOSTER

Elie J. Baghdady, Weston, Mass., assignor to the United States of America as represented by the Secretary of the Army

Filed Jan. 28, 1963, Ser. No. 254,527
4 Claims. (Cl. 325—344)

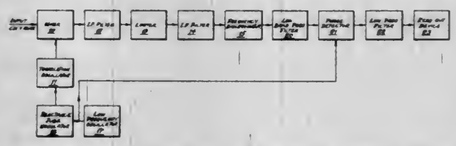


3. A circuit for enhancing the weaker of two co-channel signals comprising, means to extract the beat or difference frequency between said co-channel signals, means to multiply said difference frequency and said two co-channel signals in a first balanced modulator, means to square said two co-channel signals and means to multiply said squared signal and said two co-channel signals in a second balanced modulator, means to select the components in the output of said second balanced modulator at the frequency of the two original co-channel signals, and also those components above and below the frequencies of said two signal co-channel signals by the amount of said difference frequency, and means to add the outputs of said first balanced modulator and the selected components in the output of said second balanced modulator.

3,287,646
SIGNAL-TO-NOISE RATIO METER

Hugh P. Taylor, Cochituate, Mass., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Oct. 28, 1963, Ser. No. 319,620
5 Claims. (Cl. 325—363)



1. A signal-to-noise ratio meter for determining said ratio of a continuous wave signal having noise included therewith which comprises:

(a) a translation oscillator,

(b) means for sinusoidally frequency sweeping said translation oscillator,

(c) a mixer having a pair of inputs and an output, said translation oscillator connected to one of said inputs and

(d) means coupling said continuous wave signal and noise into said other mixer input,

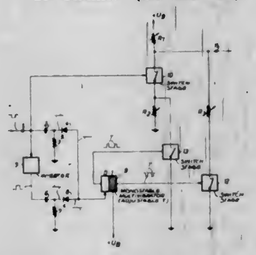
(e) voltage amplitude limiter having its input connected to said mixer output,

(f) frequency discrimination means connected to receive the output of said limiter means,

(g) a phase detector having a pair of inputs and an output, for comparing the phases of signals introduced at said inputs and producing an output having an amplitude proportional thereto,

(h) a source of a sinusoidal signal inphase and synchronized with the sweep of said means for sweeping said translation oscillator,
(i) said source connected to one input of said detector and the output of said discriminator connected to the other of said detector inputs,
(j) a read-out device for indicating the voltage amplitude at the input of said device,
(k) whereby when the output of said detector is applied to said read-out device the amplitude indication thereof will be proportional to the signal-to-noise ratio of said continuous wave signal.

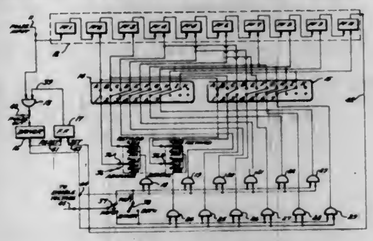
3,287,647
PULSE CONVERTER FOR BINARY SIGNALS OF RECTANGULAR SHAPE TO PULSES HAVING FOUR LEVELS OR STEPS
Joachim Engel, Hamburg-Rahlstedt, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 30, 1963, Ser. No. 276,792
Claims priority, application Germany, May 24, 1962, St 19,281
13 Claims. (Cl. 328—34)



1. A converter to convert a sequence of rectangular pulses into a train of pulses capable of being transmitted on a transmission path impervious to direct current voltage comprising:
a source of rectangular pulses;
a monostable trigger circuit;
means coupled to said source and the input of said trigger circuit responsive to each of the leading and trailing edges of each of said rectangular pulses to control the triggering of said trigger circuit;
first switching means coupled to said source responsive to said rectangular pulses; and
second switching means coupled to the output of said trigger circuit and said first switching means;
said first and second switching means cooperating to produce said train of pulses, each pulse thereof having four steps of predetermined different voltage values.

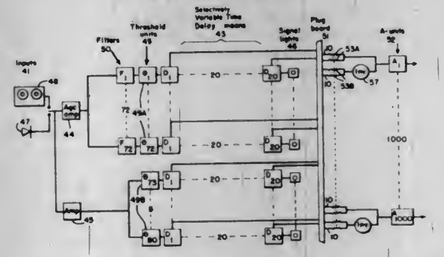
3,287,648
VARIABLE FREQUENCY DIVIDER EMPLOYING PLURAL BANKS OF COINCIDENCE CIRCUITS AND MULTIPOSITION SWITCHES TO EFFECT DESIRED DIVISION
Lewis A. Poole, Fort Walton Beach, Fla., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Jan. 21, 1964, Ser. No. 339,312
1 Claim. (Cl. 328—48)

A pulse signal frequency divider comprising:
(*a*) a counter including a plurality of connected in series bistable stages fed by the pulse signal;
(*b*) a first coincidence circuit fed by the pulse signal and the output of the last stage of the counter, the output of the first coincidence circuit being the desired division of the pulse signal frequency;
(*c*) an enabling voltage source;
(*d*) at least two banks of reset coincidence circuits fed by the enabling voltage source and the first coincidence circuit;
(*e*) a multi-position switch for selecting the banks of coincidence circuits;
(*f*) at least two prewired jacks having a plurality of input terminals and a plurality of output terminals at least equal to the number of counter stages, each of the banks of reset coincidence circuits connected with



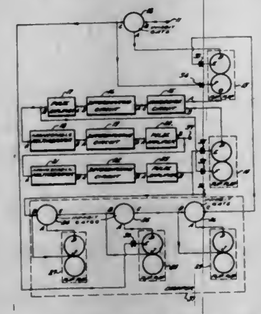
their outputs to a respective one of said two prewired jacks of the input terminals, each output terminal of the two prewired jacks being connected to at least two counter stages for resetting the counter;
(*g*) and an adjustable switch interposed between one of the reset coincidence circuits of each of the banks of reset coincidence circuits and the prewired jacks connecting selected input terminals of the prewired jacks.

3,287,649
AUDIO SIGNAL PATTERN PERCEPTION DEVICE
Frank Rosenblatt, Brooktondale, N.Y., assignor to Research Corporation, New York, N.Y., a corporation of New York
Filed Sept. 9, 1963, Ser. No. 307,675
3 Claims. (Cl. 328—55)



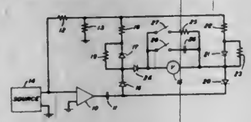
1. An audio signal pattern perceptron device comprising means for generating a signal, means for separating said signal into a plurality of discrete frequency bands, a threshold response unit for each such band, to thereby define a first plurality of threshold response units, the outputs of each said threshold response units existing only when the inputs thereto exceed a predetermined value, the output of each said threshold response unit coupled to a delay line, each said threshold response unit having its own distinct delay line, each said delay line composed of a plurality of individually variable time delay units which serially and sequentially trigger each other, said individual delay units in each said delay line generating an output when triggered, said outputs lasting each for a predetermined length of time, means for feeding said outputs to a second threshold response unit, said second threshold response unit being one of a second plurality of threshold response units distinct from said first plurality of threshold response units, whereby the signal received by each of said second threshold response units is the time and amplitude sum of the output of the delay line coupled thereto, and a final response unit coupled to a plurality of said second threshold response units.

3,287,650
PULSE TRAIN GENERATOR EMPLOYING TRIGGERED SELF-RECIRCULATING PULSE-CIRCUIT AND COUNTER PRODUCING SYNCHRONIZABLE BUT INDEPENDENT OUTPUT PULSE-TRAIN OF SELECTABLE LENGTH
William J. Achramowicz, Cherry Valley, Mass., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Jan. 29, 1964, Ser. No. 341,142
5 Claims. (Cl. 328—63)



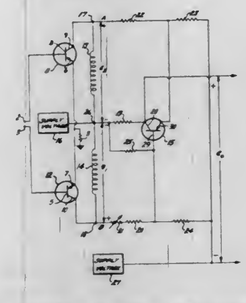
1. Apparatus for generating a train of pulses, comprising a source of signal pulses, a gate circuit, first and second bistable multivibrators, said gate circuit being enabled by said first bistable multivibrator to allow a single source pulse to pass through and switch said first bistable multivibrator, disabling said gate circuit, and causing said first bistable multivibrator to switch to a coincident state with said second bistable multivibrator, means for deriving a pulse from the coincident output of said bistable multivibrators to switch said second bistable multivibrator from the coincident state, means for delaying said pulse and applying the delayed pulse to again switch said second bistable multivibrator into coincidence with said first bistable multivibrator thereby generating a series of pulses at the output of said delay circuit equally spaced at a predetermined interval, and means for counting said delayed pulses to provide a pulse output after a predetermined count to switch said first bistable multivibrator to its initial state and stopping the pulse generating action.

3,287,651
ELECTRIC METERING CIRCUIT
James F. Ingle, New Providence, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 10, 1964, Ser. No. 350,807
1 Claim. (Cl. 328—150)



In combination
an amplifier having an input terminal and an output terminal,
a negative feedback path connected between said amplifier input and output terminals,
said feedback path including a serially connected passive network comprising two paths connected in parallel where each path comprises a first diode, a parallel combination of a second diode and a first resistor, and a second resistor all connected in series in the stated order beginning at the end of the path closer to said amplifier output and, furthermore, where all of said diodes in one of said paths are poled in one direction and all of said diodes in the other path are poled in the opposite direction,
a load circuit, and
means including at least one diode connecting said load circuit between the junctions between said first diode and said parallel combination in each of said parallel paths.

3,287,652
PUSH-PULL AMPLIFIER CIRCUIT HAVING AN INDUCTIVE LOAD AND METHOD FOR OBTAINING A SYMMETRICAL GAIN
Bert K. Erickson, Fayetteville, N.Y., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Mar. 27, 1964, Ser. No. 355,520
3 Claims. (Cl. 330—14)



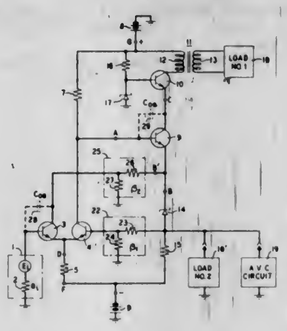
1. A single ended push-pull amplifier circuit for driving an inductive load comprising:
a first and second transistor of like type each having a collector, emitter, and base;
an inductive load connected to the collector of said first and second transistor;
a supply voltage source connected at the midpoint of said inductive load;
a third transistor having a collector, emitter and base for inverting one half of the inductive load, one half of the inductive load being connected to the third resistor in a common emitter configuration and the other half being connected in a common base configuration with the emitter and base being resistively connected to the collectors of the first and second transistors; and
a load resistor connected to the midpoint of said load and to said third transistor for developing a single ended output.

3. A method of producing a symmetrical gain from a push-pull amplifier having a single ended form while obtaining a feedback signal for driving an inductive load comprising:
connecting an inductive load to the collectors of the push-pull transistors with a supply voltage source at the midpoint of the inductive load;
connecting a load resistor between the supply voltage source and the collector of an inverting transistor one half of the inductive load being connected to the inverting transistor in a common emitter configuration and the other half being connected in a common base configuration;

connecting biasing resistors to the emitter and base of the inverting transistor one biasing resistor being variable and the other being fixed; and

balancing the amplifier circuit to obtain symmetrical gain by disconnecting the fixed biasing resistor at one end of the inductive load, connecting the fixed biasing resistor to the opposite end of the inductive load, and adjusting a variable biasing resistor to create a null value at the load resistor.

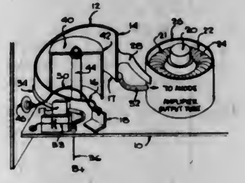
3,287,653
NEUTRALIZED DIRECT-COUPLED DIFFERENTIAL AMPLIFIER INCLUDING POSITIVE AND NEGATIVE FEEDBACK LOOPS
Robert V. Goordman, Hackettstown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 27, 1964, Ser. No. 355,320
8 Claims. (Cl. 330—18)



6. A transistor amplifier comprising first and second transistors each having an emitter electrode, a base electrode and a collector electrode connected in differential amplifier configuration, said first transistor being adapted to receive an input signal and said second transistor having a collector load impedance, a third transistor having emitter, base and collector electrodes coupled to said second transistor and said collector load impedance in power-amplifying arrangement, and an emitter-circuit impedance for said third transistor including a negative feedback circuit direct-coupled to said second transistor and a positive feedback circuit direct-coupled to the collector of said first transistor in an arrangement to neutralize the base-collector impedance of said first transistor and to energize said first and third transistors serially for power, said emitter circuit impedance including a constant voltage device connected between said negative and positive feedback circuits to stabilize voltage biases for said first and second transistors.

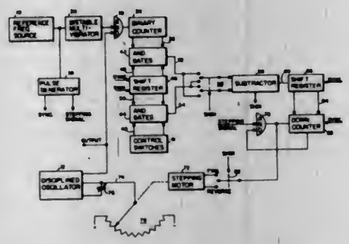
3,287,654
RADIO FREQUENCY TUNER
Hans Scharla-Nielsen, Indialantic, Fla., assignor to Radiation Incorporated, Melbourne, Fla., a corporation of Florida
Filed Jan. 31, 1962, Ser. No. 170,145
8 Claims. (Cl. 330—53)

1. A radio frequency tuner comprising a first metallic tuning element of generally cylindrical shape and having a discontinuity of substantial length in its wall defining a pair of ends of said wall, means, for coupling a R.F. voltage source to one end of said wall, the other end of said wall being connected to a point of R.-F. reference potential, a second metallic tuning element connected to said reference potential and being generally concentric with said first tuning element, said second element being of generally semi-cylindrical shape, one of said elements being rotatable at will about its axis relative to the axis of the other element, the wall of at least one of said elements continuously varying from a maximum to a



minimum height along its circumference, said elements being relatively movable to spaced locations so that the distance between and area of opposing surfaces between them is continuously variable to thereby continuously vary both the inductance and capacity between the ends of said first element.

3,287,655
DIGITAL CONTROL FOR DISCIPLINING OSCILLATORS
Douglas A. Venn and Donald H. Jones, Washington, D.C., assignors to the United States of America as represented by the Secretary of the Navy
Filed Nov. 30, 1964, Ser. No. 414,921
5 Claims. (Cl. 331—14)



1. An oscillator disciplining system comprising:

a variable frequency oscillator which includes a control for changing the oscillator frequency;

timing means for defining a fixed time period and including a stable reference frequency source, a bistable multivibrator connected to said source and an AND gate connected to said multivibrator;

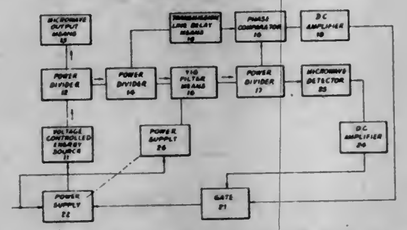
command means for producing a first digital signal related to the desired frequency of said oscillator;

counter means controlled by said timing means and connected to said oscillator through said AND gate for producing a second digital signal related to the number of signal cycles produced by said oscillator in a fixed time period;

comparator means connected to receive said first and second digital signals and to produce a third digital signal related to the digital difference of said first and second digital signals; and

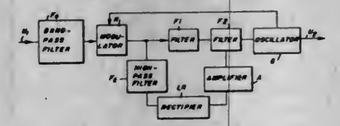
controller means connected to receive said third digital signal and in response to said third digital signal to change the oscillator frequency to conform with the desired frequency.

3,287,656
VARIABLE FREQUENCY MICROWAVE DISCRIMINATOR
James E. Fleming, Fairfax, Va., assignor to Keltec Industries, Inc.
Filed Nov. 18, 1964, Ser. No. 412,122
3 Claims. (Cl. 331—16)



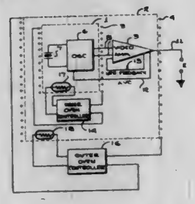
1. In a variable frequency microwave energy system, a wave energy source of the energization dependent output frequency variety; variable energization means adapted to energize said wave energy source such that the output frequency is variable within a selected frequency band; first power divider means having at least one input and at least first and second outputs; means for applying a portion of the output of said wave energy source to said input of said first power divider means; phase comparator means having at least first and second inputs and at least one output; first wave energy transmission means interconnecting said first output of first power divider means and said first input of said phase comparator means; second wave energy transmission means interconnecting said second output of said first power divider means and said second input of phase comparator means; said first wave energy transmission means including a tunable yig filter adapted to tune over said frequency band; first control means adapted for varying said variable energization means; second control means, nonresponsive to said first control means, adapted for tuning said yig filter means and for varying said variable energization means in tracking relation; output utilization means connected to said output of said phase comparator means and responsive to a difference in frequency between the output of said wave energy source and the tuned frequency of said yig filter means and means connecting said output utilization means to said first control means for varying said variable energization means in response to said difference in frequency such that said difference in frequency is minimized.

3,287,657
PHASE CONTROLLED OSCILLATOR WITH A VARIABLE SYNCHRONIZING RANGE
Walter Herbert Erwin Widl, Bandhagen, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden
Filed Apr. 6, 1964, Ser. No. 357,839
Claims priority, application Sweden, Apr. 9, 1963, 3,918/63
1 Claim. (Cl. 331—17)



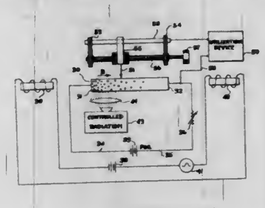
A circuit arrangement for phase synchronization of a voltage controlled free-oscillating oscillator by means of an incoming frequency and by means of a comparator which in dependence on the difference between said incoming frequency and the frequency of the oscillator generates an output signal for the control of the oscillator, characterized by the fact that between the output of the comparator and the input of the oscillator, two filters are connected with series after each other, of which filters one has an unchangeable characteristic while the other is controllable by means of the output signal of the comparator through a high pass filter in such a way that it gradually becomes effective as said oscillator approaches a synchronized condition.

3,287,658
FREQUENCY STANDARD
Peter G. Sulzer, S. Glen Road, Potomac, Md.
Filed Feb. 14, 1962, Ser. No. 173,199
3 Claims. (Cl. 331—69)

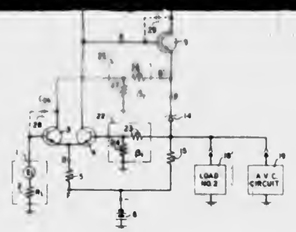


1. A frequency standard comprising a temperature stabilized outer oven, a temperature stabilized inner oven located in said outer oven, a crystal controlled oscillator located in said inner oven, a high input impedance amplifier for amplifying output waves generated by said oscillator, said amplifier being located in said outer oven and including negative feedback means for stabilizing its gain, means responsive to the output of said amplifier for deriving an automatic volume control signal indicative only of the amplitude of said waves as derived from said amplifier, and means responsive to said automatic volume control signal to stabilize the amplitude of the output waves generated by said oscillator.

3,287,659
SIGNAL GENERATORS USING SEMICONDUCTOR MATERIAL IN MAGNETIC AND ELECTRIC FIELDS
Betsy Ancker-Johnson, Seattle, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Dec. 12, 1963, Ser. No. 330,182
13 Claims. (Cl. 331—94)



1. A signal generator comprising in combination: a block of semiconductor material having a gradation in a physical characteristic thereof; a signal output circuit coupled with said material; and means for establishing parallel electric and magnetic fields in said material and for injecting current carriers into said device to establish a low density plasma therewithin without the occurrence of impact ionization and with the plasma having a density gradient parallel to said fields; whereby high frequency signals are provided in said signal output circuit.



6. A transistor amplifier comprising first and second transistors each having an emitter electrode, a base electrode and a collector electrode connected in differential amplifier configuration, said first transistor being adapted to receive an input signal and said second transistor having a collector load impedance, a third transistor having emitter, base and collector electrodes coupled to said second transistor and said collector load impedance in power-amplifying arrangement, and an emitter-circuit impedance for said third transistor including a negative feedback circuit direct-coupled to said second transistor and a positive feedback circuit direct-coupled to the collector of said first transistor in an arrangement to neutralize the base-collector impedance of said first transistor and to energize said first and third transistors serially for power, said emitter circuit impedance including a constant voltage device connected between said negative and positive feedback circuits to stabilize voltage biases for said first and second transistors.

3,287,654

RADIO FREQUENCY TUNER

Hans Scharla-Nielsen, Indialantic, Fla., assignor to Radiation Incorporated, Melbourne, Fla., a corporation of Florida

Filed Jan. 31, 1962, Ser. No. 170,145
8 Claims. (Cl. 330—53)

1. A radio frequency tuner comprising a first metallic tuning element of generally cylindrical shape and having a discontinuity of substantial length in its wall defining a pair of ends of said wall, means, for coupling a R.F. voltage source to one end of said wall, the other end of said wall being connected to a point of R.-F. reference potential, a second metallic tuning element connected to

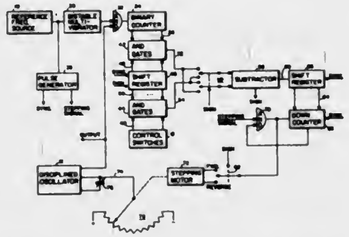
[illegible] of said first element.

3,287,655

DIGITAL CONTROL FOR DISCIPLINING OSCILLATORS

Douglas A. Venn and Donald H. Jones, Washington, D.C., assignors to the United States of America as represented by the Secretary of the Navy

Filed Nov. 30, 1964, Ser. No. 414,921
5 Claims. (Cl. 331—14)



1. An oscillator disciplining system comprising:
a variable frequency oscillator which includes a control for changing the oscillator frequency;
timing means for defining a fixed time period and including a stable reference frequency source, a bistable multivibrator connected to said source and an AND gate connected to said multivibrator;
command means for producing a first digital signal related to the desired frequency of said oscillator;
counter means controlled by said timing means and connected to said oscillator through said AND gate for producing a second digital signal related to the number of signal cycles produced by said oscillator in a fixed time period;
comparator means connected to receive said first and second digital signals and to produce a third digital signal related to the digital difference of said first and second digital signals; and
controller means connected to receive said third digital signal and in response to said third digital signal to change the oscillator frequency to conform with the desired frequency.

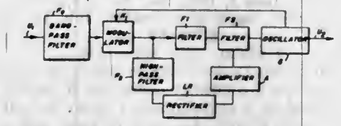
least first and second outputs; means for applying a portion of the output of said wave energy source to said input of said first power divider means; phase comparator means having at least first and second inputs and at least one output; first wave energy transmission means interconnecting said first output of first power divider means and said first input of said phase comparator means; second wave energy transmission means interconnecting said second output of said first power divider means and said second input of phase comparator means; said first wave energy transmission means including a tunable yig filter adapted to tune over said frequency band; first control means adapted for varying said variable energization means; second control means, nonresponsive to said first control means, adapted for tuning said yig filter means and for varying said variable energization means in tracking relation; output utilization means connected to said output of said phase comparator means and responsive to a difference in frequency between the output of said wave energy source and the tuned frequency of said yig filter means and means connecting said output utilization means to said first control means for varying said variable energization means in response to said difference in frequency such that said difference in frequency is minimized.

3,287,657

PHASE CONTROLLED OSCILLATOR WITH A VARIABLE SYNCHRONIZING RANGE

Walter Herbert Erwin Widl, Bandhagen, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden

Filed Apr. 6, 1964, Ser. No. 357,839
Claims priority, application Sweden, Apr. 9, 1963, 3,918/63
1 Claim. (Cl. 331—17)



A circuit arrangement for phase synchronization of a voltage controlled free-oscillating oscillator by means of an incoming frequency and by means of a comparator which in dependence on the difference between said incoming frequency and the frequency of the oscillator generates an output signal for the control of the oscillator,

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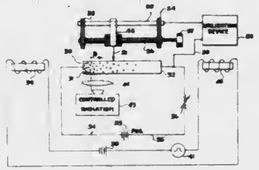
1. A frequency standard comprising a temperature stabilized outer oven, a temperature stabilized inner oven located in said outer oven, a crystal controlled oscillator located in said inner oven, a high input impedance amplifier for amplifying output waves generated by said oscillator, said amplifier being located in said outer oven and including negative feedback means for stabilizing its gain, means responsive to the output of said amplifier for deriving an automatic volume control signal indicative only of the amplitude of said waves as derived from said amplifier, and means responsive to said automatic volume control signal to stabilize the amplitude of the output waves generated by said oscillator.

3,287,659

SIGNAL GENERATORS USING SEMICONDUCTOR MATERIAL IN MAGNETIC AND ELECTRIC FIELDS

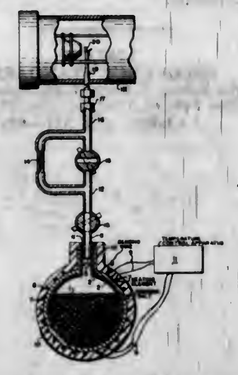
Betsy Ancker-Johnson, Seattle, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware

Filed Dec. 12, 1963, Ser. No. 330,182
13 Claims. (Cl. 331—94)



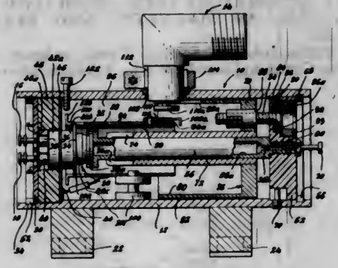
1. A signal generator comprising in combination: a block of semiconductor material having a gradation in a physical characteristic thereof; a signal output circuit coupled with said material; and means for establishing parallel electric and magnetic fields in said material and for injecting current carriers into said device to establish a low density plasma therewithin without the occurrence of impact ionization and with the plasma having a density gradient parallel to said fields; whereby high frequency signals are provided in said signal output circuit.

3,287,660
SOLID STATE CHEMICAL SOURCE FOR AMMONIA BEAM MASER
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Morton Robinson
Filed Jan. 24, 1964, Ser. No. 340,113
6 Claims. (Cl. 331—94)



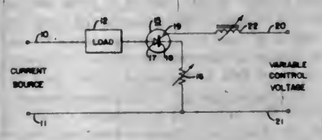
1. A solid state chemical source for an ammonia beam maser comprising:
a reservoir containing an ammonia salt;
passage means connecting said reservoir to said maser; and
means for regulating the temperature of said reservoir at a predetermined level thereby causing said salt to dissociate and liberate gaseous ammonia through said passage means at a predetermined pressure proportional to the temperature of said reservoir.

3,287,661
MICROWAVE OSCILLATOR
Thomas A. Rose, Tampa, Fla., assignor to Trak Microwave Corporation, Tampa, Fla.
Filed Aug. 28, 1964, Ser. No. 392,770
5 Claims. (Cl. 331—98)



1. An ultra-high frequency oscillator comprising, in combination
(A) an outer conductor,
(B) a coaxial inner conductor,
(C) a triode mounted within said outer conductor, said triode having
(1) a cathode terminal electrically connected to said outer conductor and
(2) a plate terminal electrically connected to said coaxial inner conductor,
(D) an elongated tubular grid sleeve member, said member being
(1) electrically connected to a grid terminal of said triode and
(2) coaxially disposed between said outer conductor and said coaxial inner conductor to define
(a) a grid-plate cavity and
(b) a grid-cathode cavity,
(c) said grid sleeve member serving to locate the physical terminations of said grid-cathode and grid-plate cavities, and
(E) a flange affixed to said grid-sleeve member
(1) said flange extending into said grid-cathode cavity at a point axially remote from the termination of said grid-cathode cavity,
(2) so as to conform the electrical and physical lengths of said grid-cathode and grid-plate cavities.

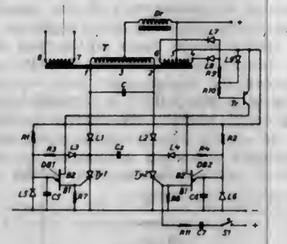
3,287,662
SELF-EXCITED CHOPPER CIRCUIT UTILIZING CONTROLLED RECTIFIER HAVING A GATE TURN-OFF CHARACTERISTIC
Alec H. B. Walker, Trafford, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 21, 1963, Ser. No. 260,159
4 Claims. (Cl. 331—111)



1. A self-excited current chopper for interrupting the flow of current from a current source through a load with a controlled duty cycle comprising, a controllable rectifying device of the type having anode, cathode and control electrodes and capable of being caused to be fully conductive upon flow of current from the control electrode to the cathode electrode and to be fully non-conductive upon flow of current into the control electrode from the cathode electrode, said load connected in the anode-cathode circuit of said device and to said current source, means connecting the cathode electrode of said device and said source of current, a source of control voltage operatively connected to the control electrode of said device, and reactance means connected in the control-cathode circuit of said device to delay the flow of current from said control electrode to said cathode electrode when said device is non-conductive and to delay the flow of current to said control electrode from said cathode electrode when said device is conductive.

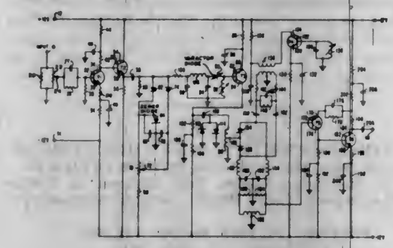
3,287,663
THYRISTOR OSCILLATOR
Oyvind Steen, Bandhagen, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden
Filed June 3, 1965, Ser. No. 461,064
Claims priority, application Sweden, July 17, 1964, 8,725/64
1 Claim. (Cl. 331—111)

An arrangement in oscillators in which the oscillating circuit comprises a condenser connected in parallel with a first winding of a transformer, a direct current voltage source and a coil connected between said source and said oscillating circuit for maintaining the direct current constant and two thyristors are connected to said oscillating circuit for commutating the feeding voltage to the oscillating circuit, from which through a second winding of said transformer a sinusoidal voltage is obtained, characterized thereby, that for striking the thyristors one base electrode of a double base diode is connected to a striking electrode of each thyristor between the cathode of the thyristor and the emitter of said double base diode is connected a striking condenser, and between the anode of the thyristor and said emitter is connected a diode in series with a resistance and in each of said double base diodes the other base electrode is connected to the collector of a transistor included in a circuit connected to said oscillating circuit, said circuit being so arranged



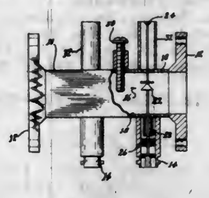
that the transistor will be blocked during a time period when the sine wave voltage obtained in the oscillating circuit passes its reference line, and for the quenching of the thyristors and for the dissipation of the overall charge in the quenching condenser a diode is connected in parallel to each of said striking condenser, which diode being arranged together with said series connected diode and resistance and said quenching condenser to constitute a discharge circuit for said overall charge.

3,287,664
HETERODYNE MODULATOR USING A MINIMUM OF TRANSISTORS
Michael O. Felix, San Carlos, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Apr. 8, 1964, Ser. No. 358,324
9 Claims. (Cl. 332—23)



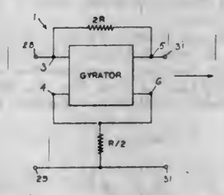
1. A modulator circuit having a source of modulating signals, an output, a first carrier oscillator having a time constant determining network, filtering means coupling said modulating signal source to said time constant determining network such that modulated carrier output signals from said carrier oscillator cannot pass forward to the modulating signal source, means for preventing the modulating signal from appearing in the output of the carrier oscillator, a second carrier oscillator, and means for mixing the signal from the second carrier oscillator with the signal from the first carrier oscillator, said mixing means being coupled to the output.

3,287,665
HIGH SPEED SEMICONDUCTOR MICROWAVE SWITCH
Robert H. Brunton III, West Acton, Mass., assignor to the United States of America as represented by the Secretary of the Air Force
Filed June 25, 1964, Ser. No. 378,087
2 Claims. (Cl. 333—7)



1. A high speed switching device for microwaves: comprising a section of microwave guide having a rectangular shape with two parallel broad faces and two parallel narrow faces; a pair of tuning stubs placed perpendicularly in said broad faces of said wave guide equidistant from said narrow faces and one quarter of a wavelength apart; a pair of connectors having center conductors mounted on said wave guide opposed to said stubs; a pair of diodes secured in the center of said wave guide with one connection of each of said diodes being movably shorted to said tuning stub, the other connection of each of said diodes being electrically connected to the center conductor of a connector through a choke and bypass capacitor; means to vary the bias on said diodes which is capable of amplifying pulses from .2 to 5 microseconds and from 100 cycles to 100 kilocycles per second; a capacitive post threaded into said wave guide midway between said diodes; and means to vary the bias on said diodes to take advantage of the nonlinear impedance characteristic thereof to pass or shunt RF current in said wave guide.

3,287,666
TRANSFORMATION NETWORK FOR CHANGING A CIRCUIT EXHIBITING GYRATOR CHARACTERISTICS TO A CIRCUIT EXHIBITING ISOLATOR CHARACTERISTICS
Heinz M. Schlicke, Fox Point, Wis., assignor to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Aug. 4, 1964, Ser. No. 387,327
3 Claims. (Cl. 333—24.1)



1. In a circuit for transformation from a gyrator characteristic to an isolator characteristic the combination of:
a gyrator circuit having a pair of input terminals and a pair of output terminals,
a resistive parallel feedback path, said parallel path extending from one input terminal to one output terminal; and
a resistive series feedback path having resistance value-changing characteristics comparable to those of the parallel feedback path and a resistance value of approximately one-fourth the resistance value of the parallel feedback path, said series path having a terminal common with the other input terminal

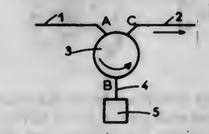
and the other output terminal, and said series path having a second terminal providing a circuit terminus.

3,287,667

LOW ATTENUATION VERY HIGH FREQUENCY TIME DELAY VS. FREQUENCY VARIATION CORRECTING NETWORK

Paul Boutelant, Bobigny, France, assignor to Compagnie Generale d'Electricite, Paris, France

Filed Jan. 29, 1964, Ser. No. 340,884
Claims priority, application France, Jan. 31, 1963, 923,294
12 Claims. (Cl. 333—28)



1. A transmission system for transmitting electrical signals within a band of frequencies having a central frequency f_o, comprising:

an input line for said signals,

an output line for said signals,

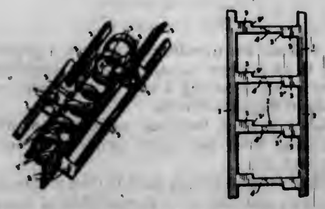
and phase-shift network means operatively connecting said input line with said output line and including circulator means having a plurality of branch connections and at least one circuit with a reactive impedance operatively connected with at least one of said branch connections, said reactive impedance having a resonant frequency within said frequency band, said reactive impedance circuit being constituted by a band-pass filter formed by a wave-guide connected at one end thereof to said circulator means and a plurality of resonant cavity means coupled to said wave-guide means at predetermined spacings along said wave-guide means, and further cavity means operatively connected to the end of said wave-guide means opposite the said one end thereof, said cavity means being tuned substantially to the frequency f_o, said spacings being equal to an integer number of half-wave lengths within said wave-guide means.

3,287,668

DELAY LINE FOR TRAVELING WAVE TUBES, ESPECIALLY FOR MILLIMETER-WAVES, CONSTRUCTED FROM A PLURALITY OF LADDER-SHAPED STRUCTURES, BENT TO FORM A SPIRAL LINE

Werner Veith and Konrad Poebl, Munich, Germany, assignors to Siemens & Halske Aktiengesellschaft, Berlin and Munich, Germany, a corporation of Germany

Filed Oct. 13, 1964, Ser. No. 403,667
Claims priority, application Germany, Oct. 15, 1963, S 87,877
5 Claims. (Cl. 333—31)



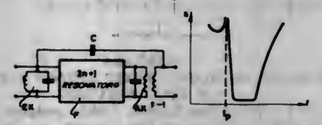
1. A delay line for moving field tubes, especially for the amplification of millimeter waves, which consist of a spiral arranged in the interior of an electrically conductive hollow body, with individual windings rigidly attached to metal supports which extend inwardly from the wall of the hollow body toward the spiral and are angularly offset with respect to one another progressively in the hollow body in the longitudinal direction of the spiral, the spiral comprising arcuate-shaped sections which are disposed between two adjacent metal supports in respective planes extending perpendicular to the longitudinal axis of the delay line, and straight sections which extend in the longitudinal direction of the delay line, characterized in that the spiral and the metal supports are made of a plurality of stamped sheet metal strips which, as a development of the arcuate-shaped sections and of the adjoining metal supports, have the form of a ladder whose rungs are stepped alternately toward the stringers thereof forming in each case a half support member, the formed strips being interassembled progressively in a star pattern in circumferential direction of the spiral whereby the central portion of the rungs form the arcuate-shaped sections of the spiral, while the longitudinally extending sections of the delay line are formed by the step-like portions of the rungs extending parallel to the stringers.

3,287,669

ELECTROMECHANICAL BAND FILTER HAVING BRIDGING CAPACITOR FOR PROVIDING ATTENUATION POLE

Werner Poschenrieder, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin and Munich, Germany, a corporation of Germany

Filed Sept. 21, 1962, Ser. No. 225,967
Claims priority, application Germany, Sept. 22, 1961, S 75,882
3 Claims. (Cl. 333—71)



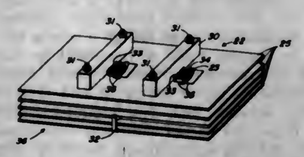
1. An electromechanical band filter with $(2n+1)$ mechanical resonators (n=1, 2, 3, . . .), comprising means forming two electrical terminals respectively for the first and for the last mechanical resonator, electrical resonance circuits disposed respectively in the input line and in the output line of the filter, and means forming a capacitive overcoupling extending from the filter output to the filter input to form an attenuation pole lying in the blocking range at one side of the pass band of the filter.

3,287,670

HIGH POWER FERRITE STACKED DISC CORE HF TRANSFORMERS AND/OR POWER DIVIDERS

Klaus G. Schroeder, Dallas, Tex., assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Mar. 19, 1965, Ser. No. 441,196
12 Claims. (Cl. 333—79)



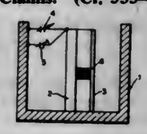
4. In a high power high frequency transformer, a ferrite material transformer core section with two elongate relatively narrow coil winding slot windows and magnetic circuit ferrite core material between said slot windows; a single layer of insulated wire turns passed through said slot windows; with the windings including turns of at least two transformer winding sections; wherein the magnetic circuit ferrite core material between said slot windows is substantially rectangular in cross section along a plane normal to the axis of the wire windings within the area enclosed by the winding turns; wherein a plurality of said ferrite material transformer core sections are stacked together; the wire turns are wound through said slot windows and about the magnetic circuit ferrite core material between the slot windows; and means is provided holding coil turns of the transformer in mutually spaced relation including nonconductive assembly retaining bar means having multiple spaced coil turn retaining grooves.

3,287,671

TUNABLE TANK CIRCUIT CONTAINING PLURAL INNER CONDUCTORS BENDABLE RELATIVE TO ONE ANOTHER

Willy Minner, Ingolstadt, Germany, assignor to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany

Filed Oct. 15, 1964, Ser. No. 404,112
Claims priority, application Germany, Oct. 17, 1963, T 24,905
9 Claims. (Cl. 333—82)



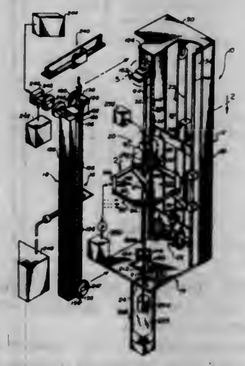
1. A tunable tank circuit comprising an outer conductor and an inner conductor comprising at least two substantially parallel spaced-apart individual conductor elements which are electrically connected together in parallel and which are movable relative to one another for varying the distance therebetween.

3,287,672

DISC-LOADED WAVEGUIDE TUNING MACHINE WHICH AUTOMATICALLY TUNES SUCCESSIVE CAVITIES BY INDENTING WAVEGUIDE WALL

Marvin L. Heinz, Mountain View, Calif., assignor to the United States of America, as represented by the United States Atomic Energy Commission

Filed Nov. 19, 1964, Ser. No. 412,573
12 Claims. (Cl. 333—83)



1. A high-speed apparatus for tuning radio-frequency cavities in a linear accelerator waveguide section comprising;

(a) frame support means;

(b) cavity indenting means secured to said frame support means in translatable relation therealong;

(c) support and seal means demountably coupled in vacuum sealed relation between the ends of said section and said frame support means to secure in predetermined position said section relative to said plunger indenting means;

(d) drive means mounted to said frame support means and coupled to said cavity indenting means to provide translation of said indenting means with respect to said frame support means;

(e) position monitoring means coupled between said indenting means and said frame support means to establish and maintain the position of said indenting means relative to the succession of waveguide section cavities;

(f) power source means coupled to said waveguide section to introduce radio-frequency driving power thereto;

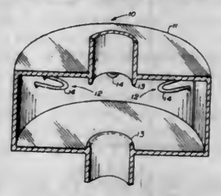
(g) and signal measuring means coupled to said waveguide section to monitor the generated signal within the cavity being tuned upon introduction of radio-frequency power from said power source means, whereby each of the cavities of said waveguide section is successively indented by said indenting means in proportion to the signal monitored by said signal measuring means.

3,287,673

ATTENUATOR FOR SUPPRESSING HIGH-ORDER CAVITY RESONANCES HAVING A TRANSVERSE ELECTRIC COMPONENT

Fred G. Hammersand, East Petersburg, Pa., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Filed Mar. 15, 1965, Ser. No. 440,034
7 Claims. (Cl. 333—83)



1. An attenuator for suppressing spurious cavity resonances in klystron tube resonant cavities comprising a plurality of loops of a lossy conductor material integrally secured to the inner surface of the cavity wall; said loops being spaced apart in a plane passing through said cavity in perpendicular relation to the axis of the tube.

3,287,674

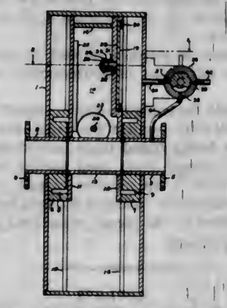
PRESSURIZED WAVEGUIDE SHUT-OFF

George H. Stiegler, Jr., Ellicott City, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force

Filed July 16, 1964, Ser. No. 383,266
3 Claims. (Cl. 333—98)

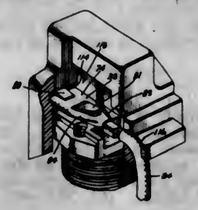
1. A pressurized waveguide shut-off comprising: a gas tight enclosure; similar first and second short sections of open ended waveguide extending from the inside of said enclosure to the outside, the inner ends of said waveguide sections being spaced apart; means for coupling the outer end of said first waveguide section to a pressurized waveguide system, and means for coupling the outer end of said second waveguide section to a component which it may be desired to disconnect from said pressurized system; a member contained in said enclosure and selectively

movable between "open" and "closed" positions by means external to said enclosure; said movable member having an open ended section of waveguide similar to said first and second waveguide sections which bridges the space between the inner ends of said first and second waveguide sections when said movable member is in its "open" position; and said movable member also having a cover plate and gasket assembly which is positioned opposite the inner end of said second waveguide section when said movable member is in its "closed" position, said plate being yieldably held by said movable member so as to be forceable into gas tight closure of the inner end of said second waveguide section by the pressure in said enclosure



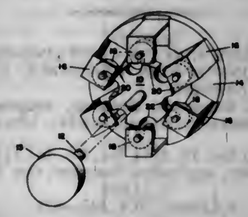
when the pressure in said second waveguide section is reduced; and a three-position valve having three ports connected, respectively, to said enclosure, said second waveguide section and the atmosphere, said valve operating in one position to close all ports, in another position to connect said second waveguide section to the atmosphere and to close the port connected to said enclosure for depressurizing said second waveguide section after said movable member has been moved from its "open" to its "closed" position, and in the remaining position to connect said second waveguide section to said enclosure for pressurizing said second waveguide from said enclosure before moving said movable member from its "closed" to its "open" position.

3,287,675
PLUG-ON ELECTROMAGNETIC RELAY WITH AN EXTERNAL POCKET
Lee O. Woods, Morrison, Ill., assignor to General Electric Company, a corporation of New York
Filed Mar. 1, 1965, Ser. No. 436,240
8 Claims. (Cl. 335—202)



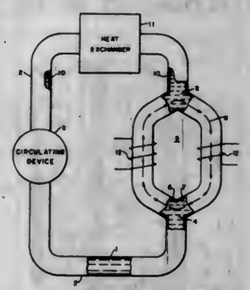
1. An electromagnetic plug-on relay for use with electrical apparatus, said relay having a housing, at least one terminal mounting pocket in said housing, said pocket opening from a first outer wall of said housing, a lip overlying a portion of said pocket, a buttress wall raised above the lower surface of said pocket, a lead guiding slot extending from said buttress wall and opening to a second wall of said housing, said housing being formed with an integral lead catch means for holding a lead extending from a terminal mounted in the terminal mounting pocket in position on said housing, said lead catch means cooperating with said pocket, said lip, and said buttress wall to retain a terminal and its lead in secure position on said housing.

3,287,676
TORQUE DEVICE HAVING A DIAMAGNETIC ROTOR
Louis K. Davis, Phoenixville, and Sanford M. Weinberger, Philadelphia, Pa., assignors to General Electric Company, a corporation of New York
Filed Apr. 24, 1964, Ser. No. 362,306
5 Claims. (Cl. 335—306)



1. A device for producing restoring torque upon rotational displacement from a neutral or zero position, comprising:
- a magnetic structure and a diamagnetic structure located around a common center of relative rotation, free to rotate relatively thereabout,
- said magnetic structure having pairs of magnetic poles opposed to the said diamagnetic structure,
- said diamagnetic structure being magnetically non-uniform in a plane including the said center of relative rotation and a portion of the said diamagnetic structure opposed to the poles of the said magnetic structure.

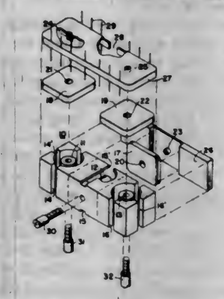
3,287,677
HIGH FREQUENCY TRANSFORMER CORE COMPRISED OF MAGNETIC FLUID
Glenn R. Mohr, Linthicum, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 25, 1964, Ser. No. 369,979
2 Claims. (Cl. 336—57)



1. In a high frequency induction device in which heat is generated due to the induction action therein, the combination comprising:
- a conduit means formed by a first section and a second section and a third section all connected in parallel;
- magnetic fluid contained within said conduit means, the magnetic fluid in said first and second sections forming a relatively low reluctance closed magnetic path;

- at least one conductive winding wound in an inductive relation about at least one of said sections included in said magnetic path, said at least one winding adapted to be energized by a high frequency current, the induction action between the current in said at least one winding and said magnetic fluid generating heat in the magnetic fluid forming said magnetic path;
- flow forcing means connected in said third section for circulating said magnetic fluid around a heat removing flow path formed by said third section in series with the parallel combination of said first and said second section to continuously remove and replace the heated magnetic fluid by forcing said magnetic fluid to flow from said third section through said first and second sections in the same direction and then return to said third section;
- heat exchange means connected in said third section for removing the heat from the heated magnetic fluid therein as said magnetic fluid circulates around said heat removing flow path.

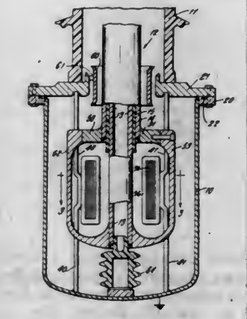
3,287,678
MINIATURE MAGNETIC CORES HAVING PERPENDICULAR ANNULAR RECESSES
Takashi Okamoto and Misao Takahashi, Tokyo, and Kouji Kawahara, Kawasaki-shi, Japan, assignors to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan
Filed Nov. 14, 1963, Ser. No. 323,709
Claims priority, application Japan, Nov. 17, 1962, 37/51,576, 37/68,970; May 6, 1963, 38/33,291
11 Claims. (Cl. 336—83)



1. A core arrangement, comprising a core body of magnetic material having a first side surface and a second side surface at substantially right angles to said first side surface and a plurality of annular recesses formed therein in spaced relation to each other, one of said annular recesses opening at and having an axis perpendicular to said first side surface and another of said annular recesses opening at and having an axis perpendicular to said second side surface, each of said annular recesses forming an axially extending post.

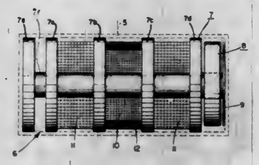
3,287,679
GAS INSULATED CURRENT TRANSFORMER
Otto Jensen, Malvern, and Amado Conangla, Devon, Pa., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 13, 1965, Ser. No. 447,633
2 Claims. (Cl. 336—174)

1. In combination; a grounded sealed conductive housing; a lead bushing extending through said conductive housing; a coaxial conductor extending through said lead bushing; a current transformer within said grounded housing insulation support means connected between said grounded housing and said current transformer for supporting said current transformer within said grounded housing in insulated relation with respect to said grounded housing; said current transformer having a toroidal secondary winding and a primary winding wound on a magnetic core; said primary winding connected in series with said coaxial conductor; said housing filled with a high dielectric gas under pressure greater than atmospheric pressure; said coaxial conductor comprising inner and outer conductors insulated from one another; said inner conductor extending beyond the end of said outer conductor and through the center of said toroidal sec-



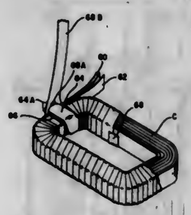
ondary winding; said end of said outer conductor adjacent the upper end surface of said toroidal winding; said primary winding including a pair of generally C-shaped conductors extending about the end surfaces and respective outer opposite side surfaces of said secondary winding and the said inner conductor; said pair of C-shaped conductors connected at their upper ends to said outer conductor adjacent said upper end surface of said toroidal winding; said pair of C-shaped conductors connected at their lower ends to said end of said inner conductor adjacent the lower end surface of said toroidal winding.

3,287,680
ELECTRICAL DEVICE
Grover K. Houpt, Lansdale, and Edward T. Thomson, Wayne, Pa., assignors to Automatic Timing & Controls, Inc., King of Prussia, Pa., a corporation of Pennsylvania
Filed June 18, 1963, Ser. No. 288,791
2 Claims. (Cl. 336—179)



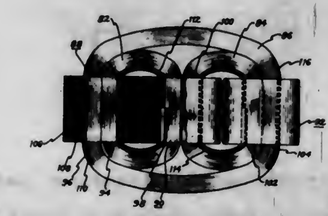
1. A temperature-compensated transformer assembly comprising:
- (a) a primary winding adapted to be coupled to a source of an exciting A.C. voltage,
- (b) a secondary winding mounted for mutual inductive coupling with said primary winding,
- (c) a resistive winding wound around a selected one of said windings and having a negligible effect on the magnetic fields produced by said primary and secondary windings, said resistive winding being connected in series with said primary winding, and
- (d) a slotted thermistor mounted close to said windings and electrically connected with said resistive winding, said slot being formed therein to prevent production of eddy currents therein.

3,287,681
INSULATED COIL WITH INTEGRAL POINTED TERMINAL
Washington J. Caldwell, Toledo, Ohio, assignor to Eltra Corporation, a corporation of Ohio
Application Jan. 22, 1962, Ser. No. 182,700, now Patent No. 3,232,544, dated Feb. 1, 1966, which is a division of application Ser. No. 769,386, Oct. 24, 1958, now Patent No. 3,084,879, dated Apr. 9, 1963. Divided and this application May 26, 1965, Ser. No. 458,915
2 Claims. (Cl. 336—192)



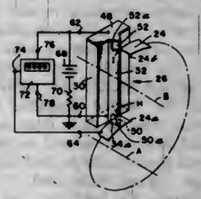
1. An insulated coil comprising a conducting strip having continuous, integral, terminal ends for connection to an electrical circuit, said terminals both extending from the coil at one side thereof, the inner terminal being bent to extend outwardly across the turns of the coil, the outer terminal extending parallel to said one coil side normal to the inner terminal, insulation between the turns of the coil and between the inner terminal end and the turns including the outer terminal, flexible tape insulation positioned about the coil sides terminating at a point adjacent the inner terminal, said tape insulation being positioned in overlapping layers on the coil, and a pointed tip on the inner terminal end piercing the tape to position the inner terminal in an aperture in the tape at a point where the tape extends across the inner terminal whereby the inner terminal is insulated by the tape.

3,287,682
CORE INSULATION FOR PROTECTION AGAINST IMPULSE VOLTAGE
James E. Holcomb, Lanesboro, Mass., assignor to General Electric Company, a corporation of New York
Filed May 18, 1960, Ser. No. 29,896
7 Claims. (Cl. 336—219)



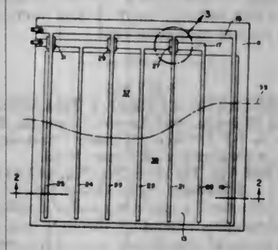
1. An improved core and coil structure for stationary electrical induction apparatus, said core comprising a plurality of strips of laminated magnetic material, said strips being provided with insulation to reduce the eddy current losses of said core, said coil being wrapped around said laminations which form a portion of said core, and a small number of well insulated additional laminations of magnetic material between said coil and the laminations of the core whereby under high induced voltage conditions on the coil, such well insulated additional laminations will withstand the electromagnetically induced stresses.

3,287,683
FULLY CONTINUOUSLY ROTATABLE POTENTIOMETER
Samuel W. Wolfe, Pasadena, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Aug. 31, 1964, Ser. No. 393,456
9 Claims. (Cl. 338—165)



1. A potentiometer comprising;
(a) rotatable means carrying a contact strip of a conductive material formed as a predetermined angular portion of a predetermined curve of convolution generated about the axis of rotation of the rotatable means, said predetermined angular portion of the curve of convolution being three hundred and sixty degrees (360°) in angular length about the axis of rotation,
(b) an elongated resistance strip having a straight contact edge, said resistance strip being made of a material exhibiting a resistance between any two spaced points therealong proportional to the distance between said points, and
(c) means for supporting said resistance strip in approximately radial alignment about the axis of rotation and in sliding engagement with said conductive contact strip, the length of said contact edge of the resistance strip being co-extensive with the path of rotation of the various radii along said curve of convolution, whereby the conductive contact strip places an electrical short circuit across the ends of said contact edge of the resistance strip in the angular position of the rotatable means in which the contact edge engages both the inner and outer ends of the curve of convolution, and the contact edge engages the conductive contact strip at a single point therealong and at a radial distance in accordance with the angular position of the rotatable means at all other angular positions of the rotatable means.

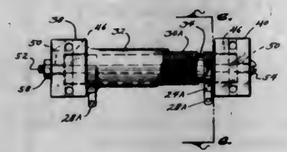
3,287,684
ELECTRICAL HEATING DEVICE
Albert Armbruster, Jr., Glenside, Pa., assignor to Motson Services Incorporated, a corporation of Pennsylvania
Filed Feb. 27, 1964, Ser. No. 347,866
5 Claims. (Cl. 338—211)



1. An integral electrical heating device comprising: an electrically non-conducting substrate of readily cuttable material; a layer of electrical resistance material secured to said non-conducting substrate; at least first and second

header bus bars secured to said non-conducting substrate, said first and second header bus bars lying along the same edge of said layer of electrical resistance material and being adapted to be connected to a power supply; a plurality of distribution bus bars of printable electrically conducting material disposed substantially parallel to each other and in contact with and along said layer of electrical resistance material; said header bus bars and said distribution bus bar being fabricated of printable electrically conducting material; a first group of said plurality of distribution bus bars connected to said first header bus bar and a second group of said plurality of distribution bus bars connected to said second header bus bar, said first group of distribution bus bars transmitting current through said electrical resistance material to said second group of distribution bus bars to generate heat as said current passes through said electrical resistance material.

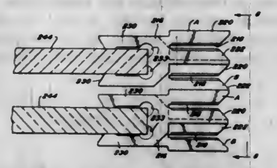
3,287,685
RESISTOR ELEMENT
Roland A. Schaecher, Columbus, Nebr., assignor to Dale Electronics, Inc., Columbus, Nebr., a corporation of Nebraska
Filed Sept. 6, 1963, Ser. No. 307,267
3 Claims. (Cl. 338—318)



1. In a resistor element,
an elongated core base of non-electro conducting material comprised of a cylindrical center portion having its ends terminating in rectangular blocks,
the diameter of said center portion being less than the height of said blocks,
mounting holes in said blocks,
a resistance element on said center portion and having opposite ends,
a first terminal band embracing said center portion and having a terminal end extending therefrom transversely to the longitudinal axis of said center portion, said first terminal band embracing said center portion between one end of said resistance element and one of said rectangular blocks,
and a second terminal band embracing said center portion and having a terminal end extending therefrom transversely to the longitudinal axis of said center portion, said second terminal band embracing said center portion between the other end of said resistance element and the other rectangular block, said terminal ends of said first and second terminal bands terminating in a plane outwardly of said blocks,
said first terminal band being operatively electrically connected to said one end of said resistance element,
said second terminal band being operatively electrically connected to said other end of said resistance element.

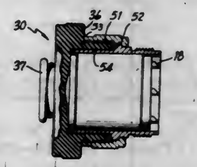
3,287,686
CONNECTOR WITH GLASS SUBSTRATE
Herbert E. Ruehlemann, Huntingdon Valley, Pa., assignor to Elco Corporation, Willow Grove, Pa., a corporation of Pennsylvania
Filed Aug. 8, 1963, Ser. No. 300,897
10 Claims. (Cl. 339—17)

6. In combination, a plurality of glass substrates each having a plurality of contacts secured thereto, each of said contacts comprising a contact head and a substrate head integrally joined together by a body section, the longitudinal axis of said contact head being vertically spaced with respect to that of said substrate head, said substrate head being comprised of a pair of widely spaced parallel fingers defining between them a gap for reception of one of said pluralities of glass substrates, said fingers being provided on their inner surfaces with at



least one inwardly projecting bump to contact a glass substrate upon insertion thereof, said contact head being adapted to be mated with a contact having a similar contact head, said contacts being spaced along said glass substrates, said contacts being mounted on said substrate so that the contact heads of adjacent contacts are oppositely spaced from said glass substrate.

3,287,687
PROTECTORS FOR ELECTRICAL CONNECTORS
James R. Mosher, 12613 Saratoga Creek Drive, Saratoga, Calif.
Filed Aug. 17, 1964, Ser. No. 389,836
1 Claim. (Cl. 339—36)

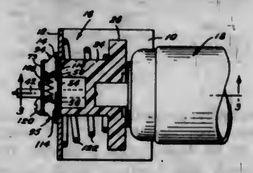


An electrical connector of the axially connecting type having a shell and an outside coupling nut with inside threads which shell and nut form an annular cavity having a uniform predetermined width and a predetermined volumetric capacity in combination with a protector comprising a hollow cylinder made up of elastic material having a first open end where the thickness of the cylinder is greater than said predetermined width, a second open end where the thickness of the cylinder is less than said predetermined width, an inside surface, an outside surface, a gradually tapered wall thickness and a total volume substantially equal to said volumetric capacity, a disc-shaped closure having a diameter greater than the outside diameter of said first open end, said closure being integral with said first open end thereby closing it, said outside surface containing threads for threaded engagement with said coupling nut and said inside surface being substantially smooth for engaging the outside surface of said shell.

3,287,688
HOLDER FOR FLUORESCENT LAMPS AND THE LIKE
John Laurenzo, Cranston, R.I., assignor to Super Products Co., Providence, R.I., a corporation of Rhode Island
Filed May 11, 1964, Ser. No. 366,258
10 Claims. (Cl. 339—56)

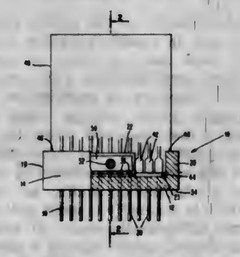
1. In a holder for mounting a fluorescent lamp in lamp fixture, a bracket mounted on said fixture and having an opening formed therein, a holder element including a body portion to which an enlarged flange portion is integrally joined at one end thereof, said body portion being shaped and proportioned for slidably interfitting in the opening in said bracket, contact members fixed in said body por-

tion and extending into a recess formed in said flange portion for engagement by the contacts of the fluorescent lamp that is adapted to be mounted on said holder element, a clip assembly secured to the outer end of said body portion and including a housing in which opposed clip fingers are positioned for limiting movement in a direction that is transverse to the longitudinal axis of said holder element, means located in said housing for normally biasing said clip fingers in an outward direction, and a coil spring enveloping said body portion and pro-



jecting outwardly beyond the outer end thereof, said coil spring being adapted to engage said bracket for urging said holder element away therefrom, whereby pressure exerted on said holder element will force the body portion thereof through the opening in said bracket against the action of said coil spring, the configuration of said clip fingers permitting insertion thereof through said opening after which said clip fingers are urged transversely outwardly by said biasing means to lock said holder element in said bracket with the coil spring being compressed between the flange of said body portion and said bracket.

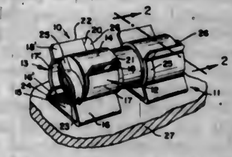
3,287,689
ELECTRICAL CONNECTOR
John Presper Eckert, Jr., Gladwyne, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 21, 1964, Ser. No. 419,880
11 Claims. (Cl. 339—92)



1. In an electrical connector: a base receptacle, a flexible multi-conductor element secured thereon by terminal means connecting each conductor of said multi-conductor, and means to press said conductors against leads of an inserted circuit card.

3,287,690
FUSE CLIP
Walter R. Book, Bethlehem, Conn., assignor to Anaconda American Brass Company, a corporation of Connecticut
Filed Feb. 4, 1965, Ser. No. 430,290
3 Claims. (Cl. 339—258)

1. A fuse clip for holding one end portion of a fuse mechanically and electrically connected thereto which is formed from a continuous metal strip comprising a pair of upstanding resilient and electrically conductive metal arms defined by opposite end portions of the strip positioned in opposed spaced relationship to each other to hold an end portion of a fuse therebetween, a base portion defined by the fold between the arms and elongated cuts extending from the end edge portions of the strip along opposite marginal side edge portions of the strip to define a partially cut integral thin marginal strip having a free end along the side edge of at least one of the two arms on both end edges of the clip which are readily



bendable from the respective arm to a position substantially within the space between the arms at one end to obstruct longitudinal movement of a fuse positioned therein.

3,287,691
HYDROPHONE CABLE
Carl H. Savit, Van Nuys, Calif., assignor to Western Geophysical Company of America, Los Angeles, Calif.
Filed Sept. 10, 1964, Ser. No. 395,539
1 Claim. (Cl. 340—7)



A unitary hydrophone suspension system for suspending hydrophones in fluid comprising:

a unitary cable having a negative buoyancy;

means including a plurality of hydrophones and weights physically integrated wtih said cable for increasing the negative buoyancy at selected sinkable portions of said cable;

means including discrete floatable covering segments encasing said cable and spaced from said hydrophones so as to give the entire system a net positive buoyancy sufficient to float the remainder of said cable at the surface while suspending the sinkable cable portions at a preselected depth below the surface;

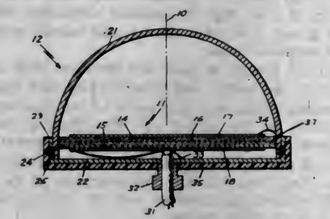
means including at least one fully waterproof non-absorptive buoyant element associated with each hydrophone to give the combination of hydrophone, buoyant element and integral piece of cable a positive buoyancy sufficient to hold the combination at a substantially lesser depth than the depth of suspension of the remainder of the selected sinkable cable portion on which the combination is located; and

mechanical means, including additional fully waterproof non-absorptive buoyant elements and weights alternatively disposed along each of said sinkable cable portions and integrally connected thereto to support said hydrophones below the surface of the fluid and filter out surface noise before it reaches the hydrophones.

3,287,692
BENDER TYPE ELECTROACOUSTICAL APPARATUS
Edwin E. Turner, Newport, R.I., assignor to Raytheon Company, a corporation of Delaware
Continuation of abandoned application Ser. No. 701,552, Dec. 9, 1957. This application Feb. 13, 1963, Ser. No. 258,957
4 Claims. (Cl. 340—10)

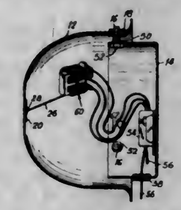
1. An electroacoustical transducer comprising a pair of expander plates joined into a rigid surface contact over their coincident areas, a pair of opposed electrodes, one

of each electrodes adhered to opposite outer faces of said plates, said expander plates and electrodes having a combined effective vibrating mass which is a fraction of the combined actual mass of said plates and said electrodes, and a rigid shell radiator enclosing said plates and having a circular edge rigidly secured to an



edge of each of said expander plates and moveable therewith, said shell having an actual mass greater than the combined effective vibrating mass of said plates and said electrodes, and the combined total effective vibrating mass of the combination of said plates, electrodes, and shell being greater than the combined actual mass of said plates, electrodes and shell radiator.

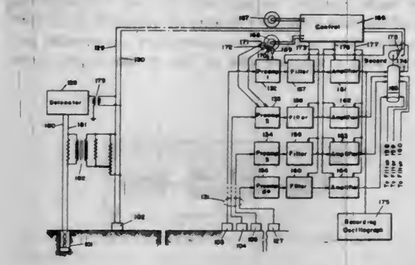
3,287,693
TRANSDUCER-TRANSFORMER UNIT
Samuel Meyer Bagno, 18 Columbus Ave., Belleville, N.J.
Filed July 21, 1965, Ser. No. 473,642
20 Claims. (Cl. 340—15)



1. A transducer for an ultrasonic space alarm system, said transducer comprising a bell-shaped standing wave diaphragm made of sheet material, and a disc-shaped piezoelectric ceramic resonator having one flat face cemented to the middle of said diaphragm, whereby the resonator acts as a bender and the diaphragm is vibrated with standing wave undulations which propagate in the ambient air.

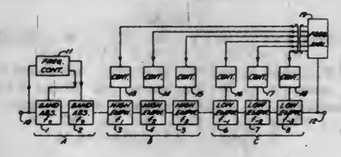
3,287,694
SEISMIC AMPLIFIER SYSTEM
Francis M. Romberg, Irving, Tex., assignor, by mesne assignments, to Dyna-Tronics Mfg. Corp., a corporation of Texas
Filed Apr. 12, 1963, Ser. No. 272,735
14 Claims. (Cl. 340—15.5)

1. An amplifying system for recording a plurality of seismic signals on a reproducible medium and for playing back said seismic signals from said producible medium comprising a plurality of preamplifiers, a seismic signal source being connected to the input of each preamplifier, each of said preamplifiers including at least one transistorized stage of voltage amplification, a source of variable impedance for each of said stages, said source of variable impedance being connected in the emitter circuit of each stage, a plurality of amplifiers, means for applying the output of each preamplifier to an input to an associated amplifier, the output of each amplifier being applied to said reproducible medium for recording thereon, and a control unit, said control unit including means for producing a trip function in response to the initiation



of seismic signals, and means responsive to said trip function for controlling the impedance of each of said variable impedance sources in a predetermined manner.

3,287,695
SELF-ADJUSTING INVERSE FILTER
Maurice E. Taylor, Monroeville, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed June 22, 1964, Ser. No. 376,981
12 Claims. (Cl. 340—15.5)



1. An electrical signal processing method adapted to flatten the frequency spectrum of a continuously changing signal whose frequency spectrum has the form of a smooth transmission band which comprises

transmitting the signal through a band-absorption filter whose frequency characteristic has a predominant absorption frequency with a low-frequency limb and an high-frequency limb,

continuously measuring the frequency spectrum of the signal,

continuously adjusting the predominant frequency of the band absorbed during said transmission in response to said measured spectrum,

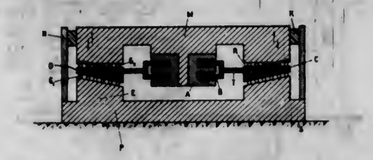
continuously adjusting the slope of the low-frequency limb of the band absorbed during said transmission in response to said measured spectrum, and

continuously adjusting the slope of the high-frequency limb of the band absorbed during said transission in response to said measured spectrum.

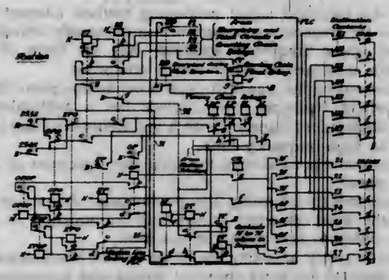
3,287,696
VIBRATOR
Jacques Cholet, Rueil-Malmaison, Gérard Grau, Paris, and Michel Lavergne, Le Vesinet, France, assignors to Institut Francais du Petrole, des Carburants et Lubrifiants, and Compagnie Generale de Geophysique, Rueil-Malmaison, Seine et Oise, France, and Paris, France, respectively
Filed Oct. 28, 1963, Ser. No. 319,385
Claims priority, application France, Nov. 3, 1962, PV 914,306
13 Claims. (Cl. 340—17)

1. A vibrator comprising a pulsing plate, an upper plate of heavy mass, vertically moveable, taking its bearing on a plurality of wedge-shaped members whose upper

and lower faces have an angle of less than $\pi/4$ formed therebetween, said wedge-shaped members being supported by the pulsing plate and having their upper and lower faces parallel, respectively, to the corresponding faces of the two plates, a plurality of vibration generators of reciprocating motion, each comprising a moveable part integral with a separate one of the wedge-shaped members, said moveable parts having a displacement in synchronism with respect to a stationary part common to all of said vibration generators, said moveable parts spaced from each other at regularly distributed angular intervals around an axis perpendicular to said pulsing plate, said displacement directed to a common point on said axis and said moveable parts having the same inclination with respect to said axis.



3,287,697
CODE INTEGRITY CHECKS FOR CODED REMOTE CONTROL SYSTEMS
Arthur P. Jackel, Penn Hills Township, Allegheny County, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed July 5, 1962, Ser. No. 207,734
6 Claims. (Cl. 340—146.1)



6. In a coded remote control system including a plurality of locations connected by a communication channel, said system being operable to transmit functions over said channel in the form of stepped codes at least from one of said locations to another of said locations, each code step having a long duration first or short duration second character, each code from said one location including a first portion of successive steps which defines a station call combination of first and second character code steps unique to said one location and a second portion which defines transmitted functions by successive selected first and second character code steps, the first characters steps of said station call having a distinct totalized characteristic, the combination comprising:

(a) a first and a second counting means at said one location each operable between two conditions when successively actuated,

(b) a drive circuit controlled by said system for successively actuating said first counting means to record each first character code step in a first group of code steps transmitted during said second portion of a particular code,

(c) another drive circuit controlled by said system for successively actuating said second counting means to record each first character code step in a second group of code steps transmitted alternately with said first group code steps during said second portion of said particular code,

(d) circuit means at said one location with connections to said system and controlled by both associated counting means and responsive to the totalized characteristic of the station call for effecting the transmission during said particular code subsequent to said second portion thereof of separate indications characterizing the combined characteristics of the station call totalized characteristic and the existing condition of each counting means,

(e) registry means at said other location responsive to system operation for recording the characterizing indications received during a code,

(f) a third and a fourth counting means at said other location each operable between two conditions when successively actuated,

(g) drive circuit means controlled by said system and having connections for successively actuating said third and fourth counting means to record each first character code step in said first and said second code step groups respectively received during said second portion of said particular code,

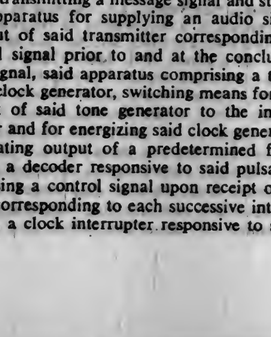
(h) a station selection means at said other location controlled by said system for registering the station call combination received during said first portion of said particular code,

(i) comparison circuit means at said other location controlled jointly by said third and fourth counting means, by said station selection means, and by said registry means for comparing the combined characteristic provided by the existing condition of said third and fourth counting means and the totalized characteristic of the registered station call combination with the registered characterizing indications,

(j) said comparison circuit means having connections for effecting the completion of the reception of said particular code and the final registry of the functions carried thereby only when the comparison determines each corresponding pair of compared characteristics to be equivalents.

3,287,698
DATA HANDLING APPARATUS
Theodore Sapino, Framingham, Mass., assignor to Honeywell Inc., a corporation of Delaware
Filed Dec. 12, 1962, Ser. No. 244,060
20 Claims. (Cl. 340—146.1)

1. Apparatus for verifying the selective storage of data characters in a data storage medium in accordance with coded input data composed from a predetermined set of different characters, comprising a coincident current core memory having a plurality of different locations for storing said coded input data characters, a coincident current core buffer having a core corresponding to each of said memory locations, means for successively addressing said memory locations jointly with their corresponding buffer cores, means successively operative for storing in said buffer cores true comparisons between said coded input data characters and the codes of an independently generated first sequence of said predetermined set of characters, data transfer means adapted to store characters in said data storage medium, means for simultaneously reading the true comparison contents of said buffer cores into said data transfer means, means responsive to the readout of said true comparisons from said buffer cores for simultaneously reading corresponding echoes into the same buffer cores, means for successively comparing said coded input data characters and the character codes of an independently generated second character sequence substantially identical to said first sequence and lagging the latter, and means for comparing the results of said last-recited comparison with said echoes.

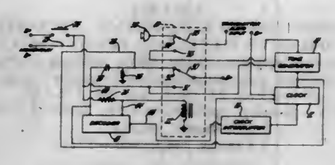


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20. A magnetic storage device comprising a coordinate array of bistable cores, means including coordinate row and column windings for addressing individually selected ones of said cores, means including a sense winding common to said cores for reading out the contents of said individually addressed cores, means including an inhibit winding common to said cores for reading data into said individually addressed cores, a sense winding individual to each of said cores, means including a readout winding common to said cores for simultaneously reading out the contents of all of said cores through said individual sense windings, means including said individual sense windings for simultaneously reading data into said cores, at least one bistable strobe core including an individual sense winding, and a pair of coordinate row and column windings for addressing said strobe core to switch it to one of its stable states, said readout winding linking said strobe core and being adapted to induce a timing pulse in its sense winding upon switching said core to its other stable state.

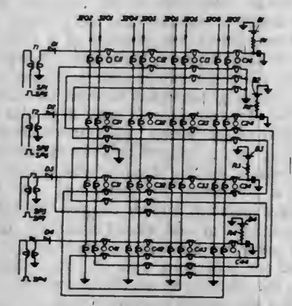
3,287,699
RADIOTELEPHONE IDENTIFICATION SIGNAL APPARATUS
James D. Malone, San Mateo, Calif., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 13, 1963, Ser. No. 279,869
1 Claim. (Cl. 340—164)

In a selective signaling system using call signals represented by permutations of integers and including a transmitter for transmitting a message signal and station identification apparatus for supplying an audio signal to the audio input of said transmitter corresponding to an assigned call signal prior to and at the conclusion of the message signal, said apparatus comprising a tone generator and a clock generator, switching means for connecting the output of said tone generator to the input of said transmitter and for energizing said clock generator whereby a pulsating output of a predetermined frequency is developed, a decoder responsive to said pulsating output for producing a control signal upon receipt of a number of pulses corresponding to each successive integer of said call signal, a clock interrupter responsive to said control signal for momentarily interrupting said clock generator, said switching means responsive to the receipt of said groups of pulses by said decoder for disabling said clock generator whereby a pulse train corresponding to said call signal is developed at the output of said pulse generator,



said tone generator responsive to said pulse train for developing an audio signal corresponding to said pulse train and additional switching means for momentarily energizing said clock generator at the completion of said message signal for re-transmitting said call number.

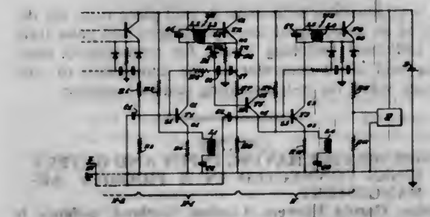
3,287,700
CORE MATRIX HAVING INPUT AND OUTPUT LINES CONNECTED IN A PRIORITY ARRANGEMENT
Thomas Harold Flowers, London, England, assignor to Her Majesty's Postmaster General, London, England
Filed May 16, 1963, Ser. No. 280,812
Claims priority, application Great Britain, May 23, 1962, 19,890/62
2 Claims. (Cl. 340—166)



1. A selecting circuit comprising in combination a plurality of rows of rectangular hysteresis loop magnetic material cores, each row containing the same number of cores, and, for each core in each row, a biassing winding serving to maintain the core in a first magnetic condition, the biassing windings of each row of cores being connected to a bias source and a bias source disabling means common to the row only, an input winding for switching the core to its second magnetic condition and an output winding for producing an output when the core is switched to its second magnetic condition, a number of input leads equal to the number of cores in a row and an equal number of output leads, each input lead and each output lead being connected respectively to the input and output winding of a different core in one of the rows, the input winding of each core in that row being connected with the input winding of a different core in every other row, the output winding of each core of the first mentioned row being connected with the output winding of a different core in every other row, each core in each row being accorded a particular precedence in an order of precedence for selecting purposes, and, on each core except one

in every row, disabling winding means which are energized to disable the core when an input is applied to the input winding of each core of higher precedence in the precedence order.

3,287,701
TRANSISTORIZED ELECTRONIC DECODER RESPONSIVE TO PLURAL FREQUENCIES
Francesco Semeria, Milan, Italy, assignor to Società Italiana Telecomunicazioni Siemens S.p.A.
Filed Feb. 27, 1962, Ser. No. 176,142
Claims priority, application Italy, June 30, 1961, Patent 14,333
3 Claims. (Cl. 340—171)

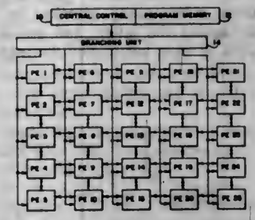


1. An improved multistage transistor decoder adapted to detect a sequence of signals having different frequencies in which all the frequencies of the signals are applied to all the stages and every stage includes at least: a first transistor which forms, together with a series resonant circuit connected to the emitter terminal and a parallel resonant circuit connected to the collector terminal, a frequency selective amplifier and has its base connected through a resistor to one terminal of a first condenser which has its other terminal grounded; a second transistor forming an electronic switch therein; means comprising a reactive coupling connected between the collector terminal of the first transistor of each stage and the corresponding base of the second transistor for driving the latter; rectifying means coupled between the emitter of said second transistor and the terminal which is not grounded of said first condenser, for generating a D.-C. control signal; means including a diode coupled through the cathode to the emitter of said second transistor and a second condenser connected between the anode of said diode and the ground for generating a D.-C. output signal; a bias source for the decoder; an additional transistor connected between first and second successive stages of said decoder with its base connected to the not-grounded terminal of the first condenser of said first stage, the collector of said additional transistor being connected to a pole of said bias source, and the emitter of the same additional transistor being connected to the emitter of the first transistor in said second stage so that said additional transistor cuts off the first transistor of said second stage in response to said D.-C. control signal generated by said first stage; and a resistor connecting to ground the emitter of said first transistor.

3,287,702
COMPUTER CONTROL
Walter C. Borck, Jr., Arbutus, and Robert C. McReynolds, North Linthicum, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 4, 1962, Ser. No. 242,233
9 Claims. (Cl. 340—172.5)

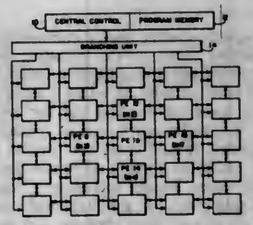
1. In a computer having a plurality of processing elements under simultaneous control of central control means and receiving identical control signals therefrom, the improvement comprising:

circuit means associated with said processing elements and responsive to internal conditions within said processing elements for selectively altering any of



said control signals to thereby allow a processing element to be in a different mode of operation than other processing elements of said plurality.

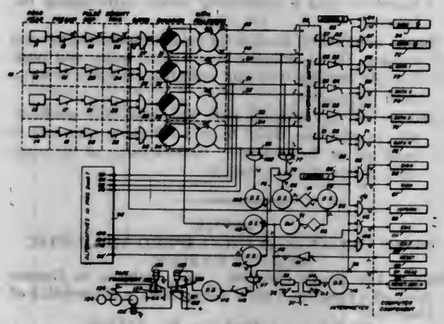
3,287,703
COMPUTER
Daniel L. Slotnick, Baltimore, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 4, 1962, Ser. No. 242,234
8 Claims. (Cl. 340—172.5)



1. A computer comprising:
(1) a central control means;
(2) a plurality of similar processing elements arranged in a geometric array including at least one side, each said processing element being under simultaneous control of said central control means with each processing element possessing means for communicating with other preselected processing elements in said array; and
(3) input-output means associated with the processing elements along said side of said array for transferring information to and from the processing elements along said side, said last named processing elements being operable to transfer information to and from next adjacent processing elements.

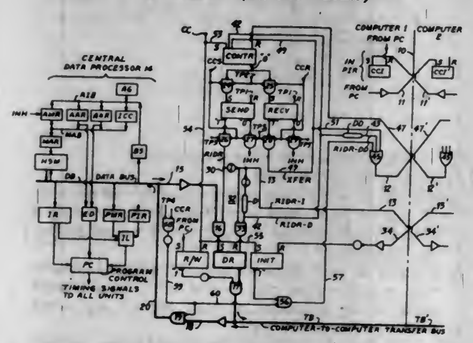
3,287,704
CODE INTERPRETER
Robert W. Bains, Shreveport, La., assignor to United Gas Corporation, a corporation of Delaware
Filed Feb. 28, 1963, Ser. No. 261,905
14 Claims. (Cl. 340—172.5)

1. A data processing apparatus comprising: means for sensing a four-channel binary coded decimal data record and providing binary coded decimal signals representing data sensed thereby, an interpreter comprising means connected for receiving and decoding such binary coded signals into decimal output signals representing decimal values of binary coded decimal data sensed, means connected for receiving and encoding such decimal signals into five-channel two-out-of-five coded data output signals, means responsive to a request signal from an outside data receiving apparatus for operating and controlling said means for sensing a data record and providing



said binary coded decimal signals, and other means responsive to said request signal for controlling the transmittal of the two-out-of-five coded data signals.

3,287,705
COMPUTER SYSTEM
Murray Rosenblatt, Haddonfield, and David E. Williams, Stratford, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed Mar. 7, 1963, Ser. No. 263,669
6 Claims. (Cl. 340—172.5)



1. In a system including two similar independent computers each including a memory, a data bus and a central processor for controlling the flow of words therein in the performance of programs, said central data processor in each computer including a program interrupt means for interrupting the performance of a program at an interruptable point and entering into the performance of a computer-to-computer transfer program, the combination of

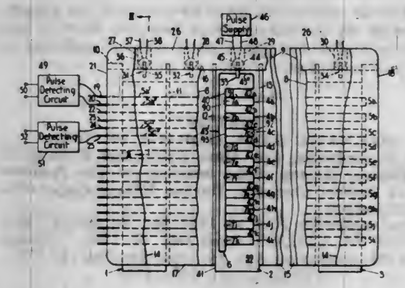
first cross connection means connecting the central data processor of each computer to the program interrupt means in the central data processor of the other computer for sending a communication request signal to cause the request-receiving computer to enter into a computer-to-computer transfer program,

a computer-to-computer transfer bus,

a send and receive means in ecah computer operative in response to the execution of the computer-to-computer transfer program of the respective computer to cause a word to be transferred from the data bus of one computer through the transfer bus to the data bus of the other computer, and

second cross connection means cross connecting the send and receive means associated with the two computers in an interlocking fashion to prevent the sending by a sending computer of a subsequent word until after a preceding word has been accepted by the receiving computer.

3,287,706
ELECTRICAL DIGITAL DATA STORES
Gerald Patrick Rodgers, Seaton, England, assignor to The General Electric Company Limited, London, England
Filed Feb. 13, 1964, Ser. No. 344,649
Claims priority, application Great Britain, Feb. 19, 1963, 6,653/63
14 Claims. (Cl. 340—173)

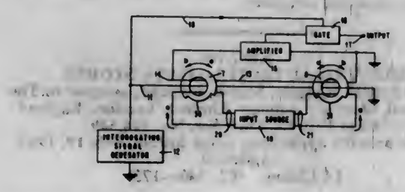


1. An electrical digital data store having an input conductor configuration which is for carrying interrogating current pulses and which contains at least two alined conductor elements with first and second conductor portions each extending between adjacent ends of these elements to provide a binary digit storage location, a conductor path containing two adjacent spaced conductor strips connected in series in such manner that current flowing in one direction in one strip flows in the opposite direction in the other strip, and mounting means which carries said conductor path and on which said conductor configuration is mounted with the two end parts of said first conductor portion alongside but not in contact with said two conductor strips respectively whereby an interrogating current pulse flowing through said first conductor portion induces two aiding voltages in said conductor path, there being an electrical discontinuity in one of said first and second conductor portions in dependence upon the binary digit value stored at said storage location whereby an interrogating current pulse supplied to the conductor configuration is directed through the other one of these conductor portions.

3,287,707
MAGNETIC STORAGE DEVICES
Gerald Horace Perry and Sydney John Widdows, Malvern, England, assignors, by mesne assignments, to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed May 26, 1959, Ser. No. 815,909
Claims priority, application Great Britain, May 27, 1958, 16,924/58; Oct. 10, 1958, 32,382/58; Mar. 2, 1959, 7,131/59
7 Claims. (Cl. 340—174)

1. Intelligence storage device including two substantially identical ferromagnetic storage elements each capable of being set to either one of two remanent magnetic states, a read wire and an output wire each threading both of the elemens with one of the wires passing through the elements in the same direction magnetically and the other wire passing through the elements in opposite directions magnetically, and a source of pulses coupled to said read wire, said pulses having an amplitude such that

both of said elements are made to traverse only the reversible portions of their hysteresis loops, in opposite directions, to that by virtue of the different slopes of said reversible portions, the resultant output pulses pro-



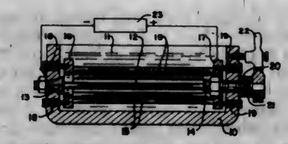
duced in the output wire are of an amplitude and polarity dependent on the instantaneous magnetic state of said elements, and said magnetic states remain unaffected by said read out pulses.

3,287,708

MAGNETIC DATA STORAGE DEVICES

John R. Anderson, Los Altos, Calif., and Richard M. Cinchesa, Dayton, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Original application Nov. 18, 1957, Ser. No. 696,987, now Patent No. 3,042,997, dated July 10, 1962. Divided and this application Apr. 16, 1962, Ser. No. 187,779
4 Claims. (Cl. 340—174)



1. A magnetic data storage device comprising: an elongated core of electrically conductive material in a state of torsional strain with respect to a longitudinal axis thereof; and a concentric layer of ferromagnetic material disposed on the surface of said core and in a state of torsional strain with respect to said core axis by an amount related to and opposite in direction from said torsional strain of said core whereby the easy direction of magnetization of said ferromagnetic material is oriented in a helical direction with respect to said core axis.

3,287,709

HIGH SPEED MEMORY

Eric W. Moulton, Malibu, Calif., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware

Filed Oct. 2, 1962, Ser. No. 227,919
3 Claims. (Cl. 340—174)



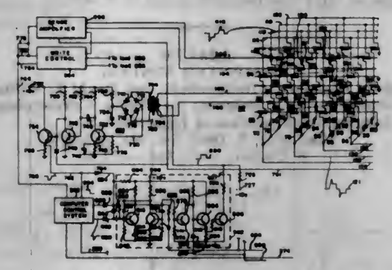
1. A high speed memory device comprising, in combination:
an evacuated envelope,
a magnetic matrix comprising a cylindrical configuration of ferrite rods disposed within said envelope, said ferrite rods being discrete saturable elements,
a single electron beam-providing means disposed within said envelope, said beam providing means comprising a cathode centrally positioned in said configuration and a concentric anode surrounding the matrix,
means comprising a modulating grid surrounding said cathode for modulating an electron beam and positionally relating it to said saturable elements to write onto the matrix,
and means for demodulating and oppositely positionally relating the beam to said saturable elements to read out of the matrix by beam-sensing of the magnetic states of said elements.

3,287,710

WORD ORGANIZED HIGH SPEED MAGNETIC MEMORY SYSTEM

Richard Lee Snyder, Malibu, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Aug. 31, 1962, Ser. No. 222,756
5 Claims. (Cl. 340—174)



5. A magnetic memory system comprising
a plurality of control leads,
a plurality of word leads each coupled to said plurality of control leads, said word leads each including a central conductor and a magnetic wire wound around said conductor,
a plurality of core elements each including a magnetic wire wound around said control leads and said word leads at the couplings of each one of said word leads to said control leads,
first and second sources of switching pulses coupled to first and second ends of the central conductors of said word leads to apply a first pulse to the first ends of a plurality of central conductors and a second pulse to the second end of a selected one of said central conductors to saturate the magnetic wire wound therearound and pass a full amplitude current pulse therethrough, said first and second pulses being of opposite polarity selected to pass current pulses through a selected central conductor in a first direction for reading from core elements coupled to said selected conductor and in a second direction for writing into said core elements,
a source of bias current coupled to said control conductors for passing half amplitude current pulses therethrough developing a field for combining with the field of said first current pulse during reading and subtracting from the field of said second current pulse during writing,
a source of writing current pulses of full amplitude coupled to said control leads for developing a field to combine with the field of said second pulse during writing,

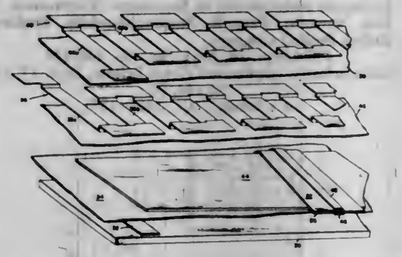
and means coupled to said control leads for responding to the change of state of said core elements during reading.

3,287,711

THIN FILM SHIFT REGISTER

Kent Dastrup Broadbent, San Pedro, Calif., assignor, by mesne assignments, to Interstate Electronics Corporation, a corporation of California

Filed Oct. 29, 1962, Ser. No. 233,846
13 Claims. (Cl. 340—174)



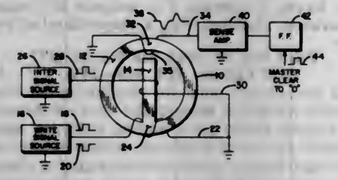
1. A magnetic device comprising an elongated magnetic medium having a pair of edge portions comprising areas extending longitudinally along the edges of said medium and an inner portion extending longitudinally along said medium between said edge portions, said inner portion having a first state of magnetization, input means magnetically coupled to said magnetic medium at a first predetermined place thereof for establishing in said magnetic medium an area of a second state of magnetization, output means responsive to the state of magnetization of said magnetic medium at a second predetermined place thereof spaced from said first predetermined place by a continuous portion of said magnetic medium, and means magnetically coupled to said magnetic medium along said continuous portion thereof, for producing a shaped magnetic field adapted to move the area of said second state of magnetization from said first predetermined place to said second predetermined place on said magnetic medium within said continuous portion thereof, said magnetic field having a relatively high value in said inner portion and a relatively low value in said edge portions of said magnetic medium.

3,287,712

NONDESTRUCTIVE READOUT MAGNETIC MEMORY

Frederick G. Hewitt, Egan Township, Dakota County, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Dec. 19, 1962, Ser. No. 245,772
4 Claims. (Cl. 340—174)



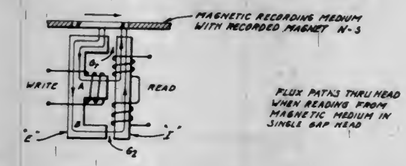
3. A nondestructive readout magnetic memory apparatus comprising:
a magnetic core having a central aperture having a substantially high remanent-magnetization flux path thereabout for storing binary information in said core as a function of the direction of flux in said path,
at least one additional leg of said core having a substantially negligible remanent-magnetization,
said additional leg projecting from said central aperture's internal periphery across said central aperture and separated from an opposing portion of said core by an air gap, said leg providing magnetic coupling between opposing portions of said core,
writing means magnetically coupled to said path at its juncture with said leg,
sensing means magnetically coupled to said path in said air gap,
interrogate means magnetically coupled to said leg,
flux induced in said leg by said interrogate means causing a temporary alteration of the flux of said path adjacent said sensing means, said temporary alteration of the flux of said path adjacent said sensing means generating an output signal in said sensing means indicative of the binary information stored in said core.

3,287,713

MAGNETIC RECORDING HEADS UTILIZING SYMMETRICAL WINDINGS TO AVOID CROSS TALK

Vincent J. Porter, Quakertown, Pa., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Oct. 12, 1962, Ser. No. 230,039
5 Claims. (Cl. 340—174.1)



1. A read-write magnetic head comprising a magnetic core including an E-shaped section and I-shaped section spaced from the ends of the legs of said E-shaped section so as to create three magnetic gaps, a drive winding wound on said magnetic core so as to create magnetic flux paths in the center and end legs of said E-shaped section, the flux in each of said end legs being substantially equal and travelling in the same direction with respect to said center leg so that the flux value in said center leg is substantially twice the magnitude of the flux in each of said end legs, and a read winding wound on said I-shaped section of said magnetic core so that the flux paths from said drive winding induce equal but opposite and hence self-canceling voltages in said read winding.

3,287,714

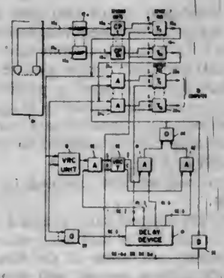
DESKEWING UTILIZING A VARIABLE LENGTH GATE

Donald R. Dustin, Salt Point, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 24, 1962, Ser. No. 246,708
6 Claims. (Cl. 340—174.1)

1. An extended skew system comprising:
means for receiving bits of skewed bytes,
means for testing the count status of received bits of each byte said count status having one of two states at a predetermined test time, said test time occurring less than one-half bit period after a first received bit of the byte,

delay means for enabling a variable character gate, and means for extending said character gate at said

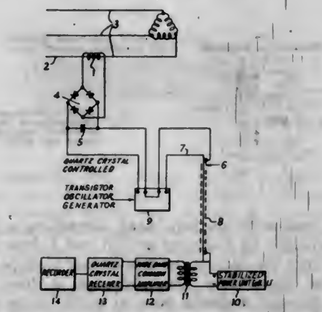


test time when said count status is at a predetermined one of said two states.

3,287,715
ELECTRONIC INDICATOR SYSTEMS

Frederick Charles Riches, Hounslow, Peter Harry Varney, Windsor, and Kenneth Clark, Cheltenham, England, assignors to Sargrove Electronics Limited, Hounslow, Middlesex, England, a British company

Filed June 17, 1965, Ser. No. 464,729
Claims priority, application Great Britain, June 17, 1960, 21,342/60, Patent 914,998
1 Claim. (Cl. 340—184)

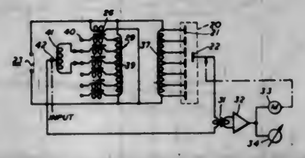


A system for continuously indicating prevailing conditions at a number of remote stations comprising first means operative in dependence on a local physical condition to generate a continuous low voltage output proportional to the physical condition at each of the remote stations, remote low voltage radio frequency quartz controlled transistor oscillation generator means at each remote station supplying an output signal at a unique stable frequency and comprising a variable μ thermionic tube having a cathode and a control grid, means supplying an input signal at said unique stable frequency to the tube, and means coupling the first means to the tube to supply varying grid-cathode bias potential to vary the amplification factor of the tube, a coaxial line to feed the respective unique radio frequency output signals through a common transmission channel, means coupling the generator means tube to the cable to supply the output signal thereto at said unique frequency at an amplitude controlled by the first means, a wide band amplifier connected to the coaxial line operative to amplify all the signals from the remote stations, branch lines for each of the said generators fed by the wide band amplifier, each branch including a quartz crystal filter selectively turned to the unique radio frequency signal of one of the generators, means for providing a stabilised D.C. voltage on the coaxial line, a demodulator circuit to provide a D.C. voltage output which is proportional to the varying amplitude of the unique frequency signal comprising a detector connected to the quartz crystal filter to receive its output signal, and a continuous indicator connected to the detector output to indicate the level of the remote station condition.

3,287,716
CAPACITIVE POTENTIOMETER REBALANCING SYSTEM

Caleb Frederick Wolfendale, London, England, assignor, by mesne assignments, to Sogenique (Electronics) Limited, Newport, Pagnell, Buckinghamshire, England, a British limited company

Filed Sept. 26, 1961, Ser. No. 140,874
Claims priority, application Great Britain, Sept. 27, 1960, 33,144/60
4 Claims. (Cl. 340—187)



1. A position responsive device comprising a source of alternating current, a first inductor connected to said source of alternating current, said first inductor including a plurality of linearly displaced first taps, a plurality of fixed conductive elements, each of said elements being connected to one of said first taps, a first movable conductive element, said first movable conductive element having electrostatic coupling with said fixed conductive elements, a second inductor, said second inductor including a plurality of linearly displaced second taps, a plurality of electrical contacts, a transformer including a primary winding and a plurality of secondary windings, said primary winding being connected to said source of alternating current, each of said secondary windings respectively connecting one of said second taps to one of said electrical contacts, a second movable conductive element positionable to contact at least one of said electrical contacts, a signal difference generating means including first and second input terminals and an output for generating a signal related to the difference in the signals received at said input terminals, means for electrically connecting said first movable conductive element and said second movable conductive element to said input terminals and motor means including a signal input connected to the output of said signal difference generating means and a mechanical output for generating a mechanical movement in accordance with the signal received at said signal input.

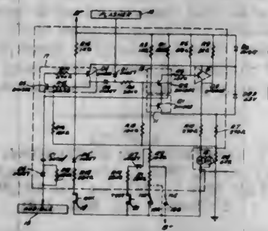
3,287,717
STATIC ANNUNCIATOR WITH ACKNOWLEDGMENT AND RING BACK

Murray Kraus, Levittown, Pa., assignor to Compudyne Corporation, Hatboro, Pa., a corporation of Pennsylvania

Filed July 30, 1962, Ser. No. 213,277
13 Claims. (Cl. 340—213)

1. An annunciator point for monitoring the condition of a device which has normal and alert conditions comprising a lamp which has a normal condition indicating the device is in normal condition, sensing means for sensing alert and normal conditions producing a signal only in alert condition, a first gate means having input, output and control terminals with its output terminal coupled to the lamp and its input terminal coupled to the sensing means to derive a continuous input signal from the sensing means in the alert condition, and a flasher

connected to the control terminal and providing a control signal at the first gate means in order to flash the lamp alternately on and off and acknowledgment means connected to said control terminal and including a flip flop distinct and separate from the first gate means, said flip flop having an input terminal connected to a manually controlled acknowledgement switch, an output terminal coupled to the control terminal of the first gate means through which terminal said acknowledgement means is able to overcome the effect of the

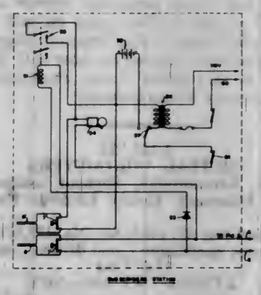


flasher when the flip flop is in the state selected by the acknowledgement switch, a further terminal coupled to the first gate means other than to the control terminal so that upon discontinuance of the signal current flow through the gate means the flip flop will be restored to the state in which it cannot overcome the effect of the flasher, and second gate means connecting the input terminal of the first gate means and the sensing means, thereby to provide isolation of the flip flop from the sensing means.

3,287,718
SUBSCRIBER ALARM SYSTEM

Lloyd S. Stensrud, 601 9th Ave. W., Southwest Fargo, N. Dak.

Filed Mar. 10, 1964, Ser. No. 350,867
9 Claims. (Cl. 340—213.1)

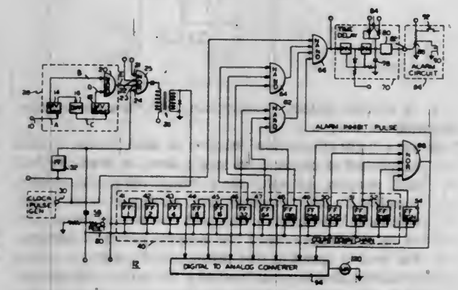


1. An alarm system comprising a pair of conductors connecting a remote circuit to a central alarm circuit, means at the remote circuit for completing a circuit between said pair of conductors on the occurrence of an event, alarm means and a unidirectional current element connected in series circuit across said pair of conductors at the remote circuit, said central alarm circuit including a source of potential, switch means having at least two positions, second alarm means connected in circuit with said source of potential and said switch means, said switch means connected to said pair of conductors and adapted in one position to connect said conductors in circuit with said source of potential and second alarm whereby said second alarm is energized by said means at the remote circuit upon the occurrence of an event, and said switch means adapted in the other position to connect said conductors in circuit with said source of potential to cause current flow through said unidirectional current element and energize said alarm means at the remote circuit whereby reverse signaling is obtained in said pair of conductors.

3,287,719
SQUITTER MONITOR MODULE

Dean S. Thornberg and Richard M. Jepperson, both of Salt Lake City, Utah, assignors to Montek Division of Model Engineering and Manufacturing Corporation, Salt Lake City, Utah, a corporation of Indiana

Filed Dec. 2, 1963, Ser. No. 327,386
5 Claims. (Cl. 340—248)

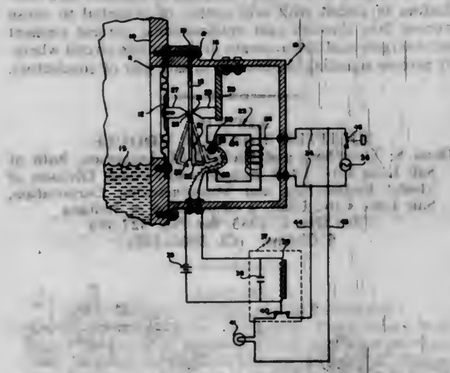


1. A pulse rate monitor system comprising a pulse pair decoder including a first monostable multivibrator receiving beacon reply pulses from a directional coupler, a differentiating circuit having an input from said first monostable multivibrator, a second monostable multivibrator having an input from said differentiating circuit, and a first NAND gate having an input from said first and second monostable multivibrators and having an output terminal for providing decoded video signals; a control and reset flip-flop for receiving signals from a clock pulse generator, a first NOR gate coupled for receiving signals from said first NAND gate and from said control and reset flip-flop, a binary count down chain having a plurality of flip-flop stages each reset by said control and reset flip-flop, the first flip-flop in said count down chain receiving an input from said first NOR gate, a SIGN flip-flop comprising a register with said count down chain, a second NOR gate having inputs from the last four flip-flops in the said count down chain and from said SIGN flip-flop, a digital-to-analog converter having inputs from said second NOR gate and from a plurality of flip-flops which are intermediate stages of said count down chain, a squitter count indicating meter fed by said digital-to-analog converter, a second and a third NAND gate each having inputs from flip-flops which are intermediate to said intermediate stages of the count down chain, a fourth NAND gate having inputs from said second and third NAND gates, from said second NOR gate, and from said pulse generator, a time delay circuit having an input from said fourth NAND gate, and an alarm circuit fed by said squitter rate device, said alarm circuit comprising a silicon controlled rectifier being triggered by said fourth NAND gate, an alarm relay fed by said silicon controlled rectifier, and an alarm lamp controlled by said alarm relay.

3,287,720
RESONANT REED MOTION DETECTOR

Francis T. Chambers III, Princeton, and Edward S. Kinney, Westfield, N.J., assignors to Lockheed Aircraft Corporation, Burbank, Calif.

Filed Sept. 12, 1963, Ser. No. 308,544
7 Claims. (Cl. 340—248)



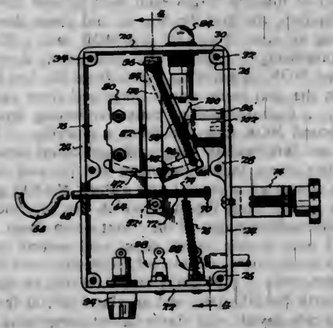
3. A motion detector comprising, a frame, a member movable

from a neutral position relative to said frame, a reed supported at one end on said frame, at least the free end portion of said reed being magnetic, means coupled to said member and arranged to constrain said reed intermediate the ends thereof on movement of said member from the neutral position whereby the reed is tuned to one resonant frequency, a source of alternating current having a frequency substantially half said one resonant frequency of the reed, excitation coil means coupled to said source of alternating current and arranged adjacent the free end of said reed to induce oscillation thereof at said one resonant frequency, and a magnetically operated contact switch responsive to said excitation coil means and detecting detuning of said reed from said one resonant frequency.

3,287,721
INTRAVENOUS ALARM SUPPLY MONITOR

Karl W. Boehr, Middleport, N.Y., assignor to Sigmamotor, Inc., Middleport, N.Y.

Filed July 3, 1964, Ser. No. 380,152
11 Claims. (Cl. 340—272)

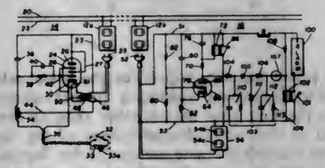


1. An intravenous infusion monitor comprising, an electric signal circuit, an electric signal circuit controlling switch having a first position for closing said circuit and a second position for opening the circuit, a pivoted support means adapted for supporting an infusion liquid container and having a raised position and a lowered position, a rock bar pivotable with said support means, and control means including a pivoted spring operatively coupled with said rock bar, said spring being movable toward and away from dead center relative to said rock bar to a position permitting a predetermined weight placed on said support means to move the same to said lowered position and to another position moving said support means together with said weight to said raised position, said switch being actuated to one of its said positions when said support means is moved to said lowered position and being actuated to the other of its said positions when said support means is moved to said raised position, and means for securing said control means in various positions including said other position.

3,287,722
REMOTE CONTROLLED SWITCHING SYSTEM

Bryant F. Craig, 1808 E. Abrams, Arlington, Tex.

Filed May 7, 1962, Ser. No. 192,890
5 Claims. (Cl. 340—310)



1. A transmitter for applying a telemetering signal to a power circuit which comprises:

(a) a tube having a heater, a cathode, control grid, and an anode,

(b) a connection extending directly between said anode and one line of said power circuit,

(c) a series capacitive-inductance circuit connected at one terminal of the capacitor to the anode of said tube, at an intermediate tap on the inductance to the second line of said power circuit, and at the extremity of the inductance to said cathode,

(d) transformer means connected across said power circuit for applying heater current to said tube, and

(e) a grid leak circuit connected between said control grid and an intermediate point on said inductance for applying bursts of high frequency alternating current to said power circuit on those half cycles of the voltage on said power circuit when said anode is positive relative to said cathode.

3,287,723
DIGITAL VOLTMETERS

Eric Metcalf, Farnborough, England, assignor to The Solartron Electronic Group Limited, Farnborough, England

Filed July 27, 1965, Ser. No. 475,076
Claims priority, application Great Britain, Aug. 4, 1964, 31,577/64
2 Claims. (Cl. 340—347)

1. A digital voltmeter comprising in combination:

an operational amplifier having an input circuit and an output circuit;

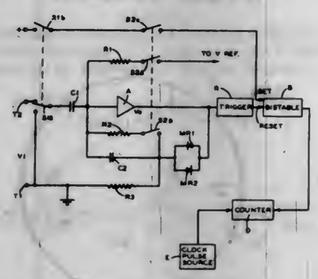
a capacitive feedback network coupled between said output and input circuits;

an input terminal adapted to receive an input voltage;

first switching means coupled between said input terminal and said input circuit of said amplifier for providing to said input circuit an electric charge proportional to said input voltage;

a source of reference voltage; second switching means;

a resistive feedback network connected between said output and input circuits, said second switching means coupling said source of reference voltage and said resistive feedback network to the input of said amplifier, said second switching means being operable to simultaneously connect said reference voltage source to said input circuit of said amplifier and also to establish said resistive feedback network;



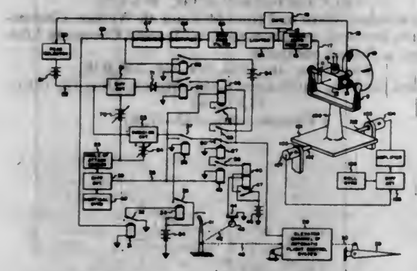
a source of clock pulses; and

means coupled to the output circuit of said amplifier for counting clock pulses from the instant that said second switching means are operated following the application of a quantity of charge proportional to the input voltage into the amplifier until the output of said amplifier returns to a datum level.

3,287,724
OBSTACLE CLEARANCE SYSTEM FOR AIRCRAFT

Joseph E. Zupanick, Westbury, and Donal R. Treffeisen, Glen Cove, N.Y., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force

Filed Oct. 24, 1957, Ser. No. 692,961
6 Claims. (Cl. 343—7)

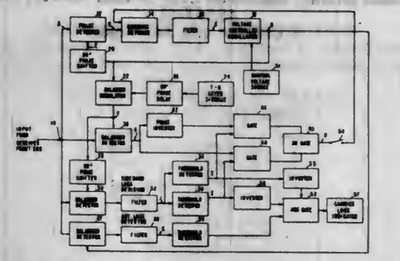


1. In an aircraft guidance system, apparatus including means for detecting the presence and angular orientation of an obstacle lying along the path of aircraft travel, said means for detecting producing first and second signals, said first signal when produced being indicative of the presence of an obstacle, and said second signal when produced being proportional to the angular deviation of the longitudinal axis of the aircraft from the line-of-sight between said aircraft and the peak of said obstacle, means for producing a reference signal, means for generating a third signal proportional to the aircraft angle-of-attack, means for comparing said second signal with the sum of said reference and third signal to produce a fourth signal proportional to the difference between said second signal and said signal sum, means having a control input for positioning a control surface of said aircraft, and means for selectively applying said fourth signal to said control input, said means for selectively applying being adapted to receive said first signal and said fourth signal and being operative to apply said fourth signal to said control input in the presence of said first signal.

3,287,725
PHASE-LOCKED LOOP WITH SIDEBAND REJECTING PROPERTIES

James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of Donald W. Brown, Mahlon Easterling, Warren L. Martin, and Edward C. Posner

Filed June 1, 1964, Ser. No. 371,857
12 Claims. (Cl. 343—14)

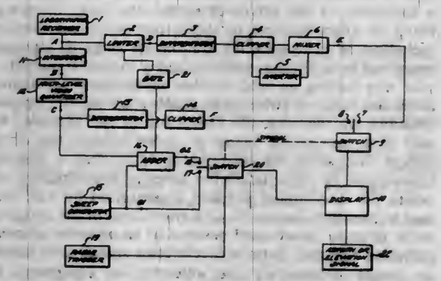


1. In a system wherein a transmitter and receiver are alternately keyed on and off with a keying signal, said transmitter transmitting an interrupted carrier wave and sidebands in response to said keying signals, said receiver receiving reflection signals of said interrupted carrier wave and sidebands from a target, said receiver including a phase-locked loop having a voltage controlled oscillator, the improvement comprising means for detecting when said phase-locked loop has locked in phase with a sideband signal and producing a "sideband lock" signal indicative thereof, means responsive to said "sideband lock" signal for unlocking said phase-locked loop from the phase of said sideband signal, means for detecting when said phase-locked loop has locked to the phase of any of said received signals and producing an "any lock" signal indicative thereof, and means responsive to the presence of said "any lock" signal and the absence of said "sideband lock" signal for indicating that said phase-locked loop has locked in phase with said carrier.

3,287,726
QUANTITATIVE RADAR MAPPING OF STORM ECHO MAXIMA

David Atlas, 828 Chestnut St., Waban, Mass.

Filed Oct. 20, 1964, Ser. No. 405,311
8 Claims. (Cl. 343—17.1)



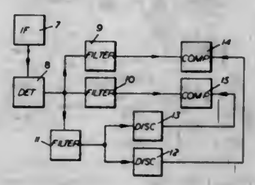
3. The method of displaying radar signals reflected from a storm cloud as a function of the angular position of the radar antenna, which method comprises the step of

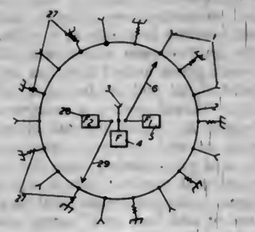
displaying the profile of maximum echo intensity at each antenna position, and the step of displaying the storm boundary of the storm cloud at said each antenna position by alternately plotting the maximum signal intensity and storm boundary in successive pulse periods.

3,287,727
HARMONIC PHASE COMPARISON DIRECTION DETERMINATION SYSTEM

Charles William Earp, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 19, 1963, Ser. No. 324,794
Claims priority, application Great Britain, Nov. 29, 1962, 45,113/62
3 Claims. (Cl. 343—106)



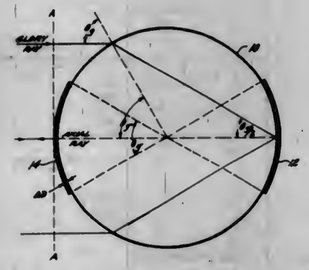


1. Radio navigation system operative by the Doppler principle having means at a receiver station to compare in phase a direction-dependent signal with a reference signal to determine the direction from a transmitter station, including, in order to obtain a more accurate direction determination, means at the receiver station to compare a harmonic of the direction-dependent signal with a harmonic of the reference signal, the latter harmonic being an exact multiple of the former harmonic, further including at a transmitter station of ring of antennas energized by a first transmitter and a second transmitter, said ring having an odd number of antennas occupying alternate ones of twice that number of equally spaced positions on the ring, the energizing of the antennas by said first transmitter being in order around the circle except that when the coupling cycle reaches a position unoccupied by an antenna the antenna diametrically opposite the unoccupied position is energized by said second transmitter, successive such transitions of the coupling cycle from an unoccupied position to an opposite antenna initiating the said harmonic reference signal, and means to couple successively the antennas, to equipment to simulate a rotation of an antenna the direction-dependent signal being a frequency modulation caused by the simulated rotation, and the reference signal an amplitude modulation phase-related to said simulated rotation.

3,287,728
ZONED RADIANT ENERGY REFLECTOR AND ANTENNA HAVING A GLORY RAY AND AXIAL RAY IN PHASE AT THE FOCAL POINT

David Atlas, 62 Wiswall Road, Newton Center, Mass.

Filed May 7, 1963, Ser. No. 278,791
16 Claims. (Cl. 343—753)

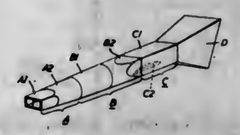


1. A radiant energy focusing device comprising a curved object having an axis of revolution and a constant refractive index of a value which permits the existence of a glory ray, a cap on said object corresponding to the curvature thereof and having a constant thickness and refractive index, said cap being so placed and of such a size that the focal point of a glory ray and an axial ray on said axis of revolution lie on the surface of said object opposite the position of said cap and in an in-phase relationship.

3,287,729
POLARISERS FOR VERY HIGH FREQUENCY ELECTRO-MAGNETIC WAVES

John Richard Mark and Ronald Kenneth Walker, Chelmsford, England, assignors to The Marconi Company Limited, a British company

Filed Nov. 26, 1962, Ser. No. 240,038
Claims priority, application Great Britain, Dec. 14, 1961, 44,872/61
4 Claims. (Cl. 343—756)



1. An adjustable polarizer for providing either elliptically or linearly polarized electromagnetic waves from input linearly polarized waves comprising first and second colinear, coaxial, circularly sectioned lengths of waveguide, said second length of waveguide being rotatable relative to said first length of waveguide about the common axis thereof, means for applying linearly polarized waves to said first length of waveguide, a pair of spaced conductor units extending diametrically within said first length of waveguide at an angle of substantially 22½ degrees to each other, a third conductor unit extending diametrically within said second length of waveguide and rotatable therewith between an angular range of plus or minus 22½ degrees with respect to the nearest of said pair of spaced conductor units, and means for relatively phase delaying to an extent to provide the required degree of ellipticity of polarization, components of the output waves from said second length of waveguide which are respectively parallel and perpendicular to the conductor unit which is nearest to the input end of said first length of waveguide.

3,287,730
VARIABLE POLARIZATION ANTENNA

John L. Kerr, Neptune, N.J., assignor to the United States of America as represented by the Secretary of the Army

Filed Feb. 5, 1963, Ser. No. 256,481
4 Claims. (Cl. 343—756)

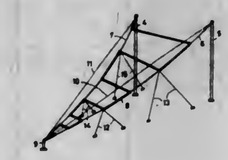


1. Apparatus for transforming stationary plane polarized radiation into radiation having any preselected condition of polarization comprising first and second rectangular waveguides, a circular waveguide rotating joint coupling said first and second rectangular waveguide adjacent one end of each said rectangular waveguides, the longitudinal axis of said joint being perpendicular to the longitudinal axis of said first and second rectangular waveguides adjacent said one end, the longitudinal axis of said second rectangular waveguide at the other end being coincident with said longitudinal axis of said joint, means for rotating said second rectangular waveguide about said longitudinal axis at said other end thereof, an elliptical waveguide, a rotating joint connecting one end of said elliptical waveguide to said other end of said second rectangular waveguide with the longitudinal axis of said elliptical waveguide coincident with the longitudinal axis of said other end of said second rectangular waveguide, and means for rotating said elliptical waveguide about said longitudinal axis thereof.

3,287,731
LOGARITHMIC PERIODIC ANTENNA HAVING GRADIENT, RELATIVE TO GROUND PLANE, VARYING ALONG LENGTH OF ANTENNA

Gerhard Braun, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin and Munich, Germany, a corporation of Germany

Filed Aug. 4, 1964, Ser. No. 387,347
Claims priority, application Germany, Aug. 7, 1963, S 86,612
5 Claims. (Cl. 343—792.5)



1. A logarithmically periodic antenna for telecommunication, especially for horizontal polarization in the range of short and ultra short waves, comprising an arrangement of transmitter elements which are excited with respect to earth and constructed according to the log periodic law, the center line of the antenna being curved toward the surface of the earth, whereby the gradient angle of the antenna system with respect to the surface of the earth is greater for radiating elements with greater transverse dimensions, and thereby longer operating wave length, than for radiating elements with smaller transverse dimensions, and thereby shorter operating wave length, said center line being formed with a curve that will provide at least approximately the desired gradient angle of the principal transmission lobe for each operating frequency.

3,287,732
RADIO ANTENNA CONSTRUCTION

John Altmayer, Euclid, Ohio, assignor to New-Tronics Division of Automatic Radio, Cleveland, Ohio, a corporation of Massachusetts

Filed Nov. 15, 1963, Ser. No. 323,928
2 Claims. (Cl. 343—900)



1. An antenna comprising:
an elongated nonconductive rod-like member, said member being constructed of resilient material and exhibiting a sufficient degree of flexibility transversely of its longitudinal axis so as to bend slightly when subjected to transverse forces;
a sleeve constructed of conductive material enveloping said member for substantially the entire length of said member and supported thereon, said sleeve including a plurality of braided conductors braided in a manner to permit flexure transversely of the longitudinal axis of said member; and,
a protective cover of relatively tough, non-conductive, flexible material enveloping the outer longitudinal surface of said sleeve and exhibiting a degree of flexibility transversely of the longitudinal axis of said member which is at least equal to that of said member and said sleeve taken together so as not to impair the flexibility of the antenna.

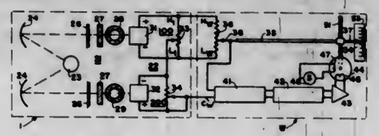
3,287,733
METHOD FOR PROVIDING A SERIES OF SIMULTANEOUSLY RECORDED GROUPS OF TEST RESULT RECORDS

Milton H. Pelavin, Greenburgh, N.Y. (25 Lark Ave., White Plains, N.Y.), and William J. Smythe, 430 Park Ave., Rye, N.Y.

Original application July 30, 1963, Ser. No. 298,762, now Patent No. 3,196,449, dated July 20, 1965. Divided and this application Oct. 28, 1964, Ser. No. 407,146
5 Claims. (Cl. 346—1)

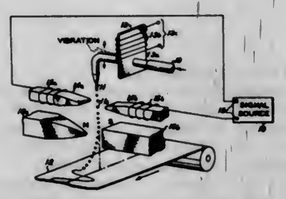
1. In a method of providing a series of spaced, simultaneously recorded groups of test result records on a variable speed recording chart of multi-pen recording means from a plurality of groups of testing means operatively connectible thereto, the steps of operatively connecting a first group of said testing means to said recording means while driving said recording chart at a recording speed whereby a first group of test result records

will be simultaneously formed thereon by said pens, disconnecting said first group of testing means from said recording means and operatively connecting a second testing means group thereto while simultaneously deactivating said pens and driving said recording chart at a spacing speed for a first period of time to provide a



first space thereon following the said first group of test result records, activating said pens and simultaneously driving said recording chart at the said recording speed whereby a second group of test result records, spaced from said first group, will be simultaneously formed thereon by said recording pens.

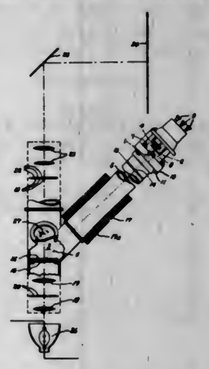
3,287,734
MAGNETIC INK RECORDING
Benjamin Kazan, Los Angeles, Calif., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Nov. 26, 1965, Ser. No. 509,758
17 Claims. (Cl. 346—1)



1. A method of recording with liquid ink comprising the steps of: forming a droplet stream of liquid ink including therein a distribution of a magnetic polarizable component; selectively polarizing the droplets in said stream by means of an applied magnetic field responsive to a signal of information intelligence; and, applying a second magnetic field to said droplets after said last recited step to deflect at least some of said droplets relative to a surface on which droplets deposit to record said information.

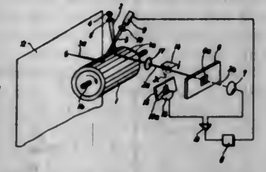
3,287,735
RADIANT ENERGY APPARATUS
Harold R. Day, Jr., Burnt Hills, N.Y., assignor to General Electric Company, a corporation of New York
Filed Aug. 28, 1962, Ser. No. 220,011
16 Claims. (Cl. 346—74)

4. Apparatus for producing phase diffraction gratings comprising an image receiving surface capable of deformation when subjected to electrostatic charge, means for directing a stream of electrons at said image receiving surface for producing said electrostatic charge thereon, and a thin layer of pyrolytic graphite between



said electron beam producing means and said image receiving surface through which said stream of electrons passes without appreciable loss of coherence.

3,287,736
RADIATION TYPING APPARATUS
Horst Germer, 13 Aegidienmarkt, Braunschweig, Germany
Filed Oct. 26, 1964, Ser. No. 407,617
Claims priority, application Germany, Nov. 4, 1963, G 39,173
24 Claims. (Cl. 346—74)

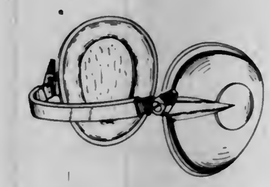


1. Radiation typing apparatus comprising, in combination, a first radiation source producing a first beam; scanning means impinged by said first beam and operable for moving said first beam in a scanning movement; a pattern located in the path of said first beam following said scanning means so as to be scanned by said first beam; photoelectric sensing means located in said path of said first beam behind said pattern for producing successive impulses representing the scanned pattern; a second radiation source producing a second beam of a different radiation, and being controlled by said impulses so that the intensity of said second beam varies to represent scanned elements of the scanned pattern, said second radiation source being disposed so that said second beam impinges said scanning means and is moved by the same in a scanning movement synchronized with the scanning movement of said first beam and adapted to scan a writing surface responsive to the varying intensity of said different radiation of said second beam to receive an image of the scanned pattern.

DESIGNS

NOVEMBER 22, 1966

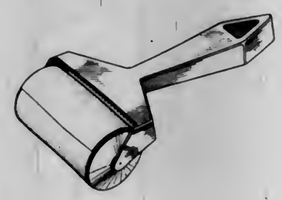
206,256
NOISE SUPPRESSING EAR MUFF
Charles J. Boyer, Reading, Pa., assignor to The Electric Storage Battery Company, Philadelphia, Pa.
Filed Feb. 21, 1966, Ser. No. 1,138
Term of patent 14 years
(Cl. D3—13)



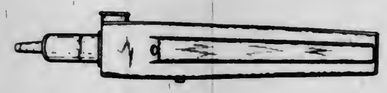
206,257
LAUNDRY TRAY
John Maurus, 16100 Kennedy, Roseville, Mich. 48066
Filed Mar. 29, 1965, Ser. No. 84,465
Term of patent 14 years
(Cl. D4—3)



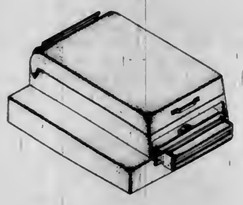
206,258
LINT ROLLER
Eric M. Roth, 81 Clansman Blvd., Toronto, Ontario, Canada
Filed Jan. 26, 1966, Ser. No. 778
Term of patent 14 years
(Cl. D9—2)



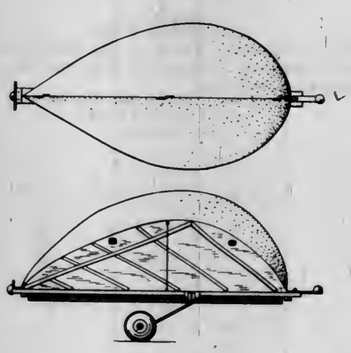
206,259
BATTERY POWERED PORTABLE VACUUM CLEANER
Alvin Polatchek, New York, N.Y., assignor to Shields, Inc., Attleboro, Mass., a corporation of Massachusetts
Filed Feb. 2, 1966, Ser. No. 884
Term of patent 14 years
(Cl. D9—2)



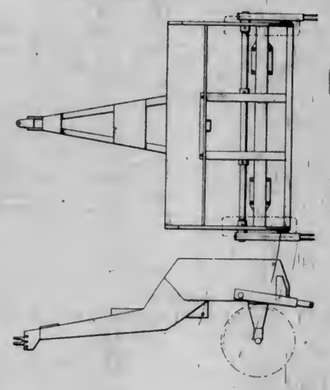
206,260
MACHINE FOR CLEANING BOWLING SCORE CARDS AND THE LIKE
Carl R. Yeaman, Los Angeles County, Calif., assignor to Sav-On Draperies, Inc., Los Angeles, Calif., a corporation of California
Filed Feb. 16, 1966, Ser. No. 1,067
Term of patent 14 years
(Cl. D9—2)



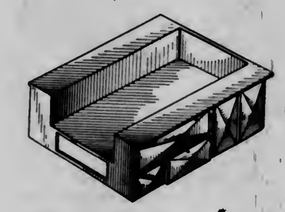
206,261
CAMPING TRAILER
Charles F. Lawley, R.D. 5, Shavertown, Pa. 19603
Filed Jan. 18, 1966, Ser. No. 665
Term of patent 14 years
(Cl. D14—3)



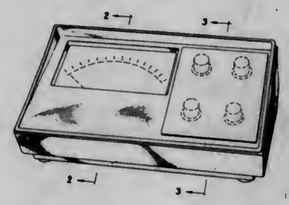
206,262
TRAILER
Richard E. Ten Eyck, Wichita, Kans., assignor to Tryco Manufacturing Company, Inc., Decatur, Ill., a corporation of Illinois
Filed Mar. 9, 1966, Ser. No. 1,367
Term of patent 14 years
(Cl. D14—3)



206,263
TRUCK
Charles D. Edwards, Elgin, Ill., assignor to B. I. Weller Co., Chicago, Ill., a corporation of Illinois
Filed Mar. 23, 1966, Ser. No. 1,595
Term of patent 14 years
(Cl. D14—3)



206,264
pH METER CASE
Gordon J. Waligorski, Lombard, Ill., assignor to Coleman Instruments Corporation, Maywood, Ill., a corporation of Delaware
Filed Dec. 3, 1965, Ser. No. 43
Term of patent 14 years
(Cl. D16—2)



206,265
DRAPERY TRAVERSE TRACK OR SIMILAR ARTICLE
Gerald T. Shea, 29 Dartmouth, Deer Park, Long Island, N.Y. 11100
Filed May 20, 1965, Ser. No. 85,383
Term of patent 14 years
(Cl. D21—1)



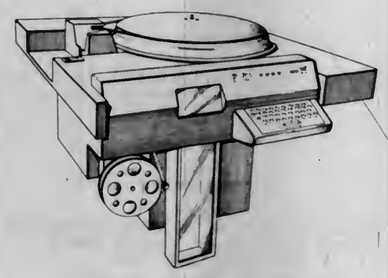
206,266
ELECTRIC SHAVER
Alfred W. Madl, Mequon, Wis., assignor to John Oster Manufacturing Co., Milwaukee, Wis., a corporation of Wisconsin
Filed Jan. 13, 1966, Ser. No. 589
Term of patent 14 years
(Cl. D22—3)



206,267
DENTAL STAND UNIT
John A. Maurer, Canton, and David A. Walquist, Wooster, Ohio, assignors to The Weber Dental Manufacturing Company, Canton, Ohio, a corporation of Ohio
Filed Dec. 30, 1965, Ser. No. 373
Term of patent 14 years
(Cl. D24—1)



206,268
DATA PREPARATION CONSOLE
Walter J. Zenner, Des Plaines, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware
Filed Sept. 30, 1964, Ser. No. 81,953
Term of patent 14 years
(Cl. D26—5)



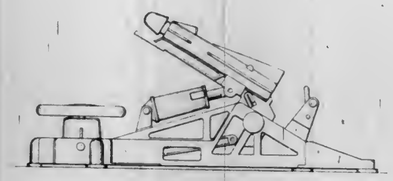
206,269
PICTURE FRAME OR SIMILAR ARTICLE
Hart Preston, Armenonville, Rond Point, Duboys D'Angiers, Cannes, France, and Harold Barnett, 1 Boulevard Beaumarchais, Paris, France
Filed Mar. 29, 1965, Ser. No. 84,478
Term of patent 14 years
(Cl. D29—20)



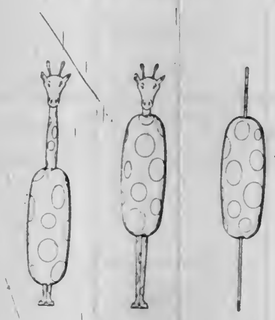
206,270
TIE HOLDER
Walter A. Dunn, 139 Baker St., Warwick, R.I. 02886
Filed Nov. 22, 1965, Ser. No. 88,255
Term of patent 14 years
(Cl. D33—8)



206,271
COMBINED PROJECTILE AND LAUNCHER TOY
Carl F. Gladen, 3667 Kawkawlin River Drive, Bay City, Mich. 48706
Filed Dec. 9, 1965, Ser. No. 146
Term of patent 14 years
(Cl. D34—15)



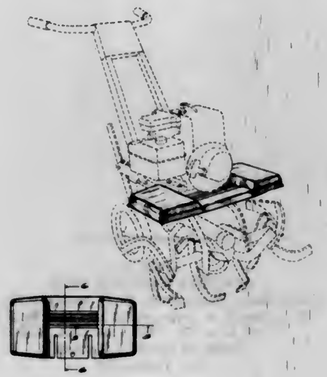
206,272
ANIMAL FIGURE TOY
Irvin J. Gershen, Springfield, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Filed Dec. 21, 1965, Ser. No. 265
Term of patent 14 years
(Cl. D34—15)



206,273
CANE TYPE WEED KILLER OR SIMILAR ARTICLE
Paul A. Enblom, Eden Prairie, Minn., assignor to Judd Ringer Corporation, St. Louis Park, Minn., a corporation of Minnesota
Filed Oct. 6, 1965, Ser. No. 87,338
Term of patent 14 years
(Cl. D35—2)



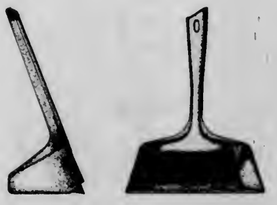
206,274
TILLER HOUSING
John W. Davies III, Plymouth, Wis., assignor to Gilson Bros. Co., Plymouth, Wis., a corporation of Wisconsin
Filed Dec. 16, 1965, Ser. No. 218
Term of patent 14 years
(Cl. D40—1)



206,275
CLOCK
William Gordon Simpson, 15 Glemsford Drive, Harpenden, England
Filed Nov. 12, 1965, Ser. No. 88,065
Term of patent 14 years
Claims priority, application Great Britain May 14, 1965
(Cl. D42—7)



206,276
COMBINED DUSTPAN AND BRUSH
Francis Leroy Parsisson, Bridge Road, Florence, Mass. 02614
Filed Mar. 15, 1966, Ser. No. 1,472
Term of patent 14 years
(Cl. D44—18)



206,277
SPONGE RACK
Emery L. Groff, Pompano Beach, Fla., assignor to Emery L. Groff, Jr., Bethesda, Md.
Original design application Jan. 28, 1965, Ser. No. 83,619, now Patent No. 203,058, dated Nov. 30, 1965. Divided and this application Oct. 21, 1965, Ser. No. 456
Term of patent 14 years
(Cl. D44—29)



206,278
CONTAINER OPENER OR SIMILAR ARTICLE
Harold Charles Dowit, 11835 Sheldon St., Sun Valley, Calif. 94087
Filed June 14, 1965, Ser. No. 85,723
Term of patent 14 years
(Cl. D44—29)



206,279
PIE CUTTER OR THE LIKE
Gregory E. Palmer, P.O. Box 5002, Detroit, Mich. 48200
Filed June 21, 1965, Ser. No. 85,835
Term of patent 14 years
(Cl. D44—29)



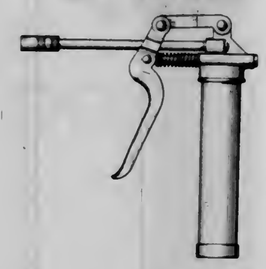
206,280
FINGER RING
John L. Hazelquist, Garden City, Mich., assignor to Traub Manufacturing Company, Detroit, Mich., a corporation of Michigan
Filed Feb. 23, 1966, Ser. No. 1,150
Term of patent 14 years
(Cl. D45—10)



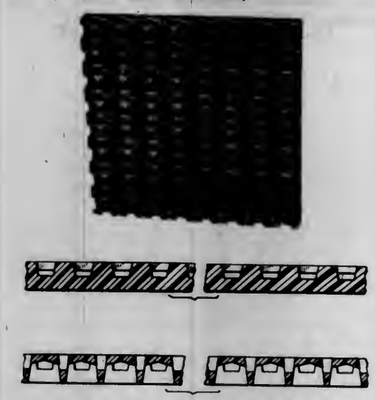
206,281
FILTER AND DRIER UNIT FOR REFRIGERATION
Robert F. Sunstrom, Menominee, Mich., and Robert L. Latzko, Marinette, Wis., assignors to The Ansul Company, Marinette, Wis., a corporation of Wisconsin
Filed Dec. 1, 1965, Ser. No. 5
Term of patent 14 years
(Cl. D46—1)



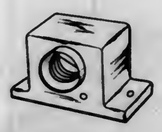
206,282
HAND GREASE GUN
Edwin P. Sundholm, Albert City, Iowa 50510
Filed Mar. 2, 1966, Ser. No. 1,240
Term of patent 14 years
(Cl. D46—1)



206,283
PLASTIC LENS-LOUVER
Jack G. High, Winfield, Ill., assignor to MSL Industries, a corporation of Minnesota
Filed Oct. 18, 1965, Ser. No. 87,562
Term of patent 14 years
(Cl. D48—16)



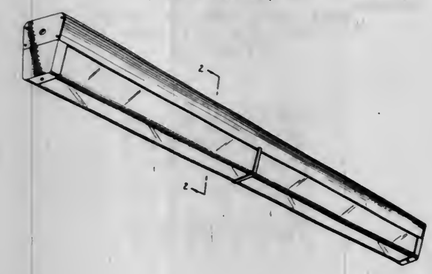
206,284
AUTOMATIC CLOSET LIGHT
Hajime Ota, Tokyo, Japan, assignor to Fedtro Inc., Rockville Centre, N.Y., a corporation of New York
Filed Dec. 10, 1965, Ser. No. 138
Term of patent 14 years
(Cl. D48—20)



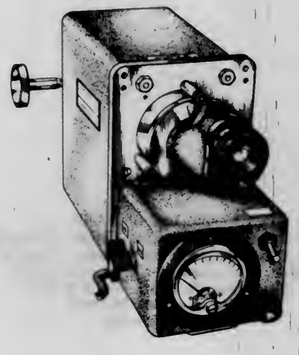
206,285
FLOOR LAMP BASE
Richard Wareham, Euclid, and Ralph Ellsworth, Willoughby, Ohio, assignors to Superior Funeral Supply Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 10, 1966, Ser. No. 555
Term of patent 14 years
(Cl. D48—20)



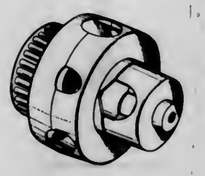
206,286
FLUORESCENT LIGHTING FIXTURE OR SIMILAR ARTICLE
Joseph J. Ostyn, Rochelle Park, N.J., assignor to American Illuminating Company, Inc., Newark, N.J.
Filed Dec. 22, 1965, Ser. No. 282
Term of patent 14 years
(Cl. D48—23)



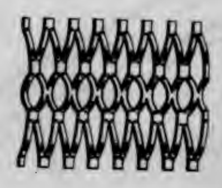
206,287
DEROTATION INSTRUMENT
Jean G. Lecuyer, Crystal Lake, Ill., assignor to Chicago Aerial Industries, Inc., a corporation of Delaware
Filed Dec. 3, 1965, Ser. No. 27
Term of patent 14 years
(Cl. D52—6)



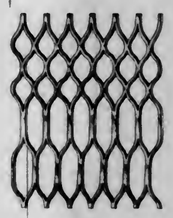
206,288
SWIVEL CLAMP FOR TUBES
John Ward Blakely, 4031 Mary Ellen, North Hollywood, Calif. 91600
Filed Aug. 23, 1965, Ser. No. 86,678
Term of patent 14 years
(Cl. D54—1)



206,289
EXPANDED METAL SHEET
William M. Ries, Wheeling, W. Va., assignor to Wheeling Steel Corporation, Wheeling, W. Va., a corporation of Delaware
Filed Jan. 20, 1966, Ser. No. 697
Term of patent 14 years
(Cl. D54—2)



206,290
EXPANDED METAL SHEET
William M. Ries, Wheeling, W. Va., assignor to Wheeling Steel Corporation, Wheeling, W. Va., a corporation of Delaware
Filed Jan. 20, 1966, Ser. No. 707
Term of patent 14 years
(Cl. D54—2)

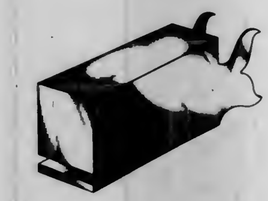


206,291
LORGNETTE
Wilma Fae Nordhoff, 130 W. 11th St., New York, N.Y. 10025
Filed June 14, 1966, Ser. No. 2,675
Term of patent 14 years
(Cl. D57—1)

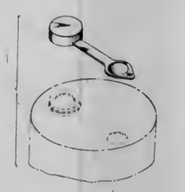
206,292
BOTTLE OR SIMILAR ARTICLE
Victor Koenigsberg, Franklin Square, N.Y., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed Mar. 4, 1965, Ser. No. 84,087
Term of patent 14 years
(Cl. D58—8)



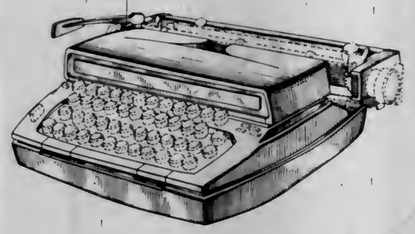
206,293
DISPLAY BOX OR SIMILAR ARTICLE
Jerome Gould, Encino, Calif., assignor to Design Properties, Inc., Los Angeles, Calif., a corporation of California
Filed May 10, 1965, Ser. No. 85,207
Term of patent 14 years
(Cl. D58—11)



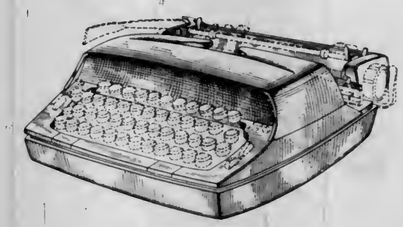
206,294
COMBINED CONTAINER CLOSURE AND MEASURING SPOON
Harry Poris, 165 W. 66th St., New York, N.Y. 10023
Filed June 9, 1965, Ser. No. 85,651
Term of patent 14 years
(Cl. D58—26)



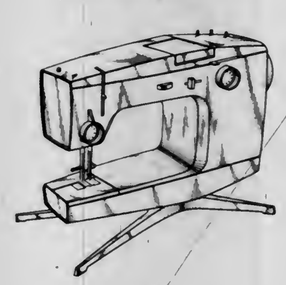
206,295
TYPEWRITER
Karl T. Baughman, Evanston, Ill., assignor to Sears, Roebuck and Co., Chicago, Ill., a corporation of New York
Filed Nov. 17, 1965, Ser. No. 88,134
Term of patent 14 years
(Cl. D64—11)



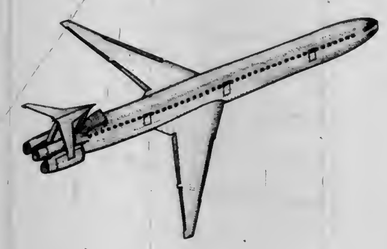
206,296
TYPEWRITER
Karl T. Baughman, Evanston, Ill., assignor to Sears, Roebuck and Co., Chicago, Ill., a corporation of New York
Filed Nov. 17, 1965, Ser. No. 88,136
Term of patent 14 years
(Cl. D64—11)



206,297
FREE ARM SEWING MACHINE
Marcel Fresard, Geneva, Switzerland, assignor to Mefina S.A., Fribourg, Switzerland, a corporation of Switzerland
Filed Nov. 22, 1965, Ser. No. 88,190
Claims priority, application Switzerland June 2, 1965
Term of patent 14 years
(Cl. D70—1)



206,298
AIRCRAFT
Lawrence Bernard Rellis, 734 NW. 80th St., Apt. 16, Miami, Fla.
Filed Mar. 7, 1966, Ser. No. 1,546
Term of patent 14 years
(Cl. D71—1)



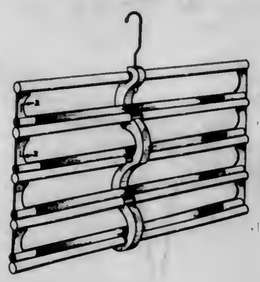
206,299
AIRCRAFT
Lawrence Bernard Rellis, 734 NW. 80th St., Apt. 16, Miami, Fla.
Filed Mar. 7, 1966, Ser. No. 1,583
Term of patent 14 years
(Cl. D71—1)



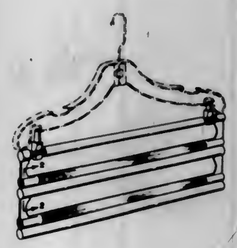
206,300
HANGER
Charles Moses, Long Beach, N.Y.
(1328 Wiley St., Hollywood, Fla. 33020)
Filed Aug. 17, 1965, Ser. No. 86,610
Term of patent 14 years
(Cl. D80—8)



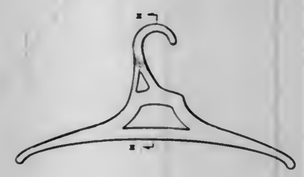
206,301
HANGER
Charles Moses, Long Beach, N.Y.
(1328 Wiley St., Hollywood, Fla. 33020)
Filed Aug. 17, 1965, Ser. No. 86,615
Term of patent 14 years
(Cl. D80—8)



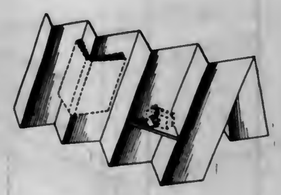
206,302
HANGER
Charles Moses, Long Beach, N.Y.
(1328 Wiley St., Hollywood, Fla. 33020)
Filed Oct. 11, 1965, Ser. No. 87,415
Term of patent 14 years
(Cl. D80—8)



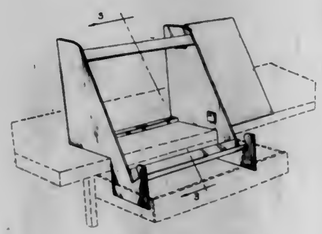
206,303
GARMENT HANGER
Leonard Louik, 7138 Reynolds St., Pittsburgh, Pa. 15208
Filed Nov. 9, 1965, Ser. No. 88,052
Term of patent 14 years
(Cl. D80—8)



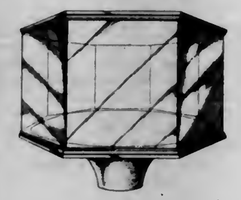
206,304
RACK FOR DISPLAYING BOOKS, CAMERAS AND THE LIKE
Herbert Pinzke, 28W511 Highland Road, West Chicago, Ill. 60185
Filed May 16, 1966, Ser. No. 2,323
Term of patent 14 years
(Cl. D80—9)



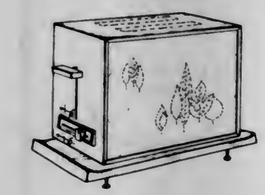
206,305
EASEL FOR A CIRCUIT BOARD OR THE LIKE
Dallas R. Lynch, Little Rock, Ark., assignor to the United States of America as represented by the Secretary of the Army
Filed Mar. 30, 1965, Ser. No. 84,538
Term of patent 14 years
(Cl. D80—9)



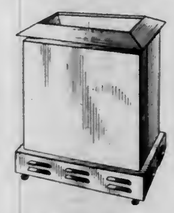
206,306
DISPLAY CASE
Donald Lee Helms, Alexandria, Va., assignor to Kay Jewelry Stores, Inc., Washington, D.C., a corporation of Delaware
Filed Sept. 10, 1965, Ser. No. 86,933
Term of patent 14 years
(Cl. D80—11)



206,307
TOASTER
Robert O. Ernest, Oak Park, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Oct. 21, 1965, Ser. No. 87,709
Term of patent 14 years
(Cl. D81—10)



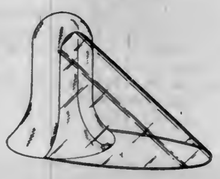
206,308
SAUNA HEATER
Ben Steinman, 52 Edgerwood Lane, Huntington, N.Y. 11743
Filed Nov. 22, 1965, Ser. No. 88,180
Term of patent 14 years
(Cl. D81—20)



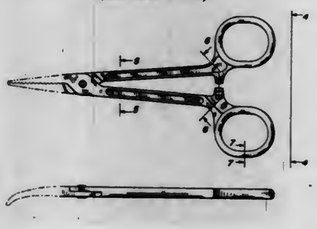
206,309
SOLARIUM
Mike Tecton, 5101 45th St. NW., Washington, D.C. 20016
Filed Sept. 3, 1965, Ser. No. 86,826
Term of patent 14 years
(Cl. D83—1)



206,310
COMBINATION CABANA AND SOLARIUM THEREFOR
Mike Tecton, 5101 45th St. NW., Washington, D.C. 20016
Filed Sept. 16, 1965, Ser. No. 87,027
Term of patent 14 years
(Cl. D83—1)



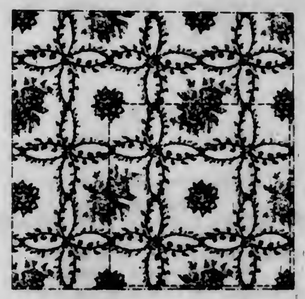
206,311
HEMOSTAT
Arthur Eizenberg, Tarzana, Calif., assignor to Pharmaseal Laboratories, Glendale, Calif., a corporation of California
Filed Oct. 18, 1965, Ser. No. 87,540
Term of patent 14 years
(Cl. D83—12)



206,312
CIGARETTE HOLDER
Maria E. Roberts, Upper Montclair, N.J. (238 Park St., Montclair, N.J. 07042)
Filed Sept. 22, 1965, Ser. No. 87,119
Term of patent 7 years
(Cl. D85—8)



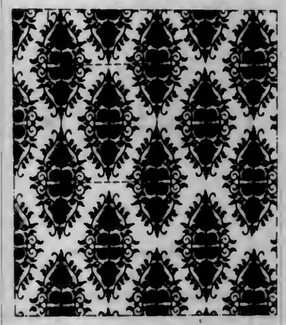
206,313
PLASTIC COATED SHEET MATERIAL
Richard A. Mazur, McFarland, Wis., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 3, 1965, Ser. No. 45
Term of patent 14 years
(Cl. D87—3)



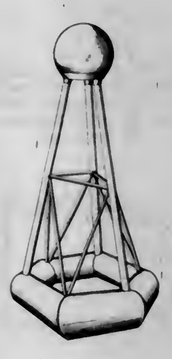
206,314
PLASTIC COATED SHEET MATERIAL
Richard A. Mazur, McFarland, Wis., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Jan. 14, 1966, Ser. No. 670
Term of patent 14 years
(Cl. D87—3)



206,315
PLASTIC COATED SHEET MATERIAL
Dennis L. Kristowski, Stoughton, Wis., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 5, 1965, Ser. No. 88,004
Term of patent 14 years
(Cl. D87—3)



206,316
OFFSHORE STORAGE TANK
Robert S. Chamberlin, Western Springs, Donald C. Stafford, Hinsdale, and Charles A. McDonald, Palos Heights, Ill., assignors to Chicago Bridge & Iron Company, Oak Brook, Ill., a corporation of Illinois
Continuation of design applications Ser. No. 84,057, Mar. 3, 1965, and Ser. No. 84,461, Mar. 26, 1965. This application Nov. 24, 1965, Ser. No. 516
Term of patent 14 years
(Cl. D91—1)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 22ND DAY OF NOVEMBER, 1966

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Barnes, Robert L., and R. L. Dinsmore, to Richfield Oil Corp. Supersonic jet fuel and method using isoparaffinic hydrocarbons and polycyclic hydrocarbons prepared from aromatic fractions. Re. 26,116, 11–22–66, Cl. 60—208.
Dinsmore, Robert L.: *See*—
Barnes, Robert L., and Dinsmore. Re. 26,116.
Leslie, John H., and H. C. Lingle, to Signode Corp. Power strap tensioning tool. Re. 26,114, 11–22–66, Cl. 140—123.6.
Lingle, Harrison C.: *See*—
Leslie, John H., and Lingle. Re. 26,114.
Richfield Oil Corp.: *See*—
Barnes, Robert L., and Dinsmore. Re. 26,116.
Schwoyer, William L., to Trojan Powder Co. Aqueous explosive slurries containing sulfur compounds having a low coefficient of expansion. Re. 26,115, 11–22–66, Cl. 149—41.
Signode Corp.: *See*—
Leslie, John H., and Lingle. Re. 26,114.
Trojan Powder Co.: *See*—
Schwoyer, William L. Re. 26,115.

LIST OF PLANT PATENTEES

Perkins, Dana H. Carnation plant. 2,686, 11–22–66, Cl. 70.

LIST OF DESIGN PATENTEES

American Illuminating Co.: *See*—
Ostyn, Joseph J. 206,286.
Ansul Co., The: *See*—
Sunstrom, Robert F., and Latzko. 206,281.
Barnett, Harold: *See*—
Preston, Hart, and Barnett. 206,269.
Baughman, Karl T., to Sears, Roebuck and Co. Typewriter. 206,295, 11–22–66, Cl. D64—11.
Baughman, Karl T., to Sears, Roebuck and Co. Typewriter. 206,296, 11–22–66, Cl. D64—11.
Blakely, John W. Swivel clamp for tubes. 206,288, 11–22–66, Cl. D54—1.
Boyer, Charles J., to The Electric Storage Battery Co. Noise suppressing ear muff. 206,256, 11–22–66, Cl. D2—13.
Chamberlin, Robert S., D. C. Stafford, and C. A. McDonald, to Chicago Bridge & Iron Co. Offshore storage tank. 206,316, 11–22–66, Cl. D91—1.
Chicago Aerial Industries, Inc.: *See*—
Lecuyer, Jean G. 206,287.
Chicago Bridge & Iron Co.: *See*—
Chamberlin, Robert S., Stafford, and McDonald. 206,316.
Coleman Instruments Corp.: *See*—
Wallgorski, Gordon J. 206,264.
Colgate-Palmolive Co.: *See*—
Koenigsberg, Victor. 206,292.
Davies, John W., III, to Gilson Bros. Co. Tiller housing. 206,274, 11–22–66, Cl. D40—1.
Design Properties, Inc.: *See*—
Gould, Jerome. 206,293.
Dowit, Harold C. Container opener or similar article. 206,278, 11–22–66, Cl. D44—29.
Dunn, Walter A. Tie holder. 206,270, 11–22–66, Cl. D33—8.
Edwards, Charles D., to B. I. Weller Co. Truck. 206,263, 11–22–66, Cl. D14—3.
Elzenberg, Arthur, to Pharmaseal Laboratories. Hemostat. 206,311. 11–22–66, Cl. D83—12.
Electric Storage Battery Co., The: *See*—
Boyer, Charles J. 206,256.
Ellsworth, Ralph: *See*—
Wareham, Richard, and Ellsworth. 206,285.
Enblom, Paul A., to Jubb Ringer Corp. Cane type weed killer or similar article. 206,273, 11–22–66, Cl. D35—2.
Ernest, Robert O., to Sunbeam Corp. Toaster. 206,307, 11–22–66, Cl. D81—10.
Fedtro, Inc.: *See*—
Ota, Hajime. 206,284.
Fresard, Marcel, to Mefina S.A. Free arm sewing machine. 206,297, 11–22–66, Cl. D70—1.
Gershen, Irvin J., to Johnson & Johnson. Animal figure toy. 206,272, 11–22–66, Cl. D34—15.
Gilson Bros. Co.: *See*—
Davies, John W., III. 206,274.
Gladen, Carl F. Combined projectile and launcher toy. 206,271, 11–22–66, Cl. D34—15.
Gould, Jerome, to Design Properties, Inc. Display box or similar article. 206,293, 11–22–66, Cl. D58—11.
Groff, Emory L., to E. L. Groff, Jr. Sponge rack. 206,277, 11–22–66, Cl. D44—29.
Groff, Emory L., Jr.: *See*—
Groff, Emory L. 206,277.
Hazelquist, John L., to Traub Mfg. Co. Finger ring. 206,280, 11–22–66, Cl. D45—10.
Helms, Donald L., to Kay Jewelry Stores, Inc. Display case. 206,306, 11–22–66, Cl. D80—11.
High, Jack G., to MSL Industries. Plastic lens-louver. 206,283, 11–22–66, Cl. D48—16.
Johnson & Johnson: *See*—
Gershen, Irvin J. 206,272.
Jubb Ringer Corp.: *See*—
Enblom, Paul A. 206,273.
Kay Jewelry Stores, Inc.: *See*—
Helms, Donald L. 206,306.
Koenigsberg, Victor, to Colgate-Palmolive Co. Bottle or similar article. 206,292, 11–22–66, Cl. D58—8.
Kristowski, Dennis L., to United States Rubber Co. Plastic coated sheet material. 206,315, 11–22–66, Cl. D87—3.
Latzko, Robert L.: *See*—
Sunstrom, Robert F., and Latzko. 206,281.
Lawley, Charles F. Camping trailer. 206,261, 11–22–66, Cl. D14—3.
Lecuyer, Jean G., to Chicago Aerial Industries, Inc. Derotation instrument. 206,287, 11–22–66, Cl. D52—6.
Loulk, Leonard. Garment hanger. 206,303, 11–22–66, Cl. D80—8.
Lynch, Dallas R., to United States of America, Army. Easel for a circuit board or the like. 206,305, 11–22–66, Cl. D80—9.
MSL Industries: *See*—
High, Jack G. 206,283.
Madl, Alfred W., to John Oster Mfg. Co. Electric shaver. 206,266, 11–22–66, Cl. D22—3.
Maurer, John A., and D. A. Walquist, to The Weber Dental Mfg. Co. Dental stand unit. 206,267, 11–22–66, Cl. D24—1.
Maurus, John. Laundry tray. 206,257, 11–22–66, Cl. D4—3.
Mazur, Richard A., to United States Rubber Co. Plastic coated sheet material. 206,313, 11–22–66, Cl. D87—3.
Mazur, Richard A., to United States Rubber Co. Plastic coated sheet material. 206,314, 11–22–66, Cl. D87—3.
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Moses, Charles. Hanger. 206,301, 11–22–66, Cl. D80—8.
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Oster, John, Mfg. Co.: *See*—
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Ostyn, Joseph J., to American Illuminating Co. Fluorescent lighting fixture or similar article. 206,286, 11–22–66, Cl. D48—23.
Ota, Hajime, to Fedtro, Inc. Automatic closet light. 206,284, 11–22–66, Cl. D48—20.
Palmer, Gregory E. Pie cutter or the like. 206,279, 11–22–66, Cl. D44—29.
Parsisson, Francis L. Combined dustpan and brush. 206,276, 11–22–66, Cl. D44—18.
Pharmaseal Laboratories: *See*—
Elzenberg, Arthur. 206,311.
Pinzke, Herbert. Rack for displaying books, cameras and the like. 206,304, 11–22–66, Cl. D80—9.
Polatchek, Alvin, to Shields, Inc. Battery powered portable vacuum cleaner. 206,259, 11–22–66, Cl. D9—2.
Poris, Harry. Combined container closure and measuring spoon. 206,294, 11–22–66, Cl. D58—26.
Preston, Hart, and H. Barnett. Picture frame or similar article. 206,269, 11–22–66, Cl. D29—20.
Rellis, Lawrence B. Aircraft. 206,298, 11–22–66, Cl. D71—1.
Rellis, Lawrence B. Aircraft. 206,299, 11–22–66, Cl. D71—1.
Ries, William M., to Wheeling Steel Corp. Expanded metal sheet. 206,289, 11–22–66, Cl. D54—2.
Ries, William M., to Wheeling Steel Corp. Expanded metal sheet. 206,290, 11–22–66, Cl. D54—2.
Roberts, Maria E. Cigarette holder. 206,312, 11–22–66, Cl. D85—8.
Roth, Eric M. Lint roller. 206,258, 11–22–66, Cl. D9—2.
Sav-On Draperies, Inc.: *See*—
Yeaman, Carl R. 206,260.

Sears, Roebuck and Co.: *See*—
Baughman, Karl T. 206,295.
Baughman, Karl T. 206,296.
Shea, Gerald T. Drapery traverse track or similar article. 206,265, 11–22–66, Cl. D21—1.
Shields, Inc.: *See*—
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Simpson, William G. Clock. 206,275, 11–22–66, Cl. D42—7.
Stafford, Donald C.: *See*—
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Steinman, Ben. Sauna heater. 206,308, 11–22–66, Cl. D81—20.
Sunbeam Corp.: *See*—
Ernest, Robert O. 206,307.
Sundholm, Edwin P. Hand grease gun. 206,282, 11–22–66, Cl. D46—1.
Sunstrom, Robert F., and R. L. Latako, to The Ansul Co. Filter and drier unit for refrigeration. 206,281, 11–22–66, Cl. D46—1.
Superior Funeral Supply Corp.: *See*—
Wareham, Richard, and Ellsworth. 206,285.
Tecton, Mike. Solarium. 206,309, 11–22–66, Cl. D83—1.
Tecton, Mike. Combination cabana and solarium therefor. 206,310, 11–22–66, Cl. D83—1.
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Ries, William M. 206,290.
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LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 22ND DAY OF NOVEMBER, 1966

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AS-Motor G.m.b.H.: *See*—
Doll, Gunther. 3,286,742.
Aacon Contracting Co., Inc.: *See*—
Cadillac, John G. and Robert T. 3,286,827.
Abex Corp.: *See*—
Jones, Roger D. 3,286,601.
Taylor, Thomas S., and Ling. 3,286,798.
Abitibi Power & Paper Co. Ltd.: *See*—
Martin, Andrew C., and Robb. 3,286,489.
Abrahams, Fred W.: *See*—
Feinberg, Albert E., and Abrahams. 3,287,599.
Abrasive Developments Ltd.: *See*—
Ashworth, Stewart I. 3,286,406.
Achramowicz, William J., to United States of America, Air Force. Pulse train generator employing triggered self-recirculating pulse-circuit and counter producing synchronizable but independent output pulse-train of selectable length. 3,287,650, 11–22–66, Cl. 328—63.
Ackroyd, Ronald T., A. Barker, J. Erskine, and M. A. Perks, to United Kingdom Atomic Energy Authority. Nuclear reactors. 3,287,225, 11–22–66, Cl. 176—33.
Ackroyd, Ronald T., M. A. Perks, J. E. Mann, and A. Barker, to United Kingdom Atomic Energy Authority. Nuclear reactors. 3,287,227, 11–22–66, Cl. 176—40.
Acloque, Paul H., and C. Guillemet, to Compagnie de Saint-Gobain. Method and apparatus for determining surface birefringencies in a transparent material employing a prism place adjacent to the surface. 3,286,581, 11–22–66, Cl. 88—14.
Acrow (Engineers) Ltd.: *See*—
Ringwood, Michael J. C., and Spooner. 3,286,652.
Adams, Harold W., to FMC Corp. Heat transfer method. 3,286,477, 11–22–66, Cl. 62—63.
Adams, Harold W., to United States of America, Air Force. Oxidation inhibitor for lubricating composition. 3,287,269, 11–22–66, Cl. 252—49.6.
Adams, Nicholas M., to Nalco Chemical Co. Method of agglomerating and stabilizing particulate matter by chemical treatment. 3,286,475, 11–22–66, Cl. 61—36.
Admiral Corp.: *See*—
Kao, Lin, and Dietch. 3,287,493.
Rabeler, Richard J. 3,287,501.
Advance Ross Electronics Corp.: *See*—
McGlashan, Kenneth W. 3,287,605.
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Rohr, Otto, Aebi, and Ebner. 3,287,100.
Agfa Aktiengesellschaft: *See*—
Wick, Richard, and Orthmann. 3,286,588.
Woodcock, Edward C. 3,287,012.
Ahlgren, Axel W., to Amerock Corp. Fastener for latching a door. 3,287,044, 11–22–66, Cl. 292—17.
Alguepersе, Jean and J. Barjhoux, to Societe d'Electro-Chimie d'Electro-Metallurgie et des Acieries Electriques d'Ugine. Process for manufacture of javel extracts. 3,287,238, 11–22–66, Cl. 202—187.
Ajinomoto Co., Inc.: *See*—
Mitsugi, Koji, Shiro, Okumura, Komagata, Katagiri, Tuchiya, and Takahashi. 3,287,232.
Akerstrom, Stig H. J., to Bofors, Aktiebolaget. Method of preparing 2-chloro-6-nitro benzonitrile. 3,287,393, 11–22–66, Cl. 260—465.
Albers, Kenneth A., to Char-Lynn Co. Rotary fluid pressure device. 3,286,645, 11–22–66, Cl. 103—130.
Albert, Harry E.: *See*—
Haines, Paul G., Albert, and Whiton. 3,287,430.
Aldrich, Paul H., and H. I. Enos, Jr., to Hercules Inc. Size containing rosin, terpene resin and reaction product of an acidic compound with a terpene resin and use of the size for sising paper. 3,287,206, 11–22–66, Cl. 162—168.
Alfa Romeo S.p.A.: *See*—
Garcea, Giampaolo, and Surace. 3,287,025.
Alfille, Lucien, A. Barriere, G. Farges, C. Rodier, and M. Rozenholc, to Commissariat a L'Energie Atomique. Method of preparation of a composite guide tube for nuclear reactor, and devices for the practical application of same. 3,286,343, 11–22–66, Cl. 29—528.
Algino, Joseph M.: *See*—
Chace, Thomas B., and Algino. 3,286,478.
Allais, Andre, and P. Girault, to Roussel-UCLAF S. A. Para substituted benzyl-1-iso-propylidene carboxates. 3,287,398, 11–22–66, Cl. 260—482.
Allegheny Ludlum Steel Corp.: *See*—
Wilton, Joseph W. 3,287,237.
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Schlicke, Heins M. 3,287,666.
Allen Electric and Equipment Co.: *See*—
Mazurkevics, Anatolijs. 3,286,518.
Allen, W. D., Mfg. Co.: *See*—
Henningsen, Raymond W. 3,286,929.
Alles, Francis P., and C. W. Smith, to E. I. du Pont de Nemours and Co. Process for preparing a photopolymerizable element. 3,287,152, 11–22–66, Cl. 117—34.
Alley, Raymond L., to The American Warming & Ventilating, Inc. Flow control damper. 3,286,732, 11–22–66, Cl. 137—601.
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Altemiller, Arthur D., to Knapp-Monarch Co. Combination stop and latch for multi-purpose appliance. 3,286,300, 11–22–66, Cl. 16—138.
Altmayer, John, to New-Tronics Division of Automatic Radio. Radio antenna construction. 3,287,732, 11–22–66, Cl. 343—900.
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Newman, Howard, Moon, and English. 3,287,366.
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Young, Guy B., and Lubinski. 3,286,628.
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American Metal Products Co.: *See*—
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Anderson, Albert E., and W. W. Rees, to Eastman Kodak Co. Antifoggants for silver halide emulsions on a linear polyester support. 3,287,135, 11–22–66, Cl. 96—87.
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Schadt, John R., Chapin, Anderson, and La Bruna. 3,286,878.

Anderson, George A., to Olin Mathieson Chemical Corp. Method of making heat exchangers. 3,286,328, 11–22–66, Cl. 29—157.3.

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Anderson, James H., Jr.: *See*—
Anderson, James H., Sr. and J. H. Anderson, Jr. 3,286,488.

Anderson, James H., Sr. and J. H. Anderson, Jr. Flexible couplings and hub mountings. 3,286,488, 11–22–66, Cl. 64—12.

Anderson, John R., and R. M. Clinehens, to The National Cash Register Co. Magnetic data storage devices. 3,287,708, 11–22–66, Cl. 340—174.

Anderson, Lloyd L., to Amerock Corp. Magnetic catch. 3,287,051, 11–22–66, Cl. 292—251.5.

Anderson, Malcolm G., to The Goodyear Tire & Rubber Co. Tire. 3,286,759, 11–22–66, Cl. 152—358.

Anderson, Wilbur G., to Packaging Corp. of America. Container construction. 3,286,901, 11–22–66, Cl. 229—23.

Ando, Shinji, to Kabushiki Kaisha Hattori Tokeiten Ginsa. Oscillation device of magnetic escapement. 3,286,457, 11–22–66, Cl. 58—116.

Andre, Thierry, to European Atomic Energy Community (Euratom). Electric spark gap with insulation which maintains its high insulative character throughout its operation. 3,287,590, 11–22–66, Cl. 313—180.

Andrews, Thomas D. H., and J. C. E. Flint, to Dowty Technical Developments Ltd. Gear pumps and motors. 3,286,643, 11–22–66, Cl. 103—126.

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Anthony, Paul P.: *See*—
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Armeniades, Constantine D., W. C. Johnson, and T. Raphael, to Arthur D. Little, Inc. Mixing device. 3,286,992, 11–22–66, Cl. 259—4.

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Arrance, Frank C., to Douglas Aircraft Co., Inc. Electrode and battery. 3,287,164, 11–22–66, Cl. 136—9.

Arrance, Frank C., to Douglas Aircraft Co., Inc. Battery electrode and battery, and process for preparing said electrode. 3,287,166, 11–22–66, Cl. 136—68.

Arth, Glen E., A. H. Todd, and T. B. Windholz, to Merck & Co., Inc. Dihaloalkylation of keto steroids. 3,287,356, 11–22–66, Cl. 260—239.55.

Arthur, Norman R., to United States of America, Air Force. Maneuverable target for anti-missile systems. 3,287,019, 11–22–66, Cl. 273—105.4.

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Atlas, David. Zoned radiant energy reflector and antenna having a glory ray and axial ray in phase at the focal point. 3,287,728, 11–22–66, Cl. 343—753.

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Back, Frank G. Tracking device. 3,287,497, 11–22–66, Cl. 178—7.88.

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Baldwin, Lionel V., and V. A. Sandborn, to United States of America, National Aeronautics and Space Administration. Apparatus for increasing ion engine beam density. 3,287,582, 11–22–66, Cl. 313—63.

Ball, Ralph K.: *See*—
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Baltacis, Eriks, to Osterreichische Studiengesellschaft fur Atomenergie Ges. m.b.H. Apparatus for determining short physical phenomena and arrangement for carrying out the method. 3,287,081, 11–22–66, Cl. 352—84.

Banathy, Jeno D., to International Register Co. Timer adjusted oven thermostat. 3,286,924, 11–22–66, Cl. 236—46.

Bancroft, Joseph, & Sons Co.: *See*—
Hushebeck, Henry R. 3,287,083.

Bancroft & Martin, Inc.: *See*—
Brice, William A. 3,286,981.

Bangerter, Kenneth R., O. M. Ulbing, and H. S. Bennett, to Ingersoll-Rand Co. Balancing hoist. 3,286,989, 11–22–66, Cl. 254—168.

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Baranauckas, Charles F., and I. Gordon, to Hooker Chemical Corp. Preparation of aryl phosphites. 3,287,449, 11–22–66, Cl. 260—975.

Barany, Ernest H.: *See*—
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Barbour, John H. Liquid detergent. 3,287,277, 11–22–66, Cl. 252—106.

Bareckl, Chester J., and J. R. Shore, to American Seating Co. Horizontal kneeler. 3,287,065, 11–22–66, Cl. 297—426.

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Greenberg, Donald K. 3,286,409.

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Barnes, Robert B. 3,287,559.

Barnes, John W.: *See*—
Connors, James J. Jr., and Barnes. 3,287,562.

Barnes, Robert B., to Barnes Engineering Co. Infrared thermogram camera and scanning means therefor. 3,287,559, 11–22–66, Cl. 250—65.

Barrera, Jose M. Water reservoir thermal circulator and flow control for brewing machine. 3,286,618, 11–22–66, Cl. 99—302.

Barrett, Robert D., and K. Racinnas, to International Harvester Co. Self-adjusting hydraulic disk brakes. 3,286,795, 11–22–66, Cl. 188—72.

Barriere, Andre: *See*—
Alfille, Lucien, Barriere, Farges, Rodier, and Rozenholc. 3,286,343.

Barrows, Martin R., D. E. Kaplan, and W. B. Pegram, to Robinson-Halpern Co. Liquid level gauge. 3,286,523, 11–22–66, Cl. 73—301.

Barsel, Norman, to Chem Research Co. Hypotensive diuretic aludrinochrome isonicotinic acid hydrazone solutions. 3,287,216, 11–22–66, Cl. 167—65.

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Bartz, Adam A., to E. I. du Pont de Nemours and Co. Werner chromium complexes and methods for their preparation. 3,287,141, 11–22–66, Cl. 106—13.

Bartz, Arnold M., to The Dow Chemical Co. Optical absorption cell for gas chromatograph effluent analysis having gas heating means. 3,287,557, 11–22–66, Cl. 250—43.5.

Bartz, Heinrich, Kommanditgesellschaft: *See*—
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Batke, Leonard A., and C. E. Hammond, to Ethicon, Inc. Package and cabinet unit. 3,287,075, 11–22–66, Cl. 312—108.

Batteau, Dwight W., to United Research Inc. Energy coupling device. 3,286,782, 11–22–66, Cl. 181—.5.

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Battenfeld, Werner, to Battenfeld, Firma Gebr. Apparatus for applying members, as lables, platens, or the like to hollow bodies in a blowing process. 3,287,198, 11–22–66, Cl. 156—518.

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Bauer, Werner R., to Robertshaw Controls Co. Switch actuator and coupling means therefor. 3,287,535, 11–22–66, Cl. 200—168.

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Baynes, William H. Planetarium. 3,286,374, 11–22–66, Cl. 35—45.

Beach, Kenneth M., Jr., to Varian Associates. Teaching devices. 3,286,371, 11–22–66, Cl. 35—8.

Beaman, Alden G., R. Duschinsky, and W. P. Tautz, to Hoffmann-La Roche Inc. 2-nitroimidazoles and process. 3,287 408, 11–22–66, Cl. 260—309.

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Bedol, Alan, to Marshallan Products, Inc. Collapsible barbeque grille. 3,286,705, 11–22–66, Cl. 126—25.

Beebe, Herbert R., to American Character, Inc. Sound reproducing device for a doll or the like. 3,287,020, 11–22–66, Cl. 274—9.

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Walker, Charles W. E. 3,286,360.

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Reich, Bernard, Benanti, and Orloff. 3,287,643.

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Bendl, Robert E. Tensile strength testing device. 3,286,515, 11–22–66, Cl. 73—95.5.

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Gawlick, Heinz, and Bendler. 3,286,631.

Benetti, John G., ½ to G. A. Petersen, and ½ to A. Petersen. Webbed prong-type tooth with resilient retaining means. 3,286,378, 11–22–66, Cl. 37—142.

Benetti, John G., ½ to G. A. Petersen, and ½ to A. Petersen. Digging tooth with corrugated cross-section. 3,286,379, 11–22–66, Cl. 37—142.

Bennett, Harold A., and R. W. Martin, to Sperry Rand Corp. Contact assembly. 3,287,609, 11–22–66, Cl. 317—234.

Bennett, Harry S.: *See*—
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Bernheim, Louis L. Extensible and retractable delivery tube assembly. 3,286,804, 11–22–66, Cl. 193—7.

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Bertoldo, Joseph M. Hand grip attachment for hospital-type beds. 3,286,283, 11–22–66, Cl. 5—317.

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Bibbens, William H. Method and apparatus for chamfering toothed machine elements. 3,286,593, 11–22–66, Cl. 90—1.4.

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Truelock, Marvin A., Keys, and Rose. 3,286,534.

Biggs, Percival R. Preservative medium suitable for preserving cut flowers. 3,287,104, 11–22–66, Cl. 71—2.4.

Bill, Theodore R., to Standard Trailer Co. Crane extension and resulting crane assembly. 3,286,855, 11–22–66, Cl. 214—3.

Billings, Roy O. Hammering tools. 3,287,066, 11–22–66, Cl. 299—37.

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Birlec-Efco (Melting) Ltd.: *See*—
Ingall, James B. 3,287,177.

Bishop, Alfred E., and E. E. Mayaud, to Radio Corp. of America. Method of making luminescent screens. 3,287,151, 11–22–66, Cl. 117—33.5.

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Blank, Benjamin, and J. F. Kerwin, to Smith Kline & French Laboratories. Phenyldesoxythyronines. 3,287,396, 11-22-66, Cl. 260—471.

Blankenship, Verlie E., to Cutters Machine Co., Inc. Apparatus for hoisting and transporting a table. 3,286,986, 11-22-66, Cl. 254—6.

Blenman, William G., to General Motors Corp. Paint spraying apparatus. 3,286,688, 11-22-66, Cl. 118—323.

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Block Engineering Inc.: *See*—
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Bly, James H., and H. A. Enge, to High Voltage Engineering Corp. Charged particle deflecting device consisting of sequentially positioned uniform and non-uniform magnetic field sectors. 3,287,558, 11-22-66, Cl. 250—49.5.

Board, Richard G., and N. H. Shapiro. Retractable safety belts. 3,286,946, 11-22-66, Cl. 242—107.2.

Board, Richard G., and N. H. Shapiro. Retractable safety belts. 3,287,062, 11-22-66, Cl. 297—388.

Boblnski, Jack, and N. N. Schwartz, to Thiokol Chemical Corp. Halogen containing organoboron compounds and method of preparation. 3,287,416, 11-22-66, Cl. 260—606.5.

Bockemuehl, Robert R., and J. E. Kaupplia, to General Motors Corp. Controlled conducting region geometry in semiconductor devices. 3,287,611, 11-22-66, Cl. 317—235.

Boehringer, C. F., & Soehne G.m.b.H.: *See*—
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Bohneblust, Clarence E., to American Telephone and Telegraph Co. Apparatus to visually identify cable pairs in a multipair cable by cable pair encoding means. 3,287,509, 11-22-66, Cl. 179—175.3.

Bohr, Nicholas J. Method for tensioning sleeves. 3,286,338, 11-22-66, Cl. 29—446.

Bolger, James W., to Rexall Drug and Chemical Co. Certain morpholino-substituted 4-keto-1,2,3,4-tetrahydroquinolines. 3,287,450, 11-22-66, Cl. 260—247.5.

Bolie, Victor W., to Iowa State University Research Foundation, Inc. Method of counting erythrocyter utilising high frequency current. 3,287,638, 11-22-66, Cl. 324—71.

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Whysmuzis, Paul D., Roth, Bolstad, and Aronoff. 3,287,308.

Bolt, William N. Handling of goods during processing or treatment. 3,286,362, 11-22-66, Cl. 34—33.

Book, Walter R., to Anaconda American Brass Co. Fuse clip. 3,287,690, 11-22-66, Cl. 339—258.

Boone, Christopher B. Screwless terminal fuseholder. 3,287,528, 11-22-66, Cl. 200—129.

Boppel, Henry L., to The Sheffield Corp. Forming method and apparatus. 3,286,410, 11-22-66, Cl. 51—165.

Borchhardt, Dieter: *See*—
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Borck, Walter C., Jr., and R. C. McReynolds, to Westinghouse Electric Corp. Computer control. 3,287,702, 11-22-66, Cl. 340—172.5.

Borden Co., The: *See*—
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Wechsler, Harry, and Kline. 3,287,480.

Borg-Warner Corp.: *See*—
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Roeske, Eugene A. 3,286,635.
Underwood, Herbert N., and Dietrich. 3,287,039.
Zeidler, Reinhold C. 3,286,803.

Borner, Manfred, E. Durre, W. Hirsch, G. Semmler, and H. Schuessler, to Telefunken Patentverwertungsgesellschaft m.b.H. Tubular electrostrictive resonator-type transducer. 3,287,579, 11-22-66, Cl. 310—8.2.

Borth, Paul F., to Photo-Engravers Research Inc. Etching of printed circuit components. 3,287,191, 11-22-66, Cl. 156—3.

Bosch, Lawrence R. Paddle and ball game with bell goals. 3,287,018, 11-22-66, Cl. 273—85.

Boseley, Joseph J. Battery switch. 3,287,532, 11-22-66, Cl. 200—158.

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Boswinkle, George, and L. H. Hinkel, to Whirlpool Corp. Vacuum cleaner. 3,286,444, 11-22-66, Cl. 55—215.

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Botkin, Robert J., to American Metal Products Co. Pedestal base. 3,286,966, 11-22-66, Cl. 248—188.7.

Bourcier de Carbon, Christian M. L. L.: *See*—
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Boutelant, Paul, to Compagnie Generale d'Electricite. Low attention very high frequency time delay vs. frequency variation correcting network. 3,287,667, 11-22-66, Cl. 333—28.

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Bowlby, Roland L.: *See*—
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Boyce, Clarence A., Jr., and M. E. Wasilisin, to Martin-Marietta Corp. Method of molding bi-cellular thermoelectric couples. 3,287,473, 11-22-66, Cl. 264—25.

Boyce, William C., and H. E. Freeman, to United States of America, Air Force. Low-profile, high-strength latch. 3,286,317, 11-22-66, Cl. 24—223.

Boyles, John H. Independently variable stroke multiple needle tufting machine. 3,286,979, 11-22-66, Cl. 112—266.

Bosek, John S., to Continental Can Co., Inc. Easy opening can. 3,286,874, 11-22-66, Cl. 220—46.

Brack, Alfred, H. Gleinig, R. Raue, and H. Kleiner, to Farbenfabriken Bayer Aktiengesellschaft. Certain 2-heterocyclic iminobens [c,d] indole dyestuffs. 3,287,465, 11-22-66, Cl. 260—305.

Bracki, Kenneth A.: *See*—
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Bragg, Calvin J.: *See*—
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Bragg, Kenneth R., to Parker-Hannifin Corp. Coupling for tubes. 3,287,034, 11-22-66, Cl. 285—115.

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Brainard, Wallace E. and E. F. Drechsler, to Kearney & Trecker Corp. Machine tool with a tool changer. 3,286,344, 11-22-66, Cl. 29—568.

Braithwaite, David G., to Nalco Chemical Co. Electrochemical cell including a tubular foraminous partition. 3,287,248, 11-22-66, Cl. 204—260.

Braithwaite, David G., J. S. D'Amico, P. L. Gross, and W. Hanzel, to Nalco Chemical Co. Electrochemical cell for the production of organo metallic compounds. 3,287,249, 11-22-66, Cl. 204—260.

Brandes, Arthur. Rack for storing and dispensing containers. 3,286,846, 11-22-66, Cl. 211—49.

Brandt, Lawrence: *See*—
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Brandt, Thomas F., to General Electric Co. Electric fuse element having cooling tabs. 3,287,526, 11-22-66, Cl. 200—120.

Brannock, Kent C., and H. E. Davis, to Eastman Kodak Co. Process and intermediates for manufacture of 2-(dialkylmethyl)-5-alkyl-2-cyclohexen-1-ones. 3,287,372, 11-22-66, Cl. 260—345.9.

Branstrator, Wayne P. Floor and wall construction. 3,286,421, 11-22-66, Cl. 52—250.

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Braun, Gerhard, to Siemens & Halske Aktiengesellschaft. Logarithmic periodic antenna having gradient, relative to ground plane, varying along length of antenna. 3,287,731, 11-22-66, Cl. 343—792.5.

Bray, Walter J., Jr., to Monsanto Co. Spray-dried vinyl acetate dibutyl maleate copolymer, with pigment, thickener, dispersing agent and plasticizer. 3,287,290, 11-22-66, Cl. 260—17.

Brian, Ross F.: *See*—
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Brice, William A., to Bancroft & Martin, Inc. Ball valve. 3,286,981, 11-22-66, Cl. 251—315.

Bricout, Henri, to Societe anonyme dite: Societe d'Applications des Machines Motrices. Automatic reversing and metering device for central lubrication systems. 3,286,793, 11-22-66, Cl. 184—7.

Bridger, Robert F.: *See*—
McCabe, Leo J., and Bridger. 3,287,270.

Bridges, Raymond C. Hydraulic clamping and tensioning means for saw blades. 3,286,987, 11-22-66, Cl. 254—51.

Brigham, Roger S., to Continental Can Co., Inc. Chain carrier clip. 3,286,817, 11-22-66, Cl. 198—179.

Brightman, Barrie, and D. C. Rimlinger, to Stromberg-Carlson Corp. Conference circuit. 3,287,499, 11-22-66, Cl. 179—1.

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Broadbent, Kent D., to Interstate Electronics Corp. Thin film shift register. 3,287,711, 11-22-66, Cl. 340—174.

Brondyke, Kenneth J., and R. T. Craig, to Aluminum Co. of America. Method and apparatus for horizontal casting of ingots. 3,286,309, 11-22-66, Cl. 22—57.2.

Broniewski, Bohdan, and A. E. Wolfhugel, to Societe Generale de Constructions Electriques et Mecaniques (Alsthom). Electrical machines. 3,287,580, 11-22-66, Cl. 310—58.

Brooks, Norman B., to High Voltage Engineering Corp. Ion source having an expansion cup for effecting beam divergence. 3,287,598, 11-22-66, Cl. 315—111.

Brosnan, Dennis W. Rail renewal process. 3,286,648, 11-22-66, Cl. 104—2.

Brossi, Arnold, to Hoffmann-LaRoche Inc. Bismuth iodide complex of salts of racemic 2-dehydroemetine. 3,287,456, 11-22-66, Cl. 260—270.

Broun, Thorowgood T., Jr., H. H. Hoekje, A. Martinsons, and P. P. Anthony, to Pittsburgh Plate Glass Co. Alkali-chlorine cell containing improved anode. 3,287,250, 11-22-66, Cl. 204—263.

Broussalian, George L., to Monsanto Co. Complexes of SO with nitriles, method of preparation thereof and method of sulfonation or sulfation therewith. 3,287,389, 11-22-66, Cl. 260—458.

Broussard, Leo, W. J. Mattox, W. F. Arey, W. A. Knarr, and S. M. Laurent, to Esso Research and Engineering Co. Crystalline synthetic zeolites for the hydrocracking of hydrocarbons. 3,287,255, 11-22-66, Cl. 208—111.

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Brown, Arnold R., to General Motors Corp. Wheel cover. 3,287,067, 11-22-66, Cl. 301—37.

Brown, Carl F., Jr., and G. F. Fiorstedt, to Prismo Safety Corp. Method of plating metal article with metal. 3,287,157, 11-22-66, Cl. 117—102.

Brown, Cecil S. Electric cooker with heated rock beds. 3,286,620, 11-22-66, Cl. 99—446.

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Brown, D. S., Co., The: *See*—
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Brown, David Tractors Ltd.: *See*—
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Brown, Donald W.: *See*—
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Brown, Howard R., to The D. S. Brown Co. Joint seals. 3,286,425, 11-22-66, Cl. 52—396.

Brown, Hugh M., to The Sheffield Corp. Fiber separator. 3,286,306, 11-22-66, Cl. 19—65.

Brown, Maudestean C. Disposable baby bibs. 3,286,279, 11-22-66, Cl. 2—49.

Brown, Raymond L.: *See*—
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Brown, Robert O., R. W. Gaul, G. B. Leyland, and J. D. Conrad, Jr., to Westinghouse Electric Corp. Valve structure. 3,286,979, 11-22-66, Cl. 251—118.

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Brugger, Robert, and G. Voss, to Langbein-Pfanhauser Werke A.G. Electrodeposition of copper and solutions therefor. 3,287,236, 11-22-66, Cl. 204—52.

Brunton, Robert H., III, to United States of America, Air Force. High speed semiconductor microwave switch. 3,287,665, 11-22-66, Cl. 333—7.

Bruscaglioni, Raffaello, to Filotecnica Salmoiraghi S.p.A. Activated-fin installation on board ships. 3,286,678, 11-22-66, Cl. 114—126.

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Burk, Eugen, to Siemens-Electrogerate Aktiengesellschaft. Apparatus for hydraulic deep-drawing of sheet metal. 3,286,496, 11-22-66, Cl. 72—54.

Burkhardt, Rolf, to Compur-Werk Gesellschaft mit beschrankter Haftung & Co. Microtome. 3,286,575, 11-22-66, Cl. 83—699.

Burklo, Donald C., to Kaiser Aluminum & Chemical Corp. Apparatus for mixing and gunning slurrils. 3,286,995, 11-22-66, Cl. 259—169.

Burnett, Lonnie A., H. M. Fuldner, N. D. Neal, and J. W. Wilson, to The Cincinnati Milling Machine Co. Automatic control system. 3,287,545, 11-22-66, Cl. 235—151.11.

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Hsi, Richard S. P., to The Upjohn Co. N-lower alkyl carbamates of salicycloylmorpholide. 3,287,364, 11-22-66, Cl. 260—247.2.
Hubbard, David C., C. C. Cagle, M. H. Fink, and C. H. Le Vee, to A. B. Chance Co. Insulated sectionalizing spacer. 3,287,491, 11-22-66, Cl. 174—138.
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Juillen-Davin, Jean, to Crouzet. Device for measuring forces by application of the Hall effect. 3,286,528, 11-22-66, Cl. 73—398.
Junta, Sebastian, and P. J. Kovacs, to United States Steel Corp. Apparatus for coiling wire. 3,286,499, 11-22-66, Cl. 72—161.
Jurgeleit, Herbert F. and M. M. Austin, to United States Rubber Co. Molding apparatus and method employing thermal expansion and contraction. 3,287,486, 11-22-66, Cl. 264—325.
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Moore, James E., Jr., to Lindsay Controls, Inc. Fire-intrusion automatic telephone dial alarm device. 3,287,500, 11–22–66, Cl. 179—5.

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Rockerath, John L., J. E. Goppert, and H. J. Schreck, to Jet Sew Inc. Continuous zipper sewing apparatus and method. 3,286,669, 11-22-66, Cl. 112—265.
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Scharre, Edward W., to Anaconda Aluminum Co. Container. 3,286,909, 11-22-66, Cl. 229—51.

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Schembri, William T. Access door. 3,286,405, 11-22-66, Cl. 49—463.

Scheper, George W., Jr., to General Electric Co. Reversible axial flow gas turbine. 3,286,982, 11-22-66, Cl. 253—73.

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Schlenker, Norman E. Reinforced shell construction. 3,286,415, 11-22-66, Cl. 52—86.

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Schrader, Martin W. Connecting rod assembly. 3,286,535, 11-22-66, Cl. 74—44.

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Southern, Derek, F. H. Waight, and A. C. B. MacPhail, to Shell Oil Co. Lubricating composition. 3,287,266, 11-22-66, Cl. 252—46.7.

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Sowa, Frank J. Method of controlling weeds. 3,287,103, 11-22-66, Cl. 71—2.3.

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Spencer, John W., and C. C. Rice. Boiler superheater tube reaming assembly. 3,286,553, 11-22-66, Cl. 77—2.

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CLASSIFICATION OF PATENTS

ISSUED NOVEMBER 22, 1966

NOTE.—First number, class; second number, subclass; third number, patent number

2– 2.1	3,286,274	33– 50	3,286,352	54– 82	3,286,441	73–116	3,286,517	91–434	3,286,601	106– 56	3,287,144
3	3,286,275	174	3,286,353	55– 23	3,286,442		3,286,518	92– 28	3,286,602	90	3,287,145
49	3,286,279		3,286,354	211	3,286,443	159	3,286,519	94– 8	3,286,603	281	3,287,146
91	3,286,276	184.5	3,286,355	215	3,286,444	178	3,286,520	22	3,286,604	288	3,287,147
115	3,286,277	214	3,286,356	350	3,286,445	189	3,286,521	44	3,286,605	107– 14	3,286,660
116	3,286,278	215	3,286,357	357	3,286,446	194	3,286,522	45	3,286,606		3,286,661
4–252	3,286,280	223	3,286,358	56– 9	3,286,447	301	3,286,523	51	3,286,607	108–144	3,286,662
5–247	3,286,281	34– 12	3,286,359	208	3,286,448	341	3,286,524	95– 4.5	3,286,608		3,286,663
296	3,286,282	23	3,286,360	57– 12	3,286,449	359	3,286,525	10	3,286,609	109– 7	3,286,664
317	3,286,283	31	3,286,361	58.3	3,286,450	393	3,286,526		3,286,610	82	3,286,665
335	3,286,284	33	3,286,362	58.32	3,286,451	395	3,286,527	11	3,286,611	110– 28	3,286,666
348	3,286,285	45	3,286,363	142	3,286,452	398	3,286,528		3,286,612	112–176	3,286,667
8–115.5	3,287,082		3,286,364	58– 23	3,286,453	418	3,286,529	31	3,286,613	265	3,286,668
116.4	3,287,083	92	3,286,365	42	3,286,454	432	3,286,530	63	3,286,614		3,286,669
9– 1	3,286,286		3,286,366	59	3,286,455		3,286,531	77.5	3,286,615	266	3,286,670
308	3,286,287	123	3,286,367	85.5	3,286,456	503	3,286,532	89	3,286,616	113–119	3,286,671
12– 1	3,286,288	151	3,286,368	116	3,286,457	74– 5.6	3,286,533	96– 1	3,287,113	114– 54	3,286,672
15– 49	3,286,289	155	3,286,369	59– 74	3,286,458	44	3,286,534		3,287,114	66.5	3,286,673
	3,286,290	163	3,286,370	60– 13	3,286,459		3,286,535		3,287,115	67	3,286,674
76	3,286,291	35– 8	3,286,371	26.11	3,286,460	84	3,286,536		3,287,116	74	3,286,675
77	3,286,292	9	3,286,372	39.14	3,286,461	193	3,286,537		3,287,117	102	3,286,676
104.16	3,286,293	12	3,286,373	39.47	3,286,462	215	3,286,538		3,287,118	125	3,286,677
258	3,286,294	45	3,286,374	39.48	3,286,463	230.17	3,286,540	1.5	3,287,119	126	3,286,678
410	3,286,295	36– 7.1	3,286,375	53	3,286,464	230.4	3,286,539		3,287,120	208	3,286,679
422	3,286,296	37– 43	3,286,376	54.5	3,286,465	339	3,286,541		3,287,121	219	3,286,680
555	3,286,297	118	3,286,377	105	3,286,466	424.8	3,286,542		3,287,122	115– 34	3,286,681
16– 44	3,286,298	142	3,286,378	202	3,286,467	472	3,286,543		3,287,123	116–173	3,286,682
87.4	3,286,299		3,286,379	203	3,286,468	483	3,286,544	29	3,287,124	117– 2	3,287,148
138	3,286,300	40– 19.5	3,286,380	208	Re.26,116	501	3,286,545		3,287,125	15	3,287,149
197	3,286,301	23	3,286,381	224	3,286,469	567	3,286,546		3,287,126	17.5	3,287,150
18– 2	3,286,302	102	3,286,382	229	3,286,470	579	3,286,547		3,287,127	33.5	3,287,151
5	3,286,303		3,286,383	254	3,286,471	626	3,286,548	33	3,287,128	34	3,287,152
17	3,286,304	106.52	3,286,384	256	3,286,472	752	3,286,549	35	3,287,129	36.1	3,287,153
19	3,286,305	126	3,286,385	258	3,286,473	798	3,286,550		3,287,130	36.9	3,287,154
19– 65	3,286,306	129	3,286,386	260	3,286,474	75– 10	3,287,107	45	3,287,131	54	3,287,155
66	3,286,307	154	3,286,387	61– 36	3,286,475		3,287,108	53	3,287,132	72	3,287,156
22– 3	3,286,308	336	3,286,388	72.6	3,286,476	66	3,287,109	77	3,287,133	102	3,287,157
57.2	3,286,309	43– 57.5	3,286,390	62– 63	3,286,477	129	3,287,110		3,287,134	114	3,287,158
	3,286,310	46– 29	3,286,391	135	3,286,478	177	3,287,111	87	3,287,135		3,287,159
69	3,286,311	74	3,286,392	186	3,286,479	222	3,287,112	106	3,287,136	132	3,287,160
129	3,286,312	111	3,286,393	188	3,286,480	76–101	3,286,551	107	3,287,137	212	3,287,161
23– 23	3,287,084	169	3,286,394	202	3,286,481	77– 2	3,286,552	98– 2	3,286,617	230	3,287,162
79	3,287,085	192	3,286,395	218	3,286,482		3,286,553	99– 93	3,287,138	118– 2	3,286,683
198	3,287,086	232	3,286,396	371	3,286,483	22	3,286,554	94	3,287,139	48	3,286,684
202	3,287,087	244	3,286,397	391	3,286,484	32.3	3,286,555	192	3,287,140	49.1	3,286,685
230	3,287,088	47– 1.1	3,286,398	477	3,286,485	57	3,286,556	302	3,286,618	76	3,286,686
254	3,287,089		3,286,399	63– 32	3,286,486	75.5	3,286,557	362	3,286,619	239	3,286,687
277	3,287,090	1.41	3,286,403	64– 1	3,286,487	81– 1	3,286,558	446	3,286,620	323	3,286,688
285	3,287,091	8	3,286,400	12	3,286,488	43	3,286,559	100– 45	3,286,621	411	3,286,689
	3,287,092	57.5	3,286,401	15	3,286,489	58.1	3,286,560	101– 37	3,286,623	504	3,286,690
347	3,287,093		3,286,402	65– 2	3,287,095	130	3,286,561	40	3,286,624	119– 1	3,286,691
24– 16	3,286,313	48–192	3,287,094	3	3,287,096	82– 36	3,286,562	93	3,286,625	52	3,286,692
20	3,286,314	49–384	3,286,404	40	3,287,097	83– 5	3,286,563	129	3,286,626	103	3,286,693
73	3,286,315	441	3,286,389	133	3,287,098	24	3,286,564	218	3,286,622		3,286,694
221	3,286,316	463	3,286,405	66–202	3,286,490	54	3,286,565	364	3,286,627	120– 44	3,286,695
223	3,286,317	51– 8	3,286,406	67– 7.1	3,286,491	68	3,286,566	102– 28	3,286,628	122– 34	3,286,696
243	3,286,318	33	3,286,407	21	3,286,492	80	3,286,567	49	3,286,629	123– 8	3,286,697
253	3,286,319	105	3,286,408	68– 5	3,286,493	136	3,286,568		3,286,630		3,286,698
28– 58	3,286,320	165	3,286,409	70–371	3,286,773	174	3,286,569	70.2	3,286,631		3,286,699
72	3,286,321		3,286,410	419	3,286,494	184	3,286,570	84	3,286,632		3,286,700
76	3,286,322	307	3,286,411	71– 2.3	3,287,099	272	3,286,571		3,286,633		3,286,701
29– 25.19	3,286,323	52– 16	3,286,413		3,287,100	467	3,286,572		3,286,634	90	3,286,702
27	3,286,324	66	3,286,414		3,287,101	490	3,286,573	103– 3	3,286,635	122	3,286,703
116	3,286,325	86	3,286,415		3,287,102	501	3,286,574	25	3,286,636	188	3,286,704
155.55	3,286,326	153	3,286,416		3,287,103	699	3,286,575	37	3,286,637	126– 25	3,286,705
155.68	3,286,327	204	3,286,417	2.4	3,287,104	84–466	3,286,576	38	3,286,638	194	3,286,706
157.3	3,286,328	223	3,286,418	2.5	3,287,105	85– 1	3,286,577	41	3,286,639	128– 24	3,286,707
159.2	3,286,329	225	3,286,419	2.7	3,287,106	36	3,286,578	44	3,286,640		3,286,708
219	3,286,330	241	3,286,420	72– 8	3,286,495	41	3,286,579	93	3,286,641	25	3,286,709
235	3,286,331	250	3,286,421	54	3,286,496	77	3,286,580	117	3,286,642	29	3,286,710
243.52	3,286,332	287	3,286,422	56	3,286,497	88– 14	3,286,581	126	3,286,643	40	3,286,711
254	3,286,333	288	3,286,423	61	3,286,498		3,286,582	128	3,286,644	66	3,286,712
401	3,286,335	291	3,286,424	161	3,286,499		3,286,583	130	3,286,645	156	3,286,713
411	3,286,336	396	3,286,425	219	3,286,500		3,286,584	136	3,286,646	702.1	3,287,033
423	3,286,337	481	3,286,426	237	3,286,501	24	3,286,585	162	3,286,647	129– 31	3,286,714
446	3,286,338	483	3,286,427	259	3,286,502		3,286,586	104– 2	3,286,648	131–198	3,286,715
466	3,286,339	496	3,286,428	466	3,286,503		3,286,587	17	3,286,649	132– 40	3,286,716
471.1	3,286,340	621	3,286,412	73– 1	3,286,504		3,286,588	106	3,286,650	133– 8	3,286,717
	3,286,341	727	3,286,429	7	3,286,505		3,286,589	126	3,286,651	134–140	3,286,718
482	3,286,342	53– 21	3,286,430	23	3,286,506		3,286,590	147	3,286,652	136– 6	3,287,163
528	3,286,334	37	3,286,431	30	3,286,507		3,286,591	105–165	3,286,653	9	3,287,164
	3,286,343	38	3,286,432	38	3,286,508	57	3,286,592	177	3,286,654	65	3,287,165
568	3,286,344	39	3,286,433		3,286,509	90– 1.4	3,286,593	197	3,286,655	68	3,287,166
30– 4	3,286,345	64	3,286,434	53	3,286,510	11	3,286,594	199	3,286,656	86	3,287,167
24	3,286,346	117	3,286,435	55	3,286,511		3,286,595	215	3,286,657		3,287,168
229	3,286,347	281	3,286,436	88	3,286,512	13.05	3,286,596	227	3,286,658		3,287,169
289	3,286,348	296	3,286,437	88.5	3,286,513		3,286,597	420	3,286,659	100	3,287,170
292	3,286,349	379	3,286,438		3,286,514	13.1	3,286,598	106– 13	3,287,141	120	3,287,171
32– 40	3,286,350	380	3,286,439	95.5	3,286,515	91– 36	3,286,599	14	3,287,142	122	3,287,172
33– 42	3,286,351	54– 44	3,286,440	100	3,286,516	411	3,286,600	55	3,287,143	177	3,287,173

136–179	3,287,174	167– 72	3,287,219	200–129	3,287,528	220– 54	3,286,875	248– 74	3,286,963	260– 78	3,287,322
182	3,287,175	73	3,287,220	130	3,287,529	73	3,286,876	188.7	3,286,964		3,287,323
204	3,287,176	74	3,287,221	142	3,287,530	83	3,286,877		3,286,965		3,287,324
137– 83	3,286,719	84	3,287,222	144	3,287,531	85	3,286,878		3,286,966	78.3	3,287,325
119	3,286,720	90	3,287,223	158	3,287,532	221– 36	3,286,879	201	3,286,967		3,287,326
218	3,286,721	171– 1	3,286,774	162	3,287,533	82	3,286,880	226	3,286,968	78.5	3,287,327
	3,286,722	173– 48	3,286,775	168	3,287,534	173	3,286,881	359	3,286,969	79	3,287,328
344	3,286,723		3,286,776		3,287,535	222– 61	3,286,882	404	3,286,970	79.3	3,287,329
426	3,286,724	174– 71	3,287,487	202–187	3,287,233	131	3,286,884	429	3,286,971	79.5	3,287,330
484.2	3,286,725	81	3,287,488	203– 49	3,287,234	173	3,286,883	249– 24	3,286,972	80.5	3,287,331
505.18	3,286,726	102	3,287,489	55	3,287,235	182	3,286,885	82	3,286,973	82	3,287,332
516.13	3,286,727		3,287,490	204– 52	3,287,236	196	3,286,886	141	3,286,974	83.7	3,287,333
525.3	3,286,728	138	3,287,491	140	3,287,237	386	3,286,887	192	3,286,975	86.7	3,287,334
543.15	3,286,729	175– 52	3,286,777	140.5	3,287,238	223– 46	3,286,888	219	3,286,976		3,287,335
550	3,286,730	69	3,286,778	143	3,287,239	70	3,286,889	250– 43.5	3,287,556	87.1	3,287,336
599	3,286,731	176– 18	3,287,224	163	3,287,240	224– 17	3,286,890		3,287,557	89.1	3,287,337
601	3,286,732	33	3,287,225		3,287,241	39	3,286,891	49.5	3,287,558		3,287,338
624.2	3,286,733	37	3,287,226	165	3,287,242	42.1	3,286,892	65	3,287,559	92.1	3,287,339
625.41	3,286,735	40	3,287,227	180	3,287,244	225– 2	3,286,893	83.6	3,287,560	93.7	3,287,340
625.64	3,286,734	54	3,287,228	192	3,287,243	103	3,286,894	105	3,287,561		3,287,341
628	3,286,736	65	3,287,229	224	3,287,245	226– 95	3,286,895	203	3,287,562		3,287,342
138–144	3,286,737	77	3,287,230		3,287,246	97	3,286,896	219	3,287,563		3,287,343
139–122	3,286,738	78	3,287,231	243	3,287,247	111	3,286,897	222	3,287,564	94.7	3,287,344
389	3,286,739	178– 5.4	3,287,492	260	3,287,248	188	3,286,898	251– 46	3,286,977	96.5	3,287,345
140–123.6	RE.26,114		3,287,493		3,287,249	227– 10	3,286,899	112	3,286,978	112.5	3,287,346
147	3,286,740		3,287,494	263	3,287,250	229– 2.5	3,286,902	118	3,286,979	158	3,287,347
141– 18	3,286,741	7.1	3,287,495	270	3,287,251		3,286,903	302	3,286,980	180	3,287,348
27	3,286,742	7.2	3,287,496	206– .4	3,286,820	4.5	3,286,904	315	3,286,981	202	3,287,349
143–105	3,286,743	7.88	3,287,497	1	3,286,821	9	3,286,905	252– 28	3,287,264	209	3,287,350
168	3,286,744	46	3,287,498	2	3,286,822	16	3,286,900	42.7	3,287,265	211.5	3,287,351
144–178	3,286,745	179– 1	3,287,499	39	3,286,823	23	3,286,901	46.7	3,287,266		3,287,352
208	3,286,746	5	3,287,500	45.33	3,286,824	37	3,286,906	47.5	3,287,267	231	3,287,353
	3,286,747	15	3,287,501	46	3,286,825	41	3,286,907	48.4	3,287,268	239	3,287,354
238	3,286,748	18	3,287,502	47	3,286,826	44	3,286,908	49.6	3,287,269	239.5	3,287,355
145– 50	3,286,749	100.2	3,287,503		3,286,827	51	3,286,909		3,287,270	239.55	3,287,356
148– 6.16	3,287,178		3,287,504	50	3,286,828		3,286,910	49.9	3,287,271		3,287,357
6.21	3,287,179		3,287,505	52	3,286,829	230– 55	3,286,911	51.5	3,287,272	240	3,287,358
11.5	3,287,180		3,287,508	56	3,286,830	145	3,286,912		3,287,283	242	3,287,359
13	3,287,177	110	3,287,506		3,286,831	152	3,286,913	56	3,287,273	243	3,287,360
20.3	3,287,181	170.6	3,287,507		3,286,832	232	3,286,914	73	3,287,274		3,287,361
33.5	3,287,182	175.3	3,287,509	65	3,286,833	234– 17	3,286,915	75	3,287,275		3,287,362
111	3,287,183	180– 7	3,286,779		3,286,834	235– 1	3,286,916	105	3,287,276	246	3,287,363
113	3,287,184		3,286,780	80	3,286,835	30	3,286,917	106	3,287,277	247.2	3,287,364
159	3,287,185	52	3,286,781	84	3,286,836	50	3,286,918	301.1	3,287,278	247.5	3,287,450
174	3,287,186	181– .5	3,286,782	208– 59	3,287,252	60	3,286,919		3,287,279	249.9	3,287,365
187	3,287,187		3,286,783	65	3,287,253	61.12	3,287,543	435	3,287,280		3,287,366
	3,287,188	33	3,286,784	68	3,287,254	70	3,286,920	455	3,287,281	250	3,287,451
149– 8	3,287,189		3,286,785	111	3,287,255	92	3,287,544		3,287,282	252	3,287,452
12	3,287,190	50	3,286,786		3,287,256	98	3,286,921	518	3,287,284	256.5	3,287,453
41	RE.26,115	67	3,286,787		3,287,257	151.11	3,287,545	253– 73	3,286,982	268	3,287,454
150– 29	3,286,750	182–155	3,286,788	143	3,287,258	153	3,287,546		3,286,983	270	3,287,455
35	3,286,751	163	3,286,789	264	3,287,259	236– 9	3,286,922	79	3,286,984		3,287,456
49	3,286,752	184– 6	3,286,790	321	3,287,260	21	3,286,923	254– 2	3,286,985	279	3,287,457
52	3,286,753		3,286,791	330	3,287,261	46	3,286,924	6	3,286,986	287	3,287,458
151– 37	3,286,754		3,286,792	341	3,287,262	59	3,286,925	51	3,286,987	289	3,287,459
69	3,286,755	7	3,286,793	209–166	3,286,837		3,286,926	131	3,286,988	293.2	3,287,460
152–209	3,286,756	186– 1	3,286,794	210– 48	3,287,263	239– 23	3,286,927	168	3,286,989	296	3,287,461
330	3,286,757	188– 72	3,286,795	95	3,286,838	150	3,286,928	172	3,286,990	300	3,287,462
356	3,286,758	96	3,286,796	101	3,286,839	242	3,286,929	259– 1	3,286,991	302	3,287,463
358	3,286,759	97	3,286,797	134	3,286,840	265.27	3,286,930	4	3,286,992		3,287,464
156– 3	3,287,191	195	3,286,798	223	3,286,841	284	3,286,931	107	3,286,993	305	3,287,465
	3,287,192	218	3,286,799	275	3,286,842		3,286,932	135	3,286,994	306.7	3,287,466
59	3,287,193	190– 49	3,286,800	332	3,286,843	304	3,286,933	169	3,286,995		3,287,467
144	3,287,194	192– 53	3,286,801	523	3,286,844	327	3,286,934	177	3,286,996	309	3,287,468
251	3,287,195	98	3,286,802	211– 34	3,286,845	428.5	3,286,935	260– 2	3,287,285	309.6	3,287,469
254	3,287,196	111	3,286,803	49	3,286,846	240– 6.46	3,287,547	2.5	3,287,286	314.5	3,287,470
272	3,287,197	193– 7	3,286,804	65	3,286,847	7.1	3,287,548		3,287,287	326.3	3,287,471
518	3,287,198	194– 9	3,286,805	71	3,286,848	8.1	3,287,549	4	3,287,288	327	3,287,367
583	3,287,199	195– 28	3,287,232	74	3,286,849	8.2	3,287,550	8	3,287,289		3,287,368
157– 1.1	3,286,760	197– 16	3,286,806	105.1	3,286,850	41.1	3,287,551	17	3,287,290		3,287,369
158– 28	3,286,761	17	3,286,807	212– 3	3,286,851	41.15	3,287,552	18	3,287,291		3,287,370
123	3,286,762	172	3,286,808	38	3,286,852	52	3,287,553	22	3,287,292	340.9	3,287,371
159– 2	3,286,763	198– 31	3,286,812	128	3,286,853	241–100.5	3,286,936		3,287,293	345.9	3,287,372
44	3,286,764	32	3,286,809	214– 1	3,286,854	105	3,286,937		3,287,294	346.3	3,287,373
161– 1	3,287,200	33	3,286,810	3	3,286,855	162	3,286,938		3,287,295	347.4	3,287,374
	3,287,201		3,286,813	8	3,286,856	175	3,286,939		3,287,296	348	3,287,375
60	3,287,202	34	3,286,814	38	3,286,857	259	3,286,940	23	3,287,297	349	3,287,376
123	3,287,203		3,286,815	83.26	3,286,858	242– 26.1	3,286,941		3,287,298	397.2	3,287,377
175	3,287,204	38	3,286,811	152	3,286,859	55.11	3,286,942		3,287,299	397.3	3,287,378
192	3,287,205	149	3,286,816	303	3,286,860	55.12	3,286,943		3,287,300	397.4	3,287,379
162–168	3,287,206	179	3,286,817	314	3,286,861	66	3,286,944	23.7	3,287,301	397.45	3,287,380
186	3,287,207	204	3,286,818	519	3,286,862	71.2	3,286,945	28	3,287,302	401	3,287,381
227	3,287,208	220	3,286,819	656	3,286,863	107.2	3,286,946	29.2	3,287,303	410	3,287,382
165– 2	3,286,765	200– 6	3,287,510	215– 11	3,286,864	128	3,286,947	29.6	3,287,304	410.9	3,287,383
14	3,286,766	14	3,287,511	13	3,286,865	129.51	3,286,948		3,287,305	414	3,287,384
82	3,286,767		3,287,512	40	3,286,866	130.2	3,286,949		3,287,306	417	3,287,385
166– 9	3,286,768	16	3,287,513		3,286,867		3,286,950		3,287,307	429.7	3,287,386
39	3,286,769	17	3,287,514		3,286,868	244– 1	3,286,951	31.2	3,287,308	453	3,287,387
42	3,286,770	38	3,287,515	217– 12	3,286,869		3,286,952	34.2	3,287,309	455	3,287,388
177	3,286,771	47	3,287,516	219– 62	3,287,536		3,286,953	37	3,287,310	456	3,287,390
179	3,286,772	50	3,287,517	69	3,287,537		3,286,954		3,287,311	458	3,287,389
167– 22	3,287,209	61.08	3,287,518	89	3,287,538	14	3,286,955	41	3,287,312	462	3,287,391
30	3,287,210	81.9	3,287,519	100	3,287,539		3,286,956		3,287,313	464	3,287,392
	3,287,211	86.5	3,287,520	118	3,287,540	16	3,286,957	45.7	3,287,315	465	3,287,393
	3,287,212	114	3,287,521	241	3,287,541	84	3,286,958	45.75	3,287,314	465.3	3,287,394
	3,287,213	116	3,287,522	244	3,287,542	148	3,286,959	47	3,287,316	468	3,287,395
39	3,287,214		3,287,523	220– 5	3,286,870	246– 35	3,287,554	57	3,287,317	471	3,287,396
65	3,287,215	120	3,287,524		3,286,871	187	3,287,555	72	3,287,318	479	3,287,397
	3,287,216		3,287,525	41	3,286,872	248– 20	3,286,960	75	3,287,319	482	3,287,398
	3,287,217		3,287,526	44	3,286,873	44	3,286,961		3,287,320	486	3,287,399
	3,287,218	127	3,287,527	48	3,286,874		3,286,962	78	3,287,321	491	3,287,400

260–494	3,287,401	261– 92	3,287,002	289– 17	3,287,042	312–291	3,287,079	324– 37	3,287,632	338–318	3,287,685
498	3,287,402	94	3,287,003	290– 40	3,287,565	313– 59	3,287,581	51	3,287,633	339– 17	3,287,686
515	3,287,403	114	3,287,004	292– 9	3,287,043	63	3,287,582	52	3,287,634	36	3,287,687
521	3,287,404	263– 40	3,287,005	17	3,287,044	75	3,287,583	54	3,287,635	56	3,287,688
537	3,287,405	264– 13	3,287,472	114	3,287,045	84	3,287,584		3,287,636	92	3,287,689
543	3,287,406	25	3,287,473	169	3,287,046	89	3,287,585	62	3,287,637	258	3,287,690
555	3,287,407		3,287,474		3,287,047	109	3,287,586	71	3,287,638	340– 7	3,287,691
	3,287,408	34	3,287,475	216	3,287,048	113	3,287,587	91	3,287,639	10	3,287,692
558	3,287,409	36	3,287,476	229	3,287,049	154	3,287,588	113	3,287,640	15	3,287,693
583	3,287,410	53	3,287,477	230	3,287,050	161	3,287,589	122	3,287,641	15.5	3,287,694
585	3,287,411	63	3,287,478	251.5	3,287,051	180	3,287,590	149	3,287,642	17	3,287,695
586	3,287,412	122	3,287,479	254	3,287,052	271	3,287,591	158	3,287,643		3,287,696
593	3,287,413		3,287,480	256.63	3,287,053	330	3,287,592	325–316	3,287,644	146.1	3,287,697
606	3,287,414	139	3,287,481	336.3	3,287,054	346	3,287,593	344	3,287,645		3,287,698
606.5	3,287,415	150	3,287,482	341.12	3,287,055	315– 27	3,287,594	363	3,287,646	164	3,287,699
	3,287,416	161	3,287,483	347	3,287,056		3,287,595	328– 34	3,287,647	166	3,287,700
609	3,287,417	245	3,287,484	294– 81	3,287,057		3,287,596	48	3,287,648	171	3,287,701
613	3,287,421	263	3,287,485	296– 37	3,287,058	71	3,287,597	55	3,287,649	172.5	3,287,702
614	3,287,418	325	3,287,486	297– 69	3,287,059	111	3,287,598	63	3,287,650		3,287,703
615	3,287,419	266– 11	3,287,006	332	3,287,060	126	3,287,599	150	3,287,651		3,287,704
	3,287,420	267– 1	3,287,007	385	3,287,061	169	3,287,600	330– 14	3,287,652		3,287,705
624	3,287,422	64	3,287,008	388	3,287,062	187	3,287,601	18	3,287,653	173	3,287,706
631	3,287,423	111	3,287,009		3,287,063	316– 2	3,287,080	53	3,287,654	174	3,287,707
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653.3	3,287,425	12	3,287,011	426	3,287,065	18	3,287,603	16	3,287,656		3,287,709
653.8	3,287,426	18	3,287,012	299– 37	3,287,066	100	3,287,604	17	3,287,657		3,287,710
666	3,287,427	45	3,287,013	301– 37	3,287,067	101	3,287,605	69	3,287,658		3,287,711
	3,287,428	51	3,287,014	302– 14	3,287,068		3,287,606	94	3,287,659		3,287,712
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666.5	3,287,430	272– 58	3,287,016	72	3,287,567	142	3,287,608	98	3,287,661		3,287,714
672	3,287,431	273– 14	3,287,017	88.3	3,287,568	234	3,287,609	111	3,287,662	184	3,287,715
676	3,287,432	85	3,287,018	88.5	3,287,569		3,287,610		3,287,663	187	3,287,716
677	3,287,433	105.4	3,287,019		3,287,570	235	3,287,611	332– 23	3,287,664	213	3,287,717
679	3,287,434	274– 9	3,287,020		3,287,571		3,287,612	333– 7	3,287,665	213.1	3,287,718
	3,287,435	275– 15	3,287,021		3,287,572	249	3,287,613	24.1	3,287,666	248	3,287,719
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683.68	3,287,439	124	3,287,025		3,287,576	138	3,287,617	79	3,287,670	347	3,287,723
846	3,287,440	415	3,287,026		3,287,577	267	3,287,618	82	3,287,671	343– 7	3,287,724
857	3,287,441	491	3,287,027	308– 20	3,287,069	321– 16	3,287,619	83	3,287,672	14	3,287,725
858	3,287,442	495	3,287,028	58	3,287,070	44	3,287,620		3,287,673	17.1	3,287,726
876	3,287,443	281– 5	3,287,029	72	3,287,071	69	3,287,621	98	3,287,674	106	3,287,727
879	3,287,444	285– 18	3,287,030	122	3,287,072		3,287,622	335–202	3,287,675	753	3,287,728
881	3,287,445	27	3,287,031	310– 4	3,287,578	323– 22	3,287,623	306	3,287,676	756	3,287,729
898	3,287,446	39	3,287,032	8.2	3,287,579	43.5	3,287,624	336– 57	3,287,677		3,287,730
899	3,287,447	115	3,287,034	58	3,287,580	89	3,287,625	83	3,287,678	792.5	3,287,731
937	3,287,448	147	3,287,035	312– 36	3,287,073	122	3,287,626	174	3,287,679	900	3,287,732
976	3,287,449	287– 20	3,287,036	97	3,287,074		3,287,627	179	3,287,680	346– 1	3,287,733
261– 18	3,286,997	20.2	3,287,037	108	3,287,075	123	3,287,628	192	3,287,681		3,287,734
27	3,286,998	20.5	3,287,038	206	3,287,076	324– .5	3,287,629	219	3,287,682	74	3,287,735
30	3,286,999	21	3,287,039	217	3,287,077		3,287,630	338–165	3,287,683		3,287,736
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37	3,286,671	37	3,287,330	37	3,287,673	41	3,287,394	42	3,287,694	47	3,287,428
	3,286,689		3,287,348		3,287,676		3,287,442		3,287,722	48	3,286,311
	3,286,750		3,287,360		3,287,679	42	3,286,274	43	3,286,351		3,286,325
	3,286,777		3,287,363		3,287,680		3,286,301		3,286,472		3,286,344
	3,286,784		3,287,367		3,287,684		3,286,317		3,286,506		3,286,360
	3,286,828		3,287,368		3,287,686		3,286,492		3,286,521		3,286,411
	3,286,851		3,287,369		3,287,689		3,286,529		3,287,089		3,286,447
	3,286,896		3,287,370		3,287,697		3,286,534		3,287,263		3,286,519
	3,286,928		3,287,373		3,287,713		3,286,684		3,287,631		3,286,548
	3,286,979		3,287,390		3,287,717		3,286,719		3,287,719		3,286,563
	3,287,001		3,287,395	38	3,286,385		3,286,723	44	3,286,824		3,286,584
	3,287,026		3,287,396		3,287,096		3,286,768	45	3,286,276		3,286,680
	3,287,056		3,287,399		3,287,204		3,286,805		3,286,369		3,286,712
	3,287,076		3,287,403		3,287,633		3,286,819		3,286,380		3,286,728
	3,287,110		3,287,411		3,287,688		3,286,825		3,286,515		3,286,737
	3,287,112		3,287,418		3,287,692		3,286,884		3,286,553		3,286,745
	3,287,128		3,287,430	39	3,286,295		3,286,958		3,286,621		3,286,781
	3,287,142		3,287,431		3,286,306		3,287,030		3,286,630		3,286,820
	3,287,148		3,287,446		3,286,446		3,287,031		3,286,957		3,286,853
	3,287,151		3,287,477	41	3,286,321		3,287,035		3,286,972		3,286,927
	3,287,157		3,287,517		3,286,552		3,287,064		3,286,974		3,286,936
	3,287,162		3,287,526		3,286,569		3,287,235		3,287,327		3,286,938
	3,287,165		3,287,534		3,286,649		3,287,241		3,287,353		3,287,066
	3,287,169		3,287,541		3,286,696		3,287,250		3,287,656		3,287,097
	3,287,184		3,287,554		3,286,967		3,287,274	46	3,286,346		3,287,176
	3,287,200		3,287,576		3,286,986		3,287,400		3,286,516		3,287,215
	3,287,201		3,287,588		3,287,082		3,287,413		3,286,524		3,287,361
	3,287,220		3,287,603		3,287,085		3,287,419		3,287,070		3,287,478
	3,287,226		3,287,604		3,287,328		3,287,420		3,287,084		3,287,516
	3,287,231		3,287,606		3,287,337		3,287,434		3,287,209		3,287,525
	3,287,272		3,287,608		3,287,338		3,287,544		3,287,659		3,287,551
	3,287,302		3,287,616		3,287,340		3,287,561	47	3,286,893		3,287,573
	3,287,303		3,287,628		3,287,372		3,287,632		3,287,099		3,287,666
	3,287,318		3,287,662		3,287,392		3,287,670		3,287,320	49	3,286,313
	3,287,321										

DESIGN PATENTS

2	206,305	9	206,298	12	206,307	22	206,273	31	206,300	38	206,270
4	206,260		206,299		206,316	29	206,272		206,301	45	206,306
	206,278	12	206,263	14	206,282		206,286		206,302	47	206,289
	206,288		206,264	15	206,262		206,312		206,308		206,290
	206,293		206,268	20	206,276	31	206,259	34	206,267	48	206,266
	206,311		206,283	21	206,257		206,265		206,285		206,274
8	206,309		206,287		206,271		206,291	37	206,256		206,313
	206,310		206,295		206,279		206,292		206,261		206,314
9	206,277		206,296		206,280		206,294		206,303		206,315
	206,284		206,304		206,281						

PLANT PATENTS

21	2,686										

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

November 22, 1966 Volume 832 Number 4

TRADEMARKS

NOTICES

Notice of Tentative Recordation of a Trade Name

[T.D. 66234]

Tentative recordation of trade name under section 42, Trademark Act of 1946, and section 11.16, Customs Regulations

TREASURY DEPARTMENT
OFFICE OF THE COMMISSIONER OF CUSTOMS
Washington, D.C., October 20, 1966

An application has been filed in the Treasury Department for the recordation of the following described trade name under the provisions of section 42, Trademark Act of 1946, and section 11.16, Customs Regulations:

"FLOWER MODES" is a trade name used by Flower Modes, Ltd., a corporation organized under the laws of the State of New York, located at 17 East 37th Street, New York, New York. The trade name is used in connection with women's accessory merchandise such as hair ornaments, costume flowers, hats, hair coverings, bags, and raincoats; it is also used on novelty items, stuffed toys and cosmetic novelties. The merchandise is imported from Japan, France and Italy.

Any person who desires to file an opposition to the recordation of this trade name shall notify the Commissioner of Customs, Bureau of Customs, Washington, D.C. 20226, before the expiration of 30 days after October 31, 1966, of his intent to oppose the recordation. If a notice of opposition is filed, the opposer will be furnished with a copy of the application for recordation of the trade name, together with its supporting documents and instructions as to the procedure to be followed. The customs officers concerned will be given notice within 45 days after October 31, 1966, of any opposition proceedings.

Until 45 days after October 31, 1966, all articles of foreign manufacture bearing names or marks which copy or simulate the abovementioned trade name shall be detained, but not seized. If a notice is received that an opposition has been filed, such articles shall continue to be detained until a final determination is made concerning the right of the applicant of the trade name. Articles detained either before or after any such notice is received shall receive the treatment provided for in section 11.17(b), Customs Regulations, which permits removal or obliteration of the offending mark or name prior to release, or exportation or destruction of the merchandise.

(Signed) LESTER D. JOHNSON,
Commissioner of Customs.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 82,124 (WALTHAM), Waltham Watch Company, Watches, watchcases, watch-movements, and parts thereof, **filed** Apr. 9, 1964, D.C., E.D. Mich. (Detroit), Doc. 25211, *Waltham Watch Company* v. *Glick's*. Final consent order and injunction Aug. 23, 1966.

Reg. No. 88,426 (BUTTER NUT), Schulze Baking Company, Bread; **Reg. No. 721,100** (BUTTERNUT), Interstate Bakeries Corporation, Bakery goods—namely, bread, rolls and sweet bakery products, **filed** Aug. 22, 1966, D.C., N.D. Ind. (South Bend), Doc. 3878, *Interstate Bakeries Corp.* v. *William F. Kuse et al.*

Reg. No. 187,851 (LAFAYETTE in script), R. E. Thompson Manufacturing Company, Radio receiving sets and parts thereof, head telephones, and loud speakers; **Reg. No. 759,564,**

CONDITION OF TRADEMARK APPLICATIONS AS OF SEPTEMBER 30, 1966

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	28,584
Date of oldest new application	August 4, 1965
Date of oldest amended application (filing date)	November 26, 1963

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	8-4-65	4-30-64
(II) F. H. WETHERBEE, Classes 1, 3, 6, 7, 9, 10, 18, 22, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	12-3-65	11-23-63
Renewals (All Classes)	8-17-66	
Sec. 12(c) Publications (All Classes)	8-23-66	

Applications filed during the month of September—2,089

Registrations Issued—424—No. 818,902 to No. 819,325
Renewals Issued—70

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

same, Lafayette Radio Electronics Corporation, Radio sets, amplifiers: public address, hi fi, stereo, preamplifiers, radio tuners, etc., filed Aug. 15, 1966, D.C.N.J. (Newark), Doc. 817–66, *Lafayette Radio Electronics Corporation* v. *Jax International Corp.*

Reg. No. 268,551 (SUPREME SILVER PLATE), International Silver Company, Silver-plated flat tableware, filed Mar. 1, 1966, D.C., S.D.N.Y., Doc. 66/945, *The International Silver Co.* v. *Supreme Cutlery Corp. et al.* Consent judgment; defendants enjoined Aug. 30, 1966.

Reg. No. 361,207 (ENDURANCE), The Glidden Company, Ready mixed paints, paint enamels, stains, wood fillers and varnishes, filed Aug. 30, 1966, D.C., S.D. Calif. (Los Angeles), Doc. 66–1406, *The Glidden Co.* v. *Endorance Coatings Corporation.*

Reg. No. 361,460 (LADY IN WAITING in script), Abraham H. Bleich, doing business as Bleich Dress Mfg. Co., Ladies' maternity dresses; **Reg. No. 782,476** (LADY IN WAITING), Fitwel Dress Co., Inc., Women's dresses, shirts, slacks, shorts, blouses, etc., filed Oct. 10, 1966, D.C.N.J. (Newark), Doc. 1010–66, *Fitwel Dress Co., Inc.* v. *The Waiting Lady Maternity Shoppe.*

Reg. No. 441,727 (WRANGLER), Blue Bell, Inc., Western style dungarees and pants; **Reg. No. 517,844** (BLUE BELL'S WRANGLER), same, Men's, women's, boys' and girls' work shirts; **Reg. No. 532,851**, same, Western style jackets; **Reg. No. 771,508** (LADY WRANGLER), same, Misses' and girls' sportswear—namely, dungarees, skirts, jackets, sweaters, blouses, and shorts, filed August 19, 1966, D.C., S.D.N.Y., Doc. 66/2637, *Blue Bell, Inc.* v. *Trends to Fashion, Inc.* Consent Judgment; defendant enjoined Sept. 22, 1966.

Reg. No. 517,844. (See Reg. No. 441,727.)

Reg. No. 526,408 (WESTERN UNION), The Western Union Telegraph Company, Public and private telegraph, facsimile, television and other wire and wireless message transmission, and the sending and delivery of messages by mail and by messenger; **Reg. No. 768,514** (WESTERN UNION TELEX), same, Direct-dial controlled two-way subscriber-to-subscriber teleprinter exchange services; **Reg. No. 772,508** (WESTERN UNION TELEX AND DESIGN), same; **Reg. No. 779,247** (WESTERN UNION TELEGRAM AND DESIGN), same, Telegraphic communication services; **Reg. No. 781,578**, same, filed Aug. 31, 1966, D.C. Ariz. (Phoenix), Doc. 6097 phx., *The Western Union Telegraph Company* v. *Lincoln Life Insurance Company, formerly known as Western Union Assurance Co.* Consent judgment; injunction issued Oct. 4, 1966.

Reg. No. 532,851. (See Reg. No. 441,727.)

Reg. No. 534,232 (XYLOCAINE), Aktiebolaget Astra Apotekarnes Kemiska Fabriker, Local anesthetic primarily used in dental surgery; **Reg. No. 692,703**, same, Astra Pharmaceutical Products, Inc., Anesthetic used in medicine, surgery, and dentistry to induce local anesthesia, including topical anesthesia, and which may be prepared in different forms—namely, as solutions for injections, infusion, and spray, etc.; 2,797,241, Brown and Poole, DIETHYL-GLYCINEXYLIDIDE AND PROCESS, filed Apr. 27, 1966, D.C., S.D.N.Y., Doc. 66/1199, *Astra Pharmaceutical Products, Inc.* v. *R.S.A. Corp.* Consent judgement; patent and trademark registrations held valid and infringed July 14, 1966.

Reg. No. 692,703. (See Reg. No. 534,232).

Reg. No. 694,624 (LEES in script), James Lees and Sons Company, Textile carpets and rugs, filed Aug. 22, 1966, D.C., S.D. Calif. (Fresno), Doc. 2828–ND, *James Lees and Sons, Inc.* v. *Lee's Carpets and Drapes.*

Reg. No. 721,100. (See Reg. No. 88,426.)

Reg. No. 739,852 (FLUME STABILIZATION SYSTEM AND DESIGN), John J. McMullen Associates, Inc., Designing and engineering ship anti-roll equipment; **Reg. No. 775,970**, same, Ship anti-roll equipment consisting of a series of tanks and mechanical means for moving liquids from tank to tank; 3,054,373, K. C. Ripley, FLUME TYPE HEELING TANK STABILIZER; 3,083,672, same, STABILIZATION SYSTEM; 3,004,094, same, PASSIVE STABILIZATION SYSTEM FOR LONG PERIOD SHIPS; 3,109,403, same, SHIP STABILIZER, filed Sept. 20, 1966, D.C., W.D. Wash. (Seattle), Doc. 6887, *John J. McMullen Associates, Inc.* v. *W. C. Nickum & Sons Company.*

Reg. No. 759,564. (See Reg. No. 187,851.)

Reg. No. 768,514. (See Reg. No. 526,408.)

Reg. No. 771,508. (See Reg. No. 441,727.)

Reg. No. 772,508. (See Reg. No. 526,408.)

Reg. No. 775,970. (See Reg. No. 739,852.)

Reg. No. 779,247. (See Reg. No. 526,408.)

Reg. No. 781,578. (See Reg. No. 526,408.)

Reg. No. 782,476. (See Reg. No. 361,460.)

Reg. No. 805,537 (LITTLE BRUTE), Little Brute Company, Hand operated tools and engine accessories—namely, crankshaft straightener, seal puller, engine positioner, adaptor, etc., filed Aug. 23, 1966, D.C. Mass. (Boston), Doc. 66–637–S, *Little Brute Company* v. *Wyman Industries, Inc.*

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 198,790. Welsh Sporting Goods Corp., Iowa Falls, Iowa. Filed July 29, 1964.

BOYT

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Animal Equipment—Namely, Bridles, Reins, Bits, Tailsets, Leadstraps, Halters, Saddle Covers, Stable Sheets and Blankets.

Class 9—Explosives, Firearms, Equipments, and Projectiles

For Sporting Goods—Namely, Gun Cases, Shell, Cartridge, Game, and Gun Carriers, Gun Slings and Straps, and Scabbards.

Class 22—Games, Toys, and Sporting Goods

For Sporting Goods—Namely, Fishing Rod, Billiard Cue, and Bow Cases, Reel and Tackle Bags, Ski Cases, and Ski Boot Bags.

First use Mar. 1, 1964; at least as early as Jan. 1, 1900, as to "Boyt."

SN 219,747. Schramm Fiberglass Products, Inc., Chicago, Ill. Filed May 26, 1965.

TWINWELD

Owner of Reg. No. 724,098.

Class 1—Raw or Partly Prepared Materials

For Potting Compounds—Namely, a Resin Composition for Embedding or Encapsulating Components or Objects.

Class 5—Adhesives

For Epoxy Resin Adhesive.

First use on or about July 1, 1957.

SN 230,474. Koninklijke Luchtvaart Maatschappij N.V., New York, N.Y. Filed Oct. 19, 1965.

KLM

Class 100—Miscellaneous

For Restaurant Services.
First use 1950.

Class 102—Insurance and Financial

For Financial Services—Namely, Providing Financing for Travel; Insurance Services—Namely, Underwriting Commercial Insurance Covering Transportation of Air Cargo.
First use September 1956.

Class 105—Transportation and Storage

For Transportation Services—Namely, Providing Air Transportation for Persons and for Cargo; Auto Rental Services; Travel Tour Services.
First use August 1943.

SN 232,105. Spectronics Corporation, Westbury, N.Y. Filed Nov. 4, 1965.

SPECTROLINE

Class 2—Receptacles

For Carrying Cases for Black Lights, Spectral Lamps, and Filters; Stowage Boxes.

Class 11—Inks and Inking Materials

For Fluorescent Inks.

Class 16—Protective and Decorative Coatings

For Fluorescent Paints and Varnishes.

Class 21—Electrical Apparatus, Machines, and Supplies

For Signature Verification Lamps; High Intensity Desk Lamps; Miniature and Sub-Miniature Incandescent Lamps; Black Light Hot and Cold Cathode Lamps and Power Supplies; Quartz Hot and Cold Cathode Lamps and Power Supplies.

Class 26—Measuring and Scientific Appliances

For Glass Filters; Radar Console Lights; Zirconium Arc Lamps and Power Supplies; Sodium Arc Lamps and Power Supplies; Spectral Discharge Lamps and Power Supplies; Fluorescent Penetrant Inspection Kits; Fluorescent Magnetic Inspection Kits; Micro and Regular Pipette Filters; Diffusion Cloud Chambers; Van der Graf Generators.

Class 37—Paper and Stationery

For Fluorescent Chalks, Signature Transfer Slips; Fingerprint Slips; Bank Pads, and Phosphors.

Class 44—Dental, Medical, and Surgical Appliances

For Dermatological Lamps; Infra-Red Lamps; Medical, and Dental Examining Lights; Ceiling Mounted and Portable Operating Lights; Urine Drainage Bags; Disposable Enema Bags; Colloidal Barium Enema Bags; Fountain Syringes; Eye Charts, Mounting Boards for Electrocardiogram: , X-Ray Film Driers, Cassettes, Identification Printers, Holders, and Blockers; X-Ray Dark Room Safelights, Illuminators, and Accessories; Dry and Wet Sterilizers; Sterilizer Heaters; Hole-Detectors for Surgeons' Gloves; Explosion-Proof Operating Lights; and Humane Hospital Restraints.

First use Feb. 24, 1961.

SN 247,755. Andrea Dumon, Incorporated, d.b.a. Andrea Dumon Laboratories, Chicago, Ill. Filed June 10, 1966.

Andrea Dumon

The mark is fanciful.

Class 51—Cosmetics and Toilet Preparations

For Milk Bath With Cold Cream, Bath Oil, Peroxide Developer for the Hair and Hair Conditioner.
First use Apr. 30, 1965.

Class 52—Detergents and Soaps

For Shampoo for the Hair.
First use October 1965.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 188,169. Westlake Plastics Company, Lenni Mills, Pa. Filed Mar. 6, 1964.

PROPYLUX

For Polypropylene Rods, Rigid Sheets, and Tubes for General Use by Industrial Fabricators.
First use Aug. 25, 1960.

SN 230,482. American Optical Company, Southbridge, Mass. Filed Oct. 19, 1965.

AOLUX

For Glass Laser Rods and Glass Materials for Use in Making Laser Rods.
First use Feb. 15, 1963.

SN 235,813. Beckwith-Arden Inc., Watertown, Mass. Filed Jan. 5, 1966.

TRANSBECK

Owner of Reg. Nos. 690,987, 745,873, and 812,337.
For Sheet Material for the Box Toes and Counters of Shoes.
First use Dec. 3, 1965.

SN 243,934. Adrian Lee Winters, Sr., d.b.a. Winters' Wood Specialties, Columbia, La. Filed Apr. 20, 1966.

MISTER HICKORY

No claim is made to the word "Hickory" apart from the mark as shown without waiving any common law rights therein.
For Hickory Rounds for Barbecuing Foods.
First use on or about Apr. 15, 1961.

SN 246,144. Arden Corporation, Detroit, Mich. Filed May 20, 1966.

Royal

For Cat Litter.
First use Feb. 15, 1966.

SN 246,145. Arden Corporation, Detroit, Mich. Filed May 20, 1966.

Imperial

For Cat Litter.
First use Feb. 4, 1966.

Class 2—Receptades

SN 219,125. International Paper Company, New York, N.Y. Filed May 18, 1965.

Egg-Guard

The representation of the eggs are disclaimed apart from the mark as shown.
For Egg Shipping Boxes Made of Paper and Paperboard.
First use Apr. 26, 1965.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 237,421. R. G. Barry Corporation, d.b.a. The House of Foam, Columbus, Ohio. Filed Jan. 27, 1966.

PET-PALACE

For Portable Polyurethane Beds for Pets—Namely, Dogs and Cats.
First use Jan. 18, 1966.

SN 242,121. Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany. Filed Mar. 29, 1966.

VISTRAM

Owner of German Reg. No. 813,490, dated Mar. 26, 1965.
For Handbags, Traveling Bags, Travel Kits, Trunks, Brief Cases, and Purses, All Prepared of Leather.

SN 249,207. Lark Luggage Corp., New York, N.Y. Filed June 29, 1966.

THE APACHE

For Luggage.
First use May 10, 1966.

Class 6—Chemicals and Chemical Compositions

SN 205,875. United Aircraft Corporation, Sunnyvale, Calif. Filed Nov. 9, 1964.

UTC

For Salts of Fatty Acid and Hydroxy Substituted Fatty Acids and Mixtures Thereof Useful in the Preparation of Biologically Active Compositions.
First use Aug. 20, 1964.

SN 205,881. United Aircraft Corporation, Sunnyvale, Calif. Filed Nov. 9, 1964.

UTC

The drawing is lined for red, but no claim is made to color.
For Salts of Fatty Acid and Hydroxy Substituted Fatty Acids and Mixtures Thereof Useful in the Preparation of Biologically Active Compositions.
First use Aug. 20, 1964.

SN 238,438. Home Chemical Company, St. Paul, Minn. Filed Feb. 9, 1966.

WHITE CHARGER

For Household Bleach Containing a Disinfectant and Deodorant.
First use Jan. 1, 1965.

SN 240,645. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Mar. 10, 1966.

PANOSCREEN

For Laboratory Diagnostic Reagent for Detection of Antibodies.
First use Aug. 13, 1965.

SN 246,742. American Cyanamid Company, Wayne, N.J. Filed May 27, 1966.

SPECTRA-SORB

For Light Absorber.
First use May 9, 1966.

SN 246,800. Robert M. McMath, d.b.a. Rosemary Shelton, New York, N.Y. Filed May 27, 1966.

CHIFFAROMA

For Aerosol Spray Deodorant and Air Sanitizer.
First use Jan. 20, 1966.

SN 246,821. Thiokol Chemical Corporation, Bristol, Pa. Filed May 27, 1966.

TP

For Plasticizers for Rubber and Plastic Compositions.
First use on or before Dec. 31, 1943.

SN 246,841. Wilco Company, Los Angeles, Calif. Filed May 31, 1966.

WIL-PLATE

Owner of Reg. Nos. 653,616 and 691,413.
For Metal Plating Solutions.
First use Mar. 18, 1966.

SN 246,849. American Photocopy Equipment Company, Evanston, Ill. Filed May 31, 1966.

SUPER-STAT

For Electrostatic Printing Process Developing Solutions Comprising Dispersants and Replenishers.
First use Feb. 18, 1966.

SN 246,877. Chicago Candle Corporation, Chicago, Ill. Filed May 31, 1966.

FLEUR-DE-LOVE

For Air Fresheners.
First use Jan. 10, 1966.

SN 246,878. Chicago Candle Corporation, Chicago, Ill. Filed May 31, 1966.

SNAPSULE

For Capsules Containing Air Freshening Ingredients.
First use May 20, 1966.

Class 7 — Cordage

SN 241,397. The Wear-Flex Corporation, Milwaukee, Wis. Filed Mar. 18, 1966.

Always... a jump ahead!

For Load Lifting Slings.
First use Mar. 7, 1966.

SN 252,526. Tyrex Inc., New York, N.Y. Filed Aug. 17, 1966.

DYNACOR

For Rayon Yarns and Cords for Use in Making Pneumatic Tires.
First use Feb. 23, 1966.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 229,261. Larbar Corporation, St. Paul, Minn. Filed Oct. 4, 1965.

WINGAID

For Gun Sights.
First use Aug. 24, 1965.

SN 233,338. General Ordnance Equipment Corp., Pittsburgh, Pa. Filed Nov. 26, 1965.

CHEMICAL MACE

The word "Chemical" is disclaimed apart from its use with the mark.
For Non-Explosive Defensive Weapons in the Nature of Tear Gas Packaged in Aerosol Containers.
First use Sept. 28, 1965.

SN 234,174. Canadian Safety Fuse Company Limited, Montreal, Quebec, Canada. Filed Dec. 8, 1965.

SCUF-FLEX

Priority claimed under Sec. 44(d) on Canadian application filed Oct. 28, 1965; Reg. No. 146,005, dated June 30, 1966.
For Detonating Fuse.

Class 10 — Fertilizers

SN 242,710. The Borden Company, New York, N.Y. Filed Apr. 5, 1966.

SACCO

For Plant Food and Fertilizers.
First use June 1924.

SN 242,725. Greenleaf, Inc., Denver, Colo. Filed Apr. 5, 1966.

GREENLEAF

For Fertilizers and Soil Amendments.
First use on or about Jan. 2, 1965.

Class 11 — Inks and Inking Materials

SN 220,016. Miller-Cooper Ink Company, Kansas City, Mo. Filed May 28, 1965.

FRANKLIN

For Printing Inks.
First use at least as early as 1917.

Class 12 — Construction Materials

SN 225,825. Southwestern Petroleum Corporation, Fort Worth, Tex. Filed Aug. 16, 1965.



For Mastic-Type Roof Coatings.
First use May 1, 1963.

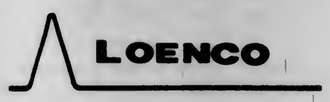
Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 236,798. Amsted Industries Incorporated, Chicago, Ill. Filed Jan. 19, 1966.

R. D. WOOD 20

For Cast Iron Pipe.
First use Aug. 6, 1965.

SN 237,138. Loenco, Inc., Altadena, Calif. Filed Jan. 24, 1966.



For Valves—Lever Type and Pneumatic Type Valve Operators and Parts Thereof.
First use 1956.

SN 245,897. Barwood Manufacturing Corp., Everett, Mass. Filed May 18, 1966.

BAR-SEAL

Owner of Reg. Nos. 664,949, 710,137, and 710,432.
For Headed Fasteners With Sealing Washers.
First use Jan. 12, 1965.

SN 245,898. Barwood Manufacturing Corp., Everett, Mass. Filed May 18, 1966.

SHUR-SEAL

Owner of Reg. Nos. 664,949, 710,137, and 710,432.
For Headed Fasteners With Sealing Washers.
First use Feb. 8, 1966.

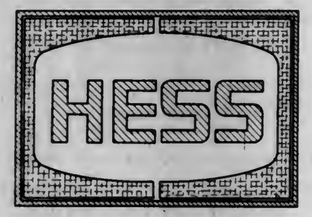
Class 15 — Oils and Greases

SN 225,826. Southwestern Petroleum Corporation, Fort Worth, Tex. Filed Aug. 16, 1965.



For Lubricating Oils and Greases.
First use May 1, 1963.

SN 237,966. Hess Oil & Chemical Corporation, Perth Amboy, N.J. Filed Feb. 3, 1966.



The drawing is lined for the colors green and yellow or gold. Owner of Reg. No. 753,201.
For Petroleum Products.
First use Aug. 31, 1960.

SN 246,629. Vernon L. Cannon, d.b.a. Hol-Can Oil Company, Dothan, Ala. Filed May 26, 1966.



The drawing is lined for blue and red but the mark is not limited to this arrangement of color.
For Lubricating Greases.
First use Apr. 18, 1966.

Class 16 — Protective and Decorative Coatings

SN 210,065. Alside, Inc., Akron, Ohio. Filed Jan. 18, 1965.

ELECTROLON

For Baked Enamel Finish Coating Applied to and Sold as a Part of Aluminum Products Including Household Siding.
First use Dec. 17, 1964.

Class 18 — Medicines and Pharmaceutical Preparations

SN 182,687. The Upjohn Company, Kalamazoo, Mich. Filed Dec. 9, 1963.

MEDPAK

For Package Containing Medicinal Tablets.
First use Sept. 18, 1963.

SN 225,121. Eastern Baker Pharmaceutical Corporation, Jacksonville, Fla. Filed Aug. 6, 1965.

FARIUM

For Barium Sulphate for Gastro-Intestinal Tract Radiography.
First use July 9, 1965.

SN 237,844. Konate Pharmacal Co., Inc., Springfield Gardens, N.Y. Filed Feb. 2, 1966.

TRANKS

For Tranquilizer and Sedative Aid.
First use Dec. 8, 1965.

SN 239,195. Acid-Eze Co., Inc., Trion, Ga. Filed Feb. 21, 1966.

ACID-EZE E.C.

Owner of Reg. No. 778,686.
For Compound Liquid Antacid.
First use Jan. 1, 1966.

SN 240,357. Sutliff & Case Co., Inc., Peoria, Ill. Filed Mar. 7, 1966.

BUTATRAX

For Sedative-Tranquilizer Capsules.
First use in or about January 1960.

SN 240,358. Sutliff & Case Co., Inc., Peoria, Ill. Filed Mar. 7, 1966.

GUAIAMINE

For Cough and Cold Capsules.
First use in or about October 1963.

SN 240,359. Sutliff & Case Co., Inc., Peoria, Ill. Filed Mar. 7, 1966.

THEOFED

For Anti-Asthmatic Tablets.
First use in or about January 1957.

SN 240,360. Sutliff & Case Co., Inc., Peoria, Ill. Filed Mar. 7, 1966.

QUADA-CREME

For Anesthetic-Germicidal Antihistaminic Ointment.
First use in or about October 1964.

SN 240,405. Dr. Ballowitz & Co., Bad Soden, Taunus, Germany. Filed Mar. 8, 1966.

DRAGEES NEUNZEHN

The word "Dragees" may be translated as "pills" and the word "Neunzehn" may be translated as "nineteen." The word "Dragees" is disclaimed apart from the mark as shown. Owner of German Reg. No. 642,118, dated Oct. 9, 1951.
For Laxatives.
First use 1951; in commerce Oct. 17, 1952; 1930 as to "Dragees."

SN 242,619. Eli Lilly and Company, Indianapolis, Ind. Filed Apr. 4, 1966.

KEFLORDIN

Owner of Reg. Nos. 761,574 and 810,957.
For Broad Spectrum Antibiotic.
First use Mar. 28, 1966.

SN 243,143. Lambert-Kay, Incorporated, Los Angeles, Calif. Filed Apr. 11, 1966.

LINATONE

For Animal Food Supplement Containing Vitamins.
First use in or about February 1951.

SN 243,404. Bristol-Myers Company, New York, N.Y. Filed Apr. 14, 1966.

BRISTAB

For Medicinal and Pharmaceutical Preparation—Namely, a Diuretic.
First use Feb. 14, 1966.

SN 243,763. American Home Products Corporation, New York, N.Y. Filed Apr. 19, 1966.

NOWGO

For Antacid-Laxative Preparation.
First use Mar. 23, 1966.

SN 244,088. The Denver Chemical Manufacturing Company, d.b.a. Wampole Laboratories, Stamford, Conn. Filed Apr. 22, 1966.

ENZIMICINA

For Pharmaceutical Preparation—Namely, an Enzyme Antibiotic Combination.
First use Apr. 13, 1966.

SN 244,107. Haver-Lockhart Laboratories, Shawnee, Kans. Filed Apr. 22, 1966.

D.H.L.

For Canine Distemper-Hepatitis-Leptospira Canicola Vaccine for Animals.
First use January 1958.

SN 244,108. Haver-Lockhart Laboratories, Shawnee, Kans. Filed Apr. 22, 1966.

FEROCINE

For Canine Distemper Vaccine for Animals.
First use Mar. 9, 1961.

SN 244,110. Haver-Lockhart Laboratories, Shawnee, Kans. Filed Apr. 22, 1966.

ANTIPHRINE

For Antihistamine and Bronchodilator for Animals.
First use Mar. 2, 1960.

SN 244,217. A. J. Hetherington Co., Hughson, Calif. Filed Apr. 25, 1966.

LIVER-LAX

For Laxative.
First use 1933.

SN 245,105. Richardson-Merrell Inc., Cincinnati, Ohio. Filed May 6, 1966.

CYREDIN

For Vitamins.
First use Apr. 14, 1966.

SN 245,110. Snyder's Drug Stores, Inc., St. Paul, Minn. Filed May 6, 1966.

SLUMBEX

For Sleep Tablets for Taking as an Aid To Sleep.
First use Apr. 4, 1966.

SN 245,139. Abbott Laboratories, North Chicago, Ill. Filed May 9, 1966.

GALLIMYCIN-AA

Owner of Reg. Nos. 737,778 and 631,683.
For Medicated Feed Additive.
First use Mar. 11, 1966.

SN 245,512. Richardson-Merrell Inc., New York, N.Y. Filed May 12, 1966.

AVCEN

For Vaginal Cleanser.
First use Apr. 21, 1966.

SN 245,656. Parke, Davis & Company, Detroit, Mich. Filed May 16, 1966.

MEDICAMENTA VERA PD

Owner of Reg. Nos. 397,903, 795,205, and others.
For Raw and Semi-Prepared Materials Including Extracts for Preparation of Pharmaceutical Preparations Such as Concentrates for Preparation of Syrup of Cocillana, Excipients and Fillers for Pharmaceutical Preparations Such as Lactose, Magnesium Stearate and Mannitol and Reactants Such as Palmitoyl Chloride and Methyl Dichloracetate.
First use before Jan. 1, 1960.

SN 245,731. Merck & Co., Inc., Rahway, N.J. Filed May 16, 1966.

DIOSMOL

For Osmotic Diuretic Agent.
First use Apr. 19, 1966.

SN 248,948. The Norwich Pharmacal Company, Norwich, N.Y. Filed June 27, 1966.

BONAID

For Buquinolate Veterinary Pharmaceutical Preparation for the Prevention of Coccidiosis.
First use June 13, 1966.

Class 19—Vehicles

SN 233,905. Holiday Rambler Corporation, Wakarusa, Ind. Filed Dec. 3, 1965.

ALUMA FRAME

The word "Frame" is disclaimed apart from the mark as shown.
For Travel Trailers.
First use on or before Nov. 1, 1965.

SN 234,496. Amsted Industries Incorporated, Chicago, Ill. Filed Dec. 13, 1965.

UNIT

For Self-Contained Railway Brake Actuating Mechanism Including: Power Cylinder, Slack Adjuster, Brake Shoe Assembly, and Levers and/or Links Connecting the Power Cylinder and Slack Adjuster to the Brake Shoe Assembly.
First use July 3, 1958.

SN 235,177. Freightliner Corporation, Portland, Oreg. Filed Dec. 23, 1965.

FREIGHTLINER

Owner of Reg. No. 583,277.
For Motor Trucks and Truck Tractors.
First use Jan. 10, 1941.

SN 244,868. Agway, Inc., Syracuse, N.Y. Filed May 4, 1966.

AGWAY

For Trucks for Hauling and Spreading Fertilizers, Truck Bodies and Parts, and Feed Carts.
First use Mar. 5, 1964.

SN 248,081. Saab Aktiebolag, Linköping, Sweden. Filed June 15, 1966.

SONETT

The term "Sonett" translated means "sonnet."
For Automobiles.
First use 1947; in commerce 1958.

SN 254,421. Blount Marine Corporation, Warren, R.I. Filed Sept. 14, 1966.

SEMIFOIL

For Boat Hulls.
First use Aug. 22, 1966.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 171,973. Communication Papers Inc., Moosic, Pa. Filed June 27, 1963.

TIMEFAX NDA

Owner of Reg. No. 401,601.
For Electrosensitive Recording Paper.
First use in or about January 1953.

SN 220,826. Arrow Specialty Co., Tulsa, Okla. Filed June 10, 1965.

ARROW

For Electric Engine Starters and Electric Liquid Level Switches, Which Are Used as Replacement Parts for Equipment in Oil Field Operations.
First use Oct. 1, 1955.

SN 221,252. Burch Electronics, Inc., Snook, Tex. Filed June 16, 1965.

MARK 100

For Vehicle Electrical Power Converter for Supplying Electrical Power to an Electrical Power Requiring Unit and Which Is Adapted for Installation in and Attachment to a Vehicle Whereby a Part of the Electrical Output of the Generator of the Vehicle Is Converted to the Electrical Power Requiring Unit by the Converter.
First use at least as early as Apr. 7, 1965.

SN 252,053. Womack Electronics, Inc., Danville, Va. Filed Aug. 10, 1966.

SUPER-LOG

For Radio and Television Antennas.
First use July 5, 1966.

SN 252,328. Birns & Sawyer Cine Equipment Co., Inc., Los Angeles, Calif. Filed Aug. 15, 1966.

AQUAPRENE

For Electrical Cable and Connectors.
First use June 7, 1966.

SN 253,817. Stuart Muchnick, d.b.a. Steri Import and Export Company, Springfield Gardens, N.Y. Filed Sept. 6, 1966.

SIECO

For Cloth and Vinyl Plastic Electrical Insulating Tapes.
First use Dec. 23, 1965.

Class 22 — Games, Toys, and Sporting Goods

SN 208,563. Albert M. Gardner, Jr., Lancaster, Pa. Filed Dec. 21, 1964.

P#YCHE

For Equipment Sold as a Unit for Playing a Board Game.
First use Nov. 16, 1964.

SN 227,942. Earl W. Hoyt, d.b.a. Recreation Enterprises, Los Altos, Calif. Filed Sept. 16, 1965.

BROADCAST TRIPLE

The baseball is disclaimed apart from the mark as shown.
For Equipment, Sold as a Unit, for Playing a Baseball-Type Game.
First use Feb. 10, 1965.

SN 229,461. Springbok Editions, Inc., New York, N.Y. Filed Oct. 6, 1965.

A SPRINGBOK JIGSAW PUZZLE

No claim of exclusive right is made to "Jigsaw Puzzle" apart from the mark as shown.
For Puzzles of the Jig-Saw Type.
First use Jan. 14, 1965.

SN 229,462. Springbok Editions, Inc., New York, N.Y. Filed Oct. 6, 1965.



For Toys, Puzzles, Board Games, Word Games and Art-Related Games.
First use Jan. 14, 1965.

SN 231,928. Old Pal, Inc., Lititz, Pa. Filed Nov. 1, 1965.



STINGRAY

For Tackle Boxes.
First use Aug. 4, 1965.

SN 231,929. Old Pal, Inc., Lititz, Pa. Filed Nov. 1, 1965.



PIKE

For Tackle Boxes.
First use Aug. 4, 1965.

SN 231,930. Old Pal, Inc., Lititz, Pa. Filed Nov. 1, 1965.



STARFISH

For Tackle Boxes.
First use Aug. 20, 1965.

SN 231,931. Old Pal, Inc., Lititz, Pa. Filed Nov. 1, 1965.



TROUT

For Tackle Boxes.
First use Aug. 20, 1965.

SN 231,932. Old Pal, Inc., Lititz, Pa. Filed Nov. 1, 1965.



WAHOO

For Tackle Boxes.
First use Aug. 20, 1965.

SN 232,018. Old Pal, Inc., Lititz, Pa. Filed Nov. 2, 1965.



For Tackle Boxes.
First use Aug. 23, 1965.

SN 235,831. Roland C. Ienni, Andover, N.J. Filed Jan. 5, 1966.



For Equipment Comprising a Ring Attached to a String Adapted To Be Hooked Onto a Hook for Playing a Game.
First use July 1, 1965.

SN 237,205. D'Adesky Bros. Corp., Miami, Fla. Filed Jan. 25, 1966.

PROTECT-O-POOL

For Safety Net for Swimming Pools.
First use Jan. 4, 1966.

SN 253,591. Mattel, Inc., Hawthorne, Calif. Filed Sept. 1, 1966.

SOAPY SIDDLE

For Dolls, Doll Clothing, and Doll Accessories.
First use Aug. 11, 1966.

SN 253,592. Mattel, Inc., Hawthorne, Calif. Filed Sept. 1, 1966.

TRIKEY TRIDDLE

For Dolls, Doll Clothing, and Doll Accessories.
First use Aug. 11, 1966.

SN 253,593. Mattel, Inc., Hawthorne, Calif. Filed Sept. 1, 1966.

SIZZLY FRIDDLE

For Dolls, Doll Clothing, and Doll Accessories.
First use Aug. 11, 1966.

SN 253,594. Mattel, Inc., Hawthorne, Calif. Filed Sept. 1, 1966.

WINDY FLIDDLE

For Dolls, Doll Clothing, and Doll Accessories.
First use Aug. 11, 1966.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 214,952. M. B. Claff & Sons, Inc., Brockton, Mass. Filed Mar. 25, 1965.

AUTO-CLAFFBOX-SET

For Box Making Machines.
First use February 1964.

SN 218,711. Stone Conveyor Co., Inc., Honeoye, N.Y. Filed Apr. 26, 1965.

SLIDE-VEYOR

For Belt Conveyors and Parts Thereof.
First use Mar. 17, 1965.

SN 221,100. Raygo, Inc., Minneapolis, Minn. Filed June 14, 1965.

RayGo

For Soil Compacting Machines.
First use November 1964.

SN 221,882. American Chain & Cable Company, Inc., New York, N.Y. Filed June 24, 1965.

ROLO-FLEX

For Flexible Cable Controls for Automotive and Marine Use.
First use Mar. 15, 1965.

SN 239,304. Owatonna Tool Company, Owatonna, Minn. Filed Feb. 21, 1966.

TELE-TORQUE

For Torque Wrenches.
First use Feb. 4, 1966.

SN 239,340. Templeton, Kenly & Co., Broadview, Ill. Filed Feb. 21, 1966.

UNI-LIFT

For Lifting Jacks.
First use on or about Dec. 23, 1965.

SN 240,847. Richel, Inc., Kansas City, Mo. Filed Mar. 7, 1966.

BIG

For Agricultural Vehicles—Namely, Tractor-Type Vehicles Having Crop Spraying and Fertilising Means Mounted Thereon.
First use Feb. 2, 1966.

SN 245,779. Visi-Trol Engineering Company, Inc., Detroit, Mich. Filed May 16, 1966.

VISI-TROL

For Assembly Machines; Indexing Drives; C-Frame and A-Frame Toggle Presses and Force Control Registration Components Therefor; Swivel Mills; Milling, Drilling and Assembly Machines; Transfer Machines; and Quality Control Cabinets for Machines of All Types.
First use 1952.

SN 245,970. George Roman, Baltimore, Md. Filed May 18, 1966.

KLEEROFF

For Artists' Palettes.
First use Oct. 10, 1965.

Class 24 — Laundry Appliances and Machines

SN 236,941. Whirlpool Corporation, Benton Harbor, Mich. Filed Jan. 20, 1966.

TUMBLE PRESS

For Laundry Appliances and Machines—Namely, Controls for Clothes Dryers.
First use Dec. 15, 1965.

SN 238,589. APL Corporation, Linden, N.J. Filed Feb. 11, 1966.

MISS



The portrait on the drawing is fanciful. The hatchmarkings on the drawing do not indicate specific colors, but do indicate a plaid pattern.
For Ironing Board Covers, Ironing Board Pads, and Sets of Ironing Board Covers and Pads.
First use January 1965.

Class 25 — Locks and Safes

SN 236,891. Loftin Research and Development Corporation, Los Angeles, Calif. Filed Jan. 18, 1966.

SAFE-N-SOUND

For Lockable Containers for Use in Securing Valuables.
First use Oct. 15, 1965.

Class 26 — Measuring and Scientific Appliances

SN 229,699. Vari-Tech Company, Grand Rapids, Mich. Filed Oct. 8, 1965.

VARI-TECH

For Dynamic Testing Apparatus for Elastomeric Substances, Ampere-Hour Recorders, Electro-Mechanical Timer Controls for Toss Bombs, Weight-Responsive Control Equipment for the Filling of Hams With a Selectable Percentage of Curing Substances, Hydraulic Differential Pressure Switches,, Switching Modules Embodying Solid State Control Logic, and Resistance Testers.
First use on or about July 1, 1960.

SN 234,349. B. T. Heins, d.b.a. B. T. Heins Co., Seattle, Wash. Filed Dec. 10, 1965.

TRANSITIONER

For Photographic Projectors.
First use Sept. 24, 1965.

SN 238,039. Boston Research Corporation, Boston, Mass. Filed Feb. 4, 1966.

UVIR-2

For Heat Filter Lens for Film Projectors.
First use at least as early as Jan. 3, 1966.

SN 246,848. American Photocopy Equipment Company, Evanston, Ill. Filed May 31, 1966.

SUPER-STAT

For Electrostatic Copy Papers.
First use Feb. 18, 1966.

SN 250,747. Eig Cutlery, Inc., Miami, Fla. Filed July 21, 1966.

TELSTAR

For Binoculars and Telescopes.
First use June 15, 1966.

SN 251,584. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Aug. 3, 1966.

CROLUX

Owner of Reg. Nos. 608,302, 764,067, and others.
For Photopolymer Reproduction Film.
First use July 8, 1966.

SN 252,710. Electro-Nite Engineering Company, Philadelphia, Pa. Filed Aug. 19, 1966.

ELECTRO-NITE POSITHERM

For Temperature Measuring Equipment and Parts Therefor.
First use Aug. 12, 1966.

SN 252,711. Electro-Nite Engineering Company, Philadelphia, Pa. Filed Aug. 19, 1966.

ELECTRO-NITE

For Temperature Measuring Equipment.
First use November 1958.

Class 27 — Horological Instruments

SN 236,292. Selza Watch Co. S.A., Bienne, Switzerland. Filed Jan. 12, 1966.

LUXOR

For Watches and Parts Thereof.
First use 1926; in commerce Nov. 20, 1963.

Class 31 — Filters and Refrigerators

SN 242,423. Cambridge Filter Corporation, Syracuse, N.Y. Filed Apr. 1, 1966.

EQUI-FLO

For Air Filters.
First use on or before July 1, 1965.

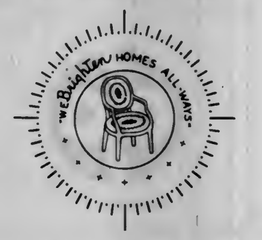
SN 242,572. Culligan, Inc., Northbrook, Ill. Filed Apr. 4, 1966.

AQUA-SENSOR

For Automatic Water Softeners and Conditioners.
First use Feb. 22, 1966.

Class 32 — Furniture and Upholstery

SN 222,829. William J. Crosby, d.b.a. Crosby Upholstering Co., Cleveland, Ohio. Filed July 7, 1965.



The representation of a chair is disclaimed apart from the mark as shown.
For Sofas, Chairs, Lounges and Upholstery, Comprising Furniture and Interior Fittings, Which Are Covered in Whole or Part With, and Hangings, Cushions, and Curtains, Which Are Made or Covered With, Textile Materials, Leather, and Other Decorative Fabrics.
First use 1948.

SN 251,859. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Aug. 8, 1966.

DU PONT

Owner of Reg. Nos. 600,896, 767,894, and others.
For Nonstructural Building Materials—Namely, Counter Tops and Vanity Tops.
First use June 15, 1966.

Class 33 — Glassware

SN 239,539. Pittsburgh Plate Glass Company, Pittsburgh, Pa. Filed Feb. 24, 1966.

LHR

For Coated Flat Glass, Including Bent and/or Shaped Coated Flat Glass.
First use at least as early as Sept. 8, 1959.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 244,871. Agway, Inc., Syracuse, N.Y. Filed May 4, 1966.

AGWAY

For Space Heating Oil Burners, Ventilating Fans, and Hay Drying Fans.
First use Mar. 5, 1964.

Class 36 — Musical Instruments and Supplies

SN 206,873. Nippon Ompa Kogyo Co., Ltd., Suginami-ku, Tokyo, Japan. Filed Nov. 24, 1964.

TESCO

Priority claimed under Sec. 44(d) on Japanese application filed Sept. 21, 1964; Reg. No. 697,623, dated Feb. 4, 1966.
For Hawaiian Guitars, Electric Guitars, Solid Guitars, Harp Guitars, Ukuleles, Electric Organs, Guitar Mikes, Musical Amplifiers for Hawaiian Guitar, Electric Guitar, Solid Guitar and Harp Guitar, Electric Bass, Tremolo Arms, Tremolo Machines, Foot Pedals (Foot Control) for Electric Guitar, Hawaiian Guitar, Violin, Contrabass, Harp and Mandolin.
Subj. to Intf. with SN 240,370.

SN 240,370. WMI Corporation, Evanston, Ill. Filed Mar. 7, 1966.

TEISCO
Del Rey

The drawing is lined for the colors red and blue, but color is not claimed as a feature of the mark.
For Electric Guitars, Acoustic Guitars, Organs, Pianos, Guitar Amplifiers, and Guitar Accessories—Namely, Picks, Cases, Amplifier Connecting Cords, and Amplifier Foot Switches.
First use July 29, 1964.
Subj. to Intf. with SN 206,873.

Class 37—Paper and Stationery

SN 242,809. Filmcraft-Chicago, Chicago, Ill. Filed Apr. 6, 1966.

BOND-WRAP

For Polyethylene Wrapping Film Sold in Sheet and Roll Form.
First use Feb. 7, 1965.

Class 38—Prints and Publications

SN 238,266. A. B. Morse Company, Barrington, Ill. Filed Oct. 7, 1966.

EXCAVATING CONTRACTOR

For Periodical Trade Magazine.
First use on or about Sept. 1, 1965.

SN 240,420. Dow Jones-Irwin, Inc., Homewood, Ill. Filed Mar. 8, 1966.

DJ·I

For Periodically Published Books.
First use Jan. 28, 1966.

SN 241,203. Universal Publishing & Distributing Corporation, New York, N.Y. Mar. 16 ,1966.

NOVA BOOKS

No claim is made to the exclusive right to the use of the word "Books" apart from the mark as shown.
For Books Containing Printed Literary and Artistic Works.
First use Sept. 5, 1963.

SN 241,204. Universal Publishing & Distributing Corporation, New York, N.Y. Mar. 16 ,1966.

AWARD BOOKS

No claim is made to the exclusive right to the use of the word "Books" apart from the mark as shown.
For Books Containing Printed Literary and Artistic Works.
First use Mar. 31, 1964.

SN 241,651. Elbert Advertisting Agency, Inc., Waltham, Mass. Filed Mar. 23, 1966.

ELBERTIDES

For Newsletter Published From Time to Time, in the Field of Marketing.
First use Jan. 29, 1963.

SN 241,872. Dell Publishing Co., Inc., New York, N.Y. Filed Mar. 25, 1966.

For Books.
First use June 22, 1964.

SN 241,873. Dell Publishing Co., Inc., New York, N.Y. Filed Mar. 25, 1966.

DELACORTE PRESS

For Books.
First use June 22, 1964.

SN 242,170. Per Se, Inc., Stanford, Calif. Filed Mar. 18, 1966.

Per/Se

For Magazine.
First use Feb. 28, 1966.

SN 244,258. Skookum Packers Association, Inc., Wenatchee, Wash. Filed Apr. 25, 1966.

SKOOKUM

For Coloring Books.
First use 1927.

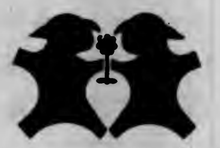
SN 246,680. Guide Services, Inc., Atlanta, Ga. Filed May 26, 1966.

MCD

For Directory Issued Periodically.
First use Apr. 18, 1966.

Class 39—Clothing

SN 198,845. Highlander Sportswear, Inc., Newark, N.J. Filed July 30, 1964.



For Wearing Apparel Such as Suede and Kidskin and Other Leather Coats; Plain, Zip-Out, Pile and Furlined—Full Length Coats, ⅞'s Coats, ¾ Coats, Jackets, Skirts, Dresses, Slacks, Suits; Shearling Coats, ⅞'s Coats, ¾ Coats; Reversibles, Coats ⅞'s Coats; Knit/Suede, Leather; Wool/Suede, Leather; Cotton/Synthetic/Suede, Leather Combinations—Suits, Jackets, ¾ Length, ⅞ Length and Coats.
First use Mar. 27, 1964.

SN 234,797. Anwelt Corporation, Fitchburg, Mass. Filed Dec. 17, 1965.



For Shoes.
First use May 27, 1965.

SN 237,201. Central Textiles, Inc., Arlington Heights, Ill. Filed Jan. 25, 1966.

KEVIN-KENT

The designation "Kevin-Kent" is fanciful and is not known to be the name of any individual.
For Men's and Boys' Clothing and Footwear, Specifically Sport Shoes, Gloves, Knit Headwear and Sox.
First use Mar. 29, 1965.

SN 238,027. Wembley, Inc., New Orleans, La. Filed Feb. 3, 1966.

GRANNY PRINTS

Applicant disclaims any exclusive right to the use of the word "Prints" apart from the mark as shown.
For Men's Neckwear.
First use Dec. 6, 1965.

SN 238,156. Bear Brand Hosiery Co., Chicago, Ill. Filed Feb. 7, 1966.

AIRMAID

Owner of Reg. Nos. 287,851, 602,758, and others.
For Hosiery.
First use on or about Dec. 27, 1930.

SN 238,344. Divina Footwear, Inc., d.b.a. Ambassador, St. Louis, Mo. Filed Feb. 8, 1966.

PACHANGAS

For Men's Shoes.
First use Jan. 14, 1966.

SN 238,752. Le Sabre Sportswear, Inc., New York, N.Y. Filed Feb. 14, 1966.

FABRICCINI

For Knit Wear—Namely, Sweaters, Sweatershirts, Shirts, and Sport Shirts.
First use Jan. 14, 1966.

SN 241,358. Melville Shoe Corporation, New York, N.Y. Filed Mar. 18, 1966.

TENNIES

For Men's, Women's, and Children's Sneakers.
First use Mar. 16, 1966.

SN 241,370. Ragan Knitting Co., Inc., Thomasville, N.C. Filed Mar. 18, 1966.

STAND-INS

For Hosiery.
First use Oct. 26, 1945.

SN 241,390. Texia Corporation, Dallas, Tex. Filed Mar. 18, 1966.

OO-SEX

For Fur Mittens.
First use in or about February 1966.

SN 241,499. Newman and Newman, New York, N.Y. Filed Mar. 21, 1966.

N & N

For Men's Outer Shirts and Men's Pajamas.
First use Mar. 19, 1963.

SN 241,944. Talbott Knitting Mills, Inc., New York, N.Y. Filed Mar. 25, 1966.

TARALAN

Owner of Reg. No. 666,938.
For Ladies' Knit Outerwear—Namely, Sweaters, Skirts, and Dresses.
First use Oct. 22, 1957.

SN 242,122. Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany. Filed Mar. 29, 1966.

VISTRAM

Owner of German Reg. No. 813,490, dated Mar. 26, 1965.
For Outerwear for Men, Women, and Children—Namely, Suits, Jackets, Trousers, Shirts, and Coats for Men; Dresses, Jackets, Skirts, Sweaters, Vests, Gowns and Coats for Women; and Shirts, Blouses, Dresses, Skirts, Jackets, Trousers, Suits and Coats for Children.

SN 243,002. Melville Shoe Corporation, New York, N.Y. Filed Apr. 8, 1966.

BIG ROBY

For Men's, Women's, and Children's Sneakers.
First use Apr. 6, 1966.

SN 248,285. Artisan House Imports, New York, N.Y. Filed June 17, 1966.



For Ladies' Sweaters, Slacks, Skirts, and Dresses and Men's Sweaters.
First use June 7, 1966.

Class 40—Fancy Goods, Furnishings, and Notions

SN 242,641. Novelty Cord & Tassel Co., Inc., Brooklyn, N.Y. Filed Apr. 4, 1966.

ALURA

For Window Shade Pulls and Buttons.
First use Dec. 20, 1965.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 233,813. National Research Corporation, Cambridge, Mass. Filed Dec. 2, 1965.

NRC-RESCUE BLANKET

Applicant claims no exclusive rights in the word "Blanket" except as incorporated in the mark as a whole as shown in the drawing.
For Metallized Plastic Film Blankets Primarily for Outdoor Use.
First use Sept. 7, 1965.

SN 233,814. National Research Corporation, Cambridge, Mass. Filed Dec. 2, 1965.

NRC-SPACE BLANKET

Applicant claims no exclusive rights in the word "Blanket" except as incorporated in the mark as a whole as shown in the drawing.
For Metallized Plastic Film Blankets in Laminate Form Primarily for Outdoor Use.
First use Sept. 7, 1965.

SN 245,173. Dettra Flag Company, Inc., Oaks, Pa. Filed May 9, 1966.

SENTRY

For Bunting.
First use on or about Apr. 21, 1966.

Class 43—Thread and Yarn

SN 242,562. Columbia-Minerva Corporation, New York, N.Y. Filed Apr. 4, 1966.

PRECIOUS NANTUK

For Yarn.
First use at least as early as Mar. 21, 1966; at least as early as 1946 as to "Precious"; at least as early as Jan. 14, 1964 as to "Nantuk."

Class 45—Soft Drinks and Carbonated Waters

SN 213,873. Herring Ginger Ale Company, Jacksonville, Fla. Filed Mar. 11, 1965.

DR. HERRING'S

For Ginger Ale Flavored Soft Drink.
First use at least as early as Sept. 1, 1934.

SN 237,847. La Salle Wines & Champagne, Inc., Farmington, Mich. Filed Feb. 2, 1966.

HAV-A-PARTY

For Non-Alcoholic Cocktail Mix.
First use Jan. 26, 1966.

SN 245,684. The Coca-Cola Company, Atlanta, Ga. Filed May 16, 1966.

Kin

For Quinine Water and Concentrates and Syrup for Making Same.
First use Mar. 2, 1966.

Class 46—Foods and Ingredients of Foods

SN 170,965. United States Wholesale Grocers' Association, Inc., d.b.a. Food Merchandisers of America, Washington, D.C. Filed June 13, 1963. COLLECTIVE MARK.

SHOPWORTH

Owner of Reg. No. 657,556.
For Ice Cream.
First use Apr. 30, 1963.

SN 178,727. Perfect Hostess Foods, Santa Monica, Calif. Filed Oct. 10, 1963.

MINIATURE DINING

For Frozen Hors d'Oeuvres—Namely, Sausage Wrapped in Pastry; Meat Preparation on a Stick; Meat and Cheese Products Carried in a Pastry Shell; Ground Herb and Nut Dessert Carried in a Pastry Shell; and Cheese and Fruit Dessert Carried in a Pastry Shell.
First use June 6, 1963.

SN 188,133. National Bellas Hess, Inc., North Kansas City, Mo. Filed Mar. 6, 1964.

G*E*X

For Fluid, Powdered, and Canned Milk, Cheese, Buttermilk, Chocolate Milk, Coffee, Potato Chips, Vegetable Oil, Mayonnaise, Salad Dressing, Prune Juice, Bread, and Fresh Canned, and Frozen Meat.
First use Nov. 1, 1962.

SN 197,116. A. Giurlani & Bro., San Francisco, Calif. Filed July 6, 1964.

STAR

Owner of Reg. Nos. 589,460 and 750,976.
For Canned and Bottled Food Products—Namely, Fruits, Vegetables, Fish, Shellfish, Tomato Paste, Pizza Sauce, Chile Sauce, Spaghetti Sauce With Mushrooms, Ravioli, Vegetable Juices, Clam Juice, Fruit and Berry Preserves, Melon Balls, Watermelon Rind, Chili Sauce, Pimientos, Olives, Maraschino Cherries, Mushrooms, Cheese, Caviar, Olive Oil, Garlic Puree, Giardiniera, Vinegars, Pickles, Gherkins, Relishes, Stuffed Olives, Fish Pate, Shellfish Pate, Peppers, Cocktail Onions, Hors d'Oeuvre Onions and Beets, Onion Rings, Onion Puree, Crab Cocktail, Seafood Cocktail, Capers, Sunflower Kernels, Pumpkin Seed Kernels, and Croutons.
First use 1926; 1900 in a different form.

SN 224,790. The Rath Packing Company, Waterloo, Iowa. Filed Aug. 2, 1965.

Rath

Owner of Reg. Nos. 189,645, 789,392, and others.
For Livestock and Poultry Feeds, and Non-Medicinal Feed Supplements and Dog Food.
First use on or about June 13, 1955.

SN 227,265. Lee Collins Company, Chelsea, Mass., assignee of Joseph K. Dennis Company, Chelsea, Mass. Filed Sept. 7, 1965.

SCOTIA

For Saltfish.
First use on or about June 8, 1920.

SN 230,313. Vitamin Products Company, d.b.a. Standard Process Laboratories, Milwaukee, Wis. Filed Oct. 15, 1965.

ANTI-PYREXIN

For Beef Extract in Tablet or Capsule Form.
First use Sept. 5, 1952.

SN 230,384. Gro-Kote, Inc., Santa Rosa, Calif. Filed Oct. 18, 1965.

GOBBLERS

For Packaged Dog and Cat Food.
First use Oct. 12, 1965.

SN. 230,575. William A. Shade Co., Inc., Belmont, Calif. Filed Oct. 19, 1965.

WASCO

For Food Flavor Concentrates and Extracts, Stabilizers and Chocolate in Solid and Liquid Form, Sold Exclusively to Food Manufacturers for Inclusion by the Food Manufacturers in Manufactured Products.
First use July 1965.

SN 230,801. Dun-Hot, Inc., Hazel Park, Mich. Filed Oct. 21, 1965.

JIGGLE CORN

Applicant disclaims the word "Corn" apart from the mark as shown.
For Packaged Popcorn, Adapted To Be Popped in the Package Containing the Popcorn.
First use July 21, 1965.

SN 232,765. Baker Extract Company, Baltimore, Md. Filed Nov. 16, 1965.



Owner of Reg. Nos. 51,116, 384,142, and others.
For Food Colors and Cake Decors—Namely, Colored Sugar Confection Beads for Use in Decorating Cake.
First use 1914.

SN 232,981. Consolidated Foods Corporation, d.b.a. Booth Fisheries, Chicago, Ill. Filed Nov. 19, 1965.

FUN FISH

The word "Fish" is disclaimed apart from the mark as shown.
For Frozen Fish.
First use Nov. 3, 1965.

SN 232,983. Cream Products Company, Inc., Cicero, Ill. Filed Nov. 19, 1965.

HY DERV

Owner of Reg. Nos. 743,071 and 770,462.
For Sour Non-Dairy Food Product Useable as a Dressing, Dip, Spread, or Sauce.
First use Aug. 4, 1964.

SN 233,106. Nick Kalender, d.b.a. Nick Kalender Farm, Dinuba, Calif. Filed Nov. 22, 1965.

ALTA

For Fresh Vegetables.
First use at least as early as 1958.

SN 233,215. Gage Food Products Company, Melrose Park, Ill. Filed Nov. 22, 1965.

FRUIT BOWL

Applicant disclaims the word "Fruit" apart from the mark as shown.
For Gelatin Dessert Powders.
First use Oct. 1, 1965.

SN 233,257. Empresa Pesquera Robinson Crusoe S.A., Vina Del Mar, Chile. Filed Nov. 24, 1965.

ROBINSON-CRUSOE

The mark is the name of a fictional character. Owner of Chilean Reg. No. 115,916, dated Sept. 2, 1957.
For Canned, Smoked, Dried, and Frosen Fish and Shellfish, Canned and Preserved Meats and Sausages, Frozen and Canned Vegetables, and Canned and Frosen Fruit and Vegetable Juices.

SN 233,331. Erman-Bach, Ltd., New York, N.Y. Filed Nov. 26, 1965.

Merba Line

Owner of Reg. No. 802,625.
For Color Decorations—Namely, Edible, Wafer Cake Tops, and Wafer Roses.
First use July 10, 1962.

SN 233,339. Hand Brands, Inc., Pound Ridge, N.Y. Filed Nov. 26, 1965.

HAND BRANDS

Applicant disclaims "Brands" apart from the mark as shown.
For Soup.
First use June 15, 1965.

SN 233,516. Milk Proteins, Inc., Detroit, Mich. Filed Nov. 29, 1965.

GOODNESS SHAKE

The word "Shake" is disclaimed apart from the mark as shown.
For Flavored Malt Base for Milk Shakes.
First use Oct. 4, 1965.

SN 233,637. Schroeder Bros., Inc., New York, N.Y. Filed Nov. 30, 1965.

CELEBRATION

Owner of Reg. Nos. 554,974, 656,554, and 708,622.
For Olives.
First use Oct. 29, 1965.

SN 233,985. Anderson-Hutchison Sales, Inc., d.b.a. Son Son Foods Co., Kansas City, Mo. Filed Dec. 6, 1965.



The drawing is lined for the colors red, blue, and gold.
For Edible Foods—Namely, Spices, Canned Fruits, and Canned Vegetables.
First use Sept. 1, 1965.

SN 234,137. Mead Johnson & Company, Evansville, Ind. Filed Dec. 7, 1965.

JUICE BOWL

Applicant disclaims the word "Juice" apart from the mark as shown.
For Canned Citrus Juices.
First use on or prior to Oct. 15, 1965.

SN 234,544. Dairy Maid Confectionery Company, Philadelphia, Pa. Filed Dec. 14, 1965.



No claim is made to the words "The Original" and "Candy" apart from the mark as shown. Applicant reserving all of its rights at common law. Owner of Reg. No. 788,806.
For Candy.
First use Nov. 23, 1965.

SN 234,556. Foremost Dairies, Inc., San Francisco, Calif. Filed Dec. 14, 1965.

BIG DIP

No claim of exclusive right is made to the word "Dip" apart from the mark as shown. Owner of Reg. No. 604,037.
For Food Product Composed of Sour Cream, Mayonnaise, and Various Flavorings Used as a Party Dip.
First Use Nov. 27, 1965.

SN 234,822. Hand Brands, Inc., Pound Ridge, N.Y. Filed Dec. 17, 1965.



Applicant disclaims the word "Brands" apart from the mark ash shown.
For Soup.
First use Aug. 15, 1965.

SN 235,065. Continental Baking Company, Rye, N.Y. Filed Dec. 20, 1965.

TWIST'RS

For Cake.
First use Sept. 30, 1965.

SN 235,069. Lansmith Cherry & Fruit Co., Ripley, N.Y. Filed Dec. 20, 1965.

SALAD QUEEN

For Bottled Maraschino Cherry Pieces.
First use Jan. 30, 1965.

SN 235,212. Moriarty Meat Company, Chicago, Ill. Filed Dec. 23, 1965.



Owner of Reg. Nos. 622,420, 641,823, and 643,671.
For Prepared Meat Products.
First use Aug. 1, 1965.

SN 236,071. Eady Farming Co., Calexico, Calif. Filed Jan. 10, 1966.

IMPERIAL SUN

For Fresh Vegetables.
First use Dec. 9, 1965.

SN 236,072. Eady Farming Co., Calexico, Calif. Filed Jan. 10, 1966.



For Fresh Vegetables.
First use Dec. 3, 1965.

SN 236,595. G. P. Gundlach & Company, Cincinnati, Ohio. Filed Jan. 17, 1966.



For Milk, Dessert Toppings, and Potato Chips.
First use Dec. 20, 1965.

SN 237,587. Pacific Hawaiian Products Company, Fullerton, Calif. Filed Jan. 28, 1966.



For Fruit Juice Based Food Beverages.
First use Jan. 26, 1966.

SN 238,043. C. W. Butler, d.b.a. Butler Farms, Weslaco, Tex. Filed Feb. 4, 1966.

TURTLE

For Fresh Vegetables.
First use Oct. 28, 1958.

SN 238,891. Rarity Packing Co., Inc. Oxnard, Calif. Filed Feb. 15, 1966.



For Fresh Vegetables.
First use Nov. 5, 1962.

SN 238,892. Rarity Packing Co., Inc., Oxnard, Calif. Filed Feb. 15, 1966.



For Fresh Vegetables.
First use Oct. 22, 1962.

SN 242,495. Rich-Moor Corporation, Los Angeles, Calif. Filed Apr. 1, 1966.

RICH-MOOR

For Line of Packaged Dehydrated Foods and Food Beverages as Follows: Orange Juice Drink; Tomato Juice Crystals; Oatmeal With Sugar and Milk; Scrambled Eggs; Eggs and Bacon Bits; Pancake Mix; Maple Syrup Mix; Spanish Rice; Macaroni and Cheese; Boston Bean Dinner; Spaghetti With Tomato Sauce; Vegetable Beef Stew; Macaroni and Beef With Seasonings; Chicken Rice Dinner; Western Hash With Beef; Chili Beef Dinner; Beef Stroganoff With Noodles; Chicken a la King; Soups; Hashed Brown Potatoes; Freeze-Dried Corn; Peas and Carrots; Green Beans; Instant Mashed Potatoes With Milk; Biscuit Mix; Corn Cake Mix; Gingerbread Mix; Beef Flavored Brown Gravy; Cooked Ground Beef; Cooked Diced Chicken; Instant Applesauce; Fruit Cocktail With Sugar; Slice Peaches With Sugar; Apple Slices; Instant Fruit Drinks of Various Flavors; Mixes for Making Milk Shakes; Sweet Milk Cocoa; Instant Whole Milk; Cheddar Cheese Spread; Peanut Butter; Jellies; Instant Dessert Puddings; French Apple Compote.
First use Jan. 20, 1966.

SN 242,593. Growers Exchange, Inc., Glendale, Ariz. Filed Apr. 4, 1966.

Gordo

Owner of Reg. No. 766,025.
For Fresh Vegetables.
First use Mar. 4, 1966.

SN 244,608. J. R. Norton Co., Glendale, Ariz. Filed Apr. 29, 1966.

BIG JUAN

For Fresh Vegetables—Namely, Lettuce.
First use Nov. 13, 1964.

SN 246,322. Kellogg Company, Battle Creek, Mich. Filed May 23, 1966.

PRODUCT 19

For Cereal Breakfast Foods.
First use Mar. 15, 1966.

SN 248,581. Ore-Ida Foods, Inc., Ontario, Oreg. Filed June 21, 1966.

"PIXIE"

CRINKLES

Owner of Reg. No. 739,071.
For Frozen French Fried Potatoes.
First use Mar. 19, 1966.

SN 251,381. Central Sands Produce, Inc., Bancroft, Wis. Filed Aug. 1, 1966.



For Potatoes in Natural State.
First use August 1963.

SN 253,826. Los Angeles Importing Co., Monterey Park, Calif. Filed Sept. 6, 1966.

EL DORADO

For Salad and Cooking Oils; Canned Tomatoes and Canned Tomato Puree.
First use Mar. 15, 1940.

Class 47—Wines

SN 190,822. Nishimoto Trading Co., Ltd., Los Angeles, Calif. Filed Apr. 10, 1964.

FUJIYAMA

For Bottled Wines.
First use on or about Mar. 20, 1964.

SN 237,081. California Wine Association, San Francisco, Calif. Filed Jan. 24, 1966.

VICTOR HUGO

The name "Victor Hugo" does not identify any particular living individual. Owner of Reg. No. 320,387.
For Wines.
First use Oct. 27, 1965.

SN 237,940. Charles Jacquin et Cie., Inc., Philadelphia, Pa. Filed Feb. 3, 1966.

JACQUIN

Owner of Reg. Nos. 435,863, 793,470, and 813,568.
For Wine.
First use Nov. 1, 1965.

Class 48—Malt Beverages and Liquors

SN 231,890. Charrington & Co. Limited, London, E. 1, England. Filed Nov. 1, 1965.

TOBY

Owner of British Reg. No. 824,858, dated Aug. 31, 1961.
For Beers.

SN 239,378. Carling Brewing Company, Incorporated, d.b.a. Carling Brewing Company, Cleveland, Ohio. Filed Feb. 23, 1966.

Stag

The drawing is lined for the colors gold and red. Owner of Reg. Nos. 512,884 and 515,136.
For Beer.
First use December 1958.

SN 242,325. Brasserie de Kronenbourg, Anct. F. G. Hatt, Brasserie du Bas-Rhin, S.A., Strasbourg-Cronenbourg, Bas-Rhin, France. Filed Mar. 31, 1966.

Kronenbourg 1664

Owner of U.S. Reg. Nos. 753,508 and 753,509.
For Beer.
First use 1664; in commerce 1953.

SN 242,326. Brasserie de Kronenbourg, Anct. F. G. Hatt, Brasserie du Bas-Rhin, S.A., Strasbourg-Cronenbourg, Bas-Rhin, France. Filed Mar. 31, 1966.

HATT

Owner of U.S. Reg. Nos. 753,507, 753,508, and 753,509.
For Beer.
First use 1664; in commerce 1953.

Class 49—Distilled Alcoholic Liquors

SN 227,308. McCormick Distilling Co., Weston, Mo. Filed Sept. 7, 1965.

MCCORMICK

Owner of Reg. Nos. 401,746 and 793,468.
For Whiskey, Gin, Vodka and Grain Alcohol.
First use in or about 1903; at least as early as 1887 as to the mark "McCormick's."

SN 231,576. Charles N. May & Company, Chicago, Ill. Filed Oct. 24, 1965.

GLYNN BURNIE

The name "Glynn Burnie" is not the name of any individual, living or dead.
For Whisky.
First use March 1962.

SN 249,908. Heublein, Inc., Hartford, Conn. Filed July 11, 1966.

HEUBLEIN

Owner of Reg. Nos. 632,942, 651,283, and others.
For Prepared Alcoholic Cocktails, Brandy, and Liqueurs.
First use April 1955.

SN 253,084. Simon Levi Company, Ltd., Los Angeles, Calif. Filed Aug. 25, 1966.

NINOTCHKA

For Vodka.
First use Feb. 6, 1955.

Class 50—Merchandise Not Otherwise Classified

SN 233,445. The Borden Company, New York, N.Y. Filed Nov. 29, 1965.

LINTEX

Owner of Reg. Nos. 196,428 and 310,302.
For Covering Materials for Tables, Shelves and the Like With Fabric Backing to Which a Protective and Decorative Vinyl, Acrylic, Oil or Other Polymeric Coating Has Been Applied.
First use Nov. 1, 1924.

SN 242,899. Hermes Plastics Inc., New York, N.Y. Filed Apr. 7, 1966.

MAGNETIX

For Multitoned Plastic Engraving Stock.
First use Feb. 28, 1966.

SN 244,478. Arthur C. Farnham, d.b.a. The Real-O-Stake Company, San Carlos, Calif. Filed Apr. 28, 1966.

REAL-O-STAKE

For Device in the Nature of a Stake for Holding and Displaying Signs.
First use June 1956.

SN 245,171. Dettra Flag Company, Inc., Oaks, Pa. Filed May 9, 1966.

Sentry

For Flags and Cloth Decorations.
First use on or about Apr. 21, 1966.

SN 245,172. Dettra Flag Company, Inc., Oaks, Pa. Filed May 9, 1966.

SENTRY

For Flags and Cloth Decorations.
First use on or about Apr. 21, 1966.

Class 51 — Cosmetics and Toilet Preparations

SN 191,978. Hudson National, Inc., New York, N.Y., by change of name from Hudson Vitamin Products, Inc., New York, N.Y. Filed Apr. 24, 1964.



LORD HUDSON

For Men's Toiletries—Namely, Deodorant, Aftershave Lotion, and Shaving Cream.
First use Mar. 10, 1964.

SN 228,369. Sybil Ives Incorporated, White Plains, N.Y. Filed Sept. 22, 1965.

MAXIMIZER

For Activator for Use in Conjunction With Hair Bleaching.
First use Mar. 25, 1965.

SN 228,491. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Sept. 28, 1965.

BLUSH FIRE

For Lipsticks.
First use Apr. 29, 1965.

SN 230,144. Gabrieleen Company, Inc., Chicago, Ill. Filed Oct. 14, 1965.

PRO-LONG

For Hair Styling Gel for Professional Use.
First use Aug. 23, 1965.

SN 232,827. Eversharp, Inc., Milford, Conn. Filed Nov. 17, 1965.

ELECTRONIC HOT LATHER

Applicant disclaims the term "Hot Lather" apart from the mark as shown.
For Shaving Cream.
First use Nov. 1, 1965.

SN 234,405. Eversharp, Inc., Milford, Conn. Filed Dec. 13, 1965.

LATHER MAT

Applicant disclaims the term "Lather" apart from the mark as shown.
For Shaving Cream.
First use Nov. 24, 1965.

SN 234,406. Eversharp, Inc., Milford, Conn. Filed Dec. 13, 1965.

LATHER MATIC

Applicant disclaims the term "Lather" apart from the mark as shown.
For Shaving Cream.
First use Nov. 24, 1965.

SN 242,244. The House of Wrisley, Inc., Paris, Tenn. Filed Mar. 30, 1966.

GOLD FIRE

For Cologne.
First use Dec. 29, 1965.

SN 250,115. Dr. Vladimir Alexandre Oneskiw, d.b.a. Laboratories du Dr. V. A. Oneskiw and/or Beauty Seal, Montreal, Quebec, Canada. Filed July 13, 1966.

beauty seal

Owner of Canadian Reg. No. 164/42000, dated June 30, 1952.
For Television, Cinema, and Theatrical Facial Make Up, Perfume, Toilet Waters, Toilet Creams, Toilet Powders, Toilet Lotions, Preparations for Hair Dressings, Dental Powder and Creams, Toilet Preparations for Eyes, Deodorant, Manicure Toilet Preparations, Bath Salts, Lipstick, Sun Tan Preparations, Shaving and After Shaving Preparations.
First use Jan. 14, 1963; in commerce Jan. 14, 1963.

SN 251,093. American Home Products Corporation, New York, N.Y. Filed July 27, 1966.

DENTURINE

Owner of Reg. No. 329,226.
For Mouthwash.
First use June 22, 1966.

SN 251,581. Ar. Winarick, Inc., New York, N.Y. Filed Aug. 3, 1966.

TROPIC LIME

Applicant disclaims use of the word "Lime" apart from the mark as shown.
For Cologne and After Shave.
First use Apr. 21, 1966.

SN 252,056. Richard Hudnut, Morris Plains, N.J. Filed Aug. 10, 1966.

CURLS AWAY

For Neutralizer and Hair Straightener Gel.
First use May 20, 1966.
Subj. to Intf. with SN 253,088.

SN 252,516. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Aug. 17, 1966.

BRIXEL

For Perfume.
First use Aug. 10, 1966.

SN 252,521. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Aug. 17, 1966.

ULTREX

For Perfume.
First use Aug. 5, 1966.

SN 252,524. Countess Maritza Cosmetic Co., Inc., New York, N.Y. Filed Aug. 17, 1966.

ENGLISH CROWN

For After-Shave Lotion.
First use July 25, 1966.

SN 252,786. Lever Brothers Company, New York, N.Y. Filed Aug. 22, 1966.

CORR-ECTIN

For Mouth Wash.
First use Aug. 21, 1964.

SN 252,788. Lanvin-Charles of the Ritz, Inc., New York, N.Y. Filed Aug. 22, 1966.

MONSIEUR LANVIN

Owner of Reg. Nos. 556,672, 698,286, and others.
For Cologne, After Shave Lotion, and Talc.
First use May 1963.

SN 253,706. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Sept. 2, 1966.

TALIXE

For Perfume.
First use Aug. 22, 1966.

SN 253,715. Lenard et Cie., Inc., Flushing, N.Y. Filed Sept. 1, 1966.



For Men's Colognes.
First use Aug. 16, 1966.

Class 52 — Detergents and Soaps

SN 186,064. The Dow Chemical Company, Midland, Mich. Filed Feb. 5, 1964.



For Chlorinated Hydrocarbon Solvents for Use by Professional Dry Cleaners.
First use Sept. 24, 1963.

SN 230,429. Puritan Chemical Company, Atlanta, Ga. Filed Oct. 18, 1965.

FLIP

For Commercial Powdered Disinfectant Cleanser.
First use on or about Dec. 7, 1964.

SN 230,558. Pennsalt Chemicals Corporation, Philadelphia, Pa. Filed Oct. 19, 1965.

B-K
CCA

Owner of Reg. Nos. 108,332, 795,698, and others.
For General Purpose Alkaline Detergent Especially for Use in Dairies and Food Processing Plants.
First use in or about December 1954.

SN 230,567. Radiator Specialty Company, Charlotte, N.C. Filed Oct. 19, 1965.



The drawing is lined for red, but no claim is made to color.
For Boiler Cleaning Compound.
First use Oct. 1, 1965.

SN 234,415. Hardwick Products, Inc., Marblehead, Mass. Filed Dec. 13, 1965.



The word "Cleen" is disclaimed apart from the mark as shown.
For Household All-Purpose Cleaner.
First use October 1961.

SN 237,386. Rohm & Haas Company, Philadelphia, Pa. Filed Jan. 26, 1966.



Owner of Reg. No. 797,392.
For Preparation Used as a Detergent, Emulsifier and Wetting Agent for Manufacturing Purposes and for Industrial, Institutional, Farm and Other Applications.
First use on or about Dec. 29, 1965.

SN 240,782. Purex Corporation, Ltd., Lakewood, Calif. Filed Mar. 11, 1966.

INSTANT FELS

Owner of Reg. Nos. 56,841, 764,076, and others.
For Soap Granules for Laundry Use.
First use June 1953.

SN 241,581. Chemical Service of Baltimore, Inc., Baltimore, Md. Filed Mar. 22, 1966.

SUDS & DRY

For Rug Shampoo.
First use Mar. 18, 1966.

SN 252,317. Diamond Alkali Company, Cleveland, Ohio. Filed Aug. 15, 1966.

DIA-CLEAN

Owner of Reg. Nos. 549,472 and 641,233.
For Cleaner for Use in the Food Processing Industry.
First use Feb. 16, 1966.

SN 252,449. J. C. Zobrist Company, Charleston, W. Va. Filed Aug. 16, 1966.

BRUTE 4

For Multi-Purpose Cleaner and Wax Stripper.
First use Aug. 2, 1966.

SERVICE MARKS

Class 100 — Miscellaneous

SN 208,471. Maitland Junior Chamber of Commerce, Maitland, Fla. Filed Dec. 18, 1964.



For Advisory Services in the Field of Fund-Raising.
First use Oct. 20, 1964.

SN 222,158. Imperial House Motels, Inc., Dayton, Ohio. Filed June 28, 1965.



For Motel Services—Namely, Providing Lodgings and Meals in Motels.
First use May 2, 1961.

SN 223,421. Imperial House Motels, Inc., Dayton, Ohio. Filed July 15, 1965.

Imperial House

For Motel Services—Namely, Providing Lodgings and Meals in Motels.
First use at least as early as May 2, 1961.

SN 232,141. Otis Engineering Corporation, Dallas, Tex. Filed Nov. 4, 1965.

OTIS

For Oil and Gas Well Services—Namely, Snubbing Service, Well Workover, Running and Pulling of Pipe Under Pressure, Wireline Services, Installing and Removing Subsurface Devices by Flexible Line, Bailing, Fishing, Swabbing, Internal Corrosion Detection and Sampling Surveys, Oil and Gas Well Completion Services, Consulting Services in Connection With Oil and Gas Well Equipment Selection, Use and Application Techniques, Well Workover Services, Tubing Testing Services for Pressure Testing Pipe in Place and Prior to Use of the Pipe in the Wells, Tubing and Pipe Plugging Services, Valve Drilling and Pipe Tapping Services, Specialized Consulting Service in Connection With Operation of Wells, and Safety and Blowout Prevention Service.
First use on or about Jan. 1, 1936.

SN 242,350. Financial Executives Institute, New York, N.Y. Filed Mar. 31, 1966.



The mark comprises a monogram consisting of the letters FEI in a rectangular design.
For Association Services—Namely, Informing Members of the Institute Regarding Developments and Trends in Financial Management; Maintaining Liaison With Organizations Dealing With Problems of Interest to Financial Management; Developing Educational Programs Relating to Careers in Financial Management; Conducting Chapter Meetings, Area Conferences, and International Conferences; and Publishing Bulletins, Directories, Reports, Magazines, and Other Authoritative Material Related to the Field of Business Management.
First use May 1962.

Class 101 — Advertising and Business

SN 225,388. Youthpower, Inc., Milwaukee, Wis. Filed Aug. 9, 1965.

YOUTHPOWER

For Non-Profit Summer Employment Clearing Houses Operated by and for Young People Between the Ages of Sixteen and Twenty-One.
First use June 1, 1964.

SN 227,290. John D. Heikes, d.b.a. John Heikes Enterprises, Corona Del Mar, Calif. Filed Sept. 7, 1965.

"INSTANT BINGO"

The word "Bingo" is disclaimed apart from the mark as shown.
For Promoting the Sale of Goods of Retailers and Producers to Consumers Through the Organizatin and Offering of a Bingo Contest.
First use Aug. 10, 1965.

SN 230,968. Charles E. Vaughn, d.b.a. Vaughn Electrosources Company, Birmingham, Ala. Filed Oct. 21, 1965.

VESCO

For Service of Designing for Others Control Systems Embodying Various Types of Instruments—Namely, Controls for Process Temperatures, Pressure, Volume, and Time Flow, Electrical Resistance, Peak Loads, Torque and Torsion Loads, Magnetic Pick-Up Devices, Strain Gauge Test Devices, and Gas Analyzers.
First use July 1963.

SN 234,087. The Three Star Stamp Company, Hopkins, Minn. Filed Dec. 6, 1965.



Owner of Reg. No. 752,651.
For Promotion of the Sale of Goods of Others by the Issuance of Script Certificates to Stores Located in the Several States and by Redemption of Said Certificates From Customers of Said Stores, Also Located in the Several States.
First use in or about December 1962.

SN 235,553. Ebsco Industries, Inc., Birmingham, Ala. Filed Dec. 30, 1965.

das

DIRECTIONAL ADVERTISING SERVICES

Applicant disclaims any exclusive rights to the words "Advertising Services" apart from the remainder of the mark.
For Service of Advertising the Goods and Services of Others by Placing in Offices and Other Places of Business a Number of Periodicals Enclosed in Binders, the Subscriber's Advertising Being Placed on the Binders.
First use on or about Feb. 1, 1965.

SN 236,596. G. P. Gundlach & Company, Cincinnati, Ohio. Filed Jan. 17, 1966.



For Retail Dairy Store Services.
First use Dec. 20, 1965.

SN 238,174. Computers for Industry and Business, Inc., New York, N.Y. Filed Feb. 7, 1966.

cib

For Data Processing Computer Service.
First use January 1, 1962.

SN 238,594. Alextronics Corporation, Cleveland, Ohio. Filed Feb. 11, 1966.

BENEFACTS

For Analyzing Employee Benefit Plans, and Programming Information With Respect Thereto by Electronic Data Processing.
First use December 1965.

SN 245,796. Sandusky Distributing Company, Sandusky, Ohio. Filed May 16, 1966.

MR. WIGGS

For Department Store Services.
First use May 21, 1962.

Class 102 — Insurance and Financial

SN 179,137. Interstate Management Corporation, Evansville, Ind. Filed Oct. 16, 1963.



For Consumer Finance Services.
First use July 1963.

SN 194,462. D. A. Campbell Company, Inc., New York, N.Y., assignee of Douglas A. Campbell, d.b.a. D. A. Campbell Company, New York, N.Y. Filed May 28, 1964.



For Investment Brokerage Services, Private Placement of Securities, and Investment Research and Advisory Services.
First use Oct. 3, 1962.

SN 231,325. Western Pennsylvania National Bank, Pittsburgh, Pa. Filed Oct. 22, 1965.

CASHMASTER

For Check Cashing Service.
First use June 15, 1965.

SN 236,319. Greater Nebraska Life Insurance Company, Lincoln, Nebr. Filed Jan. 10, 1966.



For Underwriting Life, Health, and Accident Insurance.
First use Feb. 2, 1965.

Class 103 — Construction and Repair

SN 227,680. Grayson Rose Automatic Transmission Company, Birmingham, Ala. Filed Sept. 13, 1965.



For Repair and Servicing of Automatic Transmissions for Automobiles.
First use on or about June 14, 1962.

SN 236,868. Michael Agostino, Bronx, N.Y. Filed Jan. 20, 1966.

ALL CLEAR

For Sewer Service for Cleaning Sewer Lines, Drain Pipes, and Other Tubular Conduits.
First use Nov. 23, 1959.

SN 237,341. Paul J. Grunau Company, Milwaukee, Wis. Filed Jan. 26, 1966.



For Installation and Designing Services in the Fields of Plumbing, Heating, Air Conditioning, and Automatic Fire Sprinkler Systems.
First use November 1955.

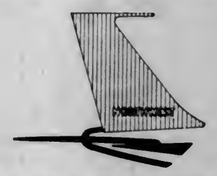
Class 105 — Transportation and Storage

SN 220,068. The Best Fertilizers Co., Lathrop, Calif. Filed June 1, 1965.



Applicant disclaims the word "Express" apart from the mark as shown. The drawing is lined for red but color is not claimed as a feature of the mark. Owner of Reg. Nos. 736,988, 792,777, and others.
For Transportation and Storage Service.
First use on or about May 25, 1964.

SN 222,191. Northwest Airlines, Inc., d.b.a. Northwest Orient Airlines, Minneapolis, Minn. Filed June 28, 1965.



The drawing is lined for red but applicant does not claim color as a feature of the mark.
For Transportation of Passengers, Cargo, and Mail by Air.
First use Mar. 15, 1961.

SN 246,237. Dollar-A-Day Rent-A-Car, Beverly Hills, Calif. Filed May 23, 1966.



Applicant disclaims "Dollar a Day," "Rent a Car," the numeral 1 and the dollar sign apart from the mark as shown.
For Renting and Leasing Passenger Automobiles.
First use Apr. 1, 1966.

COLLECTIVE MEMBERSHIP MARKS

SN 234,881. Choristers Guild, Dallas, Tex. Filed Dec. 20, 1965.



The representation of a cross is disclaimed apart from the mark. The Greek letters Chi, Rho, which stand for "Christus Rex" are disclaimed apart from the mark as shown. The lining and stippling shown in the drawing are not for the indication of color, but form part of the ornamental design of the cross.
For Indicating Membership in Applicant's Guild.
First use May 15, 1958.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

818,902. AQUAMAC. Commercial Solvents Corporation. SN 210,744. Pub. 9–6–66. Filed 1–27–65.

818,903. FLUR-O-FRAN. France Packing Company. SN 220,755. Pub. 9–6–66. Filed 6–9–65.

818,904. VYCRON XTRA-TUF. Beaunit Corporation. SN 226,506. Pub. 9–6–66. Filed 8–26–65.

818,905. VELVA COAT. Archer-Daniels-Midland Company. SN 226,980. Pub. 9–6–66. Filed 9–2–65.

818,906. DYLAR. Sinclair-Koppers Company. SN 229,142. Pub. 9–6–66. Filed 10–1–65.

818,907. EBONITE. Embosograf Company of Illinois. SN 229,777. Pub. 9–6–66. Filed 10–11–65.

818,908. WONDERFLEX. Embosograf Company of Illinois. SN 229,778. Pub. 9–6–66. Filed 10–11–65.

818,909. NURSERYMAN A PRODUCT OF HORTICULTURAL RESEARCH AND DESIGN. Dolly Madison Foods, Inc. MULTIPLE CLASS (Classes 1 and 10). SN 232,495. Pub. 9–6–66. Filed 11–12–65.

818,910. BALEBUSTER. Ed. F. Mangelsdorf & Bro., Inc. SN 234,044. Pub. 9–6–66. Filed 12–6–65.

818,911. SUMILITE. Sumitomo Bakelite Ltd., d.b.a. Sumitomo Bakelite Company, Ltd. SN 235,593. Pub. 9–6–66. Filed 12–30–65.

818,912. TUFLENE. The Goodyear Tire & Rubber Company. SN 236,090. Pub. 9–6–66. Filed 1–10–66.

818,913. INTERNATIONAL. International Paper Company. SN 236,825. Pub. 9–6–66. Filed 1–19–66.

818,914. FRENCHEE. Dairyland Seed Company, Inc. SN 237,433. Pub. 9–6–66. Filed 1–27–66.

818,915. FLEXLOK. Acme Backing Corporation. SN 238,824. Pub. 9–6–66. Filed 2–15–66.

818,916. ST REGIS. St. Regis Paper Company. SN 243,031. Pub. 9–6–66. Filed 4–8–66.

Class 2 — Receptacles

818,917. EUCLID AND DESIGN. Euclid Spiral Paper Tube Corp. SN 188,222. Pub. 9–6–66. Filed 3–9–64.

818,918. LIVE-PAK. Columbia Corrugated Container Corp. SN 214,954. Pub. 9–6–66. Filed 3–25–65.

818,919. LANCO SNAP INS. Lanco Container Corp. SN 221,188. Pub. 9–6–66. Filed 6–15–65.

818,920. DOLLY-UP. Theresa P. Carey. SN 221,253. Pub. 9–6–66. Filed 6–16–65.

818,921. HESCO. The Harold E. Saper Company. SN 222,760. Pub. 9–6–66. Filed 7–6–65.

818,922. DUO-SERVICE. Albermarle Paper Manufacturing Company, d.b.a. Consumer Bag and Packaging Corporation. SN 222,799. Pub. 9–6–66. Filed 7–7–65.

818,923. RUFF-RIDER. Olin Mathieson Chemical Corporation. SN 223,255. Pub. 9–6–66. Filed 7–13–65.

818,924. THE GOLDEN STEIN. Edward J. Paprocki, d.b.a. Ever Ready Machine & Die Co. SN 234,664. Pub. 9–6–66. Filed 12–15–65.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

818,925. PAK-A-BOOK AND DESIGN. H. E. Dial and MacDonald Millard (joint owners). SN 219,406. Pub. 9–6–66. Filed 5–21–65.

818,926. REGENCY. Gimbel Brothers, Inc. SN 223,402. Pub. 9–6–66. Filed 7–15–65.

818,927. FOR MY MONEY IT'S RICO AND DESIGN. Rico Leather Specialty Inc. SN 231,942. Pub. 9–6–66. Filed 11–1–65.

Class 4 — Abrasives and Polishing Materials

818,928. E. FABER. Eberhard Faber Inc. SN 221,908. Pub. 9–6–66. Filed 6–24–65.

818,929. EBERHARD FABER. Eberhard Faber Inc. SN 221,913. Pub. 9–6–66. Filed 6–24–65.

818,930. BEHOLD. The Drackett Company, assignee of Bristol-Myers Company. SN 229,056. Pub. 8–23–66. Filed 10–1–65.

818,931. DIAMOND BRITE. The Drackett Company, assignee of Bristol-Myers Company. SN 229,057. Pub. 8–23–66. Filed 10–1–65.

Class 5 — Adhesives

818,932. E. FABER. Eberhard Faber Inc. SN 221,909. Pub. 9–6–66. Filed 6–24–65.

818,933. EBERHARD FABER. Eberhard Faber Inc. SN 221,914. Pub. 9–6–66. Filed 6–24–65.

818,934. BEACON. Lowell Bearing Company. SN 222,173. Pub. 9–6–66. Filed 6–28–65.

818,935. GOLD EAGLE AND DESIGN. Morris Feldstein & Son, Inc. SN 225,130. Pub. 8–23–66. Filed 8–6–65.

Class 6 — Chemicals and Chemical Compositions

818,936. PIC. Cook Coffee Company. MULTIPLE CLASS (Classes 6 and 52). SN 221,470. Pub. 9–6–66. Filed 6–18–65.

818,937. D·H AND DESIGN. Daly-Herring Company. SN 223,027. Pub. 9–6–66. Filed 7–9–65.

818,938. TARNIBAN. Technic, Inc. SN 224,264. Pub. 9–6–66. Filed 7–26–65.

818,939. BUG·IT. American Gas & Chemicals, Inc. SN 224,291. Pub. 9–6–66. Filed 7–27–65.

818,940. ERYTHROL-TROL. Dade Reagents, Inc. SN 224,937. Pub. 9–6–66. Filed 8–4–65.

818,941. DOX-ANODE. MacCleaster Chemical Company Limited. SN 225,041. Pub. 9–6–66. Filed 8–5–65.

818,942. MISCELLANEOUS DESIGN. American Gas & Chemicals, Inc. SN 226,880. Pub. 9–6–66. Filed 9–1–65.

818,943. VIBRALURE. W. F. Fancourt Co., Inc. SN 228,449. Pub. 9–6–66. Filed 9–23–65.

818,944. INDOLIQUE. Fritzsche Brothers, Inc. SN 230,529. Pub. 9–6–66. Filed 10–19–65.

818,945. SEA MIST PRODUCTS ETC. AND DESIGN. Trager Manufacturing Company. SN 232,036. Pub. 9–6–66. Filed 11–2–65.

818,946. HIO-DINE AND DESIGN. Nease Chemical Company, Inc. SN 232,713. Pub. 9–6–66. Filed 11–15–65.

818,947. STELOTOL. Foseco International Limited. SN 233,590. Pub. 9–6–66. Filed 11–30–65.

818,948. DEXIL. Foseco International Limited. SN 233,707. Pub. 9–6–66. Filed 12–1–65.

818,949. DYCOTE. Foseco International Limited. SN 233,708. Pub. 9–6–66. Filed 12–1–65.

818,950. FARMACY. Tide Products, Inc. SN 233,757. Pub. 9–6–66. Filed 12–1–65.

818,951. POSTALOY. Casting Materials Company, Inc. SN 233,779. Pub. 9–6–66. Filed 12–2–65.

818,952. LEA ANTISTAT. The Lea Manufacturing Co. SN 234,215. Pub. 9–6–66. Filed 12–8–65.

818,953. DURATROL. Masury-Young Company. SN 236,616. Pub. 9–6–66. Filed 1–17–66.

818,954. SABOA–100. Masury-Young Company. SN 236,617. Pub. 9–6–66. Filed 1–17–66.

818,955. AEROCAT TRIPLE-S. American Cyanamid Company. SN 236,704. Pub. 9–6–66. Filed 1–18–66.

818,956. CHEMHOE AND DESIGN. Pittsburgh Plate Glass Company. SN 236,774. Pub. 9–6–66. Filed 1–18–66.

818,957. EQUOL. Mackenzie Chemical Works, Inc. SN 236,834. Pub. 9–6–66. Filed 1–19–66.

818,958. WITHDRAWN.

818,959. PRESST. The Ironees Company. SN 236,997. Pub. 9–6–66. Filed 1–21–66.

818,960. IRONEES. The Ironees Company. SN 236,998. Pub. 9–6–66. Filed 1–21–66.

818,961. KROMAROON. Chas. Pfizer & Co., Inc. SN 237,021. Pub. 9–6–66. Filed 1–21–66.

818,962. IMPLENAL. Badische Anilin- & Soda-Fabrik Aktiengesellschaft. SN 237,076. Pub. 9–6–66. Filed 1–24–66.

818,963. RYLEX. E. I. du Pont de Nemours and Company. SN 237,100. Pub. 9–6–66. Filed 1–24–66.

818,964. HISTOCLAD. Clay-Adams, Inc. SN 237,312. Pub. 9–6–66. Filed 1–26–66.

818,965. PHYTAR. The Ansul Company. SN 237,419. Pub. 9–6–66. Filed 1–27–66.

818,966. SPRITE. The Sinclair Manufacturing Company, d.b.a. Sinclair Manufacturing Company. SN 237,878. Pub. 9–6–66. Filed 2–2–66.

818,967. CINDY. The Sinclair Manufacturing Company. SN 237,879. Pub. 9–6–66. Filed 2–2–66.

818,968. AS–50. Chas. Pfizer & Co., Inc. SN 238,282. Pub. 9–6–66. Filed 2–7–66.

818,969. MET-L-CHEK. The Met-L-Chek Co. SN 238,438. Pub. 9–6–66. Filed 2–9–66.

818,970. TRONOX AND DESIGN. American Potash & Chemical Corporation. SN 238,480. Pub. 9–6–66. Filed 2–10–66.

818,971. LIKE HAVING YOUR OWN MONEY TREE AND DESIGN. Marlyn Chemical Company, Inc. SN 243,151. Pub. 9–6–66. Filed 4–11–66.

Class 8 — Smokers' Articles, Not Including Tobacco Products

818,972. SASIENI TWO 2 DOT. Sasiene Ltd. SN 235,531. Pub. 9–6–66. Filed 12–29–65.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

818,973. CYAN-FO. American Cyanamid Company. SN 209,051. Pub. 9–6–66. Filed 12–30–64.

818,974. DEPUTY AND DESIGN. Penguin Associates, Inc. SN 223,340. Pub. 9–6–66. Filed 7–14–65.

Class 10 — Fertilizers

818,909. (See Class 1 for this trademark.)

Class 11 — Inks and Inking Materials

818,975. SHACHIHATA AND DESIGN. Shachihata Kogyo Kabushiki Kaisha. MULTIPLE CLASS (Classes 11 and 37). SN 222,534. Pub. 9–6–66. Filed 7–2–65.

818,976. HOT SPOT. Pacific Industries, Inc. SN 235,930. Pub. 9–6–66. Filed 1–6–66.

Class 12 — Construction Materials

818,977. AGWAY. Agway, Inc. by merger of Cooperative Grange League Federation Exchange, Inc. SN 189,665. Pub. 9–6–66. Filed 3–26–64.

818,978. HALLCRAFT HOMES AND DESIGN. Hallcraft Homes, Inc. SN 199,365. Pub. 9–6–66. Filed 8–6–64.

818,979. HALLCRAFT TOWNHOUSES AND DESIGN. Hallcraft Homes, Inc. SN 203,170. Pub. 9–6–66. Filed 10–2–64.

818,980. UNIMASTIC. The Flintkote Company. SN 206,710. Pub. 9–6–66. Filed 11–23–64.

818,981. MARBLE CRETE. William J. Bennett, d.b.a. Marble Crete Co. MULTIPLE CLASS (Classes 12 and 23). SN 225,845. Pub. 9–6–66. Filed 6–16–65.

818,982. TERRATAPE. Griffolyn Co., Inc. SN 227,497. Pub. 9–6–66. Filed 9–9–65.

818,983. GREEN TAG. The Flintkote Company. SN 228,453. Pub. 9–6–66. Filed 9–23–65.

818,984. RED TAG. The Flintkote Company. SN 228,455. Pub. 9–6–66. Filed 9–23–65.

818,985. REDY GO AND DESIGN. Hass Wholesale, Inc. SN 229,243. Pub. 9–6–66. Filed 10–4–65.

818,986. RICH-MIX. Oklahoma Cement Company. SN 229,983. Pub. 9–6–66. Filed 10–12–65.

818,987. FARBOTHERME. Societe pour Recherches Scientifiques et Chimiques S.A. SN 231,704. Pub. 9–6–66. Filed 10–27–65.

818,988. SLIP-CLIP. Smith Products, Inc., d.b.a. Childers Products Co. SN 232,939. Pub. 9–6–66. Filed 11–18–65.

818,989. MORLOK. Versuvius Crucible Company. SN 233,290. Pub. 9–6–66. Filed 11–24–65.

818,990. FIRMIX GROUT. The Euclid Chemical Company. SN 236,733. Pub. 9–6–66. Filed 1–18–66.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

818,991. LAVELLE AND DESIGN. Lavelle Rubber Company. SN 226,927. Pub. 9–6–66. Filed 9–1–65.

818,992. STA-KUL. Black, Sivalls & Bryson, Inc. SN 227,235. Pub. 9–6–66. Filed 9–7–65.

818,993. TF TRADITIONALLY DEPENDABLE AND DESIGN. Taylor Forge & Pipe Works. SN 227,357. Pub. 9–6–66. Filed 9–7–65.

818,994. RAJAH OF CALIFORNIA AND DESIGN. William R. Hartnell. SN 236,748. Pub. 9–6–66. Filed 1–18–66.

818,995. STUB/OUT. Calumet & Hecla, Inc. SN 237,300. Pub. 9–6–66. Filed 1–26–66.

Class 15 — Oils and Greases

818,996. ASCO AND DESIGN. Southern Saw Service, Inc., d.b.a. Atlanta Saw Company. MULTIPLE CLASS (Classes 15 and 23). SN 202,514. Pub. 9–6–66. Filed 10–23–64.

818,997. ECOALUBE. Everlube Corporation of America, d.b.a. Everlube Corporation. SN 234,186. Pub. 8–23–66. Filed 12–8–65.

818,998. PENETREX. Quaker Oil Corporation. SN 235,425. Pub. 9–6–66. Filed 12–28–65.

818,999. J2. Japan Gas Lighter Corp. SN 242,017. Pub. 9–6–66. Filed 3–28–66.

819,000. CANNON. Vernon L. Cannon, d.b.a. Hol-Can Oil Company. SN 246,652. Pub. 9–6–66. Filed 5–26–66.

Class 16 — Protective and Decorative Coatings

819,001. COLOUR CUPBOARD AND DESIGN. Turco Paint & Varnish Co., Inc. SN 230,961. Pub. 9–6–66. Filed 10–21–65.

819,902. TI-KOTE. Texas Instruments Incorporated. SN 239,460. Pub. 9–6–66. Filed 2–23–66.

Class 17 — Tobacco Products

819,003. DIE HAND ETC. AND DESIGN. Kessing & Thiele. SN 222,280. Pub. 9–6–66. Filed 6–29–65.

819,004. SPORTSTUDENT. Kessing & Thiele. SN 227,155. Pub. 9–6–66. Filed 9–3–65.

819,005. GOLDANKER. Kessing & Thiele. SN 227,156. Pub. 9–6–66. Filed 9–3–65.

819,006. PRISMA. Arnold André. SN 234,721. Pub. 9–6–66. Filed 12–16–65.

Class 18 — Medicines and Pharmaceutical Preparations

819,007. VITARINE AND DESIGN. The Vitarine Co., Inc. SN 218,506. Pub. 9–6–66. Filed 5–10–65.

819,008. BYKONOX. Byk-Gulden Lomberg Chemische Fabrik GmbH. SN 224,507. Pub. 9–6–66. Filed 7–29–65.

819,009. DAIRY PRIMER. Vit-A-Way, Inc. SN 224,821. Pub. 9–6–66. Filed 8–2–65.

819,010. S AND DESIGN. Sherman Laboratories. SN 227,525. Pub. 9–6–66. Filed 9–9–65.

819,011. WONDER-LIN. Wonder-Lin Manufacturing Company. SN 229,164. Pub. 9–6–66. Filed 10–1–65.

819,012. PARAMEZ. Imperial Chemical Industries Limited. SN 232,838. Pub. 9–6–66. Filed 11–17–65.

819,013. BABY LOVE. American Pharmaceutical Company. SN 236,705. Pub. 9–6–66. Filed 1–18–66.

819,014. AS ATHA-SPRAY AND DESIGN. Youngs Drug Products Corporation. SN 236,943. Pub. 9–6–66. Filed 1–20–66.

819,015. AP ATHA-POWDER AND DESIGN. Youngs Drug Products Corporation. SN 236,945. Pub. 9–6–66. Filed 1–20–66.

819,016. BIS-MINT. Raynor Mead, d.b.a. Mead Laboratory. SN 237,141. Pub. 9–6–66. Filed 1–24–66.

819,017. LOMODEX. Fisons Pharmaceuticals Limited. SN 237,443. Pub. 9–6–66. Filed 1–27–66.

819,018. BARIMEX. The Macbick Company. SN 237,716. Pub. 9–6–66. Filed 2–1–66.

819,019. DERFULE. Cole Pharmacal Company, Inc., d.b.a. Cole Chemical Co. and Cole Chemical Company. SN 238,050. Pub. 9–6–66. Filed 2–4–66.

819,020. ERGOTATROPIN. Cole Pharmacal Company, Inc., d.b.a. Cole Chemical Co. and Cole Chemical Company. SN 238,052. Pub. 9–6–66. Filed 2–4–66.

819,021. PROCTOFOAM. Reed & Carnrick. SN 239,316. Pub. 9–6–66. Filed 2–21–66.

819,022. PRESCRIPTION 98. C-B Drug Company. SN 239,586. Pub. 9–6–66. Filed 2–25–66.

819,023. VETITRAN. Ciba Corporation. SN 239,592. Pub. 9–6–66. Filed 2–25–66.

819,024. GRAVILOSE. Harcliffe Laboratories, Inc. SN 239,620. Pub. 9–6–66. Filed 2–25–66.

819,025. MICRO-C. The Cramer Chemical Company. SN 239,742. Pub. 9–6–66. Filed 2–28–66.

819,026. HAY-HIST. Pure Pharmacal Company. SN 239,797. Pub. 9–6–66. Filed 2–28–66.

819,027. RELORIN. Geigy Chemical Corporation. SN 243,977. Pub. 9–6–66. Filed 4–21–66.

Class 19 — Vehicles

819,028. CHRIS-CRAFT SEA SKIFF AND DESIGN. Chris-Craft Industries, Inc., assignee of Chris-Craft Corporation. SN 208,543. Pub. 9–6–66. Filed 12–21–64.

819,029. SPORTS BAC AND DESIGN. Highway Cruisers, Inc., by change of name from Highway Cruisers of California Inc. SN 217,892. Pub. 9–6–66. Filed 5–3–65.

819,030. SEILON 303. Seilon, Inc. SN 221,305. Pub. 9–6–66. Filed 6–16–65.

819,031. SUPRAFOIL. American Supramar Corporation. SN 225,254. Pub. 9–6–66. Filed 8–9–65.

819,032. A SUPRAMAR PRODUCT AND DESIGN. American Supramar Corporation. SN 225,255. Pub. 9–6–66. Filed 8–9–65.

819,033. MISS TEEN. Arnold, Schwinn & Co. SN 229,177. Pub. 9–6–66. Filed 10–4–65.

819,034. MODU-CAR. Aeronca Manufacturing Corporation. SN 229,326. Pub. 9–6–66. Filed 10–5–65.

819,035. UDS. United Distributors Service, Inc. SN 235,741. Pub. 9–6–66. Filed 1–3–66.

819,036. AMERICAN FLYER. D. P. Harris Hardware & Manufacturing Co., Inc. SN 243,130. Pub. 9–6–66. Filed 4–11–66.

Class 20 — Linoleum and Oiled Cloth

819,037. NOBELLE. Custom Vinyl Ltd. SN 231,892. Pub. 9–6–66. Filed 11–1–65.

Class 21 — Electrical Apparatus, Machines, and Supplies

819,038. QF. Square D Company. SN 206,658. Pub. 5–3–66. Filed 11–20–64.

819,039. ZERO START. Phillips Manufacturing Company, Inc. SN 209,725. Pub. 9–6–66. Filed 1–11–65.

819,040. STERIVISION. Bell Hospital Systems, Inc., by change of name from Bell Hospital Services, Inc. SN 211,244. Pub. 11–23–65. Filed 2–3–65.

819,041. COMPELEC. CIT—Compagnie Industrielle des Telecommunications. SN 224,522. Pub. 9–6–66. Filed 7–29–65.

819,042. MIDMAC AND DESIGN. Midvale-Heppenstall Company. SN 225,175. Pub. 9–6–66. Filed 8–6–65.

819,043. MAG-TRONIC. American Bosch Arma Corporation. SN 228,971. Pub. 9–6–66. Filed 9–30–65.

819,044. DUNKERMOTOREN AND DESIGN. Dunkermotoren Prazisions-Kleinstmotoren Gesellschaft mbH. SN 232,119. Pub. 9–6–66. Filed 11–4–65.

819,045. V.I.U. LITE. Aluminum Housewares Co., Inc. SN 232,960. Pub. 9–6–66. Filed 11–19–65.

Class 22 — Games, Toys, and Sporting Goods

819,046. PLAY WA-HOO! AND DESIGN. Mile High Game & Toy Co., Inc. SN 215,247. Pub. 9–6–66. Filed 3–29–65.

819,047. AMERICAN MODEL CAR RACEWAYS AND DESIGN. American Model Car Raceways, Inc. SN 220,346. Pub. 9–6–66. Filed 6–4–65.

819,048. SEEMOR. Uneeda Doll Company, Inc. SN 228,090. Pub. 9–6–66. Filed 9–17–65.

819,049. FORMULA-SIX AND DESIGN. Shakespeare Company. SN 229,139. Pub. 9–6–66. Filed 10–1–65.

819,050. SPHERE-O-METRICS. Dickson and Shannon. SN 233,470. Pub. 9–6–66. Filed 11–29–65.

819,051. 10-HI. S. S. Kresge Company. SN 233,918. Pub. 9–6–66. Filed 12–3–65.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

818,981. (See Class 12 for this trademark.)

818,996. (See Class 15 for this trademark.)

819,052. EAGLE. Harsco Corporation, assignee of Eagle Crusher Company, Inc. SN 203,488. Pub. 8–2–66. Filed 10–7–64.

819,053. SIGNODE AND DESIGN. Signode Corporation. SN 211,202. Pub. 9–6–66. Filed 2–2–65.

819,054. POLY CUT. H. K. Porter Company, Inc. SN 214,165. Pub. 9–6–66. Filed 3–15–65.

819,055. ISAR. Douglas Motors Corporation. SN 214,519. Pub. 9–6–66. Filed 3–19–65.

819,056. POWER PIPE. Walker Manufacturing Company. SN 214,936. Pub. 9–6–66. Filed 3–24–65.

819,057. LAWN BARBER AND DESIGN. Lawn Barber Corporation. SN 217,901. Pub. 9–6–66. Filed 5–3–65.

819,058. AERO-MATIC. American Monarch Machine Company, Inc. SN 218,943. Pub. 9–6–66. Filed 5–17–65.

819,059. WINONA AND DESIGN. Winona Tool & Manufacturing Company, Inc. SN 219,743. Pub. 9–6–66. Filed 5–11–65.

819,060. DUO-DAMP. Borg-Warner Corporation. SN 221,568. Pub. 9–6–66. Filed 6–21–65.

819,061. PRESSEAL. Pittsburgh Plate Glass Company. SN 225,437. Pub. 9–6–66. Filed 8–10–65.

819,062. LUGMASTER. Murphy Diesel Company. SN 226,855. Pub. 9–6–66. Filed 8–31–65.

819,063. POSTMASTER. Mail Systems Corporation. SN 227,855. Pub. 9–6–66. Filed 9–15–65.

819,064. ICE PET. Fuso Keigokin K.K. SN 228,359. Pub. 9–6–66. Filed 7–8–66.

819,065. ORDERMASTER. Lewis-Shepard Products, Inc. SN 228,467. Pub. 9–6–66. Filed 9–23–65.

819,066. TIME-MIST AND DESIGN. Time-Mist, Inc. SN 228,578. Pub. 9–6–66. Filed 9–24–65.

819,067. TYCO. Tyco Automotive Corp. SN 230,458. Pub. 9–6–66. Filed 10–18–65.

819,068. GOLO. Cordem Corporation. SN 234,181. Pub. 9–6–66. Filed 12–8–65.

819,069. DI-PAC. Dresser Industries, Inc., d.b.a. Pacific Pumps, Inc. SN 234,399. Pub. 9–6–66. Filed 12–13–65.

819,070. TEX-A-ROBIC. Can-Tex Industries, Inc., d.b.a. Process Equipment Division. SN 234,537. Pub. 9–6–66. Filed 12–14–65.

819,071. MICRO FLUSH. Eskimo Radiator Mfg. Co. SN 234,635. Pub. 9–6–66. Filed 12–15–65.

819,072. UDS. United Distributors Service, Inc. SN 235,742. Pub. 9–6–66. Filed 1–3–66.

819,073. WHITE CROSS AND DESIGN. National Stamping & Electric Works. SN 237,583. Pub. 9–6–66. Filed 1–28–66.

819,074. HI-SQUEEZ. Appleton Machine Company. SN 238,384. Pub. 9–6–66. Filed 2–9–66.

819,075. SANITAIRE. Worden-Allen Company. SN 243,064. Pub. 9–6–66. Filed 4–11–66.

Class 24 — Laundry Appliances and Machines

819,076. RED CAP AND DESIGN. Edward J. Budavich, d.b.a. E. J. Budavich Co. SN 225,398. Pub. 9–6–66. Filed 8–10–65.

Class 26 — Measuring and Scientific Appliances

819,077. CT. Clark Metal Products, Inc. SN 221,467. Pub. 9–6–66. Filed 6–18–65.

819,078. A AEROFEED AND DESIGN. Aerofeed Incorporated. SN 221,774. Pub. 9–6–66. Filed 6–23–65.

819,079. MECHANO-WEIGH. Howe Richardson Scale Company. SN 225,565. Pub. 9–6–66. Filed 8–12–65.

819,080. PS ALLOY AND DESIGN. Precision Scientific Company. SN 235,713. Pub. 9–6–66. Filed 1–3–66.

819,081. PYROGRAPH. C-F Equipment Co. SN 246,157. Pub. 9–6–66. Filed 5–20–66.

Class 30 — Crockery, Earthenware, and Porcelain

819,082. INARCO AND DESIGN. International Artware Corporation. SN 226,919. Pub. 9–6–66. Filed 9–1–65.

Class 31 — Filters and Refrigerators

819,083. ORASORB. Sel-Rex Corporation. SN 237,160. Pub. 9–6–66. Filed 1–24–66.

819,084. CHEVRON (DESIGN). Standard Oil Company of California. SN 238,457. Pub. 9–6–66. Filed 2–9–66.

Class 32 — Furniture and Upholstery

819,085. LEOPOLD. The Leopold Company. SN 233,268. Pub. 9–6–66. Filed 11–24–65.

Class 33 — Glassware

819,086. SOLAKOTE. Textron Electronics, Inc., d.b.a. Spectrolab. SN 196,919. Pub. 9–6–66. Filed 7–1–64.

Class 34 — Heating, Lighting, and Ventilating Apparatus

819,087. CURTAINLINE. Wehr Corporation, assignee of Carnes Corporation. SN 210,533. Pub. 9–6–66. Filed 1–25–65.

819,088. SIZEOMETER. Norcross Corporation. SN 219,054. Pub. 9–6–66. Filed 5–17–65.

819,089. GOLDEN 21. Westinghouse Electric Corporation. SN 221,666. Pub. 9–6–66. Filed 6–21–65.

819,090. HY-WAY HOT OIL HEATER AND DESIGN. Hy-Way Heat Systems, Inc. SN 224,618. Pub. 9–6–66. Filed 7–30–65.

819,091. UMBRELLA (DESIGN). Schaub Engineering Co. SN 226,294. Pub. 9–6–66. Filed 8–23–65.

819,092. CHEVRON (DESIGN). Standard Oil Company of California. SN 232,246. Pub. 9–6–66. Filed 11–5–65.

819,093. THERM O ATTIX AND DESIGN. L. Richard Luedemann, d.b.a. Therm-O-Attix. SN 233,365. Pub. 9–6–66. Filed 11–26–65.

819,094. GRIDMATE. Armstrong Cork Company. SN 238,151. Pub. 9–6–66. Filed 2–7–66.

819,095. STEAMBLOC. Babcock-Wilcox and Goldie-McCulloch Limited. SN 238,829. Pub. 9–6–66. Filed 2–15–66.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

819,096. GAS KIT SET. Searle Leather & Packing Co. SN 220,972. Pub. 9–6–66. Filed 6–11–65.

819,097. SEMICURE (LTC). Tru-Flex Rubber Products Company. SN 227,193. Pub. 9–6–66. Filed 9–3–65.

819,098. TEE UNIT AND DESIGN. Tru-Flex Rubber Products Company. SN 227,194. Pub. 9–6–66. Filed 9–3–65.

819,099. STEEL-N. Wolverine Fabricating & Manufacturing Co., Inc. SN 232,749. Pub. 9–6–66. Filed 11–15–65.

Class 36 — Musical Instruments and Supplies

819,100. DR. FUN'S FUNHOUSE. Columbia Broadcasting System, Inc. SN 205,664. Pub. 9–6–66. Filed 11–6–64.

819,101. S-F-X. August H. May. SN 208,946. Pub. 9–6–66. Filed 12–28–64.

819,102. SPHERE SOUND RECORDS. Bell Records, Inc. SN 220,828. Pub. 9–6–66. Filed 6–10–65.

819,103. 007 AND PISTOL DESIGN. United Artists Records, Inc. SN 223,363. Pub. 9–6–66. Filed 7–14–65.

819,104. 007 AND DESIGN. United Artists Records, Inc. SN 223,364. Pub. 9–6–66. Filed 7–14–65.

Class 37 — Paper and Stationery

818,875. (See Class 11 for this trademark.)

819,105. ZANY. Hanson White Publishing Co. Ltd. SN 193,273. Pub. 9–6–66. Filed 5–12–64.

819,106. TREE IN A TRIANGLE (DESIGN). Weyerhaeuser Company. SN 194,939–G. Pub. 9–6–66. Filed 6–4–64.

819,107. PACESETTER. Lindy Pen Company Incorporated. SN 203,310. Pub. 9–6–66. Filed 10–5–64.

819,108. TRANSTAT AND DESIGN. Polymark Limited. SN 211,573. Pub. 9–6–66. Filed 2–8–65.

819,109. SYMBOL (DESIGN). Gilman Paper Company. SN 226,145. Pub. 9–6–66. Filed 8–20–65.

819,110. MISCELLANEOUS DESIGN. Sheldon Mermell, d.b.a. S. Mermell Company. SN 229,266. Pub. 9–6–66. Filed 10–4–65.

819,111. W AND DESIGN. Wallace Business Forms, Inc. SN 232,625. Pub. 9–6–66. Filed 11–12–65.

819,112. HUSKY. Weyerhaeuser Company. SN 233,155. Pub. 9–6–66. Filed 11–22–65.

819,113. TRIDENT. J. V. Palmer Pen Co. Inc. SN 233,158. Pub. 9–6–66. Filed 11–19–65.

819,114. LIMITED. Paper Mate Manufacturing Company. SN 233,194. Pub. 9–6–66. Filed 11–23–65.

819,115. SPEED-E-CLEAN. Speedrite Products, Inc. SN 235,348. Pub. 9–6–66. Filed 12–27–65.

819,116. PALOMA. Consolidated Papers, Inc. SN 236,238. Pub. 9–6–66. Filed 1–12–66.

819,117. SPEED-E-CLEAN AND DESIGN. Speedrite Products, Inc. SN 236,437. Pub. 9–6–66. Filed 1–10–66.

819,118. PRIME-WRAP. The Goodyear Tire & Rubber Company. SN 239,517. Pub. 9–6–66. Filed 2–24–66.

Class 38 — Prints and Publications

819,119. BETTER HOMES AND FAMILIES. Meredith Publishing Company. SN 200,015. Pub. 9–6–66. Filed 8–17–64.

819,120. REVUE. Verlag Th. Martens & Co. G.m.b.H., assignee of Kindler und Schiermeyer Verlag A.G. SN 211,656. Pub. 9–6–66. Filed 2–9–65.

819,121. ILLINOIS WILDLIFE. Illinois Federation Sportsmen's Clubs, Inc. SN 222,707. Pub. 9–6–66. Filed 7–6–65.

819,122. MILITARY EXPORT REPORTER AND DESIGN. American Aviation Publications, Inc. SN 223,374. Pub. 9–6–66. Filed 7–15–65.

819,123. CURTAIN CALL. Ruth Van Gelder. SN 228,029. Pub. 9–6–66. Filed 9–17–65.

819,124. FLASH OF GENIUS. Arthur Schwartz. SN 229,682. Pub. 9–6–66. Filed 10–8–65.

819,125. GI JOE AND DESIGN. Hassenfeld Bros., Inc. SN 230,642. Pub. 9–6–66. Filed 10–20–65.

819,126. SPLIT CIRCLE (DESIGN). The Diners' Club, Inc. SN 231,671. Pub. 9–6–66. Filed 10–27–65.

819,127. MOOSE. The Hearst Corporation. SN 231,761. Pub. 9–6–66. Filed 10–28–65.

819,128. W AND DESIGN. Wallace Business Forms, Inc. SN 232,626. Pub. 9–6–66. Filed 11–12–65.

Class 39 — Clothing

819,129. SCORE XII. Score XII Inc. SN 194,921. Pub. 9–6–66. Filed 6–4–64.

819,130. FOREVER PREST ETC. AND DESIGN. Haggar Company. SN 196,523. Pub. 9–6–66. Filed 6–26–64.

819,131. TINY MITE. Boss Manufacturing Company. SN 206,221. Pub. 9–6–66. Filed 11–16–64.

819,132. BOATOGS. Balboa Originals of California. SN 216,247. Pub. 9–6–66. Filed 4–12–65.

819,133. ANGELTOGS BY BENTEX AND DESIGN. The Bentex Company. SN 221,248. Pub. 9–6–66. Filed 6–16–65.

819,134. MONKS BY MORT. Morton D. Sullivan. SN 225,905. Pub. 9–6–66. Filed 8–17–65.

819,135. DURA-SMOOTH. The Manhattan Shirt Company. SN 226,655. Pub. 9–6–66. Filed 8–27–65.

819,136. POLY-THERM. Spun-Lo Elderlon, Inc. SN 228,201. Pub. 9–6–66. Filed 9–20–65.

819,137. FANCY ME. Fancee Free Manufacturing Co., Inc. SN 229,218. Pub. 9–6–66. Filed 10–4–65.

819,138. SCOOP TREAT. Exquisite Form Industries, Inc. SN 230,372. Pub. 9–6–66. Filed 10–18–65.

819,139. THE VERDE SHOE. Strathmore Shoe Co., Inc. SN 231,280. Pub. 9–6–66. Filed 10–22–65.

819,140. MATLIN. Matlin Cloak & Suit Co., Inc. SN 231,347. Pub. 9–6–66. Filed 10–22–65.

819,141. TAILORED TREAT. Exquisite Form Industries, Inc. SN 231,901. Pub. 9–6–66. Filed 11–1–65.

819,142. REGAL AND DESIGN. Regal Apparel, Ltd. SN 232,346. Pub. 9–6–66. Filed 11–8–65.

819,143. NOBLEPRESS. National Merchandising Corporation. SN 232,579. Pub. 9–6–66. Filed 11–12–65.

819,144. RESIL'FLEX. Bear Brand Hosiery Co. SN 233,441. Pub. 9–6–66. Filed 11–29–65.

819,145. JOIE DE VIE. Genesco, Inc. SN 233,593. Pub. 9–6–66. Filed 11–30–65.

819,146. HALF PENNIES. Shoe Corporation of America. SN 233,649. Pub. 9–6–66. Filed 11–30–65.

819,147. REAL BOY. Selden Manufacturing Corporation. SN 234,381. Pub. 9–6–66. Filed 12–10–65.

819,148. FLYING FISH (DESIGN). Catalina, Inc. SN 234,593. Pub. 9–6–66. Filed 12–13–65.

819,149. DOUBLE DUO BY H.I.S. AND DESIGN. Henry I. Siegel Co., Inc. SN 234,707. Pub. 9–6–66. Filed 12–14–65.

819,150. SHAPEFULLY YOURS. Glamorise Foundations, Inc. SN 234,746. Pub. 9–6–66. Filed 12–16–65.

819,151. WEATHER GIRL. Princess Ann Girl Coat, Inc. SN 237,590. Pub. 9–6–66. Filed 1–28–66.

819,152. LITTLE GENERAL. Shamrock Knitting Mills, Inc. SN 242,056. Pub. 9–6–66. Filed 3–28–66.

819,153. W (DESIGN). Blue Bell, Inc. SN 245,533. Pub. 9–6–66. Filed 5–13–66.

819,154. SHOCK PROOF. The Alden Mills. SN 246,426. Pub. 9–6–66. Filed 5–24–66.

Class 40 — Fancy Goods, Furnishings, and Notions

819,155. DIANA AND DESIGN. The Boye Needle Company. SN 207,005. Pub. 9–6–66. Filed 11–27–64.

819,156. EXPERT. Amerace Corporation. SN 225,250. Pub. 9–6–66. Filed 8–9–65.

819,157. FUN SHADE AND DESIGN. Optics International Corp., d.b.a. Optico. SN 233,626. Pub. 9–6–66. Filed 11–30–65.

819,158. FUN SHADE. Optics International Corp., d.b.a. Optico. SN 233,627. Pub. 9–6–66. Filed 11–30–65.

819,159. SASHEEN. Minnesota Mining and Manufacturing Company. SN 238,766. Pub. 9–6–66. Filed 2–14–66.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

819,160. PLAYBOY PLAYMATE. HMH Publishing Co. Inc. (Delaware corporation), by merger and change of name from HMH Publishing Co., Inc. (Illinois corporation). SN 192,591. Pub. 9–6–66. Filed 5–4–64.

819,161. TROYTUF. Troy Mills Inc. SN 211,786. Pub. 9–6–66. Filed 1–27–65.

819,162. STEP OFF. Tifton Rug Mills, Inc. SN 228,087. Pub. 9–6–66. Filed 9–17–65.

819,163. HYGIENT. Venetianaire Corporation of America. SN 228,584. Pub. 9–6–66. Filed 9–24–65.

819,164. KERMALA. Aronian Hovsepian Stein. SN 233,243. Pub. 9–6–66. Filed 11–24–65.

819,165. 6600 SEA GLASS. J. P. Stevens & Co., Inc. SN 233,418. Pub. 9–6–66. Filed 11–26–65.

819,166. A FABRIC YOU CAN LEAN ON BY KLOPMAN. Klopman Mills, Inc. SN 234,569. Pub. 9–6–66. Filed 12–14–65.

819,167. BEDDY WHITE. Victor B. Handal & Bro., Inc. SN 234,640. Pub. 9–6–66. Filed 12–15–65.

819,168. COHAMA UNITED MERCHANTS. United Merchants and Manufacturers, Inc. SN 236,209. Pub. 9–6–66. Filed 1–11–66.

819,169. UNITED MERCHANTS. United Merchants and Manufacturers, Inc. SN 236,210. Pub. 9–6–66. Filed 1–11–66.

819,170. UNITED MERCHANTS. United Merchants and Manufacturers, Inc. SN 236,211. Pub. 9–6–66. Filed 1–11–66.

819,171. PIQUELLA. Hudson Textile Corp. SN 236,258. Pub. 9–6–66. Filed 1–12–66.

819,172. TAN-A-CHECK. Tanbro Fabrics Corporation. SN 236,668. Pub. 9–6–66. Filed 1–17–66.

819,173. TAI PING. Hong Kong Carpet Manufacturers, Ltd. SN 246,691. Pub. 9–6–66. Filed 5–26–66.

Class 43 — Thread and Yarn

819,174. PLUS-SET. J. P. Stevens & Co., Inc. SN 237,260. Pub. 9–6–66. Filed 1–25–66.

Class 44 — Dental, Medical, and Surgical Appliances

819,175. RIGIDPAK. Brunswick Corporation. SN 216,788. Pub. 9–6–66. Filed 4–19–65.

819,176. PLASTIBELL. Hollister Incorporated. SN 232,207. Pub. 9–6–66. Filed 11–5–65.

819,177. STERI-DRAPE. Minnesota Mining and Manufacturing Company. SN 246,582. Pub. 9–6–66. Filed 5–25–66.

Class 45 — Soft Drinks and Carbonated Waters

819,178. SLIM JIM. L. B. Stavis Syrups, Inc. SN 200,599. Pub. 9–6–66. Filed 8–25–64.

819,179. GOLD MEDAL AND DESIGN. Gold Medal Beverage Company. SN 242,360. Pub. 9–6–66. Filed 3–31–66.

Class 46 — Foods and Ingredients of Foods

819,180. MR. DEE-LISH AND REPRESENTATION OF A STANDING USHER WEARING A CAP WITH LETTERS ABC. ABC Vending Corporation, d.b.a. ABC Vending Corp. SN 156,703. Pub. 9–6–66. Filed 11–6–62.

819,181. REPRESENTATION OF A STANDING USHER WEARING A FANCIFUL CAP WITH THE LETTERS ABC. ABC Vending Corporation, d.b.a. ABC Vending Corp. SN 156,704. Pub. 9–6–66. Filed 11–6–62.

819,182. BLUE JAY BRAND JJ AND DESIGN. Jarosz Produce Farms, Inc. SN 174,274. Pub. 9–6–66. Filed 8–2–63.

819,183. MILK-BANK. National Dairy Products Corporation. SN 194,638. Pub. 9–6–66. Filed 6–1–64.

819,184. PAMINA. Cooperatieve Condensfabriek "Gelderland-Overijsel" G.A. SN 197,476. Pub. 9–6–66. Filed 7–9–64.

819,185. SPECIALLY GOOD. Schuss Wholesale Grocery Co. SN 204,297. Pub. 9–6–66. Filed 10–19–64.

819,186. CARNATION. Carnation Company. SN 206,814. Pub. 9–6–66. Filed 11–24–64.

819,187. GOLDEN. Adams and Brooks, Inc. SN 210,400. Pub. 9–6–66. Filed 1–22–65.

819,188. M AND DESIGN. Milwaukee Sausage Co., Inc. SN 213,034. Pub. 9–6–66. Filed 3–1–65.

819,189. VICTORIA PARADE AND DESIGN. N.V. Biscuiten Chocoladefabriek "Victoria." SN 213,695. Pub. 9–6–66. Filed 3–9–65.

819,190. BOLS. Erven Lucas Bols Incorporated. SN 213,750. Pub. 9–6–66. Filed 3–10–65.

819,191. SEANIP DINNER. Ralston Purina Company. SN 214,285. Pub. 9–6–66. Filed 3–16–65.

819,192. FRONTIER. Fred Meyer, Inc., d.b.a. Fred Meyer Bakery. SN 214,672. Pub. 9–6–66. Filed 3–22–65.

819,193. VITA-BEE. Fred Meyer, Inc., d.b.a. Fred Meyer Bakery. SN 214,676. Pub. 9–6–66. Filed 3–22–65.

819,194. KING CARTER. Virginia Seafoods, Inc. SN 216,639. Pub. 9–6–66. Filed 4–15–65.

819,195. GOOD 'N FRUITY ETC. AND DESIGN. Quaker City Chocolate & Confectionery Co., Inc. SN 218,319. Pub. 9–6–66. Filed 5–7–65.

819,196. COOK AND DESIGN. Cook Chocolate Company. SN 219,402. Pub. 9–6–66. Filed 5–21–65.

819,197. HILL CITY. Piedmont Mills, Inc. SN 220,230. Pub. 9–6–66. Filed 6–2–65.

819,198. LAMB'S. Lamb-Weston, Inc. SN 220,984. Pub. 9–6–66. Filed 6–11–65.

819,199. OUR CHIEF AND DESIGN. Piedmont Mills, Inc. SN 221,201. Pub. 9–6–66. Filed 6–15–65.

819,200. DO-SPRING. American Food Laboratories, Inc. SN 222,243. Pub. 9–6–66. Filed 6–29–65.

819,201. REPRESENTATION OF A COWBOY. General Foods Corporation. SN 222,841. Pub. 9–6–66. Filed 7–7–65.

819,202. SPRUANCE. Viviano Macaroni Company. SN 224,278. Pub. 9–6–66. Filed 7–26–65.

819,203. HONEY CRISP. General Foods Corporation. SN 224,530. Pub. 9–6–66. Filed 7–29–65.

819,204. SPUDSVILLE, U.S.A. AND DESIGN. Idaho Potato Growers, Inc. SN 225,956. Pub. 9–6–66. Filed 8–18–65.

819,205. JUMBOLINA. Continental Sea Foods, Inc. SN 226,127. Pub. 9–6–66. Filed 8–20–65.

819,206. SHISHKATINI. J. Warren Bowman, Inc. SN 226,207. Pub. 9–6–66. Filed 8–23–65.

819,207. CO-CO/T. National Dairy Products Corporation. SN 227,511. Pub. 9–6–66. Filed 9–9–65.

819,208. CORN CLOUDS. Fairmont Foods Company. SN 229,217. Pub. 9–6–66. Filed 10–4–65.

819,209. SEABROOK FARMS AND DESIGN. Francis H. Leggett & Co., d.b.a. Seabrook Farms Co. SN 230,173. Pub. 9–6–66. Filed 10–14–65.

819,210. MISTY MINTS. Crawford Candies Inc., d.b.a. Crawford Candies. SN 230,617. Pub. 9–6–66. Filed 10–20–65.

819,211. MISTY-MORN. Piggly Wiggly Operators' Warehouse, Inc. SN 232,589. Pub. 9–6–66. Filed 11–12–65.

819,212. SWING. D. Thompson Swing, Inc. SN 232,740. Pub. 9–6–66. Filed 11–15–65.

819,213. HUNT—FOR THE BEST. Hunt Foods and Industries, Inc., d.b.a. Hunt Foods, Inc. SN 232,755. Pub. 9–6–66. Filed 11–15–65.

819,214. WHY LUG A JUG. Seneca Grape Juice Corp. SN 232,867. Pub. 9–6–66. Filed 11–17–65.

819,215. CHEF HENRI'S. Chef Henri, Inc. SN 232,979. Pub. 9–6–66. Filed 11–19–65.

819,216. ROYAL HAWAIIAN. Castle & Cooke, Inc., d.b.a. Royal Hawaiian Macadamia Nut Co. SN 233,075. Pub. 9–6–66. Filed 11–22–65.

819,217. ARAWAK. Farmers Exchange, Inc. SN 233,175. Pub. 9–6–66. Filed 11–23–65.

819,218. RASCAL. Ralph Samsel, d.b.a. Ralph Samsel Co. SN 233,220. Pub. 9–6–66. Filed 11–22–65.

819,219. BON-JOY CUP. Good Humor Corporation. SN 235,561. Pub. 9–6–66. Filed 12–30–65.

819,220. LUCK'S. Luck's, Incorporated. SN 236,107. Pub. 9–6–66. Filed 1–10–66.

819,221. CHATTER BOX. East India Spice Co., Ltd. SN 236,188. Pub. 9–6–66. Filed 1–11–66.

819,222. FRITZSCHE ETC. AND DESIGN. Fritzsche Brothers, Inc. SN 239,255. Pub. 9–6–66. Filed 2–21–66.

819,223. RED CARPET. John Morrell & Co. SN 242,906. Pub. 9–6–66. Filed 4–7–66.

Class 47 — Wines

819,224. COR DE ROSE AND DESIGN. Warren B. Strauss, d.b.a. Warren B. Strauss Company. SN 186,124. Pub. 9–6–66. Filed 2–5–64.

Class 48 — Malt Beverages and Liquors

819,225. TRENTON OLD STOCK AND DESIGN. Metropolis Brewery of N.J., Inc. SN 197,501. Pub. 9–6–66. Filed 7–9–64.

819,226. CHAMP. Metropolis Brewery of N.J., Inc. SN 222,397. Pub. 9–6–66. Filed 6–30–65.

819,227. OKTOBERFEST BRAU. G. Heileman Brewing Company, Inc. SN 225,478. Pub. 9–6–66. Filed 8–11–65.

Class 49 — Distilled Alcoholic Liquors

819,228. GROG SHOPPE. E. Martinoni Company. SN 219,028. Pub. 9–6–66. Filed 5–17–65.

Class 50 — Merchandise Not Otherwise Classified

819,229. LOVELIEST GIFT FOR A GARDENER. Moultrie Manufacturing Company. SN 205,595. Pub. 9–6–66. Filed 11–5–64.

819,230. SPACE-AD. Sumner D. Bearman, d.b.a. Space-Ad, SN 213,647. Pub. 9–6–66. Filed 3–9–65.

819,231. PRESCO P AND DESIGN. Presque Isle Paper Products, Inc. SN 219,258. Pub. 9–6–66. Filed 5–19–65.

819,232. AUTO-GRO ETC. AND DESIGN. Pan American Hydroponics, Inc. SN 229,869. Pub. 9–6–66. Filed 10–5–65.

819,233. 3M. Minnesota Mining and Manufacturing Company. SN 233,809. Pub. 9–6–66. Filed 12–2–65.

819,234. JAN PAC. Janet Paper Corp. SN 235,678. Pub. 9–6–66. Filed 1–3–66.

819,235. GMD. George P. Marsden, d.b.a. George Marsden Design. SN 237,723. Pub. 9–6–66. Filed 2–1–66.

819,236. ZIP STICK AND DESIGN. Z-I-P Corporation. SN 237,902. Pub. 9–6–66. Filed 2–2–66.

819,237. 3M. Minnesota Mining and Manufacturing Company. SN 239,064. Pub. 9–6–66. Filed 2–17–66.

Class 51 — Cosmetics and Toilet Preparations

819,238. CHIEF. Colgate-Palmolive Company. SN 170,877. Pub. 9–6–66. Filed 6–5–63.

819,239. ANDREA FRESH-UPS. Andrea Raab Corp., assignee of Herbert Raab, d.b.a. Andrea Products Co. SN 178,816. Pub. 7–19–66. Filed 10–11–63.

819,240. KINDNESS FROM CLAIROL. Clairol Incorporated. SN 200,071. Pub. 9–6–66. Filed 8–18–64.

819,241. COLOR BALANCE. Clairol Incorporated. SN 200,073. Pub. 9–6–66. Filed 8–18–64.

819,242. LADY EVA. Fred Myer, Inc. SN 214,669. Pub. 9–6–66. Filed 3–22–65.

819,243. GENUINE SPRAY. Parfums Ciro, Inc. SN 217,204. Pub. 9–6–66. Filed 4–23–65.

819,244. JOJOBA. Javier A. Gomes. SN 219,798. Pub. 9–6–66. Filed 5–26–65.

819,245. GOLDEN DOOR AND DESIGN. Golden Door Cosmetics, Inc. SN 221,040. Pub. 9–6–66. Filed 6–14–65.

819,246. E. FABER. Eberhard Faber Inc. SN 221,912. Pub. 9–6–66. Filed 6–24–65.

819,247. EBERHARD FABER. Eberhard Faber Inc. SN 221,917. Pub. 9–6–66. Filed 6–24–65.

819,248. ONCE A WEEK. John H. Breck, Inc. SN 222,110. Pub. 9–6–66. Filed 6–28–65.

819,249. KA ETC. AND DESIGN. King Arthur, Inc. SN 222,585. Pub. 9–6–66. Filed 7–2–65.

819,250. BORICUA. Victor Baroub, d.b.a. Boricua Products Co. SN 231,871. Pub. 9–6–66. Filed 10–28–65.

819,251. OLIGODENT. Jean Vigneron. SN 231,711. Pub. 9–6–66. Filed 10–26–65.

819,252. GIN WATER AND DESIGN. DEP Corporation. SN 232,534. Pub. 9–6–66. Filed 11–12–65.

819,253. MR. PLUSH. Allied Research Corporation. SN 232,647. Pub. 9–6–66. Filed 11–15–65.

819,254. MARION DYBAL. Erich Dybal. SN 236,070. Pub. 9–6–66. Filed 1–10–66.

819,255. FORMAGEN I. Samuel Bonat & Bro., Inc. SN 237,653. Pub. 9–6–66. Filed 2–1–66.

819,256. SPORTS CENTER. Carley, Inc. SN 238,400. Pub. 9–6–66. Filed 2–9–66.

819,257. INVISIBLE SHAVE AND DESIGN. Invisible Shaving Liquid Corp. SN 238,535. Pub. 9–6–66. Filed 2–10–66.

819,258. HOMOGENATED. Shulton, Inc. SN 238,793. Pub. 9–6–66. Filed 2–14–66.

819,259. GENTIQUE. Bristol-Myers Company. SN 238,919. Pub. 9–6–66. Filed 2–16–66.

819,260. LETTERMAN. Bristol-Myers Company. SN 238,922. Pub. 9–6–66. Filed 2–16–66.

819,261. BRIGHT NOW. Bristol-Myers Company. SN 239,005. Pub. 9–6–66. Filed 2–17–66.

819,262. INTRO. Bristol-Myers Company. SN 239,006. Pub. 9–6–66. Filed 2–17–66.

819,263. EXTEND. The Procter & Gamble Co. SN 239,079. Pub. 9–6–66. Filed 2–17–66.

819,264. CRESTWOOD. De Beaufort, Ltd. SN 239,127. Pub. 9–6–66. Filed 2–18–66.

819,265. ENAJ. Josephine K. Preston, d.b.a. Jo Preston Cosmetics. SN 239,930. Pub. 9–6–66. Filed 3–1–66.

819,266. VARI-TONE. Roux Laboratories, Inc. SN 239,933. Pub. 9–6–66. Filed 3–1–66.

819,267. BY CASHMERE BOUQUET. Colgate-Palmolive Company. SN 240,260. Pub. 9–6–66. Filed 3–7–66.

819,268. HF AND DESIGN. Hi-Fashion, Inc. SN 240,300. Pub. 9–6–66. Filed 3–7–66.

Class 52 — Detergents and Soaps

818,936. (See Class 6 for this trademark.)

819,269. BEACHRITE. National Industrial Products Company. SN 201,043. Pub. 9–6–66. Filed 9–1–64.

819,270. FINALE. Red Top Maintenance Service, Inc. SN 222,871. Pub. 9–6–66. Filed 7–7–65.

819,271. CALGON LAUNDRY FRESH AGAIN. Calgon Corporation. SN 224,920. Pub. 9–6–66. Filed 8–4–65.

819,272. SEBAQUIN. Summers Laboratories, Inc. SN 229,692. Pub. 9–6–66. Filed 10–8–65.

819,273. JEWELDIP. E-Z-Est Products Co., Inc. SN 230,039. Pub. 9–6–66. Filed 10–13–65.

819,274. SUPERSAN. Lazarus Laboratories, Inc. SN 230,853. Pub. 9–6–66. Filed 10–21–65.

819,275. SEA MIST PRODUCTS ETC. AND DESIGN. Trager Manufacturing Company. SN 232,037. Pub. 9–6–66. Filed 11–2–65.

819,276. IODOX. Guardian Chemical Company. SN 232,126. Pub. 9–6–66. Filed 11–4–65.

819,277. SCALEX. Douglas L. Snow and Thelma M. Snow (joint owners), d.b.a. Southwestern Chemicals Company. SN 232,734. Pub. 9–6–66. Filed 11–15–65.

819,278. DAIRY DEW AND DESIGN. Big Bear, Inc. SN 233,318. Pub. 9–6–66. Filed 11–26–65.

819,279. LEA INSULSTRIP. The Lea Manufacturing Co. SN 234,217. Pub. 9–6–66. Filed 12–8–65.

819,280. HEAVYWEIGHT. Lever Brothers Company. SN 236,899. Pub. 9–6–66. Filed 1–20–66.

819,281. MONSIEUR LANVIN. Lanvin-Charles of the Ritz, Inc. SN 237,982. Pub. 9–6–66. Filed 2–3–66.

Service Marks

Class 100 — Miscellaneous

819,282. PARKER HOUSE. G. J. Sherrard Company, d.b.a. The Parker House. SN 148,332. Pub. 9–6–66. Filed 7–3–62.

819,283. WL ETC. AND DESIGN. The Wellman-Lord Engineering, Inc. MULTIPLE CLASS (Classes 100 and 103). SN 206,902. Pub. 9–6–66. Filed 11–24–64.

819,284. FOOD HOST USA AND DESIGN. Food Host U.S.A., Inc. SN 208,906. Pub. 9–6–66. Filed 12–28–64.

819,285. THE MOTEL EMBLEM TRAVELERS TRUST. Quality Courts Motels, Inc. SN 211,925. COLLECTIVE MARK. Pub. 9–6–66. Filed 2–12–65.

819,286. MISCELLANEOUS DESIGN. Trident Engineering Associates, Inc. SN 232,947. Pub. 9–6–66. Filed 11–18–65.

Class 101 — Advertising and Business

819,287. QUALITY HOUSE. House Furnishing Company, d.b.a. Quality House Stores. SN 171,662. Pub. 9–6–66. Filed 6–24–63.

819,288. SERVICE IN THE HAND AND DESIGN. Travelers Directory Service, Inc. SN 206,783. Pub. 9–6–66. Filed 11–23–64.

819,289. LA LECHE LEAGUE. La Leche League International Inc. SN 206,867. Pub. 9–6–66. Filed 11–24–64.

819,290. PROFILE OF MOTHER NURSING BABY (DESIGN). La Leche League International Inc. SN 206,868. Pub. 9–6–66. Filed 11–24–64.

819,291. PICTURE OF A LADY (DESIGN). Fast Foods, Inc. SN 211,996. Pub. 9–6–66. Filed 2–15–65.

819,292. FLUFFY FRESH. Fluffy Fresh Prepared Mix Company, Inc. SN 223,112. Pub. 9–6–66. Filed 7–12–65.

819,293. WW AND DESIGN. World Wide Life Insurance Company. SN 225,386. Pub. 9–6–66. Filed 8–9–65.

819,294. WORLD WIDE AND DESIGN. World Wide Insurance Service Corporation. SN 225,387. Pub. 9–6–66. Filed 8–9–65.

819,295. CASEY, THE KEY TO YOUR EMPLOYMENT PROBLEMS AND DESIGN. Casey Employment Service Corp. SN 225,470. Pub. 9–6–66. Filed 8–11–65.

Class 102 — Insurance and Financial

819,296. MEDI-FACT. Medi-Fact Inc. SN 229,104. Pub. 9–6–66. Filed 10–1–65.

Class 103 — Construction and Repair

819,283. (See Class 100 for this trademark.)

819,297. VOLKSWAGEN. Volkswagenwerk Aktiengesellschaft. SN 198,446. Pub. 9–6–66. Filed 7–23–64.

819,298. CHAIR IN CIRCLE WITHIN A SUNBURST WITH SLOGAN "WE BRIGHTEN HOMES ALL-WAYS." William J. Crosby, d.b.a. Crosby Upholstering Co. SN 222,828. Pub. 9–6–66. Filed 7–7–65.

Class 104 — Communication

819,299. "2-WAY MIKE" AND DESIGN. Communications, Inc. SN 212,977. Pub. 9–6–66. Filed 3–1–65.

818,300. WORLDVISION. ABC International Television, Inc. SN 220,055. Pub. 9–6–66. Filed 6–1–65.

Class 105 — Transportation and Storage

819,301. HYDRO-TRAIN. Puget Sound Tug & Barge Company. SN 190,969. Pub. 9–6–66. Filed 4–13–64.

819,302. CLUB CAR AND DESIGN. Club Car, Inc. SN 221,699. Pub. 9–6–66. Filed 6–22–65.

819,303. TRANSTRIBUTION. Herrin Transfer & Warehouse Co., Inc. SN 228,528. Pub. 9–6–66. Filed 9–24–65.

Class 106 — Material Treatment

819,304. TANTALIZED. Alloy Surfaces Company, Inc. SN 229,043. Pub. 9–6–66. Filed 10–1–65.

Class 107 — Education and Entertainment

819,305. RADIO BIBLE CLASS AND DESIGN. The Radio Bible Class, Inc. SN 219,262. Pub. 9–6–66. Filed 5–19–65.

819,306. THE CHOSEN FEW. Paul Rubio, d.b.a. Paul Rubio Productions. SN 230,081. Pub. 9–6–66. Filed 10–13–65.

819,307. JACK IN THE BOX. Jack-In-The-Box, Inc. SN 246,021. Pub. 9–6–66. Filed 5–19–66.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 2 — Receptacles

819,308. H. D. Hudson Manufacturing Company, Chicago, Ill. SN 190,084. Filed P.R. 4–1–64; Am. S.R. 6–9–66.

Super Tank

For Stock Watering Tanks.
First use Nov. 28, 1963.

819,309. Century Engineering Corporation, Cedar Rapids, Iowa. SN 221,254. Filed P.R. 6–16–65; Am. S.R. 9–26–66.

POLY

For Polyethylene Tanks for Use in Agricultural Spray Apparatus for Sale to and Use by Farmers.
First use December 1964.

819,310. National Distillers & Chemical Corporation, New York, N.Y. SN 222,734. Filed P.R. 7–6–65; Am. S.R. 9–23–66.

MULTIFILM

For Plastic Bags.
First use June 15, 1965.

819,311. Union Carbide Corporation, New York, N.Y. SN 226,181. Filed 8–20–65.

FOLD-LOCK TOP

For Plastic Bags.
First use on or about Oct. 15, 1962.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

819,312. Lispenard Manufacturing Corp., Brooklyn, N.Y. SN 240,009. Filed P.R. 3–2–66; Am. S.R. 9–13–66.

Lispenard

For Handbags, Tote Bags, Portfolios, Brief Cases, and Travel Cases Comprising a Carrying Case With Attached Outer Compartments for Business Papers.
First use Apr. 1, 1952.

Class 6 — Chemicals and Chemical Compositions

819,313. Archer-Daniels-Midland Company, Minneapolis, Minn. SN 231,527. Filed P.R. 10-24–65; Am. S.R. 9–8–66.

AMBER RAW

For Soybean Oil.
First use in or about November 1928.

819,314. The J. J. Dill Company, Kalamazoo, Mich. SN 231,743. Filed P.R. 10–28–65; Am. S.R. 9–12–66.

INSECT-O-STRIP

For Strips of Resin Material Impregnated With Vaporizable Insecticide.
First use May 5, 1965.

Class 14 — Metals and Metal Castings and Forgings

819,315. Edwin L. Wiegand Company, Pittsburgh, Pa. SN 227,731. Filed P.R. 9–13–65; Am. S.R. 9–19–66.

GRANVILLE

For Metal Tubing.
First use on or about June 1, 1965.

Class 18 — Medicines and Pharmaceutical Preparations

819,316. The Southern Optical Company, Louisville, Ky. SN 206,086. Filed P.R. 11–12–64; Am. S.R. 9–12–66.

SOAX

For Antiseptic Storage and Hydrating Solution for Contact Lenses.
First use Oct. 28, 1964.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

819,317. Hot Roll Manufacturing Co., Liberty, Mo. SN 208,743. Filed P.R. 12–23–64; Am. S.R. 9–27–66.

VIBRANT

For Vibratory Rollers.
First use Nov. 18, 1964.

819,318. Simplicity Manufacturing Company, Port Washington, Wis. SN 232,160. Filed P.R. 11–4–65; Am. S.R. 9–28–66.

HYDROLIFT

For Tractors.
First use Sept. 20, 1965.

Class 32 — Furniture and Upholstery

819,319. Restronics, Inc., Jersey City, N.J. SN 217,400. Filed P.R. 4–26–65; Am. S.R. 9–16–66.

COMFORT-BUILT

For Pillows and Cushions.
First use Feb. 18, 1965.

819,320. Johnson-Carper Furniture Company, Incorporated, Roanoke, Va. SN 237,224. Filed P.R. 1–25–66; Am. S.R. 9–21–66.

johnson/carper

Owner of Reg. No. 652,750.
For Bedroom Furniture and Upholstered Living Room Furniture.
First use May 1, 1965.

Class 38 — Prints and Publications

819,321. Reed & Carnrick, Kenilworth, N.J. SN 235,796. Filed P.R. 1–4–66; Am. S.R. 9–23–66.

ABSTRACTA DERMATOLOGICA

For Periodically Issued Booklet Containing Digests of Current Literature in the Medical Field.
First use on or about Sept. 1, 1965.

Class 40 — Fancy Goods, Furnishings, and Notions

819,322. Faberge, Inc., New York, N.Y. SN 235,644. Filed P.R. 1–3–66; Am. S.R. 9–8–66.

FLUTTERLASH

For Artificial Eyelashes.
First use June 4, 1965.

Class 45 — Soft Drinks and Carbonated Waters

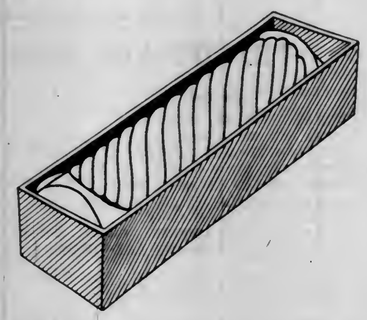
819,323. Alex C. Gunter, Clearbrook, Va. SN 214,339. Filed P.R. 3–17–65; Am. S.R. 9–21–66.

Ho TOT Ho LD

For Chocolate Flavored Soft Drink.
First use Jan. 30, 1964.

Class 46 — Foods and Ingredients of Foods

819,324. Leo Peters, Chicago, Ill. SN 217,927. Filed P.R. 5–3–65; Am. S.R. 6–16–66.



The lines shown in the drawing is a feature of the mark and do not represent color lining.
For Butter and Oleomargarine.
First use Aug. 1, 1957.

Class 51 — Cosmetics and Toilet Preparations

819,325. Lanvin-Charles of the Ritz, Inc., d.b.a. Charles of the Ritz, New York, N.Y. SN 229,982. Filed P.R. 10–12–65; Am. S.R. 9–14–66.

FACE SHADERS

For Kit of Light and Dark Facial Make-Up and an Applicator Brush.
First use Aug. 30, 1965.

TRADEMARK REGISTRATIONS RENEWED

53,739. DESIGN EAGLE ON GLOBE. Cl. 13. 6–12–06.
55,031. BBB AND DESIGN. Cl. 8. 8–7–06.
55,038. MANIFOLD. Cl. 37. 8–7–06.
55,061. 3½. Cl. 37. 8–7–06.
56,596. AERMOTOR. Cl. 23. 10–9–06.
56,622. PLYMOUTH 1824 AND DESIGN. Cl. 7. 10–9–06.
56,932. MORSE. Cl. 23. 10–23–06.
57,620. QUAKER. Cl. 46. 11–13–06.
58,464. WELCOME. Cl. 52. 12–18–06.
58,465. SUNLIGHT. Cl. 52. 12–18–06.
210,083. DONGANON. Cl. 39. 3–9–26.
210,836. FLASH AND DESIGN. Cl. 46. 3–23–26.
211,158. VITAMUL. Cl. 18. 4–6–26.
212,975. MAGNET. Cl. 46. 5–18–26.
214,208. DESIGN (SINGLE RED LINE). Cl. 37. 6–15–26.
214,695. MELODY KING. Cl. 36. 6–29–26.
215,324. GABA-TABLETTEN AND DESIGN. Cl. 18. 7–13–26.
215,331. GABA AND DESIGN. Cl. 18. 7–13–26.
215,478. VIMTO. Cl. 45. 7–20–26.
218,075. DON. Cl. 39. 9–21–26.
218,248. FERRO AND DESIGN. Cl. 25. 9–21–26.
218,398. LORRAINE. Cl. 42. 9–28–26.
218,665. ERACLIN. Cl. 15. 9–28–26.

218,755. WE NEVER DISAPPOINT. Cl. 37. 10–5–26.
218,764. WE NEVER DISAPPOINT. Cl. 38. 10–5–26.
218,813. LEFAX. Cl. 37. 10–5–26.
218,871. ELKON. Cl. 21. 10–5–26.
219,353. N AND DESIGN. Cl. 23. 10–19–26.
219,401. SANCO. Cl. 6. 10–19–26.
219,642. DISNEY. Cl. 39. 10–19–26.
219,699. BRAZO FLUX. Cl. 34. 10–19–26.
219,768. DESIGN CAMEO HEAD. Cl. 39. 10–26–26.
220,019. CELLU. Cl. 46. 10–26–26.
221,128. SIZE-MATIC. Cl. 23. 11–23–26.
221,648. WHITE ROSE. Cl. 46. 12–7–26.
221,698. MOTIF. Cl. 39. 12–7–26.
222,026. V AND DIAMOND DESIGN. Cl. 14. 12–21–26.
223,321. PORCELAIN. Cl. 37. 2–1–27.
223,707. MOSLER RUST RESISTER AND DESIGN. Cl. 15. 2–8–27.
223,900. JEL SERT. Cl. 46. 2–15–27.
224,151. MARTIN WARE AND DESIGN. Cl. 13. 2–22–27.
224,320. SILVR-COOL. Cl. 16. 2–22–27.
224,343. HAZEL. Cl. 46. 2–22–27.
224,528. EASY-TITE. Cl. 35. 3–1–27.
224,834. NORTH CHIEF. Cl. 46. 3–8–27.
421,865. WINTRADINE. Cl. 18. 5–28+46.
421,560. BIOMIL. Cl. 18. 6–4–46.
421,723. DESIGNOSCOPE. Cl. 22. 6–18–46.
422,342. MAJORETTE. Cl. 51. 7–16–46.
422,539. PERSPI-CURA. Cl. 51. 7–30–46.
422,690. SPIFFY COLLAR STAY-DOWN AND DESIGN. Cl. 28. 8–6–46.
423,497. SESMO. Cl. 23. 9–3–46.
423,716. PROTOL. Cl. 18. 9–10–46.
423,736. ACETOGEN. Cl. 6. 9–10–46.
423,935. MICROCAST PROCESS AND DESIGN. Cl. 14. 9–17–46.
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425,615. LOOSITE AND DESIGN. Cl. 52. 11–26–46.
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426,460. BLACK FLAG AND DESIGN. Cl. 23. 12–24–46.
426,945. GRAY LABEL. Cl. 21. 1–21–47.
427,120. LIQUID SANDPAPER. Cl. 16. 1–28–47.
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137,653. LUNA. Cl. 29. 11–30–20.
376,647. GREYHOUND AND DESIGN. Cl. 22. 4–2–40.
377,284. SILEX. Cl. 13. 4–30–40.
377,447. TIME-O-GRAF. Cl. 26. 5–7–40.
378,479. PENN TRIUMPH. Cl. 15. 6–11–40.
378,719. QUICAP. Cl. 50. 6–18–40.
380,110. CORTLINE AND DESIGN. Cl. 22. 8–6–40.
380,328. MAYR'S WORM CHASER AND DESIGN. Cl. 18. 8–20–40.
381,715. DRAPERTOWN. Cl. 39. 10–1–40.
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705,104. DORVO. Cl. 1.
705,105. BITTLE QUALITY PRODUCTS AND DESIGN. Cl. 1.
705,108. CUSTOM CALF. Cl. 1.
705,109. ASTRALUCINE. Cl. 1.
705,115. WISE-PAK. Cl. 2.
705,116. FACE-PAK. Cl. 2.
705,117. BLOOMER AND DESIGN. Cl. 2.
705,119. TISSUER. Cl. 2.
705,121. GRANSPRAY. Cl. 4.
705,123. ODORE-AIRE THE HOUSE OF PROTECTION AND DESIGN. Cl. 6.
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705,129. CYANATEX. Cl. 6.
705,131. CAN'T MISS. Cl. 6.
705,132. ROCK & ROLL. Cl. 8.
705,134. KLEENUP. Cl. 10.
705,140. "TRILITE GLIDE-AWAY." Cl. 13.
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705,147. LESOLUX. Cl. 16.
705,148. LESOVIT. Cl. 16.
705,149. LESOTAL. Cl. 16.
705,154. SEPTIDERM. Cl. 18.
705,155. SEPTICORT. Cl. 18.
705,163. JEL-CORT. Cl. 18.
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705,180. HUMWINGER. Cl. 22.
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705,195. A-S-K. Cl. 23.
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705,206. E-Z PLEAT AND DESIGN. Cl. 23.
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705,212. ERECT-A-LIFT. Cl. 23.
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705,244. MAGIC STRINGS. Cl. 36.
705,248. BLUE RIBBON RUBBER BANDS AND DESIGN. Cl. 37.
705,251. CHANNEL CHATTER. Cl. 38.
705,254. ROCKET REVIEWS. Cl. 38.
705,255. SONORAMA. Cl. 38.
705,257. MARINE NEWS. Cl. 38.
705,263. THE JOURNAL OF BIOPHYSICAL AND BIOCHEMICAL CYTOLOGY. Cl. 38.
705,269. FRESHER HUG-FIT. Cl. 39.
705,270. KOOL SHOULDERS. Cl. 39.
705,275. ROUND HILL. Cl. 39.
705,283. FULLSPAN AND OVAL DESIGN. Cl. 39.
705,284. SWEET DREAMS. Cl. 39.
705,286. CINDY SUE. Cl. 39.
705,288. SLEEP SHOP AND DESIGN. Cl. 42.
705,291. FLEX-O-WEB. Cl. 42.
705,294. FULLSPAN AND DESIGN. Cl. 42.
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705,305. FEATHER WEIGHT AND DESIGN. Cl. 45.
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705,313. N-ZYM-A. Cl. 46.
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705,346. EDITH JORDAN. Cl. 51.
705,351. TAN-O-RAMA. Cl. 51.
705,352. SANIGARD. Cl. 52.
705,364. PLA-SKATE. Cl. 22.
705,365. POCKET PAC. Cl. 22.

705,369. PROPULSION ENGINEERING. Cl. 38.
705,371. SERV "10." Cl. 45.
705,378. TWICE RED. Cl. 51.
705,380. WHITE LUSTRE. Cl. 51.
705,379. ANANDA PINK. Cl. 51.
705,382. PEARL CARE. Cl. 52.
705,383. INTERNATIONAL CAMERAMEN ETC. AND DESIGN. Cl. 101.

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811,338. MISCELLANEOUS DESIGN. Cl. 26. 7–19–66. Burtek, Inc., Tulsa, Okla. Corrected: In the statement, column 2, lines 1 and 2, "electrical" both occurrences, should be deleted.

812,632. SERVI-I-STRETCH. Cl. 42. 8–9–66. Service Knitting Mills, Inc., New York, N.Y. Corrected to appear:

SERV-I-STRETCH

813,590. BIDETTE AND DESIGN. Cl. 51. 8–23–66. Youngs Drug Products Corporation, by change of name from Youngs Rubber Corporation, New York, N.Y. Corrected: In the statement, column 1, line 1, "Young" should be deleted and *Youngs* should be inserted.

814,286. FLOWERFLAKE AND DESIGN. Cl. 14. 9–6–66. Metalflake, Inc., Haverhill, Mass. Corrected: In the statement, column 1, line 1, "Delaware" should be deleted and *Massachusetts* should be inserted.

814,335. BRONKOLIXIR. Cl. 18. 9–6–66. Breon Laboratories Inc., New York, N.Y. Corrected: In the statement, column 1, line 1, ", Inc." should be deleted and *Inc.* should be inserted.

814,336. BRONKOSOL. Cl. 18. 9–6–66. Breon Laboratories, Inc., New York, N.Y. Corrected: In the statement, column 1, line 1, ", Inc." should be deleted and *Inc.* should be inserted.

814,457. OSCILLOMINK. Cl. 26. 9–6–66. Siemens & Halske Aktiengesellschaft, Munich, Germany. Corrected: In the statement, column 2, line 3, "Nov. 8," should be deleted and *Nov. 4*, should be inserted.

815,193. INLAND EXPRESS IE AND DESIGN. Cl. 105. 9–13–66. Inland Express, Inc., Marlborough, Mass. Corrected: In the statement, column 2, line 4, "1965" should be deleted and *1951* should be inserted.

815,249. TRY BEFORE YOU HIRE. Cl. 101. 9–13–66. James Pair Personnel Service, Inc., Atlanta, Ga. Corrected: In the statement, column 2, line 1, "urocurement" should be deleted and *procurement* should be inserted.

815,513. KNIT KNOTS. Cl. 39. 9–20–66. Goodimade Manufacturing Company, doing business as Les Girls, Philadelphia, Pa. Corrected: In the statement, column 2, line 2, "shirts" should be deleted and *skirts* should be inserted.

TRADEMARK REGISTRATIONS—NEW CERTIFICATES

New Certificates issued under sections 7(c), 7(f), 7(g) of the Trademark Act of 1946 for the unexpired term of the original registrations.

353,381. VIBROSAN AND DESIGN. Cl. 44. "Sodeco" Societe des Compteurs de Geneve. 1–4–38. New Cert. Sec. 7(c) to Vibrosan S.A., Geneva, Switzerland.

500,197. EVERHOT. Cl. 34. Everhot Heater Company. 5–11–48. New Cert. Sec. 7(c) to Frick Company, Waynesboro, Pa.

692,379. CALECO. Cl. 24. California Laundry Equipment Co. 2–2–60. New Cert. Sec. 7(c) to David E. Glatt, doing business as California Laundry Equipment Co., Oakland, Calif.

705,259. LEGACY. Cl. 38. Random House, Inc. 10–4–60. New Cert. Sec. 7(c) to Xerox Corporation, Rochester, N.Y.

707,124. CAPSEBON. Cl. 18. Allied Laboratories, Inc., doing business as Pitman-Moore Co. 11–15–60. New Cert. Sec. 7(c) to The Dow Chemical Company, Midland, Mich.

708,258. METASOL. Cl. 6. Metalsalts Corporation. 12–13–60. New Cert. Sec. 7(c) to Merck & Co., Inc., Rahway, N.J.

746,507. C-ER AND DESIGN. Cl. 21. Products Research Company. 3–12–63. New Cert. Sec. 7(c) to The Potter Company, Northfield, Ill.

797,620. MEDI CARD AND DESIGN. Cl. 102. Medi-Card, Inc. 10–12–65. New Cert. Sec. 7(c) to Medi Card, Inc., Port Chester, N.Y.

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(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

ABC International Television, Inc., New York, N.Y. 819,300, pub. 9–6–66. Cl. 104.
ABC Vending Corp., d.b.a. ABC Vending Corp., Long Island City, N.Y. 819,180, pub. 9–6–66. Cl. 46.
ABC Vending Corp., d.b.a. ABC Vending Corp., Long Island City, N.Y. 819,181, pub. 9–6–66. Cl. 46.
A-S-K Corp., Berkeley, Calif. 705,195, canc. Cl. 23.
Acetogen Associates, Inc., to Acetogen Gas Co., Detroit, Mich. 423,736, ren. 11–22–66. Cl. 6.
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Acme Backing Corp., New York, N.Y. 818,915, pub. 9–6–66. Cl. 1.
Adams and Brooks, Inc., Los Angeles, Calif. 819,187, pub. 9–6–66. Cl. 46.
Advanced Engineering Corp., Milwaukee, Wis. 705,228, canc. Cl. 31.
Aermotor Co., Chicago, Ill., to Braden-Aermotor Corp., Broken Arrow, Okla. 56,596, ren. 11–22–66. Cl. 23.
Aerofeed Inc., Chalfont, Pa. 819,078, pub. 9–6–66. Cl. 26.
Aeronca Mfg. Corp., Middletown, Ohio. 819,034, pub. 9–6–66. Cl. 19.
Agway, Inc., from Cooperative Grange League Federation Exchange, Inc., Ithaca, N.Y. 818,977, pub. 9–6–66. Cl. 12.
Albemarle Paper Mfg. Co., d.b.a. Consumer Bag and Packaging Corp., Richmond, Va. 818,922, pub. 9–6–66. Cl. 2.
Alden Mills, The, Meridian, Miss. 819,154, pub. 9–6–66. Cl. 39.
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Amerace Corp., New York, N.Y. 819,156, pub. 9–6–66. Cl. 40.
American Aviation Publications, Inc., Washington, D.C. 705,369, canc. Cl. 38.
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American Bosch Arma Corp., Springfield, Mass. 819,043, pub. 9–6–66. Cl. 21.
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American Cyanamid Co., Wayne, N.J. 818,955, pub. 9–6–66. Cl. 6.
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American Food Laboratories, Inc., Brooklyn, N.Y. 819,200, pub. 9–6–66. Cl. 46.
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American Model Car Raceways, Inc., Beverly Hills, Calif. 819,047, pub. 9–6–66. Cl. 22.
American Monarch Machine Co., Inc., Peoria, Ill. 819,058, pub. 9–6–66. Cl. 23.
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Balboa Originals of California, Redwood City, Calif. 819,132, pub. 9–6–66. Cl. 39.
Barnes-Hind Laboratories, Inc., Sunnyvale, Calif. 705,163, canc. Cl. 18.
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Bearman, Sumner D., d.b.a. Space-Ad, Los Angeles, Calif. 819,230, pub. 9–6–66. Cl. 50.
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Calumet & Hecla, Inc., Allen Park, Mich. 818,995, pub. 9–6–66. Cl. 13.
Cannon, Vernon L., d.b.a. Hol-Can Oil Co., Dothan, Ala. 819,000, pub. 9–6–66. Cl. 15.
Can-Tex Industries, Inc., d.b.a. Process Equipment Division, Mineral Wells, Tex. 819,070, pub. 9–6–66. Cl. 23.
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Casting Materials Co., Inc., White Plains, N.Y. 818,951, pub. 9–6–66. Cl. 6.
Castle & Cooke, Inc., d.b.a. Royal Hawaiian Macadamia Nut Co., Honolulu, Hawaii. 819,216, pub. 9–6–66. Cl. 46.
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Colgate-Palmolive Co., New York, N.Y. 819,267, pub. 9–6–66. Cl. 51.
Columbia Corrugated Container Corp., Syosset, N.Y. 818,918, pub. 9–6–66. Cl. 2.
Columbia Broadcasting System, Inc., New York, N.Y. 819,100, pub. 9–6–66. Cl. 36.
Columbia Rope Co.: *See*—
Plymouth Cordage Co.
Commercial Solvents Corp., New York, N.Y. 818,902, pub. 9–6–66. Cl. 1.
Communications, Inc., Rapid City, S. Dak. 819,299, pub. 9–6–66. Cl. 104.
Compagnie Industrielle des Telecommunications, Paris, France. 819,041, pub. 9–6–66. Cl. 21.
Consolidated Papers, Inc., Wisconsin Rapids, Wis. 819,116, pub. 9–6–66. Cl. 37.
Consumer Bag and Packaging Corp.: *See*—
Albemarle Paper Mfg. Co.
Continental Sea Foods, Inc., New York, N.Y. 819,205, pub. 9–6–66. Cl. 46.
Cook Chocolate Co., Chicago, Ill. 819,196, pub. 9–6–66. Cl. 46.
Cook Coffee Co., Maple Heights, Ohio. 818,936, pub. 9–6–66. Multiple Class (Classes 6 and 52).
Cooperatieve Condensfabriek "Gelderland-Overijsel" G.A., Deventer, Netherlands. 819,184, pub. 9–6–66. Cl. 46.
Cooperative Grange League Federation Exchange, Inc.: *See*—
Agway, Inc.
Cordem Corp., Minneapolis, Minn. 819,068, pub. 9–6–66. Cl. 23.
Corn Products Co., New York, N.Y. 705,316, canc. Cl. 46.
Cortland Line Co., Inc., Cortland, N.Y. 380,110, canc. Cl. 22.
Cortland Line Co., Inc., Cortland, N.Y. 382,340, canc. Cl. 22.
Cramer Chemical Co., The, Gardner, Kans. 819,025, pub. 9–6–66. Cl. 18.
Crawford Candies Inc., d.b.a. Crawford Candies, Ambler, Pa. 819,210, pub. 9–6–66. Cl. 46.
Crawford Candies: *See*—
Crawford Candies Inc.
Crest Specialty, Not Inc., to Crest Specialty, Inc., Chicago, Ill. 422,690, ren. 11–22–66. Cl. 28.
Crest Specialty, Inc.: *See*—
Crest Specialty, Not Inc.
Crosby Upholstering Co.: *See*—
Crosby, William J.
Crosby, William J., d.b.a. Crosby Upholstering Co., Cleveland, Ohio. 819,298, pub. 9–6–66. Cl. 103.
Custom Vinyl Ltd., Brooklyn, N.Y. 819,037, pub. 9–6–66. Cl. 20.
Dade Reagents, Inc., Miami, Fla. 818,940, pub. 9–6–66. Cl. 6.
Dairyland Seed Co., Inc., Campbellsport, Wis. 818,914, pub. 9–6–66. Cl. 1.
Daly-Herring Co., Kinston, N.C. 818,937, pub. 9–6–66. Cl. 6.
De Beaufort, Ltd., New York, N.Y. 819,264, pub. 9–6–66. Cl. 51.
Dep Corp., Los Angeles, Calif. 819,252, pub. 9–6–66. Cl. 51.
Detroit Graphite Co., Detroit, Mich., to The Valspar Corp., Rockford, Ill. 224,320, ren. 11–22–66. Cl. 16.
Dial, H. E., and MacDonald Millard, Calgary, Alberta, Canada. 818,925, pub. 9–6–66. Cl. 3.
Dickson and Shannon, New York, N.Y. 819,050, pub. 9–6–66. Cl. 22.
Dill, J. J., Co., The, Kalamazoo, Mich. 819,314. Cl. 6.
Diners' Club, Inc., New York, N.Y. 819,126, pub. 9–6–66. Cl. 38.
Disney Hats, New York, N.Y., to John B. Stetson Co., Philadelphia, Pa. 219,642, ren. 11–22–66. Cl. 39.
Douglas Motors Corp., Milwaukee, Wis. 819,055, pub. 9–6–66. Cl. 23.
Dow Chemical Co., The, Midland, Mich. 705,104, canc. Cl. 1.
Dow Chemical Co., The: *See*—
Allied Laboratories, Inc.
Drackett Co., The, Cincinnati, Ohio, from Bristol-Myers Co., New York, N.Y. 818,930, pub. 8–23–66. Cl. 4.
Drackett Co., The, Cincinnati, Ohio, from Bristol-Myers Co., New York, N.Y. 818,931, pub. 8–23–66. Cl. 4.
Dresser Industries, Inc., d.b.a. Pacific Pumps, Inc., Huntington Park, Calif. 819,069, pub. 9–6–66. Cl. 23.
Dunkermotoren Prazisions - Kleinstmotoren Gesellschaft m.b.H., Bonndorf (Black Forest), Postfach, Germany. 819,044, pub. 9–6–66. Cl. 21.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 818,963, pub. 9–6–66. Cl. 6.
Duratex Co., The, Newark, N.J., from The General Tire & Rubber Co., Akron, Ohio. 132,362 canc. Cl. 42.
Dybal, Erich, Bodensee, Austria. 819,254, pub. 9–6–66. Cl. 51.
E-Z-Est Products Co., Inc., Oakland, Calif. 819,273, pub. 9–6–66. Cl. 52.
Eagle Crusher Co., Inc.: *See*—
Harsco Corp.
Eagle Pencil Co., New York, N.Y., to Eagle Pencil Co., Danbury, Conn. 55,058, ren. 11–22–66. Cl. 37.
Eagle Pencil Co., New York, N.Y., to Eagle Pencil Co., Danbury, Conn. 55,061, ren. 11–22–66. Cl. 37.
East India Spice Co., Ltd., Mount Vernon, N.Y. 819,221, pub. 9–6–66. Cl. 46.
Eastern Craft Center Inc., New York, N.Y. 705,344, canc. Cl. 51.
Eastern States Farmers' Exchange, Inc., West Springfield, Mass. 705,324, canc. Cl. 46.
Eberhard Faber Inc., Wilkes-Barre, Pa. 819,246, pub. 9–6–66. Cl. 51.
Eberhard Faber Inc., Wilkes-Barre, Pa. 819,247, pub. 9–6–66. Cl. 51.
Eberhard Faber Inc., Crestwood, Wilkes-Barre, Pa. 818,928, pub. 9–6–66. Cl. 4.
Eberhard Faber Inc., Crestwood, Wilkes-Barres, Pa. 818,929, pub. 9–6–66. Cl. 4.
Eberhard Faber Inc., Crestwood, Wilkes-Barre, Pa. 818,932, pub. 9–6–66. Cl. 5.
Eberhard Faber Inc., Crestwood, Wilkes-Barre, Pa. 818,933, pub. 9–6–66. Cl. 5.
Edgewood Mfg. Co., El Monte, Calif. 705,241, canc. Cl. 34.
Eisendrath, B. D., Tanning Co., Chicago, Ill. 705,108, canc. Cl. 1.
Elk Engineering Works Inc., St. Marys, Pa. 705,211, canc. Cl. 23.
Elkon Works, Inc., Weehawken, N.J., to P. R. Mallory & Co., Inc., Indianapolis, Ind. 218,871, ren. 11–22–66. Cl. 21.

Embosograf Co. of Illinois, Chicago, Ill. 818,907, pub. 9–6–66. Cl. 1.
Embosograf Co. of Illinois, Chicago, Ill. 818,908, pub. 9–6–66. Cl. 1.
Empire Plastic Corp., Pelham Manor, N.Y. 705,180, canc. Cl. 22.
English Sewing Ltd.: *See*—
Winterbottom Book Cloth Co. Ltd., The.
Erven Lucas Bols Inc., Fairlawn, N.J. 819,190, pub. 9–6–66. Cl. 46.
Eskimo Radiator Mfg. Co., Los Angeles, Calif. 819,071, pub. 9–6–66. Cl. 23.
Essex Bottlers: *See*—
Mr. Boston Distiller Inc.
Euclid Chemical Co., The, Cleveland, Ohio. 818,990, pub. 9–6–66. Cl. 12.
Euclid Spiral Paper Tube Corp., Cleveland, Ohio. 818,917, pub. 9–6–66. Cl. 2.
Everhot Heater Co., to Frick Co., Waynesboro, Pa. 500,197, new cert. Cl. 34.
Everlube Corp.: *See*—
Everlube Corp. of America.
Everlube Corp. of America, d.b.a. Everlube Corp., North Hollywood, Calif. 818,997, pub. 8–23–66. Cl. 15.
Ever Ready Machine & Die Co.: *See*—
Paprocki, Edward J.
Eversharp, Inc., New York, N.Y. 705,214, canc. Cl. 23.
Exquisite Form Industries, Inc., New York, N.Y. 819,141, pub. 9–6–66. Cl. 39.
Exquisite Form Industries, Inc., New York, N.Y. 819,138, pub. 9–6–66. Cl. 39.
Faberge, Inc., New York, N.Y. 819,322. Cl. 40.
Fairmont Foods Co., Omaha, Nebr. 819,208, pub. 9–6–66. Cl. 46.
Fallenberg, R. B., Laboratory: *See*—
Fallenberg, Robert B.
Fallenberg, Robert B., d.b.a. R. B. Fallenberg Laboratory, Glendale, Calif. 426,354, ren. 11–22–66. Cl. 18.
Fancee Free Mfg., Co., Inc., St. Louis, Mo. 819,137, pub. 9–6–66. Cl. 39.
Fancourt, W. F., Co., Inc., Greensboro, N.C. 818,943, pub. 9–6–66. Cl. 6.
Farfisa, Ancona, Italy. 705,243, canc. Cl. 36.
Farmers Exchange, Inc., Franklinton, La. 819,217, pub. 9–6–66. Cl. 46.
Fast Foods, Inc., Columbus, Ohio. 819,291, pub. 9–6–66. Cl. 101.
Feldstein, Morris, & Son, Inc., Brooklyn, N.Y. 818,935, pub. 8–23–66. Cl. 5.
Fels and Co., Philadelphia, Pa. 705,352, canc. Cl. 52.
Ferro Stamping & Mfg. Co., to Ferro Mfg. Corp., Detroit, Mich. 218,248, ren. 11–22–66. Cl. 25.
Ferro Mfg. Corp.: *See*—
Ferro Stamping & Mfg. Co.
Fisons Pharmaceuticals Ltd., Loughborough, England. 819,017, pub. 9–6–66. Cl. 18.
Flintkote Co., The, New York, N.Y. 818,980, pub. 9–6–66. Cl. 12.
Flintkote Co., The, New York, N.Y. 818,983, pub. 9–6–66. Cl. 12.
Flintkote Co., The, New York, N.Y. 818,984, pub. 9–6–66. Cl. 12.
Fluffy Fresh Prepared Mix Co., Inc., Kansas City, Mo. 819,292, pub. 9–6–66. Cl. 101.
Food Host U.S.A., Inc., Lincoln, Nebr. 819,284, pub. 9–6–66. Cl. 100.
Foseco International Ltd., Birmingham, England. 818,947, pub. 9–6–66. Cl. 6.
Foseco International Ltd., Birmingham, England. 818,948, pub. 9–6–66. Cl. 6.
Foseco International Ltd., Birmingham, England. 818,949, pub. 9–6–66. Cl. 6.
France Packing Co., Philadelphia, Pa. 818,903, pub. 9–6–66. Cl. 1.
Frankau, Adolp, & Co. Ltd., London, England, to Wally Frank, Ltd., New York, N.Y. 55,031, ren. 11–22–66. Cl. 8.
Franth Wetherholts: *See*—
Wetherholt's Perfume Co.
Fresher Mfg. Corp., New York, N.Y. 705,269, canc. Cl. 39.
Frick Co.: *See*—
Everhot Heater Co.
Fritzsche Brothers, Inc., New York, N.Y. 818,944, pub. 9–6–66. Cl. 6.
Fritzsche Brothers, Inc., New York, N.Y. 819,222, pub. 9–6–66. Cl. 46.
Fuso Keigokin K.K. Tokyo, Japan. 819,064, pub. 9–6–66. Cl. 23.
Fyton Industries Inc., Waco, Tex. 705,142, canc. Cl. 13.
Gaba Ltd., Basel, Switzerland. 215,324, ren. 11–22–66. Cl. 18.
Gaba Ltd., Basel, Switzerland. 215,331, ren. 11–22–66. Cl. 18.
Gardner-Denver Co., Quincy, Ill. 705,193, canc. Cl. 23.
Geigy Chemical Corp., Ardsley, N.Y. 819,027, pub. 9–6–66. Cl. 18.
Gelder, Ruth V., Cincinnati, Ohio. 819,123, pub. 9–6–66. Cl. 38.
General Foods Corp., White Plains, N.Y. 819,201, pub. 9–6–66. Cl. 46.
General Foods Corp., White Plains, N.Y. 819,203, pub. 9–6–66. Cl. 46.
General Liquids Corp.: *See*—
Norin, Jack.
General Metalware Co.: *See*—
Northwestern Metalware Co.
General Tire & Rubber Co.: *See*—
Duratex Co., The.
Genesco, Inc., Nashville, Tenn. 819,145, pub. 9–6–66. Cl. 39.
Gibbs, Thomas B., & Co., Chicago, Ill., from Amphenol-Borg Electronics Corp., Delavan, Wis. 377,447, canc. Cl. 26.
Gilman Paper Co., New York, N.Y. 819,109, pub. 9–6–66. Cl. 37.
Gimbel Brothers, Inc., New York, N.Y. 818,926, pub. 9–6–66. Cl. 3.
Glatt, David E.: *See*—
California Laundry Equipment.
Glamorise Foundations, Inc., New York, N.Y. 819,150, pub. 9–6–66. Cl. 39.
Glynn, William: *See*—
Mar-Clay Hosiery Mills.
Golden Door Cosmetics, Inc., San Diego, Calif. 819,245, pub. 9–6–66. Cl. 51.
Gold Medal Beverage Co., St. Paul, Minn.. 819,179, pub. 9–6–66. Cl. 45.
Gomez, Javier A., Jal, Mexico. 819,244, pub. 9–6–66. Cl. 51.
Good Humor Corp., Englewood Cliffs, N.J. 819,219, pub. 9–6–66. Cl. 46.
Goodimade Mfg., Co., d.b.a. Les Girls, Philadelphia, Pa. 815,513. Am. 7(d). Cl. 39.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 819,118, pub. 9–6–66. Cl. 37.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 818,912, pub. 9–6–66. Cl. 1.
Gopher State Canneries, Inc., Watertown, Minn., to Green Giant Co., Le Sueur, Minn. 224,834, ren. 11–22–66. Cl. 46.
Grand Specialties Co., Chicago, Ill. 705,212, canc. Cl. 23.
Granwood Flooring Co. Ltd., Riddings, England. 705,121, canc. Cl. 4.
Green Giant Co.: *See*—
Gopher State Canneries, Inc.
Griffolyn Co., Inc., Houston, Tex. 818,982, pub. 9–6–66. Cl. 12.
Guardian Chemical Co., Atlanta, Ga. 819,276, pub. 9–6–66. Cl. 52.
Gunter, Alex C., Clearbrook, Va. 819,323. Cl. 45.
Gynecic Laboratories, Inc.: *See*—
Larre Laboratories.
HMH Publishing Co., Inc., from HMH Publishing Co., Inc., Chicago, Ill. 819,160, pub. 9–6–66. Cl. 42.
Haggar Co., Dallas, Tex. 819,130, pub. 9–6–66. Cl. 39.
Hallcraft Homes, Inc., Scottsdale, Ariz. 818,978, pub. 9–6–66. Cl. 12.
Hallcraft Homes, Inc., Scottsdale, Ariz. 818,979, pub. 9–6–66. Cl. 12.
Handal, Victor B., & Bro., Inc., New York, N.Y. 819,167, pub. 9–6–66. Cl. 42.
Hanson White Publishing Co. Ltd., London, England. 819,105, pub. 9–6–66. Cl. 37.
Harcliffe Laboratories, Inc., Brooklyn, N.Y. 819,024, pub. 9–6–66. Cl. 18.
Harris, D. P., Hardware & Mfg. Co., Inc., New York, N.Y. 819,036, pub. 9–6–66. Cl. 19.
Harsco Corp., Harrisburg, Pa., from Eagle Crusher Co., Inc., Galion, Ohio. 819,052, pub. 8–2–66. Cl. 23.
Hartnell, William R., Los Angeles, Calif. 818,994, pub. 9–6–66. Cl. 13.
Hass Wholesale, Inc., South Bend, Ind. 818,985, pub. 9–6–66. Cl. 12.
Hassenfeld Bros., Inc., Pawtucket, R.I. 819,125, pub. 9–6–66. Cl. 38.
Heald Machine Co., The, to The Heald Machine Co., Worcester, Mass. 221,128. Am. 7(d). Cl. 23.
Hearst Corp., The, New York, N.Y. 819,127, pub. 9–6–66. Cl. 38.
Helleman, G. Brewing Co., La Crosse, Wis. 819,227, pub. 9–6–66. Cl. 48.
Herrin Transfer & Warehouse Co., Inc., Shreveport, La. 819,303, pub. 9–6–66. Cl. 105.
Hi-Fashion, Inc., Atlanta, Ga. 819,268, pub. 9–6–66. Cl. 51.
Highway Cruisers of California Inc.: *See*—
Highway Cruisers, Inc.
Highway Cruisers, Inc., from Highway Cruisers of California Inc., Covina, Calif. 819,029, pub. 9–6–66. Cl. 19.
Hohner, M., Inc., Hicksville, N.Y. 214,695, ren. 11–22–66. Cl. 36.
Hol-Can Oil Co.: *See*—
Cannon, Vernon L.
Hollister Inc., Chicago, Ill. 819,176, pub. 9–6–66. Cl. 44.
Holzapfel, Louis, d.b.a. Sanitary Supply Co., to Sanco Products Co., Inc., Greenville, Ohio. 219,401, ren. 11–22–66. Cl. 6.
Hong Kong Carpet Mfg. Ltd., Hong Kong, China. 819,173, pub. 9–6–66. Cl. 42.
Hot Roll Mfg. Co., Liberty, Mo. 819,317. Cl. 23.
House Furnishing Co., d.b.a. Quality House Stores, Minneapolis, Minn. 819,287, pub. 9–6–66. Cl. 10.
Howmet Corp.: *See*—
Austenal Laboratories, Inc.
Hudson, H. D., Mfg. Co., Chicago, Ill.. 819,308. Cl. 2.
Hudson Textile Corp., North Bergen, N.J. 819,171, pub. 9–6–66. Cl. 42.
Humble Oil & Refining Co.: *See*—
Standard Oil Co. (New Jersey).
Hunt Foods and Industries, Inc., Fullerton, Calif. 819,213, pub. 9–6–66. Cl. 46.
Hunt Foods, Inc.: *See*—
Hunt Foods and Industries, Inc.
Hy-Way Heat Systems, Inc., Youngstown, Ohio. 819,090, pub. 9–6–66. Cl. 34.
Idaho Potato Growers, Inc., Idaho Falls, Idaho. 819,204, pub. 9–6–66. Cl. 46.
Illinois Federation Sportsmen's Clubs, Inc., Blue Island, Ill. 819,121, pub. 9–6–66. Cl. 38.
Injection Molders Supply Co.: *See*—
Morse, A. Reynolds.

Imperial Chemical Industries Ltd., Millbank, London, England. 819,012, pub. 9–6–66. Cl. 18.
Inland Express, Inc., Marlborough, Mass. 815,193. Am. 7(d). Cl. 105.
International Artware Corp., Cleveland, Ohio. 819,082, pub. 9–6–66. Cl. 30.
International Cameramen: *See*— Mahan, James B.
International Paper Co., New York, N.Y. 818,913, pub. 9–6–66. Cl. 1.
Invisible Shaving Liquid Corp., Staten Island, N.Y. 819,257, pub. 9–6–66. Cl. 51.
Ironees Co., The, Philadelphia, Pa. 818,959, pub. 9–6–66. Cl. 6.
Ironees Co., The, Philadelphia, Pa. 818,960, pub. 9–6–66. Cl. 6.
Irwin Corp., New York, N.Y. 705,177, canc. Cl. 22.
Jack-In-The-Box, Inc., San Diego, Calif. 819,307, pub. 9–6–66. Cl. 107.
Janet Paper Corp., Brooklyn, N.Y. 819,234, pub. 9–6–66. Cl. 50.
Japan Gas Lighter Corp., New York, N.Y. 818,999, pub. 9–6–66. Cl. 15.
Jarosz Produce Farms, Inc., Pine Island, N.Y. 819,182, pub. 9–6–66. Cl. 46.
Jel Sert Co., The: *See*— Wegner, Charles T., Jr.
Johnson-Carper Furniture Co., Inc., Roanoke, Va. 819,320. Cl. 32.
Jordan, Edith, Inc., Fayetteville, N.C. 705,346, canc. Cl. 51.
Kay-Brunner Steel Casting Co., Los Angeles, Calif., to Kay-Brunner Steel Products, Inc., Alhambra, Calif. 222,026, ren. 11–22–66. Cl. 14.
Kay-Brunner Steel Products, Inc.: *See*— Kay-Brunner Steel Casting Co.
Kendall Co., The: *See*— Lorraine Mfg. Co.
Kessing & Thiele, Buende (Westphalia), Germany. 819,003, pub. 9–6–66. Cl. 17.
Kessing & Thiele, Buende (Westphalia), Germany. 819,004, pub. 9–6–66. Cl. 17.
Kessing & Thiele, Buende (Westphalia), Germany. 819,005, pub. 9–6–66. Cl. 17.
Kindler und Schiermeyer Verlag A.G.: *See*— Verlag Th. Martens & Co. G.m.b.H.
Arthur, King, Inc., Memphis, Tenn. 819,249, pub. 9–6–66. Cl. 51.
Klopman Mills, Inc., Rockleigh, N.J. 819,166, pub. 9–6–66. Cl. 42.
Kresge, S. S., Co., Detroit, Mich. 819,051, pub. 9–6–66. Cl. 22.
La Leche League International Inc., Franklin Park, Ill. 819,289, pub. 9–6–66. Cl. 101.
La Leche League International, Inc., Franklin Park, Ill. 819,290, pub. 9–6–66. Cl. 101.
Lanco Container Corp., Brooklyn, N.Y. 818,919, pub. 9–6–66. Cl. 2.
Lanvin-Charles of the Ritz, Inc., New York, N.Y. 819,281, pub. 9–6–66. Cl. 52.
Lanvin-Charles of the Ritz, Inc., d.b.a. Charles of the Ritz, New York, N.Y. 819,325. Cl. 51.
Lamb-Weston, Inc., Portland, Oreg. 819,198, pub. 9–6–66. Cl. 46.
Larre Laboratories, Denver, Colo., to Gynecic Laboratories, Inc., Yonkers, N.Y. 424,537, ren. 11–22–66. Cl. 44.
Lavelle Rubber Co., Chicago, Ill. 818,991, pub. 9–6–66. Cl. 13.
Lawn Barber Corp., Hollywood, Calif. 819,057, pub. 9–6–66, Cl. 23.
Lawrence, Donald E., Monclair, Calif. 705,131, canc. Cl. 6.
Lazarus Laboratories, Inc., Long Island City, N.Y. 819,274, pub. 9–6–66. Cl. 52.
Lea Mfg. Co., The, Waterbury, Conn. 819,279, pub. 9–6–66. Cl. 52.
Lea Mfg. Co., The, Waterbury, Conn. 818,952, pub. 9–6–66. Cl. 6.
Lechler, Chr., & Sohn Nachf.: *See*— Schowitz, Dr. Heinrich.
Lefax, Philadelphia, Pa. 218,813, ren. 11–22–66. Cl. 37.
Leggett, Francis H., & Co., d.b.a. Seabrook Farms Co., Carlstadt, N.J. 819,209, pub. 9–6–66. Cl. 46.
Leopold Co., The, Burlington, Iowa. 819,085, pub. 9–6–66. Cl. 32.
Les Fils de Paul Schwarz-Etienne to Petit-fils de Paul Schwarz-Etienne, La Chaux-de-Fonds, Switzerland. 425,592, ren. 11–22–66. Cl. 27.
Les Girls: *See*— Goodimade Mfg., Co.
Lever Brothers Co., New York, N.Y. 819,280, pub. 9–6–66. Cl. 52.
Lever Brothers Co., New York, N.Y. 58,464, ren. 11–22–66. Cl. 52.
Lever Brothers Co., New York, N.Y. 58,465, ren. 11–22–66. Cl. 52.
Lewis-Shepard Products, Inc., Watertown, Mass. 819,065, pub. 9–6–66. Cl. 23.
Lindy Pen Co., Inc., North Hollywood, Calif. 819,107, pub. 9–6–66. Cl. 37.
Link Research Corp., Beverly Hills, Calif. 705,203, canc. Cl. 23.
Linville, Creath Q., Phoenix, Ariz. 705,116, canc. Cl. 2.
Lisperard Mfg. Corp., Brooklyn, N.Y. 819,312. Cl. 3.
Lorraine Mfg. Co., Pawtucket, R.I., to The Kendall Co., Walpole, Mass. 218,398, ren. 11–22–66. Cl. 42.
Lowell Bearing Co., Chicago, Ill. 818,934, pub. 9–6–66. Cl. 5.
Lucien Piccard Watch Corp., New York, N.Y. 705,219, canc. Cl. 27.
Luck's Inc., Seagrove, N.C. 819,220, pub. 9–6–66. Cl. 46.
Luedemann, L. Richard, d.b.a. Therm-O-Attix, Marysville, Calif. 819,093, pub. 9–6–66. Cl. 34.
MacBick Co., The, Wilmington, Mass. 819,018, pub. 9–6–66. Cl. 18.
MacCleaster Chemical Co. Ltd., London, England. 818,941, pub. 9–6–66. Cl. 6.
Ma Cherie Sales Corp. of America, d.b.a. Ma Cherie Sales Corp., St. Louis, Mo. 705,304, canc. Cl. 45.
Ma Cherie Sales Corp.: *See*— Ma Cherie Sales Corp. of America.
MacKenzie Chemical Works, Inc., Central Islip, N.Y. 818,957, pub. 9–6–66. Cl. 6.
Madison, Dolly, Foods, Inc., Louisville, Ky. 818,909, pub. 9–6–66. Multiple Class (Classes 1 and 10).
Mahan, James B., d.b.a. International Cameramen, Alexandria, Va. 705,383, canc. Cl. 101.
Maico Co., Inc., The, to Textron, Inc., Minneapolis, Minn. 424,028, ren. 11–22–66. Cl. 44.
Maico Co., Inc., The, to Textron, Inc., Minneapolis, Minn. 423,993, ren. 11–22–66. Cl. 44.
Maico Co., Inc., The, to Textron, Inc., Minneapolis, Minn. 423,994, ren. 11–22–66. Cl. 44.
Malden Form Brassiere Co., Inc., New York, N.Y. 705,284, canc. Cl. 39.
Mall Systems Corp., Redwood City, Calif. 819,063, pub. 9–6–66. Cl. 23.
Mallory, P. R., & Co., Inc.: *See*— Elkon Works, Inc.
Mangeladorf, Ed. F., & Bro., Inc., St. Louis, Mo. 818,910, pub. 9–6–66. Cl. 1.
Manhattan Shirt Co., The, New York, N.Y. 819,135, pub. 9–6–66. Cl. 39.
Marble Crete Co.: *See*— Bennett, William J.
Mar-Clay Hosiery Mills, from William Glynn, d.b.a. Mar-Clay Hosiery Mills, Philadelphia, Pa. 705,286, canc. Cl. 39.
Marlyn Chemical Co., Inc., Lakeview, Ohio. 818,971, pub. 9–6–66. Cl. 6.
Marsden, George P., d.b.a. George Marsden Design, Washington, D.C. 819,235, pub. 9–6–66. Cl. 50.
Marsden, George, Design: *See*— Marsden, George P.
Mason Tackle, Co., Otisville, Mich. 705,365, canc. Cl. 22.
Massasoit Mfg. Co., Fall River, Mass., from Massasoit Co., Laurelton, N.J. 137,653, canc. Cl. 29.
Massasoit Co.: *See*— Massasoit Mfg. Co.
Martinoni, E., Co., San Francisco, Calif. 819,228, pub. 9–6–66. Cl. 49.
Masury-Young Co., Melrose Park, Ill. 818,953, pub. 9–6–66. Cl. 6.
Masury-Young Co., Melrose Park, Ill. 818,954, pub. 9–6–66. Cl. 6.
Mathieson, Olin, Chemical Corp., New York, N.Y. 818,923, pub. 9–6–66. Cl. 2.
May, August H., Chicago, Ill. 819,101, pub. 9–6–66. Cl. 36.
May Department Stores Co., The, St. Louis, Mo. 376,647, canc. Cl. 22.
May, Jack, d.b.a. Sardeau, to Sardeau Inc., New York, N.Y. 426,251, ren. 11–22–66. Cl. 51.
Mayr's Seed & Feed: *See*— Mayr, I. K.
Mayr's Seed & Feed, Ltd.: *See*— Mayr, I. K.
Mayr, I. K., d.b.a. Mayr's Seed & Feed, from Mayr's Seed & Feed, Ltd., Beaver Dam, Wis. 380,328, canc. Cl. 18.
McKays Co., The, St. Paul, Minn. 705,224, canc. Cl. 31.
Mead, Raynor, d.b.a. Mead Laboratory, Bronx, N.Y. 819,016, pub. 9–6–66. Cl. 18.
Mead Laboratory: *See*— Mead, Raynor.
Medi-Card, Inc., to Medi Card, Inc., Port Chester, N.Y. 797,620, new cert. Cl. 102.
Medi Card, Inc.: *See*— Medi-Card, Inc.
Medi-Fact Inc., West Peabody, Mass. 819,296, pub. 9–6–66. Cl. 102.
Merck & Co., Inc.: *See*— Metalsalts Corp.
Meredith Publishing Co., Des Moines, Iowa. 819,119, pub. 9–6–66. Cl. 38.
Mermell, Sheldon, d.b.a. S. Mermell Co., Los Angeles, Calif. 819,110, pub. 9–6–66. Cl. 37.
Mermell, S., Co.: *See*— Mermell, Sheldon.
Met-L-Chek Co., The, Los Angeles, Calif. 818,969, pub. 9–6–66. Cl. 6.
Metalflake, Inc., Haverhill, Mass. 814,286. Am. 7(d). Cl. 14.
Metalsalts Corp., to Merck & Co., Inc., Rahway, N.J. 708,258, new cert. Cl. 6.
Metropolis Brewery of N.J., Inc., Trenton, N.J. 819,225, pub. 9–6–66. Cl. 48.
Metropolis Brewery of N.J., Inc., Trenton, N.J. 819,226, pub. 9–6–66. Cl. 48.
Meyer, Fred, Inc., d.b.a. Fred Meyer Bakery, Portland, Oreg. 819,192, pub. 9–6–66. Cl. 46.
Meyer, Fred, Bakery: *See*— Meyer, Fred, Inc.
Meyer, Fred, Inc., d.b.a. Fred Meyer Bakery, Portland, Oreg. 819,193, pub. 9–6–66. Cl. 46.
Midvale-Heppenstall Co., Philadelphia, Pa. 819,042, pub. 9–6–66. Cl. 21.
Mile High Game & Toy Co., Inc., Denver, Colo. 819,046, pub. 9–6–66. Cl. 22.
Milwaukee Sausage Co., Inc., Seattle, Wash. 819,188, pub. 9–6–66. Cl. 46.

Millar, E. B., & Co., to Richheimer Coffee Co., Chicago, Ill. 212,975, ren. 11–12–66. Cl. 46.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 819,159, pub. 9–6–66. Cl. 40.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 819,177, pub. 9–6–66. Cl. 44.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 819,233, pub. 9–6–66. Cl. 50.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 819,237, pub. 9–6–66. Cl. 50.
Monadnock Novelty Corp., Winchendon, Mass. 705,201, canc. Cl. 23.
Monsanto Co.: *See*— Monsanto Chemical Co.
Monsanto Chemical Co., to Monsanto Co., St. Louis, Mo. 424,348, ren. 11–22–66. Cl. 1.
Morrell, John, & Co., Ottumwa, Iowa. 819,223, pub. 9–6–66. Cl. 46.
Morse, A. Reynolds, d.b.a. Injection Molders Supply Co., Cleveland, Ohio. 705,239, canc. Cl. 34.
Morse Twist Drill & Machine Co., New Bedford, Mass., to Universal American Corp., New York, N.Y. 56,932, ren. 11–22–66. Cl. 23.
Mosler Safe Co., The, Hamilton, Ohio. 223,707, ren. 11–22–66. Cl. 15.
Moultrie Mfg. Co., Moultrie, Ga. 819,229, pub. 9–6–66. Cl. 50.
Mr. Boston Distiller Inc., d.b.a. Essex Bottlers, Boston, Mass. 705,331, canc. Cl. 49.
Murphy Diesel Co., Milwaukee, Wis. 819,062, pub. 9–6–66. Cl. 23.
Musher Foundation, Inc., New York, N.Y. 705,154, canc. Cl. 18.
Musher Foundation, Inc., New York, N.Y. 705,155, canc. Cl. 18.
Myer, Fred, Inc., Portland, Oreg. 819,242, pub. 9–6–66. Cl. 51.
N.V. Biscuit-en Chocoladefabriek "Victora," Dordrecht, Netherlands. 819,189, pub. 9–6–66. Cl. 46.
Nash Engineering Co., South Norwalk, Conn. 219,353, ren. 11–22–66. Cl. 23.
Nated Corp., Forest Hills, N.Y. 705,233, canc. Cl. 34.
National Carbon Co., Inc., to Union Carbide Corp., New York, N.Y. 426,945, ren. 11–22–66. Cl. 21.
National Dairy Products Corp., Chicago, Ill. 819,183, pub. 9–6–66. Cl. 46.
National Dairy Products Corp., New York, N.Y. 819,207, pub. 9–6–66. Cl. 46.
National Distillers & Chemical Corp., New York, N.Y. 819,310. Cl. 2.
National Industrial Products Co., Columbus, Ohio. 819,269, pub. 9–6–66. Cl. 52.
National Merchandising Corp., New York, N.Y. 819,143, pub. 9–6–66. Cl. 39.
National Stamping & Electric Works, St. Louis, Mo. 819,073. pub. 9–6–66. Cl. 23.
National Steel Corp., Pittsburgh, Pa. 705,143, canc. Cl. 14.
National Tea Co.: *See*— Rasmussen, Geo., Co.
Nease Chemical Co., Inc., State College, Pa. 818,946, pub. 9–6–66. Cl. 6.
New York Marine News Co., Inc., The, New York, N.Y. 705,257, canc. Cl. 38.
Nichols, John N., d.b.a. J. N. Nichols & Co., Salford, England, to J. N. Nichols (Vimto) Ltd., Manchester, England. 215,478, ren. 11–22–66. Cl. 45.
Nichols, J. N. (Vimto) Ltd.: *See*— Nichols, John N.
Nilo Santos Pinto, Rio de Janeiro, Brazil. 705,244, canc. Cl. 36.
Norcross Corp., Newton, Mass. 819,088. pub. 9–6–66. Cl. 34.
Norcross Sales, Inc., d.b.a. Sleep Shop, Denver, Colo. 705,288, canc. Cl. 42.
Norin, Jack, to General Liquids Corp., Baltimore, Md. 427,120, ren. 11–22–66. Cl. 16.
Northern Mfg., Associates, Gnovick, Minn. 705,333, canc. Cl. 50.
Northwestern Metalware Co., to General Metalware Co., Minneapolis, Minn. 224,151, ren. 11–22–66. Cl. 13.
Odor-Aire, Inc., Wichita, Kans. 705,123, canc. Cl. 6.
Oklahoma Cement Co., Dallas, Tex. 818,986, pub. 9–6–66. Cl. 12.
Optics: *See*— Optics International Corp.
Optics International Corp., d.b.a. Optics, Philadelphia, Pa. 819,157, pub. 9–6–66. Cl. 40.
Optics International Corp., d.b.a. Optics, Philadelphia, Pa. 819,158, 9–6–66. Cl. 40.
Optics: *See*— Optics International Corp.
Oxweld Acetylene Co., to Union Carbide Corp., New York, N.Y. 219,699, ren. 11–22–66. Cl. 34.
Pacific Industries, Inc., New York, N.Y. 818,976, pub. 9–6–66. Cl. 11.
Pacific Pumps, Inc.: *See*— Dresser Industries, Inc.
Pair, James, Personnel Service, Inc., Atlanta, Ga. 815,249. Am. 7(d). Cl. 101.
Palmer, J. V., Pen Co., Inc., New York, N.Y. 819,113, pub. 9–6–66. Cl. 37.
Pan American Hydroponics, Inc., Dallas, Tex. 819,232, pub. 9–6–66. Cl. 50.
Paper Mate Mfg. Co., Santa Monica, Calif. 819,114, pub. 9–6–66. Cl. 37.
Pappas, William J., d.b.a. Southland Importing and Exporting Co., High Point, N.C. 705,291, canc. Cl. 42.
Paprocki, Edward J., d.b.a. Ever Ready Machine & Die Co., Brooklyn, N.Y. 818,924, pub. 9–6–66. Cl. 2.
Paragon Rubber Corp., Easthampton, Mass. 705,248, canc. Cl. 37.
Parefums Circo, Inc., New York, N.Y. 819,243, pub. 9–6–66. Cl. 51.
Parker House, The: *See*— Sherrard, G. J., Co.
Pearl Care Co., The, Los Angeles, Calif. 705,382, canc. Cl. 52.
Pecsolite Equipment Co., Gladwyne, Pa., from Baum's Sporting Goods Inc., Sunbury, Pa. 705,176, canc. Cl. 22.
Penguin Associates, Inc., Malvern, Pa. 818,974, pub. 9–6–66. Cl. 9.
Pet Milk Co.: *See*— Whitman, Stephen F., & Son, Inc.
Peters, Leo, Chicago, Ill. 819,324. Cl. 46.
Petit-fils de Paul Schwarz-Etienne: *See*— Les Fils de Paul Schwarz-Etienne.
Petroleum Solvents Corp., to Siloo Inc., New York, N.Y. 425,615, ren. 11–22–66. Cl. 52.
Pfizer, Chas., & Co., Inc., New York, N.Y. 818,968, pub. 9–6–66. Cl. 6.
Pfizer, Chas., & Co., Inc., New York, N.Y. 818,961, pub. 9–6–66. Cl. 6.
Phillips Mfg. Co., Inc., Minneapolis, Minn. 819,039, pub. 9–6–66. Cl. 21.
Physicians Products Co., Inc.: *See*— Talby-Nason Co.
Piedmont Mills, Inc., Lynchburg, Va. 819,199, pub. 9–6–66. Cl. 46.
Piedmont Mills, Inc., Lynchburg, Va. 819,197, pub. 9–6–66. Cl. 46.
Piggly Wiggly Operators' Warehouse, Inc., Shreveport, La. 819,211, pub. 9–6–66. Cl. 46.
Pitman-Moore Co.: *See*— Allied Laboratories, Inc.
Pittsburgh Plate Glass Co., Pittsburgh, Pa. 819,061, pub. 9–6–66. Cl. 23.
Pittsburgh Plate Glass Co., Pittsburgh, Pa. 818,956, pub. 9–6–66. Cl. 6.
Plymouth Cordage Co., to Columbia Rope Co., Auburn, N.Y. 56,622, ren. 11–22–66. Cl. 7.
Polymark Ltd., London, England. 819,108, pub. 9–6–66. Cl. 37.
Porter, H. K., Co., Inc., Pittsburgh, Pa. 819,054, pub. 6–9–66. Cl. 23.
Potter Co., The: *See*— Products Research Co.
Precision Scientific Co., Chicago, Ill. 819,080, pub. 9–6–66. Cl. 26.
Presque Isle Paper Products, Inc., Erie, Pa. 819,231, pub. 9–6–66. Cl. 50.
Preston, Jo, Cosmetics: *See*— Preston, Josephine K.
Preston, Josephine K., d.b.a. Jo Preston Cosmetics, Wantagh, N.Y. 819,265, pub. 9–6–66. Cl. 51.
Princess Ann Girl Coat, Inc., New York, N.Y. 819,151, pub. 9–6–66. Cl. 39.
Procter & Gamble Co., The, Cincinnati, Ohio. 819,263, pub. 9–6–66. Cl. 51.
Process Equipment Division: *See*— Can-Tex Industries, Inc.
Procter-Silex Corp., The: *See*— Silex Co., The.
Products Research Co., to The Potter Co., Northfield, Ill. 746,507, new cert. Cl. 21.
Puget Sound Tug & Barge Co., Seattle, Wash. 819,301, pub. 9–6–66. Cl. 105.
Pure Pharmacal Co., Houston, Tex. 819,026, pub. 9–6–66. Cl. 16.
Quaker City Chocolate & Confectionery Co., Inc., Philadelphia, Pa. 819,195, pub. 9–6–66. Cl. 46.
Quaker Oats Co., The, Chicago, Ill. 425,833, ren. 11–22–66. Cl. 46.
Quaker Oats Co., The: *See*— American Cereal Co., The.
Quaker Oil Corp., St. Louis, Mo. 818,998, pub. 9–6–66. Cl. 15.
Quality Courts Motels, Inc., Daytona Beach, Fla. 819,285, pub. 9–6–66. Cl. 100.
Quality House Stores: *See*— House Furnishing Co.
Raab, Andrea, Corp., Brooklyn, N.Y., from Herbert Raab, d.b.a. Andrea Products Co., Brooklyn, N.Y. 819,239, pub. 7–19–66. Cl. 51.
Raab, Herbert: *See*— Raab, Andrea, Corp.
Radio Bible Class, Inc., The, Grand Rapids, Mich. 819,305, pub. 9–6–66. Cl. 107.
Ralston Purina Co., St. Louis, Mo. 819,191, pub. 9–6–66. Cl. 46.
Random House, Inc., to Xerox Corp., Rochester, N.Y. 705,259, new cert. Cl. 38.
Rasmussen, Geo., Co., to National Tea Co., Chicago, Ill. 224,343, ren. 11–22–66. Cl. 46.
Ratcliff Distributing Co.: *See*— Ratliff, Leslie B.
Ratliff, Leslie B., d.b.a. Ratliff Distributing Co., St. Louis, Mo. 705,206, canc. Cl. 23.
Red Top Maintenance Service, Inc., Denver, Colo. 819,270, pub. 9–6–66. Cl. 52.
Reed & Carnrick, Kenilworth, N.J. 819,021, pub. 9–6–6. Cl. 18.
Reed & Carnrick, Kenilworth, N.J. 819,321. Cl. 38.
Regal Apparel, Ltd., New York, N.Y. 819,142, pub. 9–6–66. Cl. 39.
Restronics, Inc., Jersey City, N.J. 819,319. Cl. 32.
Reuben, Arnold, Inc., New York, N.Y. 705,309, canc. Cl. 46.
Richardson, Howe, Scale Co., Clifton, N.J. 819,079, pub. 9–6–66. Cl. 26.

Richheimer Coffee Co.: *See*—
Millar, E. B., & Co.
Rico Leather Specialty Inc., Chicago, Ill. 818,927, pub. 9–6–66. Cl. 3.
Rockefeller Institute, The, New York, N.Y. 705,263, canc. Cl. 38.
Roovee-Lotsch Corp., Old Forge, Pa. 705,204, canc. Cl. 23.
Roux Laboratories, Inc., New York, N.Y. 819,266, pub. 9–6–66. Cl. 51.
Royal Hawaiian Macadamia Nut Co.: *See*—
Castle & Cooke, Inc.
Rubio, Paul, d.b.a. Paul Rubio Productions, Hollywood, Calif. 819,306, pub. 9–6–66. Cl. 107.
Rubio, Paul, Productions: *See*—
Rubio, Paul.
S.A.F.R. Societe Anonyme, Paris, France. 705,317, canc. Cl. 46.
St. Regis Paper Co., New York, N.Y. 818,916, pub. 9–6–66. Cl. 1.
Saks & Co., New York, N.Y. 705,343, canc. Cl. 51.
Samsel, Ralph, Co.: *See*—
Samsel, Ralph.
Samsel, Ralph, d.b.a. Ralph Samsel Co., El Centro, Calif. 819,218, pub. 9–6–66. Cl. 46.
Sanco Products Co., Inc.: *See*—
Holsapfel, Louis.
Sanitary Supply Co.: *See*—
Holsapfel, Louis.
Saper, Harold E., Co., The, Chicago, Ill. 818,921, pub. 9–6–66. Cl. 2.
Sardeau: *See*—
May, Jack.
Sardeau Inc.: *See*—
May, Jack.
Sasieni Ltd., Hackney, London, England. 818,972, pub. 9–6–66. Cl. 5.
Schaub Engineering Co., Downers Grove, Ill. 819,091, pub. 9–6–66. Cl. 34.
Schenley Industries, Inc., New York, N.Y. 705,329, canc. Cl. 49.
Schoeneman, J., Inc., Baltimore, Md., to J. Schoeneman Inc., Owings Mills, Md. 210,083, ren. 11–22–66. Cl. 39.
Schowitz, Dr. Heinrich, d.b.a. Chr. Lechler & Sohn Nachf., Stuttgart-Feuerbach, Germany. 705,147, canc. Cl. 16.
Schowitz, Dr. Heinrich, d.b.a. Chr. Lechler & Sohn Nachf., Stuttgart-Feuerbach, Germany. 705,148, canc. Cl. 16.
Schowitz, Dr. Heinrich, d.b.a. Chr. Lechler & Sohn Nachf., Stuttgart-Feuerbach, Germany. 705,149, canc. Cl. 16.
Schuss Wholesale Grocery Co., Portland, Oreg. 819,185, pub. 9–6–66. Cl. 46.
Schwartz, Arthur, Washington, D.C. 819,124, pub. 9–6–66. Cl. 38.
Score XII Inc., Evansville, Ind. 819,129, pub. 9–6–66. Cl. 39.
Scott, Harry S.: *See*—
Bridges, John S.
Scott, Harry S., Inc.: *See*—
Bridges, John S.
Seabrook Farms Co.: *See*—
Leggett, Francis H., & Co.
Searle Leather & Packing Co., Los Angeles, Calif. 819,096, pub. 9–6–66. Cl. 35.
Seeman Brothers Inc., New York, N.Y., to White Rose Foods Corp., Syosset, N.Y. 221,048, ren. 11–22–66. Cl. 46.
Selion, Inc., Barberton, Ohio. 819,030, pub. 9–6–66. Cl. 19.
Seinsheimer, H. A., Co., The, Cincinnati, Ohio. 381,715, canc. Cl. 39.
Selden Mfg. Corp., New York, N.Y. 819,147, pub. 9–6–66. Cl. 39.
Sel-Rex Corp., Nutley, N.J. 819,083, pub. 9–6–66. Cl. 31.
Seneca Grape Juice Corp., Dundee, N.Y. 819,214, pub. 9–6–66. Cl. 46.
Service Knitting Mills, Inc., New York, N.Y. 812,632. Am. 7(d). Cl. 42.
Sexauer, J. A., Mfg. Co., Inc., White Plains, N.Y. 224,528, ren. 11–22–66. Cl. 35.
Shachihata Kogyo Kabushiki Kaisha, Nishi-Ku, Nagoya, Japan. 818,975, pub. 9–6–66. Multiple Class (Classes 11 and 37).
Shakespeare Co., Kalamazoo, Mich. 819,049, pub. 9–6–66. Cl. 22.
Shamrock Knitting Mills, Inc., Marietta, Ga. 819,152, pub. 9–6–66. Cl. 39.
Sherman Laboratories, Detroit, Mich. 819,010, pub. 9–6–66. Cl. 18.
Sherrard, G. J., Co., d.b.a. The Parker House, Boston, Mass. 819,282, pub. 9–6–66. Cl. 100.
Shoe Corp. of America, Columbus, Ohio. 819,146, pub. 9–6–66. Cl. 39.
Shulton, Inc., Clifton, N.J. 819,258, pub. 9–6–66. Cl. 51.
Siegel, Henry I., Co., Inc., New York, N.Y. 819,149, pub. 9–6–66. Cl. 39.
Siemens & Halske Aktiengesellschaft, Munich, Germany. 814,457. Am. 7(d). Cl. 26.
Signode Corp., Chicago, Ill. 819,053, pub. 9–6–66. Cl. 23.
Silex Co., The, Hartford, Conn., from The Procter-Silex Corp., Chicago, Ill. 377,284, canc. Cl. 13.
Siloo Inc.: *See*—
Petroleum Solvents Corp.
Simplicity Mfg., Co., Port Washington, Wis. 819,318. Cl. 23.
Sinclair-Koppers Co., Pittsburgh, Pa. 818,906, pub. 9–6–66. Cl. 1.
Sinclair Mfg. Co.: *See*—
Sinclair Mfg. Co., The.
Sinclair Mfg. Co., The, d.b.a. Sinclair Mfg. Co., Toledo, Ohio. 818,966, pub. 9–6–66. Cl. 6.
Sinclair Mfg. Co., The, Toledo, Ohio. 818,967, pub. 9–6–66. Cl. 6.
Sleep Shop: *See*—
Norcross Sales, Inc.
Sleepwear, Inc., New York, N.Y. 427,160, ren. 11–22–66. Cl. 39.
Smith Products, Inc., d.b.a. Childers Products Co., Cleveland, Ohio. 818,988, pub. 9–6–66. Cl. 12.
Snow, Douglas L., and Thelma M. Snow, d.b.a. Southwestern Chemicals Co., Houston, Tex. 819,277, pub. 9–6–66. Cl. 52.
Societe Pour Recherches Scientifiques et Chimiques S.A. Chemin des Trois-Rois, Lausanne, Switzerland. 818,987, pub. 9–6–66. Cl. 12.
"Sodeco" Societe des Compteurs de Genve, to Vibrosan S.A., Geneve, Switzerland. 353,881, new cert. Cl. 44.
Sonneborn, L., Sons, Inc., to Witco Chemical Co., Inc., New York, N.Y. 423,716, ren. 11–22–66. Cl. 18.
Sonopresse, S.A.R.L., Paris, France. 705,255, canc. Cl. 38.
Sol Cafe Mfg. Corp., Jamaica, N.Y. 705,320, canc. Cl. 46.
Sorg Paper Co., The: *See*—
Wrenn Paper Co., The.
Southern Optical Co., The, Louisville, Ky. 819,316. Cl. 15.
Southern Saw Service, Inc., d.b.a. Atlanta Saw Co., Atlanta, Ga. 818,996, pub. 9–6–66. Multiple Class (Classes 15 and 23).
Southland Importing and Exporting Co.: *See*—
Pappas, William J.
Southwestern Chemicals Co.: *See*—
Snow, Douglas L., and Thelma M. Snow.
Space-Ad: *See*—
Bearman, Sumner D.
Spectrolab: *See*—
Textron Electronics, Inc.
Speedrite Products, Inc., Wichita, Kans. 819,115, pub. 9–6–66. Cl. 37.
Speedrite Products, Inc., Wichita, Kans. 819,117, pub. 9–6–66. Cl. 37.
Spun-Lo Elderlon, Inc., New York, N.Y. 819,136, pub. 9–6–66. Cl. 39.
Square D Co., Park Ridge, Ill. 819,038, pub. 5–3–66. Cl. 21.
Staffler, Mrs. Jean, Fort Bragg, Calif. 705,181, canc. Cl. 22.
Standard Associates, Inc., Hutchinson, Kans. 705,251, canc. Cl. 38.
Standard Oil Co. (New Jersey), Bayonne, N.J., to Humble Oil & Refining Co., Houston, Tex. 218,665, ren. 11–22–66. Cl. 15.
Standard Oil Co. of California, San Francisco, Calif. 819,084, pub. 9–6–66. Cl. 31.
Standard Oil Co. of California, San Francisco, Calif. 819,092, pub. 9–6–66. Cl. 34.
Stavis, L. B., Syrups, Inc., Danvers, Mass. 819,178, pub. 9–6–66. Cl. 45.
Stern, Rose: *See*—
Ardco Mfg. Co.
Sterling Drug Inc.: *See*—
Winthrop Products Inc.
Stetson, John B., Co.: *See*—
Disney Hats.
Steven Mfg. Co., St. Louis, Mo., to Steven Mfg. Co., Hermann, Mo. 421,723, ren. 11–22–66. Cl. 22.
Stevens, J. P., & Co., Inc., New York, N.Y. 819,165, pub. 9–6–66. Cl. 42.
Stevens, J. P., & Co., Inc., New York, N.Y. 819,174, pub. 9–6–66. Cl. 43.
Stonebridge Cotton Mfg. Co., Ltd., Manchester, England. 705,294, canc. Cl. 42.
Stonebridge Cotton Mfg. Co., Ltd., Manchester, England. 705,283, canc. Cl. 39.
Strathmore Shoe Co., Inc., Brockton, Mass. 819,139, pub. 9–6–66. Cl. 39.
Strauss, Warren B., Co.: *See*—
Strauss, Warren B.
Sullivan, Morton D., Omaha, Nebr. 819,134, pub. 9–6–66. Cl. 39.
Sumitomo Bakelite Co., Ltd.: *See*—
Sumitomo Bakelite Ltd.
Sumitomo Bakelite Ltd., d.b.a. Sumitomo Bakelite Co., Ltd., Chiyoda-ku, Tokyo, Japan. 818,911, pub. 9–6–66. Cl. 1.
Summers Laboratories, Inc., Fort Washington, Pa. 819,272, pub. 9–6–66. Cl. 52.
Superior Shower Door Co., Los Angeles, Calif. 705,140, canc. Cl. 18.
Swing, D. Thompson, Inc., Price, Md. 819,212, pub. 9–6–66. Cl. 46.
Tailby-Nason Co., Boston, Mass., to Physicians Products Co., Inc., Petersburgh, Va. 211,158, ren. 11–22–66. Cl. 18.
Tanbro Fabrics Corp., New York, N.Y. 819,172, pub. 9–6–66. Cl. 42.
Tan-O-Rama, Inc., Newark, N.J. 705,351, canc. Cl. 51.
Taylor Forge & Pipe Works, Bellwood, Ill. 818,993, pub. 9–6–66. Cl. 13.
Technic, Inc., Cranston, R.I. 818,938, pub. 9–6–66. Cl. 6.
Texas Instruments Inc., Dallas, Tex. 819,002, pub. 9–6–66. Cl. 16.
Textron Electronics, Inc., Sylmar, Calif. 819,086, pub. 9–6–66. Cl. 33.
Textron Inc.: *See*—
American Screw Co.
Maico Co., Inc., The.
Therm-O-Attix: *See*—
Luedemann, L. Richard.
Tide Products, Inc., Edinburg, Tex. 818,950, pub. 9–6–66. Cl. 6.
Tifton Rug Mills, Inc., East Point, Ga. 819,162, pub. 9–6–66. Cl. 42.
Time-Mist, Inc., Stamford, Conn. 819,066, pub. 9–6–66. Cl. 26.

Trager Mfg. Co., Scranton, Pa. 818,945, pub. 9–6–66. Cl. 6.
Trager Mfg. Co., Scranton, Pa. 819,275, pub. 9–6–66. Cl. 52.
Travelers Directory Service, Inc., Winston-Salem, N.C. 819,288, pub. 9–6–66. Cl. 101.
Trident Engineering Associates, Inc., Annapolis, Md. 819,286, pub. 9–6–66. Cl. 100.
Troy Mills, Inc., Troy, N.H. 819,161, pub. 9–6–66. Cl. 42.
Tru-Flex Rubber Products Co., Los Angeles, Calif. 819,097, pub. 9–6–66. Cl. 35.
Tru-Flex Rubber Products Co., Los Angeles, Calif. 819,098, pub. 9–6–66. Cl. 35.
Turco Paint & Varnish Co., Inc., Philadelphia, Pa. 819,001, pub. 9–6–66. Cl. 16.
Tuscarora Chemical Works, Chittenango, N.Y. 705,128, canc. Cl. 6.
Tyco Automotive Corp., Hicksville, N.Y. 819,067, pub. 9–6–66. Cl. 23.
Uneeda Doll Co., Inc., Brooklyn, N.Y. 819,048, pub. 9–6–66. Cl. 22.
Union Carbide Corp.: *See*—
National Carbon Co., Inc.
Oxweld Acetylene Co.
Union Carbide Corp., New York, N.Y. 819,311. Cl. 2.
United Artists Records, Inc., New York, N.Y. 819,103, pub. 9–6–66. Cl. 36.
United Artists Records, Inc., New York, N.Y. 819,104, pub. 9–6–66. Cl. 36.
United Distributors Service, Inc., Roanoke, Va. 819,035, pub. 9–6–66. Cl. 19.
United Distributors Service, Inc., Roanoke, Va. 819,072, pub. 9–6–66. Cl. 23.
United Merchants and Mfg. Inc., New York, N.Y. 819,168, pub. 9–6–66. Cl. 42.
United Merchants and Mfg., Inc., New York, N.Y. 819,169, pub. 9–6–66. Cl. 42.
United Merchants and Mfg., Inc., New York, N.Y. 819,170, pub. 9–6–66. Cl. 42.
Universal American Corp.: *See*—
Morse Twist Drill & Machine Co.
Valspar Corp., The: *See*—
Detroit Graphite Co.
Vanity Fair Mills, Inc.: *See*—
Vanity Fair Silk Mills.
Vanity Fair Silk Mills, to Vanity Fair Mills, Inc., Reading, Pa. 219,768, ren. 11–22–66. Cl. 30.
Venango Refining Co., Inc., Franklin, Pa. 378,479, canc. Cl. 15.
Venetianaire Corp. of America, Yonkers, N.Y. 819,163, pub. 9–6–66. Cl. 42.
Verlag Th. Martens & Co., G.m.b.H., from Kindler und Schiermeyer Verlag A.G., Munich, Germany. 819,120, pub. 9–6–66. Cl. 38.
Vesuvius Crucible Co., Pittsburgh, Pa. 818,989, pub. 9–6–66. Cl. 12.
Vibrosan S.A.: *See*—
"Sodeco" Societe des Competurs de Genve.
Vigneron, Jean, Vosges, France. 819,251, pub. 9–6–66. Cl. 51.
Virginia Seafoods, Inc., Irvington, Va. 819,194, pub. 9–6–66. Cl. 46.
Vitarine Co., Inc., The, Springfield Gardens, N.Y. 819,007, pub. 9–6–66. Cl. 18.
Vit-A-Way, Inc., Fort Worth, Tex. 819,009, pub. 9–6–66. Cl. 18.
Viviano Macaroni Co., Carnegie, Pa. 819,202, pub. 9–6–66. Cl. 46.
Volkswagenwerk Aktiengesellschaft, Wolfsburg, Germany. 819,297, pub. 9–6–66. Cl. 103.
Vulcan Corp., Portsmouth, Ohio. 705,185, canc. Cl. 22.
Wallace Business Forms, Inc., Chicago, Ill. 819,111, pub. 9–6–66. Cl. 37.
Wallace Business Forms, Inc., Chicago, Ill. 819,128, pub. 9–6–66. Cl. 38.
Wally Frank Ltd.: *See*—
Frankau, Adolp, & Co., Ltd.
Walker Mfg. Co., Racine, Wis. 819,056, pub. 9–6–66. Cl. 23.
Wamarco, Inc., Waynesboro, Pa. 705,332, canc. Cl. 50.
Wegner, Charles T., Jr., Chicago, Ill., to The Jel Sert Co., Bellwood, Ill. 223,900, ren. 11–22–66. Cl. 46.
Wehr Corp., Milwaukee, Wis., from Cranes Corp., Verona, Wis. 819,087, pub. 9–6–66. Cl. 34.
Wellman-Lord Engineering, Inc., The, Lakeland, Fla. 819,283, pub. 9–6–66. Multiple Class (Classes 100 and 103).
Westinghouse Electric Corp., Buffalo, N.Y. 819,089, pub. 9–6–66. Cl. 34.
Wetherholt's Perfume Co., to Franth Wetherholts, Chicago, Ill. 422,342, ren. 11–22–66. Cl. 51.
Weyerhaeuser Co., Tacoma, Wash. 819,106, pub. 9–6–66. Cl. 37.
Weyerhaeuser Co., Tacoma, Wash. 819,112, pub. 9–6–66. Cl. 37.
White Rose Foods Corp.: *See*—
Seeman Brothers Inc.
Whitman, Stephen F., & Son, Inc., Philadelphia, Pa., to Pet Milk Co., St. Louis, Mo. 210,836, ren. 11–22–66. Cl. 46.
Wiegan, Edwin L., Co., Pittsburgh, Pa. 819,315. Cl. 14.
Williams, D. S., Co., Inc., Reading, Pa. 705,364, canc. Cl. 22.
Williamson-Dickie Mfg. Co., The, Fort Worth, Tex. 218,075, ren. 11–22–66. Cl. 39.
Winona Tool & Mfg. Co., Inc., Winona, Minn. 819,059, pub. 9–6–66. Cl. 23.
Winterbottom Book Cloth Co. Ltd., to English Sewing Ltd., Manchester, England. 214,208, ren. 11–22–66. Cl. 37.
Winthrop Products Inc., to Sterling Drug Inc., New York, N.Y. 421,365, ren. 11–22–66. Cl. 18.
Winthrop Products Inc., to Sterling Drug Inc., New York, N.Y. 421,560, ren. 11–22–66. Cl. 18.
Witco Chemical Co., Inc.: *See*—
Sonneborn, L., Sons, Inc.
Wolverine Fabricating & Mfg., Inkster, Mich. 819,099, pub. 9–6–66. Cl. 35.
Wonder-Lin Mfg. Co., Wilkes-Barre, Pa. 819,011, pub. 9–6–66. Cl. 18.
Worden-Allen Co., Milwaukee, Wis. 819,075, pub. 9–6–66. Cl. 23.
World Wide Life Insurance Co., Milwaukee, Wis. 819,293, pub. 9–6–66. Cl. 101.
World Wide Insurance Service Corp., Milwaukee, Wis. 819,294, pub. 9–6–66. Cl. 101.
Wrenn Paper Co., The, to The Sorg Paper Co., Middletown, Ohio. 223,321, ren. 11–22–66. Cl. 37.
Xerox Corp.: *See*—
Random House, Inc.
Youngs Drug Products Corp., from Youngs Rubber Corp., New York, N.Y. 813,590. Am. 7(d). Cl. 51.
Youngs Drug Products Corp., New York, N.Y. 819,014, pub. 9–6–66. Cl. 18.
Youngs Drug Products Corp., New York, N.Y. 819,015, pub. 9–6–66. Cl. 18.
Youngs Rubber Corp.: *See*—
Youngs Drug Products Corp.
Z-I-P Corp., Albuquerque, N. Mex. 819,236, pub. 9–6–66. Cl. 50.
Zaehringer, Alfred J., d.b.a. American Rocket Co., Wyandotte, Mich. 705,254, canc. Cl. 38.
Zimco Sportswear, Inc., New York, N.Y. 705,275, canc. Cl. 39.

U.S. GOVERNMENT PRINTING OFFICE: 0—1966

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
November 29, 1966 Volume 832 Number 5

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of October 1966

Examiner affirmed	189
Examiner affirmed in part	35
Examiner reversed	58
Total	282

Failure To Argue Rejection in Brief

In view of the Notice appearing in 826 O.G. 1060 and entitled, "Appeal Briefs Under Rules 192 and 193(b)," whenever a brief is found to be defective for the reason that an applicant has failed to respond to some ground or grounds of rejection advanced by the Examiner, the Examiner should simply note this fact in the Examiner's Answer and point out which claims are affected thereby. Further treatment of the affected claims in the Answer is unnecessary.

RICHARD A. WAHL,
Oct. 20, 1966. *Assistant Commissioner.*

TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

Chapter I—Patent Office, Department of Commerce

PART 1—RULES OF PRACTICE IN PATENT CASES

Reply by Applicant to Office Action

Effective on the date of publication of this notice in the Federal Register, § 1.111(b) is amended to read as indicated below. This amendment provides that objections or requirements as to form not necessary to further consideration of the claims may be held in abeyance only until patentable subject matter in the application is indicated, rather than until a claim is actually allowed, as was heretofore the case. Since the amendment is procedural only, and makes no substantive change, notice and public hearings are deemed unnecessary.

In § 1.111, paragraph (b) is amended by striking out "a claim is allowed" at the end of the parenthetical matter and inserting in lieu "allowable subject matter is indicated," so that the paragraph, amended, reads as follows:

§ 1.111 *Reply by applicant.*

• • • • •

(b) In order to be entitled to reexamination or reconsideration, the applicant must make request therefor in writing, and he must distinctly and specifically point out the supposed errors in the examiner's action; the applicant must respond to every ground of objection and rejection in the prior office action (except that request may be made that objections or requirements as to form not necessary to further consideration of the claims be held in abeyance until allowable subject matter is indicated), and the applicant's action must appear throughout to be a bona fide attempt to advance the case to final action. A general allegation that the claims define invention without specifically pointing out how the language of the claims patentably distinguishes them from the references does not comply with the requirements of this section.

• • • • •

(Sec. 1, 66 Stat. 793, 35 U.S.C. 6, 131, 132)

Dated: October 24, 1966.

EDWIN L. REYNOLDS,
Acting Commissioner.

Approved:

J. HERBERT HOLLOMAN,
Assistant Secretary for Science and Technology.

[F.R. Doc. 66-11834; Filed, Oct. 31, 1966; 8:45 a.m.]

Published in F.R. 13944, Nov. 1, 1966

Board of Appeals Hearings

Effective January 1, 1967, examiners will be permitted to attend Board of Appeals hearings in cases related to their technology. Not more than two examiners will attend any one hearing, and they will be present as observers only.

RICHARD A. WAHL,
Nov. 2, 1966. *Assistant Commissioner.*

Disclaimer and Dedication

3,128,122.—*Ned W. Mizelle*, High Point, N.C. RECLINING CHAIR FIXTURE. Patent dated Apr. 7, 1964. Disclaimer and dedication filed Aug. 9, 1966, by the assignee, *General Steel Products, Inc.*

Hereby disclaims and dedicates to the public the terminal part of the term of said patent subsequent to June 18, 1980.

Disclaimers

3,085,480.—*Ivan L. Kauffman*, Orchard Lake, and *Donald L. Annett*, Farmington, Mich. METHOD AND APPARATUS FOR SIDE SEAMING CARTON BLANKS. Patent dated Apr. 16, 1963. Disclaimer filed Aug. 11, 1966, by the inventors and the assignee, *Ex-Cell-O Corporation*.

Hereby enter this disclaimer as to claims 1, 3 and 6 of said patent.

New Applications Received During October 1966

Patents	7539
Designs	381
Plant Patents	7
Reissues	17
Total	7944

Issue—November 29, 1966

Patents	1475	No. 3,287,737 to No.	3,289,211, incl.
Designs	53	No. 206,317 to No.	206,369, incl.
Plant Patents	1	No. 2,687	
Reissues	2	No. 26,117 to No.	26,118, incl.
Total	1531		

3,113,643.—*John Redvers Botterill*, Solihull, England. ACTUATOR FOR A SPOT TYPE DISC BRAKE ACTING OVER A PARTIAL AREA OF A DISC BRAKE FRICTION PAD, SAID AREA SPACED CIRCUMFERENTIALLY FROM THE AXIS OF THE ACTUATOR. Patent dated Dec. 10, 1963. Disclaimer filed Oct. 10, 1966, by the assignee, *Girling Limited*.

Hereby enters this disclaimer as to claims 1, 2, 3, 5, 6 and 7 of said patent.

3,122,070.—*Ivan L. Kaufman*, Orchard Lake, and *Donald S. Annett*, Farmington, Mich. METHOD AND APPARATUS FOR SIDE SEAMING CARTON BLANKS BY APPLICATION OF HEAT. Patent dated Feb. 25, 1964. Disclaimer filed Aug. 11, 1966, by the inventors and the assignee, *Es-Cell-O Corporation*.

Hereby enter this disclaimer as to claims 1, 2, 4, 5, 6, 7, 8, 9 and 10 of said patent.

3,239,524.—*Herman S. Lowrie*, Glenview, Ill. 3-PHENYL-4-DIALKYLAMINOALKOXYCINNOLINES. Patent dated Mar. 8, 1966. Disclaimer filed Aug. 30, 1966, by the assignee, *G. D. Searle & Co.*

Hereby enters this disclaimer as to claims 1–6 of said patent.

3,266,307.—*Francis de Winter*, Cambridge, Mass. ADIABATIC CLORIMETER. Patent dated Aug. 16, 1966. Disclaimer filed Oct. 21, 1966, by the inventor and assignee, *Dynatech Corporation*.

Hereby enter this disclaimer to claims 1 through 10 inclusive of said patent.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF SEPTEMBER 26, 1966

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	7-3-63	10-2-61
GENERAL ORGANIC CHEMISTRY, GROUP 120—G. D. MITCHELL, Manager. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	6-4-63	8-31-61
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—M. STERMAN, Manager. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.	8-1-63	8-21-61
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	2-5-63	1-31-62
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	7-1-63	10-23-61
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—M. L. LEVY, Manager. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	7-15-63	12-15-61
SECURITY, GROUP 220—S. BOYD, Manager. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	1-16-62	9-9-63
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—E. J. SAX, Manager. Communications; Multiplexing Techniques; Facsimile; Date Processing, Computation and Conversion; Storage Devices and Related Arts.	1-7-63	6-6-61
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—F. M. STRADER, Manager. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	4-12-63	7-31-61
PHYSICS, GROUP 280—R. L. EVANS, Manager. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	1-13-64	10-25-62
DESIGNS, GROUP 290—S. BOYD, Manager. Industrial Arts; Household, Personal and Fine Arts.	6-15-65	1-5-65

Total number of pending applications (excluding Designs)	195, 258
Total number of Design applications pending	Not available
Total number of applications awaiting action (excluding Designs)	143, 338
Total number of Design applications awaiting action	Not available
Date of oldest new application awaiting action	Jan. 16, 1962
Date of oldest amended application awaiting action	June 6, 1961

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during November 1966, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 600. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1955*.

Patents ..... Numbers 2,486,373 to 2,490,010, inclusive

Plant Patents ..... Numbers 888 to 903, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid, Flexible and Special Receptacles and Packages.	6-26-64	5-16-63
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks; Fasteners.	5-19-64	3-19-62
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, Etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	2-13-64	3-19-62
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	12-4-64	10-15-63
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	7-8-64	8-20-62
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager. Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	10-17-63	7-25-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE CHARLES B. VOGEL, THOMAS W. LAMB AND MINTER I. PALMER, JR.

No. 7592. Decided July 21, 1966

[53 CCPA —; 363 F.2d 459; 150 USPQ 445]

1. PATENTABILITY—OBVIOUSNESS.

"• • • we think the Examiner and Board erred in finding the appealed claims obvious over the teachings of Athy and Wyckoff. The rejection is based on an improper piecemeal reconstruction of the prior art made in light of appellants' disclosure and not taught or made obvious by the reference disclosures."

2. SAME—PARTICULAR SUBJECT MATTER—"WELL LOGGING."

The decision of the Board of Appeals refusing certain claims in an application entitled "Well Logging," as unpatentable over the prior art, is reversed.

APPEAL from the Patent Office. Serial No. 745,073.

REVERSED.

Theodore E. Bieber for appellants.

Clarence W. Moore (*Fred W. Sherling* of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, JR., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

RICH, *Acting Chief Judge*, delivered the opinion of the court.

This appeal is from so much of the decision of the Board of Appeals as affirmed the Examiner's rejection of claims 15, 19, 20, and 21 of appellants' application Serial No. 745,073, filed June 27, 1958, entitled "Well Logging."[1]

The invention relates to a method of well logging of the acoustic or seismic type wherein the velocities of acoustic pulses passed through the rock formations surrounding a bore hole are measured as an indication of the characteristics of those formations. Such operations involve the use of a logging device which is lowered into and moved along the well bore. The device is provided with spaced transducers including a transmitter for generating discrete acoustic impulses and spaced receivers for detecting the arrivals of the impulses at the locations of the receivers and simultaneously producing electrical signals. Electrical connections passing from the logging device to and out of the top of the bore hole to recording equipment permit recording of the times the impulses are emitted by the transmitter and the signals denoting their arrival are produced by the receivers. Means are also provided for coordinating the recording with the position of the logging device as it is moved along the bore hole. Thus a recording of the velocity characteristics of the surrounding geological structure along the length of the bore hole is provided for consideration in predicting the existence of accumulations of petroleum fluids or like deposits.

Appellants disclose well logging procedures of the aforementioned type including a preferred embodiment wherein the logging device includes a single transmitter and three receivers, all on one side of

[1] The Board also affirmed the rejection of the other claims, 12, 14, and 16–18, remaining in the application but no appeal was taken as to them and an amendment cancelling them was filed with the Notice of Appeal.

the transmitter and spaced along the bore hole. The receiver nearest the transmitter is spaced from it a substantial distance such as five feet. The second receiver is spaced a like distance from the first receiver and the third receiver is spaced one foot from the second. A recording is produced to permit simultaneous determination of the times taken for the impulse to travel between the first and second receivers and between the second and third receivers as the device is drawn along the bore hole. The shorter spacing between the latter two receivers facilitates the detection of thin layers of rock which might be missed if only the average velocity over the longer spacing of the first two receivers is measured.

Claim 19, which is representative, reads:

19. An acoustic well logging process comprising:
(1) disposing three acoustic receiving stations along the axis of the borehole of a well with two of said stations separated by a short interval that is shorter than the thinnest earth formation in which the velocity of acoustic energy is to be measured and two of said stations separated by a long interval that is several times longer than the short interval;
(2) moving said three stations in a traverse of a section of the borehole while generating a succession of acoustic impulses at a point a fixed distance on one side of said three stations;
(3) measuring the difference between the times required for said acoustic impulses to travel through the earth formations intervening between the point of generation and each of the receiving stations that are separated by said short interval and producing indications of the velocities at which the impulses travel through the earth formations adjacent to said short interval;
(4) measuring the differences between the times required for said acoustic impulses to travel through earth formations intervening between the point of generation and each of the receiving stations that are separated by said long interval and producing indications of the velocities at which the impulses travel through the earth formations adjacent to said long interval;
(5) obtaining each of said velocity indications during the same traverse of a section of the borehole and measuring the depths at which each of said velocity indications are obtained.

The claims stand rejected on the following references:

Athy et al. (Athy), 2,207,281, July 9, 1940.
Wyckoff, 2,233,992, March 4, 1941.

Athy shows an acoustical velocity type of well logging system using a logging device including an acoustic transmitter (designated 2) and two receivers (designated 11 and 12) spaced from each other either below or above the transmitter, both on the same side. A record is produced showing the time relationships between the initiation of the pulse and its arrival at each of the two receivers. The patent further discloses:

Furthermore, it is to be understood that, while the source of seismic waves is shown to be above the two receptors 11 and 12, this showing is for purposes of illustration only and not by way of limitation, since the source of seismic waves may be placed below the receptors or between them. If desired, a single receptor only may be employed. On the other hand, it may in some cases be desirable to employ a greater number of receptors than two.

Athy also states:

We also contemplate that spacing between the transmitter 2 and the receptors 11 and 12 may be used to enlarge the information which we obtain. If, for example, the transmitter 2 is placed at an appreciable distance from the receptors 11 and 12, then the record logs of velocities and amplitude variations are primarily those contributed by the virgin strata surrounding the borehole, since in this case the borehole section will form but a negligible part of the total path traversed by the seismic energy. If, on the other hand, the transmitter 2 is placed close to the receptor 11 and the receptor 12 is separated a few feet from receptor 11, then two types of information are available. Since the distance between transmitter 2 and receptor 12 is appreciable, the corresponding velocity and amplitude variation logs represent characteristics of virgin strata. Since the distance between transmitter 2 and receptor 11 is small, the variations received by receptor 11 will represent those contributed by structure near the borehole.

It will be apparent that a dense, non-porous strata will be influenced far less physically in a region closely surrounding the borehole than in a porous strata such as sandstone, which is less dense. The control of distances between the transmitter and the near receptor, and between the transmitter and the far receptor, or the interreceptor distance, may be exercised to give the desired type of information.

Wyckoff too relates to an acoustical velocity well logging system and specifically discloses the use of a transmitter and two reecivers in spaced relationship along the direction of the well bore. The transmitter may be disposed between the two receivers or the receivers may both be on the same side of the transmitter. The patent discusses the spacing of the elements of the system as follows:

The spacing between the detectors and the source varies widely depending upon the terrain being studied and upon the desired degree of resolving power; that is, ability to separate adjacent strata. In practice, the spacing between the three elements usually runs between 2 and 50 feet.

The Examiner rejected the claims as "obvious over the teachings of Athy et al. and Wyckoff, taken in combination, in accordance with 35 U.S.C. 103." The Board said his view was

• • • that it is obvious in view of Athy et al. to use three receivers and in view of Wyckoff to use any desired distance between transducers depending upon the desired resolving power.

The substance of the Board's position in affirming the Examiner is as follows:

The cited art teaches the use of more than two receivers for a single transmitter. It recognizes that the distance between transmitter and receiver and between receivers is variable dependent on the desired information. It discusses the determination of different strata as to velocity of impulses therethrough and the depth of a stratum. It teaches the determination of information from the recordings of the reception of signals by the receivers.

To express the invention in terms of long and short intervals merely defines in different terminology the transmission of impulses in accordance with the references through different types of formation which are known to have different transmissive properties. As explained by the references, the several impulses received by different detectors at positions within the scope of appellants' claimed method are determinative of variations in the stratum structure. In traversing a borehole the received impulses identify the formation which has transmitted the impulse. Wyckoff explains at line 18 of column 3 that "strata can be traced and subsurface contours mapped." It seems to us that the claims do not exceed what would be obvious to a person of ordinary skill in the art with a knowledge of Athy et al. and Wyckoff. We do not find the claims specific to a single unitary structure as argued by appellants. Further, we do not see that the illustrated construction produces any unexpected operation or utility.

Appellants emphasize two aspects of their invention. The first is that they use three receivers in addition to the transmitter that produces the acoustic signal and thereby obtain two different measurement intervals, both of which measure the time for the signal to pass from one receiver to another receiver. They designate such intervals RR intervals as contrasted to a TR, or transmitter to receiver interval. The second feature emphasized is that two of these receivers are spaced a relatively long distance while the third receiver is spaced a short distance from one of the first two receivers.

As advantages of their process over the prior art, appellants state that they are able, during a single traverse of the bore hole, "to accu-

rately measure using RR measuring intervals both the average velocity of the formation surrounding a borehole as well as the actual velocity of a relatively thin porous layer." They state that obtaining both measurements during a single traverse of the logging device provides a simple means for correlating both measurements and eliminating the possibility of malfunctioning of the logging system.[2]

As is to be expected with an obviousness rejection, neither reference discloses a specific embodiment employing all the features of the claimed method. All of the embodiments specifically disclosed in Athy, described by the Solicitor in oral argument as the most pertinent reference, utilize a transmitter along with two receivers and thus provide but one receiver-to-receiver measuring interval. The Examiner and Board rely on the suggestion in our first quotation from Athy that "it may in some cases be desirable to employ a greater number of receptors [receivers] than two" as teaching the use of three receivers. As to the requirement for the long and short receiver spacing, they rely on the excerpt from Athy quoted hereinabove which discusses the effect of different spacing of the transmitter-to-receiver and receiver-to-receiver intervals in the one transmitter and two receiver system specifically disclosed. On this latter point, reliance is also placed on Wyckoff's disclosure that spacing between the detectors and the source is varied depending upon the terrain and the desired degree of resolving power, with "2 to 50 feet" separation being used in practice.

Some difficulty arises from the failure of the Examiner and Board to point out why they think the disclosure relied on would make it obvious to modify specific disclosures in the prior art of one transmitter-two receiver processes to provide appellants' process using three receivers which provide two receiver-to-receiver measuring intervals and are relatively spaced in a manner different from that of the specific prior art disclosures. Although the Solicitor undertakes to overcome some of that deficiency, we are not satisfied that the record demonstrates that the required modification, or selection of features, would have been obvious to a person of ordinary skill in the art.

In the first place, the mere suggestion in Athy that it may in some cases be desirable to employ more than two detectors does not disclose the position of any additional receivers. Noting that Athy suggests that the receivers "may be spaced on either side of the transmitter" and also that a single receiver may be used, a logical interpretation of the suggestion to use a greater number of receivers than two might be that either one or two receivers are disposed on opposite sides of the transmitter from the two provided in the systems specifically described. The disclosure certainly does not provide a clear teaching of using a third receiver in the position required by the claims nor does it teach the spacing required thereby.

The Solicitor, going into more detail than the Examiner and Board, urges that Athy's suggestion of using a greater number of receivers than two would lead to modification of the patentee's one transmitter-two receiver system by the addition of a third receiver for the purpose of making two simultaneous receiver-to-receiver measurements because "It is known that receiver-to-receiver measurements are the most accurate * * *." However, no clear disclosure to the latter effect has been pointed out in the references.[3]

The quotation from Athy regarding spacing of the transmitter and receivers, set out hereinabove, suggests that placing the transmitter closer to the nearest receiver than the distance between the two receivers permits obtaining information regarding variations "contributed by structure near the borehole" through the transmitter-to-receiver measurements while the longer receiver-to-receiver measurements represent characteristics of undisturbed or virgin strata. That disclosure teaches merely that the shorter spacing be used to obtain information as to disturbed structure near the bore hole. It does not relate to detecting thin earth formation or suggest modification of Athy's one transmitter-two receiver system to measure a first long receiver-to-receiver interval and a second receiver-to-receiver interval shorter than the thinnest rock formation to be located.

Wyckoff was cited primarily for its disclosure that the spacing between the detectors and source is varied depending upon the terrain and the ability to separate adjacent strata together with the reference to a separation of two to fifty feet. There is no suggestion there, however, that two intervals of different spacing be measured in connection with a single traverse of a bore hole, much less that both measurements be of receiver-to-receiver intervals.

[1] In summary, we think the Examiner and Board erred in finding the appealed claims obvious over the teachings of Athy and Wyckoff. The rejection is based on an improper piecemeal reconstruction of the prior art made in light of appellants' disclosure and not taught or made obvious by the reference disclosures. See *In re Rothermel*, 47 CCPA 866, 276 F.2d 393, 125 USPQ 328.

[2] The decision of the Board is reversed.

REVERSED.

[2] The application explains the manner in which the claimed method reveals the desired information as follows:

> If the travel time of the seismic impulses over the long distance interval is represented as LT and the travel time over the short distance as ST, the travel times are normally interrelated by the equation $LT=K(ST)$ where K is the ratio of the length of the long interval to that of the short interval. As a formation of unusually low velocity is approached by a measuring unit in which the short interval is spaced ahead of the long interval, the quantity K(ST) becomes greater than LT. Then, as the larger proportions of the low velocity appear within the long interval, the quantity LT increases until both LT and K(ST) become equal if the formation is thick enough to accommodate both measurement intervals. As the measurement unit moves past the formation, the quantities K(ST) and LT increase in sequence. Anomalous measurements due to short borehole irregularities, the off-centering of the measuring devices within the borehole are made obvious by the absence of the above pattern.

[3] The Solicitor apparently bases his statement that it is known that the receiver-to-receiver measurements are the "most" accurate on certain material in appellants' brief which he considers an acknowledgment of that proposition. However, that material, which states that systems using a pair of receivers in conjunction with a transmitter to provide a receiver-to-receiver measurement overcame certain inaccuracies in systems utilizing a transmitter-to-receiver measurement, does not satisfy us that appellants have admitted the broad proposition the Solicitor urges.

U.S. Court of Customs and Patent Appeals

IN RE SAMUEL M. NEELY

No. 7583. Decided June 2, 1966

[53 CCPA —; 361 F.2d 255; 149 USPQ 839]

1. PATENTABILITY—OBVIOUSNESS—FLOOD LIGHTING.

"There is no doubt that, as the appellant argues, Cahill's nine-pole illuminating system is designed to meet problems of lighting quite different from those presented by hockey rinks and that many considerations go to the 'crux' of Cahill's system for illuminating a baseball field and are not applicable to lighting a hockey rink where substantially all players, save the two goal keepers, are constantly and rapidly changing both position and direction of movement over the rink. However, that does not mean that a person with a knowledge of the lighting requirements of a hockey rink could not learn from Cahill the method of doing it. As the Board, referring to light, said, 'the need for distribution and intensity, generally, would be as well known as for a baseball field.'"

2. SAME—SAME—SAME.

"We fail to see anything in arranging floodlights and directing their beams so that a given area is lighted to the greatest advantage which would be beyond the capacity of a person ordinarily skilled in the art. The essence of the method claimed is simply placing two poles at diagonally opposite corners and providing them with enough floodlights to adequately light a hockey rink. Certainly, it is obvious, when uniform illumination of an area is desired, to aim the floodlights at the spots which will produce uniform illumination and, if all lamps are of the same intensity, to increase the number of lamps aimed at a particular spot as the distance from the pole increases."

3. SAME—PARTICULAR SUBJECT MATTER—"FLOODLIGHTING OF ATHLETIC FIELDS."

The refusal of certain claims in an application entitled "Floodlighting of Athletic Fields," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 141,753.

AFFIRMED.

William Douglas Sellers, *George A. Brace*, *Munson H. Lane* for appellant.

Clarence W. Moore (*Fred W. Sherling* of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

KIRKPATRICK, *J.*, delivered the opinion of the court.

This is an appeal from a decision of the Board of Appeals affirming the Examiner's rejection of claims 2, 3 and 10 of the appellant's application Serial No. 141,753, entitled "Floodlighting of Athletic Fields," as "unpatentable over Cahill" 1,235,527. We consider this a section 103 rejection.

Claim 2 is as follows:

2. A method of floodlighting a hockey rink consisting in the steps of erecting two poles at diagonally opposite corners respectively of the rink with a plurality of floodlamps atop each pole, and directing the lamps toward respective spots on the playing surface of the rink in a pattern of substantially uniform light intensity throughout the playing surface with the axes of certain of the lamps directed toward the center zone of the rink from one pole crossing those from the other pole, thereby to illuminate the space above the playing surface.

Claim 3 provides that the lamps be directed toward spots on the playing surface of the rink "in a pattern in which concentration of spots increases with an increase in distance of the spots from the poles."

Claim 10 is not limited to a hockey rink and merely claims the location of poles, pointing out that it leaves both sides and both ends of the field "free of view-obstructing poles" and, by adjusting the individual lights, illuminates the entire field to a desired minimum intensity.

The appealed claims are all method claims, but, so far as the issue of obviousness is concerned, the considerations applicable are no different from claims for physical structures or arrangements.

The main reference considered by the Board and by the Examiner is the Cahill patent referred to above. That patent is for "Illuminating Systems for Base-Ball and Other Games." None of the sixteen claims refer to illuminating anything other than a baseball field and, although the specification refers to the illumination of large areas so that baseball and other games may be played at night, hockey rinks are nowhere mentioned.

[1] There is no doubt that, as the appellant argues, Cahill's nine-pole illuminating system is designed to meet problems of lighting quite different from those presented by hockey rinks and that many considerations go to the "crux" of Cahill's system for illuminating a baseball field and are not applicable to lighting a hockey rink where substantially all players, save the two goal keepers, are constantly and rapidly changing both position and direction of movement over the rink. However, that does not mean that a person with a knowledge of the lighting requirements of a hockey rink could not learn from Cahill the method of doing it. As the Board, referring to light, said, "the need for distribution and intensity, generally, would be as well known as for a baseball field."

[2] We fail to see anything in arranging floodlights and directing their beams so that a given area is lighted to the greatest advantage which would be beyond the capacity of a person ordinarily skilled in the art. The essence of the method claimed is simply placing two poles at diagonally opposite corners and providing them with enough floodlights to adequately light a hockey rink. Certainly, it is obvious, when uniform illumination of an area is desired, to aim the floodlights at the spots which will produce uniform illumination and, if all lamps are of the same intensity, to increase the number of lamps aimed at a particular spot as the distance from the pole increases.

The appellant's application states that it is conventional to use four poles on each side of a hockey rink, and Cahill discloses the use of multiple poles with lamps selectively aimed. It can hardly be said that it is an unexpected result if the removal of most of the poles improves the spectators' view of the rink or that a two-pole system will be less expensive than a four-pole.

[3] The decision of the Board is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE WALKER MANUFACTURING COMPANY

No. 7568. Decided May 5, 1966

[53 CCPA —; 359 F.2d 474; 149 USPQ 528]

1. TRADEMARK—DESCRIPTIVENESS—"CHAMBERED PIPE" FOR EXHAUST SYSTEMS.

"We are in accord with the response made by the Board that: The question • • • is not whether the Board or others may or would utilize 'CHAMBERED PIPE' to describe applicant's goods, but whether this designation does, in fact, describe such goods. That there are other words which others may employ to describe or define applicant's goods does not, in any way, lessen the descriptive character of the words 'CHAMBERED PIPE.' • • • "

2. SAME—SAME—SAME.

Held, with respect to the mark "CHAMBERED PIPE" sought to be registered for exhaust systems, "We think it pertinent to add that it would be difficult to devise or divine a more apt and clearly descriptive term than that by which appellant itself designates and describes its exhaust system."

APPEAL from the Patent Office. Serial No. 165,007.

AFFIRMED.

William H. Gross for appellant.

Clarence W. Moore (*George C. Roeming* of counsel) for the Commissioner of Patents.

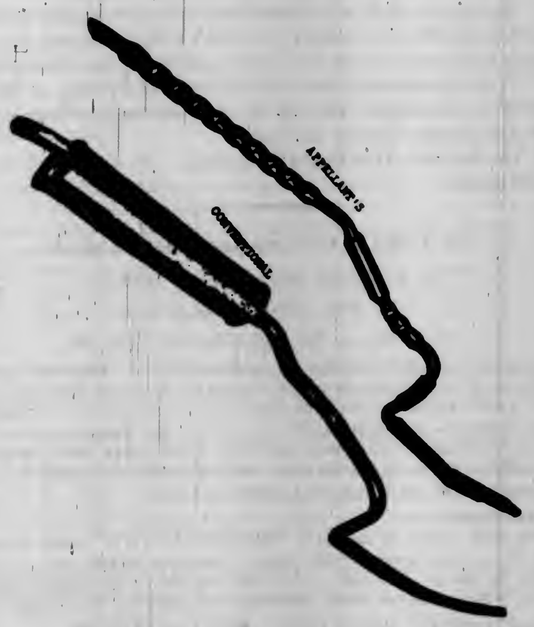
Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK,

United States Senior District Judge for the Eastern District of Pennsylvania

ALMOND, *J.*, delivered the opinion of the court.

Walker Manufacturing Company appeals from the decision of the Trademark Trial and Appeal Board refusing registration on the Principal Register of the term "CHAMBERED PIPE" for exhaust systems and components for internal combustion engines.[1] Specimens filed with the application consist of labels affixed to the goods bearing the designation "WALKER CHAMBERED PIPE." Registration was thus refused by the Examiner and affirmed by the Board on the ground that the term "CHAMBERED PIPE" is merely descriptive of appellant's goods within the meaning of section 2(e)(1) of the statute (15 U.S.C. 1052).

Appellant's product or exhaust system, in connection with which the term "CHAMBERED PIPE" is used, is described in promotional literature of record as a mechanism which eliminates the conventional muffler by utilizing a series of tuning or silencing portions over the length of a pipe, such portions being carefully determined to secure optimum performance of the exhaust system. To eliminate word description of appellant's system and show comparison therewith to the conventional muffler, we reproduce the following configurations:



It was the Examiner's position that the "tuning and silencing portions" are, in fact, chambers formed in the exhaust pipe which permit the expansion of exhaust gases, serving this function in lieu of the large single conventional muffler; and that the words "CHAMBERED PIPE" aptly describe the system.

[1] Application Serial No. 165,007, filed March 19, 1963. The word "Pipe" is disclaimed apart from the mark.

In sustaining the Examiner, the Board pointed out certain promotional and advertisement material used by appellant explanatory and descriptive of the system to which it would affix its alleged trademark. Pertinent excerpts from this material addressed to and disseminated among the automotive trade disclose the following: "There is a 'first' for Olds [Oldsmobile] too: the introduction of the Walker Mfg. Co. *chambered exhaust system*, the first major break-through in exhaust systems"; a description of the exhaust system as "a series of small tuning *chambers* spaced at select intervals along the length of the pipe from the manifold to the exhaust outlet"; "*NEW WALKER CHAMBERED PIPE* * * * Scientifically designed tuning chambers blend exhaust tones." [Our emphasis.]

Suffice it to say that the record is replete with like promotional material aptly descriptive of appellant's exhaust system.

In view of the above and in further reliance on standard dictionary definition of the word "chamber" as, inter alia, "an increased or compartmental space designed for some special purpose," the Board concluded that "CHAMBERED PIPE" merely describes the nature and character of appellant's goods.

Appellant here poses, as it did before the Board, the following question:

> Without any knowledge whatsoever of appellant's trademark, would the court define or describe appellant's exhaust system as a "chambered pipe"?

[1] We are in accord with the response made by the Board that:

> The question * * * is not whether the Board or others may or would utilize "CHAMBERED PIPE" to describe applicant's goods, but whether this designation does, in fact, describe such goods. That there are other words which others may employ to describe or define applicant's goods does not, in any way, lessen the descriptive character of the words "CHAMBERED PIPE." * * *

[2] We think it pertinent to add that it would be difficult to devise or divine a more apt and clearly descriptive term than that by which appellant itself designates and describes its exhaust system.

The decision of the Board is affirmed.

AFFIRMED.

MARTIN, *J.*, dissenting.

I fail to find in the majority opinion any articulated reason why the term "chambered pipe" is descriptive of appellant's exhaust system not heretofore known, and thus I am not convinced that the opinion expressed therein that the term is "apt" and "clearly descriptive" is correct.

When I think of a chambered pipe, if I have *any* mind's eye view at all, I would visualize a straight tube having spaced internal dividers. But then the term is self-contradictory, since a pipe is a hollow tube, yet to be "chambered" tends to defeat its functional purpose as a conduit.

Further, I agree with Judge Smith that there is no basis on which it can be said that the indentations or "tuning and silencing portions" are *in fact* chambers, as the Examiner asserted. Even should those portions be characterizable as chambers, their presence would not be discernible without an interior view. The record does not show that the ordinary purchaser would have such a view.

Appellant's own promotional material for the trade refers three times to the tuning and silencing portions as "tuning chambers," while at the same time calls the "new type exhaust system" "Chambered Pipe" four times in the same material. But the characterization of

certain portions as "tuning chambers" is not such as to make the *entire* Walker exhaust *system*, the involved goods, "aptly" described by the term "Chambered Pipe." Also, I quite agree with appellant that the term "chambered pipe," occurring *in part* in lowercase 3 out of 37 times in the text of exhibits of record, is no bar to registration of the term "Chambered Pipe." Walker's designation as a "Chambered Pipe," like aspirin or linoleum, *may become* generic if used other than in a trademark sense. The majority deems the phrase "*chambered exhaust system*" "aptly descriptive," but the sought-for mark is "Chambered Pipe." The issue of whether this latter designation has been lost to the public is not before us.

The fault the majority finds here apparently is that rather than an entirely arbitrary designation, appellant has chosen two words having ordinary meanings. But combinations of words having ordinary meanings applied to goods as a mark are not necessarily descriptive. I agree with appellant wherein it states:

*** * * Actually, the device is a tubular member provided with dimple-like depressions and intermediate cushion-like surfaces. Or, the device could be described as comprising a pipe section having undulations therein, or as being formed with humps and hollows or recesses, or as having raised and depressed portions. The device also includes a series of baffles, internal short pipe sections and passages. We respectfully submit that the arbitrary term CHAMBERED PIPE would not have been normally used to describe this construction. Furthermore, this component is desirable in, but not an essential part of, a CHAMBERED PIPE system.**

Heretofore, engines were silenced by the use of systems comprising mufflers, exhaust pipes, resonators and tail pipes. While there may be some technical connotation to the term "chambers" in this art, "Chambered Pipe" is at best no more than suggestive to the ordinary purchaser.

Clearly there was no prior established descriptive significance to the term "Chambered Pipe." It should also be kept in mind that *the issue is not* whether or not, under section 23, the term is incapable of distinguishing appellant's goods since naturally and adequately nominative of exhaust systems. Since I do not think "Chambered Pipe" is *descriptive* of the *goods* here, exhaust *systems* and *components* for internal combustion engines, I would reverse the Board.

SMITH, *J.*, dissenting.

I find that considerable confusion has arisen in this case as to the goods to which the mark is applied. This confusion is reflected in the Examiner's answer, the Board's opinion and the majority's opinion herein. The mark, "Chambered Pipe," as stated in the majority opinion, is applied to an exhaust system for internal combustion engines. The reasoning of record and the majority as to why "chambered pipe" describes such an exhaust system, does not withstand examination. It is stated in the Examiner's answer:

*** * * applicant seeks to register the term CHAMBERED PIPE *for a pipe with chambers* formed *in portions* of its length. [Emphasis added.]**

The Board's opinion, after reviewing certain published descriptions of appellant's exhaust system in which the term "chambers" had been used and after considering the dictionary meaning of the term, states:

In view of the foregoing and considering that the word "chamber" is defined in Webster's Third New International Dictionary as, inter alia, "an enclosed or compartmented space designed for some special purpose," it is concluded that "CHAMBERED PIPE" merely described the nature and character of applicant's goods.

The majority opinion concludes with the observation:

We think it pertinent to add that it would be difficult to devise or divine a more apt and clearly descriptive term than that by which appellant itself designates and describes its *exhaust* system. [Emphasis added.]

The goods, appellant's exhaust system, will now be examined to see *in fact* just what the majority holds that the term "Chambered Pipe" describes. The fact which appears from the record is that appellant created a new type of exhaust system for internal combustion engines which was to supplant previous types of exhaust systems. Prior to appellant's system, a representative dual exhaust system, showing exhaust pipes, mufflers, resonators and tail pipes, appeared as follows:



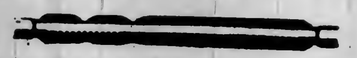
Figure 5 FIRST PRODUCTION DUAL EXHAUST SYSTEM

An example of appellant's system, in addition to the one depicted in the majority, appears as follows:



Figure 26 1964 OLDSMOBILE "CHAMBERED PIPE" SYSTEM

It is clear that the Examiner, Board and the majority ignored the nature of the goods upon which the mark "Chambered Pipe" is applied. Rather, their attention was focused entirely on those portions of the exhaust system, termed "tuning and silencing" portions, consisting of visible surface indentations in the outer shell surrounding portions of the pipe. In FIG. 26, above, these indentations are shown in the shell which surrounds the central exhaust pipe portion of the exhaust system. A longitudinal cross-sectional view of that portion may be examined:



It is significant on the issue of descriptiveness that the above longitudinal cross-sectional view shows two cooperating parts, an inner pipe and a separate outer jacket. The pipe is perforated at critically spaced intervals. The separate outer jacket is constructed of tubing that surrounds the pipe. The externally visible indentations are selectively placed along the outer jacket. By selectively locating these indented sleeves (in relation to each other, the perforations, and the pipe) appellant creates highly selective tuning and silencing portions

based on acoustical theory which varies for each engine and for various operating characteristics. The differences in length between the indentations is based on acoustical theory and are readily visible in the figure shown. Thus, the "pipe" as shown is not "chambered." Instead it is an open conduit designed to convey the exhaust gases from an internal combustion engine to a selected discharge point and to do so with the minimum of back pressure within the pipe itself.

Like Judge Martin, when I try to visualize a device described by the term "chambered pipe" I would visualize a pipe having spaced internal dividers which would make it a "chambered pipe" in the descriptive sense. I do not consider the term "chambered pipe," to be "merely descriptive" of appellant's multi-part exhaust system for an internal combustion engine. That system is much more than a "pipe." The engine exhaust pipe is but one element of the system and instead of being "chambered," it is open. It becomes an element of a silencing system when perforations are placed at selected areas longitudinally of the pipe, and a series of separate acoustic tuning portions of varying lengths are secured to and surround the pipe in a critical relation to the perforations therein. There are no "chambers" in the pipe.

We are dealing with the composite term "chambered pipe" and the issue of descriptiveness of this term must be reached by considering the term "chamber" or "chambered" as well as the term "pipe." Thus, the word "chambered" is used as an adjective which modifies the word "pipe." Neither the Examiner, the Board, nor the majority have seen fit to set forth the descriptive meaning of the noun "pipe." Instead, their attention is focused on the adjective.

Webster's Collegiate Dictionary, fifth edition, defines "pipe" in its third meaning as "any long tube or hollow body of wood, metal, earthenware, or the like to conduct water, steam, etc." Thus, the descriptive meaning of a "chambered pipe," utilizing the majority's definition of "chamber," would seem to me to require such a tube or body divided into "chambers," as for example may be found in a stalk of bamboo. Thus, I would find the composite term "chambered pipe" to be descriptive at best of such a structure in which the tube or hollow body is divided into chambers by a series of partitions. Moreover, as Judge Martin points out, it is a reasonable argument that "Chambered Pipe" is a contradiction in terms. I do not agree, however, that even then the term is descriptive of an internal engine exhaust system in which the significant feature is that the exhaust pipe is *not* divided into "chambers" but instead is *an open tube or hollow body* through which the exhaust gases are conveyed from the engine to a discharge point.

I think that the majority's holding that the term "Chambered Pipe" is "descriptive" of appellant's goods is inconsistent with past decisions in which we have applied the term "descriptive" to trademarks.

In *Fleetwood Co.* v. *Mitchum Co.*, 51 CCPA 831, 323 F.2d 1015, 139 USPQ 281, this court held that the mark "Fayd" was not descriptive of skin creams and said:

> We are unable to agree with that reasoning or conclusion. "Fade" merely suggests a desired result of the instant skin creams, but can hardly be held descriptive of the creams themselves. * * *

In *Browns Hosiery Mills, Inc.* v. *Russell Hosiery Mills, Inc.*, 50 CCPA 848, 311 F.2d 811, 136 USPQ 226, the mark "Sweater Knit" was considered by this court and we stated:

> The most we can find in the term "sweater" as part of a trademark for socks by way of suggestiveness is that it generates in the mind an *association* with something soft and warm. The generation of such mental associations, while avoiding the use of common descriptive terminology open to all to use, is one of the prime functions of trademarks of a certain type. It does not follow from the successful selection of such a suggestive trademark that others desirous of creating the same impression or association are free to imitate or copy the mark because of its suggestibility.

These decisions seem to me to be soundly based and in line with other decisions dealing with the troublesome legal question arising from the alleged descriptiveness of a mark such as the one here in issue. While earlier decisions are not direct precedents, they are helpful in stating factors which should be considered. The majority opinion does not discuss what seem to me to be pertinent decisions and since it appears to disagree with them this possible conflict should be noted.

It seems clear to me that the mark here under consideration falls in that extensive class of marks which this court considered in *Van Camp Sea Food Co.* v. *Alexander B. Stewart Organizations*, 18 CCPA 1415, 50 F.2d 976, 9 USPQ 541. There the mark "Chicken of the Sea" was said to be suggestive, but not descriptive.

In my opinion the issue here involved in registration of the mark "Chambered Pipe" is very similar to that involved in registration of the mark "Polycopy" in which case we agreed with the Trademark Trial and Appeal Board that the mark "Polycopy" was not merely descriptive of photo copying machines. See *Polaroid Corp.* v. *Anken Chemical & Film Corp.*, 52 CCPA 1220, 343 F.2d 771, 145 USPQ 191.

As I see it, the majority opinion is predicated initially upon a faulty consideration of the alleged descriptiveness of the mark which has its genesis in the Examiner's incorrect designation of the goods with which the mark is used. At the risk of being redundant, I repeat, the mark is *not* for *chambered pipe*. It also is not for merely a portion of the exhaust pipe. It is for an *exhaust system for internal combustion engines* and parts thereof in which system sound attenuating or resonating spaced sleeves are affixed to the outer periphery of the pipe which, as I have pointed out herein, is not "chambered."

I would therefore reverse the decision of the Trademark Trial and Appeal Board.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

Plant Pat. 1,967, J. S. Reed, AVOCADO, **filed** May 5, 1966, D.C., S.D. Calif. (San Diego), Doc. 3548–SD–C, *Mrs. Joe L. Shields* v. *H. G. Smits*. Stipulation and consent judgment dismissing action Sept. 26, 1966.

2,719,986, H. J. Rand, HOLLOW MATTRESS AND INFLATION CONTROL THEREFOR; **3,199,124**, R. D. Grant, AIR MATTRESS, **filed** Sept. 28, 1966, D.C., W.D.N.Y. (Buffalo), Doc. 1966–117, *Grant Airmass Corporation et al.* v. *Gaymar Industries, Inc.*

2,728,779, A. Pohland, ESTERS OF SUBSTITUTED AMINOBUTANES, **filed** June 20, 1966, D.C., E.D.N.Y., Doc. 66C–576, *Eli Lilly and Co.* v. *Generic Formulae, Inc.* Consent judgment for injunction Sept. 30, 1966.

2,741,146, C. L. Fender, TREMOLO DEVICE FOR STRINGED INSTRUMENTS; **2,960,900**, same, GUITAR; **Des. 169,062**, same; **Des. 186,826**, same, ELECTRIC GUITAR; **Des. 187,001**, same, BASS GUITAR, **filed** June 7, 1965, D.C., S.D. Calif. (Los Angeles), Doc. 65–846–FW, *Columbia Records Distribution Corp.* v. *Thomas Organ Co. et al.* Consent judgment—patents held valid; defendants enjoined Aug. 15, 1966.

2,744,660, W. H. Jacobs, BEVERAGE DISPENSER; **2,745,641**, same, **filed** Jan. 17, 1966, D.C. Mass. (Boston), Doc. 66–47–J, *Jet Spray Cooler, Inc.* v. *Wilmot H. Simonson Co. et al.* Action dismissed Sept. 21, 1966.

2,745,641. (See 2,744,660.)

2,750,216, P. E. Thies, BOWL SLEEVE GASKET; **Reg. No. 667,444** ("NO SEEP" AND DESIGN), Paul E. Thies, doing business as Pet Manufacturing Co., Combined lead sleeve and wax gasket for setting toilet bowls, **filed** Sept. 15, 1966, D.C. Nebr. (Omaha), Doc. 02598, *Paul E. Thies* v. *William H. Harvey Co. et al.*

2,751,898, P. M. De Groat, MODEL ENGINE STARTER, **filed** May 28, 1965, D.C., S.D. Calif. (Los Angeles), Doc. 65–80S–TC, *L. M. Cox Mfg. Co., Inc.* v. *K & B Mfg. Corp.* Consent judgment—patent held infringed; defendant enjoined Aug. 16, 1966.

2,761,441, J. Loecy, Jr., DIAMOND TOOL, **filed** Sept. 20, 1966, D.C., E.D. Mich. (Detroit), Doc. 29000, *Cleveland Industrial Tool Company, Inc.* v. *Wheel Trueing Tool Company.*

2,776,139, Blamey and Mullany, GAME BALL, **filed** July 2, 1964, D.C. Conn. (New Haven), Doc. 10536, *David N. Mullany et al.* v. *Bradley's, Inc.* Order of dismissal Sept. 27, 1966.

2,777,928, A. A. Bernard, ARC WELDING METHOD AND MEANS; **2,902,587,** same, ARC WELDING PROCESS AND APPARATUS; **3,051,822,** A. A. Bernard et al., WELDING WITH BLANKET AND GAS ARC-SHIELD, **filed** Oct. 5, 1964, D.C.N.J. (Newark), Doc. 924–64, *Air Reduction Company, Inc.* v. *Chemetron Corp.* Stipulation and order of dismissal Sept. 29, 1966.

2,778,069, Starck and Gency, REMOVABLE WINDOW WITH SASH BALANCE; **3,116,520,** J. G. MacGregor, WINDOW SASH CONSTRUCTIONS, **filed** July 6, 1965, D.C., W.D.N.Y. (Buffalo), Doc. 11487, *A.M.S. Corporation* v. *Caldwell Manufacturing Co., Inc.* Consent judgment—action dismissed (notice Sept. 22, 1966).

2,798,226, H. Kanter, NECKTIE FORM, **filed** Aug. 31, 1964, D.C., S.D.N.Y., Doc. 64/2684, *France Neckwear Co., Inc.* v. *A. Ruderman Co., Inc. et ano.* Order dismissing action Sept. 26, 1966.

2,799,346, Baker and Conrad, RETRIEVABLE BRIDGE PLUG; **2,806,532,** same, METHOD AND APPARATUS FOR PRESSURING WELL BORES, **filed** Nov. 18, 1963, D.C., S.D. Calif. (Fresno), Doc. 2465–ND, *Baker Oil Tools, Inc.* v. *Schlumberger Well Surveying Corp. et al.* Consent judgment holding patents infringed Sept. 26, 1966.

2,806,532. (See 2,799,346.)

2,862,468, R. E. Johnson, ORNAMENTAL STITCH SEWING MACHINES, **filed** Jan. 5, 1959, D.C., S.D.N.Y., Doc. 141–237, *Singer Manufacturing Company* v. *Brother International Corporation.* Stipulation and order of discontinuance Sept. 12, 1966.

2,873,429, Atchley and Harrison, MAGNETIC ASSEMBLY HAVING GALVANOMETERS PROVIDED WITH ADJUSTABLE LOCKS, **filed** Sept. 23, 1966, D.C., N.D. Okla. (Tulsa), Doc. 6538, *Midwestern Instruments, Inc.* v. *Century Geophysical Corporation.*

2,897,514, S. M. Collins, FOLDING SHOWER DOOR; **2,897,515,** same, **filed** Sept. 16, 1966, D.C., S.D. Fla. (Miami), Doc. 66–1054, *Kinkead Industries, Inc.* v. *Keller Bath Enclosures, Inc. et al.*

2,897,515. (See 2,897,514.)

2,902,587. (See 2,777,928.)

2,960,900. (See 2,741,146.)

3,051,822. (See 2,777,928.)

3,116,520. (See 2,778,069.)

3,199,124. (See 2,719,986.)

3,213,000, R. Ewing, MULTIPLE STAGE FLASH EVAPORATOR, **filed** Sept. 20, 1966, D.C., E.D. La. (New Orleans), Doc. 66–384, *Aqua-Chem, Inc.* v. *Gulf Oil Company.*

3,225,305, F. F. Offner, SYMMETRICAL TRANSISTOR AMPLIFIER WHICH IS SELF-COMPENSATING WITH RESPECT TO CHANGES IN TEMPERATURE, **filed** Sept. 22, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c1710, *Beckman Instruments, Inc.* v. *Technical Development Corp.*

3,225,860, C. R. Fox, SPEAKER ASSEMBLY, **filed** Sept. 21, 1966, D.C., S.D. Calif. (Los Angeles), Doc. 66–1512–IH, *Metra Electronics Corporation* v. *A.R.O. Electronics, Inc. et al.*

3,236,289, G. E. Dixon, FOLDING DOOR WITH FLEXIBLE JOINT, **filed** Sept. 27, 1966, D.C., S.D. Fla. (Miami), Doc. 66–1087, *Guy E. Dixon* v. *New Castle Products, Inc. et al.*

3,237,356, F. W. Fork, ADJUSTABLE ELECTRICAL TRENCH, **filed** Sept. 12, 1966, D.C., W.D. Pa. (Pittsburgh), Doc. 66–1096, *H. H. Robertson Company* v. *Raceways, Inc.*

3,241,429, Rice and Leach, PICTORIAL PARALLAX PANORAMAGRAM UNITS, **filed** Sept. 12, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c1654, *Pid Corporation* v. *R. R. Donnelley & Sons Co. et al.*

3,245,409, J. R. Martin, SELF-ADJUSTABLE FOUNDATION GARMENT; **3,245,410,** same, **filed** May 17, 1966, D.C., S.D.N.Y., Doc. 66/1427, *Flexnit Company, Inc.* v. *De Luxe Girdlecraft Co., Inc.* Consent judgment—defendant enjoined Sept. 13, 1966.

3,245,410. (See 3,245,409.)

3,249,001, N. L. Stauffer, AUTOMATIC FOCUSING PHOTOGRAPHIC PROJECTOR, **filed** Sept. 7, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c1628, *Honeywell, Inc.* v. *Bell & Howell Co.*

3,250,058, R. F. Baddour, METHOD OF AND APPARATUS FOR CHROMATOGRAPHIC SEPARATIONS, **filed** Sept. 30, 1966, D.C. Mass. (Boston), Doc. 66–726–G, *Abcor, Inc.* v. *Hewlett-Packard Company.* **Same, filed** Oct. 17, 1966, D.C. Del. (Wilmington), Doc. 3272, *Hewlett-Packard Company* v. *Abcor, Inc.*

3,266,384, D. Scaramucci, WELL SWAB ASSEMBLY; **3,266,386,** same, SWAB CUP, **filed** Sept. 19, 1966, D.C., W.D. Okla. (Oklahoma City), Doc. 66–347, *Domer Scaramucci et al.* v. *Dresser Industries, Inc.*

3,266,386. (See 3,266,384.)

3,267,630, R. E. Omholt, FLOORING SYSTEMS; **3,271,916,** same, UNIFORMLY RESILIENT FLOORING SYSTEMS, **filed** Sept. 27, 1966, D.C. Del. (Wilmington), Doc. 3262, *Powerlock Floors, Inc.* v. *Robbins Flooring Co., Inc.*

3,271,901, C. B. Bednar, JAIL DOOR OPERATOR, **filed** Sept. 13, 1966, D.C., N.D. Calif. (San Francisco), Doc. 35637, *Van Dorn Company* v. *Herrick Iron Works et al.*

3,271,916. (See 3,267,630.)

3,274,621, J. Diamond et al., WATER-RETAINING RECREATIONAL STRUCTURE FOR SWIMMING POOLS AND THE LIKE, **filed** Sept. 27, 1966, D.C., S.D.N.Y., Doc. 66/3095, *Coleco Industries, Inc.* v. *Doughboy Industries, Inc.*

Re. 24,955, E. P. Campbell, GRASS CATCHER FOR ROTARY MOWERS, **filed** Aug. 19, 1966, D.C., E.D. Mo. (St. Louis), Doc. 66C309(3), *J. Gordon Campbell, Inc. et al.* v. *Canvas Products Company.*

Re. 26,046, M. Gottfried, PRESSURE BANDAGE-SPLINT, **filed** Sept. 22, 1966, D.C., E.D. Mich. (Detroit), Doc. 29011, *Jobst Institute, Inc.* v. *S. H. Camp Company.*

Des. 189,062. (See 2,741,146.)

Des. 176,492, J. Barofsky, TELEVISION CABINET OR SIMILAR ARTICLE, **filed** Apr. 16, 1965, D.C., S.D. Calif. (Los Angeles), Doc. 65–596–FW, *Jack Barofsky* v. *General Electric Corporation.* Summary judgment—patent held invalid Aug. 15, 1966.

Des. 186,826. (See 2,741,146.)

Des. 187,001. (See 2,741,146.)

Des. 190,918, T. D. Poulsen, DOLL, **filed** Dec. 14, 1964, D.C., S.D.N.Y., Doc. 64/3831, *Dam Things Establishment* v. *Ideal Toy Corporation.* Order dismissing action Sept. 20, 1966.

Des. 195,429, Taige and Dykes, COMBINED ELECTRIC CAN OPENER AND KNIFE SHARPENER, **filed** Sept. 26, 1966, D.C., S.D.N.Y., Doc. 66/3079, *Rival Manufacturing Company* v. *Van Wyck International Corporation.*

REISSUES

NOVEMBER 29, 1966

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,117
FRUIT ORIENTING AND CUTTING SYSTEM

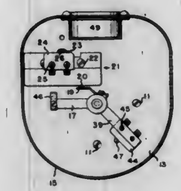
Joseph A. Amori, 1596 Davis St., San Jose, Calif.
Original No. 2,827,089, dated Mar. 18, 1958, Ser. No. 508,457, May 16, 1955, which is a division of Ser. No. 271,134, Feb. 12, 1952, now Patent No. 2,713,934, dated July 26, 1955. Application for reissue Apr. 19, 1966, Ser. No. 548,023
3 Claims. (Cl. 146—73)



1. A halving machine for tri-diametral ovaloid fruit comprising means for orienting a fruit so that its suture is in a vertical plane and means for cutting said fruit along its suture without engaging said orienting means, said first-mentioned means comprising a pair of parallel rotatable shafts, a pair of frusto-conical members mounted on one of said shafts with their apices disposed toward each other to present two spaced fruit-contacting surfaces, a cylindrical element positioned on the other of said shafts to present a fruit-contacting surface so located with respect to the two fruit-contacting surfaces presented by said frusto-conical members that the points of contact of fruit with said members and said element constitute the approximate apices of a substantially triangular figure, and means for simultaneously rotating said shafts; said second-mentioned means comprising a rotatable knife blade suspended above said orienting means and residing within the vertical plane in which the suture of the fruit is oriented, a knife-clearing slot in said cylindrical element in alignment with said knife blade, and means for moving said orienting means beneath said knife blade to engage the fruit with the blade.

26,118
TIMER WITH REVERSIBLE MOTOR

Charles Swenson, P.O. Box 83, Madison Square Station, New York, N.Y.
Original No. 3,087,103, dated Apr. 23, 1963, Ser. No. 140,720, Sept. 26, 1961. Application for reissue May 21, 1964, Ser. No. 380,726
17 Claims. (Cl. 318—265)



1. In a timing device: an electrically reversible motor responsive to a momentary circuit change by start in one direction or the other and reversal of direction while running in either direction; a member driven by said motor and adapted for limited movement *substantially* at constant-speed from a starting position; a member for setting in the path of said motor driven member at varying distances from said starting position; a main first switch to selectively energize and deenergize the motor circuit, a momentary, normally open second switch, and a momentary normally open third switch connected in the circuit to effect by momentary closing aforesaid circuit change and thereby determine the direction of movement of the motor driven member; actuating means to close said main switch and momentarily close said second switch in the starting position of the motor driven member for movement thereof toward the setting member; means applying said movement to momentarily close said third switch for reversal of the motor at a position determined by the setting member, and means opening the main switch upon return to the starting position of the motor driven member.

PLANT PATENTS

GRANTED NOVEMBER 29, 1966

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,687
ROSE PLANT

Walter E. Lammerts, Watsonville, Calif., assignor to Amling-Devor Nurseries, Inc., Livermore, Calif., a corporation of California
Filed Aug. 31, 1965, Ser. No. 484,141
1 Claim. (Cl. Plt.—11)

A new and distinct variety of rose plant, substantially as herein shown and described, distinguished by its combination of the long urn-shaped bud which opens to a multicolor yellow, gold and carmine coloration in a large high centered imbricate flower with the tall compact habit of growth, plant vigor, and continuity of abundant blooms that is characteristic of Queen Elizabeth.

PATENTS

GRANTED NOVEMBER 29, 1966

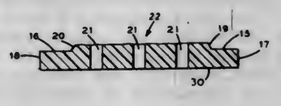
GENERAL AND MECHANICAL

3,287,737
KNITTED CAP CONSTRUCTION
Richard D. Schuessler, 800 Redbud Lane, Wilmette, Ill.
Filed May 7, 1965, Ser. No. 453,941
5 Claims. (Cl. 2—206)



1. A cap comprising an elongated tubular conical body of stretchable porous knitted material having an open end section adapted to be fitted upon a wearer's head, said body also having a gradually tapered intermediate section extending from said open end section and having a length approximately three times the length of said open end section, and a closed end section merging with said intermediate section, said open end section being provided with external fastening means on one side thereof, said fastening means having an opening therethrough dimensioned to receive and frictionally engage said closed end section, said closed end section being foldable about another side of said open end section opposite from said one side thereof and being slidable through the opening of said fastening means on said one side of said open end section, said closed end section being frictionally engageable with said fastening means to restrain retraction of said closed end section from said opening and to hold said intermediate section in a position wherein said intermediate section is adapted to extend across and protect the lower portion of a wearer's face.

3,287,738
FRAME ELEMENT FOR UNIFORM CAPS
Clifford Vanderbush, Closter, N.J., assignor to Frielich Brothers Corp., New York, N.Y., a corporation of New York
Filed Oct. 22, 1965, Ser. No. 500,503
6 Claims. (Cl. 2—209.7)



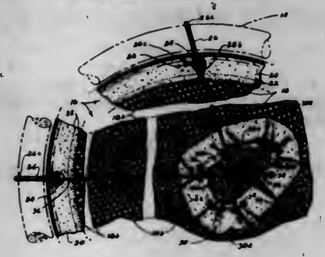
1. A flexible frame element for a uniform cap comprising a molded plastic strip of uniform width, said strip comprising a longitudinally extending intermediate zone of uniform thickness throughout the length thereof formed with ventilating openings and a pair of oppositely disposed longitudinally extending marginal imperforate edge portions of similar cross section, said intermediate zone having a thickness slightly greater than that of said edge portions.

3,287,739
COMBINATION BIFURCATED GARMENT
Morris Kaplan, Allentown, Pa., assignor to Sondra Manufacturing Co., Inc., Allentown, Pa., a corporation of Pennsylvania
Filed Sept. 4, 1963, Ser. No. 306,427
3 Claims. (Cl. 2—224)



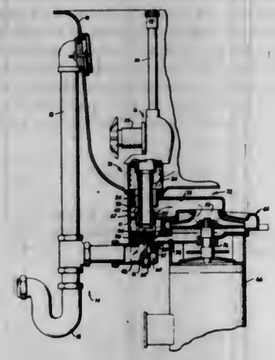
1. A combination panty and leg covering garment comprising an upper panty garment and a lower leg covering garment both of knitted fabrics, said garments being of different knit structures and the lower leg covering garment having lower thigh, knee, leg and foot covering portions and the upper garment having waist, crotch and upper thigh covering portions and said garments being joined together by an inturned circular seam between the crotch and the knee and intermediate of the thigh and elastic bands being positioned at the waist and at the inturned circular seam independently to support the garment both at the waist and intermediately of the thigh, the knitting loops and stitches in the upper panty garment being two to four times in size than the loops in the lower leg covering garment, and the wales extending vertically in the upper panty garment and horizontally in the lower leg covering garment and the courses extending horizontally in the upper panty garment and vertically in the lower leg covering garment.

3,287,740
POOL COVER
Sol Langer, Scotch Plains, N.J., assignor, by mesne assignments, to Andray Products, Inc., Orange, N.J., a corporation of New Jersey
Continuation of abandoned application Ser. No. 336,932, Jan. 10, 1964. This application Jan. 7, 1966, Ser. No. 528,682
8 Claims. (Cl. 4—172)



1. A cover for a pool having a rim bounding an open top comprising a cover body of a material capable of being gathered having an outer edge, mounting means on said outer edge of said cover body adapted to engage said rim for releasably securing said cover body on said pool in closing relation to said open top, and sizing means operatively connected to said cover body and operable for gathering said material toward a central section of said cover body such that an annular section of cover body surrounding said central section and extending toward said outer edge is taut and provides a relatively non-yieldable closure over the corresponding portion of said pool.

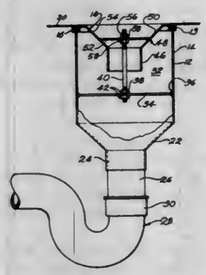
3,287,741
HYDROTHERAPY EQUIPMENT
Floyd M. Nash, Little Rock, Ark., assignor to Jacuzzi Bros., Inc., Richmond, Calif., a corporation of California
Filed May 21, 1964, Ser. No. 369,143
8 Claims. (Cl. 4—180)



1. In combination with a bathtub, an improved hydrotherapy apparatus comprising:
(a) a nozzle mounted within said bathtub;
(b) a pump and driving motor therefor, said pump having a pressure outlet and vacuum inlet;
(c) first conduit means interconnecting the interior of the bathtub and said vacuum inlet;
(d) second conduit means interconnecting the nozzle and said pressure outlet;
(e) a drain line to waste connected to the second conduit means; and
(f) a valve assembly operatively associated with the first and second conduit means and the drain line to selectively close said second conduit means to said line or open said second conduit means to both said line and first conduit means to apply pumping pressure to said line reduced by a predetermined amount.

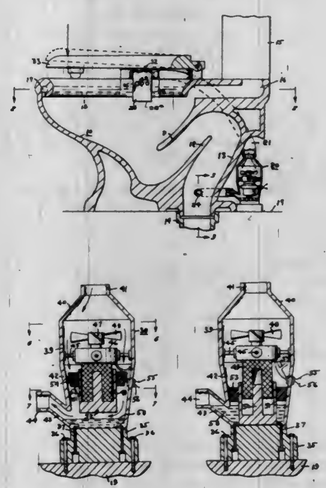
3,287,742
SHOWER PAN DRAIN
Ray R. Gaddis, 2646 Miriam Lane, Decatur, Ga.
Filed Apr. 13, 1964, Ser. No. 359,302
4 Claims. (Cl. 4—191)

1. In a shower drain outlet which includes a conventional shower bottom pan and drain opening in which is mounted a drain fitting:
(a) a large cylindrical housing of such diameter as to be larger than the shower drain opening and any fittings positioned therein,
(b) a gasket on the upper end of said housing fitting accurately around the upper end of said housing and being fitted to the underside of the shower bottom,
(c) an outlet on said housing fitted to an outlet pipe,
(d) means on said housing for attaching a pressure adjustment member thereto,
(e) means on said shower pan for attaching the pressure adjustment thereto,



(f) and a pressure adjustment member mounted between said pressure adjustment attachment means on said shower pan and being adjustable to force said cylindrical housing upper and gasket against the underside of said shower bottom.

3,287,743
WATER CLOSET VENTILATING UNIT
Charles E. Contes, Trevose, Pa., assignor of fifty percent to Walter A. Gay, Jr., Philadelphia, Pa.
Filed Mar. 11, 1964, Ser. No. 351,028
4 Claims. (Cl. 4—213)



1. A toilet ventilating device adapted for connection to an existing toilet bowl, comprising in combination,
(a) a hollow housing having an inlet thereto proximate its upper end and an outlet conduit line projecting laterally upward therefrom proximate its lower end, said outlet line forming with said hollow housing a liquid sealable trap structure,
(b) an electrically energizable fan disposed substantially centrally entirely within and supported from

the walls of said housing with the fan blades disposed for rotation in a horizontal plane and effective when energized to move gases downward from the said housing inlet toward the said housing outlet,

(c) a cylindrical piston within said housing axially shiftable vertically upward from a lower position at the bottom of said housing to an upper position spaced thereabove, by energization of a solenoid carried by and extending downward from the said fan, said piston returning to its lower position when said solenoid is deenergized,

(d) a well formed in the bottom of said housing containing a substantially fixed volume of said trap-sealing liquid in which said piston is immersed only when in its lowered position,

(e) operating means for selectively raising said piston free of the well liquid for opening said trap structure and lowering said piston into said well liquid to raise the level thereof for closing said trap structure,

(f) an annular seal extending peripherally about and carried by said piston effective to close the gas flow path between said housing inlet and trap when said piston is at its said lower position by engagement of the seal with the inside surface of the housing walls completely peripherally thereabout to thereby prevent any of said trap sealing liquid from being aspirated into the waste line when the trap is closed and the toilet is flushed, said seal being disengaged from the housing walls to open the gas flow path when said piston is at its said upper position,

(g) and selectively operable control means for simultaneously energizing said fan and solenoid to thereby withdraw gases from the toilet bowl for discharging the same through the opened trap into the waste line.

ERRATUM

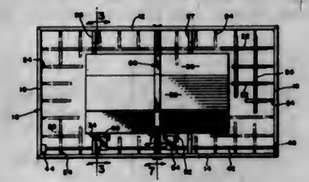
For Class 5—82 see:
Patent No. 3,287,895

3,287,744
STABILIZER EQUIPPED MATTRESSES
Gustav Drews, Garden City, N.Y., assignor to Eclipse Sleep Products, Inc., Brooklyn, N.Y., a corporation of New York
Filed Nov. 5, 1965, Ser. No. 506,516
5 Claims. (Cl. 5—260)



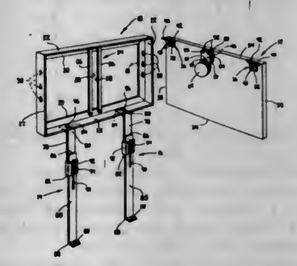
1. In a stabilizer equipped mattress, the combination of a mattress having upper and lower faces each having a border wire, said faces being spaced from one another by hourglass springs, stabilizers in the border of the mattress normally spacing the border wires from one another, each stabilizer composed of spring wire having a bent back upper lip, a bent forward lower lip and an intervening yieldable bow-shaped spring section parallel to said lips, and connecting coil springs connecting the border wires with the outer portions of outermost hourglass springs and the lips of said stabilizers, shoulders interpost between said lips and said yieldable spring section to form stops for the connecting coil springs and thus position the stabilizers on said border wires.

3,287,745
ADJUSTABLE SUPPORT FOR BED SPRING
Robert B. Maddox, Cincinnati, Ohio, assignor to Robert B. Maddox Associates, Inc., Cincinnati, Ohio, a corporation of Ohio
Filed Oct. 21, 1964, Ser. No. 405,347
18 Claims. (Cl. 5—263)



1. A support for a flat spring structure mounted in a frame, said support including a platform, a resilient pad moveably disposed on said platform for support and movement thereon, means to move said platform with respect to the spring structure whereby said resilient pad is adapted to move into engagement with the bottom of the spring structure to provide support thereto, and means to control the movement of said platform to vary the force of the support transmitted to the flat spring structure from said resilient pad.

3,287,746
BACK REST FOR BEDS
Francis E. Weddle, Bargersville, Ind.
Filed Feb. 8, 1965, Ser. No. 430,946
5 Claims. (Cl. 5—327)



1. A back rest for beds comprising a rectangular frame having opposite end portions and side portions and a forward extending perimetral flange, said flange and said end and side portions being substantially perpendicular thereby forming a shallow box,

means for vertically mounting said box onto the head end of a bed,

a plurality of hooks mounted on said end portions in vertical, spaced-apart relationship adjacent said perimetral flange, said hooks being adjustable in vertical position,

a trackway comprising two elongated and parallel strips having facing edges, said trackway being secured to said side portions parallel to said end portions and extending from one of said side portions to the other of said side portions, said trackway being at a medial position intermediate said end portions,

a rectangular board having opposite ends and sides, said board being of a size to fit within said perimetral flange,

a pair of brackets mounted on said board adjacent said opposite ends and one of said sides of said board, each of said brackets having a portion which is bent away from said board adjacent said one side of said board,

a pair of pins secured respectively to said bent portions of said brackets parallel and adjacent said side of said board,

three hinge plates hingedly connected in edge-to-edge relationship, one of said hinge plates being secured to said board adjacent said one side at a medial position intermediate said opposite ends of said board, said one hinge plate being bent away from said board adjacent the connection with the intermediate hinge plate and adjacent said one side, said intermediate hinge plate being capable of overlapping said one of said hinge plates, and

a discoid slide having a perimetral groove with a bottom and two upstanding bearing surfaces, said bearing surfaces defining a rectangular groove cross-section, said slide being mounted in said trackway, said facing edges of said strips being in said groove adjacent said bottom, the third of said hinge plates being mounted on said discoid slide whereby said board is mounted on said frame and capable of vertical reciprocation and hinge action with respect to said frame and oscillation about the axis of said disc, and whereby said hooks receive said pins to secure said board in positions angular with respect to said frame.

3,287,747
MATERNITY ABDOMINAL CUSHION
Orval T. Ellsworth, Berkeley, Calif.
(10317 Cherry Tree Lane, Silver Spring, Md.)
Filed Apr. 19, 1965, Ser. No. 448,931
4 Claims. (Cl. 5—338)

4. A maternity abdominal cushion comprising,

a body formed of a resilient material and the length of said body being greater than its width,

said body extending from the breast bone at the chest of the user to the hip bones at the pelvis end of the user,

said body having a concavity therein to accommodate the abdomen,

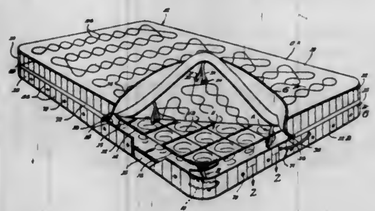
said concavity having dimensions less than the width, the length, and the depth of said body.

3,287,748
FOAM RUBBER PRODUCT AND METHOD OF MANUFACTURE
Thomas Trogdon, Waynesville, and Russell E. Fultz, Lake Junaluska, N.C., assignors to Dayco Corporation, Dayton, Ohio, a corporation of Ohio
Filed Mar. 2, 1964, Ser. No. 348,413
11 Claims. (Cl. 5—345)



1. A molded unitary foam rubber article having rectangular upper and lower surfaces and a uniform depth, said article having segments extending upwardly from the lower surface whose density is dissimilar from the density of the remaining portion of said article, said segments having a maximum width at the lower surface and decreasing in width as they extend upward.

3,287,749
MATTRESS
Eugene A. Marsico, % Denison Mattress Factory, 1001–1031 W. Owings St., Denison, Tex.
Filed July 7, 1965, Ser. No. 470,075
4 Claims. (Cl. 5—351)



1. A mattress comprising

a central mattress body, an upper mattress body and a lower mattress body,

each of said mattress bodies including a slab shaped resilient block whose thickness is at least eight percent of the total thickness of the mattress,

each block having laterally extending top and bottom surfaces and peripheral sides, said blocks being disposed with the top surface of the lower body block adjacent the bottom surface of the central body block and the bottom surface of the upper body block adjacent the top surface of the lower body block, said blocks lying freely one on top of the other and being readily partible,

quick attachable and detachable means near the peripheral sides of said blocks of said upper and lower mattress bodies for anchoring the blocks of said upper and lower bodies to the block of said central body near the peripheral sides thereof,

each of said upper and lower mattress bodies further including a partial boxing secured to the resilient block thereof adjacent the peripheral sides of the last said block, each partial boxing having a free edge, slide fastener means secured to said free edge of each partial boxing, said slide fastener means being cooperable and providing quick connectable and disconnectable means for connecting the partial boxings together,

said blocks of said upper and lower mattress bodies each comprising a transversely flexible but laterally rigid laminate including an outer ticking, a layer of padding, and an inner cover, said laminates being quilted all the way through by lines of stitching spaced less than one foot apart and drawn up tight to place the ticking and cover close together along the lines of stitching, the quilted ticking and inner cover being prestressed in tension transverse to the lines of stitching.

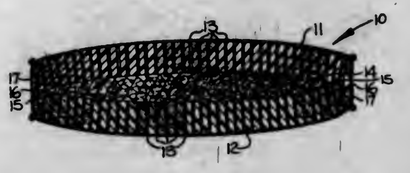
3,287,750
LUXURY CROWN CUSHION
Walter H. Jessup, Hickory, N.C., assignor to Dixie Foam Rubber, Inc., Hickory, N.C., a corporation of North Carolina
Filed Aug. 30, 1965, Ser. No. 483,705
1 Claim. (Cl. 5—355)

A luxury crown cushion for use in upholstered furniture and characterized by an initial softness upon depres

sion followed by increased firmness upon further depression, said cushion comprising:

a pair of cellular elastomeric cushion members having substantially identical width and length dimensions and each being of a predetermined thickness and initially of rectangular cross-sectional configuration, said members being superposed and adhesively joined together about the periphery of their opposed faces to define therebetween a pocket,

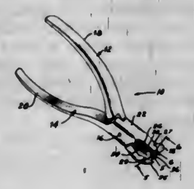
a bat of polyester fibrous textile material having width and length dimensions only slightly less than those of said cushion members and initially of uniform thickness and being positioned as an insert within said



pocket, said bat being compressed around its periphery upon insertion and functioning to urge the central portion of said members outwardly into a generally convex position and to impart characteristics of initial softness, and

a side edge band member having a predetermined width less than the combined thicknesses of said cushion members and initially of rectangular cross-sectional configuration and encircling and being adhesively secured to the periphery of said cushion members, said members together defining a rounded edge with smooth blending adjacent surfaces.

3,287,751
PLIER-TYPE CUTTING AND GRIPPING TOOL
Robert Hoffman, 17 Copper Beech Place, Merrick, N.Y.
Filed Nov. 2, 1964, Ser. No. 407,977
2 Claims. (Cl. 7—5.4)

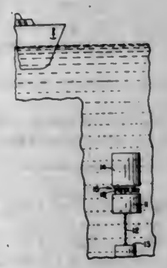


1. A pliers comprising a first relatively short movable jaw, a second relatively short movable jaw, means pivotally mounting said jaws for movement towards and away from each other, each of said jaws having complementary abutting beaks provided with flat surfaces which abut each other with the jaws in a closed position, said first jaw having a first blade at one edge thereof, said second jaw having a projection disposed outwardly of and extending perpendicularly to the flat surface of said second jaw, said projection terminating in a second blade extending above said flat surface of said second jaw and extending perpendicularly to and cooperating with said first blade to cut material disposed therebetween upon partial closure of said jaws and so that upon further closure of said jaws an end of said material so cut will be grasped between said flat surfaces, and a pair of opposed projections substantially thinner than said beaks having complementary knurled surfaces forming extensions and being coplanar with said flat surfaces of said beaks and extending outwardly from the sides of said jaws opposite to said blades and forwardly of said beaks and at an angle relative to the longitudinal axis of said pliers for facilitating twisting of the material.

3,287,752
METHOD OF REMOVING SUDS-LADEN WASH WATER FROM FABRICS
Charles R. Waldrop, Herrin, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Original application June 1, 1964, Ser. No. 371,670. Divided and this application Oct. 21, 1965, Ser. No. 510,434
3 Claims. (Cl. 8—158)

1. In a method for removing suds-laden wash water from fabrics disposed in a perforate basket rotatably mounted in a tub holding the wash water while avoiding suds lock of the basket spin rotation thereof, the steps comprising draining the wash water from the tub including some of the wash water from the fabrics in the basket; applying a rotational drive to the basket to accelerate the latter thereby extracting the remaining wash water from the fabrics in the basket while continuing the draining of the extracted wash water from the tub; uncoupling said rotational drive upon said basket accelerating to a predetermined speed to thereby decelerate the basket; and directing rinse water into the tub and the basket during acceleration and subsequent deceleration of the basket to both remove the suds from the fabric and also to prevent suds lock.

3,287,753
OCEANOGRAPHIC APPARATUS
Richard T. Race, Chicago, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Aug. 25, 1964, Ser. No. 391,871
6 Claims. (Cl. 9—8)



1. An underwater buoy including in combination, a first section adapted to be moored beneath the surface of the water, a second section of buoyant construction, a release mechanism securing said second section to said first section, said release mechanism comprising a latch member on one of said sections, bracket means on the other of said sections and a latch bolt being supported by said bracket means, spring means for biasing said latch bolt into open position in said bracket means, displaceable trigger means for holding said latch bolt in position to capture said latch member against the bias of said spring means, a solenoid energizable to displace said trigger means to free said latch bolt so that said spring means moves said latch bolt to open position to thereby release said latch member, the buoy further including a receiver responsive to signals of predetermined frequency and having an output coupled to said solenoid for actuating the same to permit said second section to rise to the surface of the water, said receiver including time delay means connected to said output thereof for preventing actuation of said solenoid in response to random signals having components of said predetermined frequency.

3,287,754
COLLAPSIBLE SURFBOARD
Thomas D. Price, 234 Valencia, San Clemente, Calif., and Karl D. Pope, 3210 Colorado Place, Costa Mesa, Calif.
Filed Oct. 9, 1964, Ser. No. 402,856
9 Claims. (Cl. 9—310)



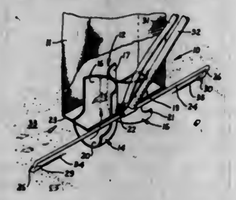
9. A surfboard adapted to be arranged in a collapsed and disassembled condition for compact storage and ease of handling including

first and second molded plastic foam sections of approximately equivalent length, adapted to be connected in an assembled condition in end abutment and longitudinal alignment with each other, and

means for detachably securing said sections including at least two laterally spaced tension clamps located in the upper surface and at least two laterally spaced tension clamps located in the bottom surface of said sections at their respective abutting ends, said clamps being disposed in recesses formed in the surface of said plastic foam and

means for distributing the forces applied to said tension clamps for preventing the application of excessive stress upon the plastic foam material immediately adjacent thereto so that substantial tension can be applied near the upper and lower surfaces of the board for opposing the loading forces produced by the surfing activity which tend to separate said board sections while locating the entire clamping structure flush or beneath the board surface, thereby obviating any interference with the user of the board and maintaining full maneuverability in the water with respect to paddling and surfing.

3,287,755
DEVICE FOR CLEANING SWIMMING POOLS
Andrew L. Pansini, 180 Los Cerros Drive, Greenbrae, San Rafael, Calif.
Filed Feb. 15, 1965, Ser. No. 432,479
11 Claims. (Cl. 15—1.7)



1. An apparatus for cleaning foreign material from submerged swimming pool surfaces, said apparatus being adapted for use in combination with a receptacle having an open inlet portion and a fluid discharge portion, said apparatus comprising:

(a) a receiver adapted to be secured to the open inlet portion of a receptacle used in combination therewith;

(b) guide means secured to said receiver, said guide means being adapted to guide fluid directed thereinto through the open inlet portion of a receptacle secured to said receiver;

(c) a water conveying conduit having a portion disposed in laterally spaced relationship with respect to said guide means;

(d) a nozzle in said portion of the conduit positioned to direct a jet of water from said portion into said guide means;

(e) means for orientating said nozzle relative to the surface of a pool being cleaned in a position where a jet of water issuing therefrom passes in close proximity and substantially parallel to said surface; and wherein the apparatus is characterized in that, upon thus orientating said nozzle:

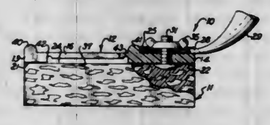
(1) the area between said nozzle and guide means is unenclosed beneath said jet to enable said jet to wash over said surface and entrain foreign material therefrom; and,

(2) the area between said nozzle and guide means is unenclosed laterally of said jet sufficiently to permit the free flow of water contained in the pool to and from said area; and further comprising,

(f) a longitudinally extensive handle secured to said receiver in a plane substantially normal to the path defined by a jet of water issuing from said nozzle to provide for traversing of said receiver over the surface of a pool being cleaned in a direction normal to said path, and;

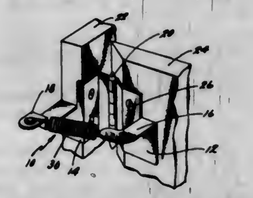
(g) means to selectively vary the degree to which the area between said nozzle and guide means is laterally unenclosed.

3,287,756
FLEXIBLE SPONGE MOP HEAD
Frank A. Gesell, 708 South Road, Harbor Estates, Boynton Beach, Fla.
Filed Oct. 24, 1965, Ser. No. 504,383
3 Claims. (Cl. 15—119)



1. A mop head comprising an elongated block of pliable sponge material having a lower washing surface and an upper surface, a one-piece elongated backing unit having a relatively thin and flexible elongated central portion, thicker rigid elongated leading and trailing portions integral with and parallel to said central portion and adjacent said upper surface of said pliable sponge material, said leading and trailing portions being thickened in the direction of the sponge, means adhesively securing said thickened rigid leading and trailing portions to the upper surface of said pliable sponge material, said central portion being free of the sponge, an elongated recess between said pliable sponge material and said flexible central portion of said backing unit, and an elongated longitudinal gripping ridge on the upper surface of each of said leading and trailing portions of said backing unit extending the length thereof and a pair of elongated recesses in the undersurface of the backing unit defining said flexible central portion whereby the unit breaks at said recesses.

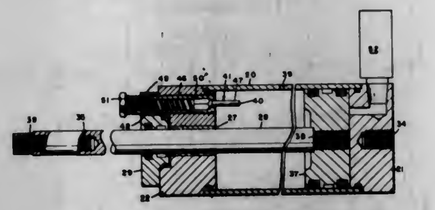
3,287,757
DOOR ACTUATING MECHANISM
Andrew J. Van Noord, Grand Rapids, Mich., assignor to Dolo Manufacturing Corporation, Grand Rapids, Mich., a corporation of Michigan
Filed July 22, 1964, Ser. No. 385,553
10 Claims. (Cl. 16—72)



1. In a double-acting door operating structure for an enclosure including a door hinged to a supporting frame of the enclosure about hinges having a vertical hinge axis for movement from a closed position over an opening to the inside of said enclosure to an open position permitting access to the inside of said enclosure through said opening and vice versa, said supporting frame having side and top edges surrounding and facing said opening, said door covering said opening and being hinged to swing away from the inside of said enclosure, said door when closed having its inside face facing the inside of said enclosure and its outside face facing outwardly of said enclosure, the improvement comprising: first and second mounting elements attachable respectively to the door and frame; said first mounting element including a mounting plate mounted on the said inside face of said door and an arm extending toward and into said opening when the door is closed; said second mounting element including a mounting plate secured to one of said edges and having a support element extending into said opening, means on said arm and means on said support element for pivotally mounting opposite ends of a spring element, both of said means being located on a horizontal plane; a spring element pivotally connected at each end to respective ones of said means; said spring element being movable with hinged movement of said door from open open to closed position from a first position offset on one side of a horizontal line between said hinge axis and said means of said support element, across said line, to a second position offset on the other side of said horizontal line; the ends of said spring element being spaced further apart in said open and closed positions than in the cross-over position on said axis; and said spring element being resiliently deformable with movement between said positions.

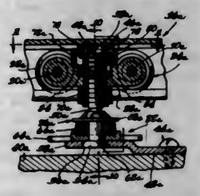
3,287,758
PNEUMATIC DOOR-CONTROL DEVICE
Ben V. Domas, 1450 Buell Road, Rte. 2, Lake Orion, Mich., and Glenn B. Morse, Rte. 3, Grand Rapids, Mich.
Filed May 15, 1964, Ser. No. 367,835
1 Claim. (Cl. 16—84)

A pneumatic door-control device, comprising:
a cylinder;
a first cylinder head member normally secured to one end of said cylinder, said first head member having a bearing and a bore disposed on an axis parallel to that of said cylinder;
a second cylinder head member normally secured to the opposite end of said cylinder;
a piston slidably mounted in said cylinder;
a piston rod slidably received in said bearing and secured to said piston; and
a dump valve mounted in one of said head members, said valve having an actuator normally extending into said cylinder for engagement with said piston at a position near the end of the stroke thereof, and operative to open an exhaust passage from said cylinder on actuation by said piston, said valve including a tubular housing mounted in threaded engagement with said one cylinder head member for axial adjustment with respect to said cylinder to determine the position of said piston where contact is made with said actuator, and



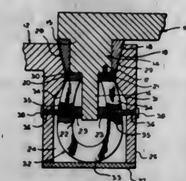
said valve also including a member slidably mounted in said tubular housing, and having a valve surface engageable with a valve seat in said tubular housing, and further includes biasing means urging said valve to closed position, said biasing means being operative to maintain closure of said valve against normal cylinder pressures, but yieldable against normal piston forces.

3,287,759
CONVERTIBLE SUSPENSION ARRANGEMENT FOR SLIDING DOORS
Robert E. Foltz, Sterling, Ill., assignor to Lawrence Brothers, Inc., Sterling, Ill., a corporation of Illinois
Filed Sept. 21, 1964, Ser. No. 397,816
6 Claims. (Cl. 16—87)



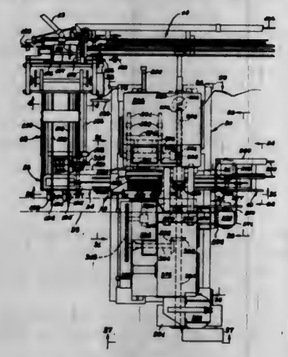
1. A suspension arrangement for supporting a sliding door comprising: a carriage adapted for transportable relocation in a horizontally disposed guide track; door hanger means including an upright member slidably and rotatably engaging said carriage; first and second relatively rotatable and selectively engageable abutment means mounted respectively on said carriage and on said upright member, and resilient means acting between the carriage and the door hanger means in one relative position of rotation of said upright member disengaging said abutment means to cushioningly suspend the door hanger means from said carriage through said resilient means, said abutment means being relatively rotatable to another position of rotation interengaging said abutment means to lock said door hanger means with respect to said carriage for rigidly suspending said door hanger means from said carriage independently of said resilient means, one of said selectively engageable abutment means having a first region of predetermined major transverse dimension and a second region of lesser, minor transverse dimension, the other of said selectively engageable abutment means having opposite portions spaced apart to admit said second region therebetween in one position of relative rotation and to confront said first region in a second position of relative rotation.

3,287,760
MAGNETIC HINGE
Robert E. Moore, Winnetka, Ill.
Filed Mar. 11, 1964, Ser. No. 350,988
8 Claims. (Cl. 16—171)



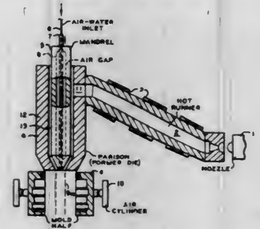
8. A hinge comprising a pair of hinge portions rotatable with respect to each other on a common axis, the first of said hingle portions having a cavity therein lying on said axis of rotation, a projecting member of magnetically susceptible material on the other of said hinge portions adapted to enter said cavity, and a magnet held in said cavity for effecting alignment of said rotatable hinge portions and to provide connected relative rotation of said hinge portions and a releasable connection therebetween, said hinge portion having said cavity therein provided with adjustable centering means for positioning said projecting member in predetermined angular relation within said cavity.

3,287,761
SKINLESS SAUSAGE MAKING MACHINE
Alvin Borsuk and William R. Kohrs, Madison, Wis., and Richard J. Millenaar, Charlottesville, Va., and William J. Higgins, Albuquerque, N. Mex., assignors to Oscar Mayer & Co., Inc., Chicago, Ill., a corporation of Illinois
Continuation of application Ser. No. 311,803, Sept. 26, 1963. This application June 17, 1965, Ser. No. 469,044
23 Claims. (Cl. 17—32)



5. An apparatus for compacting and shaping successive groups of sausage forming product portions which are in the form of elongate cylindrical sections, said apparatus comprising a turret supported on a horizontal axis, mold members mounted in peripherally spaced relation on said turret, said mold members each having a plurality of cylindrical product receiving cavities arranged in row formation and in a plane which is substantially normal to a diametrical plane extending through the axis of rotation of the turret, means for intermittently rotating the turret to bring the mold members successively to a loading station, a compacting and shaping station, and a discharge station, means at the loading station for simultaneously feeding a group of previously formed product portions into the cavities in a mold member, reciprocably mounted punch means along opposite sides of the turret at the compacting station which is operated to engage the product portions at opposite ends in each of the mold cavities so as to compact and shape the same, and punch means mounted for reciprocating movement at one side of the discharge station which is disposed on the side of the turret opposite the loading station for ejecting the compacted and shaped product out of the mold cavities.

3,287,762
BLOW MOLDING APPARATUS
John N. Scott, Jr., and Donald L. Peters, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Nov. 7, 1963, Ser. No. 322,142
6 Claims. (Cl. 18—5)

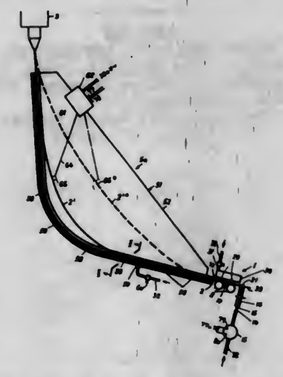


1. Apparatus for blow molding a thermoplastic object comprising in combination sectional mold means which form, when closed, a cavity for forming a molded thermoplastic object, die means having a mandrel means disposed therein in communication at a first end thereof with a supply of molten thermoplastic material so as to extrude from the second end thereof an open-ended tube of thermoplastic material into the space between the open mold sections, said mandrel and die means comprising four concentric elongated cylinders disposed within themselves so as to form a first, second, third and fourth annulus, said first annulus being operatively connected to said supply of thermoplastic material at a first end thereof and adapted at the second end thereof to form said tube of thermoplastic material, said fourth annulus being in communication with said cavity at a first end thereof and so extended at a second end thereof to form a first conduit operatively connected to a source of a gaseous pressure medium, said second annulus being closed at both ends thereof so as to form a closed annulus are between said first and third annulus, said third annulus being in communication with said cavity at a first end thereof so as to form a conduit for the removal of said gaseous medium, said mold halves being provided with means, when closed, to pinch off said tube at a point remote from said die and mandrel means and to close around said mandrel means at a point adjacent thereof.

3,287,763
FEED AND CONTROL DEVICE FOR LINKING AN EXTRUDER TO A PROCESSING MACHINE
Rudolf Diener, Zurich, Switzerland, assignor to Eldima A.G., Zurich, Switzerland
Filed Nov. 10, 1964, Ser. No. 410,218
Claims priority, application Switzerland, Apr. 2, 1964, 4,188/64
6 Claims. (Cl. 18—12)

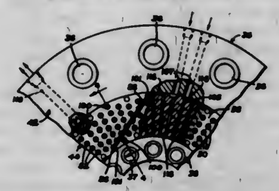
1. A device of the class described, comprising: a director member having a straight input portion for continuously receiving an extrusion from extrusion means and a straight output portion for delivering said extrusion to processing means, said input and output portions being interconnected by a curved portion to define a smooth laterally open passage for said extrusion, said

input portion being aligned with said extrusion as it enters said director member and said output portion being aligned with the portion of said processing means to which said extrusion is delivered, said extrusion being gravitationally urged to sag into contact with said curved portion, the maximum sag of said extrusion intermediate said input and output portions being limited by said curved portion; sensing means responsive to the amount



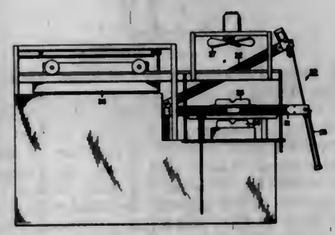
of said sag; control means responsive to said sensing means and connected to control the difference between the rates of reception and delivery of said extrusion into and from said director member for maintaining the average effective magnitude of said sag at a predetermined value; and means included in said director member for directing a fluid against said extrusion to prevent contact between said extrusion and said passage.

3,287,764
PLASTIC PELLETIZERS
James L. Swickard, Jr., and Harvey H. Gove, both of Hamilton, Ohio, assignors to The Black Clawson Company, Hamilton, Ohio, a corporation of Ohio
Filed June 1, 1965, Ser. No. 460,116
8 Claims. (Cl. 18—12)



1. An improved die plate for a plastic pelletizer, comprising an annular intermediate section having means defining a plurality of axially extending orifices through which the plastic material is extruded, said intermediate section further including a series of generally radially extending passageways spaced between said orifices for conducting heating fluid through said intermediate section in close proximity to said orifices, an inner section spaced within said intermediate section and connected thereto for closing the inner ends of said radially extending passageways, an annular outer section surrounding said intermediate section and connected thereto for closing the outer ends of said radially extending passageways, said outer section having means defining a series of inlet and outlet passages for receiving and discharging heating fluid, and means for connecting said ends of said passageways extending radially through said intermediate section to said inlet and outlet passages for providing a generally uniform flow of heating fluid through said intermediate section.

3,287,765
ADJUSTABLE FRAMEWORK FOR MOLDING
Jose R. Puente, Rochester, N.Y., assignor to Leaming Industries, Inc., Canandaigua, N.Y., a corporation of New York
Filed Feb. 5, 1965, Ser. No. 430,638
16 Claims. (Cl. 18—19)

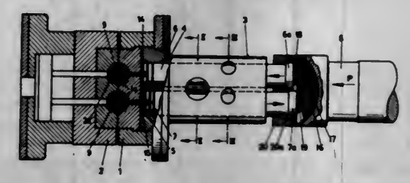


1. In an adjustable framework for holding a sheet of material for molding and including an upper frame and a lower frame that are separable and that can be brought into a closed position in which said upper frame closely overlies said lower frame, the improvement comprising: support plate means arranged on one of said frames; a plurality of movable clamping fingers arranged on the other of said frames; spring means associated with each of said respective clamping fingers for biasing each of said fingers towards said support plate means whereby said clamping fingers are adapted to hold said sheet against said support plate means when said frames are in said closed position; and clamp means for forcing said frames into close mutual engagement and including a slidable latch bar arranged on one of said frames and latch means arranged on the other of said frames, said latch bar being slidable into latching engagement with said latch means when said frames are in said closed position, said clamp means also including lever means pivotally mounted on said other of said frames for engaging said latch bar in said latched position, and means arranged on one of said frames for urging said lever means into engagement with said latch bar so as to force said frames into said mutual engagement.

3,287,766
TWO PLUNGER INJECTION MOLDING MACHINE
Fred Drabert, Minden, Westphalia, and Gerhard Zwicker, Dutzen, Minden, Westphalia, Germany, assignors to Drabert Sohne, Minden, Westphalia, Germany, a German partnership
Filed Sept. 16, 1964, Ser. No. 396,995
Claims priority, application Germany, Oct. 19, 1963, D 42,759
3 Claims. (Cl. 18—30)

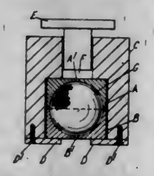
1. An injection-moulding press tool for the injection moulding of articles of hardenable material, comprising two parts of a mould, each part being formed with a mould cavity, cylinder means secured to one of the said mould parts and having at least two bores, an injection piston means slidable in each bore, a piston rod for actuating the piston means, and a device between the said piston rod and the piston means by which random differences in the pressures which arise in the bores of the cylinder in the introduced mass of material are equalised before the cessation of the injection process in such a manner that the specific injection pressure in the interconnected mould cavities is equalised, the said device comprising a part-spherical member mounted for movement

in a complementary recess in the end of the piston rod and an additional part-spherical member disposed at the end of each piston for sliding engagement in complementary recesses in the said part-spherical member, whereby, in operation, if one of the bores of the double cylinder is supplied with an excess quantity of moulding material for the mould cavity and the other bore is supplied with a relatively smaller quantity of moulding material, the



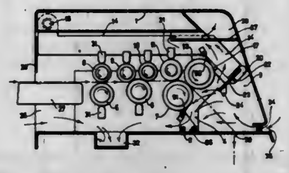
piston of the bore with an excess quantity which first encounters resistance to movement on impact with moulding material, transmits a reaction force to the corresponding additional part-spherical member which in turn causes sliding displacement of the first-mentioned part-spherical member and thereby substantially equalises the forces acting on the two pistons and thus also the pressure in the two mould cavities.

3,287,767
INJECTION MOULD
Peter Ford, John William Watson, and Roger James Ottewell, all of Erdington, Birmingham, England, assignors to Dunlop Rubber Company Limited, Erdington, England, a British company
Filed Feb. 4, 1965, Ser. No. 430,292
Claims priority, application Great Britain, May 23, 1960, 18,129/60; May 17, 1961, 18,129/60
5 Claims. (Cl. 18—30)



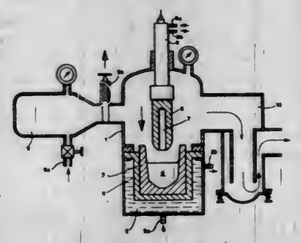
1. An injection mould for use in a process of covering golf ball cores and having a plurality of mating die plates held in assembly, the inner surfaces of which define a spheroid, from 3 to 12 inwardly protruding wedge-shaped support members symmetrically disposed on said inner surfaces to permit a golf ball core to be centrally supported on said support members at a predetermined distance from said inner surfaces, thus defining a moulding zone of unvarying thickness, the end faces of said wedges being shaped to allow ready withdrawal of the coated core from the mould, each wedge having planar inner and outer end faces, the inner end face of each wedge disposed so as to be in a direction between parallel to the direction of removal of the coated core and a direction diverging outwardly from said spherical mould surface, the outer end face of each wedge disposed so as to be in a direction between parallel to the direction of removal of the coated core and a direction converging outwardly from said spherical mould surface, means defining an injection orifice and means defining a spew hole in said die plates, and means to force moulding material through said injection orifice into said moulding zone.

3,287,768
HIGH SPEED COTTON DRAW FRAME
Albertus Rakhorst, Nijverdal, Netherlands, assignor to N.V. Stoomspinnerij "Twenthe," Stationsplein, Almelo, Netherlands, a Dutch corporation
Filed Dec. 17, 1965, Ser. No. 514,494
Claims priority, application Netherlands, Jan. 4, 1961, 259,697
10 Claims. (Cl. 19—200)



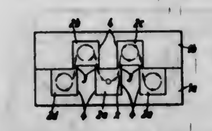
1. High speed cotton draw frame comprising drafting means including a series of groups of interengaging upper and lower draft rolls and a pair of interengaging smooth metal surfaced crush rolls so as to constitute successive nips, means for rotating the rolls for forwarding a plurality of carded cotton slivers through said nips from the entrance end to the delivery end of the drafting apparatus, successive groups of upper and lower draft rolls running at increased circumferential speeds relative to the preceding group of rolls so as to attenuate the slivers and form them into a web, the pair of crush rolls being situated at the delivery end of the drafting means and receiving the web, pressure means for causing pressure between the rolls of each group of draft rolls and between the pair of crush rolls, the pressure between the pair of crush rolls being selected to crush and disintegrate seeds, leaves and other impurities entrained in the web passing through the nip of the crush rolls, the lower crush roll being in surface contact with the last draft roll in the sequence of groups of draft rolls and pressure means causing pressure between the lower crush roll and said last draft roll.

3,287,769
VACUUM MELTING AND CASTING APPARATUS
Ernst-Günter Hess, Berlin-Lankwitz, Germany, and Marcel Louis Portal, Brebbia, Varese, Italy, assignors to European Atomic Energy Community (EURATOM), Brussels, Belgium
Filed Dec. 30, 1963, Ser. No. 334,355
Claims priority, application Germany, Feb. 11, 1963, E 24,318
5 Claims. (Cl. 22—57)



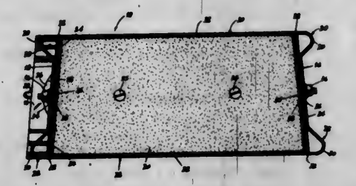
1. Apparatus for melting and casting very high melting point and/or strongly reactive materials in the same furnace, comprising a vacuum arc furnace with a housing and a fixed water-cooled melting crucible, a longitudinally displaceable arc electrode, a chill-mould carried by said arc-electrode, and a pressure container connected to said furnace housing.

3,287,770
MULTIPLE-BILLET MOLD
Hans Schrewe, Duisburg, Germany, assignor to Mannesmann Aktiengesellschaft, Dusseldorf, Germany, a corporation of Germany
Filed Feb. 25, 1964, Ser. No. 347,161
Claims priority, application Germany, Feb. 28, 1963, M 55,938
5 Claims. (Cl. 22—57.2)



1. A multiple-billet mold for the continuous casting of metal, comprising a mold body defining a plurality of hollow spaces extending throughout the height of the mold body and being open at the top and bottom and forming passages for the continuously cast metal and channels connecting for interior intercommunication each hollow space with at least one other hollow space, said channels extending throughout at least a fraction of the height of the mold, whereby there will be continuously cast a single casting each channel being disposed eccentrically relative to the hollow space with which it communicates.

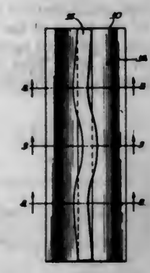
3,287,771
SLIP BOX WITH LINER
Robert W. Eribacher, 920 N. Fountain, Cape Girardeau, Mo.
Filed Apr. 23, 1964, Ser. No. 362,133
2 Claims. (Cl. 22—112)



1. A slip box having a plurality of separate sides forming a closure, said sides mating with one another in substantially endwise relation to form a plurality of corners, each of said sides having a grooved outwardly projecting reinforcing rib member extending along the top and bottom of the side serving as a reinforcing means, and each of said sides having a flat inside surface between the top and bottom ribs, a flat sheet-like insulating member removably attached to the interior of said sides and a protective member for top and bottom edges of said insulating member comprising a lip element extending inwardly from each of said ribs past the edge of the insulating member, each of said sides and ribs and lip elements being formed of an integral piece of material.

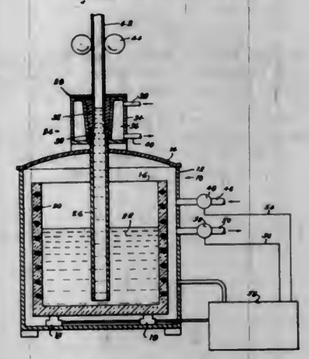
3,287,772
T-SHAPED EXTERNAL CHILL
Aloysius P. Steinhauser, Granite City, Ill., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey
Filed May 8, 1964, Ser. No. 365,999
5 Claims. (Cl. 22—174)

1. An external chill which comprises an elongated metallic body of substantially uniform thickness presenting a convex outer face which is curved transversely with respect to the length of said body and an elongated metallic fin extending in a substantially radial direction from the center of the face of said body opposite said outer



face, said fin having a substantially straight longitudinal edge portion adjacent to said body and a sinuous longitudinal edge portion remote from said body.

3,287,773
METHOD OF LEVEL CONTROL FOR CONTINUOUS CASTING
James Woodburn, Jr., Wheaton, Ill., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey
Filed Dec. 3, 1963, Ser. No. 327,642
4 Claims. (Cl. 22—200.1)



3. The method of continuous casting in conjunction with a sealed tank, a ladle, a mold, and means communicating between the ladle and the mold, comprising the steps, developing air pressure in the tank, and thereby forcing molten metal from the ladle into the mold, freezing the molten metal in the mold, continuously withdrawing the article so frozen and cast from the mold, and increasing the air pressure in the tank in proportion to the rate of removing the cast article.

3,287,774
SKI BOOT FASTENING COMPRISING STEP ADJUSTED TOGGLE MEANS
Kenneth W. Binding, Winchester, and John D. Mahoney, Marshfield, Mass., assignors to Market Forge Company, Everett, Mass., a corporation of Massachusetts
Filed Nov. 16, 1964, Ser. No. 411,495
8 Claims. (Cl. 24—70)

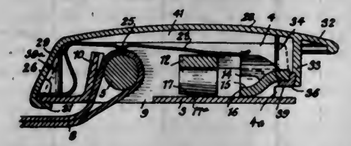
1. A toggle assembly for converting a ski boot provided with lacing hooks to toggle-closure fastenings, comprising spring clips adapted to be applied to the heads of pairs of hooks at opposite sides of the instep, each clip having opposed limbs spring-biased toward each other operative to grip the top and bottom sides of the

heads of the hooks, and angularly disposed ends adapted to engage the outer and inner sides of the shanks of the hooks, spaced pulls integral with the limbs of one of the clips, a flexible strap secured at one end between said pulls, said strap being adapted to extend across the instep toward the clip at the opposite side, a loop secured to



the distal end of the strap, a bearing on said other clip and a toggle lever pivotally supported by a pin extending through it and the bearing on said clip, said lever being engageable with the loop to pull the strap transversely of the instep and secure the strap in tension by closing of the toggle lever, said loop and toggle lever being shaped to conform closely to the contour of the shoe.

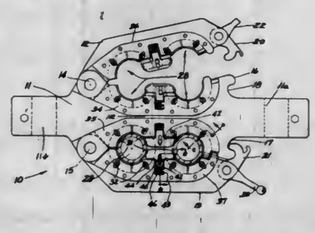
3,287,775
BUCKLES FOR SAFETY BELTS AND THE LIKE
William J. Eubank, Livonia, Mich., assignor to American Safety Equipment Corporation, New York, N.Y.
Filed Oct. 29, 1964, Ser. No. 407,431
6 Claims. (Cl. 24—77)



1. A buckle for safety belts adapted to be attached to an end of a safety belt section comprising, a body member, a latching plate rockably secured to the body member, said latching plate having a downwardly-bulged central portion and provided with an elongated slot at one edge of said central portion, the slot defining a lip along one edge disposed out of the plane of the body of the latching plate, spring means secured within the body member and operative on the latching plate to cause said latching plate to be resiliently held against the body member, a connection plate attached to an end of another safety belt section, said connection plate having a slot opening into which the lip enters under the bias of the spring when the connection plate is slid into the body for positioning between said lip and body member, said slot opening in the connection plate having an edge engageable with said engaging lip to oppose withdrawal of the connection plate from the body, and a cover member having a limited raising movement with respect to the body member and connected to the body member, complementary engaging means between the cover member and the latching plate so that the latching plate will be disengaged from the connection plate when the cover member is manually raised, said engaging lip having a curved edge and said slot opening edge in the connection plate being correspondingly curved for swivellable engagement therebetween.

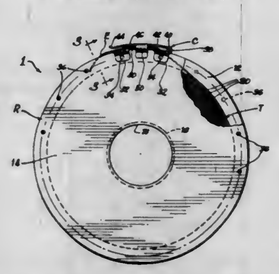
3,287,776
MULTIPLE STRING MANUAL OPERATED ELEVATOR
Cicero C. Brown, 8490 Katy Road, Houston, Tex.
Filed Jan. 13, 1964, Ser. No. 337,442
14 Claims. (Cl. 24—81)

11. An elevator device for handling at least three well pipes, including
a body having a central portion,
a first jaw member disposed on one side of the body,
means pivotally securing one end of said first jaw member to the body at a point offset from said central portion to permit swinging of said first jaw member toward and away from said body,
a second jaw member disposed on that side of the body opposite the side on which said first jaw member is located,
means pivotally securing one end of the second jaw member to the body at a point offset from said central portion to permit swinging of said second jaw member toward and away from said body,
means for releasably latching the free end of said first jaw member to the body to secure said first jaw member in position adjacent said body,



means for releasably latching the free end of said second jaw member to the body to secure said second jaw member in position adjacent said body,
said body having at least one recess in each side adjacent each jaw member when the jaw member is in latched position,
each jaw member having a complementary recess coacting with said recess in the body to form a pipe receiving opening between the jaw member and said body, and
pipe supporting means mounted in each pipe receiving opening for supporting a pipe extending therethrough.

3,287,777
REEL CLIP ASSEMBLY
James N. Cranwill, 2331 S. Whittier St., Springfield, Ill.
Filed July 14, 1964, Ser. No. 382,624
2 Claims. (Cl. 24—81)



1. Means for retaining a plurality of courses of inteligence bearing tape in a tightly wound position within a reel having spaced side walls comprising a reel clip having hingedly connected substantially parallel cover and main plates, a resilient block mounted on one of said cover and main plates and lying therebetween, means on said cover plate for releasably clamping said cover plate to said main plate and for urging said resilient block against the other of said cover and main plates, there being a tape receiving slot defined by said reel clip through which the tape end may be threaded to position it between said main plate and said cover plate, and at least

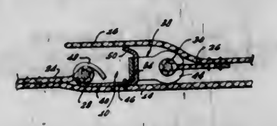
one pair of opposed ear means integral with said main plate and spaced from each other a distance substantially equal to the distance between the outer surfaces of said side walls for releasably clamping the clip device to the side walls of said reel.

3,287,778
COUPLING FOR STEERING CABLE
Joseph N. Cannizzaro, 321 2nd Ave., Brentwood, Long Island, N.Y.
Filed May 10, 1965, Ser. No. 454,492
4 Claims. (Cl. 24—123)



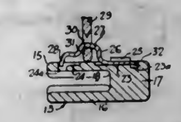
1. Means for coupling a steering cable of the type having a metal wire with a plastic covering comprising,
a sleeve of braided wire,
a pair of ferrules, one affixed to each end of said sleeve,
a plurality of barbs on the interior surface of said ferrules,
said barbs extending inwardly and toward the center of said sleeve,
whereby said barbed sleeve may be slipped onto the ends of the cable desired to be coupled and pulled back to tighten the connection.

3,287,779
TAPE CLOSER FOR SLIDE FASTENERS
Monte Sinderman, 1553 Glendon Ave., Los Angeles, Calif.
Filed Apr. 6, 1965, Ser. No. 445,925
4 Claims. (Cl. 24—205.11)



1. In a slide fastener having opposed teeth racks and a slide received by said teeth racks for moving the racks into interlocking relationship, each of said teeth racks having a flexible bead portion and a plurality of teeth fastened to said bead portion in spaced relationship, the improvement of the combination of a lock mechanism for locking said teeth racks together adjacent the free ends thereof and for holding an overflap, normally overlying said teeth racks, in a substantially flat plane which comprises:
a hook member having an outer hook portion, an inner portion fastened to the flexible bead of one of said teeth racks adjacent the free end thereof, and a generally flat connecting portion between said inner and outer portions;
fastening means on said flat connecting portion of said hook member for holding an overflap overlying said hook member against said connecting portion;
and an eye member positioned opposite said hook member and fastened to the other of said flexible beads, said eye member having an opening for receiving said hook member thereby holding said flexible beads in locking side-by-side relationship.

3,287,780
AUTOMATIC LOCKING SLIDER FOR SLIDE FASTENER
Henry A. Cooperberg, St. Laurent, Montreal, Quebec, Canada, assignor to Star Fasteners of Canada Ltd., Montreal, Quebec, Canada
Filed Mar. 15, 1965, Ser. No. 439,579
3 Claims. (Cl. 24—205.14)

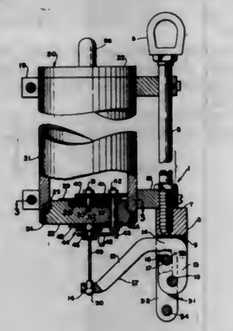


1. A locking slider for slide fasteners including a slider body comprising outer and inner body members positioned in spaced relation and connected at one end by a neck portion to provide a substantially Y-shaped channel therebetween, a first rectangular recess in said outer body member over the centre channel of said Y-shaped channel, a transverse slot extending from said first recess through said outer body member, a second rectangular recess in said outer body member over said neck portion, said first and second recesses being substantially in axial alignment, ear means extending outwardly from said outer body member on each longitudinal side of said second recess, an unperforated longitudinal locking member of flat spring strip, said locking member having a substantially U-shaped portion extending outwardly therefrom and intermediate the length thereof, the end portion of said locking member on one side of said U-shaped portion being located in said second recess and secured therein by deformation of said ear means, the other end portion of said locking member being movably positioned in said first recess and forming locking prong means which extends through said transverse slot and into said centre channel, a pull tab having a slot adjacent one end thereof, the portion of said pull tab between said slot and said one end thereof being positioned within said U-shaped portion of said locking member, the distance between said pull tab slot and said one end of said pull tab being greater than the perpendicular distance between the outer member of said U-shaped portion and said outer body member, such that when said pull tab is positioned to lie adjacent said slider body said locking prong means will extend into said centre channel and when said pull tab is positioned perpendicular to said slider body said locking prong means will be withdrawn from said centre channel.

3,287,781
AUTOMATICALLY RELEASED COUPLINGS
George R. Perez and Juan A. Perez, Alexandria, Va., assignors to American Machine & Foundry Company, a corporation of New Jersey
Filed Sept. 11, 1964, Ser. No. 395,659
12 Claims. (Cl. 24—230)

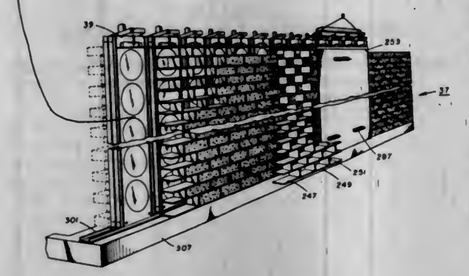
1. In a releasable connector of the type described, the combination of a connector including a relatively fixed element and a relatively movable element, said movable element being pivotable between a locking position and a releasing position; support means rigidly secured to said fixed element, said movable element extending adjacent said support means when said movable element is in said locking position; coupling means comprising at least a stationary element secured to said support means and a second element adapted to be selectively locked to and released from said stationary element, an element of said coupling means being rotatable relative to said stationary element to effect release of said second element; an operating member movably mounted on said support means; means operatively connected to said operating member

and said rotatable element of said coupling means to effect rotation of said rotatable element to release said second element of said coupling means when said operating member is actuated in a given direction, power means operatively arranged relative to said operating member to



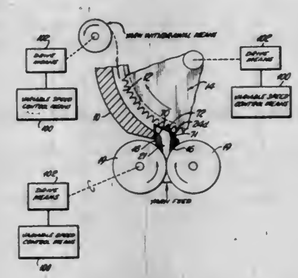
actuate the same in said given direction; and means interconnecting said second element of said coupling means and said pivotable element of said connector to prevent said pivotable element from pivoting to said releasing position so long as said second element of said coupling means is locked to said stationary element.

3,287,782
APPARATUS TO CONSTRUCT MASONRIES
Harry W. McClarney, 5621 Westlawn, Waco, Tex.
Original application Sept. 5, 1963, Ser. No. 306,766, now Patent No. 3,210,445, dated Oct. 5, 1965. Divided and this application Oct. 29, 1964, Ser. No. 407,491
14 Claims. (Cl. 25—1)



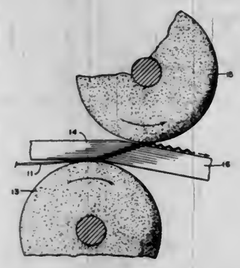
1. Apparatus for constructing a masonry panel section made up of a plurality of units of masonry and a cementatory bonding substance capable of uniting said units into a common mass, said apparatus comprising:
(a) at least one magnetizable element affixed to a vertical surface portion of each such unit of masonry;
(b) a support structure;
(c) removable unit positioner means for disposing said units initially in predetermined spaced alignment, as in a panel, and adjacent said support structure; and
(d) magnetic means incorporated with said support structure for attracting said magnetizable elements of said plurality of units of masonry and maintaining said units in said predetermined spaced alignment after removal of said unit positioner means and during the pouring and setting of said cementatory bonding substance.

3,287,783
YARN CRIMPING APPARATUS
Denis Albert Edward Mattingly, London, England, assignor to The Klinger Manufacturing Company Limited, London, England
Filed June 10, 1964, Ser. No. 374,045
Claims priority, application Great Britain, June 13, 1963, 23,668/63
9 Claims. (Cl. 28—1)



1. Apparatus for crimping yarn comprising feed means having a bight on the discharge side thereof, confining means of short length having stationary wall portions adjacent said bight, enclosure means having an inlet and an outlet, said inlet communicating with the discharge end of said confining means, said enclosure means extending transversely away from said bight, and driven conveyor means having projections extending into said enclosure means, whereby the mass of crimped yarn formed in said confining means is positively engaged at the discharge end of said confining means and conveyed through said enclosure means to said outlet, and means for periodically varying the speed of said conveyor means to produce a yarn of non-uniform crimp.

3,287,784
CRIMPING METHOD AND APPARATUS
Robert J. Loftin, Spartanburg, S.C., and Richard S. Roberts, Stamford, Conn., assignors to Celanese Corporation of America, New York, N.Y., a corporation of Delaware
Filed Dec. 29, 1965, Ser. No. 517,347
13 Claims. (Cl. 28—1)



11. Apparatus for crimping fibrous material comprising:
(a) pair of spaced apart plates having first surfaces opposed to one another and being substantially parallel, said plate surfaces defining a confined zone having a first end and a second end and having a width substantially greater than its height; and

(b) a pair of spaced-apart right cylindrical rolls operating at first and second speeds having their axes parallel to one another and cooperating with said first and second ends of said zone to force said fibrous material into said zone and to retard its exit from said zone whereby said fibrous material is caused to form crimps therein, said rolls being arranged with respect to said zone so that an imaginary plane passing through the roll centers forms an angle of between about 10 degrees and 60 degrees with an imaginary plane parallel to the said plate surfaces and passing through the center of said zone.

3,287,785

APPARATUS AND METHOD FOR MANUFACTURE OF POMPON

Anthony J. Ciroli, Medford, Mass., assignor to Yankee Homecraft Corp., East Natick, Mass., a corporation of Massachusetts

Filed Sept. 8, 1964, Ser. No. 394,706
11 Claims. (Cl. 28—2)



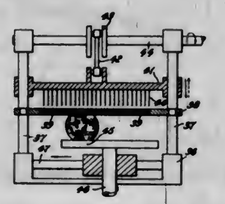
3. A one-piece tool for making pompons comprising an elongate body portion having opposite side surfaces, a convex top surface curved lengthwise thereof, and a bottom surface; first means at one end of said body portion for anchoring a length of yarn; second means located at the other end of said body portion providing a hook around which said length of yarn can be hitched; a plurality of grooves in said side surfaces for preventing slippage along said top surface of successive turns of said yarn wound about said side surfaces and said top and bottom surfaces; and third means common to said bottom surface for holding said turns of yarn in closer spacing at said bottom surface than at said top surface.

3,287,786

APPARATUS FOR MAKING SHAPED FELT

Ronald Stansfield Goy, Four Oaks, Sutton Coldfield, England, assignor to Dunlop Rubber Company Limited, London County, England, a British company

Original application Dec. 2, 1963, Ser. No. 327,431, now Patent No. 3,216,082, dated Nov. 9, 1965. Divided and this application Aug. 27, 1965, Ser. No. 483,266
Claims priority, application Great Britain, Dec. 11, 1962, 46,639/62
15 Claims. (Cl. 28—4)



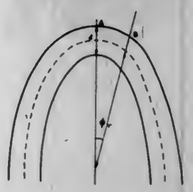
2. An apparatus for making a shaped felt comprising means for forming a mat of fibers into a desired shape, a plurality of barbed needles carried by a needling head movable in a direction to cause said barbed needles to pierce the shaped mat and a plate mounted to cause the shaped mat to move in relation to the barbed needles.

3,287,787

METHOD OF SELECTIVELY WEAKENING CRIMPED POLYESTER FILAMENTS AND FIBERS

Geoffrey Leonard Goulding and Keith Philip Barr, both of Harrogate, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

Filed Sept. 29, 1961, Ser. No. 141,791
Claims priority, application Great Britain, Sept. 30, 1960, 33,612/60
8 Claims. (Cl. 28—76)



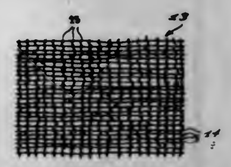
1. A process for treating crimped oriented polyester filaments and fibres, before heat setting the crimp, with a chemical agent under conditions such that the filaments and fibres are selectively weakened at intervals corresponding to the apexes of their crimp by the uniform application of the chemical agent, the filaments and fibres between said intervals being substantially less affected by said chemical agent whereby the fibers and filaments are predisposed to break in said intervals.

3,287,788

METHOD OF MAKING STRETCHABLE COTTON FABRICS

Reid C. Goodbar and Robert M. Simril, Ware Shoals, S.C., assignors to Riegel Textile Corporation, a corporation of Delaware

Filed Nov. 21, 1963, Ser. No. 325,375
1 Claim. (Cl. 28—76)



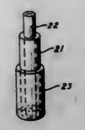
A method of producing a stretchable cotton fabric which has a greater stretch potential in one direction than the other comprising the steps of weaving a greige fabric having a width of approximately 51¾ inches with 27/1 warp yarn having a twist multiple of 4.75 and 17.25/1 filling yarns with a twist multiple of 4.75, preparatory finishing of the fabric, slack mercerizing the fabric in a 25% to 30% solution of sodium hydroxide at 62° twaddle while maintaining a tension free condition in the filling direction and maintaining tension in the warp direction, the final finishing of the fabric without exerting any tension in the filling direction.

3,287,789

METHOD OF MAKING A CAPACITOR

Frank A. Braun, Lincroft, and Ralph F. Trambarulo, Red Bank, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 23, 1961, Ser. No. 146,768
2 Claims. (Cl. 29—25.42)



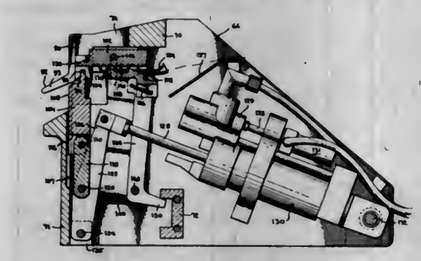
1. A method for the fabrication of a capacitor which comprises the steps of inserting an aluminum rod having an anodic aluminum oxide layer thereon into a sheath comprising a ductile metal and drawing the resultant assembly, thereby bringing said sheath into intimate contact with said oxide layer.

3,287,790

APPARATUS FOR MAKING ELECTRICAL SPLICES

Coey William Fritz, York, and William Roderick Over, Harrisburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa.

Filed May 7, 1965, Ser. No. 454,105
5 Claims. (Cl. 29—33.5)



1. An applicator for applying connecting devices onto the ends of wires, said applicator comprising, crimping die means having a transversely extending slot extending therethrough intermediate the ends thereof, an anvil and feed assembly, said anvil and feed assembly comprising a pair of spaced apart plates, a crimping anvil secured to, and extending between said plates, shearing means on said assembly in alignment with, and movable into said slot, a feed slide between said plates and beside said anvil, means for moving said feed slide towards and away from said anvil to feed an uncrimped connector to a position between said die and anvil, and means for moving said anvil and feed assembly towards said die whereby the end portion of a wire disposed between said die and anvil is trimmed, a connecting device is crimped onto the trimmed end of said wire, and an uncrimped connecting device is fed to a position between said die means and said anvil.

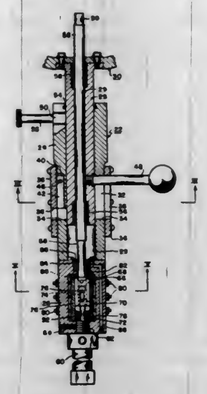
3,287,791

TURRET ASSEMBLY

Robert F. Wrench, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed June 3, 1965, Ser. No. 461,041
14 Claims. (Cl. 29—35.5)

1. An improved tool manipulating mechanism comprising, a housing having a longitudinal bore, a barrel slidably and rotatably mounted within said bore, means for sliding said barrel longitudinally of said bore and for rotating said barrel about the longitudinal axis of said bore, a rod mounted within said barrel for longitudinal sliding movement independently of longitudinal sliding movement imparted to said barrel, and means for imparting quick-acting longitudinal movement to said rod.

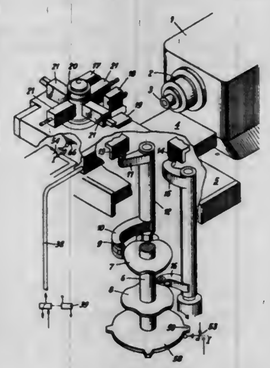


3,287,792

AUTOMATIC CYCLE LATHE

Pierre Kummer, Tramelan, Switzerland, assignor to Kummer Frères S.A., Fabrique de Machines, Tramelan, Bern, Switzerland

Filed May 8, 1964, Ser. No. 365,935
Claims priority, application Switzerland, May 10, 1963, 5,889/63
5 Claims. (Cl. 29—54)



1. In an automatic cycle lathe of the type comprising a tailstock destined to receive a work engaged in rotation, and two crossed slides positioned in front of the tailstock and controlled through cams, the improvement defined in that the upper of said two slides is adapted to receive a plurality of fixed tool holders subjected to said upper slide in working positions disposed on both sides of a definite intermediate position, and that said upper slide

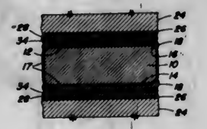
is equipped with a plurality of movable tool holders adapted to successively occupy said intermediate position during the cycle.

3,287,793
SAW TEETH
Horace V. Battersby, Cortez Star Route, Bradenton, Fla.
Filed Dec. 22, 1965, Ser. No. 515,780
1 Claim. (Cl. 29—103)



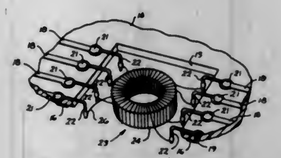
A saw comprising a planar saw blade and a set of identical saw teeth formed along a peripheral edge portion of said blade, each tooth being defined between uniformly spaced identical gullets in said blade, said gullets extending approximately normal to said peripheral edge portion of said blade and being defined by opposed, parallel side wall faces, one face of each gullet extending outwardly of said peripheral edge of said blade to constitute the cutting face of a tooth, the tip at the outer end of each cutting face comprising a straight transverse cutting edge defined by a line perpendicular to the mid-plane of said saw blade, said tip being defined by an included angle of substantially 70 degrees, the peripheral tooth surface trailing said edge being in a flat rearwardly and inwardly-inclined plane for approximately one-half the length of the tooth from gullet to gullet, the remainder of the tooth peripheral surface comprising a rearwardly-extending land, the sides of said saw blade being tapered for gradually decreasing thickness of the blade from the tips of said saw teeth, the body portions of each of said teeth at opposed side portions directly under said rearwardly-extending lands being formed with relief cuts of approximately one-quarter the blade thickness at the teeth.

3,287,794
METHOD OF SOLDERING SEMICONDUCTOR DISCS
Charles W. Van Hise, Colonia, N.J., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 23, 1962, Ser. No. 181,914
4 Claims. (Cl. 29—155.5)



4. The improved method comprising the steps of forming a bismuth telluride disc with a peripheral face and a flat end face; rounding the edge between the flat end face and peripheral face so that said edge has a discernible radius of curvature; nickel plating the flat end face and the rounded edge; forming an aluminum conductor with a flat face; joining the flat faces of the semiconductor disc and conductor with a layer of solder; heating the aluminum conductor prior to its being joined to the semiconductor; coating the conductor flat face with a tin-zinc alloy solution while it is heated; covering the coated flat face with a lead-tin coating while the tin-zinc solution is in a fluid state; and cooling the aluminum conductor prior to joining thereof with the semiconductor.

3,287,795
METHODS OF ASSEMBLING ELECTRICAL COMPONENTS WITH CIRCUITS
Edwin G. Chambers and Kenneth W. Fisher, Columbus, Ohio, assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed June 5, 1964, Ser. No. 373,014
2 Claims. (Cl. 29—155.5)



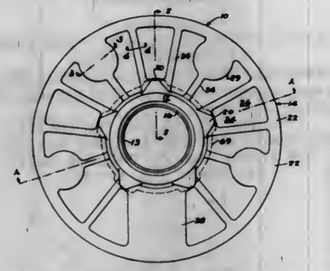
1. A method of securing an electrical component with a printed circuit supported on a panel, which includes the steps of:
- assembling a multi-ended, unitary terminal structure with land areas of the printed circuit and the panel, mechanically securing the terminal structure with the panel,
- securing portions of the unitary structure to the land areas of the printed circuit for electrical connection,
- removing portions of the unitary structure to provide individual terminals extending from and secured with the land areas of the printed circuit and the support panel,
- attaching component terminations to free ends of the terminals extending from the printed circuit land areas, and
- encapsulating the component terminations and terminal ends within a potting compound.

3,287,796
METHOD OF MAKING A JOINT
Harold O. Seltsam, Lakewood, Ohio, assignor to Tomlinson Industries, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Mar. 26, 1965, Ser. No. 442,969
3 Claims. (Cl. 29—157)



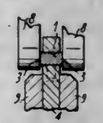
1. The method of joining a shank to an apertured thin walled container which comprises the steps of cutting a shank to form a V-shaped annular groove with one side of the V forming a radially extending shoulder, forming a section of a sphere of uniform thickness, blanking said section so that the outer edge thereof is coaxial and parallel with a radius line drawn to the center thereof, and punching the central portion of said section concentrically and parallel with said outer edge to form a washer from said punched section, placing said washer over the shank in abutment with said radially extending shoulder, flattening said washer by applying force simultaneously at a plurality of locations thereon so as to toggle the inner edge thereof inwardly into said V-shaped annular groove for peripheral sealing and gripping engagement therewith, inserting said shank into said apertured thin walled container and applying means for holding said flattened washer against said wall in rigid fluid-tight contact therewith.

3,287,797
METHOD OF MAKING A FLANGED HUB BY CASTING AND COINING
Raymond J. Wilcox, Albert P. Schweizer, and Warren L. Meyer, Lansing, Mich., assignors to Motor Wheel Corporation, Akron, Ohio, a corporation of Ohio
Filed Mar. 30, 1964, Ser. No. 355,743
10 Claims. (Cl. 29—159.3)



1. In the method of making a flanged hub, the steps of casting a blank of malleable cast iron to form a generally cylindrical body portion having a radial flange, said flange having an annular peripheral rim, a plurality of radially extending spokes, and depressions in the spacing between said spokes, said rim and said body portion, and then cold working radial faces of said rim and said spokes within an annular zone extending radially inward from said rim with a pair of opposed dies to flow material from said rim and said spokes into said depressions.

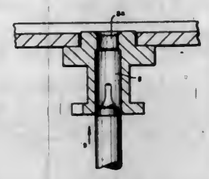
3,287,798
METHOD OF MAKING HOUR SYMBOLS FOR TIMEPIECE DIALS
Pierre-Edouard Beyeler and Jean Maurice Beyeler, Geneva, Switzerland, assignors to Beyeler & Co. S.A., Geneva, Switzerland, a firm of Switzerland
Filed Oct. 12, 1964, Ser. No. 403,296
4 Claims. (Cl. 29—177)



1. In a method of manufacturing hour symbols for timepiece dials, the steps of, forming blanks of the symbols, frictionally engaging the blanks edgewise in apertures in a plate support so that opposite faces of the blanks project outwardly from the plate support, and simultaneously removing material by machining from the opposite faces of the blanks by means of two rotating tools.

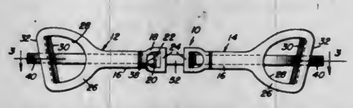
3,287,799
METHOD OF MAKING AN OSCILLATING SET FOR CLOCK WORK-MOVEMENT
Hermann Hausheer, Neuchatel, Switzerland, assignor to Axhor Société Générale de l'Industrie des Pièces Pivotées, Neuchatel, Switzerland, a firm
Filed Dec. 16, 1964, Ser. No. 418,668
Claims priority, application Switzerland, Dec. 18, 1963, 15,632/63; Nov. 24, 1964, 15,122/64
1 Claim. (Cl. 29—178)

Method for making an oscillating set for a clock work-movement comprising the steps of providing a bushing having at one end thereof a collar and an axial bore the diameter of which is reduced in front of said collar near the upper face thereof, said collar having an outside diameter that is slightly smaller than a hole in a balance so that said collar can easily penetrate into said hole, placing said balance on said collar so that said collar penetrates said hole, then driving a staff into said bore of said collar so as to distort the same in its section of reduced diameter thereby increasing the diameter of said



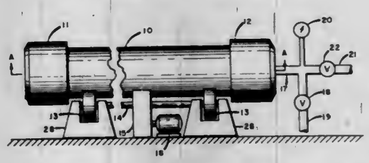
collar and squeezing the same into said hole of said balance to make said balance and staff rigid, and then driving a collet provided with a balance spring on said staff until said collet rests against said upper face of said bushing.

3,287,800
PISTON RING TOOL SET
Robert W. Macy II, Specialties Co., P.O. Box 748, Newcastle, Wyo.
Filed June 1, 1964, Ser. No. 371,439
3 Claims. (Cl. 29—222)



1. A piston tool ring set comprising a mirror image pair of tools, each tool being of one piece construction, each piece comprising a substantially straight elongate strap having a piston ring end engaging end bent at a slight angle thereto, said bent end having an aperture therein of greater width than the width of the piston ring end to be engaged, a struck-out portion, of less length than the length of the aperture, extending at an angle rearwardly away from said bent end at the end portion of said aperture to engage the piston ring end when said aperture of said bent end is engaged over the piston ring end, said strap having a thumb receiving aperture at the other end of said straight elongate portion, said struck-out portion extending normal to the axis of said elongate strap.

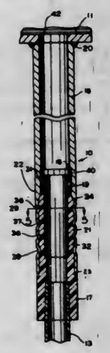
3,287,801
METHOD FOR LINING PIPE UNDER PRESSURE
Kenneth A. Blenkarn, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Nov. 26, 1962, Ser. No. 240,030
7 Claims. (Cl. 29—460)



5. In the method of lining pipe with cement wherein a cement slurry is centrifugally cast in said pipe under internal fluid pressure and said pressure is maintained until said cement has developed a compressive strength sufficient to resist collapse by said pipe when said pressure is released, the improvement comprising:
- restrained differential movement of said pipe and said

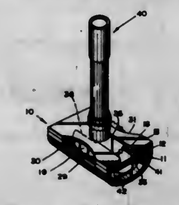
fluid lining when said casting pressure is released therefrom by internally upsetting the ends of said pipe before casting said cement slurry in said pipe.

3,287,802
METHOD FOR COUPLING A PLASTIC PIPE TO A METAL PIPE
Myron L. Robinson, 419 de la Fuente St., Monterey Park, Calif., and Donald C. Hill, 998 Glen Oaks, Pasadena, Calif.
Original application July 26, 1961, Ser. No. 126,911, now Patent No. 3,222,094, dated Dec. 7, 1965. Divided and this application July 26, 1965, Ser. No. 474,930
5 Claims. (Cl. 29—508)



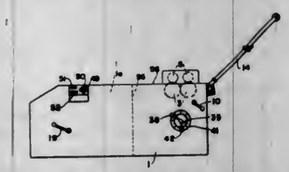
1. In a method for coupling a plastic pipe to a metal pipe wherein an end portion of said plastic pipe includes an intermediate section terminating in an end section with the intermediate section provided with external annular locking grooves and the end section provided with at least one fluid sealing unit with said sealing unit including an annular sealing groove in the outer peripheral surface of said end section and a seal gasket positioned therein and adapted to engage the inner peripheral surface of the metal pipe, the steps of:
inserting said plastic pipe end portion into an end portion of said metal pipe; and
applying radial pressure to the outer peripheral surface of said metal pipe overlying said locking grooves so as to deform said metal pipe into and about said locking grooves in complementary, interlocking, abutting alignment.

3,287,803
RAZOR PROTECTOR
John A. Wauters, 276 Church St., Newton, Mass.
Filed Apr. 12, 1965, Ser. No. 447,123
5 Claims. (Cl. 30—90)



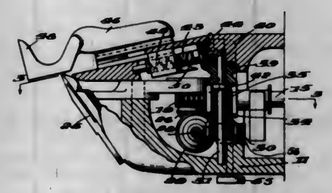
1. A razor protector comprising a hollow casing adapted to receive the head of a razor, an opening in at least one end of said casing adapted to receive the head of a razor, one wall of said casing having a slot extending inwardly from the end of said wall which is adjacent to said opening, said slot being of sufficient width to slidably receive the portion of the handle of a razor which is adjacent to the head of a razor when its head is moved into the casing through said opening, and means for opening and closing said slot comprising rotatable means provided with a slot of sufficient width to slidably receive a portion of a handle of a razor.

3,287,804
CLOTH CUTTING DEVICE WITH SEMI-AUTOMATIC FIELD
Carl Schmale and Hans Freermann, Ochtrup, Westphalia, Germany, assignors to Firma Carl Schmale, Ochtrup, Westphalia, Germany
Filed Sept. 20, 1963, Ser. No. 310,346
Claims priority, application Germany, Sept. 20, 1962, Sch 32,060; Aug. 22, 1963, Sch 33,747
24 Claims. (Cl. 30—131)



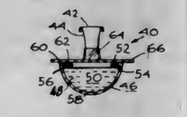
1. An automatic device for the transverse cutting of cloth webs to predetermined lengths comprising, in combination:
manually operated cutting means disposed in a cutting region;
feed means for feeding a predetermined length of cloth web to present into the cutting region the portion of cloth where the cut is to be made; and
automatic control means including clutch means and braking means for respectively initiating operation of said feed means when actuated and for stopping the feed means after a predetermined length is fed, said control means including means for adjusting the length of web which is intended to be fed upon each advance of the feed means, and manually operable means for releasing said braking means to correct a particular length which is fed without changing the feed length to which the control means are adjusted.

3,287,805
HAIR CLIPPER WITH CUT REGULATOR INDICATOR
Paul E. Du Charme, 141 Springcrest Drive, Akron, Ohio
Filed Apr. 19, 1966, Ser. No. 549,744
9 Claims. (Cl. 30—202)



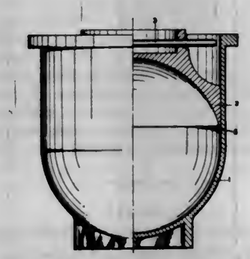
4. In combination with an electric motor-operated hair clipper having a mechanism interposed between the motor and the clipper blade to operate the blade; another mechanism including a clutch which is controlled from outside the clipper body, said clutch engaging the second-mentioned mechanism with the first-mentioned mechanism; a comb attachment that is reciprocated slowly in advance of the clipper blade, when the clutch is engaged, so as to space the blade varying distances from the scalp of the person whose hair is being cut; and a tell-tale device mounted on the clipper body and having a part which is projected outwardly of the clipper body synchronously with one movement of the reciprocating comb attachment, said part being retracted automatically within the clipper body synchronously with the other movement of the comb attachment, thereby advising the operator when the comb attachment is in its retracted position.

3,287,806
SPOON HAVING PEELABLE COVER
David Kellerman, 1485 S. Cardiff, Los Angeles, Calif.
Filed Apr. 12, 1965, Ser. No. 447,396
4 Claims. (Cl. 30—326)



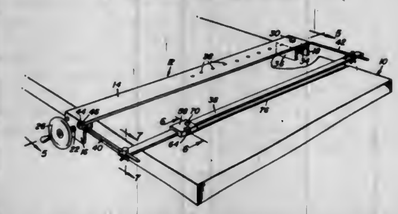
1. In combination:
a spoon having a handle portion and a bowl portion coupled to said handle portion, and said bowl portion defining a cavity, and said bowl portion having a rim around the upper edge thereof and said rim extending a preselected distance inwardly over said cavity;
and a flexible, thin, sheet like member peelably detachably coupled to upper surface portion of said rim, and along a preselected section of said handle portion, and said flexible, thin, sheet like member having outer portions extending beyond said upper surface portions of said spoon, whereby said flexible member may be peeled away from said spoon to allow removal of the contents of said cavity.

3,287,807
POROUS CHEESE MOLD WITH A FOLLOWER
Cornelis Johannes Menke, Groningen, Netherlands, assignor to Van Wijk & Boerma N.V., Groningen, Netherlands, a corporation of Dutch law
Filed Nov. 25, 1964, Ser. No. 413,916
Claims priority, application Netherlands, Nov. 25, 1963, 300,947
3 Claims. (Cl. 31—44)



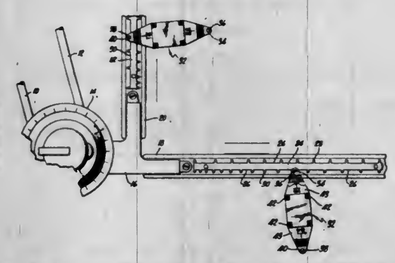
1. A cheese mold comprising a base portion and a follower portion adapted to form with said base portion a closed chamber, at least the interior walls of said base portion consisting of individual solid particles that are joined together to provide a surface having pores, each pore width being smaller than 100 microns.

3,287,808
CLAMP SAW GUIDE
William J. Fortune, 946 South 5th West, Missoula, Mont.
Filed Sept. 15, 1964, Ser. No. 396,580
8 Claims. (Cl. 33—32)



1. A saw guide comprising an elongated guide member adapted to overlie and be supported from a workpiece and including means operative to releasably retain said guide in adjusted position relative to said workpiece, said guide member including an elongated longitudinally extending tool guiding edge adapted to closely overlie said workpiece and guide a guiding portion of a saw body moved along said guide member and including a saw blade for cutting said workpiece along a line paralleling said guiding edge and spaced outwardly at one side of said guide member, an elongated secondary guide defining a work tool cut reference line defining member generally paralleling and of a length generally equal to the length of said guiding edge, means supporting said secondary guide from said guide member for swinging movement of said secondary guide about an axis generally paralleling said guide member from a first operative position spaced a predetermined distance outwardly of one side of and generally paralleling said guiding edge and adapted to closely overlie said workpiece and generally coincide with said line and a second inoperative position disposed to the side of an upstanding plane containing said tool guiding edge remote from said one side of said tool guiding edge, and a marking slide slidably supported on said secondary guide for movement therealong, said marking slide including marking means adapted to mark a reference line on said workpiece upon movement of said slide along said secondary guide over said workpiece.

3,287,809
DRAFTING INSTRUMENT
Charles A. Vogel, Sunnyvale, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Aug. 5, 1964, Ser. No. 387,668
1 Claim. (Cl. 33—81)



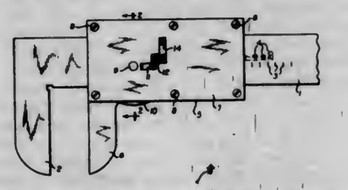
A drafting machine comprising: two parallel bars, an indexing head mounted on the parallel bars, a scale base mounted on the indexing head, a horizontal scale mounted on the scale base, a vertical scale mounted on the scale base at a right angle to the horizontal scale, a horizontal notched scale mounted on the horizontal scale, a vertical

notched scale mounted on the vertical scale, both said notched scales having notches on both upper and lower straight edges, the notches on said straight edges having lengths of varying increments, a movable base for cooperative use with said notched scales, legs on said movable base for resting upon a drawing board, slip retarding material on said legs for preventing slippage of said movable base on said drawing board, and four pins on said movable base, each of said pins having a different diameter such that the movement of a properly selected notch on one of said notched scales for its full length while a properly selected pin of the movable base is held stationary therein serves to move the corresponding scale a certain desired dimensional distance.

3,287,810
READING DEVICE FOR POSITION-MEASURING INSTRUMENTS

Johannes Heidenhain, Egerer, near Chieming, Germany, assignor to Firma Wenczler & Heidenhain, Traunreut, near Traunstein, Germany, a corporation of Germany

Filed June 10, 1964, Ser. No. 374,195
Claims priority, application Germany, July 6, 1963, W 34,841
6 Claims. (Cl. 33—125)



1. A device for reading the relative position of two parts movable relatively to each other by a longitudinal and rotatable movement, respectively, comprising

a first member carrying a main division including discrete graduation lines,

a second member carrying a reading device, said reading device including a rotatable disc carrying a marker moving across said main division due to its rotation, and having an auxiliary division for reading the fractional values of said main division,

the marker of said rotary disc comprising a plurality of markers equal to each other in discontinuous succession, so that only in predetermined rotary positions of said rotary disc one of said markers is disposed parallel to the graduation lines of said main division, and

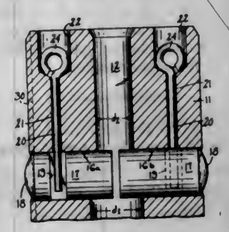
said rotary positions coincide with those rotary positions, in which the fractional values are indicated on said auxiliary division in full numbers.

3,287,811
FLUID ACTUATED GAGE FOR INTERNAL MEASUREMENTS

Everett A. Hollis, Granby, Conn., assignor to Pratt & Whitney, Inc., a corporation of Delaware

Filed June 3, 1964, Ser. No. 372,205
2 Claims. (Cl. 33—147)

1. A gaging device comprising a cylindrical plug member adapted to be inserted in a bore whose diameter is to be gaged, said plug member having an axial bore longitudinally therethrough and a bore diametrically therethrough defining two gaging pin bores, cylindrical gaging pins in each of said gaging pin bores, said pins having slots defined therein intermediate the ends thereof, said plug member having two keyways defined longitudinally therein from one end thereof communicating with the gaging pin bores, and pin retaining keys in said keyways extending into the slots in said pins to retain said pins in said plug and allow limited movement of said pins in their bores, the axial bore comprising portions having a greater diameter on one side of the diametrical

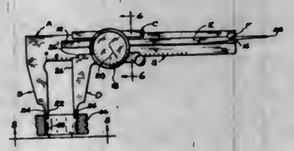


bore than on the other side thereof, and the pins of a length such that they always extend into both the smaller and larger diameter portions of the axial bore when retained in their bores.

3,287,812
CALIPER

Harry M. Smith, 1341 Old Country Road, Belmont, Calif.

Filed Oct. 19, 1964, Ser. No. 404,581
4 Claims. (Cl. 33—147)



1. In a caliper of the class having an elongate body with a first jaw extending therefrom, a carriage slidably mounted on said body having affixed thereto a second jaw movable toward and away from said first jaw, and means for indicating the position of said carriage along said body, the improvement comprising a reference edge formed on said body remote from said first jaw, an extension rod secured to said carriage and longitudinally slidable with respect to said reference edge in response to movement of said carriage along said body, a tapered portion formed on the outer extremity of said extension rod, said tapered portion having a relatively small diameter proximate the outer extremity thereof and diverging to a relatively large diameter toward the inner end of said rod, the diameter of a segment of said tapered portion being correlated with the distance of the segment along said rod, so that the diameter of said tapered portion that is opposite said reference edge is correlated to the position of said indicating means.

3,287,813
GAUGE FOR COUPLING COMPONENTS

Fred A. Lennon, Chagrin Falls, and Emery J. Zahuranec, Bedford, Ohio, assignors to Crawford Fitting Company, Cleveland, Ohio, a corporation of Ohio

Filed Dec. 4, 1961, Ser. No. 156,780
6 Claims. (Cl. 33—168)

1. A No-Go gauge for determining the high pressure and low pressure relative axial positions of rotationally threaded coupling components comprising a generally

rectangular body having bifucated work engaging ends of a thickness differing by an amount expressed in units which is equal to the reciprocal of the number of rotations per unit length times the difference of the number of rotations for high pressure positioning and the num-

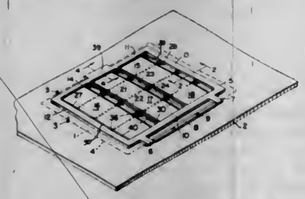


ber of rotations for low pressure positioning, whereby the relative axial positions of the rotationally threaded coupling components for both high pressure and low pressure use can be determined accurately by the gauge without counting the relative rotations of the components during rotational assembly of the threaded components.

3,287,814
MOUNTING MEANS

David Littmann, Belmont, Mass., assignor to Cardiosonics Medical Instruments Corporation, Belmont, Mass., a corporation of Massachusetts

Filed Mar. 25, 1964, Ser. No. 354,599
7 Claims. (Cl. 33—180)



1. A means for mounting a plurality of data sheets at preselected positions on a mounting sheet larger than said data sheets comprising,

a board having a flat surface and means for receiving and locating a mounting sheet in a selected position,

a frame having an aperture formed therein with opposite side members bordering said aperture and spaced apart the width of said data sheets,

means for registering said frame with said selected position,

a pair of coplanar shelves with each shelf integral with a side member and extending inwardly therefrom into said aperture to form supports for opposite edges of a data sheet as it is positioned over said aperture,

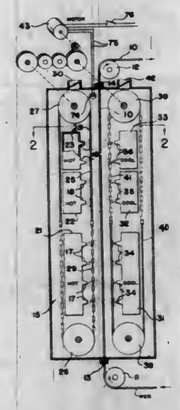
and upwardly extending partitions formed on the upper surfaces of said shelves with the partitions on one shelf laterally aligned with the partitions on the other and with said partitions dimensioned and spaced from each other to receive data sheets therein with the side edges of said data sheets supported on said shelves and the upper and lower edges adjacent said partitions and with the center portions of said data sheets lying over said aperture.

3,287,815
METHOD AND APPARATUS FOR TREATING WEB MATERIAL

Richard J. Yunghahn, Bernardsville, N.J., assignor to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Dec. 5, 1963, Ser. No. 328,319
8 Claims. (Cl. 34—7)

1. The method for heat processing a web material by subjecting it to tempering gases comprising, passing said material between opposing material impinging gases, one a heating gas and the other a cooling gas, and deflecting

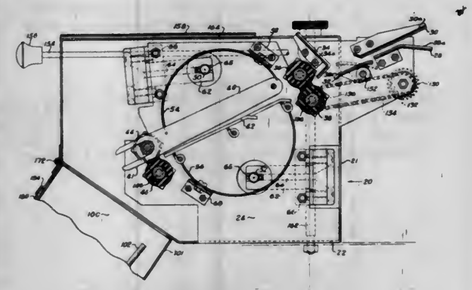


one while permitting the other to reach said material to thus provide the treatment desired.

3,287,816
DRYING PROCESSED PHOTOGRAPHIC MATERIAL

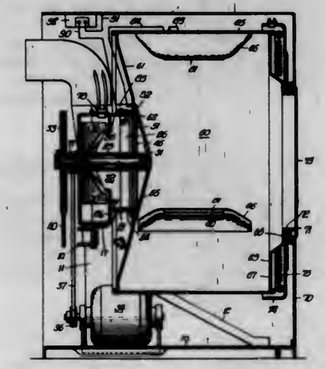
Albert E. Mignone, Shaker Heights, Ohio, assignor to Addressograph-Multigraph Corporation, Cleveland, Ohio, a corporation of Delaware

Filed July 8, 1965, Ser. No. 470,436
5 Claims. (Cl. 34—18)



1. The method of drying processed photographic sheet material which is issuing from a processing unit at a relatively high rate of linear motion which comprises continuing the motion of the sheet at the same rate into and through a drying zone, while the sheet is passing through said zone passing outside air across both surfaces of the sheet in the same direction through a confining housing at a rate which will tend to support said sheet free of said housing, simultaneously heating the surfaces of the sheet in such manner that the air temperature of the sheet surfaces is maintained near the maximum temperature which the photosensitive surface of the photographic sheet material can withstand without sustaining injury, and stacking the sheets one upon the other immediately upon their issuance from the drying zone.

3,287,817
METHOD OF USING AN ELECTRODE PROBE FOR ELECTRONIC DRIER CONTROL
Thomas R. Smith, Newton, Iowa, assignor to The Maytag Company, Newton, Iowa, a corporation of Delaware
Continuation of application Ser. No. 190,575, Apr. 27, 1962. This application Aug. 4, 1965, Ser. No. 478,531
7 Claims. (Cl. 34—31)



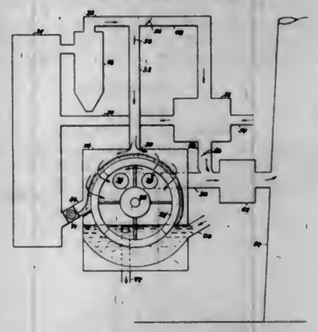
1. In the drying of wet fabrics the method of controlling termination of the drying operation comprising: effecting contact between said fabrics and water absorptive material having a high electrical resistance when dry and a relatively lower electrical resistance when damp electrically connected across a pair of spaced electrodes, establishing a degree of moisture equilibrium by direct contact between said fabrics and said absorptive material sothat as the drying operation proceeds the moisture content of the absorptive material tends to follow the moisture content of the fabrics being dried, determining the electrical resistance between said electrodes, maintaining said fabric drying operation until the electrical resistance between said electrodes reaches a predetermined value, and initiating termination of said drying operation responsive to the sensing of said predetermined value of resistance.

3,287,818
ELECTRONIC DRYER CONTROL PICK-UP DEVICE
Donald E. Janke, Benton Harbor, and Sandy C. Gay, St. Joseph, Mich., assignors to Whirlpool Corporation, Benton Harbor, Mich., a corporation of Delaware
Filed Mar. 12, 1964, Ser. No. 351,425
13 Claims. (Cl. 34—45)



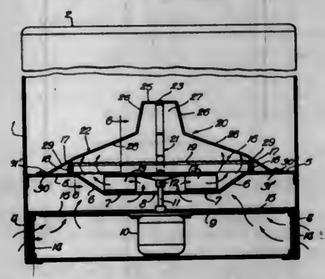
1. In a clothes dryer,
a casing,
a drum supported for rotation within said casing to tumble clothes therewithin,
and control means for sensing the electrical resistance of the clothes, comprising:
insulated contact means inside said drum for engaging the clothes,
a continuous metal slip ring outside said drum electrically connected to said contact means,
a strip of insulating material between said slip ring and the outside surface of said drum,
said strip being stressed in opposition to tension in said ring to provide a firm frictional locking of said slip ring and strip in position for co-rotation with said drum,
a stationary brush carried from said casing and engaging said slip ring,
and means electrically interconnecting to said brush and said control means.

3,287,819
WASTE DISPOSAL SYSTEM
Noel D. Hazzard, Andover, N.Y., assignor, by mesne assignments, to The Air Preheater Company, Inc., a corporation of Delaware
Filed Apr. 23, 1964, Ser. No. 362,095
6 Claims. (Cl. 34—58)



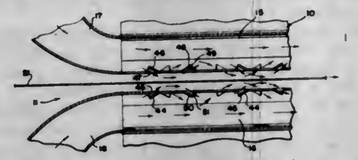
1. A waste disposal system comprising in combination a continuous filter having an inlet for waste entrained slurry and an outlet for the removal of filtered waste therefrom, a reactor for the combustion of said filtered waste, means conveying filtered waste from said filter to said reactor, means forming part of said filter operative to continuously form a layer of slurry, means directing hot gases exhausting from the reactor to and through said layer thereby removing entrained particles from said gases while the filtered waste is being heated by said hot gases before it is conveyed to the reactor, gas cleaning means, and means directing gases after traversal of said layer of slurry to said gas cleaning means.

3,287,820
CLOTHES SUPPORT MEANS FOR BLOWER TYPE DRYER
George M. Gibson, % G. M. Gibson Corporation, Bellevue, Iowa
Filed May 11, 1964, Ser. No. 366,340
13 Claims. (Cl. 34—151)



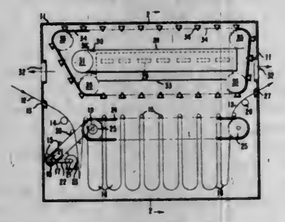
5. In a clothes dryer, in combination, a cabinet for the clothes load, a transverse bottom wall to support portions of the clothes load, a blower adjacent said bottom wall to direct a forced air stream into said cabinet, a screen assembly supported on said bottom wall and overlying said blower to also support portions of the clothes load, and a spider rack in said cabinet carried adjacent said bottom wall and extending across the cabinet in spaced relation above said screen assembly, said spider rack comprising crossed legs joined centrally of the cabinet and extending toward the cabinet side walls forming spaced areas between adjacent legs to expose sections of said screen assembly to thereby support portions of the clothes in spaced relation to the screened assembly and to allow festooned portions of the clothes to rest upon said screen assembly.

3,287,821
CONVEYING AND TREATING APPARATUS
Alex J. Schregenberger, Milltown, N.J., assignor to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Sept. 30, 1963, Ser. No. 312,586
3 Claims. (Cl. 34—156)



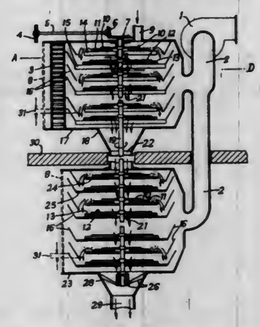
1. Apparatus for supporting, conveying and meanwhile treating a web passing therethrough by a gaseous medium comprising, a circulating gas system including a blower, conduit means for the gaseous medium from said blower, conduit means returning said gaseous medium to said blower, opposing plenums positioned in said system between said conduits through which said gaseous medium flows dividedly and uninterruptedly, said web passing between the faces of said opposing plenums, a plurality of openings in the faces of said plenums made by perforation thereof each having the perforated sections angled as directing deflectors for directing the flow of said gaseous medium against said web in the direction of its travel, and a further plurality of perforate openings in the same plenum face and each also having the perforate sections angled as deflectors for redirecting web deflecting gaseous medium into said plenum and into said gas supply system for recirculation.

3,287,822
DRYING APPARATUS
William Howard Beasley, Jr., and James Raymond Hogan, both of Brevard, N.C., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Jan. 28, 1964, Ser. No. 340,68:
2 Claims. (Cl. 34—157)



1. A drying apparatus which comprises
(a) a drying chamber,
(b) means for feeding a coated web into the drying chamber,
(c) means for forming the web into festoons in said chamber,
(d) means for directing a drying gaseous medium from above the festoons onto the festooned web while the latter is moving in a longitudinal direction in said chamber, and
(e) means for directing the dried web from said chamber;
said apparatus being characterized in that
(i) above the festooned web, the drying chamber contains two spaced longitudinally disposed plenum supply ducts having a plurality of lateral nozzles for the gaseous medium and a longitudinal deflector between said ducts and nozzles for deflecting the gaseous medium downwardly onto the festooned web,
(ii) wedge-shaped baffles are disposed above the festooned web and beneath the deflector to prevent a drying gaseous medium from impinging directly upon the uppermost parts of the festooned web, said baffles being wedge-shaped, having a closed bottom, being spaced apart the same distance as the uppermost parts of the festooned web and adapted to travel at the same speed and in the same direction as said parts.

3,287,823
DISC DRYING APPARATUS FOR MEAL OR POWDERS OF VARIOUS KINDS
Livio Vidali, 7 Piazza dell'Unita, Trieste, Italy
Filed July 17, 1963, Ser. No. 295,655
6 Claims. (Cl. 34—173)

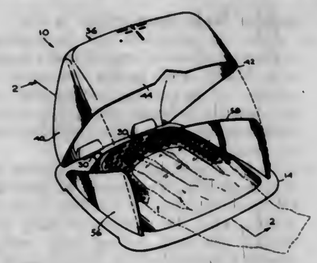


1. Drying apparatus for finely-divided material, such as meal and powders, comprising first and second sets of stationary discs, each set comprising a plurality of discs situated one above the other, means for heating said first set of discs, means contacting said discs to convey said material from each disc to the next lower disc, means for passing a current of heated air across said first set of discs for heating and dehydrating said material, and means for passing a current of air at ambient temperature across said second set of discs for completing the dehydration of and for cooling said material.

3,287,824
NAIL POLISH DRYER
Herbert A. Selditz, 1389 Kelton Ave., Los Angeles, Calif. 90024
Filed Aug. 5, 1963, Ser. No. 299,795
1 Claim. (Cl. 34—202)

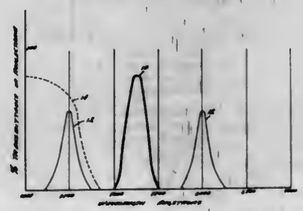
A device for drying polish applied to the nail of a human digit including a base plate having front and rear portions; a digit cushion supporting perforated platform dis-

posed above said base plate; a cover including an upper wall and a first pair of side walls depending therefrom, hinge means coupling said cover upper wall to said rear portion of said base plate for pivotal movement with respect thereto, said cover side walls each being substantially triangularly shaped and having a height which increases substantially proportionally to its remoteness from said base plate rear portion; said cover upper wall defining vent openings therein remote from said hinge means; a heating



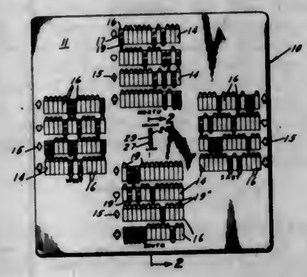
element supported between said platform and said base plate for heating air therebetween to cause it to be naturally convected through said perforated plate and directed over said platform and through said vent openings; second side wall means shaped similarly to said first pair of said walls and supported on said base plate parallel to and slightly offset from said first pair of side walls for frictionally engaging said cover to maintain it in a selected pivotal position.

3,287,825
CODE GAME
John W. Ryan, 688 Nimes Road, Bel Air, Calif., and Conrad B. Sloop, 1518 Magnolia, Long Beach, Calif.
Filed Feb. 18, 1965, Ser. No. 433,694
16 Claims. (Cl. 35—2)



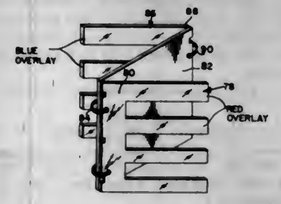
1. A code game comprising:
a first marking medium having given optical filter response characteristics;
a second marking medium having given optical filter response characteristics different from that of said first marking medium,
said two marking media being substantially indistinguishable from each other to the unaided human eye,
said media being adapted to co-act to effect a composite presentation of information including in said composite presentation a component presentation of information provided by one of said media,
said component presentation being substantially indistinguishable from said composite presentation to the naked eye;
and optical filter means for distinguishing said first and second marking media to make visible the image formed by said component presentation while substantially concealing the image formed by the remainder of said composite presentation.

3,287,826
CARD PLAYING AND INSTRUCTION DEVICE
Robert E. Shilling, 10111 England Ave., Inglewood, Calif.
Filed July 17, 1964, Ser. No. 383,308
10 Claims. (Cl. 35—8)



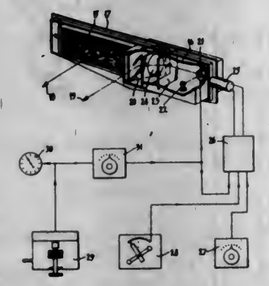
1. Game playing apparatus of the character described, comprising:
(a) a card game board having a plurality of playing stations;
(b) rows of transversely aligned members at each playing station, said rows each being representative of a particular card suit, each member of a row carrying a single specific designating insigne of a card of the suit represented, and with the respective insigne of each row being similarly positioned in the row according to its corresponding value; and
(c) means supporting said members of each row for individual selective movement to a position of display and a position of nondisplay of its suit designating insigne, whereby the cards of each suit in the player's hand at each station may be correspondingly set up in similarly positioned rows.

3,287,827
TEACHING AID USING TRANSPARENT OVERLAYS OF DIFFERENT COLORS
Robert L. Lippman, Big Spring, Tex. (1135 S. Trenton, Tulsa, Okla.)
Filed May 19, 1964, Ser. No. 368,571
19 Claims. (Cl. 35—9)



1. A teaching aid adapted to be placed over visual matter to be learned and which matter appears in at least two different colors, said aid comprising; at least two colored transparent overlay means each being adapted to be singly and selectively placed over said visual matter, the color of each said overlay means being the same as a respective one of said colors of the visual matter so as to camouflage the visual matter of the same color as the pertaining overlay means then in use and thereby cause the user to determine the camouflaged matter by viewing the matter showing through the overlay means then in use, each said overlay means comprising a plurality of parallel strips adapted to be singly moved to permit the user to see the previously camouflaged matter in the context of the matter which showed through the said overlay means then in use, means moveably interconnecting said overlay means, each strip of one overlay means being adapted to cover the same portion of said visual matter as a respective strip of the other overlay means.

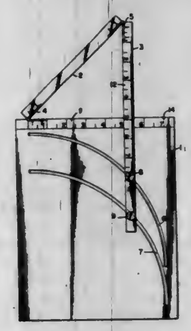
3,287,828
LOW VISIBILITY SIMULATION SCREEN
Ronald William Cumming, Brighton, Victoria, Australia, assignor to Commonwealth of Australia, Crown Solicitor's Office, Canberra, Australia
Filed Nov. 4, 1964, Ser. No. 408,796
Claims priority, application Australia, Nov. 5, 1963, 37,270/63
7 Claims. (Cl. 35—12)



1. A low visibility simulation screen for use by an instructor in training a pilot to land an aircraft in conditions of low visibility said screen being disposed in the field of vision of each trainee but not in the field of vision of his instructor, said screen comprising in a first plane a plurality of parallel narrow opaque zones spaced apart by zones of at least partial transparency, and in a second parallel and adjacent plane a second plurality of narrow opaque zones parallel to the firstmentioned narrow opaque zones and spaced apart by zones of at least partial transparency, the opaque zones in said first and second planes being uniform in width and spacing and having a width greater than that of the spacing, the edges of the opaque zones being vignetted to provide gradual transition from opacity to transparency and vice versa, the spaces between opaque zones in said first and second planes being so small that a trainee is not consicous of the existence of separate opaque and transparent zones but rather of a diffused view of the external scene.

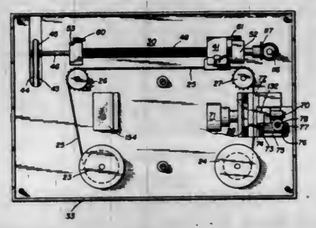
3,287,829
RIGHT TRIANGLE DEMONSTRATION DEVICE
John A. Minsky, Cheboygan, Mich. (U.S. 27, Rte. 3, St. Johns, Mich. 48879)
Filed July 24, 1964, Ser. No. 385,015
1 Claim. (Cl. 35—34)

A device for teaching trigonometry comprising a base, a pivot point on the top of said base, scale markings along the top of said base extending from said pivot point
a first arm hingedly mounted at one end to the top of said base at said pivot point and being rotatable between a first horizontal position adjacent to and parallel with the top of said base to a second vertical position extending above and perpendicular to the top of said base
a second arm hingedly affixed at one end to the other end of said first arm, scale markings on said second arm extending from said affixed end, said second arm being carried by said first arm but remaining vertically disposed as said first arm is rotated between its first and second positions
a first slot in said base, said first slot being along an arc of a first circle whose center lies directly below said pivot point
a second slot in said base, said second slot being along an arc of a second circle whose center lies directly below both said pivot point and the center of said first circle
means for slidably connecting said second arm to said first slot at a point midway between the center and



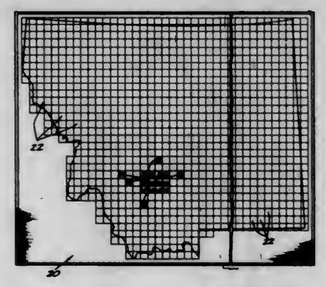
the other end of said second arm to permit motion of said first and second arms relative to said base
and means for selectively fastening the other end of said second arm to said second slot along any point thereof to restrict motion of said first and second arms relative to said base
whereby the first and second arms may be set to display the relationships between the sides of a right triangle as the acute angles are varied.

3,287,830
VISUAL AND AURAL COMMUNICATION DEVICE
Paul E. Fleury, Golden, and Raymond H. Appleton, Wheatridge, Colo., assignors of one-half to Joseph M. Gidding, New York, N.Y., one-fourth to Joseph Coors, and one-fourth to Paul E. Fleury, both of Golden, Colo.
Filed Apr. 27, 1964, Ser. No. 362,565
6 Claims. (Cl. 35—35)



1. A device for facilitating communication such as that between two persons speaking different languages comprising a portable unit having a screen and an optical system for the reproduction of visual images and an audio system for the reproduction of corresponding sounds, a combined audio and visual record strip comprising a flexible tape having a row of spaced different visual images thereon and a plurality of different sound recordings extending in spaced parallel lines along the strip, means for selecting for reproduction any one of said visual images and independently thereof any one of said sound recordings, and means for reproducing the selected sound recording while the selected visual image remains stationary and is being projected and reproduced on said screen.

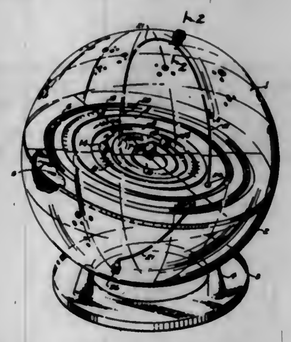
3,287,831
SYSTEM FOR MANUFACTURING MAPS
Francis O. Holm, Glendale, Calif., assignor to Western Map Company, Glendale, Calif., a corporation of California
Filed Nov. 30, 1962, Ser. No. 241,388
5 Claims. (Cl. 35—42)



1. A combination of the type described for making a secondary map of an area that is a fraction of a larger area comprising:
a master map of said larger area, the part of the map representing said larger area being divided into sections separated by boundary lines, each of said sections being identified by an area code symbol thereon;
detail maps of the respective sections, each of said detail maps bearing legends identifying features of the area represented by each said detail map;
a deck of index cards comprising a plurality of subdecks of separate groups of index cards corresponding respectively to each of said detail maps, each of said index cards bearing a record of a legend of a feature on the corresponding detail map, each of said index cards being a punched card having first, second, and third fields in specific locations thereon for the recording of indexing information, each of said cards bearing in its first field a code symbol of the section in which the legend on said each record is represented in said detail map and also bearing in said second and third fields respectively indicia indicating the location where said legend appears on said detail map, said code symbols being in the form of perforations punched in alphanumeric code, congruent locations on the respective detail maps being represented by indentical indicia punched on the punched cards in fields thereon corresponding to said congruent locations on said detail maps.

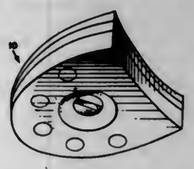
3,287,832
PORTABLE PLANETARIUM
Herbert R. Baerg, La Crescenta, Calif., assignor to California Institute Research Foundation, Pasadena, Calif., a corporation of California
Filed Sept. 4, 1962, Ser. No. 221,074
12 Claims. (Cl. 35—45)

1. A planetarium device, comprising:
(a) a circular disk structure having a series of bands of progressively increasing radius exposed throughout their circumference and disposed in various angularly related plates corresponding to the planes in which selected planets orbit about the Sun; each band including means defining an orbit path of the corresponding planet and indicia bordering said orbit path means relating to the movement of said planet therein;
(b) a Sun symbolizing means at the center of said disk structure;



(c) and planet representing means movable about said orbit path means.

3,287,833
SHOE HEEL AND ATTACHMENT MEANS THEREFOR
Jozef M. Rakus, P.O. Box 1749, Washington, D.C.
Filed Mar. 1, 1965, Ser. No. 435,819
5 Claims. (Cl. 36—36)



1. A heel construction for a shoe including a sole which comprises a deformable heel member, said heel member including a recessed upper surface of substantially conical shape, a heel base secured to the shoe sole, said heel base being provided with a plurality of generally peripherally arranged, spaced pockets with each pocket having a retaining lip spaced from the sole, a generally centrally positioned attachment means carried by the heel base, a plurality of retainers carried by the heel member in similar spacing relation to said pockets of the heel base, and a centrally disposed securing means carried by the heel member for engagement with the attachment means, whereby upon deformation of the heel so that the upper conical recess is flattened against the heel base, the retainers enter and engage the retaining lips of the pockets and a suction is produced and releasably maintained by said securing means when engaged with said attachment means.

3,287,834
MOTOR GRADER MOLD BOARD ATTACHMENT
Ethel G. Hopkins, Des Moines, Iowa
(E. 7th and Main, Clarinda, Iowa)
Filed Apr. 6, 1964, Ser. No. 357,489
3 Claims. (Cl. 37—156)

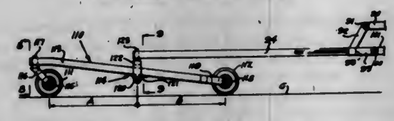
1. A bracket attachment for supporting a rotatable device having opposed stub shafts on a motor grader mold board having upper and lower edges, the attachment comprising in combination:
pillow block means including a bearing for rotatably receiving one of the stub shafts, and including further a housing within which said pillow block means

is vertically movable, and a spring unit suspending said pillow block means within said housing;
first arm means secured to said housing and releasably engageable with one edge of the mold board;
second arm means hingedly secured to said housing,



and releasably engageable with the other edge of the mold board; and
means adjustably interconnecting said first and second arm means for moving said first and second arm means relative to each other.

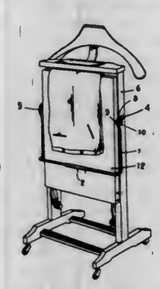
3,287,835
LAND LEVELER
Arthur P. Waterson, P.O. Box 415, Dighton, Kans.
Filed Mar. 23, 1964, Ser. No. 354,052
2 Claims. (Cl. 37—180)



1. A land leveler having forwardly and rearwardly extending feeler elements, ground engaging wheel means carried by each feeler element, earth leveling means carried by said land leveler, and means for controlling said earth leveling means in response to vertical movement of said ground engaging wheel means, at least one of said ground engaging wheel means comprising a vertical pivot carried adjacent the end of its associated feeler element, a yoke depending from said pivot, a horizontally pivoted arm carried by said yoke, a slot at one end of said arm, an axle extending across said slot, a first wheel rotatably mounted on said axle, a second vertical pivot at the other end of said arm, a bifurcated swivel bracket secured to said second vertical pivot in depending relation, a second axle extending transversely between the bifurcations of said bracket, and a second wheel rotatably mounted on said second axle.

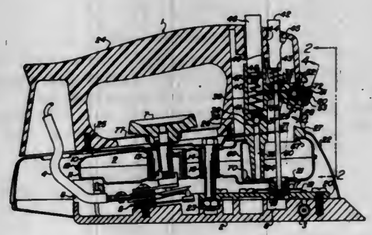
3,287,836
HANDLE FOR CLOSING THE GARMENT-PRESSING PLATES OF ROOM VALETS
Aristide Regultti, Via Renzana 5, Agnosine, Brescia, Italy
Filed Jan. 11, 1966, Ser. No. 520,013
2 Claims. (Cl. 38—71)

1. In a room valet having mating rigid and moving plates for pressing therebetween an article of apparel, the rigid plate being mounted on vertical supports, the improvement consisting of a plate-closing device which comprises in combination:
(a) a U-shaped handle including extremities and curved portions proximate the extremities;
(b) a pair of pivotable bushings positioned laterally and externally on the vertical supports of said rigid plate and containing the extremities of said U-shaped handle;
(c) springs mounted on said extremities and seated within said bushings; and
(d) a pair of pivotable, grooved rotules positioned laterally on said moving plate and adapted to contact the curved portions of said handle in the proximity



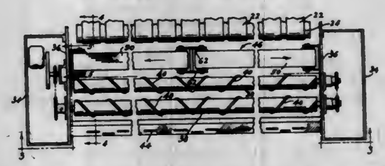
of said extremities when the valet is in closed position.

3,287,837
STEAM AND SPRAY IRON
Edmond G. Franklin, Canton, Ohio, assignor to The Hoover Company, North Canton, Ohio, a corporation of Ohio
Filed Sept. 17, 1964, Ser. No. 397,173
9 Claims. (Cl. 38—77)



1. In a block of homogeneous material defining a unitary one-piece member adaped to be mounted on an iron having a water reservoir therein, said member having a reservoir filling through opening formed therein, a vertical bore formed in said member and extending completely therethrough, a portion of said bore defining a pump cylinder and the remainder of said bore defining an inlet to said cylinder, said bore being spaced from said through opening and having a check valve seat formed therein, and a passageway formed in said member, said passageway extending from a point above said check valve seat in said bore to the front wall of said member.

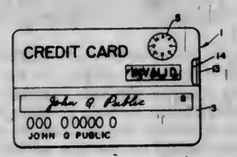
3,287,838
FEEDING AND SMOOTHING ATTACHMENT FOR FLATWORK IRONER
Dan D. Mazzolla, 2464 Raleigh Drive, York, Pa.
Filed July 29, 1965, Ser. No. 475,672
8 Claims. (Cl. 38—143)



1. A smoothing and feeding attachment for a flatwork ironer provided with ironing rolls and a feed apron at the

entrance of said ironer, said attachment comprising frame means arranged to be mounted adjacent the forward end of said feed apron, rolls supported by said frame means for rotation about axes parallel to each other and said forward end of said feed apron and substantially horizontally even therewith, said rolls having oppositely spiralling projecting ribs thereon operable to spread flatwork pieces transversely toward the opposite ends of said rolls to smooth the same transversely prior to passing the same to said feed apron, means to drive said rolls to effect such spreading, means mounted upon said frame forwardly of said rolls in position to be engaged frictionally by flatwork passing to said rolls and operable to impose longitudinal tension upon flatwork to smooth it longitudinally, friction belt means supported by said frame means with the upper surfaces of upper courses thereof substantially parallel to and level with the upper surface of said feed apron adjacent the front of the same and rearwardly to said rolls, said upper courses of said belt means being mounted for movement in opposite directions away from each other toward the opposite edges of said feed apron, and means interengaging said belt means to drive said upper courses thereof away from each other substantially at equal speeds, whereby said upper courses are engageable with the undersurfaces of flatwork pieces as fed to said feed apron to supplement the transverse spreading action of said rolls and simultaneously impose a final drag upon the trailing ends of flatwork pieces prior to moving to said feed apron to insure straight trailing ends being fed to an ironer by said feed apron.

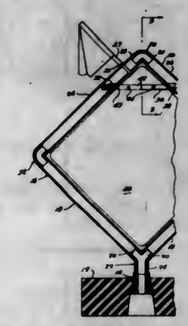
3,287,839
IDENTIFICATION CARD PROVIDED WITH COMBINATION LOCKING MEANS
Joseph Rotwein, 1500 Massachusetts Ave. NW., Bethesda, Md., and Andrew E. Friedrich, Laurel, Md.; said Friedrich assignor to said Rotwein
Filed Mar. 24, 1965, Ser. No. 442,446
4 Claims. (Cl. 40—2.2)



1. A credit card suitable for use solely and exclusively by the proper holder thereof comprising in combination; a sheath with information thereon to identify the person to whom it was issued, a member disposed within the sheath and slideable therein which contains thereon information relating to the validity of the card, a combination lock formed within the sheath which locks the slideable member in place within the sheath, a transparent window formed in the sheath at a position which will render visible the information on the slideable member when the combination lock is opened and the slideable member is moved to such a position that the information in the window will show that the card is valid.

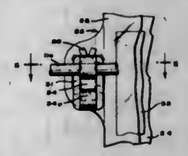
3,287,840
DIAMOND-SHAPED SIGN ASSEMBLY
John B. Keats, Erie, Pa., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed June 12, 1964, Ser. No. 374,596
4 Claims. (Cl. 40—138)

1. A sign assembly comprising a base adapted to be supported upon a ground surface and having a socket rising therefrom, a diamond-shaped frame having four corners, a mounting stem projecting from one of said corners, said frame being disposed in an upright direction with the corner carrying the stem at the bottom, the corner opposite the stem carrying corner at the top, and the other two corners on opposite sides of the top and bottom corners, the stem on the bottom corner being received within and secured to said socket, a shaft member located inwardly of and extending across the top corner of said



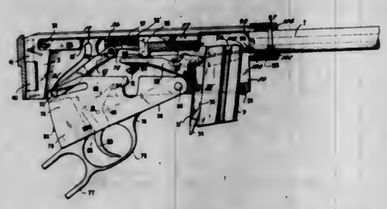
frame and connected to said top corner for free rotational movement, a sign fabricated of plastic material and conformably shaped to a size to freely fit within said frame disposed within said frame, and means connecting the upper corner portion of said sign to said shaft member for rotation of said sign with said shaft member, said sign being freely swingable into and out of said frame upon impingement of a wind or other force thereto.

3,287,841
DISPLAY DEVICE FOR SHOPPING CART
Terry G. Spragg, 1420 Harvard Ave., Seattle, Wash., and Leo J. Notenboom, 12404 NE. 108th, Kirkland, Wash.
Filed Aug. 16, 1965, Ser. No. 479,975
7 Claims. (Cl. 40—308)



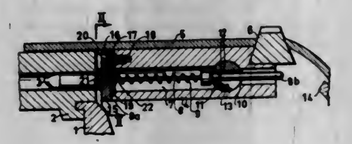
1. A display device comprising, an envelope with a transparent side for revealing a display carried within the envelope and having a pair of oppositely extending ears each with an elongated eyelet having a relatively rigid rim, and a pair of mounting clips each presenting an elongated button spaced by a reduced stem from the rest of the clip and adapted to be inserted through a respective said eyelet when the length of the button coincides with the length of the eyelet and to lock the clip onto the eyelet when the clip is then turned to locate the length of the button at cross-angles with the length of the eyelet, said clips also having respective rod gripping means each comprising a pair of opposed spaced snap fingers which project from the opposite side of the respective clip from its said stem and hook inwardly to selectively grip a rod located therebetween.

3,287,842
KNOCKDOWN REPEATING LEVER ACTION RIFLE
Walter H. B. Smith, deceased, late of New York, N.Y., by Alice Denhoff, executrix, 150 W. 58th St., New York, N.Y.
Filed Sept. 23, 1964, Ser. No. 399,131
7 Claims. (Cl. 42—16)



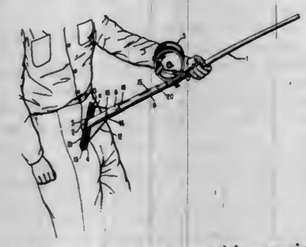
1. A firearm comprising a breech frame formed with a cartridge chamber at its upper forward portion, a bolt reciprocable in the frame for opening and closing the chamber, a straight bolt driving lever pivoted to the bolt at one end, a cam slot formed in the frame, means to move the rear end of said lever in the slot to effect reciprocation of the bolt, said means including a combined lever-trigger element pivotally mounted on the forward lower portion of the frame, said element embodying a lever arm and vertical spaced plates secured to the lever, said plates being formed with aligned slots at their rear upper portions, the rear portion of said bolt driving lever being received between said spaced plates and a cam follower pin projecting through the rear end portion of the bolt driving lever and operatively engaging the said cam slot of the frame and the said aligned slots of the lever-trigger element whereby elevation and depression of the lever-trigger element about its pivot reciprocates the bolt in a straight line path.

3,287,843
BREECH BOLT WITH FIRING PIN OPERABLE AT DIFFERENT ANGLES
Alexander W. Seidel and Tilo T. Möller, Oberndorf (Neckar), Germany, assignors to Firma Heckler & Koch G.m.b.H., Oberndorf (Neckar), Germany
Filed Feb. 5, 1965, Ser. No. 430,628
Claims priority, application Germany, Feb. 18, 1964, H 51,729
11 Claims. (Cl. 42—69)



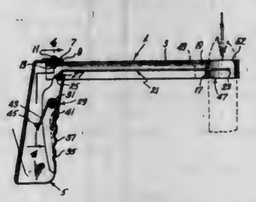
1. An automatic pistol, comprising a body, an externally operated breech carrier, a breech bolt carried by said carrier, means to support an interchangeable barrel, an abutment plate mounted on the breech bolt for engaging the base of a cartridge inserted into the barrel, said abutment plate having a central aperture and at least one eccentric aperture, and a striker pin adapted to be introduced selectively into one of said bores, said striker pin being accommodated for the major part of its length in a bore within the breech bolt having a diameter selected so that the striker pin may adopt various positions relatively to the axis of said bore according to which of the apertures in the abutment plate are engaged by a tip end of the striker pin and without influencing the function of the pistol.

3,287,844
FISHING ROD SUPPORT
William L. Hoxter, Chester, Md.
Filed Jan. 15, 1965, Ser. No. 425,858
8 Claims. (Cl. 43—21.2)



1. A fishing rod support comprising a pair of elongated arm members each having one end pivotally mounted on the rod adjacent the end thereof for pivotal movement between a non-use position extending substantially parallel to the longitudinal axis of the rod and a support position extending substantially perpendicular to the rod on opposite sides thereof, said arms being arcuate in cross-section and mounted to closely engage and substantially encircle a portion of said rod when in said non-use position and to present a substantially T-shaped support having a smooth curved rear surface substantially flush with the adjacent end of said rod for supporting the butt end of the rod against the body of a fisherman when in said support position, means on said rod for moving said arms between said non-use position and said support position, and means for engaging said moving means to releasably retain said arms in said non-use position and in said support position.

3,287,845
EEL IMPALING DEVICE
Anthony B. Smith, 21 Lincoln Place, Freehold, N.J.
Filed Sept. 14, 1964, Ser. No. 396,003
1 Claim. (Cl. 43—53.5)



An eel-impaling device, comprising: an elongated barrel formed of sheet metal having a generally U-shaped cross-sectional configuration and having at the front end thereof a transverse guide plate with an opening centrally disposed therein; a spear positioned in said barrel with the forward end thereof slidably mounted in said opening for guided longitudinal movement between a retracted position at least substantially entirely within said barrel to an extended position wherein the forward end of said spear projects beyond the front end of said barrel, said forward end of said spear being provided with a point; a handle member secured below said barrel adjacent the rear end thereof, said handle member being formed of sheet metal of generally U-shaped configuration, open at the front thereof; a pivot pin mounted transversely between the opposite sides of said handle member in the upper portion thereof; a lever pivotally mounted intermediate its ends on said pivot pin and having its upper end pivotally connected to the rear end of said spear, the lower end of said lever extending below said pivot

pin to provide a gripping portion movable between an open position diverging outwardly from within said handle and a closed position at least partially nested within said handle to thereby actuate said spear between its retracted and extended positions, respectively; spring means disposed between said handle and said gripping portion for urging said gripping portion into open position; and a bracket member fixed on one side of said barrel and having a generally annular portion extending forwardly therefrom to define with the front end of said barrel a substantially circular vertical, open area adapted to receive an eel head, said bracket having a free end terminating in closely spaced relation from the opposite side of said barrel to provide a narrow gap through which a fishing line may be introduced for drawing an eel into said open area and having a bearing surface positioned in longitudinal alignment with said barrel and in opposed spaced relation with respect to the front end thereof, whereby an eel may be held in position during the impaling action of said spear and gripped thereby while removing the hook.

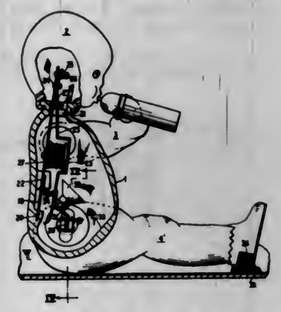
3,287,846
GYROSCOPIC TOP
Everett W. Frangos, 96 Euclid Ave., Lynn, Mass.
Filed Aug. 19, 1963, Ser. No. 302,872
6 Claims. (Cl. 46—50)



1. A gyroscopic top, comprising a rotor, a spindle rotatably supporting said rotor, a hub mounted on each end of said spindle, each of said hubs being convex at least on the end facing said spindle, said rotor being formed with a countersinking on each side thereof and adjacent said hubs, said countersinking being of sufficient depth to receive at least the inner convex ends of said hubs in recessed relation to the outer surfaces of said rotor, said rotor being formed with an axial passage therethrough, a tubular bearing mounted at each end of said passage and rotatably supporting said spindle, said bearing having a convex head portion engaging the inner end of said hub.

3,287,847
MECHANICALLY ACTUATED DOLL WITH ARTICULATED LEGS
Robert Gardel, 11 Riverside Drive, New York, N.Y., and Egon Gorsky, 365 E. 46th St., Brooklyn, N.Y.
Filed Aug. 28, 1964, Ser. No. 392,702
7 Claims. (Cl. 46—118)

1. A doll comprising a body and legs articulated thereto, delayed release mechanism between the body and one of said legs, means for setting said mechanism to hold the body and said leg temporarily in a fixed relative position and said mechanism being automatically self-releasing after at least a short delay, said delayed release mechanism including a suction cup and a surface to which said cup can temporarily adhere, said cup and surface being so mounted that they may be brought into engagement by relative movement of the leg and body in one direction, and said mechanism including means for causing relative movement of the leg and body through approximately 90° upon the release of said cup from said surface, said one leg being articulated to the body through means providing two alternative positions of engagement, in one of which the leg is firmly engaged with the



delayed release mechanism and in the other of which the leg is adjustable normally without actuation of said mechanism.

3,287,848
DOLL EYES MOVABLE BY GRAVITY OR BY MOTOR MEANS
Abraham M. Katz and Kenneth W. Lindsay, both of Great Neck, N.Y., assignors to Ideal Toy Corporation, Hollis, N.Y.
Filed Apr. 7, 1964, Ser. No. 357,959
2 Claims. (Cl. 46—135)



1. An eye mechanism for an animated doll having eyeballs therein comprising pivot means for mounting said eyeballs within the eye sockets of the doll for movement from side to side and for movement from an opened position to a closed position, and eyeball-moving means operatively connected to said eyeballs, said eyeball-moving means including a bifurcated yoke connected to said eyeballs, an inclined shaft mounted for rotation through a conical path, connection means connecting said shaft and said bifurcated yoke, and drive means within said doll for rotating said shaft through said conical path for imparting movement to said yoke, said eyeballs thereby moving in unison from side to side in response to rotation of said shaft, said bifurcated yoke and said eyeballs forming a pendulum assembly means for causing said movement of said eyeballs into the closed position in response to rearward tilting of the doll, said connection means maintaining the connection between said shaft and said bifurcated yoke during said last-mentioned movement.

3,287,849
TALKING DOLL HAVING SYNCHRONIZED MOUTH MOVEMENT
Louis F. Weiss, North Hollywood, Calif., assignor to Life-Like Doll, Los Angeles, Calif., a fictitious firm, composed of Robert D. Krupnick
Filed Dec. 15, 1964, Ser. No. 418,485
7 Claims. (Cl. 46—232)

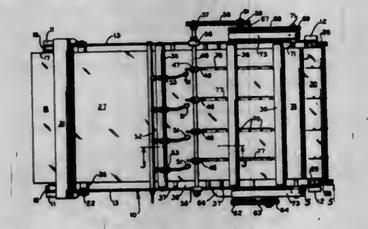
1. A talking doll comprising;
(a) a doll having a mouth,

(b) a sound-reproducing tape apparatus for reproducing sound only disposed within said doll,
(c) a removable tape cartridge adapted to coact with said tape apparatus,
(d) resiliently loaded means to retain said cartridge in operable relation to said tape apparatus,
(e) an electrical circuit, including an amplifier, and further including means to form a rectified envelope



of the output signal from said amplifier, said circuit being, electrically connected to said sound-reproducing tape apparatus, and
(f) actuating means electrically connected to said electrical circuit and mechanically connected to the mouth of said doll to move said mouth in synchronous relation to the sounds reproduced by said tape apparatus.

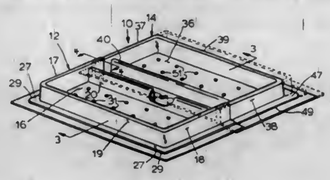
3,287,850
PERFORATED PLASTIC FILM
Bruno Da Valle, 15951 Quail Hill Road, Los Gatos, Calif.
Original application Sept. 4, 1959, Ser. No. 838,305, now Patent No. 3,146,283, dated Aug. 25, 1964. Divided and this application Jan. 20, 1964, Ser. No. 338,893
1 Claim. (Cl. 47—9)



A roll of polyethylene film in strip form having a parallel array of longitudinal grooves therein disposed parallel to the edges of the strip and being heat deformed from the plane of the strip, and spaced perforations in each of said grooves, said perforations having heat deformed edges.

3,287,851
EXTENSIBLE PLANT PROTECTOR HAVING MEANS FOR EVENLY DISTRIBUTING ITS COLLECTED WATER
Henry Guy Cramer, Manatee County, Fla., assignor to Salvatori Industries, Inc., Sarasota, Fla., a corporation of Florida
Filed Oct. 21, 1965, Ser. No. 499,607
8 Claims. (Cl. 47—25)

1. An improved plant protector comprising two sections capable of being telescopically fitted together whereby said sections will be adjustable, each section having a bottom surrounded by raised front, back and side walls forming an open top tray, said bottom having spaced means for distributing its collected water, and each tray section having a peripheral flange extending outwardly



from its front, back and side walls, said peripheral flange extending outwardly of said front wall having a notch adapted to receive a stem of a plant when in use.

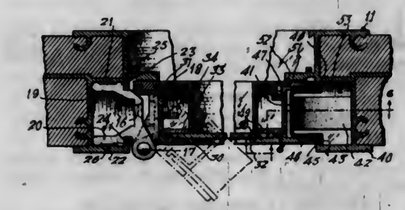
3,287,852
LOUVERED VENTILATOR DEVICE
Merland C. Belden, Hopkins, Minn., assignor to Louver Manufacturing Co., Inc., Minneapolis, Minn., a corporation of Minnesota
Filed May 11, 1964, Ser. No. 366,559
5 Claims. (Cl. 49—87)



1. A ventilator louver device for use with building structures to permit controlled ventilation thereof, said device comprising
a substantially rigid, generally rectangular, vertically oriented, frame structure to be mounted in a wall structure of a building and presenting an exterior and interior surface, said frame structure including vertical and transverse frame members,
a plurality of similar, elongate fixed louver members extending transversely of said frame structure and each louver member being rigidly connected at its respective ends to said vertical frame members, said fixed louver members being disposed in substantially parallel relation with respect to each other and each being inclined transversely of its length and downwardly from the interior surface of the frame structure towards the exterior surface thereof, thereby defining air passages between adjacent of said fixed louver members,
a plurality of similar, elongate, substantially parallel movable louver members extending transversely of said frame structure and each having an upper longitudinal edge portion disposed in overlying bearing engagement with an upper edge portion of one of said fixed louver members whereby each movable louver member is pivotally suspended from a fixed louver member for pivotal movement between open and closed positions, each movable louver member being disposed in abutting relation with the interior surface of the associated fixed louver member when the former is in the open position and being disposed in obstructing relation with respect to one of said air passages when in the closed position,
means on each of said fixed louver members engaging the upper edge portion of the associated movable louver member for retaining the latter in suspended relation therewith,

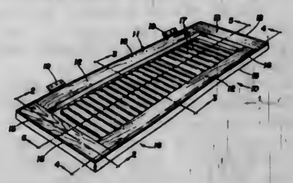
and means interconnected with said movable louver members for simultaneously causing pivotal movement of said movable louver members between said open and closed positions.

3,287,853
METAL WINDOW HAVING A SLIDABLE AND SWINGING SASH
Arthur Silverman, 55 Dorison Drive, Short Hills, N.J.
Filed Aug. 5, 1964, Ser. No. 387,622
1 Claim. (Cl. 49—179)



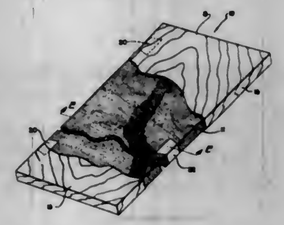
A window including a metal window frame, a window sash, said frame having a vertical channel at one side of the window sash including a vertical bottom wall and spaced and parallel frame members each having an end portion inturned toward and in spaced and opposed relation to the end portion of the other frame member and in spaced relation to said bottom wall, hinges at said one side of the window sash, each hinge including a base member of inherently resilient synthetic plastic material having a main portion and spaced apart parallel flanges connected together at one end by said main portion and resiliently flexible toward and from each other and each resiliently slidable engaging one of said frame members of said vertical channel with its free end slidably abutting said bottom wall, said base member also having portions adjacent to but spaced from the other ends of said flanges in slidable engagement with said inturned ends of said frame members, each hinge also including a hinge portion pivotally connected to said base member and secured to said side of said sash.

3,287,854
STRUCTURAL PANEL
Steve Zlatko Dasovic, 37 Brightside Drive, and Hans-Gunther Richard Wolf, 8 Du Barry Ave., both of West Hill, Ontario, Canada
Filed Jan. 7, 1965, Ser. No. 423,966
8 Claims. (Cl. 49—501)



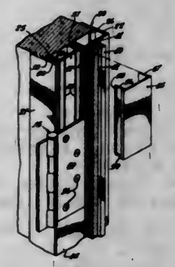
1. A combination stressed structural panel and comprising:
- a rectangular space frame having side portions and end portions defining front and back faces, and having side and end surfaces in planes substantially normal so said front and back faces, said side and end portions enclosing a substantially rectangular space;
- a thermoplastic frame-covering member extending over the whole of said front face and side surfaces, said member covering said rectangular space on one side thereof and being free of attachment to said front face over a substantial proportion thereof permitting relative movement therebetween;
- said member comprising a face portion and side portions in planes substantially normal thereto; an adhesive bonding layer between said side portions of said member and said side surfaces of said frame around substantially the full extent thereof, and a molded pattern formed in said face portion of said member and occupying a portion of said rectangular space.

3,287,855
LOW DENSITY PARTICLE BOARD CORE DOOR
Earland G. Hallonquist, Nanaimo, British Columbia, John M. Jaworsky, New Westminster, British Columbia, and Horst Sturmlinger, Richmond, British Columbia, Canada, assignors to MacMillan, Bloedel and Powell River, Limited, Vancouver, British Columbia, Canada, a corporation of British Columbia
Filed Feb. 10, 1964, Ser. No. 343,791
5 Claims. (Cl. 49—503)



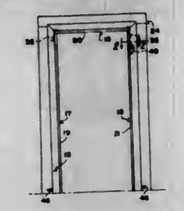
1. A door comprising a solid low density core of from 0.20 to 0.50 specific gravity of small wood particles pressed and bonded together with adhesive, the particles near the surface of the core being of such a size that they would pass through about a 5 mesh (Tyler) standard screen but would be retained on about a 30 mesh screen, said core being faced with a single thickness of wood veneer ranging in thickness from about 1/60 inch to about 1/8 inch adhesively secured thereto, said veneer forming a smooth unbroken facing for the core and cooperating with the core to provide dimensional stability in and prevent warping and twisting of the door.

3,287,856
DOOR FRAME ASSEMBLY
Alexander E. Passovoy, 5144 Valencia Drive, Orange, Calif.
Filed Oct. 16, 1964, Ser. No. 404,439
10 Claims. (Cl. 49—504)



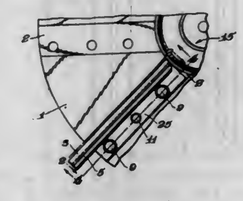
1. In a door frame assembly providing a door jamb for receiving door hinge butts,
- an extruded frame member having a door jamb portion containing a continuously planar, unmortised surface receiving said door hinge butts secured thereto, said door jamb portion including first and second laterally spaced slots extending substantially throughout the length thereof,
- said door jamb portion being wider than the door hinge butts, a portion of which is elevated to form a longitudinal shoulder located a constant dimension from the face of the frame member so that the hinge butts are automatically aligned by abutting their respective side edges against said shoulder,
- and plural cover sections engaging the portions of said frame member located above and below the hinge butts between said shoulder and the face of said frame member, by moving each of said cover sections having first and second longitudinally extending tongues in a direction transverse to the length of the door jamb and snapping into engagement with the first and second slots of said door jamb portions, the faces of each of said cover sections and said elevated portion being substantially flush with the surface of said hinge butts when said cover sections are in engagement with said door jamb portion so that the outer surface of said door jamb is formed in flush abutment with three edges of each hinge but without any milling, mortising or notching being required.

3,287,857
DOOR FRAMES
John Dukas, 2065 Grand Ave., New York, N.Y.
Filed Nov. 6, 1964, Ser. No. 409,358
2 Claims. (Cl. 49—504)



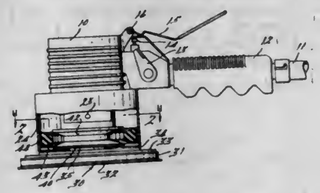
1. A door frame of the character described, comprising a head section on top of the upper ends of two spaced jamb sections; each of said frame sections being an elongated channel consisting of a floor wall intermediate opposite side walls; said sections being positioned whereby their floor walls are inward of the frame and determine a door space and each of them having a rib along its length formed by a deepening of the channel; said ribs extending into the door space to serve as a door stop, the upper end of the rib of each jamb section being cut away so the distance therefrom to the edge of the floor wall which is at the upper end of the jamb section, is a distance equal to the thickness of the rib of the head section; the respective ends of the rib of the head section, resting on the respective upper edges of the ribs of the jamb sections, a first means on said jamb sections holding the head section against relative upward movement, a second means on said jamb sections holding the head section against relative movement in a direction transverse to the floor walls of the jamb sections, a stop member secured within the upper region of one of the jamb sections, adapted to contact the jamb part of an installed buck on which the frame is to be mounted by having the head and jamb legs of said buck entered into the corresponding frame sections, cantilever blade spring member mounted within the upper region of the other jamb section, adapted to contact the other jamb part of the buck and be stressed thereby when the rib on the head section rests at least on part of the upper edges of the ribs of each of the jamb sections, said jamb section on which said spring is secured, carrying an element having a threaded hole therethrough and a screw threadedly engaged in said threaded hole; one end of said screw being adapted to contact that face of the spring which is opposite the inner surface of the floor wall of the jamb it is on; the floor wall of such jamb section having a hole making the other end of the screw accessible for manipulation, so upon turning said screw in a predetermined direction, it will contact said face of the blade spring and upon further such turning thereof will press said spring against said other jamb part of the buck and thereby neutralize said spring.

3,287,858
ABRASIVE BLASTING WHEEL ASSEMBLY
Ralph W. Moore, Hagerstown, Md., and Joseph E. Bowling, Jr., Waynesboro, Pa., assignors to The Pangborn Corporation, Hagerstown, Md., a corporation of Delaware
Filed July 13, 1964, Ser. No. 382,416
20 Claims. (Cl. 51—9)



1. A rotatable abrasive blasting wheel assembly comprising a rotatable wheel, radially extending vane supporting channels in one face of said wheel and having floors, vane face backing plates supported in said channels, tungsten carbide vane faces secured to said backing plates and also supported in said channels, additional means connecting each face vane with its backing plate for reinforcing the plate and face against centrifugal force, and means for securing each backing plate to the floor of a vane supporting channel in said wheel.

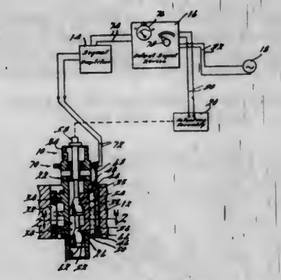
3,287,859
ROTATABLE GRINDING AND SURFACING TOOL
Treffle J. Leveque, 16606 Glastonbury, Detroit, Mich.
Filed Aug. 23, 1965, Ser. No. 481,605
15 Claims. (Cl. 51—120)



2. A hand tool for surface finishing workpieces comprising a motor having a drive shaft providing a protruding end; a housing rigidly secured to said motor, said drive shaft end extending into said housing; a coupling member fixed to said drive shaft end for rotation therewith; driven means mounted for rotation on and with respect to said coupling member about an axis eccentric to the axis of said drive shaft; ring means fixed to said housing in position to drivingly engage said driven means and to effect rotational movement of said driven means

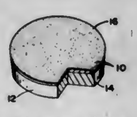
about its axis during orbital movement of said driven means about the axis of said drive shaft, the ratio of the radius of said ring means to the radius of said driven means being less than two to one; and a rotational work performing member secured for rotation and orbital movement with said driven means.

3,287,860
INTERFACE ENERGY CONTROL
Kenneth R. Blake, Huntington, Ind., assignor to Micromatic Hone Corporation, Detroit, Mich., a corporation of Michigan
Filed Sept. 4, 1964, Ser. No. 394,473
11 Claims. (Cl. 51—165)



1. In low velocity abrading apparatus for removing the material of a workpiece with a work member with the temperature at the interface between the workpiece and the work member reaching a predetermined ideal temperature at which the abrading operation is ideally performed, apparatus comprising: means for sensing the temperature of the surface of the workpiece proximate the interface between the workpiece and the work member and for providing an output signal having a magnitude varying in accordance with variations in the sensed temperature, and having a predetermined magnitude when the sensed temperature indicates establishment of the ideal temperature at the interface, and means responsive to said output signal for providing a signal when said output signal has a magnitude a preselected difference from said predetermined magnitude.

3,287,861
ABRASIVE ARTICLES AND METHOD OF MAKING ABRASIVE ARTICLES
William J. Abernathy, Huntsville, Ala., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Mar. 6, 1964, Ser. No. 350,084
11 Claims. (Cl. 51—204)



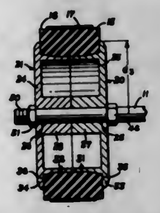
9. An abrasive article comprising:
(A) A supporting base comprising a material capable of being anodized;
(B) An anodized porous coating on a surface of said base;
(C) A plurality of abrasive grits positioned to form an abrasive surface conforming to said surface of said base; and
(D) Said abrasive grits being bonded in pores of said porous coating by said porous coating but protruding above the outer surface of said porous coating.

3,287,862
ABRASIVE ARTICLES AND METHOD OF MAKING ABRASIVE ARTICLES
William J. Abernathy, 209 Cole Drive, S.E., Huntsville, Ala.
Filed Nov. 30, 1964, Ser. No. 414,830
8 Claims. (Cl. 51—204)



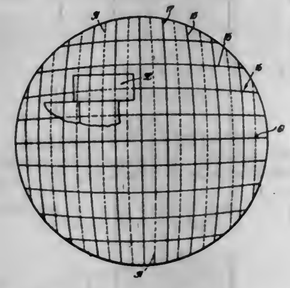
4. An abrasive article comprising:
(A) a supporting base comprising a material capable of being anodized and being aluminum;
(B) an anodized coating on a surface of said base;
(C) a plurality of abrasive grits of diamond material positioned to form an abrasive surface conforming to said surface of said base; and
(D) said abrasive grits being bonded together by said anodized coating.

3,287,863
BELT HOLDER ASSEMBLY
Albert Field, 1706 Salem Ave., Dayton, Ohio
Filed June 23, 1964, Ser. No. 377,249
3 Claims. (Cl. 51—375)



1. A belt holder assembly for holding a cloth belt having a predetermined inner diameter in place comprising, a resilient annular support having side surfaces extending between parallel inner and outer surfaces thereof, said outer surface of said annular support in its unstressed condition having a diameter slightly less than the predetermined diameter so that the belt can be easily slipped thereon, a pair of disk shaped retainers for insertion into said annular support from opposite sides thereof and each including inner side walls to engage at least a portion of each of said side surfaces of said annular support, inwardly extending annular flanges on each of said side walls for engaging said inner surface of said annular support, each said flange including a tapered outer portion adjacent said side walls of said annular support and a cylindrical inner portion on the innermost end of said tapered portion, said tapered portion having a smaller outer diameter at the innermost end thereof substantially equal to the unstressed inner diameter of said annular support and a larger outer diameter adjacent said side walls, screw means extending through each of said retainers for drawing said retainers together within said annular support until said inner portions meet that that said tapered portions impart a force which extends axially inward and radially outward of said tapered portion to cooperate with said resilient annular support to effect radial expansion of said outer surface to a diameter slightly greater than the predetermined diameter of the belt for holding the same securely on said outer surface, and said cylindrical inner portions limit the inner area of said annular support to which said force is applied to prevent the outer diameter of said outer surface of said annular support from being greater at its outer edge.

3,287,864
GRID DOME ROOF STRUCTURE
Reign C. Ulm, Schererville, Ind., assignor to Union Tank Car Company, Chicago, Ill., a corporation of New Jersey
Filed Apr. 22, 1964, Ser. No. 361,837
14 Claims. (Cl. 52—81)



1. A grid dome roof, comprising: an inner series of curved arches, an outer series of curved arches extending perpendicular to said inner arches, said inner and outer arches being connected at main tie points where they cross, the length of the arch spans between said main tie points being such that the l/r ratio of such arch spans exceeds a predetermined limit, roof skin overlying said outer arches and being connected to the outer surface of each outer arch, a series of relatively weak intermediate members overlying the arches of said inner series and extending between and substantially parallel to the arches of said outer series, said intermediate members being secured to said inner arches at first stiffening tie points where they cross each inner arch whereby the arch spans between tie points of said inner arches are shortened to the extent that the l/r ratio for said inner arch spans is below said predetermined limit, the outer surfaces of said intermediate members being in substantially the same spherical plane as said outer arches, said roof skin being connected to the outer surfaces of said intermediate members and to the outer surfaces of said outer arches at second stiffening tie points between the arches of said inner series whereby the arch spans between tie points on said outer arches are shortened to the extent that the l/r ratio for said outer arch spans is below said predetermined limit, said inner and outer arches being selected for their ability to sustain a predetermined load according to the formula:

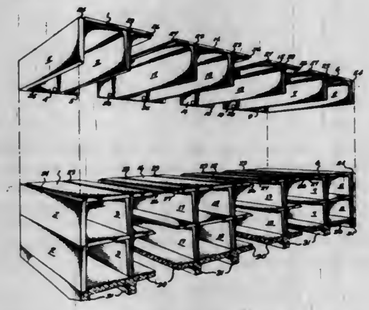
$$Q_{CR}=\gamma_1 EI/R^3$$

where:

γ_1 is a factor dependent upon the overall span of the arch
E is the modulus of elasticity of the structural entity which defines the arch (in p.s.i.)
I is the moment of inertia of the arch (in inches^4)
R is the radius of the arch (in inches) and the roof load Q_{CR} is known.

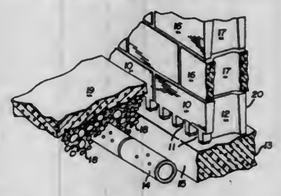
3,287,865
SECTIONAL TIERED VAULT STRUCTURE
Frederick V. Lockman, 1718 NE. 73rd St., Seattle, Wash.
Filed Nov. 5, 1962, Ser. No. 235,289
2 Claims. (Cl. 52—136)

1. A sectional tiered vault structure comprising a plurality of superposed tiers of vaults, each tier including a plurality of preformed units two adjacent units of which have horizontal wall elements with portions thereof projecting toward each other in coplanar edge-abutting relationship and cooperatively forming a horizontal wall of a first cavity in such tier and each of said horizontal wall elements having another portion forming at least a portion of a horizontal wall of a second cavity in the same tier, said adjacent units further having upright wall elements with portions projecting toward each other, disposed in coplanar edge-abutting relationship and cooperatively forming an upright wall of said first cavity in such tier, and said adjacent units further having upright walls disposed perpendicular to said edge-abutting upright wall



elements, spaced from the abutting edges of said horizontal wall element portions and of said upright wall element portions and spaced apart and forming opposite sides of said first cavity, and horizontal wall means abutting the edges of said upright walls opposite said horizontal wall elements and closing the opposite horizontal side of said first cavity.

3,287,866
FOUNDATION AND WALL DRAINAGE SYSTEM
Joseph Bevilacqua, Youngstown, Ohio, assignor of one-half to Robert J. Rider, Youngstown, Ohio
Filed Oct. 23, 1963, Ser. No. 318,221
1 Claim. (Cl. 52—169)

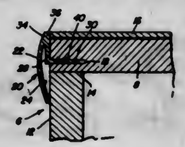


A foundation wall and drainage system comprising a footer, a drain tile adjacent said footer, a wall formed of hollow building blocks having openings in their upper and lower surfaces arranged vertically on said footer, the lowermost row of said building blocks having cut away portions in the inner faces thereof communicating with the interiors of said hollow building blocks and forming drainage openings adjacent said drain tile, a gravel or blast furnace slag fill over said drain tile and extending to and covering said drainage openings in said blocks and a cement pad on said gravel or blast furnace slag fill engaging said blocks of said wall at a location above said drainage openings.

3,287,867
STAIR NOSING
Loyd P. Aton, 23800 Kelly, East Detroit, Mich.
Filed Jan. 3, 1964, Ser. No. 335,584
3 Claims. (Cl. 52—179)

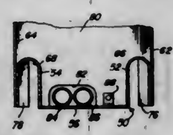
1. In combination, a stair step comprising a vertical riser, a tread at right angles thereto and having a leading edge portion resting atop an upper edge of the riser, said leading edge portion being provided with a horizontal groove constituting a keyway, covering tile fixed atop said

tread, nosing means comprising a strip of molding, said molding extending along said leading edge portion and being concavo-convex and having its concave side overlying the leading edge portion of the tread and upper edge portion of the riser and having an upper horizontal lengthwise edge flush with the top of the tile, the edge



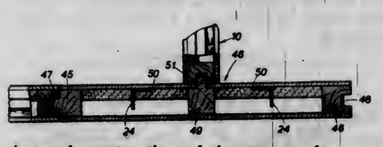
portion of said molding defining said upper lengthwise edge including a depending flange disposed between the concave side of said molding and said leading edge portion of said tread and including a generally horizontally outwardly projecting flange adjacent its lower extremity extending away from said concave side of said molding and frictionally secured in said groove.

3,287,868
PANEL WALL STRUCTURES
Raymond F. Becker, Portland, Oreg., assignor to Ray F. Becker Company, Portland, Oreg., a corporation of Oregon
Filed May 23, 1963, Ser. No. 282,735
17 Claims. (Cl. 52—220)



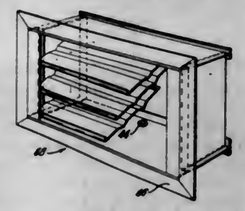
1. In a panel wall structure,
a plurality of panels provided with wall portions and flanges extending inwardly from wall portions thereof,
means securing the flange at one edge of one of the panels to the flange of one edge of another of the panels,
the ends of the flanges being provided with notches which are laterally aligned with one another and are spaced inwardly from the wall portions of the panels,
an angle member provided with a double walled vertical flange having slots positioned therein receiving the portions of the flanges between the notches and the wall portions of the panels,
and means securing the panels to the angle member.

3,287,869
REMOVABLE PARTITION WALLS
Featherston A. Kilgore, 54 Riverwood Parkway, Toronto, Ontario, Canada
Filed June 21, 1963, Ser. No. 289,669
6 Claims. (Cl. 52—270)



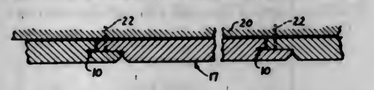
1. A panel construction of the type used as a sound barrier comprising, in combination, a planar reinforcing framework defining an opening therein, at least one lead sheet substantially co-extensive with said framework secured to one side of said framework, at least one layer of a porous material substantially co-extensive with the framework opening disposed within said opening such that a space is defined between said lead sheet and said porous material, a pair of rigid sheets substantially co-extensive with said reinforcing framework rigidly secured thereto, one of said sheets abutting the lead sheet and the other of said sheets abutting the layer of porous material, means for adhesively securing said porous material to the abutting sheet, a tongue formed along one longitudinal edge of said framework and a groove formed along the opposite longitudinal edge of said framework, and gasket material disposed in said groove.

3,287,870
WEATHERPROOF LOUVER
Edward H. Johnson, Manmee, Ohio, assignor to The American Warming & Ventilating, Inc., a corporation of Ohio
Filed Apr. 8, 1964, Ser. No. 358,230
6 Claims. (Cl. 52—473)



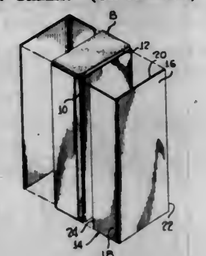
4. A louver to be mounted in the wall of a building to pass outside air into the building while keeping water out, said louver comprising a pair of opposed side frame members, a plurality of louver blades sloping downwardly in a direction toward the outside edge portions of said side frame members, upper longitudinally-extending edge portions of said blades having water-retaining lips formed thereon, lower longitudinally-extending edge portions of said blades having lips thereon forming water-collecting channels at the lower edge portions of said blades, means communicating with said water-collecting channels for removing and disposing of water collected thereby, said blades also having grooved portions extending longitudinally thereof intermediate said water-retaining lips and said water-collecting channels to retard the flow of water transversely down said blades toward said water-collecting channels, and said blades also having means by which they can be affixed to said side frame members.

3,287,871
BRACKET SECURING PANELS TO BACKING
Fred Korn, Chicago, Ill., assignor to United States Mineral Wool Company, Stanhope, N.J., a corporation of New Jersey
Filed Aug. 5, 1963, Ser. No. 299,918
1 Claim. (Cl. 52—509)



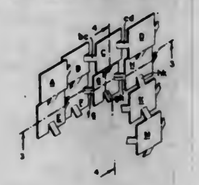
A surface composed of a plurality of rectangular panels secured to a backing, each of said panels including an adjacent pair of overhanging face flanges and an adjacent pair of undercut back flanges, an overhanging flange of one of said panels overlying an undercut flange of an adjacent panel to form a lap-joint therebetween, and at least one bracket disposed within the confines of each lap-joint, said brackets being of substantially double L-shape with one of their legs of serrated edge character, said serrated leg being projected into the body of one panel at the junction of its overhanging face flange, and the opposed leg overlying the rear of the undercut back flange of an adjacent panel, and fastener means extending from said undercut flange through its overlying bracket and into said backing.

3,287,872
METAL ENCASED REFRACTORY BRICK AND METHOD OF MAKING
Robert M. Focht, Lansdale, Pa., assignor to E. J. Lavino and Company, Philadelphia, Pa., a corporation of Delaware
Filed May 12, 1964, Ser. No. 366,724
4 Claims. (Cl. 52—598)



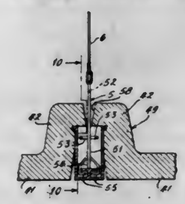
1. A refractory brick package, comprising a brick body of refractory material having a quadrangular cross section and intersecting side faces forming longitudinal corners, two elongate metal bodies of single angle cross section each having two legs each of a width materially greater than one-half the width of the said side faces of the brick body, two diagonally spaced corners of the brick body being positioned in the angles of said two metal bodies whereby each leg of each metal body lies against and extend widthwise across more than half the width of the two adjacent intersecting side faces, two other elongate metal bodies of single angle cross section each having two legs, two other diagonally spaced corners of the brick body being positioned in the angles of the said two other metal bodies, the legs of the said other metal bodies extending widthwise across at least half the width of the two adjacent intersecting side faces of the brick so as to overlap and lie against the outer sides of adjacent legs of the first two metal bodies, and means joining the legs of the said two other metal bodies to the adjacent legs of the first mentioned metal bodies, the said overlapping legs of the several metal bodies providing substantially complete metal cladding of the brick body.

3,287,873
LIGHT REGULATING PANEL SCREEN
Laura McDill, R.F.D. 1, Woodstock, Vt.
Filed Jan. 20, 1964, Ser. No. 338,840
8 Claims. (Cl. 52—675)



1. A screen panel cut from a sheet of flat material having a plurality of plane surfaces lying in different planes composed of a plurality of platelets, certain of said platelets extending about the periphery of the panel and the remaining platelets being located interiorly of these, at least three platelets being disposed about each interior platelet adjacent thereto, each platelet being connected to at least one adjacent platelet and each interior platelet being connected to at least two adjacent platelets, the connection between each connected adjacent pair of platelets including a tab portion cut from the pair of platelets and integrally joined at its opposite ends to each one of the pair of platelets, the tab portion being folded at each end thereof in opposite directions whereby the pair of adjacent platelets is held spaced apart with their surfaces lying in different planes and with the marginal portion of one of the pair of adjacent platelets underlying the marginal portion of the other of the pair of platelets, the folding line of a tab portion connected to each interior platelet at the connection of such tab portion to such platelet intersecting the folding line of at least one other tab portion at the connection of such tab portion with the same platelet.

3,287,874
CHANNEL GRID MEMBERS WITH T-RAIL AND HANGER BRACKET
Leo G. Stahlhut, Kirkwood, Mo., assignor to K-S-H Plastics, Inc., Kirkwood, Mo., a corporation of Missouri
Filed Aug. 5, 1963, Ser. No. 299,737
5 Claims. (Cl. 52—720)

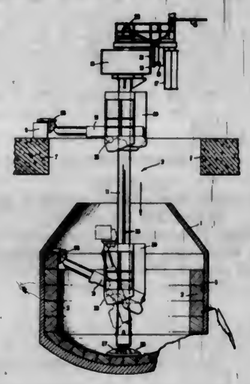


2. A grid assembly for a suspended ceiling comprising a grid member having a pair of transversely spaced vertical walls connected at their lower edges by and integral with a web, a T-rail on and the stem of which is integral with the upper surface of the web, said T-rail being between and below the top of the vertical walls, and a hanger bracket, mounted on said T-rail, said hanger bracket comprising a plate, ears on said plate projecting toward the two walls of said member and closely adjacent, but slidable with respect thereto, and inturned feet, along the lower edge of said plate, said feet slidably engaging the underside of the head of the T-rail.

3,287,875
METHOD FOR LINING FURNACES
Ira W. Lakin, Volant, Pa., assignor to National Steel Corporation, a corporation of Delaware
Original application Oct. 11, 1963, Ser. No. 315,517, now Patent No. 3,236,397, dated Feb. 26, 1966. Divided and this application Dec. 23, 1965, Ser. No. 516,019
5 Claims. (Cl. 52—747)

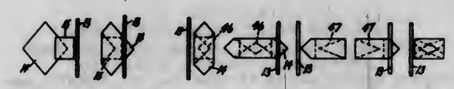
1. A method of lining a furnace having a relatively small access opening at the top and a relatively large interior space to be lined, comprising the steps of
resting the lower end of an upright column on a bottom interior surface within the furnace, with an upper portion of the column projecting upwardly through the access opening,
providing an operator's cab vertically movable on and horizontally swingable about the column,
providing an extensible and retractable arm, pivotally mounted for vertical swinging movement, associated with the operator's cab,
providing block clamping means pivoted for vertical swinging movement, on a free end of the arm,
supplying a block of refractory material at a location exterior of the furnace and above the access opening,

manipulating the arm and clamping means to place the clamping means in position to grip the refractory block,
manipulating the clamping means to grip the refractory block,
manipulating the arm to lift and position the gripped refractory block at a distance from the column which is less than the distance of the periphery of the access opening from the column,



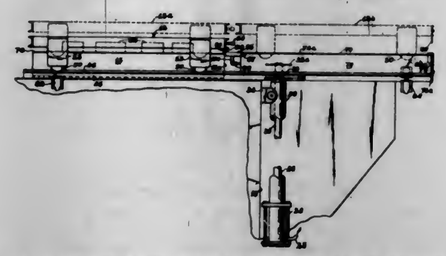
lowering the operator's cab and arm through the opening into the interior of the furnace to a position in which the arm, clamping means, and gripped block are in the interior of the furnace below the access opening,
manipulating the arm and clamping means to place the gripped block in position to line the furnace, and
manipulating the clamping means to release the gripped block.

3,287,876
METHOD OF WRAPPING ARTICLES OR PACKAGES
Franklin M. Willbrandt, Battle Creek, Mich., assignor to Battle Creek Packaging Machines, Inc., Battle Creek, Mich.
Original application Apr. 7, 1961, Ser. No. 101,543, now Patent No. 3,112,589, dated Dec. 3, 1963. Divided and this application Sept. 4, 1963, Ser. No. 306,475
8 Claims. (Cl. 53—33)



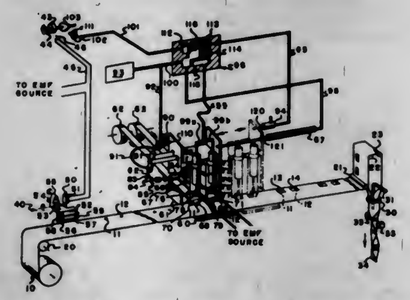
1. The method of wrapping an article which comprises the steps of:
positioning a sheet of wrapping material cornerwise with its leading corner portion part way over an article receiving support,
positioning an article on said support with the trailing end of the article on said leading portion and with the leading end of the article projecting on said support ahead of said leading portion,
folding said sheet over the article with the initial trailing corner portion of the sheet projecting in front of the article,
positioning a retaining bar in overlapped retaining engagement with the folded over projecting portion of said sheet and closely adjacent the front of the article,
advancing the article with the portion of the sheet wrapped thereover over said retaining bar and the folded over projecting corner portion of said sheet to pull the forwardly projecting portion from under said bar into underlapped relation to the forward end of said article and the initial leading corner portion of said sheet,
sealing the lapped portions of said sheet,
and thereafter forming overlapped side folds in the side edge of said sheet over the sides of said article.

3,287,877
LOADING FIXTURE FOR SKIN-PACKAGING MACHINE
Robert E. Kostur, Franklin Park, Ill., assignor to Comet Industries, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Oct. 1, 1963, Ser. No. 313,089
21 Claims. (Cl. 53—112)



1. A loading fixture for placing articles having stability in repose on a substantially horizontal surface for packaging the articles in a skin-packaging machine, said fixture comprising means forming a frame, means for guiding said frame substantially horizontally in two planes spaced apart vertically at least a distance to clear the maximum height of an article to be packaged, means for moving said frame upward from the lower of said planes to the upper of said planes, and jig means mounted on said frame for providing lateral support for said articles while same are being placed for repose in said machine.

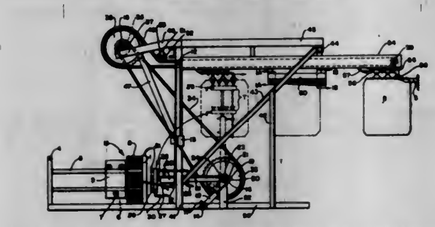
3,287,878
APPARATUS FOR PRODUCING TETRAHEDRON CONTAINERS PROVIDED WITH AN ACCESS APERTURE
George A. Mobley, Spartanburg, S.C., assignor to Milliken Tetra Pak, a Division of Clemson Industries, Inc., Pacolet, S.C., a corporation of Delaware
Filed Feb. 25, 1963, Ser. No. 260,587
8 Claims. (Cl. 53—133)



8. Apparatus to provide a plurality of shaped containers with sealed openings therein comprising: means for supplying sheet material to said apparatus, means to advance said sheet material, hole forming means operably

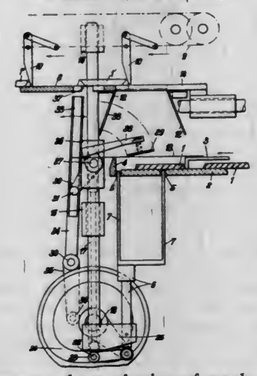
associated with said sheet material to periodically form a plurality of pairs of holes in said advancing sheet of material, each of said pairs of holes being spaced from the next adjacent pairs of holes, means to simultaneously place a strip of heat sealable material over each hole of said pair of holes, means to heat seal a portion of each of said heat sealable strips to said sheet material to close each of said holes and to leave a portion of said heat sealable strips unsealed to provide a means to readily pull said heat sealable strips from said sheet material to expose the hole formed therein, means to form said sheet material into a plurality of containers and means to sever said sheet material between each of said pairs of holes and between the holes in each pair.

3,287,879
BAG DISPENSING, TRANSPORTING AND POSITIONING APPARATUS
Frank H. Miller, Jr., Louisville, Ky., assignor to Miller Engineering Corporation, Louisville, Ky., a corporation of Kentucky
Filed Sept. 19, 1963, Ser. No. 310,071
7 Claims. (Cl. 53—188)



1. A device for singly dispensing and transporting paper bags from a group and positioning same onto a spout of a filling machine, wherein each bag is fabricated of multiple plies of paper sealed at one end and along the length of the top, with the other end of the top unsealed to form a valve opening, which comprises:
(a) a bag holding means, including
(i) an open top magazine including a frame containing side members, a front member, a rear member, and means for urging said bags into position towards said front member;
(ii) said side members being spaced apart the length of a bag so as to accommodate a group of bags wherein each bag is positioned with its major axis disposed horizontally and its minor axis disposed vertically with the top of said bag folded over so as to face the rear member;
(b) a first gripping means, including means for gripping the bag in the magazine near the valve end of the body portion thereof in its initial position, wherein its major axis is disposed horizontally, and for holding same until after it is in a bag transfer position outside of the magazine in which position its major axis is disposed vertically;
(c) a second gripping means for gripping the top of said bag in the bag transfer position and for holding same until after it is in position on the filling spout;
(d) a first transport means operatively connected to said first gripping means for movement from an initial horizontal position to a bag transfer position and back to said horizontal position;
(e) a second transport means operatively connected to said second gripping means for movement from an initial position in proximity to said filling spout to a bag transfer position and back to said initial position;
(f) synchronizing means wherein the location of said first transport means is synchronized with the location of said second transport means so that when said first transport means is disposed in its initial horizontal position in proximity to said magazine, said second transport means is disposed in its initial position in proximity to the filling spout, and when said first transport means is in its bag transfer position, it is disposed directly below said second transport means in its bag transfer position;
(g) means for positioning the valve opening of said bag onto a filling spout; and
(h) power means for driving said transport means.

3,287,880
APPARATUS FOR PACKAGING OF GOODS, PARTICULARLY FROM THE SWEETS INDUSTRY
Otto Hänsel, Hannover, Germany, and Hans Lesch, Hannover-Kirchrode, Germany, assignors to Otto Hansel G.m.b.H., Hannover, Germany, a corporation of Germany
Filed Jan. 21, 1964, Ser. No. 339,123
5 Claims. (Cl. 53—222)



1. An apparatus for packaging of goods, particularly from the sweets industry, comprising
a working table feeding goods to be wrapped to a working station,
a lifting punch engaging one of said goods from below and reciprocating in order to lift said one of said goods,
a counter holder engaging a piece of wrapping material disposed on top of said one of said goods and, thereby, said one of said goods from above, to secure said one of said goods between said lifting punch and said counter holder,
a slide vertically reciprocating adjacent said working table and carrying said counter holder,
a folding box disposed above said working table and open at its bottom and its top,
said one of said goods being moved upwardly through said folding box while being retained between said lifting punch and said counter holder,
said folding box including means for at least partly wrapping said piece of wrapping material around said one of said goods,
final folders disposed on top of said folding box and rendered operative during the return stroke of said lifting punch for finishing the wrapping of said one of said goods,
means permitting return of said counter holder into its original position by avoiding said folding box,
means for pivotally mounting said counter holder on said vertically reciprocating slide for swinging about an axis perpendicular to the direction of movement of said slide,
means for swinging said counter holder upwardly outside of the range of said folding box upon said slide

reaching its uppermost position and into the range of said folding box upon said slide performing at last part of its return stroke, and

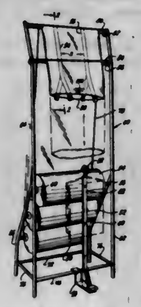
said counter holder avoiding said folding box during its return stroke.

3,287,881

BAG, BAG SUPPLY AND BAG APPLYING APPARATUS AND METHOD FOR USE WITH CONTINUOUS ROLLS OF BAGS AND THE LIKE

Murray Jelling, 21 Spring Hill Road, Roslyn Heights, N.Y., and Michael Friedman, 1178 E. 23rd St., Brooklyn, N.Y.

Filed Oct. 10, 1962, Ser. No. 229,630
18 Claims. (Cl. 53—256)



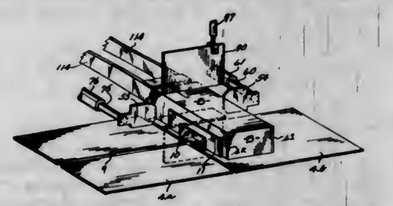
13. Dispensing apparatus for tubing provided with at least one substantially transverse seam having openings therein spaced apart at a determinable distance, said apparatus comprising at least two pairs of guide rollers, one of said pairs of rollers being elevated relative to the other of the pairs, one roller of each pair being provided with annular grooves spaced apart at said determinable distance; and a pair of spreaders engaged with said rollers, each spreader including: a hook-shaped upper extremity engaged in one of the annular grooves of said one roller of the higher pair and sandwiched therein by the other roller of the higher pair, and an inverted Y-shaped section connected to and depending from said upper extremity, said Y-shaped section including a substantially vertical leg engaged in one of the grooves of said one roller of the lower pair of rollers and trapped therein by the other roller of the latter said pair and a bifurcated lower extremity depending from said vertical leg.

3,287,882

BALE CLOSING AND SEALING APPARATUS

Murl L. Smith, Parma Heights, Ohio, assignor to General Bay Equipment Corporation, Cleveland, Ohio, a corporation of Ohio

Filed July 1, 1963, Ser. No. 291,784
10 Claims. (Cl. 53—378)



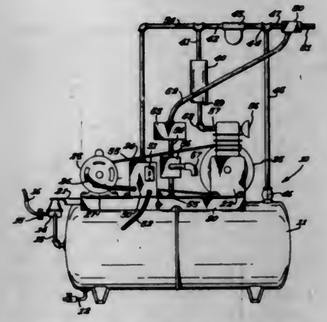
10. In an apparatus for closing and sealing the package sheet material extending outwardly from the open end of a bale, said apparatus including a generally flat platform extending in a given plane for supporting said bale with the open end facing in a given direction; a back-up rail extending above said platform and forming an aligning abutment for the closed end of said bale; first and second plate-like members selectively movable toward and away from each other along a path above said plane and generally parallel with said rail, said path being spaced from the rail only slightly further than the desired length of said bale; movement of said members toward each other being effective to form side folds and upper and lower flaps in said outwardly extending sheet material; a third plate-like member above said platform and selectively movable in a vertical direction to fold said upper flap over said side folds; a fourth plate-like member below said platform and selectively movable in a vertical direction to fold said lower flap over said side fold; means for applying an adhesive to at least one of said flaps; and sequencing means for folding said one flap over said folds after the other flap; the improvement comprising: said fourth plate-like member including a generally perpendicular plate at the upper end thereof, said plate forming a generally flat surface for supporting said lower flap, said one flap being said lower flap, said plate being movable upwardly with said fourth member after said adhesive is applied to said lower flap.

3,287,883

GAS DRYING SYSTEM

Richard C. Mott, Harwood Heights, Ill., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed May 27, 1964, Ser. No. 370,576
7 Claims. (Cl. 55—33)



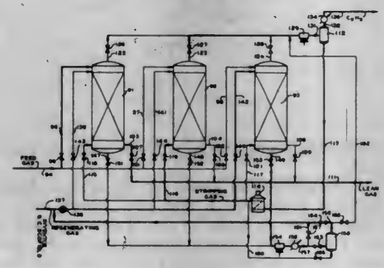
1. A compressor unit for supplying dry air to pneumatic systems, including: a controlable air compressor operatively driven to compress air taken in at an atmospheric pressure and delivered to an outlet at a higher than atmospheric pressure; a single desiccant tank containing a desiccant material having a relatively large surface area connected to said outlet to receive said compressor air; said desiccant tank having an outlet connected through a check valve to an air storage tank for said pneumatic system; said desiccant tank outlet further connected to a pressure operated dump valve which is in turn connected to the atmosphere; said compressor air being dried by said desiccant material as said air passes into said air storage tank through said check valve when said dump valve is closed; control means responsive to the air pressure in said air storage tank and connected to said pressure operated dump valve to control said dump valve; said desiccant material being dried by said compressor air when said control means opens said dump valve to the atmosphere thereby supplying a low pressure outlet for said compressor air as it passes through said desiccant material; and pressure operated time delay means connected to said desiccant tank outlet; said time delay means further being connected to said air compressor to operatively control said compressor in response to the pressure in said desiccant tank outlet; said time delay means stopping said compressor when said pressure in said desiccant tank outlet has been at substantially atmospheric pressure for a fixed time.

3,287,884

SEPARATION AND RECOVERY OF ACETYLENE FROM GASES CONTAINING THE SAME

Raymond C. Scofield, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Dec. 9, 1963, Ser. No. 329,089
4 Claims. (Cl. 55—63)



1. A process for separating acetylene from a gas containing the same by adsorption, which comprises passing said gas through a fluid permeable bed comprising eta-alumina, withdrawing lean unadsorbed gas from said bed, passing a stripping gas through said bed, withdrawing stripping gas enriched with desorbed acetylene from said bed, cooling the stripping gas and acetylene, separating the stripping gas and acetylene to produce a highly concentrated acetylene product stream, and passing a regenerating gas through said bed to cool and regenerate the same.

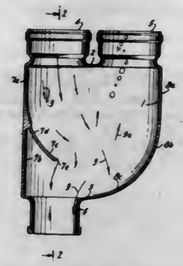
3,287,885

AIR SEPARATOR FOR DRAIN PIPES

Fritz Sommer, Bern, Switzerland, assignor, by direct and mesne assignments, of one-eleventh to Aktiengesellschaft Oederlin & Cie, Baden, Switzerland; one-eleventh to Scovill Manufacturing Company, a corporation of Connecticut; one-eleventh to Revere Copper and Brass Incorporated, a corporation of Maryland; one-eleventh to Triangle Conduit and Cable Co., Inc., a corporation of Delaware; one-eleventh to Cerro Copper and Brass Company, a Division of Cerro Corporation, a corporation of New York; one-eleventh to Anaconda American Brass Company, a corporation of Connecticut; one-eleventh to Chase Brass & Copper Co., Incorporated, a corporation of Connecticut; one-eleventh to Mueller Brass Co., a corporation of Michigan; one-eleventh to Phelps Dodge Copper Products Corporation, a corporation of Delaware; one-eleventh to Bridgeport Brass Company, a Division of National Distillers and Chemical Corporation, a corporation of Virginia; and one-eleventh to Calumet & Hecla, Inc., a corporation of Michigan

Continuation of application Ser. No. 116,712, June 13, 1961. This application Aug. 5, 1964, Ser. No. 389,817
4 Claims. (Cl. 55—201)

1. A separator for separating air from a mixture of waste water and air, comprising an upper portion having a vertical inlet for the mixture of waste water and air, and a vertical first outlet for air spaced from said inlet in one horizontal direction; a lower portion having a second outlet for the water, said upper and lower portions having wall means forming an unobstructed chamber; and a guide means projecting from a portion of said wall means located between said inlet and said second outlet into the space of said chamber between said inlet and said second outlet and toward a region of the chamber located below said first outlet, said region forming an unobstructed passage to said second outlet, said guide means having a free end portion terminating in the space between said inlet and said second outlet and concave upwardly inclined to horizontal and vertical planes so



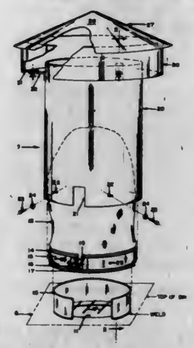
as to point to a wall portion of said wall means spaced in said one horizontal direction from said second outlet for directing a stream of the water and air mixture in a substantially horizontal direction across and underneath said first outlet so that air separates from the water in the stream and rises across the stream through said first outlet while the water of the stream flows unobstructed downwardly from the region of said wall portion into said second outlet.

3,287,886

DUST RETAINING VENT MEANS

John Tiberi, 3727 S. Maplewood Ave., Chicago, Ill.

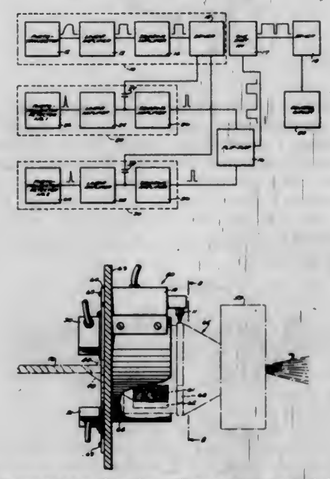
Filed May 28, 1965, Ser. No. 459,867
1 Claim. (Cl. 55—378)



Dust retaining vent means for bins and silos used to store cement or other dust forming materials, comprising, an upstanding collar adapted to be mounted in dust-tight relationship over an opening in the roof or top wall of a storage bin or silo, grate means mounted in said collar in the form of a plurality of spaced rods having the ends thereof secured to the said collar so as to partially obstruct said opening, an elongated dust filter bag having its open end fitting over said collar, a clamping band surrounding said collar and clamping said open end of said dust bag in dust-tight relationship therewith, a rubber seal disposed between said clamping band and the open end of said bag, an imperforate chimney setting on said roof or top wall having its lower end fitting over and attached direct-

ly to said clamping band and thereby indirectly to said collar, said chimney having a diameter and an axial length exceeding the distended diameter and axial length respectively of said dust filter bag, and cover means mounted on the top of said chimney so as to prevent rain and snow from entering the same and comprising a conical section and a depending skirt portion, said skirt portion surrounding the upper end of said chimney in spaced relationship therewith, and said skirt portion being substantially smaller than the diameter of said conical section whereby the latter overhangs said skirt as a circular eave.

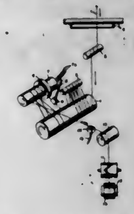
3,287,887
DETECTING APPARATUS FOR STRANDS
Georg Dornberger, Murray Hill, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed May 11, 1964, Ser. No. 366,407
15 Claims. (Cl. 57—19)



1. An apparatus for detecting strand material during a strand feeding operation comprising:
means for feeding a strand,
detecting means synchronized with the strand feeding means and periodically operable to sense the presence or absence of the strand in a time slot variable with the speed of the feeding means, and
means responsive to the operation of the detecting means for stopping the operation of the feeding means when the strand is absent.

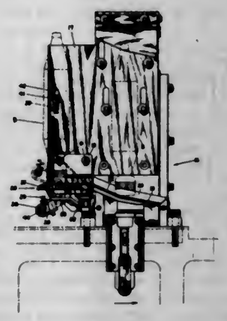
3,287,888
APPARATUS FOR THE TREATMENT OF SYNTHETIC FILAMENTS
Ronald W. Chidgey, Pensacola, Fla., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Original application Nov. 12, 1963, Ser. No. 322,704. Divided and this application Oct. 15, 1965, Ser. No. 496,635
4 Claims. (Cl. 57—35)

1. Apparatus for treating molecularly orientable continuous multifilament yarn of substantially zero twist to render same stress-relieved and of such coherency that the yarn is adapted for use as warp yarn of a fabric comprising:
(a) means for longitudinally forwarding the yarn in a path from a source thereof;
(b) a driven draw roll positioned in the yarn path and adapted to forward the yarn at a speed such that the yarn is stretched to orient same molecularly;
(c) a freely rotatable separator roll positioned adjacent the draw roll in spaced relationship therewith, the axis of the separator roll being at a slight angle with respect to the axis of the draw roll so that the yarn normally progressing around the rolls moves in a helical path;
(d) a heated freely rotatable second separator roll mounted adjacent the draw roll, the axis of the second separator roll being at a slight angle with respect to the axis of the draw roll so that yarn nor-



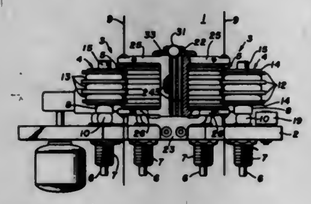
mally progressing around the rolls moves in a helical path.
(e) a circumferential flange on the heated separator roll and positioned so that yarn moving from the draw roll at an angle to the heated separator roll has a peripheral moment applied thereto by contact with the flange to impart a false twist thereto between the flange and draw roll;
(f) means located in the yarn path between the flange and draw roll for applying a liquid to the yarn; and
(g) means for packaging the yarn after it passes around the heated roll.

3,287,889
BOBBIN DOFFING MECHANISM
Leo L. Chabot, Cumberland, R.I., assignor to Draper Corporation, Hopedale, Mass., a corporation of Maine
Filed Feb. 12, 1964, Ser. No. 344,498
10 Claims. (Cl. 57—53)



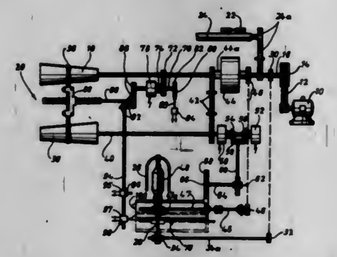
1. A mechanism for doffing wound bobbins from a row of spindles supported on a textile machine which includes a unitary bobbin lifting member, said lifting member comprising a bobbin drive breaking cam surface and a bobbin lifting cam surface, a bobbin ejecting means being mounted in following adjacent relationship to said lifting member, said ejecting means including a pivotally mounted bobbing ejection lever, and an ejection trigger member being adapted for loading and releasing said ejection lever through successive contacts with each of said spindles.

3,287,890
APPARATUS FOR TWISTING YARN
Euell K. McIntosh and Kenneth R. Baugh, Pensacola, Fla., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Oct. 7, 1964, Ser. No. 402,114
6 Claims. (Cl. 57—77.4)



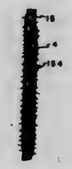
1. Yarn twisting device comprising,
(a) driven disc means defining a yarn trough having an arcuate yarn engaging bottom,
(b) means for driving said driven disc means, and
(c) guide means normally having engagement with a linearly traveling yarn and being selectably movable toward said yarn trough for carrying said yarn into contact with said arcuate bottom effecting twisting of said yarn and movable away from said trough to carry said yarn out of engagement with said arcuate bottom.

3,287,891
APPARATUS FOR CONTROLLING WINDING OPERATIONS IN A SPINNING MACHINE
Willi Pfeifer, Eislingen (Fils), Germany, assignor to Zinser-Textilmaschinen Gesellschaft, Ebersbach (Fils), Germany
Filed June 15, 1964, Ser. No. 375,155
Claims priority, application Germany, June 24, 1963, Z 10,190
14 Claims. (Cl. 57—99)



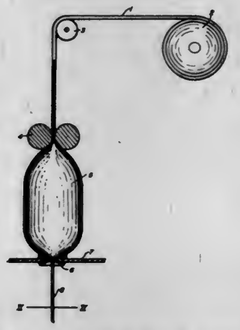
1. Apparatus for controlling winding operations, comprising, in combination, drive means; operating means reciprocable for controlling winding operations on spindle means; transmission means connecting said drive means with said operating means and including reversing means having first and second positions for moving said operating means in opposite reciprocating strokes, respectively; and control means including an electromagnetic control coupling having a first coupling part rotated by said drive means and a second coupling part operatively connected to said reversing means for alternately placing the same in said first and second positions after turning of said second coupling part through selected angles, and switch means actuated by said operating means at the ends of reciprocating strokes and connected to said electromagnetic control coupling for energizing the same so that said second coupling part is driven.

3,287,892
PRODUCTION OF ELASTIC STRETCH YARNS
David Rapoza, Emerson, N.J., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware
Filed Oct. 23, 1963, Ser. No. 318,330
6 Claims. (Cl. 57—152)



1. As an article of manufacture, a composite yarn suitable for knitting, weaving or for otherwise being made into fabric comprising a substantially non-elastic textile staple fibrous material which is spun about and substantially helically covers a core consisting essentially of a continuous stand of a flexible cellular plastic foam having from about 60 to about 95 cells per linear inch and a specific gravity ranging from about 1 to about 3.

3,287,893
PROCESS FOR THE MANUFACTURE OF ROPES FROM PLASTIC HOSE
Felix Kleinekathöfer, Geigelsteinstrasse 2, Endorf, Upper Bavaria, Germany
Filed Jan. 28, 1964, Ser. No. 340,721
Claims priority, application Germany, Jan. 30, 1963, K 48,811
5 Claims. (Cl. 57—157)



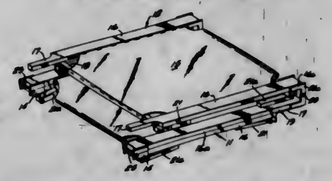
1. A process for the manufacture of ropes having the characteristics of gut strings from plastic hose composed of a plurality of filaments, which comprises inflating said hose with air and passing the hose thus inflated through a zone of constriction, simultaneous braking, stretching and twisting actions being imparted to said hose while passing said zone.

3,287,894
METHOD OF PREPARING RAYON TYING TWINE
Richard MacHenry, Prospect Park, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed June 25, 1964, Ser. No. 378,063
4 Claims. (Cl. 57—164)

1. A method of preparing rayon tying twine which comprises twisting rayon yarn from 2 to 6 turns per inch, treating said yarn with a homogeneous mixture of from 90 to 96%, based on the volume of the mixture of a

C_1–C_4 alkanol and an aqueous dispersion of polyvinyl acetate at a solids concentration of from 25 to 65% based on the weight of the dispersion, winding the wet yarn into a package, and drying the package.

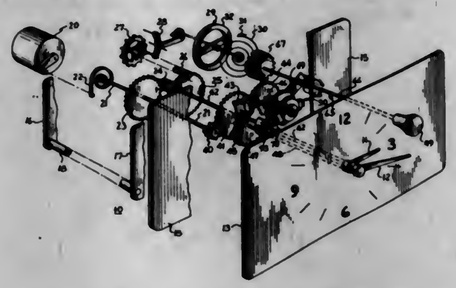
3,287,895
FOLDABLE LITTER STRUCTURE
William R. Hire, Newark, Ohio, assignor by direct and mesne assignments to Research Manufacturing, Inc., Newark, Ohio, a corporation of Ohio
Filed Dec. 16, 1964, Ser. No. 418,615
9 Claims. (Cl. 5—82)



1. A foldable litter comprising a plurality of relatively adjoining frame-forming sections foldably connected and carrying patient supporting means foldable with said sections; each of said sections including a pair of relatively spaced apart, longitudinally extending side rails, certain of said sections including at least one rigid cross tie extending transversely between said side rails; means pivotally connecting the side rails of said sections to the cross ties thereof and providing for turning movement only of said side rails with respect to said cross ties about axes extending longitudinally of said side rails; and hinge means connecting the side rails of each of said sections to the side rails of another of said sections, said hinge means including lineal hinge pin means whose axes are disposed in perpendicular relation to the longitudinal axes of said side rails and said hinge means being turnable bodily with said side rails about the longitudinal axes of said side rails between a first position in which the axes of their hinge pin means are disposed in parallel relation to the longitudinal axes of said cross ties to permit said sections to be folded with respect to one another and a second position in which the axes of their hinge pin means are disposed in perpendicular relation to the longitudinal axes of said cross ties to thereby lock said sections against relative folding movement.

3,287,896
AUTOMATIC REGULATOR FOR AUTOMOBILE CLOCK OR THE LIKE
Walter F. Kolodziej, La Salle, Ill., assignor to General Time Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 18, 1965, Ser. No. 502,764
3 Claims. (Cl. 58—85.5)

1. In a clock having a spring balance timing control and a hand-setting motion gear, the combination comprising, a shaft coupled to said timing control for adjusting the control upon rotation of the shaft, a first clutch member fixed on said shaft and having an annular array of axially extending serrations, a second clutch member coupled to said motion gear and having an annular array of serrations extending axially toward and being axially alined with the serrations of the first clutch member, said second clutch member being axially slidable towards said first clutch member, a shift member rotatably mounted between said first and second clutch members and having serrations facing the serrations on both said first and second clutch members, a latch coupled to said shift member for limiting rotation thereof, a setting knob coupled to a pinion and mounted for axially shifting said pinion from a rest position into meshing engagement with said motion gear, and means for sliding said second clutch member resiliently against said shift member, rotatably



engaging the clutch members by mating the clutch member and shift member serrations, upon movement of said knob to mesh the pinion with the motion gear.

3,287,897
TIMEPIECE ESCAPEMENT
Harold Alec Johnson, Los Angeles, Calif., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Aug. 4, 1965, Ser. No. 477,205
10 Claims. (Cl. 58—116)



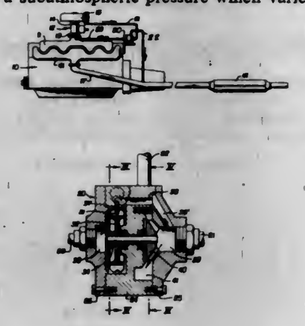
1. A timing escapement mechanism comprising a pair of coplanar spaced concentric gear members one of which comprises a wheel gear having a plurality of peripheral teeth and the other of which comprises a ring gear having a plurality of internally facing teeth, and a dog located between the inner and outer gear members adapted to oscillate between said teeth.

3,287,898
SELF-REGULATING EXHAUST CONTROL SYSTEM
Charles W. Morris, 11769 Chenault St., Los Angeles, Calif., and Lorne L. Frazier, 2514 W. 171st St., Torrance, Calif.
Filed Jan. 11, 1965, Ser. No. 424,546
7 Claims. (Cl. 60—30)

1. A self-regulating system for facilitating the reduction of pollutants and combustibles in exhaust gases of an internal combustion engine, such engine having an intake zone at variable subatmospheric pressure during operation and an exhaust system, comprising: a turbine adapted to generate torque, said turbine including a substantially enclosed runner mounted upon a rotatable shaft, nozzle means for directing gas from a source at virtually atmospheric pressure for reaction against said runner, and a spent gas outlet port; pipe means communicating said spent gas port with an intake zone of an internal combustion engine; a blower driven by said shaft; means for supplying air at virtually atmospheric pressure to said blower; a discharge port from said blower; and pipe

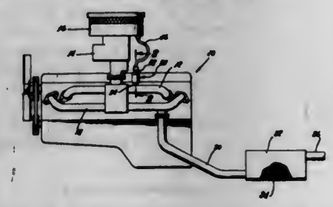
means for conducting air from said discharge port to the exhaust system of said engine, whereby the speed of said turbine and blower and the volume of air discharged by the blower are varied generally inversely to the absolute pressure of the engine intake zone.

7. A self-regulating method of supplying air to the exhaust system of an internal combustion engine during idling and deceleration thereof, by utilizing normally non-utilized power produced during operation of an internal combustion engine, the engine having a modulated intake zone at a subatmospheric pressure which varies with op-



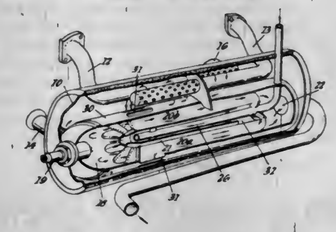
erating conditions of the engine, and an exhaust system, comprising: generating torque in a motor unit by conducting air at virtually atmospheric pressure to an intake zone of a motor unit and communicating a discharge zone of such unit with the modulated intake zone of the engine, the intake and discharge zones of the motor unit being in torque generating relation; driving a blower with torque thus generated by the motor unit, conducting a further and larger portion of air at virtually atmospheric pressure to said blower and conducting air discharged by said blower into a desired portion of the exhaust system of the engine.

3,287,899
AIR POLLUTION CONTROL SYSTEM FOR INTERNAL COMBUSTION ENGINE
Louis J. Bintz, Placentia, Calif., assignor to Norris-Thermador Corporation, Los Angeles, Calif., a corporation of California
Filed Feb. 12, 1965, Ser. No. 432,302
3 Claims. (Cl. 60—30)



1. An air pollution control system for an internal combustion engine which comprises a catalyst bed disposed in the exhaust system of the engine and comprising active catalytic material of the type capable of oxidation-reduction cycling, and air supply valve means connected to the intake system of the engine and responsive to intake manifold vacuum so as to be open during the deceleration mode of engine operation and closed during the other modes of engine operation, said valve means supplying air to the intake system in excess of engine combustion requirements so as to supply oxygen to the catalyst during deceleration, and the catalyst releasing the oxygen for catalytic oxidation of exhaust ingredients during the other modes of engine operation, said valve means comprising a valve element movable between a closed position and an open position and means normally biasing the element to its closed position, the valve element being arranged so that the pressure differential between atmospheric and intake manifold pressures exerts a force opposing said biasing means and tending to open the valve, said pressure differential force exceeding the force of the biasing means to open the valve when the intake manifold vacuum reaches a high value during deceleration, but being insufficient to move the element from its closed position during other modes of engine operation, a portion of the valve element being masked off from atmospheric pressure in its closed position, said portion being exposed to atmospheric pressure when the valve element moves out of the closed position toward the open position so as to increase said pressure differential force, whereby once the valve is opened at a high intake manifold vacuum during deceleration it will remain open during a substantial portion of the deceleration cycle despite a substantial reduction of the intake manifold vacuum.

3,287,900
COMBUSTION APPARATUS FOR ENGINE EXHAUST GAS
John Peter Soltau, Dorridge, Solihull, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company
Filed Nov. 23, 1965, Ser. No. 509,322
1 Claim. (Cl. 60—30)

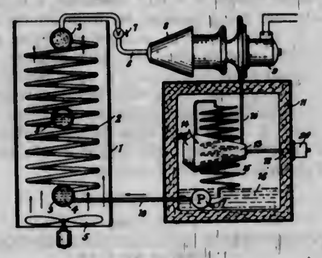


Combustion apparatus comprising an outer casing and inner casing, a plurality of equal length inlet pipes for exhaust gas from a multi-cylinder internal combustion engine, the discharge ends of said inlet pipes being disposed in a space defined between the inner and outer casings, said inner casing defining a combustion chamber, an inner tube combustion air delivery means arranged to discharge into said inner tube, an inner tube communicating at one of its ends with the combustion chamber, first passage forming means communicating at one end with the space between the inner and outer casings and at the other end with said inner tube, and second passage forming means alternating with said first passage forming means, said second passage forming means affording communication between the combustion chamber and an outlet for the products of combustion.

3,287,901
CLOSED CYCLE POWER GENERATING APPARATUS
Edward Tauer, New York, N.Y., assignor to Atmospheric Energy, Ltd., New York, N.Y., a corporation of Delaware
Filed Nov. 22, 1963, Ser. No. 325,531
6 Claims. (Cl. 60—36)

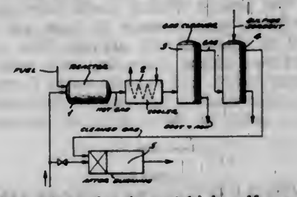
1. An apparatus for generating power comprising a closed fluid system, said closed fluid system including an evaporator, said evaporator being in the form of a coil provided with a plurality of enlarged expansion chambers,

a tubular housing surrounding said coil, means for directing a heat-containing media into and through said housing whereby a fluid media in liquid form in said coil is transformed into a gaseous media, conduit means for conducting said gaseous media to a first turbine, said conduit means including valve means for controllably regulating the flow of the gaseous media from the evaporator to said first turbine, said first turbine having a rotor which is rotated under the effect of the gaseous media, means coupled to the rotor of said turbine and actuated thereby to generate power, an insulated cooling chamber, a second turbine in said cooling chamber, a conduit for conducting the



gaseous media from said first turbine through said cooling chamber to said second turbine, said second turbine being effective to lower the temperature and pressure of said gaseous media, conduit means coupling said second turbine to a condenser coil within said cooling chamber whereby said gaseous media is transformed to a liquid state, said cooling chamber being liquid tight and serving to collect the liquid media therein, a pump in said chamber, and a conduit connecting said pump to the coil of said evaporator whereby the liquid media is conducted to said evaporator for subsequent continuous repetitive transfer of the fluid media through said system.

3,287,902
METHOD OF COMBUSTION OF HIGH-SULPHUR ASH FUELS AT THERMAL POWER STATIONS
Sergei Alexeevich Khristianovich and Viktor Mikhailovich Maslennikov, Novosibirsk, Vasily Sergeevich Frolov, Zhukovsky, Moisei Kusielevich Pismen, Moscow, Mark Ikhelevich Derbaremdiker, Ljubertsy, Alexei Pavlovich Andrianov, Moscow, Petr Mikhailovich Sharov, Shchekino, and Evgeny Alexeevich Fadeev, Novosibirsk, U.S.S.R., assignors to Institute Teoreticheskoi i prikladnoi Mekhaniki sibirskogo Otdelenia Akademii Nauk U.S.S.R., Novosibirsk, U.S.S.R.
Filed Mar. 16, 1965, Ser. No. 440,191
1 Claim. (Cl. 60—39.02)



A method of combustion of high sulfur ash fuels at thermal power plants comprising:

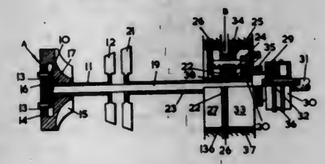
partially oxidizing the entire amount of initial fuel at temperatures between 1000 and 1500° C. under pressure up to the maximum pressure of the power generation cycle, said oxidizing being accomplished using a part of the air required for complete burning, and resulting in complete gasification of the initial fuel with conversion of the organic sulfur compounds present in said initial fuel to hydrogen sulfide;

cooling the resulting gasification products by indirect heat exchange with a portion of the working medium of the power plant to a temperature sufficient to permit the removal of sulfurous compounds, soot and ash;

separating the sulfurous compounds, soot and ash from the cooled gasification products; and

subsequently further oxidizing the cleaned gasification products to produce a high temperature working fluid for said power plant.

3,287,903
POWER TRANSMISSION SYSTEM FOR A GAS TURBINE ENGINE
Axel C. Wickman, 69 S. Washington Drive, St. Armands' Key, Sarasota, Fla.
Filed July 14, 1964, Ser. No. 382,502
Claims priority, application Great Britain, July 16, 1963, 28,083/63
9 Claims. (Cl. 60—39.16)



1. The combination of a gas turbine engine and a power transmission system, including a compressor, a first turbine rotor capable of driving the compressor at its full capacity, a power output shaft, a second turbine rotor connected to drive the power output shaft, means supporting said first and said second turbine rotors for relative rotation, a first overdrive epicyclic gearing connected to transmit drive from the first turbine rotor to the compressor, a reaction member in said first overdrive epicyclic gearing, a drive shaft connected to be driven by said reaction member, a first unidirectional clutch operatively arranged between said compressor and said first turbine rotor to prevent the first turbine rotor from rotating faster than the compressor, a common power output shaft, a second gearing operatively connected between said drive shaft and said common power output shaft for said drive shaft to drive said common power output shaft at one ratio, said second gearing being also operatively connected between the power output shaft of said second turbine rotor and said common power output shaft for said power output shaft of said second turbine rotor to drive said common power output shaft at a different ratio such that said power output shaft of said second turbine rotor will rotate slower than said drive shaft, and a second unidirectional clutch operatively arranged between said reaction member and the second gearing whereby the speed of the second turbine rotor will increase above the ratio dictated by the second gearing when said second unidirectional clutch freewheels.

3,287,904
GAS TURBINE ENGINE
Henry Russell Warren, 5069 Greenbrier Drive, and Russell Phillips Warren, 2712 McGregor Blvd., both of Fort Myers, Fla.
Filed Oct. 14, 1965, Ser. No. 496,083
9 Claims. (Cl. 60—39.34)

1. A gas turbine engine comprising:

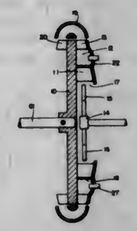
a main driving member;

a plurality of air compressing and turbine-driving blades disposed in a circular array around and forming a driving connection with said driving member;

an enclosing member extending over and around said turbine driving elements and said air compressing

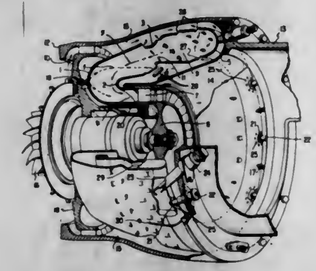
elements and forming for rotation with said driving member an air compressing region, a continuous combustion zone, and a turbine-driving zone; and

fuel distribution means for distributing fuel to said combustion zone in alternate fueling and cooling cycles to permit maximum temperatures and pres-



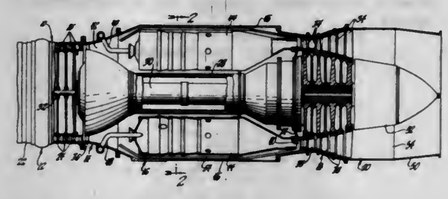
sures within the average temperature rise of said combustion zone and said turbine-driving zone during the fueling cycle thereof while limiting the average temperatures and pressures therein below those developed in said combustion zone and said turbine-driving zone during fuel distribution thereto.

3,287,905
COMBUSTION CHAMBER FOR A GAS TURBINE
Gaston Bayard, 9 Ave. de Savoie, Toulouse, Haute-Garonne, France
Filed May 13, 1964, Ser. No. 367,011
Claims priority, application France, Dec. 9, 1963, 4,934, Patent No. 1,388,005
1 Claim. (Cl. 60—39.36)



In combination with a gas turbine having radially outwardly extending blades, a compressor, an annular casing coaxial with and communicating with the turbine and compressor, said casing defining a chamber having a U-shaped cross section in which the U has two legs interconnected by an arcuate bend, one of said legs being directed toward said turbine blades, said casing comprising walls of U-shaped cross section one nested within the other, means for introducing air from the compressor into said other leg of the chamber and for forming and igniting an explosive mixture in said other leg of the chamber, the radially inner said wall bounding said other leg of the chamber having an annular portion that extends into and throttles said other leg of the chamber and that has openings for compressed air therethrough on its side toward said bend, said openings being directed toward the radially outer said wall bounding said other leg but inclined toward said bend, so that compressed air entering said other leg through said openings is directed toward and along said other wall and about said bend and toward the roots of said turbine blades.

3,287,906
COOLED GAS TURBINE VANES
Hamilton L. McCormick, deceased, late of Carmel, Ind., by Signe M. McCormick, executrix, Carmel, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 20, 1965, Ser. No. 473,529
7 Claims. (Cl. 60—39.51)



1. In a gas turbine having compression, combustion, and turbine zones in serial relationship, the combination comprising:

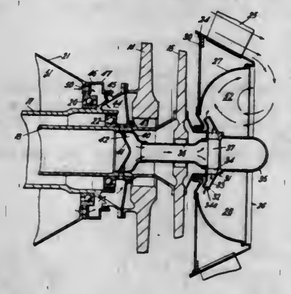
guide vane means in said turbine zone exposed to hot combustion gases flowing through said turbine zone,

a plurality of circumferentially spaced closed tubes extending axially from said guide vane means to an area subjected to compressor discharge air,

wick means disposed in said tubes and said guide vane means, and

a heat exchange medium substantially filling said tube and said guide vane means, a portion of said heat exchange medium being in the liquid state and saturating said wick means with the remainder being in a vapor state whereby a closed system is provided to transfer heat from said guide vane means to said compressor discharge air to cool said guide vane means.

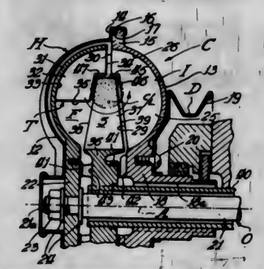
3,287,907
GAS TURBINE ENGINE EXHAUST DUCT STRUCTURE
Arthur Bill, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a company of Great Britain
Filed Apr. 1, 1965, Ser. No. 444,541
Claims priority, application Great Britain, June 12, 1964, 24,612/64
4 Claims. (Cl. 60—39.66)



1. A gas turbine engine comprising compressor equipment, combustion equipment, turbine equipment and an annular exhaust duct all arranged in flow series, said exhaust duct comprising an outer casing member and an inner frusto-conical member, the frusto conical member being open at its downstream end and inducing exhaust gases to form a vortex flow therewithin, and form a cone of gas over which the remaining exhaust gases flow, means for bleeding compressed air from a stage of said compressor equipment, means for directing it to parts of said en-

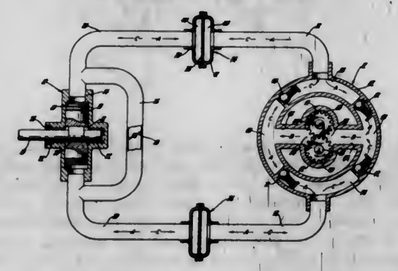
gine to cool the parts, and booster means for boosting the pressure of the compressed air such that it may be exhausted into said vortex flow within the exhaust duct.

3,287,908
HYDROKINETIC TORQUE CONVERTER
Anthony C. Mamo, Des Plaines, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Jan. 3, 1964, Ser. No. 335,564
4 Claims. (Cl. 60—54)



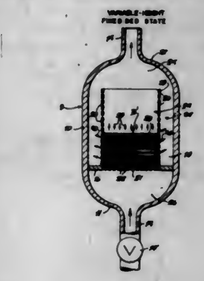
1. A hydraulic torque converter having a plurality of fluid circulating elements together defining a substantially toroidal fluid circuit having a geometric torus centerline and having an entrapped fluid vortex with a hydraulic circulation eye, said elements being rotatable about a common axis, said elements comprising at least one impeller for circulating and imparting kinetic energy to fluid therein, at least one turbine for absorbing kinetic energy from the fluid and at least one stator effective to change the directional flow of the fluid, each of said elements being particularly characterized by the inclusion of fluid guidance means providing freedom for said vortex eye to adjust to all of the various flow conditions of the converter said fluid guidance means comprising an annular shell having a plurality of blades extending generally radially inwardly thereof with respect to said torus center line, the radially inner terminal end portions of each of said blades being independent of adjacent terminal end portions for providing complete fluid intercommunication therepast, at least one of said elements having the respective blades thereof extending through and past said vortex eye under substantially all conditions of operation.

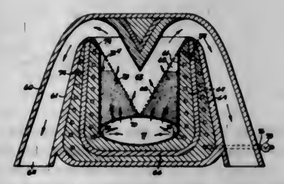
3,287,909
HYDROSTATIC TRANSMISSION
Nathaniel B. Kell, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 11, 1964, Ser. No. 351,047
17 Claims. (Cl. 60—54.5)



15. In a transmission, the combination of
(a) an hydraulic pulse generator unit having a drive member and a single pair of fluid ports, an hydraulic pulse responsive motor unit having a rotary driven member and a pair of fluid ports connected by two parallel fluid paths, and fluid circuit means connecting said generator unit with said pulse responsive motor unit,
(b) said hydraulic pulse generator providing pulses of reciprocating fluid movement which are transmitted from one of its fluid ports through said hydraulic pulse responsive motor unit to the other of its fluid ports without fluid transfer between said generator fluid ports,
(c) said parallel fluid paths each including a pair of one-way valves, a further fluid path connecting the midpoints of said parallel fluid paths and including said rotary driven member in fluid communication therewith, said one-way valves being arranged so as to convert reciprocating pulsed fluid movement appearing at said motor fluid ports into unidirectional fluid flow through said further fluid path for driving said rotary driven member in response to said reciprocating pulsed fluid movement.

3,287,910
NUCLEAR REACTOR
Calvin C. Silverstein, Trenton, N.J., assignor to Cornell Aeronautical Laboratory, Inc., Buffalo, N.Y., a corporation of New York
Filed Sept. 4, 1963, Ser. No. 306,423
27 Claims. (Cl. 60—203)





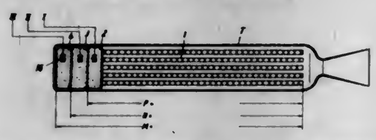
1. In a nuclear reactor, the combination comprising a container having a perforated fluid inlet wall and a perforated fluid outlet wall at a higher elevation than said fluid inlet wall, a multiplicity of freely movable discrete solid particles arranged in said container, at least some of the perforations in said fluid outlet wall being below the level of said particles in said container at all times, and means for flowing fluid upwardly into said container through the perforations in said fluid inlet wall, at least part of the fluid escaping from said container through said perforations in said fluid outlet wall, thereby suspending said particles in fluid to form a bed having a variable volume dependent upon the rate of fluid flow.

6. In a nuclear reactor, the combination comprising a container having a perforated side wall and a perforated bottom wall, an outer imperforate wall surrounding said side wall and providing a space therebetween, a multiplicity of freely movable discrete solid particles arranged in said container, at least some of the perforations in said side wall being below the level of said particles in said container at all times, fluid inlet means arranged below said bottom wall communicating with the perforations therein, and fluid outlet means arranged above said bottom wall and communicating with said space and the interior of said container.

3,287,911
HYBRID HYPERGOLIC ROCKET PROPELLANT SYSTEMS AND METHOD
Alfred Klein, 1265 47th St., Brooklyn, N.Y.
No Drawing. Filed Dec. 5, 1963, Ser. No. 328,197
5 Claims. (Cl. 60—220)

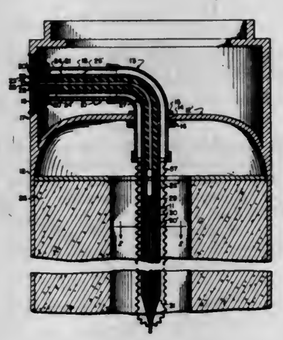
5. A method of applying thrust to a mass by a combustive reaction comprising, introducing an oxidant into and making contact with a fuel element in a combustion chamber of a reaction motor said oxidant comprising hydrogen peroxide and said fuel element comprised of a mixture consisting of 70%–85% by weight of a powdered material selected from the group consisting of alkali metal carbide, alkali earth metal carbide and mixtures thereof, 5%–15% by weight of potassium cuprocyanide, 0%–15% by weight of an alkali metal azide, 10%–30% by weight of a material suitable to be used as a binder, said mixture being formed into a solid matrix, producing a combustive reaction and said alkali metal azide causing an acceleration of said combustive reaction.

3,287,912
PROPELLENT CHARGE FOR SOLID FUEL ROCKETS
Karl-Otto Wehlow, Dusseldorf, and Hans-Dieter Harnau, Gevelsberg, Westphalia, Germany, assignors to Firma Rheinmetall G.m.b.H., Dusseldorf, Germany
Filed July 8, 1963, Ser. No. 293,926
Claims priority, application Germany, June 30, 1962, R 33,039
7 Claims. (Cl. 60—256)



1. A solid fuel rocket comprising an elongated container enclosed at one end, a combustion chamber, a nozzle connected to the open end of said container and communicating with said combustion chamber, a main solid fuel charge disposed within said combustion chamber and having a burning rate dependent upon variations in external ambient temperature assumed by the unburnt fuel and upon variations in combustion chamber pressure, said main fuel charge producing a predetermined propulsion momentum at a reference ambient temperature and a reference combustion chamber pressure and lower propulsion momentum at lower ambient temperatures and combustion chamber pressures, means for igniting said main fuel charge, at least one auxiliary solid fuel charge disposed within said combustion chamber and isolated from said main fuel charge, means for igniting said auxiliary fuel charge independently of said first mentioned igniting means, and switching means for said second mentioned igniting means responsive to at least one of said variations when the variation would cause the propulsion momentum generated by said main fuel charge to be lower than said predetermined propulsion momentum, said switching means including a bimetallic element controlled by said external ambient temperature, upon ignition said auxiliary fuel charge being capable of generating at least during a substantial part of the burning time of said main fuel charge an auxiliary propulsion momentum whereby the combined auxiliary propulsion momentum and lower main propulsion momentum are substantially equal to said predetermined propulsion momentum.

3,287,913
IGNITER
William M. Boydston, Costa Mesa, Calif., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Filed July 9, 1962, Ser. No. 208,539
12 Claims. (Cl. 60—256)

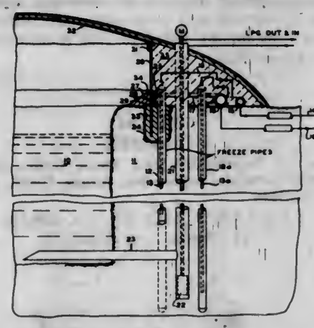


1. In a rocket engine, a combustion chamber having a propellant grain with a central cavity therein, a tubular guide member having its inner end opening axially of said combustion chamber and its outer end secured in the wall of said combustion chamber offset from the longitudinal axis thereof, a bendable tube longer than said tubular guide member adapted to be pushed through said tubular guide member to extend from the wall of said combustion chamber and project axially into the central cavity of said propellant grain, pressure sealing means effective to hold the outer end of said tube to the wall of said combustion chamber, pyrotechnic material enclosed in said bendable tube within said grain cavity, means arranged within said bendable tube operable to ignite said pyrotechnic material throughout the length thereof, and electrical means passing through said pressure sealing means for energizing said igniting means.

3,287,914
EARTHEN STORAGE FOR VOLATILE LIQUIDS AND METHOD OF CONSTRUCTING SAME
William M. Faulconer, and William C. Fisher, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 19, 1963, Ser. No. 302,830
5 Claims. (Cl. 61—.5)

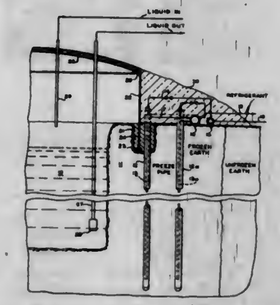
4. An earthen storage system for normally gaseous liquid comprising an open-topped earthen reservoir in frozen earth; refrigeration freeze pipe conduit means vertically positioned around the periphery of said reservoir and extending into the earth to a point below the bottom of said reservoir; means to supply refrigeration liquid to said freeze pipes; a continuous, enclosing, vapor-impermeable, roof-supporting shell vertically positioned around

said reservoir between said reservoir and said freeze pipes and sealed to frozen earth; a gusset plate secured to each



freeze pipe and to said shell; and an insulated roof sealed to and supported by said shell.

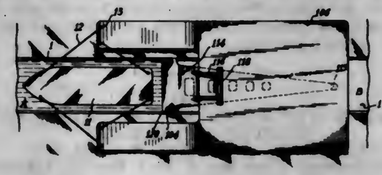
3,287,915
EARTHEN STORAGE FOR VOLATILE LIQUIDS AND METHOD OF CONSTRUCTING SAME
Phillip S. Massey, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 19, 1963, Ser. No. 302,884
5 Claims. (Cl. 61—.5)



2. A combination roof support and vapor barrier for use in an earthen storage system for normally gaseous liquid having an open-topped earthen reservoir maintained in frozen earth by means of a plurality of freeze pipes located around the periphery of the reservoir, said combination comprising a trench in the frozen earth around the periphery of the reservoir; an insulated, vapor-impermeable roof covering said reservoir; a continuous, enclosing, roof supporting, vapor-impermeable wall extending downwardly from the roof and terminating in said trench; a base plate fixedly secured horizontally to the bottom of said wall; and a frozen slurry of solids in a liquid filling said trench so as to support said wall and said roof and to form a vapor-impermeable seal with said wall.

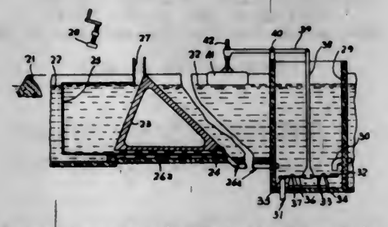
3,287,916
WATER RAMP
Jean Aubert, Paris, France, assignor to Societe Anonyme dite: Societe Generale de Traction et d'Exploitations, Paris, France
Filed Sept. 16, 1963, Ser. No. 309,198
Claims priority, application France, Sept. 21, 1962, 910,040
1 Claim. (Cl. 61—9)

In a water ramp installation having a channel of constant slope over its entire length, an automotor engine comprising a continuously rigid unitary structure spanning the channel and having wheels engaging each bank on opposite sides of the channel, an elongated rigid push-frame depending from said unitary structure and solely supported therefrom by a ball and socket joint at one



end portion of said push-frame; the other end portion of the push-frame being traversed beyond both lateral sides by a mask rigidly integral with the push-frame to define therewith a stiff single member, said mask conforming substantially to the bottom and sides of the channel and being fitted with supporting and guiding wheels.

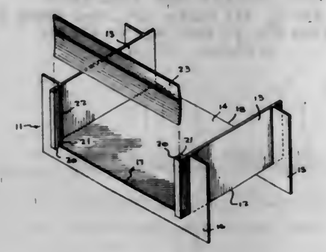
3,287,917
APPARATUS FOR AUTOMATIC CONTROL OF OUTFLOW OF IMPOUNDED WATER
Lawrence Alexander Turner, Jordaanskraal, Middleton, Cape Province, Republic of South Africa, assignor to Fluid Dynamics (Proprietary) Limited, Port Elizabeth, Cape Province, Republic of South Africa, a company of the Republic of South Africa
Original application Apr. 24, 1961, Ser. No. 105,140, now Patent No. 3,221,504, dated Dec. 7, 1965. Divided and this application May 24, 1965, Ser. No. 458,197
Claims priority, application Republic of South Africa, Apr. 29, 1960, 1,741/60
6 Claims. (Cl. 61—25)



1. Improved apparatus for the automatic regulation of the outflow from an open body of water impounded by a barrier and having a varying level when the level of said body of water is below a predetermined upper limit, which apparatus comprises a gate contiguous to said body of water and arranged to be opened and closed to control the outflow of water from said impounded body of water, a hollow float fixedly coupled to said gate on the side of said gate facing said body of water, said float having a water inlet and outlet aperture adjacent the bottom thereof and having an air vent at the top thereof, conduit means connecting said inlet and outlet aperture to a stationary control chamber, said control chamber having intake passage means in communication with the impounded body of water and discharge passage means for discharging water from the control chamber downstream of the barrier, and control means in said control chamber for controlling closure of both passage means for the withdrawal and supply of water from and to the control chamber and consequently from and to said float to vary the buoyancy of the float and consequently the opening and closing movements of the gate, said control means being operatively dependent on the level of the impounded body of water, and wherein the control means comprises valve means movable to close each one of said passage means while the other one remains open, the opening and closing

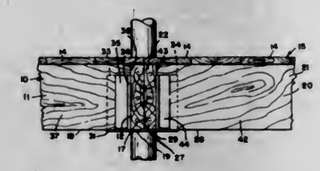
operations of which are effected through the medium of float means connected to said valve means and operated by the rising and falling of the level of the impounded body of water.

3,287,918
WATER LEVEL CONTROL DEVICE
Charles A. Stewart, 609 Rector Bldg., Little Rock, Ark.
Filed Aug. 16, 1963, Ser. No. 302,622
3 Claims. (Cl. 61—28)



1. A device for controlling flow of water between adjacent rice fields comprising a rigid channel-shaped body having outwardly projecting flange means adapted to be embedded in the soil in a levee between the adjacent fields, whereby to define a water flow passage through the levee, the side walls of the body being formed with vertical grooves, and a resilient plate member arcuately curved vertically continuously throughout its height and having its end edges frictionally engaged in said vertical grooves, said plate member defining a cylindrical resilient gate closure from side edge to side edge, each side edge being biased against opposite walls of its respective seating groove for frictionally-positioning the gate closure relative to the bottom of the channel-shaped body, the plate member acting as a flow-controlling gate and being manually vertically adjustable in said grooves.

3,287,919
DOCK AND DOCK BRACKET
Laurence C. Hahn, 5625 Girard Ave. N., Minneapolis, Minn.
Filed Aug. 3, 1964, Ser. No. 387,112
7 Claims. (Cl. 61—48)



7. A dock bracket for supporting, on a post, two juxtaposed sections of a platform each having a deck attached to a longitudinal frame member extending along one lateral edge of the section and a transverse frame member extending along an end of each section and forming a re-entrant angle with said longitudinal frame member, said frame members being disposed below said deck and exposed on the undersides thereof, said sections being adapted to be arranged in end to end alignment with the transverse frame members in juxtaposition, said bracket comprising:

(a) a shelf on which the approaching end portions of the frame members of both sections rest,

(b) a flange extending upwardly from said shelf and juxtaposed adjacent the outermost surface of both of said longitudinal frame members,

(c) an upright secured to said shelf and extending upwardly therefrom and disposed in the re-entrant angle between the frame members of one section adjacent the inner surface thereof,

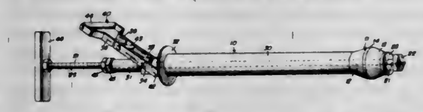
(d) another upright secured to said shelf and disposed in the re-entrant angle between the frame members of the other section and adjacent the inner surfaces of said frame members,

(e) a collar on the outer surface of said flange and adapted to encircle a dock post,

(f) said collar being disposed outwardly of said flange and platform to permit of attachment of the platform to the post at a locality below the upper end of the post and

(g) means engaging said collar and post and holding said bracket in fixed relation to said post.

3,287,920
DEVICE FOR SECURING A PLUG IN AN INFUSION HOLE
Richard H. Oitto, Jr., Pittsburgh, Pa., assignor to the United States of America as represented by the Secretary of the Interior
Filed Dec. 20, 1961, Ser. No. 160,962
5 Claims. (Cl. 61—63)



1. Apparatus for plugging an infusion hole including a deformable plug assembly in cooperative relationship with an expander mechanism,

said plug assembly comprising

a hollow stopper means of deformable material having as an integral part thereof an enclosure wall at one end formed as an outwardly extending cone-shaped portion with a slit near its apex,

a slotted element,

and a sleeve of pliable and substantially non-resilient material retaining said slotted element within the hollow stopper means such that the element is in position at the base of the cone-shaped portion,

said expander mechanism comprising

an elongated rod having at one end a keying means operable to be received through the slotted element of the plug assembly to engage a surface of the element within the cone-shaped enclosure portion,

a material forming member slidably supported on said rod,

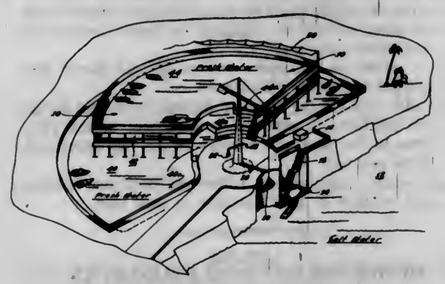
two elongated hollow members nested together and slidably supported on said rod such that an end of one of said nested members is in contact with the forming member,

and the other of said nested members having fixed thereon a pivot support means adjacent to a flange on the other end of the said one of the nested members,

stop means fixed to said rod and in contact with one end of the other of said nested members for preventing movement of the pivot support means away from the said flange,

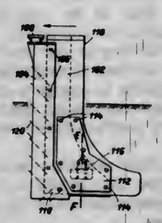
and a lever means pivoted on said pivot support means and operable to slidably contact the flange on the said one of the nested members whereby the latter is displaced relative to the other of said nested members and the rod such that it displaces the forming member to enter a substantial part thereof within the said sleeve to expand and deform the sleeve and the hollow stopper means in contact therewith.

3,287,921
BOAT STORAGE SYSTEM
Frank B. Wilson, 1831 W. Lomita Blvd., Lomita, Calif., and Wayne A. Watkins, 1707 238th St., Torrance, Calif.
Filed Aug. 21, 1963, Ser. No. 303,541
4 Claims. (Cl. 61—63)



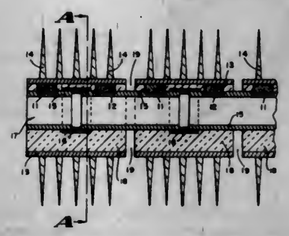
1. A boat storage system and structure including: a housing positioned adjacent a body of salt water; at least one tank-like storage means in said housing, said tank-like storage means being isolated from said body of salt water and being intended to hold fresh water and having a portion accessible from the exterior of said housing; fresh water in said storage means; means for introducing such fresh water into said storage means from a source independent of said body of water; and means adjacent said housing for hoisting vessels out of said body of water and for depositing the same into said accessible portion of said tank-like storage means to be floated on said fluid in said storage means.

3,287,922
METHOD AND DEVICE FOR EMBEDDING A LINE, A CABLE OR THE LIKE UNDERGROUND
Rudolf Harmstorf, Schillerstr. 45, Hamburg-Altona, Germany
Filed Feb. 28, 1962, Ser. No. 176,217
Claims priority, application Germany, Mar. 4, 1961, H 41,919



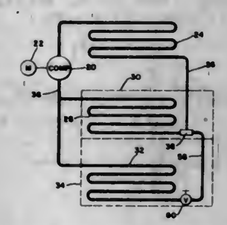
1. The device for embedding an elongated member underground comprising, in combination, an upright column-like hollow structure having a lower end and a front portion and lateral sides, guide means for said elongated member defined within said hollow structure, outlet means for said elongated member defined adjacent said lower end of said hollow structure and directed rearwardly thereof, a first vibrating soil engaging body mounted in front of said front portion of said hollow structure and mounted thereto, vibration-absorbing elements mounting said body to said hollow structure, a first vibration generator operatively connected to said first vibrating body, second soil engaging vibrating bodies defined on both lateral sides of said hollow structure and mounted thereto, vibration-absorbing elements mounting said second bodies to said lateral sides, a second vibration generator arranged within said hollow structure, means for operatively connecting said second vibration generator to said second vibrating bodies, said connecting means extending through openings defined in said lateral sides of said hollow structure, and sealing means arranged between the walls of said openings and said connecting means, said sealing means being in the form of vibration-absorbing means.

3,287,923
THERMOELECTRIC ASSEMBLY
Thore M. Elfving, 433 Fairfax Ave., San Mateo, Calif.
Filed Mar. 22, 1965, Ser. No. 441,804
15 Claims. (Cl. 62—3)



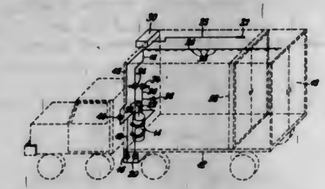
1. A thermoelectric assembly of the type including pairs of semiconductor elements of n-type and p-type thermoelectric material having first and second spaced surfaces, first junction bridges connected between the first surfaces of each of said pairs of elements, second junction bridges connected between the second surface of said semiconductor elements to form thermocouples, at least one of said first or second junction bridges being in the form of short lengths of hollow finned tubes having outwardly extending heat transfer fins.

3,287,924
REFRIGERATING APPARATUS
James A. Bright, Miamisburg, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 2, 1965, Ser. No. 484,531
2 Claims. (Cl. 62—5)



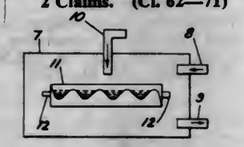
1. Refrigerating apparatus including first and second refrigerant evaporating means having inlet and outlet means, refrigerant compressing and condensing means having inlet means connected to the outlet means of said first and second evaporating means, vortex means having a central outlet means connected to the inlet means of said first evaporating means and an outer outlet means connected to the inlet means of said second evaporating means, means for changing the pressure energy of the refrigerant to velocity energy comprising a restrictor having its inlet connected to the outlet means of said compressing and condensing means and having its outlet discharging substantially tangentially into the inner surface of said vortex means.

3,287,925
INTRANSIT LIQUEFIED GAS REFRIGERATION SYSTEM
John J. Kane, Fullerton, Calif., and Allen P. Matter, Kenmore, N.Y., assignors to Union Carbide Corporation, a corporation of New York
Filed Dec. 5, 1963, Ser. No. 328,356
13 Claims. (Cl. 62—51)



1. A method for the intransit preservation of perishable products comprising the steps of providing pressurized low-boiling liquefied gas, having a boiling point at atmospheric pressure below about −80° C., and at temperature corresponding to a vapor pressure above about 10 p.s.i.g. with the entire liquid and vapor substantially in equilibrium at the temperature of the liquid at all times, in a mobile thermally insulated storage container associated with a mobile thermally insulated storage chamber; controllably dispensing pressurized liquefied gas from the container by said vapor pressure and spraying such pressurized liquefied gas in liquid form at above atmospheric pressure into the storage chamber to cool and maintain the interior of such chamber thereby to a selected temperature range below ambient; exposing the interior of said storage chamber to the surrounding atmosphere and terminating such flow of liquefied gas from within said container.

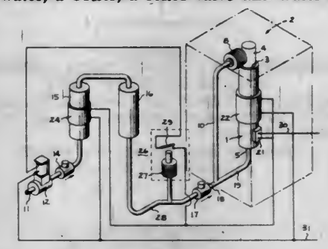
3,287,926
METHOD OF MAKING AND HARVESTING ICE
Henry J. Hall, Detroit, Mich.
(25210 Circle Drive, Southfield, Mich.)
Filed June 17, 1964, Ser. No. 375,716
2 Claims. (Cl. 62—71)



1. The method of freezing and dry harvesting ice, which consists providing a container of water, enclosing said container in an air tight space, and simultaneously subjecting all parts of said container to a constant flow of refrigerant at a constant temperature well below the freezing point of water, freezing the water and thereafter maintaining said refrigerant uniformly in contact with all walls of said container while maintaining said refrigerant at said constant temperature and shrinking the volume of the ice equally on all sides simultaneously for harvesting.

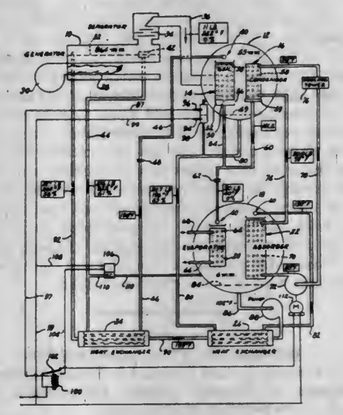
3,287,927
HYDRAULIC ICE MAKER
Dwight W. Jacobus, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Feb. 7, 1966, Ser. No. 525,490
5 Claims. (Cl. 62—135)

1. A hydraulic ice maker comprising:
a tube open at one end for containing water to be frozen into ice;
means for freezing the water contained in said tube;
said tube having a water inlet at the other end thereof for introducing water under pressure into said tube to eject a portion of the ice from said one end of said tube;
ice severing means including an expansion chamber operable upon expansion of said chamber to sever an ejected portion of ice;
water supply means including, in series connection a normally closed valve means connected to a source of water, a boiler, a relief valve and water conduit



means connecting said relief valve to said expansion chamber and to said water inlet,
means for heating said boiler to vaporize water contained therein and thereby effect flow of a volume of water through said relief valve and into said expansion chamber to operate said severing means,
and a tube heater for effecting a thawing of the bond between said ice and said tube subsequent to the operation of said severing means whereby flow of said volume of water from said expansion to said tube ejects a portion of the ice from said one end thereof.

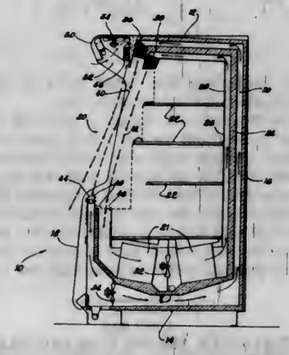
3,287,928
DECRYSTALLIZER MEANS FOR DOUBLE EFFECT ABSORPTION REFRIGERATION SYSTEM
John Graham Reid, Jr., Grosse Pointe, Mich., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 14, 1964, Ser. No. 359,744
5 Claims. (Cl. 62—141)



1. In an absorption refrigeration system comprising a first upper shell containing a generator; a second intermediate shell containing a second generator and condenser; a third lower shell containing an evaporator and absorber; a heat exchanger arranged below the lower shell; a first line leading from the bottom of the intermediate shell through one side of the heat exchanger to

the absorber; and a second line leading from the bottom of the lower shell through the other side of the heat exchanger to the first generator: the improvement comprising a third line leading from the first generator to a point in the second line located upstream from the heat exchanger; valve means normally closing said third line; means responsive to the liquid level in said intermediate shell for sensing the build-up of crystals in said other side of the heat exchanger; and means operated by the sensing means to open said valve means.

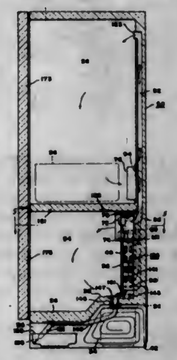
3,287,929
REFRIGERATED CABINET WITH IMPROVED NOZZLE CONSTRUCTION
Sterling Beckwith, Libertyville Township, Ill., assignor to Dual Jet Refrigeration Company, Chicago, Ill., a corporation of Illinois
Filed June 30, 1965, Ser. No. 468,373
9 Claims. (Cl. 62—256)



1. In a refrigerated cabinet construction of the type defining an open side and including air inlet means and air nozzles extending in side-by-side relationship across opposite edges of said open side, passages defined in said construction communicating each of the corresponding inlets and nozzles, refrigeration means located in at least the innermost one of said passages, and circulating means located in at least the innermost of said passages for driving air streams through said passages and across said open side between corresponding inlets and nozzles, said air streams crossing said open side in side-by-side contacting relationship, the improvement comprising additional driving means for an air stream, said driving means being located adjacent said nozzles, an additional nozzle having its outlet end directed toward the outermost of the air streams passing between said nozzles and inlets, said driving means being adapted to collect ambient air and to direct the ambient air through said additional nozzle for passage of an ambient air stream into engagement with said outermost air stream.

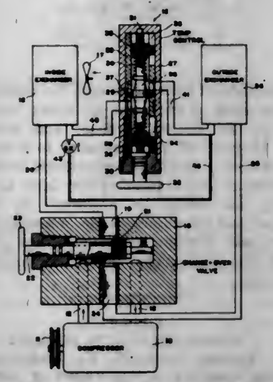
3,287,930
REFRIGERATING APPARATUS
John J. O'Connell, and Leonard J. Mann, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application Feb. 10, 1964, Ser. No. 343,736, now Patent No. 3,252,292, dated May 24, 1966. Divided and this application Sept. 13, 1965, Ser. No. 486,648
1 Claim. (Cl. 62—277)

A refrigerator including insulating means enclosing a compartment, said compartment having a raised bottom wall portion extending across the rear of said compartment, means forming a machine compartment beneath said compartment having a portion of increased height beneath said raised bottom wall portion, a refrigerant liquefying means having a compressor with a major portion located in said machinery compartment beneath said raised bottom wall portion, a refrigerant evaporating means supported in said compartment above said raised bottom wall portion, a partition wall extending upwardly from said raised bottom wall portion shielding the remainder of said compartment from said evaporating means, and means operatively connecting said evaporat-



ing and liquefying means, said raised bottom wall portion having a drain sump and a drain outlet connection extending from said sump through said wall portion, a drain disposer in said machinery compartment, and a drain conduit extending from said drain outlet connection to said drain disposer, said sump being provided with a removable cover for keeping cold air and foreign objects away from said sump which is removable to provide access for cleaning said sump and said drain outlet connection.

3,287,931
HEATING AND COOLING SYSTEM FOR MOTOR VEHICLES
Frank Welty, Youngstown, Ohio., assignor to The Vendo Company, Kansas City, Mo., a corporation of Missouri
Filed Apr. 5, 1965, Ser. No. 445,341
5 Claims. (Cl. 62—324)



1. A combined heating and cooling system for motor vehicles and the like comprising a power-driven refrigerant compressor, a first heat exchanger adapted to be installed within the space to be heated or cooled, a second heat exchanger adapted to be positioned outside said space, a

reversing valve having ports connected to the inlet and outlet of said compressor and a pair of other ports connected, respectively, to a refrigerant port of said first exchanger and a refrigerant port of said second exchanger, conduit means interconnecting the other refrigerant ports of said exchangers and having means therein to yieldingly impede the flow of refrigerant in either direction, and a second conduit having a restricted passage and a series check valve in parallel with said conduit means to transfer liquid refrigerant from the said other of said refrigerant ports of said second exchanger to the other of said refrigerant ports of said first exchanger when said valve is set to discharge compressed refrigerant into said second exchanger.

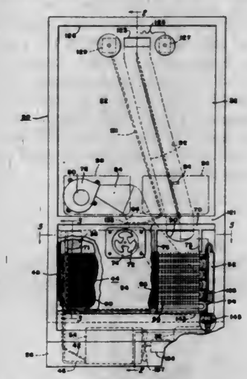
3,287,932
SPRAY FREEZER TUNNEL
Alfred H. Schlemmer, Jr., 400 N. Lake Eloise Drive, Winter Haven, Fla.
Filed July 16, 1965, Ser. No. 472,594
7 Claims. (Cl. 62—374)



1. In a food freezing apparatus, the combination of an elongated housing forming a tunnel, a longitudinal partition provided in said tunnel and separating the same into an upper compartment and a lower compartment, a food conveyor passing through said tunnel from one end thereof to the other, said conveyor having a loading end, a discharge end, an upper food conveying run passing through said upper compartment along said partition and a lower return run passing through said lower compartment, a plurality of transversely extending rotatable guiding rolls provided at longitudinally spaced points in said lower compartment, the lower run of said conveyor passing in a catenary path over said guiding rolls whereby to maintain appropriate tension on the upper run of the conveyor passing along said partition, and means for discharging volatilizable liquefied gas into said upper compartment, said housing forming said tunnel comprising a plurality of modular sections assembled in end-to-end relationship, said tunnel partition comprising a plurality of planar partition members embodied in the respective tunnel sections, and longitudinally extending wear strips mounted on the upper surface of each partition member, the wear strips on each partition member being laterally offset from and longitudinally overlapping the wear strips on the next adjacent partition member, the upper run of said conveyor riding on said wear strips, together with fixed fastener means securing one end of each of said wear strips at a fixed point to its associated partition member, and self-adjusting fastener means securing the other end of each wear strip to the partition member so as to permit longitudinal expansion and contraction of the wear strip under changes in temperature independently of the associated partition member.

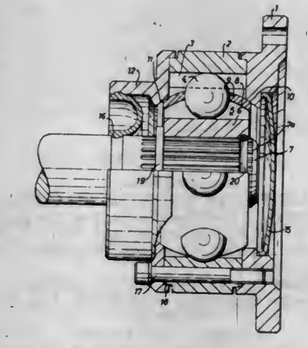
3,287,933
REFRIGERATING APPARATUS
John J. O'Connell and Leonard J. Mann, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application Feb. 10, 1964, Ser. No. 343,736, now Patent No. 3,252,292 dated May 24, 1966. Divided and this application Sept. 13, 1965, Ser. No. 486,647
6 Claims. (Cl. 62—441)

1. A refrigerator including insulating means enclosing a below freezing compartment and an above freezing compartment, said insulating means including insulated side walls and an insulated rear wall for said below freezing compartment, a refrigerant evaporating means in the form of a single elongated unit located within said below freezing compartment in front of and generally parallel to said rear wall and having its opposite ends adjacent said side walls, a partition wall located in said below freezing compartment in front of said evaporating means, upwardly extending dividing means behind and transverse to said partition wall cooperating with said evaporating means and



the walls of said below freezing compartment to provide separate chambers on opposite sides thereof containing the opposite ends of said evaporating means, said partition wall on one side of said dividing means being provided with an opening at the bottom and the top and on the opposite side of said dividing means being imperforate, said insulating means being provided with supply and return air passages connecting said above freezing compartment with said separate chamber behind the imperforate portion of said partition wall on the opposite side of said dividing means.

3,287,934
UNIVERSAL JOINTS AND COUPLINGS
Harry Asher, Thorntonville, Cleckheaton, England, assignor to Holset Engineering Company Limited, Huddersfield, England, a British company
Filed May 5, 1964, Ser. No. 365,053
Claims priority, application Great Britain, May 14, 1963 18,985/63
9 Claims. (Cl. 64—21)



1. A universal joint comprising a shaft, an outer and an inner member mounted concentrically with and axially surrounding said shaft, said inner member supported

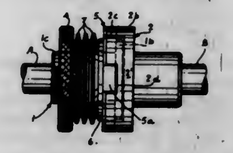
on and connected to said shaft, said outer and inner members having a plurality of regularly circularly spaced, matching inner and outer grooves respectively,

a plurality of balls, a ball locating cage mounted intermediate the outer and the inner members for locating said balls equidistantly spaced with their centres on a common plane, each ball engaged in a groove of said outer and inner members,

the mounting for said cage consisting of spherical bearing contact between the internal and external surfaces of the cage and the inner and outer members respectively, the cage thus being mounted for controlling the articulation centre of the joint,

said grooves being axial parallel, extending straightly in the axial direction of said members and providing cross-sectional shapes which at least in part closely fit the diameters of the balls therein with minimum sliding friction and high rolling efficiency, whereby the balls roll in their grooves to steer the cage accurately into the bisector plane.

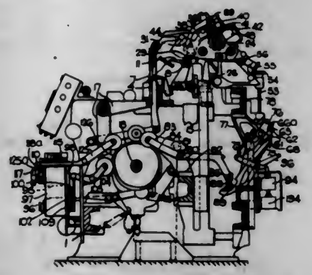
3,287,935
FRICTION CLUTCH
Heinrich Grünbaum, Binningen, Switzerland, assignor to Dr. C. Schachenmann & Co., Basel, Switzerland
Filed June 10, 1964, Ser. No. 373,961
11 Claims. (Cl. 64—30)



1. A friction clutch, comprising a first rotary coupling unit including a first coupling member; a second rotary coupling unit located substantially coaxially with respect to said first coupling unit, said second coupling unit including a coupling element having a substantially cylindrical portion substantially coaxial with said first coupling member and a radially extending transverse wall portion, an annular clutch member rotatably and slidably received on said substantially cylindrical portion of said first coupling element, and biasing means provided on said first coupling element and arranged to bias said clutch member axially into frictional engagement with said transverse wall portion; connecting means provided on said members for constraining the latter for simultaneous rotational movement about their common axis and for permitting said members to move freely out of engagement with each other in axial direction in response to movement of one of said coupling units axially away from the other coupling unit, without affecting the bias of said biasing means, said coupling units transmitting between themselves a driving torque whose magnitude depends on the bias of said biasing means when said members are connected for simultaneous rotational movement.

3,287,936
STRAIGHT BAR KNITTING MACHINES
William Bentley, Woodhouse Eaves, near Loughborough, Dennis A. Cozens, Leicester, and Barry C. Strong, Thurmaston, Leicester, England, assignors to William Cotton Limited
Filed Dec. 16, 1964, Ser. No. 418,666
Claims priority, application Great Britain, Dec. 19, 1963, 50,289/63
5 Claims. (Cl. 66—82)

1. A straight bar knitting machine having a row of needles, a thread carrier reciprocatable along the row of needles, abutment means reciprocatable with the thread carrier, spaced limit stops providing first inwardly directed limit stop faces for engagement by the reciprocatable abutment means, adjustable lead screw means for adjusting the spaced limit stops inwardly and outwardly to provide for small increment adjustments of the amplitude of travel of the reciprocatory abutment means and consequently of the thread carrier, spaced sets of movable spacer blocks carried by the spaced limit stops respectively and providing



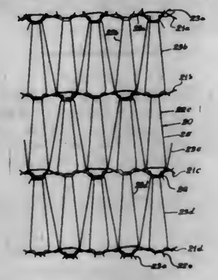
spaced sets of second inwardly directed limit stop faces, and selection control means operably associated with the spaced sets of spacer blocks to displace them selectively and bring their second inwardly directed limit stop faces selectively into regions inwardly adjacent said first inwardly directed limit stop faces, thereby providing for larger increment adjustments of the amplitude of travel of the reciprocatable abutment means and consequently of the thread carrier.

3,287,937
METHOD OF MAKING KNITTED GARMENTS
James H. Landau, 15 Mayflower Parkway, Westport, Conn.
Original application Dec. 12, 1961, Ser. No. 158,757. Divided and this application Oct. 21, 1965, Ser. No. 509,466
2 Claims. (Cl. 66—171)



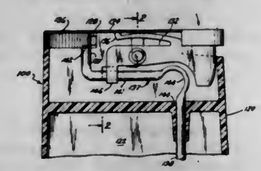
1. The method of making a knitted garment to be worn on the human torso which comprises the steps of knitting two first and second tubular lengths of material having courses of predetermined length to conform to the peripheral dimensions of first and second oppositely disposed portions of the human torso, the number of wales in certain successive courses of each tube being either progressively increased or progressively decreased, said increases or decreases being made only by the addition or subtraction of an equal number of wales disposed on either side of two diametrically opposite longitudinally extending lines, severing each of said tubes along a longitudinal line disposed equidistant from said first mentioned two longitudinal lines to provide first and second half panels of material each having awo side margins, and joining the respective side margins of the first half panel with the respective side margins of the second half panel.

3,287,938
RUN-RESISTANT ELASTIC FABRIC
Herbert Knohl, Seneca, S.C., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts
Filed Dec. 6, 1963, Ser. No. 328,599
14 Claims. (Cl. 66—190)



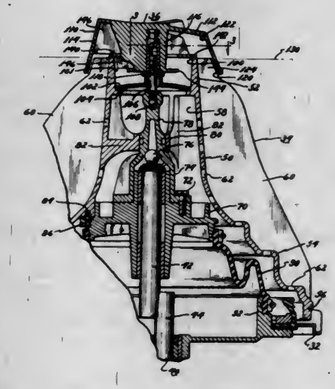
1. A tubular-knit elastic fabric tube including an elastomeric yarn inlaid into a modified jersey-knit textile yarn structure comprising alternate spiraloid courses of tightly knit plain stitches of yarn of relatively greater shrinkability and intermediate spiraloid courses of more loosely knit alternating plain and tuck stitches of yarn of relatively lesser shrinkability and wherein the elastomeric yarn is incorporated as a tuck yarn in stitches which have no other tuck yarn.

3,287,939
FINGERPIECE CONTROLLED GAS LIGHTERS
Conrad Zellweger, 28 Avenue des Arpillieres, Geneva, Switzerland, and William Retzler, 8 Howard Road, Great Bookham, England
Original application July 23, 1963, Ser. No. 297,128, now Patent No. 3,208,243, dated Sept. 28, 1965. Divided and this application Sept. 15, 1965, Ser. No. 498,182
Claims priority, application Switzerland, July 27, 1962, 9,014
3 Claims. (Cl. 67—7.1)



1. A hand held lighter of the gas fuel type comprising a reservoir for maintaining highly volatile fuel under pressure in its liquefied state; a sparking wheel having an abrading surface; a flint element biased against the abrading surface of said sparking wheel; a burner means including a burner nozzle located near said sparking wheel and said flint element and a hollow element extending from within said reservoir to said burner nozzle, said hollow element having a first portion terminating in said reservoir, a second portion terminating in said burner nozzle, a third portion connecting said first and second portions and extending at an angle to said first portion, and a resiliently constrictable portion at the juncture of said first and third portions which is internally exposed to reservoir pressure; and a movable fingerpiece connected to said hollow element at said third portion to control constriction of said constrictable portion, said fingerpiece being normally in a position which coincides with complete constriction of said constrictable portion and being movable from said position in a direction to cause movement of the third portion of said hollow element to produce gradual opening of said constrictable portion from a condition of complete constriction to a maximum opening whereby said fingerpiece operates to provide complete control of the checking, unchecking, throttling and flow rate of fuel from said reservoir to said burner nozzle.

3,287,940
WASHING MACHINE LINT FILTER
Andrew H. Gerhardt, Fort Pierce, Fla., and James J. Schmidt, East Detroit, Mich., assignors to American Motors Corporation, Detroit, Mich., a corporation of Maryland
Filed June 15, 1964, Ser. No. 375,111
9 Claims. (Cl. 68—18)



1. Filter means for use with agitator type washing machines, and comprising:

an agitator formed to include a vertically disposed hollow body portion,

a wash water receptive opening provided through the upper disposed terminal and of said hollow body portion and above the static level of wash water in which operated,

wash water emitting openings provided between the ends of said hollow body portion,

a filter member provided in said hollow body portion, near the upper terminal end thereof and between said wash water receptive and emitting openings,

means for driving said agitator for circulating wash water through said openings and said filter member therebetween,

and deflector means provided on the upper disposed end of said agitator and extending over said receptive opening for directing wash water received thereby into the receptive opening provided in the terminal end of said agitator,

said deflector means being provided in spaced relation vertically over the terminal end of said agitator and extending radially outward and downward in concentric spaced relation to the peripheral surface of said agitator at said terminal end.

3,287,941
RUG AND CARPET CLEANING DEVICE
Nishan E. Buruchian, 427 Marlboro Road, Wood Ridge, N.J.
Filed Feb. 9, 1965, Ser. No. 431,317
18 Claims. (Cl. 68—20)

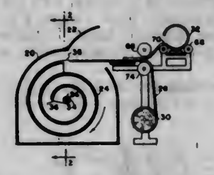
1. A rug and carpet cleaning device comprising:

a tank;

a rotatable spiral guide mounted within the tank;

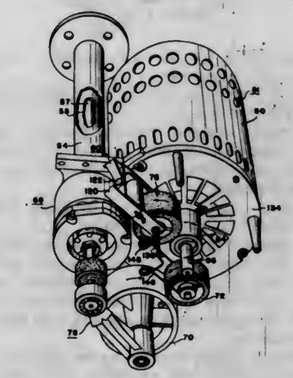
a conveyor having means, as a part thereof, for holding the article to be cleaned in position;

means for moving the conveyor onto the rotatable spiral guide;
means for introducing cleaning solution into the tank;
an end plate affixed to each end of the rotatable spiral guide;
one of the end plates having a central opening therein;



means for rotating the spiral guide, the conveyor and the article held thereto so that the cleaning solution is drawn up inside the combination and is ejected through the central opening in the end plate having the central opening; and
means for draining the cleaning solution from the tank.

3,287,942
WASHING MACHINE AND ROLLER DRIVE MECHANISM THEREFOR
Donald A. Brackman and Byron L. Brucken, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 4, 1965, Ser. No. 430,265
16 Claims. (Cl. 68—23)



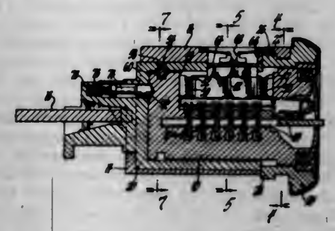
10. An agitating and spinning mechanism comprising, two shaft means concentrically arranged, support means for said shaft means, spin driven roller means drivably connected to one of said shaft means for rotating said one of said shaft means, means drivably connected to the other of said shaft means for motivating said other of said shaft means, agitate driven roller means rotatably carried by said support means for driving said motivating means, power shaft means operable in a first and second manner, first self-energizing roller means movable with respect to said spin driven roller means and said power shaft means for selectively wedgingly engaging said spin driven roller means and said power shaft means to motion transmittingly connect said power shaft means with said spin driven roller means when said power shaft means is operating in a first manner for inducing spinning, and second self-energizing roller means movable with respect to said agitate driven roller means and said power shaft means for selectively wedgingly engaging said agitate driven roller means and said shaft means to motion transmittingly connect said power shaft means with said agitate driven roller means when said power shaft means is operating in a second manner for inducing agitating, one of said first or second self-energizing roller means including an idler roller and means for moving said idler roller out of wedging engagement with its respective driven roller means in response to the manner of operation of said power shaft means.

3,287,943
SAFETY LOCK FOR OUTBOARD MOTORS
George W. Vaughn and Felix F. Roitz, both of 2038 Oakland Ave., Pueblo, Colo.
Filed Nov. 25, 1964, Ser. No. 413,813
3 Claims. (Cl. 70—58)



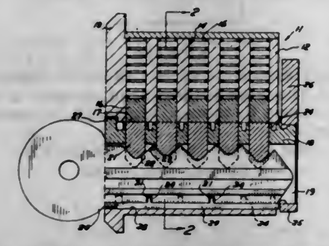
1. A lock for a pair of spaced-apart clamping members for preventing said members against unauthorized rotation or use of the clamping members, the clamping members having threaded shanks and a pivoted handle on each of the heads of the threaded shanks, said lock comprising a hollow, elongated square-shaped tubular member having a hollow portion extending at least from each end thereof to receive, respectively, a pivoted handle of said threaded shanks within each end thereof, an elongated slot of a cross-section to receive at least the width of the shank of said clamping members and extending from each end of said tubular member along the rear side thereof, said slots extending sufficiently to enable the tubular member to interfit between said clamping members when positioned in spaced-apart relation while the pivoted handles are positioned within the adjacent hollow portions of the tubular members, and an aperture extending through the upper and lower surfaces of said tubular member and through the free end of one of the handles in substantially coaxial alignment with each other and adapted for receiving the shank of a locking means.

3,287,944
LOCKING MEANS
Duane R. Crumb, Webster, N.Y., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 18, 1964, Ser. No. 352,868
6 Claims. (Cl. 70—364)



1. In a cylinder lock, the combination comprising, a casing, an output sleeve rotatably mounted within the casing, a plug rotatably mounted within the sleeve, said plug and said casing having radial recesses and said sleeve having a slot alignable in a predetermined position of the plug and of the sleeve relative to the casing, a pair of separate side locking bar members received for movement radially within said recesses and slot, said members being arranged one radially overlying the other within the recesses and slot and having portions defining a parting face between said members, and key-operated tumbler means mounted within said plug for movement therein between locking and unlocking positions transversely of the path of movement of said members, said tumbler means in the locking position thereof locating the radially inner of said members wholly within the plug and the radially outer of said members within the sleeve and the casing in positions aligning said parting face with the circumferential interface between the plug and the sleeve whereby the sleeve and the casing are keyed together and the plug is freely rotatable within the sleeve, said tumbler means in the unlocking position thereof locating said members in an unlocking position within said recesses and slot wherein the plug and sleeve are keyed together and freely rotatable within the casing.

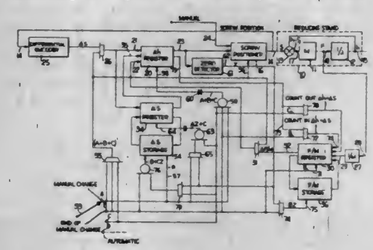
3,287,945
CYLINDER LOCK
Leon Yulkowski, 536 S. Telegraph Road, Pontiac, Mich.
Filed Sept. 2, 1964, Ser. No. 393,875
5 Claims. (Cl. 70—364)



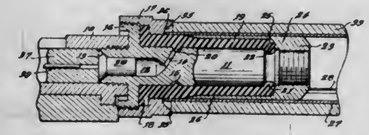
1. In a cylinder lock, including a shell, a rotatable plug, key operated movable pins in the plug, and spring-biased drivers in the shell bearing on the pins normally retaining the plug against rotation;
said plug having an elongated axial key slot of predetermined profile opening outwardly of one side of the plug and in registry with said pins;
the improvement comprising: an elongated ward body nested and retained in the shell and extending axially of said plug;
a plurality of longitudinally spaced ward projections on said body extending radially inward of said plug;
there being plurality of longitudinally spaced annular grooves in said plug in registry with and loosely receiving said ward projections;
and a key having a corresponding series of longitudinally spaced transverse notches in its undersurface, located in said key for cooperative clearance registry with said ward projections.

3,287,946
AUTOMATIC GAUGE CONTROL WITH MANUAL ADJUSTMENT
Ralph E. Perrault, Monrovia, Calif., Allan C. Halter, Milwaukee, Wis., and Paul L. McMath, Claremont, Calif., assignors, by direct and mesne assignments, to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Dec. 30, 1963, Ser. No. 334,251
10 Claims. (Cl. 72—8)

1. In a control for a system having means comparing a system first parameter with a reference and ordering changes in a system second parameter according to a relationship between changes in said first and second parameters to maintain a predetermined system condition, manually controlled means for changing said system second parameter independently of the control action of said comparing means to achieve a second system condition, and
means responsive to the change in said system second parameter by said manually controlled means and including a register for said system second parameter to change said reference according to said relationship to a value corresponding to the quantity recorded in said register at the beginning of said change by said manually controlled means and the existing value of said system first parameter at the end of said change by said manually controlled means.



3,287,947
EXPLOSION APPARATUS FOR FLANGING A TUBE
Charles E. Frantz, Richland, Wash., William E. Cawley, Phoenix, Ariz., and Frank F. Vlacil and Eugene R. Astley, Richland, Wash., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Jan. 3, 1964, Ser. No. 335,699
3 Claims. (Cl. 72—56)

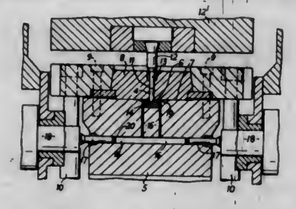


1. A tube-flanging apparatus comprising a central body having a longitudinal explosion chamber extending from one end of the body and terminating at a region spaced from said one end in generally radial passages extending to the outside of the body, the body having an external flange near the said one end and an external groove near the other end, an expansible flexible sleeve embracing the body and having an external flange at one end engaging the external flange on the body and an internal flange on the other end engaging the groove on the body, means for holding the flanges of the body and the sleeve together, a mandrel connected to said other end of the body, engaging said other end of the sleeve, and embracing said sleeve from said other end thereof to a region thereof adjacent the portion of the body in which the said passages are located.

3,287,948
COLD FORMING ARTICLES FROM LENGTHS OF ROD, BAR OR TUBE
John Malcolm Alexander and Bela Lengyel, South Kensington, London, England, assignors to National Research Development Corporation, London, England
Filed June 26, 1963, Ser. No. 290,798
Claims priority, application Great Britain, June 29, 1962, 25,128/62
7 Claims. (Cl. 72—57)

1. The method of cold-forming an article having a substantial lateral projection from a billet of bar or

tube, comprising the steps of applying a force to said billet to force said billet down a die channel conforming to the billet in cross-section into a die chamber into contact with wall surfaces of said chamber and thereby



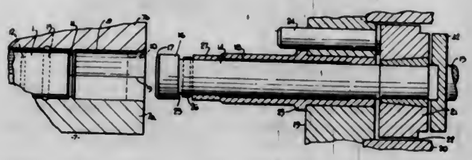
deforming the material of said billet a substantial distance laterally of the direction of said force to form said projection, said billet being in contact with fluid under high fluid pressure during the deformation of said billet, and removing said article from said die chamber.

3,287,949

MANUFACTURE OF PIPE JOINTING SLEEVES AND THE LIKE

Edward J. Skinner, Solihull, England, assignor to The Wednesbury Tube Company Limited, Bilston, England, a British company

Filed Jan. 15, 1963, Ser. No. 251,596
3 Claims. (Cl. 72—62)



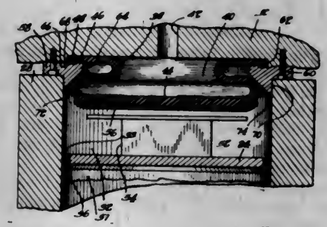
1. Apparatus for forming an internal annular solder-filled recess in a pipe-receiving portion of a metal pipe-jointing member; comprising a forming tool consisting of a mandrel, an enlarged head on said mandrel and a sleeve which is a sliding fit on said mandrel, said sleeve co-operating with said head of the mandrel to form an annular solder-receiving receptacle; a reciprocable driving member for moving said forming tool into and out of the pipe-receiving portion; a direct coupling between said driving member and said sleeve; a resilient deformable coupling between said driving member and said mandrel; abutment means for arresting the movement of said mandrel into said pipe-receiving portion, said resilient deformable coupling being deformable by said driving member to permit said sleeve to be further moved by said driving member into said pipe-receiving portion towards said head to close said receptacle when said mandrel is so arrested; said resilient deformable coupling, when so deformed, exerting pressure to move said sleeve in the reverse sense relative to said mandrel when said forming tool is withdrawn; and means for preventing movement of said sleeve in the reverse sense relatively to said mandrel until said forming tool has been moved through a distance along its withdrawal stroke, said last mentioned means comprising a liquid receiving chamber connected through a valve to a reservoir, a wall of said chamber being movable with said sleeve, to permit the volume of said chamber to be altered by movement of said wall with said sleeve during the first mentioned movement of said sleeve relatively to said mandrel, said valve providing for flow of liquid between said chamber and said reservoir during said first mentioned movement of said sleeve and being biased closed to prevent reverse flow of the liquid, thereby to prevent reverse movement of said sleeve relatively to said mandrel, during movement of the forming tool through said distance of its withdrawal stroke, and means for thereafter automatically opening said valve to permit such reverse flow and thereby the reverse movement of said sleeve relatively to said mandrel.

3,287,950

DIAPHRAGM TYPE HYDRAULIC PRESS

Eugene E. Grankowski, Chicago, Ill., assignor to Verson Allsteel Press Company, Chicago, Ill., a corporation of Illinois

Filed Nov. 6, 1963, Ser. No. 321,879
3 Claims. (Cl. 72—63)



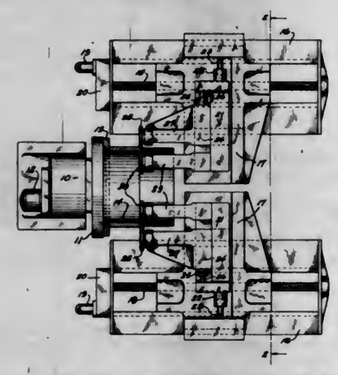
1. In an apparatus of the type described for forming a workpiece, fixed head means, an annular member movable axially toward and away from said head means for combining with said head means for providing a workpiece accommodating cavity, said annular member having an inner wall surface substantially parallel to its axis, a ring element secured to said head means and engageable within said inner wall surface, and resiliently expandable diaphragm means mounted on said head means within said ring means for traversing said annular means, said diaphragm means including a radially outwardly extending marginal flange portion clamped between said head means and said ring element, said ring element including an at least partially downwardly facing surface outwardly of an inner edge thereof, said diaphragm means including a sidewall portion extending from said marginal flange portion downwardly around said ring element inner edge and beneath said downwardly facing surface, said resiliently expandable diaphragm means being expandable by fluid under pressure for engaging and forming a workpiece positioned in said cavity and for engaging and radially expanding said ring element into tight sealing engagement with said inner wall surface and upwardly against said head means.

3,287,951

ART OF ROLL-REDUCING RING WALL THICKNESS

Otto F. Widera, South Milwaukee, Wis., assignor to Ladish Co., Cudahy, Wis., a corporation of Wisconsin

Continuation of application Ser. No. 199,956, June 4, 1962. This application Mar. 4, 1966, Ser. No. 538,438
8 Claims. (Cl. 72—85)



1. Apparatus for roll reducing ring wall thickness while maintaining substantially the same mean diameter of a cylindrical workpiece which is being elongated, comprising: a head stock having a rotatably supported face plate, means on said face plate for removably supporting one end of a cylindrical workpiece for rotation while the workpiece is being elongated and while maintaining the interior of the workpiece open, a bed frame positioned adjacent said head stock, a first tool holder mounted on said bed frame for adjustable movement radially of the workpiece and having a rotatably supported reducing roll positioned for engagement with the O.D. of the workpiece, a second tool holder mounted on said bed frame for movement radially of the workpiece and having a rotatably supported reducing roll positioned for engagement with the I.D. of the workpiece, the axes of said reducing rolls being parallel to the axis of the workpiece, and said rolls having a width dimension which is minor compared to the length of the cylindrical workpiece, said rolls having like cross-sectional shapes and being supported in the same transverse plane substantially equal distances from a midpoint in the thickness of the workpiece wall to form an extrusion orifice which is of less height than the thickness of the workpiece wall and which extends transversely of the reducing rolls, and means for causing relative feed motion between the tool holders and face plate in a direction axially of the workpiece while the latter is being rotated to cause continuous extrusion of cylindrical wall portions of the workpiece through the extrusion orifice between the reducing rolls, and thereby simultaneously reduce the wall thickness and elongate the cylindrical workpiece while working equally on both sides and while maintaining substantially the same mean diameter of the workpiece.

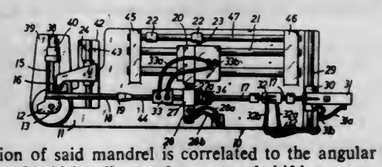
3,287,952

BENDING MACHINE

Herbert Van Harten, Rodenkirchen, Germany, assignor to Hilgers Maschinen- und Apparatebauanstalt m.b.H., Rodenkirchen, Germany

Filed Apr. 1, 1964, Ser. No. 356,395
Claims priority, application Germany, Apr. 6, 1963, H 48,780
1 Claim. (Cl. 72—150)

A rotary bending machine for pipes and similar tubular workpieces, comprising a base; a vertical shaft journalled in said base; a carrier mounted on said base and rotatable about the axis of said shaft; means for rotating said carrier; a form fixed to and rotatable with said carrier about the axis of said shaft, said form having a peripheral bending surface arranged to engage and to bend a workpiece in response to rotation of said carrier and said bending surface having sections with different radii of curvature; an elongated mandrel mounted on said base and having a leading end portion arranged to extend into the workpiece which is being bent up to a point close to said bending surface; first shifting means for moving said mandrel axially in synchronism with rotary movement of said form about the axis of said shaft so that the axial



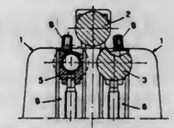
position of said mandrel is correlated to the angular position of said bending surface; second shifting means for moving said mandrel horizontally and sideways in a direction substantially at right angles to the axis of the mandrel; a clamping die provided on said carrier and arranged to clamp the leading end portion of the workpiece against said bending surface during rotation of said form; a chuck surrounding a portion of said mandrel and arranged to clamp the trailing end portion of the workpiece during bending; and a slide mounted on said base for movement in the axial direction of said mandrel and supportingly connected with said chuck so that the chuck and the workpiece may move axially of the mandrel when the form rotates about the axis of said shaft.

3,287,953

MACHINE FOR CURVING SHEETS, IN PARTICULAR TO OBTAIN CONICAL WORKPIECE AND THE LIKE

Prosperino Rino Boldrini, Via Gaetano Crespi 28, Rino, Milano, Italy

Filed Oct. 31, 1963, Ser. No. 320,427
Claims priority, application Italy, Nov. 19, 1962, 22,863/62
2 Claims. (Cl. 72—171)



1. A machine for bending metal sheets comprising a frame provided with a pair of vertically arranged guides, a bending roll having a bearing fixed on said frame, a pair of adjustable rolls each provided with a support adjustable in said guides, said supports being tiltable so that the axes of said last-named rolls may be angularly related to the axis of said bending roll, and a pair of supplementary rolls respectively mounted on said supports and adjustable and tiltable therewith.

3,287,954

METHOD FOR HEATING STEEL BILLETS

Carlton F. Schrader, Chesterton, and Louis Molnar, Hammond, Ind., assignors to Inland Steel Company, Chicago, Ill., a corporation of Delaware

Filed Aug. 30, 1962, Ser. No. 220,447
7 Claims. (Cl. 72—364)

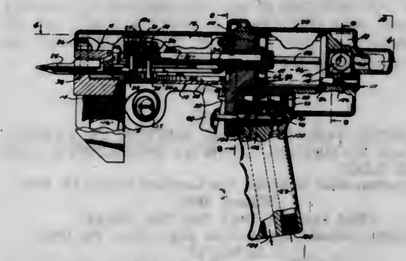
1. A method for deterring surface checking on a hot-worked article composed of tellurium-containing steel, said method comprising the steps of:

moving said article, in an unfinished form, on a predetermined path extending within and along the length of an elongated furnace;
providing a source of heat comprising a plurality of flames fired into said furnace along the length thereof;



heating said article to a hot-working temperature as the article moves on said path through said furnace;
said heating of the article being performed in its entirety without impingement of the outer end portion of any of said flames on the surface of said article;
and then hot working said article.

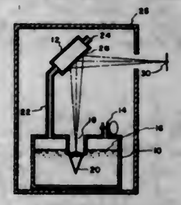
3,287,955
TOOL FOR SETTING RINGS
James C. Winslow, Sierra Madre, and Ralph D. Adams, Glendora, Calif., assignors to Winslow Product Engineering Corporation, Arcadia, Calif., a corporation of California
Filed Apr. 20, 1965, Ser. No. 449,449
20 Claims. (Cl. 72—407)



1. A tool for clinching a ring or staple, comprising:
a frame;
a ring clinching assembly on the frame including a pair of pivoted jaws for receiving and clinching a ring;
motor means operatively connected to the jaws;
and means energizing the motor means to operate the jaws through a cycle of opening and closing prior to receiving a ring to be clinched.

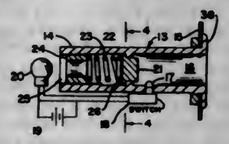
3,287,956
SPACE SIMULATOR
Marc G. Dreyfus and Harold W. Yates, Stamford, Conn., assignors to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware
Filed Nov. 14, 1963, Ser. No. 323,655
4 Claims. (Cl. 73—1)

1. A simulator for producing radiative target behavior of space, moon or stellar backgrounds which can be utilized for testing and calibrating instruments which are to be used in such environments, comprising
(a) a relatively small black body reference source,
(b) means for cooling said black body reference source at cryogenic temperatures,
(c) optical means for imaging the field of view of an instrument to be tested on said black body reference source,
(d) means for cooling said optical means whereby the emissivity and radiance of said optical means do not significantly impair the performance of the simulator which allows the use of a relatively small black body reference source requiring less cooling to attain cryogenic temperatures, and



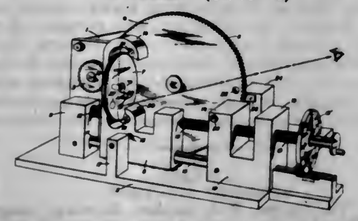
(e) said black body reference source, said means for cooling said black body reference source, said optical means, and said means for cooling said optical means are all enclosed in an uncooled chamber which is purged to prevent frosting therein.

3,287,957
CALIBRATION UNIT
Alexander E. Martens, Greece, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Oct. 1, 1964, Ser. No. 400,808
8 Claims. (Cl. 73—1)



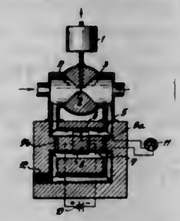
1. An applanation tonometer calibration unit comprising, a receptacle for receiving a probe of an applanation tonometer, a plunger slidably mounted in said receptacle for engaging the end of said probe, means biasing said plunger with a predetermined force against said probe, a luminous ring formed on said plunger having a predetermined diameter to thereby provide an image simulating a meniscus ring formed on said applanation tonometer when pressed against an eye with a predetermined force.

3,287,958
TEST APPARATUS FOR TIME-INDICATING DEVICES
Walter E. Hanson, 5555 Rockburn Hill Road, Elkridge, Md.
Filed Aug. 22, 1963, Ser. No. 303,845
10 Claims. (Cl. 73—6)



1. A system for testing and calibrating time-indicating devices and especially clocks and watches comprising a timing disc mounted for rotation, driving means for driving said timing disc at a constant predetermined speed, a strobe disc operatively associated with said timing disc and mounted for rotation thereby, a marker located on the face of said strobe disc, means positioned adjacent said strobe disc for illuminating the face thereof, means for energizing said illuminating means, control means for connecting said energizing means to said illuminating means in response to and in synchronism with the ticks of the time-indicating device under test and calibrated means operatively associated with said strobe disc for providing an indication of the relationship between said timing disc and said strobe disc when said marker is made to appear stationary while being strobed by said illuminating means, said calibrated means including means for varying the speed of said strobe disc in relation to said timing disc to effect calibration thereof.

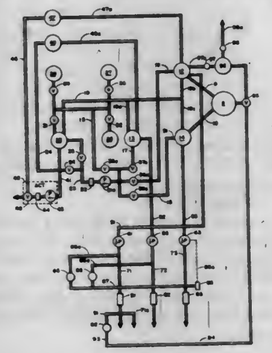
3,287,959
PORTABLE MEASURING APPARATUS FOR DETERMINING THE OXYGEN CONTENT OF A GAS, IN PARTICULAR OF AN AIR MIXTURE IN A MINE WORKING
Karl-Friedrich Luft, 39 An St. Albertus Magnus, Essen, Germany
Filed July 1, 1963, Ser. No. 291,675
Claims priority, application Germany, July 5, 1962, B 67,927
7 Claims. (Cl. 73—23)



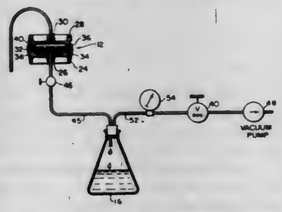
1. Portable measuring apparatus for determining or comparing the oxygen content of gases, comprising: a gas chamber; means to establish a non-homogeneous magnetic field in said chamber; means for feeding to said chamber a gas whose oxygen content is to be determined; means for feeding a comparison gas to said chamber; a main gas flow system communicating with said chamber adapted for the flow of gas therein in response to pressure difference occurring between said first-mentioned gas and said reference gas under the influence of said magnetic field; a secondary gas flow system arranged in parallel with the said main system; a symmetrical bridge circuit including first thermal flow-measuring means in said main gas flow system and second thermal flow-measuring means in said secondary system; and adjusting means for adjusting the flow resistance of said secondary gas flow system, said bridge circuit being effective to indicate difference in oxygen content between said first-mentioned gas and said comparison gas giving rise to gas flow in said main gas flow system.

3,287,960
METHOD AND APPARATUS FOR TESTING AND TREATING LIQUIDS
Hinemon L. Abercrombie, Jr., Citronelle, Ala., assignor to Mobil Oil Corporation, a corporation of New York
Filed Oct. 22, 1963, Ser. No. 318,083
13 Claims. (Cl. 73—53)

1. A method of testing and treating fluid in a plurality of containers, comprising the steps of sequentially flowing fluid from each of said containers to a testing zone for at least a predetermined time period, flowing said fluid from said testing zone to a treating zone during said predetermined time period, continuing to flow fluid from said each of said containers to said testing and treating zones beyond said predetermined time period upon the detection of at least one characteristic of said fluid at said testing zone, and terminating fluid flow from said each of said containers to said testing and treating zones when said at least one characteristic is no longer detected at said testing zone.



3,287,961
DETECTION OF SURFACTANTS
James L. Dwyer, South Lincoln, Mass., assignor to Millipore Filter Corporation, Bedford, Mass., a corporation of Massachusetts
Filed May 6, 1964, Ser. No. 365,246
3 Claims. (Cl. 73—61.1)



1. The method of testing a water immiscible liquid for the presence of surfactants comprising adding water to said liquid and mixing it therewith, separating water from said liquid and placing it on a hydrophobic filter then applying a sufficient pressure differential across said filter to force the water therethrough, and measuring said pressure.

3,287,962
ULTRASONIC INSPECTION APPARATUS
Donald P. Relyea, 25 Lincoln Ave., South Norwalk, Conn., and Russel L. Uphoff, 122 Hannah's Road, Stamford, Conn.
Filed Dec. 26, 1963, Ser. No. 335,711
6 Claims. (Cl. 73—67.9)

1. An ultrasonic inspection apparatus including
(A) transducer means for generating and detecting ultrasonic energy in a test body,
(B) an oscillator having a frequency determined by the velocity of the propagation of sonic energy in said test body,
(C) a cathode ray tube,
(D) means coupling said oscillator to said cathode ray tube for generating a range scale, said means including
(1) a frequency divider connected to said oscillator, and
(2) a mixer circuit having
(a) a first input connected to said oscillator,

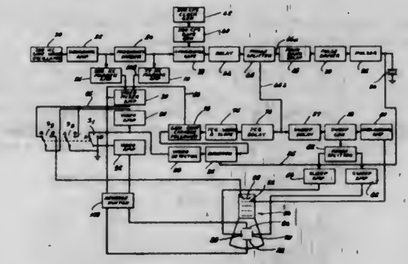
(b) a second input connected to said frequency divider, and

(c) an output connected to said cathode ray tube for generating said range scale as a first series of elongated range markers resulting from the output of said frequency divider and a second series of range markers resulting from the output of said oscillator for graduating the increment between said elongated range markers,

(E) synchronizing circuit means connected between said frequency divider and said transducer means, said synchronizing means including

(1) a coincident gate,

(2) a pulse generator developing pulses at a substantially reduced frequency rate relative to the frequency rate of the output from said frequency divider for enabling said coincident gate to pass at least one pulse of the output from said frequency divider each and every time said gate is enabled,



(3) a delay circuit responsive to the first pulse passed on each enabling of said coincident gate for developing a single clock pulse each and every time said coincident gate is enabled and

(4) means for selectively delaying each said clock pulse to achieve time coincidence with one of said elongated range markers,

(a) each said clock pulse operating to control the pulsing of said transducer means,

(F) a receiver, said receiver

(1) being coupled to said transducer means for

(2) amplifying electrical response of said transducer means to the detection of ultrasonic echoes originating from points located within said test body and

(3) applying said amplified electrical responses to said cathode ray tube,

(G) whereby said amplified electrical responses are displayed with said range scale so as to provide immediate indication of the precise location of said echo originating points.

3,287,963

SONIC WAVE PULSE ECHO APPARATUS AND METHOD FOR MEASURING FLAW DIMENSION

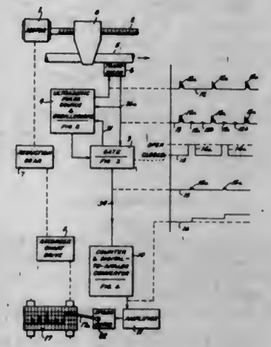
Andrew Stanya, South Euclid, and Norman A. Herrick, Eastlake, Ohio, assignors to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey

Filed Apr. 8, 1963, Ser. No. 271,103
14 Claims. (Cl. 73—67.9)

1. Sonic testing apparatus, comprising:

(a) means for propagating through a workpiece a beam of sonic waves pulsed at a predetermined frequency;

(b) means for relatively moving the workpiece and the beam propagating means at a predetermined speed in a direction transverse to the direction of beam propagation; and



(c) means for detecting echo pulses from flaws in the workpiece;

(d) means for counting the detected echo pulses.

3,287,964

APPARATUS FOR TESTING FILAMENTARY MATERIAL

Leon J. Dennis and Fred A. Place, Towanda, and Leadom A. Warner, Sayre, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Jan. 10, 1964, Ser. No. 337,091
4 Claims. (Cl. 73—95)

4. Apparatus for testing filamentary material comprising in combination

a force measuring mechanism including a member moveable in response to the application of a force to the member and means for indicating the magnitude of the force being applied to the member,

a support mounted on the member,

a first gripping means fixed to said support for gripping one end of a piece of filamentary material,

a moveable support,

a second gripping means fixed to said moveable support for gripping the other end of a piece of filamentary material,

driving means for moving said moveable support from a starting position in a direction to move the second gripping means away from the first gripping means and cause the support mounted on the member to apply a force to the member as a piece of filamentary material held between the first and second gripping means is placed under tension,

return means for moving said moveable support in a direction to move the second gripping means toward the first gripping means to position the moveable support at said starting position,

a cooperative arrangement of radiation transmitting and sensing elements including physically separate means mounted on the support mounted on the member and on the moveable support for providing signals in response to incremental distances of relative movement of the moveable support with respect to the support mounted on the member,

recording means for recording an indication of said signals,

means for activating the driving means to cause said moveable support to move from the starting position in a direction to move the second gripping means away from the first gripping means, and

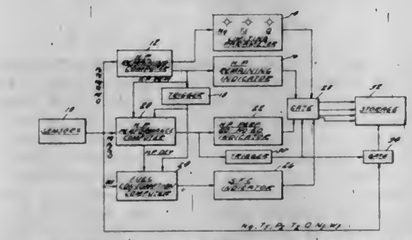
means responsive to rupture of a piece of filamentary material held between the first and second gripping means for inactivating the driving means, activating the return means, and inactivating the recording means.

3,287,965

ENGINE PERFORMANCE INDICATOR

Charles B. Brahm, Ellington, and Ronald A. Haverl, Vernon, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Sept. 27, 1963, Ser. No. 312,081
11 Claims. (Cl. 73—116)



1. In combination with a gas generator having means associated therewith for sensing the values of and producing signals proportional to the load on, the conditions adjacent the inlet to and a plurality of power limiting operating parameters of the gas generator; said gas generator also having associated therewith a power remaining computer which, in response to the produced power limiting operating parameter signals, generates a signal commensurate with power remaining available from the gas generator; a power performance computer comprising:

first signal generating means responsive to the signal proportional to the load on the gas generator for generating a signal commensurate with the actual power being developed by the gas generator;

second signal generating means responsive to the signals proportional to the sensed values of the conditions adjacent the inlet to the gas generator for generating a signal commensurate with the rated power of the gas generator for said inlet conditions;

summing means responsive to said signals commensurate with power remaining, as provided by said power remaining computer, and actual developed power, as provided by said first signal generating means, for generating a signal commensurate with the actual power the gas generator can develop for the existing inlet conditions; and

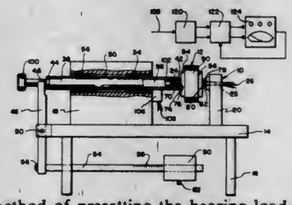
comparing means responsive to the signal commensurate with actual power which the gas generator can develop, as provided by said summing means, and to the signal commensurate with rated power, as provided by said second signal generating means, for generating a power performance signal commensurate with the proximity of the rated power to the actual power the gas generator can develop.

3,287,966

METHOD AND APPARATUS FOR PRESETTING AXIAL LOAD ON A BEARING ASSEMBLY

Gordon J. Haan, Grandville, and John M. Jessup, Grand Rapids, Mich., and Richard Namon, Miami, Fla., assignors to Lear Siegler, Inc.

Filed Mar. 4, 1964, Ser. No. 349,358
11 Claims. (Cl. 73—140)



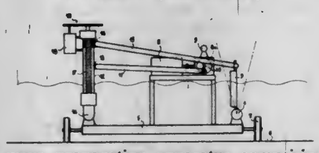
1. A method of presetting the bearing load of a bearing assembly having bearing load adjustment means thereon, comprising the steps of: applying to the bearing a selected standard axial bias equal to the pre-load desired; rotating the bearing; detecting a vibrational output frequency condition under said bias; relaxing said bias; and adjusting the load adjustment means until a like vibrational output frequency condition is obtained.

3,287,967

WAVE PROPAGATING APPARATUS

Jean Laurent, 116 Avenue du General Leclerc, Paris, France

Filed Nov. 22, 1963, Ser. No. 325,720
Claims priority, application France, Nov. 26, 1962, 916,604
6 Claims. (Cl. 73—148)



1. A wave propagating apparatus comprising a rigid frame; means for supporting said frame for displacement in relation to a datum position of a model under test; rigid guide means fixed relative to said datum position; an operative connection between said frame and said guide means for controlling the path of said frame displacement; means for traversing said frame along said path; an oscillatory paddle mounted for oscillation about a fixed axis in said frame; a linkage for oscillating said paddle; a first motor coupled to said linkage for determining the frequency of oscillation of said paddle; a second motor coupled to said linkage for determining the amplitude of said oscillation; a third motor for displacing said frame; and means for controlling at least one of said motors.

3,287,968

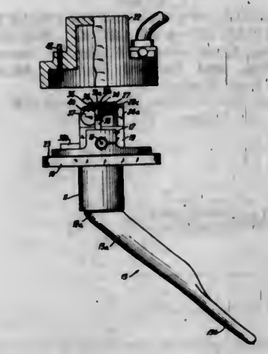
BOAT SPEEDOMETER

Theodore W. Kenyon, Joshua Town Road, Old Lyme, Conn.

Filed Mar. 24, 1964, Ser. No. 354,392
8 Claims. (Cl. 73—186)

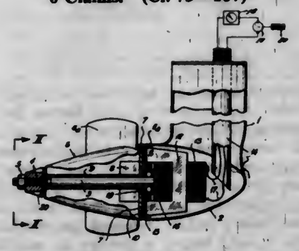
1. In a boat speedometer, the combination of a strut adapted to project into the water; a platform superstruc-

ture; a torsion bar on which said strut is secured, said bar having its ends mounted to said platform; a transformer attached to said platform having a primary winding and a secondary winding; a projection attached to said torsion bar, defining an air gap in the flux path between said primary and secondary windings, said air gap varying in direct proportion to the force on the strut; a first voltage



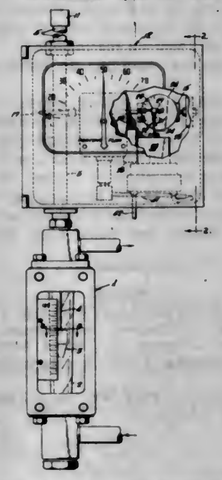
source connected to said primary winding; a second voltage source connected in series opposition with said secondary winding; said series connected circuit providing a voltage output varying, as said air gap varies, in essentially direct proportion to the speed of the boat; a meter graduated in an essentially linear manner for speed; and, circuit means for transmitting said voltage output to said meter.

3,287,969
LOG FOR INDICATING VELOCITY OF MOTION OF WATERCRAFT
Constant Joseph Nicolas Hardy, Colombes, Seine, France, assignor to Societe d'Etudes Pour l'Utilisation des Matieres Plastiques Dans l'Industrie (S.E.U.P.I.), Boulogne-sur-Seine, France, a company of France
Filed Jan. 17, 1964, Ser. No. 338,447
Claims priority, application France, Jan. 25, 1963, 922,696/63
6 Claims. (Cl. 73—187)



1. A log system comprising a first plastic molding constituting a fixed support including a faired member and an integral stem projecting upward therefrom for attachment to a water craft, and a second plastic molding comprising an impeller hub having integral impeller blades projecting outward therefrom for rotation by the motion of said craft through the water, A.-C. generating means including a permanent magnet rotor imbedded in said plastic hub and a stator winding imbedded in said faired member in electromagnetically coupled relation with said magnet rotor, conductor means connected to said winding and extending through said stem to said craft, and electric means aboard the craft connected to said conductor means for indicating a characteristic of the A.-C. energy generated by said generating means.

3,287,970
LINEARITY ADJUSTMENT MEANS FOR METERS
Le Roy S. Harris, Huntingdon Valley, Pa., assignor to Schutte and Koerting Company, Cornwells Heights, Pa., a corporation of Pennsylvania
Original application Dec. 3, 1958, Ser. No. 777,998, now Patent No. 3,137,165, dated June 16, 1964. Divided and this application Sept. 16, 1963, Ser. No. 308,933
4 Claims. (Cl. 73—209)

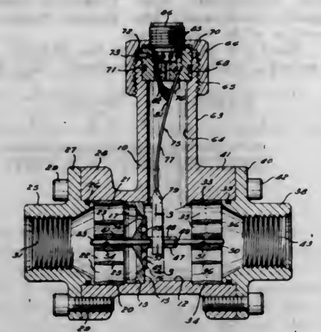


2. In a meter, a movable measurement responsive element, an indicator gauge, and transmission means for operatively connecting the element to the gauge, said transmission means including a mechanical linkage coupled to the said element, transmitter means interposed between the linkage and the gauge for transmitting movements of said linkage to said gauge, said mechanical linkage comprising a rotatable member, a connecting link connecting said rotatable member with the movable measurement responsive element to cause rotation of said rotatable member in response to movement of said measurement responsive element at least one linearity adjustment device for correcting non-linear relation between the movements of said element and the variations in quantity which produces said movements including a first linearity adjustment means comprising a rotatably mounted calibrated disc connected to and movable with said rotatable member, connecting means connected to said calibrated disc at a point offset from the center of rotation of said disc linking said disc to said transmitter means, and means to permit rotatable adjustment of said disc relative to said rotatable member.

3,287,971
FLOWMETER
Eugene Bahniuk, Seven Hills, Ohio, assignor to The Weatherhead Company, Cleveland, Ohio, a corporation of Ohio
Filed June 10, 1964, Ser. No. 374,096
8 Claims. (Cl. 73—210)

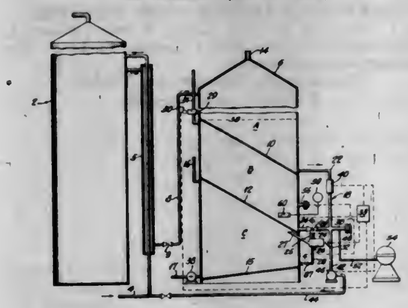
1. A flowmeter for measuring the rate of fluid flow comprising a body having an inlet and an outlet, a passage extending between said inlet and said outlet, a valve seat in said passage, a valve member adapted to move to and from said seat to provide a variable area orifice between said seat and said valve member, a cantilever spring mounted in said body having a high preload to bias said valve member toward said seat and having a spring rate to maintain the biasing force substantially constant over the range of movement of said valve member, and

sensing means responsive to deflection of said cantilever spring adapted to indicate the position of said valve mem-



ber and hence the area of said orifice and thereby indicate the rate of fluid flow through the passage.

3,287,972
AUTOMATIC CUSTODY TRANSFER SYSTEM
Leonard H. Hughes, Dallas, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed May 11, 1964, Ser. No. 366,472
10 Claims. (Cl. 73—219)



5. An automatic custody transfer system comprising, a cylindrical tank; a pair of transverse, steeply sloping, plate members, parallel to one another and dividing said tank into three fluid-tight chambers comprising an upper chamber; an intermediate chamber and a lower chamber; said steep slope being sufficient to form a Seraphin neck structure with the side of said tank adjacent to the upper edge of said plate members; an inlet for admitting liquid into said upper chamber near the top thereof and an outlet for discharging liquid from the lower part of said lower chamber; conduit means for placing the lower portion of said upper chamber in fluid communication with the lower portion of said intermediate chamber and for placing the lower portion of said intermediate chamber in fluid communication with said lower chamber; valve means interposed in said conduit means for opening communication between said upper chamber and said intermediate chamber while closing communication between said intermediate chamber and said lower chamber, and for opening communication between said intermediate chamber and said lower chamber while closing communication between said upper chamber and said intermediate chamber; first switch means responsive to a high level of liquid in said intermediate chamber; second switch means responsive to a low level of liquid in said intermediate chamber; actuating means responsive to said first and second switch means for operating said valve means to fill and drain said intermediate chamber whereby said valve means is actuated for opening communication between said upper chamber and said intermediate chamber causing liquid to flow into said intermediate chamber, and subsequently opening communication between said intermediate chamber and said lower chamber causing liquid to drain from said intermediate chamber; and counter means actuated by said actuating means for counting the number of times said intermediate chamber is filled and emptied.

3,287,973
AIR VOLUME FLOWMETER
Leonard N. Liebermann, 2644 Ellentown Road, La Jolla, Calif., and Stanley H. Lai, 4164 Hill St., San Diego, Calif.
Filed Jan. 28, 1964, Ser. No. 340,689
3 Claims. (Cl. 73—228)

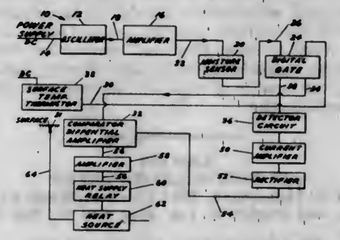


1. A flowmeter for measuring the flow rate of gaseous fluid issuing from a duct covered by a protective grill comprising,
a housing having a partially open base adapted to be placed on said grill including means for directing the flow of a portion of said gaseous fluid through a selected portion of the housing,
movable damper plate means for controlling the flow of gaseous fluid through said housing,
vane means rotatably suspended in said housing in the path of the directed flow of gaseous fluid, the rotatable suspension means for said vane including an adjustable torsion spring for restraining rotational movement of the vane from a null rest position,
and calibrated measurement means provided for both adjusting the said torsion spring to increase its restoring force and for simultaneously adjusting said movable damper plate means to vary the flow of gaseous fluid through said housing,
whereby the said vane is restored from a position deflected by flow of gaseous fluid through the housing to the position of null measurement.

3,287,974
ICE CONDITION DETECTION DEVICE
Michael F. Ciemochowski, Warren, Mich., assignor to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed Mar. 30, 1964, Ser. No. 355,639
9 Claims. (Cl. 73—336.5)

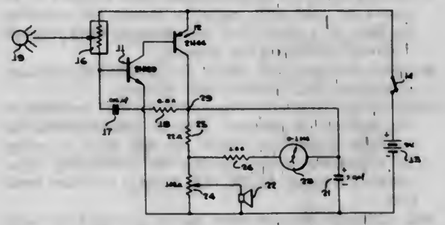
1. An electronic device for preventing condensation of moisture on a surface, said device comprising a source of direct current, means for converting the direct current to alternating current and for amplifying the alternating current, means for providing a voltage output proportional to the temperature of said surface, means for providing an alternating current output proportional to dew point temperature, means operatively connected to said last two mentioned means for preventing the passage of said two outputs so long as said output proportional to surface temperature remains higher than a predetermined

value, means for converting said alternating current proportional to dew point temperature to direct current and for producing a voltage proportional to said dew point temperature, and means operatively connected to said means for preventing the passage of said two outputs



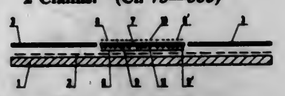
for comparing said voltage proportional to dew point temperature with said voltage proportional to the temperature of said surface and providing a signal when said voltage proportional to dew point temperature is equal to or greater than said voltage proportional to the temperature of said surface.

3,287,975
TEMPERATURE INDICATOR
Albert C. Mason, Larchmont, N.Y., and Cole H. Baker, Riverside, Conn., assignors to Pyrotel Corp., Mamaroneck, N.Y., a corporation of New York
Filed Apr. 12, 1963, Ser. No. 272,601
7 Claims. (Cl. 73—355)



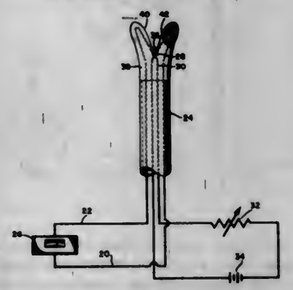
1. A system for indicating the temperature of a body comprising a variable audio frequency relaxation oscillator adapted to be energized by a D.C. source, said oscillator including: a first transistor, a second transistor of opposite conductivity type to said first transistor, separate loads for the emitter collector paths of said transistors, means for connecting the emitter collector paths of said transistors across the terminals of said source, means for coupling signals at the collector of each transistor to the base of the other transistor, said last named means including a resistance capacitance timing circuit having connections to the base and collector of said first and second transistors, respectively, said timing circuit including a variable resistive element having its impedance varied in response to the amount of infrared energy impinging thereon from said body, whereby the frequency of the waves generated by said oscillator is varied in response to the impedance of said element; means responsive to said waves for deriving an aural signal, said means for deriving an aural signal comprising: resistor means connected in said load circuit, a capacitor connected across said resistor means; and a speaker having its coil responsive to the current through said resistor means; and means for providing a visual indication of the average current flow through said resistor means.

3,287,976
COMPENSATION RADIATION PYROMETER
Pieter Euser, Delft, Netherlands, assignor to Nederlandse Centrale Organisatie voor Toegepast-Natuurwetenschappelijk Onderzoek, The Hague, Netherlands, a corporation of the Netherlands
Filed July 24, 1963, Ser. No. 297,387
Claims priority, application Netherlands, Aug. 14, 1962, 282,040
2 Claims. (Cl. 73—355)



1. A compensation radiation pyrometer for measuring the temperature of swiftly moving objects comprising, a heating element covered with a thin electrically and thermally insulating plate, a radiation receiver in the center of said plate having an area at most one-fourth of the area of the heating element and electrically insulated therefrom; said radiation receiver comprising a thin plate of electrically and thermally insulating material, both a differential electrical resistance element of temperature sensitive material and an electrical temperature measuring device mounted on each side of said thin plate, each said resistance element and measuring device being arranged in a generally zig-zag formation.

3,287,977
THREADLINE TEMPERATURE MONITOR
John L. Marshall, Jr., and George B. Price, Pensacola, Fla., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed May 27, 1964, Ser. No. 370,544
8 Claims. (Cl. 73—359)

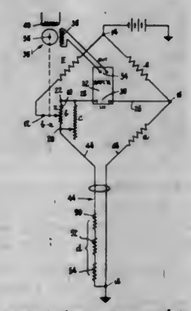


1. Apparatus for measuring the temperature of a running threadline, comprising in combination:
(a) means forming a shield having convergent surfaces defining a generally V-shaped threadline guide;
(b) a pair of leads mounted within said shield and joined to form a thermocouple junction which is exposed at the apex of said V; and
(c) a resistance wire mounted within said shield and in thermal contact with said junction.

3,287,978
ELECTRICAL BRIDGE CIRCUIT
Knud J. Knudsen, Middlebury, Conn., assignor to Lewis Engineering Company, Naugatuck, Conn., a corporation of Connecticut
Filed Oct. 23, 1963, Ser. No. 318,389
6 Claims. (Cl. 73—362)

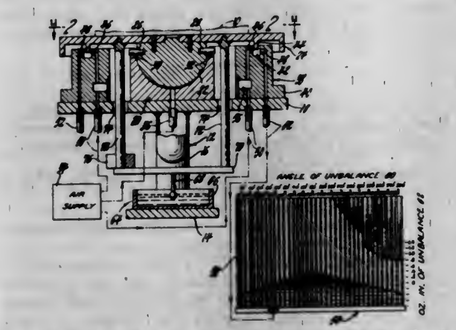
1. An electrical bridge circuit comprising, in combination:
(a) first and second adjoining arms having a common junction for connection to a voltage source,

(b) said arms having commensurate resistance values,
(c) a third arm and a resistive transducer having a common junction for connection to said voltage source,
(d) said third and second arms having a common junction,
(e) said transducer comprising the fourth bridge arm,
(f) a linear potentiometer and a shunt resistor connected across the ends of the potentiometer,
(g) said shunt resistor having a value to produce a predetermined desired resistance between the ends of the potentiometer,



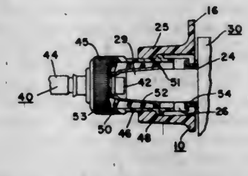
(h) said first arm being connected to the slider of the potentiometer,
(i) one end of the potentiometer being connected to said transducer,
(j) an electro-responsive device connected between the remaining end of the potentiometer and the common junction of the second and third arms,
(k) said potentiometer being of high positive temperature coefficient of resistance material, and
(l) the shunt resistor being of negative temperature coefficient of resistance material to minimize the effects of changes in ambient temperature.

3,287,979
BALANCING SYSTEM
Howard R. Dohring, Southfield, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 25, 1964, Ser. No. 377,819
9 Claims. (Cl. 73—483)



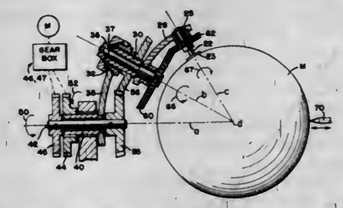
8. In apparatus for determining the unbalance in a workpiece, the combination of a workpiece support having an annular control flange thereon, means universally pivoting the support, means sensing the angular disposition of the support, the sensing means including a source of fluid pressure, a transfer member having an annular chamber therein arranged to receive the control flange on the workpiece support, the annular chamber having an input connected to the source and an output, the control flange being so arranged relative to the chamber and the inlet and the outlet as to vary the pressure thereacross in accordance with the angular disposition of the support at a series of circumferentially spaced points, and means sensing the pressures at the spaced points for indicating the amount of static unbalance in the workpiece and the angular disposition thereof.

3,287,980
SPEEDOMETER CABLE ACCESS
Howard C. Gilliland, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 30, 1964, Ser. No. 386,337
4 Claims. (Cl. 73—493)



1. In combination, a plastic coupler portion having an annular body thinned peripherally toward one end having plural outward projections thereon, and a speedometer housing for vehicle instrument panel installation having passage-forming portion with substantially J-shaped slots engaged by said outward projections of said plastic coupler portion, said annular body further having an inwardly extending annular end which mates with an islet also of insulating material in which one end of a spring means is embedded, a tapered end shield for a flexible cable speedometer drive tip located axially of said annular body and said spring means, said shield having an outwardly flanged portion engaged by a free end of said spring means, said plastic coupler portion engaging only said speedometer housing to permit speedometer cable access for servicing from a passenger side of dashboard location upon front removal of speedometer means.

3,287,981
GENERATION OF ROTATIONS ABOUT A FIXED POINT WITH SYMMETRIC AND NEAR SYMMETRIC DISTRIBUTION OF TANGENTIAL VELOCITY COMPONENTS AND ROTARY COMPONENTS
John Sohn Wolfe, 741 Torrington Place, Dayton, Ohio
Filed May 20, 1964, Ser. No. 368,812
5 Claims. (Cl. 74—1)



1. In device of the character described adapted to subject a mass member to surge conditions, the combination of a mass member, means supporting said mass

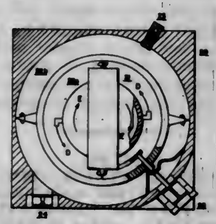
member for triaxial motion about a point which is the intersection of primary, secondary, and tertiary axes extending at predetermined angles to each other such that rotation of said mass member about said secondary axis will bring said tertiary axis into coincidence with said primary axis, said supporting means including a first arm means arranged to rotate about said primary axis, a second arm means carried by said first arm means and rotatable with respect to said first arm means about said secondary axis, and a rotatable mounting carried on said second arm means defining the tertiary axis of rotation with respect to said second arm means and connected to said mass member, drive means acting on said arm means and said rotatable mounting to produce simultaneous rotation of said mass member about each of said axes at predetermined velocities with the component of rotational movement of said mass member about any one of said axes being a normally fixed rotational speed, said drive means including a first rotational drive for said first arm means, a second rotational drive for said second arm means operating at a predetermined and different rotational speed to bring said tertiary axis into coincidence with said primary axis in a cyclic manner, and a third rotational drive for said rotatable mounting operating at the same angular velocity as said first rotational drive and in the opposite direction of rotation whereby the rotational components of motion of said mass member about said primary and tertiary axes will cancel upon each coincidence thereof due to the rotational component of movement introduced by said second rotational drive.

3,287,982

GYROSCOPE

Paul F. Hayner and Kenneth E. Mayo, Nashua, N.H., assignors to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware

Filed Feb. 23, 1960, Ser. No. 10,386
10 Claims. (Cl. 74—5.7)



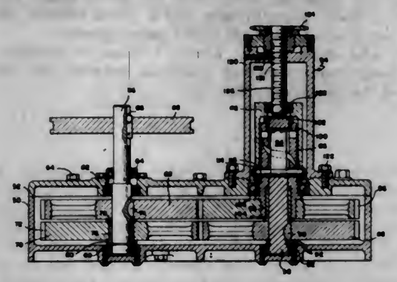
1. A fluid actuated gyroscope comprising:
(a) a housing,
(b) a hollow rotor,
(c) means supporting said rotor within said housing for rotation therein about an axis of spin,
(d) a reaction impellor including means forming an aperture communicating between the interior and exterior of said rotor,
(e) a release valve coupling the interior and exterior of said housing for the release of said fluid from within said housing to a low pressure area in the exterior thereof,
(f) said housing containing a fluid having a pressure substantially greater than the pressure in said low pressure area,
(g) whereby upon the opening of said release valve fluid flows therethrough from the interior of said rotor by way of said impellor and flow of said fluid through said impellor actuates said rotor for rotation about said axis.

3,287,983

VARIABLE FORCE OSCILLATOR

Curtis L. Austin and Robert N. Bateson, Minneapolis, Minn., assignors to General Mills, Inc., a corporation of Delaware

Filed Jan. 25, 1963, Ser. No. 253,935
4 Claims. (Cl. 74—61)



3. An oscillator for producing a vibratory force comprising a housing, a first shaft rotatably mounted in said housing, a first pair of eccentric weights mounted on said first shaft, said weights being of substantially the same size and weight, means for fixedly connecting a first weight of said weights to said shaft, means for rotatably mounting the second weight on said shaft, a second shaft rotatably mounted in said housing parallel to the first shaft, a second pair of eccentric weights mounted on said second shaft, said second weights being of substantially the same size and weight, a cam member coaxial with said second shaft and at least partially encircling said second shaft, means for fixedly connecting a first weight of said second pair of weights to the cam member, means for fixedly connecting the other weight of said second pair to the second shaft, said second shaft and said other weight being at least partially rotatable relative to the cam member and its attached weight, the first weights on each shaft being paired with each other and the second weights on each shaft being paired with each other so that a desired phase relationship between said weights exists, means for rotating the first shaft in one direction, gearing means for rotating the second shaft by said first shaft in an opposite direction, and means including the cam member, for varying the phase relationship of the second weight on each shaft with respect to the first weight on each shaft while the shafts are rotating, said means causing the second weight on each shaft to be revolved with respect to the first weight thus varying the phase relationship between the first and second weights on each shaft.

3,287,984

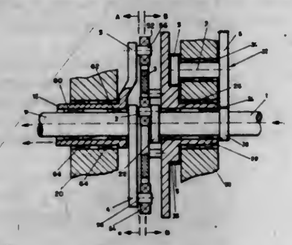
MECHANICAL OSCILLATION GENERATOR

Josef Neubauer, Petersberg, Kreis Hersfeld, Germany, assignor to Firma Zuse K.G., Bad Hersfeld, Germany

Filed June 25, 1965, Ser. No. 466,957
Claims priority, application Germany, June 25, 1964, Z 10,937
16 Claims. (Cl. 74—84)

1. A mechanical oscillation generator which comprises a housing, a driving shaft journalled in said housing for rotation thereof, at least one driven shaft also journalled in said housing coaxially of said driving shaft and providing the output of said generator thereat, first and second drive elements coupled together for common rotation, the first drive element being journalled in said housing coaxially with but independently of said driving shaft, a transmission train of known ratio connected between said driving shaft and first drive element for rotating said first drive element at a rotational speed dependent upon said ratio, means coupling the second drive element and driving

shaft together comprising an eccentric pin-and-slot connection of a first moment-arm whereby to impart oscillating movement to said second drive element during rotation of said driving shaft, means on said drive elements cooperating to confine the oscillating movement of said second drive element to a diametrical line transverse of



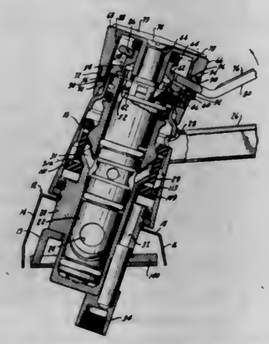
the axis of said shafts, a crank of a second moment-arm secured to said driven shaft and having a radially slidable connection at the end of said monemt-arm with said second drive element lying on a second diametrical line, whereby the movement imparted to said driven shaft responsive to the driving shaft is both rotary and oscillatory.

3,287,985

CARTRIDGE SWING SPOUT FAUCET AND IMPROVEMENTS THEREON

Alfred M. Moen, 25 Lakeview Drive, Grafton, Ohio

Continuation of application Ser. No. 207,893, July 6 1962. This application Nov. 5, 1964, Ser. No. 410,826
12 Claims. (Cl. 74—104)



1. A stem actuator assembly for use with a stem mounted within a housing for rotation and reciprocation comprising handle means at the upper end of the housing for rotating and reciprocating the stem, a removable collar secured to the upper end of the housing and having a flange overlying the upper end of the housing, said collar securing the said handle means, and a cap secured to said stem for movement with it, said cap surrounding the upper portion of the housing.

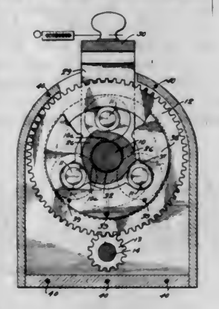
3,287,986

MULTIROLLER DRIVE ASSEMBLY AND DISENGAGING APPARATUS

Algirdas L. Nasvytis, Cleveland Ohio, assignor to TRW Inc., a corporation of Ohio

Filed Jan. 16, 1964, Ser. No. 338,117
10 Claims. (Cl. 74—204)

1. In combination in a friction concentric gear system, a sun member, a plurality of intermediate roller members and a ring member wherein said roller members are in preloaded friction drive relationship with said sun member and ring member when in assembled drive relation, and cam means located inwardly of said roller members and having surface means contacting and simultaneously



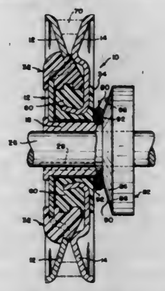
moving said roller members generally radially outwardly away from said sun member whereby said preloaded friction drive relationship between said sun and roller members is interrupted.

3,287,987

PULLEY APPARATUS

Edward T. Getz, Cleveland Heights, Matthew Pacak, Solon, and Joseph E. Udvardi, Cleveland, Ohio, assignors to Eaton Yale & Towne Inc., a corporation of Ohio

Filed Apr. 28, 1964, Ser. No. 363,183
10 Claims. (Cl. 74—230.17)



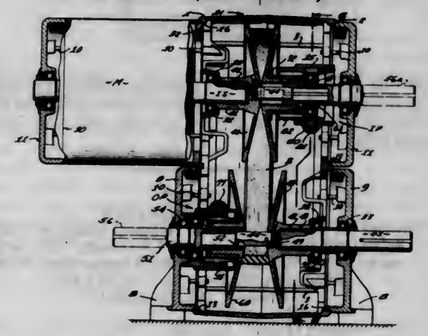
1. A pulley apparatus for automatically maintaining a constant tension on a cooperating drive means, comprising:
a generally cylindrical hub member,
a first sheave half secured to said hub member and extending generally radially outwardly therefrom,
a second sheave half rotatably and slidably mounted on said hub member and axially spaced from said first sheave half, said sheave halves being adapted to receive said drive means therebetween and defining the effective diameter of said pulley apparatus in accordance with the axial spacing therebetween,
interfitting compensating means on said sheave halves having cooperating surfaces effective to control rotation of one of said sheave halves relative to the other in response to variations in loads imposed on said pulley apparatus to vary the axial spacing between said sheave halves and thus the effective diameter of said pulley apparatus, thereby maintaining a constant tension on said drive means, and
means for releasably maintaining said sheave halves in any one of a plurality of relative compensating positions, said maintaining means comprising in turn:
an annular stop member rigidly secured to said

hub member and having a tapered face extending downwardly towards said second sheave half, and

an annular garter-type spring in engagement with said tapered face and disposed between said second sheave half and said stop member,

said garter-type spring being only radially inwardly movable on said tapered face and adapted to exert a sufficient force against said second sheave half to maintain said sheave halves in a compensating position against the force of said drive means.

3,287,988
VARIABLE SPEED PULLEY-BELT DRIVE
Don Heyer, 1019 N. Raymond Ave., Fullerton, Calif.
Filed May 11, 1964, Ser. No. 366,350
20 Claims. (Cl. 74—230.17)



1. A variable pulley-belt drive comprising: a support structure, an input shaft and an output shaft carried by said support structure in laterally spaced relation, input and output pulley assemblies operatively connected with said respective shafts and each including a pair of pulley sections having divergent surfaces, means mounting said pulley sections for movement of one pulley section of each assembly toward and away from the other pulley section of its pair, and means for moving said one pulley sections of both of said assemblies including a pair of adjuster shafts, means connecting said adjuster shafts respectively to one of said movable pulley sections to move the latter upon rotation of said adjuster shafts, means for rotating said pair of adjuster shafts simultaneously in at least one direction, a belt engaged between the divergent surfaces of said pulley sections at relative effective pulley diameters governed by rotation of said adjuster shafts, said means for rotating said adjuster shafts simultaneously comprising a part on said adjuster shafts and rotatable therewith, and a cable oppositely wrapped about and extending between said rotatable parts.

3,287,989
AUTOMATIC TRANSMISSION AND CONTROL
Arturo Alfredo La Chiusa, 1721 W. 67th St., Los Angeles, Calif.
Original application Aug. 1, 1962, Ser. No. 215,479, now Patent No. 3,205,683, dated Sept. 14, 1965. Divided and this application Mar. 1, 1965, Ser. No. 435,871
3 Claims. (Cl. 74—330)

1. An automatic transmission and interrelated foot-operated control device for operating a motor powered apparatus comprising:

a universal block including a plurality of interposed independently rotatable gear elements, each element having an internal gear and an external bevel gear, the internal gears being aligned to and spaced along a common axis to successively receive an axially movable pinion, the external bevel gears being formed in a single frontal plane;

a transmission shaft adapted to coaxially surround, support and rotate a differential and associated axles;

a transmission shaft actuating mechanism coaxial to said transmission shaft including a plurality of axially aligned bevel gears adapted to mesh with said external bevel gears of said universal block;

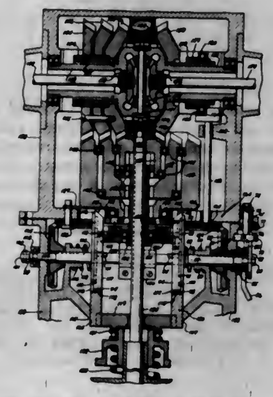
a pinion;

pinion mounting and driving means for providing movement of said pinion between said internal gears and for driving the universal block gear element associated with an internal gear aligned with said pinion;

clutch means for engaging and disengaging said pinion mounting and driving means with a motor means;

clutch actuating means; and

a foot-operated control means for selectively operating said pinion mounting and driving means and said clutch means including: a primary control shaft including means for mounting said shaft for longitudinal movement; a foot-operable pedal pivotally mounted on one end of said shaft; transmission control means mounted on said shaft and associated with said pinion mounting and driving means and said clutch means whereby longitudinal movement of said shaft under urging of an operator's foot controls the engagement and disengagement of said clutch and the disposition of said pinion between said internal gears.

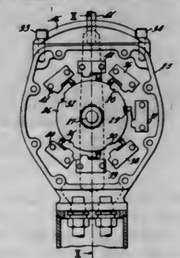


3,287,990
FLEXIBLE REMOTE CONTROL DEVICE
Oscar Robert Ellinger, Katonah, N.Y., assignor to Controlex Corporation of America, White Plains, N.Y., a corporation of New York
Filed Sept. 2, 1964, Ser. No. 396,793
8 Claims. (Cl. 74—501)



1. A flexible remote control device for transmitting traction or compression forces, comprising a flexible tubular sheath, a flat flexible force transmitting member adapted to move to and fro in said sheath, a pair of flexible flat elongated guide members arranged in said sheath on opposite sides of said transmitting member, spaced rolling elements between said guide members and said transmitting member, a pair of coaxial tubes located at at least one end of said device and rotatable relative to each other, means rotatably supporting said pair of coaxial tubes in said device and limiting axial movement therein in at least one direction, each of said coaxial tubes in said pair thereof being provided with a pair of oppositely disposed closed slots extending generally in inclined relation lengthwise of the tube, each slot on one of said coaxial tubes being associated with a slot on the other coaxial tube and said associated slots in each pair thereof being inclined in opposite directions so that such associated slots in each pair thereof cross to form at their juncture a space through both of said tubes, the inclinations of the associated slots in each pair thereof being such that the space formed by one pair of associated slots is movable lengthwise of the device in directions opposite to the movements of the space formed by the other pair of associated slots as said tubes are rotated relative to each other, and a follower in each of said spaces and connected to one of said guide members.

3,287,991
ROTARY CONTROL MECHANISM
Herbert L. Eckert, Cedar Rapids, Iowa, assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Mar. 23, 1964, Ser. No. 353,961
2 Claims. (Cl. 74—533)



1. A rotary control device comprising:

a support,

a shaft rotatably mounted on said support,

a guide rigidly secured to said support in spaced relation to said shaft and presenting a plurality of pockets facing in an axial direction relative to said shaft,

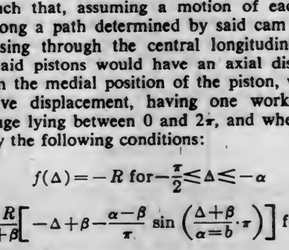
an elongated axially flexible control lever engageable with said pockets,

first attaching means rigidly securing a portion of said lever to a part of said shaft spaced radially a substantial distance from its axis in the direction opposite from said guide, and

second attaching means connecting an intermediate portion of said lever to said shaft for axial movement relative thereto, said lever being resiliently flexible axially relative to said shaft thereby permitting manual movement of said lever from one of said pockets to another.

3,287,992
ACCELERATOR PEDAL FOR MOTOR VEHICLES
Ralph E. Smith, 1307 Devon Ave., Park Ridge, Ill.
Filed Dec. 11, 1964, Ser. No. 417,621
12 Claims. (Cl. 74—562)

1. In an acceleator pedal for a motor vehicle having an accelerator linkage to the carburetor, in combination: a lower rigid plate hinged to a fixed part of the vehicle and having front and rear ends; means for connecting said lower plate to the accelerator linkage so that movement of the plate about its hinge acts on the linkage without substantial lost motion; an upper rigid plate having front and rear ends; means hingedly connecting said upper plate to said lower plate; a block of soft, resilient material beneath said upper plate; and means securing said block of material to one of said plates.



3,287,993
HYDRAULIC PISTON PUMPS AND MOTORS
Zbigniew Alexander Lomnicki, Codsall, England, assignor to Boulton Paul Aircraft Limited, Staffordshire, England
Filed Jan. 4, 1965, Ser. No. 423,017
Claims priority, application Great Britain, Jan. 10, 1964, 1,256/64

1. In a machine having at least three pistons, the improvement comprising a track member having a cam surface in driving connection with each of said pistons, said cam surface comprising a pair of half peripheral sections, one of said half sections being a mirror image of the other half section, and one half section being shaped such that, assuming a motion of each of said pistons along a path determined by said cam surface, a point passing through the central longitudinal axis of each of said pistons would have an axial displacement $f(\Delta)$ from the medial position of the piston, where Δ is the relative displacement, having one working stroke in the range lying between 0 and 2π, and where $f(\Delta)$ is defined by the following conditions:

$$f(\Delta) = -R \text{ for } -\frac{\pi}{2} \leqq \Delta \leqq -\alpha$$

$$f(\Delta) = \frac{-R}{\alpha+\beta}\left[-\Delta+\beta-\frac{\alpha-\beta}{\pi}\sin\left(\frac{\Delta+\beta}{\alpha=b}\cdot\pi\right)\right] \text{ for } -\alpha \leqq \Delta \leqq -\beta$$

$$f(\Delta) = \frac{2R\Delta}{\alpha+\beta} \text{ for } -\beta \leqq \Delta \leqq \beta$$

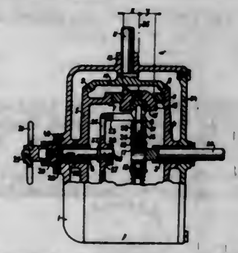
$$f(\Delta) = \frac{R}{\alpha+\beta}\left[+\Delta+\beta+\frac{\alpha-\beta}{\pi}\sin\left(\frac{\Delta-\beta}{\alpha-\beta}\cdot\pi\right)\right] \text{ for } \alpha \leqq \Delta \leqq \alpha$$

$$f(\Delta) = R \text{ for } \alpha \leqq \Delta \leqq \frac{\pi}{2}$$

in which conditions 2R is the stroke of the piston, 2α is an arbitrarily chosen working section within the range

of Δ and 2β is the range of Δ within the working sector throughout which the displacement $f(\Delta)$ is a linear function of Δ, and in which one of the three separate sets of values α and β to be applied are those hereinbefore specified in Table A as Cases II, III and IV.

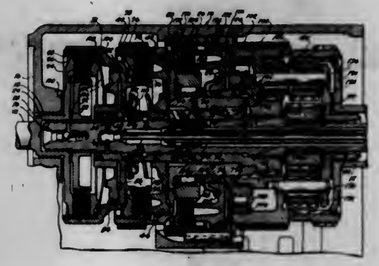
3,287,994
VARIABLE SPEED DRIVE
Miroslav Kotík, Brno, Czechoslovakia, assignor to Elitex, Sdruzeni podniku textilniho strojirenstvi, Liberec, Czechoslovakia
Filed Sept. 17, 1964, Ser. No. 397,169
Claims priority, application Czechoslovakia, Sept. 26, 1963, 5,269/63
7 Claims. (Cl. 74—721)



1. In a variable speed drive, in combination, a pair of friction disc means adapted to be rotated in opposite directions, arranged aligned along a common axis and having each a face facing a corresponding face of the other friction disc means; a plurality of rolling elements located spaced from each other and distributed about said common axis between said friction disc means and having each an outer surface in rolling engagement with said faces; a plurality of shaft means, one for each rolling element and each mounting a respective rolling element turnably about an axis of symmetry thereof; an output shaft having a portion between said friction disc means and extending along said common axis; support means fixed to said portion of said output shaft and supporting the shaft means of each of said rolling elements tiltably about a tilting axis transverse to said common axis and movably together with said output shaft about said common axis; resilient means between each of said shaft means and said portion of said output shaft for resiliently pressing the rolling element carried by the respective shaft means against said faces; and control means connected to said shaft means of said rolling element for simultaneously tilting each of said shaft means about its tilting axis, said tilting axes, said outer surfaces of said rolling elements and said faces of said friction disc means being constructed and arranged so that said rolling elements will engage said faces substantially along circles having equal diameters regardless of the angle at which said shaft means are tilted.

3,287,995
NON-SYNCHRONOUS MULTIPLE SPEED RATIO POWER TRANSMISSION MECHANISM
Richard L. Leonard and Frank B. Gessler, Farmington, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Feb. 20, 1963, Ser. No. 259,845
29 Claims. (Cl. 74—763)

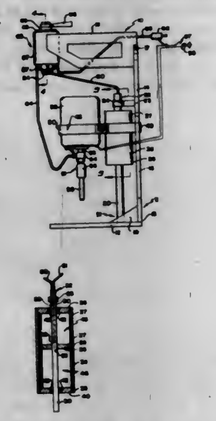
10. In a multiple speed ratio power transmission mechanism comprising a driving member, a driven member, a gear assembly, selectively engageable clutch means for establishing a driving connection between said driving member and a power input element of said gear assembly, a second element of said gear assembly being connected to said driven member, a third element of said gear assembly being adapted to accommodate driving torque reaction, an overrunning coupling having two races with coupling elements disposed therebetween, said third element being connected to one race, fluid pressure operated friction coupling means for connecting the other race selectively to a stationary portion of said mechanism, a fluid pressure source, conduit structure connecting said source and said friction coupling means, a fourth element of said gear unit being adapted to accommodate driving torque reaction during operation in a relatively low speed ratio, brake means for anchoring said fourth element against a stationary portion of said mechanism, said friction coupling means being adapted to accommodate rotation of said third element in one direction when said mechanism is conditioned for operation in said low speed ratio, said friction coupling means and said coupling elements defining in part a torque reaction path between said third element and said stationary portion of said mechanism during operation in said



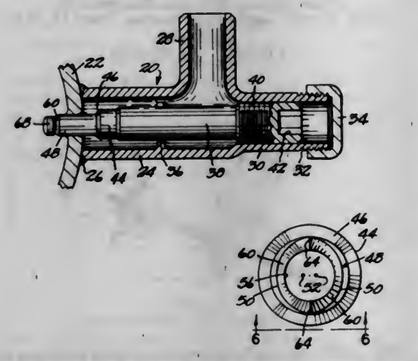
intermediate speed ratio, second clutch means for connecting two elements of said gear assembly to a common torque delivery member to establish high speed ratio direct drive operation, said coupling elements accommodating overrunning motion of said third element in the opposite direction during operation in said high speed ratio, and valve means disposed in and partly defining said conduit structure for controlling sequentially distribution of fluid pressure to said friction coupling means and said second clutch means, a friction brake means having a pressure operated brake servo for anchoring said third element against rotation in both directions, a branch passage in fluid communication with said conduit structure extending to said brake servo, and a shuttle valve means disposed in part in said branch passage for controlling distribution of pressure to said brake servo in response to a pressure change in said friction coupling means.

3,287,996
DRILL FEED
James T. Doyle, 2220 E. 6th Ave., Vancouver, British Columbia, Canada
Filed Nov. 23, 1964, Ser. No. 412,966
5 Claims. (Cl. 77—33.5)

1. Feed apparatus for a drill having a tubular bit comprising a supporting frame, means for slidably mounting a drill on said frame for reciprocal movement towards and away from the work, a hollow cylinder member, a piston member in said cylinder member dividing the latter into two chambers of variable size, each of said chambers being arranged to be filled with a fluid, means rigidly connecting one of the members to the frame, means connecting the other member to the drill for cooperative movement therewith, valve controlled distribution means for selectively and alternately connecting a selected one of either of the chambers with the drill bit, and means directionally controlled by said distribution means, operable when one of the chambers is connected to the bit, for supplying the other chamber with a fluid under pressure to thereby move the movable member and hence the drill.

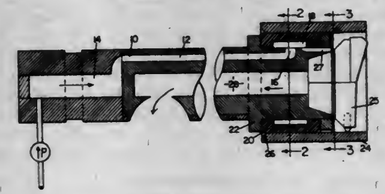


3,287,997
SLUG RETAINING PIPE TAP
Thomas E. McMurray and Eugene C. Knoblock, South Bend, Ind., assignors to M. B. Skinner Company, a division of Textron, Inc., South Bend, Ind., a corporation of Rhode Island
Filed Feb. 25, 1964, Ser. No. 347,151
6 Claims. (Cl. 77—42)



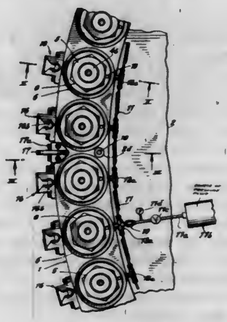
1. A member adapted to be screw-threaded in a T fitting connected to a steel walled fluid-containing member to be tapped and to a discharge conduit, comprising
an elongated steel member having a screw-threaded end portion, and a punching end portion of smaller cross-sectional dimension than said threaded end portion,
said punching end portion having a bore open at its end, coaxial with said punch and of an axial dimension greater than the thickness of the wall to be tapped,
the tip of said punching end portion being defined by at least two surface portions convergent toward the axis of said bore on all radii and of curved shape on all planes transverse of the axis of said punch, each of said converging surface portions having a longitudinal axis offset from the axis of said bore, and each converging surface intersecting a similar surface portion to form longitudinally forwardly converging ridges extending from the outer surface to near the bore of said punching end portion.

3,287,998
FLUID PRESSURE DRILL GUIDE
Hans J. Goernert and Conrad L. Goernert, both of Box 452, North Grosvenordale, Conn.
Filed July 20, 1964, Ser. No. 383,781
7 Claims. (Cl. 77—55)



1. The combination of a cutting tool which has a shank and a cutter head on the shank, of a guide comprising a plastic insert surrounding the cutter head and having in general a diameter slightly less than that of the cutter head, the plastic being of a semi-flexible nature, and means providing pressure exerted upon the interior surface of said plastic insert tending to apply pressure thereto in an outwardly radial direction.

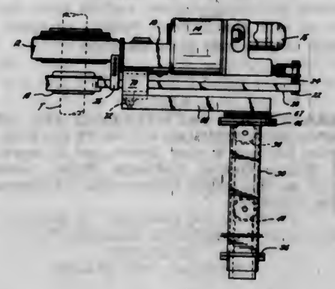
3,287,999
APPARATUS FOR FACILITATING THE APPLICATION AND REMOVAL OF NUTS OR THE LIKE
Karlheinz Kreckel, Welper (Ruhr), and Gerhard Schiffers and Werner Wenzel, Hattingen (Ruhr), Germany, assignors to Rheinstahl Huttenwerke Aktiengesellschaft, Essen, Germany
Filed Nov. 24, 1964, Ser. No. 413,559
Claims priority, application Germany, Nov. 27, 1963, R 27,441
14 Claims. (Cl. 81—54)



1. An apparatus for facilitating the application and removal of nuts and similar fasteners in structures wherein a plurality of elongated bolt-like carriers are anchored in and connect a supporting part with a common supported part and wherein such carriers have fastener receiving end portions extending beyond an exposed side of the supported part, said apparatus comprising a common housing arranged to be placed against the common supported part, said common housing having a common supporting face adapted to abut against and be supported by said common supported part; a plurality of tensioning devices provided on said common housing, each including cooperating cylinder means and piston means with

one of said means engaging said housing and the other of said means operatively connected to the end portion of a carrier, said cylinder and piston means together defining fluid-receiving chamber means of variable volume and said cylinder and piston means being arranged to subject the corresponding carriers to tensioning stresses and to increase the length of such carriers when the volume of the respective chamber means increases; a source of pressure fluid; and conduit means connecting said source with all of said chamber means so that, on admission of pressure fluid into and on resultant increase in the volume of said chamber means, the length of the carriers increases substantially equally and the housing substantially uniformly presses the supported part in a direction toward the supporting part to thus facilitate the application of fasteners to the end portions of the carriers, said cylinders transmitting pressure to said common housing which in turn by its common supporting face transmits such pressure to said common supported part thus tending to equalize the tension in each of said elongated bolts.

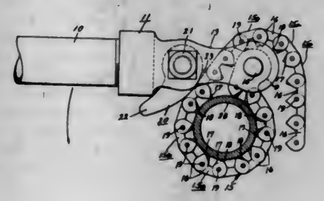
3,288,000
SUPPORTING AND POSITIONING MECHANISM FOR POWER TONGS
James Lewis Foster, P.O. Box 1351, Wichita Falls, Tex.
Filed Jan. 28, 1965, Ser. No. 428,777
9 Claims. (Cl. 81—54)



1. In apparatus for connecting and disconnecting threaded joints in a well pipe string, the combination with a power tong adapted to be grippingly engaged with a well pipe to rotate the same; of supporting and positioning mechanism for the tong comprising inner and outer telescopingly arranged trackways, means for supporting the trackways in an upright position for longitudinal movement relative to each other adjacent a well bore, means for movably supporting the tong on the upper end of one of the trackways for horizontal rotational movement into and out of a position extending over the bore for engagement with the pipe, and means positioned for coaction with the trackways to impart relative longitudinal movement to and hold the trackways in a selected position of longitudinal adjustment relative to each other.

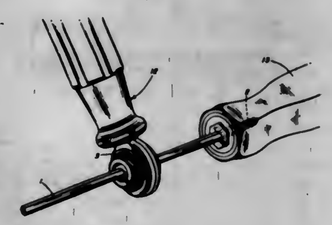
3,288,001
CHAIN WRENCH
Jonathan L. Laird, Jr., R.D. 3, Coatesville, Pa.
Continuation of application Ser. No. 373,242, June 8, 1964. This application May 9, 1966, Ser. No. 548,800
7 Claims. (Cl. 81—68)

1. In a chain wrench comprising a head having a handle connected thereto, said head including a bifurcated portion and a cam, a chain including means connecting said chain to said head between said bifurcation, said chain comprising transverse rows of link plates having link pins connecting the link plates to each other in rows, said link plates of each row being interdigitated with respect to the link plates of said adjacent row, each of said link plates having teeth disposed on the same side of said plate, the terminus of said chain extending through said bifurcation intermediate said cam and said connecting means whereby said chain substantially circumscribes and grips with said teeth a workpiece to which torque is to be applied by said wrench; the improvement wherein said



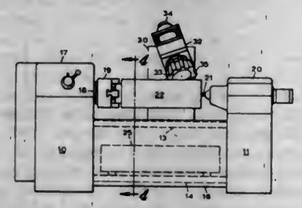
cam includes a smooth camming surface for bearing against the side opposite said toothed side of said chain in the portion thereof circumscribing said workpiece to thereby securely anchor said chain against said workpiece and said cam, said camming surface being of sufficient length to permit said cam to be the sole anchoring means for said wrench upon torque being applied to workpieces having differing diameters.

3,288,002
COMBINATION POLYGONAL WRENCH WITH ADJUSTABLY POSITIONED SOCKET AND RATCHET WRENCH
Robert Mankovitz, Soderarmsvagen 45, Johanneshov, Sweden
Filed Nov. 4, 1964, Ser. No. 408,849
Claims priority, application Sweden, Nov. 12, 1963, 12,458/63
1 Claim. (Cl. 81—71)



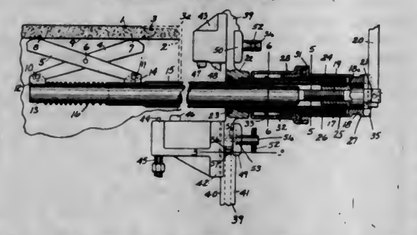
The combination of a polygonal wrench having a non-circular cross section and intended for use in rotating screws, nuts, and the like with a socket member having a hole passing concentrically therethrough along the longitudinal axis thereof, the cross section of said hole corresponding substantially with the peripheral contour of said polygonal wrench, a recess in one end of said socket adjacent said hole, a friction ring of flexible material secured to said socket within said recess and substantially concentric therewith, said ring having an opening with a diameter less than the largest diameter of the socket hole so the socket is retained in arbitrarily displaced positions along the polygonal wrench while remaining relatively longitudinally displaceable therealong, said socket having an outer peripheral surface of non-circular contour, and a ratchet wrench having an inner peripheral surface which corresponds to the outer peripheral surface of said socket.

3,288,003
LATHE
Harry E. Luebkemann, Wilmington, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed May 18, 1964, Ser. No. 368,291
3 Claims. (Cl. 82—2)



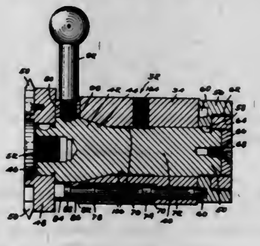
1. A lathe comprising in combination:
(a) a bed,
(b) a pair of longitudinal ways extending parallelly along said bed, one of said ways received above and rearward from the other way,
(c) a locating surface at one end of said bed and extending toward said ways,
(d) a headstock unit received on said locating surface and against said other way, said headstock unit having a recessed area therebehind adjacent to said one way to provide a space therebetween,
(e) a tailstock unit received on said ways in a cantilever manner and spaced from said headstock unit,
(f) a saddle unit received on said ways between said headstock and tailstock units, said saddle having one arm portion extending toward the headstock unit parallel to said one way and bearing thereagainst and another arm portion extending therefrom and bridging across said ways,
(g) a cross slide received on said other saddle arm portion for movement therealong, and
(h) means for moving said saddle along said ways to move said cross slide between spaced positions adjacent to said headstock and tailstock, said one saddle arm portion extending into the space between said one way and the headstock unit when said cross slide is adjacent to said headstock unit, said means including
(1) a feed screw supported parallel to said ways and
(2) a nut engaged over said feed screw and attached to said saddle at the end of said one arm portion toward said headstock unit.

3,288,004
PIPE FINISHING MACHINE
Thomas G. Brown and Bengt G. Bjalme, Erie, Pa., assignors to Reed Manufacturing Company, Erie, Pa., a corporation of Pennsylvania
Filed Oct. 7, 1964, Ser. No. 402,131
4 Claims. (Cl. 82—4)



1. A pipe finishing machine having a tube, a rod slidable in the tube, one end of the rod projecting out one end of the tube, pairs of links pivoted to each other, said pairs being disposed about the axis of the tube, one link of each pair being pivoted to said one end of the tube and the other link of each pair being pivoted to said one end of the rod whereby the pairs of links expand radially so as to grip the bore of a pipe as said one end of the rod approaches said one end of the tube, said rod having a threaded spindle within the opposite end of the tube, a nut within said opposite end of the tube screwed onto said spindle, said nut having a shoulder thrusting against said opposite end of the tube and having a portion projecting outside said opposite end of the tube and accessible to means for turning the nut, a handle pivoted on said projecting portion and movable to a position crosswise to the axis of the tube, a hub slidably and rotatably journaled on the tube, an externally threaded sleeve fixed to the hub and extending from the hub in telescoping relation to said opposite end of the tube, a collar surrounding said sleeve and having a shoulder thrusting against said nut, said collar having a slot receiving the handle in its crosswise position, retractable nuts in the collar movable into and out of engagement with said sleeve, an arm extending from the hub having two pairs of parallel surfaced radially extending guideways respectively on one and on the opposite side of said arm, a tool holder on one pair of guideways, a clamp on the other pair of guideways, and clamping means for tightening the tool holder and clamp against the guideways.

3,288,005
INDEXING ROTARY TOOL HOLDER
Joseph Tringale, 65 Sumner St., Medford, Mass., and John A. Berberian, Medford, Mass. (4 Elm Ave., Burlington, Mass.)
Filed July 9, 1964, Ser. No. 381,371
6 Claims. (Cl. 82—36)



4. Apparatus for sequentially positioning tool members in an operative position adjacent a rotating work piece comprising the combination of: a non-rotatable housing positioned for movement relative to said rotating work piece; a central shaft fixed against movement in an axial direction and rotatable within said housing; indexing means carried on one end of said shaft for rotation therewith relative to said housing; a rotary tool head removably mounted on the other end of said shaft, said rotary tool head adapted to have a plurality of radially extending tool members mounted thereon; locking means cooperating with said indexing means to prevent rotation of said shaft; operating means rotatable relative to said shaft; cam means on said operating means for disengaging said locking means from said indexing means when said operating means is rotated in one direction relative to said shaft, thereby freeing said shaft for rotation in the same direction relative to said housing; ratchet means for fixing said operating means relative to said shaft following disengagement of said locking means, the continued rotation of said operating means in said one

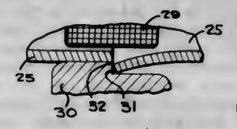
direction thus causing said shaft and said indexing means to be correspondingly rotated; and, limit means on said operating means cooperating with said locking means to limit rotation of said operating means in said one direction, whereby upon rotation of said operating means in the opposite direction relative to said shaft, said locking means will be reengaged with said indexing means.

3,288,006

MAGNETIC IMPULSE SCORING AND/OR CUTOFF OF ELECTRICALLY CONDUCTIVE SECTIONS

Paul M. Erlandson, Palos Park, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Aug. 14, 1963, Ser. No. 302,021
27 Claims. (Cl. 83—6)



1. In the method of effecting the separation of a moving conductive section into individual elements, the steps of moving the conductive section between a coil and a cooperating work member, and rapidly passing a pulse of high current through the coil to induce an opposite and repelling force into the conductive section with the conductive section being repelled from the coil towards the cooperating work member and a shearing force is placed on the moving conductive section.

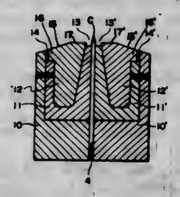
14. An apparatus for shearing a moving thin walled conductive tube comprising a coil shaped to form a magnetic field corresponding to the cross section of the tube, a cooperating back-up member shaped similarly to said coil and being spaced therefrom for the movement of the tube between said coil and said back-up member, and means for applying a predetermined current pulse through said coil of a strength and time length to produce a magnetic field capable of forcing a local portion of the tube towards said back-up member to effect a severance of the tube.

3,288,007

PAPER HOLDING APPARATUS FOR CUTTING CYLINDER IN A ROLLING PRESS

Masumi Eda, 3 7-chome, Den-enchofu, and Yuji Fujishiro, 7 1-chome, Fukazawa-cho, both of Tokyo, Japan

Filed Oct. 5, 1964, Ser. No. 401,291
4 Claims. (Cl. 83—117)



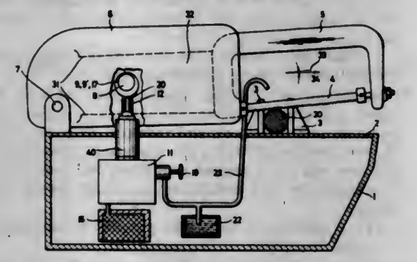
1. A cutting machine comprising a knife holder roller and a folding roller mounted for rotation in timed relation about parallel axes and for adjustment toward and away from each other, said cutting roller having a channel extending axially along the periphery thereof, a cutting device mounted in said peripheral channel comprising a pair of elongated casings of angle cross-section each including a heavy base flange and a thin flange extending from said base flange forming rabbets with the free edges of the bases in juxtaposition and the thin flanges extending from their respective bases in the same direction, said casings being mounted in said peripheral channel with the rabbets opening outwardly, an elongated knife holder of J-shape cross-section in each rabbet with the outer surfaces of the long stem flange in registry with the free edge of the associated base and the short stem flange in contact with the thin flange of the casing, rubber-like insert in the channel of each J-shaped knife holder projecting beyond the free edge of the long stem flange, an elongated cutting knife having a serrated cutting edge mounted between said bases and said long stem flanges and projecting beyond said long stem flanges, said rubber-like insert being spaced from the cutting edge of the knife to provide for lateral distortion, said folding roller having an elongated axially extending peripheral groove for registry with the knife, an additional rubber-like insert in the groove of said folding roller whereby web material fed between the knife holding roller and cooperating folding roller is cut by said cutting knife while being clamped between the rubber-like inserts in the J-shaped channels and the additional rubber-like insert in the groove of the folding roller.

3,288,008

HACK SAW MACHINE

Paul Stolzer, Achern, Baden, Germany, assignor to Karl Stolzer, Achern, Baden, Germany, a German firm

Filed Sept. 30, 1965, Ser. No. 491,697
Claims priority, application Germany, Sept. 30, 1964, St 22,747
11 Claims. (Cl. 83—169)



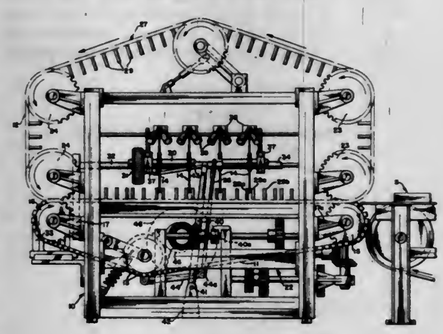
1. In a hack saw machine having a frame, means on said frame for clamping a workpiece, a saw bow, guide means for guiding said saw bow for reciprocating movements in one direction, driving means for reciprocating said saw bow so as to carry out successive cutting and return strokes, means for pivotably mounting said guide means together with said saw bow on said frame so as to be pivotable relative to said workpiece about an axis extending transverse to and spaced from said saw bow, means for removably securing a saw blade in said saw bow in a position so as to extend at an oblique angle to said direction of movement of said saw bow so that during said cutting strokes said saw blade is pivoted upwardly together with said saw bow and said guide means, and control means for lifting said saw bow and saw blade off said workpiece at the end of each cutting stroke, for lowering said saw bow so that said saw blade will engage upon said workpiece at the end of each return stroke, and for thereafter exerting a force upon said saw bow so as to attain the desired cutting pressure of said saw blade on said workpiece during each cutting stroke, said control means comprising a compensating spring acting upon said guide means for substantially compensating the weight of said guide means and the elements connected thereto and pivotable therewith, a cylinder, a double-acting main piston within said cylinder, said first chamber adapted to contain a fluid, an auxiliary piston in said first chamber dividing said cylinder into a first and a second chamber, each of said pistons having a compression surface facing the other, means on at least one of said pistons for guiding said auxiliary piston so as to be movable telescopically on and in the axial direction relative to said main piston and defining an intermediate chamber located between said pistons in said first chamber when said compression surfaces of said pistons are spaced from each other, said intermediate chamber being sealed relative to said first and second chambers and having a variable capacity in accordance with the movements of said pistons relative to each other, a first piston rod secured near one end to said main piston, and a second piston rod secured near one end to said auxiliary piston, cam means rotatably mounted on said guide means and operatively connected to said driving means so as to be rotatable in a particular relation to the reciprocating movements of said saw bow, said cam means having cam surfaces laterally adjacent to and angularly offset relative to each other and each being adapted to act upon the other end of one of said piston rods for moving said pistons in a certain relation relative to each other, at least one first channel extending through said auxiliary piston and at least one second channel extending through said main piston, first and second check valves connected to said first and second channels, respectively, permitting said fluid to flow only in the direction from said first chamber to said second chamber, a conduit connected to said second chamber and leading to said saw blade, an adjustable one-way throttle valve connected into said conduit, whereby when said main piston is moved within said cylinder in the direction toward said first chamber containing said auxiliary piston, a part of the fluid contained in said first chamber is displaced therefrom so as to pass through said channels, said check valves and said intermediate chamber into said second chamber, while when said main piston is moved in the opposite direction, at least a part of the fluid then contained within said second chamber is passed from said second chamber through said throttle valve and said conduit to said saw blade for cooling and lubricating the same, said cam means being disposed in relation to the reciprocating movement of said saw bow in such a position that, when said saw bow reverses its direction of movement after completing its cutting stroke, said cam means tend to move said piston rod of said main piston together with said main piston in the direction against the action of said compensating spring, whereby said guide means and said saw bow are pivoted upwardly and said saw blade is lifted for a limited distance off said workpiece, said cam surfaces being angularly offset relative to each other so that, after said saw blade has been lifted off said workpiece at the end of each cutting stroke, said auxiliary piston is moved away from said main piston, whereby a certain amount of fluid is drawn from said first chamber through said first channel and said first check valve into said intermediate chamber, said auxiliary piston then being moved by its associated cam surface and said second piston rod toward said main piston, whereby said amount of fluid is passed from said intermediate chamber through said second channel and said second check valve into said second chamber and said main piston is thereby shifted for a certain distance in the direction toward said first chamber and by means of said first piston rod takes along and pivots said guide means and all other elements pivotable therewith including said saw bow and saw blade against the action of said compensating spring for a certain distance and independently of the speed of said driving means in the downward direction to the position in which said saw blade at the end of said return engages upon said workpiece.

3,288,009

FLYING-CUTTER APPARATUS WITH WORK FEED COMPRESSING MEANS

John J. Bradley, Green Bay, Wis., assignor to Paper Converting Machine Company, Inc., Green Bay, Wis., a corporation of Wisconsin

Filed July 21, 1964, Ser. No. 384,062
5 Claims. (Cl. 83—176)



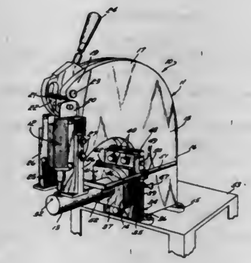
1. In apparatus for cutting a stack of continuous superposed webs, a frame, a crossbar conveyor mounted on said frame and having a horizontal path segment for supporting said stack, a disc blade mounted for movement through said stack, a second conveyor mounted on said frame, said second conveyor being equipped with a plurality of U-shaped members, said second conveyor having a path segment parallel to and above the first-mentioned path segment with said U-shaped members being sized to straddle and compress said web during the cutting thereof, adjacent members being spaced to permit passage of said disc blade therebetween, and drive means on said frame for advancing both of said conveyors in synchronized fashion, said drive means also being operative to move said disc blade through a vertical cutting arc and translating said blade.

3,288,010

HORN PRESS

Leon E. Rutz, Goodhue County, Minn., assignor to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan

Filed May 11, 1965, Ser. No. 454,801
7 Claims. (Cl. 83—191)



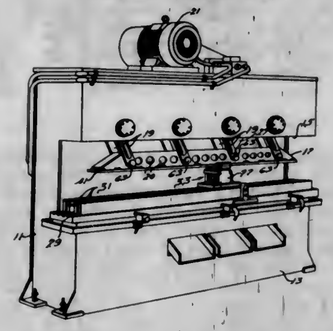
1. A press, comprising in combination:
(a) a rigid frame having a vertical face directed in one direction;
(b) means on said frame for supporting a first tool for vertical reciprocation in parallel relation to said

vertical face and spaced in said one direction from said face;

(c) an elongated horn-like member having means at one end for fixedly supporting a second tool; and

(d) means extending in the direction of said horn-like member and detachably fixedly secured to said vertical face, and detachably fixedly secured to the opposite end of said horn-like member, and operative to support said horn-like member as a cantilever and to hold the second tool in a predetermined position in which it may coact with the reciprocable tool.

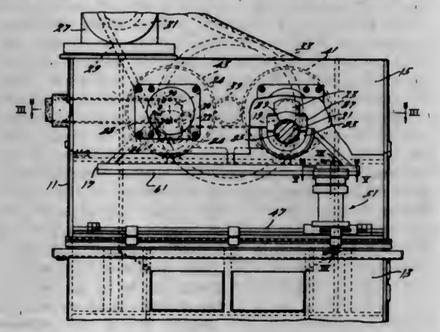
3,288,011
FLYING CUTOFF MACHINE WITH SWINGING RAM
Alexander Borzym, 6841 Oakman Blvd., Dearborn, Mich.
Filed June 30, 1965, Ser. No. 468,240
1 Claim. (Cl. 83—310)



In a cutoff machine or the like for treating elongated work while the work is traveling in a path longitudinal of itself, a press frame having a flat bed extending parallel to and beneath said work path, said frame also having a head spacedly overhanging the bed and path, a ram extending parallel to said path above the bed, a plurality of parallelogram links supporting the ram from the head for translatory swinging movement toward and from said path about axes perpendicular to the path, means including a crank and a connecting rod for imparting harmonic oscillatory swinging movement to said ram about said axes, tracks on the ram and on the bed parallel to said path, and a die carriage slidable along said tracks and having work engaging parts actuatable by such swinging movement of the ram.

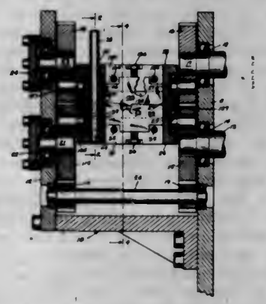
3,288,012
FLYING CUTOFF MACHINE WITH ORBITAL RAM
Alexander Borzym, 6841 Oakman Blvd., Dearborn, Mich.
Filed June 30, 1965, Ser. No. 468,241
1 Claim. (Cl. 83—310)

In a cutoff machine or the like for treating elongated work while the work is traveling in a path longitudinal of itself, a stationary frame including a flat substantially horizontal bed extending under and parallel to said work path, a head spacedly overlying said path and bed and including substantially vertical front and rear walls and an intermediate partition wall, all of said walls extending parallel to said path, a pair of spaced parallel horizontally aligned cranks of like throw journaled in said front and patrition walls and rotatable about axes perpendicular to said walls and path, a ram hung on the cranks and extending parallel to said path and orbitally movable parallel to itself toward and from the bed by synchronous rotation of the cranks, tracks on the ram and bed parallel to said path, a die carriage slidable along the tracks and having work engaging parts actu-



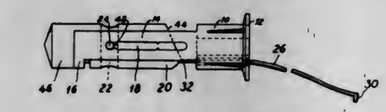
atable by movement of the ram, and means carried by the head and journaled in said rear and partition walls for synchronously driving said cranks.

3,288,013
ROTATABLY DRIVEN APPARATUS FOR PRODUCING PARALLEL MOVEMENT OF COOPERATING BLADES
Richard H. Cochrane, Milwaukee, Wis., assignor to Pratt Manufacturing Corp., Milwaukee, Wis., a corporation of Wisconsin
Filed May 26, 1965, Ser. No. 458,978
5 Claims. (Cl. 83—328)



1. Apparatus for producing substantially parallel movement of cooperating instruments comprising a first holder, a second holder, an instrument in each of said holders, means including a first gear for causing orbital movement of said first holder in a planetary path around the axis of said first gear, means including a second gear meshing with said first gear for causing orbital movement of said second holder in a planetary path around the axis of said second gear, the instruments being so disposed in the holders and the planetary paths being so related to one another that the instrument of the first holder has operating engagement with the instrument of the second holder each time the holders complete an orbit, a rod projecting from and extending transversely of one of said holders and having slidable engagement with the other holder to maintain the holders in facing relationship with one another during their orbital travel, the holder from which said rod projects being tiltably movable relative to the rod for adjustment purposes, and means for adjustably maintaining a selected position of tiltable movement.

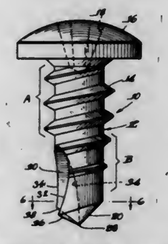
3,288,014
FASTENING DEVICE
Louis Aackersberg Mortensen, Skodsborg, Denmark (35 Kongevej, Birkerod, Denmark)
Filed Sept. 15, 1964, Ser. No. 396,561
Claims priority, application Denmark, Feb. 24, 1964, 900/64
7 Claims. (Cl. 85—3)



1. A fastening device comprising a nipple having at one end an abutment shoulder and at the other end two parallel projecting fingers each defining a longitudinal guide track in opposite portions of said fingers, an oblong member being mounted between said fingers and having oppositely projecting guiding means defining perpendcular to the axis of said nipple a transverse pivot axis for said oblong member, said guiding means being slidably received in said tracks to retain said oblong member between said fingers for pivotal movement between a first position in which said oblong member is approximately aligned with said nipple axis and a second position in which said oblong member extends transversely of said nipple axis and projects laterally of said fingers, said oblong member having a transverse threaded bore which is aligned with the axis of said nipple when said oblong member is in said transverse position and is engageable by leading a threaded screw through the bore of said nipple by means of which screw the oblong member from said second position may be given a translatory movement towards said abutment shoulder and lengthwise of said fingers to a third position, each of said slots having first and second restricted portions, the transverse dimensions of which are slightly less than the transverse dimension of said guiding means, said first restricted portions being disposed intermediate the ends of the tracks and preventing the oblong body from moving back from its third towards its second position in response to the pressure normally applied by screwing another screw into the threaded bore of said oblong member after unscrewing the first mentioned screw, and said second restricted portions being disposed in juxtaposition to the ends of the tracks remote from said abutment shoulder and preventing sliding of said guiding means when said oblong member is pivotally moved from its first to its second position, the improvement comprising a passage through the wall of the nipple, and a drawing means one end of which is secured to the oblong member at a point transversely spaced from said pivot axis when said oblong member is in its second position, the other, free end of said drawing means extending through said passage, whereby said oblong member may be pivotally moved from its second to its first position by gripping and drawing said free end of the drawing means.

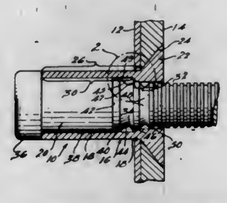
3,288,015
DRILLING AND THREAD FORMING SCREW
Walter M. Hanneman, Annapolis, Md. (2501 N. Keeler Ave., Chicago, Ill. 60639)
Filed June 14, 1965, Ser. No. 463,726
11 Claims. (Cl. 85—47)

1. A drilling and thread cutting screw including a shank, a head at one extremity thereof having means for accommodating a screw-turning tool, thread convolutions on said shank presenting a holding section and an entering thread forming section, a conical surface traversing the entering extremity of the shank, the axis of said conical surface being inclined to the shank axis, and the apex thereof being substantially coincident wtih said shank axis and presenting an entering screw tip, the entering portion of said shank having a longitudinal recess, a leading cutting edge, and a non-cutting trailing edge circumferentially spaced therefrom, said edges being defined by the intersection of said recess with said conical surface, said



recess being so located with respect to the shank periphery as to present said conical surface as a surface of relief extending circumferentially from said cutting edge to said trailing edge.

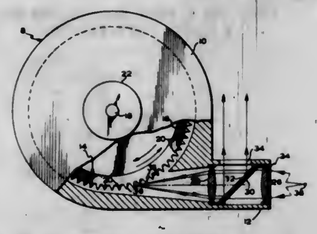
3,288,016
BLIND TWO-PIECE FASTENER
Perry J. Reynolds, Detroit, Mich., assignor to Huck Manufacturing Company, Detroit, Mich., a corporation of Michigan
Filed July 6, 1964, Ser. No. 380,595
4 Claims. (Cl. 85—70)



1. A fastener for joining together a plurality of workpieces having aligned openings comprising: a pin and a tubular sleeve member, said sleeve member having a through bore and having an enlarged head for engaging the forward one of the workpieces and having a cylindrical portion for extending rearwardly from said enlarged head through the aligned openings and terminating beyond the rearward one of the workpieces, said bore having a forward bore portion extending generally forwardly from a point proximate said enlarged head and a rearward bore portion extending generally rearwardly from said point with said forward bore portion being of a smaller diameter than said rearward bore portion, a radially inwardly extending shoulder portion located adjacent said enlarged head and at the juncture of said forward and rearward bore portions, said pin comprising a shank extending through said bore and head means at one end of said shank engageable with the end of said cylindrical portion opposite said enlarged head for forming a deformed, enlarged head in that portion of said sleeve extending beyond the rearward one of the workpieces as said pin is moved axially forwardly relatively to said sleeve, means on the end of said shank opposite said head means for being gripped by a tool whereby a relative axial force can be applied between said pin and said sleeve for setting the fastener, said shank having an annular locking groove located intermediate its ends, said locking groove having a first annular shoulder at its rearward end on said shank and being of a diameter less than said rearward bore portion and greater than said shoulder portion and being engageable with a first portion of said shoulder portion for deforming material from

said shoulder portion into said locking groove as said pin is moved relatively from its initial unset position to a preselected position after the fastener has been set whereby said pin and said sleeve are locked together, an annular portion located at the forward end of said locking groove and being of a diameter proximate to the diameter of said forward bore portion, said annular portion having an axial length less than that of said forward bore portion, a second annular shoulder on said shank intermediate said first annular shoulder and said head means and being of a diameter greater than said first annular shoulder and being engageable with a second portion of said shoulder portion for stopping the axially forward movement of said pin at said preselected position said second annular shoulder extending generally transversely to the axis of said pin and being axially spaced from said first annular shoulder a distance less than the axial length of said forward bore portion.

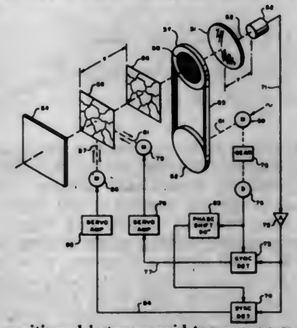
3,288,017
WAVELENGTH CHANGER FOR THE INFRARED AND OPTICAL BAND
Doyle C. Wells, San Diego, Calif., assignor to The Ryan Aeronautical Co., San Diego, Calif.
Filed June 11, 1962, Ser. No. 202,045
2 Claims. (Cl. 88—1)



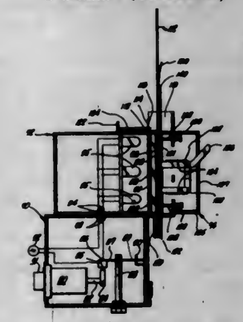
1. A wavelength changer, comprising:
a disc-like rotatable reflector unit having a peripheral train of substantially radially extending, closely spaced reflectors, each reflector having a reflective surface of involute form;
a collimating system to focus incident wave energy and having an axis intersecting the periphery of said reflector unit at such an angle that the involute surfaces of said reflectors maintain a constant angle relative to said axis as the reflectors pass across the axis;
means to rotate said reflector unit causing said reflectors to move across and effectively along said axis, whereby wave energy from said collimating means reflected from said reflectors is subjected to a Doppler shift;
and a fixed mirror disposed to intercept and redirect the reflected wave energy.

3,288,018
OPTICAL CORRELATOR HAVING MEANS TO LINEARLY DISTRIBUTE CENTER OF ILLUMINATION
Samuel Belchis, Hartsdale, and George R. Gamertsfelder, Pleasantville, N.Y., assignors to General Precision, Inc., a corporation of Delaware
Filed July 12, 1963, Ser. No. 294,711
6 Claims. (Cl. 88—1)

1. An optical correlator, comprising,
an illuminated object,
a variable density transparency representative of said object positioned substantially parallel thereto but spaced therefrom,
a radiation sensor for generating a voltage the polarity and magnitude of which are indicative of the direction and extent of the deviation of the centroid of illumination from the center thereof in one of two orthogonal directions,
said sensor being positioned to receive light transmitted from each point on said body through corresponding points on said transparency,
means for linearly distributing the centroid of illumination positioned between said transparency and said sensor, and
means for rotating said linearly distributing means continuously,
whereby the voltage generated by said sensor contains alternating components indicative of the translational misalignment between said body and said transparency.

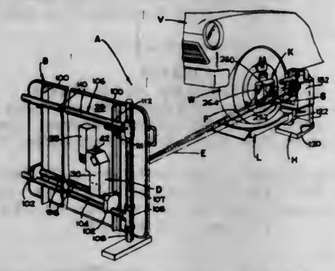


3,288,019
PHOTOGRAPHIC TYPE SEDIMENTATION RECORDER
Charles M. Blumenfeld, 4700 Parkridge Road, Sacramento, Calif.
Filed May 8, 1962, Ser. No. 193,084
1 Claim. (Cl. 88—14)



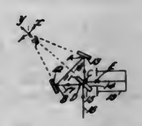
Apparatus for recording the sedimentation of solids in a liquid, the apparatus comprising a supply box adapted to hold a supply of photographic paper, a paper holder separate from the box, the supply box and holder each having a separate respective opening connecting the interior with the exterior, means for releasably securing the box and holder together so the openings in each of them are aligned, means for transferring paper from the box to the holder through the aligned openings while they are together and without exposing the paper to light, means for separating the holder from the box without exposing the paper in the holder to light, means for holding a sample of the liquid, means for shining light through the liquid, means for holding the paper in the holder in the path of light passing through the sample, a developer tank having an opening in it and adapted to hold a developer solution in the tank, means for releasably securing the holder to the tank in place of the supply box so the openings in them are aligned, and means for transferring the exposed paper in the holder through the opening in the tank and into the developer solution without exposure to light.

3,288,020
APPARATUS FOR OPTICALLY MEASURING WHEEL ALIGNMENT CHARACTERISTICS
Melvin H. Lill, Lansing, Mich., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Jan. 8, 1963, Ser. No. 250,116
6 Claims. (Cl. 88—14)



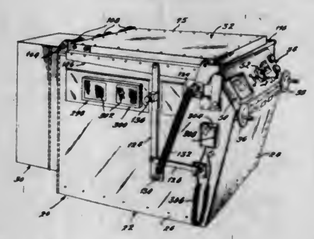
1. In an optical wheel aligning apparatus the combination comprising a projector for emanating three separate beams including a horizontal main beam and two reference beams respectively spaced from the main beam in a horizontal plane and in a vertical plane both intersecting the main beam; a mirror stand including a movable mirror support bracket; a first plane mirror mounted on said bracket and capable of being located by movement of the bracket to reflect the projected main beam along a horizontal path perpendicular to the projected beam; and second and third plane mirrors carried by said bracket in predetermined orientation relative to said first mirror, each of said second and third mirrors being so positioned as to intercept a different one of said reference beams and reflect the beam toward said projector in substantially the same horizontal and vertical orientation relative to the main beam as the initially projected orientation of the beams, when said main beam is reflected along said perpendicular path, whereby said mirror stand can be installed adjacent the vehicle wheel for an alignment measuring operation without the use of predetermined reference points for the mirror stand.

3,288,021
MICROSCOPE FOR MEASURING THE SIZE OF AN OBJECT
Harold Horace Hopkins, Barnet, England, assignor to W. Watson & Sons Limited, Barnet, England, a British company
Filed Jan. 10, 1963, Ser. No. 250,593
Claims priority, application Great Britain, Jan. 15, 1962, 1,467/62
5 Claims. (Cl. 88—14)



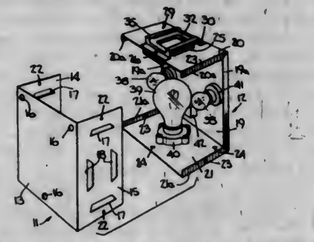
1. A microscope for measuring the size of an object by forming in the same field of view two images of an object, which microscope comprises an objective lens system for directing away from the object a primary beam carrying an image of the object, a single movable mounting, first and second plane mirrors rigidly mounted on said mounting in fixed relationship to each other so as to be inclined at a predetermined angle towards each other, a beam splitting device having a plane surface interposed between the objective lens system and said two mirrors to receive said primary beam from said objective lens system, said plane surface being substantially parallel to the bisector of the said predetermined angle between said two mirrors, said device serving to partially transmit and partially reflect said primary beam in order to derive, by division of amplitude, a first and second derived beam from the said primary beam, said first derived beam being formed by transmission through said plane surface to be reflected back to the plane surface by intersecting the first and second mirrors sequentially, said second derived beam formed by reflection at said plane surface to be reflected back to the plane surface by intersecting said second and first mirrors sequentially, and an eye-piece system positioned to receive from said plane surface said first and second derived beams, said first derived beam being received by transmission through said plane surface and said second derived beam being received by reflection at said plane surface subsequent to reflection by said mirrors whereby to form two images of the object in the same field of view, and control means to move said mounting together with said mirrors as a unit to effect movement of the mirrors along a perpendicular to said plane surface to cause lateral movement of the two images relative to each other in said field of view.

3,288,022
PHOTOREPRODUCTION DEVICE
Ernest R. Swanson, St. Louis, Mo. (Rte. 1, Box 74, Defiance, Mo.)
Filed Oct. 4, 1963, Ser. No. 313,902
18 Claims. (Cl. 88—24)



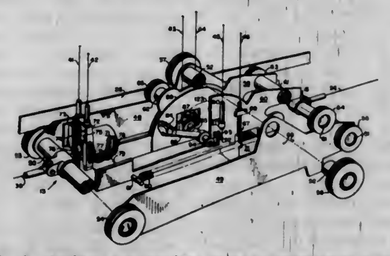
1. A photoreproducing machine comprising a housing, a transparent wall on said housing, means for covering said wall to prevent ambient light from entering the machine, a platform structure positioned in the housing, means for moving the platform structure toward and away from the transparent wall, a movable carriage mounted on said platform structure, a projector including a light source, a film stage and a lens system mounted on said carriage, said light source and said lens system being movable relative to the film stage, and a mirror mounted on the platform structure in spaced relationship to said projector and in position to reflect light from the projector onto the transparent wall, means for moving the carriage relative to the platform structure to change the spacing between the projector light source and lens system and the mirror in response to movements of the platform relative to the transparent wall for changing the size of the image projected on the transparent wall, and other means for simultaneously moving the projector film stage relative to the projector lens system to keep the image from the projector focused on the transparent wall in all positions of the platform structure.

3,288,023
SLIDE COPYING APPARATUS
Kingdon Lane, 1200 Madison Ave., New York, N.Y.
Filed Apr. 27, 1964, Ser. No. 362,587
3 Claims. (Cl. 88—24)



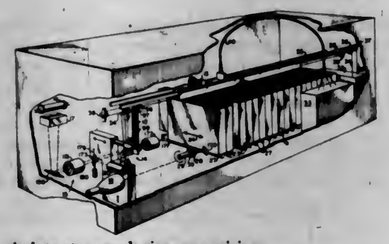
1. A slide-copying apparatus, comprising a housing having in one wall thereof an opening larger than the largest slide transparency to be copied, a first slide-holding member carried by said housing in spaced overlying relationship to said opening and provided with a first aperture aligned with said opening and smaller than the frame of the largest slide but larger than either the transparency thereof or the frame of the smallest slide to be copied, a high power light source and a low power light source located within said housing and arranged to direct light toward and through said opening, a flashed opal glass plate located within said housing and arranged across said opening, switch means connected with said light sources to permit energization of said low power light source independently of said high power light source, a second slide-holding member provided with a second aperture smaller than the frame but larger than the transparency of the smallest slide to be copied, means on said second member for holding the frame of said smallest slide fixedly in position with the transparency thereof overlying said second aperture, and means on said first member for selectively holding either said second member or said largest slide fixedly in position with either said second aperture or said largest slide transparency in alignment with said first aperture and said opening.

3,288,024
RECORD SHEET SELECTION AND TRANSPORT MEANS
Donald H. Cronquist, 128 Adrian Place, Los Gatos, Calif., and Austin H. Higginson, 678 Cupples Court, Santa Clara, Calif.
Original application Jan. 12, 1959, Ser. No. 786,406, now Patent No. 3,149,529, dated Sept. 22, 1964. Divided and this application July 16, 1964, Ser. No. 383,106
10 Claims. (Cl. 88—24)



1. A random access data storage apparatus comprising:
a plurality of drawers, each drawer containing a plurality of cells, each cell containing a plurality of film strips,
a fixed read/write station spaced apart from the drawers,
a transport means movable between the read/write station and the drawers,
a first selective positioning means drivingly coupled to the transport means for locating the transport means in spaced relation with a selected drawer,
a second selective positioning means having means drivingly coupled to the drawers for locating a selected cell therein in spaced relation with the transport means, said transport means including a selective pickup means for removing a selected one of the film strips from the selected cell of the selected drawer, said transport means having means operable to carry the selected film strip to the read/write station.

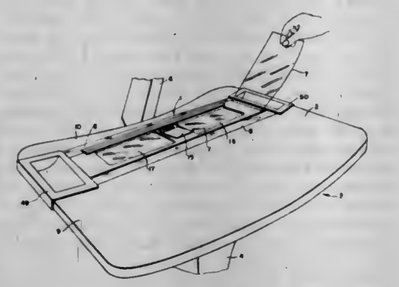
3,288,025
X–Y POSITIONING MECHANISM
Frank A. Litz, San Jose, and John J. Lynott, Santa Clara, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Original application Jan. 12, 1959, Ser. No. 786,406, now Patent No. 3,149,529, dated Sept. 22, 1964. Divided and this application July 16, 1964, Ser. No. 383,105
4 Claims. (Cl. 88—24)



1. A data storage device comprising:
a plurality of cells each containing a plurality of film strips,
a remote read/write station having an optical system for recording information on and reproducing information from a film strip,
a transport carriage movable between the read/write station and the various cells,
said transport carriage being operable to remove and transport a selected one of the film strips from a selected one of the cells to the read/write station,
said read/write station including a film holder for receiving and holding the selected film strip,
said film holder being movable along two axes, and
two selective positionable drive means mechanically coupled to the film holder, each of the drive means being operable to move and position the film holder along a respective one of the axes whereby the optical system is aligned with a selected coordinate portion of the film strip.

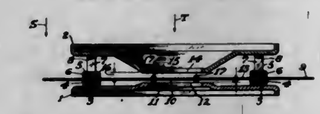
3,288,026
BOWLING SCORE SHEET FILM POSITIONING AND HOLDING DEVICE
Stanley E. Condon, Plymouth, Ohio, assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Aug. 27, 1964, Ser. No. 392,562
9 Claims. (Cl. 88—24)

1. A score sheet holding device attachable to a bowling score projector table of the type having a top provided with a writing area through which light passes to permit projecting the score from a transparent score sheet for view by an audience, comprising in combination:
a score sheet holder comprising:
an elongated substantially flat frame having an opening therein, and
score sheet guide means connected to said frame;
means for mounting said holder on a score projector table with said frame adjacent to and extending across the top thereof;
said opening of said frame element being effective to expose the upper surface of a transparent bowling



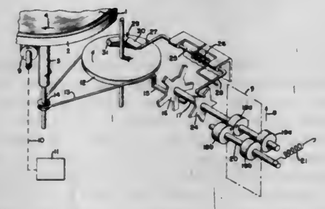
score sheet to be disposed adjacent said frame and the score projector top, and on which upper surface the score is to be recorded; and
a magazine associated with said frame and adjacent thereto, to store a roll supply of connected unused score sheets and from which a score sheet can be fed to said frame and positioned above said writing area for entries of scores thereon;
said score sheet guide means being effective to facilitate proper positioning of a score sheet relative to said opening of said frame element.

3,288,027
TWO-PART NEGATIVE HOLDER
Antonín Ružička, Prerov, Czechoslovakia, assignor to Meopta národní podnik, Prerov, Czechoslovakia
Filed Dec. 29, 1964, Ser. No. 421,840
Claims priority, application Czechoslovakia, Jan. 2, 1964, 25/64
10 Claims. (Cl. 88—24)



1. A negative holder for a projection printer comprising, in combination:
(a) two pairs of wipers,
(1) the wipers of one pair being spaced from the wipers of the other pair in a predetermined direction,
(2) the wipers of each pair forming therebetween respective slots extending transversely of said direction substantially in a common plane,
(3) said slots being adapted simultaneously to receive respective longitudinal portions of a film for movement of the film under tension in said plane while simultaneously frictionally engaged by said wipers,
(b) two gate-forming members having respective opositely disposed contact faces and formed with gate openings in said contact faces, and
(c) actuator means for moving one of said members relative to the other transversely of said plane between an inoperative position and an operative position,
(1) said contact faces in said inoperative position being spaced from said plane in opposite directions to permit free movement of said film therebetween in said plane, and
(2) said contact faces in said operative position being spaced from said plane in a common direction and closely adjacent each other for clampingly receiving said film therebetween and said gate openings being aligned in said common direction.

3,288,028
SOUND AND SLIDE SYNCHRONIZING ARRANGEMENT
William A. Sours, Utica, N.Y., assignor to General Electric Company, a corporation of New York
Filed Aug. 31, 1964, Ser. No. 393,049
8 Claims. (Cl. 88—28)

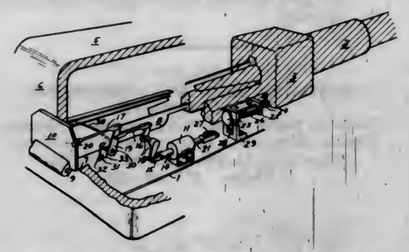


1. In a picture slide changer, an arrangement for advancing a picture slide advance shaft step by step comprising a star wheel and a sprocket wheel keyed to said slide advance shaft, a drive wheel having a drive tooth for intermittently engaging said sprocket wheel to drive said sprocket wheel, means for locking said star wheel automatically against rotation when said drive tooth moves out of engagement with said sprocket wheel, said drive wheel having a camming surface, said locking means comprising a first arm resiliently urged to follow said camming surface and a second arm resiliently urged to engage said star wheel for locking said star wheel, said first arm responsive to a first camming action of said camming surface to move said second arm out of locking engagement with said star wheel automatically when said drive tooth moves into driving engagement with said sprocket wheel and for maintaining said second arm out of locking engagement with said star wheel during the period when said drive tooth is driving said sprocket wheel, said first arm responsive to a second camming action of said camming surface for returning said second arm into locking engagement with said star wheel automatically when said tooth moves out of driving engagement with said sprocket wheel.

3,288,029
CLOSURE DEVICE FOR A CASING DISCHARGE PORT OF A GUN
Åke Johan Arthur Birath, Bofors, Sweden, assignor to Aktiebolaget Bofors, Bofors, Sweden, a corporation of Sweden
Filed Apr. 1, 1965, Ser. No. 444,627
Claims priority, application Sweden, Apr. 8, 1964, 4,359/64
5 Claims. (Cl. 89—33)

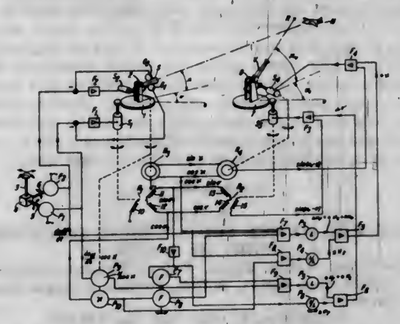
1. A closure device for opening and closing a discharge port for empty shell casings ejected by the ejecting mecha-

nism of a gun, said device comprising, in combination, a movable closure member for opening and closing a casing discharge port in a protective wall for a gun; energy storing means coupled to the closure member, said means being loaded by an opening of said closure member and urging the same into its closed position; a linkage means coupled with the closure member for moving the same from the closed position into the open position; a casing-ejecting mechanism including an actuating member movable in response to an activation of said ejection mechanism by firing a round from the gun; first coupling means supported by said linkage means and coupling the same to said actuating member in the closed position of the closure member for moving said member into its open



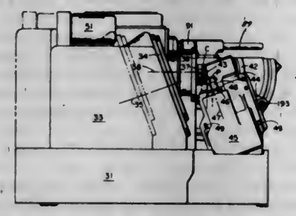
position by a movement of said actuating member; first coupling-release means coacting said coupling means for releasing the same from the actuating member upon movement of the closure member into the open position; second coupling means coacting with said closure member for holding the same in its open position against the action of said energy-storing means; and second coupling-release means coacting with said second coupling means to release the latter for return of the closure member into its closing position by the action of said energy-storing means, said second coupling-release means being activated by engagement with an ejected casing moving toward said port and return into an inactive position upon passage of the casing.

3,288,030
FIRE CONTROL SYSTEM FOR WEAPONS
Karl Göran Folke Lind, Karlskoga, Sweden, assignor to Aktiebolaget Bofors, Bofors, Sweden, a corporation of Sweden
Filed June 26, 1964, Ser. No. 378,250
Claims priority, application Sweden, July 1, 1963, 7,287
13 Claims. (Cl. 89—41)



1. A fire control system for aiming a weapon movable in traverse and elevation at a remote target comprising: a first servomotor means including a traverse control signal input and a mechanical output coupled to said weapon for moving the latter to a different traverse angle when a control signal is received at said traverse control signal input; a second servomotor means including an elevation control signal input and a mechanical output coupled to said weapon for moving the latter to a different elevation angle when a control signal is received at said elevation control signal input; a sight directable to different traverse angles and different elevation angles; a first transmitting resolver comprising a rotor part and a stator part, a primary winding on one of said parts, means for feeding a constant peak amplitude A.C. voltage to said primary winding, two mutually orthogonally oriented secondary windings on the other of said parts, means for coupling said rotor part to said sight whereby one of said secondary windings transmits a voltage proportional to $\sin \sigma$ and the other of said secondary windings transmits a voltage proportional to $\cos \sigma$, σ being the traverse angle of said sight with respect to a given direction; a second transmitting resolver comprising a rotor part and a stator part, a primary winding on one of said parts, means for feeding a constant peak amplitude A.C. voltage to said primary winding, two mutually orthogonally oriented secondary windings on the other of said parts, means for coupling said rotor part to said sight whereby one of said secondary windings transmits a voltage proportional to $\sin \chi$ and the other of said windings transmits a voltage proportional to $\cos \chi$, χ being the elevation angle of said sight with respect to a given plane; a first comparison resolver comprising a stator part and a rotor part, two mutually orthogonally oriented primary windings on one of said parts, a secondary winding on the other of said parts, means for connecting said rotor part to the mechanical output of said first servomotor means, means for connecting one of said secondary windings of said first transmitting resolver to one of the primary windings of said first comparison resolver, means for connecting the other of said secondary windings of said first transmitting resolver to the other of the primary windings of said first comparison resolver whereby the secondary winding of said first comparison resolver transmits a voltage proportional to $\sin (\sigma_v - \sigma)$, σ_v being the traverse angle of said weapon with respect to said given direction, said voltage constituting a primary traverse control signal; a second comparison resolver comprising a stator part and a rotor part, two mutually orthogonally oriented primary windings on one of said parts, a secondary winding on the other of said parts, means for connecting said rotor part to the mechanical output of said second servomotor means, means for connecting one of the secondary windings of said second transmitting resolver to one of the primary windings of said second comparison resolver, means for connecting the other secondary winding of said second transmitting resolver to the other primary winding of said second comparison resolver whereby the secondary winding of said second comparison resolver transmits a voltage proportional to $\sin (\chi_v - \chi)$, χ_v being the elevation angle of said weapon with respect to said given plane, said voltage constituting a primary elevation control signal; computer means including signal inputs connected to at least one of the secondary windings of said first transmitting resolver and at least one of the secondary windings of said second transmitting resolver, a first signal output for transmitting a deflection traverse control signal which is trigonometrically related to the traverse angle of said sight and a second signal output for transmitting a deflection elevation control signal which is trigonometrically related to the elevation angle of said sight; means for feeding the sum of said primary and deflection traverse control signals to the traverse control signal input of said first servomotor means; and means for feeding the sum of said primary and deflection elevation control signals to the elevation control signal input of said second servomotor means.

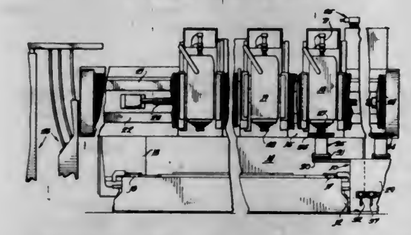
3,288,031
GEAR GENERATING MACHINE AND METHOD
Adolph H. Krastel and Harry Pedersen, both of Rochester, N.Y., assignors to The Gleason Works, Rochester, N.Y., a corporation of New York
Filed Aug. 5, 1965, Ser. No. 477,510
30 Claims. (Cl. 90—5)



1. A gear generator comprising a frame, a work spindle rotatable in a work head on the frame, a cradle carrying a rotary cutting tool and rotatable in a cradle housing that is reciprocable on the frame to advance and withdraw the cradle relative to the work spindle, the direction of such reciprocation being in a plane parallel to both the work spindle and the cradle rotation axis, and the cradle rotation axis being inclined to said direction by an acute angle.

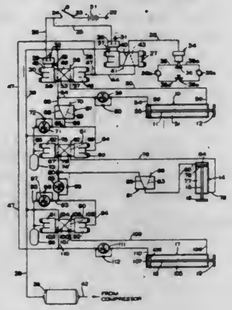
24. The method of generating gears with tapering tooth slots, with a rotary tool having opposite side cutting surfaces representing the opposite sides of a tooth of a generating gear which are coaxial surfaces of revolution, which comprises generating one side of the tooth slot of a work gear with one side cutting surface of the tool by rotation of the work gear about its axis and simultaneous rotation of the tool about the axis of the generating gear, then shifting the work gear in a direction perpendicular to the axis of the generating gear and rotating the work gear about its axis to position the opposite side cutting surface of the tool for contact with the opposite side of the tooth slot, and then generating said opposite side of the tooth slot by reverse rotation of the gear about its axis and simultaneous reverse rotation of the tool about the axis of the generating gear.

3,288,032
TOOL CHANGING APPARATUS FOR MILLING MACHINES AND THE LIKE
Earl Pankonin, Elmwood Park, and Howard E. Shelley, Skokie, Ill., assignors to Onsrud Machine Works, Inc., a corporation of Illinois
Filed Apr. 29, 1965, Ser. No. 451,802
5 Claims. (Cl. 90—11)



1. Mechanism to facilitate the changing of tools in the tool operating head of a milling machine having a stationary machine bed, a carriage mounted on such bed and longitudinally movable relative thereto, such carriage including two members one each of which is movably disposed on each side of such bed, and a tool head carrying cross-rail mounted adjacent each end on one of such two members comprising a base member adapted to be fixedly located whereby such tool head carrying cross-rail may be disposed in tool changing position relative to said base member, a plurality of tool tables individually movably mounted on said base member, fluid pressure means for raising and lowering said tool tables for carrying tools into and out of attachment position, and valve means individual to each one of said plurality of tool tables for controlling the application of fluid pressure to said fluid pressure means.

3,288,033
POWER CYLINDER SEQUENCE CONTROL SYSTEM
William C. Blue, Pittsburgh, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Original application Apr. 9, 1962, Ser. No. 186,081. Divided and this application Mar. 14, 1966, Ser. No. 533,931
7 Claims. (Cl. 91—36)

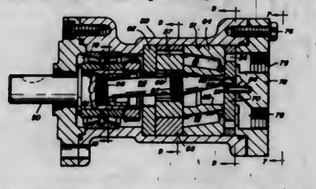


1. In combination:
(a) a source of fluid under pressure,
(b) a plurality of power cylinders each having a piston member operable to an extended position responsively to fluid pressure and to a retracted position responsively to release of such fluid pressure,
(c) interlocking control means for effecting supply of fluid under pressure from said source to the piston members of said plurality of said power cylinders and release therefrom for effecting operation of said piston members to their respective extended and retracted positions, respectively, in sequential order,
(d) said interlocking control means including delay means for delaying supply of fluid under pressure to any one of said piston members during such time that the precedingly operated power cylinder is subjected to fluid pressure for operating its piston member to its said extended position, and
(e) actuating means normally biased to an inactive position, in which said interlocking control means is inactivated, and being operable to an actuating position for initiating operation of said interlocking control means to effect a complete sequental cycle of operation of said piston members, each successive cycle being initiated by successive operations of said actuating means to its said actuating position.

3,288,034
ROTARY MOTOR OR PUMP
Hollis N. White, Jr., Lafayette, Ind. (2616 Willow Drive, West Lafayette, Ind.), and Harvey C. White and Hollis N. White, R.R. 2, Maryville, Mo.
Filed Feb. 24, 1965, Ser. No. 439,511
15 Claims. (Cl. 91—56)

8. A hydraulic motor, comprising a first casing providing an internally toothed, generally cylindrical cham-

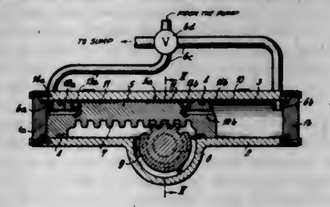
ber, a rotor mounted in said chamber and having a lesser number of external teeth for hypocycloidal movement about the first casing chamber axis, said rotor having an axis offset from the first casing chamber axis and an axial splined bore extending therethrough, a second casing secured to said first casing on said one outer side and providing a chamber having a generally cylindrical inner wall defining an axis coaxial with said first casing chamber axis, a hydraulic fluid inlet passage extending generally radially of said second casing chamber and communicating said second casing chamber with the exterior of said second casing for supplying pressure fluid to said motor for actuating said rotor, a hydraulic fluid outlet passage extending generally axially of said second casing and communicating said second casing chamber with the exterior of said second casing for removing pressure fluid from said first casing chamber, said second casing being equipped with a plurality of flow passages, one for each tooth of said first casing chamber and communicating with said first casing chamber between adjacent teeth thereof, said second casing passages communicating with said second casing chamber a spaced distance inward of the second casing chamber inner wall, a generally cylindrical commutator rotatably mounted in said second casing chamber and having a bore extending therethrough parallel to the commutator axis, said bore being arranged to communicate with a first plurality of but less than all



of said flow passages, said commutator having a notched peripheral portion arranged to communicate with a second plurality of but less than all of said flow passages, said second plurality being mutually exclusive of said first plurality, said notched peripheral portion being in constant communication with said inlet passage while said commutator bore is in constant communication with said outlet passage, a third casing secured to said first casing on the other outer side thereof and providing a generally cylindrical chamber coaxially related to said first casing chamber, an output shaft rotatably mounted in said third casing chamber and equipped with an axial splined bore extending partway therethrough from the end thereof adjacent said first casing, and a coupling pin interconnecting the bores of said shaft, rotor and commutator, said pin having a first peripheral splined portion at one end thereof engaging said shaft splined bore, and a second peripheral splined portion intermediate the pin ends engaging said rotor splined bore, said pin having a cylindrical portion on the other end thereof for engagement with said commutator bore, said pin having an axis inclined relative to the axes of all of said shaft, rotor and commutator to drive said shaft only in response to the rotary component of the hypocycloidal movement of said rotor and to drive said commutator only in response to the orbital component of the hypocycloidal movement of said rotor.

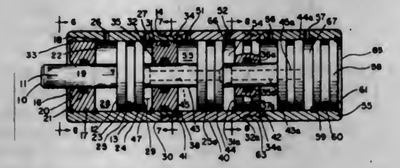
3,288,035
MOTION TRANSMITTING APPARATUS
Clemens Ryzner, Sprockhoevel, Germany, assignor to Paul Pleiger Maschinenfabrik, Hammerthal-Nord, Germany
Filed Aug. 6, 1962, Ser. No. 215,134
8 Claims. (Cl. 91—467)

8. A hydraulic apparatus for transforming reciprocating motion into oscillating rotary motion, comprising a housing member defining an elongated cylinder chamber having two sealed ends, and a fluid conveying port adjacent to each of said ends and communicating with said chamber; a double acting piston member reciprocably received in said chamber, said piston member slidably fitted into said housing member and having an axial length less than the distance between said ports; fluid flow regulating reversing means operatively connected with and alternately admitting a hydraulic pressure fluid to said ports so that the piston member is caused to reciprocate in said chamber; a toothed rack rigid with and extending in the axial direction of said piston member; a pinion rotatably mounted in said housing member and having teeth mating with the teeth of said rack so as to alternately rotate in opposite directions when said piston member reciprocates in said chamber, said piston member having a peripheral portion disposed substantially diametrically opposite said pinion and said housing member having an internal wall portion adjacent to said peripheral portion, said peripheral portion tending to bear against said wall portion in response to pressure trans-



mitted to said piston member by said mating teeth when the pinion rotates; and hydraulic balancing means, said hydraulic balancing means being located exclusively in the region of said pinion but at the opposite side therefrom of said rack for counteracting the pressure generated by said teeth, said hydraulic balancing means arranged to counteract said pressure at all times during reciprocatory movement of said piston irrespective of the axial position of the latter with respect to said chamber, said balancing means comprising at least one recess provided in at least one of said portions and duct means provided in one of said members for admitting hydraulic pressure fluid to said members for admitting hydraulic pressure fluid to said recess means, and wherein said piston member is provided with axially spaced sealing means engaging said housing member, said recess means being provided in said wall portion intermediate said sealing means, the overall axial length of said recess means, the distance between said sealing means, and the length of said chamber being selected in such a way that said recess means is always located between said sealing means.

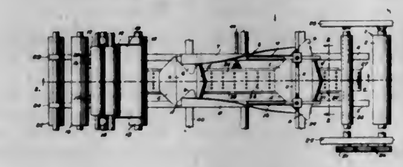
3,288,036
MULTIPLE LINEAR ACTUATING CYLINDER
Robert M. Fisher, 20966 Las Flores Mesa Drive, Malibu, Calif.
Filed Sept. 12, 1963, Ser. No. 308,529
3 Claims. (Cl. 92—62)



1. A linear actuating cylinder comprising:
a plurality of interfitting cylindrical guides; and

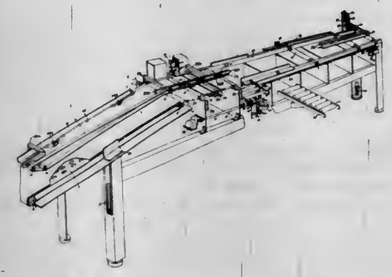
a plurality of pistons positioned end-to-end, each of said pistons being assembled in one of said interfitting cylindrical guides, respectively, forming thereby a section;
the upper one of said plurality of pistons being solid, the remaining pistons each having a central aperture for pneumatic or fluid flow transfer therethrough;
the bottom of each of said pistons being normally positioned at the top of each succeeding piston whereby the pressure applied to the top most of said pistons is multiplied by a factor between .8 and .9 times the number of said sections assembled together in-line on a common axis.

3,288,037
SIDE FLAP FOLDING SECTION OF A ROTARY ENVELOPE MAKING MACHINE
Arthur H. Burnett, Prairie Village, Kans., assignor to Berkley Machine Company, Kansas City, Mo., a corporation of Missouri
Filed Jan. 16, 1964, Ser. No. 338,113
2 Claims. (Cl. 93—61)



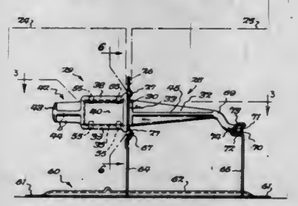
1. In an envelope making machine wherein envelope blanks are delivered with the side flaps laterally extended from body portions of the envelope blanks and with the envelope blanks in a pre-registered and timed position to a folding section which includes
side flap folders at respective opposite sides of the machine,
an endless perforate belt between the folders and having an upper face no wider than said body portions of the envelopes,
toothed wheels for carrying said belt with the teeth of said wheels meshing with similar teeth on the belt,
means rotatably carrying said wheels at ends of the folding section to provide a run of said belt coextensive with length of the folding section and in underlying registry with said body portions of the envelope blanks,
a fixed manifold having side, bottom and end walls providing an open top substantially coextensive with and completely covered by said run of the belt,
belt guides along inner faces of the side walls of the manifold for supporting the edges of said run of the belt thereon for providing a sliding seal between the belt and said manifold,
means connected with the manifold for drawing a vacuum in said manifold for producing a continuous suction through said run of the belt along the length of the folding section for seizing the overlying body portion of each pre-registered blank as it is delivered to said folding section and for maintaining continuously the same seized hold on each envelope blank while the envelope blanks are being carried by the conveyor along the length of said folding section for preventing displacement of the blanks from said pre-registered and timed position by said folders when folding the side flaps over the seized body portions, and
belt supporting means in the manifold between said belt guides for cooperating with the guides for supporting said run of the belt with the upper face in plane with the lines of fold produced in said flaps.

3,288,038
ARTICLE SORTING AND STACKING MACHINE
Richard L. Swartz, Columbia, S.C., assignor to Universal Business Machines, Inc., Columbia, S.C., a corporation of South Carolina
Filed Dec. 2, 1963, Ser. No. 327,409
19 Claims. (Cl. 93—93)



1. A machine for counting and stacking articles comprising in combination, a plurality of stationary article-receiving bins arranged in a row, an article-conveying trackway having a floor extending over the top of all of said bins, said trackway floor embodying a pivoted gate section arranged above each bin and being operative when pivoted out of the plane of the floor to deflect articles downwardly into the bin, an electric system for controlling the operation of said gates and including counting means for counting the articles deposited in each bin, and means controlled by said counting means and being responsive to a predetermined number of articles passing into each bin to effect closure of the gate of the bin and opening of the gate of the next preceding bin.

3,288,039
TRANSVERSE JOINTS FOR PAVEMENTS
Alfred F. Crone, Williamsville, N.Y., assignor to Acme Highway Products Corporation, Buffalo, N.Y.
Filed Mar. 10, 1965, Ser. No. 438,561
2 Claims. (Cl. 94—8)



1. A highway joint including a rigid center plate for positioning between two pavement slabs and provided at intervals with holes,
load transfer members each formed in two parts, one part extending in one direction from said center plate and the other part extending in the opposite direction therefrom,
said first mentioned part of said load transfer member having a dowel shaped to extend through one of said holes,
said dowel having an enlargement positioned to engage one side of said center plate which limits the extent to which said dowel may be inserted through said hole, the other part of said load transfer member hav-

ing a three walled socket into which said dowel enters,

said socket having an open side,

the walls adjacent to said open side having integral lugs extending beyond said walls at the edges of said open side and being bent over into frictional engagement with said dowel to hold said dowel frictionally in its operative position in said socket,

said dowel having a part engaging the other side of said center plate beyond the limits of said hole which prevents movement of said dowel out of said hole.

3,288,040

SOIL STABILIZATION

Raymond C. Burrows, Minneapolis, Minn., assignor to Archer-Daniels-Midland Company, Minneapolis, Minn., a corporation of Delaware

No Drawing. Filed Sept. 28, 1964, Ser. No. 399,908

11 Claims. (Cl. 94—25)

1. A method for stabilizing soil which comprises contacting soil with soil-stabilizing amounts of alkali metal silicate and alkali metal hexafluorosilicate in the presence of water.

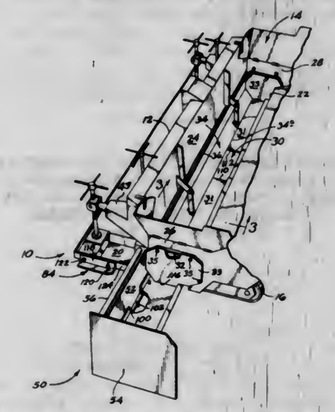
3,288,041

MULTIPLE-USE PAVER

Jack D. Layton, Salem, Oreg., assignor to Layton Manufacturing Co., Salem, Oreg., a corporation of Oregon

Filed Aug. 4, 1964, Ser. No. 387,302

10 Claims. (Cl. 94—46)



1. In a paver including an elongated hopper extending transversely of the paver, having an elongated opening extending longitudinally along the base of the hopper, said hopper including an upright forward wall defining the front side of said opening,

an elongated support substantially paralleling said opening, extending along the opening on the rear side thereof,

a horizontally disposed cut-off plate, including an inner marginal portion partially closing off said opening, and having a rear edge detachably locked to said support,

a horizontal track exposed to the inside of the hopper mounted on said forward wall,

said cut-off plate having a forward edge slidably supported on said track, and

means for moving said support laterally of said paver, with said support then producing corresponding movement in said cut-off plate.

3,288,042

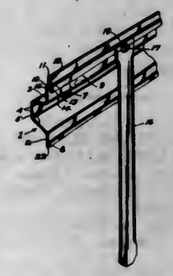
CONCRETE SLAB KEY JOINT FORMING STRIP

George O. Gaetke, San Francisco, Calif., assignor to Burke Concrete Accessories, Inc., a corporation of California

Filed Apr. 17, 1964, Ser. No. 360,699

The portion of the term of the patent subsequent to Aug. 11, 1981, has been dedicated to the Public

5 Claims. (Cl. 94—51)



2. A concrete form of the type used in forming a key contraction joint between adjacent concrete slabs, comprising in combination:

(A) a plurality of stakes adapted to be vertically set in transversely aligned relationship with the upper ends thereof disposed uniformly below grade level; and,

(B) an elongated strip adapted to be supported on said stakes, said strip having:

(1) longitudinal upper and lower substantially coplanar members adapted to abut against said stakes upon being supported thereon;

(2) a longitudinal key deformation member interposed between and connected to the upper and lower coplanar members; and,

(3) an inverted socket formed on the upper coplanar member and adapted to be received over said stakes to support said strip thereon, said socket comprising:

(a) a first portion extending longitudinally of and laterally from the upper edge of the upper of said coplanar members;

(b) a second portion extending longitudinally of and substantially vertically from said first portion to define a thin section; and,

(c) a third portion extending from and longitudinally of said second portion in spaced relationship to the upper edge thereof and in spaced substantially opposed relationship to the upper of said coplanar members.

3,288,043

INDICATOR DEVICE FOR CAMERAS WITH AN AUTOMATIC LIGHT EXPOSURE REGULATING DEVICE

Wilhelm Bertram, 125 Planegger Strasse, Munich-Pasing, Germany

Filed May 25, 1964, Ser. No. 369,962

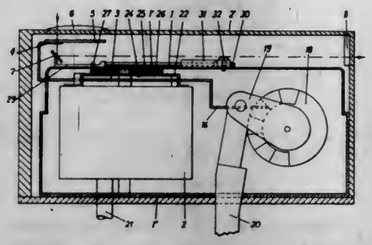
12 Claims. (Cl. 95—10)

1. In an indicator device for a camera of the type having an automatic light exposure regulating device including a light measuring device, said indicator device presenting a color symbol in an observation window of said camera which, after presetting of said indicator device to various preselectable parameters, indicates whether a successful exposure may be made, the combination comprising:

a rotatable coil device and a hand affixed to the moving member of said device for rotation therewith;

a transparent disk attached to said hand, said disk having a diaphragm scale in each of several concentric areas of various radii, said disk having a color field at one end thereof and a second color field at the other end thereof, the circumferentially inner edge of said second color field being arcuate;

a light entrance on one side of said disk;



a mirror on the other side of said disk opposite said light opening for reflecting the image of a portion of said disk into the observation window;

means for adjusting said mirror radially along said disk in accordance with ones of said preselectable parameters.

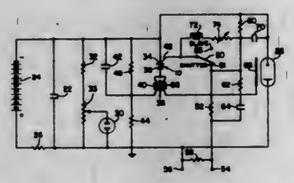
3,288,044

SYSTEM FOR TRIGGERING FLASHLAMP

Donald W. Bramer, Fairport, N.Y., assignor to Graflex, Inc., Rochester, N.Y., a corporation of Delaware

Filed Aug. 5, 1964, Ser. No. 387,666

8 Claims. (Cl. 95—11.5)



1. An electrical circuit for operating a photographic flashlamp comprising

(a) a light sensitive silicon controlled rectifier,

(b) a storage capacitor,

(c) a transformer,

(d) means connecting said capacitor and the primary winding of said transformer in series with the anode and cathode of said rectifier,

(e) means for charging said capacitor,

(f) means for biasing said rectifier and maintaining it in a light responsive condition, whereby when a light signal strikes said rectifier it becomes conductive and said capacitor discharges through it and through said primary winding to produce an electrical pulse in the secondary winding of said transformer,

(g) said biasing and maintaining means including impedance elements connected between the gate electrode and the cathode of said rectifier, said impedance elements being of sufficient value to maintain the sensitivity of said rectifier at a desired level,

(h) alternatively operable means for reducing the impedance between the gate electrode and cathode of said rectifier to render it substantially insensitive to light, and

(i) means for applying an electrical trigger pulse between the gate electrode and the cathode of said rectifier in response to closing of an external switch during times when said alternatively operable means is operative.

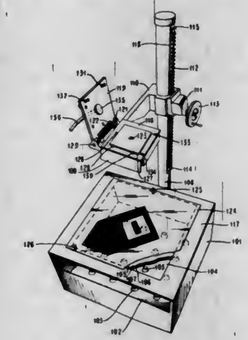
3,288,045

METHOD AND APPARATUS FOR PRODUCING ARTICLES HAVING ARRAYS OF SIMILAR PATTERNS

William E. Harding, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Continuation of application Ser. No. 161,625, Dec. 22, 1961. This application May 4, 1965, Ser. No. 467,159

13 Claims. (Cl. 95—18)



1. A method for producing a circuit assembly having a plurality of circuit elements formed therein in a number of discrete locations, with each said element comprising a number of accurately registered members comprising the steps of:

providing an array of individual lenses of the same orientation and focal distance in a first location;

coating said assembly with a photosensitive substance and positioning said assembly in contact with said array;

projecting a master pattern of a first circuit member through said lens array for an interval of time and from a predetermined location to expose said coating and to establish a set of images therein like said first circuit member;

developing said coating to establish an apertured layer on said circuit assembly for controlling a subsequent first sequence of fabrication steps;

maintaining said lens array in said first location;

recoating said assembly a second time with a photosensitive substance upon completion of said first sequence of fabrication steps and positioning said assembly adjacent said array;

projecting a master pattern of a second circuit member through said lens array for an interval of time and from said predetermined location to expose said second coating and to establish therein a set of images like said second circuit member;

and developing said second coating to establish an apertured layer on said circuit assembly for controlling a subsequent second sequence of fabrication steps.

3,288,046

STEP-BY-STEP FEED SYSTEM FOR PHOTOCOPYING APPARATUS

Hansjuerg Mey, Oberengstringen, Switzerland, assignor to Gretag Aktiengesellschaft, Regensdorf, Switzerland

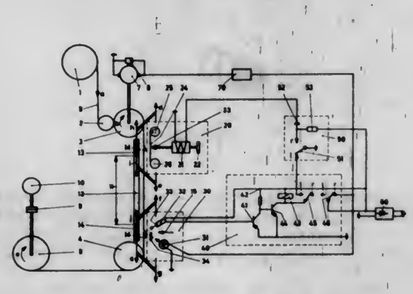
Filed Mar. 9, 1964, Ser. No. 350,364

Claims priority, application Switzerland, Mar. 12, 1963, 3,155/63

5 Claims. (Cl. 95—75)

1. A step-by-step feed mechanism for photocopying apparatus adapted to operate with copying material in strip form, comprising an adjustable length masking device defining a correspondingly adjustable length picture aperture, roller guide means for guiding a strip of copying

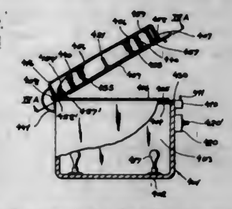
material in a plane parallel to the plane of said masking device adjacent said picture aperture and longitudinally thereof, said masking device including first and second parallel spaced parts lying transversely of the direction of travel of the copying material which establish the upper and lower sides of said picture aperture, said first and second parts being adjustable parallel to themselves towards and away from each other to correspondingly shorten or lengthen said picture aperture in accordance with the requirements of a picture format, a marking device including means for making a mark on the copying material before the material enters said picture aperture, said marking device and said first part of said masking device being coupled together for movement as a unit as said first part is adjusted, a sensing device including means for detecting marks made on the copy material by said



marking device after such marks leave said picture aperture, said sensing device and said second part of said masking device also being coupled together for movement as a unit as said second part is adjusted, a motor for driving said roller guide means thereby to move the copying material longitudinally past said picture aperture, and electrical control circuit means for controlling operation of said motor and marking device, said circuit means including means for momentarily actuating said marking device to make a mark on the copying material and for starting said motor to drive said marked copying material past said picture aperture, and means controlled by said sensing device and actuated upon arrival of the mark on the copying material at said sensing device for stopping said motor and hence also stopping the copying material.

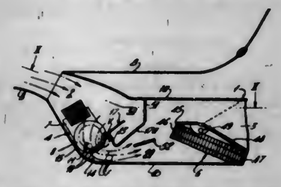
3,288,047
APPARATUS FOR EXPOSING AND DEVELOPING SENSITIVE SHEETS
Walter Limberger, Hamburg, Germany, assignor to Lumoprint Zindler K.G., Hamburg, Germany
Filed Mar. 29, 1965, Ser. No. 443,200
3 Claims. (Cl. 95—75)

1. An apparatus for copying the contents of an original onto an electrically conductive photosensitive sheet incorporating a thermally activable developing agent for a latent image, comprising support means for said photosensitive sheet, exposure means including a source of light rays trained upon an original to be copied for creating a corresponding latent image on said photosensitive sheet, timing means for measuring a predetermined operating interval for said exposure means, and heating means operable by said timing means at the end of said interval for subjecting said photosensitive sheet for a predetermined length of time to a temperature sufficient to develop said latent image, said heating means including contact means engageable with said sheet and



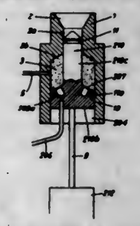
circuit means for passing a heating current through said sheet by way of said contact means.

3,288,048
VEHICLE VENTILATION APPARATUS
Nikolaus Laing, 35 Hofener Weg, 7141 Aldingen, near Stuttgart, Germany
Filed June 7, 1965, Ser. No. 461,832
Claims priority, application Germany, Mar. 12, 1960, L 35,596
19 Claims. (Cl. 98—2)



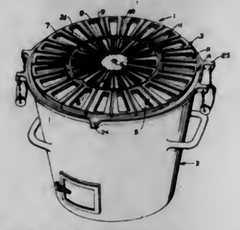
1. In a vehicle having a passenger compartment, ventilating apparatus comprising: means defining an inlet which, when the vehicle is in motion, is located in a region of above-ambient pressure; a fan of the cross-flow type comprising a bladed cylindrical rotor mounted for rotation about its axis in a predetermined direction and guide means co-operating therewith on rotation thereof in said predetermined direction to set up a flow of air from a suction side through the path of the rotating blades of the rotor to the interior thereof and thence again through the path of the rotating blades to a pressure side, the suction side being connected to said inlet and the pressure side to the passenger compartment; driving means for the rotor; and adjustable throttle means to regulate said air flow independently of the rotor speed.

3,288,049
INFUSOR-TYPE COFFEE APPARATUS
Heinrich Schmid and Meinrad Huber, both of Dietikon, Switzerland, assignors to Paliz A.G., Zug, Switzerland
Filed May 5, 1964, Ser. No. 364,978
Claims priority, application Switzerland, May 17, 1963, 6,222/63; Jan. 8, 1964, 167/64; Apr. 9, 1964, 4,510/64
5 Claims. (Cl. 99—289)



1. A coffee brewing machine comprising a stationary brewing chamber having a brewing water inlet and a liquid coffee outlet connected thereto, a coffee powder feeding orifice in the top of the chamber and a discharge orifice in the bottom of the chamber, said orifices being coaxial, and a single valve member movable coaxially through the two orifices for controlling flow through both orifices.

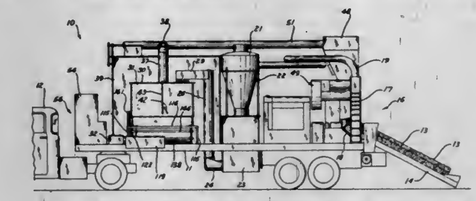
3,288,050
ADJUSTABLE GRILL
Koichiro Saiki, 2202 Akahori, Yokkaichi Mie Prefecture, Japan
Filed July 9, 1964, Ser. No. 381,488
6 Claims. (Cl. 99—447)



1. An adjustable grill, comprising:
(a) a pair of plates in face to face engagement and superposed relation providing an upper plate and a lower plate;
(b) said pair of plates each being formed with a pair of parallel rows of equally spaced openings and intervening grill portions respectively between the adjacent pairs of openings in each row with said intervening portions being of substantially the same width as each of the openings of each of said adjacent pairs in a direction longitudinally of each row and the rows of openings in said upper plate being superposed relative to the rows of openings in said lower plate, whereby upon movement of one plate relative to the other longitudinally of said rows the intervening portion between each adjacent pair of openings in each row of openings may move to a position in which the respective openings in said rows will be fully closed;
(c) the openings in one corresponding row in each plate being different in number than the number of openings in the other corresponding row in each plate with the difference in number being such that in a first position of said plates relative to each other all of the openings in one plate will be closed by said intervening portions of the other plate, and in a second position all of the openings in both plates will be substantially fully open and in other positions of said plates relative to each other in said direction the effective openings in the pair of rows in each plate will vary relative to each other and relative to said first and second positions; and
(d) means supporting said plates for movement relative to each other in said direction through all of said positions.

3,288,051
APPARATUS FOR PRODUCING PELLETS FOR LIVESTOCK FEED
John N. Dodgen, Merton D. Snapp, and Kenneth R. Johnson, Humboldt, Iowa, assignors to Dodgen Industries, Inc., Humboldt, Iowa, a corporation of Iowa
Filed May 27, 1963, Ser. No. 283,306
13 Claims. (Cl. 99—235)

1. A feed processing machine comprising in combination:
a frame;
a hammer mill mounted on said frame and adapted to receive feed to be processed;
means mounted on said frame for receiving supplement and for mixing said supplement and said feed together;
means for transmitting the feed from said hammer mill to said mixing means;



means mounted on said frame for making pellets from said mixed feed; and
auger means for transmitting the mixed feed from said mixing means to said pellet making means, said auger means including means for returning mixed feed from said pellet making means to said mixing means when the feed in said pellet making means reaches a predetermined quantity.

3,288,052
COATING APPARATUS
Richard Murray Hough, Sunfield, Mich.
Filed Aug. 7, 1963, Ser. No. 300,551
7 Claims. (Cl. 99—235)

1. A coating apparatus comprising: a driven, rotational granule-distributing disc; granule feed means to said disc; a driven, rotational liquid-misting disc beneath and coaxial with said distributing disc; liquid feed means to said misting disc; a driven rotational frustoconical detention ring positioned around and spaced from the peripheries of said discs, and having its larger diameter portion at the bottom, causing downward particle feed flow past the periphery of said liquid misting disc.

3,288,053
FEED VALVE
Harold V. Perttula, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware
Filed May 31, 1963, Ser. No. 284,470
10 Claims. (Cl. 99—238)

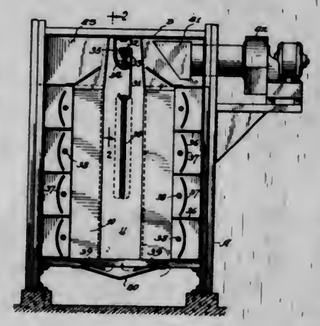
1. In a mechanism having a pressurized processing chamber, into which material to be processed is fed from a first supply means and a pressurized processing fluid is fed from a second supply means, an improved feed valve comprising: first and second valve members relatively movable with respect to each other from first to second to third operating positions; said first member having first port inlet means connecting to said first supply means,

second port inlet means connecting to said second supply means, port outlet means connecting to said processing chamber, and pressure relief port means; said second member having at least one valve passage therethrough having first and second openings; said port inlet and outlet means, said relief port means and said valve passage openings being constructed and located in said members such that in said first operating position said first valve



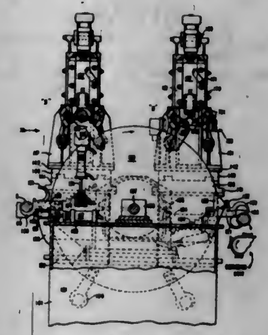
passage opening is in registration with said first port inlet means and said second valve passage opening is closed by said first member, and in said second operating position one of said valve passage openings is in registration with said second port inlet means and the other valve passage opening is in registration with said port outlet means, and in said third operating position one of said valve passage openings is in registration with said relief port means.

3,288,054
APPARATUS FOR COOKING, SMOKING, AND CHILLING BACON AND OTHER MEATS
Harry W. Weprin, Chicago, and Richard P. Nelson, La Grange, Ill., assignors to Armour and Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 10, 1960, Ser. No. 61,683
4 Claims. (Cl. 99—260)



1. In apparatus for heating and cooling meat bodies of varying sizes in sequence for equalizing exterior and interior temperatures thereof, a casing providing an elongated passage having a number of communicating heating sections and a number of communicating cooling sections, means for conveying said meat bodies consecutively through each of said sections, variable means in said heating sections for supplying maximum heat in the foremost sections and reduced heat in the later sections, variable means in said cooling sections for supplying maximum cold in the foremost sections and reduced cold in the succeeding sections, and control means for actuating said temperature-modifying means in order to provide different temperatures in said sections whereby said meat bodies are brought to the desired temperature.

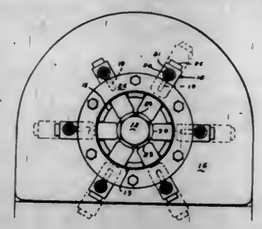
3,288,055
PACKAGING APPARATUS
Werner Arthur Velkrath, Landenberg, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed July 18, 1963, Ser. No. 295,961
9 Claims. (Cl. 100—4)



1. Apparatus for forming bundles of elongated elements and applying elastic bands thereto, said apparatus comprising in combination: a first means for receiving a continuous stream of elongated elements and conveying said elements in a given path in a given direction from a first position to a second position, said first means constructed and arranged to convey said elements in substantially parallel relationship with each other with their elongated dimension substantially perpendicular to the given direction, a second means positioned adjacent said given path between said first and said second positions, cooperating with said first means to engage said stream of elements to separate said continuous stream of elements into a series of separate groups of parallel elements, a third means positioned adjacent said given path and said second position for receiving and compacting each group of elements into a compact bundle of laterally aligned substantially parallel elements, a fourth means positioned adjacent said second position for conveying said compact bundles from said second position through a banding zone to a third position, a fifth means positioned in said banding zone for applying at least one band element around the outer periphery of each bundle to maintain each bundle in compact form, a sixth means adjacent said third position for removing said banded bundles from said banding zone, a seventh means cooperating with the other means for operating said other means in predetermined timed relationship to carry out said element separating and bundle-banding operations continuously and automatically.

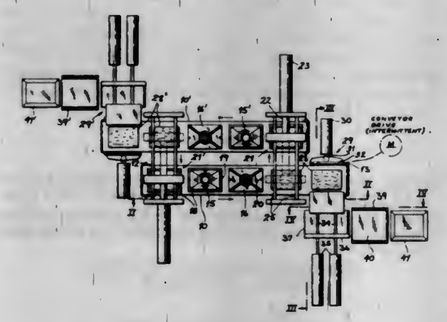
3,288,056
IRIS TYPE VALVE
Marvin E. Ginaven, Springfield, Ohio, assignor to The Bauer Bros. Co., Springfield, Ohio, a corporation of Ohio
Filed Apr. 5, 1965, Ser. No. 445,536
9 Claims. (Cl. 100—98)

1. A press including a cage having an inlet thereto. means defining an outlet therefrom, rotatable shaft means mounted in said cage to have one end extend to and through said outlet, means on said shaft means within said cage operable on material delivered through said inlet to advance said material to and through said outlet and, in the process thereof, extract fluid therefrom, means on said shaft means restricting said outlet and an iris valve unit including a multiplicity of segments in connection with said cage mounted to independently, selectively and variably bridge said restricted outlet to cause press material to flow thereby in a selectively split form, said segments including petal-like valve blades disposed



and relatively adjustable radially of said shaft means, said blades being circumferentially spaced apart distances sufficient to define flow passages therebetween.

3,288,057
DELIVERY SYSTEM FOR LOOSELY COHERENT SHEETS
Kurt Loewenfeld, Krefeld, Germany, assignor to G. Siempelkamp & Co., Krefeld, Germany, a corporation of Germany
Filed Nov. 2, 1964, Ser. No. 408,122
Claims priority, application Germany, Nov. 7, 1963, S 88,196
8 Claims. (Cl. 100—198)



1. A system for advancing substantially rectangular sheets of loosely coherent material toward a press having a platen and adapted to consolidate said sheets into rigid boards, comprising:

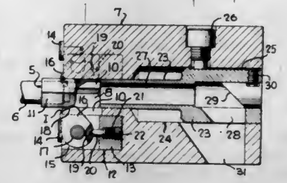
transport means forming a supporting surface for carrying a loosely coherent sheet along a predetermined path;

conveyor means disposed adjacent said path for receiving said sheet from said supporting surface;

transfer means engageable with an edge of said sheet for displacing said sheet onto said conveyor means by transverse movement relative to said supporting surface;

and a movable carrier provided with an endless band parallel to said edge forming part of said conveyor means and shiftable into a position overlying said platen for delivering said sheet to said press platen by a positioning of said band above said platen and subsequent unloading of said sheet from said band with concurrent withdrawal of said carrier at a speed substantially equaling the band speed.

3,288,058
MARKING DEVICE
Ralph R. Holt, Eaton, Ohio, assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 18, 1964, Ser. No. 352,932
12 Claims. (Cl. 101—6)



1. A work piece marking means comprising a die head having a recess into and from which work pieces can be serially presented and then retracted, at least one radial slot opening into the recess, and a marker swingably mounted in the slot and having an arcuate marking surface struck from the center about which the marker is swingable and having thereon marking indicia disposed to be frictionally engageable in rolling contact with a work piece when it is moved into and then retracted from the recess, there also being included detent means for releasably holding the marker in proper operating position to be effectively engaged by a work piece being presented to the recess, said detent means comprising cooperatively engageable spring detent and receiving recess means disposed to be brought into cooperative marker holding position each time the marker is returned to its initial position for engagement by a work piece being presented to the die head recess.

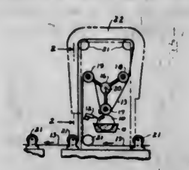
3,288,059
COLOR REPRODUCTION
Edward R. Atkinson, 366 S. Troy St., Aurora, Colo.
Filed Oct. 20, 1965, Ser. No. 506,419
3 Claims. (Cl. 101—211)

1. The method of producing a color reproduction image which is characterized by lack of pickiness, minimum pattern and color distortion comprising the steps of: printing a first series of alternate red and blue rectilinear ink dots, in line, and at the same angle on an ink receptive media, with said dots having a ratio of width to height of at least two to one, being separated by relatively thin bridge lines and with said red and blue dots having the same surface area, printing on said media other series of rectilinear, in line ink dots of yellow ink, parallel to and on either side of said series of red and blue dots with said yellow ink dots being of like configuration to said red and blue ink dots, with relatively thin bridge lines therebetween, and with the total surface area of the yellow ink dots being in the order of twice that of either the blue or red ink dots and controlling the tone of the ink dots by varying the volume of ink for respective dots.

3,288,060
IMPRESSION SYSTEM FOR GRAVURE PRESS
Wallace T. Miller, Bogota, N.J., assignor to Interchemical Corporation, New York, N.Y., a corporation of Ohio
Filed Oct. 29, 1964, Ser. No. 407,363
4 Claims. (Cl. 101—153)

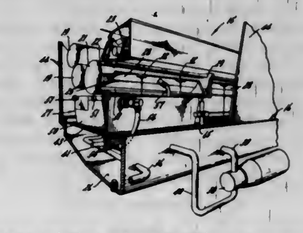
1. A gravure press comprising a rotatable gravure printing cylinder of conventional non-yieldable material, a series of rotatable impression cylinders made of conventional yieldable materials having selected varying compressibilities, said series being pivotally mounted so that any one of the series of impression cylinders may be pivoted into peripheral engagement with the printing cylinder, means for fixing said pivoted impression cylinder in

said position of engagement and means for guiding a web to be printed upon through the nip between the printing cylinder and the engaging impression cylinder, the im-



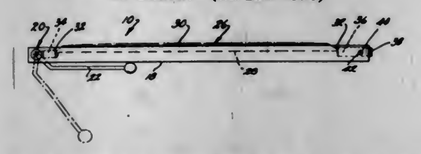
pression cylinders which remain out of engagement with the printing cylinder forming at least part of the means for guiding the web through the nip.

3,288,061
PRESS INKING ARRANGEMENT
Frank J. Doyle, Bellwood, Ill., assignor to Miehle-Goss-Dexter, Incorporated, Chicago, Ill., a corporation of Delaware
Filed Dec. 31, 1963, Ser. No. 334,734
1 Claim. (Cl. 101—210)



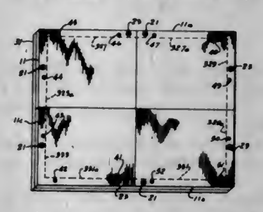
In a rotary printing press, an inking arrangement comprising, in combination, a frame, a fountain roller journalled in said frame, means defining an overflow fountain adjacent said roller, a trough in said frame underlying said roller in position to receive ink overflowing from said fountain, first supply means including a conduit for selectively delivering ink to said trough, a level control valve in said trough and coupled to said conduit for maintaining a supply of ink in said trough, a screen over said trough, a pump associated with said trough and having a releasable coupling with said fountain for feeding ink from the trough directly to the fountain, a pair of horizontally spaced tracks secured to said frame between said overflow fountain and said trough, a pan having rollers journalled on the sides thereof removably supported on said tracks and above said screen, said pan having an open top disposed, and dimensioned so as to intercept substantially all of the ink overflowing from said fountain, when positioned within said frame on said tracks, second supply means including a selectively disconnectable supply line for delivering ink to said pan, a second level control valve in said pan releasably coupled to said supply line for maintaining a supply of ink in said pan, a second pump mounted externally on said pan, a powered drive member on said press disposed substantially in the plane of said tracks, said second pump having a driving member adapted to engage said powered drive member when said pan is rolled into said ink intercepting position, a second screen in said pan for preventing foreign matter from entering and clogging said second pump and extending down into said pan to separate said second pump and level control valve, and said second pump having a releasable coupling with said fountain for feeding ink from the pan directly to the fountain, whereby ink can be continuously supplied to said roller from either said trough or said removable pan.

3,288,062
CHASE LOCKUP BAR ASSEMBLY
Dan P. Westra, Grand Haven, Mich., assignor to The Challenge Machinery Company, Grand Haven, Mich., a corporation of Michigan
Filed Nov. 4, 1964, Ser. No. 408,874
15 Claims. (Cl. 101—390)



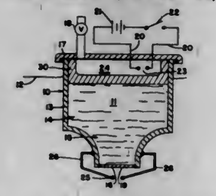
11. A lockup bar assembly for locking a printing form into position upon the bed of a printing press, comprising: a housing portion adapted to lie upon said press bed, said housing having an elongate chamber formed along one side thereof and a surface on one of its ends adapted to contact one side of said press bed; means movably carried by said housing for contacting the other side of said press bed; a stiffly resilient member lying within said housing chamber and extending toward and in contact with said contacting means; a manually operable cam means for exerting a force between said housing and said member such that the latter forces said contacting means and contacting surface into compressive contact against opposite sides of said press bed, thereby locking said housing into position thereupon; said cam means acting upon said member such that said force is applied thereto at areas occurring rearwardly of the longitudinal axis of the member; said member having a bending moment in response to the application of such force such that when it is under a predetermined such compressive load it will be bowed laterally of the direction of said load; and means for directing the bowing of said member laterally of said housing and outwardly from said chamber toward said printing form, whereby a force is applied against the printing form which is essentially parallel to the sides of said bed and normal to said housing.

3,288,063
METHOD AND APPARATUS FOR PREPARING MULTIPAGE PRINTING PLATES AND THE LIKE
George W. Bungay, Jr., Brooklyn, N.Y., assignor to Electrographic Corporation, New York, N.Y., a corporation of New York
Filed May 5, 1965, Ser. No. 453,245
3 Claims. (Cl. 101—401.1)



1. The method of forming a four page printing plate with accurate registration between the respective pages, which comprises, in combination, the steps of forming four page molds, each having marginal sides outside the printing area, micro-registering in turn each of said four page molds provided with preformed accurate registration marks on different adjacent marginal sides of each page mold on a bed, punching placement holes in accurate predetermined relationship with respect to the registration marks in each page mold on adjacent marginal sides of each page mold, said placement holes being punched on less than all sides of each page mold, trimming the marginal sides from each of the page molds which do not contain placement holes, assembling the four punched page molds in registered position on a backing sheet of multipage size by means of pins passing through prepunched placement holes located in said backing sheeet corresponding to the placement holes of all the individual page molds, and securing the page molds to said backing sheet.

3,288,064
METHOD AND APPARATUS FOR PROJECTING UNDERWATER EXPLOSIVE
Calvin A. Gongwer, Glendora, Calif., assignor to Aerojet-General Corporation, El Monte, Calif., a corporation of Ohio
Filed Oct. 11, 1965, Ser. No. 496,251
12 Claims. (Cl. 102—22)



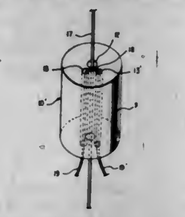
1. A method for transmitting an unenclosed body of an explosive liquid through another liquid to a predetermined remote location for selective detonation, comprising:

arranging a quantity of said explosive liquid within an otherwise closed container having an orifice;

submerging said container in said other liquid; and

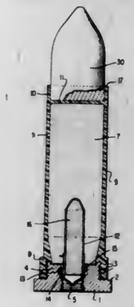
subjecting said explosive liquid to an impulsive force within said container whereby said explosive liquid is ejected from said container through said orifice into said other liquid in the form of a vortex ring which moves through said other liquid, said liquids remaining substantially unmixed while said explosive liquid retains its vortex ring configuration.

3,288,065
BOOSTER AND METHOD OF DETONATING EXPLOSIVE
George H. Tousley, Jr., Florissant, Mo., assignor to Commercial Solvents Corporation, a corporation of Maryland
Filed Nov. 10, 1964, Ser. No. 410,196
4 Claims. (Cl. 102—24)



1. In an explosive arrangement for a large diameter borehole blasting operation comprising a blasting explosive unreliably sensitive to blasting caps and detonating fuse and selected from the group consisting of nitrocarbo-nitrate blasting agents and slurry blasting agents containing ammonium nitrate, water and a sensitizer, the improvement of a booster for reliably detonating said blasting explosive consisting of a compacted core of explosive material generally insensitive to detonating fuse, said core having three bores extending therethrough, each two of said bores being spaced by a web having a thickness of about 1/16 to 3/16 inch, a detonating fuse threaded through two of said bores and an initiator for said detonating fuse in the third of said bores.

3,288,066
CARTRIDGE CASE
Hans Stadler, Nurnberg, and Heinz Gawlick and Rudolf Stahlmann, Furth, Bavaria, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany
Filed Mar. 10, 1964, Ser. No. 350,861
8 Claims. (Cl. 102—38)

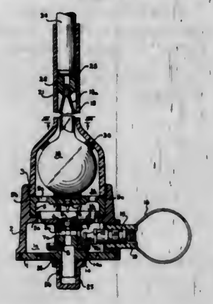


1. A cartridge, comprising: a bottom piece supporting primer means and booster means, plastic propellant charge container means forming part of the cartridge case and closed in front thereof, a propellant charge accommodated within said container means, said booster means including further plastic container means extending into said propellant charge, said container means being subject to tearing thereof by explosion of said booster means and said propellant charge, projectile like body means at the front end of said container means, cooperating means to assure tearing of said container means upon ignition of said booster means and said propellant at a predetermined place along the wall cross section of said container means forwardly adjacent said bottom piece, said cooperating means including means tightly securing said bottom piece to the rear end portion of said container means, the portion of said container means forwardly of said plate being adapted to be shot out of the barrel together with the said projectile like body means upon the occurrence of said explosion, and said cooperating means further comprising internal and external reinforcements on said container means, said internal reinforcements being adapted for connection with said bottom piece, said tearing taking place in front of and adjacent to said reinforcements, said cooperating means further includes external reinforcing means on said container means, said plastic container means being constructed as a cup at the front end thereof, and said projectile like body means being clampingly held at said plastic container means by the side walls of said cup, said external reinforcement means comprising a shouldered part on said rear end portion of said container means.

3,288,067
IGNITERS FOR MINES
Paul Madlener, Karlsruhe-Durlach, and Otto Pecksen, Berghausen, Baden, Germany, assignors to Industrie-Werke Karlsruhe Aktiengesellschaft, Karlsruhe, Germany
Filed Jan. 27, 1965, Ser. No. 428,401
Claims priority, application Germany, May 26, 1962, J 21,836; Jan. 31, 1964, J 25,206
10 Claims. (Cl. 102—70)

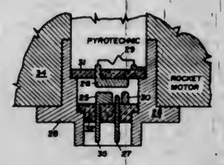
1. An igniter for mines, comprising a hollow housing; a flexible diaphragm mounted in and subdividing the

interior of said housing into a pair of separate chambers at least one of which is sealed from the atmosphere; an evacuated container of breakable material mounted in said one chamber so that, in response to rupture of said container, the diaphragm is suddenly flexed by suction



action in a sense to reduce the volume of said one chamber; and flame generating means including a firing member and a primer member, one of said members being mounted on and being movable by said diaphragm and the other member being mounted in said housing in the path of said one member.

3,288,068
TRIGGERED EXPLODING WIRE DEVICE
Donald E. Jefferson, Washington, D.C., and Carl W. Kettenbach, Clarksville, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Apr. 30, 1964, Ser. No. 364,036
4 Claims. (Cl. 102—70.2)



4. A unitary ordnance device adapted to be mounted on a component to be detonated or ignited and adapted to be energized from an independent firing system comprising

a conductive casing,

electrically insulating support means structurally affixed to the interior walls of said casing,

a cathode, anode and probe electrodes mounted on said support means and within said casing in a fixed spaced relationship,

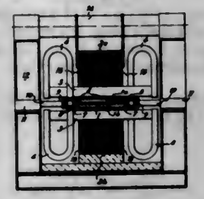
said support means enclosing a gas filled space within said casing,

said anode, cathode and probe electrodes each having a portion thereof extending within and without said gas filled space,

an exploding bridge wire connected between said anode and said casing and adjacent a pyrotechnic to be detonated whereby

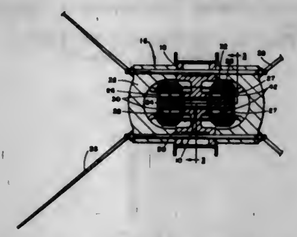
said probe and cathode electrodes extending outside said gas filled space form terminals which may energize to cause electrostatic breakdown between said anode and cathode for firing said exploding bridge wire, detonating said pyrotechnic, and destroying said component.

3,288,069
ELECTROMAGNETIC PUMPS FOR PUMPING MOLTEN METAL
Raymond Michaux, Saint Germain-en-Laye, France, assignor to Institut de Recherches de la Siderurgie Francaise, Saint Germain-en-Laye, France
Filed Aug. 26, 1963, Ser. No. 304,388
Claims priority, application France, Sept. 7, 1962, 908,871
16 Claims. (Cl. 103—1)



1. In an electromagnetic pump for pumping molten metal, in combination, an outer elongated electrically-conductive bar extending in the same general direction as and located along a stream of molten metal which is pumped by the electromagnetic pump; an inner elongated electrically-conductive metallic bar of substantially the same composition as the stream of molten metal, said inner bar being located between and engaging both the stream of molten metal and the outer electrically-conductive bar for electrically connecting the latter to the stream of metal, the material of said outer electrically-conductive bar having a lower melting point and a higher electrical conductivity than the material of said inner bar; and cooling means for cooling at least that portion of said inner bar which engages said outer bar for maintaining said portion of said inner bar at a temperature sufficiently low to maintain at least said portion of said inner bar in a solid state.

3,288,070
THERMOELECTRIC PUMP
Milton A. Perlow, Woodland Hills, and Herman M. Dieckamp, Canoga Park, Calif., assignors to North American Aviation, Inc.
Filed Feb. 18, 1964, Ser. No. 345,718
10 Claims. (Cl. 103—1)



1. A thermoelectric pump comprising in combination:

(a) a duct for passing an electrically conducting fluid,

(b) at least one pair of associated thermoelectrically dissimilar electric elements spaced from said duct,

(c) means for providing an electrical current path between said thermoelectric elements across said duct,

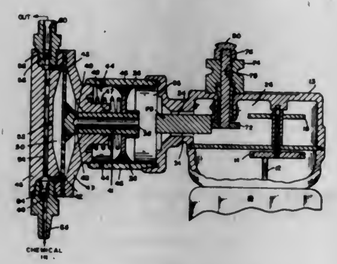
(d) said current path means including conductor members contacting said duct and said thermoelectric elements,

(e) means for generating a magnetic field across said duct normal to said electrical current,

(f) means for holding said thermoelectric members in compression, and

(g) heat rejection means connected to respective cold junctions of associated ones of said thermoelectric materials.

3,288,071
CHEMICAL RATIO FEED PUMP
Herbert E. Anderson, 407 N. 14th St., Muskogee, Okla.
Filed Dec. 16, 1964, Ser. No. 418,603
5 Claims. (Cl. 103—38)



1. A treating fluid feed pump of the character described comprising:

a pressure fluid cylinder;

said pressure fluid cylinder containing unidirectional inlet and outlet valves operated by a valve operating lever;

a cam operating against said valve operating lever to alternately supply and exhaust pressure fluid through said valves to said cylinder;

means to rotate said cam;

a pump head chamber having inlet and outlet valved passageways to prevent reverse flow;

a flexible diaphragm member disposed in said pump head chamber, one side of which is in communication with said pasageway to move treating fluid therethrough;

a piston disposed in said pressure fluid chamber operable upon supply of pressure fluid to stroke in one direction;

a reciprocable operating shaft sealed with respect to said cylinder and interconnecting said piston and said diaphragm on its other side, a conduit through said shaft to provide communication of said pressure fluid with the other side of said diaphragm;

a return spring to bias said piston in an opposite direction upon exhaust of said pressure fluid;

a control stop member contiguous to the end of said piston stroke in said opposite direction; and

a control cam adjustably secured to said cylinder and operable to displace said stop member with respect to said piston and therefore set the desired length of said stroke.

3,288,072
PUMP
William G. McKenzie, Racine, Wis., assignor to Walker Manufacturing Company, Racine, Wis., a corporation of Wisconsin
Filed Jan. 13, 1965, Ser. No. 425,126
10 Claims. (Cl. 103—43)

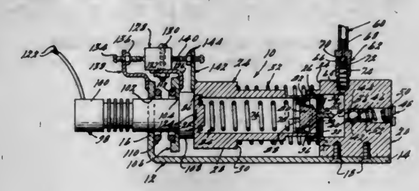
1. In a fluid pumping device,

a housing defining a pumping chamber,

valve means for selectively communicating fluid to and from said chamber,

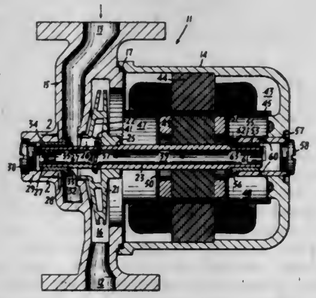
piston means reciprocable within said chamber,

a fluid accumulator chamber located within said piston means, and



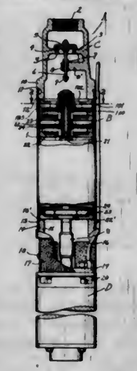
means including said valve means responsive to the movement of said piston means for causing fluid to discharge from said accumulator chamber.

3,288,073
CANNED PUMP HAVING REDUCED HYDRAULIC THRUST
Rinaldo F. Pezzillo, Levittown, Pa., assignor to Pall Corporation, Glen Cove, N.Y., a corporation of New York
Filed Dec. 1, 1964, Ser. No. 414,981
7 Claims. (Cl. 103—87)



1. A centrifugal pump comprising, in combination, a housing having fluid inlet and fluid outlet passages, an impeller rotatably disposed across the line of fluid flow therebetween, an axial opening in the impeller for entry of fluid, and a circumferential opening for delivery of pumped fluid under centrifugal pressure therefrom, a motor rotor and a motor stator in the housing, an impeller shaft having the impeller attached at a front end and the rotor at a position behind the impeller, bearing means in the housing rotatably supporting the shaft, thrust-opposing means attached to the shaft having a surface fixed into rotatable engagement with a bearing means, the juxtaposed bearing means and thrust-opposing means surfaces defining passages therebetween for entry of fluid for lubricating the bearing, an axial passage in the shaft open at each end, a fluid chamber behind the rotor, the rear end of the axial passage opening into said chamber, the other end of the passage opening into the inlet side of the impeller, a pressure surface exposed to pressure in the outlet side of the impeller and attached to the shaft, tending to urge the shaft rearwardly, and a pressure surface attached to the shaft and exposed to pressure in the fluid chamber behind the rotor, tending to urge the shaft forwardly, the pressure surfaces and the axial passage being dimensioned to produce a net forward thrust of reduced magnitude against the front bearing.

3,288,074
SUBMERSIBLE PUMP
Malcolm S. Hall, St. Louis County, Mo., assignor to Weber Industries, Inc., Affton, Mo., a corporation of Missouri
Filed Nov. 2, 1964, Ser. No. 408,229
3 Claims. (Cl. 103—87)



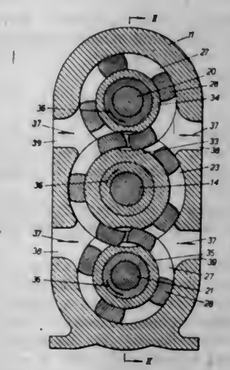
1. In a multi-stage, centrifugal submersible pump, a pump body comprising a plurality of diffuser units, each diffuser unit comprising a back plate having upper and lower central planar portions, a diffuser having upper and lower planar surface portions, and an impeller disposed between said diffuser and back plate, liquid guide vanes being provided on the under surface of said back plates, means for effecting rotation of said impeller, each impeller being of the enclosed type having an upper and lower shroud, the said upper shroud of said impeller being in spacedly parallel, underlying relationship with respect to the lower planar portion of the related diffuser, the lower shroud of said impeller being in spacedly parallel, overlying relationship with respect to the upper central planar portion of the associated back plate, the liquid guide vanes upon the said back plate cooperating with the upper planar central portion of the diffuser of the adjacent diffuser unit cooperating to define liquid passageways said lower shroud having a centrally provided eye, a peripheral skirt depending from the edge of said eye, each back plate having an enlarged central aperture, the skirt of the related impeller extending downwardly into the aperture of the related back plate, and means for effecting stable interrelationship between said back plate and said diffuser.

3,288,075
PUMPS
Kenneth R. Lung, Morehead City, N.C., assignor to The Tait Manufacturing Company, Dayton, Ohio, a corporation of Ohio
Filed Nov. 27, 1964, Ser. No. 414,076
8 Claims. (Cl. 103—87)

1. A pump assembly adapted to handle liquid having foreign particles dispersed therein, comprising means defining a pump housing, a tubular pump shaft rotatably mounted therein, at least one impeller mounted on said pump shaft for rotation thereby, at least one bearing connected to said housing and having a surface supporting said pump shaft on the inlet side of said impeller, means defining an axially extending passageway within said pump through the center portion of said impeller, means defining a lateral passageway within said pump shaft connecting said axially extending passageway with said bearing surface, inlet means to said axially extending passageway located on the discharge side of at least one of said impellers, and filter means mounted for rotation with said impeller and spaced adjacent said inlet means for supplying liquid free of foreign particles to said axially extending passageway for flushing and lubricating said bearing by way of said lateral passageway.

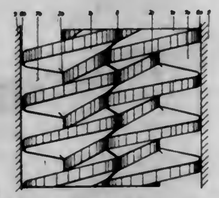


3,288,076
HYDRAULIC MEANS
Øystein Bjørndal, Telavaag, Hordaland, Norway
Filed Jan. 28, 1965, Ser. No. 428,689
Claims priority, application Norway, Jan. 31, 1964, 151,806
3 Claims. (Cl. 103—126)



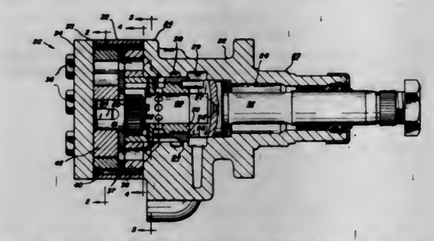
1. A hydraulic pump which comprises a housing and shafts mounted in rotatable engagement and received therein, said rotatable shafts including two shafts each carrying, in spaced apart relation, two plates having opposed sides formed with axially extending projections, and an intermediate shaft disposed centrally of the housing, parallel to and between said two shafts, said intermediate shaft carrying a plate engaging the plates of both said two shafts by virtue of projections, extending axially from both surfaces thereof, which are threaded in between projections on the plates of said two shafts, the housing having in the walls two pairs of opposed openings, each pair constituting an inlet and an outlet for fluid and being located at approximately the same level as the threaded plate projections of a corresponding one of the pairs of adjacent shafts, and the disposition of the projections relative to the walls of the housing providing a minimal clearance therebetween, the arrangement being such that on rotation of the shafts, fluid is pumped transversely through the housing in opposite directions.

3,288,077
MACHINE FOR WORKING AND SIMULTANEOUSLY DELIVERING OR CONVEYING LIQUIDS, VISCOUS OR PLASTIC COMPOSITIONS AND POWDERS
Walter Meskat, Leverkusen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
Filed Aug. 20, 1965, Ser. No. 481,322
Claims priority, application Germany, Sept. 11, 1964, F 43,960
12 Claims. (Cl. 103—128)



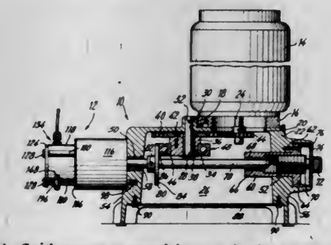
1. A machine for working and simultaneously delivering liquid, viscous or plastic compositions and powders, which comprises at least two screws which are arranged in a common housing and which are each provided with an eccentric core wherein the central axes of the cores of the adjacent screws are arranged eccentrically relative to the spindles rotating in the same direction by which the screws are driven, in such a way that the flight lands of one screw engage in the grooves of the adjacent screw.

3,288,078
HYDRAULIC DEVICE
Thomas L. Monroe, West Lafayette, and Lee A. Dettlof, Lafayette, Ind., assignors to TRW Inc., a corporation of Ohio
Filed Aug. 25, 1964, Ser. No. 391,939
14 Claims. (Cl. 103—130)



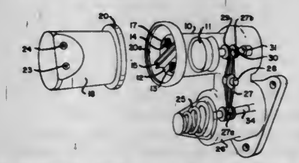
1. A pump including in combination a housing having a bore therein, wall means defining inlet and outlet passageways in said housing communicating with said bore, an internally toothed stator fixedly connected to said housing, an externally toothed rotor mounted for rotary and orbital movement with respect to said stator, said rotor having one less tooth than said stator, a commutator in said bore, a drive shaft coaxial with and connected to said commutator for rotating the same, a plurality of ports communicating at one end with spaces between the teeth on said stator and at the other end with said bore, said commutator having a first plurality of circumferentially spaced passages constantly connected at one end to said inlet passageway and at their other end adapted to be alternately connected to said plurality of ports, said commutator also having a second plurality of circumferentially spaced passages constantly connected at one end to said outlet passageway and at the other end adapted to be alternately connected to said plurality of ports, said first plurality of circumferentially spaced passages being located alternately with said second plurality of circumferentially spaced passages, an internal drive gear connected to said drive shaft for common rotation therewith and with said commutator, an external drive gear within said internal drive gear and meshing therewith and being connected to and coaxial with said rotor for common rotational and orbital movement therewith, the number of internal drive gear teeth over the number of external drive gear teeth comprising a gear ratio and the number of said first plurality of circumferentially spaced passages as well as the number of said second plurality of circumferentially spaced passages being equal to said gear ratio multiplied by the number of teeth on said externally toothed rotor.

3,288,079
PUMP
Nelson G. Kling, Ringwood, N.J., assignor to Technicon Chromatography Corporation, Chauncey, N.Y., a corporation of New York
Filed Sept. 24, 1964, Ser. No. 398,860
8 Claims. (Cl. 103—153)



1. A fluid pump comprising: a body made of a first material; an elongated, tubular insert of a second material, having end and lateral openings, molded in said body surrounding an elongated core of said first material which is integral with the external portion of said body through one of said ends and said lateral opening in said insert; an elongated pumping chamber in said core; a pumping cylinder projecting transversely through said block, through said first material in said lateral opening of said insert, and through said core into fluid flow communication with said chamber; and a piston disposed within said cylinder and operable for reciprocating movement in said cylinder.

3,288,080
FUEL PUMPS
Edward A. Madej, 1209 Riverview Drive, Verona, Pa.
Filed Oct. 16, 1964, Ser. No. 404,402
4 Claims. (Cl. 103—153)

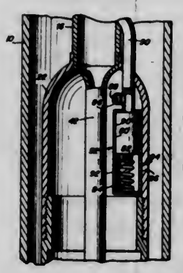


1. In a plastic fuel pump for handling hydrocarbon fuels a cylinder, a piston movable in said cylinder, a first end member in said cylinder, a cap means on the cylinder adjacent the first end member, an internal wall within the cap means engaging the first end member and forming therewith a pair of chambers within the cap member, a pair of one way valves in said first end member actuated only by pressure differential on opposite sides of said first end member, one on each side of said internal wall communicating between the cylinder and

the chambers, keeper means on said first end member holding said valves for free movement transverse to the plane of the first end member, ports in the cap means communicating between the exterior and each of the chambers, a second end member on the cylinder spaced from the first end member, actuator means engaging the piston alternately to move the piston in the cylinder toward the first end member and then release said piston for movement away from said first end member and resilient means urging the piston away from the first end member.

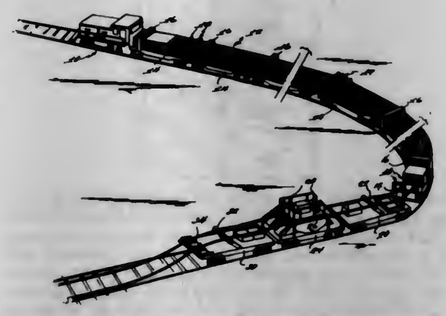
3,288,081
FLUID PRESSURE OPERATED BOTTOM HOLE PUMP
George W. McMillan, 101 S. 1st St., Carrizo Springs, Tex.
Filed Dec. 7, 1964, Ser. No. 416,543
8 Claims. (Cl. 103—234)





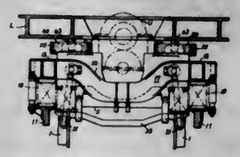
1. A pump installation comprising a vertically elongated pump barrel adapted to be submerged in a liquid in a well, said barrel comprising a housing closed from the atmosphere and having a non-return pump inlet valve effecting the intake of liquid into said barrel but preventing reverse flow, a pump delivery conduit entering said pump barrel and having a delivery conduit inlet communicating with the lower portion of the pump barrel, a non-return pump delivery valve in said conduit inlet admitting liquid from said pump barrel into said delivery conduit while preventing reverse flow, fluid pressure pump operating means including an automatic selector valve periodically supplying an operating gas under pressure into said pump barrel and thereby discharging accumulated liquid therein into said delivery conduit inlet and subsequently periodically venting the pump barrel interior to the atmosphere, pressure responsive valved passage means mounted within the pump barrel communicating the interior of said pump barrel with the well bore whereby a rapid equalization of pump barrel-well bore pressure is facilitated, said fluid pressure pump operating means closing said passage means when operating gas under pressure is being supplied into said pump barrel and opening said passage means when said pump barrel is being vented to the atmosphere.

3,288,082
RAIL HANDLING APPARATUS
Dennis William Brosnan, Box 1808, Washington, D.C.
Filed Feb. 10, 1965, Ser. No. 431,644
18 Claims. (Cl. 104—2)



1. Apparatus for use in a rail handling operation for moving a strand of rail between a rail storage area on a flat car arrangement and a track structure comprising: an additional flat car coupled to said storage area flat car arrangement, drive means mounted on said additional flat car for moving said rail between said storage area and the track structure, and additional drive means mounted on said additional flat car for selectively threading a strand of rail into driving engagement with said first mentioned drive means.

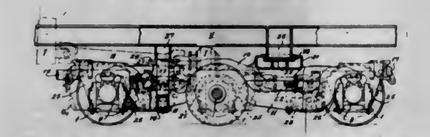
3,288,083
LOCOMOTIVE TRUCK
William C. Jones, Granite City, Ill., assignor to General Steel Industries, Inc., Granite City, Ill., a corporation of Delaware
Filed Sept. 13, 1963, Ser. No. 308,718
9 Claims. (Cl. 105—34)



1. A railway vehicle truck comprising three wheel and axle assemblies spaced apart lengthwise of the truck, a truck frame supported therefrom and including transversely spaced longitudinally extending side members positioned outboard said wheels and a transverse transom intermediate the middle assembly and each end assembly, a generally rectangular bolster elongated longitudinally of the truck and comprising transversely spaced longitudinally extending side members located transversely inboard of said middle assembly wheels and longitudinally spaced transversely extending end members positioned adjacent said transoms and longitudinally inboard thereof, the region defined by said bolster side and end members being substantially wholly open, said bolster being resiliently supported from said frame adjacent the intersections of said bolster side and end members, transversely and longitudinally spaced horizontal upwardly facing bearing surfaces being provided on said bolster above all the supports

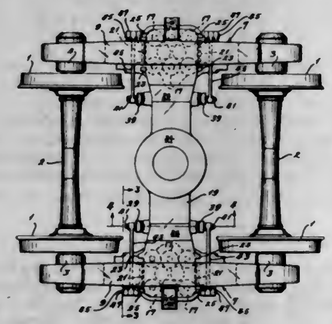
thereof from said frame, said upwardly facing bearings each having an arcuate upright wall curved about a vertical axis at the center of the bolster and adapted for engagement with cooperating arcuate surfaces on structure depending from the vehicle underframe, said arcuate upright walls being elongated transversely of the truck, said bolster side members mounting, in substantial transverse alignment with its center, upright additional bearings comprising arcuate walls curved about a common vertical axis at the bolster center and adapted to engage mating bearing elements on the vehicle underframe for preventing relative lateral movement between said bolster and said supported underframe.

3,288,084
LOCOMOTIVE TRUCK
John L. Schauster, Highland, Ill., assignor to General Steel Industries, Inc., Granite City, Ill., a corporation of Delaware
Filed Sept. 16, 1963, Ser. No. 309,153
9 Claims. (Cl. 105—34)



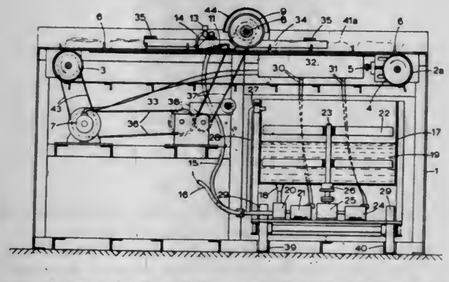
1. A railway vehicle truck comprising spaced wheel and axle assemblies, a frame supported therefrom and comprising transversely spaced longitudinally extending side members and longitudinally spaced transversely extending transom members connecting said side members intermediate said assemblies, one of said transom members having its bottom surface upwardly arched intermediate its ends and being provided with an upwardly facing bearing at the center of its top surface, said other transom member mounting upwardly facing horizontal bearings spaced apart transversely of the truck and having its top surface depressed between said bearings to a level substantially lower than the crown of the arched bottom surface of said one transom member.

3,288,085
RAILWAY VEHICLE TRUCK
Thomas Joseph Kolesa, Granite City, Ill., assignor to General Steel Industries, Inc., Granite City, Ill., a corporation of Delaware
Filed Nov. 22, 1963, Ser. No. 325,594
8 Claims. (Cl. 105—193)



1. A railway vehicle truck comprising a pair of transversely spaced longitudinally extending separate side frames movable with respect to each other, upright springs carried by said side frames intermediate their ends, a transverse load-carrying bolster mounted at its ends on said springs, a pair of shafts extending longitudinally of the truck and each journalled in said bolster inwardly from said side frames, separate pairs of substantially vertical arms fixed respectively to said shafts and spaced apart a substantial distance axially thereof, and pairs of similarly spaced substantially horizontal pitmans extending transversely of the truck and connected respectively at one of their ends to opposite side frames and at the other of their ends to said arms adjacent the corresponding side frame.

3,288,086
MACHINE FOR SLITTING AND FILLING DOUGHNUTS AND THE LIKE
Raymond Morris William Ward, 18 Whitehouse Way, Iver Heath, England
Filed Apr. 17, 1964, Ser. No. 360,696
2 Claims. (Cl. 107—1)



1. A machine for slitting and filling articles such as doughnuts comprising a conveyor belt adapted to advance said articles; a rotatable knife blade arranged to rotate above said belt about an axis transverse to the direction of travel thereof; a plurality of stops on said belt to prevent said articles from sliding as they are slit by said knife blade; a wedge-shaped member positioned after said knife blade, said member being positioned so that the smaller end thereof will engage in said slits in said articles after they have passed said knife blade whereby said slits will be opened; a vat for filling material; a filling nozzle positioned adjacent the larger end of said wedge-shaped member; a valve controlling the supply of filling material from said vat to said nozzle; an actuating member arranged to be engaged by said articles to open said valve to supply filling material to said nozzle for injection into said slits and to be disengaged from said articles as the advance thereof on said belt is continued thereby to close said valve and cut off the supply of said filling material; a conduit by which said vat is connected with said nozzle; a releasable connection between said conduit and said vat; and wheels on which said vat is supported so as to be easily removable.

3,288,087
TABLET MAKING MACHINE
Edmond Deshusses, Geneva, Switzerland, assignor to Constructions Mecaniques du Leman SA of Geneva, Geneva, Switzerland
Filed June 8, 1964, Ser. No. 373,357
Claims priority, application Switzerland, June 17, 1963, 7,490/63
1 Claim. (Cl. 107—18)

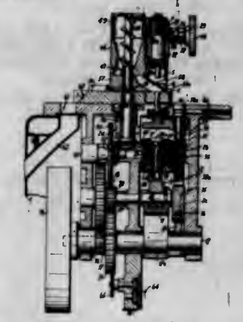
A machine for making tablets from a powdered product comprising the combination of:
a stationary supporting table,
a tablet-forming die carried by the table,
a movable frame including a top cross bar and a bottom cross bar and interconnecting rods,

a driving mechanism operatively connected to the bottom cross bar of the movable frame for the reciprocating movement of the movable frame relative to the table,

a reciprocating punch carried by and movable with the top cross bar of the movable frame for compressing the powdered product in the die,

a powder distributing mechanism located above the table and including a powder supply container having a lower discharge aperture and a driven rotating screw disposed within the container,

a rotatable obturator-distributor rigidly mounted on and rotatable with the screw of the powder dis-



tributing mechanism and disposed intermediate the powder distributing mechanism and the die,

the obturator-distributor being provided with an oblique passage therethrough and having one end registrable at one point in the revolution of rotation with the discharge opening for the charging of the oblique passage with the powdered material and having an opposite end registrable at another point in the revolution of rotation with the die for the discharging of the powdered material from the oblique passage and into the die, and

an extractor in the bottom of the die for pushing formed tablets from the die and being movable vertically in synchronism with the charging of the die.

3,288,088
PACKAGING METHOD
Edwin H. Leedy, Cincinnati, Ohio, assignor, by mesne assignments, to Lockwood Manufacturing Company, a corporation of Delaware
Filed Dec. 9, 1963, Ser. No. 328,967
8 Claims. (Cl. 107—54)

2. The method of producing a package containing a multiplicity of partially baked brown and serve dough products arranged in a predetermined orientation which comprises,

baking said multiplicity of products in a baking pan in which said dough products are arranged in a plurality of columns and rows, said columns being normal to said rows,

conveying said multiplicity of partially baked products in said pan to a pick-up station,

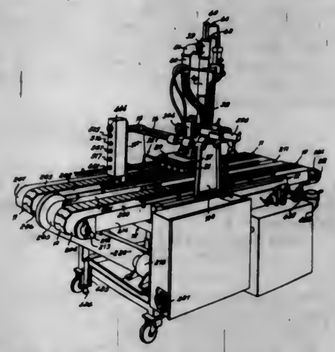
simultaneously engaging each one of said partially baked products at said pick-up station with a single one of a plurality of suction cups mounted upon a transport member,

effecting relative movement between said transport member and said pan while said cups remain engaged with said partially baked products so as to remove said products from said pan,

conveying said transport member to a packing station while said cups remain engaged with said partially baked products,

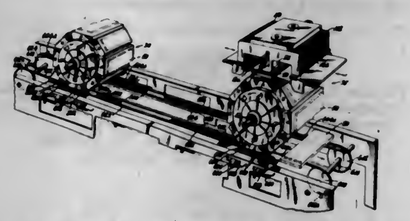
locating a container at said packing station,

simultaneously inserting all of said multiplicity of partially baked products while engaged with said suction cups and while in contacting relationship with adjacent ones of said partially baked products into said container, and



releasing said partially baked products from said suction cups for subsequent movement in said container away from said packaging station, said products when released by said suction cups being arranged in rows and columns and being in contacting relationship with adjacent ones of said partially baked brown and serve products.

3,288,089
WAFER CUTTING APPARATUS AND METHOD
Charles M. Schott, Brookside, N.J., assignor to Mars, Incorporated, Hackettstown, N.J., a corporation of Delaware
Filed Aug. 30, 1962, Ser. No. 220,955
13 Claims. (Cl. 107—69)

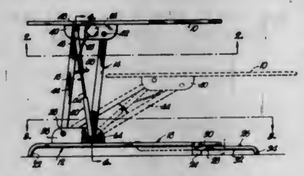


7. In a machine for delivering to a mold cut portions of a slab of material, the combination of means to sever the slab into a plurality of cut portions equally spaced from each other, means to convey the cut portions to a place of deposit while holding the equal spacing of the portions, and means to eject predetermined selected pieces for filling a mold having cavities spaced at intervals different from the intervals at which the pieces are spaced.

3,288,090
CONTROL STRUCTURE FOR IRONING BOARDS
Arthur S. King, Prairie Village, Kans., assignor to Murray W. Maxwell, Shawnee Mission, Kans., Sam D. Capper, Kansas City, Mo., and Nelle Ferguson, Kansas City, Mo.
Filed Aug. 27, 1965, Ser. No. 483,211
8 Claims. (Cl. 108—138)

1. In an ironing board assembly of the kind having an ironing board, a supporting base for the board, and

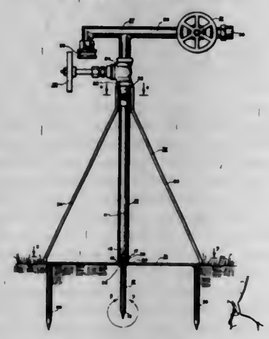
parallel linkage pivotally interconnecting the base and the board whereby the latter remains parallel with the base as it is shifted toward and away from the base, a spreader for separating the board from its base comprising:



an elongated, extensible device,

said device being interposed between the board and the base and being swingable with respect to the board and the base whereby, upon extension of the device, the board will swing away from the base.

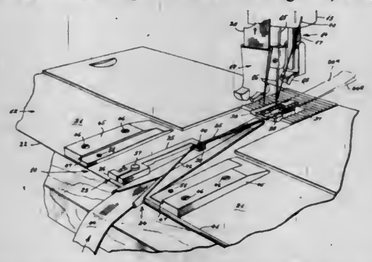
3,288,091
WATERING DEVICE
Boyd J. Cortello, 289 E. Vine St., Murray, Utah
Filed Jan. 28, 1965, Ser. No. 428,773
3 Claims. (Cl. 111—7)



3. A watering device including, in combination, a depending, elongate watering means including a conductive, watering probe; and support structure releasably secured to said elongate watering means, said support structure including depending prong means constructed and arranged for sod insertion, and wherein said support structure includes a foot plate, said depending prong means being integral with and depending from said foot plate, and wherein said foot plate includes an aperture, said elongate watering means comprising an elongate extension conduit integral with said watering probe, the construction of said extension conduit and said watering probe forming a downwardly-facing shoulder construction to abut said foot plate about said aperture, said conductive, watering probe being constructed to pass through said aperture and depend beneath said foot plate.

3,288,092
ZIGZAG ATTACHMENT FOR A TWO NEEDLE SEWING MACHINE
Ronald J. Boser, 261—79 Langston Ave., Glen Oaks, N.Y.
Filed Sept. 2, 1964, Ser. No. 394,017
5 Claims. (Cl. 112—100)

1. In a two needle sewing machine having a base, an overhanging arm and a main drive shaft mounted on said base, the combination of a zigzag attachment having a looper mechanism comprising a looper drive mechanism and a looper zigzag mechanism, said looper drive mechanism driving said looper zigzag mechanism, said looper zigzag mechanism adapted to carry a thread being dispensed from said looper zigzag mechanism to cooperate with a lock thread formed by each of said needles to form a zigzag thread, said looper drive mechanism comprising a gear, said gear being mounted on said main drive shaft base, said gear being driven by said main shaft, a second gear, said second gear being driven by the first said gear, a second gear shaft carrying said second gear, a cam plate mounted on said second gear shaft, a sliding bar mounted on said cam plate, a plurality of elongated slots on said sliding bar, a plurality of screws mounted on said cam plate, said screws having each an enlarged head, said screws passing through said slots of said sliding bar, said screw heads overlapping the edge of said slots for clamping againt said sliding bar, said sliding bar being radially movable relative to an axis of said second gear shaft, a push rod, one end of said push rod being freely pivoted to a longitudinal midpoint of said sliding bar, a lever,

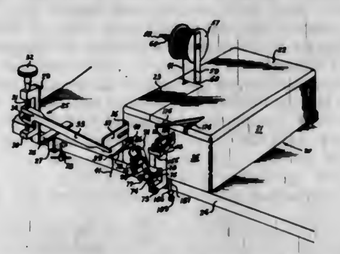


a looper zigzag mechanism shaft, the opposite end of said push rod being freely pivoted to one end of said lever, and the opposite end of said lever being rigidly affixed to one end of said looper zigzag mechanism shaft, a looper arm, one end of said looper arm being rigidly affixed to the opposite end of said looper zigzag mechanism shaft, a looper tube, the opposite end of said looper arm carrying said looper tube, an opening extending through said looper tube, said looper tube having one end extending relatively close to said two needles of said sewing machine, said looper drive mechanism being on the underside of said sewing machine base, and said looper zigzag mechanism being on the upper side of said sewing machine base, said looper zigzag mechanism shaft extending through said base from a lower to an upper side, a pair of rails mounted on said base, an angular groove in each of said rails, a cover plate, said cover plate having opposite parallel edges, said parallel edges being slidably received within said grooves of said rails and said cover plate enclosing said looper zigzag mechanism on the upper side of said sewing machine base.

3,288,093
DEVICE FOR FORMING AND TYING BELT LOOPS
Kenneth Warga, 1025 Clay Ave., Scranton, Pa.
Filed Oct. 14, 1964, Ser. No. 403,775
12 Claims. (Cl. 112—104)

1. In a device for forming and tying belt loops, in combination, a base, a support for a garment thereon, a housing adjacent said support, a needle extending outward from said housing, belt loop thread material threaded through said needle, the garment being adapted to be doubled and pressed against said needle to extend said thread through a double thickness of the garment; a hook extending from said housing, a knot tying head including a pair of separable fingers adjacent said hook, said thread being doubled over said hook and extended over said knot tying head adjacent said fingers, a thread holder and scissors carried by said casing adjacent said knot holder, said thread

holder including a pair of blades between which the ends of said doubled thread are positioned and held, means for rotating said knot tying head in a direction to form a loop in said doubled thread, means to separate said fingers simultaneously with the rotation of said head, means to release said fingers to clamp a portion of the doubled thread exteriorly of the loop after formation, means simultaneously to activate said scissor blades to sever and



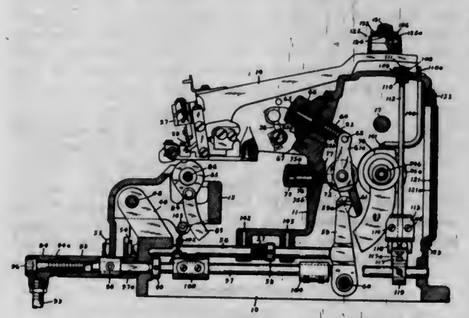
release the doubled thread when said thread is clamped by said fingers, a lifting arm extending from the casing between said hook and said head, means operable in conjunction with said means for rotating said head and said means actuating said scissors, for lifting said arm to lift said thread from said knot tying head while still clamped by said fingers to tighten the knot, and to remove the tied belt loop from the knot tying head.

3,288,094

BLINDSTITCH SEWING MACHINE

Gerald C. Roth, Oak Lawn, Richard C. Tringali, Mount Prospect, and John F. Hopp, Northbrook, Ill., assignors to Union Special Machine Company, Chicago, Ill., a corporation of Illinois

Filed Sept. 16, 1963, Ser. No. 309,019
20 Claims. (Cl. 112—178)



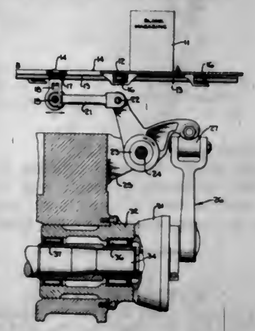
1. In a blindstitch sewing machine having a frame, a rotary drive shaft mounted in said frame, a curved needle, connections from said drive shaft for swinging said needle along an arcuate path, a work supporting member rockably mounted on said frame and a node former carried by said member for oscillatory movement thereon, the combination which comprises second connections from said drive shaft for rocking said work supporting member, said second connections comprising a pair of levers in direct engagement with each other, and adjustable means mounted on said frame for adjustment thereon to vary the effective length of at least one of said levers at will to thereby vary the amount of rocking movement imparted to said work supporting member.

3,288,095

MODIFIED CRANK DRIVE FOR FEED BAR DRIVE AND WING DRIVE

James A. Ballo, Oconomowoc, Wis., assignor to Carnation Company, Los Angeles, Calif., a corporation of Delaware

Filed Oct. 2, 1963, Ser. No. 313,384
10 Claims. (Cl. 113—113)



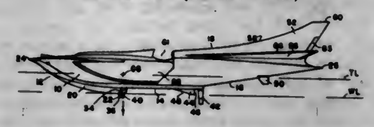
1. A feed mechanism for advancing a sheet metal work piece through a series of operations along a work table which comprises: reciprocating feed means for striking said work piece; a link means, said link means being capable of converting rotational motion into reciprocating motion and transmitting said reciprocating motion to said feed means; a modified crank drive comprising: a drive shaft; a revolving, rotating crank shaft, said crank shaft defined by a crank gear and a crank shaft pin positioned eccentrically to the axis of said crank gear; a stationary gear positioned to mesh with said crank gear; means for drivingly interconnecting said drive shaft and said crank whereby the revolution of said drive shaft causes relative orbital movement of said crank gear with respect to said drive shaft and causes concurrent rotation of said crank shaft pin about the axis of the crank shaft gear so that the link means connecting said crank pin and said feed means imparts a dwell to said feed means prior to the time the feed means strikes the work piece.

3,288,096

HYDROPLANE CAPABLE OF MAKING STABLE TURNS AT HIGH SPEEDS

Armand D. Swenson, 3223 W. 154th St., Gardena, Calif.

Filed Sept. 16, 1965, Ser. No. 487,731
15 Claims. (Cl. 114—66.5)



1. A hydroplane, symmetrically constructed about a longitudinally extending, vertical plane of symmetry, and comprising:

(a) an elongated, relatively narrow, planing ski having a planing bottom;

(b) a displacement hull extending above and broadening out laterally from said ski;

(c) a pair of airfoil members projecting laterally outwardly on opposite sides of the hull, from an upper forward portion of said hull, and each having a lower, surface-effect surface set at a pronounced angle of attack with respect to the direction of travel,

with the center of gravity of said hydroplane being located substantially below the said lower, surface-effect surfaces

of the airfoil members, and above the planing bottom of said planing ski, substantailly in the vertical plane of symmetry, and said hydroplane further comprising:

(d) a tail section including a vertical stabilizer extending above the hull and entirely above the center of gravity of the hydroplane;

(e) a water rudder depending below said hull, intermediate the length of said hydroplane, including means mounting it for pivotal movement about a generally vertical axis; and

(f) an air rudder depending below said hull, rearwardly of the water rudder, and including means mounting it for pivotal movement about a generally vertical axis,

with said water and air rudders both being disposed substantially entirely below the center of gravity of the hydroplane.

3,288,097

COMBINATION OIL-ORE-BULK CARGO SHIP

Robert S. Boston, South San Francisco, Calif., assignor, by mesne assignments, to Marcona Corporation, San Francisco, Calif., a corporation of New York

Filed July 15, 1964, Ser. No. 382,907
6 Claims. (Cl. 114—73)



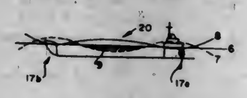
3. In a cargo ship for use as either a tanker, ore, or dry bulk carrier, a shell, a tank top, and an upper deck mounted in substantially parallel horizontal spaced planes in the shell, means mounted in the shell including vertically extending longitudinal bulkheads for forming cargo holds, said bulkheads having a plurality of large openings therein adjacent the tank top so that there is free access between the holds whereby the ship rates a steamer freeboard, and conversion means adapted to be mounted on the bulkheads for changing the freeboard rating of the ship from steamer freeboard to tanker freeboard, said conversion means comprising closure means for removably covering each of said plurality of openings and means removably securing the closure means over said openings and to the bulkhead in liquid tight relation thereto so that with the closure means secured, the ship rates a tanker freeboard.

3,288,098

SHIPS FOR TRANSPORTING LIQUID CARGOES

Juan José Chico Garate, Ibiza 66–1°–D, Madrid, Spain

Filed Mar. 2, 1964, Ser. No. 348,732
18 Claims. (Cl. 114—74)



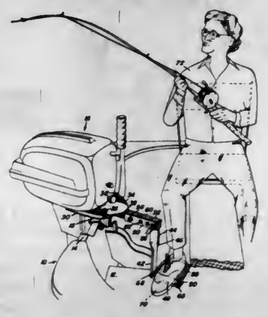
1. A ship for the sea transport of liquid cargoes, comprising a hull formed by a thin skin, having an inherent buoyancy, a deck to which said skin is attached, flexible separating means within said skin and defining both an inner liquid cargo space and an outer buoyancy space between said separating means and said skin, separate from said cargo space, and means for admitting the sea water to said buoyancy space, with free communication between the latter and the outside, thereby subjecting said cargo space to at least the same pressure as that of the sea water, so as to minimize stresses acting on said hull.

3,288,099

FOOT STEERING CONTROL FOR OUTBOARD MOTORS

Frank W. Bittner, 43235 E. Whittier, Hemet, Calif.

Filed Mar. 31, 1965, Ser. No. 444,243
8 Claims. (Cl. 114—153)



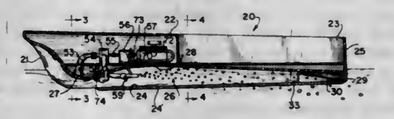
1. In combination with an outboard motor of the type including a two section mounting clamp assembly with one section pivoted to the outboard motor for rotation about an upstanding axis and the other section pivotally supported from said one section for rotation about a horizontal axis, said other section including means adapted to be supported from the transom of a boat, a foot steering control including a mounting portion secured to a forward portion of said outboard motor, a steering arm assembly including an upstanding leg means freely pivotally mounted at its upper end portion to said mounting portion for rotation about a generally horizontal disposed axis extending transversely of said motor and terminating at its lower end portion in a foot engageable portion adapted to be engaged by one foot of an operator of said boat and to swing through a horizontal plane about said upstanding axis as said motor is rotated about said upstanding axis.

3,288,100

BOAT AND JET PROPULSION MEANS THEREFOR

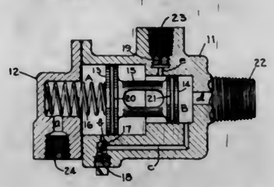
Clifford B. Cox, Chicago, Ill., and Joe M. Valdespino, Orlando, Fla., assignors to Clifford B. Cox, Chicago, Ill., Joe M. Valdespino, Orlando, Fla., James C. Robinson, Orlando, Fla., and Floyd Groo, Orlando, Fla.

Filed June 26, 1964, Ser. No. 378,312
6 Claims. (Cl. 115—11)



1. The combination of a boat having a tunnel along the length thereof, said tunnel being relatively shallow at the bow and increasing sharply to a relatively deep intermediate portion and then tapering gradually to a relatively shallow portion at the stern, jet propulsion means mounted on said boat and including a pump within the forward portion of said boat, means for admitting water to said pump from the exterior of said boat, a source of power for driving said pump, a venturi type aspirator nozzle located within the relatively deep portion of said tunnel constructed to receive water under pressure from said pump, said nozzle having a bore at one end connected to a reduced throat and a diverging discharge from said throat, an opening located in said diverging portion in spaced relation to said throat for admitting air into the water passing through said nozzle whereby said air would be entrained in the water and cause accelerated thrust thereof.

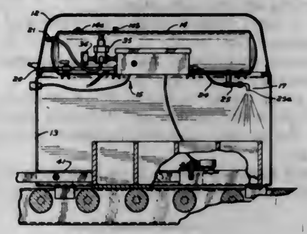
3,288,101
RAILROAD CABOOSE CAR WARNING SIGNAL
Frank C. Miller, 2752 Meadowview Drive NW., Roanoke, Va., and William B. Tanner, 5409 Berry Hill Road, Norfolk, Va.
Filed Sept. 15, 1964, Ser. No. 396,766
1 Claim. (Cl. 116—55)



A signal device for connection in a fluid pressure line containing a normal relatively high pressure and which is actuated by a sudden rapid loss of pressure in said line, said device comprising a fluid reservoir, a fluid actuated whistle means, and an actuating valve, said actuating valve including a valve body having an elongated bore, the bore having a first portion of one diameter and a second portion of a second substantially smaller diameter, first end closure means for the first portion of said bore and second end closure means for the second portion of the bore, a piston assembly including a first piston head of large diameter and an interconnected second piston head of smaller diameter, said first piston head being slidably mounted in said first portion and said second piston head being slidably mounted in said second portion, said first end closure means and said valve body and said first piston head forming a first chamber, said first piston head and said valve body and said second piston head forming a second chamber, said second piston head and said valve body and said second end closure means forming a third chamber, passage means extending through said body from said first chamber to said third chamber in fluid flow communication when said piston assembly is in its non-alarm position, check valve means disposed in said passage means permitting flow of fluid from said first chamber to said third chamber but blocking fluid flow in the opposite direction, said first closure means includes a thickened cover having an internal cavity in communication with said first chamber, spring means extending from said cavity into said first chamber to engage said first piston head for urging said piston assembly to its non-alarm position, passage means connecting said first chamber to said fluid pressure line in fluid flow communication, means connecting said third chamber to said fluid reservoir in fluid flow communication, means connecting said second chamber in fluid communication with atmosphere when said piston assembly is in its non-alarm position, and means connecting said third chamber to said fluid actuated whistle means in fluid flow communication only when said piston assembly is in its alarm position.

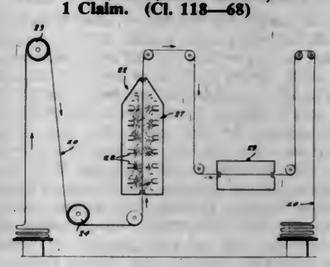
3,288,102
DEVICE FOR SPRAYING BEVERAGE CASES
Eugene P. Reagan, deceased, late of Minneapolis, Minn., by Eileen S. Reagan, administratrix, Minneapolis, and Frank E. Reed, Jr., Minneapolis, Minn., assignors to Summit Chemical Company, Baltimore, Md., a partnership
Filed Oct. 28, 1963, Ser. No. 319,600
5 Claims. (Cl. 118—2)

1. A spraying apparatus for spraying articles conveyed therepast including:
(a) a spray nozzle;
(b) a fluid supply communicating with the nozzle for delivery of fluid under pressure thereto;
(c) control means controlling the flow of fluid from said supply to said nozzle including electric circuit means responsive to a signal arranged to open and close communication between the fluid supply and the nozzle;
(d) a sensing device having a rotatable sensing element which element is arranged to frictionally contact an article carried on the conveyor to be rotated as the article is moved therepast; and



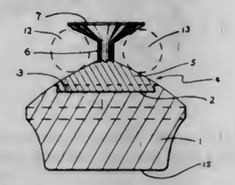
(e) an electric signal generator driven by said rotatable element which signal is transmitted to the electric circuit means of said control means.

3,288,103
MECHANISMS AND METHODS FOR THE PRODUCTION AND TREATMENT OF NAPPED FABRICS
George W. Lemieux, Swannanoa, N.C., assignor to Beacon Manufacturing Company, a corporation of Delaware
Filed Jan. 2, 1964, Ser. No. 335,307
1 Claim. (Cl. 118—68)



A mechanism for chemically treating a napped fabric to retain the original loft and height of its nap and prevent excessive shedding and shrinking thereof comprising:
(a) chemical treating means, receiving and allowing passage therethrough of said napped fabric, for saturating said napped fabric with a suitable chemical adapted upon curing to retain said original loft and nap and prevent excessive shedding;
(b) heating and curing means adapted to dry and cure said chemically treated napped fabric; and
(c) feeding and conveying means adapted to feed and convey the napped fabric through said chemical treating means and said heating and curing means to prevent destroying by crushing the original loft and height of the nap whereby the necessity for further napping is eliminated, said feeling and conveying means comprising:
(1) a pair of feed rolls disposed in advance of said chemical treating means and having coverings thereon including a plurality of short pins which support said napped fabric and
(2) a pair of endless conveyor chains adapted to receive the napped fabric from said pair of feed rolls and having a plurality of upstanding pins attached thereto along the length thereof to engage said napped fabric along only its longitudinal edges and operable to so convey said napped fabric through said chemical treating means and said heating and curing means.

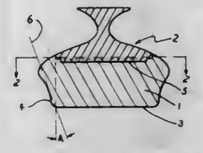
3,288,104
SOAP-ARTICLE INCLUDING ATTACHED HOLDER
Robert B. Staver, 191 Hillview Ave., Los Altos, Calif.
Filed Aug. 12, 1963, Ser. No. 301,531
9 Claims. (Cl. 118—76)



1. In combination, a body of material of a size to be grasped by a hand and manipulated thereby, said body having an upper surface portion; a member extending upwardly from and having a base portion atached to at least part of said upper surface portion of said body, said body having an opposite (lower) surface for application to an object to be treated, said member including a holding means portion having a slender stem portion extending upwardly, said stem being sufficiently slender to be positioned comfortably within the crotch of two adjacent squeezing fingers of a hand without spreading said fingers to an uncomfortable degree, a head portion of the holding means provided at the upper end of said stem that extends laterally a substantial distance out over a portion of said adjacent squeezing fingers, the under surface of said head and the generally opposed upper surface of said base portion of the member being spaced apart a distance sufficient to accommodate the fingers of said hand without spreading two adjacent squeezing fingers to an uncomfortable degree, and generally converging inwardly towards said stem so as to fit snugly on said adjacent fingers, said opposed converging surfaces bearing firmly substantially above and below said fingers in a wedge-like manner that produces two equal reactive generally opposing vertical component forces acting on each of said two adjacent fingers to squeeze firmly said fingers between them for hands having a substantial range of different finger sizes; the center of gravity of the body of material being so located with respect to the central stem portion of the holding means that, with the hand held generally downward, the mass of the body of material produces a turning moment of force about the vicinity of the central holding means portion that lies between said adjacent fingers, which causes a force-couple to be imparted by the combination against the hand, whereby to cause the combination to assume a self-locking grip on the hand, with the hand held substantially relaxed, for hands having the same substantial range of different finger sizes.

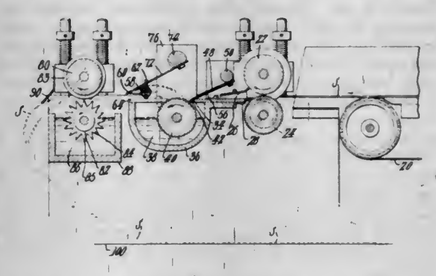
3,288,105
SOAP-TYPE ARTICLE INCLUDING ATTACHED HOLDER
Robert B. Staver, 191 Hillview Ave., Los Altos, Calif.
Filed Aug. 12, 1963, Ser. No. 301,538
6 Claims. (Cl. 118—76)

1. In combination, a body of erodable material of substantially uniform composition of a size to be grasped by a hand, said body having an upper surface portion, a separate member extending over and attached to at least part of said upper surface portion, said member being of sufficient cross-dimension to substantially impede erosion of the upper surface of said body of material to thereby prevent the said surface being used as a principal surface of application of said body of material, said member including a holding means for holding by the hand, said body having one principal lower surface for application to an object to be treated, said body having side surfaces converging substantially inwardly toward said lower surface in the general configuration of a taper, wherein the effective vertical height of the body of material is not less than 22½% of the maximum cross-dimension of said body, and wherein the volume of the body of material



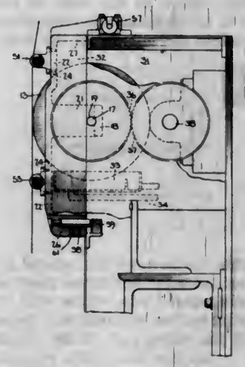
contained within the downwardly tapered portion of said body, measured from the horizontal plane of intersection of the generally tapered side surface with the lower principal cooperating surface upwardly to a parallel plane that intersects with the widest part of the effective side taper of the body is not less than sixty percent of the total volume of said body of material located upwardly from said horizontal plane of intersection of the generally tapered side surface with the lower principal cooperating surface.

3,288,106
COATING MECHANISM FOR SKIVED SHOE SOLES
George W. Heiseler, Saugus, Mass., assignor to Boston Machine Works Company, Lynn, Mass., a corporation of Massachusetts
Filed Mar. 26, 1964, Ser. No. 354,991
3 Claims. (Cl. 118—100)



1. A coating machine comprising a container for a pool of liquid, a coating roll rotatable about a horizontal axis mounted in said container, a horizontal table mounted on said container at one side of said roll on a level below the top of said roll, said table having a beveled edge in adjustable proximity to said roll, a series of spring fingers supported above said table and sloping forward and downward at an angle to the surface of the roll and resiliently pressing on said beveled edge whereby a work-piece advancing between the beveled edge and the fingers into contact with the roll is flexed sharply upward at the line of contact, means for feeding work-pieces across said table toward said roll, a sloping deflector mounted above and beyond said roll in position to be engaged by work-pieces flexed upward by said roll, and a horizontal wiper bar yieldingly supported under said deflector in position to be engaged by the coated side of work-pieces passing said deflector.

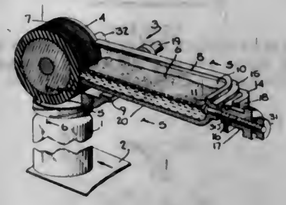
3,288,107
FINISH ROLL
Peter Conrad, Charlotte, N.C., assignor to Celanese Corporation of America, New York, N.Y., a corporation of Delaware
Filed Oct. 1, 1964, Ser. No. 400,822
6 Claims. (Cl. 118—234)



1. In an apparatus in which a plurality of yarns are treated with liquid by passing said yarns, in parallel, continuously into limited contact with the outside surfaces of a plurality of parallel applicator rolls driven from a common shaft, said applicator rolls dipping into the liquid in individual containers and picking up said liquid and carrying a film of said liquid, by the rotation of said rolls, to said yarns, the improvement which comprises the combination of an individual movable support for each of said rolls, said support being mounted for movement into and out of an operative position in which the roll carried by said support dips into said liquid in one of said pans, means for retaining said supports in their opertive positions, yarn guide means carried by each of said supports for defining precisely the paths of the yarn over the roll carried by said support, said support maintaining its roll and guide means in fixed relationship, individual drive-transmitting means on said shaft for each of said applicator rolls, and means, on each of said applicator rolls, for driving its applicator roll by cooperation with the corresponding drive-transmitting means on said shaft when said support is in said operative position, the construction and arrangement being such that said cooperating driving means is operatively disengaged from said drive-transmitting means when said support is moved away from said operative position.

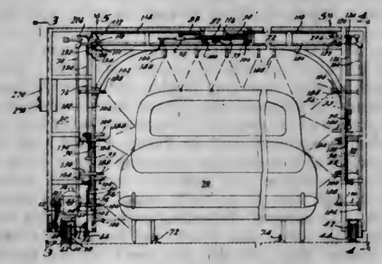
3,288,108
FLUID APPLICATOR
Frederick V. Hildebrandt, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware
Filed July 1, 1964, Ser. No. 379,473
4 Claims. (Cl. 118—258)

1. A liquid adhesive coating mechanism comprising the combination of a frame member, an adhesive applying roller rotatably mounted thereon, an adhesive reservoir member having an adhesive metering edge formed at its front end and mounted adjacent to said roller for applying adhesive thereto, means mounting said reservoir member on said frame member for longitudinal sliding movement toward and away from said roller to adjust the thickness of adhesive flowing over said metering edge, and means for adjustably fixing the position of said reservoir member on said frame member comprising engaged screw threaded elements, connections between said screw threaded elements and the respective frame and reservoir members, one of said connections including an open slot



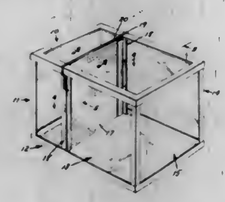
from which said screw threaded elements may be removed for lifting said reservoir member from said frame member.

3,288,109
CAR WASH APPARATUS
Courtland N. Smith, Jr., Glen Ridge, and Charles W. Knight, Riverton, N.J., assignors to Sherman Car Wash Equipment Co., Palmyra, N.J., a corporation of New Jersey
Filed Oct. 5, 1964, Ser. No. 401,434
16 Claims. (Cl. 118—316)



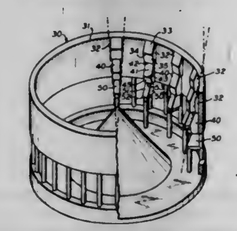
1. A vehicle washing apparatus comprising an inverted U-shaped frame adapted to encompass a vehicle to be cleaned, said frame comprising opposite leg portions and a head portion connecting said leg portions providing an achway for the vehicle, means for effecting relative motion lengthwise of the vehicle between said frame and vehicle, a high pressure detergent spray wash section operably supported in said frame, said wash section comprising a plurality of independent spray banks at least one in each of said leg portions and head portion, each bank comprising a liquid conduit means, a plurality of spray nozzles carried by each said conduit means in spaced relationship and pointed in the direction of said archway, said nozzles being arranged and constructed to produce overlapping fan-like jet streams of liquid at the surface of the vehicle and swingable means supporting said conduit means relative to said frame, said supporting means being arranged and constructed to provide for reciprocation of said conduit means in a single plane in each said leg portions and head portion lengthwise of said legs and head portion respectively, means for effecting reciprocation of one of these swingably supported conduit means, means drivingly connecting this one supported conduit means with the others whereby all are reciprocated in unison and means for supplying said conduit means with liquid detergent.

3,288,110
AQUARIUM SEPARATOR
Jerome Goldman, 80—15 41st Ave., Jackson Heights, Queens, N.Y.; and Marvin Goldman and Jerry Rosen, both of 79—19 149th Ave., Howard Beach, Queens, N.Y.
Filed Oct. 14, 1964, Ser. No. 403,774
3 Claims. (Cl. 119—5)



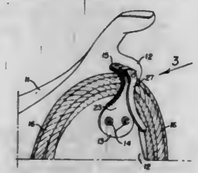
1. A tank divider accessory adapted to be removably positioned within an aquarium and to connect a pair of opposite walls of said aquarium to form separate compartments having free and complete water circulation therebetween, which comprises essentially a non-absorptive, non-toxic, semi-rigid, completely perforated, plastic plate the dimensions of the perforations being suitable to prevent clogging and small enough to prevent baby fish from swimming through, said plate being vertically positioned between the walls and adjacent a bottom portion of the aquarium, a pair of rigid plastic channels each of which is positioned against the inner surface of an opposite wall, said channel comprising essentially a flat strip in intimate contact with the inner surface of the aquarium wall, having a pair of slightly concave arms extending perpendicularly from said strip and meeting at a slit-like linear-opening into which the perforated plate is inserted and is held in place by a gripping force of the arms, each channel being removably secured to said walls by means of a clip.

3,288,111
SILAGE FEEDING
Mark E. Singley, Belle Mead, N.J., assignor to Fiddler's Creek Foundation Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 28, 1964, Ser. No. 399,786
3 Claims. (Cl. 119—52)



1. In a silo having side walls enclosing a silage mass, and having a silage discharge opening at the lower end thereof, a plurality of silage fracturing baffles, said baffles comprising: an upper tier of spaced baffles, each having a downwardly inclined plane surface, the upper end of which lies adjacent the interior surface of the side walls of the silo, and the lower edge of which extends into the silage mass; a second lower tier of spaced baffles, each of which has an inclined plane, the upper end of which is closer to the side walls of the silo than the lower end of the inclined plane of the upper baffles, and the lower end of which extends further into the silage mass than the lower end of the inclined plane of the upper baffles, whereby the silage mass in moving past said baffles is periodically subject to a compressive and relaxing force.

3,288,112
QUICK RELEASE ROPE HANGER
Charles L. Welton, Saratoga, Wyo.
Filed Aug. 29, 1963, Ser. No. 305,437
6 Claims. (Cl. 119—110)



1. A quick release hanger for holding a coiled rope on the fork of a saddle adapted to be affixed to the side of the saddle and comprising in combination therewith, a strap of spring steel formed as an arched member with one end thereof constituting a base and the opposite end constituting the top, means for securing the base thereof to the wall of the saddle with the body of the spring strap upstanding therefrom, with the arched portion curving outwardly from the saddle wall at the base and with the upper portion arching back and inwardly to place the top against the side of the saddle whereby to form a normally closed arc outstanding from the wall of the saddle which is adapted to hold a coil of rope and to be resiliently opened to release the rope by pulling the top outwardly and away from the saddle wall and a leather-like covering protectively encasing the strap.

3,288,113
SELF-SHARPENING PENCIL
Josef Gabler, Mainaustrasse 44, Zurich, Switzerland
Filed May 26, 1965, Ser. No. 458,900
1 Claim. (Cl. 120—15)



A self-sharpening pencil, comprising, in combination, a tubular case, a cap mounted upon one end of said case and slidable thereon, a tubular member within said case, a conical tip member screwed upon one end of said tubular member and having an end portion substantially aligned with the other end of said case, lead engaging segments within said case, a tube integral with said segments, another tube having an end contacting an end of the first-mentioned tube and another end engaging a cavity in said cap, a sleeve interconnecting said two tubes adjacent the contacting edges thereof, another sleeve enclosing the second-mentioned tube and having helical threads thereon, a third sleeve enclosing the second-mentioned sleeve and having an outwardly projecting annular flange, a bush fixed within said case and engaging an end of the third-mentioned sleeve, a pin having one end

engaging said cap cavity and enclosed by the second-mentioned tube, said pin having a projection extending through a slot formed in the second-mentioned tube and an aligned slot formed in the second-mentioned sleeve, a coiled spring engaging said bush and an inner surface of said cap, said tubular member having an inwardly projecting annular flange adapted to engage the outwardly projecting annular flange of the third-mentioned sleeve when said conical tip member and said tubular member are pulled away from said case, and lead sharpening means upon an inner surface of said conical tip member, said lead sharpening means having blades extending at an acute angle to the axis of the pencil.

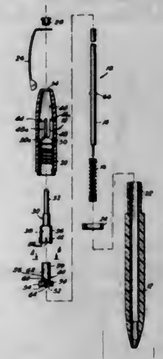
3,288,114
WRITING IMPLEMENT
Wilhelm Ritter, Brensbach, Odenwald, Hesse, Germany, assignor to Firma Jacob Ritter Kom. Ges., Brensbach, Odenwald, Hesse, Germany
Filed Nov. 19, 1963, Ser. No. 324,652
Claims priority, application Germany, Apr. 27, 1963, R 35,044
2 Claims. (Cl. 120—42.03)



1. In a writing implement comprising a casing, a spring-loaded cartridge disposed therein, and means for extension of said cartridge through the lower end of said casing and for retraction in the opposite direction, the improvements which comprise, in combination, a slit in the upper end of said casing; a groove near the upper end, and opposite to said slit, of said casing; a pressure pin inserted in said casing from above, having an upper surface sloping away from the side where said groove is located and having a recess in its lower end to house the upper end of said cartridge; recesses disposed along the sides of said pressure pin facing both sides of said slit; a projection on said pressure pin corresponding to, and extending into, said slit; an arresting catch directly and integrally fastened to the side of said pressure pin facing said groove, said catch having an upper and a lower stop face, each adapted to engage in said groove, one for writing and one for retracted position; a clip integrally fastened to said pressure pin at the highest point of said sloping surface, said clip being at a distance from said casing at said highest point, so as to allow free movement of said pressure pin, and lying firmly against said casing at its lowest point, and protectively covering said groove.

3,288,115
BALL-POINT PEN MECHANISM
Emil Hechtle, Oradell, N.J., assignor to Radiant Pen Corp., Kenilworth, N.J.
Filed July 16, 1965, Ser. No. 472,449
3 Claims. (Cl. 120—42.03)

1. A ball point pen having a cap, a barrel, a cartridge, a spring for urging the cartridge to a retract position, and a protract-retract mechanism comprising a plunger terminating in a set of teeth, a ratchet upon which the cartridge is seated having a set of main teeth, and a set of teeth on the inner surface of the cap for alternately engaging and turning the main teeth of the ratchet to permit entry of



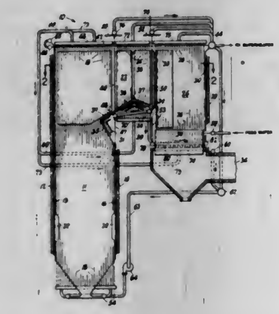
the main ratchet teeth into the slots and for retaining the ratchet in retract position, said ratchet further provided with an inwardly positioned set of auxiliary teeth for contact with the plunger teeth when the plunger engages the ratchet.

3,288,116
MULTI-COLOR ADAPTED BALL POINT PEN
Nathan Poritz, 236 E. 23rd St., Brooklyn, N.Y.
Filed July 14, 1964, Ser. No. 382,450
10 Claims. (Cl. 120—42.1)



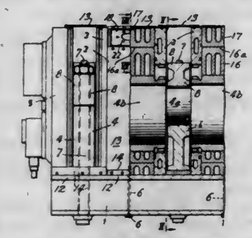
1. A ball point pen comprising a hollow barrel having an aperture in its lower end, a first ink tube disposed within said hollow barrel being provided with a lower ball point, said lower ball point being disposed in registry with said aperture in the lower end of said hollow barrel, a moveable cap having an aperture in its upper end disposed on the upper end of said hollow barrel, a second ink tube disposed within said hollow barrel and alongside said first ink tube being provided with an upper ball point, said upper ball point of said second ink tube being in registery with the aperture in said moveable cap, said moveable cap being longitudinally moveable on said barrel whereby the downward movement of the cap exposes the upper ball point of said second ink tube through the aperture in the upper end of said moveable cap and the movement of said moveable cap further projects the lower ball point end of said first ink tube through the aperture in the lower end of said hollow barrel, at least one member disposed within said hollow barrel for holding at least one of said ink tubes longitudinally within said hollow barrel, and means disposed on said moveable cap for releasably locking said moveable cap in and from the positions of projection and retraction of the ball points through the apertures.

3,288,117
ARRANGEMENT OF TUBE CIRCUITS IN SUPERCRITICAL FORCED THROUGH-FLOW VAPOR GENERATOR
Wilburt W. Schroedter, West Hartford, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Dec. 1, 1965, Ser. No. 510,924
8 Claims. (Cl. 122—406)



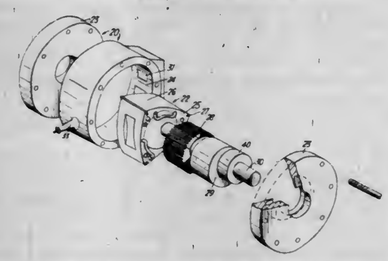
1. A forced through flow supercritical vapor generator having a through flow circuit; an upright furnace with opposed front, rear and side walls; a gas pass extending laterally from the upper region of the furnace, said gas pass having side walls, roof and floor effectively forming extensions of the furnace side wall, furnace roof and furnace rear wall, respectively; a gas pass extending downwardly from the lateral gas pass, and having a front wall and a rear wall, and side walls effectively forming extensions with the lateral gas pass sidewalls; vertically extending tubes lining the vertical walls of the furnace, of the lateral gas pass and of the downward gas pass; laterally extending tubes lining the roof of the furnace, the roof of the lateral gas pass the roof of the downward gas pass and the bottom of the lateral gas pass; vertically extending first hanger tubes passing through said lateral gas pass in the plane of said rear wall tubes for suspending the rear wall tubes therefrom; vertically extending second hanger tubes passing through said lateral gas pass in the plane of the front wall of said downward gas pass for suspending the tubes of the front wall of the downward gas pass therefrom; means directing a first part of said through flow in series up through said front wall tubes and through the roof tubes of said furnace, of said lateral gas pass and of said downward gas pass; means directing a second part of said through flow in series up through the side walls of said furnace, of said lateral gas pass and of said downward gas pass; means directing a third part of said through flow in series up through said furnace rear wall tubes, through the tubes of the bottom of said lateral gas pass, and thence in three parallel streams (a) through said first hanger tubes, (b) through the tubes of the front wall of said downward pass and said second hanger tubes, and (c) through the tubes of the rear wall of said downward pass.

3,288,118
CIRCULAR PISTON MACHINE
Hubert Abermeth, Cologne, Germany, assignor to Klockner-Humboldt-Deutz Aktiengesellschaft, Cologne, Germany
Filed Sept. 18, 1963, Ser. No. 309,899
Claims priority, application Germany, Sept. 24, 1962, K 47,802
4 Claims. (Cl. 123—8)



1. In a rotary piston machine having at least one rotary piston and having a plurality of machine parts arranged one behind the other when looking in the longitudinal direction of the axis of rotation of said piston: a supporting beam extending in the longitudinal direction of the axis of rotation of said piston and being spaced therefrom and supporting said machine parts, rails arranged along opposite longitudinal sides of said beam, one of said rails engaging and aligning said machine parts, means fixedly connecting said machine parts to said beam, and cover means covering at least some of said machine parts and being connected to said rails.

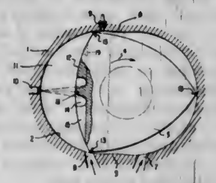
3,288,119
PUMPS FOR ROTARY ENGINES
Alan W. Sparrow, Peterborough, England, assignor to F. Perkins Limited, London, England, a British company
Filed Jan. 27, 1964, Ser. No. 340,374
Claims priority, application Great Britain, Jan. 28, 1963, 3,494/63
11 Claims. (Cl. 123—8)



1. In a rotary engine of the type having a housing having a first trochoidal internal profile, a rotor operatively rotatable within said housing having a second trochoidal external profile, said rotor profile being disposed within the housing profile in rolling relationship thereto, constraining means to maintain said profiles in rolling engagement with each other, and power transmitting support means for said rotor; cooling means for said rotor including the combination of liquid reservoir means in said engine, supply conduit means connecting said reservoir to a source of coolant, discharge conduit means spaced from said supply conduit means connected to said reservoir for discharging coolant therefrom, said rotor having coolant intake passage means therein including at least one entry opening continuously open to and periodically communicating with said reservoir for receiving said coolant and

at least one exit opening, said exit opening communicating with a hollow compartment within said rotor, discharge passage means in said rotor having an entry opening connected to said hollow space and an exit opening communicating with said reservoir at a point circumferentially spaced from said intake passage entry opening, the disposition of the intake passage between its openings being such that coolant is moved freely from said entry opening to said exit opening under the influence of acceleration forces engendered by the motion of said intake passage means during rotation of said rotor.

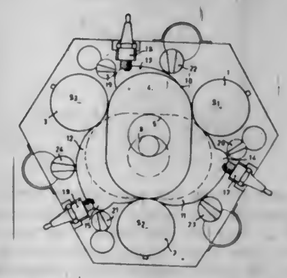
3,288,120
ROTARY PISTON INTERNAL COMBUSTION ENGINE
Heinz Lamm and Lothar Kortner, Stuttgart-Bad, and Hans-Otto Derndinger, Stuttgart-Wangen, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Nov. 20, 1964, Ser. No. 412,660
Claims priority, application Germany, Nov. 22, 1963, D 42,993
14 Claims. (Cl. 123—8)



1. A rotary piston internal combustion engine, especially of trochoidal construction, comprising:
housing means having lateral housing parts and casing means provided with multi-arched internal surfaces forming zones in proximity to the axis of the engine,
eccentric shaft means having eccentric means,
polygonal piston means rotatably supported on said eccentric means and provided with piston recess means in the piston flanks thereof,
said housing means being provided within one of said zones with gas exchange channel means, said piston means during movement thereof relative to said casing means and to the eccentric shaft means sliding with the corners thereof along the inner casing surfaces and thereby valving said gas exchange channel means,
the piston recess means in each piston flank having circular wall means,
and inlet groove means in a respective piston flank tangentially connected with the said circular wall means of the corresponding piston recess means, said inlet groove means beginning in relation to the direction of rotation of the piston means within the area of the trailing piston corner and having a depth increasing continuously from the beginning thereof toward the recess means and corresponding substantially to the depth of the piston recess means at the place of connection therewith.

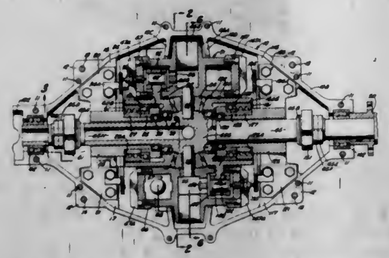
3,288,121
ROTARY PISTON ENGINE
René Linder, % Ceriani, 29 Via San Pietro, Saronno, Italy
Filed Mar. 7, 1966, Ser. No. 532,168
Claims priority, application Switzerland, Aug. 30, 1962, 10,330/62
12 Claims. (Cl. 123—8)

1. A rotary piston engine comprising an engine chamber having therein:
(A) an elongated piston having a given radius and a shape defined by two arcuate sections of a circle facing each other, said piston having a central opening with an inner wall, the center of said opening coinciding with its center of symmetry;
(B) a shaft extending through the center of symmetry of said engine; said center of symmetry being not coincident with said center of symmetry of said piston;
(C) a wheel having a given radius, the periphery of said wheel being adapted to roll over said inner wall, said wheel being carried by said shaft;
(D) three cylinders in contact with the periphery of said piston, the centers of said cylinders coinciding with the apices of the equilateral triangle having its center at the center of symmetry of said engine while said piston performs a wobbly rotary movement in constant contact with said cylinders, the center of said piston revolving around its center and around the center of symmetry of said engine, the spacing between the center of said piston and the center of symmetry of said engine varying periodically by a distance defined by the relationships $(e+x)$ and $(e-x)$ where e is the average spacing between the center of symmetry of the engine and the center of symmetry of the piston; the periphery of said piston being in contact through the apex of one of its two arcuate sections with one of said cylinders and through two points of its other arcuate



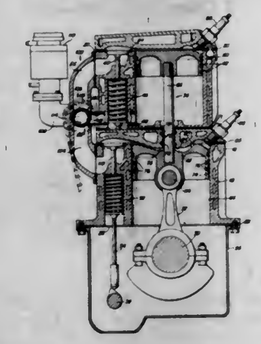
sections with said other two cylinders there always being a point on one of the arcuate sections contacting one cylinder and one point of the other arcuate section contacting another cylinder, the curves defining the lateral sections of the periphery of said piston and interconnecting the ends of said arcuate sections being so shaped as to differ from a true straight line in a form such that the third cylinder is constantly in contact with a point on said curves;
(E) the inner periphery of the wall of said piston differing by the above given distance from a true cylindrical surface in order to take into account the difference between the rotary movement of the center of the piston and a true circular path;
(F) the inner periphery of said engine chamber being defined by three similar arcs of a circle, each of said arcs being broken off to form a section; each of said arcs being limited by two of said cylinders and corresponding to the said arcuate section of said piston so as to form therewith and with two of said cylinders three elementary chambers;
(G) each of said arcs defining an elementary chamber having a recess located asymmetrically with respect to the apex defining the elementary chamber; said recess serving as an ignition chamber;
(H) means feeding in succession fluid into and out of said elementary chambers.

3,288,122
ENGINE
Chris Atsalos and Emmanuel Atsalos, San Diego, Calif., assignors of 12 percent to said Chris Atsalos, 54.67 percent to said Emmanuel Atsalos, and 33.33 percent to Steve S. Nicolaidis, San Diego, Calif.
Filed Feb. 25, 1964, Ser. No. 347,171
8 Claims. (Cl. 123—11)



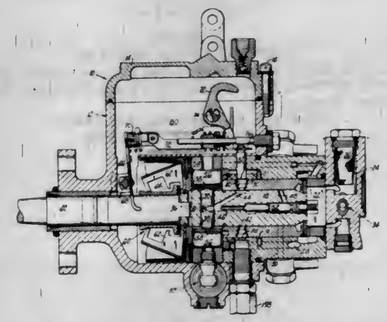
1. An engine of the character described, including a shaft, a cylinder housing secured to said shaft for rotation therewith, said housing including a first and a second cylinder portion, a first and a second piston member in said first and second cylinder portion respectively, first means for alternately arresting movement of said piston members with respect to said cylinder housing, a second means synchronized with said first means for alternately advancing said piston members with respect to said cylinder housing, said first and second means operating such that when one of said piston members is arrested the other is advanced, said second means including a fluid coupling between said piston members.

3,288,123
SUPERCHARGING ENGINE
Donald E. Stinebaugh, Coeur d'Alene, Idaho, assignor to El Dea Corporation, Spokane, Wash., a corporation of Washington
Filed July 2, 1964, Ser. No. 379,925
9 Claims. (Cl. 123—57)



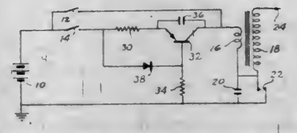
8. In a four-cycle supercharging engine,
cylinder means having a head end and a crankcase end,
a piston reciprocable in and dividing the cylinder means into a charging chamber at the head end and a supercharging chamber at the crankcase end,
an air-fuel supplying device,
and valve means connecting the supply device to the supercharging chamber while the piston is moved toward the head end of the cylinder means, connecting the supplying device to the charging chamber during the first part of movement of the piston toward the crankcase end of the cylinder means in an intake stroke of the piston, closing the supercharging chamber from the charging chamber during said first part of the movement of the piston in its intake stroke, and connecting the supercharging chamber to the charging chamber during the latter part of said intake stroke of the piston.

3,288,124
PUMP GOVERNOR
Vernon D. Roosa, West Hartford, Conn. (% Hartford Machine Screw Co., P.O. Box 1440, Hartford, Conn.)
Filed July 12, 1963, Ser. No. 294,495
9 Claims. (Cl. 123—140)



1. In a fuel injection system for an internal combustion engine, a flyweight governor providing a primary control of the engine fuel supply, a control fluid having a pressure which is a function of engine speed, governor boost means responsive to the control fluid providing a secondary control of the engine fuel supply, and means for manually adjusting the secondary control of the governor boost means to provide a predetermined engine droop.

3,288,125
TRANSISTORIZED IGNITION SYSTEM
William V. Guyton, Rte. 1, Box 341, Clackamas, Oreg., and Herbert Bartch, 2311 SE. 148th Ave., Portland, Oreg.
Filed June 16, 1964, Ser. No. 375,476
9 Claims. (Cl. 123—148)



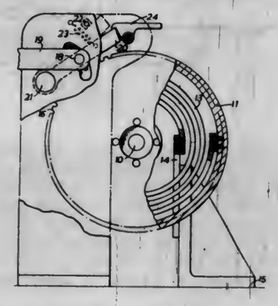
1. A kit for use in stabilizing the coil current in an ignition system for an engine having the series circuit arrangement of an ignition primary coil and the parallel combination of breaker points and ignition capacitor normally connected across a source of electric potential, the kit comprising
(a) a transistor,
(b) means for connecting the transistor collector to the ignition primary coil,
(c) base bias voltage resistance means connected to the transistor base,
(d) means for connecting the base bias voltage resistance means to one terminal of the source of electric potential,
(e) emitter current limiting resistance means connected to the transistor emitter,

(f) means for connecting the emitter current limiting resistance means to the other terminal of the source of electric potential,

(g) bias voltage source means connected across the series arrangement of the emitter current limiting resistance means and the emitter-base junction of the transistor for providing substantially constant bias voltage across said series arrangement and substantially constant current through the emitter-collector circuit, and

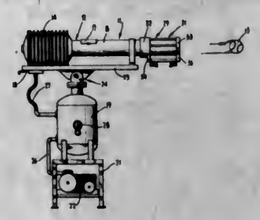
(h) capacitance means connected in the transistor circuit operatively to shunt the series arrangement of the ignition primary coil and ignition capacitor for providing a low reactance discharge path for the discharge oscillations of said series arrangement.

3,288,126
SPRING-DRIVEN MOTORS
Kenneth Alfred Edgar Moore and Edward Aylett Moore, both of "West Timber," Bucklers Yard, Besulleu, Hampshire, England
Filed Apr. 13, 1964, Ser. No. 359,047
5 Claims. (Cl. 123—179)



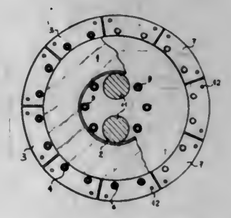
1. A starter for an internal combustion engine having an engine frame normally fixedly supported, in use, and a shaft by which drive is transmitted by said engine, said starter comprising resilient means surrounding said shaft, one end of said resilient means being fixed relatively to said frame, clutch means for coupling the other end of said resilient means to said shaft in one direction of rotation of said shaft, means for displacing said other end of said resilient means around said shaft to store energy in said resilient means and means for locking said other end of said resilient means in the displaced position, said resilient means serving, when said locking means are unlocked, to release the stored energy and rotate said shaft in a direction opposite to that of said displacement, and said clutch means being a sprag clutch having negligible back-lash and including a first member drivably connected to said other end of the resilient means, a second member drivably connected to said engine shaft, said first and second members having facing coaxial circular cylindrical surfaces bounding an annular space, a plurality of coupling members disposed in said annular space, said coupling members having a shape other than circular in planes perpendicular to the axis of said clutch, and spring means biasing said coupling members into continuous engagement with said circular cylindrical surfaces, said coupling members wedging between said cylindrical surfaces in said one direction of rotation of said other end of said resilient means and sliding freely over said cylindrical surfaces in the opposite direction of rotation of said other end.

3,288,127
BASEBALL PITCHING MACHINE WITH BALL CURVING DEVICE
John C. Bullock, 20054 Anita Ave., Castro Valley, Calif.
Filed Sept. 30, 1964, Ser. No. 400,318
6 Claims. (Cl. 124—11)



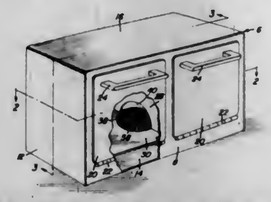
1. A pitching machine comprising a pneumatic gun including a barrel from which a ball may be propelled, means mounting said gun in an elevated position for selective movement about a vertical axis and a horizontal axis transverse to said barrel, a ring mounted upon the end of said barrel for selective concentric rotation relative thereto, a second ring coaxially spaced from said first ring away from said barrel, a plurality of longitudinally elongated low coefficient of friction rods secured between said rings at circumferentially spaced positions thereof, a high coefficient of friction strip member mounted longitudinally between said rings and having an arcuate cross section means mounting said strip member for movement radially of said rings, means spring loading said strip member in a direction radially outward of said rings, and adjustable stop means for variably limiting radial outward movement of said strip member.

3,288,128
SETTING DEVICE FOR A RING-SHAPED SAW BLADE
Henri Fehlmann, Courtelary, Bern, Switzerland
Filed Sept. 22, 1964, Ser. No. 398,361
Claims priority, application Switzerland, Sept. 24, 1963, 11,798/63
7 Claims. (Cl. 125—15)



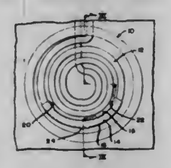
1. A setting device for a thin ring-shaped saw blade having an internal cutting edge and subject to rotation, including means preventing deformation of said saw blade during said rotation, said device comprising a bell-shaped holder including a bottom portion and rim means attached to the outer periphery of and supporting said blade, said rim means including a rim member having an open end portion and supported by said bottom portion, said means preventing deformation including means dividing said open end portion into at least three separate equal sections symmetrically disposed relative to the axis of said rotation including slits in said open end portion parallel to said axis, said rotation expanding said sections to prevent said deformation.

3,288,129
FOOD WARMER
John J. Fox, Box 591, Elizabeth St., Warrenville, Ill.
Filed Dec. 4, 1964, Ser. No. 415,962
8 Claims. (Cl. 126—19.5)



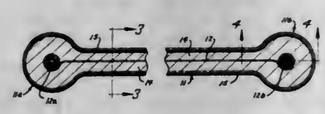
8. A food warmer comprising an elongated cabinet including a top, a bottom, and front, back and end walls, a horizontal partition in the cabinet spaced from the bottom and the end walls thereof, a vertical partition extending between said horizontal partition and the top, upstanding baffles on the end portions of the horizontal partition spaced from the top and the end walls, said partitions and baffles defining food compartments and air circulating passages in the cabinet, said horizontal partition having an opening therein communicating the compartments with the passages for receiving air therefrom, and means in the cabinet for circulating warm air through the passages, the opening and the compartments.

3,288,130
DEVICE FOR LEVELING PANS
Mary M. Pollock, 132 Beisner Ave., Pittsburgh, Pa.
Filed Nov. 23, 1964, Ser. No. 412,925
7 Claims. (Cl. 126—215)



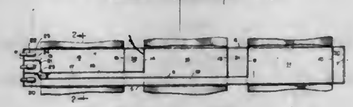
1. In combination with a stove grate a device for leveling pans comprising a planar circular segment strip of material having two ends, each end having a lug extending downward for gripping the stove grate when resting on the stove.

3,288,131
SURGICAL RETRACTOR
Edgar A. Garland, 719 Plaza Drive, Evansville, Ind.
Filed Jan. 10, 1964, Ser. No. 336,990
1 Claim. (Cl. 128—20)



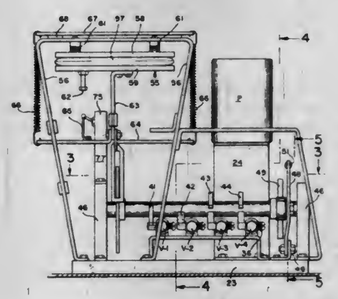
A disposable surgical retractor for a body cavity having retractable tissue comprising an elongated body member of an absorbent material having raised enlargements at opposite ends thereof, and a flat stiffening member disposed within said elongated body member coiled upon itself at each end thereof in the areas of said raised enlargements of said elongated body member, whereby when said retractable tissue bears against said surgical retractor, said raised enlargements thereon engage the inside walls of said body cavity.

3,288,132
BLADDER STRUCTURES USEFUL IN THERAPEUTIC TREATMENT
Paul A. Meredith, Oak Park, Ill., assignor, by direct and mesne assignments, of seven and one-half percent to Myron L. Anthony, La Grange, Ill., seven and one-half percent to George S. Hoban, Chicago, Ill., and twelve and one-half percent each to George W. Butler and Gladys A. Butler, both of River Forest, Ill.
Filed Nov. 1, 1963, Ser. No. 320,774
5 Claims. (Cl. 128—24)



1. A bladder structure comprising superposed, elongated, flexible films joined together by substantially air tight seams defining a plurality of inflatable bladder cavities between said films and spaced longitudinally in said bladder structure, and also defining a plurality of narrow, elongated air passages extending longitudinally from an end of said bladder structure to and each communicating with a different one of said bladder cavities spaced longitudinally from said end.

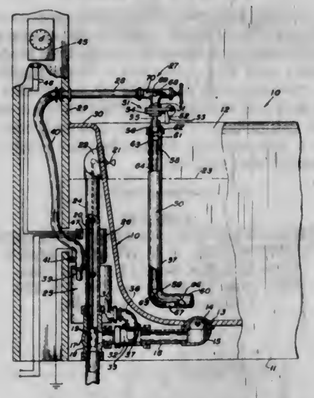
3,288,133
ALTERNATELY INFLATABLE SUPPORTING SYSTEM FOR THE HUMAN BODY
Hugh B. Little, Box 311, Logan, Ohio
Filed Mar. 31, 1964, Ser. No. 356,104
8 Claims. (Cl. 128—24)



1. A circulatory-aid human body supporting system comprising a cushion having at least two groups of inflatable and deflatable cells with the cells of each group being in sufficient number and arranged so that they are distributed throughout the overall area of the cushion and with the cells of the different groups alternating with each other, a pneumatic pressure unit for supplying pressure to the various cells, and control means connected between said unit and said groups of cells for supplying pressure to one group of cells to fully inflate those cells and then to exhuast pressure from the other group of cells to deflate those cells to provide for support of the body successively by the different groups of cells, said cells of the cushion being elongated and extending in the general direction of the body adapted to be positioned thereon so as to aid in circulation of blood in the body, the cells of each group being spaced laterally and the cells of the one group alternating laterally with the cells of the other group, said control means comprising a plurality of flow control valves, cam means for operating said valves, and means for actuating said cam means at predetermined intervals, said cam means comprising a cam shaft having a plurality of cams axially spaced

therealong for cooperating with a corresponding number of valves, said actuating means comprising means for rotating said shaft at predetermined intervals and including a reciprocable actuator having fingers, projections on said shaft in cooperative relationship with said fingers and adapted to be engaged by said fingers to rotate it, a bellows connected to said actuator for controlling reciprocation thereof, and means for compressing and expanding the bellows to reciprocate the actuator.

3,288,134
HYDROTHERAPY INSTALLATION FOR CONVENTIONAL BATHTUB
Gilbert H. Reich, 1082 E. Linden, Richmond Heights, Mo.
Filed Aug. 7, 1963, Ser. No. 300,454
2 Claims. (Cl. 128—66)



1. For adapting to therapeutic use a bathtub installation of the type having a drain end and a side apron concealing an external drain shoe and drain shoe line which communicates between the tub and a vertical stoppered drain-control T,

apparatus comprising

a flow by-pass T in the drain shoe line,

a first water hose line connected to the T,

an electric-motor powered recirculating pump external of the tub concealed in part by such apron

and having a pump inlet side to which said first water host is connected,

the pump further having an outlet side,

a second water hose line connected to said outlet side of the pump,

motor control means to operate the pump,

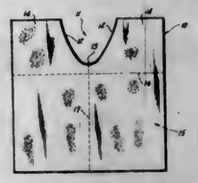
a flow control valve fixedly mounted above the tub water level inwardly of its upper edge on the outflow side of the second hose line, which valve including means to prevent its complete closure,

the valve having a downwardly directed outlet,

and a nozzle aerator assembly mounted on the valve.

3,288,135
DRAPE
Louis Pereny, deceased, late of Dayton, Ohio, by Evelyn Pereny, executrix, Dayton, Ohio, and Paul Creager, Jr., and Thomas N. Zinck, Dayton, Ohio, assignors to Protective Treatments, Inc., Dayton, Ohio, a corporation of Ohio
Filed Nov. 22, 1963, Ser. No. 325,733
9 Claims. (Cl. 128—132)

1. A bifurcated obstetrical drape comprising a sheet of flexible plastic material having its upper end configurated to define a central arcuate cut-out portion separating a pair of upwardly extending upper end portions, the said cut-out portion being defined by a curved bottom smoothly joined with outwardly flaring sides defining the inner edges of said upper end portions, said upper end portions being adapted for adhesive securement to the thighs of a patient



adjacent the buttocks with the arcuate bottom of said cut-out portion being adapted to be adhesively secured across the space between the vaginal area and the anal area of the patient, and one surface of said drape being temporarily secured to a stiff sheet.

3,288,136
TUBE LOCK
Douglas W. Lund, P.O. Box 1167, Florence, Ala.
Filed Jan. 7, 1964, Ser. No. 336,176
3 Claims. (Cl. 128—133)

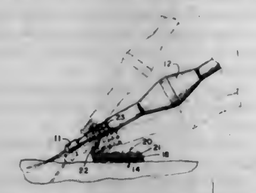


1. A mounting and locking device for use with a tubular structure comprising first and second members, said first member including pad means having cloth-like material on at least one surface and an adhesive coating on another surface of said pad means, said second member including a flexible sleeve adapted to be slidably mounted on said tubular structure, a relatively soft resilient deformable sleeve disposed about said flexible sleeve, said deformable sleeve being of foraminous construction of an easily deformed material which will retain the deformed shape, and a housing having hook-forming pile threads attached to said deformable sleeve, whereby said second member can be positioned on said tubular structure and pressure exerted thereon to cause the flexible sleeve and the deformable sleeve to be deformed and clampingly engage the tubular structure and thereafter when the first and second members are joined, the hook-forming pile threads of the second member will releasably engage the cloth-like material of the first member to prevent lengthwise movement of the tubular structure.

3,288,137
ANCHORING DEVICE
Douglas W. Lund, P.O. Box 1167, Florence, Ala.
Filed Jan. 7, 1964, Ser. No. 336,178
3 Claims. (Cl. 128—133)

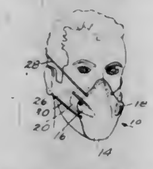
1. An anchoring assembly for maintaining an infusion needle in fixed position relative to a surface comprising a first member including a pad means having cloth-like material on at least one surface, adhesive means on another surface of said pad means for attaching said first member to said surface, a second member removably mounted on said first member, said second member including a deformable body, a reduced hinge-forming portion connected to said body and adapted to be bent at an angle thereto, a clamping portion carried by said hinge-forming portion, said body, hinge-forming portion and clamping portion being of foraminous construction of easily deformed material capable of retaining the deformed shape,

said second member further including a portion of material having hook-forming pile threads, and said portion of material being fixed to said body, whereby the first member can be attached to a surface, the clamping portion of



said second member can be deformed to clampingly engage said needle, and said body can be removably mounted on said first member by said hook-forming pile threads engaging the cloth-like material of said first member.

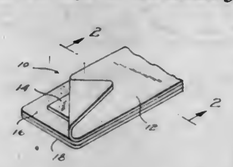
3,288,138
SURGICAL MASK
Louis Sachs, 11 Slade Ave., Baltimore, Md.
Filed Oct. 14, 1965, Ser. No. 505,098
5 Claims. (Cl. 128—139)



1. A surgical mask comprising: a unitary cup-shaped mask of impermeable molded construction having a central portion of a size and shape to cover the mouth and nostrils of a person wearing the same, and sufficiently flexible to conform with its edge region generally to the outline of the person's face about the nose; said mask having integral molded channel portions defining the exterior walls of air passages extending from the central portion of said mask rearwardly along each side of said mask, said air passages flaring outwardly toward the rear so as to open substantially adjacent the cheek of the person wearing said mask and in a direction facing posteriorly of the head of the person wearing said mask; substantially flat plate-like means defining the interior walls of said air passages, said plate-like means extending rearwardly beyond the edge of said mask and lying adjacent the cheek of the person wearing said mask so as to prevent the cheeks of said persons from obstructing said air passages, the size of said central portion being such that the volume enclosed between the face of the person wearing the mask and said central portion is substantially equal to the combined volume of said air passages; and strap means joined to said mask for supporting the latter about the person's head, whereby exhaled air is exhausted from said cup-shaped mask through said air passages in a direction posteriorly of the head of the person wearing said mask and a substantially complete exchange of air within said mask occurs with each inhalation and exhalation.

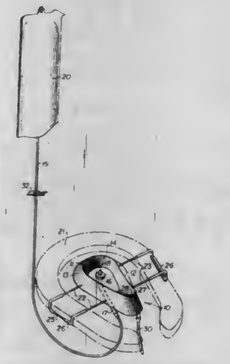
3,288,139
BANDAGES
Stanley E. Goodman, 160 East Ave., Westport, Conn.
Filed Sept. 23, 1964, Ser. No. 398,581
9 Claims. (Cl. 128—156)

1. A bandage comprising a backing layer which is stretchable in at least one direction and which has an outer peripheral edge of a predetermined configuration, a layer of clot-releasing material carried by said backing layer and adhering to one face thereof, said layer of clot-releasing material having an outer peripheral edge of the same general configuration as said edge of said backing layer and said edge of said backing layer being situated beyond said edge of said clot-releasing material to define with the latter a marginal portion of said backing layer extending beyond said layer of clot-releasing material, a



layer of adhesive carried by said marginal portion of said backing layer at the same face thereof as that which carries said layer of clot-releasing material, and a covering layer covering said layer of clot-releasing material and releasably adhering to said layer of adhesive, so that when said covering layer is removed said clot-releasing material can be placed over a wound with said adhesive surrounding the wound and attaching the backing layer removably to the skin.

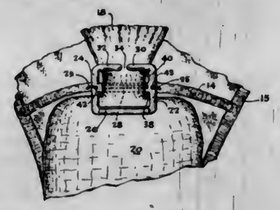
3,288,140
MEANS FOR TREATING SURFACE WOUNDS
John J. McCarthy, 2097 Riverside Drive, Lakewood, Ohio
Filed Oct. 4, 1963, Ser. No. 314,009
1 Claim. (Cl. 128—248)



A device for treating a wound comprising a cup for enclosing said wound and areas immediately adjacent to said wound to define a substantially closed chamber, said cup having a relatively rigid bottom wall and a side wall, the upper edge of said side wall defining a rim for effecting a fluid-tight seal with said adjacent areas, said cup having a narrowed peak portion, a treating agent bath in said chamber, an inlet tube extending through the bottom wall of said cup opposite said wound, means for mounting said inlet tube and permitting angular movement of said inlet tube relative to said relatively rigid bottom wall but preventing any substantial degree of axial movement of said tube relative to said relatively rigid bottom wall, a bag for holding a supply of treating agent, a conduit connecting said bag to said inlet tube, said inlet tube having a nozzle opening at its end for directing a stream of treating agent into said chamber, through said bath, and toward said wound to thereby irrigate and cleanse the wound, a discharge opening in

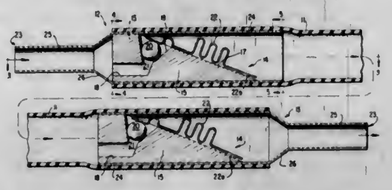
said peak portion of the cup above the wound and the nozzle opening, and resilient straps fixed to said cup and having end portions for connecting said cup to a toilet seat.

3,288,141
CATAMENIAL SUPPORT GARMENT
Robert V. Mathison, Asheville, N.C., and John C. Bletzinger and Charlotte I. Rickard, Neenah, Wis.; said Bletzinger and said Rickard assignors to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed Sept. 27, 1963, Ser. No. 312,229
20 Claims. (Cl. 128—288)



1. A device for supporting sanitary napkins comprising a panty and sanitary napkin attachment means in combination therewith, said panty having the usual waistband, leg openings, and crotch area defined by front and back seams extending transversely of the garment, said attachment means comprising a fastener of flat, generally oblong configuration having a pair of side bars, a bottom bar, a top bar and an intermediate bar, said intermediate bar having on its face at least one row of spaced pointed protuberances extending obliquely upward, said fastener being pivotably secured at points adjacent the ends of said intermediate bar to the inside front portion of said panty intermediate the leg openings at the forward edge of the crotch area of said panty with the protuberances facing inward.

3,288,142
HYDROCEPHALUS SHUNT WITH SPRING BIASED ONE-WAY VALVES
Salomon Hakim, Hospital Militar Surgical Dept., Bogota, Colombia
Filed Apr. 27, 1964, Ser. No. 363,110
10 Claims. (Cl. 128—350)



1. A hydrocephalus shunt device for controlling the drainage of cerebrospinal fluid in a conduit connecting between a source of cerebrospinal fluid and the circulatory system, said device comprising

a plurality of check valves in which each said valve comprises,

a rigid body having an inlet and an outlet end,

an internal passage in said body connecting said inlet and outlet ends and including a section which is divergent along its length in the direction of said body outlet,

a spherical ball of a diameter to sealingly fit within said divergent section at a valve seat and block said passage, and

spring means resiliently pressing said ball into sealing contact with said seat at a positive preestablished pressure;

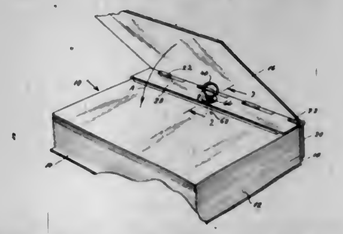
conduit means connecting said valves in series with the outlet end of one valve body connected to the said inlet end of the next one in said series;

means for connecting the inlet end of the first valve in said series to the conduit leading to the source of cerebrospinal fluid; and

means for connecting the outlet end of the last valve in said series to the conduit leading to the circulatory system,

said body, said ball and said spring means being of substantially inert, non-toxic material of which the physical properties are essentially unaffected by surgical sterilization temperatures.

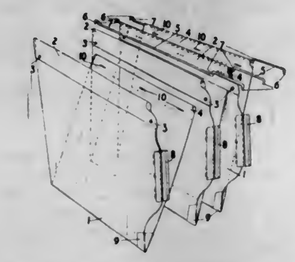
3,288,143
LOOSE LEAF BOOK LOCK
Max W. Federbush and Alexander P. Federbush, both of 35 E. 75th St., New York, N.Y.
Filed Apr. 22, 1964, Ser. No. 361,733
1 Claim. (Cl. 129—13)



A loose leaf book construction comprising book cover parts having overlapping rear flanges, one of said parts having upstanding pins adapted to enter respectively holes in the supported loose leaves, an elongated rectangular plate hinged to the inner surface of the other of said cover parts, said plate having a hole midway the length thereof, a sleeve fastener assembly carried by the plate and adapted to extend through the hole therein, and over one of the upstanding pins on said one cover part, said sleeve assembly comprising a sleeve having an internal tapered opening and a top flange adapted for engagement with the underside of the cover part plate, a slightly tapered plug extending through said plate hinged to the other cover part and having a flange overlying the upper side of the other cover part plate and an axial opening extending therethrough, said plug tightly fitted in the flanged end of the sleeve and the flanges of the sleeve and plug cooperating with the other cover part plate to fix the sleeve fastener assembly to the other cover part plate, an operating member in said sleeve and slidable through said plug axial opening, said operating member having a hollow sleeve portion adapted to receive one of the pins of the one cover part and having a shoulder portion, said sleeve portion having a plurality of circumferentially spaced openings in the lower end thereof, gripping balls lying respectively in the circumferentially spaced openings and operable over the tapered internal surface of the sleeve, a spring surrounding the operating member and engaging the slightly tapered plug and the shoulder portion on the operating member whereby to urge normally the operating member outwardly of the sleeve and the gripping balls in tight engagement with the internally tapered surface of the sleeve, a finger pull ring hingedly mounted on the outer end of the operating member and extending on both sides thereof whereby to act against the flange of the slightly tapered plug to serve as a stop to limit the outward movement of the operating member

and to confine the gripping balls within the end of the sleeve, the plane of the body of the pull ring normally in a plane parallel to the long edges of the plate hinged to the inner surface of said other cover part, and means for preventing displacement of said ring out of said normal plane whereby said ring offers no resistance to the closing movement of said other cover part, said latter means including opposed flattened surfaces on the ring-attaching end of the operating member, the flange of the plug being deformed to form recesses on its upper surface on opposite sides of its bore, the base of each recess extending downwardly and inwardly forming opposed integral long-faced lug portions on the inner ends of the bases of the recesses in opposed relation with the opposed flattened surfaces on the operating member whereby rotation of the operating member with its ring is prevented.

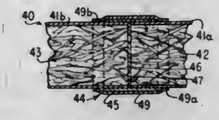
3,288,144
FILING SYSTEMS
David Leonard Hyams, Croydon, England, assignor to Roneo Limited, Croydon, England, a British company
Filed July 20, 1965, Ser. No. 473,393
Claims priority, application Great Britain, July 31, 1964, 30,294/64
3 Claims. (Cl. 129—16.7)



1. In a filing system of the suspended type, a plurality of file pockets adapted to be interconnected in concertina fashion, each pocket being defined by front and rear walls having upper and lower edges and front and rear edges, said front and rear walls being connected along the lower edges thereof, the upper edge of one of said walls being folded over to provide a first loop portion extending throughout the axial extent of said wall, fastening means adjacent each front and rear edge of said folded over upper edge for maintaining said first loop portion with the area between said fastening means being free, the upper upper edge of the other of said walls being folded over to provide a second loop portion having a length less than the distance between said fastening means so that the second loop portion of a similar and adjacent pocket may be inserted through the free area of the first loop portion and positioned co-axially therewith to join the pockets together, and a bar passing through said first and second loop portions for constituting a common support for the upper edges of adjacent pockets.

3,288,145
TOBACCO ARTICLE
Sol Roy Rosenthal, 230 E. Delaware Place, Chicago, Ill.
Filed June 10, 1963, Ser. No. 286,534
23 Claims. (Cl. 131—4)

1. A cigarette comprising a longitudinally extending tubular wrapper, two columns of tobacco in end-to-end position within said wrapper, a lateral fire barrier of metal foil between the adjacent ends of said two columns of tobacco, and a longitudinal fire barrier of metal foil extending from said lateral fire barrier and in thermal contact with said wrapper around the entire periphery thereof, said cigarette being adapted to be smoked from either end with one of said columns of tobacco serving as a filter for the smoke produced by the burning of the other column of tobacco, said lateral fire barrier being porous so as to present substantially no resistance to drawing therethrough during the smoking of said other

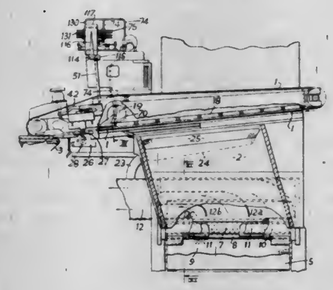


column of tobacco, said longitudinal fire barrier being cylindrical and extending at least about 4 mm. longitudinally of said wrapper and around the entire periphery thereof, said fire barriers cooperating positively to stop burning of said wrapper and said other column of tobacco even during drawing therethrough when said other column of tobacco is substantially consumed.

3,288,146
COMPOSITION FOR INCORPORATING FLAVOR INTO TOBACCO SMOKE
Abraham Bavley, Bon Air, and Ernest W. Robb II and Robert D. Carpenter, Richmond, Va., assignors to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia
No Drawing. Filed July 11, 1963, Ser. No. 294,249
2 Claims. (Cl. 131—10)

1. A tobacco product comprising a tobacco section and a filter section, said filter section including, prior to ignition of said tobacco section, an inclusion complex formed between a host compound and an organic flavoring material, said host compound being selected from the group consisting of cyclodextrin host compounds and tri-o-thymotide host compounds, said tobacco section being substantially free of said inclusion complex, said inclusion complex being adapted to release said organic flavoring material upon contact with tobacco smoke resulting from the burning of said tobacco section.

3,288,147
TOBACCO-MANIPULATING MACHINES
Desmond Walter Molins, Gordon Francis Wellington Powell, and Frederick Pocock, all of Deptford, London, England, assignors to Molins Machine Company Limited, London, England, a British company
Continuation of application Ser. No. 32,959, May 31, 1960. This application May 1, 1964, Ser. No. 373,595
Claims priority, application Great Britain, June 3, 1959, 19,063/59
4 Claims. (Cl. 131—21)



1. In a continuous rod cigarette-making machine having means for forming an elongated continuous filler stream containing tobacco in excess of that required in the

cigarette rod and having at least some variations in density and in mass per unit length therealong, conveyor means for conveying the filler stream lengthwise toward cigarette rod-forming devices, a trimmer located along said filler stream to remove excess tobacco therefrom, means for adjustably supporting said trimmer for movement toward and away from said conveyor to vary the cross-sectional area of the stream to compensate for variations in the density of the stream before trimming, means upstream of said trimmer for passing air generally transversely through said stream, and pneumatic detection means responsive to the air passing through said stream to detect variations, both long-term and short-term, in the air permeability of the tobacco in said stream and to produce a composite signal varying therewith, said air permeability variations having a correlation with and providing an indication of the density variations in said untrimmed stream, the improvement of a control system for said trimmer supporting means, said system comprising a first control means for receiving said composite signal from said detection means and for producing an output indication responsive to the composite signal, additional means for receiving the composite signal and for smoothing the same to minimize the short-term variations and leave longer-term variations therein, a second control means for receiving the smoothed signal and producing an output indication responsive to the smoothed signal, and coupling means for receiving said output indications from both said control means, combining said output indications and transmitting the same to said trimmer supporting means to impart to said trimmer a displacement varying with the combined output indications of both said control means.

3,288,148
METHOD OF PRODUCING TOBACCO FOILS

Ernst-Rolf Detert, Lubbecke, and Willi Buchholz, Obermehnen, near Lubbecke, Germany, assignors to Eduard Gerlach G.m.b.H., Westphalia, Germany

No Drawing. Filed June 1, 1964, Ser. No. 371,742
Claims priority, application Germany, June 14, 1963, G 37,958
1 Claim. (Cl. 131—140)

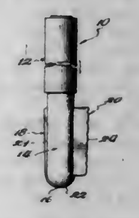
A method of producing tobacco foils comprising the steps of mixing finely pulverized tobacco with a viscous solution of cellulose derivatives in a solvent of a group consisting of water, organic solvents, and mixtures thereof so as to form a paste, mixing at least one whitener of the group consisting of calcium carbonate, magnesium carbonate, aluminum hydroxide, talc, and titanium dioxide with at least one vegetable pigment of the group consisting of flavones and anthocyanins so as to form a colored lacquer, adding said lacquer to said paste, then shaping the mixture into foils, and drying said foils.

3,288,149
SMOKING PIPE REAMER

Edward H. Terrell, Jr., 1442 N. Sedgwick, Chicago, Ill., and Lutrelle P. Wassmann, Wilmette, Ill.; said Wassmann assignor to said Terrell

Filed Mar. 23, 1964, Ser. No. 354,059
3 Claims. (Cl. 131—246)

1. A smoking pipe reamer comprising, a generally cylindrical body having an elongate handle at one end and a shank at the opposite end, said shank having a rounded end, an internal socket on one side of the shank, a fixed scraper blade on said shank having a first portion on the side of said shank opposite said socket, said scraper blade portion tapering toward said rounded end of the shank, said scraper blade having an arcuate portion tangent to and joining the tapered end of the first portion and extending across said rounded end, the arcuate portion being bisected by the axis of said shank, a raking blade member slidably mounted in said socket and spring biased to a normal position protruding from said socket, the protruding face of said raking blade being serrated and tapered in a direction toward said arcuate portion of the scraper blade and terminating immediately adjacent there-



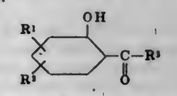
to, said scraper blade and raking blade lying in a common plane parallel to the axis of said shank, thereby presenting a scraping and raking member which is substantially continuous and provides substantially continuous contact with the internal wall of a tobacco pipe bowl.

3,288,150
PROCESS FOR THE PURIFICATION OF TOBACCO SMOKE

Oliver W. Burke, Jr., 506 Intracoastal Drive, Fort Lauderdale, Fla., and Eldon E. Stahly, Pompano Beach, Fla.; said Stahly assignor to said Burke

No Drawing. Original application Aug. 13, 1963, Ser. No. 301,879. Divided and this application Aug. 7, 1964, Ser. No. 398,463
1 Claim. (Cl. 131—261)

A process for the purification of tobacco smoke from a smoking article by the removal of volatile metal compounds therefrom, which comprises passing said smoke through a filter into the mouth of the user down stream therefrom, said filter comprising a ligand compound having the formula:



in which R^1, R^2 and R^3 are radicals selected from the group consisting of hydrogen, C_1 to C_{12} hydrocarbon radicals, =CO, —CHO, —COOH, —OH, —OR, —NO_2, —NH—CO—R, —SO_2NH_2, —SO_2NHR, —SO_2NRR, —SO_2R, SO_3H, —$CONH_2$, —CONHR, —CONRR, —NH_2, —NHR, —NRR, and halogen radicals; and R is a C_1 to C_{12} hydrocarbon radical; said ligand compound being other than a mordant dye.

3,288,151
PROCESS FOR THE PURIFICATION OF TOBACCO SMOKE

Oliver W. Burke, Jr., 506 Intracoastal Drive, Fort Lauderdale, Fla., and Eldon E. Stahly, Pompano Beach, Fla.; said Stahly assignor to said Burke

No Drawing. Original application Aug. 13, 1963, Ser. No. 301,879. Divided and this application Aug. 7, 1964, Ser. No. 398,465
1 Claim. (Cl. 131—262)

A process for the purification of tobacco smoke from a smoking article by the removal of volatile metal compounds therefrom, which comprises passing said smoke through a filter into the mouth of the user downstream therefrom, said filter comprising a ligand compound which is an orthohydroxy aromatic amide other than a mordant dye, and in which the amide group has the formula —$CONR^1R^2$ wherein R^1 and R^2 are radicals selected from the group consisting of hydrogen and the C_1 to C_{18} hydrocarbon radicals.

3,288,152
PROCESS FOR THE PURIFICATION OF TOBACCO SMOKE

Oliver W. Burke, Jr., 506 Intracoastal Ave., Fort Lauderdale, Fla., and Eldon E. Stahly, Pompano Beach, Fla.; said Stahly assignor to said Burke

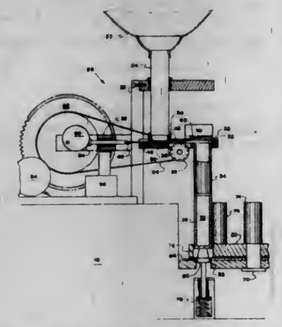
No Drawing. Filed Aug. 13, 1963, Ser. No. 301,879
1 Claim. (Cl. 131—267)

A process for the purification of tobacco smoke from a smoking article by the removal of volatile metal compounds therefrom which comprises passing said smoke through a filter into the mouth of the user down stream therefrom, said filter comprising, in essentially unmordanted form, a relatively non-toxic ligand compound selected from the class of mordant dyes, said unmordanted mordant dye being an aromatic compound containing transition metal chelating groups selected from the groups consisting of o-hydroxy-carbonyl, o-hydroxy-carboxyl, o-hydroxy-amide, o-hydroxy-azomethine, o-hydroxy-lactone, and o-hydroxy-hydroxy ligand groups.

3,288,153
COIN COUNTING AND WRAPPING MACHINE

Darrell L. Ballard, Flint, and Harold Stratton, Genesee County, Mich., assignors of thirty-three and one-third percent to Zetta Waara, Flint, Mich.

Filed July 12, 1965, Ser. No. 471,175
1 Claim. (Cl. 133—8)



Means for counting out and packaging in wrappers a selected number of coins comprising,

a vertical tube for holding a plurality of coins in stacked arrangement,

a horizontal table spaced below said tube a distance greater than the thickness of one such coin and less than the thickness of two such coins,

a shuttle adapted for reciprocal forward and rearward motion upon said table and disposed during its rearward motion to be withdrawn beyond the rear edge of said tube to permit the lowermost of said stacked coins to fall from said tube upon said table, and during its forward motion to contact and to push such coin forwardly upon said table,

an electrical switch arranged to be actuated by contact with said coin and to register such contact upon a counter,

a friction wheel arranged to contact and force said coin past said switch,

a vertically arranged coin guide extending through an aperture in said table forwardly of said switch and friction wheel and disposed to receive and guide said coin downwardly through said table,

means for imparting reciprocating forward and rearward motion to said shuttle and rotary motion to said friction wheel,

a horizontal platform arranged below said coin guide and adapted for rotation about a vertical axis offset from said coin guide,

index means for releasably retaining said platform in successive stations of rotation,

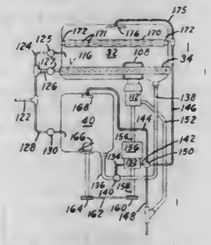
a plurality of upstanding tubes, each adapted to support an opened coin wrapper therein, respectively supported upon said platform at regular arcuate intervals and equidistant from said axis of rotation of said platform, and respectively arranged to be in registration with and below said coin guide to dispose such wrapper to receive coins falling from said coin guide, when said index table is at a station of rotation,

and means for electrically de-energizing said shuttle to halt forward motion thereof, and for rotating said platform from each station of rotation to the next successive station of rotation, when said counter has registered contact with a pre-selected number of coins.

3,288,154
PLURAL COMPARTMENT DISHWASHER WITH UNITARY PUMP

James W. Jacobs, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Nov. 2, 1964, Ser. No. 408,232
5 Claims. (Cl. 134—58)



1. A dishwashing apparatus comprising, a first washing compartment and a second washing compartment each having sump regions, a unitary pump for draining fluid from and supplying fluid to said first and second washing compartments, said pump having an inlet and an outlet, a sump region in each of said washing compartments for draining washing fluid therefrom, fluid distributing means in each of said washing compartments, first fluid directing means for connecting each of said sump regions to the inlet of said unitary pump, second fluid directing means for directing fluid from said pump outlet to said fluid distributing means during a washing cycle of operation, motor means for driving said pump, and control means for conditioning said motor means and said first and second fluid directing means to effect predetermined cycles of operation in said compartments including either individual cleaning cycles in one or the other of the compartments or a sequence of cleaning cycles in said compartments.

3,288,155
SILVERWARE WASHING SYSTEM

Norman T. Swetnam, Louisville, Ky., assignor to General Electric Company, a corporation of New York

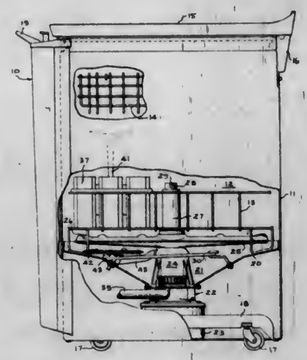
Filed Sept. 28, 1964, Ser. No. 399,430
3 Claims. (Cl. 134—176)

3. A silverware washing system for use in a dishwasher having a wash camber comprising:

(a) means to support silverware within the wash chamber,

(b) a main spray device mounted for movement within the wash chamber and adapted to substantially evenly distribute wash fluid throughout the entire wash chamber including the area consumed by said silverware supporting means, and

(c) a secondary spray device in closed proximity to said silverware supporting means and adapted to direct the wash fluid substantially exclusively toward the silverware supported by said silverware supporting means,



(d) said main spray device and said secondary spray device both operating simultaneously,

(e) said secondary spray device being positioned on the same side of said silverware supporting means as said main spray device and spaced from said silverware supporting means whereby said main spray device is free to pass between said silverware supporting means and said secondary spray device to assist in creating a wash action within said silverware supporting means.

3,288,156
DISHWASHER WITH UPWARDLY EXTENSIBLE DISTRIBUTOR
Hans Jordan, Los Angeles, and Julian F. Macias, La Mirada, Calif., assignors to Waste King Corporation, Los Angeles, Calif., a corporation of California
Filed Nov. 19, 1964, Ser. No. 412,454
4 Claims. (Cl. 134—176)

1. In a front loading dishwasher, the combination of:

(a) a tub provided with a front wall having a doorway therein and provided with a bottom wall;

(b) vertically spaced upper and lower dish racks in said tub and mounted for movement into and out of said tub through said doorway;

(c) said lower dish rack being spaced upwardly from said bottom wall of said tub;

(d) a vertical tubular manifold centrally located in said tub below said lower dish rack and carried by said bottom wall of said tub;

(e) a pump having an outlet communicating with the lower end of said manifold to deliver water thereto;

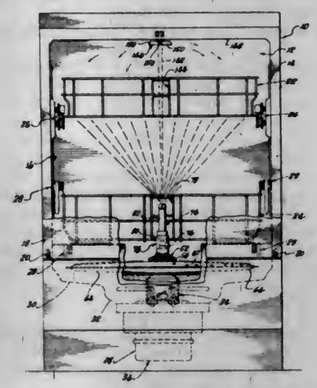
(f) said manifold having radial outlets intermediate its upper and lower ends and having an axial outlet at its upper end;

(g) a reaction-type lower water distributor rotatably mounted on said manifold intermediate its upper and lower ends and below said lower dish rack and communicating with said radial outlets in said manifold;

(h) a vertically extensible and contractible, telescoping, upper water distributor mounted on said manifold in communication with said axial outlet therein and extensible upwardly by water under pressure delivered thereto by said pump;

(i) said lower dish rack having a central opening to receive said upper water distributor when it is in its extended condition;

(j) said upper water distributor having sections which telescope downwardly into said manifold when said upper water distributor is in its contracted condition; and



(k) the upper end of said upper water distributor being below said lower dish rack when it is in its contracted condition and being above the bottom of said lower dish rack when it is in its extended condition.

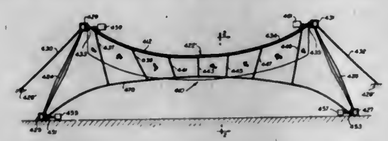
3,288,157
DRESSING SHELTER
Helene Szkolny, 73 Marlboro St., Belmont, Mass.
Filed Mar. 31, 1964, Ser. No. 356,109
7 Claims. (Cl. 135—5)



1. A dressing shelter comprising a hat having a stiffened rim, said rim extending outwardly from the shoulders of the wearer, a cylindrical robe of flexible material and of approximately the same diameter when fully extended as said rim, an upper end of said robe being formed with a peripheral casing having an opening, and means for securing said robe about a wearer including at least one drawstring enclosed in said casing and extending through said opening for contracting said casing and said upper end of said robe inwardly over said rim toward the center of said hat, to provide a dressing shelter about the wearer.

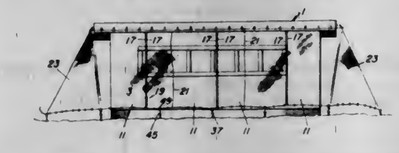
3,288,158
MOVABLE ROOF STRUCTURE
Paul Guglotta, 28 South St., New York, N.Y.
Original application May 31, 1963, Ser. No. 284,633, now Patent No. 3,211,163, dated Oct. 12, 1965. Divided and this application Dec. 28, 1964, Ser. No. 421,537
3 Claims. (Cl. 135—5)

1. A movable roof structure comprising a pair of upper longitudinally extending spaced apart guide means and a pair of lower longitudinally extending spaced apart guide means, a plurality of cable modules extending transversely of said guide means, each of said cable modules including an upper downwardly curving cable having its ends movably mounted on said upper pair of guide means, a lower upwardly curving cable having its ends movably



secured to said lower pair of guide means, a plurality of hangers secured to and depending from said upper cable and secured to said lower cable for supporting same, a flaccid roof secured to said upper cables, and means for moving said cable assemblies toward and away from one end of said structure for opening and closing said roof.

3,288,159
PROTECTIVE NET
Warren G. Corliss, Rte. 1, Box 522, Stuart, Fla.
Filed Jan. 18, 1965, Ser. No. 426,117
2 Claims. (Cl. 135—8)



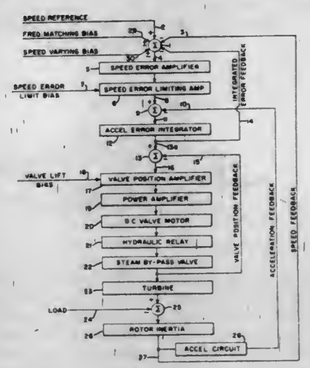
1. A building structure and a protective net therefor, including, in combination, at least one panel of reticulated structure forming said protective net and having reinforcing means connected to the reticulated structure at the top, bottom and edges thereof, and said building structure having a top portion and said top reenforcing means being releasably connected thereto, means secured to the ground in position outwardly disposed with respect to said top portion of the building structure, said means which are secured to the ground comprising a cable and spaced apart anchoring means disposed in the ground, and said cable being attached to said anchoring means for axial movement with respect thereto, and said bottom reenforcing means being releasably connected to said means which are secured to the ground.

3,288,160
ACCELERATION LIMITING LONG RANGE SPEED CONTROL
Markus A. Eggenberger and Paul H. Troutman, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed Apr. 1, 1964, Ser. No. 356,446
6 Claims. (Cl. 137—27)

1. In a control system for a prime mover of the type having valve means for controlling the admission of motive fluid to the prime mover, the combination of:

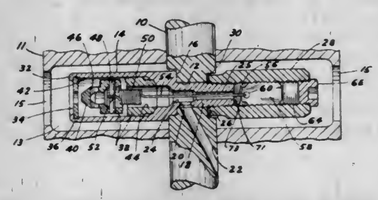
first means providing a first electrical speed error signal representative of the difference between desired speed and actual speed of the prime mover, including circuit means limiting said speed error signal to a maximum selectable value,

second means comparing said first signal with an electrical acceleration-responsive signal to provide a second error signal representative of the difference between desired acceleration and actual acceleration when the first signal is limited and representative of the speed error when the first signal is not limited, and



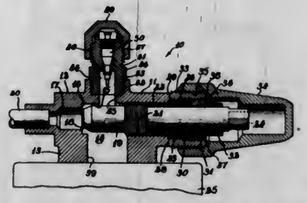
motor means connected to position said valve so as to directly control prime mover acceleration and speed in response to said second signal.

3,288,161
GOVERNOR CONTROL VALVE WITH ADJUSTABLE SELF-LOCKING DEVICE
Jerome J. Frankowski and Chester S. Garski, Detroit, Mich., assignors to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed June 27, 1963, Ser. No. 291,102
6 Claims. (Cl. 137—56)



2. In a vacuum type governor, the combination of a housing formed with a closed-end cylindrical chamber having oppositely disposed access openings in the circumferential wall thereof, a drive shaft mounted in said housing so as to extend axially through said chamber, the portion of said shaft disposed in said chamber being formed with oppositely disposed flats and a transverse passage through and normal to said flats, and a centrifugal governor control valve assembly mounted on said shaft through said transverse passage for rotation with said shaft, said assembly comprising a first cylinder-guided type governor portion having a shoulder engaging one of said flats and an externally threaded portion extending through said transverse passage and a second internally threaded portion cooperating with said external threads to draw said two portions against said shaft, a valve weight slidably mounted within said first governor portion, said valve weight being connected at its inner end to a spring extending through said first portion and into the threaded passage in said second portion, and an adjustable self-locking anchor for said spring cooperating with said internal threads in said second portion, whereby said governor valve assembly may be assembled on said shaft through said access openings after said shaft has been mounted in said housing.

3,288,162
CHARGING AND SAMPLING VALVE IN A CLOSED FLUID SYSTEM
Charles V. Gary, Elmhurst, Ill., assignor to Henry Valve Company, Melrose Park, Ill., a corporation of Illinois
Filed Feb. 20, 1964, Ser. No. 346,273
3 Claims. (Cl. 137—223)



1. In a closed fluid handling system, a charging and sampling valve adapted to control flow between parts of said system, said charging and sampling valve comprising a body portion, a chamber formed within said body portion, inlet and outlet ports communicating with said chamber, means adjacent each of said inlet and outlet portions to permit mounting of said valve within said fluid handling system, a valve stem being threadably mounted within said body portion, first seat means formed on an end portion of said valve stem, said first seat means adapted to co-operate with a second seat means formed in an end wall portion of said chamber at said outlet portion, said seat means being in the direct path of flow between said inlet and outlet ports and adapted to control flow therebetween, sealing means surrounding a portion of said stem as it emerges from said body portion, a charging fitting on said valve body, a central bore in said charging fitting communicating with said chamber, a charging core within said central bore adapted to control flow therethrough, stem means on said charging core adapted to be engaged by a stem operator means carried on a charging line, said stem operator means being adapted to open said charging core when said charging line is fluid-tightly connected to said charging fitting whereby said chamber is placed in communication with a system externally of said closed fluid system thereby to permit charging and sampling regardless of the position of said valve stem.

3,288,163
WIPER RING FOR A FLUID SYSTEM FLOW INTERRUPTING DEVICE
Milton H. Craven, Houston, Tex., assignor to Grove Valve and Regulator Company, Oakland, Calif., a corporation of California
Filed Sept. 5, 1963, Ser. No. 306,787
7 Claims. (Cl. 137—242)

1. In a flow obstructing device adapted for installation in a fluid transmission line and including a housing, a fluid conduit opening into said housing, and an inner member rotatably mounted in said housing, said inner member being circular in cross section in planes perpendicular to its axis of rotation, the outer surface of said inner member being conditioned to block said fluid conduit opening in one rotational position of said inner member,

the combination therewith of:

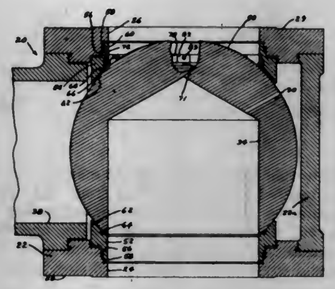
an annular, substantially rigid seat ring slidably carried in said housing around said fluid conduit opening,

a main resilient seal ring carried by said seat ring to seal against a complementary sealing outer surface on said inner member,

a second resilient seal ring carried by said seat ring to seal against said housing,

the diameters of said main and second seal rings being related so as to provide a differential in areas exposed to line pressure producing a force which biases said seat ring into sealing engagement with said inner member,

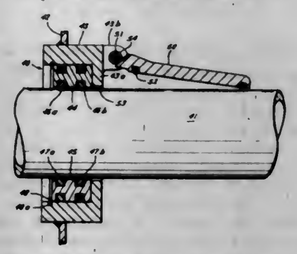
an annular resilient wiper member mounted on said seat ring in wiping engagement with said outer surface of the inner member,



said wiper member being disposed around said fluid conduit opening but within the area circumscribed by said main resilient seal ring, and

a fluid pressure by-pass passageway connecting said fluid conduit and the space between said wiper member and said main seal ring.

3,288,164
BULKHEAD SEAL
Samuel S. Clark, Houston, Tex., assignor to Keystone Valve Corporation, Houston, Tex.
Filed May 1, 1964, Ser. No. 364,156
9 Claims. (Cl. 137—320)



1. A bulkhead seal for providing a seal between a bulkhead and an elongated member extending therethrough, comprising a housing, having an opening therein through which such elongated member may extend through the bulkhead, a plurality of arcuate members adapted to be positioned in the opening in the housing to encircle such elongated member; and seal means located between and in sealing engagement with adjacent arcuate members, between and in sealing engagement with the arcuate members and the housing, and between and in sealing engagement with the arcuate members and the elongated member extending through the bulkhead.

3,288,165
COMBINED GAUGE AND REGULATOR
Bidwell Chapman Cranage, Ferguson, Mo., assignor to Stile-Craft Manufacturers, Inc., St. Louis, Mo., a corporation of Missouri
Filed Feb. 5, 1964, Ser. No. 342,826
8 Claims. (Cl. 137—505.13)

1. A combined gauge and regulator comprising:

(a) a valve body having a chamber,

(b) a flexible element across the chamber, one side of the flexible element being subjected to the pressure in the chamber,

(c) a rod reciprocatively mounted in the body, the rod having one end extending into the chamber, the rod being provided with a discharge orifice in the rod end communicating with the chamber at the one side of the flexible element,

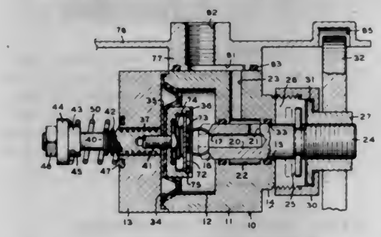
(d) the body including an inlet communicating with the chamber at the same side of the flexible element and an outlet communicating with the discharge orifice through the rod,

(e) a plunger attached to the flexible element and reciprocatively mounted in the valve body,

(f) the plunger being provided with a rack,

(g) an indicating element pivotally mounted on the valve body,

(h) a gear train interconnecting the rack with the indicating element including a pinion meshing with the rack and actuating the indicating element in response to the position of the plunger upon movement of the flexible element in the chamber,



(i) a valve member carried by and movable with the flexible element, the valve member opening and closing the discharge orifice,

(j) a resilient means connected to the plunger and exerting a force on the flexible element in opposition to the pressure in the chamber at the said one side of the flexible element,

(k) the rod including a threaded portion,

(l) a sleeve threadedly connected to the threaded rod portion,

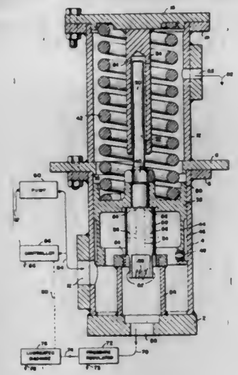
(m) a knob attached to the sleeve for turning the sleeve on the threaded rod portion,

(n) key means interconnecting the rod and body, and

(o) means cooperating with the knob and sleeve to cause reciprocative, rectilinear longitudinal movement of the rod without rotation upon threaded adjustment of the sleeve by the knob, whereby to set the discharge orifice at a predetermined distance from the valve member to determine the chamber pressure at the one side of the flexible motor element at which the motor element causes the valve member to open or close the discharge orifice.

3,288,166
ACCUMULATOR SYSTEM
Vincent S. Wagner, Lower Makefield Township, Bucks County, Pa., assignor to De Laval Turbine Inc., Trenton, N.J., a corporation of New Jersey
Filed Feb. 26, 1964, Ser. No. 347,520
4 Claims. (Cl. 137—509)

1. An accumulator-regulator comprising means including a movable wall providing a variable volume chamber for a liquid, means providing a force acting on said movable wall in a direction to reduce the volume of said chamber, means providing a first passage for inflow of liquid to said chamber, means providing a second passage for flow of liquid out of said chamber, means movable with said wall effective to close off said first passage against flow of liquid outwardly therethrough from said chamber when the volume of the chamber decreases below a predetermined volume greater than the minimum volume of said chamber, and means movable with said wall to restrict variably flow of oil from the chamber through said second passage, the last mentioned means providing less restriction to flow as the volume of the chamber increases and providing more restriction to flow as the volume of said chamber decreases.

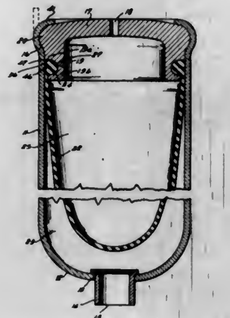


3,288,167
RELIEF VALVE
Willard C. Gibson, Mentor, Ohio, assignor, by mesne assignments, to Textron Inc., Providence, R.I., a corporation of Rhode Island
Filed Feb. 5, 1964, Ser. No. 342,753
5 Claims. (Cl. 137—541)



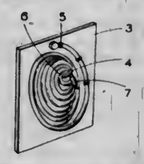
1. A relief valve comprising a body having a fluid passage bore extending axially therethrough, a valve seat at the outer end of said bore, a poppet adapted to make sealing engagement with said valve seat, a stem secured to said poppet and extending axially through said bore beyond the inner end thereof, a first spring abutment on said stem spaced from the inner end of said bore, a compression spring around said stem having one end engageable with said first abutment, and spacer means providing a second spring abutment for the other end of said spring a spaced distance from said body, said spacer means comprising three separate identical members having substantially flat center sections adapted to fit together in edge abutting relationship in longitudinal alignment to form a rigid triangular box around said stem, each of said members extending from said body to a point adjacent the other end of said spring.

3,288,168
PRESSURE VESSEL
Jean Mercier and Jacques H. Mercier, New York, N.Y.; said Jacques H. Mercier assignor to Mercier Olaer Patent Corporation, Wilmington, Del., a corporation of Delaware
Filed Nov. 16, 1964, Ser. No. 411,313
1 Claim. (Cl. 138—30)



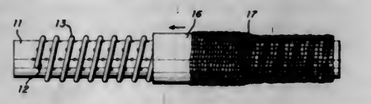
A pressure vessel comprising a rigid hollow container having a mouth at one end and a port at the other end, a cover member positioned in the mouth of the container, said cover member having a port, means to securely retain said cover member in place, said cover member having a cylindrical portion extending into the container and having its outer surface transversely spaced from the wall of said container, said cylindrical portion having an annular groove in its outer surface, a flexible partition of resilient deformable material positioned in said container and intervening between said ports, said partition having an annular bead at its periphery positioned in said annular groove, the diameter of the periphery of said partition being slightly less than that of said cylindrical portion so that said annular bead will be securely retained in said annular groove, said bead having a laterally outward extending annular flange on its outer surface, of length approximately one-half the length of said bead, the lower edge of said flange defining a relatively sharp step with respect to the outer surface of the partition material, the depth of said groove being slightly less than the transverse thickness of said bead at the flange portion thereof, whereby said flange portion will be under greater compression than the remaining portion of said sealing bead, the upper wall of said groove and the adjacent wall of said container defining a junction, said compressed flange being forced into said junction to define a seal.

3,288,169
PNEUMATIC HOSE
Trevor F. Moss, "Tidal Waters," Noss Mayo, South Devon, England
Filed Apr. 26, 1963, Ser. No. 275,966
Claims priority, application Great Britain, May 2, 1962, 16,808/62
3 Claims. (Cl. 138—118)



1. A hose assembly including a hose formed of resilient thermoplastic material comprising at least a part of said hose being self-coiling, said self-coiling part being preformed into a plurality of self-supporting convolutions, in which each succeeding coil is of smaller diameter than the coil that precedes it, said coil taking the form of a flat disc in the retracted state and of a spiral configuration in the extended state, a back plate positioned on one side of the hose, and means on the back plate for supporting the hose in a substantially vertical plane.

3,288,170
REINFORCED CORRUGATED HOSE
Doyle V. Haren, Clyde, N.C., assignor to Dayco Corporation, Dayton, Ohio, a corporation of Ohio
Filed June 24, 1964, Ser. No. 377,558
8 Claims. (Cl. 138—122)



1. A reinforced flexible corrugated hose comprising a helical reinforcement of elastomeric coated wire having axially spaced coils, a tubular knitted stockinet enveloping and bonded to said reinforcement, at least one elastomeric cord spirally wrapped around said stockinet, and a tube of elastomeric material enveloping and bonded to said stockinet.

3,288,171
FLUID CONDUIT AND METHOD FOR MAKING SAME
Robert T. Hucks, Jr., Somerville, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Original application Sept. 29, 1961, Ser. No. 141,849, now Patent No. 3,219,472, dated Nov. 23, 1965. Divided and this application Feb. 10, 1965, Ser. No. 431,635
4 Claims. (Cl. 138—145)

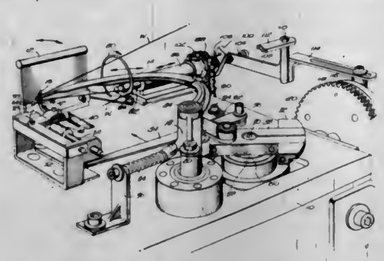


1. A fluid conduit comprising:
(a) a porous fibro-cement pipe having on the interior surface thereof a cast, hardened, smooth, blister-free, and fluid-impervious coating,
(b) said coating penetrating pores of said interior surface to form an integral bond therewith,
(c) said coating comprising a heat-reacted, catalyzed, liquid, thermosetting resin, and
(d) said coating being between about 8 and about 60 mils in thickness.

3,288,172
LOOP CATCHING MECHANISM IN NARROW WEB LOOM
Elmer H. Johnson, Sharon, Mass., assignor to Joh D. Riordan, Hopkinton, and Gertrude C Libby, Stoughton, Mass., trustees of the Libby Family Trusts
Filed Feb. 18, 1965, Ser. No. 433,693
3 Claims. (Cl. 139—118)

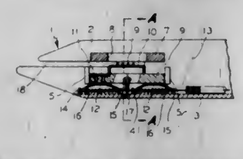
1. In a narrow-web loom having a frame and warp shed-forming means carried thereby, means for projecting successive loops of weft yarn through said shed from one side thereof to the other, said means comprising an arm pivoted at one end to said frame, a weft-laying finger secured to the free end of said arm, said finger having an arcuate shape concentric with said pivot point,

a power-driven crank mounted on said frame, and a link pivotally attached at one end to said arm at an intermediate point thereof and at the other end to said crank,



the effective length of said link being approximately equal to the diamenter of the circular path described by the rotation of said crank.

3,288,173
DEVICE FOR THE CLAMPING AND PULLING OF WEFT YARNS
Ramón Balaguer Golobart, Calle Caspe 86, Barcelona, Spain
Filed Sept. 16, 1964, Ser. No. 396,940
Claims priority, application Spain, Sept. 19, 1963, 291,993
1 Claim. (Cl. 139—122)



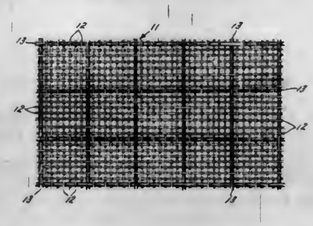
In a shuttleless loom, in combination with weft-inserting means, a weft-gripping device carried by said weft-inserting means and comprising two jaws, at least one of said jaws being movable for engagement with the other jaw, one of the jaws being provided with a window-shaped aperture, the other jaw being provided with a U-shaped spring member adapted to move into said aperture and thereby to grip wefts placed on said spring.

3,288,174
CHECK STRAP ASSEMBLY
Chester R. Messer, Concord, N.H., assignor to Page Belting Company, Concord, N.H., a corporation of New Hampshire
Filed Oct. 9, 1964, Ser. No. 402,787
2 Claims. (Cl. 139—161)



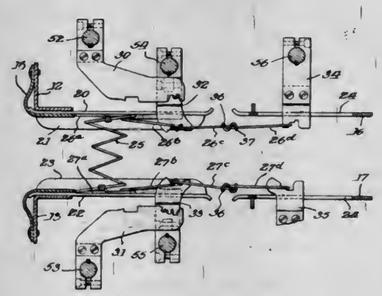
1. In a picker stick check assembly, an endless woven fabric loop movable between friction fingers which engage it at both its opposite sides and being impregnated with a plastic hardening and smoothing compound in its side areas within range of its movement between the said friction fingers, said impregnated areas being visible and well defined by color contrast with the body of the loop and having converging ends effective in distributing working stresses across the width of the loop.

3,288,175
TEXTILE MATERIAL
Emery I. Valko, Belmont, Mass., assignor to J. P. Stevens & Co., Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 22, 1964, Ser. No. 405,670
3 Claims. (Cl. 139—425)



1. A textile material consisting essentially of non-metallic fibers and up to about 10% by weight of a continuous system of metallic fibers in continuous metal-to-metal contact and having an average diameter of about 20 microns and less, said textile material having the functional and aesthetic properties of non-metallic textiles and possessing metallic electrical conductivity.

3,288,176
MACHINE AND METHOD FOR ASSEMBLING COIL SPRINGS IN THE PRODUCTION OF MATTRESSES
Wilton J. Davis, Massillon, Ohio, assignor to Posture Products, Inc., Massillon, Ohio, a corporation of Delaware
Filed Oct. 31, 1963, Ser. No. 320,318
12 Claims. (Cl. 140—3)



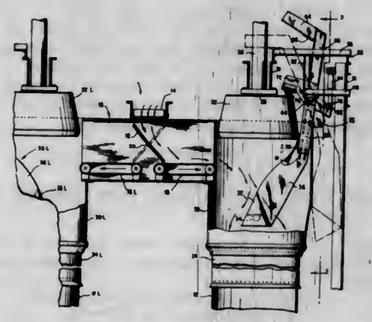
1. A method of interconnecting the top and bottom convolutions of helical coil springs by tie wires having S-shaped hook-like parts, comprising locating and supporting a first row of coil springs, locating and supporting a second row of coil springs adjacent the first row and with the convolutions of the second row overlapping the convolutions of the first row, deforming the top convolutions of the first and second rows so that the overlapping and underlapped portions thereof project upwardly, similarly deforming the bottom convolutions of the first and second rows so that the overlapping and underlapped portions thereof project downwardly, positioning a tie wire above and below the top and bottom convolutions, respectively, with each tie wire being located relatively adjacent an underlapped convolution, rotating the tie wires to cause the base loops of the S-shaped hook-like parts to engage with the arcs of the underlapped convolutions and then pass through the spaces

between the arcs formed by the underlapping and overlapped portions of the convolutions, and then effecting a separating action of the first and second rows of coil springs to cause the deformed convolutions thereof to return to a co-planar relation, whereby the outer loops of the hook-like parts of the tie wires will engage the arcs of the over-lapping convolutions and thereby interconnect the helical coil springs.

3,288,177
APPARATUS FOR FILLING AND PACKING CONTAINERS

Robert C. Clark, Asheville, N.C., assignor to Engineering Associates Incorporated, Asheville, N.C., a corporation of North Carolina

Original application Nov. 1, 1962, Ser. No. 234,956, now Patent No. 3,186,448, dated June 1, 1965. Divided and this application Jan. 18, 1965, Ser. No. 426,126
3 Claims. (Cl. 141—73)



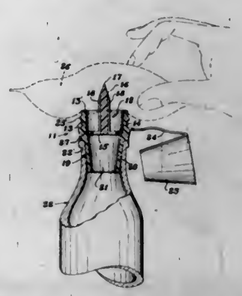
1. Apparatus for packing loose, compressible material in containers comprising in combination; a container to be packed with the loose compressible material, a distributor mounted for movement between an extended position axially disposed above the mouth of the container and a retracted position radially spaced from the axis of the container, first actuating means for moving the distributor between said positions thereof, means including a pressing plunger movable vertically into the container to compress material therein, second actuating means for moving said plunger vertically into the container to compress material therein, and means for energizing said second actuating means for initiating downward movement of said pressing plunger in response to the arrival of said distributor at its fully retracted position, said last-mentioned means including a switch actuated by said distributor when the distributor reaches said retracted position thereof whereby the plunger will not start its downward movement towards the container until the distributor is in its fully retracted position.

3,288,178
SPOUT

Hjalmar Eduardo Johnson, Buenos Aires, Argentina, assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed May 21, 1964, Ser. No. 369,079
5 Claims. (Cl. 141—330)

1. A spout comprising a tubular element having an upper and lower portion, said upper portion having an upper edge; a perforated base, said base being transversely disposed within said tubular element between said upper and lower portions; and a pointed punch, said punch having a length and width and an exterior surface and being affixed to and projecting from said base to a point beyond said upper portion, said punch having at least one groove which extends lengthwise on the exterior surface thereof from said base to near the pointed end of said punch, said lower portion being adapted to fit in

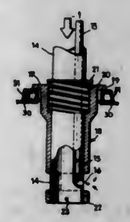


the mouth of a rigid container and said spout including a closing cap capable of pressure matching the upper edge of the upper portion of said spout.

3,288,179
AUTOMATIC NOZZLE WITH SAFETY SHUTOFF VALVE

Albert F. Romanowski, Greeneville, Tenn., assignor to Bowser, Inc., Greeneville, Tenn., a corporation of Indiana

Filed Feb. 17, 1966, Ser. No. 528,267
4 Claims. (Cl. 141—225)



1. In a liquid dispensing nozzle having a valve that can be latched open, a pressure sensitive chamber and mechanism responsive thereto for closing said latched valve in response to the pressure in said chamber falling below a predetermined magnitude, and a duct connected to said chamber and having an opening in the vicinity of the end of said nozzle, the improvement comprising:

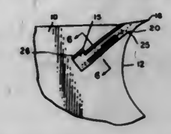
(a) a sleeve slidably mounted on said nozzle in the vicinity of said end;
(b) mechanical biasing means attached to said nozzle and to said sleeve to urge said sleeve toward said nozzle end and cover said duct opening;
(c) means fastened to said nozzle end to limit the motion of said sleeve toward said nozzle end;
(d) and support means fastened to said sleeve for resting said nozzle on a projection so that the weight of said nozzle causes said nozzle end to move relative to said sleeve and expose said duct opening.

3,288,180
INSERTED TOOTH SAW

Clarence F. McLean, James C. McLean, and Dugald R. McLean, all of R.R. 1, Rainy River, Ontario, Canada

Filed May 18, 1964, Ser. No. 368,294
4 Claims. (Cl. 143—145)

1. The combination of a saw plate and teeth for insertion therein, comprising: a series of equi-spaced angularly positioned notches through said plate along and from an edge thereof; an offset at the bottom of each notch; a series of rectangular teeth, each wider than the thickness of said plate and insertable in one of said notches from the side thereof; a beveled edge along one side of each tooth for wedging entrance of said teeth into said notches, when side pressed thereagainst in said insertion; each of said teeth having a chisel-shaped end

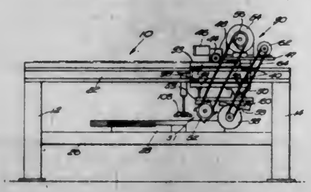


protruding outwardly past said plate edge, when said teeth are in said notches; a stop on the other side of said tooth for contact against a side of said plate in said tooth insertion, to centrally position the tooth across said plate; and a cross stop at the opposite end of each tooth for offset entrance, when said teeth are inserted in said notches as aforesaid.

3,288,181
APPARATUS FOR CUTTING TEETH IN WOOD MEMBERS

Morton R. Fellman, 12835 SW. 75th St., Miami, Fla.

Filed Apr. 30, 1964, Ser. No. 363,791
16 Claims. (Cl. 144—1)



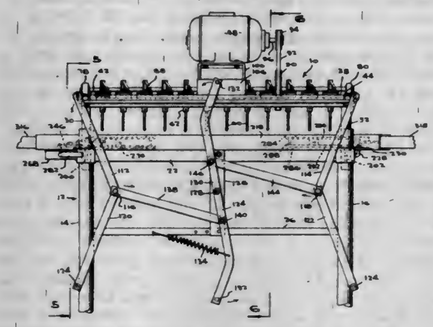
1. In apparatus for cutting a plurality of teeth in the ends of an elongated wood member that is utilized in the construction of a prefabricated wood truss, a table on which the wood member is supported, means for clamping said wood member in fixed position on said table, a carrier mounted for movement in a linear path toward said wood member, a cutter head mounted for rotation on said carrier and including a plurality of blades for cutting teeth of a predetermined design in said wood member, the angular relation between the longitudinal axes of said wood member and said cutter head being adjustable, wherein the angle that the teeth are cut in said wood member is variable with respect to the longitudinal axis thereof, and means for moving said carrier toward said wood member in a linear path, said cutter head being mvoable with said carrier into engagement with said wood member for cutting the teeth therein in accordance with the angle that has been preselected therefor.

3,288,182
MULTIPLE SPINDLE DRILL

Paul Jameson, Notus, Idaho

Filed Nov. 8, 1963, Ser. No. 322,293
4 Claims. (Cl. 144—110)

1. A multiple spindle drill comprising a substantially open rectangular frame comprising a plurality of vertically-elongated substantially hollow support members, a cross-brace extending between each adjacent pair of support members, a cylindrical element telescopically disposed within each of said support members and being reciprocable therein adjacent the upper ends thereof, a channel member extending between a first pair of cylindrical elements a second channel member extending between a second pair of oppositely-disposed cylindrical elements, said cylindrical element being spaced from and substantially parallel with respect to one another, a pair of angle members extending between and securing, respectively, the opposed ends of said channel members, a multiple drill support extending between said angle members and being fixedly secured thereto, a plurality of drills depending from said drill support, a shaft journaled for rotation

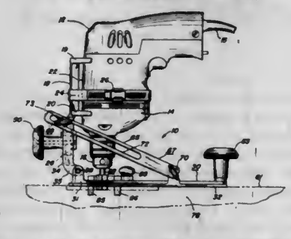


between said angle members, motor means fixedly supported between said angle members and connected with said shaft and said drills to effect rotation of said drills, and means connected on said frame and with said angle members for effecting reciprocation of said angle members, said channel members, said motor means and consequently of said spindle drill support.

3,288,183
ELECTRIC DRILL ATTACHMENT

Arthur C. Eisbrenner, Walrath Circle, North Kingsville, Ohio

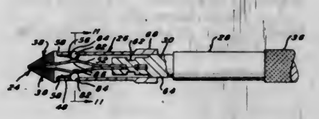
Filed Jan. 31, 1964, Ser. No. 341,496
3 Claims. (Cl. 144—136)



1. A universal attachment for a hand drill which has a housing including in combination a support bracket having first and second spaced generally V-shaped wall portions for engagement with the drill housing, a clamping band engageable with said support bracket between said first and second V-shaped wall portions and adapted to extend around the drill housing to hold said support bracket in position, a guide extension extending from and integral with said support bracket, a base member having first and second end portions, a pivot hinge at said first end portion of said base, a connecting member having first and second end portions, said pivot hinge pivotally connecting said first end portion of said base member to said first end portion of said connecting member, wall means defining a guideway in said second end portion of said connecting member, said guide extension residing in said guideway and permitting longitudinal adjustment of said base relative to a hand drill, a clamping mechanism for holding said guide extension and connecting member in a fixed position relative to each other and comprising a block member having a threaded opening and engageable

with said guide extension, a threaded member residing in said threaded opening and engageable with said connecting member whereby said guide extension and connecting member may be squeezed together, a handle connected to said threaded member, said base member having a generally flat bottom surface and having wall means defining a plurality of window-like effects in a direction normal to said flat bottom surface, a portion of said wall means defining one of said window-like effects being cut away at said first end portion of said base to provide for the free escape of chips cut by a tool in the drill, a handle on said second end portion of said base, a securing link for adjustably locating the angular position of said base relative to said connecting member and to a drill to which the connecting member is adapted to be attached, said securing link comprising first and second end portions, first pivot means connecting said first end portion of said securing link to said base, wall means defining a slot in said second end portion of said securing link, a lock screw extending through said slot and into a cooperating threaded opening in said connecting member to fix the position of said base, an attachment guide for moving said attachment parallel to a given guide surface, said attachment guide comprising an arm secured to said base and extending in a direction generally transverse to said base, first and second spaced attachment guide surfaces generally parallel to the extent of said base and adapted to engage a given guide surface to movement of said attachment.

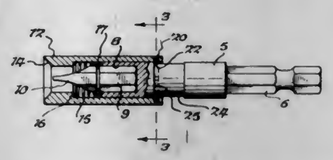
3,288,184
PHILLIPS HEAD SCREW STARTER
Smith Kyser, Lowell, Mich., assignor to Aircraft Specialties, Inc., Lapeer, Mich., a corporation of Delaware
Filed Dec. 28, 1964, Ser. No. 421,439
4 Claims. (Cl. 145—50)



1. A starter for a screw having cross cut slots in its head comprising a shank portion and a bit portion formed on one end thereof, said bit portion comprising two divergent blades secured on said shank portion, with the forward ends of said blades being V-shaped in cross-section, said blades being adapted to be releasably secured in said screw slots, a sleeve slidably mounted over said shank portion and said bit portion, said blades including divergent surfaces within the area covered by said sleeve, with said sleeve having a pair of opposed holes formed therein, a ball positioned within said sleeve at each of said holes, with the diameters of said holes being smaller than the diameters of said balls, said balls adapted to contact said divergent surfaces when said sleeve is pushed forward, whereby the sliding of said sleeve in a forward direction will cause said blades to converge.

3,288,185
SCREWDRIVER CONSTRUCTION
Frederick G. Clark, Buffalo, N.Y., assignor of one-half to Wade Stevenson, Buffalo, N.Y.
Filed Jan. 15, 1965, Ser. No. 425,726
3 Claims. (Cl. 145—51)

1. A screwdriver comprising:
(a) a rotatable shank having a polygonal socket at one end thereof,
(b) a bit removably secured in said socket and having a corresponding cross sectional configuration on its socket engaging end,
(c) a finder sleeve slidably mounted on the end of said shank and having an internal shoulder,
(d) a shoulder on said bit,



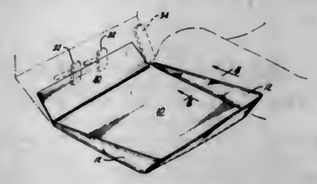
(e) a spring interposed between said shoulders to simultaneously urge said sleeve outwardly of said bit and said bit into engagement with said shank,
(f) and stop means limiting outward movement of said sleeve.

3,288,186
SURGE DAMPING BAFFLE FOR LIQUID STORAGE TANK
Richard T. Headrick, 916 Crestfield Ave., Duarte, Calif.
Filed June 5, 1964, Ser. No. 372,932
16 Claims. (Cl. 150—.5)



1. Apparatus for storing liquids comprising tank adapted to contain liquid therein and a plurality of flexible elongated pockets having opposite open ends secured to the interior surface of the tank, the pockets being arranged along a line extending transversely of a line along which moves surges in the liquid contained in the tank, the pockets having their elongate extents aligned with the line of surge action, each pocket having an enlarged open end and a restriction spaced from the enlarged open end along the pocket, the enlarged open ends of the pockets being adapted to catch at least a portion of the liquid flowing in the surge to transfer energy from the liquid to the tank.

3,288,187
CAR FLOOR TRAY
Sherman M. Wheaton, 1530 Nelchina St., Anchorage, Alaska
Filed Mar. 10, 1965, Ser. No. 438,539
4 Claims. (Cl. 150—.5)



1. A car floor tray for collecting snow, water, dirt and the like, comprising:
an outwardly tensed C-shaped resilient wire floor frame generally shaped to conform to the side and rear margins of a car floor area occupied by a passenger's feet;

a larger outwardly tensed C-shaped resilient wire flange frame overlying said floor frame in upward and outward spaced relation;
said floor frame and said flange frame being flexibly joined at their forward ends by integral U-bends;
said flange frame overlying said floor frame in upward and outward spaced relation;
a mat panel secured at its edges to said floor frame and extending therebetween;
a flange panel secured along its outer edges to said flange frame and along its inner edges to said mat panel in a water tight manner; and
said mat panel and flange panel being formed of flexible plastic sheet material.

3,288,188
BILLFOLD
Orla S. Elliff, Nocona, Tex., assignor to Justin Leather Goods Company, Nocona, Tex., a corporation of Texas
Filed Dec. 11, 1964, Ser. No. 417,689
3 Claims. (Cl. 150—36)



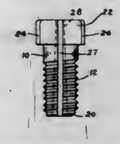
1. A billfold provided with a main pocket open along its upper edge, said main pocket being comprised of a main panel and end pockets secured to the lower edge of main panel on opposite sides of the center thereof, said end pockets having inner and outer flat surfaces, tabs on the ends of said main panel slidably received in slots in said inner surfaces of said end pockets, and means limiting the outward slidable movement of said tabs when said main pocket is expanded.

3,288,189
COVER FOR GOLF BAG
Elmer H. Davis, 5838 Alton Road, Miami Beach, Fla.
Filed Aug. 5, 1964, Ser. No. 387,633
4 Claims. (Cl. 150—52)



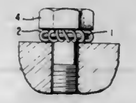
1. A cover for a golf bag having a carrying strap comprising a flexible elongated casing formed from weather resistant sheet material of substantially uniform thickness and width,
the lower end of said casing terminating in a pair of integral mating arcuate projections,
the lower portion of said casing and the said projections forming a junction joined together at the marginal edges thereof by a closure means,
said casing having a pair of vertically spaced slots in the margin of an upper portion of one longitudinal edge of said casing and an overlap extension of the adjacent opposite longitudinal edge having slots therein coinciding with said first mentioned slots for the passage therethrough of the said carrying strap,
the upper end of said casing terminating in a pair of mating arcuate extensions forming a junction secured together around marginal surfaces thereof by said closure means whereby said casing will enclose a golf bag therein when the said strap thereof is threaded through said coinciding slots.

3,288,190
SELF-LOCKING SCREW WITH FRICTION REDUCING DRIVING MEANS
John F. Holmes, 25 Strawberry Hill Road, Andover, Mass.
Filed Sept. 21, 1964, Ser. No. 397,894
2 Claims. (Cl. 151—14)



1. A self-locking screw formed of spring material having a threaded body and an enlarged head, said body and head having a longitudinal slit therein extending radially inwardly for the full length thereof and extending from a side surface thereof a distance more than one-half the diameter of said body and head but less than the full diameter thereof, said slit having a circular opening at its inner end of a diameter greater than the width of said slit and being co-axial with the screw, the portion of the screw at each side of the slit being resiliently deformable, whereby said body is adapted to be received in a threaded opening of less diameter than said body, said head being generally hexagon-shaped with said slit intersecting the periphery of said heat at one of the corners thereof and with the two side surfaces of the head laterally opposite said slit being eccentrically located, said two surfaces converging toward each other in the direction of the radially outer end of said slit, wherein a socket wrench gripping said head will not appreciably contact said surfaces, thus causing the major portion of the gripping torque to be applied to the surfaces adjacent the slit, thereby tending to close said slit to facilitate removal of the screw.

3,288,191
HEADED FASTENER WITH LOCK
Olof Viktor Thorborg, 80 Linnegatan, Stockholm, Sweden
Filed May 20, 1964, Ser. No. 369,658
3 Claims. (Cl. 151—38)



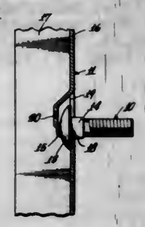
1. In combination with a headed fastener rotatable toward and away from a fixed substrate, a locking device disposed between the head of the fastener and the substrate, said locking device comprising a closed metal ring, and a wire helix forming a plurality of metal loops encompassing the ring, the inside diameter of the metal loops being substantially greater than the outside diameter of the metal ring, so that the metal loops serve as pawls when compressed by said headed fastener turned in one

direction, thereby to prevent turning of the head of the fastener in the other direction, the spacing and the inside diameter of the loops and the outside diameter of the metal ring being so related that upon tilting, the loops come into firm gripping contact with the ring instead of with each other, whereby the metal ring limits the angle of tilt of the loops independently of the number of loops.

3,288,192
BOLT-LIKE MEMBER AND MOUNTING THEREFOR

Carl G. Bollinger, 47 E. Woodland, Niles, Ohio

Filed Sept. 1, 1964, Ser. No. 393,651
4 Claims. (Cl. 151—41.75)



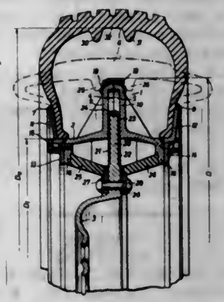
1. In combination: a bolt having a rounded head and a non-circular shank portion adjacent the bolt head, said head in its axial direction being thinner at its periphery than at its center, and a plate to which said bolt is to be assembled with its shank projecting from one side and its head abutting and overlying the opposite side, said plate having a tongue lanced therefrom to provide a key-hole slot having a larger portion to freely pass said bolt head and a smaller portion whose opposed margins engage with said non-circular shank portion to hold said bolt against rotation, said tongue having its integral connection with said plate at said larger slot portion and having a portion overlying and displaced, both before and after assembly of said bolt, away from that plate side which said bolt head overlies, the displacement being a predetermined distance substantially equal to the maximum thickness of said bolt head for closely confining the latter between said tongue portion and the adjoining plate side to restrict axial movement of said bolt, said bolt being assembled with said plate solely from said plate one side by first passing said head through said larger slot portion and with said bolt tilted relative to the plane of said plate whereby the thin peripheral head portion first enters between said tongue and said plate, and then moving said bolt bodily in the plane of said plate and into said smaller slot portion while tilting said bolt to position its axis normal to the plane of said plate, said tongue portion having at least one section thereof disposed normal to the axis of said bolt and engaging th bolt head at a point axially inwardly of said maximum thickness thereof whereby said section and said bolt provide abutments in mutual contact to restrain said bolt from movement out of said slot.

3,288,193
VEHICLE WHEEL

Albrecht Wolfgang Mantzel, Ingolstadt (Danube), Germany, assignor to Inpaco Trust Reg., Vaduz, Liechtenstein

Filed July 7, 1965, Ser. No. 470,081
Claims priority, application Germany, July 10, 1964, J 26,186
18 Claims. (Cl. 152—49)

1. A tire-equipped wheel for vehicles comprising a tire, a tire-chamber therein, a wheel disk and a drop base rim connected to the wheel disk by elastic means, the drop base rim being provided with a deep annular guide groove which lies in the center plane of the drop base rim perpendicular to the axis of the wheel, the wall-

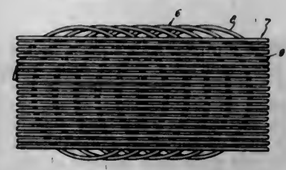


portions of the drop base rim forming said guide groove projecting outwardly into said tire-chamber, and the wheel disk being provided with a peripherical annular extension engaging said guide groove of said drop base rim.

3,288,194
RESTRICTIVE TREAD PLY COMPONENTS FOR PNEUMATIC TIRES

Larry C. Frazier, Prescott, Ariz., assignor to National-Standard Company, Niles, Mich., a corporation of Delaware

Filed Mar. 11, 1965, Ser. No. 438,947
5 Claims. (Cl. 152—361)

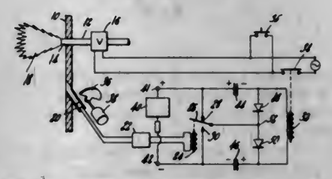


1. In a restrictive tread component for a tire the combination of a first annular ply comprising first cord means lying in a plurality of circumferentially successive and serially connected convolutions, each of said convolutions being in overlapping relation with more than one of serially successive convolutions, and a second ply comprising second cord means of helical configuration having its axis coaxial with the axis of said first annular ply and with the turns of said second cord means in superposed relation with the convolutions of said first annular ply.

3,288,195
FAIL-SAFE CONTROL APPARATUS

Elihu C. Thomson, Wellesley, Mass., assignor to Electronics Corporation of America, Cambridge, Mass., a corporation of Massachusetts

Filed Sept. 4, 1964, Ser. No. 394,472
17 Claims. (Cl. 158—28)



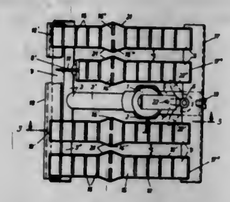
1. A fail-safe circuit comprising
a load,
a power source for energizing said load,

coupling circuitry for coupling power from said source to said load including two energy storage devices,
first circuit means to provide a first energy transfer loop between said source and one energy storage device independent of said load and a second energy transfer loop between the second energy storage device and said load independent of said source,
second circuit means to provide a third energy transfer loop between said source and said second energy storage device independent of said load and a fourth energy transfer loop between said one energy storage device and said load independent of said source,
and means to alternately complete said first and second circuit means for transferring energy from said source through said energy storage devices to said load.

3,288,196
COMBINED BUNSEN BURNER, MORE PARTICULARLY FOR GAS WATER HEATERS

Georg Hein, Huckeswagen, and Erich Tropp, Remscheid, Germany, assignors to Joh. Vaillant K.G., Remscheid, Germany

Filed Jan. 9, 1964, Ser. No. 336,789
Claims priority, application Germany, Feb. 14, 1963, V 23,651; May 16, 1963, V 24,065; May 14, 1963, V 24,058
11 Claims. (Cl. 158—115)



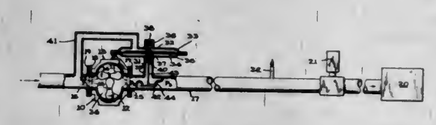
1. Combined Bunsen burner apparatus particularly for use with gas water heaters and adapted to be connected to a gas supply line, said apparatus being comprised of several individual burners, each individual burner including two pressed sheet metal cups connected with each other and forming a horizontally arranged mixing chamber, and a lamellar burner insert closing off the mixing chamber at the top and provided with gas outlet openings, said individual burners being arranged adjacently and associated with one gas outlet nozzle each of a common distributing pipe, said distributing pipe being of T-shaped design and projecting laterally from and rigidly connected to a central connection piece which may be screwed to the gas supply line.

3,288,197
BRAKING DEVICE FOR ROTARY POSITIVE DISPLACEMENT GAS METER IN A PILOT-LIGHTED GAS BURNING SYSTEM

Willis E. Rose, Connersville, Ind., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware

Filed Sept. 7, 1965, Ser. No. 485,174
6 Claims. (Cl. 158—115)

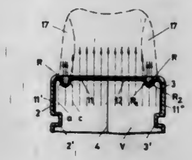
1. In a pilot-lighted gas burning system including a gas supply line adapted to be connected to a source of gas, a gas appliance burner and a pilot burner connected to said supply line, a quick-acting appliance valve in said supply line between said pilot burner and said appliance burner, and a rotary positive displacement gas meter in said supply line upstream of said pilot burner, said meter comprising a casing having an inlet and an outlet and a pair of lobed intermeshing rotors rotatably mounted in said casing and adapted to be rotated upon the passage of gas therethrough, the combination therewith of a self-actuating braking device for said meter comprising a control valve in said supply line between said meter and said pilot burner, means for normally maintaining said control valve in partially open position, and means responsive to the difference in pressure at the inlet and the outlet of said meter for so actuating said control valve that said valve is moved to closed position when closure of said appliance valve produces a pressure at the meter outlet greater than the pressure at the meter inlet and is moved to fully open position when opening of said appliance valve produces a pressure at the meter outlet less than the pressure at the meter inlet.



3,288,198
BUNSEN BURNER FOR GAS APPLIANCES, MORE PARTICULAR FOR GAS WATER HEATERS

George Hein, Huckeswagen, and Erich Tropp, Remscheid, Germany, assignors to Joh. Vaillant K.G., Remscheid, Germany

Filed Oct. 23, 1963, Ser. No. 318,269
Claims priority, application Germany, Oct. 30, 1962, V 23,215; Apr. 13, 1963, V 23,939
5 Claims. (Cl. 158—116)



1. In a gaseous fuel burner, the improvement comprising: a piece of sheet material having generally flat portions with a plurality of elongate and generally parallel spaced slots therein for emitting gaseous fuel, said slots having opposite and spaced apart end portions, said plate also having a concave depression substantially intersected by one of said end portions for causing the fuel to flow therefrom in a converging manner, thereby creating turbulent flow from said concave depression and a lesser rate of fuel flow therefrom than from other portions of said slot.

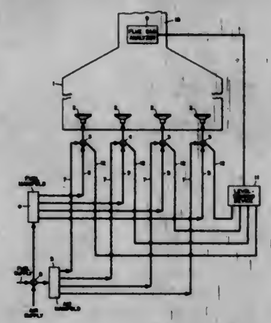
3,288,199
LOW EXCESS AIR OPERATION OF MULTIPLE-BURNER RESIDUAL-FUEL-FIRED FURNACES

John E. Gerrard, Matawan, Charles W. Siegmund, Morris Plains, and Wladimir Philippoff, Cranford, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Aug. 2, 1965, Ser. No. 476,662
4 Claims. (Cl. 158—117.5)

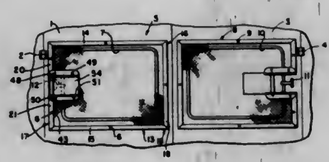
1. A process for the control of low excess air combustion in a multiple-burner furnace during operation of the burners thereof which comprises (a) adjusting the

air-fuel feed to a first burner of said furnace, while analyzing the concentration of a flue gas component whose concentration in the flue gas is proportional to the level of excess air operation of said first burner, thereby establishing essentially the stoichiometric point



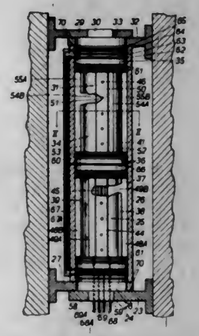
of said first burner; (b) backing off said first burner to the desired level of low excess air combustion and (c) sequentially repeating (a) and (b) on each burner of said multiple-burner furnace, thereby establishing substantially the same desired level of combustion at each burner of said furnace.

3,288,200
WINDOW SCREENS FOR VEHICLES
Jules A. Gagne, Orange Ave. Extension, Fort Pierce, Fla.
Filed June 8, 1964, Ser. No. 373,371
6 Claims. (Cl. 160—180)



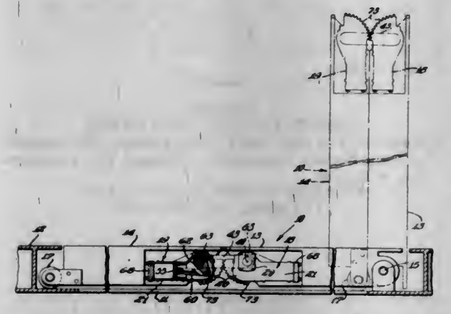
1. A light weight window screen adapted to be connected to the interior of a vehicle to completely close the vehicle window opening and having provision to accommodate an operating device for the vehicle window which projects inwardly of the vehicle, the screen comprising a main frame defining a frame opening and comprising:
upper and lower spaced apart frame members, and
first and second frame sides connected to and extending between said upper and lower frame members,
said first side having a short length thereof removed intermediate said upper and lower frame members to provide a pair of frame side elements with adjacent ends spaced apart;
a generally U-shaped subframe connected to each of said frame elements and extending between the adjacent ends thereof, said subframe comprising:
a first leg projecting from one of said frame side elements,
a second leg projecting from the other of said frame side elements, and
a third leg connected to and extending between said first and second legs;
said third leg being spaced between said first and second frame sides, whereby said subframe defines a U-shaped access opening completely open and unobstructed in a direction away from said second frame side; a closure assembly comprising
a closure element, and
a flexible curtain connected to said closure element and extending generally perpendicularly therefrom;
said subframe including means mounting said closure assembly in a plane spaced inwardly of the vehicle window a distance sufficient to accommodate the window operating device of the vehicle, and for sliding movement
from a first position in which said flexible curtain is spaced from said first frame side and said access opening is open and unobstructed to provide free access to the window operating knob, and
to a second position in which said flexible curtain closes the open end of said U-shaped access opening via a third position in which said flexible curtain is electrically opened as it passes over the operating knob of the window; and
screen material extending between said main frame and said subframe.

3,288,201
HYDRAULICALLY CONTROLLED HATCH HINGES
Finn Floer, Fana, Norway, assignor to A/S Bergens Mekaniske Verksteder, Bergen, Norway
Filed Oct. 1, 1963, Ser. No. 312,993
Claims priority, application Norway, Oct. 27, 1962, 146,247
7 Claims. (Cl. 160—188)



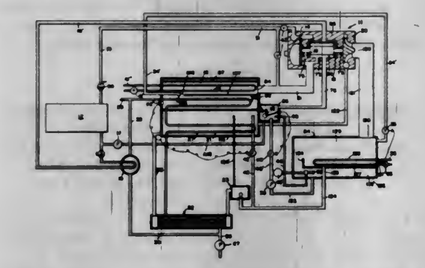
1. Hydraulically controlled hatch hinge, especially for ships', hatches and of the kind in which two cover sections are linked together by an oscillating fluid controlled motor whose rotation causes the one section to pivot about the hinge relative to the other section, a housing having its end portions rotatably disposed between pairs of opposed complementary brackets, one of each of said pairs of brackets being connected to one cover section and the other of said pairs of brackets being connected to the other cover section, and a pair of axially aligned rotors rotatably supported within said housing, each of said rotors having their respective end portions disposed in bearing relationship to the wall of said housing, means connecting the one section to a first rotor, and means connecting the other section to a second rotor, the two rotors being axially immovably received but radially rotatable, each relative to its respective part of the housing which parts are fixedly connected to each other and arranged so as to be rotatable relative to both the two sections, and means for applying a rotary force to said rotors.

3,288,202
PISTON-LEVER ROTARY ACTUATORS FOR HATCH COVERS AND THE LIKE
Rollin Douglas Rumsey, Buffalo, N.Y., assignor to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan
Filed Jan. 15, 1964, Ser. No. 337,852
19 Claims. (Cl. 160—188)



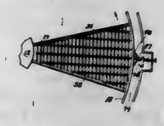
1. An assembly including members relatively movable about a hinge joint,
powered hinge means for hingedly relatively moving said members comprising a pair of opposed complementary coordinated rotary actuators having respective head portions adjacent to said joint and oppositely extending crank lever portions projecting away from said joint,
means operatively connecting the head portions for coordinated operation,
means mounting said crank lever portions rigidly on said members at respectively opposite sides of the hinge joint,
and means for driving the actuators comprising respective elements movable reciprocably relative to said members on respective axes angular to said joint and reacting with said crank lever portions to effect relative movement of said members.

3,288,203
HEATING AND COOLING SYSTEM
Louis H. Leonard, Jr., Dewitt, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed June 23, 1964, Ser. No. 377,319
15 Claims. (Cl. 165—2)



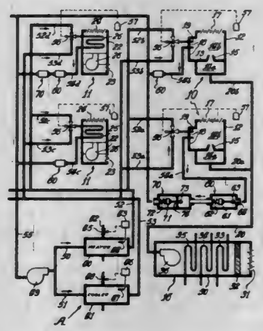
1. A method of operating a simultaneous heating and cooling system including a turbine driven refrigerant compressor and a steam condenser having first and second condensing portions, comprising the steps of supplying substantially constant pressure steam to the turbine for driving the turbine, supplying to the condenser the steam discharged from the turbine, blanketing at least a portion of the first condensing portion with refrigerant vapor for reducing its condensing capacity to increase the steam temperature in the condenser and the heating capacity of the second portion and to increase the discharge pressure of the turbine thereby reducing the turbine and compressor outputs below their maximum outputs to reduce the cooling capacity of the system, and regulating the quantity of said refrigerant vapor blanketing the first condensing portion for regulating the steam temperature and the discharge pressure on the turbine to vary the capacities of the system.

3,288,204
SUSPENDED CHAIN MATRIX
Lloyd D. Grames, Wellsville, and Walker H. Rayburn, Scio, N.Y., assignors, by mesne assignments, to The Air Preheater Company, Inc., a corporation of Delaware
Filed Dec. 11, 1964, Ser. No. 417,581
4 Claims. (Cl. 165—5)



1. Regenerative heat exchange apparatus having an upright shell divided by partitions into a series of upright compartments, inlet and outlet ducts in said apparatus for a heating fluid and a fluid to be heated, perforate support means adjacent the upper end of said compartments extending substantially normal to the vertical axis of said shell, and a multiplicity of chain-like elements depending from said perforate support means and extending to the lower end of said shell adapted to absorb heat from the heating fluid and transfer it to the cooler fluid as it flows through the compartments, and means operative to sequentially strike said support means of said series of compartments thereby agitating the chain-like elements depending therefrom and jarring loose particulate material deposited on said chains.

3,288,205
THREE-PIPE AIR CONDITIONING SYSTEM AND CONTROL ARRANGEMENT THEREFOR
Charles W. Egbert, Ridgewood, N.J., assignor to Borg-Warner Corporation, a corporation of Illinois
Filed Nov. 2, 1964, Ser. No. 407,966
7 Claims. (Cl. 165—22)



1. An air conditioning system comprising a plurality of heat exchange coils; means for flowing room air over said coils in heat exchange relation therewith; a chilled

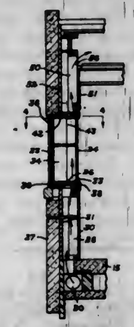
liquid circuit including a cooler for supplying a chilled heat exchange fluid to said coils; a heated liquid circuit including a heater for supplying a heated heat exchange fluid to said coils; valve means receiving said heated and said chilled heat exchange fluids, said valve means being selectively operable for flowing either chilled or heated heat exchange fluid through said heat exchange coils; a return system including conduits which form a part of both said chilled liquid circuit and said heated liquid circuit for returning both heated and chilled liquid from said coils to said heater and cooler, said return system further including branch conduits which feed said heater and said cooler, respectively, from a conduit which is common to both said chilled liquid circuit and said heated liquid circuit; and temperature responsive valve means downstream from each heat exchange coil for substantially preventing the flow of fluid from said heat exchange coils to said heater and cooler when the temperature of said fluid rises, by some predetermined amount, above the normal temperature of fluid leaving said heat exchange coils and when the temperature of said fluid falls, by some predetermined amount, below the normal operating temperature of fluid leaving said heat exchange coils.

3,288,206

AIR CONDITIONING SYSTEM

Charles F. Beeler, Box 896, Hamilton, Ohio

Filed Mar. 4, 1966, Ser. No. 531,973
10 Claims. (Cl. 165—39)



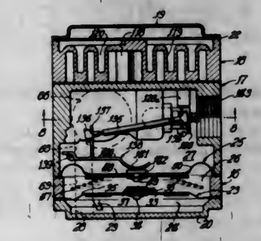
10. Window structure for use in a building having a perimeter air conditioning system comprising, a window frame defining a window opening in the building, inner and outer spaced glass window panes mounted in said opening in the building, inner and outer spaced glass window panes mounted in said opening for closing the same, an inner opening in one portion of said window frame for flow of air uniformly through the space between said glass panes, an outlet opening in another portion of said frame for venting air from said space between said panes, means for connecting an air supply to said inlet opening for flow of air at a preset temperature through said space to negate the flow of heat between said panes, blind means disposed in said space for blocking the flow of radiant sun energy through said inner glass panes, a device for sensing a predetermined amount of sunlight passing through said window to move said blind means to its blocking position including an outer housing having one side thereof open to receive sunlight at the same angle as said outer panes, an inner compartment in said outer housing, said inner compartment being closed except for an opening in one side thereof which extends in the same direction as said one side of said outer housing for receiving sunlight from the same direction as said outer panes, said opening having a configuration which is a proportional reduction of the area so that said inner compartment receives an amount of sunlight which is proportioned in amount and intensity to the sunlight passing through said outer panes, said one side and opening having glass panes therein spaced apart a distance proportional to the distance between said panes and being made of glass similar to said panes, temperature sensing means for sensing the temperature in said inner compartment and thereby determining the intensity of sunlight passing into said opening and through said panes, and means for lowering said blind means in response to a predetermined sensing by said temperature sensing means.

3,288,207

LIQUID TO GAS CONVERTER

Clarence D. Fox and John E. Lair, Decatur, Ill., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed Feb. 10, 1964, Ser. No. 343,797
11 Claims. (Cl. 165—40)



1. A liquid petroleum gas converter comprising; a housing having a liquid inlet and a vapor outlet and defining a vapor expansion chamber interposed therebetween, means interposed between said liquid inlet and said vapor expansion chamber adapted to control the rate of flow into said vapor expansion chamber, a solenoid operated valve interposed between said means controlling the flow into said vapor expansion chamber and said liquid inlet, said solenoid operated valve being movable between a closed position preventing flow from said inlet to said means and an open position allowing flow therebetween, a mechanically operable normally open electrical switch disposed within said housing and adapted to be connected in series between said solenoid operated valve and a source of power, operation thereof being effective to move said solenoid operated valve from said closed position to said open position, and means associated with said switch to effect operation thereof, said means including means responsive to a pressure signal from an intake manifold of an internal combustion engine.

3,288,208

PRE-HEATING AND DE-AERATION SYSTEM FOR BOILER FEED WATER

Joseph J. Blackmore, R.R. 1, Edwardsville, Ill., and Perry G. Glunt, 91 Wildwood Lane, Kirkwood, Mo.

Filed Jan. 28, 1965, Ser. No. 428,803
5 Claims. (Cl. 165—108)

1. A feed water pre-heating and de-aeration system for that type of boiler in which water is maintained at greater than atmospheric pressure, comprising

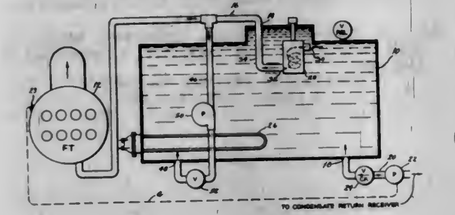
means for hermetically storing water under pressure,

means at such storage means to heat such water above its atmospheric boiling point temperature,

means at said storage means and connectable to such boiler for applying the pressure of such boiler to such heated water, whereby to maintain the water in its liquid phase,

means at said storage means for introducing additional water into said storage means on demand and propelling the water, so pressurized and at such temperature, to such boiler, and

means to conduct the water, so propelled, in a vortex and simultaneously to remove entrapped air from the center of the vortex,



whereby application of such boiler pressure and elevated temperature to the boiler feed water during de-aeration effects maximum air removal and minimizes air re-absorption, together with

means at said storage means for recirculating the pressurized and heated water through such vortex-effecting means and returning same to the storage means,

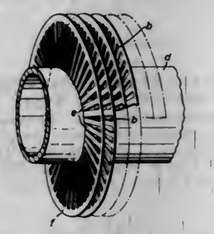
whereby water is continuously passed through said vortex-effecting means.

3,288,209

HEAT TRANSMITTING TUBES HAVING HELICAL FIN MEANS

Alan J. Wall, Lincoln, and Alan Palmer, London, England, assignors to Clayton Dewandre Company Limited, Lincoln, England

Filed Apr. 13, 1964, Ser. No. 359,099
4 Claims. (Cl. 165—184)



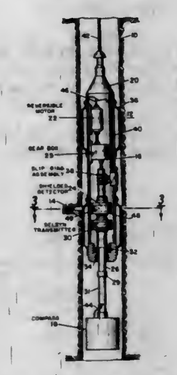
1. In assembled combination, a heat transfer tube and means providing an extended surface heat transfer fin structure on said tube comprising a preformed longitudinally folded metallic strip wound substantially helically edgewise upon and along said tube, said strip having a spaced series of continuous slots extending partly across its width to form a number of spaced flat fingers that in the folded fin structure have free inner ends and are integrally interconnected at their outer ends by a longitudinally continuous portion, said strip being so folded as to provide at the inner end of each finger an angularly extending relatively flat base portion that is attached to the periphery of said tube, and means securing said free inner ends of said fingers along the periphery of said tube whereby the fin structure comprises radially extending circumferentially spaced flat fingers interconnected by a longitudinally continuous outer edge portion with said slots being continuously open substantially between said tube and said outer edge portion.

3,288,210

ORIENTING METHOD FOR USE IN WELLS

Harvey L. Bryant, Tulsa, Okla., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware

Filed Nov. 4, 1963, Ser. No. 321,229
4 Claims. (Cl. 166—4)



1. An orienting method for use in wells comprising the steps of:

placing in a stratum surrounding a well bore a radioactive marker capable of being detected by a radiation detector;

lowering into said well bore to the level of said radioactive marker a first radiation detector having a selected radical direction of radiation detection and capable, when rotated, of transmitting to the earth's surface the angular position of said radioactive marker relative to the selected direction of radiation detection and compass means capable of transmitting to the earth's surface the direction of North relative to said selected direction of radiation detection;

rotating said first radiation detector and compass means and determining thereby the angular position of said radioactive marker relative to the selected direction of radiation detection and thereby the angular position of said radioactive marker relative to the direction of North;

removing said first radiation detector and compass means from said well bore;

lowering in said well bore to the level of said marker a perforator having a selected radial direction of perforation and connected to a second radiation detector having a selected radial direction of radiation detection and capable when rotated of transmitting to the earth's surface the angular position of said radioactive marker relative to the selected direction of radiation detection, said selected radial direction of perforation of said perforator being in a known fixed relationship to the selected direction of radiation detection of said second radiation detector;

rotating said second radiation detector and said perforator until said direction of radiation detection is directed toward said radioactive marker;

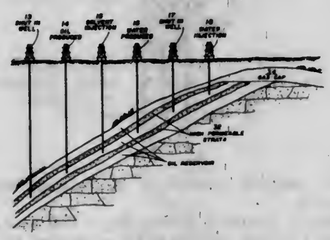
lowering said radiation detector and said perforator to adjacent a desired level of perforation; and

then orienting said perforator to a desired direction of perforation relative to the angular position of said radioactive marker and the direction of north.

3,288,211
WATER FLOODING PROCESS
Norris Johnston, 4222 Thacher Road, Ojai, Calif.
No Drawing. Filed Feb. 13, 1964, Ser. No. 344,540
6 Claims. (Cl. 166—9)

1. In a water flooding process in which water is forced into at least one input well so as to push oil in an oil bearing formation to at least one output well, the step which comprises including with said water an enzyme chosen from the class which consists of proteases, cellulases, hemicellulases, chitinases, amyloglucosidases, polygalacturonidases and mixtures thereof.

3,288,212
SECONDARY OIL RECOVERY METHOD
Leo J. O'Brien, Le Roy W. Holm, and Frank Walter, Crystal Lake, Ill., assignors, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed May 21, 1964, Ser. No. 369,116
8 Claims. (Cl. 166—9)

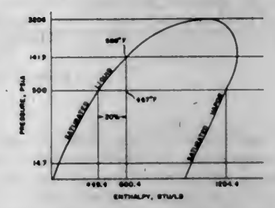


1. In the method of producing petroleum from a fluid-flooded subterranean oil-bearing formation traversed by a plurality of wells wherein a first aqueous fluid is injected into the formation by means of a first injection well and said first fluid is driven through said formation toward a producing well, the improvement comprising injecting a second fluid into said formation through a second injection well intermediate said first injection well and said producing well, and simultaneously withdrawing a portion of said first injected fluid from an area adjacent to and upstream from said second injection well, the withdrawal of said portion of first injected fluid creating a pressure gradient relative to the remainder of said formation and thereby increasing the sweep efficiency of said second injected fluid, and driving said second injected fluid through said formation toward said producing well.

3,288,213
SURFACTANT-WATER FLOODING PROCESS
Jack A. King, Tulsa, and John W. McGhee, Mannford, Okla., assignors to Cities Service Oil Company, a corporation of Delaware
No Drawing. Filed May 28, 1964, Ser. No. 371,110
9 Claims. (Cl. 166—9)

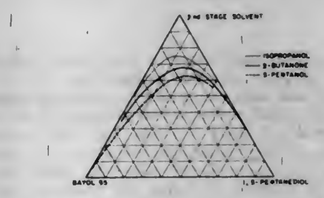
1. A method for recovering oil from subterranean reservoirs by surfactant waterflood injection in which the additional oil recoverable by any given surfactant system is maximized comprising:
(a) injecting a surfactant slug not exceeding about 10% of the formation pore volume into the reservoir, said slug containing not more than about 10% by weight surfactants, the surfactants being blended in such proportions that the hydrophilic-lipophilic balance of the surfactant system is approximately the same as that associated with the crude oil-injection water system; and
(b) driving the surfactant slug through the reservoir by means of a water flood,
whereby, a portion of the residual oil retained in the reservoir after primary production will be recovered, said portion being greater than that recoverable by blending the desired surfactants in any other proportions.

3,288,214
WATER/STEAM INJECTION IN SECONDARY RECOVERY
Adolf K. Winkler, The Hague, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed June 25, 1963, Ser. No. 290,553
3 Claims. (Cl. 166—40)



1. A method of reducing the viscosity of hydrocarbons within a hydrocarbon-bearing earth formation, comprising:
(a) heating an aqueous liquid containing impurities at a pressure at which substantially no vaporization of the liquid occurs to a temperature which will cause it to vaporize at formation pressure to a predetermined degree selected so that the impurities within the liquid will remain in solution therewith after vaporizing to said predetermined degree, said temperature and pressure corresponding substantially to saturated liquid at an enthalpy equal to that of the desired mixture at formation pressure;
(b) introducing said liquid into a conduit leading to the formation; and
(c) injecting said liquid into the formation through said conduit.

3,288,215
WELL TREATMENT TO INCREASE WATER INJECTIVITY
Percy N. Townsend and Victor G. Meadors, Tulsa, Okla., assignors, by mesne assignments, to Esso Production Research Company, a corporation of Delaware
Filed Aug. 1, 1963, Ser. No. 299,214
8 Claims. (Cl. 166—42)

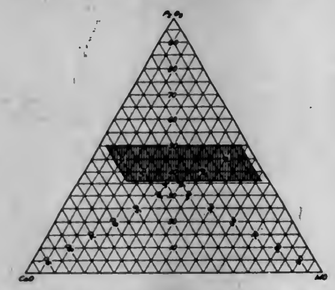


1. A method of removing brine, oil and tar from a subterranean formation in the vicinity of a borehole in the earth, which comprises injecting 1,5-pentanediol through said borehole into said formation, and thereafter injecting into said formation a solvent selected from the group consisting of tertiary octylamine, 3-pentanol, 2-butanone and isopropanol.

3,288,216
INCREASING WELL INJECTIVITY
Marne M. Blickensderfer and Carl F. Brandner, Dallas, Tex., assignors to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed July 25, 1963, Ser. No. 297,673
12 Claims. (Cl. 166—42)

1. A process for increasing the flow of fluids between a well and a formation obstructed by flow-restricting materials comprising the steps of introducing through the well into the formation in immediate succession a slug of 1,1,1-trichloroethane, a slug of toluene, and a slug of methanol, and each of said slugs having a volume sufficient to provide a continuous zone of said slug across the formation whereby substantial portions of the flow-restricting materials are removed from the formation and well to thereby increase the flow of fluids between the well and the formation.

3,288,217
METHOD AND COMPOSITION FOR INHIBITING SCALE DEPOSITION IN OIL-PRODUCING FORMATIONS AND EQUIPMENT
Paul H. Ralston, Bethel Park, Pa., assignor to Calgon Corporation
Filed July 20, 1964, Ser. No. 383,830
15 Claims. (Cl. 166—42)

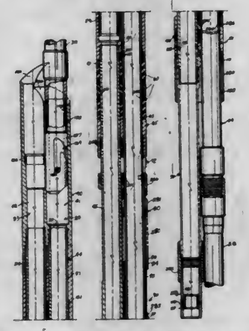


3. A glassy phosphate composition analytically consisting essentially of, in mol percent, about 34.6% CaO, about 18.9% MgO, and about 46.5% P_2O_5.

14. Method of inhibiting scale deposition in subterranean fractures comprising incorporating into a fracturing liquid a solid composition of claim 3 in particulate size of about 8 to about 60 U.S. Standard mesh and injecting the fracturing liquid into a subterranean formation with sufficient force and under sufficient pressure to fracture said formation, whereby the composition of claim 3 is carried into the fractures, deposited there and exposed to dissolving aqueous fluid.

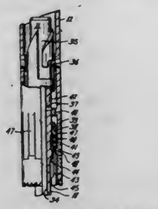
3,288,218
WELL TOOLS AND APPARATUS
Carter R. Young, Carrollton, Tex., assignor to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware
Filed Oct. 3, 1963, Ser. No. 313,563
17 Claims. (Cl. 166—119)

1. A well apparatus including: a well casing passing through upper and lower producing zones in a well bore, said casing having upper and lower openings through which well fluids from said upper and lower zones can flow into the well casing; a first barrier means in said casing between said upper and lower openings: a second barrier means in said casing above said upper openings, said second barrier means including a head, said head having a pair of longitudinal passages therethrough, said head having means in said passages for releasably securing first and second flow conductors to said head which extend to the surface of the well, said first and second flow conductors being removable upwardly from said second barrier means when released from said head, said second barrier means being movable into the well casing by means of one of said flow conductors; a pair of tubular means connected to said head and communicating with said passages for conducting fluids from said lower and upper zones into said first and second conductors, one of said tubular means extending to said first barrier means and communicating at its lower end with said well casing



below said first barrier means, said head having a first guide surface inclined inwardly to one of said passages and a second guide surface inclined from said first guide surface to the other of said passages, said first guide surface being also inclined inwardly toward the other of said passages, said first and second guide surfaces guiding said first flow conductor into said other of said passages and said first guide surface subsequently guiding said second flow conductor into said one of said passages, said other of said passages being of greater diameter than said one of said passages.

3,288,219
WELL PACKING APPARATUS
David E. Young, Bellaire, and Howard L. McGill, Houston, Tex., assignors to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas
Filed June 11, 1964, Ser. No. 374,488
8 Claims. (Cl. 166—120)



1. A well packer sized and adapted for reception in a well bore for packing-off the well bore comprising:
a housing having a longitudinal bore;
a body member slidably disposed within said housing bore;
packaging means operatively mounted on said body member and arranged for expansion thereby into sealing engagement with the well bore;
first anchoring means selectively operable for securing said packer against longitudinal movement in one direction within the well bore;
second anchoring means for securing said packer against longitudinal movement in the opposite direction relative to the well bore including outwardly-extendible wall-engaging means mounted on said

housing and fluidly sealed relative thereto to provide a fluid-tight space therebetween, said wall-engaging means being adapted for extension into engagement with the well bore upon application of hydraulic pressure in said fluid-tight space; and

hydraulic means responsive to a pressure differential acting in said opposite direction across said packing means when expanded for applying a hydraulic pressure in said fluid-tight space to press said wall-engaging means into anchoring engagement with a force proportionately related to this pressure differential.

3,288,220
COMBINATION PACKER, AND PUMP ANCHOR
Melvin L. Rouse, Cross Plains, Tex.
(714 Travis Ave., Fort Worth, Tex.)
Filed July 13, 1964, Ser. No. 382,228
3 Claims. (Cl. 166—138)



1. A combination packer and pump anchor for well equipment, comprising, a cylindrical mandrel, a lock nut threadably secured to one end of the mandrel, a tail pipe coupling secured to the other end of the mandrel, a sleeve extending from the lock nut over a short length of the mandrel, a cylindrical reinforced packing element having a concentric bore received on the mandrel to abut at one end with the sleeve, a cylindrical body unit having a concentric bore and having longitudinally extending radial slots formed with a tapering depth, said unit having further longitudinal recesses of constant depth spaced intermediate the radial slots, said unit keyed to the mandrel to prevent rotation and permit longitudinal movement with respect thereto, slips adapted for selective alignment with the radial slots and the recesses, friction springs depending from the slips and maintained in a spaced convex relationship about the mandrel, said packing element being expanded in response to the slips entering the radial slots.

3,288,221
SUBSURFACE SAFETY VALVE
George C. Howard and Lawrence B. Wilder, Tulsa, Okla., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Mar. 6, 1964, Ser. No. 349,823
10 Claims. (Cl. 166—183)

1. A valve device comprising:

an elongated central tubular member adapted to be connected into a string of conduit;

an elongated outer tubular member encasing said central member;

said outer member being radially spaced from said central member to provide an annular space therebetween, and being sealed to said central member in a fluid-tight manner at both the upper and lower ends thereof;

inlet port means and outlet port means in one of said tubular members placing said annular space in flow communication with the exterior of said tubular member, said port means being spaced apart along the length of said tubular member;

valve sleeve means slidably positioned in said annular space to move between an open position and a closed position and to control the flow of fluid through said port means;



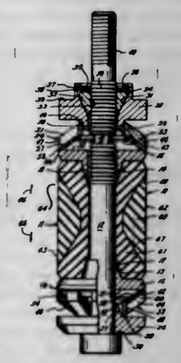
resilient means acting on said sleeve means to bias said sleeve means toward the closed position;

a hydraulic reservoir hydraulically connected to said sleeve means so that hydraulic pressure therein biases said sleeve means toward the open position;

a floating piston slidably positioned in said annular space and having its working end hydraulically connected to said reservoir; and

pressure fluid port means for supplying a pressured fluid to the power end of said floating piston.

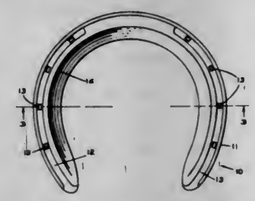
3,288,222
PROGRESSIVELY EXPANDED PACKING ELEMENT FOR A BRIDGE PLUG
Harold J. Urbanosky, Houston, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas
Filed Mar. 11, 1964, Ser. No. 351,041
5 Claims. (Cl. 166—192)



5. As a sub-combination, a packing element adapted for expansion into sealing engagement with a well bore, said packing element consisting of: a plurality of elastomeric elongated annular plies bonded together to form

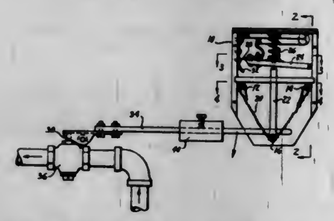
a unitary tubular member having a wall of uniform thickness, each of said plies being of an elastomeric material having at least a different modulus of elasticity than that of at least another one of said plies with each being uniformly tapered from a first thickness at each end thereof to a second thickness at the central portion thereof, said plies being cooperatively proportioned and arranged in such a manner that the composite modulus of elasticity at any transverse section of said tubular member progressively increases from the central portion thereof toward each end of said tubular member.

3,288,223
CUSHIONED RACE HORSESHOE
David Ferguson, 7332 Jefferson Ave. E., Detroit, Mich.
Filed Oct. 16, 1964, Ser. No. 404,303
5 Claims. (Cl. 168—12)



1. A race horseshoe comprising a metal frame having a ground-engaging face and a hoof-engaging face, said ground-engaging face including a flange extending substantially around the outer perimeter at a level substantially parallel to said hoof-engaging face, said hoof-engaging face including a pair of spaced inner and outer upstanding flanges providing a recess therebetween, and a resilient composition material filling said recess and bonded to said frame, and terminating substantially at the upper level of said inner and outer flanges.

3,288,224
FIRE ALARM AND SPRAY SYSTEM ACTUATED BY MELTING A SOLUBLE NYLON STRAND
Alpherie A. Trudeau, 1 5th Ave., Taftville, Conn.
Filed Oct. 13, 1964, Ser. No. 403,731
3 Claims. (Cl. 169—19)



1. In a fire alarm and spray system including a water supply valve, a valve actuating plunger and a normally horizontal weighted arm pivotally supported at one end adjacent said plunger and operable by gravity to move said plunger to open said valve, a housing adjacent the other end of said arm, a pair of horizontal spaced apart posts in said housing, an arm support member pivotally mounted in said housing below said arm and between said posts, a plastic heat soluble strand having its ends secured to said posts and an intermediate portion extending beneath and supporting said arm support member and hence said arm, a switch actuating lever pivotally mounted at one end in said housing above said arm support member, a second plunger extending between said switch lever and said arm support member, spring means biasing said switch lever downwardly against said second plunger, an electrical contact carried by the other end of said switch arm, and a fixed contact carried internally of said housing adjacent said first contact and in the downward path of travel of said first mentioned contact, closure of said contacts being adapted to close a circuit to actuate an alarm, melting of said strand due to excess heat releasing said arm to fall by gravity to open said valve, and permitting said spring means to bias said switch lever downwardly to engage said first mentioned contact with said fixed contact to actuate the alarm simultaneously with the opening of the valve.

3,288,225
HELICOPTER ROTOR
John Avery Flint and James Eric George, both of Farnborough, England, assignors to Power Jets (Research and Development) Limited, London, England, a British company
Filed Nov. 2, 1964, Ser. No. 408,106
Claims priority, application Great Britain, Nov. 6, 1963, 43,858/63
16 Claims. (Cl. 170—135.4)

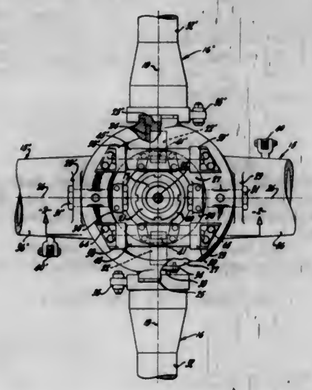


1. A helicopter rotor assembly comprising a non-rotatable member, a head member rotatably mounted on said member, at least one rotor blade attached to said head member to rotate therewith, at least one long shallow aperture extending along the blade span in the surface of each said blade, means for feeding a fluid flow to the head member, means connected to conduct said fluid from the head member to each said aperture for discharge therefrom as a thin layer over the blade surface, and non-rotating control means for varying the aerodynamic lift on each blade wherein the control means comprises an annular valve assembly in communication with the means for feeding the fluid flow to the head member, the valve assembly being mounted coaxially relative to said head member and having concentric walls with radial partitions extending between them so as to form a plurality of axially extending passages for the fluid flow to the head member and a valve slidably mounted in each of the said passages to regulate the fluid flow therein.

3,288,226
TEETERING ROTOR HUB ASSEMBLY
Harold E. Lemont, Jr., Menlo Park, and Gerhard J. Sissingh, San Mateo, Calif., assignors, by mesne assignments, to Fairchild Hiller Corporation, Hagerstown, Md., a corporation of Maryland
Filed Mar. 15, 1965, Ser. No. 439,597
6 Claims. (Cl. 170—160.26)

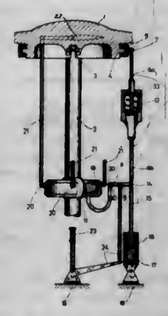
1. In combination with the upwardly extending rotor shaft of a rotary wing aircraft, a lift wing assembly including a rotor hub and a plurality of rotor blades extending outwardly therefrom in different directions, mounting structure connecting said hub with said rotor shaft so as to be rotatably driven thereby and supporting the hub for angular displacements relative to said rotor shaft about a transverse axis generally normal to a plane including the axis of rotation of the rotor shaft to enable the tip path plane described by rotation of said lift wing assembly to be tilted to change the orientation of the thrust developed thereby so as to effect cyclic control of such aircraft, and a plurality of spring structures each

offset transversely from the axis of rotation of said rotor shaft and being respectively connected between said hub and rotor shaft in a generally right-angle disposition with respect to such transverse axis so as to develop a corrective force between said hub and rotor shaft tending to restore the same to a predetermined orientation following any relative angular displacement therebetween about



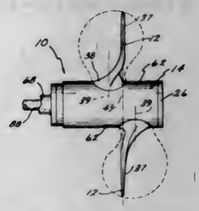
such transverse axis, whereby the permissible range of travel of the flight center of gravity of such aircraft is extended by such corrective force application, said spring structures comprising an even number thereof and being symmetrically disposed about the axis of rotation of said rotor shaft at substantially equal angular distances from each other.

3,288,227
HELICOPTER ROTOR SYSTEM
Hans Derschmidt, Munich, Germany, assignor to Bolkow Gesellschaft mit beschrankter Haftung, Ottobrunn, Germany
Filed May 18, 1965, Ser. No. 456,640
Claims priority, application Germany, May 22, 1964, B 76,880
11 Claims. (Cl. 170—160.26)



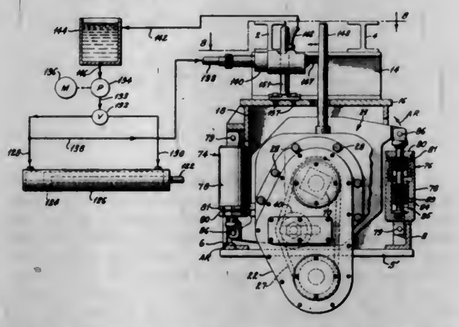
2. Device for the longitudinal stabilization of rotary wing aircraft having an inclinable rotor head, rotor blades angularly adjustable on the rotor head and a displaceable swash plate controlling the pitch angle of the rotor blades, said device comprising, in combination, substantially rectilinear rod means connected at one end to said rotor head; lever means connected between said swash plate and the other end of said rod means; resilient means interpositioned in said rod means and providing for relative rectilinear displacement of the ends of the latter towards and away from each other; and damping means connected to said other end of said rod means and connected to the aircraft fuselage; said damping means having a resistance to relative rapid displacement of said rod means greater than the bias of said resilient means.

3,288,228
VARIABLE PITCH AND REVERSIBLE PROPELLER
Finn T. Irgens, Milwaukee, Wis., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed May 28, 1965, Ser. No. 459,753
8 Claims. (Cl. 170—160.43)



1. An adjustable pitch propeller comprising a pair of blades each having a blade portion and a base portion including thereon a gear segment and having an axis about which said blade is rotatable, a hub having means mounting said base portions on said hub in parallel relation to each other spaced axially of said hub for rotation of said blades with respect to said hub and so that said blade portions lie generally in a common plane in one condition of operation, and rack means cooperable with said gear segments for angularly rotating said blades about said base portion axes.

3,288,229
DRILLING SLIDE FOR LARGE HOLES WITH TRAVERSING BAR CONCENTRIC TO THE DRILL AND AUTOMATIC REGULATION OF THE DRILLING FEED
Louis Chappuis, Villeurbanne, France, assignor to Societe d'Etude et de Construction de Machines Pour Toutes Industries (SECOMA), Rhone, France, a French concern
Filed Dec. 23, 1963, Ser. No. 332,810
9 Claims. (Cl. 173—9)



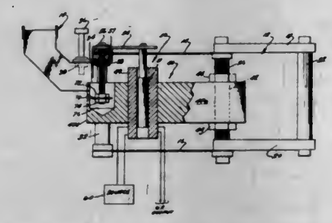
1. A drilling apparatus comprising a support, a drive shaft rotatably mounted on said support, a hollow drill bit mounted over said shaft for longitudinal movement with respect thereto, first coupling means coupling said bit to said shaft during rotation of said

shaft while permitting said longitudinal movement, drive means external of said support, second coupling means coupling said drive means to said shaft, mounting means mounting at least a portion of said second coupling means for pivotal movement in said support in response to a predetermined change in resistance to drilling, feeding means mounted on said support for feeding said bit along said support, and sensing means mounted on said support and cooperating with said second coupling means and said feeding means to regulate the feeding of said bit in response to pivotal movement of said second coupling means.

3,288,230
METHOD OF PREVENTING GAS LOSS DURING GAS DRILLING
Frank H. Braunlich, Jr., and Warren M. Zingg, Tulsa, Okla., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Mar. 24, 1964, Ser. No. 354,466
4 Claims. (Cl. 175—72)

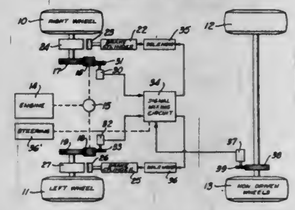
1. In a process for drilling boreholes into the earth wherein a gas is circulated within the borehole, the method of preventing loss of said gas into a permeable earth formation which comprises mixing with said gas and circulating into said borehole a charge of a pulverulent solid from the group consisting of water swellable natural gums, synthetic polymers and clays and thereafter mixing with said gas and circulating into said borehole a charge of an aqueous base mist from the group consisting of water and water solutions of salts.

3,288,231
EGG WEIGHING APPARATUS
Albert W. Hanne, Ottumwa, Iowa, assignor to Big Dutchman, Inc., Zeeland, Mich., a corporation of Michigan
Filed Jan. 25, 1965, Ser. No. 427,620
2 Claims. (Cl. 177—210)



1. Apparatus for automatically measuring the weight of individual eggs or like objects, comprising in combination: a receiving platform structure for restingly supporting the objects to be weighed; resiliently biased suspension means connecting said platform to a fixed external frame and extending therebetween; said suspension means arranged to move away from its normal biased position in response to the weight of an object upon said platform; an electromechanical transducer having a body portion and a member movable relative to the said body to produce electrical signals representative of and having a known relationship to said relative motion; means connecting said movable transducer member to said suspension means and platforms; a mounting member comprising a substantially solid block of heat-conductive material securable to said frame, extending toward said platform, and arranged to at least partially engirdle said transducer body to fixedly mount the same; said mounting member acting as a heat transfer and dissipation structure for controlling the operating temperature of the transducer; said mounting member block defining a well for containing a viscous damping liquid; said suspension means having a member connected thereto and extending into said well, such that the movements of said suspension means in response to the weight of an object upon said platform are damped by said member moving within said damping fluid; and means electrically connected to said transducer for producing an indication of the weight of the object on the platform from said electrical signal representative thereof.

3,288,232
WHEEL SPEED CONTROL
Willard W. Shepherd, Whittier, Calif., assignor to Shepherd Machinery Co., Industry, Calif., a limited partnership
Filed Sept. 21, 1964, Ser. No. 397,857
3 Claims. (Cl. 180—1)



1. In a wheel speed control for a vehicle having first and second driven wheels and a nondriven wheel, the combination of:

first signal generating means for generating a first signal which varies as a function of the rotational speed of the first wheel;

second signal generating means for generating a second signal which varies as a function of the rotational speed of the second wheel;

third signal generating means for generating a third signal which varies as a function of the rotational speed of the nondriven wheel;

first speed reducing means for reducing the speed of the first wheel;

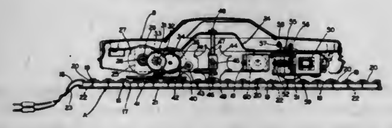
second speed reducing means for reducing the speed of the second wheel;

control circuit means for producing a selected one of two output signals when first and second input signals differ by a predetermined amount and producing both of said output signals when both the first and second input signals differ from a third input signal by a predetermined amount;

means for coupling said first, second and third signals to said control circuit means as inputs; and

means for coupling said output signals to said first and second speed reducing means, respectively, in controlling relation.

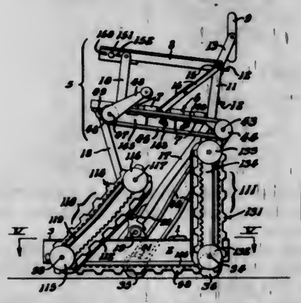
3,288,233
REMOTELY CONTROLLED ELECTRICALLY PROPELLED VEHICLE
Allen Shotwell, 207 Simpson Howell Road, Elizabeth, Pa.
Filed Oct. 8, 1964, Ser. No. 402,428
11 Claims. (Cl. 180—2)



1. In remotely controlled electrically propelled vehicle apparatus including a platform having two series of spaced conductors thereon, and an electrically propelled vehicle adapted for movement over the platform,

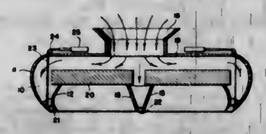
a drive motor on the vehicle, and electric pick-up means on the vehicle for contact with each series of conductors, and an electric circuit connected to said conductors, the improvemen characterized by a steering motor on the vehicle, and a relay on the vehicle which determines which motor is to be electrically connected to said pick-up means in response to the amount of current the relay receives from said conductors, whereby the vehicle may be moved in any direction over said platform.

3,288,234
STAIR CLIMBING CONVEYANCE
Jack M. Feliz, Camden, N.J.
(34—808 Via Echo, Palm Springs, Calif.)
Filed Aug. 17, 1964, Ser. No. 390,044
28 Claims. (Cl. 180—6.5)



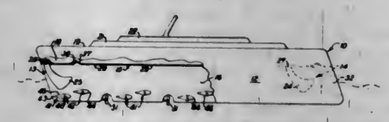
1. In a load carrying conveyance, a platform to receive the load; main endless belt tractor means supporting the platform for mobility; lever means carrying auxiliary endless belt tractor means disposed on pivots forwardly and rearwardly on the platform and outwardly off-set from said main tractor means and said platform to be operatively clear of said main tractor means and platform to permit rotation of said auxiliary tractor means without interference contact with said main tractor means or platform; power mechanism manually controllable by an operator for driving the several tractor means; rotational means for rotating said several lever means concentrically positioned with said pivots and means for driving said rotational means.

3,288,235
CONTROL SYSTEM FOR GROUND EFFECT VEHICLES
Richard Stanton Jones, Cowes, Isle of Wight, England, assignor to Westland Aircraft Limited, Somerset, England
Filed Nov. 1, 1963, Ser. No. 320,711
Claims priority, application Great Britain, Nov. 15, 1962, 43,165/62
20 Claims. (Cl. 180—7)



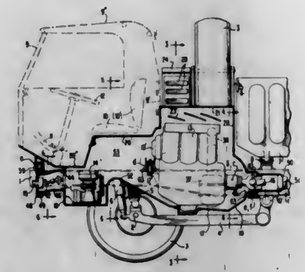
1. In a ground effect machine including a base platform structure, means defining a substantially continuous series of downwardly directed jet passages around the periphery of said platform structure, means for propelling the machine, and means for generating pressurized air to be discharged through said jet passages to provide a pressurized supporting air cushion under said platform structure for supporting the platform structure clear of the surface by its pressure, the improvement comprising a flexible skirt surrounding the platform and the jet passage means and extending below the lowest point of said platform to retard the escape of the air cushion which is bounded by the underside of the base platform structure, at least partially by the flexible skirt, and by the surface over which the machine operates, the flexible skirt extending around substantially the entire periphery of the base platform, and controlled deflecting means for mechanically deflecting the flexible skirt at selected points thereof to attenuate the air cushion at the selected points and induce a change in direction of the machine toward the selected point.

3,288,236
HYDRO-AIR CUSHION VESSELS
Guillermo Solomon Padial, Apartado 13068, Madrid, Spain
Filed Jan. 5, 1965, Ser. No. 423,418
2 Claims. (Cl. 180—7)



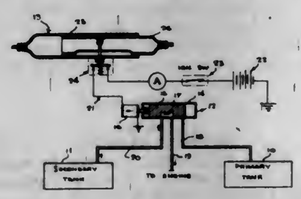
2. A large, ocean-going, hydro-air cushion vessel having a hull with bow and stern ends and including a pair of spaced vertical side walls, a horizontal floor extending between the walls and spaced from the lower edges of the walls a sufficient distance so that the vessel when fully loaded and supported by compressed air will float with such floor above the water, a transverse series of skid members located at the bow of the hull, and a transverse series of skid members located at the stern of the hull, said skid members being individually pivotally mounted at their upper ends adjacent to the underside of the floor at the bow and stern of the hull and depending from such pivotal mounting to a point above the lower edges of the walls, said skid members in each of said series at the bow and stern ends of the hull having flat side walls and being adjacent to one another and extending between the walls to form substantially air-tight doors, said skid members, walls and floor forming an air chamber for supporting the vessel on an air cushion, means for introducing air into the chamber to form an air cushion, and said skid members being of lightweight construction and extending downwardly and rearwardly from the pivotal mountings thereof so that their lower ends trail during the movement of the vessel, said skid members having a width substantially greater than their thickness and such that the skid members may be pivoted in the direction of their widths relative to one another a substantial distance and still overlap one another to maintain the air cushion in said chamber, each of said skid members increasing in width from the upper pivoted end thereof to the lower free trailing end thereof and having a substantially triangularly-shaped water engaging end portion, the apex of which is disposed downwardly and is located in spaced trailing relation to the pivotal mounting of said skid member, the forward edge of each skid member being convexly-shaped and of substantially greater radius of curvature than the edge of the apex in said triangularly-shaped end portion, and means for regulating the pivotal movements of each skid member during the operation of the vessel, said regulating means including means connected to the hull of the vessel and to the rear edge of each said skid member and automatically operative to cushion the rearward and upward movements of said skid member about its pivot and to tend to return the same to normal position.

3,288,237
MOTOR VEHICLE
Alfred H. Müller, Waiblingen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Apr. 13, 1964, Ser. No. 359,209
Claims priority, application Germany, Apr. 17, 1963, D 41,386
17 Claims. (Cl. 180—54)



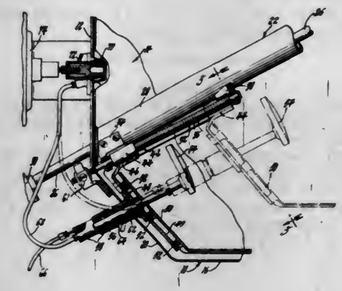
1. A vehicle suitable for cross-country driving, comprising:
frame means,
a driver cab,
drive means including a driving engine and engine accessories,
said driver cab being movable relative to said frame means within certain limits,
front axle means,
said driver cab being arranged above and in front of said front axle means and said engine being arranged above and to the rear of the front axle means,
and a trough-like structure complemented into watertight housing means accommodating therein the driving engine and at least some of the engine accessories,
said driver cab resting on said housing means,
said housing means having a trough-like bottom cross section which is closed off by cover means offset in a step-like manner downwardly from the rear toward the front thereof.

3,288,238
FUEL DIVERSION SYSTEM
Emmett W. Lindsey, 2422 Laburnum Ave., Roanoke, Va.
Filed July 16, 1964, Ser. No. 383,183
18 Claims. (Cl. 180—77)



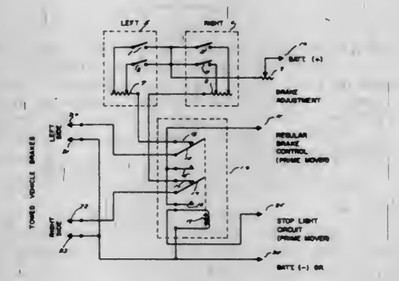
1. A fuel diversion system for a self propelling vehicle including at least one mover means and means for supplying fuel to the mover means comprising first and second fuel sources communicable with said fuel supply means, means for sensing the nonpropulsion condition of means operative to produce a nonpropulsion condition of said vehicle and valve means responsive to said sensing means to communicate said fuel supply means with a selected one of said fuel sources thereby permitting fuel from the selected fuel source to be supplied to said mover means.

3,288,239
ADJUSTABLE TOEBOARD AND CONTROL PEDAL FOR VEHICLES
Theodore F. Ristau, Saginaw, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 25, 1964, Ser. No. 369,818
4 Claims. (Cl. 180—78)



1. In a vehicle body including a passenger seat, the combination comprising, a steering column mounted on the body in predetermined relation with the seat, a pedal mounting member, a control pedal movably mounted on said pedal mounting member, motion guiding means defining a rectilinear path, means mounting said motion guiding means on said steering column to have the motion path thereof directed therealong, means mounting said pedal mounting member on said motion guiding means for rectilinear movement along said steering column, and means for moving said pedal mounting member along said steering column to various selected positions of said pedal relative to said seat.

3,288,240
AUTOMATIC STABILITY CONTROL MEANS FOR TOWED VEHICLES
Richard M. Franzel, Rte. 1, Box 580, Mound, Minn.
Filed July 29, 1964, Ser. No. 385,921
8 Claims. (Cl. 180—82)



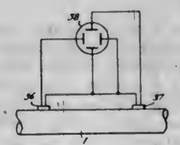
1. Automatic stability control means for a towed vehicle to overcome inherent undesirable effects of lateral acceleration forces due to swaying and swerving movements thereof when said towed vehicle is in motion, comprising in combination, automatic sensing means carried by said towed vehicle and activated by said lateral acceleration forces experienced by said towed vehicle in said motion, automatic means connecting said sensing means

with wheel braking means of said towed vehicle, means to permit selective brake operation of said towed vehicle by said sensing means only when regular brakes of prime-mover and regular brakes of towed vehicle are not applied in normal way, said braking means of said towed vehicle powered by standard electric battery located in said prime-mover, said braking means being instantaneously applied on the side of said towed vehicle that receives outward lateral acceleration thereby causing corrective forces to be automatically applied to the appropriate side of said towed vehicle, thus minimizing the undesirable effects of said swaying and swerving thereof.

3,288,241
METHOD AND APPARATUS FOR MEASUREMENT OF ACOUSTIC POWER TRANSMISSION AND IMPEDANCE

Dennison Bancroft, Waterville, Maine, and Nicholas Maropis, West Chester, Carmine F. De Prisco, Glen Mills, and William C. Elmore, Swarthmore, Pa., assignors to Aeroprojects Incorporated, West Chester, Pa., a corporation of Pennsylvania

Filed Nov. 1, 1960, Ser. No. 66,642
20 Claims. (Cl. 181—.5)



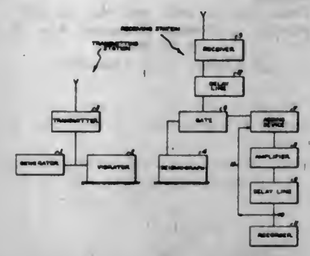
9. A method for determining the standing wave pattern in a vibratory member comprising the steps of attaching a plurality of transducers at spaced points along the length of a metallic structural member of known length, introducing vibratory energy into said member, measuring instantaneous particle displacement of said member by said transducers at said points, generating an output signal from each transducer indicative of the amount of particle displacements sensed by each transducer, and then combining the output signal of said transducers so as to produce a resultant signal proportional to the elastic standing wave parameter of the acoustical power being transmitted by said member.

3,288,242
ELECTROMAGNETIC WAVE CONTROLLED GATED SEISMIC WAVE RECORDER

Julien M. Loeb, Saint-Cloud, France, assignor of fifty percent to Compagnie Generale de Geophysique, and fifty percent to Institut Francais du Petrole des Carburants et Lubrifiants, Paris, France and Rueil-Malmaison, France, respectively

Filed Oct. 29, 1962, Ser. No. 233,749
Claims priority, application France, Nov. 7, 1961, 878,133
2 Claims. (Cl. 181—.5)

1. A system for seismically prospecting underground strata, comprising a transmitting station including means for simultaneously producing a series of seismic wave trains and of electromagnetic wave trains of a short duration at predetermined adjustable time intervals; and a receiving station including means adapted to receive the seismic wave trains reflected by the underground strata and to transform them into the electromagnetic pulses, means for receiving the electromagnetic waves, means for delaying the electromagnetic waves thus received by an adjustable amount equal to the time required for the seismic waves to impinge on and be reflected by strata at a predetermined depth and to reach the receiving station, a gate opened by the delayed electromagnetic waves during the passage thereof including an input for receiving said electromagnetic pulses and an output for

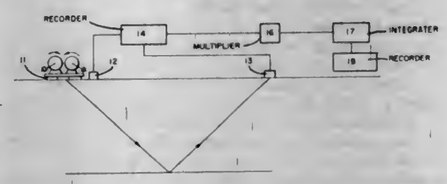


transmitting the received electromagnetic pulses, and recording means adapted to receive the electromagnetic pulses transmitted by the output of said gate.

3,288,243
PHASE VARYING CONTINUOUS WAVE SEISMIC SURVEYING SYSTEM

Daniel Silverman, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware

Filed Oct. 25, 1963, Ser. No. 318,934
2 Claims. (Cl. 181—.5)



1. Seismic surveying apparatus comprising: signal generating means for impressing a seismic signal of a given duration upon the earth, said signal generating means comprising at least one unbalanced rotating weight; drive means connected to said weight for rotating the same, said drive means comprising a hydraulic motor so mounted to permit angular rotation of its stator; variable phase shift means coupled to said drive means for sharply shifting the angle of rotation any selected degree to produce such selected shift in the phase of said signal during its duration, said phase shift means including a hydraulic cylinder geared to said hydraulic motor to sharply rotate said stator; and detector means for receiving the resulting seismic signal transmitted through the earth.

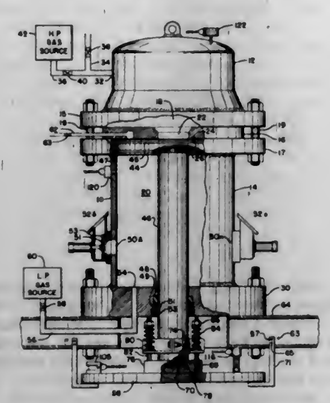
3,288,244
SEISMIC SYSTEM

Robert A. Kirby, Tulsa, Okla., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware

Filed Aug. 10, 1961, Ser. No. 130,536
7 Claims. (Cl. 181—.5)

7. An apparatus for generating a seismic disturbance which comprises a vertically disposed enclosed housing, the upper end of said housing having an orifice to provide fluid communication through said upper end, a piston fitted within and adapted to move up and down within said housing, a piston rod connected at its upper end to said piston and extending downward in a slidable, fluid-tight relationship through the lower end of said housing, the inner surface of said upper end of said housing and

the upper end of said piston adapted upon engagement with one another to form a releasable fluid-tight seal about said orifice, a source of high pressure gas adapted to communicate with the interior of said housing through

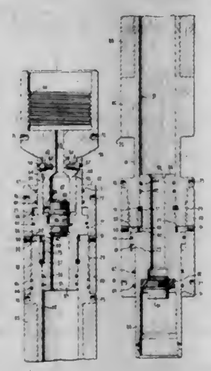


said orifice, and port means penetrating said housing in a position to enable fluid communication between the exterior of said housing and the interior thereof below said piston.

3,288,245
RIGID ACOUSTICALLY ISOLATED WELL LOGGING TOOL

Terry O. Anderson, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware

Filed Dec. 4, 1964, Ser. No. 415,902
12 Claims. (Cl. 181—.5)

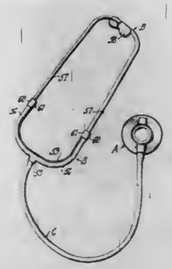


1. An acoustic well logging sonde including:
spaced transducer means connected by a rigid compressional wave isolating longitudinal coupling assembly comprising:
first solid member means having longitudinally disposed surfaces,
second solid member means slidably engaged thereby only on longitudinally disposed mating surfaces,
sealed solid walled expansive chamber means coupled between the two solid member means for volume variation in dependency on their relative longitudinal positions,
and liquid body means completely filling the expansive chamber means providing at liquid-solid interfaces an impedance discontinuity to the longitudinal propagation of compressional wave energy through the coupling assembly.

3,288,246
STETHOSCOPE WITH IMPROVED ROTATABLE BINAURAL COUPLINGS

Derek R. Allen, Montrose, Calif., assignor to Allen Medical Instrument Corporation, a corporation of California

Filed Oct. 20, 1965, Ser. No. 498,834
3 Claims. (Cl. 181—24)



1. A stethoscope comprising a communication tube having a pair of flexible branch tubes branching from one end thereof; a pair of binaurals of rigid tubing having respective ends coupled to respective ends of said branch tubes; and a yoke of spring sheet material having respective arms of substantially flat ribbon form disposed in planes at right angles to a common plane of said yoke, having their one ends joined by a transverse connecting bridge and having, at their other ends, integral extensions of dihedral angular form comprising respective end portions of said arms and respective webs joined to said end portions by right-angle bends and extending in opposite directions in a plane adjacent and parallel to the common plane of the side edges of said arms at one side of said yoke, and respective curled sleeves formed as continuations of said webs, tangent to said webs, extending continuously therefrom substantially entirely around said binaurals, and centered in the general plane of the yoke, said sleeves encircling respective binaurals immediately adjacent the ends of said branch tubes with a yielding frictional engagement such as to permit rotational adjustment of said binaurals and to hold them in selected positions of such rotational adjustment.

3,288,247
SAFETY STEPLADDER

Albert K. Barnes, 82—67 Austin St., Kew Gardens, N.Y.

Filed July 26, 1965, Ser. No. 474,741
5 Claims. (Cl. 182—106)

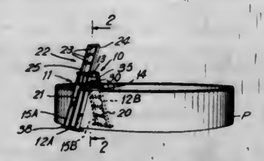
1. A safety stepladder, comprising: a front stepladder portion, a rear stepladder portion, a top step and platform member providing thereunder hinge means effectively hingedly connected to the top of said front stepladder portion and to the top of said stepladder portion for hingedly mounting said front and rear stepladder portions with respect to each other and with respect to said top step and platform member; controllably vertically extendable and retractible auxiliary support means having a lower portion provided with mounting means effectively mounting same with respect to said front and rear stepladder portions and having an upper portion vertically slidably engaged with respect to said lower portion for controllable upward extension and downward retraction relative thereto and relative to said top step and platform

member; and controllably manually operable locking means effectively cooperable with respect to said vertically slidable upper portion of said auxiliary support means for controllably and positively locking, in a structurally strong manner, said upper portion of said auxiliary support means in a desired vertically extended position whereby to provide a stable and strong type of auxiliary support for manual grasping by a person standing on the safety stepladder, said mounting means for mounting said lower portion of said auxiliary support means with respect to said front and rear stepladder portions comprising lower pivotal linkage means having a center clamp rigidly con-



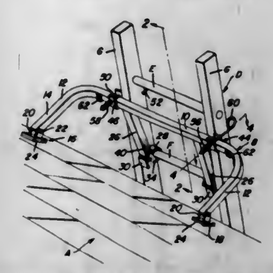
nected at the middle thereof to said lower portion of said auxiliary support means and having front and rear linkage portions pivotally connected with respect to said clamp at the inner ends thereof and pivotally connected at the outer ends thereof to corresponding lower parts of said front and rear stepladder portions, said mounting means also comprising upper pivotal linkage means having a centrally positioned vertically apertured slide-bearing means and having front and rear linkage portions pivotally connected to said slide-bearing means at the inner ends thereof and pivotally connected at the outer ends thereof, to corresponding upper parts of said front and rear stepladder portions.

3,288,248
POOL LADDER
Steven D. Gurian, 88 Gate Lane, East Meadow, N.Y., and Morton M. Bernstein, 38 Dorchester Drive, Manhasset, N.Y.
Filed Jan. 13, 1965, Ser. No. 425,242
9 Claims. (Cl. 182—118)



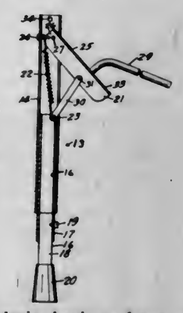
1. A ladder comprising a pair of laterally spaced A-frames, a plurality of laterally extending spaced steps connected between one pair of opposed legs of said A-frames and forming a first group of steps, a second group of steps, and means mounting said second group of steps adjacent the other pair of legs of said A-frames for movement between a lower position wherein the second group of steps are substantially coextensive with said other pair of legs and the lowest step is positioned adjacent to the bottom of said A-frames to allow access to the upper portion of the ladder, and a raised position wherein the lowest step is spaced a substantial distance from the bottom of said A-frames and the space between said lowest step in the raised position and the bottom of said A-frames is void of steps for preventing access to the upper portion of the ladder from the side of the ladder having said second group of steps.

3,288,249
GUTTER BRIDGING LADDER ATTACHMENT
Clyde W. Gibson, P.O. Box 447, Harrisburg, N.C.
Filed June 4, 1965, Ser. No. 461,361
7 Claims. (Cl. 182—214)



5. A gutter bridging ladder positioning and position stabilizing attachment comprising: a horizontal elongated U-shaped frame embodying a bight portion adapted to span the space between and engage against the rails of a ladder, and the legs at the ends of said bight portion, said legs having free end portions adapted to rest firmly against a surface, means carried by said frame and functioning to detachably connect the same with a selected rung on said ladder, and additional means also carried by said frame and adapted to detachably connect said frame with portions of said rails in a plane above the plane of the selected rung, said additional means comprising a pair of rail abutting clamps slidingly adjustably mounted on said bight portion, each clamp embodying a spring-biased rail engaging hook spaced from and adjustable toward and from said bight portion and rail.

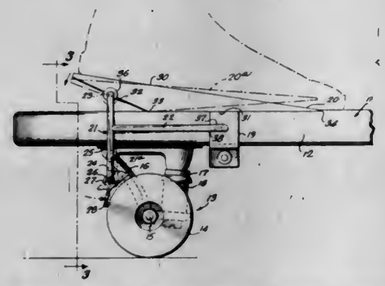
3,288,250
BRAKING MEANS FOR MOBILE DEVICES
Carl W. Oja, 2190 Marshall Ave., St. Paul. Minn. 55104, and Richard L. Scheuerman, Inver Grove, Minn.; said Scheuerman assignor to said Oja
Filed July 8, 1965, Ser. No. 470,429
6 Claims. (Cl. 188—5)



1. A mobile device having a frame mounted on wheels, a platform supported on the frame in elevated condition in relationship to the wheels, and braking means located beneath said platform and mounted on said frame, said braking means comprising at least one assembly of elements including a tubular element oriented essentially vertically in relation to a plane through the wheels of said mobile device, said tubular element being spaced from the surface supporting the wheels of said device, a plunger telescopically engaged within the lower end of said tubular element and normally withdrawn from the surface supporting the wheels of said device but adapted to be extended downwardly from said tubular element to engage

with said surface, a toggle mechanism for extending said plunger downwardly from said tubular element and retracting said plunger from its extended condition, and biasing means within said tubular element for biasing said plunger in a retracted condition from the surface supporting the wheels of said device, said tubular element having an elongated essentially vertical opening along one side thereof, one of the arm means of the toggle mechanism including a longitudinal segment out of said tubular element along one side thereof at said opening and separated therefrom, with a flange extension inwardly from one end of said segment pivotally connected to said tubular element and a handle member attached externally to said segment to permit said segment to be pivoted outwardly from said tubular element into a non-braking position and returned thereto for braking, the other of the arm means of said toggle mechanism including at least one connecting rod pivotally attached to said plunger at a location on said plunger which remains within said tubular element during both extremes of movement of said plunger as effected by said toggle mechanism, the pivot between said arm means of said toggle mechanism being within said tubular element when said plunger is in said extended condition.

3,288,251
SKATEBOARD BRAKE
Paul Sakwa, 825 New Hampshire Ave. NW., Washington, D.C.
Filed May 18, 1965, Ser. No. 456,649
1 Claim. (Cl. 188—29)



A braking device for skateboards having pivotally mounted front and rear wheel assemblies comprising:

(a) a brake pad for compressing against the periphery of both rear wheels of the skateboard;

(b) said brake pad having forwardly projecting top and bottom portions whereby said top and bottom portions engage said periphery to prevent slippage of said brake pad;

(c) a brake frame attached to said brake pad through a swivel bar and swivel housing allowing said brake pad to freely rotate through an arc corresponding to the arc of said pivotally mounted rear wheel assembly;

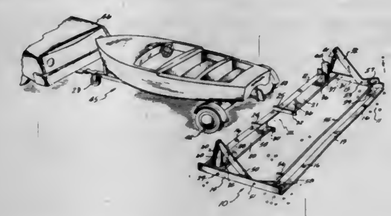
(d) a brake pedal attached to said brake frame;

(e) said brake pedal having a single inclined upper surface for placement of the operators foot and two lower surfaces joining in a pivot point;

(f) said brake pedal in normal position resting on the forward lower surface holding said brake frame attached to the rear of the pedal in an elevated position which in turn holds said brake pad slightly apart from the rear wheels, whereby said wheel assembly, when pivoting, will lightly contact said top and bottom portions of said brake pad and forcing it into an arc corresponding to the arc of said pivoted wheel assembly;

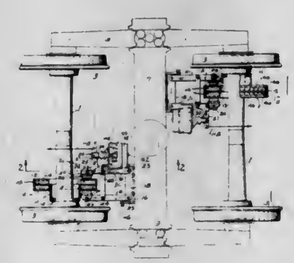
(g) said brake pedal being pivoted by rocking back on its pivot point, lowering said brake frame and pressing said brake pad firmly against the rear wheels of the skateboard.

3,288,252
BOAT RAMP SAFETY STOP
Walter E. Thomae, Milwaukee, Wis., assignor to Skobis Company, Milwaukee, Wis., a corporation of Wisconsin
Filed July 16, 1964, Ser. No. 383,096
7 Claims. (Cl. 188—32)



2. In a boat ramp for passage of a boat trailer toward a body of water to launch a boat carried by the trailer while the latter is coupled to a towing vehicle; a stop supported on the ramp for movement between an inoperative position and an operative position; actuating means spaced from said stop in position to be activated by the wheels of the boat trailer after they have passed said stop while the latter is in its inoperative position, said actuating means functioning when activated to actuate said stop to its operative position for preventing the passage of the towing vehicle beyond said stop; and means providing for the passage of a centrally located single front wheel of the boat trailer beyond said stop while the latter is in its operative position.

3,288,253
RAILWAY TRUCK BRAKE
Elias Orshansky, Jr., Los Angeles, Calif., assignor, by mesne assignments, to Evans Products Company, Plymouth, Mich., a corporation of Delaware
Original application Sept. 1, 1960, Ser. No. 53,427, now Patent No. 3,198,289, dated Aug. 3, 1965. Divided and this application July 30, 1965, Ser. No. 485,965
5 Claims. (Cl. 188—59)



1. In a railway truck, wheel and axle assemblies, truck side frames mounted on opposite ends of said assemblies, a truck load-supporting structure extending between and carried by said side frames, said assemblies including brake disks fixed thereon, a pair of bars individually pivoted directly on said bolster and projecting therefrom lengthwise of the truck alongside said disks and pro-

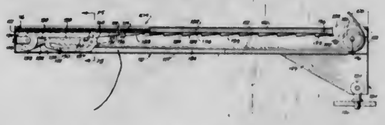
vided with brake shoes at their swinging ends, a lever fulcrumed on one of said pivoted bars, a link connecting one arm of said lever to the other bar of said pair of bars, and a pressure fluid cylinder mounted on said lever-fulcruming bar and having a piston connected to another arm of said lever and applying both brake shoes to said disk by actuating said lever.

3,288,254

ONE WAY RESTRAINT APPARATUS

Edward H. Replogle, Buffalo, N.Y., assignor to American Safety Equipment Corporation, New York, N.Y., a corporation of New York

Original application Sept. 12, 1963, Ser. No. 308,591, now Patent No. 3,174,704, dated Mar. 23, 1965. Divided and this application Feb. 4, 1965, Ser. No. 464,253
9 Claims. (Cl. 188—82.3)



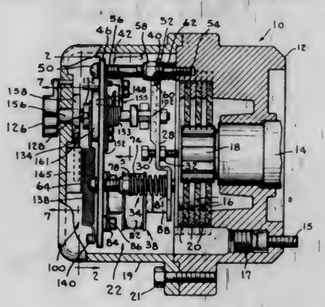
7. In restraint apparatus, the combination comprising a restraining element in a predetermined retracted condition from which it is adapted to be protracted, means constantly urging said element toward retraction, deactivatable stop means for preventing protraction of said element but inoperative when said element is in said condition, and deactivator means for said stop means operative when said element is in said condition to render said stop means inoperative and including a member requiring no manipulation to permit protraction of said element from said condition but movable in response to partial retraction of said element following said protraction to render said stop means operative.

3,288,255

ROTARY MOTION CONTROL APPARATUS AND SAFETY RELEASE

Karl Palme, Milwaukee, Wis., assignor to Wehr Steel Company, Milwaukee, Wis., a corporation of Wisconsin

Filed July 29, 1964, Ser. No. 385,840
17 Claims. (Cl. 188—171)



1. Rotary motion control apparatus comprising, in combination,

frame means,

a disk stack comprising at least one stationary disk fixed with respect to said frame means and at least one rotatable disk free from said frame means for rotation with respect to said stationary disk,

a mounting plate spaced from said frame means,

an operator plate disposed intermediate said mounting plate and said frame means, said operator plate having a first surface facing toward said disk stack and a second surface facing away from said disk stack,

a plurality of mounting means extending from said frame means to said mounting plate and connecting said mounting plate to said frame means, a first one of said mounting means extending through said operator plate and including means providing a pivotal connection about which said operating plate assembly is movable toward and away from said disk stack to set and release said rotatable disk, said means providing said pivotal connection comprising a first seat member supported on said first mounting means and engaging said second operator plate surface and spring means arranged on said first mounting means and connected to said first operator plate surface to bias said operator plate into engagement with said seat member, a second one of said mounting means extending through said operating plate and supporting an operator spring assembly in engagement with said second operating plate surface and biasing said operating plate toward said disk stack to set said rotatable disk,

said operator plate including pressure means extending toward and engageable with said disk stack and arranged intermediate said pivotal connection and said operator spring assembly and magnetic means,

magnetic means associated with said operator plate and operative when activated to move said operating plate assembly away from said disk stack,

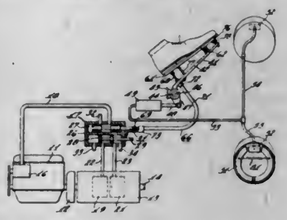
and release means operatively connected to said operator plate for selectively moving said operator plate away from said disk stack independently of said magnetic means.

3,288,256

INCHING AND BRAKING CONTROL FOR MOTOR VEHICLES

David W. Dandro, Burlington, Iowa, assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Nov. 10, 1964, Ser. No. 410,158
1 Claim. (Cl. 192—13)



A clutching and braking control for a motor vehicle comprising:

a power train including

a clutch actuated by fluid pressure and

a fluid control valve for said clutch,

a fluid pressure wheel brake system including

wheel brakes and

delivery means for selectively supplying pressure fluid to said wheel brakes,

a brake lever pivotally mounted on said vehicle on a first transverse axis and connected to said delivery means for operating the latter,

a pedal,

means pivotally mounting said pedal on said lever on a second transverse axis spaced from said first axis and intermediate longitudinally opposite ends of said pedal,

a stop on said lever on the side of said second axis remote from said first axis and engageable with said pedal to limit pivoting of the latter in one direction about said second axis beyond a predetermined position relative to said lever, biasing means interposed between said pedal and lever urging said pedal toward said position,

a first part on said pedal elongated in a longitudinal direction and adapted to be engaged by the foot of the vehicle operator to selectively

pivot said pedal relative to said lever without pivoting said lever about said first axis,

pivot said lever about said first axis without pivoting said pedal relative to said lever and

simultaneously pivot said pedal relative to said lever and said lever about said first axis,

a second part on said pedal extending transversely from the portion of said first part remote from said first axis and adapted for engagement by the operator's foot to only pivot said lever about said first axis without pivoting said pedal relative to said lever, and

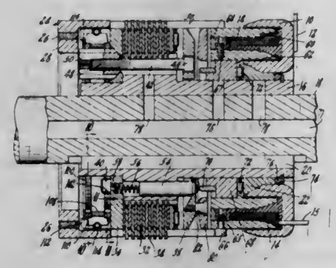
means for operating said control valve in response to relative rotation between said pedal and lever in opposition to said biasing means.

3,288,257

CLUTCH DEVICE WITH PRESSURE MULTIPLYING AND AUTOMATIC WEAR COMPENSATING MEANS

Otmar M. Ulbing, R.F.D. 1, Berkshire, N.Y.

Filed Feb. 24, 1964, Ser. No. 346,839
21 Claims. (Cl. 192—35)



12. A clutch comprising a pair of clutch elements, one clutch element being secured to a driven member and the other clutch member being secured to the driving member,

a plurality of tie bars,

means to move one end of each of said tie bars relative to its other end along a circular path about the axis of said clutch to tilt said tie bars to force said one clutch element into engagement with the other element, and

means for automatically adjusting the effective lengths of the tie bars along their axes in response to the tilting of said tie bars through a predetermined angle in a clutch engaging operation whereby wear is compensated.

3,288,258

TORQUE RELEASING CLUTCH MECHANISM

Hugh B. Taylor, Waverly, N.Y., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey

Filed Aug. 24, 1964, Ser. No. 391,711
10 Claims. (Cl. 192—150)

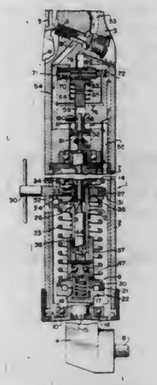
4. A power wrench containing a torque responsive clutch, comprising:

(a) fluid motor;

(b) a torque responsive clutch drivingly connected to said motor and adapted to release itself in response to a predetermined torque load;

(c) resilient means operative, when unlocked, to urge and move said clutch to its released position;

(d) lock means normally preventing said resilient means from moving said clutch to its released position and operative in response to the releasing movement of said clutch to unlock said resilient means whereby it can move said clutch to its released position; and



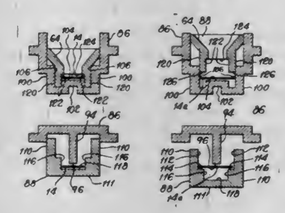
(e) actuator means operative to return said resilient means to its normal position wherein said lock means prevents it from moving said clutch to its released position.

3,288,259

EMBOSSING TOOL FOR SELECTIVELY ACCOMMODATING MATERIAL OF DIFFERENT SIZES

Georg Fritz Bremer, Albany, Calif., assignor to Dymo Industries, Inc., Emeryville, Calif., a corporation of California

Filed Mar. 1, 1965, Ser. No. 435,962
6 Claims. (Cl. 197—6.7)

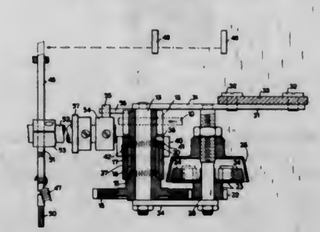


1. In an embossing tool capable of establishing an embossment in elongated strip material of different widths and having embossing means therein for establishing the embossment, a strip guide for selectively guiding a strip of one width along a fixed prescribed longitudinal path to and from the embossing means and positively aligning the center line of the strip with the embossing means between an entrance and exit thereof, said strip guide comprising:

means providing a first guide channel at the entrance and a second guide channel at the exit of the embossing means for laterally aligning the strip along the prescribed path, said guide channels each including laterally spaced locating surfaces defining guide channels of lesser and greater widths; and

means movable relative to said fixed prescribed path in a direction transverse to said lateral and longitudinal directions between a first position and a second position, movement of said means simultaneously adjusting spaced locating surfaces at each of said first and second guide channels to thereby adjust said guide channels from one of said widths to the other of said widths to accommodate different widths of tape, said guide channels, said locating surfaces and said movable means being arranged so that the centerline of the strip to be embossed is maintained transversely as well as laterally to the same fixed prescribed path regardless of the width of the strip.

3,288,260
CARRIAGE SPEED GOVERNING MEANS FOR TYPEWRITERS
Kenneth Sargent, Windsor, Conn., assignor to Olivetti Underwood Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 12, 1963, Ser. No. 330,046
4 Claims. (Cl. 197—64)



1. In a business machine having a carriage movable on a frame for advance and return travel, means to bias the carriage to advance and normally effective carriage advancement restraining means,

the combination with a tabulation controlling mechanism which is operable to release said restraining means to cause tabulating advancement of the carriage by said biasing means to given tabulated positions,

of carriage braking means to govern the speed of advance of the carriage during tabulations, comprising:

a rotor,

a stator correlated with said rotor,

centrifugal fly-weight means associated with said rotor to establish a carriage-speed-responsive braking connection between said rotor and stator during tabulating advance of the carriage,

an element turnably entrained with said rotor,

a clutch drum constantly entrained with the carriage for rotation thereby,

a helical clutch spring,

said element, said drum and said clutch spring coaxially arranged and the latter having turns associated with and directionally correlated to said drum and including at least one in light frictional contact therewith, so that there is normally a tendency for self-clutching action of the clutch spring to said drum at advance travel of the carriage, said clutch spring always adapted to drive said element when it is driven by said drum,

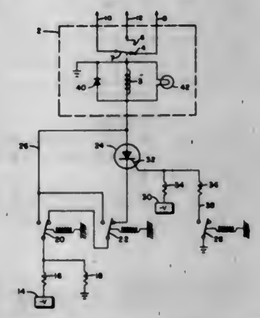
a member turnably mounted in coaxial relationship to said drum and having an annular-row of teeth for effecting clutching control over said clutch spring,

a control association of said member with that end of the spring which has a turn in light frictional contact with said drum, whereby if during carriage advance travel the said member is held against rotation with said drum, the said clutch spring is incapable of self-clutching action,

means normally in engagement with the teeth of said member to hold the latter against rotation during carriage advance travel other than tabulating travel,

and means controlled by said tabulation controlling mechanism, when operated, to release said holding means for the durations of tabulating advancements of the carriage, whereby for such durations the clutch spring is enabled for self-clutching action and the carriage consequently is subject to fly-weight controlled braking action.

3,288,261
ELECTRONIC CASE SHIFT MEANS
Roland L. Hoiseth, Minneapolis, and Hilding E. Nelson, Scandia, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 1, 1965, Ser. No. 484,259
7 Claims. (Cl. 197—71)



1. An electronic shift and shift lock circuit of the type wherein when the shift lock key is depressed, the shift lock circuit remains energized until the shift key is momentarily depressed, said circuit comprising:

(a) a signal generator for alternatively producing a first electrical signal representing lower case characters and a second electrical signal representing upper case characters;

(b) first and second electrical contacts each movable between first and second positions by said shift and shift lock keys respectively; and

(c) a gate-signal controlled rectifier for coupling said first and second contacts to said signal generator such that said first signal is produced when both said contacts are in said first position and said second signal is produced when said first contact is held in said second position or when said second contact is momentarily moved from its first to its second position.

3,288,262
VARIABLE SPACING MECHANISM FOR TYPEWRITERS AND LIKE MACHINES
Rinaldo Saito, Ivrea, Italy, assignor to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy
Filed Nov. 4, 1963, Ser. No. 321,221
Claims priority, application Italy, Nov. 8, 1962, 22,020/62
12 Claims. (Cl. 197—84)

1. In a variable spacing mechanism for typwriters and like machines, the combination comprising:

(a) a toothed escapement member urged in an advancing direction,

(b) movable dog means normally engaged with said escapement member against said urge,

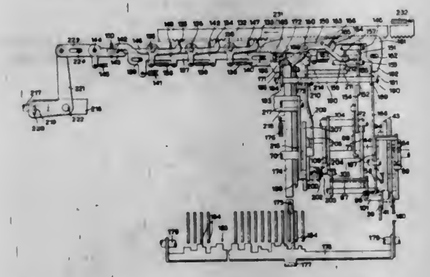
(c) means mounting said movable dog means for engagement with and disengagement for said escapement member,

(d) means for variably moving said movable dog means in a retrograde direction when disengaged from said escapement member,

(e) retaining dog means for said escapement member,

(f) means mounting said retaining dog means for engagement with and disengagement from said escapement member, said retaining dog means being normally disengaged from said escapement member,

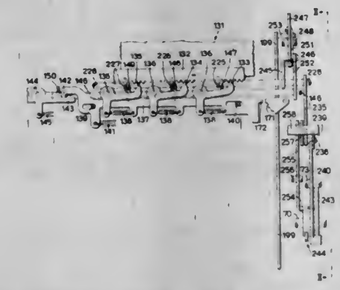
(g) universal means operable for alternating said movable dog means and said retaining dog means in the engagement with said escapement member,



(h) means for moving said retaining dog means in said advancing direction when engaging said escapement member,

(i) and means for mutually arresting said movable dog means and said retaining dog means against each other upon operation of said universal means, whereby said escapement member is caused to advance through a spacing corresponding to the sum of the retrograde movement of said movable dog means and of the advancing movement of said retaining dog means.

3,288,263
CARRIAGE LONG RUN CONTROLLING DEVICE FOR TYPEWRITERS AND LIKE MACHINES
Rinaldo Saito, Ivrea, Italy, assignor to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy
Filed Jan. 30, 1964, Ser. No. 341,394
Claims priority, application Italy, Feb. 7, 1963, 2,528/63
7 Claims. (Cl. 197—94)

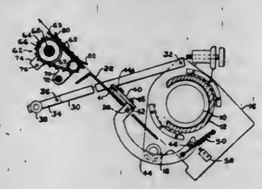


1. In a typewriter having a carriage and a spacing mechanism for letter spacing said carriage by one or more small intervals of spacing, said mechanism comprising an escapement member having teeth spaced apart by an integral multiple of said interval and normally engaged by a number of independent escapement dogs corresponding to said multiple and mutually spaced apart one interval plus an amount equal to an integral number of said multiple, a carriage long run controlling device comprising in combination:

(a) means movable from a rest position to an operated position to disengage said dogs from said member for conditioning said carriage for a long run, said means being so shaped as to disengage one of said dogs after being moved through a stroke longer than the stroke required for disengaging the other dogs,

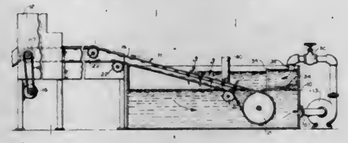
(b) and means operable at the end of said long run for temperarily returning said movable means from said operated position to an intermediate position to cause said member to be reengaged by said one dog only, whereby said member is arrested according to said multiple of interval.

3,288,264
PRINTING MACHINE WITH MOVABLE PAPER-POSITIONING SCALE
Samuel Gabrielson, Sr., and Joseph Konkel, Lynnfield, Mass., assignors to ANelex Corporation, Boston, Mass., a corporation of Massachusetts
Filed Mar. 31, 1965, Ser. No. 444,200
13 Claims. (Cl. 197—133)



1. In a printing machine: a printing element bearing a type font; a yoke supporting said printing element, said yoke being movably mounted for positioning said printing element at a printing station or alternatively in a retracted position; a scale; arm means pivotally mounted on said yoke and supporting said scale for movement, upon displacement of said yoke and said printing element to the retracted position, to a position aligned with said printing station for registration of paper with the font of said printing element; said arm means being movable to shift said scale to a withdrawn position spaced from said printing station and permitting return of said yoke and printing element to the printing station.

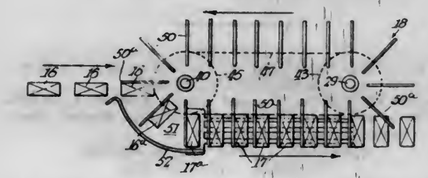
3,288,265
LIQUID FEEDING AND POSITIONING OF FRUIT AND VEGETABLE ARTICLES
Traver J. Smith, San Jose, Calif., assignor of one-half to Genevieve I. Magnuson, and one-half to Genevieve I. Magnuson, Robert Magnuson, and Lois J. Fox, trustees of the estate of Roy M. Magnuson
Filed Oct. 12, 1965, Ser. No. 505,095
14 Claims. (Cl. 198—30)



1. In a fluid feed apparatus for fruit and vegetable articles, a tank for an article-containing liquid, an article conveyor having at least one stretch thereof leading from below the level of the liquid in said tank to a position above said level of liquid, parallel series of apertured

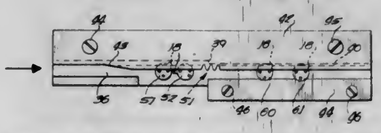
article receiving stations in said conveyor, means for effecting a flow of liquid through said stations to cause articles carried by said liquid to be seated in said article-receiving stations successively, and a central baffle in said liquid and disposed between said series.

3,288,266
CARTONER LOADER
John J. Bradley, Green Bay, Wis., assignor to Paper Converting Machine Company, Inc., Green Bay, Wis., a corporation of Wisconsin
Filed Mar. 16, 1964, Ser. No. 352,105
2 Claims. (Cl. 198—33)



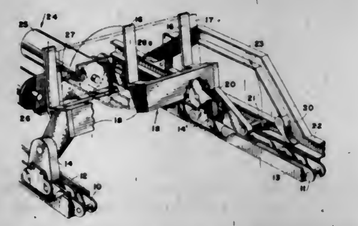
1. Apparatus for handling objects such as unsecured, generally rectangular bundles of stacked web material, comprising a frame having a generally horizontal platform, a first conveyor operatively associated with said frame for sequentially delivering said bundles to said platform with each bundle being oriented on said first conveyor with its long dimension parallel to the direction of conveyor travel, a second conveyor, a pair of vertically disposed shafts rotatably mounted on said frame, one of said shafts being provided adjacent said platform, means on said frame for rotating said shafts, chain means and sprocket means operably coupled to said shafts, a plurality of paddle-like pusher members mounted on said chain means for movement therewith in an arcuate fashion over said platform to orient and transfer said bundles from said first to said second conveyor, said second conveyor being operably associated with said frame and arranged to receive said bundles and transport the same along a path wherein each bundle is oriented with its shorter dimension parallel to said second conveyor path said second conveyor including a plurality of horizontally spaced-apart bundle-receiving carriers, said platform being equipped with a plurality of spaced-apart tapered fingers disposed in the path of carrier travel, said fingers being slotted to accommodate passing by said fingers, whereby said pushers are adapted to sweep said bundles down said tapered fingers into said carriers.

3,288,267
METHOD AND APPARATUS FOR ALIGNING AND ORIENTING COMPONENTS
William C. Taylor, Waterford, and Gerald Robert Grafius, Erie, Pa., assignors to Automation Devices, Inc., Erie, Pa., a corporation of Pennsylvania
Filed Mar. 12, 1965, Ser. No. 439,368
11 Claims. (Cl. 198—33)



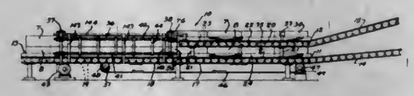
1. Apparatus for aligning and orienting parts having a body portion, a plurality of terminal means projecting from said body portion and an offset tab on said body portion in a predetermined fixed relationship with the orientation of said terminal means, said apparatus comprising: means for aligning each of said parts with said terminal means thereof extending in a generally vertical position and for discharging parts which are not so aligned; a pair of rail means defining a path in which said parts are confined and must travel, a plurality of teeth-like notches formed in one of said rail means which project into said path, each of said notches being engageable by individual ones of said plurality of terminal means to cause said parts to rotate, and means engaged by said offset tabs to limit the rotation of said parts and thereby orient said offset tab means in a predetermined radial position before said parts are free to traverse said path to its end.

3,288,268
LUMBER CONVEYOR
Glenn D. Fehely, Arcata, Calif., assignor to Lumbermatic, Inc., Arcata, Calif., a corporation of California
Filed Mar. 19, 1965, Ser. No. 441,200
10 Claims. (Cl. 198—33)



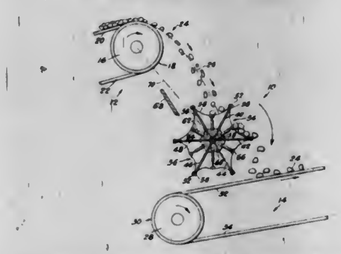
1. In a lumber conveyor of the type having a rotatably mounted carrier for each board, and including means to rotate each carrier to discharge a board therefrom at a preselected unloading station along the conveyor, improved board discharging means comprising a guide follower attacbed to each carrier and extending outwardly therefrom, said follower being swingable about the axis of rotation of said carrier to rotate said carrier into discharge position, a guide disposed adjacent the conveyor for engagement with said follower to normally maintain the carrier in board carrying position, a shunt path in said guide at each unloading station, movement of the follower along the shunt path causing its carrier to rotate and discharge, and means to divert the follower from the guide along a preselected shunt path.

3,288,269
CASE STACKING CONVEYOR SYSTEM
Ernest E. Roth, Arnold, and Henry E. Tanner, Affton, Mo., assignors to Alvey Conveyor Manufacturing Company, St. Louis, Mo., a corporation of Missouri
Filed May 17, 1965, Ser. No. 456,167
7 Claims. (Cl. 198—35)



1. A case stacking conveyor system comprising a first conveyor having a case receiving end and a case discharge end connected by an intermediate portion, a second case receiving conveyor spaced above said first conveyor and having a case run-off end over said intermediate portion of said first conveyor, separate supplies of cases on said first and second conveyors, guide means associated with each conveyor to guide said cases thereon into a line in abutting relation, said guide means constraining said cases on each conveyor to move through substantially identical curved paths to cause gaps to form at the same side of the lines of said cases, said cases on said second conveyor on reaching said run-off end descending into stacked relation with cases on said first conveyor, and case stack registering means adjacent said first conveyor including elements movable into the gaps formed between successive cases in each line of cases and positively registering said cases in vertically aligned stacked relation.

3,288,270
TRANSFER APPARATUS
Norman W. Bunting, Hillsboro, Ohio, assignor to Koppers Company, Inc., a corporation of Delaware
Filed Feb. 19, 1965, Ser. No. 433,859
5 Claims. (Cl. 198—103)



1. Apparatus for transferring particulate material from an elevated location to a receiver positioned therebelow comprising,

a rotatable feeder positioned above said receiver in the path of the particulate material discharged from the elevated location,

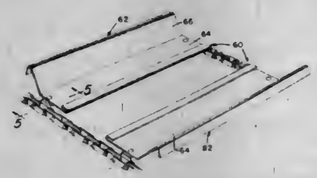
said feeder having an external surface with a plurality of recessed portions therein,

at least one of said recessed portions being arranged in an upwardly facing position to receive therein the particulate material discharged from said elevated location and to discharge said particulate matter therefrom when said rotatable feeder rotates and the material receiving recessed portion assumes a downwardly facing position;

means to rotate said rotatable feeder; and

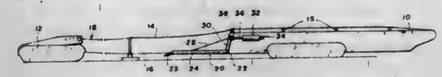
means associated with each of the recessed portions of said external surface that decreases the depth of each said recessed portion as said rotatable feeder rotates, and each said recessed portion assumes a downwardly facing position, whereby the particulate material carried in each said recessed portion is effectively discharged from said downwardly facing recessed portions.

3,288,271
CONVEYER
Charles E. Burford, Maysville, Okla., assignor to The Burford Company, Maysville, Okla., a corporation of Oklahoma
Filed Oct. 8, 1964, Ser. No. 402,448
3 Claims. (Cl. 198—131)



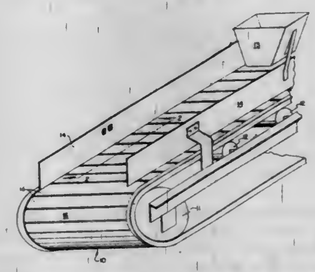
1. A conveyer comprising opposite end sprockets, a pair of endless chains engaged about said sprockets in side-by-side relationship to be driven by said sprockets, at least one receptacle assembly including a pair of receptacle members extending transversely with respect to said endless chains, said receptacle members including base portions and oppositely positioned side portions extending upwardly from the sides of the base portions, and means securing the opposite end portions of said receptacle members to said chain members, said means including an elongated slot in the opposite ends of each receptacle member and extending in the general longitudinal direction of said chains, brackets fixed with respect to the endless chains at the opposite ends of said receptacle members and having inwardly extending portions situated adjacent said slots, said inwardly extending bracket portions having apertures, and securing means received through said apertures and said slots at the opposite ends of said receptacle members to adjustably secure said receptacle members with respect to said endless chains.

3,288,272
CONVEYOR APPARATUS
Donald D. Murphy, Franklin, Pa., assignor to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 27, 1964, Ser. No. 414,383
13 Claims. (Cl. 198—139)



1. A conveyor apparatus comprising: a self-propelled drive unit and a self-propelled tail unit relatively movable with respect to each other in a rectilinear path; an endless conveyor belt extending between said units; means carried by said drive unit for drawing in and storing a substantial amount of said belt as said units are moved toward each other and for paying out the stored portion of said belt as said units are moved apart; a launching platform mounted on said drive unit so that said units can be transported as one; said platform being mounted for pivotal movement about a horizontal axis; and means for pivoting said platform about said horizontal axis.

3,288,273
SELF-CLEANING CONVEYOR BELT HAVING REPLACEABLE WEAR SURFACES
Stanley D. Michaelson, Salt Lake City, Utah, and Karl F. Eilers, Hayden Lake, Idaho, assignors to Kennecott Copper Corporation, New York, N.Y., a corporation of New York
Filed Dec. 21, 1964, Ser. No. 419,768
13 Claims. (Cl. 198—195)



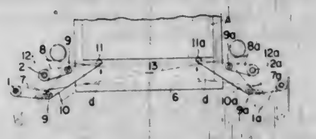
1. A conveyor belt, comprising a flexible endless backing member; means providing inturned marginal edges extending the length of the flexible backing member and defining, with the backing member, pockets at opposite

sides of the belt; and elongate wear strips extending from within each pocket and across the backing member, whereby said wear strips are tightly held in position by said backing member and said inturned marginal edges to form a superficial wear surface for the belt.

3,288,274
WORK EJECTION DEVICE FOR MULTIPLATEN HOT PRESSES AND THE LIKE

Noriyuki Nagaoka, Nagoya-shi, Japan, assignor to Kabushiki Kaisha Taihei Seisakusho, Nagoya-shi, Japan, a joint-stock company of Japan

Filed Nov. 4, 1964, Ser. No. 408,943
1 Claim. (Cl. 198—221)

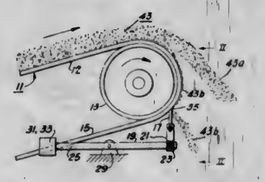


In an apparatus of the type similar to a multiplaten hot press wherein a plurality of workpieces of substantially planar shape are processed in vertically stacked arrangement interposed between parts of the apparatus, a device for ejecting the workpieces from the apparatus, said device comprising two pairs of vertical shafts disposed symmetrically on the left and right sides of the apparatus at its material insertion end, controllable driving means to drive at least one shaft on each side, pairs of left and right link mechanisms supported and driven by respective said shafts and having contact members, each of said pairs of left and right link mechanisms being so disposed and adapted that, during operation, said contact members contact and push one of said workpieces through a predetermined distance in the ejection direction away from the material insertion end and that, when not in operation, said pair of left and right link mechanisms are fully retracted toward their respective sides to avoid interference with the operation of other devices, and means to adjust the effective operational stroke of said link mechanisms and positions relative to the apparatus of said contact members at the end of said stroke.

3,288,275
METHOD AND APPARATUS FOR CLEANING CONVEYOR BELTS

Norman W. Bunting, Port Area, Manila, Republic of the Philippines, assignor to Koppers Company, Inc., a corporation of Delaware

Filed Dec. 6, 1965, Ser. No. 511,959
5 Claims. (Cl. 198—230)



1. Apparatus for removing particulate matter from a material conveyor belt including both a carrying and a return flight, and a driven head pulley comprising:

(a) a scraper blade pivotally mounted adjacent the head pulley;

(b) means for pivoting said scraper blade whereby said blade operatively engages the return flight of said conveyor belt;

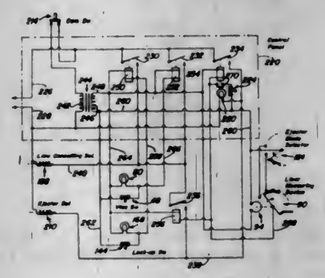
(c) means to vibrate said scraper blade in a direction substantially normal to the path of travel of said conveyor belt; and

(d) means connected to said vibrator means whereby said vibrator and said scraper blade are reciprocated horizontally in a direction substantially normal to the direction of travel of said return flight.

3,288,276
SAFETY DEVICE FOR TYPESETTING MACHINES

George R. Price, Houston, Tex., assignor to Safety Devices, Inc., Houston, Tex., a corporation of Texas

Filed Sept. 30, 1963, Ser. No. 312,530
16 Claims. (Cl. 199—52)



1. In a type comprising machine having an assembling mechanism for transferring a line of matrices to a vise mechanism wherein said line of matrices is justified when aligned with a mold including a linear predetermining the length of a slug, cast in the mold by a casting mechanism including a line cancelling stop and having an ejector mechanism including an ejector blade selector for ejecting said slug from the mold, when aligned therewith, by an ejector blade corresponding in size to said length of the slug, a malfunction indicating and damage preventing system including: means for measuring said length of the slug to be cast, comparing means operatively connecting said ejector blade selector with the measuring means for dispatching a signal when the length of slug to be cast does not correspond to the size of the ejector blade selected, means responsive to initial operation of the casting mechanism for rendering the measuring means operative to engage the liner prior to casting, detecting means rendered operative simultaneously with the measuring means for sensing malfunction of the casting mechanism and the assembling mechanism to independently stop casting, means responsive to dispatch of said signal from the comparing means for both preventing casting and subsequent operation of the ejector mechanism, indicating means operatively connected to said detecting means for identifying the malfunction, and reset means operatively connected to said signal responsive means for restoring the ejector mechanism to an operative condition.

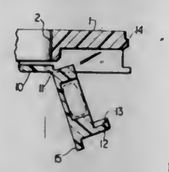
3,288,277
DISPENSING CONTAINER

Dieter Hallerbach, Danbury, Conn., assignor to Richardson-Merrell Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 22, 1965, Ser. No. 489,269
5 Claims. (Cl. 206—42)

5. A container for pills to be dispensed individually at predetermined periods which consists essentially of two parts, the upper part comprising an essentially flat round transparent cover member having an annular bead on its outer periphery forming part of a latching means

and the lower part being essentially the same diameter as the cover member and being of flexible plastic which comprises a central section having attached thereto a plurality of independent pill holding units axially disposed and essentially parallel with each other each having a cavity of sufficient size to hold a pill, tab members extending upwardly from the outer edge of said individual pill holding units with latch means adapted to

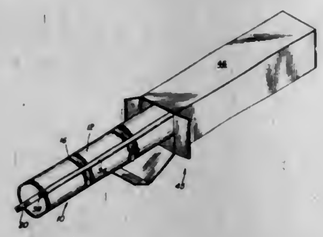


engage the latching means on the said cover member, said pill holding members being attached to the central member by a thin section which can be bent when downward pressure is applied to the member and thereby act as a hinge permitting the pill holding member to separate from the cover member and permit release of a pill from the cavity in which it is contained and indices on said container identifying each of said pill holding cavities.

3,288,278
CRUSH-PROOF SEALED PACKAGE

Harold M. Rich, Northbrook, and Berthold L. Weller, Deerfield, Ill., assignors to Kitchens of Sara Lee, Inc., Chicago, Ill., a corporation of Maryland

Filed Sept. 8, 1964, Ser. No. 394,827
6 Claims. (Cl. 206—46)



1. A crush-proof sealed package comprising

a pair of opposed substantially semi-cylindrical thermoplastic material container body sections, an article positioned in the container formed by said body sections,

a peripheral flange integrally formed with each of said body sections,

a tear tape secured to the inner surface of one of said flanges,

a thin fusion line around the marginal edges of said flanges connecting said flanges together in airtight relationship, and

a rectangular, relatively collapsible, single-ply, paperboard material carton,

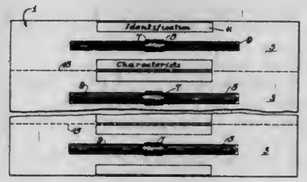
said container being snugly positioned in said carton so that said connected flanges provide a brace between opposite corners of said carton,

said connected flanges and the arcuate walls of said container cooperating with the corners and walls of said carton to greatly strengthen and rigidify the same.

3,288,279
BLISTER PACKAGE FOR ELECTRICAL COMPONENTS

Harold V. May, Pittsfield, Mass., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts

Filed Oct. 10, 1961, Ser. No. 144,089
8 Claims. (Cl. 206—56)

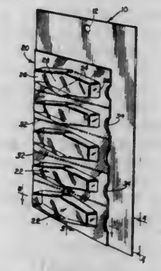


1. A blister type package for individually packaging electrical components having a body structure with end leads extending axially therefrom comprising a backing sheet of relatively rigid material, a front sheet of relatively rigid material, an intermediate transparent sheet of relatively rigid plastic material, spaced raised blisters formed in the plastic sheet corresponding generally to the shape of the components, said electrical components being housed in said blisters, elongated openings in the front sheet which fit over the raised blisters, said front and backing sheets and plastic sheet material forming an adhered together assembly, aligned and perforated tear seams in the front and backing sheets as well as the plastic sheet material which separate adjoining blisters for separating a packaged component from the package forming sheets, and removable continuous tear strips in the backing sheet which strips extend along the backing sheet over the blister areas accommodating the end leads for access to these areas.

3,288,280
COMPOSITE PACKAGE

John Donald Bostrom, Niles, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware

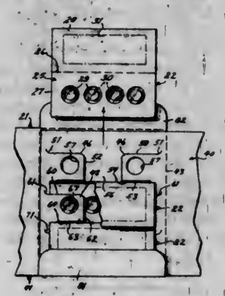
Filed Aug. 28, 1963, Ser. No. 305,049
2 Claims. (Cl. 206—56)



1. A composite package for containing an article of manufacture comprising a backing member having first and second sheets adhesively secured together, said first sheet having a plurality of adjacently positioned pre-indented outlines of closed geometric shape each extending substantially through the thickness of said first sheet and penetrating its outer surface, a cover member of transparent sheet plastic material including a plurality of article containing body portions each being positioned in the same manner and having complementary exterior geometric configurations corresponding to said pre-indented outlines provided in said backing member first sheet, said

cover member being adhesively secured to the outer surface of said backing member first sheet immediately outside of said pre-indented outlines and said article containing body portions to provide maximum adhesive engagement of said cover member to said backing member first sheet intermediate adjacent article containing body portions, a perforated portion between each pair of adjacent article containing body portions in said cover member to facilitate separation therebetween, and a finger engaging lift tab for each article containing body portions enabling manual engagement and removal of individual article containing body portions from said cover member, the relationship between each article containing body portion and the pre-indented outline of the backing member first sheet with which it is associated assuring exposure of the interior of each article containing body portion as it is stripped from the backing member.

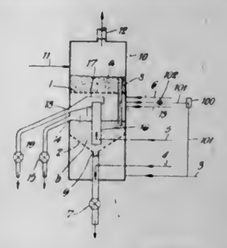
3,288,281
PILL-PACKET PACKAGE
George C. Sparks, 101 Rorer St., Erdenheim, Pa.
Filed Oct. 21, 1964, Ser. No. 405,352
3 Claims. (Cl. 206—56)



1. A pill-packet package comprising a carrier sheet of resiliently flexible material, said carrier sheet being cut to form on the carrier-sheet material a plurality of pairs of tabs with the tabs of each pair extending toward and terminating short of each other in the plane of said sheet, said tabs each having a thru opening, the tabs of each pair being longer on one side than the other, and a plurality of generally flat pill packets having protuberant pill pockets at spaced locations on one side, said packets each being of an external dimension small enough for insertion between said carrier sheet and a respective pair of resiliently deflected and undeformed tabs past the longer tab sides and large enough for retention beneath the shorter tab sides, said packets each having a medial portion between said pockets overlying the sheet region between the respective pair of tabs and having its remote portions underlying the respective pair of tabs, and said pill pockets being engageable in said tab openings.

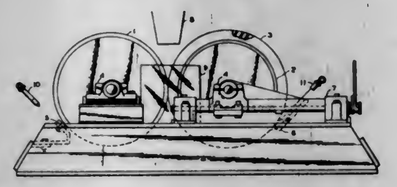
3,288,282
METHOD AND APPARATUS FOR DRYING AND SEPARATING SOLID PARTICLES
Geoffrey Frank Eveson and George Thomas Richards, Sheffield, England, assignors to Head, Wrightson, & Company Limited, Thornaby-on-Tees, England
Filed June 20, 1963, Ser. No. 289,309
5 Claims. (Cl. 209—11)

2. Apparatus for drying and cleaning small particulate material having components of different specific gravities, comprising a fluidising vessel, at least one perforate support in said vessel for a fluidised bed of discrete solid particles, means for feeding said discrete solid particles to said vessel and on to said support, means for supplying gaseous medium to said vessel under conditions operative to form and maintain said fluidised bed, said means comprising a gaseous medium supply line led to the fluidizing vessel at a point beneath the fluidised bed, means operative to produce pulsations of fluid pressure of said gaseous medium in said bed comprising a pulsing unit provided in a circuit for the gaseous medium, which is branched from said gaseous medium supply line, said branched circuit being led to said vessel at a point above said bed, means for feeding said particulate material to said fluid-



ised bed of discrete solid particles for separation of said material into fractions of different specific gravities, means for removing said fractions separately from each other from said bed, and means for continuously feeding sufficient of said discrete solid particles to said bed as substantially to replace in said bed those of such particles as are discharged by said removing means from said bed and to enable the specific gravity of said bed to be maintained at a value intermediate between those of the said fractions.

3,288,283
ADHESION PROCESS FOR SEPARATING PHOSPHATE FROM CLAY
Joe D. Clary, Lakeland, Fla., and Joseph P. Matoney, Pittsburgh, Pa., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
Filed Feb. 20, 1964, Ser. No. 346,132
1 Claim. (Cl. 209—45)



A process for separating a phosphate mineral ore from a clay-like substance which comprises:

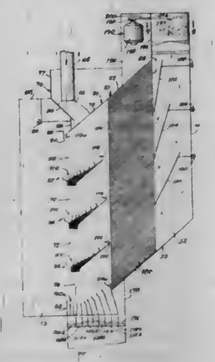
(a) feeding a slurry consisting essentially of about 20–40% by weight of a phosphate mineral ore matrix to a pair of rotating rollers while rotating said rollers at a speed of about 10–20 r.p.m., at least one of said rollers having a soft, deformable surface,

(b) flattening said matrix while passing said slurry through said rollers, thereby separating the phosphate mineral ore from the clay-like substance of the matrix, said clay-like substance adhering to the surface of one of said rollers while the ore deforms said deformable surface and falls freely from between said rollers,

(c) removing the clay-like substance from the surface of said rollers, and

(d) collecting said freely falling ore separately from said clay-like substance.

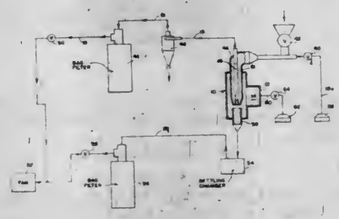
3,288,284
METHOD AND APPARATUS FOR PNEUMATICALLY CLASSIFYING SOLIDS
Russell Eugene Manley, 25 Skyline Drive, Box 1050, Ogden Dunes, Portage, Ind.
Filed Apr. 15, 1963, Ser. No. 273,014
17 Claims. (Cl. 209—135)



7. In a pneumatic classifier, a plurality of superposed wind chambers disposed in spaced relationship, common means for passing air-streams in parallel, respectively through said wind chambers, a hopper means for containing a plurailty of particles of diverse size and having discharge means for dropping a stream of diverse particles in free fall directly and generally transversely through the air-stream of the first wind chamber for initial pneumatic classification of the diverse particles therein in a plurality of fractions in the direction of the air-streams, a first row of collectors in the first wind chamber spaced from the discharge means of said hopper for separately collecting individual fractions of the classified particles, said collectors, each including a collecting and discharge means for collecting an individual fraction of the falling particles in the direction of air flow to return their velocities to substantially zero and to drop each of the collected particle fractions in a row of adjacent streams of particles in the order in which collected in generally free transverse fall through the air-stream of the wind chamber next adjacent the first wind chamber for a partial reclassification in a second row of particle collectors spaced from the first row of particle collectors, collecting means in the second particle collectors being disposed adjacent to each other for receipt of partially reclassified streams of particles from said first row of collectors and means for removing classified particles from said second collector.

3,288,285
AIR CLASSIFIER
Charles E. Walker, Fargo, N. Dak., and Charles E. Lapple, Los Altos, Calif., assignors to General Mills, Inc., a corporation of Delaware
Filed July 9, 1963, Ser. No. 293,788
15 Claims. (Cl. 209—143)

1. An apparatus to classify by use of a fluid medium finely divided material such as flour into a coarse and a fine fraction, said classifier including a chamber having a separation area therein, a primary conduit arranged to pneumatically convey material to be classified and leading in a first predetermined direction to said separation area, a fine fraction conduit leading from said separation area along a second predetermined direction, means for positioning said primary conduit and said fine fraction conduit relative to each other so that a first flow path is defined passing from said primary conduit through said separation area into said fine fraction conduit, said first flow path being caused to bend in said separation area in a predetermined direction of bend and with a predetermined degree of curvature as it passes from said primary conduit to the fine fraction conduit, a coarse fraction conduit leading from said separation area, means for positioning said coarse fraction conduit relative to said primary conduit so that a second flow path is defined passing through said separation area from the primary conduit to said coarse fraction conduit, said second flow path having a degree of curvature less than said first flow path, secondary inlet means leading to said separation area, means for positioning said secondary inlet means and said fine fraction conduit relative to each other so that a third flow path is defined passing through said second flow path, fluid actuating and control means to cause pressure differentials in said apparatus so that said fluid medium flows from said

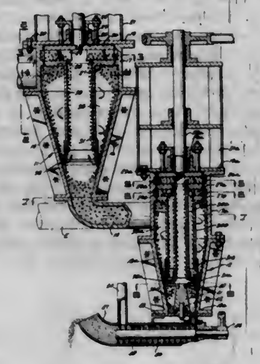


primary conduit and said secondary air inlet means into said separation area and said fluid medium flows from said separation area into said fine fraction conduit and into said coarse fraction conduit, said fluid actuating and control means being capable of being so arranged that the rate of fluid flow from said secondary inlet means is greater than the rate of fluid flow out said coarse fraction conduit, whereby a portion of the fluid from said secondary inlet means flows into said fine fraction conduit and another portion thereof flows into the coarse fraction conduit, and substantially all of the fluid from said primary conduit flows into said fine fraction conduit, with the result that a fine fraction of said material is carried into said separation area from said primary conduit and is entrained in fluid flowing in said first flow path and in said third flow path, and a coarse fraction of said material moves along said second flow path to pass through said third flow path, and into said coarse fraction conduit.

3,288,286
CENTRIFUGAL TYPE SEPARATOR
Klaas Prins, 104 E. D St., Wellston, Ohio, and Harold Dunfee, Wellston, Ohio
Filed Feb. 18, 1964, Ser. No. 345,706
8 Claims. (Cl. 209—211)

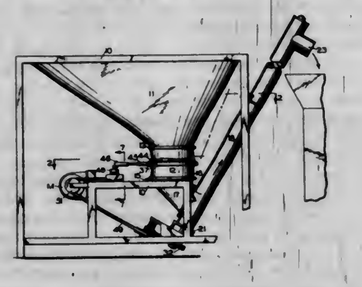
8. Apparatus for separating and classifying fragmentary materials containing particles of different specific gravities, which comprises a separation chamber of inverted conical form having a sloping wall, means for supplying a mixture of the particles in water to the chamber through an inlet at an upper level into said chamber and causing it to swirl downwardly toward an outlet for particles of higher specific gravity at a lower level of said chamber, a centrifugal pump of the multiple impeller type mounted in cooperation with said chamber, a suction tube for each impeller of the pump mounted for rotation therewith, all of said suction tubes being disposed coaxially in said chamber and spaced from each other and depending in said chamber to provide inlet lower ends at a level intermediate said chamber inlet and outlet so as to withdraw upwardly from the chamber the particles of low specific

gravity, said chamber wall converging toward said suction tubes, said ends of said tubes being located at successively different lower levels with the end of the outer-



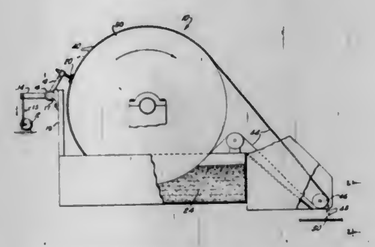
most tube being the highest to provide multiple selective suction forces, said pump having a discharge for all of said impellers.

3,288,287
SIFTER AND LIFTER FOR FLOUR AND THE LIKE
Herbert C. Rhodes, 10106 SE. Stark St., Portland, Oreg.
Filed Sept. 10, 1963, Ser. No. 307,849
7 Claims. (Cl. 209—236)



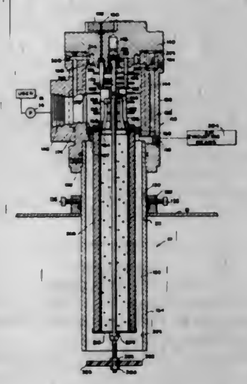
1. In a sifter for flour and the like, a stationary hopper having a bottom outlet located in a horizontal plane, a stationary housing below said hopper, said housing having a top opening of substantially the same size as said hopper outlet extending in a horizontal plane and spaced below said hopper outlet and in vertical registration therewith, a sleeve of flexible material connecting said hopper outlet and said housing top opening, means removably securing the top of said sleeve to said hopper outlet, means removably securing the bottom of said sleeve to said housing top opening, a sifting screen positioned in said sleeve substantially midway between the top and bottom of said sleeve, and extending in a horizontal plane over the interior of said sleeve, means for removably securing said screen in place in the central portion of said sleeve, a vibrating mechanism outside of said sleeve, and means connecting said vibrating mechanism with said central portion of said sleeve and with said means for securing said screen in said sleeve, whereby said central portion of said sleeve and therewith said screen will be oscillated in the horizontal plane while the upper and lower portions of said sleeve remain stationary.

3,288,288
ART OF FILTRATION
Truman P. Horton and Louis E. Capshaw, Lompoc, Calif., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed June 28, 1963, Ser. No. 291,577
3 Claims. (Cl. 210—66)



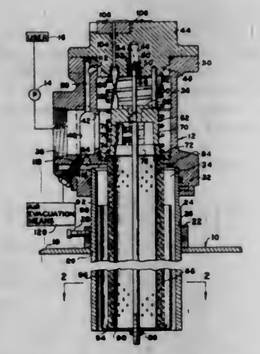
3. A continuous filtering process comprising forming a filter cake on a revolving filter medium, conditioning said cake by withdrawing a portion of liquid therefrom through the filter medium, subjecting successive portions of the filter cake to repeating compressing action as it revolves by contacting a substantial portion of the total surface of a substantially flat means at an angle to the tangent of said cake and imparting a serrated profile to the surface of the filter cake, whereby the individual serrations extend for substantially the total width of the cake and are substantially contiguous one to another.

3,288,289
MOBILE FILTER WITH CONTAMINANT COLLECTING MEANS
Borje O. Rosaen, Ann Arbor, Mich., assignor to The Rosaen Filter Company, Hazel Park, Mich., a corporation of Michigan
Filed Oct. 12, 1964, Ser. No. 403,183
9 Claims. (Cl. 210—90)



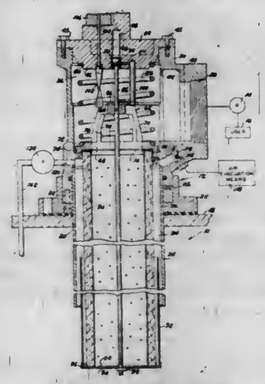
6. In combination with a fluid reservoir having an upper wall a filter device comprising
(a) a tubular member having an inner cylindrical surface, an open inlet end and an open end opposite said inlet end,
(b) means positioning said tubular member to depend from said upper wall of said reservoir vertically into said reservoir with the inlet end below the level of fluid in said reservoir and said opposite end disposed exteriorly of said upper wall,
(c) a housing structure including a portion mounted to said opposite end of said tubular member and provided with an outlet,
(d) a filter assembly and means mounting said filter assembly in said tubular member intermediate said inlet end and said outlet end; said filter assembly being vertically upwardly removable from said tubular member and said filter assembly including an annular filter element having an outer surface in communication with said inlet end and an inner surface in communication with said outlet, and
(e) a circular filter member mounted to said filter assembly and supported beneath said filter element, said filter member normally positioned exteriorly of said inlet end of said tubular member and having an annular edge engaging said inner surface of said tubular member upon removal of said filter assembly from said tubular member.

3,288,290
FILTER DEVICE
Oscar E. Rosaen, Grosse Pointe Farms, Mich., assignor to The Rosaen Filter Company, a corporation of Michigan
Filed Apr. 14, 1965, Ser. No. 447,995
4 Claims. (Cl. 210—90)



1. In combination with a fluid reservoir having an upper wall, a filter device comprising
(a) a tubular member having an open inlet end and an open end opposite said inlet end,
(b) means positioning said tubular member to depend from said upper wall of said reservoir vertically into said reservoir with the inlet end below the level of fluid in said reservoir and said opposite end disposed exteriorly of said upper wall,
(c) a housing structure including a portion mounted to said opposite end of said tubular member and provided with an outlet,
(d) a filter assembly and means slidably mounting said filter assembly in said tubular member intermediate said inlet end and said outlet end; and said filter assembly including an annular filter element having an outer surface in communication with said inlet end and an inner surface in communication with said outlet, and
(e) an inner imperforate housing member secured to said filter assembly and including a first portion spaced outwardly from said outer surface of said filter element and surrounding a portion of same adjacent the inlet end of said tubular member to define a collection chamber therebetween and a second portion closing the end of said collection chamber adjacent said inlet end of said tubular member.

3,288,291
BAYONET FILTER DEVICE
Borje O. Rosaen, Ann Arbor, Mich., assignor to The Rosaen Filter Company, Hazel Park, Mich., a corporation of Michigan
Filed Aug. 23, 1965, Ser. No. 481,688
4 Claims. (Cl. 210—90)

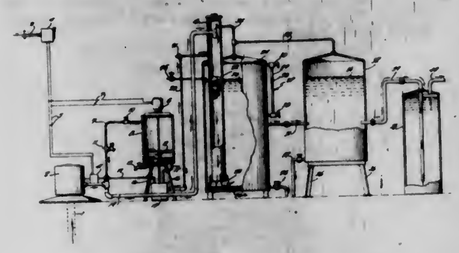


1. In combination with a fluid reservoir having an upper wall, a filter device comprising,
(a) a tubular member having an open inlet end and an open end opposite said inlet end,
(b) means positioning said tubular member to depend from said upper wall of said reservoir vertically into said reservoir with the inlet end below the level of fluid in said reservoir and said opposite end disposed exteriorly of said upper wall,
(c) a housing structure including a portion mounted to said opposite end of said tubular member and provided with an outlet,
(d) a filter assembly and means slidably mounting said filter assembly in said tubular member intermediate said inlet end and said outlet end; and said filter assembly including an annular filter element having an outer surface in communication with said inlet end and an inner surface in communication with said outlet, and
(e) an inner perforate housing member secured to said filter assembly and including a first portion spaced outwardly from said outer surface of said filter element and surrounding a portion of same adjacent the inlet end of said tubular member to define a collection chamber therebetween and a second portion closing the end of said collection chamber adjacent said inlet end of said tubular member.

3,288,292
WATER SOFTENING PLANT
Raymond J. Stone, 1901 N. Council, Oklahoma City, Okla.
Filed Feb. 12, 1964, Ser. No. 344,301
2 Claims. (Cl. 210—97)

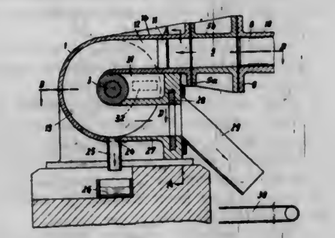
1. A water softening plant comprising a first pump for providing water pressure; a chemical treatment tank; a treating and settling tank having a downcomer tube therein; first conveying means to convey water from said pump to said downcomer; a second pump included in said first conveying means to pump water from said chemical treatment tank to said downcomer; said downcomer being

provided with means for mixing raw water and chemically treated water, said mixing means being a helical screw, a finished water pressure tank; second conveying means to convey water to said finished water pressure tank from said treating tank; air pressure equalization means including an air line having openings in said down-



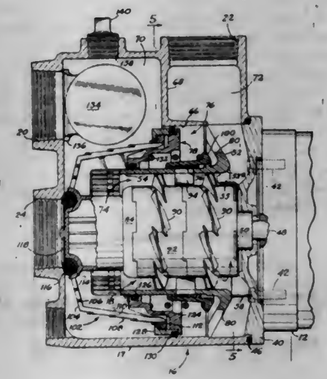
comer, said treating tank, and said finished water tank; and automatic cuton means responsive to a decrease in pressure in said treating and finished water tanks connected to said first and second pump means, whereby a decrease in pressure caused by water being consumed from said finished water tank will be reflected back to said automatic cuton means.

3,288,293
PRESSURE FILTER
Hermann Essel, Hohlerweg 5, Siegen, Westphalia, Germany
Filed Feb. 25, 1963, Ser. No. 260,423
Claims priority, application Germany, Feb. 22, 1962, St 18,886
10 Claims. (Cl. 210—107)



2. A pressure filter for separating filtrate from the solid component of a feed material, such as coal mud and the like, comprising a vessel including a shell which defines a feed-receiving space, said vessel having inlet means for admission of feed material and outlet means for evacuation of the solid component; rotary filtering wheel means provided in and dividing said space into a plurality of separate filtering chambers, said wheel means being arranged to separate filtrate from the feed material and to rotate with the solid component from said inlet means toward said outlet means; compressing means for compressing the feed material in said chambers, said compressing means comprising housing means defining an internal compartment which communicates with said chambers through said inlet means, sealable intake means for admitting feed material into said compartment, and a device for compressing the feed material in said compartment so that the feed material is forced through said inlet means and into said chambers; and means for sealing said intake means when said device compresses the feed material in said internal compartment.

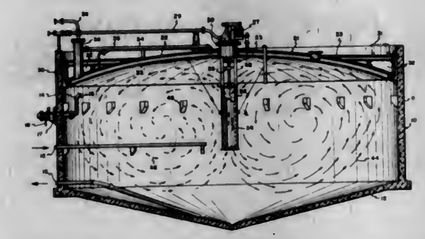
3,288,294
PUMP AND STRAINER COMBINATION
Max Frey, Portland, Oreg., assignor, by mesne assignments, to Cascade Corporation, a corporation of Oregon
Filed Jan. 14, 1964, Ser. No. 337,645
10 Claims. (Cl. 210—134)



4. A pump comprising a housing,
means defining a chamber within said housing,
a pair of ports leading to the outside of said housing and communicating with said chamber,
a reversible power-driven impeller mounted in said housing operable to pump fluid from said chamber when rotated in one direction, and to pump fluid into said chamber when rotated in the opposite direction,
check valve means for one of said ports accommodating fluid flow into said chamber only,
movable strainer mechanism mounted in said chamber including closure means shiftable between positions opening and closing the other of said ports, and
means whereby when said impeller is rotated in said one direction said strainer mechanism is moved so as to shift said closure means to a position closing said other port, and when said impeller is rotated in said opposite direction said strainer mechanism is moved so as to shift said closure means to a position opening said other port.

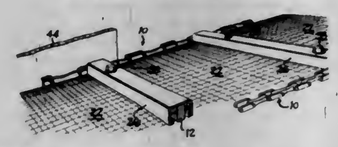
3,288,295
TANK COVER STRUCTURE
Earl M. Kelly, Hillsborough, Calif., assignor to The Eimco Corporation, Salt Lake City, Utah, a corporation of Delaware
Filed Dec. 7, 1962, Ser. No. 243,082
1 Claim. (Cl. 210—194)

Apparatus for treating putrescible sludges to effect gas evolution concomittantly with the production of other digestive products comprising:
a circular tank formed with a bottom and a vertical sidewall;
a domed cover received in said tank within the confines of the wall for vertical movement therein, said cover including a rigid continuously concave shell, a buoyant trough means associated therewith formed by a continuous wall section extending upwardly from the periphery of said concave shell to define a trough with the upper surface thereof, a cover section for said trough extending inwardly from said continuous wall section, means for venting said trough associated with said cover section, a downwardly extending mixing means attached to said concave shell; and means located in said shell for withdrawing gaseous digestion products;



means for withdrawing liquid digestion products from said tank;
means for withdrawing sludge from said tank; and
means for introducing feed to said tank.

3,288,296
FILTER SCREEN
Gene Hirs, 17208 Greenview, Detroit, Mich.
Filed Nov. 8, 1963, Ser. No. 322,428
2 Claims. (Cl. 210—232)

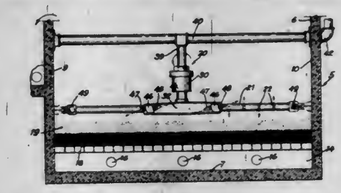


1. A filter screen assembly comprising a pair of spaced parallel drive chains, a plurality of elongate cross bars of uniform thickness extending transversely between said chains in parallel relationship with each other at uniformly spaced intervals along said chains, means securing the opposite ends of said cross bars to said chains for movement therewith, a plurality of screen elements having parallel end edges, a reinforcing strip fixedly secured to and extending along each of said end edges, a plurality of elongate coupling members each having a web and parallel side walls projecting from one side of said web, lip means on the inner side of each side wall for frictionally gripping a reinforcing strip between the lip means and said web, said lip means being transversely spaced from each other by a distance slightly greater than the thickness of said cross bar members, and means for detachably mounting said coupling members on said cross bars with the side walls and lip means of said coupling members disposed on opposite sides of said cross bars to positively retain said reinforcing strips in assembled relationship with said cross bars.

3,288,297
FILTER BED AGITATOR
Fred E. Stuart, 516 N. Charles St., Baltimore, Md.
Filed Mar. 30, 1964, Ser. No. 355,662
7 Claims. (Cl. 210—272)

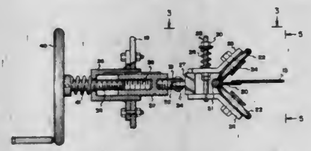
6. In combination, a sand and gravel filter having a normal surface level, a rotatable jet cleaning device suspended for rotation in a given plane above and closely adjacent said normal surface level, said device comprising a hollow inverted T-member suspended from the middle leg to freely rotate about the longitudinal axis thereof wherein the cross-leg of the T-member rotates in said given plane in a given direction, said cross-leg having oppositely and longitudinally extending hollow radial arms,

each terminating in a hollow T-shaped member, said cross leg also having a pair of laterally extending oppositely positioned hollow projections at each end thereof; said projections, arms and T-shaped terminal members lying in said given plane and rotatable therein; each of said projections having a pair of oppositely extending radially directed jets, one directed downwardly and the other directly upwardly, each at an angle of substantially



fifteen degrees to the said given plane; each of said arms having spaced circumferentially extending jets, projecting only from the side thereof rearwardly of said direction of rotation, alternate jets on said arms projecting upwardly and downwardly respectively at angles of substantially fifteen degrees to the said given plane, and said terminal members having a plurality of jets extending radially of said direction of rotation, wherein there is produced a maximum agitation of the filter bed.

3,288,298
ARTICULATED ALIGNING MEANS FOR FILTER MEDIA WEBS
Charles E. Daugherty, Cary, and Donald K. Fleming, Arlington Heights, Ill., assignors to The Eimco Corporation, Salt Lake City, Utah, a corporation of Delaware
Filed June 15, 1964, Ser. No. 375,021
9 Claims. (Cl. 210—401)

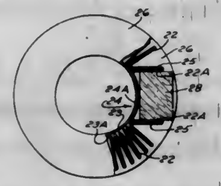


1. In a filter of the type having a filter section, a web support section spaced apart from said filter section and an endless web filter medium trained to travel successively around said filter section and said support section; the improvement comprising means for maintaining said web aligned with respect to said filter and support sections, said means comprising a continuous bead along both edges of the web, paired gripper means mounted in tandem on both sides of said filter engaging each of said web edges, said tandem pairs pivotally mounted for movement in the plane of said web, and means for urging each of said tandem pairs away from the other toward opposite sides of the filter.

3,288,299
OIL FILTER CARTRIDGE
Joseph H. Paton, North Attleboro, Mass., and Arthur F. Pettet, Barrington, R.I., assignors to Fram Corporation, Providence, R.I., a corporation of Rhode Island
Filed July 5, 1963, Ser. No. 293,049
1 Claim. (Cl. 210—487)

A filter cartridge for filtering liquids, comprising an annular filter body formed primarily of a surface type of filter element and to a less extent of a depth type of filter medium each extending the length of the cartridge body, the surface type of filter element being formed of porous pleated paper having axially extending pleats disposed,

from a first pleat to a last pleat, in an arc throughout more than three-fourths of the circumference of the cartridge body, an outwardly facing trough-shaped clip disposed within the remaining arc of the circumference of the cartridge body and formed with a perforated bottom and spaced imperforate side walls and having the first pleat of said pleated paper element folded over one side wall of said clip and the last pleat of said pleated paper element folded over the other side wall of said clip, said



depth type of filter medium being axially co-extensive with said pleated paper element and formed of a compact thick fibrous mass resiliently confined in said clip between said side walls thereof and holding the first and last pleats of said paper element against said side walls, a pair of annular sealing caps confining each end of the pleated paper element and fibrous filter medium, and a bonding agent securing the ends of said element, said medium and said clip to and between said sealing caps.

3,288,300
CENTRIFUGAL CLEANER
Charles W. Bouchillon, Starkville, Miss., assignor to The Bauer Bros. Co., Springfield, Ohio, a corporation of Ohio
Continuation of application Ser. No. 174,074, Feb. 14, 1962. This application Aug. 12, 1965, Ser. No. 483,004
10 Claims. (Cl. 210—512)



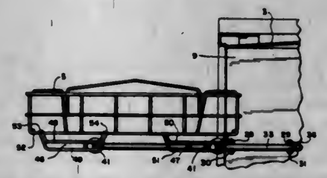
1. A hydrocyclonic separator including a hollow body formed with overflow and underflow ends, an opening at each end and with a lateral tangential inlet for admitting a slurry at the overflow end, said inlet occupying a transverse plane in said body, an overflow nozzle coaxially disposed in said body to have an inner end project, in a longitudinal sense, into said body through said opening in said overflow end to and beyond the transverse plane of said inlet but terminating substantially short of the underflow end of said body, closure means filling the opening about said nozzle at the overflow end of said body, said closure means being characterized by a helical surface portion projecting inwardly of said body and about said nozzle intermediate the inner extremity thereof and the transverse plane of said inlet and a further surface portion of said closure means forming a continuation of said helical surface and terminating in a roof surface for longitudinally circulating currents of low radial velocity which tend to move about the inner extremity of said nozzle, said roof surface having the form of an annular depression which is arcuate in cross-section and operative to smoothly reverse the flow of said longitudinally circulating currents which impact thereon.

3,288,301
PRINTED CIRCUIT CARD FRAME
Harry W. Kent, Bernard H. France, and Delbert L. Likens, all of Eau Gallie, Fla., assignors to Radiation Incorporated, Melbourne, Fla., a corporation of Florida
Filed Nov. 6, 1964, Ser. No. 409,449
6 Claims. (Cl. 211—41)



1. A printed circuit card frame comprising a plurality of members securely engaged to form a rigid interlocking enclosure, each of said members including substantially parallel, flat surface portions for establishing exterior and interior walls of said enclosure, and each having a pair of longitudinal end portions, a male element projecting from one of said end portions and longitudinally coextensive therewith, a longitudinally extending groove in the other of said end portions, said groove arranged to accept the male element of the next adjacent member, and each member further including means along said interior surface portions for removable engagement of printed circuit cards.

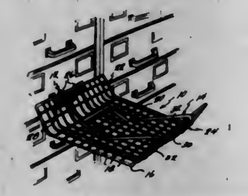
3,288,302
RACK SUPPORT SYSTEM
Allyn H. Fitzpatrick, Greendale, and Thomas Krzewina, Milwaukee, Wis., assignors to General Electric Company, a corporation of New York
Filed May 18, 1965, Ser. No. 456,641
5 Claims. (Cl. 211—41)



1. In a structure providing a chamber having side walls and a front opening, wherein there is an article-supporting rack formed of wire, a support system comprising:
(a) a pair of elongated track members of uniform cross section;
(b) means secured to said walls and respectively supporting said track members for horizontal movement along their axes between positions entirely within said chamber to positions partly outside said chamber;
(c) two horizontally spaced rack-supporting members secured to each of said track members;
(d) wire means respectively associated with each rack-supporting member, each said wire means including a pair of wires each secured at its ends to said rack, the two wires of each said pair extending horizontally in vertically spaced relation to each other intermediate their ends to form a horizontal slot;

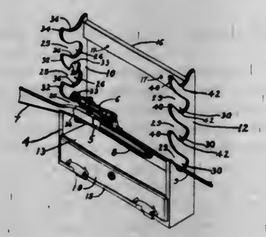
(e) each of said rack-supporting members being positioned within one of said slots to provide for horizontal movement of said rack relative to said track members, said wires being formed to stop outward movement of said rack after said rack extends substantially entirely out of said chamber and to stop inward movement of said rack when it is positioned on said track members so as to be entirely within said chamber.

3,288,303
FILE BASKET
Frederick M. Dahl, Silver Spring, Md., assignor to National Suppliers, Inc., Silver Spring, Md., a corporation of Maryland
Filed Aug. 21, 1964, Ser. No. 391,203
1 Claim. (Cl. 211—51)



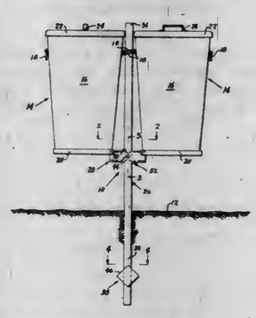
An improved file basket for attachment to the handle of a filing cabinet, comprising: a tray having a substantially flat bottom, open sides, and integral upwardly and outwardly extending flange portions at the front and rear ends thereof; a hanger element attached to the exterior surface of said front flange portion, said hanger element projecting outwardly and downwardly from said tray and adapted for hanging on said handle to support said tray, the downwardly projecting portion of the hanger element lying above the plane of said tray bottom; and a gravity clip pivotally attached to the top edge of said rear flange portion to allow said clip to be swung away from said tray to permit unimpaired access thereto and to be swung to a resting position on the top surface of said web portion of the tray.

3,288,304
GUN RACK FOR SHOULDER WEAPON HAVING TELESCOPE SIGHT
John C. Graves, 109 Fernwood Drive, West Munroe, La.
Filed Jan. 14, 1965, Ser. No. 425,496
5 Claims. (Cl. 211—64)



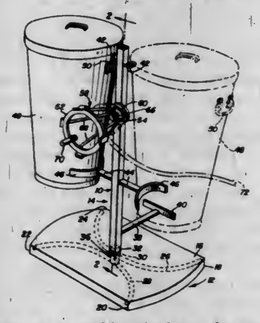
1. An improved gun rack for shoulder weapons having attached telescope sights comprising: gun receiving means for receiving and supporting a transversely presented shoulder weapon having an attached telescope sight, said means being arranged to avoid interference with said telescope sight when said weapon is so presented; means for engaging said attached telescope sight longitudinally presented by longitudinal movement of said weapon supported in said receiving means thereby preventing further transverse movement of said weapon and any direct transverse removal of said weapon from said rack.

3,288,305
GARBAGE CAN HOLDER
Floyd C. Bryant, 4842 Gilmore Drive, and William F. Teal, 4009 Seaforth Ave., both of Charlotte, N.C.
Filed Oct. 13, 1965, Ser. No. 495,525
1 Claim. (Cl. 211—71)



A garbage can holder comprising
a substantially straight cylindrical support adapted to be positioned upright in an underlying surface, the upper end of the support being free from obstructions for receiving the handle of a garbage can;
a pipe segment, of larger diameter than the support and transverse thereto, having a central circular opening transverse to the axis of the segment receiving the support, the pipe segment having a substantially straight groove spaced on each side of the central opening, the grooves facing generally upwardly for receiving the lower edge of a garbage can, the grooves being spaced a sufficient distance from the central opening to accommodate the lower edge of a frusto-conical garbage can having the lower end smaller than the upper end; and
means adjustably securing the pipe segment to the support.

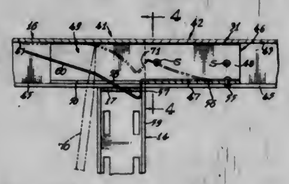
3,288,306
TRASH CAN AND HOSE RACK
James R. Walters, 708 Woodward Lane, Lexington, Ky.
Filed Mar. 21, 1966, Ser. No. 535,967
8 Claims. (Cl. 211—71)



1. For use as a stable platform for supporting the lower end of a heavily laden standard, a base assembly comprising a heavy generally panel-like body defining a plurality of generally equally spaced predetermined points

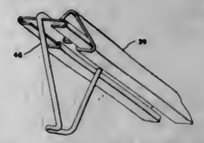
about its peripheral edge portion, rigid reinforcing members embedded in said base and extending from a generally centrally disposed center area of said base to positions at least closely adjacent said predetermined points, an upstanding anchor post having its lower end embedded in said base and its upper end projecting upwardly therefrom, the lower end of said anchor post being rigidly secured to the portions of said reinforcing members disposed in said central area, and the upper end of said anchor post projecting above said base being adapted to have the lower end of said standard rigidly fastened thereto.

3,288,307
COUNTER FRAME LATCH JOINT
Billy D. Cook, Cambridge City, Ind., assignor to M & D Store Fixtures, Inc., a corporation of Indiana
Filed Apr. 19, 1965, Ser. No. 449,099
3 Claims. (Cl. 211—177)



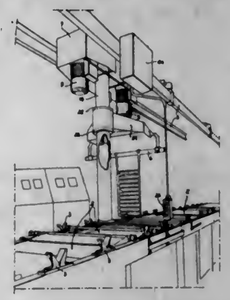
1. In a demountable sectional frame structure for store counters, merchandise display gondolas and the like, the combination of: a frame corner including a vertical, sheet-metal, tubular post, and a horizontal sheet metal channel member having a horizontal upwardly disposed main wall and downwardly extending side walls which terminate at their lower edges with inturned, coplanar horizontal flanges inner edges of which are spaced to form a longitudinal downwardly disposed central opening in said channel member, an endwise-open end portion of said channel member resting on and being welded to the top end of said post to form a right angle with said post; a second and separate sheet metal channel member, like the first such member above recited, and having an open end; an inverted channel shaped sheet metal tongue member fitting closely within and welded in place in said open end of said second channel member and extending a substantial distance outwardly beyond said open end to form a tongue, said tongue member including a horizontal downwardly disposed solid wall and side walls extending upwardly therefrom there being a longitudinal slot centrally located in said wall of said tongue said slot extending close to said open end of said second channel member, said tongue being received with a close sliding fit within the open end portion of said first channel member to relatively rigidly orient said first and second channel members in alignment and with their ends in abutment; and leaf spring means secured to said solid horizontal wall of said tongue member a substantial distance within said open end of said second channel member said spring means being narrower than said slot and being formed downwardly through said slot to provide a snap latch means engaging within the upper end of said post to prevent accidental withdrawal of said tongue from said first channel member, said spring means being formed obliquely upwardly and forwardly from said snap latch means to extend upwardly through said slot and form a cam means engaging the upper end of said post when said tongue is inserted in said first channel member and thus camming said snap latch means upwardly during said insertion of said tongue.

3,288,308
CLOTHES HANGER SUSPENSION DEVICE
Carl E. Gingher, Scranton, Pa.
(104 Gentilly Drive, Clark's Summit, Pa.)
Filed Sept. 11, 1964, Ser. No. 395,705
9 Claims. (Cl. 211—123)



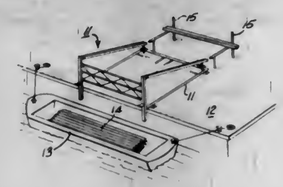
7. A garment suspension arrangement comprising a tubular member having a cross section defining a triangle with one face thereof being directed downwardly, there being a longitudinally extending slot in said one face of said tubular member with the edges of said slot being bent inwardly at substantially right angles to said one face to define a track, a base slidably carried within said tubular member and comprising a rectangular member having its longitudinal edges curved and bent inwardly to form spaced apart channels with the terminal edges of said channels receiving therebetween said tubular member track, and means attached to said base and extending outwardly therefrom through said tubular member slot for supporting a garment.

3,288,309
HANDLING APPARATUS
Robert Fleisch, 15 Blvd. Jules Favre, Lyon, Rhone, France
Filed Mar. 6, 1964, Ser. No. 349,951
Claims priority, application France, Mar. 6, 1963, 43,412, Patent 1,358,564
2 Claims. (Cl. 212—128)



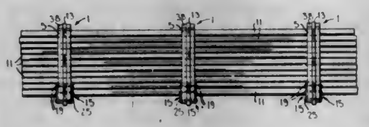
1. Handling apparatus comprising an overhead horizontal raceway, a carriage adapted to run along said raceway, a rigid centrally mounted hollow column secured to the carriage for movement therewith, said column extending vertically downwards from the carriage, a counterweight supported within the column for guided vertical displacement therein, load support means outside said column for supporting a load, said load support means comprising a collar encircling said column, a pair of arms mounted on and diverging outwardly and downwardly from said collar, load engaging means at the ends of the arms, first and second driving means supported on the carriage for movement therewith, means connecting said first driving means and the carriage in driving relation, flexible connection means between said counterweight and the collar, and a drive wheel on said carriage, said flexible connection means passing around the drive wheel for being driven thereby, said second driving means being connected to the drive wheel in driving relation to drive the latter and correlatively raise and lower the counterweight and load support means, said load support means being guided on said column by said collar.

3,288,310
VEHICULAR TYPE PIPE UNLOADER
George D. Sherman and Raymond E. Winders, both of Houma, La., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 30, 1964, Ser. No. 422,194
6 Claims. (Cl. 214—1)



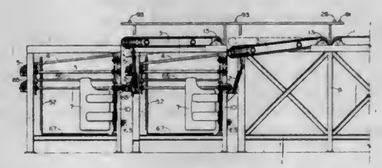
3. A vehicular type pipe unloader for transferring lengths of pipe from a relatively low level to an elevated support therefor, comprising in combination,
a framework mounted on a vehicular base for providing mobility to said unloader,
pipe lifting means carried by said framework and comprising a pair of spaced vertically movable support members,
hydraulic means for adjusting said pipe lifting means vertically relative to said framework,
a pair of pipe skids carried by said framework and cooperating with said pipe lifting means to receive said lengths of pipe from the top of the vertical movement of said lifting means, and
manual adjusting means for said skids to regulate the height thereof relative to said framework at the other end of the skids from said pipe lifting means.

3,288,311
SKID
Donald P. Beattie, 17 Wildwood, Kirkwood, Mo.
Filed June 12, 1964, Ser. No. 374,655
10 Claims. (Cl. 214—10.5)



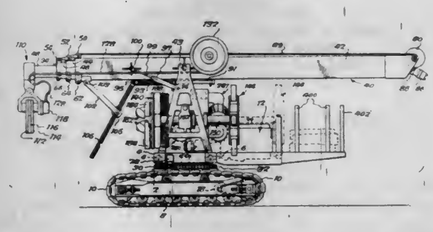
2. A collapsible skid for tubes or the like comprising a bottom bar and two side bars, hinge members connected to said side bars, each of said hinge members having a connection with a respective end portion of the bottom bar such as to enable one side bar to be swung to a collapsed position on top of the bottom bar and the other side bar to be swung to a collapsed position on top of the one side bar, said side bars being adapted to be swung to an erect position extending upwardly from the bottom bar, the side bars being mounted on hinge members so that lower ends of the side bars, when in the erect position engage the top surface of end portions of the bottom bar, each of said hinge members being generally L-shaped with one arm of each hinge member being connected to the side bars and with the other arm of each hinge member having a sliding connection with the bottom bar.

3,288,312
METHOD AND APPARATUS FOR THE SORTING, COLLECTING AND STACKING OF SHEET MATERIALS
Edward W. Hughes, Yakima, Wash., and Raymond G. Dunn, Portland, Oreg., assignors to Western Machinery Corporation, Portland, Oreg., a corporation of Oregon
Filed Nov. 29, 1963, Ser. No. 326,803
11 Claims. (Cl. 214—11)



11. Apparatus for sorting, collecting and stacking sheet material comprising:
(a) conveyor means for continuously conveying sheet material one sheet at a time,
(b) means defining at least two sheet-collecting bins arranged in the conveying direction beneath said conveyor means,
(c) said conveyor means including downwardly pivotal conveyor sections one offset upstream from each of said bins for feeding sheets into the upper end of the downstream adjacent one of said bins,
(d) a pair of sheet-receiving members extending in the conveying direction across the interior of each said bin just beneath the upper end thereof for receiving sheets from an upstream adjacent one of said conveyor sections,
(e) said receiving members extending in the conveying direction of said conveyor means,
(f) an inspection station along said conveyor means upstream from said bins for inspecting sheets on said conveyor means,
(g) control means at said inspection station for preselecting the one of said bins into which each sheet passing said inspection station is deposited,
(h) said control means including means operable in response to preselection of one of said bins for, in sequence, pivoting downwardly the conveyor section immediately preceding the preselected bin and then separating said sheet-receiving members within the preselected bin upon receipt of a sheet from the preceding said conveyor section.

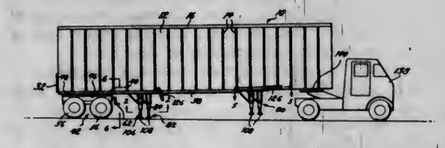
3,288,313
BOOM AND GRAPPLE
Douglas D. Hamilton, 258 Brookfield Ave., Mount Royal, Quebec, Canada
Filed June 19, 1964, Ser. No. 376,530
9 Claims. (Cl. 214—147)



3. In a machine for delimbing and debarking felled trees, a boom for feeding felled trees along an axial path into said machine, said boom comprising a support, a

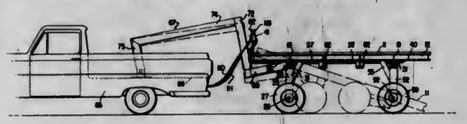
first member pivotally mounted for rotation about a horizontal axis on said support, a plurality of members telescoped within said first member, a guide means on said first member and said plurality of members telescoped therein for supporting and guiding said plurality of members for movement into and out of said first member, means interconnecting said first member and said plurality of members for extending said plurality of members outward from one end of said first member to lengthen said boom and for moving said members inward into said first member to shorten said boom, a grapple fixed to the innermost of said plurality of members, said grapple including jaws pivotally mounted for movement about a substantially horizontal axis, means for pivoting said jaws about said axis to open and close said jaws, and a heeling means on said first member pivotally mounted on said support.

3,288,314
MOBILE WAREHOUSE SYSTEM
Solomon Katz, Fairless Hills, Pa., assignor to Strick Corporation, a corporation of Pennsylvania
Original application May 6, 1963, Ser. No. 278,005, now Patent No. 3,211,313, dated Oct. 12, 1965. Divided and this application Dec. 7, 1964, Ser. No. 448,222
9 Claims. (Cl. 214—152)



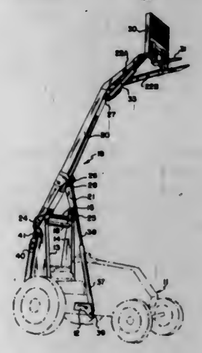
1. A method of transporting and storing materials comprised of providing an enclosed elongated trailer body having a wheeled unit detachably coupled to the rear thereof and fore and aft height-adjustable landing gears secured to said body, the aft landing gear being so secured as to be movable from an operative vertical to a retracted storage position, placing the materials in the body while it is supported upon the wheeled unit and the fore landing gear, detachably coupling a tractor to the front of the trailer body, raising the front of the body off the fore landing gear and driving the body to a storage site, uncoupling the wheeled unit, lowering the aft landing gear until it engages the ground, lowering the front end of the body while the tractor is still coupled thereto so that the body rocks around the aft landing gear until the rear of the body is spaced above the wheeled unit, lowering the fore landing gear until it engages the ground, uncoupling and withdrawing the tractor and finally withdrawing the wheeled unit so that the body remains supported in the storage position upon the fore and aft landing gears of unequal height.

3,288,315
TILT-LIFT TRAILER
Shelby R. Bigden, Waco, Tex., assignor to Ruble Langston, Bryan, Tex.
Filed July 13, 1964, Ser. No. 381,956
14 Claims. (Cl. 214—506)



1. A trailer comprising a body, forward and rear axles and ground wheels carried by each axle, a set of struts directly pivotally connected at one end to and forming the sole supporting means for each axle and connected at the other end to said body, a pair of oppositely facing horizontal rams beneath said body for independently controlling the angular position of each set of struts, and force-transmitting means connected between each ram and the associated set of struts between the ends thereof whereby operation of each ram will swing the associated set of struts to vary the angular position thereof to adjust the height of the associated end of said body relative to the other end.

3,288,316
BOOM FOR LOADING DEVICE
William S. West, 1512 Clubside Drive, Cleveland, Ohio
Filed June 3, 1965, Ser. No. 460,905
10 Claims. (Cl. 214—771)



1. In a loading device for a tractor or the like, the combination of a pair of spaced upright beams carried by the tractor or the like near the rear thereof, pivot connections carried by said upright beams adjacent spaced upper ends thereof, the respective axes of said pivot connections being in alignment with each other, a boom member having a first arm portion pivotably connected to a first of said pivot connections and a second arm portion pivotably connected to a second of said pivot connections, a forked supporting member secured to the forward end of said first arm portion substantially at the junction of said first arm portion and a vertical reference plane disposed substantially midway between said pivot connections, a load-engaging member carried by said forked supporting member, said second arm portion intersecting and extending beyond said reference plane and being secured to said first arm portion at a location beyond said reference plane and intermediate of said first connection and said junction whereby said boom member extends forwardly from said second arm portion to the forked supporting member on only one side of said reference plane from said location to said junction to diminish interference with the view forwardly to the forked supporting member from near the rear of the tractor, the distance between said second pivot connection and said location being substantially less than the distance between the said first pivot connection and said junction.

3,288,317
MOLECULARLY ORIENTED BOTTLE
Fred E. Wiley, Hazardville, Conn., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed July 1, 1965, Ser. No. 472,393
2 Claims. (Cl. 215—1)

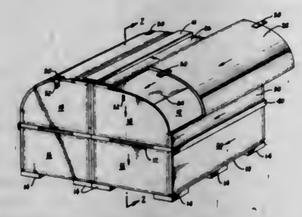
1. A molecularly oriented bottle formed from a crystalline polymer of polyethylene, said bottle having a circumferential orientation release stress in the range of 64 to 65 p.s.i., an axial orientation release stress in the range of 48 to 65 p.s.i., a circumferential modulus of elasticity in flexure at 73° F. in the range of 2.46×10^5 to 2.97×10^5 p.s.i., an axial modulus of elasticity in flexure in the range of 3.61×10^5 to 4.47×10^5 p.s.i., a circumferential tensile impact strength at 73° F. in the range of 250 to 650 ft. lb./in.^{3} and an axial tensile impact strength at 73° F. in the range of 420 to 580 ft. lb./in.^{3}.

3,288,318
FLEXIBLE PLASTIC VIAL
John D. Corbin and John F. Corbin, both of 43 W. Walnut St., North Vernon, Ind.
Filed Nov. 24, 1964, Ser. No. 413,563
5 Claims. (Cl. 215—7)



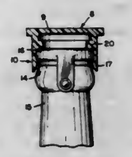
3. An unbreakable flexible plastic sampling vial of substantially cylindrical shape for receiving medical specimens, one side of which vial is flattened to prevent rolling and frosted to provide a relatively flat writing surface, said vial being provided with a flexible plastic closure of the snap-on type, such closure being provided with a needle-receiving area and a means for sealing said area.

3,288,319
COLLAPSIBLE CONTAINER
Edward P. Cahill, 115 New Montgomery St., San Francisco, Calif.
Filed Aug. 20, 1964, Ser. No. 390,921
3 Claims. (Cl. 217—12)



1. A knockdown container formed of a plurality of panels, said container including:
(a) a horizontal rectangular bottom panel;
(b) a pair of vertical end wall panels, said end wall panels each having a straight lowermost edge and two vertical edges perpendicular thereto, each of the said end wall panels also having a non-linear top edge;
(c) a vertical back wall panel perpendicular to the said end wall panels and to said bottom panel;
(d) a vertical front wall panel perpendicular to said end wall panels and to said bottom panel;
(e) a plurality of top panels bridging the space between said end wall panels and between said back wall panel and said front wall panel;
(f) interlocking male and female coupling members attached to abutting edges of the said wall panels and top panels and along two opposite ends of said bottom panel, the two remaining opposite ends of said bottom panel being free of said interlocking members whereby to permit the said panels to be secured together; and
(g) supporting means for the bottom panel, said supporting means comprising blocks spaced along the edges of said bottom panel to provide shoulders for supporting said wall panels, said last named wall panels resting directly upon the said blocks and obscuring edges of the said bottom panel, said last named wall panels being positioned adjacent the ends of said bottom panel which are free of said interlocking coupling members.

3,288,320
REUSABLE BOTTLE CAP
David L. Swanson, Madison, Wis. (8614 W. Medford Ave., Milwaukee, Wis.)
Filed Feb. 1, 1965, Ser. No. 429,339
4 Claims. (Cl. 215—39)



3. In combination a sealed bottle and a resilient reusable cap, said bottle sealed by a metal cap, said bottle having a generally cylindrical neck, the upper end of said neck having an annular rim the underside of which defines a minimum neck diameter, said neck having a flared configuration below said annular rim, said reusable cap comprising a top and an integral depending skirt, said skirt having an inwardly projecting annular bead dimensioned to be resiliently urged against said neck at said minimum diameter when said reusable cap is seated on said bottle, said skirt having disposed below said annular bead a plurality of longitudinal slots defining depending feet, a second annular bead inwardly extending from said feet and resiliently urged and seated against said metal cap below said annular rim, the inside diameter of said second annular bead being greater than said first annular bead, the distance between said annular beads being greater than between said first annular bead and said top, the inner surface of said feet being of substantially curvilinear configuration, said feet comprising the least wall thickness of said skirt, the lower extremity of said feet being tapered conically inwardly and upwardly.

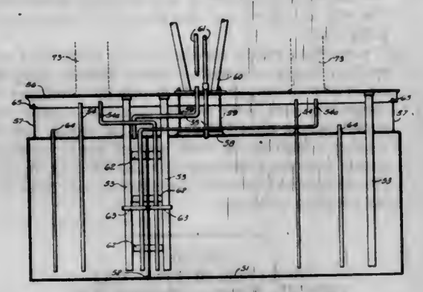
ERRATUM

For Class 217—12 see:
Patent No. 3,288,319

3,288,321
STORAGE OF PETROLEUM PRODUCTS
Albert L. Wokas, 8461 Burning Bush, Grosse Ile, Mich.
Filed Mar. 20, 1964, Ser. No. 354,504
13 Claims. (Cl. 220—18)

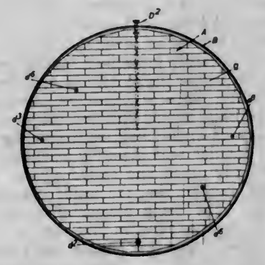
1. An integrated storage and dispensing system for the underground storage and dispensing of petroleum products contained in one compact package utilizing the components of a closed tank continuous piping connected to the tank, a pump island, means attached to the tank and supporting the pump island, an island light vent pole for venting of the interior of the tank up thru the island light vent

pole, means attached to the tank and supporting the island vent pole, the island light vent pole being fabricated to permit vent lines to be installed and become a part of the vent pole, fill pipes, gauge pipes, vent pipes, suction pipes



and discharge pipes located within the confines of the island and attached to the tank, so that the entire package can be installed in the ground as a complete unit back filled to grade and ready for use.

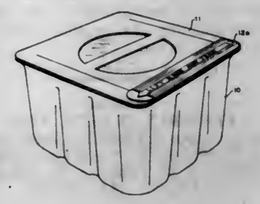
3,288,322
FLOATING COVERS FOR LIQUID STORAGE TANKS
David D. Marshall, Hale, and Irenie M. Nayler, Dudley, England, assignors to Greengate & Irwell Rubber Company Limited, Salford, England, a body corporate of Great Britain, and Nayler (Petroseals) Limited, Dudley, England
Filed Jan. 25, 1965, Ser. No. 427,674
5 Claims. (Cl. 220—26)



1. A floating cover for a liquid storage tank comprising a plurality of sheets of fibre glass, a rib moulded longitudinally of the longer sides of each sheet, a buoyant log of urethane foam secured to the underside of each sheet between the ribs to give buoyancy thereto, a rubber adhesive tape by which adjacent sheets are resiliently hinged together and a coating of protective resin over the sheet and tape to form a liquid proof seal.

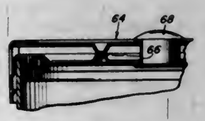
3,288,323
HEAT SEALED CONTAINER COVER WITH TEAR TAPE OPENING
Alfred Schechter, New Rochelle, N.Y., assignor, by mesne assignments, to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 21, 1961, Ser. No. 161,229
12 Claims. (Cl. 220—54)

1. An article of manufacture comprising in combination:
(1) a package comprising a rigid thermoplastic container having an open top;
(2) a cover fused to said container, said cover having a lid section defined by an area smaller than said open top and bounded over a major portion of its periphery by a scored line on its upper face and a



scored line on its lower face and bounded over a minor portion of its periphery by a line cut through said cover; and
(3) a tear strip covering said line cut through said cover and heat sealed to said cover.

3,288,324
CAN CLOSURE ASSEMBLY
Henry E. Karkut, Baldwinsville, N.Y., assignor to Henry E. Karkut, Inc., a corporation of New Jersey
Filed June 26, 1964, Ser. No. 378,211
17 Claims. (Cl. 220—57)

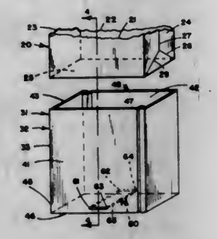


1. A closure cover assembly for a container of the type including upstanding side walls and a frame-like partial top wall extending about and projecting inwardly from the upper edges of said side walls and also further including flange means disposed about and projecting outwardly from the upper marginal edge portions of said side walls, said closure cover assembly including a closure member adapted to overlie the inner marginal edge portions of said frame-like partial top wall in fluid tight sealed engagement therewith, closure member anchor means defining an elongated resilient body member overlying said closure panel and including a pair of depending arm means disposed at opposite ends thereof, the lower end portions of said arm means including engaging means adapted for engagement with said flange means at points spaced circumferentially about said container, and coacting abutment means carried by said body member and said closure member maintaining the portions of said body member spaced inwardly of the opposite ends thereof in vertically spaced relation above the medial plane of said closure member thereby adapting said body member, when the opposite end portions thereof are urged downwardly to positions with said engaging means engaged with said flange means, to be flexed so as to apply a downward thrust on said closure member relative to said container.

3,288,325
BAG HOLDER WASTE BASKET
William H. Fulton, 1 Academy St., Chelmsford, Mass.
Filed Jan. 6, 1965, Ser. No. 423,776
4 Claims. (Cl. 220—65)

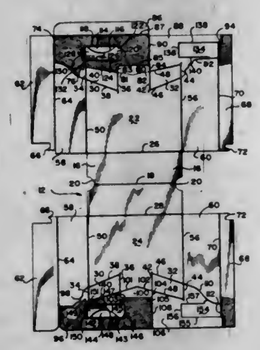
1. A bag holder wastebasket comprising:
a hollow, tubular, shell of thin self supporting sheet material defining a closed figure, said shell having an open upper end for receiving a paper bag and having an open lower end for exposing the bottom of said bag when said shell is inverted;

said shell having flat planar side walls conforming generally to the configuration of an erected paper bag with which it is used and both slidably fitting around one said bag and slidably fitting within a second said bag;
and handle means secured proximate the lower end of said shell, said handle means extending inwardly and



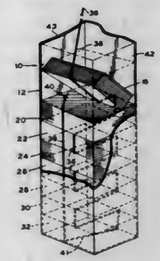
laterally of the said open lower end thereof for supporting the bottom of said one bag when said shell is right side up as a wastebasket and for serving as a grip for one hand of a user, when said shell is inverted, while the other hand of the user extends into said bottom opening to push on the bottom of said one bag to eject said bag from said shell through said open upper end of said shell.

3,288,326
BOTTLE CARRIER WITH REINFORCING TAB
George S. Holmes, Middlesex, N.J., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Mar. 22, 1965, Ser. No. 441,454
14 Claims. (Cl. 220—113)



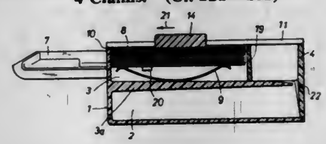
1. In a bottle carrier of the type presenting two rows of upwardly opening pockets defined in part by a longitudinal divider comprised of four parallel plies and transverse dividers extending outwardly therefrom, and wherein said longitudinal divider has aligned openings in the plies thereof defining a handle, the improvement residing in folding over material displaced but not totally detached from the outer two of said plies in the forming of said openings against normally weak areas of said outer two of said plies of said longitudinal divider and bonding said material thereto and in shaping the edges of said material and of the inner two of said plies such that said edges shall lie in a substantially interlocking relationship to one another.

3,288,327
PACKAGING OF SURGICAL GAUZE SPONGES AND THE LIKE
Jim C. Cahlik, Cleveland, Ohio, assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan
Filed Apr. 14, 1965, Ser. No. 448,179
6 Claims. (Cl. 221—70)



1. A package for the selective dispensing of a plurality of groups of discrete precounted articles comprising an enclosure, a plurality of groups of said articles contained in said enclosure, said enclosure having means at one end openable to expose the group of said articles closest to said one end for successive removal therethrough of said groups, said groups being arranged in layers in said package transversely to the direction of removal of said groups from the package via said one end, and a flexible length of material extending in a zigzag fashion within said package from adjacent said openable means alternately in opposite directions between said groups and having a terminal portion extending between the one of said groups furthest remote from said one end and the adjacent wall of the remote end of said package and thence between and in contact with the interior surface of one side of the package and the adjacent edges of the articles in said remote group.

3,288,328
BLADE DISPENSER FOR DIRECT APPLICATION TO A RAZOR
Ernst de Longuyon, Pullach, Munich, Germany, assignor to Climar A.G., Zug, Switzerland
Filed Jan. 6, 1965, Ser. No. 423,718
Claims priority, application Switzerland, Sept. 22, 1964, 12,309/64
4 Claims. (Cl. 221—102)



1. A reusable magazine of molded synthetic plastic for dispensing safety razor blades, including:
a unitary housing, comprising
a bottom wall, two side walls, and a forward wall closing off one end of the housing;
a finger-like projection, integral with said forward wall and extending therefrom, for opening a blade clamping mechanism of a safety razor;
a pair of opposed guide means, one integral with each side wall along the edge thereof remote from said bottom wall, each said means extending laterally inwards with respect to its wall to define in combination a slot and also extending laterally outwards to form each a lateral lip, and said means defining with said forward wall a narrow aperture;

said housing defining at least one interior compartment one side of which is defined by said guide means and slot, said compartment being for the storage of fresh blades and communicating with the end of said housing remote from said forward wall;

a unitary slide means for running along said guide means, for ejecting a fresh blade from said compartment through said narrow aperture;

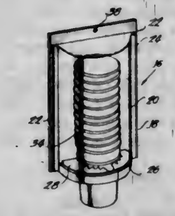
said slide means including integral therewith means running in said slot for engaging the top-most blade in said compartment; and

means engaging said lips for holding said slide means onto said guide means;

a detachable end cover for closing the end of said housing remote from said forward wall; and

means associated with said cover and said housing for detchably securing the cover to the housing, whereby said compartment can be reloaded with fresh blades when empty.

3,288,329
DISPOSABLE DISPENSER FOR CUP-LIKE PRODUCTS
Donald J. Ketchem, Arcadia, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Oct. 10, 1963, Ser. No. 315,193
5 Claims. (Cl. 221—155)



1. A disposable dispenser comprising in combination a transparent plastic semi-circular elongated member having an integral end wall at one end and a channel slot toward the other end, a semi-rigid back member to which the elongated member is affixed, and a dispenser insert maintained in position within the elongated member by engagement with the channel slot, said insert having a star-burst snap-out which will maintain a cup-like product in the dispenser and will allow for sequential dispensing thereof.

3,288,330
APPARATUS FOR STORING AND FEEDING SMALL MECHANICAL PARTS
John Madison Clapp, Athens, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Aug. 12, 1965, Ser. No. 479,237
16 Claims. (Cl. 221—174)

1. An apparatus for storing and feeding small mechanical parts, comprising:

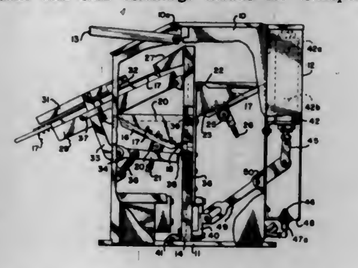
first storage means adapted for storing small mechanical parts;

second storage means disposed in vertically spaced relationship to said first storage means and adapted for storing small mechanical parts;

discharge means disposed in vertically spaced relationship to said first and second storage means and adapted for feeding small mechanical parts from the storage and feeding apparatus;

first lift means vertically movable into alternative communicating relationship with said first storage means and said second storage means for transferring small mechanical parts from said first storage means to said second storage means;

second lift means vertically movable into alternative communicating relationship with said second storage means and said discharge means for transporting

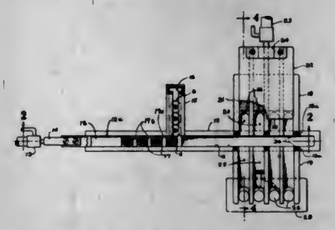


small mechanical parts from said second storage means to said discharge means;

said first and second lift means being disposed between said first and second storage means; and

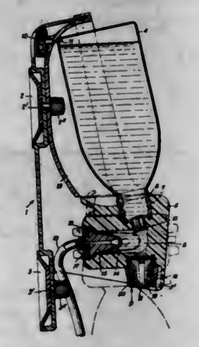
means operatively connected to said first and second lift means for vertically moving such into said communicating relationship with said first storage means and second storage means, and said second storage means and said discharge means, respectively.

3,288,331
ESCAPE AND FEEDING MECHANISM FOR FASTENERS
Anthony P. Mazurkivich, Waterbury, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Sept. 16, 1965, Ser. No. 487,786
5 Claims. (Cl. 221—238)



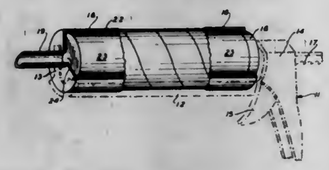
1. A fastener feeding mechanism for distributing fastener elements from a single source of supply to a plurality of setting stations, said mechanism comprising a gravity fed chute having a discharge end and said chute adapted to receive and guide a row of fastener elements from a single hopper, a guide rail positioned normal to and extending laterally across the discharge end of said chute, a feed slide member slidable in said rail and having a series of element-receiving pockets therein adapted to pick up individual elements as the slide is moved past the discharge end of said chute, the opposite side of said guide rail being intercepted by a series of grooves spaced according to the position of the pockets in said feed slide and laterally spaced from the discharge end, said series of grooves leading from said guide rail to the setting stations, and a transfer plate movable across said guide rail, said plate having depending ribs slidable in said grooves and serving to move the fastener elements out of said receiving pockets through said grooves to said setting stations.

3,288,332
LIQUID PRODUCT DISTRIBUTOR
Jean-Claude Etter, Nyon, Bernard Meylan, Leysin-Feydey, and Edgar Christin, Grand-Saconnex, Switzerland, assignors to Zyma S.A., Nyon, Switzerland, a corporation of Switzerland
Filed May 26, 1965, Ser. No. 459,015
Claims priority, application Germany, May 27, 1964, W 36,872: Switzerland, June 22, 1964, 8,135/64
1 Claim. (Cl. 222—80)



A liquid product distributor, in particular for liquid soap, comprising a support adapted to be secured to a wall and to support a container containing the said product, said support including a swinging element having a variable volume chamber for the liquid product issuing from a bottle, this chamber communicating, on the one hand, with an opening for the reception of the neck of the bottle and, on the other hand, with a nozzle for the ejection of the product, a housing to receive said bottle in an inverted position, means for ensuring the emptying of the bottle without the liquid entering into direct contact with atmospheric air and means for discharging a definite volume of the product from the said chamber through the ejection nozzle, said support including a filtered air admission needle adapted to pierce the bottom of the bottle when the latter is in the inverted position.

3,288,333
CAULKING GUN CARTRIDGE
John Valk, Jr., 114 E. Orchard St., Allendale, N.J.
Filed Sept. 21, 1965, Ser. No. 488,905
5 Claims. (Cl. 222—95)



1. A cartridge of extrudable material comprising:

(a) a generally tubular casing;

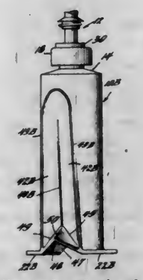
(b) a discharge nozzle at one end of the casing;

(c) a generally tubular, moisture-resistant, collapsible bag, sealed at both ends, in the casing;

(d) a filler of extrudable material in the bag;

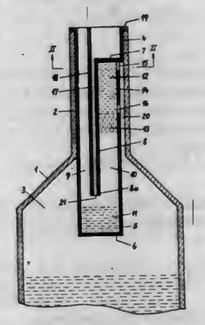
(e) a slick surface on the inside of the casing.

3,288,334
DISPENSER WITH COLLAPSIBLE CONTAINER AND PUMP
Douglas F. Corsette, Los Angeles, Calif., assignor to Calmar, Inc., City of Industry, Calif., a corporation of California
Filed May 28, 1965, Ser. No. 459,702
13 Claims. (Cl. 222—107)



1. A storing and dispensing device for fluidlike materials of varying viscosity comprising: an enclosed generally tubular container having an axially directed discharge opening through one end thereof; a generally axially reciprocable pump supported in said opening in a fluid-tight manner, said pump comprising a barrel having an intake port in communication with the interior of the container and a discharge head opening to the exterior of the container, and a reciprocable plunger in said barrel, said container having sufficient compressive strength in the direction of its axis to readily withstand the maximum operating thrust likely to be applied to said plunger in its normal operation, said container having laterally presented sidewalls arranged to collapse inwardly toward said axis under atmospheric pressure responsive to exhaustion of the container contents through the action of said pump.

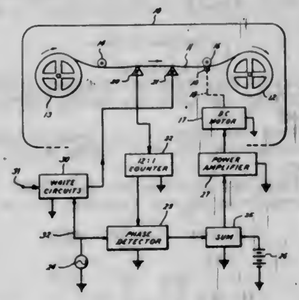
3,288,335
METERING DEVICE FOR DISPENSING IDENTICAL QUANTITIES OF LIQUIDS FROM LIQUID CONTAINERS
Heinz Steffens and Willi Steffens, both of Eitorf, Germany, assignors to Friedrich Stübbe, Vlotho (Weser), Germany
Filed Nov. 24, 1964, Ser. No. 413,527
Claims priority, application Germany, Dec. 4, 1963, St 21,413
2 Claims. (Cl. 222—455)



1. A tubular dispensing device for insertion into the opening of a liquid container for dispensing equal volumes of liquid from said container, said tubular device being closed at its inner end and having a partition extending transversely between opposite sides of said

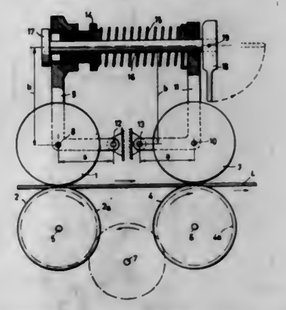
tubular device and axially from its outer end with the inner end of the partition spaced from the closed inner end of the tubular device, said device being open at the outer end on one side of said partition to form a discharge passage and closed by a transverse wall on the other side of the partition to form a closed chamber inwardly of the outer end, the tubular wall of said closed chamber having axially spaced openings inwardly of said transverse wall to form a metering chamber between the inner one of said openings and said transverse wall having a volume equal to the quantity of liquid to be dispensed, said partition being spaced from the closed end of said device sufficiently to define a receptacle beyond said partition of a volume at least as great as the volume of said metering chamber, said partition extending axially inwardly beyond said inner opening a distance sufficient to form a collecting chamber in said closed chamber inwardly of said inner opening of a volume to receive free liquid when said container is inverted and the liquid therein fills said metering chamber and exerts pressure to raise the level of said liquid above said inner opening, so that when said container is tilted with its discharge passage on the lower side, liquid will flow from said receptacle and the liquid will flow into said metering chamber as said container is inverted and beyond said inner opening until the weight of the liquid and the reduced pressure of the air above the liquid are in equilibrium.

3,288,336
TAPE TRANSPORT CONTROL SYSTEMS AND METHODS
John S. Smith, Ridgefield, Conn., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas
Filed Oct. 5, 1964, Ser. No. 401,439
2 Claims. (Cl. 226—2)



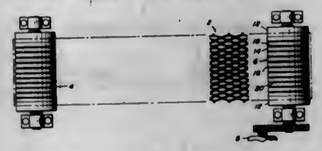
1. A tape transport control system for synchronizing the rate of movement of a magnetic recording tape with the variable frequency signal comprising:
- tape transport means including capstan means for moving the magnetic tape;
- direct-current motor means for driving the capstan means;
- magnetic reading head means for detecting pre-recorded and evenly spaced magnetic reference marks on the tape;
- circuit means for comparing the detected reference marks and the variable frequency signal for developing a control signal which is dependent on the degree of synchronization therebetween;
- and circuit means for supplying the control signal to the direct-current motor means for controlling the speed thereof for rendering the rate of movement of the tape proportional to the frequency of the periodic signal.

3,288,337
WELDING ELECTRODES FEED APPARATUS
Jan Anthonie Van Bergen and Hendrikus Johannes Kanters, both of Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 27, 1964, Ser. No. 406,835
Claims priority, application Netherlands, Nov. 15, 1963, 300,570
3 Claims. (Cl. 226—181)



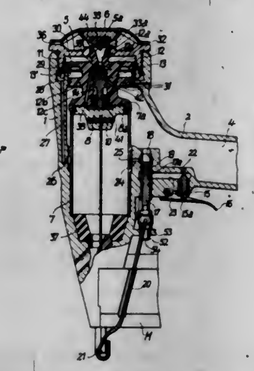
1. Welding electrode feed apparatus comprising a first and second pair of roller members, one roller of each pair of said roller members being a driven roller and the other roller of said members being a pressure roller; lever system means including a pair of angular levers pivotal about one end, each said lever having an arm portion at the other end for normally supporting said pressure roller of said roller members in a position of circumferentially forced engagement with the associated driven roller, and control means operatively connected with said lever system means for moving said lever system means into a position for displacing the pressure rollers of said pair of roller members relative to said driven rollers whereby the rollers of each said roller member are in spaced apart relation, said control means including an aperture through each said arm portion, a rod member extending between said arm portions and through said apertures and having stops at the extremities of each end thereof, a spring urging said arm portions against said stops, and means for urging said arm portions toward one another against the force of said spring whereby the rollers of each said roller member are separated.

3,288,338
APPARATUS FOR AUTOMATICALLY CENTERING ELONGATED OBJECTS
Harry C. Morrow, Bethel Park, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Apr. 29, 1964, Ser. No. 363,568
10 Claims. (Cl. 226—193)



1. A roll for automatically centering an elongated metal object passing thereover which comprises a metal shell, a radial flange at each end of said shell for supporting the edges of the object, the distance between said flanges being less than the width of the object passing thereover, and a rubber like covering extending between said flanges, said covering having a central radial slot therein and spaced apart slots on each side of said radial slot extending inwardly toward the axis of the roll away from the transverse center thereof, the diameter of each flange adjacent said covering being the same as the diameter of the covering adjacent thereto and the face of the flange and the surface of the rubber covering adjacent thereto being arranged at the same angle to the axis of the roll.

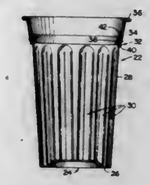
3,288,339
PNEUMATICALLY OPERABLE DRIVING DEVICE FOR DRIVING NAILS, STAPLES, AND THE LIKE
Heinz Emil Bade, Hamburg-Garstedt, Germany, assignor to Joh. Friedrich Behrens, Ahrensburg, Holstein, Germany
Filed Apr. 23, 1964, Ser. No. 362,119
Claims priority, application Germany, Apr. 27, 1963, B 71,687
9 Claims. (Cl. 227—130)



1. In a compressed air operable driving device for driving fastening means into a work piece: a housing, a cylinder in said housing, a driver-carrying piston reciprocable in said cylinder from a first position representing the retracted position of said piston to a second position representing an advanced driving position, and vice versa, said piston having a main surface adapted when subjected to the action of compressed air to drive said piston in a working stroke performing direction, nozzle means provided in said housing and having an inlet and an outlet, first conduit means communicating with said inlet and adapted to be connected to a source of compressed air, second conduit means leading from said outlet to the atmosphere, and third conduit means establishing communication between said outlet and said main surface whereby in response to compressed air passing from said first conduit means through said nozzle means to said second conduit means a suction effect is created in said third conduit means and on said piston so as to return the same to its retracted position.

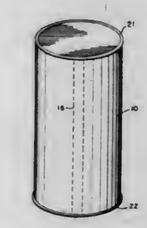
3,288,340
NESTABLE CONTAINER
Samuel Shapiro, Swampscott, and James C. White, Lynnfield, Mass., assignors to Sweetheart Plastics, Inc., Wilmington, Mass., a corporation of Maryland
Filed May 25, 1964, Ser. No. 369,792
10 Claims. (Cl. 229—1.5)

7. A disposable plastic container comprising,
- a bottom wall and an upwardly flared side wall having a rim at the top,
- a stacking ring in the side wall having a side band, a lower inwardly extending shoulder connected to the bottom of the band and a top outwardly and downwardly extending wall connected to the top of the band, the maximum diameter of the shoulder exceeding the minimum diameter of the top wall whereby when the container is nested with another identical container, the shoulder of the upper of the containers sits on the inner upper edge of the top wall,



- and means forming part of the top wall enabling the wall to flex in a downwardly direction when a load is applied to it.

3,288,341
CONTAINER WITH IMPROVED LINER CONSTRUCTION
James N. Krause, Louisville, Ky., assignor to Anaconda Aluminum Company, a corporation of Montana
Filed Apr. 6, 1966, Ser. No. 540,627
6 Claims. (Cl. 229—4.5)

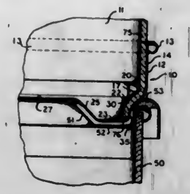


1. In a container of the type having a tubular body member of rigid composite construction, a top closure member, and a bottom closure member, the improvement in combination therewith comprising
- (A) at least one body ply wound into tubular form,
- (B) a liner ply wound into tubular form and adhesively secured to the body ply to define the interior surface of the body member with its adjacent edges in substantial abutting relationship to define a butt seam therebetween, and
- (C) an elongated tape secured to the interior surface of the body member in a position over the butt seam having its opposite elongated marginal side portions folded back against itself so that the elongated edges of the tape are defined by the outsides of the folds and the folded back marginal portions are contiguous to the interior surface of the body member.

3,288,342
BUTTRESSED OFFSET RIM DRUM END CLOSURE
Oscar A. Tinker, Van Wert, Ohio, assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Dec. 18, 1964, Ser. No. 419,532
3 Claims. (Cl. 229—5.6)

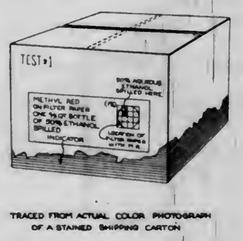
1. An end closure for a tubular drum and the like, said end closure comprising a vertical skirt, an inner wall panel connected to said skirt and spaced adjacent thereto by a first bight portion to define an upward opening annular channel between said inner wall panel and said skirt, said inner wall panel being disposed substantially parallel to said skirt along the entire length of said inner wall panel, an inner flange panel disposed adjacent

to and connected to said inner wall panel by a second bight portion, said inner flange panel extending downwardly and inwardly from said second bight portion to



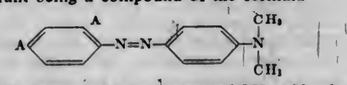
define a downwardly opening channel and terminating at an inwardly directed chuck panel and being connected to an end panel by said chuck panel.

3,288,343
SHIPPING CARTONS FOR FRANGIBLE ARTICLES AND METHOD FOR USE
James W. Hyland, Jr., Maumee, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed July 30, 1964, Ser. No. 386,343
11 Claims. (Cl. 229—6)



TRACED FROM ACTUAL COLOR PHOTOGRAPH OF A STAINED SHIPPING CARTON

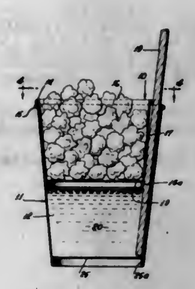
1. In a system for shipping frangible containers of aqueous alcohol,
- a carton having a liquid-pervious wall with an inside surface,
- a frangible container containing aqueous alcohol product, positioned within said carton,
- and an alcohol-sensitive colorant within the carton, positioned adjacent to the interior of said wall in exposed condition and in dry form, to be contacted by aqueous alcohol released within the carton by breakage of said frangible container, and said colorant being a compound of the formula



wherein A is selected from H and COOH, said colorant being preferentially soluble in aqueous alcohol product over ambient moisture in order to provide a visible color breakage signal on the outside of the carton indicating loss of the alcohol product resulting from container breakage within the carton.

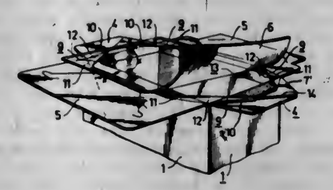
3,288,344
DOUBLE CONTAINER DISPENSING PACKAGE
Richard M. Woollen, 5114 Nagle Ave., Sherman Oaks, Calif.; and Jeffrey K. Woollen and Richard B. Woollen, both of 14537 Killion St., Van Nuys, Calif.
Filed Mar. 19, 1965, Ser. No. 441,043
5 Claims. (Cl. 229—7)

1. A dispensing package, comprising inner and outer cups, the inner cup shaped to hold an edible and to be received downwardly into the outer cup, the cups having side walls tapered with substantially the same angularity to provide interference fit limiting said downward reception with the cups then defining a liquid storage zone below the bottom of the inner cup, the side wall of the inner cup being locally displaced away from the side wall of the outer cup below the rim level of the outer cup to



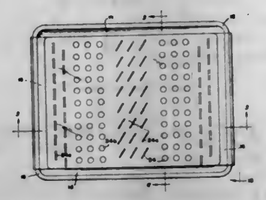
provide a re-entrant recess, a tubular straw received in said recess and capable of up and down displacement therein without interference with the edible in the inner cup, whereby the cups and straw may be rapidly assembled for withdrawal of liquid from said zone through said straw and for lifting of the edible exposed in the inner cup.

3,288,345
PACKAGING BOX
Rolf Magnus Dilot, Uppakra, Sweden, assignor to AB Akerlund & Rausing, Lund, Sweden
Filed May 12, 1964, Ser. No. 366,875
Claims priority, application Sweden, May 14, 1963, 5,284/63
4 Claims. (Cl. 229—14)



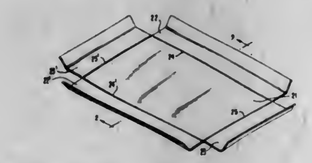
1. A box having rectangular side panels surrounding a top opening, a separate sealing flap attached to the upper boundary of each side panel at a folding line lying in the plane of said top opening, a strip of flexible material bridging the innermost portion of each space between the side edges of each adjacent pair of sealing flaps and extending downwardly on said side panels, said strip of flexible material being continuously adhesively attached to the inner surfaces of said side panels adjacent to said top opening and to the inner surfaces of each of said sealing flaps only in an area of each sealing flap surface adjacent to the area covered by that portion of said strip that folds inwardly substantially without elongation into the plane of said top opening when said sealing flaps are folded outwardly into the plane of said top opening and a sealing diaphragm which is larger than said top opening sealed continuously around its periphery to said sealing flaps and to said inwardly folded portions of said strip.

3,288,346
FOOD CONTAINER
William S. Peppler, Chappaqua, N.Y., assignor to Diamond International Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 21, 1964, Ser. No. 391,229
6 Claims. (Cl. 229—14)



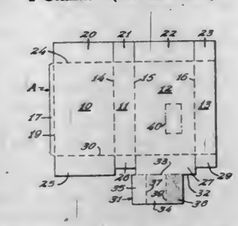
1. A container for the storage of food materials, capable of exuding liquid, comprising:
- a paper-product tray having an inner surface comprising a bottom wall and four upstanding side walls, said bottom wall being capable of retaining liquid;
- a liquid impervious, continuous, non-perforated liner overlying said bottom wall and two first opposing upstanding side walls, said liner terminating at its two side edges adjacent two second opposing upstanding side walls so that said liner is no wider than the width of said bottom wall;
- means both to define a space between said bottom wall and liner to trap exuded liquid therebetween and to adhere said liner to said inner surface of said tray, said means comprising a discontinuous pattern of adhesive between said liner and said inner surface, said space being adjacent said adhesive between said bottom wall and said liner; and
- means to permit entry of liquid to said space between said liner and said bottom wall comprising an opening between each of said side edges of said liner and each of said two second opposing upstanding side walls.

3,288,347
SUPPORT TRAY FOR PRODUCE PACKAGING
Nicholas D. Commisso, Victor, and Connie Lake, Pittsford, N.Y., assignors to Mobil Oil Corporation, a corporation of New York
Filed Jan. 15, 1965, Ser. No. 425,796
4 Claims. (Cl. 229—30)



1. A packaging tray which comprises a substantially flat bottom portion, a pair of side walls having their bottom edges integrally joined to the side edges of said bottom portion, a pair of end walls having their bottom edges integrally joined to the end edges of said bottom portion, said side walls and said end walls being substantially in the same horizontal plane as said flat bottom portion and having their outer edges contoured upwardly, a hinge line at the juncture of the edges of said bottom portion with said side and end wall edges, whereby said end and side walls can be flexed upwardly about said hinge line joining said side and end walls to said flat bottom portion.

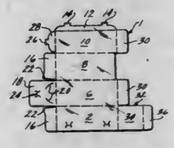
3,288,348
CARTON BLANK
John C. Brackett, St. Paul, Minn., assignor to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota
Filed Mar. 23, 1964, Ser. No. 353,963
1 Claim. (Cl. 229—37)



A carton blank for use in forming a partitional carton, the blank including:
- a first side panel, a first main panel, a second side panel, and a second main panel connected in series along parallel fold lines, the distance between the fold lines comprising the width of the panels,
- closure flaps hingedly connected to each of said panels along a substantially common line of fold intersecting the said parallel fold lines at substantially right angles, the distance between the common line of fold and the opposite edges of the panels comprising the length of these panels,
- a partition panel structure connected to the closure flap on said first main panel along a weakened line of separation parallel to said common line of fold,

the combined lengths of said closure flap on said first main panel and the partition panel structure being less than the length of said panels,
- said partition panel structure being divided into an intermediate partition panel and opposite disposed anchoring flanges by a pair of parallel fold lines spaced apart a distance substantially equal to the width of said side panels,
- one of said lines of fold of said pair which is nearest the end of the blank including said first side panel being on a line parallel to and substantially midway between the fold lines connecting said first main panel to said first side panel and said second side panel,
- said anchoring flanges being adapted to fold into face contact with said opposite main panels when said first main panel closure flap and said partition panel structure is folded therebetween.

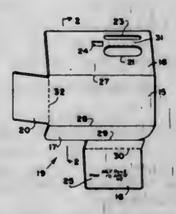
3,288,349
PLASTIC CONTAINER AND BLANK
Charles E. Palmer, Somers, Conn., and Joseph S. Lemanski, East Longmeadow, Mass., assignors, by mesne assignments, to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Original application July 18, 1962, Ser. No. 210,639. Divided and this application June 6, 1963, Ser. No. 286,077
21 Claims. (Cl. 229—39)



1. An unscored container blank integrally formed of semi-rigid synthetic plastic sheet material and including a body portion adapted to be cold-folded into four wall

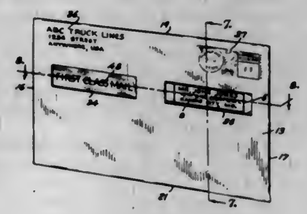
panels defining a container body of rectangular configuration and a side-locking flap along one outer side thereof, said blank having a locking tab on said one outer side and a cooperating locking incision adjacent the other outer side thereof for interengagement upon folding of the blank into the rectangular body configuration, said blank being incised along one edge at the lines of intended fold for the wall panels of the body to provide a bottom end wall flap, a pair of dust flaps and an end-locking flap and adapted to provide a closure for one end of the container, said end-locking flap and end-wall flap being spaced apart by a dust flap and one of said locking flap and end-wall flap extending from the portion of the blank adjacent said locking flap of the body portion, one of said locking flap and end wall flap having a locking incision therein and the other of said locking flap and end wall flap having a locking tab thereon engageable in said incision to provide a firm closure, said blank being incised along the other edge thereof at the lines of intended fold for the said wall panels to provide flaps adapted to be folded into a closure for the other end of said body, at least one of said locking incisions being comprised of a pair of spaced curvilinear slits and a slit extending transversely thereof and intersecting said curvilinear slits intermediate their length to provide a pair of hinged flaps, the spacing between said curvilinear slits varying along the length thereof, the cooperating locking tab being of generally dovetailed configuration with its free end being of greater width than the spacing between said curvilinear slits at their point of widest divergence and with its sides tapering to a root portion of lesser width than the spacing between the curvilinear slits at their point of greatest divergence, said one tab being adapted to extend inwardly of said one locking incision whereby said tab will overlie the hinged flap adjacent the edge of the underlying panel and the other of the hinged flaps defined by said incision will overlie said tab and said hinged flaps will resiliently bear against the surfaces of said one tab to provide firm engagement.

3,288,350
ADVERTISEMENT MAIL CONSTRUCTIONS
Bernard N. Kushner, 210 Virginia Ave., Bridgeport, Conn.
Filed Jan. 29, 1965, Ser. No. 429,001
8 Claims. (Cl. 229—70)



1. In a piece of advertisement mail of the character described, made of paper material, an envelope structure made of a blank including a first panel intermediate, contiguous and joined to a second panel and a flap; the juncture of said panels being in a line; the juncture of the first panel and said flap being in a line; in said envelope structure, said panels being positioned opposite each other, and said flap being flat against and in overlapping relation with the second panel; the distance between the line of juncture of said panels and the line of juncture of the first panel and said flap, being greater than the distance between the line of juncture of said panels and that edge of the second panel which is nearest to the line of juncture of said flap and the first panel; said lines of juncture being straight and parallel, and a flat slide extending between and along said panels; said slide being attached to said flap for swinging movement about a line on the surface of said flap which is nearest said first panel; said line of swinging movement being parallel to, and spaced from the line of juncture of the flap with said first panel, a distance not greater than the distance from the line of juncture of the flap with the first panel, to the said edge of the second panel whereby on swinging said flap away from said panels, the slide will move outward of said envelope structure.

3,288,351
WINDOW ENVELOPE FOR SELECTIVELY EXPOSING AND CONCEALING MAILING ADDRESSES ON AN ENCLOSURE
Stephen J. Benz, Jr., Memphis, Tenn., assignor to Tension Envelope Corporation, Kansas City, Mo., a corporation of Delaware
Filed Apr. 8, 1965, Ser. No. 446,560
4 Claims. (Cl. 229—71)



4. In combination, an enclosure having different addresses located on the enclosure in spaced apart substantially horizontal alignment, one or the other of which may be selected for mailing address, and an envelope for said enclosure,

said envelope including

a rectangular front panel having spaced windows in registry with the addresses on the enclosure,

a rectangular back panel connected with one edge of the front panel by a fold along bottom edges thereof,

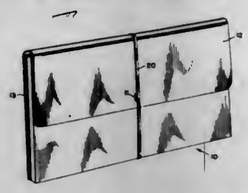
a closure flap connected with the upper edge of one panel by a fold to fold over the corresponding upper edge of the other panel to close an insert opening to a pocket between said panels,

side flaps connected by folds with side end edges of one panel and extending loosely between said panels and across the windows to divide the pocket of the envelope into front and back compartments of near the same size on the respective sides of the flaps and at both ends of the pocket, and

adhesive connecting said other panel with the side flaps immediately adjacent the folds thereof to complete the pocket between said panels,

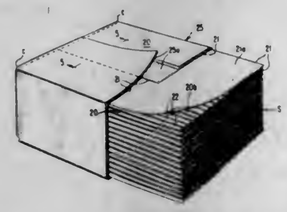
said side flaps having inner terminal edges spaced slightly apart to provide a slot connecting the front compartments at one side end with the back compartments at the other side end, so that when the side end of the enclosure having the address selected for the mailing address is inserted in a front compartment at that end of the pocket to expose said selected address through the window at that end of the front panel, the midportion of the enclosure is passed through said slot to bring the opposite side end having the other address into the back compartment at the other side end of the envelope to conceal the address thereon by means of the side flap dividing that end of the pocket.

3,288,352
ENVELOPE HAVING AN ELASTIC TIE
Harold K. Dwork, 152 Sussex Ave., Newark, N.J.
Filed Mar. 17, 1965, Ser. No. 440,459
5 Claims. (Cl. 229—77)



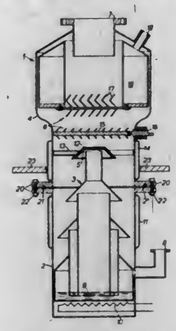
1. In combination: an envelope having a first side and a second side joined to each other at their edges and having an open edge leading to the interior of said envelope; a flap fixed to the first side at said open edge, said flap overlapping said second side when covering said open edge and closing said envelope, said flap having a hole; and an endless elastic band having a knob integrally formed with said band, said knob being located at a point along the length of said band and being of greater dimension than said hole, said elastic band being passed through said hole so that substantially all of said band is located on one side of said flap and said knob bears against the other side of said flap without passing through said hole because of its size.

3,288,353
WRAPPING MATERIAL AND THE FASHIONING OF PACKAGING BLANKS THEREFROM
Jane Fiske McCullough, P.O. Box 31, North Bennington, Vt.
Filed Dec. 16, 1964, Ser. No. 418,617
13 Claims. (Cl. 229—87)



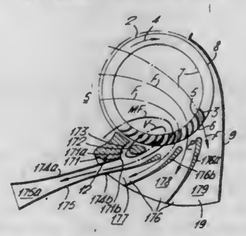
1. In a merchandisable assembly of self-sealing article-wrapping material to provide an outer enclosure for articles to be packaged, the combination of at least two separate sheets of wrapping material each having a film coating of a self-adhering-only adhesive on one of its surfaces, one of said sheets being a web of flexible cushioning material and another of said sheets being a flat flexible liner sheet, each sheet being capable of being separately dimensioned by the user to the need for forming a wrapper when the coated surfaces of said sheets are brought into bonding contact with selectable margin portions of at least one of said sheets extending beyond the other of said sheets to form flexible marginal flaps which form cohesive instantly self-sealing seams or closures for the package, one of said two sheets of wrapping material being a single-faced sheet having the said film coating on its exposed face and the other of said sheets being a flat flexible liner sheet having the said film coating on one of its faces so that when brought together their coated surfaces are a portion of the cover and cohesively bond to an area of the other sheet to form an instantly firm and rigid structure with a coated portion of at least one sheet forming said flexible marginal sealing flaps.

3,288,354
VAPOR DIFFUSION PUMPS
Nigel T. M. Dennis, Crawley, Sussex, England, assignor to Edwards High Vacuum International Limited, Crawley, Sussex, England, a British company
Filed May 28, 1964, Ser. No. 370,950
Claims priority, application Great Britain, May 30, 1963, 21,726/63
5 Claims. (Cl. 230—101)



1. A vapor diffusion pump for the production of ultra high vacua comprising an upper structure including a cooled trap and a baffle, such structure requiring baking for the purpose of removing gases inimical to the production of high vacua, the pump further comprising a lower structure including a boiler for a working fluid, at least one vapor tube and jet, said upper and lower structures being provided with coupling flanges, means coupling said flanges, and a gasket disposed between said flanges, the jet, on assembly of said upper and lower structures, being positioned above said gasket whereby when said upper structure is baked said gasket is not subjected to heat which might result in the evolution of gases from said gasket.

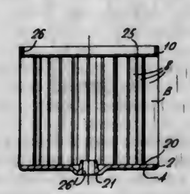
3,288,355
FLUID FLOW MACHINES
Nikolaus Laing, 7141 Aldingen Hofener Weg 35, near Stuttgart, Germany
Filed May 24, 1965, Ser. No. 457,953
Claims priority, application Germany, Dec. 7, 1956, E 13,335; Dec. 9, 1958, L 31,922
30 Claims. (Cl. 230—125)



1. A fluid flow machine comprising a cylindrical bladed rotor mounted for rotation about its axis in a predetermined direction and defining an interior space, guide means defining with the rotor a suction region and a discharge pressure region, the guide means and rotor cooperating on rotation of the latter in said predetermined direction to set up a vortex having a velocity distribution approximately as in a Rankine vortex with a core region eccentric of the rotor axis and a field region which guides fluid from the suction region through the path of the rotating blades of the rotor to the interior of the rotor and thence again through the path of the rotating blades of

the rotor to the discharge pressure region, a diffuser having an intake of smaller cross-sectional area than the cross-sectional area of said discharge pressure region and being located in said discharge pressure region, and means positioning said intake to communicate only with flow from the field region adjacent the vortex core whereby flow from the field region remote from the vortex core is bypassed by said diffuser.

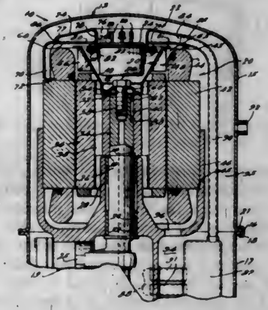
3,288,356
ROTOR AND METHOD OF MAKING SAME
Nikolaus Laing, Stuttgart, Germany, assignor, by mesne assignments, to Laing Vortex, Inc., New York, N.Y.
Original application Feb. 15, 1961, Ser. No. 89,547, now Patent No. 3,199,179, dated Aug. 10, 1965. Divided and this application July 26, 1965, Ser. No. 474,873
Claims priority, application Germany, Feb. 15, 1960, L 35,371
1 Claim. (Cl. 230—134)



For a cross-flow fluid machine having a bladed cylindrical rotor wherein flow of fluid in said machine passes from an intake side thereof through the path of the rotating blades to the interior of the rotor and thence again through the path of the rotating blades to a delivery side thereof, said rotor comprising first and second end portions at opposite ends of said rotor; a plurality of blades arranged in a ring about and extending generally longitudinally between and being unitary with said end portions with said blades having free radially inwardly extending edge portions, the outer edges of said blades defining a cylindrical envelope, said first end portion having the form of a first end closure substantially closing the entire one end of said rotor, and said second end portion having the form of an open-ended annulus within the blade envelope; and a second end closure substantially closing the entire other end of said rotor secured within said second end portion and seated upon said free radially inwardly extending edge portions.

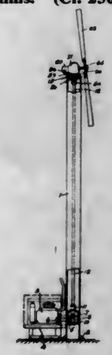
3,288,357
REFRIGERATION MOTOR-COMPRESSOR
Russell E. Comstock and Edwin L. Gannaway, Sidney, Ohio, assignors to Copeland Refrigeration Corporation, Sidney, Ohio, a corporation of Michigan
Filed Aug. 31, 1961, Ser. No. 135,202
5 Claims. (Cl. 230—208)

1. In a refrigeration motor-compressor assembly including an electric motor-driven compressor, means for inhibiting the entry of the heavier components of a non-homogeneous fluid into the inlet of the compressor without unduly restricting the entry of lighter components, comprising stationary wall portions defining a generally closed stationary inlet chamber adapted to be interposed between a compressor inlet and the source of fluid therefor, said well portions defining a stationary axially directed annular inlet orifice, a deflector driven by the motor and rotatable upon a vertical axis substantially perpendicular to the plane of and concentric with said orifice, said deflector including an annular member of greater diameter than and diverging outwardly toward and substantially covering said orifice and having a radially outwardly extending rim portion below and proximate to but spaced from said wall portions and cooperating therewith to define an annular radially directed substantially unobstructed inlet area to said aforementioned annular orifice, said inlet area being located radially outwardly of said orifice and bounded on one side by said stationary wall portions and on the other side by said rotatable



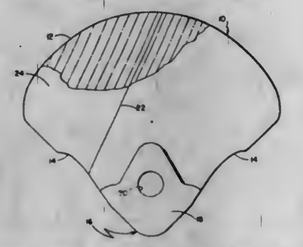
deflector, whereby upon rotation of said deflector, fluid approaching said orifice is guided outwardly and away from said orifice by said annular member and can only enter said orifice by substantially reversing its outward motion and first flowing inwardly through said annular inlet area.

3,288,358
WIND MACHINE CONSTKUCTION
Alva Richard Coles, Burbank, Calif., assignor to National Frost Protection Co., Inc., Burbank, Calif., a corporation of California
Filed Sept. 4, 1964, Ser. No. 394,504
6 Claims. (Cl. 230—254)



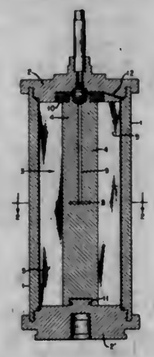
1. In a wind machine having a column, the lower end of which is anchored to a support, an elongated shaft extending from top to bottom of the column and a motor for rotating the shaft, the combination therewith, of: a head assembly for rotation about a vertical axis at the column top and comprising a gear casing and a rotation speed reducer casing, a propeller fan shaft extending through said gear casing and outwardly thereof for one end thereof and into the power drive casing for the opposite end thereof, gearing between the propeller fan shaft and the vertical drive shaft for rotating the propeller fan shaft, and speed reducer gearing driven by the propeller fan shaft in the rotation speed reducer casing, said gear casing provided with a hub, and a bearing block for receiving said hub, said bearing block being secure at the top of said column, a ring gear for said bearing block, a pinion in mesh with the teeth of said ring gear to be driven by the gearing in said rotation speed reducer casing, and means between the bearing block and the hub for producing uniform rotation of the head assembly when the motor is driving the elongated shaft.

3,288,359
FAN AND METHOD OF MAKING THE SAME
George H. Sampson, Middleboro, Mass., assignor to Winthrop-Atkins Co., Inc., Middleboro, Mass., a corporation of Massachusetts
Filed May 7, 1964, Ser. No. 365,581
7 Claims. (Cl. 230—266)



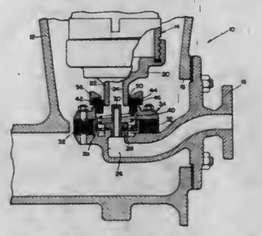
1. A fan comprising a flat blade having an arcuate end edge and side edges converging from the opposite ends of the end edge to form a handle portion by means of which the fan is adapted to be held for manipulation; characterized in that the board, of which the blade is made, is stiffer parallel to a diagonal extending from substantially the center of one side edge to substantially the center of the end edge than it is transversely of said diagonal, so that the lobe of the blade outwardly of the diagonal, with respect to the handle, flexes more readily than the portion of the blade inwardly of the diagonal with respect to the handle.

3,288,360
LIQUID CENTRIFUGE CORE
Edwin F. Babelay, Knoxville, and Hubert P. Barringer, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed June 16, 1964, Ser. No. 375,681
5 Claims. (Cl. 233—22)



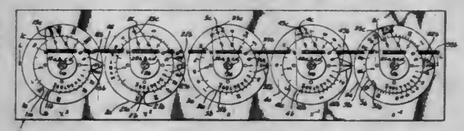
1. A core for insertion into a cylindrical centrifuge bowl comprising:
(a) an elongated right prismatic body having at least three flat side faces,
(b) radially extending fins affixed to said prismatic body along the lines of intersection of said side faces,
(c) a longitudinally extending inclined groove disposed centrally in each of said side faces, and
(d) fluid conducting means communicating with the deepest point of each of said grooves.

3,288,361
DRAG BUSHING FOR A CENTRIFUGE
Joseph Proudlove, Meadowood, Newark, Del., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 7, 1964, Ser. No. 416,343
2 Claims. (Cl. 233—23)



1. In a centrifuge having a bowl disposed normally on a vertical axis and suspended by supporting and driving means, and a drag bushing assembly disposed at the lower end of the bowl and comprising an inner annular bushing element biased toward a position concentric with the axis and having its inner periphery circumposing and normally spaced outward from the lower end of the bowl, the improvement in which the bushing element is mounted for free rotation.

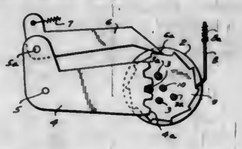
3,288,362
SLIDE RULE OF CIRCULAR TYPE, SET FOR EQUATIONS
Igor Ezopov, 336 Union Ave., Brooklyn, N.Y.
Filed June 9, 1965, Ser. No. 462,514
2 Claims. (Cl. 235—84)



1. A slide rule calculator comprising a plurality of circular slide rules mounted on a common base, wherein the axis of each said slide rule, falls on a straight line, and wherein each slide rule comprises a plurality of circular discs of decreasing diameter mounted on a common axis, the largest disc being mounted closest to the base, with the discs of smaller diameter superimposed concentrically thereover, each slide rule including a searcher tab mounted over the said discs, and about the same axis wherein said tab is provided with a hairline for aligning predetermined portions of the concentric discs, each of said discs being provided with logarithmic scales, and wherein at least one scale on one of the said slide rules, has a logarithmic scale in a reverse direction than on the other slide rules, one of said discs including an index tab with a hairline to align the said disc with a specific predetermined portion of the scale on the adjoining concentric disc in combination with means joining the searcher tab on all the slide rules, so that all searcher tabs can be set simultaneously upon the setting of one of the searcher tabs, thereby coordinating the functioning of all the slide rules into one calculating unit facili-

tating the necessary computations to ascertain the roots of equations of varying degrees.

3,288,363
REGISTER TRANSFER DEVICE
Erich Stautmeister, Marburg, Germany, assignor to Alfred Engelmann, Wennebastel, Germany
Filed May 21, 1965, Ser. No. 457,670
4 Claims. (Cl. 235—134)



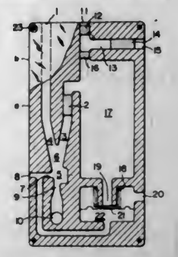
1. A transfer arrangement for an ordinal register, comprising, in combination, first and second register wheels respectively associated with successive lower and higher orders, and being turnable between digital positions, one of said digital positions of said first register wheel being a transfer position; shifting means movable between first and second positions for turning said second register wheel one step to the next following digital position; biassing means for urging said shifting means to said second position; and coupling means connecting said first register wheel with said shifting means, said coupling means including a coupling member supported for turning movement and turnably supporting said shifting means, said coupling member having a gear segment, and a plurality of axially projecting pins connected with said first register wheel for rotation and meshing with said gear segment of said coupling member during turning movement of said first register wheel toward said transfer position so that said shifting means is moved to said first position, said plurality of pins being spaced along an arc concentric with said first register wheel and extending along said arc over at least 180° but substantially less than 360° thereof so as to release said coupling member in said transfer position so that said biassing means moves said shifting means to said second position whereby said second wheel is turned to the next following digital position and a unit is transferred.

3,288,364
COMPARISON MATRIX
Richard W. Vockroth, Jr., Painted Post, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Nov. 18, 1964, Ser. No. 414,495
10 Claims. (Cl. 235—201)



1. A comparison matrix comprising a plurality of fluid amplifiers arranged in series, a power stream input at one end of said series, means for supplying control input streams to opposite sides of each of said fluid amplifiers, and a compare-equal output passage extending from each fluid amplifier to provide a power stream input to a next succeeding fluid amplifier, when pressurized responsive to said control input supply means.

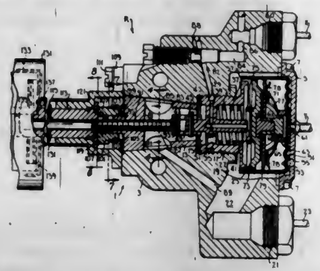
3,288,365
DIGITAL-ANALOGUE CONVERTER
Akira Shiiki, Tokyo, Japan, assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed June 30, 1965, Ser. No. 468,382
Claims priority, application Japan, June 30, 1964, 39/37,187
2 Claims. (Cl. 235—201)



1. A fluid operated digital to analogue converter comprising, a tank means including a first inlet means for receiving a first fluid stream, a second inlet means for receiving a second fluid stream and an exhaust means, a fluid amplifying means connected to said first tank inlet means and biased for diverting said first fluid stream therefrom, said tank exhaust means including a normally opened switching means through which said second fluid stream normally exhausts, said second tank inlet means passing through first and second restriction means prior to entry into said tank, load connection means located between said first and second restriction means, and means for applying an input in the form of a pulsed fluid stream commonly to said fluid amplifying means and said switching means, whereby an input pulse from said pulsed fluid stream diverts said first fluid stream into said tank means and operably closes said normally opened switching means within said tank exhaust means for increasing the pressure within said tank means and applying said pressure to said load connection means as an analogue output representation of said pulsed fluid stream input.

3,288,366
THERMOSTATIC GAS REGULATOR FOR BAKING AND BROILING
Thomas P. Fleer, Affton, Mo., assignor, by mesne assignments, to Aurora Corporation of Illinois, Chicago, Ill., a corporation of Illinois
Filed Dec. 23, 1964, Ser. No. 420,577
12 Claims. (Cl. 236—15)

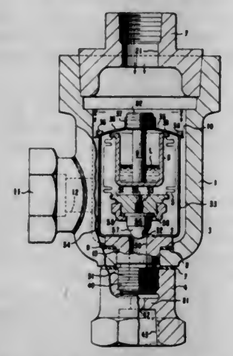
1. An oven temperature regulating system comprising a main burner for oven heating, a cycling pilot burner, a continuous pilot burner for igniting both the main burner and the cycling pilot burner, an operating gas valve for the main burner, thermostatic means responsive to cycling action of the cycling pilot burner for opening and closing said operating gas valve, control means having a main gas inlet, a main gas outlet, a main passage, a bypass, said main passage and bypass connecting the main gas inlet with the main gas outlet, said control means including an auxiliary passage connecting said main passage with said cycling pilot burner, a manual control valve for said gas inlet for opening and closing the same while said bypass is open and for closing said bypass without closing said gas inlet, said control means including a thermostatically controlled main valve responsive to heating by said main burner for controlling gas flow through said main passage by modulating action without complete closure of the main valve when said bypass is closed by the manual control valve, and without closing off gas supply through said auxiliary passage to the cycling pilot burner, said main valve when said bypass is open controlling the flow of gas to said auxiliary passage by closing and opening actions successively to extinguish and ignite the cycling pilot burner so as to close and open said operating gas valve of the main burner.



ERRATUM

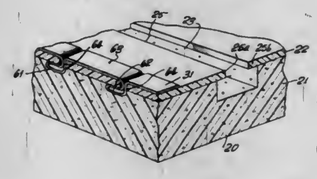
For Class 236—49 see:
Patent No. 3,288,370

3,288,367
STEAM TRAP IMPROVEMENT
Elmer Sylvester Monroe, Jr., Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Sept. 14, 1964, Ser. No. 396,310
2 Claims. (Cl. 236—56)



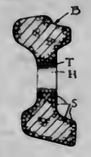
1. An improved thermostatic steam trap assembly for operating in high pressure environments above 300 p.s.i., said trap assembly comprising an elongated hollow casing member, said member comprising an inlet passageway, a valve element, a valve seat element and a thermostatic extensible hollow bellows unit containing a vaporizable liquid and operatively connected to the valve element to actuate the valve in accordance with the vaporization and condensation of liquid in said bellows unit as said unit is exposed to differing media, said bellows unit mounted in a position upstream of said valve and valve seat elements in a zone of elevated pressure and temperature, said bellows unit defining an interior closed space containing the vaporizable liquid, said trap assembly further comprising means cooperating and operatively associated with said hollow bellows unit for supporting a body of condensed liquid of predetermined volume inside said trap assembly and exteriorly of said hollow bellows unit, said means maintaining substantially all of said body of liquid in operative heat exchange relationship with said hollow bellows unit and its vaporizable liquid-containing interior space, the volume of said liquid and the heat exchange relationship so determined that upon sudden reduction of pressure in said zone of elevated temperature and pressure upstream of said valve and valve seat elements inside said trap assembly and exteriorly of said bellows unit, sufficient liquid supported by said means will vaporize and absorb heat energy from said bellows unit and its vaporizable liquid-containing interior space to cool said bellows unit and the contained vaporizable liquid to a degree which will reduce forces related to the sudden pressure drop, and tending to overextend said bellows unit, sufficiently to prevent damage to said unit and its parts, said means comprising structure cooperating with said hollow bellows unit and defining a reservoir element for collecting and holding liquid condensed within the trap assembly in which said bellows unit is installed and exteriorly of said hollow bellows unit, said reservoir element maintaining said liquid in contact with the hollow bellows unit in operative position to absorb heat energy from said unit and its interor space, said hollow bellows unit comprising an elongated hollow portion having annular corrugations, a first end closure portion, and a second end closure portion cooperating to define the interior space of the bellows unit, said reservoir element being operatively disposed to maintain liquid in contact with said hollow bellows unit, said reservoir element being a cup-like configuration formed in one of said end closure portions, said cup-like configuration provided with a bottom portion thereof extending into the interior space of said hollow bellows unit to significantly reduce the interior space therein and expose the major part of the reservoir exterior surface in the vaporizable liquid-containing interior space of said hollow unit in effective heat exchange relationship therewith.

3,288,368
FLEXIBLE SLOT-RACING TRACK
Irvin R. Athearn, 11129 Van Buren Ave., Los Angeles, Calif.
Filed Apr. 10, 1964, Ser. No. 358,915
10 Claims. (Cl. 238—10)



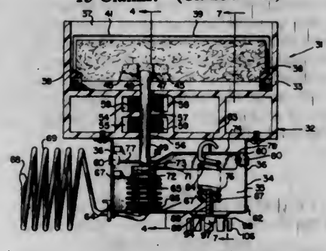
1. A flexible roadway for a model vehicle of the type which is electrically powered and provided with slot-follower and electrical pick-up means, which roadway includes: a laminated road structure comprised of a base lamination of readily deformable elastic material having a thickness substantially greater than the depth of slot required for said slot-follower, and a surface lamination of relatively thin, flexible, but deformation-resistant material, said roadway structure being slotted to guide said model vehicle by said slot follower; and electric track means on each side of said slot comprised of a ribbon of conductive material, said ribbon having loops of surplus material at spaced intervals along its length.

3,288,369
RAIL JOINT
Emory L. Groff, Pompano Beach, Fla., assignor, by mesne assignments, to Poor & Company, Chicago, Ill., a corporation of Delaware
Filed June 18, 1965, Ser. No. 464,952
6 Claims. (Cl. 238—243)



1. A non-metallic rail joint bar including head and base portions connected by a web, said web comprising, an elongated core including an intermediate resin impregnated strip having other strips at opposite sides thereof and whose top and bottom edges turn outwardly, and longitudinally disposed strands of glass fibers impregnated with a thermosetting resin extending from end to end thereof and about said edges, and also having openings in the web spaced to receive the shank of a bolt.

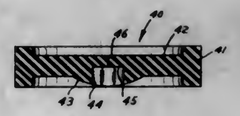
3,288,370
FLUID SYSTEM AND CONTROL DEVICE THEREFOR OR THE LIKE
Frank V. Mingrone, Milford, David Luke Morgan, Shelton, and Harold F. Snider, Orange, Conn., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Oct. 8, 1963, Ser. No. 314,784
15 Claims. (Cl. 236—49)



1. In combination, a condition responsive means having moving means movable in response to said condition, an actuator to be moved by said moving means, a pivotally mounted lever having a portion engageable with said actuator, said actuator having an end separate from and engageable with said moving means, first means operatively interconnected to said actuator to tend to move said actuator away from said moving means, and spring means operatively interconnected to said lever to retard movement of said moving means in one direction and to tend to hold said end of said actuator against said moving means in opposition to the force of said first means so that said actuator tends to follow the movement of said moving means.

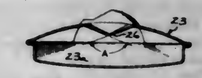
3,288,371
SPRAY SHOWER ASSEMBLY WITH SELF-CLEANING NOZZLE
Arthur E. Broughton, 3 Roosevelt Ave., Glens Falls, N.Y.
Filed Apr. 22, 1964, Ser. No. 361,713
4 Claims. (Cl. 239—107)

1. A nozzle, particularly adapted for spraying liquids containing solid particles, said nozzle including:
(a) a mounting structure adapted to be connected with a source of liquid under pressure permitting flow of liquid therethrough;
(b) an orifice defining member sealingly carried by said mounting structure disposed to control the flow of liquid, provided of resilient material having a first cross sectional dimension and including:
(1) an elongated slit arranged generally centrally thereon;
(2) a support area of increased cross sectional dimension on said member substantially encompassing said slit; and



(3) selected portions of said support area adjacent said slit being of reduced cross sectional dimension providing areas of diminished support to said member whereby the shape of the slit is in opened position and may be controlled to permit a knife edged fan shaped spray to be emitted therefrom.

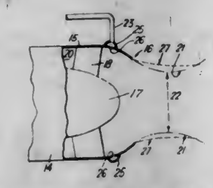
3,288,372
NON-CLOGGING DISHWASHER ARM ORIFICES FORMING A FAN-LIKE VENA CONTRACTA SPRAY PATTERN
Donald S. Cushing, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Aug. 27, 1964, Ser. No. 392,655
5 Claims. (Cl. 239—251)



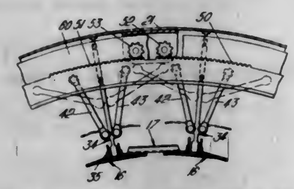
5. In an automatic dishwasher having a wash chamber adapted to receive and contain articles to be washed therein, a spray arm to effectuate a fan-like spray directed toward said articles comprising:
(a) a hollow conduit-like member in communication with a source of wash fluid under pressure,
(b) the inner surface of said hollow member having formed therein a dihedral angle of less than 180°, and
(c) a plurality of substantially circular openings in said conduit spaced along the apex of said dihedral angle,
(d) the angular relationship between each of said openings and said inner surface adjacent each of said openings creating a vena contracta in the fluid spray issuing from each of said openings,
(e) said vena contracta having a cross-sectional area smaller than the cross-sectional area of said opening whereby said opening is free to pass a solid particle of larger size than the cross-sectional area of said vena contracta.

3,288,373
JET NOZZLE
Malcolm Roy Pike, Woodthorpe, England, assignor to Rolls-Royce Limited, Derby, England, a British company
Filed Apr. 12, 1965, Ser. No. 447,250
Claims priority, application Great Britain, June 18, 1964, 25,312/64
11 Claims. (Cl. 239—265.23)

1. A jet nozzle having a throat through which fluid may flow to form a convergent-divergent jet the throat of which is downstream of the throat of said nozzle, and means for introducing further fluid into said jet upstream of the throat of said nozzle over a predetermined circumferential length thereof to thereby increase the area of the throat of said jet.



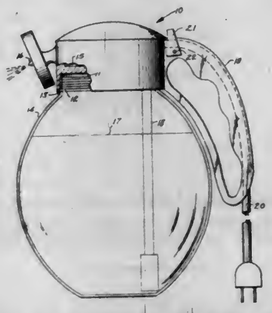
3,288,374
FLUID FLOW CONTROL APPARATUS
Francis J. Colville, Sutton-in-Ashfield, England, assignor to Rolls-Royce Limited, Derby, England, a British company
Filed Apr. 8, 1965, Ser. No. 446,676
Claims priority, application Great Britain, Apr. 24, 1964, 17,164/64
7 Claims. (Cl. 239—265.41)



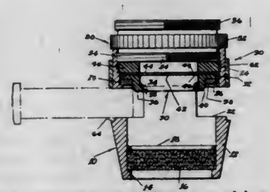
1. Fluid flow control apparatus comprising fixed structure, a fluid conduit extending therethrough, at least one flap which is pivoted up the fixed structure and which controls flow through the fluid conduit, a pair of similar, adjacent, concentric, annular rotatable members for each said flap, two similar links for each said flap which are pivotally connected to their flap at at least one point remote from the said fixed structure and which are respectively pivotally connected to their two different rotatable members, and means for simultaneously rotating the two rotatable members of each said pair thereof in opposite angular senses to effect pivotal movement of the respective flap, whereby to alter the flow through said fluid conduit.

3,288,375
ELECTRIC CLOTHES SPRINKLER
Sara A. Conover, 11774 Jocelyn Road, Jacksonville, Fla.
Filed Feb. 11, 1965, Ser. No. 431,901
1 Claim. (Cl. 239—332)

An electric clothes sprinkler comprising, in combination, a transparent, spherical container having a threaded cylindrical neck portion extending from the top portion thereof, a generally cylindrical cover member, a vibrator pump positioned within the upper portion of said cover member, the interior of the bottom portion of said cover member being threaded for removably receiving said cover member on said neck portion of said container, a sprinkler nozzle outwardly extending from the outer periphery of said cover member for guiding water emitted from said container through said nozzle when said vibrator pump is in operation, a downwardly disposed hollow intake tube secured to said vibrator pump for drawing the water from said container and transmitting it into said nozzle, a handle having a hollow space therein and being firmly secured to said cover member for carrying and guiding said sprinkler, an electric cord secured to said vibrator pump for providing the electric power thereto, said cord being carried within said hollow space of said handle, an electrical switch secured to the upper extremity of said handle, said switch adapted to turn on said vibrator pump when it is being urged toward said cover member, and said nozzle being downwardly inclined and located over the spherical side of said container, said nozzle comprising a centrally protruding spray element in a disc-shaped spray head integrally connected by a narrow neck to said cover member.



3,288,376
QUICK-RELEASE COUPLING
Walter C. Lovell, Longmeadow, Mass., assignor to Seth R. Martin, Grafton, Mass.
Filed June 11, 1964, Ser. No. 374,503
5 Claims. (Cl. 239—428.5)

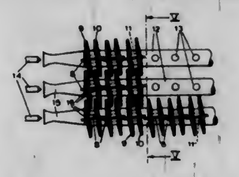


1. A quick-releasable coupling comprising a first component including an elongated tubular body mounted to receive a fluid at one end thereof and to discharge a fluid at the other end thereof, said tubular body being provided midway of its length with opposed slots along predetermined portions of its periphery, and a second component including a flat blade portion selectively inserted through the opposed slots in the tubular body to block the direct flow of fluid through the tubular body, said blade portion being provided on one face with an inlet opening connected to an inlet conduit and on the other face with an outlet opening connected to an outlet conduit, so that when said second component is engaged with said first component a fluid received in said tubular body is diverted to a remote location and then returned to said tubular body for discharge.

3,288,377
GAS BURNER
Franciskus A. van de Roer, Statensingel 98A, Rotterdam, Netherlands
Filed May 21, 1964, Ser. No. 369,261
Claims priority, application Netherlands, May 24, 1963, 293,171
7 Claims. (Cl. 239—433)

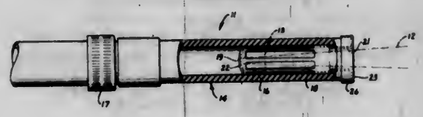
1. A gas burner comprising an air-gas mixing device, a burner tube, and a plurality of burner heads mounted on said tube, said heads each including a hollow body

terminating in a plurality of burner ports, each of said ports being a slit bounded by parallel flat surfaces, each burner head having a first slit intersected by at least one



transverse slit, said first slit lying substantially parallel and extending into close and overlapping proximity to the corresponding first slit of an adjacent burner head.

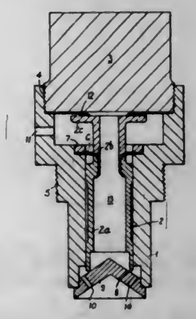
3,288,378
NOZZLE PROVIDING A QUICK CHANGE FROM HARD SPRAY TO SOFT FLOW
Robert A. Dobson, 25 Victoria Road, Burlingame, Calif.
Filed June 15, 1964, Ser. No. 375,268
4 Claims. (Cl. 239—547)



4. A jet nozzle constructed for a quick change of delivery of liquids under pressure between a hard spray and a soft flow and reverse, comprising a tubular housing having means for attachment to a flexible hose, said housing defining a chamber having an opening at both ends, said chamber opening nearest the flexible hose and attachment of said nozzle thereto being a centrally located orifice, the opening of said chamber opposite from said orifice being provided by a reduced neck portion of said chamber formed by a small internal flange, said chamber being constructed with the opening opposite from said orifice being larger than said orifice and serving as an exit opening which is spaced from the orifice at a distance sufficient to allow the conical shaped spray formed by water passing through the orifice to pass directly through said exit opening in the form of a hard spray, said flange portion being of sufficient size to hold the water in the chamber and maintain water therein when it is desired to provide a soft flow from said nozzle.

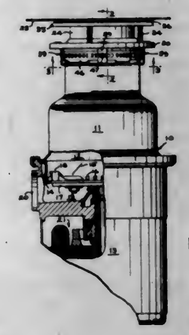
3,288,379
FUEL INJECTION VALVES
Brian Hugh Croft and Adrian Abbott, Leamington Spa, England, assignors to Associated Engineering Limited, Leamington Spa, England, a British company
Filed Sept. 8, 1964, Ser. No. 394,823
Claims priority, application Great Britain, Sept. 9, 1963, 35,495/63
2 Claims. (Cl. 239—585)

1. A servo operated fuel injection valve, comprising a valve body, a piston having an upper part of greater diameter than the lower part and located in a bore provided in the valve body, said bore having two diameters to match the diameters of the two parts of the piston, and the lower part of said bore being provided with at least one outlet orifice closed off by the lower end of the piston when in its lower position, the upper part of said body being provided with a fuel inlet passage and a fuel outlet passage, said fuel outlet passage allowing a greater rate of flow than the fuel inlet passage, an armature for closing



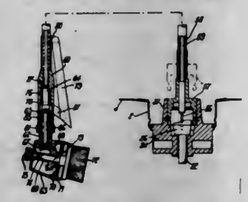
said fuel outlet passage, a solenoid for attracting said armature to open said outlet passage and a further fuel inlet passage leading to the lower part of said bore.

3,288,380
SUPPORT SYSTEM FOR A FOOD WASTE DISPOSER
Francis J. Clements and Johnny W. Yartz, Anchorage, Ky., assignors to General Electric Company, a corporation of New York
Filed Apr. 30, 1964, Ser. No. 363,842
4 Claims. (Cl. 241—100.5)



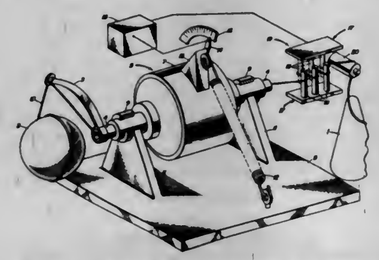
1. A system to support a food waste disposer below a sink comprising:
(a) a housing forming a part of the food waste disposer and having therein an opening to be connected to external plumbing,
(b) means supporting said housing below the sink whereby said housing may be rotated at least a few degrees about a substantially vertical axis to bring said opening into registry with the external plumbing,
(c) said means having at least one projection projecting towards said housing,
(d) said housing having a member adapted to engage said projection,
(e) said projection and said member cooperating to prevent rotation of said housing in one direction and allow rotation in the opposite direction.

3,288,381
ROTARY TOOL FOR CONNECTION WITH A WASTE DISPOSAL
John Patrick Raymond Bell, 4 St. Albans Grove, London, England
Filed Dec. 9, 1963, Ser. No. 328,923
Claims priority, application Great Britain, Dec. 14, 1962, 47,292/62
6 Claims. (Cl. 241—101)



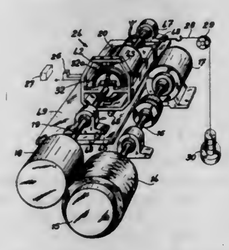
1. A rotary tool for use with a waste disposal unit of the kind which comprises an upright driving shaft and a driving clutch member at the upper end of said shaft, and is adapted to be positioned below a kitchen sink, said rotary tool comprising a plug, a flexible shaft extending through said plug, a covering for said flexible shaft, said covering having one end fixed to said plug, a rotary hand tool fixed to one end of said flexible shaft and a driven clutch member fixed to the other end of said flexible shaft, said plug being adapted to fit in said sink outlet opening with said driven clutch member adjacent said driving clutch member, a spring biasing said flexible shaft to move within said outer covering in a direction away from said plug whereby said driven clutch member is held out of engagement with said driving clutch member and trigger means at the end of said outer covering adjacent said hand tool, said trigger means being operable to move said flexible shaft within said outer covering against the action of said spring to engage said driving and said driven clutch members to cause said upright driving shaft to rotate said rotary hand tool.

3,288,382
DYNAMIC TENSION MEASURING AND CONTROLLING DEVICE FOR A WINDING MACHINE
Stanley A. Dunn, Verona, Wis., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Oct. 24, 1963, Ser. No. 318,771
5 Claims. (Cl. 242—2)



1. A dynamic fiber tension measuring and control device comprising:
a support,
a drive motor having the rotor shaft thereof rotatably mounted on said support and the stator thereof rotatably mounted on said rotor shaft,
a flyer fixed to and rotatable with said rotor shaft for winding a fiber on a take up,
resilient means connected to said support and said stator for opposing the counter-torque on said stator resulting from tension in the fiber being wound,
means on said stator calibrated to indicate the tension in the fiber being wound,
adjustable means fixed relative to said support for applying tension to the fiber being wound, and
control means responsive to the position of said indicating means for varying said adjustable means to maintain a predetermined tension in the fiber being wound.

3,288,383
AUTOMATIC CONTROL ARRANGEMENT FOR SPOOLING DRIVES
Artur Müller, Karlsruhe, Germany, assignor to Industrie-Werke Karlsruhe Aktiengesellschaft, Karlsruhe, Germany
Filed June 17, 1964, Ser. No. 375,758
7 Claims. (Cl. 242—45)

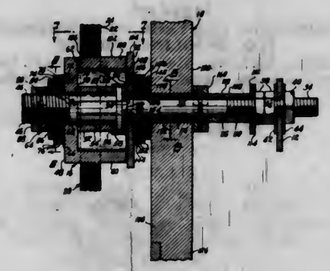


1. An automatic control arrangement for spooling drives, especially of spooling spinning machines, which includes: a thread winding bobbin, a bobbin driving motor drivingly connected to said bobbin for rotating the same, a control roller, means operatively connected to said control roller and continuously urging the same toward said bobbin for frictional engagement with the surface of a cop being formed on said bobbin, motor means for driving said control roller at a desired speed and having a rotor connected to said roller and also having a stator means rotatably supporting a stator, and a potentiometer having a stationary part and also having moveble part connected to said stator so that movements of said stator on its support will adjust said potentiometer, said potentiometer being connected in circuit with said bobbin driving motor for substantially continuously adjusting the speed of said bobbin driving motor in response to a difference in the circumferential speed of said control roller and of the cop being formed on said bobbin.

3,288,384
DISPENSER FOR PLURAL LAYER TAPE
Charles E. Clark, Rte. 1, Box 97, Greenback, Tenn.
Filed May 14, 1964, Ser. No. 367,297
8 Claims. (Cl. 242—55)

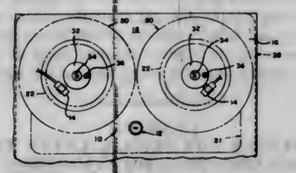
1. A dispenser for plural layer tape, comprising: a frame; a supporting shaft carried by said frame; at least a pair of tape receiving reels mounted for rotation on said supporting shaft in side by side relationship, one of said reels of said reel pair including a hub portion for receiving a roll of plural layer tape, and the other of said reels being provided with a noncircular axial central opening; a cylindrical collar having a noncircular external configuration mateable with that of said central opening, said collar being mounted for rotation on and fixed against axial shifting relative to said shaft, and said other reel being slidably mounted on said collar; adjustable slip clutch means positioned between confronting portions of

the reels of said reel pair and arranged to provide a driving connection therebetween, so that the other reel of said reel pair will rotate in response to rotation of said one reel, said adjustable slip clutch means including: a first plurality of washers rotatably mounted on said collar between said reels of said reel pair; means constraining said first plurality of washers to rotate with said one reel; a second plurality of washers arranged alternately with said first plurality of washers and provided with noncircular openings therethrough, said second plurality of washers



being slidably received on said collar to rotate therewith; and adjustable means on the side of said other reel opposite said one reel operable to urge said other reel toward said one reel to frictionally engage said alternately arranged first and second pluralities of washers; and a guide bar supported by said frame and arranged to extend generally parallel to said supporting shaft, said guide bar being positioned radially outwardly of the peripheries of said reels and being arranged to guide a tape layer between said one reel and said other reel of said reel pair.

3,288,385
SENSING DEVICE
Michael J. Markakis, Palo Alto, and Charles E. Mendenhall, Redwood City, Calif., assignors to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Mar. 18, 1964, Ser. No. 352,732
5 Claims. (Cl. 242—55.11)



1. Apparatus for a tape system for sensing when the end of a recording tape has been reached and then producing a predetermined effect upon the operation of the system, the tape being relatively nonlight-transmitting but having a light-transmitting portion at the end thereof, said apparatus comprising:

(a) a frame,

(b) a tape reel rotatably supported on said frame, said reel having a hollow tubular hub that includes light-transmitting means and is adapted to have the recording tape wound around it with the light-transmitting portion closest to said hub,

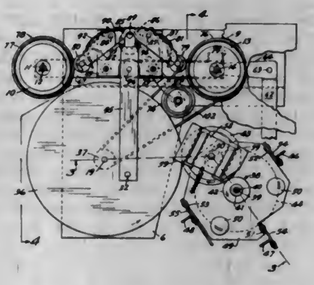
(c) a light-producing element on said frame,

(d) a light-responsive element on said frame, one of said elements being disposed within said hub, the other of said elements being disposed outside of said hub,

(e) means operated by the actuation of said light-sensitive element to affect the operation of the tape system,

whereby said light-responsive element will be actuated when the tape wound on said reel has sufficiently unwound so that only the light-transmitting end portion extends between said light-producing element and said light-responsive element.

3,288,386
TAPE TRANSPORT CONTROL MECHANISM
Sten R. Gerfast and Sheldon Lee Pastor, St. Paul, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Sept. 3, 1963, Ser. No. 305,983
9 Claims. (Cl. 242—55.12)



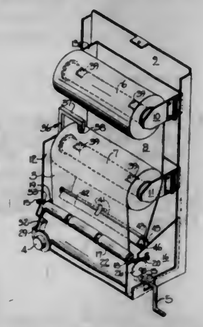
6. In a transducing apparatus having means for forward and reverse searching wherein a tape is transported between two reels, the combination comprising a frame, a rotating drive roller, a supply reel roller and a takeup reel roller each of which are rotatably mounted on said frame and are connected to a spindle adapted to support a reel, at least one of said reel-supporting rollers being formed of material having a relatively high coefficient of friction, a ring formed of rubber-like high coefficient of friction material being placed around the outer periphery of said reel-supporting roller to form a drive surface on the periphery thereof, means affording a frictional driving connection between said drive roller and said ring, and acceleration limiting means comprising a band of material having a low coefficient of friction surface being disposed between said reel-supporting roller and said ring decreasing the frictional contact between said ring and said reel-supporting roller to relieve the shock on the tape to an amount below that which would deleteriously affect the tape when said means affording a driving connection is actuated placing said one of said reel-supporting rollers in frictional driving contact with said drive roller.

3,288,387
PAPER TOWEL DISPENSER
William J. Craven, Jr., 412 Allendale Place, Charlotte, N.C.
Filed Dec. 8, 1964, Ser. No. 416,771
9 Claims. (Cl. 242—55.53)

1. In a paper towel dispenser having a frame with a dispensing opening through which toweling web is dispensed, means on the frame for supporting first and second rolls of toweling for rotation about spaced apart axes and feed means supported by the frame and positioned

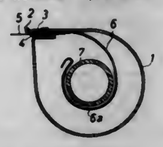
between the axes and opening for controlling dispensing of toweling web from one roll through the opening, the improvement comprising:

each roll having a core with a peripheral cavity and a web wound on the core to overlie the cavity, and



means supported by the frame and being responsive to removal of the web overlying the cavity for entering the cavity of the first core and for then introducing the leading edge of the second roll into the feed means to be dispensed.

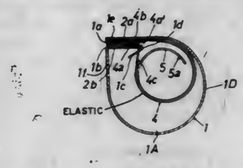
3,288,388
FILM CARTRIDGE
Alfred Winkler, Munich, Germany, assignor to Agfa Aktiengesellschaft, Leverkusen, Germany
Filed Apr. 23, 1964, Ser. No. 362,062
Claims priority, application Germany, Oct. 10, 1963, A 44,276; Dec. 12, 1963, A 44,779
12 Claims. (Cl. 242—71.1)



1. A film cartridge comprising, in combination, a cartridge housing having a mouth through which film is introduced into and withdrawn from said housing; a curved spring located in said housing and having an end fixed to said housing, said curved spring having a concave surface directed toward said mouth for receiving film which enters into said housing through said mouth thereof and forming the film into a coil; and a roller loosely supported in the interior of said housing rotatable about and movable transversely to its own axis, and said roller having an exterior surface curved in the same general direction as a portion of said spring and located adjacent the same so that the film is guided at least by said spring portion into a position adjacent said exterior surface of said roller.

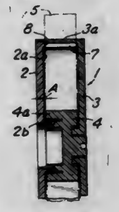
3,288,389
FILM CARTRIDGE
Josef Gersch, Unterhaching, Munich, and Heinz Meglin, Munich, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany
Filed Feb. 2, 1965, Ser. No. 429,984
Claims priority, application Germany, Feb. 12, 1964, A 45,207
20 Claims. (Cl. 242—71.1)

18. In a coreless film cartridge, a substantially cylindrical mantle defining an elongated film-admitting mouth; and an expansible elastic band consisting at least in part of elastic material provided in said mantle and comprising a looped median portion arranged to surround the



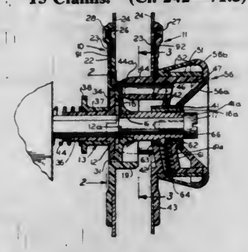
outermost convolution of a roll which is formed when a film is admitted lengthwise through said mouth and into the interior of said mantle.

3,288,390
FILM MAGAZINE FOR MOVIE CAMERAS
Masashi Kato, Minamiashigara-machi, Ashigarakami-gun, Japan, assignor to Fuji Shashin Film Kabushiki Kaisha, Kanagawa-ken, Japan, a corporation of Japan
Filed Oct. 26, 1964, Ser. No. 406,275
4 Claims. (Cl. 242—71.2)



1. A film magazine comprising two separate portions having mating side walls adapted to form a light-tight chamber, apertures in the walls of at least one portion for film passage during use, and a cut-out in the wall of one of said portions having a depth slightly less than the height of said wall, the corresponding wall of the mating portion being left intact to form said light-tight chamber.

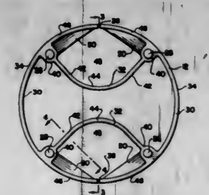
3,288,391
REEL FOR PERFORATED TAPE
Thomas B. Keesling, Los Gatos, Calif., assignor to Cycle Equipment Company, Los Gatos, Calif., a corporation of Nevada
Filed Jan. 18, 1965, Ser. No. 426,222
15 Claims. (Cl. 242—71.8)



3. A split-type reel for holding tape comprising an inner reel half and an outer reel half; said inner reel half including a molded plastic part having a first tubular hub provided with a shaft-engaging inner bore, an enlarged cylindrical portion provided with radially extending clutch grooves, a circular flange extending radially outwardly in offset relation to said enlarged cylindrical portion, and an annular series of clutch teeth about said bore at one end thereof; said outer reel half comprising a molded

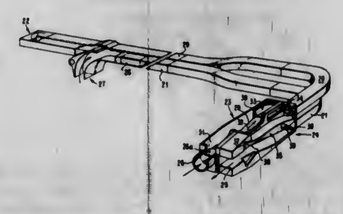
plastic structure including a second tubular hub for sliding engagement over said first tubular hub, a circular flange, wall means connecting said second tubular hub and said flange, circumferentially spaced clutch projections extending from said wall means in parallel relation to said second hub and spaced correspondingly to said grooves of said inner reel half to seat therein to provide driving engagement between said reel halves and to space said reel halves apart, and means for releasably connecting said reel halves.

3,288,392
FILM REEL
Morris Goldberg, Denver, Colo., assignor to Goldberg Brothers, Inc., Denver, Colo., a corporation of Colorado
Filed Nov. 27, 1964, Ser. No. 414,276
9 Claims. (Cl. 242—74)



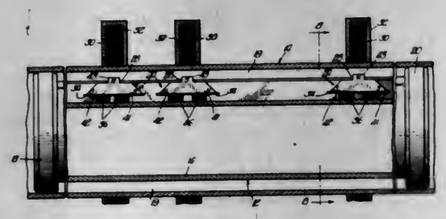
1. A hub-forming core for film and tape storage reels of the type having a pair of disk-shaped flanges fastened to opposite faces of said core in fixed spaced relation to define a continuous annular film or tape coil retaining groove therebetween which comprises: a pair of rigid arcuate semi-circular straps of a width corresponding to the width of the tape or film to be wound thereon arranged in coplanar opposed end-to-end spaced relation producing a smooth cylindrical hub interrupted at diametrically-opposed points by transverse leader slots defined between the spaced ends thereof, a pair of non-intersecting bridge-forming ribs interconnecting the arcuate hub producing straps at points spaced on opposite sides of the leader slots to form a leader-end pocket therebeneath, and means for fastening the reel flanges to the core located on both faces of the latter at the juncture of the ribs and straps.

3,288,393
ODD-EVEN AIR VALVE SYSTEM
Bjarne Junge, Los Gatos, and Russell A. Stauffer, San Jose, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 3, 1966, Ser. No. 518,418
6 Claims. (Cl. 243—1)



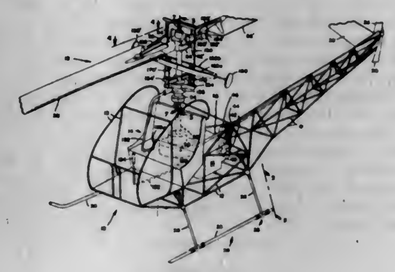
1. In a system wherein carriers are transported from a file through a selected one of a pair of file deflector valves, a pneumatic valving system for mechanically and pneumatically connecting said file deflector valves to a common file I/O channel, said pneumatic valving system comprising:
first and second file tubes pneumatically connected at one extremity thereof;
said first and second file tubes being operatively connected to one of said file deflector valves;
a pneumatic supply; and
means connected to the other extremity of said first and second file tubes operable to selectively connect said file tubes to said pneumatic supply and said common file I/O channel.

3,288,394
MAGNETIC SIGNALLING DEVICE FOR PNEUMATIC DISPATCH SYSTEM
George L. Ellery, Detroit, and Adam P. Weissmuller, Livonia, Mich., assignors to The Grover Company, Detroit, Mich., a corporation of Michigan
Filed Mar. 2, 1965, Ser. No. 436,463
6 Claims. (Cl. 243—16)



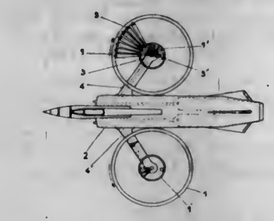
1. In a signalling device for generating a signal in response to a sensed condition, the invention comprising means for sensing a magnetic field and a magnet for generating said magnetic field, said magnet being an integral multipole magnet having a pair of like poles spaced a finite distance apart and an unlike pole spaced a finite distance from a line joining said like poles, whereby the resultant magnetic field is shaped outwardly in a preselectedd direction.

3,288,395
HELICOPTER
Kenneth Krohncke, 919 S. 7th St., San Jose, Calif.
Filed Dec. 7, 1964, Ser. No. 416,419
13 Claims. (Cl. 244—17.17)



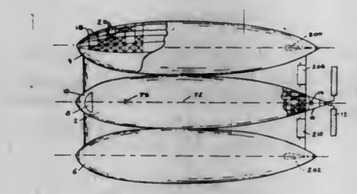
8. In a helicopter or the like having a fuselage including transverse and longitudinal frame members, a landing gear which comprises
a pair of like laterally-spaced, ground-engaging runners,
two legs secured to each of said runners at their lower ends and to said frame members at their upper ends,
a sleeve secured to said frame members and slidably encompassing each of said legs intermediate its ends.

3,288,396
AIRCRAFT HAVING DISC-SHAPED ROTATING WINGS
Robert Léon Auguste Gouin, 50 Ave. de Paris, Niort-Deux-Sevres, France
Filed Dec. 2, 1964, Ser. No. 415,443
Claims priority, application France, Dec. 12, 1963, 956,985, Patent No. 1,388,815
1 Claim. (Cl. 244—17.23)



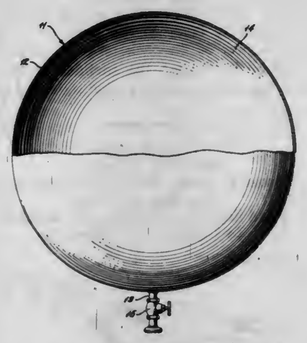
An airplane comprising a fuselage, means on opposite sides of said fuselage for supporting a pair of disc-shaped rotary aerofoils, each of said aerofoils comprising a plurality of radially extending inner vanes, rim means, and a plurality of radially extending outer vanes, having their outermost ends connected to said rim means for rotation therewith, said inner and outer vanes being supported for rotation in a common plane and about a common axis, said outer vanes being rotatable about radially extending axes, respectively, to vary the pitch thereof relative to the plane of rotation of said aerofoils, and means supported by said fuselage for rotating said aerofoils.

3,288,397
AIRCRAFT
John R. Fitzpatrick, Levittown, Pa., assignor to Aereon Corporation, King of Prussia, Pa., a corporation of Pennsylvania
Filed Nov. 10, 1964, Ser. No. 410,180
9 Claims. (Cl. 244—29)



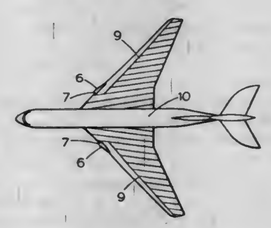
1. Lighter-than-air craft comprising an elongated hull with a longitudinal axis, propulsion means located at the rear of said hull and in substantial alignment with said longitudinal axis, means for varying the direction of the thrust on said hull by said propulsion means, said propulsion means embodying a drive shaft held in substantial alignment with the longitudinal axis of the hull, a rotor having a plurality of blades, a driving connection between the drive shaft and rotor including pivot means, said rotor blades being movable about said pivot means to vary the plane of rotation of said blades with respect to said drive shaft and the longitudinal axis of said hull, said blades further being movable about said pivot means and with respect to each other to vary the coning angle of the blades during rotation.

3,288,398
EVACUATED HOLLOW STRUCTURES
Axel Axelsson, 259 S. Coral Ave., Compton, Calif.
Filed Aug. 28, 1964, Ser. No. 392,850
2 Claims. (Cl. 244—31)



1. A balloon-type aerial vehicle comprising
a thin-walled, rigid envelope consisting of aluminum oxide and having a generally spherical configuration;
said envelope being substantially evacuated of air to create a vacuum therein to provide a lifting force for said vehicle and to stress said envelope in compression in order to utilize the full compressive strength of the aluminum oxide to obtain a strong lightweight envelope capable of resisting collapse;
an air outlet communicating with the interior of said envelope; and
means for controlling the passage of air through said outlet to vary the lifting force of said vehicle.

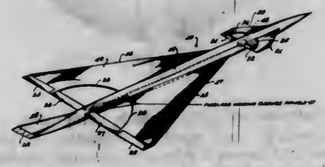
3,288,399
MEANS FOR CONTROLLING THE BOUNDARY LAYER OVER AN AEROFOIL BODY
Michael Gaster, 12 St. James Mansion, West End Lane, London, NW. 6, England
Filed Oct. 15, 1965, Ser. No. 496,389
Claims priority, application Great Britain, Dec. 16, 1964, 51,305/64
7 Claims. (Cl. 244—41)



1. An aerofoil body having a swept leading edge containing an airflow attachment line along which contamination of laminar boundary layer flow is caused by turbulent boundary layer flow originating from a disturbance located at a point on or adjacent to the attachment line, means positioned along the leading edge and in the path of the turbulent boundary layer to prevent spanwise propagation of the turbulent boundary layer along the attachment line, which means is faired into the leading edge contour so as to present a smooth outline for the airflow over the aerofoil body and comprises a front facing the disturbance and an associated inclined surface, which

front is inclined steeply to the leading edge and has a rounded portion which blends smoothly at one end into the inclined surface, the other end of the inclined surface blending smoothly into the leading edge, the front presenting a bluff surface to the turbulent boundary layer and being at such a distance from the disturbance that the height of the front is greater than the thickness of the turbulent boundary layer at the front so as to create a transitional region of flow whereby a laminar boundary layer is established along the inclined surface and the attachment line of the leading edge adjacent the inclined surface.

3,288,400
FLIGHT VEHICLE
Phiroze P. Nazir, 1020 S. Granville Ave., Los Angeles, Calif.
Filed Sept. 29, 1964, Ser. No. 400,147
14 Claims. (Cl. 244—43)



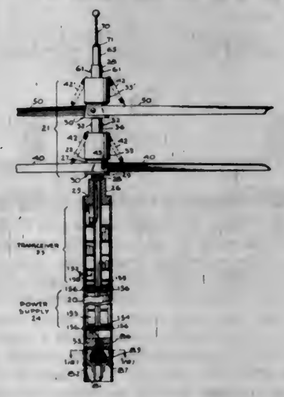
1. A flight vehicle, comprising:
a lifting airfoil;
retractable bridge means behind said airfoil for selectively defining a closed perimeter gap between the trailing edge of said airfoil and the leading edge of said bridge means;
and means for varying the angle of attack of said bridge means.

3,288,401
AIRCRAFT RUDDER LOCK STRUCTURE
Charles Fete, Santa Ana, Calif., assignor to The Reedy Corporation, Costa Mesa, Calif., a corporation of California
Filed Aug. 27, 1965, Ser. No. 483,117
14 Claims. (Cl. 244—83)



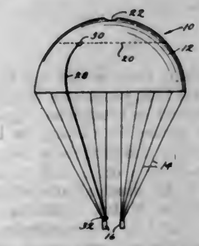
1. A rudder lock structure for aircraft comprising, in combination, a pair of elongated leg elements, each of said leg elements having flattened ends, one of the flattened ends of each leg being curved away from the leg axis, an apertured fastening region at each flattened end of the leg elements, a plurality of spring clamp elements, means to secure one of said spring clamp elements to the fastening region of the uncurved flattened ends of the pair of leg elements, the securement being adapted to hold the leg elements in V formation with the spring clamp element at the V apex, the spring clamp being adapted to be clamped to the trailing edge of the rudder element of an aircraft in a clamping position between its bottom and top, means for securing the remaining clamp members of the plurality individually to the flattened curved portion of the leg elements, the last named clamp members being adapted to be positioned to engage the trailing edge of the elevator elements of the aircraft at points thereon spaced laterally from the rudder with the curved flattened ends turned angularly relative to the connection or the straight ends to accommodate the elevator construction of the aircraft selected, an elongated expansible spring member, means to attach one end of said spring to one of the leg elements, and a fastening at the opposite end for securement at a point on the aircraft structure to tighten the assembly.

3,288,402
RADIO RELAY REPEATER
Phineas J. Icenbice, Jr., and Loren E. Curriston, Los Angeles, and Robert F. Holland, Ventura, Calif., assignors to Litton Systems, Inc., Beverly Hills, Calif.
Filed Sept. 2, 1964, Ser. No. 393,925
16 Claims. (Cl. 244—138)



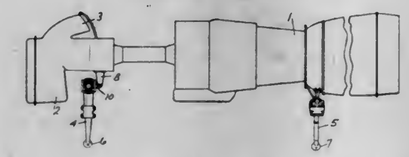
13. A relay repeater comprising:
a portable transceiver;
an antenna connected to said transceiver;
means for causing said transceiver to descend at a rate appreciably slower than that determined by gravity when the transceiver is placed in a free-fall situation; and
means for lodging said transceiver in the uppermost portions of a jungle-canopy with negligible shock to the components of the transceiver whereby said antenna extends above the top of said jungle-canopy.

3,288,403
PARACHUTE
Milton LeRoy Goff III, Rte. 1, Box 26A, Scottsville, Va., and Frederick Hundley Quarles III, 2401 Fontaine Ave., Charlottesville, Va.
Filed Feb. 26, 1965, Ser. No. 435,442
4 Claims. (Cl. 244—145)



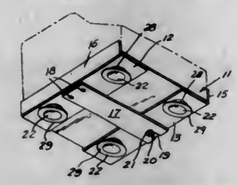
1. In a parachute having a canopy and a plurality of shroud lines depending from said parachute, the improvement comprising:
separation means incorporated in said canopy for separating a portion of the canopy from the remainder of the parachute, wherein said separation means comprises ignitable material incorporated in said canopy along a line of separation between the portion to be removed and the remainder of the parachute, and
actuating means connected to said separation means for effecting the separation of a portion of the canopy from the remainder of the parachute, wherein said actuating means includes a chemical means which ignites upon exposure to air, said chemical means being exposed to air only upon actuation of said actuating means.

3,288,404
ENGINE MOUNTING SYSTEM
Warren E. Schmidt, Philip R. Woodford, and John H. Gorndt, Erie, Pa., assignors to Lord Corporation, a corporation of Pennsylvania
Filed Aug. 24, 1964, Ser. No. 391,635
12 Claims. (Cl. 248—5)



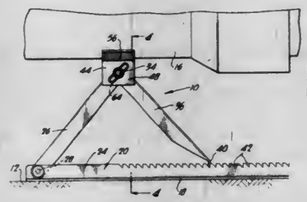
1. A mounting system comprising an engine, a horizontal torsion member transverse to an axis of the engine, crank arms transverse to the axis of the torsion member and spaced from each other along the length of the torsion member, each crank arm having one end fixed to the torsion member and having its other end connected in load carrying relation to the engine, said crank arms extending along and being on opposite sides of the longitudinal axis of the engine, a resilient mounting at each end of the torsion member, said mounting having opposed surfaces extending generally in the same direction as the torsional member and a body of elastomer between and anchored to said surfaces and sustaining vertical loads in direct stress and horizontal and torsional loads in shear.

3,288,405
VIBRATION ISOLATOR
Kenneth W. Johnson, 208 Dumbarton Oaks, Dayton, Ohio
Filed Oct. 8, 1964, Ser. No. 402,587
4 Claims. (Cl. 248—24)



1. A vibration isolating support for business machines or the like comprising: a horizontally disposed supporting base structure formed of a pair of coplanar parallel elongated plates adapted to underlie the lateral base portions of said machine, a transverse member centrally affixed to one of said plates and adjustably connected to the other plate for holding said plates in width adjusted relative positions, said transverse member being a rigid strap having a longitudinally disposed slot in its free end, a screw fixed to said other plate and positioned to extend downwardly through said slot, and a nut on said screw for adjustably clamping said transverse member to said other plate, each of said plates having upstanding machine positioning and retaining flanges along their lateral and rear edges, an upwardly convex spring element fixed at its apex to the under surface of each end portion of each of said plates, and a cup-shaped pad of resilient material covering each of said spring elements.

3,288,406
ADJUSTABLE PIPE SUPPORT
George R. Degen, 5657 Los Alamos, Buena Park, Calif.
Filed Nov. 22, 1965, Ser. No. 508,949
6 Claims. (Cl. 248—49)

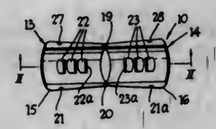


1. A support, said support being adapted to support structure at any one of a plurality of selectable positions, said support comprising:
base, said base being adapted for ground engagement, first and second ends on said base, a pivot support on said base adjacent said first end thereof, a plurality of abutments on said base, said plurality of abutments extending from adjacent said second end of said base toward said first end of said base;
a first link, said first link having a pivot end and an upper end, said pivot end being pivoted to said base at said pivot support adjacent said first end of said base;
a second link, said second link having an upper end and a pawl end, a pivot pin, said pivot pin being pivotally attached to said upper end of said first link and said upper end of said second link so that said first and second links are pivoted together, said pawl being selectively engageable against any one of said abutments so that said pivot pin can be selectively positioned away from said base in a plurality of selectable positions in accordance with the engagement of said pawl against any one of said plurality of abutments;
support structure supported on said first and second links adjacent their upper ends, said support structure being adapted to support a structure at any one of a plurality of different selected distances away from said base.

3,288,407
GROMMETS
Charles Edward Downer, Ruislip, and Alfred Edward Charles Piper, Hillingdon, England, assignors to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed Feb. 7, 1966, Ser. No. 525,627
Claims priority, application Great Britain, Feb. 8, 1965, 5,349/65
7 Claims. (Cl. 248—56)

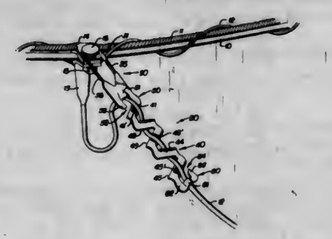
1. A one-piece grommet moulded from a synthetic plastics material and adapted to hold a cable in an apertured support the grommet comprising a head and a shank, the head having an abutment shoulder facing the shank and adapted to bear against the apertured support and the head and shank being divided lengthwise into two

similar portions, each of the said similar portions comprising a head portion and a shank portion integral therewith, the shank portions being joined at the ends thereof remote from the head by a flexible web of material which allows the two said portions to pivot about an axis transverse to the axis of the shank for clamping engagement on



opposite sides of the cable when the grommet and cable are engaged in the aperture in the support each shank portion having an internal surface provided with a projection adapted to engage a cable clamped between the two said portions to resist lengthwise movement of the cable through the grommet.

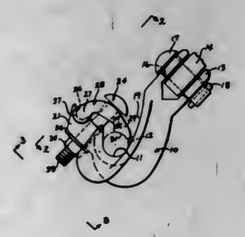
3,288,408
CABLE SUPPORT
George M. Acker, 1545 Midvale Ave., Los Angeles, Calif.
Filed Jan. 26, 1966, Ser. No. 523,091
10 Claims. (Cl. 248—61)



1. An apparatus for use with electrical cables, insulated wires, television antenna leads, or the like, to relieve electrical connections therewith of forces otherwise acting thereon due to the weight of or tensions in the cable, or the like, said apparatus comprising:
a head portion and means for mounting said apparatus by said head portion at a location of use adjacent an electrical connection with the cable to be supported by said apparatus;
a body portion including means for holding said cable thereon by friction forces generated between said cable and body portion;
a first guide means on said body portion adjacent said head portion for guiding said cable onto said body portion in a direction axially parallel to said body portion; and
a second guide means at a tail end of said body portion for guiding said cable onto said body portion in a direction axially parallel to said body portion.

3,288,409
ANGLE SUSPENSION CLAMP FOR CABLES
Malcolm Bethea, Jr., P.O. Box 1407, Birmingham, Ala.
Filed Sept. 23, 1964, Ser. No. 398,719
1 Claim. (Cl. 248—62)

An angle suspension clamp for cables comprising:
(a) a body member having an upwardly opening cable groove in a side thereof,
(b) connector means adjacent the upper end of said body member adapted to be secured to a support for supporting the clamp,
(c) spaced apart laterally projecting members carried by said body member outwardly of said cable groove defining on outwardly opening recess therebetween,
(d) a keeper pivotally supported adjacent one end thereof by said laterally projecting members with the other end of said keeper extending inwardly over said cable groove for clamping a cable therebetween,
(e) a bolt disposed to move laterally into said outwardly opening recess between said laterally projecting members,



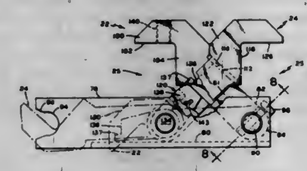
(f) there being an opening through said keeper elongated in a direction perpendicular to the cable groove for receiving said bolt, and
(g) a retaining nut on said bolt disposed to draw said other end of the keeper toward the cable groove upon rotation in one direction and disposed to release said other end of the keeper upon rotation in the opposite direction whereby said bolt, keeper and retaining nut are movable as a unit selectively into said outwardly opening recess and outwardly of said outwardly opening recess for attachment to and removal from said body member.

3,288,410
GRIP FOR AN OVERHEAD ELECTRICAL CABLE
André Noirclerc, Versailles, France, assignor to Societe Industrielle de Liaisons Electriques, Paris, France
Filed Nov. 10, 1965, Ser. No. 507,120
Claims priority, application France, Nov. 12, 1964, 994,597, Patent No. 1,426,995
10 Claims. (Cl. 248—63)



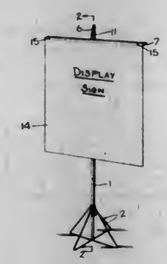
1. A grip for a cable having a plurality of strands comprising, in combination:
(a) an elongated core member having a longitudinal axis and a longitudinal face about said axis; and
(b) hook means on one longitudinal end portion of said core member for suspending the same,
(1) said face being formed with a plurality of screw-shaped elongated grooves, each groove extending about said axis in a plurality of turns, the axial spacing of the turns of each groove decreasing in an axial direction toward said one end portion from the other end portion.

3,288,411
CARGO HANDLING APPARATUS
Robert W. Davidson, York, Pa., assignor to American Machine & Foundry Company, a corporation of New Jersey
Original application July 19, 1963, Ser. No. 296,177. Divided and this application Dec. 30, 1965, Ser. No. 517,650
8 Claims. (Cl. 248—119)



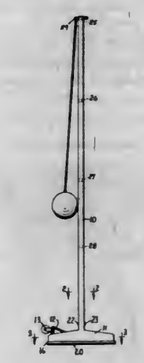
1. In a device of the type described for use in securing a load against movement relative to a support having mounting means, a locking assembly comprising a frame, a first movable member, a second complementary movable member, at least one of said members having load holding means, means movably mounting said members in said frame for disposal in inoperative positions within the confines of said frame and for movement into operative positions above said frame, and mechanism on said frame for detachably securing said assembly with said mounting means for said support.

3,288,412
DISPLAY DEVICE
Thomas V. Murphy, Yorktown Heights, N.Y., assignor to Snyder & Black & Schlegel, White Plains, N.Y., a corporation of New York
Filed Nov. 12, 1964, Ser. No. 410,515
5 Claims. (Cl. 248—125)



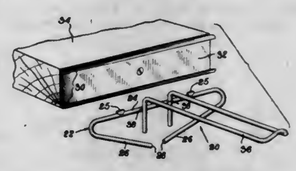
1. A transportable self-supporting display device comprising a horizontally disposed elongated display support means for supporting a display thereon, said display support having an opening through the center thereof, a vertical support means slidably disposed in the opening of said display support means, a guide bracket for guiding said display support means on said vertical support means, said guide bracket including an annular guide ring spaced from said display support means and encircling said vertical support means and a vertical bar connected at one end to said annular guide ring and at the other end to said display support means, and means mounted on said vertical support means and connected to said display support means for vertically adjusting said display support means on said vertical support means.

3,288,413
PORTABLE GYMNASIUM STANDARD
Jack E. Gregory, S. 1807 Maple St., Spokane, Wash.
Filed Sept. 7, 1962, Ser. No. 222,020
2 Claims. (Cl. 248—158)



1. A gymnasium standard comprising a base and an upstanding standard carried thereby;
said base comprising a metal cap having a depending rim and having a filling of concrete to the bottom of said rim;
said base having a stem rigidly secured thereto and projecting upwardly therefrom;
the upstanding standard being tubular at least at its lower end and telescoped with said stem;
means interconnecting the stem and standard releasably retaining them together in telescoped relation;
yieldable covering means on the bottom of the concrete and the lower edge of said rim;
casters secured to said base and having floor engaging portions extended radially outward beyond the periphery of the base, said casters being entirely above the elevation of the lower edge of said rim when said rim is resting on a supporting surface;
said yieldable covering means including a strip of U-shaped cross section fitted over the lower portion of the rim with the inner wall portion thereof bound between the concrete and the rim.

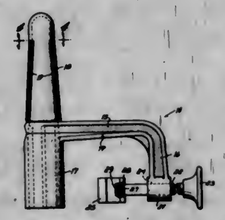
3,288,414
PRODUCT SUPPORT ENGAGED IN THE INWARDLY-TURNED LIPS OF A CHANNEL MEMBER
Vincent Fortunato, Valley Stream, N.Y., assignor to Henschel-Steinau Co., Palisades Park, N.J., a corporation of New Jersey
Filed Apr. 20, 1965, Ser. No. 449,456
14 Claims. (Cl. 248—223)



1. A product support for engaging the inwardly-turned lips of a channel member having at least two such inwardly-turned lips comprising:
a continuous element turned back on itself so as to form a midsection and two arms;

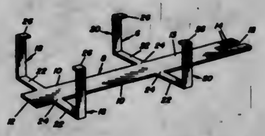
the two arms having their ends adjacent each other and being in the same plane and projecting from the mid-section a distance greater than the distance between the first and second inwardly-turned lips of the channel member;
the midsection engaging the first inwardly-turned lips of the channel member;
the arms adjacent the ends of the continuous element being forced into spring engagement with the second inwardly-turned lip of the channel; and
means for supporting a product affixed to the continuous member and projecting therefrom.

3,288,415
SUPPORT STAND
Thomas H. Eickhoff, 2250 Beechmont Ave., Cincinnati, Ohio
Filed Feb. 23, 1966, Ser. No. 529,356
10 Claims. (Cl. 248—226)



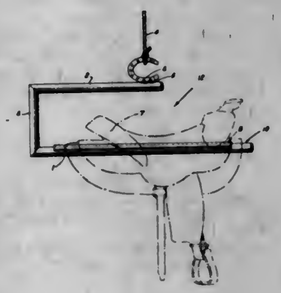
1. For use in combination with an open top drawer of an item of furniture, a support stand comprising,
a horizontal element adapted to be located over the top of the open corner of a drawer,
a corner block depending from one end of said horizontal element and adapted to be fitted into the inside of said drawer corner,
a vertical element depending from the other end of said horizontal element, said vertical element having a threaded aperture therein,
a threaded screw extending through said threaded aperture of said vertical element, said screw including a manually turnable handle non-rotatably defined on its outer end by means of which the screw may be rotated to effect axial movement of said screw relative to said flange,
a corner fitting bracket rotatably mounted upon the inner end of said screw, said bracket defining a generally right angular recess in its inner surface adapted to fit against the outer right angular corner surfaces of said drawer, and
a support element attached to said horizontal element.

3,288,416
TISSUE BOX HOLDER FOR VEHICLES
Virgil L. Franklin, 1100 W. 14th St., Odessa, Tex.
Filed Jan. 13, 1966, Ser. No. 520,438
5 Claims. (Cl. 248—311)



1. An openwork rack capable of elevated overhead installation within the passenger space of an automobile having decorative trim molding marginally bordering and fastening upholstery where needed, said rack being of simple onepiece form and adapted to encompass and support a readily insertable and removable cardboard tissue containing and dispensing box, said rack comprising a relatively broad flat-faced sheet material strap member, said strap member designed to be of a length greater than the length of said box, being narrow compared to the width of the box and providing a single main arm, and a plurality of smaller and narrower auxiliary arms joined to lengthwise marginal edge portions of said main arm and depending laterally therefrom and having free lower end portions provided with turned-in terminals constituting and providing hanger hooks, said main arm being adapted to overlie said box, said auxiliary arms being adapted to embrace portions of said box at spaced apart portions of the box and said hooks being adapted to project beneath and suspend said box.

3,288,417
SADDLE RACK
Bill A. Wallace, P.O. Box 296, Wylie, Tex.
Filed Sept. 28, 1965, Ser. No. 490,803
1 Claim. (Cl. 248—317)

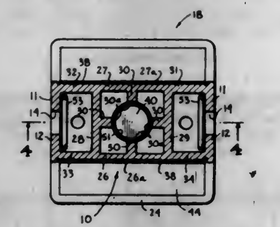


In a saddle rack; a horizontal support rail, a horizontal balance rail spaced from the horizontal rail and being in parallel alignment therewith; a transverse member connecting the ends of the support rail and balance rail, leaving the other ends of the support rail and balance rail free; the balance rail and support rail being spaced apart sufficiently to receive a saddle; the balance rail being shorter than the support rail to allow the free end of the support rail to extend beyond the end of the balance rail; a suspension member secured to the balance rail at the center of gravity of the saddle rack; and an elongated arcuate member attached along the upper surface of the support rail which conforms to the arcuate inner surface of a saddle when placed thereon which is of sufficient width and length to balance a saddle against sidewise tilting and to prevent distortion of the saddle by the weight thereupon when positioned on the support rail.

3,288,418
STRUCTURAL POLE ASSEMBLY
Carl B. Hinrichs, Charlotte, and Robert D. Whitney, Lansing, Mich., assignors to Structural Products, Inc., Charlotte, Mich., a corporation of Michigan
Filed Dec. 6, 1963, Ser. No. 328,610
10 Claims. (Cl. 248—354)

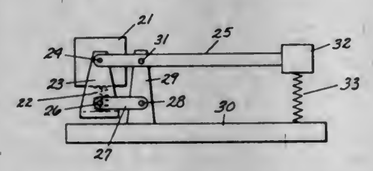
1. A thin-walled extruded pole having at least two substantially flat exterior faces for supporting decorative material, comprising an elongated box beam having four T-shaped sides with legs of the T-shaped sides extending inwardly, angle portions of the pole formed with outer

faces of pairs of portions lying in a plane extending at each side from the plane of an exterior side of said box beam for forming the material supporting faces, said



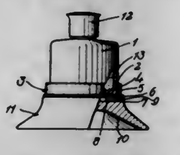
angle portions having inwardly facing legs at an angle to said extending plane for forming internal shoulders, and decorative material secured to said faces.

3,288,419
STATICALLY FIXED ISOLATION SYSTEM
Leon Wallerstein, Jr., Erie, Pa., assignor to Lord Corporation, Erie, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 276,365, Apr. 29, 1963. This application Jan. 14, 1966, Ser. No. 528,690
14 Claims. (Cl. 248—358)



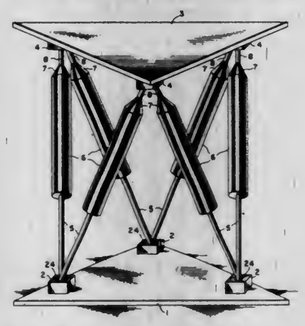
13. A mounting system comprising a base, a mass m_1, a part movable relative to the base, means in load carrying relation between said part and the mass m_1, a counterweight m_2, a resilient mounting k_2 in load carrying relation between said base and the counterweight m_2 and means responsive to deflection of mass m_2 on the resilient mounting k_2 for displacing the mass m_1 in opposition to said deflection.

3,288,420
CONTAINER FOR COSMETICS
Bunpei Maruoka, 1091 8-chome Hiratsuka, Shinagawa-ku, Tokyo, Japan
Filed Apr. 27, 1964, Ser. No. 362,897
Claims priority, application Japan, Nov. 5, 1963, 83,178/63
5 Claims. (Cl. 248—359)



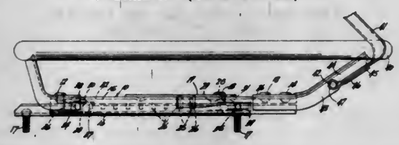
1. A cosmetic container comprising a container having an open end and an opposite closed end, a cap detachably mounted on said container open end, a flexible member having a center opening and a lateral flange extending internally and externally of said center opening of said member, said member having an internal wall extending to the internal portion of said flange capable of mating with said closed end of said container, a dish-like base member of greater width than said container and having an annular top recess and a second ring depending from said first member flange and detachably mating with said base top recess up to said flange.

3,288,421
MOVABLE AND ROTATABLE TOP
Everett R. Peterson, Rte. 1, Biggsville, Ill.
Filed Mar. 29, 1965, Ser. No. 443,536
4 Claims. (Cl. 248—396)



1. An adjusting machine comprised of
two planar surfaces,
three footings connected to one of the planar surfaces,
three footings connected to the second planar surface,
six extendable supporting units,
two of the extendable supporting units connected from each footing in one planar surface to separate footings in the second planar surface.

3,288,422
HEAVY DUTY SEAT ADJUSTER
Herbert Krause, Rockford, Ill., assignor to Atwood Vacuum Machine Company, Rockford, Ill., a corporation of Illinois
Filed July 6, 1965, Ser. No. 469,503
9 Claims. (Cl. 248—429)



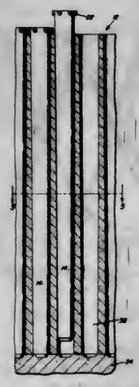
1. In a seat slide structure comprising an elongated stationary horizontal lower slide member, an elongated horizontal seat supporting upper slide member slidably supported on said lower slide member in telescoping relation thereto, and a latch member pivoted on a vertical axis on top of said upper slide member engaging selectively in notches provided in uniformly spaced relation in the top of said lower slide member, the improvement which consists in the provision on said latch member of a plurality of downwardly projecting vertical teeth in spaced parallel relation, the spacing of said teeth corresponding to the spacing of the aforesaid notches, the teeth being engageable in neighboring notches, whereby to distribute the load on said teeth and notches and thereby insure better holding action in the event of any unusual strain tending to cause relative longitudinal movement between said slide members, the vertical pivot for said latch member being on a line parallel to the notches and teeth, the pivot being spaced rearwardly with respect to said teeth so as to be appreciably closer to the rear end of said upper slide member than said teeth, said latch

having two downwardly projecting vertical teeth for engagement in neighboring notches, the two teeth being defined by the side walls of an integral channel shaped portion of the latch.

3,288,423
AIR SPACE FORMS FOR POURED CONCRETE WALLS

Clint D. Linden, 503 E. Oak St., Centerville, Iowa

Filed Apr. 7, 1964, Ser. No. 357,991
9 Claims. (Cl. 249—34)

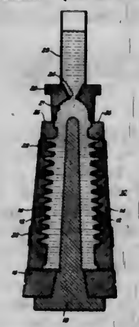


1. A device for forming a hollow core within a poured concrete wall comprising, an elongated tube, said tube being tapered slightly from one end to the other along the length thereof, and a plurality of projections located solely at spaced coplanar points about the wider end of said tube.

3,288,424
MOLD DESIGN FOR CERAMIC CASTING

John Dean, Kenova, W. Va., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware

Filed Nov. 1, 1962, Ser. No. 234,785
1 Claim. (Cl. 249—108)

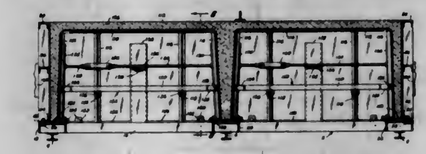


A mold for casting an elongated cylindrically shaped porcelain electrical bushing comprising a lower elongated vertically aligned ware-forming portion open at the upper end thereof and defining a ware-forming cavity of the same size and shape as said bushing, a removable auxiliary section presenting a wall surface defining an auxiliary cavity extending upwardly from said ware-forming portion upper end, the horizontal cross section of said auxiliary cavity immediately above said ware-forming portion being of substantially the same area as the cross section of the ware-forming cavity immediately below said auxiliary section, whereby an abrupt change in horizontal cross section is avoided at the juncture of said ware-forming cavity and said auxiliary cavity; a casting well extending through said auxiliary section and communicating with the uppermost portion of said auxiliary cavity.

3,288,425
FORM FOR HOLLOW CONCRETE STRUCTURES

John P. Dorris, 5301 River Ave., Newport Beach, Calif.

Filed Jan. 2, 1963, Ser. No. 249,015
8 Claims. (Cl. 249—153)



1. A form for use in making hollow cast objects, comprising: a pallet; an outer generally rectangular shell open at its upper and lower ends, and detachably secured at its lower end to an upper surface of said pallet; at least one generally rectangular integral inner shell having flexible side and end walls disposed within said outer shell in spaced relation thereto and having inwardly extending, spaced apart flanges at the lower end of said side and end walls detachably secured to said upper surface of said pallet, the external, forming surfaces of said inner shell being unbroken; and means attached to and contained within said integral inner shell operable for alternately bracing said integral inner shell when mounted upon said pallet, and for partially collapsing said side and end walls thereof when said integral shell is detached from said pallet, said spaced apart flanges permitting said collapsing of said side and end walls.

3,288,426
ADJUSTABLE FORM DEVICE

Alex L. Simpson, 1956 S. California St., Stockton, Calif.

Filed June 22, 1964, Ser. No. 376,653
10 Claims. (Cl. 249—192)



1. An adjustable form device comprising a first form member having portions defining a molding surface, a second form member telescopingly received in said first form member and also having portions defining a molding surface substantially aligned with said molding surface of said first form member, means for securing said form device to a supporting surface, each of said form members being substantially C-shaped in cross-section and including upper and lower substantially horizontal arms, each having a pair of oppositely disposed, vertically aligned ends, a substantially vertical connecting leg extending between one of said pairs of vertically aligned ends of said arms, said leg having an inner surface disposed towards said arms and an outer surface disposed away from said arms, said outer surface defining said molding surface, upper and lower substantially vertical flange members extending toward each other from the other of said pairs of vertically aligned ends of said arms, and a strengthening means comprising an elongated rigid channel secured to said inner surface of said leg of one of said form members, an elongated rigid rod slidably

received in said channel and having portions extending in juxtaposition to said inner surface of said leg of the other of said form members, a plurality of spaced apertures defined in said upper flange of said other form member, a hook engaged in one of said apertures, and a flexible member connecting said hook to the end of said rod.

3,288,427
ASSEMBLABLE FORMWORK FOR REINFORCED CONCRETE STRUCTURES

Paul Plückebaum, Am Sandacker 22,
Dusseldorf-Hamm, Germany

Filed July 8, 1964, Ser. No. 381,177
Claims priority, application Germany, July 10, 1963, P 32,174; May 23, 1964, P 34,319; June 18, 1964, P 23,600
15 Claims. (Cl. 249—192)



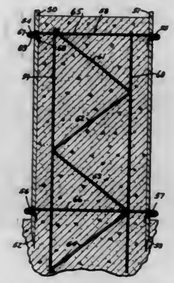
1. Assemblable formwork for reinforced concrete structures comprising form elements including form panels and connecting rails, each of said form elements having at least two opposite parallel edges and, when assembled in the formwork, a first side having a continuous smooth surface engageable with the forming concrete and consisting of a material adapted to resist cohesion of the concrete thereto, and a second side opposite to said first side and being free from engagement with the concrete being formed, a support ledge extending from said second side of said form elements at each of said edges, each support ledge forming with the respective form element a bifurcated section and defining with said form element an elongated groove having sides intersecting at an angle greater than an acute angle, an intermediate member removably insertable in the elongated grooves of the bifurcated sections of a pair of adjacent form elements in loose-fitting flush engagement with the sides of said groove, said intermediate member being located only on said second side of said adjacent form elements, and clamp means also located on said second side of said adjacent form elements for clamping together the bifurcated sections of said adjacent form elements and said intermediate member therebetween so as to join said adjacent form elements edgewise to one another.

3,288,428
PREASSEMBLED TIE CONSTRUCTION

Cameron D. Terry, Orange, Calif., assignor to Dur-O-Wal National, Inc., a corporation of Iowa

Continuation of application Ser. No. 249,356, Jan. 4, 1963, now Patent No. 3,199,827, dated Aug. 10, 1965. This application June 8, 1965, Ser. No. 462,383
6 Claims. (Cl. 249—214)

1. A tie construction preassembled as a unit and adapted to be put in place as an assembly prior to placing form panels thereon for releasably holding a pair of form panels in parallel, spaced relationship, comprising: a pair of parallel, spaced stringer members; a pair of parallel, spaced wire cross-members extending substantially in the plane of said stringer members for maintaining the parallel alignment of the stringer members, said cross-members having a length greater than the spacing between said stringer members and extending perpendicularly thereto to define a mid-portion extending between said stringer members, opposite end portions extending laterally outwardly from said stringer members, and connecting portions between said mid-portion and said end portions; means for rigidly securing said connecting portions to said stringer members to provide a rigid tie assembly; said end portions defining abutment means on the cross-members for aligning and locating said panels in parallel, spaced relationship spaced outwardly of said stringer members; said end portions defining retaining means on the cross-members for holding the panels against said abutment means, said wire cross-members and stringers being constructed to maintain the abutment and the retaining means adjacent one of said stringer members aligned with respect to each other and

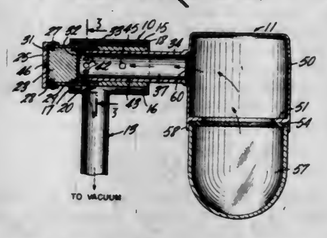


rigidly spaced from the abutment means and retaining means adjacent the other of said stringer members, and separation means on said end portions inwardly of said abutment means and said retaining means providing facilitated removal of said abutment means and the retaining means from said tie to permit removal of said form panels from said tie.

3,288,429
VACUUM CONNECTOR AND ADAPTER

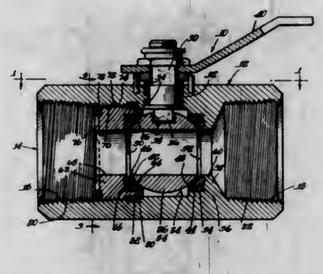
Stefano Termini, 210 Clinton Ave., Brooklyn, N.Y.

Filed Apr. 15, 1964, Ser. No. 359,918
20 Claims. (Cl. 251—149.1)



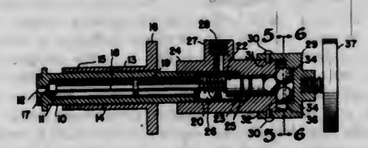
1. A vacuum connection for releasably connecting and disconnecting an instrumentality to a conduit under vacuum without breaking the vacuum comprising, in combination, a valve connector comprising means connected to said conduit in operation defining a bore in communication with said conduit, a valve reciprocable in said bore automatically biased toward an operative first position closing off communication between said conduit and said bore, an adapter comprising means for releasably receiving an instrumentality to which a vacuum is to be applied, means on said adapter inserted into said connector bore in operation and releasably received in said bore in a fluid-tight manner defining a conduit in said adapter in communication with said instrumentality in operation, said means defining said conduit on said adapter having a surface engaged with said valve when inserted in said bore for actuating said valve away from said first position to a second position in which the first mentioned conduit and said bore are in communication, and said means on said adapter received in said bore having an opening providing communication between said bore and said conduit on said adapter thereby to provide communication between said conduit on said adapter and the first-mentioned conduit.

3,288,430
BALL VALVE UNIT
Werner K. Priese, Carpentersville, Ill., assignor to Hills-McCanna Company, Carpentersville, Ill., a corporation of Illinois
Filed May 18, 1964, Ser. No. 368,143
9 Claims. (Cl. 251—315)



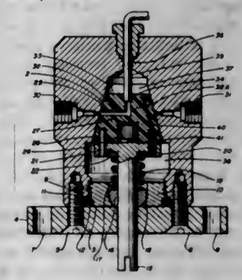
1. A valve unit comprising a main body means having a fluid passageway therethrough, a valve element shiftably disposed within said body means for selectively opening and closing said passageway, a valve seat member engageable with said valve element, and an annular adapter member within said body means and supporting said valve seat member, said adapter member including a plurality of external thread convolutions of uniform crest diameter and predetermined lead, said body means including a plurality of internal thread convolutions of uniform diameter and having said predetermined lead and being complementary to and cooperatively engaging said adapter member thread convolutions for enabling the adapter member to be axially adjusted, and said body means including a plurality of tapering internal thread convolutions merging at a predetermined area with said first mentioned internal thread convolutions, said tapering convolutions having a lead substantially equal to said predetermined lead and progressively increasing in diameter from said area toward an outer end of said body means.

3,288,431
VALVE
Oki Inazawa, Kobe, Japan, assignor to Daido Kogyo Kaisha, Ltd., Osaka, Japan, a corporation of Japan
Filed July 11, 1963, Ser. No. 294,397
4 Claims. (Cl. 251—254)



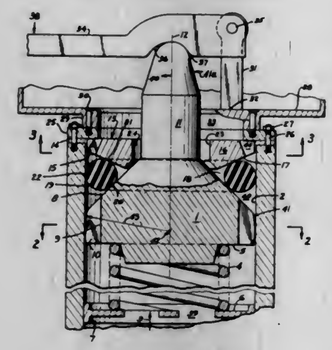
1. A valve comprising, in combination, a housing defining a valve seat, valve mechanism contained in the housing and engageable with the valve seat, first and second relatively rotatable members having opposed faces which are transverse to the axis of rotation, three balls which are adapted to be held between the opposed faces of the two relatively rotatable members, each of the two opposed faces having a diametrical groove to receive the three balls, the groove in the first member fitting the balls relatively closely and communicating with a central recess in the first member for receiving the middle ball, and the groove in the second member being substantially wider and having a depth less than half the diameter of the outermost balls so that upon relative rotation of the two members the edges of such groove sweep inward as they contact the two outermost balls, thus rotating the contacted portions of the outermost balls toward the middle ball to drive the middle ball toward the first member and into the recess, a resiliently biased member which is in contact with the middle ball to resist the entry of the middle ball into the recess, and an operative connection between the middle ball and the valve mechanism to effect operation of the valve mechanism upon movement of the middle ball into and out of the recess.

3,288,432
VALVE
Charles R. Ferrin and Bobby J. Rutherford, Tulsa, Okla., assignors to National Tank Company, Tulsa, Okla., a corporation of Nevada
Continuation of application Ser. No. 292,329, July 2, 1963. This application Oct. 22, 1965, Ser. No. 500,628
1 Claim. (Cl. 251—310)



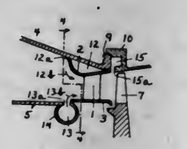
A valve including;
a body member having formed therein,
(a) a central chamber with conical walls,
(b) an access opening into the central chamber,
(c) and passages for fluid connecting from external the body into the chamber;
a plug of polytetrafluorethylene with a conical frustum shape sized to seal on the conical walls of the body chamber and having passages formed therein to align with body passages in a predetermined sequence as the plug is rotated, one passage having at least a portion extending into axial alignment with a body passage;
a tube mounted in and extended through the body passage which is aligned with the plug passage and into register with the plug passage to maintain a sealed connection between the aligned body and plug passages as the plug rotates;
a shaft extending a flat head into the access opening into the central chamber against the large face of the plug;
pins mounted in the flat head of the shaft about the shaft and extending into the plug, one of the pins having an axial passage forming at least part of a passage in the plug from the smaller face to maintain pressure across the plug equalized, the pins coupling the plug and shaft together so the plug is rotated with the shaft;
a closure plate over the access opening of the body which is sealed to the body and about the shaft;
and a spring member between the closure plate and the plug to force the plug and chamber walls into a lubricated sealing engagement.

3,288,433
POPPET VALVE
Robert E. Nelson, Rte. 1, Box 215, Willow Springs, Rosamond, Calif.
Filed Apr. 20, 1964, Ser. No. 361,171
13 Claims. (Cl. 251—317)



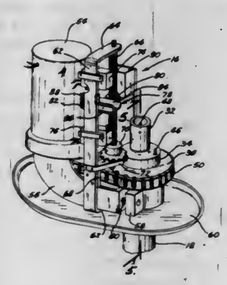
1. A valve comprising: a bore, a poppet in the bore, means providing a channel for fluid flow past the poppet forwardly in the downstream direction near the inner wall of the bore, an anvil downstream of and in front of the poppet, said poppet having a forward surface and said anvil having a rear surface at an angle to said forward surface of the poppet, a resilient sealing ring in front of the channel means, between the rear surface of the anvil and the forward surface of the poppet and in contact with the inner wall of the bore and surrounding said exit opening and the anvil providing fluid exit passages at each side of the sealing ring whereby fluid flowing downstream past the poppet can flow through the passage inside the sealing ring and fluid existing in the region outside the sealing ring can be ventilated downstream through the passage outside the sealing ring.

3,288,434
GAS TURBINE ADAPTED FOR PARTIAL ACTIVATION
Jean Chaboseau, Boissy-St.-Leger, France, assignor to Aktiengesellschaft Brown, Boveri & Cie., Baden, Switzerland, a joint stock company
Filed Aug. 6, 1965, Ser. No. 477,762
Claims priority, application France, Aug. 20, 1964, 985,715
6 Claims. (Cl. 253—78)



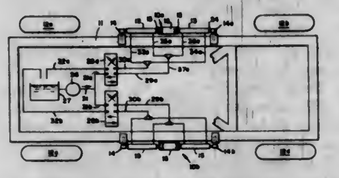
1. An effective power gas turbine adapted to be driven by one or more of the respective useful gas outputs of a plurality of driving mechanisms each constituted by a gas turbine driven compressor, said effective power turbine comprising a nozzle ring located in advance of the first row of blading thereof, said nozzle ring being sub-divided into the same number of nozzle segments as there are driving mechanisms, a gas inlet duct to each of said nozzle segments for conducting thereto the respective gas outputs from said driving mechanisms, and an annular chamber concentric with and located in the vicinity of said nozzle ring, said annular chamber being provided with a series of circumferentially spaced apertures opening in the direction of and into said nozzle segments, said annular chamber receiving gas flow through those apertures from such of said nozzle segments as are being supplied with gas outputs from the appertaining driving mechanisms in operation and discharging the same through those apertures into the nozzle segments correlated with non-operating driving mechanisms, thereby to maintain all of said nozzle segments and adjacent structural parts of said effective power turbine at a substantially uniform temperature notwithstanding a condition wherein less than all of said driving mechanisms are operating.

3,288,435
TRAILER WITH MOTORIZED JACK ASSEMBLY
Ernest W. Starkey, 4107 E. Ninth St., Des Moines, Iowa
Filed June 17, 1964, Ser. No. 375,743
15 Claims. (Cl. 254—86)



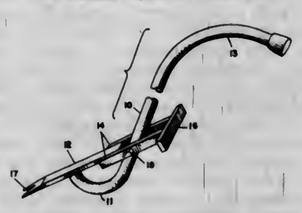
1. In a trailer type vehicle having a tongue supporting one end of said trailer and adapted to be connected to another vehicle, a jack assembly integrally connected to said tongue for supporting said tongue when disengaged from said other vehicle, said jack assembly including a first member threadably engaging in telescoping relationship a second member, said second member adapted to move longitudinally vertically relative to said first member and said tongue upon said first member being rotated, said second member disposed with its outer end opposite said first member extending downwardly, and the outer end of said first member opposite said second member extending upwardly, a battery operated motor mounted on said tongue adjacent said first member and means rotatably coupling said motor to said first member to extend and retract said second member relative to said first member thereby raising and lowering said trailer tongue, an electrical circuit including a power supply on said trailer for operating said motor and a switch means for reversing the polarity of said motor to provide for its rotation in opposite directions to lower and raise said tongue, second and third switch means in said electrical circuit being normally closed, switch actuating means having a member movably mounted on a threadable shaft and powered by said first member for movement in opposite directions along said threaded shaft, said switch actuating means adapted to move back and forth on said threaded shaft to alternately engage said second and third switches to open said second and third switches upon said first member having rotated a predetermined number of revolutions thereby opening said electrical circuit and stopping said motor until said switch means is again actuated to reverse the polarity through said motor.

3,288,436
LIFT MECHANISM
Stanley Silva, 3801 McKee Road, San Jose, Calif.
Filed Sept. 28, 1965, Ser. No. 490,913
4 Claims. (Cl. 254—86)



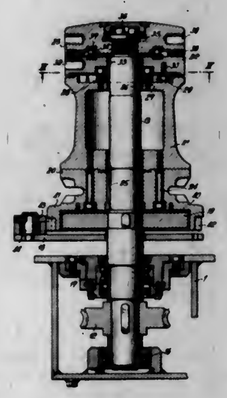
1. A mechanism for lifting a wheeled vehicle having a frame comprising:
- a first pair of hydraulically actuated cylinders, each of said cylinders of said first pair being universally pivotally mounted to said frame at points horizontally spaced on the periphery thereof and having a piston rod extending longitudinally therefrom;
- a second pair of hydraulically actuated cylinders, each of said cylinders of said second pair being universally pivotally mounted to said frame at points horizontally spaced on the periphery thereof opposite said first pair and having a piston rod extending longitudinally therefrom;
- a horizontally disposed bearing plate pivotally mounted to each of said piston rods of said first and said second pair of hydraulically actuated cylinders;
- hydraulic means mounted to said frame for simultaneously forcing said piston rods longitudinally from and into said cylinders of said first and said second pair of cylinders respectively, to thereby lower and raise said bearing plates.

3,288,437
GARDEN WEEDING TOOL
Robert O. Pederson, 3687 Paloma Drive, Ventura, Calif.
Filed Apr. 22, 1965, Ser. No. 450,108
1 Claim. (Cl. 254—132)



A garden weeding tool comprising: an elongated tubular member having a central straight portion extending downwardly to terminate in a lower end portion curving forwardly and upwardly to define an arcuate bearing section and having an upper end portion curving rearwardly and downwardly to define a handle; and a weeding structure including an elongated downwardly sloping plate terminating in a V-shaped fork at its lower forward end, the other end of said plate including means securing it adjacent to a point on the lower portion of said tubular member slightly above the initial portion of said bearing section, said means extending past said point in an upward, rearward direction to terminate in a foot pedal, the extreme end of said lower end portion of said elongated member being secured to the underside of said plate to provide a support therefor, said arcuate bearing section serving as a rocking means for said plate to facilitate lifting said V-shaped fork in removing a weed upon downward swinging movement of said handle.

3,288,438
VERTICAL CAPSTAN
Erwin Baas, Up de Schanz 66, Hamburg-Nienstedten, Germany
Filed Nov. 30, 1964, Ser. No. 414,682
Claims priority, application Germany, Nov. 30, 1963, B 74,464
7 Claims. (Cl. 254—150)

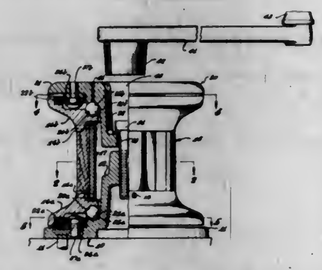


1. A vertical capstan which includes a rotatable vertical driving shaft having its upper end provided with a thread, a capstan head rotatable about the axis of said shaft and having its upper end spaced from said threaded upper end of said shaft, clamping nut means adjustably threadedly engaging said threaded end of said shaft means, first disc means interposed between said clamping nut means and said capstan head and supported by the latter, said first disc means being rotatable about the axis of said shaft and together with said capstan head confining annular closed chamber means, said first disc means being adapted to be manually rotated, pawl and ratchet means arranged in said chamber means, said pawl and ratchet means including a first member formed by a ratchet wheel and also including a second member formed by a pawl, one of said members being operatively connected to said capstan head and the other one of said members being operatively connected to said first disc means, second disc means connected to said shaft means for rotation therewith and being arranged near the lower end face of said capstan head, and friction means interposed between said lower end face of said capstan head and said second disc means, said clamping nut means being operable selectively to be threaded toward and away from said capstan head to thereby respectively establish or interrupt frictional driving engagement between said capstan head and said second disc means and thereby said shaft means through said friction means.

3,288,439
WINCH
Tracy S. Holmes, 649 Hightree Road, Uplifter's Ranch, Santa Monica, Calif.
Filed Jan. 25, 1965, Ser. No. 427,609
1 Claim. (Cl. 254—150)

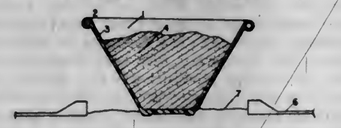
A winch comprising in combination:
- a fixed base structure adapted to be secured to a mounting surface;
- a drum having removably attached end flanges and containing spaced longitudinal grooves each adapted to receive a whelp;

each of said flanges having a coaxial annular shoulder formed thereon and projecting inwardly to surround an adjacent end portion of said drum and overlie ends of said whelps to retain the same in said grooves;
- a rotatable drive assembly having means to apply manual driving torque thereto;
- bearing means rotatably engaged with said drum, providing radial and thrust support for said drum on said base structure and for said drive assembly on said drum;
- first ratchet and pawl means formed in said first drum end and in said base structure, respectively, and interengaged to permit relative rotation of said drum on said structure in one direction and prevent such rotation in the other direction;



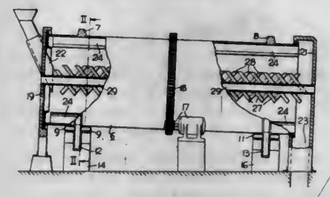
- and second ratchet and pawl means formed in the other drum end and in said drive assembly, respectively, and interengaged to permit relative rotation of said drive assembly with respect to said drum in a direction opposite that first mentioned and preventing such relative rotation in the other direction whereby reciprocating manual rotation of said driving assembly intermittently drives said drum in one direction;
- said first and second ratchet and pawl means being substantially identical in dimensions and tooth configuration and said bearing means being symmetrical about a transverse plane midway between the drum ends whereby said drum may be inverted with respect to said base structure and drive assembly to interchange the respective engagement of said ratchet and pawl means.

3,288,440
HIGHWAY GUARD
Laurens Maria Hendrikus Schimmelpenninck and Petrus Franciscus Maria Sanders, both of Prinsengracht 287, Amsterdam, Netherlands
Filed Aug. 13, 1964, Ser. No. 389,404
Claims priority, application Netherlands, Aug. 19, 1963, 296,835
7 Claims. (Cl. 256—13.1)



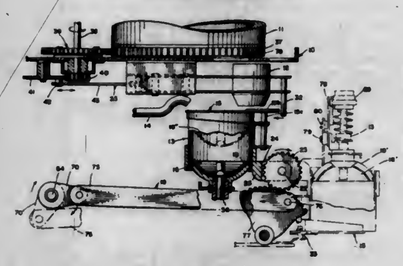
1. An energy absorbing roadway guard rail extending along a substantial portion of a roadway comprising an open trough which rests loosely on the ground and which is capable of being shifted away from the roadway by the impact of a vehicle leaving the roadway, at least the wall of the trough on the roadway side being resiliently deflectable, and a mass of loose aggregate in the trough which absorbs the kinetic energy of the vehicle when a portion of the trough is shifted by such an impact.

3,288,441
BLENDER
Bertil H. Bergstrom, West Allis, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Oct. 18, 1965, Ser. No. 497,363
7 Claims. (Cl. 259—3)



1. A machine for mixing material comprising an elongated drum having an intake opening on one end thereof and a discharge opening at the opposite end thereof; means supporting said drum for rotational movement about the longitudinal axis of said drum; an elongated stationary splitting bridge supported in said drum, said bridge having a plurality of upwardly open troughs, a number of said troughs declining forwardly toward said discharge opening and a number of said troughs declining rearwardly toward said intake opening; means on the inner peripheral surface of said drum for lifting the material to be mixed as said drum rotates and dumping said material so that said material is distributed onto said bridge, a portion of said material falling down said rearwardly declining troughs and a portion falling down said forwardly declining troughs; and means for rotating said drum.

3,288,442
POTATO WHIPPING MACHINE
O'Dell Keil, Phoenix, Ariz., assignor to Automatic Marketing Industries, Inc., Phoenix, Ariz., a corporation of Arizona
Filed July 22, 1965, Ser. No. 473,944
11 Claims. (Cl. 259—8)



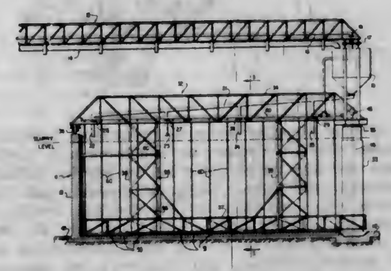
1. Potato whipping apparatus comprising a frame, a chamber pivotally mounted on said frame and equipped at one end with an openable lid, an impeller rotatably mounted in said chamber, and power means on said frame operably associated with said chamber and impeller for sequentially rotating said impeller with said lid closed and while said chamber is in an ingredient-receiving position, thereafter rotating said chamber to an ingredient-dispensing position and while said impeller is non-rotating, and lastly rotating said impeller with said lid being open and while said chamber is in said ingredient-dispensing position.

3,288,443
DEVICE FOR MIXING AND FEEDING
John F. Lynch, Chester, Pa., and Raymond A. Nichols, Wilmington, Del., assignors to Marco Development Co., Inc., Wilmington, Del., a corporation of Delaware
Filed July 27, 1964, Ser. No. 385,383
1 Claim. (Cl. 259—9)



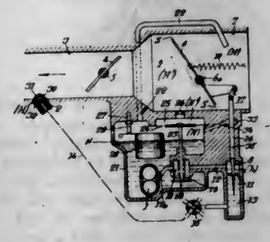
In a device for feeding and mixing a liquid medium which is subject to frothing, the combination which includes, housing means comprising, a rearward froth chamber, a housing portion extending forwardly from said froth chamber, said froth chamber and said housing portion being intercommunicatingly coaxially hollow, a lateral inlet for the medium intermediately of said froth chamber and said housing portion, and an outlet forward of said inlet and communicating through the hollow interior of said housing portion with said inlet, and the device further including, vacuum applying means opening into the interior of said froth chamber at a location to the rear of the region of said inlet to apply vacuum to said chamber, and impeller means comprising forward and rearward screw impeller portions arranged for turning in unison in said housing means, said foward screw impeller portion extending within the interior of said housing portion and having thread-like surfaces leading from the region of said inlet toward said outlet to urge and progress the medium forwardly through said housing portion toward said outlet, and said rearward screw impeller portion extending within the interior of said froth chamber and having thread-like surfaces extending rearwardly from the region of said inlet for said rearward screw impeller portion to receive froth having a rearward direction of movement and pump the froth forwardly in said froth chamber while said vacuum applying means by vacuum reduces the froth to vapor and liquid.

3,288,444
SLURRY MIXING APPARATUS
Thomas J. Tillett, Ambler, and John C. Lodholz, Perkasie, Pa., assignors to Link-Belt Company, a corporation of Illinois
Filed Oct. 22, 1965, Ser. No. 501,533
11 Claims. (Cl. 259—151)



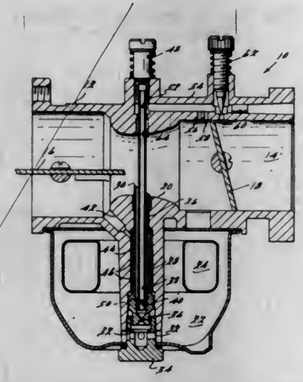
7. Slurry mixing apparatus adapted for use in wet process cement manufacturing comprising:
a tank to retain slurry during mixing,
an upstanding column disposed centrally of said tank,
a slurry mixing arm rotatably attached to and extending radially from said column,
said slurry mixing arm carrying a series of agitating blades at positions spaced radially from said center column and gas agitation means for jointly mixing the slurry,
material introducing means for said tank comprising a material distribution conduit extending substantially between said column and the periphery of said tank with outlets for material spaced along said conduit, said conduit being mounted to rotate with said arm,
means for rotating said slurry mixing arm about said upstanding column,
and slurry discharge means for said tank.

3,288,445
CARBURETTING DEVICES FOR INTERNAL COMBUSTION ENGINES
André Louis Mennesson, Neuilly-sur-Seine, France, assignor to Societe Industrielle de Brevets et d'Etudes S.I.B.E., Neuilly-sur-Seine, France
Filed June 4, 1964, Ser. No. 372,565
Claims priority, application France, June 8, 1963, 937,473
5 Claims. (Cl. 261—36)



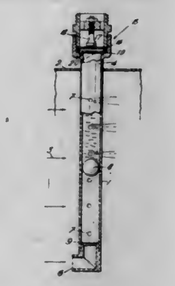
1. For use in connection with an internal combustion engine, a carburetting device for said engine which comprises, in combination, an induction pipe leading to said engine, a main throttle valve in said induction pipe, said main throttle valve being operable to control the operation of the internal combustion engine, an auxiliary throttle valve in said induction pipe located upstream of said main throttle valve, yielding means for automatically urging said auxiliary throttle valve toward its closed position, said throttle valves limiting between them, in said induction pipe, a suction chamber, fuel feed means including a delivery orifice in communication with said induction pipe downstream of said main throttle valve, a casing, diaphragm means mounted in said casing for dividing the inside thereof into two spaces, means for placing one of said spaces in communication with said suction chamber, means for placing the other of said spaces in communication with the atmosphere, a fuel delivery pump, fuel pressure regulating means comprising a container mounted between the output of said pump and said fuel feed means, a discharge valve mounted on said container and operatively connected with said diaphragm means, said fuel feed means comprising a fuel delivery conduit leading from said container to said delivery orifice, and fuel metering means in said delivery conduit between said pressure regulating means and said delivery conduit orifice, said fuel metering means being operatively connected with said auxiliary throttle valve for controlling the flow rate of fuel from said delivery orifice so that said flow rate is proportional to that which would be obtained by the flow of fuel through a single orifice of a cross section substantially proportional to the cross section area left free in said induction pipe by said auxiliary throttle valve.

3,288,446
CARBURETOR
Elmer M. Bimberg, Detroit, Mich., assignor to The Bendix Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 29, 1965, Ser. No. 443,356
5 Claims. (Cl. 261—41)



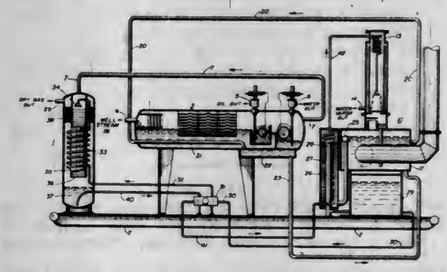
1. In a carburetor having an induction passage and a fuel bowl, a main jet mounted to discharge into said induction passage, an idle fuel tube, passage means connecting said tube to said fuel bowl, flow control means regulated by the position of said tube for controlling the flow of fuel from said tube to said main jet, adjustable means connected to said tube for moving said tube to regulate said flow control means, and idle discharge port means connected to said idle tube for discharging fuel into said induction passage.

3,288,447
VARIABLE SPREAD FLUID DISPERSAL SYSTEMS
John William Withers and Rodney Alan Rowe, both of Stonebridge House, Colston Ave., Bristol, England
Filed Oct. 16, 1964, Ser. No. 404,319
Claims priority, application Great Britain, Oct. 22, 1963, 41,666/63
13 Claims. (Cl. 261—69)



1. Apparatus for dispersing a first fluid into a second fluid comprising a conduit to be immersed in a flow of the second fluid, first and second entries spaced apart along the conduit, for admitting the first fluid and another fluid respectively, so as to meet, without substantial mixing, at a common boundary transverse to the conduit, means, in association with the conduit, which increases the ratio of the perimeter of the confined path within the conduit to the cross sectional area of the confined path, at points along the length of the conduit between the entries, an exit opening system distributed along the conduit between the two entries, and means for controlling the flow of fluid to one of the entries so that the first fluid leaves the conduit through a first part of the exit opening system and the other leaves the conduit through a remaining part of the exit opening system, and variation in the controlled flow of fluid causes variation in the extent of the first part of the exit opening system.

3,288,448
GAS DEHYDRATOR
Charles T. Patterson and Charles O. Meyers, Tulsa, Okla., assignors to Combustion Engineering, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 8, 1966, Ser. No. 532,658
3 Claims. (Cl. 261—152)



1. In a liquid desiccant dehydrating system for natural gas, an absorber vessel including;
an outer hollow cylindrical vessel shell vertically extended, said outer vessel having a vertical cylindrical sidewall, a top wall, a bottom wall and a vertical axis;
an inner hollow cylindrical shell having an upper end, a lower end, a vertical cylindrical wall, and a vertical axis, said inner shell coaxial with the outer vessel shell and extended within and spaced apart from the vertical wall of the outer vessel shell and attached to the top wall of the outer vessel shell and depending downwardly in the outer vessel shell with the lower end of the inner shell spaced apart from the bottom wall of the outer vessel shell, the lower end open to the interior of the outer vessel shell, the inner shell and outer vessel shell defining an annulus therebetween at the upper end of the inner shell;
a first input conduit connected to the top of the outer vessel shell and having a discharge end communicating with the interior of the upper portion of the inner shell to introduce gas to be dehydrated into the inner shell;
a source of gas to be dehydrated, the source communicating with said first conduit;
a second input conduit for liquid desiccant communicating with the interior of the upper end of the inner shell;
a source of liquid desiccant, the source of liquid desiccant communicating with the second conduit;
a first tray mounted in the inner shell below the discharge end of the first input conduit;
the first tray comprising a flat plate having a flat surface normal to the vertical axis of the inner shell, a plurality of parallel and elongated substantially equal width slots through the plate and surface and the slots extending across a substantial portion of

the surface, the slots defined by the edges of a first plurality of parallel substantially equal width web portions, and a louver attached to a corresponding edge of each web portion and depending downwardly from said surface at a common fixed angle to the surface, the louvers disposed parallel to each other and equidistantly apart;

a second tray mounted in the inner shell adjacent, spaced apart from, and below the first tray;

the first tray and the second tray being identical;

the second tray rotated 180° in a plane normal to the vertical axis of the inner shell so that the louvers attached to the second tray extend downwardly in an opposite direction from the louvers attached to the first tray, whereby fluids passing through the slots spread over the louvers attached to the first tray and then descend to re-spread over the louvers attached to the second tray;

a first output conduit for dehydrated gas connected to the upper portion of the outer vessel shell vertical cylindrical wall to communicate with the annulus formed between the inner and outer shell to remove dehydrated gas from the outer vessel shell;

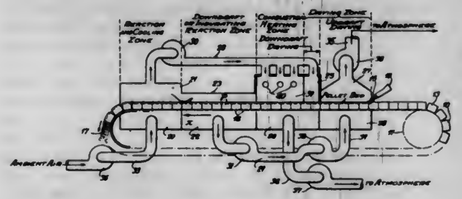
and a second output conduit for rich desiccant connected to the lower portion of the outer vessel shell, the second output conduit communicating with the lower portion of the interior of the outer vessel shell to remove the rich desiccant from the outer vessel shell.

3,288,449

APPARATUS FOR INDURATING ORE PARTICLES

Robert J. Linney, Shaker Heights, Ohio, assignor to Reserve Mining Company, Silver Bay, Minn., a corporation of Minnesota

Original application June 10, 1964, Ser. No. 374,119, now Patent No. 3,244,507, dated Apr. 5, 1966. Divided and this application June 11, 1965, Ser. No. 463,281
4 Claims. (Cl. 263—28)



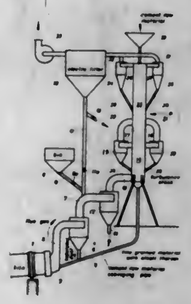
1. Apparatus for indurating moist, green pellets of comminuted ore particles and the like, comprising: an endless, gas-permeable, travelling grate conveyor encircling spaced means for supporting and propelling the same along a substantially horizontal traverse, means at one end of said conveyor for continuously depositing a bed of said pellets thereon, a gas pressure sustaining housing enclosing said conveyor substantially throughout its length, said housing being compartmentalized into pellet drying, combustion heating, indurating reaction and cooling and reaction zones, an opening between said cooling and reaction zone and said indurating reaction zone compartments, heat generating means disposed in said combustion heating zone compartment, an ambient air intake conduit opening into said cooling and reaction zone compartment, a conduit interconnecting said cooling and reaction zone and said combustion heating zone compartments, a conduit interconnecting said indurating reaction and drying zone compartments, atmospheric exhaust conduits extending from said combustion heating and drying zone compartments, respectively, and power actuated blower means interposed in each of said conduits for propelling gases therethrough.

3,288,450

METHOD OF AND APPARATUS FOR RECOVERING SUBSTANCES WITH A HIGH ALKALI PERCENTAGE FROM THE FLUE GASES OF CEMENT KILNS

Erich Bade, Beckum, Westphalia, Germany, assignor to Polysius G.m.b.H., Neubeckum, Westphalia, Germany

Filed Nov. 19, 1963, Ser. No. 335,451
5 Claims. (Cl. 263—32)



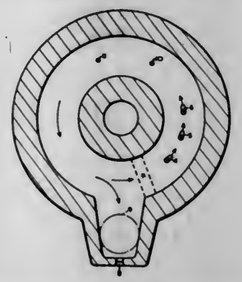
1. In a method of recovering alkali from alkali containing flue gases of a cement kiln, preheating the cement raw material to be burned by direct contact with the flue gases from the cement kiln, contacting the flue gas prior to preheating the cement raw material with a cold fine-grained material to cause the alkali to settle on said fine-grained material, and effecting separation of the said fine-grained material and the alkali settled thereon from the flue gases and, prior to said flue gases being contacted with said cold fine-grained material, and while the alkali in said flue gases is still in a gaseous condition, removing from said flue gases cement dust carried by said flue gases.

3,288,451

CONTINUOUS PRODUCTION OF FURNACE PRODUCTS

Howard K. Worner, New Lambton, New South Wales, Australia, assignor to Farnsfield Limited, Nassau, Bahamas, a corporation of the Bahamas

Filed Feb. 19, 1964, Ser. No. 345,987
Claims priority, application Australia, Feb. 21, 1963, 27,676/63; Apr. 11, 1963, 29,505/63
7 Claims. (Cl. 263—40)



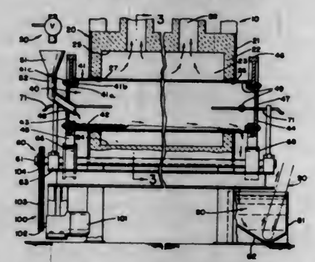
1. An apparatus for producing molten materials from particulate raw materials, comprising a housing having therein an elongated chamber in a closed figure, said chamber being divided into a feed and melting portion and a fining portion, said portions being distinct and the fining portion having a greater volume than the feed and melting portion, at least one material conduit means extending through said housing into said feed and melting portion and directing the particulate material at an angle to the horizontal and in the direction of elongation of the feed and melting portion of said chamber to move molten material in a flowing stream through the elongated chamber, particulate material feed means coupled to said material conduit means for feeding particulate material and a fluid through said material conduit means, at least one oxygen containing gas feeding means in said fining portion, said housing having a molten material tapping means at the downstream end of said fining portion and having an exhaust gas flue at the downstream end of said fining portion.

3,288,452

HEAT TREATING APPARATUS

Orald L. Stewart, Rocky River, Ohio, assignor, by mesne assignments, to Textron, Inc., Providence, R.I., a corporation of Rhode Island

Original application Jan. 18, 1962, Ser. No. 167,021, now Patent No. 3,201,289, dated Aug. 17, 1965. Divided and this application July 20, 1964, Ser. No. 389,814
6 Claims. (Cl. 266—4)



1. A heat treating furnace for metal particles comprising housing means, heating means mounted on said housing means including separate control means for a preheating zone and a high temperature heat-treatment zone, retort means extending through said housing means and having a smooth cylindrical bore, cap means at either end of said bore substantially closing said retort means, friction drive means imparting rotational movement to said retort means, automatic feed means electrically interconnected with said control means for supplying said retort means with metal particles adjacent one end of the cylindrical bore when said heating means and drive means are in operation, automatic discharge means dispensing said metal particles from said retort adjacent the other end of said cylindrical bore on a substantially first-in, first-out basis into a quenching medium.

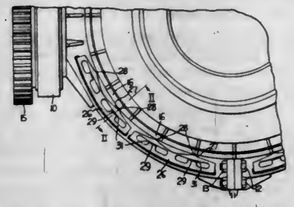
3,288,453

TEMPERATURE COMPENSATING MOUNTING FOR BASIC OXYGEN FURNACE

Arthur C. Buesing and Bela Vitez, Milwaukee, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Nov. 12, 1963, Ser. No. 322,817
1 Claim. (Cl. 266—36)

A support for a basic oxygen furnace comprising: a pair of flanges rigidly connected to the outer surface of said furnace providing spaced facing laterally directed annular surfaces; an annular trunnion ring positioned about said furnace in sliding engagement with said spaced surfaces, said trunnion ring having an inside diameter larger than the outside diameter of said furnace; resilient means mounted between said trunnion ring and said furnace and adapted to resiliently resist sliding movement between said ring and said furnace only after a predetermined amount of unresisted movement of said furnace; and stop means mounted between said trunnion ring and said furnace and adapted to prohibit relative movement



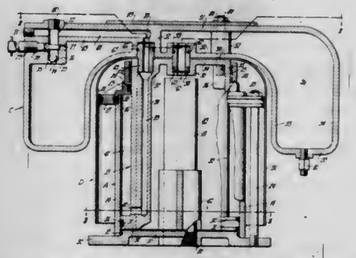
between said trunnion ring and said furnace after a predetermined amount of movement of said resilient means.

3,288,454

HEAVY-DUTY VEHICLE SEAT

Frederick J. Decker, Pittsford, N.Y., and Lyman Clark Conner, deceased, late of Los Angeles, Calif., by Russell J. Vis, executor, Santa Ana, Calif., assignors to Flexible-Air Seat Corporation, Los Angeles, Calif., a corporation of California

Filed Aug. 26, 1964, Ser. No. 392,334
12 Claims. (Cl. 267—1)



1. A cushioning pedestal support for seats comprising: a cylinder having a closed bottom including base means for mounting the same on a supporting surface with the cylinder projecting vertically upwardly therefrom and having at its upper end a radially inwardly projecting annular cylinder head; and a piston unit including an annular piston slidable within and sealed to the inner wall of said cylinder and a tubular connecting rod projecting upwardly from said piston and through said cylinder head and having at its upper end a head for supporting a seat, a road shock cushioning chamber being defined within said connecting rod between said connecting rod head and said closed bottom, and an annular rebound-checking pneumatic chamber being defined between said connecting rod and said cylinder and between said closed bottom and said cylinder head; said cushioning support further including a pair of parallel, laterally-spaced guide studs secured to said base means and a pair of bearing sleeves secured to the piston unit and slidably receiving said studs to hold said cylinder and piston unit against relative rotation about said major axis while permitting free vertical movement of said cylinder relative to the piston unit.

3,288,455

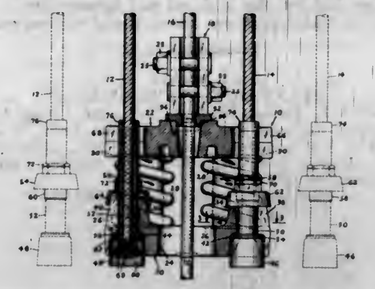
SHOCK ABSORBER FOR PUMPS

Cecil S. Robinson, Englewood, N.J., assignor to Robinson Technical Products, Inc., Teterboro, N.J., a corporation of New York

Filed Dec. 29, 1964, Ser. No. 421,823
14 Claims. (Cl. 267—1)

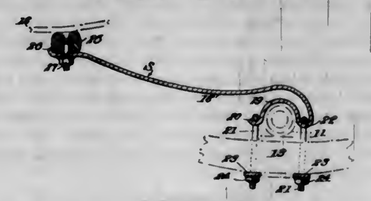
1. In a shock absorbing coupling for connection between a pumping mechanism including a plurality of

lengths of vertically depending flexible cable which are cyclically lifted and lowered in a pumping operation, and a pump rod string including a length of rod extending vertically from a well head, the combination of a rigid base member having a passageway therethrough for the free passage of the length of rod; a rigid load-supporting member positioned above said base member; means for attaching the length of rod extending through said base member to said load-supporting member; spring means extending vertically between said base member and said load-supporting member to support said load-supporting member and the rod string for yielding movement relative to said base member in response to forces applied to said base member for lifting said rod string and in



response to shock and vibratory loads incident to a pumping operation; and means for attaching each of said lengths of flexible cable to said base member, said last named means each comprising a cable-engaging member attached to the lower end of said cable, a rigid metal tube enclosing said cable and extending vertically above said cable engaging member for a distance at least approximately equal to the distance between said base member and said load-supporting member under the static load of said rod string, and means for rigidly securing said metal tube to said base member whereby during pumping operation said cable is prevented from flexing relative to said base member at any point between said load-supporting member and said base member.

3,288,456
AUXILIARY SPRING CONSTRUCTION FOR USE ON AUTOMOTIVE VEHICLES
Angelo F. Paioletti and Edwin E. Musser, both of 1330 N. Cameron St., Harrisburg, Pa.
Original application Aug. 2, 1962, Ser. No. 214,413, now Patent No. 3,227,436, dated Jan. 4, 1966. Divided and this application Oct. 21, 1965, Ser. No. 499,853
6 Claims. (Cl. 267—45)



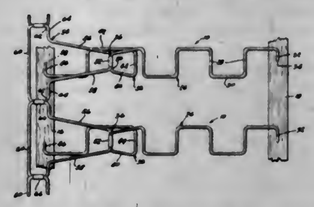
1. An auxiliary cantilever spring means for use on a vehicle having a relatively movable chassis part and suspension axle part within a housing, comprising an arch, an elongated arm extending from the arch and at a point remote to the arch arranged to contact the first-mentioned part, said arch being below and spaced from the arm, and at one end connected thereto, said arch adjacent each end having a depressed seat, and means engaging said seats operable to secure the arch stationarily to the housing.

3,288,457
SPRING MEANS
Yukihiro Takatsu, Yokohama-shi, Japan, assignor to Nippon Haisujo Kabushiki Kaisha, NHK Spring Co., Ltd., Yokohama-shi, Japan
Filed Oct. 6, 1964, Ser. No. 401,817
4 Claims. (Cl. 267—48)



1. A spring device comprising
a main spring member having a plurality of laminated spring leaves with an initial upward curvature between their ends,
an auxiliary spring member having a lesser initial curvature between its ends than said spring leaves and being connected at its center to the center of said main spring member and in contact with the central bottom surface of the lowermost leaf of said spring leaves at the center,
said auxiliary spring member comprising a plurality of parallel horizontally spaced bar steel springs extending longitudinally with respect to lowermost leaf,
said bar steel springs at a plurality of locations including contiguous to their ends having members for retaining said bar steel springs in spaced relation and from displacement.

3,288,458
SPRING ASSEMBLIES
Edward H. Gutzman, Georgetown, Ky., assignor to Hoover Ball and Bearing Company, Saline, Mich., a corporation of Michigan
Filed Sept. 21, 1964, Ser. No. 397,818
12 Claims. (Cl. 267—107)

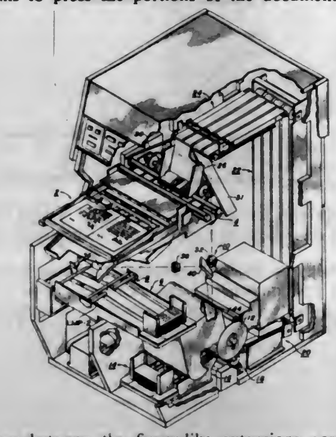


1. In a seat spring, a longitudinally extending face spring having a predetermined transverse dimension, a support spring for said face spring disposed laterally thereof and attached to one end of said face spring, and an extension on said one end of the face spring extending longitudinally thereof, said extension including a border wire section which extends in a direction transversely of said face spring and is of a length substantially greater than said transverse dimension of said face spring so that a plurality of said face springs can be arranged in a spaced side by side relation with said border wire sections connected to form a border wire.

3,288,459
DOCUMENT FEEDING APPARATUS
Allen M. Hitchcock, Palmyra, and Robert W. Thompson, Penfield, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Mar. 1, 1965, Ser. No. 435,942
4 Claims. (Cl. 271—10)

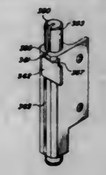
1. Document feeding apparatus for transmitting documents in proper alignment to a moving conveyor of the type having a plurality of spaced belts including
a tray capable of holding a plurality of documents

and having finger-like extensions aligned with the spaces between the belts of the conveyor,
means to move the tray forward towards the conveyor system until the finger-like extensions extend between the belts of the conveyor,
means to press the portions of the document on the



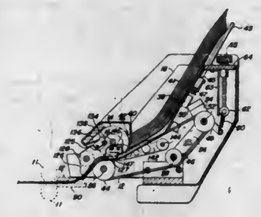
tray between the finger-like extensions against the conveyor belts when the tray is moved forward thereby feeding documents onto the conveyor system,
and means to return the tray to its original position after the documents have been fed onto the conveyor system.

3,288,460
PAPER FEED MECHANISM
Roger H. Eichorn, Webster, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Dec. 31, 1964, Ser. No. 422,657
1 Claim. (Cl. 271—19)



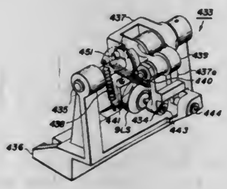
A sheet feeding apparatus comprising a supply tray for holding a stack of sheets, an elongated element extending vertically and arranged adjacent each of the two forward corners and at the sides of the stack, mounting means positioned on the sides of the stack for holding each of said element against movement in a substantially horizontal plane and permitting vertical movement of the elements, said mounting means including a tubular member adapted to slidably receive each of said elements, each of said elements having a tab adapted to rest upon the topmost sheet of the stack and extending inwardly along the forward edge thereof adjacent said corners, said elements being free to move downwardly in said tubular members by force of gravity and to be supported against the force of gravity by the positioning of the tabs upon the stack, sheet feed means for forcing the top sheet forwardly from the stack against the tabs for causing vertical buckling at the forward central portion of the sheet as the sheet slides from under said tabs due to the force produced by said sheet feed means.

3,288,461
SHEET FEEDING APPARATUS
Richard E. Smith, Webster, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Dec. 28, 1964, Ser. No. 421,556
4 Claims. (Cl. 271—35)



1. A sheet feeding apparatus of the type wherein sheets are fed seriatim from the bottom of a stack including
support fingers positioned beneath a stack of sheets to be fed and capable of raising and lowering the stack;
sheet advancing means positioned to contact the bottom sheet of a stack of sheets on the support fingers and operative to advance the sheet contacted in the direction of feeding;
means to raise and lower the support fingers including actuating means operated by the sheets being fed;
means to retain the stack of sheets from movement in the direction of feeding;
and means to drive the advancing means.

3,288,462
APPARATUS FOR HANDLING SUPERPOSED SHEETS
Robert H. Liva, Henrietta, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Sept. 30, 1964, Ser. No. 400,307
3 Claims. (Cl. 271—47)



2. A sheet transport device including
a frame,
a pair of belt shafts journaled on said frame in spaced relation to each other,
endless belts carried by said belt shafts and driven thereby to provide upper and lower runs thereof.
vacuum suction means mounted in said frame and positioned adjacent the lower runs of said belts for holding sheets to the lower surface of the lower runs during transport of the sheets,
a deflecting device mounted in the frame and adapted when actuated to extend between the lower runs of said belts for deflecting the sheets away from the transport device, and
a multiple sheet detecting apparatus operatively associated with said deflecting device and positioned adjacent said belts to sense the feeding of multiple sheets by the belts and produce actuation of said

deflecting device in response to the presence of multiple sheets, said multiple sheet detecting apparatus including

a base,

a shaft secured to said base,

a follower arm pivotally mounted on said shaft,

said follower arm having a lever portion and an arm portion,

gauge means on said arm portion in position to cooperate with a portion of one belt shaft to sense the thickness of sheets forwarded therebetween,

bias means connected to said follower arm to normally bias said gauge means into cooperating relation with said belt shaft,

a switch,

an actuator arm journaled on said shaft and positioned to actuate said switch, and

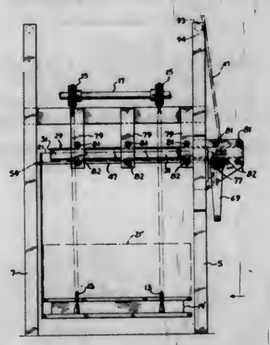
means connected to said actuator arm to normally bias said actuator arm into contact with said switch to actuate said switch,

said actuator arm having a portion positioned in interference relation to said lever portion of said follower arm whereby said actuator arm is movably held out of actuating contact with said switch.

3,288,463

AUXILIARY STACK HOLDER

Robert Stuart, Chicago, Ill., assignor to National Can Corporation, Chicago, Ill., a corporation of Delaware
Filed Jan. 29, 1964, Ser. No. 340,935
6 Claims. (Cl. 271—62)

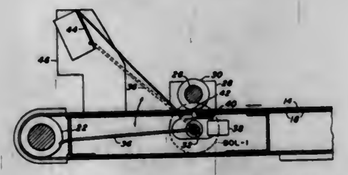


1. In a sheet feeding apparatus having an elevator for supporting a stack of sheets and sheet feeding means for removing sheets successively from the top of the stack; means for temporarily supporting, in position for continued successive removal by said sheet feeding means, a plurality of sheets remaining in the stack as the supply of sheets on the stack approaches exhaustion, said temporary supporting means including a frame having a plurality of spaced forks that are in pivotal connection with the frame and are adapted for insertion under said sheets to be supported thereby, driving means for moving the frame to place the forks selectively in sheet-supporting position and for retracting the forks from the sheet-supporting position to enable the elevator to be lowered for reloading with another stack of sheets and then raised to operative position to include in the stack those sheets then supported by the forks, all without ceasing the operation of the sheet feeding means, said frame being rotatable about its pivot axis an amount sufficient to swing the forks to an upright position, and means for maintaining said forks in said upright position.

3,288,464

CARD INVERTING APPARATUS

Robert W. Thompson, Penfield, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Mar. 1, 1965, Ser. No. 435,856
4 Claims. (Cl. 271—65)



1. Apparatus for inverting cards being carried through a path of movement on a moving conveyor system, including

a plurality of finger-like members movable between a first position wherein the members extend through the path of movement of a card on the conveyor to deflect the leading edge of the card upwards away from the conveyor, and a second position wherein the finger-like members are withdrawn from the path of movement of a card on the conveyor,

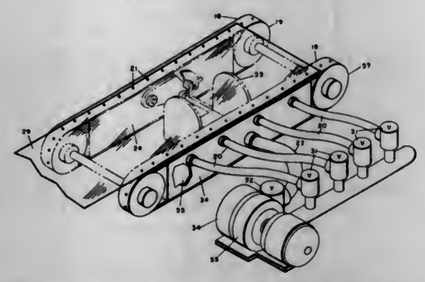
support means mounted above the conveyor to support the leading edge of a card deflected upwards away from the conveyor by the finger-like members while the trailing edge of the card is carried forward by the conveyor,

and control means, responsive to the presence of the card which is to be inverted, to control the movement of the finger-like members from the second to the first positon and to maintain said finger-like members in said first position until the leading edge of the card is in contact with said support means to thereby deflect the leading edge of the card onto the support means so that the trailing edge of the card may be carried beneath the deflected leading edge for the inversion of the card as the card moves along the conveyor.

3,288,465

PNEUMATIC CONVEYOR FOR SYNTHETIC PLASTIC WRAPPING SHEETS

Larry D. Cook, Dallas, Tex., assignor to Hercules Incorported, a corporation of Delaware
Filed Dec. 2, 1964, Ser. No. 415,347
1 Claim. (Cl. 271—74)

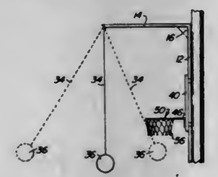


In a machine for wrapping articles in individual sheets of synthetic plastic film, film feeding means for advancing individual sheets longitudinally to a wrapping position and for holding the same longitudinally and transversely extended in the wrapping position, said film holding means comprising a pair of opposed vacuum chambers disposed in spaced parallel relation and having vacuum chambers disposed in spaced parallel relation and having film supporting surfaces disposed in a common plane and defining spaced parallel tracks in said plane and with a clear space between the same for introducing an article to be wrapped, a continuous belt encircling each of said vacuum chambers and arranged generally in planes normal to said common plane and through said film supporting surfaces with each of said belts having a film feeding run in which said belt moves along the film supporting surface of the respective one of said vacuum chambers, said belts having openings communicating with the interior of said vacuum chambers while said belts are in the film feeding runs whereby the individual sheets are held on the belts by vacuum applied through said openings to the longitudinal edges of the sheets, means for creating a vacuum in said vacuum chambers, and means for selectively discontinuing the vacuum and creating a positive pressure within the vacuum chambers whereby the sheet is released from said belt.

3,288,466

TETHERED BASKETBALL PRACTICE DEVICE

Warren H. Cumings, Ryder, N. Dak.
Filed Apr. 2, 1965, Ser. No. 446,785
8 Claims. (Cl. 273—1.5)

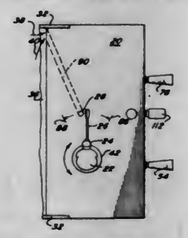


1. In a basketball practice device, a support member, an arm extending forwardly of and outwardly from said support, a weight slidably mounted with respect to said support, a ball, a flexible means carried by the forward end of said arm and said support member connecting said ball and said weight, a backboard carried by said support member below said arm, and a split generally circular hoop mounted on said backboard, said split being disposed at the forward end of the hoop, the forward end of said arm extending forwardly of the forward portion of said hoop, said flexible means being adapted to pass through the split in said hoop.

3,288,467

SIMULATED GOLF GAME WITH DIRECTION INDICATING TARGET

Donald J. Rudolph, Edison, N.J., assignor to Rudek, Inc., a corporation of New Jersey
Filed Nov. 1, 1963, Ser. No. 320,684
7 Claims. (Cl. 273—87.4)

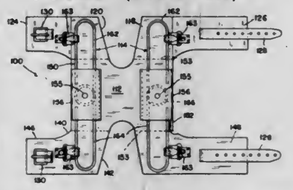


4. A golf game comprising a game board platform, a ball supporting tee adjustably movable along an axis perpendicular to said platform, and means including an adjustable knob for adjusting the height of said tee with respect to said knob, a game target panel positioned remotely from said tee and generally perpendicularly to said platform and to a path of a ball from said tee, a figure including a golf club, means mounting said figure and club on said platform adjacent to said tee for rotation about an axis perpendicular to said platform with the path of rotation of the head of said club passing over said tee, said figure mounting means including means for adjusting said rotation axis forward and back generally parallel to said ball path.

3,288,468

GOLFER'S ARM BEND RESTRAINING DEVICE

Arthur Raymond Cunningham, Chicago, Ill., assignor to Cunningham & Sons, a partnership
Filed Aug. 19, 1963, Ser. No. 302,909
3 Claims. (Cl. 273—189)

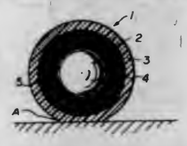


3. A device for resisting bending of a golfer's arm comprising a pair of elongated spring stiffening units each long enough to extend across the elbow lengthwise of the arm, means for securing said units to the arm so that they are respectively on the inner and outer sides of the arm and extend above and below the elbow, said means including flexible material composed of an upper segment, a middle segment connected to said upper segment and a lower segment connected to said middle segment, the upper segment extending from the upper ends of the stiffening units across the front of the arm above the elbow when the device is in use, the lower segment extending from the lower ends of the stiffening units across the front of the arm below the elbow when the device is in use, the middle segment being disposed between the upper and lower segments and extending between the stiffening units across the back of the elbow when the device is in use, said upper segment having ends provided with means for releasably securing said ends together, said lower segment having ends provided with means for releasably securing the latter ends together, means engaging the lower ends of said stiffening units for releasably securing the lower ends of said stiffening units to said lower segment, and means securing said stiffening units to said middle segment.

3,288,469

PRACTICE GOLF BALL

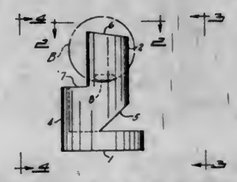
Edward K. Shaw, 25477 Water St., Olmsted Falls, Ohio
Filed Nov. 5, 1963, Ser. No. 321,648
2 Claims. (Cl. 273—199)



2. A practice golf ball having a spherical shape for use on an indoor floor surface and which simulates the action of a standard golf ball when used on a putting green comprising: a spherical body, said body including a substantially non-deformable center unit and a deformable cover means for providing an area contact with

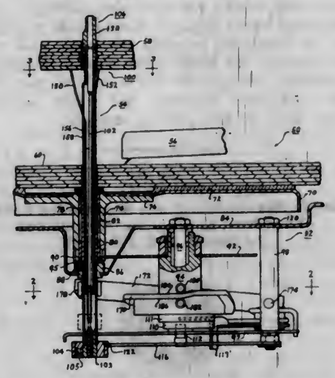
said surface when the ball is rolled thereover, said practice golf ball being substantially of the same weight, size and shape as the standard golf ball, said cover means surroundingly engaged with and secured to said center unit and with the portion thereof carrying the weight of the ball flattening out to provide said area contact between the ball and surface due to the weight of the practice ball alone, said area contact providing a frictional resistance which corresponds to the frictional resistance encountered by a standard golf ball when used on a putting green.

3,288,470
GOLF TEE FOR CORRECTING A HOOK OR SLICE
Charles W. Post, Eastview Drive, V3, Maywood Park, P.O. Box 182, Chesterland, Ohio 44026
Filed Jan. 2, 1964, Ser. No. 335,007
9 Claims. (Cl. 273—207)



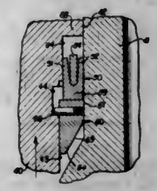
1. A golf tee comprising a base portion and a pair of vertically extending flexible fingers on said base portion, said fingers being formed from a resilient flexible material and being generally arcuate in cross-section and positioned generally diametrically opposite one another about the circumference of said base portion, said fingers being spaced apart and being the sole means for supporting a golf ball substantially about its equator.

3,288,471
AUTOMATIC RECORD CHANGING APPARATUS
Clarence W. Weedfall, St. Joseph, Mich., assignor to V-M Corporation, Benton Harbor, Mich., a corporation of Michigan
Filed June 8, 1964, Ser. No. 385,817
24 Claims. (Cl. 274—10)



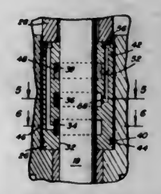
7. In a spindle assembly for an automatic record changing apparatus: an escapement device including a shaft, a stem mounted adjacent the upper end of said shaft on a pivot eccentric to said shaft and having positions concentric and eccentric with respect to said shaft, a resilient insert secured to one side of said stem, an extension on said shaft projecting upwardly along the side of said stem, said insert and extension forming elements for gripping a stack of records on said spindle assembly, and means for oscillating said stem between record gripping and non-gripping positions.

3,288,472
METAL SEAL
Bruce J. Watkins, Palos Verdes Estates, Calif., assignor to Regan Forge & Engineering Co., San Pedro, Calif., a corporation of California
Filed July 1, 1963, Ser. No. 291,723
3 Claims. (Cl. 277—11)



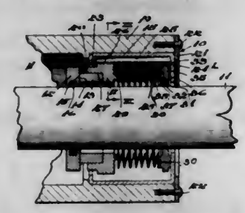
1. A metal seal assembly assembled within a casing recess to effect a fluid tight seal between a casing and a mandrel upon running of the casing over the mandrel without the application of additional external or internal sealing pressures which is resistant to deterioration in subsea applications, said metal seal assembly comprising:
annular metal sealing means for mounting within said casing recess, said sealing means having spaced divergent channel walls interconnected by a bight portion to define an annular channel therein;
annular metal spacer means received in said sealing means annular channel having a height greater than said channel for limiting movement of said sealing means within said casing recess when said casing is run over a mandrel and for spacing free ends of said divergent walls from overhead portions of the casing recess overlying said free ends the combined axial height of said sealing means and spacer means received therein being less than the axial height of said recess; and
annular metal retainer means for mounting within said casing adjacent said recess to retain said sealing means and spacer means within said casing when said casing is moved relative to said mandrel.

3,288,473
STUFFING BOX
Cyril Hinds, Lafayette, La., assignor to Oil Center Research, Inc., Lafayette, La., a corporation of Louisiana
Filed Oct. 9, 1963, Ser. No. 314,948
2 Claims. (Cl. 277—58)



1. In combination with a pump housing having a cylindrical stuffing box chamber formed therein with a constant internal diameter and communicating with the surface of the housing, a pump shaft of constant external diameter extending concentrically of the stuffing box chamber, a cylindrical sleeve having a constant internal and external diameter throughout its length disposed in the stuffing box chamber in encircling relation to the shaft with one end of the sleeve bottoming against the inner end of the stuffing box chamber, retaining means engaging the other end of the sleeve and holding the sleeve against the bottom of the stuffing box chamber, means sealing the exterior surface of the sleeve with respect to the stuffing box chamber at longitudinally spaced points therealong, the interior surface of the sleeve having a plurality of longitudinally spaced grooves therein, lubricating and sealing material filling said grooves, an independent passage in said sleeve communicating independently with the grooves for supplying the lubricating and sealing material thereto, each passage extending longitudinally of the sleeve and communicating with the outer end thereof, said retaining means for the sleeve overlying and closing the open end of the passages and being in the form of an annular member engaging the outer end of the sleeve thus simultaneously closing off all of the passages.

3,288,474
BELLOWS SEAL STRUCTURE
Remi J. Gits, Hinsdale, Ill., assignor to Gits Bros. Mfg. Co., Chicago, Ill., a corporation of Delaware
Filed June 14, 1963, Ser. No. 287,840
7 Claims. (Cl. 277—88)



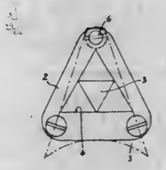
1. In a rotary seal assembly for a rotating shaft member having a rotating ring and a stationary sealing ring having a sealing surface sealingly engaging the rotating ring,
an expansible annular bellows for surrounding the shaft member and secured at one end to said stationary ring,
a seal assembly support,
and a non-rotatable end ring being sealingly related to the other end of said bellows and having an inner annular surface of a diameter to be in close running relation to said shaft and having an axial facing sealing suface engaging and sealingly related to said support so that with leakage of the bellows fluid leakage will be inhibited by said end ring.

3,288,475
TORIC PACKING
Jean Benoit, Villennes-sur-Seine, France, assignor to Le Joint Francais, Paris, France
Filed Mar. 11, 1963, Ser. No. 264,397
Claims priority, application France, June 6, 1962, 899,904
3 Claims. (Cl. 277—205)



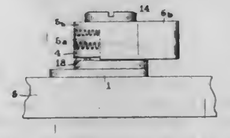
1. A packing ring of flexible, compressible, and resilient material, with nipples directed to each side of the median plane of the ring perpendicularly to this plane, the radial section of this ring being of external configuration resembling a polygon having at least four sides; and the nipples being so distributed at widely spaced points on the section that displacement or normal expansion of the material of the ring when fitted is freely permitted, thus improving tightness, the section being asymmetrical relative to an axis perpendicular to the plane of the ring, and the nipples being placed towards the narrower part of the section.

3,288,476
SECURING SYSTEM OF THE ABUTMENT TYPE FOR SKIS
René Ramillon, 3 Rue Emile Zola, Grenoble, Isere, France
Filed May 22, 1964, Ser. No. 369,507
Claims priority, application France, June 7, 1963, 43,709, Patent No. 1,366,976
5 Claims. (Cl. 280—11.35)



1. In combination with a ski, a safety system comprising a plate rigidly secured to the ski, an abutment engaged normally by the tip of the skier's shoe, and a connection between said abutment and said plate including means defining a triangular recess having two equal sides and rigid with one of said plate and abutment, a triangular member having two equal sides and being rigid with the other of said plate and abutment and the apices of which engage the corresponding sides of the triangular recess in the normal position of the abutment with reference to the ski, said apices and said triangular recess being so disposed that the rearward thrust of said plate on said abutment is shared substantially equally by two said apices, said apices being shifted away from said engagement upon excess angular thrust of the shoe against the abutment to thereby release said triangular member and allow a combined angular and longitudinal movement of the abutment with reference to the plate, and means yieldably retaining the triangular member in said normal position.

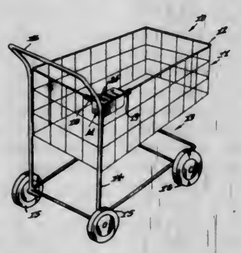
3,288,477
SAFETY SKI BINDING DEVICE
Jean Joseph Alfred Beyl, 1 Rue Devieur Robelin, Nevers, France
Filed June 22, 1964, Ser. No. 376,736
Claims priority, application France, June 27, 1963, 939,525
7 Claims. (Cl. 280—11.35)



1. Safety ski binding device adapted to hold the toe end of a ski boot against motion, which comprises in combination a base plate, a pivot member carried thereby and adapted to be secured on the top face of a ski so that said pivot member extends upwards at right angles to said ski face; a three-piece abutment body mounted on said pivot member, said body consisting of a base element, and two upper elements, said elements being in superposed position on said pivot member and being interconnected; the toe of said boot adapted to abut

against said body; resilient means connecting said elements to said base plate and retaining said abutment body, said resilient connection permitting said abutment body to rotate about said pivot when a torsional effort of predetermined value is applied thereto; a pair of diverging lateral extending arms on the rear of said abutment body adapted to hold between them and to act as a bearing and retaining surface for the toe end of the boot sole, each of the two upper elements of said body having one of said lateral arms extending rearwards on either side of the location of the toe end of the ski boot at such a level in relation to said base plate that they extend against the corners of the toe end of the ski boot; each lateral arm having an overhanging ledge adapted to engage the upper face of the corners of the toe end of the boot sole; means adapted to lock said upper two elements carrying said lateral arms in relation to each other in any desired angular positions and to cause said arms to be locked also in relation to said abutment body base.

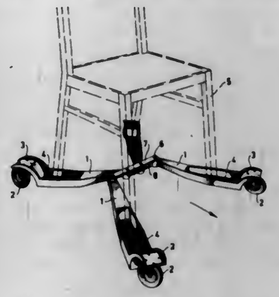
3,288,478
COIN OPERATED ADDING MACHINE FOR GROCERY CHAIN STORE CARTS
Wesley H. Powers, 6310 181st Place SW., Lynnwood, Wash.
Filed Jan. 13, 1964, Ser. No. 337,386
1 Claim. (Cl. 280—33.99)



A coin operated adding machine for grocery carts, comprising a cart, an adding machine, a housing of substantially rectangular configuration for supporting said adding machine therein, said housing being provided with a slot, a lever pivotably secured with said adding machine and extending outwardly from said housing, said housing being provided with a plurality of holes, a plurality of buttons showing different monetary values thereon resiliently secured within said holes, and indicator mechanism of said adding machine secured on said housing for showing monetary values when at least one coin is inserted into said slot and at least one button is depressed, and said housing being secured above the wire rim of said cart thereby permitting a plurality of carts to be stored one inside the other without interference.

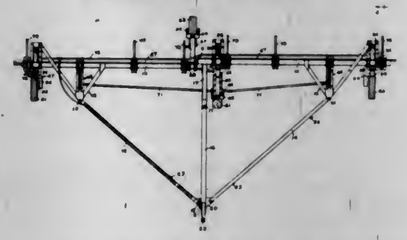
3,288,479
CONVEYING DEVICE
Evert Hilmer Ullman, Goteborg, Sweden, assignor to Aktiebolaget Astra, Apotekarnes Kemiska Fabriker, Sodertalje, Sweden, a company of Sweden
Filed July 16, 1964, Ser. No. 383,012
Claims priority, application Sweden, July 17, 1963, 7,910
3 Claims. (Cl. 280—35)

1. A conveying device for furniture and other articles having extending legs, said device being movable between an article carrying position and a storage position and comprising a plurality of support arms, centrally located guide means, each said support arm having at least one caster wheel, each said supporting arm having a pivotal connection with said guide means and being formed with an elongated intermediate cavity positioned between its caster and pivot thereby to accommodate furniture of different sizes, said guide means supporting said pivotal arms to maintain said pivotal connections substantially



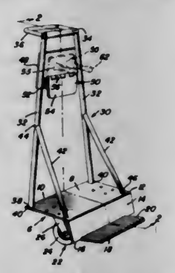
parallel in both said carrying and storage positions, in said storage position each said pivotal connection being positioned sufficiently co-linearly to permit each said supporting arm to be aligned in a substantially parallel side-by-side relation.

3,288,480
ROD WEEDER
Dwight L. Calkins, Oscar C. Calkins, and Lawrence K. Carrick, Spokane, Wash., assignors to Calkins Manufacturing Company, Spokane, Wash.
Filed Apr. 16, 1964, Ser. No. 360,330
3 Claims. (Cl. 280—43.23)



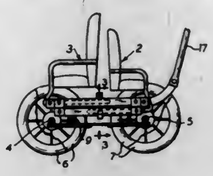
1. In a farm implement adapted to be trailed behind a towing vehicle:
a transverse horizontal frame member;
hitch means at one end of said transverse frame member adapted to be selectively coupled to a vehicle for transport purposes;
additional horizontal frame members fixed to said transverse frame members in triangular configurations extending forwardly to a central apex;
hitch means at said apex adapted to be selectively coupled to a towing vehicle for field use;
first wheel means mounted on said transverse frame member adjacent said one end thereof including a wheel carried thereon for rotation about an axis parallel to said transverse frame member, said wheel means being pivotally carried on said transverse frame member, said wheel means being pivotally carried on said transverse frame member about a transverse pivotal axis;
first power means operatively connected between said transverse frame member and said first wheel means adapted to selectively locate said first wheel means angularly about said transverse pivotal axis relative to said transverse frame member with the wheel thereof in ground contact;
and means engageable between said transverse frame member and said first wheel means adapted to selectively maintain the wheel of said first wheel means in an elevated location not in ground contact;
second wheel means mounted on said transverse frame member intermediate the ends thereof and spaced from said first wheel means, said second wheel means including a wheel frame pivotally carried on said transverse frame member about a transverse pivotal axis, said second wheel means further including a wheel mounted on said wheel frame for rotation relative thereto about a horizontal axis, said wheel being carried on a wheel support pivoted to said wheel frame about an upright axis;
second power means operatively connected between said transverse frame member and the wheel frame of said second wheel means adapted to selectively locate said wheel frame angularly about its transverse pivotal axis relative to said transverse frame member with the wheel thereon in ground contact;
and means engageable between said wheel frame and said wheel support adapted to selectively lock said wheel support relative to said wheel frame with the wheel axis thereof parallel to said transverse frame member.

3,288,481
SWIVEL CASTER HAND TRUCK
George J. Meyers, 1557 N. Yellowstone Highway, Idaho Falls, Idaho
Filed Aug. 21, 1964, Ser. No. 391,110
3 Claims. (Cl. 280—47.27)



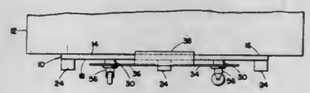
1. A manually maneuverable load lifting, handling and trucking dolly comprising, an upstanding mobile truck including an upstanding frame having a horizontal outstanding step projecting outwardly of one side of the lower portion of said frame and adapted to be nosed into a position between a floor or an equivalent foundation and the bottom of the load which is to be hoisted and moved about, said frame having handle means adjacent its upper end, abutment means carried by said frame adjacent the upper end thereof projecting outwardly of said one side of said frame above said step and adapted to reside and brace itself against a cooperating vertical surface of the load to be moved, said abutment means serving to permit the frame means to tilt toward and engage said surface by said abutment means when said step is in a horizontal plane, the lower end portion of said frame including floor engaging support wheel means disposed behind said step and including lower surface portions projecting only slightly below said step when the latter is horizontally disposed, a mount provided with first and second sides and pivotally supported from said frame adjacent the upper end thereof for movement between a first limit position with said first side facing outwardly of said one side of said frame and a second limit position with said second side facing outwardly of said one side of said frame, said abutment means being adjustably carried by said mount and projecting outwardly of one side of the latter.

3,288,482
STROLLER WITH DETACHABLE CHAIRS
Louis Gottfried, 515 West End Ave., New York, N.Y., and Jacob Berger, 600 W. 246th St., New York, N.Y.
Filed Feb. 16, 1966, Ser. No. 534,590
15 Claims. (Cl. 280—47.38)



1. A stroller comprising in combination,
a running gear including two axles,
each of said two axles carrying two wheels,
means for connecting said two axles to maintain the latter in a spaced-apart position and forming a first frame,
a second frame disposed above said axles,
springs supported by said first frame and engaging said second frame,
said second frame including two pairs of at least two longitudinal guide means disposed in superposed position,
said pairs of guide means being spaced apart from each other at a predetermined distance,
with two chairs,
each of said two chairs comprising a back and a seat,
two leg members of each of said chairs extending from the sides of said seat downwardly,
said leg members being bent into substantially horizontally disposed leg portions spaced apart from each other at a distance equal with that of said oppositely disposed guide means, and
said leg portions being received and supported by said guide means, and said horizontally disposed leg portions being adapted to rest on the ground when used as chairs.

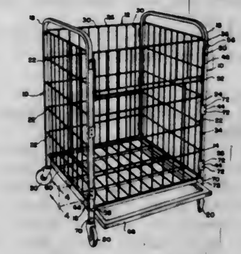
3,288,483
PALLET CART
John L. Pittenger, Huntington, Ind., assignor to North American Properties, Inc., Fort Wayne, Ind., a corporation of Indiana
Filed May 17, 1965, Ser. No. 457,909
6 Claims. (Cl. 280—79.1)



4. The combination comprising a pallet supported at one end by a pallet cart, said pallet having a base with an upwardly facing flat surface and one elongated supporting member secured to said base and depending therefrom, said pallet cart having a frame with an upwardly facing and flat first surface, two casters swivelly secured to the underside of said frame in spaced apart relation, said frame having a second surface upstanding from said first surface, said second surface extending generally parallel to the direction of a line drawn between said casters, said first and second surfaces respectively defining the bottom and one portion of the upstanding sides of a first open space free of tangible structure immediately above said first surface, said first open space having an open top, the remaining portion of said sides of said first open space also being open, a portion of said pallet base

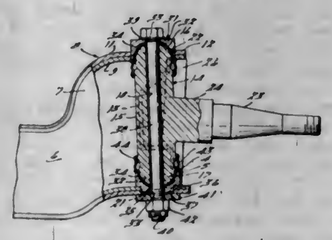
being in said first open space, said frame having an elongated opening therein extending from said second surface and between said casters, said frame and said second surface respectively defining the opposite sides and one end of said opening, the other end of said opening remote from said second surface being open, said frame having a second open space free of tangible structure immediately below said opening which communicates with said first open space, said second open space having an open end adjacent to said remote end of said opening, a portion of said pallet supporting member being positioned in said opening and said second open space, and means protruding from said first surface and engaging a portion of said base for frictionally holding said pallet on said first surface and restricting the lateral movement thereof.

3,288,484
BOTTLE RETURN CART
Fredrick F. Brunette, Farmington, Mich., assignor to Brilliant Products, Incorporated, Plymouth, Mich., a corporation of Michigan
Filed May 21, 1964, Ser. No. 369,151
5 Claims. (Cl. 280—79.2)



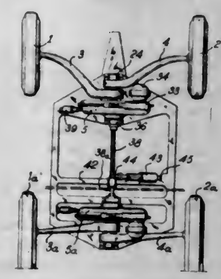
1. A cart comprising:
(a) a pair of spaced side wall sections, a front wall section, a rear wall section, a floor section and means connecting said sections together to form an open top receptacle,
(b) said front wall comprising an upper portion and a fixed lower portion and means hingedly connecting said upper portion to said lower portion,
(c) said last mentioned means comprising a horizontally extending wire member defining the upper edge of said lower portion, and a closed looped member extending around said wire member and fixed to said upper portion whereby said upper portion can be pivoted about said wire member between an upper position substantially co-planar with and extending upwardly from said lower portion and a lower position substantially parallel with and adjacent to said lower portion, and said upper portion permitting access to said receptacle in all positions,
(d) means selectively retaining said upper portion in said upper position,
(e) said looped member being elongated whereby said upper portion is movable toward and away from said lower portion at all pivoted positions a distance substantially equal to the length of the loop formed in said looped member,
(f) said retaining means comprising a substantially S-shaped hook member secured to one of said side wall sections adjacent said front wall section, said looped member including an outwardly extending end portion fixedly attached to said upper portion and disposed to be received by said hook member upon said upper portion being pivoted to said upper position and being moved away from said lower portion.

3,288,485
KINGPIN AND ASSEMBLY
Charles S. White, Rte. 3, Box 454H, Palmdale, Calif., and Bernard E. O'Connor, 8904 Rindge Ave., Playa Del Rey, Calif.
Filed June 19, 1963, Ser. No. 289,132
22 Claims. (Cl. 280—96.1)



1. A kingpin assembly adapted to be received in a supporting member and having a body, a ball end on the ends of the body, a pair of sockets having a truncated spherical recess for engaging each of the ball ends, said sockets and ball ends having an aperture extending longitudinally therethrough, said sockets being removably receivable in said supporting member, and a bolt for passing through the apertures and clamping the sockets and ball ends together and in said supporting member.

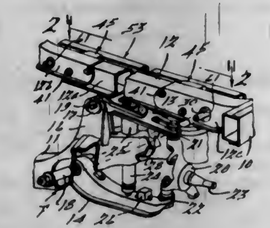
3,288,486
VEHICLE SUSPENSION SYSTEMS
Pierre Ernest Mercier, Piscop, France, assignor to Société Francaise d'Entretien et de Réparation de Matériel Aéronautique (S.F.E.R.M.A.), Suresnes, France
Filed May 6, 1964, Ser. No. 365,423
Claims priority, application France, May 11, 1963, 934,515, Patent 1,372,467; Sept. 6, 1963, 946,795, Patent 84,294
35 Claims. (Cl. 280—112)



1. An integrated suspension system for a vehicle with two pairs of wheels mounted on a chassis comprising for each pair of wheels, two aligned rotatable main shafts having axes substantially parallel with the chassis plane and rigidly connected to the respective wheel hubs by means of wheel-bearing members, a differential reversal device carried by a support pivotally connected to the chassis for movement about an axis aligned with that of said main shafts, said device having a plurality of members mechanically connected to the ends of said main shafts and being so devised that in the absence of any movement of said support relative to the chassis concerted motion of said main shafts in opposite directions is possible by the rotation relative to said support of at least

one movable component inserted between said differential reversal device members and two damped sets of elastic devices of which the first controls angular movement of said movable component relative to said support and the second, which bears a control link, controls angular movement of said support relative to the chassis about its pivotal connection thereto, whereby the first set of elastic devices determines flexibility of said main shafts for differential motion thereof and the second set of elastic devices flexibility for motion in unison thereof in the same direction.

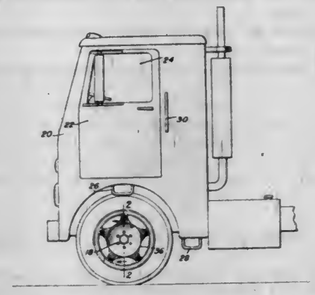
3,288,487
TORSION BAR WHEEL SUSPENSION
Alfred D. Bosley, Jr., and Robert N. Frantz, Birmingham, Vincent J. Ryszewski, Detroit, and William N. Scott, Royal Oak, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed July 28, 1964, Ser. No. 385,699
4 Claims. (Cl. 280—124)



1. In a motor vehicle having independently sprung front wheels, said vehicle having a front wheel supporting member mounted thereon for pivotal oscillation about an axis extending substantially longitudinally of the vehicle, a vehicle frame member extending transversely of the vehicle and positioned rearwardly of said front wheel supporting member, a torsion bar extending longitudinally of the vehicle having the front end portion thereof fixedly connected to said wheel supporting member for the application of torsional stress thereby, the rear end portion of said torsion bar extending rearwardly beyond said frame member, a resilient connector member fixedly mounted on said frame member having a portion thereof spaced rearwardly of said frame member and connected to the rear end portion of said torsion bar to provide a floating, but non-rotatable, independent anchorare therefor, said resilient connector comprising a pair of spaced rigid bracket pieces having a block of rubber-like insulator material sandwiched between and connected to said spaced bracket pieces, one of said bracket pieces being rigidly connected to said frame member and the other bracket piece having means rigidly connected to said rear end portion of said torsion bar.

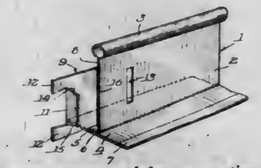
3,288,488
COMBINED HUBCAP AND STEP TREAD CONSTRUCTION
Jack E. Shinn, 226 Feldt, Evansdale, Iowa
Filed Apr. 30, 1965, Ser. No. 452,071
6 Claims. (Cl. 280—165)

2. In combination with a vehicle wheel of the type including a central hub portion defining inner and outer sides, a step member, said step member being generally circular and dish-shaped in configuration with its central and outermost peripheral portions disposed in spaced apart generally parallel planes, said central portion of said dish-shaped member being secured to the outer side of said central hub portion in general concentric relation thereto, the plane in which said outer peripheral portions of said step member are disposed being spaced outwardly of said outer side of said hub portion, said outer peripheral portions of said step member being spaced axially



outwardly of corresponding portions of said wheel and including a fully exposed and roughened peripheral edge.

3,288,489
MAIN RUNNER COUPLING
Martin D. Jahn, Riverside, Ill., assignor to Chicago Metallic Sash Company, Chicago, Ill., a corporation of Illinois
Filed July 5, 1963, Ser. No. 292,988
7 Claims. (Cl. 287—189.36)



3. In a runner constructed for connection to the abutting end of an aligned like runner of a suspended ceiling structure, said runner being of generally inverted T-shape having a central normally vertical body member and a normally horizontal flange portion, the combination of an extension member formed on the runner end, and extending longitudinally outwardly from the body member, such extension member lying in a plane extending parallel to the longitudinal axis of the body member portion with which it is to be engaged, means for interlocking with like means on another runner comprising a tongue formed on one of said members and a slot formed on the other of said members, said tongue initially extending at substantially right angles to said plane, said slot of a size to receive a like tongue on such other runner when such runners are in aligned abutting relation, said extension member being laterally offset the thickness of the metal forming the interlocking portion of the body member whereby the latter member of each runner may be disposed in side-by-side relation with the extension member of the other runner when the runner ends are in aligned abutting relation, the interlocking means carried by said extension being spaced from the free end thereof with the portion of the extension member therebetween forming reinforcing means opposing bending action between a pair of assembled runners.

3,288,490
PASSENGER CARRYING DEVICE FOR A BICYCLE
Oluf F. Jensen, 929 6th Ave., Council Bluffs, Iowa
Filed Aug. 19, 1964, Ser. No. 390,600
6 Claims. (Cl. 280—202)

1. A device for carrying a passenger on a bicycle, the bicycle including a frame having an inverted U-shaped

fork extending downwardly and rearwardly forward of the rearward end of the bicycle,

a pin member secured to said fork adjacent each of its lower ends,

a sleeve means rotatably mounted on each of lower ends of said fork,

a plate member secured to each of said sleeve means



and extending substantially at a right angle therefrom,

each of said sleeve means having at least two spaced apart slots formed therein adapted to selectively receive said pin member therein at times,

said two slots being in an approximate 90 degree relationship with respect to each other and said sleeve means.

3,288,491
ARTICULATED CARGO VEHICLE
Charles J. Ellerd, 1669 Chester Ave., Bakersfield, Calif.
Filed Feb. 5, 1965, Ser. No. 430,721
9 Claims. (Cl. 280—410)



1. An articulated cargo vehicle that includes:

(a) first and second end platforms that are in longitudinal spaced relationship;

(b) first and second decks that project towards one another from adjacent ends of said first and second platforms;

(c) an intermediate platform disposed between said first and second platforms, which intermediate platform includes end portions that overlie said decks;

(d) two transverse cross pieces affixed to the under portions of said first and second platforms adjacent the free ends thereof;

(e) two first pivot members that extend downwardly from said cross pieces;

(f) two first plates pivotally supported on said pivot members;

(g) a first tow bar that extends from said first plate under said first platform;

(h) two second pivot members that extend downwardly from said first and second decks;

(i) two second plates that are pivotally supported on said second pivot members;

(j) two vertical anchor bolts that depend from opposite end portions of said second plates;

(k) three elongate rigid tow bar sections disposed end-to-end and in pivotal engagement with said first and second pivot members, which tow bar sections serve to transmit a tractive force on said tow bar longitudinally under said first and second sections and said intermediate section without imposing a strain thereon;

(l) two first wheel assemblies disposed under said first plates and rigidly connected thereto;

(m) two second wheel assemblies disposed under said second plates and rigidly connected thereto;

(n) two third wheel assemblies disposed under said first and second platforms and rigidly affixed thereto, each of which third assemblies are disposed between one of said first and second assemblies;

(o) two vertical first bolts held in fixed positions relative said first plates and which pivot with said first plates about said first pivot members; and

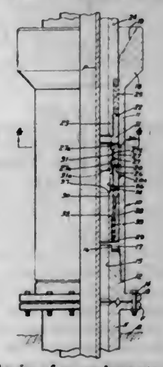
(p) first and second steering means extending under said first and second platforms in opposite directions that are pivotally connected to said anchor bolts and first bolts, with said first steering means pivoting said second plate and said second wheel assembly under said first deck to the extent that said second wheel assembly under said first deck follows said first wheel assembly under said first platform as said vehicle is moved forwardly and said tow bar is pivoted relative thereto, with said second steering means when said intermediate platform moves angularly relative to said second platform pivoting said first plate and first wheel assembly under said second platform to the extent that said two first wheel assemblies have substantially the same track.

3,288,492
TRAILER CHASSIS AND CONNECTING MEANS THEREFOR
Henry C. Stricker, Jr., and Gerald A. Sill, Edgerton, and James T. Cribben, Janesville, Wis., assignors to Highway Trailer Industries, Inc., Edgerton, Wis., a corporation of Delaware
Filed Aug. 10, 1964, Ser. No. 388,651
10 Claims. (Cl. 280—415)



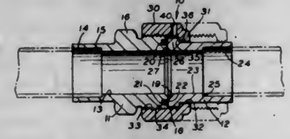
1. In chassis frame construction of the class described, in combination, first and second frame units movable into adjacent aligned position for load bearing support, a truss member for each unit and movably engaged therewith, means to connect said members to the units and to each other to form tension means, compression adjustment means intermediate the ends of the units, and bogie means to support said units jointly and independently.

3,288,493
COUPLING DEVICE FOR UNDERWATER WELLHEADS
Cicero C. Brown, % Brown Oil Tools, Inc., P.O. Box 19236, Houston, Tex.
Filed Feb. 28, 1964, Ser. No. 348,070
6 Claims. (Cl. 285—3)



1. A coupling device for underwater wellheads, comprising, a tubular housing attachable to a submerged wellhead and having an annular locking groove in the bore wall thereof, a tubular connector body coaxially insertable in the bore of said housing, said connector body having a plurality of circumferentially spaced openings through the wall thereof, latching dogs mounted in said openings for radial movement into and out of locking engagement with said groove, seal means mounted about said body above said openings for sealing engagement with said housing, a tubular mandrel slidably disposed for relative axial movement in the bore of said body, an annular enlargement about said mandrel movable therewith between a first position urging said latching dogs into said groove and a second position releasing said latching dogs for retraction from said groove, abutment means mounted in the bore of said housing in registration with the lower end of said mandrel to limit downward movement of the mandrel relative to said body, resilient means positioned between said mandrel and said body to bias said mandrel toward said first position, holding means initially securing said mandrel to said body in said second position, said holding means being releasable in response to downward force applied to said body after engagement of the lower end of said mandrel with said abutment means, and means for connecting the upper end of said body to a pipe or the like to be coupled to said wellhead.

3,288,494
UNION COUPLING
Francis J. Callahan, Jr., Chagrin Falls, and Erling G. Wennerstrom, Mayfield Village, Ohio, assignors to Cajon Company, Solon, Ohio, a corporation of Ohio
Filed Aug. 11, 1965, Ser. No. 478,826
1 Claim. (Cl. 285—14)



A union adapted to be used in a tubing system comprising:

first and second body members having passages therethrough;

each of said body members having a counterbored portion in one end thereof coaxial with said passages adapted to receive the end of a length of tubing;

the ends of each of said body members opposite to said counterbored portions including planar radially extending end faces transverse to the axis of the passages therethrough with the radially outer extremity of each end face being in the same plane as the radially inner point of its respective end face;

a radially extending flange formed on first of said body members adjacent the other end thereof;

thread means formed on the exterior surface of the second of said body members with said thread means terminating at the end face on said second body member;

a groove formed in the end face of said second member opening axially of said second member and being concentric with the passage in said second member;

said groove being spaced radially outwardly of the passage in said member and radially inwardly of said thread means;

a cylindrical sleeve surrounding a portion of said first member;

said sleeve including a central cavity and an inwardly turned flange in sliding engagement with the exterior of said member;

said inwardly turned flange having a radial dimension less than the radial dimension of said radially extending flange on said first member whereby the sliding movement of said sleeve on said member is restricted by the engagement of said flanges;

threads in the cavity in said sleeve adapted to engage with the thread means on said second member whereby said first and second members may be secured together with their respective end faces in abutment;

said threads in the cavity extending from the forward end thereof to a point immediately adjacent said inwardly turned flange whereby with the sleeve assembled in threaded engagement on said second member said threads overlie said radially extending flange on said first member;

the radial extent of said flange on the first of said body members being substantially equal to the pitch diameter of the threads in the cavity in said sleeve;

the length of said sleeve being less than the axial length of said second member but greater than twice the axial extent of said radial flange whereby said sleeve may be displaced between a position fully overlying said second member and a position of axial extension beyond the end face of said second member;

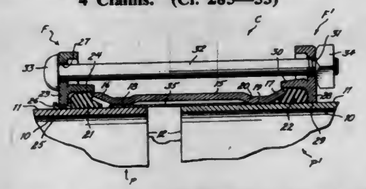
said sleeve further including a single radially extending leak test aperture through said sleeve and communicating with said cavity therein;

said aperture being positioned adjacent said inwardly turned flange whereby in the assembled position of said coupling said aperture overlies said radially extending flange;

a resilient O-ring sealing means disposed in said groove;

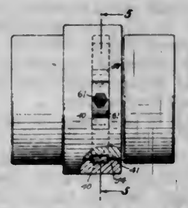
the cross-sectional dimension of said O-ring being greater than the depth of said groove whereby abutment of said end faces causes sealing engagement of said O-ring with said end face on said first member.

3,288,495
INSULATED COMPRESSION COUPLING
Frederick T. Newell and Henry Slivinski, Bradford, Pa., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Apr. 24, 1963, Ser. No. 275,265
4 Claims. (Cl. 285—53)



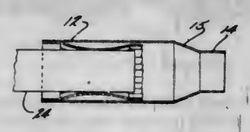
1. A compression pipe coupling comprising a middle ring having a central portion and flared ends providing annular gasket recesses; a gasket within each of said recesses; a pair of followers engaging said gaskets at their exposed outer ends; means for drawing said followers together; a straight tubular insulating sleeve within said middle ring, said central portion having a first portion of minimum inside diameter adjacent one of said flared ends and being approximately the same diameter as the inside diameter of said sleeve and providing a shoulder abutting the end of the insulating sleeve, and the remaining portion of said central portion extending from said shoulder back to the extreme other end having an inside diameter greater than the outside diameter of the sleeve, said sleeve extending from said shoulder through said central portion at least to the point of juncture of said central portion and the other of said flared portions to thereby insulate said middle ring from a pipe end received in said other end portion, and means for insulating said pipe end from the follower at said other end of the middle ring.

3,288,496
SWIVEL TUBULAR COUPLING HAVING A CAST INTERLOCK
Leon O. Myers, Oakland, Calif., assignor of one-half to Bruce & Brosler, a partnership composed of Charles O. Bruce and Edward Brosler
Filed Apr. 27, 1964, Ser. No. 363,681
3 Claims. (Cl. 285—94)



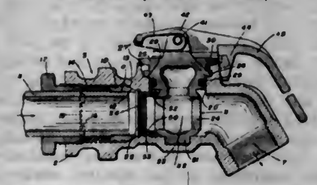
1. A swivel coupling comprising an outer component having a passageway therethrough, an inner component rotatably fitting in said outer component and having a passageway therethrough connecting with said outer component passageway, and means between opposing walls of said outer and inner components for rotatably interlocking said outer and inner components, said interlocking means including aligned peripheral grooves in said opposing walls, a slot through the wall of said outer component in registry with said aligned grooves, a shield with its ends snugly fitting into the groove in the outer wall of said inner component and exposed through said slot, to form a chamber within said shield, means installed in said shield and accessible from without for introduction of a lubricant into said chamber, and cast material filling said grooves to the exclusion of said chamber, to both rotatably interlock said outer and inner components and anchor said shield.

3,288,497
COLLAR CONNECTOR
James A. Nydam, Grand Rapids, Mich., assignor of one-half to Clarence J. Brashler, Grand Rapids, Mich.
Filed Jan. 31, 1964, Ser. No. 341,695
2 Claims. (Cl. 285—138)



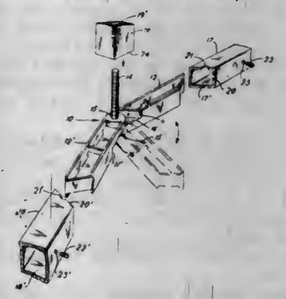
1. A removable gas conduit connector comprising: an elongated, hollow sleeve; an expandable annular connecting and sealing iris in said sleeve; said iris being formed of a plurality of axially elongated strips joined on one end into an annulus; said annulus being sealingly affixed to the inner peripheral wall of said hollow sleeve adjacent one end of said sleeve; said strips being convergent together in a radially inward tapered manner, into an overlapping spiraled relationship from said annulus, and being divergent at the ends opposite said annulus; each strip engaging in substantially a fluid tight manner the adjacent strip for substantially its entire axial length; said convergent overlapping strips forming a central annular opening therebetween; said strips being expandable toward said sleeve against their inherent bias, whereby a gas conduit inserted axially into said sleeve expands said iris to form a fluid tight connection therewith.

3,288,498
COUPLING FOR ANGLE COCKS
Henry R. Billeter, Deerfield, Ill., assignor to Sloan Valve Company, Chicago, Ill., a corporation of Illinois
Original application Oct. 22, 1963, Ser. No. 318,026, now Patent No. 3,184,212, dated May 18, 1965. Divided and this application Aug. 18, 1964, Ser. No. 390,436
1 Claim. (Cl. 285—334.1)



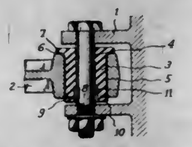
In a pipe connection for use in connecting an angle cock body inlet with the air pipe of a railway car, means providing a shock-proof, leak-proof, and locked in connection between said air pipe and said body inlet, said connecting means comprising an annular pipe adapter threaded onto the end of said air pipe and inserted in the body inlet, the end of said pipe adapter and the inner end of said body inlet having tapered surfaces in abutting relationship, the end of said pipe adapter extending beyond the end of said air pipe, an annular flexible packing sleeve surrounding said air pipe and with its outer surface in contact with the inner surface of said body inlet, said packing member extending a substantial distance along said air pipe to provide extensive sealing contact between said air pipe and said body inlet, one end of said flexible packing sleeve abutting the end of said pipe adapter opposite its tapered end, a lock nut slidable around said air pipe and having threaded engagement with said body inlet, said lock nut abutting the opposite end of said flexible packing sleeve for squeezing said flexible packing sleeve against said pipe adapter and between said air pipe and said body inlet, and a thin slip friction washer around said air pipe and between said lock nut and said packing sleeve, said slip friction washer having prongs extending therefrom imbedded in said packing sleeve to prevent rotation of said friction washer as said lock nut is being tightened, said air pipe being so arranged as to be out of direct contact with the inner walls of said body inlet to thereby reduce possibility of fatigue and breaking of said air pipe under excessive repeated vibration and shocks.

3,288,499
ADJUSTABLE GUSSET STAY FOR SUPPORT STRUCTURES
Stuart J. Morrissey, 28 Norwood Road, Port Washington, N.Y.
Filed Mar. 4, 1963, Ser. No. 262,506
5 Claims. (Cl. 287—54)



1. A joint for use in forming support structures comprising in combination with tubular structural members telescopically associated with an adjustable gusset stay and anchoring means to releasably secure said structural members in fixed position, said gusset stay including a pair of substantially complementary elongated members, each of said members having a flanged surface formed at an end thereof, said flanged portions disposed in overlapped face-to-face contact and the surfaces of said members adapted to lie substantially in the same plane, said flanges each having a bore formed transversely therethrough, means disposed in and extending through said bores for pivotally mounting said members, said structural tubular members being each provided with a groove at the end adjacent said pivotally mounting means, stop means formed on said elongated members for limiting the angular displacement between said elongated members, said gusset stay elongated members being telescopically positioned within the respective bores of said tubular members and being encased therein and means mounted on said tubular members for releasably securing said elongated member therein, said anchoring means encased in another tubular member and releasably engaging the inner surface thereof, said anchoring means including compressible members and fastening means for releasably securing said anchoring means onto said means for pivotally mounting said members in fixed locking position, thereby forming a three-dimensional joint for said support structure.

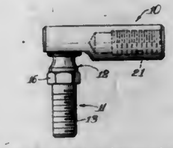
3,288,500
FLEXIBLE JOINTS
Denis Hamel, Saint Maude, Seine, France, assignor to Societe Anonyme dite: Pneumatiques, Caoutchouc Manufacture et Plastiques Kleber Colombes, Colombes, Seine, France
Filed May 4, 1964, Ser. No. 364,675
Claims priority, application France, May 10, 1963, 934,541
3 Claims. (Cl. 287—85)



1. A flexible joint comprising a sleeve of elastic material, a cylindrical internal bush located within and bonded to said sleeve, a cylindrical external bush located outside and bonded to said sleeve, one end of said external bush having a radially outwardly directed exterior flange, the adjacent end of said sleeve having a raised rim, said exterior flange being located axially within said raised rim, the other end of said external bush having a radially inwardly-directed flange, the end of said sleeve adjacent said inwardly-directed flange being formed with a raised edge that is of harder texture than the remainder of the sleeve, and said inwardly-directed flange being axially within said raised edge.

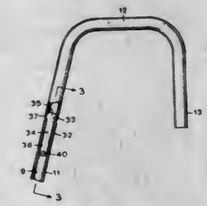
3,288,501
BALL JOINT
William D. Ross, Winnetka, and Donald K. Moeller, La Grange Park, Ill., assignors to J. J. Tourek Mfg. Co., Chicago, Ill., a corporation of Illinois
Filed Oct. 22, 1962, Ser. No. 231,936
8 Claims. (Cl. 287—90)

8. A ball joint for connecting two members together, comprising a ball screw and a shell, said ball screw including a generally spherical ball at one end and being adapted to be attached at its other end to one of said two members, said shell being generally cylindrical longitudinally and having a cavity adapted to receive said ball and formed in one longitudinal side thereof, said cavity being sufficiently deep that the center of said ball is within said cavity, the portion of said shell about the opening of said cavity being substantially flat and substantially normal to the axis of said cavity, and a substantially circular



step formed on said shell within the boundaries of said flat portion around said opening of said cavity, said step extending radially of the cavity inwardly into engagement with said ball and decreasing the opening of the cavity and preventing said ball from being withdrawn from said cavity.

3,288,502
SWIVEL CONNECTION
Cletus Romay, St. Louis, Mo., assignor to Welsh Co., St. Louis, Mo., a corporation of Missouri
Filed June 15, 1964, Ser. No. 375,148
5 Claims. (Cl. 287—91)

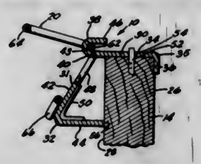


1. A swivel connection comprising:
(a) a pair of tubes,
(b) one of the tubes having its end reduced and rotatably interfitting loosely in the end of the other tube for relative rotation of the tubes, the reduced tube end providing an internal annular shoulder facing away from the reduced tube end.
(c) a bar having a head and an elongate shank, the head rotatively engaging the shoulder and the shank extending through the reduced tube end and into the other tube end, and
(d) means attaching the shank to the other tube and so as to preclude relative rotation of the bar and said other tube,
(e) the reduced tube end rotating freely in the other tube end while the bar head rotatively engages the internal shoulder to enable such rotation of the tube ends and to preclude detachment of the tube ends.

3,288,503
SPRING CLIP
Walter V. Slominski, Lexington, Ky., assignor to Hoover Ball and Bearing Company, Saline, Mich., a corporation of Michigan
Filed May 4, 1964, Ser. No. 364,630
1 Claim. (Cl. 287—189.35)

A clip for attaching a wire spring to a frame rail, said clip comprising a body formed from a substantially rectangular plate having an outer surface and shaped to form a top portion provided with a pair of ends, said body having a brace portion formed integral at one of its ends with one end of said plate top portion and arranged relative thereto such that at least a part of said brace portion is inclined with respect to said plate top portion so that the included angle therebetween is between 90° and 180°,

said body brace portion having a portion thereof cut out and bent out of the plane of said brace portion so as to form upwardly extending integral hook means on said body located at said one end of said top plate portion, said



hook means having an inner surface formed by the outer surface of said plate, and a brace leg integral with the opposite end of said brace portion and extended therefrom in a substantially parallel spaced relation with said top plate portion.

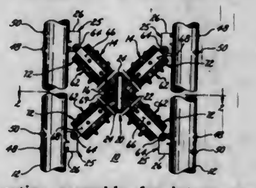
ERRATUM

For Class 287—189.36 see:
Patent No. 3,288,489

3,288,504
STRUCTURAL BRACE

William D. Briggs, Dolton, Ill., assignor to Joslyn Mfg. and Supply Co., Chicago, Ill., a corporation of Illinois

Filed Aug. 29, 1963, Ser. No. 305,431
4 Claims. (Cl. 287—189.36)



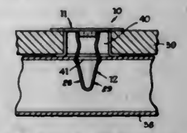
4. A connecting assembly for interconnecting a pair of structural members, said connecting assembly including a bracket having a pair of flanges adapted to be secured to one of said structural members and abut the surface thereof and a web structure extending outwardly thereof away from said member; and connector means mounted adjacent an end of the other structural member for connection to said bracket web structure, said connector means including a pair of straps extending outwardly from the end of said structural member and adapted to lie on opposite faces of said web structure for connection therewith, one of said straps comprising a Z-shaped member having an intermediate leg overlying the end of said other structural member, said connector means including a U-shaped strap having a pair of legs secured to said other structural member and a bight portion overlying said intermediate leg of said Z-shaped strap.

3,288,505
FASTENERS

Clifford Alexander Seckerson, Iver Heath, England, assignor to United-Carr Incorporated, a corporation of Delaware

Filed Jan. 28, 1964, Ser. No. 340,732
Claims priority, application Great Britain, Feb. 1, 1963, 4,319/63
4 Claims. (Cl. 287—189.36)

1. A two-part fastener for securing two members together comprising a resilient sheet metal stud and a sheet metal retainer, said stud being in the form of an open loop having two limbs joined by a web, inwardly directed feet at the free ends of each limb and an outwardly directed elbow in each limb for snap engagement through an aperture in one of the member to be secured, said retainer having a substantially flat body for engaging the upper surface of one of the member to be secured, a pair of legs depending from said body at substantially right angles thereto and having means for engaging the undersurface of the member and a shelf having opposed sides extending from said body in generally the same

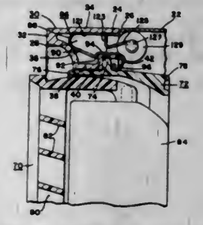


direction as said legs and a base spaced from said body and joining said sides, said stud being secured to said retainer by the snap engagement of said limbs and said feet with said shelf, said feet overlying the base of said shelf between said sides, at least one of said stud and said retainer having means to prevent the limbs of said stud from becoming jammed in said retainer when said stud is snapped into the aperture in one of the members to be secured.

3,288,506
REFRIGERATING APPARATUS

Carl E. Cline, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed June 22, 1964, Ser. No. 376,876
4 Claims. (Cl. 287—189.36)



1. In combination, a first member having a cavity therein having a mouth and provided with a first surface on one side of the cavity and an opposite surface on the opposite side of said cavity, one of said surfaces being provided with a shoulder, a spring member extending within the cavity having a reverse bend forming two arms extending from the bend toward the mouth of the cavity, one of said arms having substantial areas fitting substantially upon and bearing against substantial areas of one of said surfaces and the other of said arms having substantial areas bearing against the other of said surfaces, one of said arms having a first means for engaging said shoulder to hold it in place, a third member extending substantially into contact with said first member and provided with a hump, one of said arms having a second means for engaging said hump to hold said first and third members substantially in contact, said spring member being tensioned to press said second means into engagement with said hump.

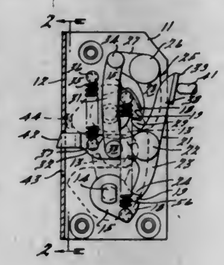
3,288,507
DOOR LOCK

John H. Roethel, South Miami, Fla.
(5455 SW. 87th St., Miami, Fla.)

Filed Sept. 14, 1964, Ser. No. 396,294
12 Claims. (Cl. 292—53)

1. In a latch mechanism for a swinging door,
a support having a plate portion for disposition at the free edge wall of the door,

a pair of latch device means pivotally mounted on said plate portion for counterswinging movement from an unlatched position to a latched position.
a pair of detent means each pivotally mounted on said plate portion for engagement with a respective one of said latch device means to hold the same in latched position,
coupling means coupling said detent means to each

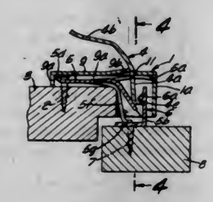


other for movement in unison to and from latch device means engagement,
said coupling means comprising a link pivotally connected at each of its ends to a respective one of said pair of detent means,
and manually operable means engageable with one of said detent means to actuate the same and thereby the other of said detent means in detent disengaging direction.

3,288,508
CATCH FOR CABINET DOORS AND THE LIKE

James W. Maize and Raymond N. Du Shane, Jr., Fullerton, Calif., assignors to Hyer Hardware Mfg. Co., Anaheim, Calif., a corporation of California

Filed Aug. 6, 1964, Ser. No. 387,968
8 Claims. (Cl. 292—128)

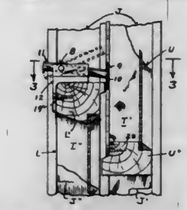


1. A catch unit for a cabinet door or the like comprising: a housing having a wall having inner and outer sides and provided with a slot; a combined handle and catch member having a portion formed as a catch element to releasably latch with a strike when engaged therewith, and a portion formed as a handle; said member being extended through said slot with the catch portion disposed inwardly of the inner side of said wall and the handle portion disposed on the outer side of said wall; said member having shoulders engaging said outer side of said wall as fulcrums to support said member on the housing for movement relative thereto; a fastener plate within said housing having resilient portions straddling and engaging said member to connect said member to said housing for movement relative thereto; and spring means carried by said plate and disposed between and in inwardly spaced relation to said resilient portions and biasing said member for effecting releasable latching engagement of said catch element with said strike.

3,288,509
WINDOW SASH LATCH

Louis Galena, 6231 Hilton St., Oakland, Calif.

Filed June 29, 1964, Ser. No. 378,735
3 Claims. (Cl. 292—238)

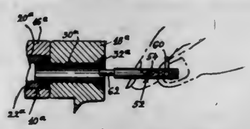


1. In a means for normally preventing an increased relative opening movement of a pair of mutually parallel and lapped outer upper and inner lower sash in a framed window opening for their relative adjustment in the opening between limited open and closed positions with respect to the top and bottom of the opening, means on an upright member of the outer sash providing an upright line of inwardly-opening bolt-receiving recesses, a rigid and straight elongated bolt member carried on and transversely across the inner sash, means hingedly and intermediately mounting the bolt member nearer the inner end thereof on the lower sash for its limited swinging in an upright plane transverse to that of the window opening and including said line of recesses and about a fixed intermediate horizontal axis therefor with respect to the mounting sash to provide oppositely directed arm portions thereof with the outwardly-directed bolt arm terminating in a working end portion selectively engageable in a said recess to normally hold the sash of the pair against relative opening movements while the upper edge of the working end of the bolt is slightly downwardly inclined and in engagement with a part of said mounting means while a ratcheting relative closing movement of the sash is permitted, said bolt being swingable upwardly about said axis for a disposal of its recess-engaging extremity inwardly of the opposed recess side bar of the outer sash and its other said arm downwardly inclined and in engagement with a second part of said mounting means to then disengage the sash for their free relative adjustment in the window opening and the other said arm being constantly exposed inwardly of said hinging means for its direct manual engagement from above for effecting said upward swinging of the bolt through a relatively small acute angle to provide free adjustability of the sash.

3,288,510
WINDOW SASH LOCKS

Martin J. Gough and Marion E. Gough, both of 35—30 94th St., Jackson Heights, N.Y.

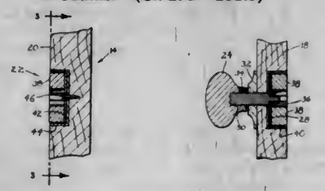
Filed Aug. 3, 1965, Ser. No. 476,917
1 Claim. (Cl. 292—251)



A locking device for windows, comprising an internally and externally screw threaded sleeve member adapted to be mounted in a recess in a frame member of a window sash, said sleeve member having a slotted end, an elongated hollow screw member adapted to be mounted in an opening in an oppositely disposed frame member of another window sash, a head on one end of the screw member, said head having a cross slot

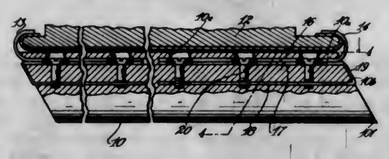
communicating with the hollow interior of the screw, and a tool for actuating said screw normally removably mounted in the hollow interior thereof, said tool having a hollow cylindrical body with a slot intersecting one end thereof, a pin hingedly and slidably carried by the body at the slotted end adapted to be swung through said slot to an axial position in the body and to a position at right angles to the body to serve as a handle, the other end of the body being closed and formed with a screw driver edge for insertion into the cross slot in the head of the screw when the tool is removed from the interior of the body of the screw.

3,288,511
TWO-PART MAGNETIC CATCH FOR DOORS OR THE LIKE
John B. Tavano, 28 Edgewood Ave., Torrington, Conn.
Filed July 20, 1965, Ser. No. 473,454
4 Claims. (Cl. 292—251.5)



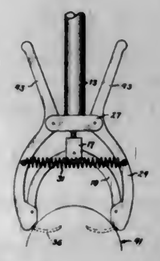
1. A magnetic catch for a door which is adapted for movement into and out of a door frame for closing the doorway defined therein, said catch comprising a first magnet retaining member, means for mounting said first member on said door, a first plurality of permanent magnets carried by said first member and having a series of exposed pole faces circumaxially arranged around said first member, each such pole face having a polarity opposite that of the two pole faces adjacent thereto in said first member, a second magnet retaining member generally similar to said first member, means for mounting said second member in said door frame so that the respective axes of said annular members are in registered relation when said door is closed in said doorway, a second plurality of permanent magnets carried by said second member and having a series of exposed pole faces circumaxially arranged around said second member, each of said last-mentioned pole faces having a polarity opposite that of the two pole faces adjacent thereto in said second member, and said means for mounting at least one of said magnet retaining members including suitable adjustment means for prepositioning that member in any desired angular relation with respect to the other of said members whereby the magnetic closing force exerted on said closed door can be preset to any desired value.

3,288,512
RESILIENT CAR DOOR PROTECTOR
Stanley V. Zientara, 5243 S. Normandy Ave., Chicago, Ill. 60638
Filed Oct. 21, 1965, Ser. No. 499,598
3 Claims. (Cl. 293—1)



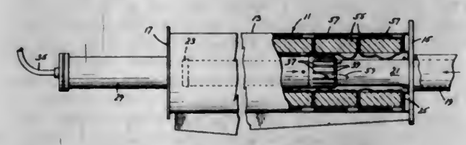
1. A protector applicable to a door of a motor car to protect an adjoining car from injury when the door is opened, comprising a strip of resilient material applied to the exterior of the door, hooks endwise of the strip and engageable with the sides of the door to hold the strip to the same, the strip being made with slots from the ends and means clamping the portions of the strip between the slots, such means carrying said hooks.

3,288,513
GAFF HOOK
David Atwood Behrick, 948 Alder St., Chico, Calif.
Filed Nov. 23, 1964, Ser. No. 413,088
2 Claims. (Cl. 294—19)



1. A gaff hook comprising:
(a) an elongated shaft;
(b) a cylinder mounted coaxially on one end of said shaft, said cylinder having an axial bore therethrough;
(c) a plunger slidably disposed within said bore;
(d) a pair of jaws pivotally mounted on said cylinder adjacent the end thereof, said jaws including a pair of hand grips capable of biasing said jaws toward an open position as said grips are moved toward each other;
(e) spring means for biasing said jaws toward a closed position; and,
(f) a pair of levers pivotally mounted at one end adjacent the ends of said jaws and at the other end on the distal end of said plunger, said levers being disposed in an over-center locking attitude in fully projected position of said plunger, said levers biasing said plunger toward retracted position within said bore as said distal end of said plunger is moved beyond center position in a direction toward said cylinder.

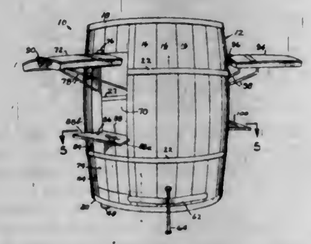
3,288,514
YARN PACKAGE EXTRACTING APPARATUS
Horace P. Fry, Jr., West Chester, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Apr. 7, 1965, Ser. No. 446,358
7 Claims. (Cl. 294—87.2)



1. Apparatus for removing annular yarn packages from a tubular package treating enclosure having a wall disposed across one end thereof and an elongated liquid distributor projecting through said wall and extending substantially centrally of the contained yarn packages,

said apparatus including an annular disk normally positioned adjacent to the wall of the enclosure and adapted for movement longitudinally of the enclosure and along the liquid distributor, a hollow arm adapted to telescope over the liquid distributor as it is inserted into annular yarn packages contained within the enclosure, and cooperating means on said disk and hollow arm for locking the same together whereby withdrawal of said hollow arm from the enclosure causes the disk which is locked thereto to urge the annular yarn packages from the enclosure.

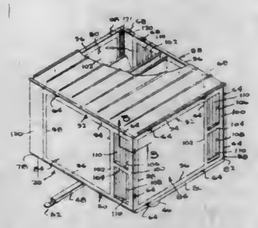
3,288,515
MOBILE CONCESSION STAND
Boyd W. Glover, 7001 S. Country Club Drive, Oklahoma City, Okla.
Filed Aug. 19, 1964, Ser. No. 390,707
1 Claim. (Cl. 296—22)



A mobile concession stand, comprising: a substantially hexagonal shaped frame having a central tongue forming a trailer hitch; a frame leveling support connected with the respective end portion of said tongue; a pair of wheels connected to opposing sides of said frame; a downwardly open upright wooden barrel shaped body mounted on said frame in surrounding relation with respect to the wheels and frame sides, said body having an outer wall composed of a plurality of staves forming the barrel shape, said body having an inner substantially cylindrical wall above said frame; a plurality of studs interposed between the inner and outer walls of said body forming a heat and cold insulating space therebetween, said body having rectangular door openings through its walls above said frame and having a wheel access opening in the depending portion of its wall outwardly of each respective said wheel; frame braces connecting the sides of said frame to the depending ends of said studs; a floor overlying said frame within the inner wall of said body; a door hingedly connected to said body above each opening for vertical swinging movement in opening and closing the openings, said doors each having outer and inner surfaces complemental with respect to the outer and inner walls of said barrel shape; door brace members connected with each respective door and removably connected with the wall of said body forming the opening for holding said door in a plane normal to the vertical axis of said body to form a sunshade; a panel hingedly connected to said body at the upper limit of the respective wheel access opening, each said panel having an outer surface complemental with respect to the outer wall of said barrel shape; and a horizontally disposed counter removably supported by the wall of said body forming the respective opening.

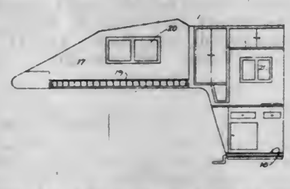
3,288,516
CONVERTIBLE VEHICLE TRAILER
Joseph Lewis, 10380 SW. 38 Terrace, Miami, Fla.
Filed Apr. 7, 1964, Ser. No. 358,035
13 Claims. (Cl. 296—23)

1. An elongated substantially rectangular cabana or room, said cabana comprising an elongated substantially rectangular stationary patio, a pair of laterally-spaced horizontally-elongated normally upright substantially rectangular sidewalls and a pair of longitudinally-spaced normally upright substantially rectangular end walls, said end walls projecting laterally from the remotely-disposed ends of one of said sidewalls and engaging against the other of said sidewalls intermediate the ends thereof, said end walls each having an upper end inclined downwardly from said other of said sidewalls toward the upper end of said one of said sidewalls, means detachably connecting the remotely-disposed sides, respectively, of said one of said sidewalls with the adjacent sides of said end walls,



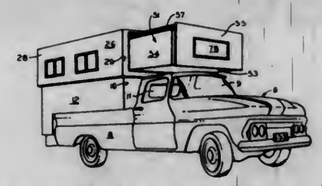
means detachably connecting said other of said sidewalls with, respectively, the other adjacent sides of said end walls, means detachably connecting the lower end of said one sidewall and the lower ends of said end walls to said patio, an elongated substantially rectangular roof extending across and being supported on said upper ends of said end walls and on the upper ends of said one sidewall, means detachably connecting said roof with said upper end of said one sidewall, means projecting laterally from the other of said sidewalls detachably connecting said roof thereon, and ingress and egress means disposed in said other of said side walls.

3,288,517
CAR TOP CAMPER
Emmanuel Bender, 8742 French St., Apt. B, Vancouver, British Columbia, Canada
Filed June 2, 1964, Ser. No. 371,912
1 Claim. (Cl. 296—23)



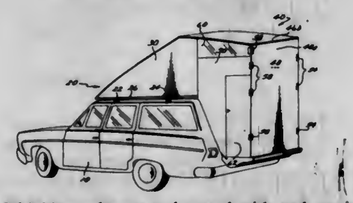
A camper for attachment to a motor vehicle comprising an L-shaped hollow body mounted on the vehicle so that one portion extends longitudinally of the roof to form a sleeping compartment and the other portion extends vertically of the rear end of the vehicle to form a kitchen compartment, said kitchen compartment having a section extendable rearwardly, a pair of spaced parallel tubular members secured to the frame of the vehicle adjacent the bottom of the kitchen compartment, a second pair of tubular members secured to the bottom of the kitchen compartment and projecting therefrom for telescopic engagement with said first pair of tubular members, a third pair of tubular members secured to the bottom of said extensible section of said kitchen compartment for telescopic engagement with said second pair of tubular members, a bumper secured to the rear wall of said extensible section having a loop at each end and adjustable vertical posts disposed in the loops of said bumper for supporting the extensible section when extended.

3,288,518
CAMPER VEHICLE BODY
Joseph E. Oliver, Le Grand, Calif., assignor of ten percent to Lester J. Gendron, Madera, Calif., ten percent to Pete Curutchet or Mildred Curutchet, seven and one-half percent to Dan C. Fore or Deanna Fore, six and one-half percent to W. H. Baker or Lorene Baker, and four and one-half percent to L. H. Bowen or Milly B. Bowen, all of Chowchilla, Calif.
Filed Sept. 24, 1964, Ser. No. 398,852
6 Claims. (Cl. 296—23)



1. A camper vehicle body comprising:
a. a lower enclosure including a pair of parallel side walls and a front wall joining said side walls;
b. an upper enclosure including a pair of parallel lateral walls and a forward wall having an opening therein;
c. means for mounting said upper closure on said lower enclosure for movement between a lower position with said lateral walls and said forward wall overlying said side walls and said front wall and an upper position with said lateral walls and said forward wall higher than said side walls and said front walls;
d. a compartment;
e. means for suspending said compartment on said upper enclosure for movement through said opening between a position inside said upper enclosure and a position outside said upper enclosure; and,
f. means on said compartment overlying and closing said opening when said compartment is inside said upper enclosure and said upper enclosure is in said lower position.

3,288,519
FOLDABLE ENCLOSURE FOR VEHICLES
Glenn E. McFarland, 6321 Ulysses St., Wichita, Kans.
Filed Dec. 10, 1964, Ser. No. 417,415
5 Claims. (Cl. 296—23)



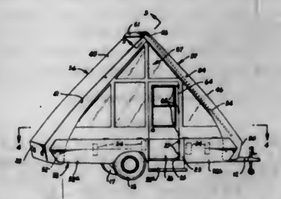
1. A foldable enclosure to be used with and carried by an automobile of station wagon style comprising in combination, a rigid platform secured to the top of the automobile, at least two rigid side members hingedly connected to said platform and individually movable from a vertical position to parallel relation with and on said platform, a rearwardly extending top member hingedly connected relative to the forward portion of said platform to parallel relation with and on said platform, and a rear enclosure unit to be supported on the tailgate of the station wagon comprising a rear top member hingedly connected to the rearward portion of said first-mentioned top member, a rear wall hingedly connected to said rear top member to be vertically positioned on the tail gate of said station wagon, and a pair of sidewalls hingedly connected to opposite sides of said rear wall to be vertically positioned on said tail gate on opposite sides of the rear opening to the passenger compartment of said station wagon, whereby said rear enclosure unit cooperates with said station wagon to provide an enclosure to the rear of said station wagon which cooperates with such side and top members to form a relatively large enclosure on top of and to the rear of said station wagon passenger compartment.

3,288,520
COLLAPSIBLE TRAILER
Klaus E. B. Krutzikowsky, 4331 N. Lowell, Chicago, Ill.
Filed Feb. 4, 1966, Ser. No. 525,228
9 Claims. (Cl. 296—23)



1. For use in a wheeled trailer having an open top body including a floor and opposed front and rear end walls and opposed side walls upstanding therefrom, a rigid roof, foldable side closure structure connected between the roof and the body, and retractable corner supports for holding the roof spaced vertically above the body with the side closure structure extended therebetween when the trailer is opened and for lowering the roof against the body when the trailer is closed, the improvement comprising the combination of opposing elongated support rails on the side walls, a bed frame extending between and being supported by the support rails, said support rails being located near the upper edges of the side walls above the level of the adjacent end wall to provide that the bed frame can be moved along the bed supports to extend over the adjacent end wall when the trailer is opened and can be moved to entirely between the side walls when the trailer is closed, said support rails further being spaced from the adjacent end wall distances slightly in excess of the corner supports to provide that the corner supports are disposed between the adjacent end wall and the bed frame in the trailer closed position, each of the corner supports including a pair of posts having connections at their remote ends, respectively, relative to the roof and the body, and having connections near their adjacent ends relative to each other, and all these connections being pivotal about axes that extend longitudinally of the trailer body to permit inward and outward articulation of the posts between the opened and closed positions of the trailer.

3,288,521
FOLDABLE A-FRAME TRAILER BODY
Leroy K. Patnode, 2011 Alba Road, Ben Lomond, Calif.
Filed May 27, 1964, Ser. No. 370,458
12 Claims. (Cl. 296—23)

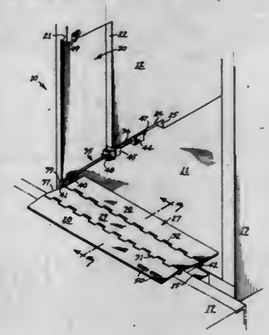


1. In a trailer comprising a frame having a draft tongue extending forwardly therefrom and at least one support

wheel disposed on either side thereof, an improved folding body comprising:
(a) a substantially rectangular floor received on and extending longitudinally of said frame;
(b) a pair of sidewalls extending, respectively, upwardly from the opposed longitudinal sides of said floor in fixed relationship with respect thereto, said side walls each extending forwardly and rearwardly of the support wheel adjacent thereto;
(c) a first door section interposed in one of said side walls to one side of the wheel adajacent thereto for movement between open and closed positions;
(d) a first substantially planar and rectangular roof panel hingedly secured adjacent one end thereof about an axis extending transversely between the rear end of said sidewalls for pivotal movement between a retracted position substantially parallel to and overlying said floor and an extended position forming an acute angle with respect to said floor;
(e) a second substantially planar and rectangular roof panel hingedly secured adjacent one end thereof about an axis extending transversely between the front and of said sidewalls for pivotal movement between a retracted position substantially parallel to and overlying said first roof panel in the retracted position thereof and an extended position forming an acute angle with respect to said floor wherein the free end thereof is in abutting engagement with the free end of said first panel in the extended position thereof;
(f) first and second substantially triangular side panels hingedly secured at one edge thereof, respectively, to each of said sidewalls for pivotal movement between a retracted position overlying and substantially parallel to said floor and an extended position wherein the edges thereof opposed to said one edge engage said roof panels when the latter are in extended engagement;
(g) a second door section interposed in the side panel secured to said one side wall so as to assume a position coextensive with said first door section when said panel is in extended position, said second door section, when coextensive with said first door section, being movable therewith between open and closed conditions and,
(h) counter balance means operatively associated with said roof panels to urge said panels into extended position; and wherein:
(1) the lengths of said first and second roof panels measured, respectively, between the axes about which they are hingedly secured and the free ends thereof are substantially equal; and,
(2) upon movement of said panels to the extended position, the free ends thereof abut along a line extending transversely of said frame and lying in a vertical plane substantially midway between said axes.

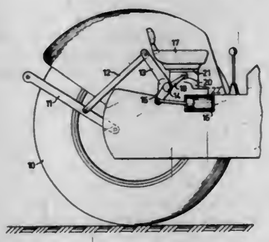
3,288,522
DOCK BOARD ASSEMBLY FOR A VEHICLE
Theodore A. Norton, 1018 Downey Drive, Nashville, Tenn.
Filed Mar. 1, 1965, Ser. No. 436,167
9 Claims. (Cl. 296—61)

1. A dock board assembly for the rear end of a vehicle having a floor and a side wall, comprising:
(a) a dock board having first, second and third leaves of substantially equal length,
(b) first hinge means for pivotally joining opposing longitudinal edges of said first and second leaves,
(c) second hinge means for pivotally joining opposing longitudinal edges of said second and third leaves,
(d) a cavity in said vehicle side wall opening toward the rear and inwardly toward said floor, said cavity being adapted to receive said dock board in an upright, inoperative position,
(e) a rod member fixed to said dock board to extend forwardly parallel to and adjacent one lateral edge of said dock board, and



(f) bearing means fixed to said vehicle to rotatably and slidably receive said rod member, so that said dock board may be moved rearwardly and pivoted inwardly to an operative position supported by said floor.

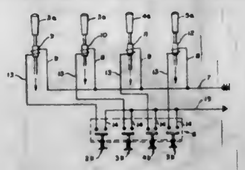
3,288,523
DRIVER'S SEATS FOR TRACTORS
Sven Erik Bolldén, Backagatan 4B, Norrkoping, Sweden, and John Elis Vifot, Kyrkogatan 29, Skurup, Sweden
Filed Apr. 17, 1964, Ser. No. 360,666
Claims priority, application Sweden, June 7, 1963, 6,321/63
3 Claims. (Cl. 296—65)



1. In a tractor having a power hitch for connection of an implement to the tractor, said power hitch including hitch arms mounted on the tractor of vertical adjustment thereon by pivotal movement of said arms about an axis extending transversely of the tractor, the combination comprising a driver's seat, means mounting said seat on the tractor for pivotal movement in relation to the tractor about an axis extending substantially in the longitudinal direction of the tractor, a first element connected to said power hitch mounted to a move proportionately with the power hitch, a second element connected to the driver's seat and spaced on one side of the pivot axis thereof, said first element located in abutting engagement with said second element when said hitch arms are located between an intermediate position of pivotal movement and a fully pivoted movement, said elements movable with respect to each other whereby said first element is engageable with said second element after an initial lost motion when said power hitch is moved from an upper end position, to raise the driver's seat on said one side of the pivot axis and thereby to tilt the driver's seat from its normal position relative to the tractor about the pivot axis thereof in dependence on and proportionally to continue downward

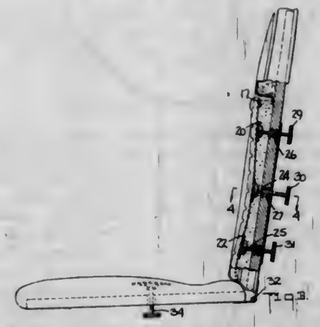
movement of the power hitch below a predetermined adjusted position.

3,288,524
AUTOMOBILE DOOR SAFETY LOCK
Edward L. Gordon, 2001 Center Ave., Pittsburgh, Pa.
Filed Nov. 23, 1964, Ser. No. 412,988
1 Claim. (Cl. 296—146)



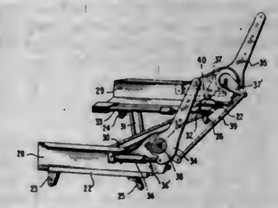
An automobile having a plurality of doors, each provided with a lock and a vertically movable latching plunger mounted on the door on the inside of the automobile, electrical control means mounted inside the automobile near the position of the driver comprising a plurality of electrical switches, each in circuit relationship with one of said plunggers, each of said plungers having a stem with an electromagnetic core mounted thereon and surrounded by an electrical coil for attracting the core downwardly in response to depression of one of said switches so as to effect downward and locking movement of the corresponding plunger, together with a latch on said stem, and a horizontally movable plunger and solenoid core having a stem for effecting latching engagement with said latch so as to prevent upward lifting movement of the plunger from the locking position, and a second control switch for effecting energization of said second solenoid to effect unlatching and permit lifting movement of said vertically movable plunger.

3,288,525
ORTHOPEDIC CHAIR
Donald B. Cerf, 309 E. Live Oak, San Gabriel, Calif.
Filed May 17, 1965, Ser. No. 456,352
5 Claims. (Cl. 297—284)



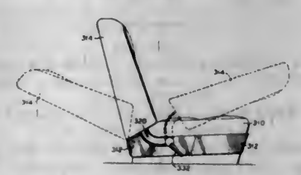
1. An orthopedic chair having a seat and a back, said seat and said back each having a contourable portion constituted by a rigid backing, a flexible diaphragm and an elastomeric layer interposed therebetween, and means to impart a curvature to the diaphragm producing a desired contour appropriate to a particular occupant, said means acting on the diaphragm on the back being constituted by a plurality of rods coupled at spaced positions to said diaphragm and projecting rearwardly through the rigid backing, the axial positions of said rods with respect to said rigid backing being adjustable to impart a curvature to said diaphragm whose profile conforms to the back curvature of the occupant.

3,288,526
SEAT CONSTRUCTION
Ernst J. H. Fiala, Berlin, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Sept. 2, 1964, Ser. No. 393,961
Claims priority, application Germany, Sept. 6, 1963, D 42,414
9 Claims. (Cl. 297—354)



1. A vehicle seat especially for motor vehicles having floor means, which is displaceable in the longitudinal direction and is adapted to be moved by an auxiliary force, comprising:
- a seat frame structure including seat frame means and back rest frame means,
- said seat frame means including guide rail means and lateral frame parts guided in said guide rail means,
- first adjusting means operatively connected with said frame structure for displacing said frame structure including the seat frame means in the longitudinal direction,
- second adjusting means for driving said seat frame structure including said seat frame means and said back rest frame means to a selective position of rest in one of a plurality of positions about a transverse vehicle axis through said seat frame means intermediate a first position wherein said seat frame means is horizontal and a second position wherein said seat frame means is tilted several degrees from the horizontal,
- and third adjusting means operatively connected with said lateral frame parts for pivoting said back rest frame means relative to said seat frame means.

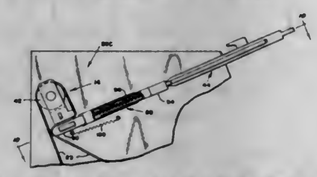
3,288,527
MOVABLE SEAT BACK
Jack E. Martens, Bloomfield Hills, Mich., assignor to The Anderson Company, a corporation of Indiana
Original application May 9, 1963, Ser. No. 279,288. Divided and this application July 7, 1965, Ser. No. 470,027
1 Claim. (Cl. 297—355)



In a seat and positionable back rest, structure for positioning said positionable back forwardly and rearwardly of an upright position comprising:
- a first plate having depending side members positioned astride and pivotally connected to said seat to permit forward and rearward tilting of said structure about said connection,

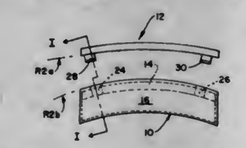
- said plate adapted to abut against said seat to arrest further pivotal movement in a rearward direction,
- a second plate fixedly supporting said back rest and being hingedly connected to said first plate along adjacent rearward edges for permitting pivotal movement of said second plate relative to said first plate from an upright position to a position rearwardly of said upright position,
- and a position-holding device operatively connected at one end to said back rest at a position above said hinged connection and at its other end to said structure so as to selectively hold said back rest in selected position relative to said structure.

3,288,528
RETRACTABLE SAFETY BELTS
Richard G. Board, Bethesda, Md. (3000 Connecticut Ave., Washington, D.C.), and Nelson H. Shapiro, Hyattsville, Md. (640 Washington Bldg., Washington, D.C.)
Filed Feb. 12, 1964, Ser. No. 344,418
2 Claims. (Cl. 297—388)



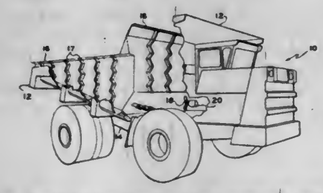
1. In a retractable seat belt or the like, a casing, a strap arranged for extensile and retractile movement with respect to said casing, a strap fastener, said casing having means for receiving and releasably retaining said fastener, and means responsive to initial insertion of said fastener in said casing for preventing extensile movement of said strap, said receiving and retaining means comprising means permitting further insertion of said fastener to increase strap tension and for retaining said fastener after said further insertion, said extensile movement preventing means comprising a lost-motion coupling engaged by said fastener.

3,288,529
BACKREST CONSTRUCTION FOR CHAIRS AND THE LIKE
George Koch, Cobourg, Ontario, Canada, assignor to Steelcase, Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Oct. 21, 1965, Ser. No. 499,559
3 Claims. (Cl. 297—460)



1. A backrest construction for chairs and the like, comprising in combination: a longitudinally curved backrest structure connectable to a chair assembly; a longitudinally curved outer panel for covering the rear of said backrest structure; said backrest and panel having different degrees of curvature and at least one of the same being resiliently deformable by flexing, to conform its curvature to that of the other; means defining at least one recess in one of said backrest and panel; at least hooking member operatively secured relative to the other of said backrest and panel; each such hooking member shaped and located so as to be insertable within one such recess to engage therewith; when said backrest and panel are resiliently flexed into conformity with each other; said hooking member holding the resiliently conforming backrest and panel closely together when so engaged with said recess, and said resilient flexing simultaneously holding said hooking member and recess in firm engagement with each other; and means for maintaining said hooking member and recess in engagement, to retain said panel in place against said backrest.

3,288,530
TRUCK
Wayne H. McGlade, Peoria, Ill., assignor to LeTourneau-Westinghouse Company, Peoria, Ill., a corporation of Illinois
Filed Nov. 16, 1964, Ser. No. 411,501
3 Claims. (Cl. 298—17)

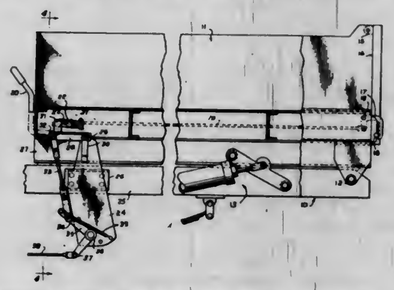


3. In a truck for hauling hot material such as slag wherein the truck has a dump body including a bottom, side walls, and an end wall, said body being mounted on said truck for pivotal movement between a raised position and a lowered position, the improvement comprising:
- a removable liner including a bottom, side walls, and an end wall, said liner having a shape complementary to said body and positioned therein,
- baffle means heat conductively and fixedly secured to said liner bottom, side walls and end walls, said baffle means supporting the liner in spaced relation to said body by abutment against said body,
- fastening means securing the liner at selected points only to said body,
- a fan associated with said body,
- drive means for rotating said fan,
- a duct for receiving the output from the fan,
- and said body having an opening therein in fluid communication with said duct for directing the output of said fan in the space between said body and said liner and about said baffle means,
- whereby removal of said fastening means permits simultaneous removal of said liner and said baffle means as a unit.

3,288,531
TAIL GATE CONTROL MECHANISM FOR DUMP TRUCKS
William A. Bartsch, 2002 W. Illinois, Dallas, Tex.
Filed June 24, 1965, Ser. No. 466,621
4 Claims. (Cl. 298—23)

1. In combination with a dump vehicle having a cab, and having a frame extending rearwardly of the cab, a bed supported on the frame and pivotally connected thereto, rearwardly thereof, and having hydraulic means for raising and lowering the bed about its pivotal connections with the frame, a tail gate pivotally connected to opposite sides of the bed adjacent the top thereof, and latch means for securing the tail gate in its closed position including a pair of pins extending laterally outwardly from opposite sides of the tail gate near the bottom thereof, a pair of substantially C-shaped latch elements pivotally connected intermediate their ends to opposite sides of the bed and engageable over said pins in one position thereof, a pair of elongated connecting rods each having one of its ends pivotally connected to one of said latch elements and extending longitudinally of the bed,

on opposite sides thereof, and a crank forwardly of the bed including a shaft extending transversely of the bed and journaled thereon for rotation about its axis, and an elongated lever and a relatively shorter crank arm rigidly connected to opposite ends of said shaft, perpendicular to said shaft and in parallel relation to each other, the ends of said connecting rods opposite said latch elements being pivotally connected to an intermediate portion of said lever and an end portion of said crank arm whereby said latch elements are movable in and out of latching engagement with said pins by operation of said crank, the combination of an elongated lug having one of its ends rigidly and removably connected to said crank shaft intermediate its ends, in substantially parallel relation to said crank arm and the adjacent end portion of said lever, and movable rotatively with said crank shaft from a first position, in which it extends forwardly of said crank shaft, to a second position in which it depends therefrom, a planar supporting element below said elongated lug, in laterally spaced relation thereto, parallel to the longitudinal axis of the frame, rigidly and removably connected to the inner side of a longitudinal frame member, in spaced apart relation thereto, and



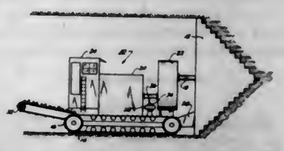
extending above and below it, between opposite sides of a sub-frame supporting the bed, an elongated cam member having one of its ends pivotally connected to said planar supporting element, immediately below said elongated lug, and movable pivotally about an axis parallel to and below said crank shaft, in laterally spaced relation thereto, said cam member being movable upwardly about its pivot, in abutting engagement with said elongated lug, whereby said crank shaft is rotated about its axis and said latch elements are engaged with said pins, said cam member having an integral inverted U-shaped member on the end thereof opposite its pivot engageable over the end of said elongated lug opposite said crank shaft in the forwardly extending position of said lug whereby said crank shaft is secured against rotation about it axis, and manually operable means including a lever in the cab of the vehicle and linkage operatively connecting said lever to the end of said cam member opposite its pivot whereby said cam member is urged upwardly about its pivot in abutting engagement with said elongated lug, in the depending position of said lug, to secure said tail gate in its latched position, by manipulation of said last mentioned lever.

3,288,532
CONTINUOUS MINING MACHINE AND METHOD
Harold E. Carver, Brea, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed Mar. 10, 1964, Ser. No. 350,877
29 Claims. (Cl. 299—18)

1. A method of continuous mining in a subterranean formation comprising:

forming a substantially concave conical face having its vertex adjacent the point of deepest penetration into said formation, said face comprising a series of annular steps about its periphery which increase in diameter from said vertex rearward, each of said steps being formed by a radial face normal to the direction of penetration and an axial face parallel to the direction of penetration;

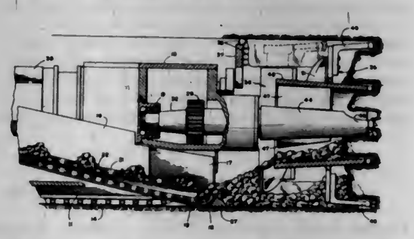
cutting peripheral grooves into said formation adjacent the interior angles formed at the juncture of said



axial faces with the adjacent next most forward radial face to form protruding annular cores of said formation, said grooves being concentric to and longitudinally disposed along the principal axis of penetration; and

severing said protruding cores from attachment to said formation by applying a shear force to the exposed faces opposite the deepest penetration of said grooves, said force being applied normal to said grooves.

3,288,533
CONTINUOUS MINING MACHINE
Joseph Gonski, Chicago, Ill., assignor, by mesne assignments, to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 5, 1964, Ser. No. 364,966
7 Claims. (Cl. 299—57)



1. In a continuous miner,

a mobile frame,

a conveyor carrier by said mobile frame and having a ground level inlet throat at the forward end portion thereof,

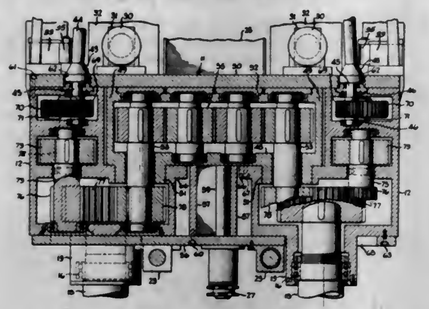
an auxiliary frame carried by said mobile frame and having cutting and dislodging means including a leading, central boring assembly flanked by a pair of lagging side boring assemblies effective to cut overlapping bores in a mine face,

said central boring assembly including a boring tube forward of and aligned with said conveyor throat and rotatable about an axis parallel to the direction of movement of said mobile frame,

said boring tube being open at front and back ends and having cutter means disposed along the front edge effective to cut and dislodge material within the area of the tube and transfer it directly backward through the open back end toward said conveyor throat,

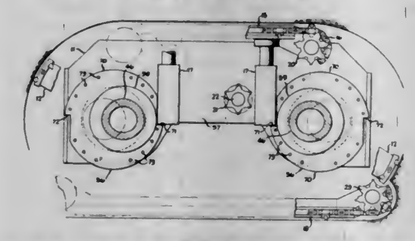
said central boring assembly having eccentric, peripheral cutting means effective to cut a diameter larger than said boring tube, said peripheral cutting means being rotatable to a position clear of the floor and roof.

3,288,534
CONTINUOUS MINER HAVING RELATIVELY ADJUSTABLE TRANSMISSION HOUSINGS FOR BORING SHAFTS
Joseph Gonski, Chicago, Ill., assignor, by mesne assignments, to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 22, 1964, Ser. No. 361,685
13 Claims. (Cl. 299—59)



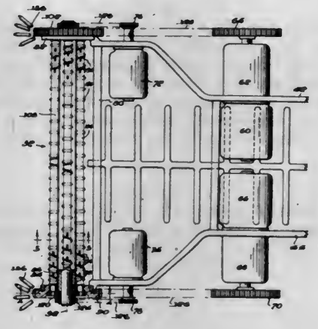
1. In a variable spacing multiple boring head assembly and in combination with a continuous mining machine, a main supporting housing, a plurality of parallel boring shafts supported by said main supporting housing, at least one auxiliary housing carried by said main supporting housing for pivotal adjustment about an axis parallel to one of said boring shafts, means detachably holding said auxiliary housing in adjustment with respect to said main housing said one boring shaft being carried by said auxiliary housing, transmission means carried by said main supporting housing for driving said boring shafts simultaneously including a connecting shaft extending between the main and auxiliary housings and journalled for rotation about the axis of pivotal adjustment of said auxiliary housing whereby the position of said one boring shaft on the main supporting housing can be varied by pivotally adjusting said auxiliary housing about said connecting shaft.

3,288,535
VARIABLE WIDTH BORING HEAD ASSEMBLY FOR CONTINUOUS MINING MACHINE
Joseph Gonski, Chicago, Ill., assignor, by mesne assignments, to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 22, 1964, Ser. No. 361,763
11 Claims. (Cl. 299—59)



1. In a variable width boring assembly for a multiple boring head continuous miner, a main supporting housing, a pair of horizontally spaced boring shaft adapters mounted on said housing, said adapters having a pair of parallel boring shafts rotatably supported thereon, each adapter having its corresponding boring shaft eccentrically located thereon, each adapter also being positionable on said housing in two operative positions, means detachably securing each adapter in position on said main supporting housing in each operative position thereof, each position being attained by rotation of the adapter in the housing with respect to the other position whereby the spacing between the boring shafts is adjustable to cut a narrow or a wide room, each boring shaft having a driven gear carried thereby and concentric therewith; driving gear means in said casing and meshed with said driven gears in the operative positions of said boring shafts, and motor means for driving said driving gear means.

3,288,536
MINING MACHINE
Alex J. Galis and Stephen A. Muldovan, Morgantown, W. Va., assignors, by mesne assignments, to Galis Manufacturing Company, Fairmont, W. Va., a corporation of West Virginia
Filed Oct. 25, 1963, Ser. No. 318,884
13 Claims. (Cl. 299—64)



1. A continuous mining machine comprising,

a body portion having a front end portion,

cutter head support means extending forwardly from said body front end portion,

a cutter head having a body portion and opposite end portions, said cutter head secured adjacent said opposite end portions to said cutter head support means,

said cutter head including cutter shaft support means,

a plurality of cutter shafts carried by said cutter shaft support means in parallel spaced relation to each other, said cutter shafts arranged in substantially parallel relation to said body front end portion,

said cutter shafts having a plurality of cutter bits extending radially therefrom,

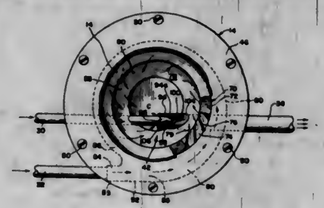
drive means to rotate said cutter head in said cutter head support means and to rotate said cutter shafts in said cutter shaft support means, and

other cutter means positioned adjacent both ends of said cutter head and adjacent said cutter head support means, said other cutter means arranged to cut a pair of vertical kerfs in the mine face, the distance between said vertical kerfs being greater than the lateral dimension of said body portion.

3,288,537
MEANS FOR HANDLING MATERIAL
Robert A. Hitch, Milford, N.J., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed July 26, 1965, Ser. No. 474,880
11 Claims. (Cl. 302—53)

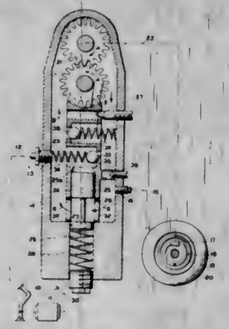
1. A material handling hopper construction comprising a conical storage structure having an apex portion and a discharge passage communicating with the apex portion, said apex portion being provided with an upper fluid circulating means, said circulating means having an annular ring means disposed within the apex portion and defining an annular peripheral passage of gradually de-

creasing cross section in the direction of fluid flow, and a central whirlpool chamber, said annular ring means being provided with a plurality of trans-radial passages communicating the annular passage with the interior of the central whirlpool chamber, a lower fluid circulating means including a venturi means disposed within said apex portion and below said annular ring means member and com-



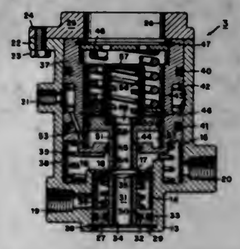
municating with the wirlpool chamber and said discharge passage, said trans-radial passages being trans-radial of the annular ring means and the central whirlpool chamber and being generally tangential of the annular peripheral passage and the periphery of the central whirlpool chamber in the direction of fluid flow to produce a whirlpool effect on the material in the whirlpool chamber.

3,288,538
POWER ASSISTED BRAKING SYSTEM
Roland De Marcellus, 11 E. Erie St., Chicago, Ill.
Filed July 16, 1964, Ser. No. 383,062
14 Claims. (Cl. 303—11)



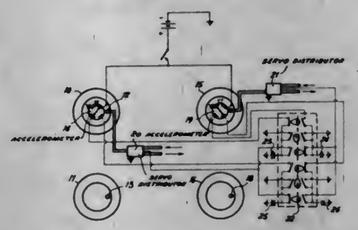
1. A power assisted braking system for a movable member whose motion is to be controlled by said system, comprising a manually operated actuator, a brake mechanism cooperating with said member for slowing its motion, a line providing fluid communication between said actuator and brake mechanism, means associated with said actuator for increasing and decreasing the fluid pressure in said line in response to operation of said actuator and thereby operating said brake mechanism, and a power assist mechanism in said line comprising a pump, means defining a fluid flow path between the outlet and inlet of said pump, a variable valve in said flow path, a pressure responsive controller for said valve located in said flow path on a first flow path side of said valve, said first side of said flow path being in fluid communication with said actuator associated means and the other side of said flow path from said valve being in fluid communication with said brake mechanism, and means coupling said movable member and pump for driving said pump at a rate proportional to the rate of motion of said movable member; whereby increases and decreases of pressure in said line by said actuator associated means effect a closing and opening of said valve by said controller, to cause increases and decreases in pump outlet pressure and corresponding changes in fluid pressure applied to said brake mechanism.

3,288,539
CONTROL VALVE
Richard C. Bueler, Glendale, Mo., assignor to Wagner Electric Corporation, St. Louis, Mo., a corporation of Delaware
Continuation of application Ser. No. 395,433, Sept. 10, 1964. This application Mar. 28, 1966, Ser. No. 538,104
21 Claims. (Cl. 303—13)



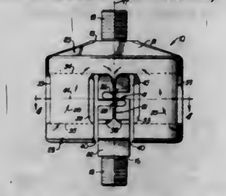
1. A control valve comprising a housing, application means movable in said housing and defining with said housing a pressure fluid flow passage therethrough, said application means being movable in response to an applied force toward a position in said flow passage establishing pressure fluid flow therethrough, said application means including an expansible fluid pressure chamber, and resiliently urged means opposing fluid pressure expansion of said chamber, said resiliently urged means being automatically movable toward a position in said flow passage to establish pressure fluid flow therethrough in response to fluid pressure in said chamber less than a predetermined value.

3,288,540
DEVICE FOR CONTROLLING THE HYDRAULIC BRAKING OF THE WHEELS OF A VEHICLE
René Lucien, Neuilly-sur-Seine, France, assignor to Societe Recherches Etudes Production R.E.P., S.a.r.l., Paris, France
Filed Oct. 27, 1964, Ser. No. 408,458
Claims priority, application France, Oct. 30, 1963, 952,319, Patent 84,854
2 Claims. (Cl. 303—21)



1. A system for controlling the hydraulic braking of a wheeled vehicle, comprising means for periodically varying the braking and the release of each wheel, for measuring the acceleration of one wheel during the release and for controlling in dependence on this measurement the value of the following braking, for measuring the deceleration of one wheel during the braking and for controlling in dependence on this measurement the value of the following release, said means comprising a switch unit constituted by a plurality of cam switches, an accelerometer on one of the front wheels, an accelerometer on one of the rear wheels, a servo-distributor for supplying pressure fluid to the brakes of the front wheel, a servo-distributor for supplying pressure fluid to the brakes of the rear wheels, and a group of four memories constituted by four resistance-capacity circuits, said switch unit being connected to said servo-distributors for applying the front brakes and releasing the rear brakes and vice versa, two of the memories controlled by said switch unit recording during the brake release the measurements supplied respectively by the accelerometers and sending during the braking said measurements respectively to the servo-distributors, the two other memories controlled by said switch unit recording during the braking the measurements supplied respectively by the accelerometers and sending during the brake release these measurements respectively to the servo-distributors.

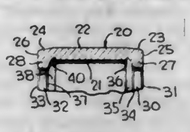
3,288,541
INTERNAL CROSS STRAP ELASTIC PIVOT
Richard R. Tracy, Pasadena, Calif., assignor to The Task Corporation, Anaheim, Calif., a corporation of California
Filed Apr. 16, 1962, Ser. No. 187,694
9 Claims. (Cl. 308—2)



1. An improved elastic pivot, comprising a one-piece body having opposite ends longitudinally spaced apart in the direction of the body axis to receive application of force and having first and second web means integral with the body and respectively extending from said ends and also having a body intermediate extent portion proximate said web means for transmitting the bulk of axially imposed force between said body ends and in sequence through first web means, said body intermediate extent and second web means, said first and second web means extending in substantially longitudinal planes disposed substantially at right angles to each other and which are spaced from said axis, extensions of said planes having substantially perpendicularly intersecting relation with each other lengthwise along said axis, and said body means including auxiliary web means for transmitting lateral forces between the body ends independently of force transmission through the first and second web means and extending in an additional plane having substantially perpendicularly intersecting relation with said axis and said longitudinal plane extensions, said auxiliary web means being located in the space between the inner ends of said first and second web means and also having its opposite ends integral with and extending in force transmitting relation respectively from the opposite ends of the body from which extend the first and second web means, said web means being adapted to flex in response to application to said body ends of force other than axial.

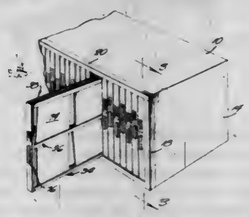
3,288,542
METHOD OF ROLLING BEARING RACES
John H. Cowles, Forestville, and James W. Rollins, Torrington, Conn., assignors to The Torrington Company, Torrington, Conn., a corporation of Maine
Filed Jan. 10, 1964, Ser. No. 337,017
9 Claims. (Cl. 308—216)

1. A bearing race comprising a cylindrical tubular body of a substantially uniform initial wall thickness and inside and outside diameters, said body including a circumferentially elongated portion, said circumferentially elongated portion having a greater inside and outside diameter and reduced wall thickness in comparison to the initial diameter and thickness of the body, and at



least one radially inwardly directed non-circumferentially elongated annular portion immediately adjacent the circumferentially elongated portion, said annular portion having a wall thickness and inner diameter at least substantially equal to the initial wall thickness and inner diameter of the body.

3,288,543
STORAGE AND RECORD RACK
Barry F. Sugerman, Miami Beach, Fla.
(2207 NE. 122nd St., North Miami, Fla.)
Filed July 21, 1964, Ser. No. 384,174
4 Claims. (Cl. 312—12)

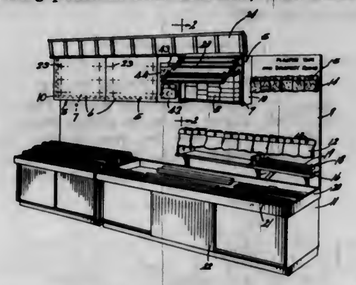


1. A storage rack for phonograph records or the like, comprising a rectangular cabinet having a top wall and a bottom wall, and a plurality of vertically-disposed trays arranged for sliding movement into and out of said cabinet, a guide rail on the bottom of the cabinet for each said trays, said rail having an upwardly-open channel track and an upstanding flange along one edge, each tray comprising a rectangular framework having front and rear members and an upper, a lower, and an intermediate record-retaining member, each extending horizontally between said front and rear members, each of generally double H-shape in cross-section, a roller journaled on said upstanding flange at the front thereof and arranged to support the underside of a tray at one side of the central depending web of said lower retaining member and a second roller journaled on said lower retaining member at its rear end and arranged to run on said guide rail and disposed on the opposite side of said central depending web of said lower retaining member.

3,288,544
COMBINATION MERCHANDISE DISPLAY AND STORAGE UNIT
Roland E. Knecht, Freeport, Ill., assignor, by mesne assignments, to Andrew F. Wintercorn, Rockford, Ill.
Filed Nov. 20, 1963, Ser. No. 324,955
4 Claims. (Cl. 312—140.1)

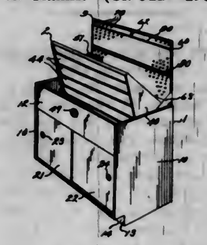
4. In an elongated merchandise display counter structure of the class described the combination of a display counter approximately at table height having a storage cabinet therebeneath for storage of merchandise, a vertical back wall in rigid relationship to the back of the display counter on which areas are adapted to be used for display purposes to hang or carry on shelves other articles of merchandise for display thereof, an open front gen-

erally rectangular cabinet mounted on and projecting forwardly from an upper portion of said back wall partway to the front of said counter, said cabinet being adapted for storage therein of a supply of merchandise, a plurality of generally rectangular display panels disposed side by side in coplanar edge to edge abutment serving both as closures for the open front of said cabinet and as backboards on which to mount articles of merchandise for display purposes, and hinge means supported on the top of said cabinet and attached to the upper back portions of said panels for concealment while demountably supporting said panels for swinging and lateral sliding movement individually on a horizontal axis and to gravitate to closed vertical position so that no catch or detent means is required, the lateral sliding movement enabling placement of the panels with the lateral edge portions of neighboring panels in close abutment, while removal of



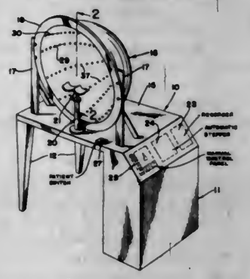
said panels facilitates the mounting or dismounting of articles of merchandise carried on the front thereof, the cabinet and the lower portions of said panels being within easy reach of a person standing in front of said counter, said hinge means for each panel comprising a horizontal bar in spaced parallel relation to one of said panel and cabinet elements, and a generally S-shaped springable hook detachably engageable on said bar and carried on the other of said panel and cabinet elements, the bar being of generally rectangular cross-section and of a thickness greater than the width of the entrance to the S-shaped hook whereby to require its springing open to admit said bar, and said hook having that portion remote from the entrance of generally circular form to provide a bearing for said bar, the bar cross-section being of a width approximately the same as the diameter of the circular bearing portion of said hook.

3,288,545
DISPLAY CABINETS
Leonard J. Benne, Orange, Calif., assignor to American Greetings Corporation, Cleveland, Ohio, a corporation of Ohio
Filed May 8, 1964, Ser. No. 365,902
12 Claims. (Cl. 312—193)



11. An article display cabinet, comprising a housing having an open upper end, a first article-displaying structure pivotally mounted on said housing adjacent the rear thereof and adjacent its upper end, a second article-displaying structure pivotally mounted on said housing adjacent its upper end and rearwardly of the pivot of said first article-displaying structure, each of said structures being manually swingable about its pivot between a generally upright article-displaying position and a generally horizontal position within said housing and adjacent its upper end, each of said structures being of a size to substantially close the upper end of the housing when said structure is in its generally horizontal position, said second structure overlying and being supported on said first structure when both of said structures are in their generally horizontal positions, and means for releasably retaining each of such structures in its generally upright position, the retaining means for one of such structures being of swingable form and the retaining means for the other of such structures being of slidable form.

3,288,546
AUTOMATIC SELF-RECORDING VISUAL FIELD TESTER
Jerome A. Gans, 22500 S. Woodland, Shaker Heights, Ohio
Filed Mar. 30, 1965, Ser. No. 445,859
5 Claims. (Cl. 351—24)



1. In an ophthalmic visual field tester, a substantially hemispheric perimeter bowl, a fixation light at the apex of said bowl, a network of normally extinguished lights visible upon illumination to an observation point near the geometrical center of said hemispheric bowl, means for locating an eye of the patient at said observation point, said network comprising radial groups of lights, each group disposed along an axis radiating from said fixation light along one of the predetermined number of great circular paths, said lights being equally spaced along said radial axes whereby corresponding lights of said radial groups define additional equally spaced concentric groups, a source of light operating potential, a first plurality of energizing circuits each common to a respective radial group, and a second plurality of energizing circuits each common to a respective concentric group, stepper switching means for sequentially connecting each of said first energizing circuits to said operating potential source, additional stepper switching means for sequentially connecting each of said second energizing circuits to said operating potential source, said operating potential source, said first mentioned switching means, said first energizing circuits, said lights, said second energizing circuits, and said additional switching means comprising a series circuit whereby a light common to the sequentially connected ones of each of said first and said second energizing circuits is illuminated, and electric pulse generating means operatively connected to both said stepper switching means for advancing said stepper switching means through said sequences, means to vary the pulse recurrence frequency of said pulse generating means, and patient operated

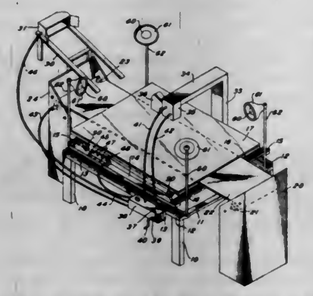
recording means operatively connected to said first plurality and said second plurality of energizing circuits for recording patient response correlated to ignition of said plurality of lights.

3,288,547
SPECTACLE MOUNTING FOR FULL FACE MASK
Guy G. Klinger, Shillington, and George R. Hoffmaster, Reading, Pa., assignors to The Electric Storage Battery Company, Philadelphia, Pa.
Filed Apr. 13, 1964, Ser. No. 359,284
2 Claims. (Cl. 351—155)



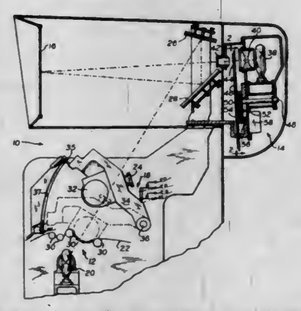
1. In combination with a full face piece mask having a headgear which is joined to the side portions of said face piece by pivotal mountings confronting the temple portions of the wearer's head, in combination, a pair of eyeglasses having temples of a fraction of normal length, each temple having a rear portion of reduced thickness provided with a substantially circular groove surrounding a pulley-like, central portion which is integral with the temple, and a cover portion covering said central portion and groove, an endless helical spring having a portion in said groove, each of said pivotal mountings having a collar portion and an enlarged head which is spaced inwardly from the inner surface of said mask, the remainder of the helical spring projecting outwardly of the rear end of said temple and being looped about the collar portion of said pivotal mounting, said springs constituting the sole and universal connections between said temples and pivotal mountings.

3,288,548
PRODUCTION OF ANIMATED PICTURES
Arthur M. Barnes, Jr., % Whiffet Studio, Bethlehem Pike, Colmar, Pa.
Filed Oct. 25, 1963, Ser. No. 318,938
7 Claims. (Cl. 352—87)



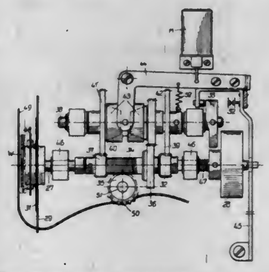
1. Apparatus for the production of animated pictures comprising a table, having a viewing location, movable background means at said viewing location, an object component of a picture located at said viewing location and having a movable portion, a camera in viewing relation to said viewing location, means for moving said movable portion with an incremental motion, means for operating said camera to expose a frame of film, and a common driving device to which said means are connected.

3,288,549
COMBINED FILM AND SLIDE PROJECTOR
Angelo, Bottani, Milan, Italy, assignor to Societa Internazionale Fonovisione S.p.A., Milan, Italy, a corporation of Italy
Filed Feb. 12, 1964, Ser. No. 344,380
Claims priority, application Italy, Feb. 14, 1963, 3,042/63
3 Claims. (Cl. 352—131)



1. Projection apparatus comprising a translucent screen having a fron. surface confronting the viewer and a rear surface; a motion picture film projector for projecting motion picture film images onto said rear surface of said screen including film guide means for guiding film along a predetermined path, illumination means on one side of said predetermined path, an arm movably between first and second positions, a pressure roller mounted on said movable arm for engaging said film and holding said film in said predetermined path when said arm is in said first position; a slide projector comprising light projector means for projecting light at said rear surface of said screen, a movable slide holder, means for moving said slide holder for moving a slide into and out of register with said light projecting means; means for energizing said film projector including said movable arm in said first position, and means for energizing said slide projector including said movable arm in said second position.

3,288,550
MOTION PICTURE FILM PROJECTORS
Petrus Gerardus Saraber, Wolfhalden, Switzerland, assignor to Contina Bureaux- und Rechenmaschinenfabrik, Aktiengesellschaft, Mauren, Liechtenstein
Filed Dec. 2, 1963, Ser. No. 327,217
Claims priority, application Switzerland, Nov. 30, 1962, 14,121/62; Sept. 6, 1963, 11,079/63
16 Claims. (Cl. 352—180)



1. A film projector, operable at normal projection speed or at slow motion speed, comprising, in combination, a first shaft; driving means rotating said first shaft at a first substantially constant speed; a second shaft; means drivingly interconnecting said first and second shafts

for rotation of said second shaft by said first shaft at a second substantially constant speed differing from and having a fixed ratio to said first constant speed, whereby said first and second shafts are in angular coincidence once during each number of revolutions of said first shaft equal to said ratio; a shutter fixedly interconnected to said first shaft for constant operation in synchronism therewith at said first substantially constant speed; intermittent film advancing mechanism operable to advance the film, and selectively controlled, as to speed of film advance, by either said first shaft or said second shaft; selector means selectively operable to shift the control of said film advancing means between said first shaft and said second shaft; electrically operable means effective, when energized, to operate said selector means to shift control of said film advancing mechanism from said second shaft to said first shaft; an energizing circuit for said electrically operable means; a control circuit for said energizing circuit including a normally open switch means controlling said energizing circuit; and cam means fixed to said second shaft and closing said normally open switch means once during each revolution of said second shaft, when said first and second shafts are in such angular coincidence.

CHEMICAL

3,288,551
PROCESS FOR THE COLORING OF FIBER BLENDS OF POLYESTER AND NATIVE OR REGENERATED CELLULOSE

Fritz Raff, Oradell, N.J., assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 8, 1963, Ser. No. 300,911
6 Claims. (Cl. 8—21)

1. A new coloring process for mixed textile materials comprising fibers of synthetic polymeric linear polyester materials and fibers of polyhydroxylated materials, which comprises applying thereto a coloring composition containing a disperse dye capable of dyeing the polyester fiber, a water-soluble reactive dye containing a reactive group capable of reacting with the polyhydroxylated fiber, an adduct of ethylene oxide and high molecular weight aliphatic alcohol cross-linked with a substituted isocyanate, and the salt of an at least di-α-halogenated lower alkanoic acid and subsequently subjecting the fiber to the action of heat in order to fix the dyestuff on the fiber blend.

3,288,552
ICE COLOR COMPOSITION

Clemens Streck, Londonville, N.Y., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 31, 1963, Ser. No. 334,897
11 Claims. (Cl. 8—44)

1. A dry particulate composition comprising an ice color diazo compound solubilized and stabilized against azoic coupling on the alkaline side by reaction with an organic amine containing at least one solubilizing group and at least one replaceable hydrogen atom attached to an amino nitrogen atom, an ice color coupling component, and based on the weight of said solubilized and stabilized diazo compound, about 3 to 30% of a member of the group consisting of alkali metal orthoborates and tetraborates, and about 30 to 180% of sodium xylene sulfonate, said composition yielding an alkaline solution in the presence of water.

3,288,553
PROCESS FOR TREATING NAPPED FABRICS

George W. Lemieux, Swannanoa, N.C., assignor to Beacon Manufacturing Company, a corporation of Delaware

No Drawing. Filed Sept. 21, 1964, Ser. No. 397,676
3 Claims. (Cl. 8—115.6)

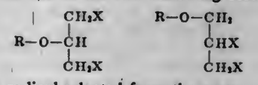
1. A chemically treated napped cellulosic fabric having a high loft, permanent resilience, softness of hand and resistance to abrasion and shedding of the nap during use of the fabric and laundering thereof, said fabric having a surface of resilient upstanding napped fibers which are impregnated and coated with a resinous composition consisting essentially of a thermosetting resinous component selected from the group consisting of dimethylol ethylene urea, methylated methylol melamine, methylated dimethylol urea, and dimethylol triazone and a thermoplastic resinous component selected from the group consisting of vinyl ketone/styrene copolymers and butadiene/styrene copolymers, said thermoplastic resinous component being present in an amount between approximately one-third and one-half of the amount of the thermosetting component, by weight, said resinous composition being cured and being present in sufficient amounts to form an impregnant and a coating of the fibers throughout the napped surface of said fabric.

3,288,554
METHOD OF TREATING A FABRIC FORMED FROM CELLULOSE FIBRES TO RENDER SAID FABRIC DRIP-DRY

Claude Jean Marie Bernardy, Petit-Lancy, Geneva, and Alfred Robert Piguet, Chatelaine, Geneva, Switzerland, assignors to Etablissements Laederich, Epinal, Vosges, France, a firm

No Drawing. Filed May 16, 1963, Ser. No. 281,038
Claims priority, application Switzerland, May 18, 1962, 6,056/62
11 Claims. (Cl. 8—120)

1. A method of treating a fabric formed from cellulose fibres to render said fabric drip-dry, which comprises impregnating said fabric with an aqueous emulsion containing at least one alkaline hydroxide and at least one halohydrin ester of one of the two following formulae:



where R is a radical selected from the group consisting of organic and inorganic acyl radicals and X is a halogen, maintaining the stability of the emulsion for a sufficient period for the halohydrin liberated by said emulsion to react with said fabric, rinsing said fabric, and then drying said fabric.

3,288,555
METHOD OF INHIBITING CORROSION

Donald R. Napier and Olen L. Riggs, Jr., Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Oklahoma

No Drawing. Filed Feb. 5, 1965, Ser. No. 430,747
18 Claims. (Cl. 21—2.7)

1. A method of inhibiting the attack of mineral acids on metal surfaces which comprises adding to the mineral acid an inhibiting amount of a surface active quaternary ammonium compound represented by the formula

$$R—Ar—(CH_2—A)_nX_n$$

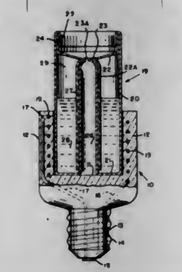
wherein R is an alkyl group of from about 8 to about 22 carbon atoms, Ar is an aromatic hydrocarbon radical derived from the group consisting of benzene and naphthalene, A is a heterocyclic nitrogen radical containing a conjugated double bond, the radical being attached through the nitrogen atom to the remainder of the molecule, X is a halogen selected from the group consisting

of chlorine or bromine, and n is a number in the range of about 1 to about 3.

3,288,556
DISPENSER

Robert L. Weber III, New Canaan, Conn., assignor to Products International Incorporated, New Canaan, Conn., a corporation of Delaware

Filed Mar. 11, 1963, Ser. No. 264,434
3 Claims. (Cl. 21—120)



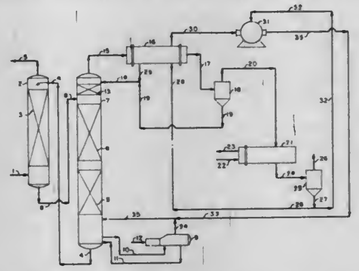
1. In combination a cup-shaped electrical heating element having a flat inner bottom surface surrounded by upstanding peripheral wall means and having a threaded portion adapted to be threaded into a light socket; electrical resistance means embedded within said heating element; a cartridge-like liquid vaporizer disposed within said electrical heating element, said vaporizer comprising an upright container holding some air and a liquid to be vaporized, said container having a surrounding side wall, a bottom wall provided with a flat bottom portion supported by the flat inner bottom surface of said heating element and an upwardly projecting dome-shaped portion positioned within said side wall so as to be surrounded by the liquid, said dome-shaped portion being hollow to define a standard serving to transmit heat from the flat inner bottom surface of said heating element upwardly to the interior wall of said dome-shaped portion, and a top wall provided with a depressed portion to form an open-top evaporating pan, said depressed portion including a central bottom opening juxtaposed above said dome-shaped portion, and capillary means overlying said dome-shaped portion and extending between the liquid in the container and said central bottom opening of said evaporating pan, permitting movement of the liquid between the interior of the container and said evaporating pan, the container being otherwise sealed, whereby when the container is heated by said electrical resistance means, pressure created within said container forces liquid upwardly through said capillary means into said pan, and when said container cools, suction within said container draws liquid from the pan back into said container.

3,288,557
REMOVAL OF ACID GASES FOR GAS STREAMS

Sidney A. Bresler, New York, N.Y., assignor to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware

Filed July 26, 1962, Ser. No. 212,677
3 Claims. (Cl. 23—2)

1. In the process of removing weakly acidic gases from gas streams by scrubbing with an aqueous alkaline scrub solution, followed by regeneration of the scrub solution by heating in a stripping tower whereby a mixed vapor stream containing desorbed acid gas and steam is produced, the improved method of recovering heat from said mixed vapor stream which comprises cooling said mixed vapor stream by a first indirect heat exchange, whereby a portion of said steam component is condensed to form a first condensate stream, recycling said first condensate stream to said regeneration step in the upper part of said stripping tower, further cooling said mixed vapor stream by a second heat exchange, whereby another portion of said steam component is condensed to form a second condensate stream, dividing said second condensate stream into a first portion and a second portion, vaporizing said first portion of said second condensate stream by said first indirect heat exchange, compressing said vaporized portion to provide compressed steam at a more highly elevated temperature, recycling said second portion of said second condensate stream to said compression step and combining said second portion with said compressed steam, whereby said compressed steam is desuperheated, and recycling said compressed steam as heating steam in said regeneration.



3,288,558
INTERNAL COMBUSTION ENGINE EXHAUST GAS TREATING PROCESS

Warren Stanley Briggs, Silver Spring, Md., William Albert Stover, Pitman, N.J., and Donald Stuart Henderson, Baltimore, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

Filed May 8, 1964, Ser. No. 366,117
4 Claims. (Cl. 23—2)



1. A method of treating exhaust gases from internal combustion engines to oxidize the air pollutants therein which comprises mixing said gases with an oxygen containing gas, and passing said mixture through a bed containing a catalyst composition comprising a porous base selected from the group consisting of alumina, silica-alumina, silica-magnesia, zirconia, zirconia-alumina, and zirconia-magnesia, said base being impregnated with from about 2 to 20 weight percent cupric oxide, from about 0.0025 to 0.4 weight percent palladium, and chromia, the outer 50 percent by volume of the base particle containing from 1 to 12 weight percent chromia based on the total particle weight.

3,288,559

THIOCYANATE EXTRACTION OF BERYLLIUM

Wendell J. Biermann, Winnipeg, Manitoba, Canada, assignor to Beryloy Limited (no personal liability), Winnipeg, Manitoba, Canada

No Drawing. Filed June 4, 1962, Ser. No. 199,663
15 Claims. (Cl. 23—19)

1. A continuous process for the selective separation of beryllium values from an aqueous solution containing beryllium values obtained from a beryllium ore containing aluminum values comprising the steps of introducing a compound selected from the group consisting of sodium thiocyanate, potassium thiocyanate, and ammonium thiocyanate into said aqueous solution to form beryllium thiocyanate, adjusting the pH value of said solution to a level of substantially 2 to 3, extracting said beryllium thiocyanate with an organic solvent capable of substantial selective extraction of said beryllium thiocyanate and selected from the class consisting of ketones, alcohols, aldehydes and esters, to thereby selectively extract said beryllium thiocyanate and obtain an organic phase rich in beryllium values and an aqueous phase containing substantially the greater portion of said aluminum values and excess thiocyanate, stripping said organic phase of said beryllium values and recovering same and recycling said stripped organic phase, adjusting the pH of said aqueous phase below 2.0 and stripping said excess thiocyanate therefrom with an organic solvent capable of effective extraction of said excess thiocyanate, stripping said last mentioned organic solvent of said excess thiocyanate by extracting same with an alkaline solution containing at least one ion selected from the class consisting of potassium, sodium and ammonium and recycling the recovered thiocyanate.

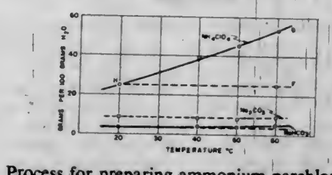
10. In the extraction of beryllium values from an aqueous solution containing beryllium values and aluminum values obtained from a beryllium ore containing aluminum values, the steps of introducing a compound selected from the group consisting of sodium thiocyanate, potassium thiocyanate, and ammonium thiocyanate into said aqueous solution to form beryllium thiocyanate, adjusting the pH value of said solution to a level of substantially 2 to 3, extracting said beryllium thiocyanate with an organic solvent capable of substantial selective extraction of said beryllium thiocyanate, said solvent being selected from the class consisting of ketones, alcohols, aldehydes and esters to thereby selectively extract said beryllium thiocyanate and obtain an organic phase rich in beryllium values and an aqueous phase containing substantially the greater portion of said aluminum values, stripping said organic phase of said beryllium values and recovering same.

3,288,560

PREPARATION OF AMMONIUM PERCHLORATE

William A. Gale, Whittier, and William T. Reburn, Trona, Calif., assignors to American Potash & Chemical Corporation, Los Angeles, Calif., a corporation of Delaware

Filed July 23, 1963, Ser. No. 296,995
8 Claims. (Cl. 23—85)



1. Process for preparing ammonium perchlorate which includes the steps of:

admixing and reacting sodium perchlorate, the equivalent of ammonium bicarbonate, water and from about 2 to 15 grams of sodium carbonate per each 100 grams of said water to form a mixture containing sodium bicarbonate and ammonium perchlorate; and

recovering solid ammonium perchlorate which is substantially free of solid sodium bicarbonate.

3,288,561

CHLORINATION OF ELECTROLYTIC COPPER REFINERY SLIMES IN A MOLTEN SALT BATH

Svante Melligren, Metuchen, William R. Opie, Keyport, and Lamar D. Coffin, Edison, N.J., assignors to American Metal Climax, Inc., New York, N.Y., a corporation of New York

No Drawing. Filed May 5, 1964, Ser. No. 365,164
9 Claims. (Cl. 23—98)

1. A process for simultaneously separating selenium and tellurium together with any antimony, arsenic and tin values present in electrolytic copper refinery slimes from other metal values contained in said slimes the chlorides of which are relatively non-volatile at temperatures of up to 900° C. compared to the chorides of selenium, tellurium, antimony, arsenic and tin, said process comprising the steps of providing a molten salt bath consisting essentially of at least one salt selected from the group consisting of alkali metal halides, alkaline earth metal halides, and mixtures thereof and containing said electrolytic copper refinery slimes, passing gaseous chlorine through the molten bath while maintaining said bath at a temperature of from 350 to 900° C. whereby the selenium, tellurium, antimony, arsenic and tin values are converted to volatile chlorides and collectively separating said volatile chorides from the nonvolatile substances.

3,288,562

METHOD OF PREPARING PHOSPHOTUNGSTIC ACID

John M. Laferty, Jr., Towanda, Pa., assignor to Sylvania Electric Products Inc., a corporation of Delaware

No Drawing. Filed Oct. 29, 1962, Ser. No. 233,930
1 Claim. (Cl. 23—140)

A method for the production of phosphotungstic acid which comprises preparing an aqueous solution of sodium tungstate, heating the solution to a temperature between about 70° and 100° C., maintaining the solution at said temperature and slowly adding hydrochloric acid thereto until the solution reaches a pH value of from about 3 to about 5 to convert the sodium tungstate to sodium metatungstate, adding sufficient phosphoric acid to the solution of sodium metatungstate to convert the sodium metatungstate to sodium phosphotungstate, and thereafter passing the solution in contact with a cation exchange material on the hydrogen cycle to remove sodium ions therefrom and to convert the sodium phosphotungstate to phosphotungstic acid.

3,288,563

METHOD OF PRODUCING A POWDER FOR MAGNETIC RECORDING CONSISTING OF MAGNETIC IRON OXIDE

Cornelis Johannes Klomp and Gerard Willem van Oosterhout, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 3, 1963, Ser. No. 277,683
Claims priority, application Netherlands, June 8, 1962, 279,551
6 Claims. (Cl. 23—200)

1. A method of producing a powder for magnetic recording having an increased signal-to-noise ratio comprising the steps of oxidizing a ferrous compound relatively insoluble in water in an alkaline liquid consisting essentially of water and having an $(OH)^-$ ion concentration of more than 0.2 normal by passing an oxidizing gas through the alkaline liquid containing the ferrous compound to form crystalline ferric oxide hydrate having a chemical composition corresponding to the formula $Fe_2O_3 \cdot nH_2O$, in which $1 \leq n \leq 2$, and converting said ferric oxide hydrate by reduction and subsequent oxidation into magnetic iron oxide, γ-Fe_2O_3.

3,288,564

METHOD OF REMOVING INORGANIC IODINE FROM BLOOD

John E. Leonard, Fullerton, Calif., assignor to Beckman Instruments, Inc., a corporation of California

No Drawing. Filed June 20, 1963, Ser. No. 289,425
6 Claims. (Cl. 23—230)

1. In a method for separating inorganic iodine from organic iodine in a blood sample, the steps of:

providing a sample of blood;

placing solid AgCl into said sample to form a precipitate containing inorganic iodine; and

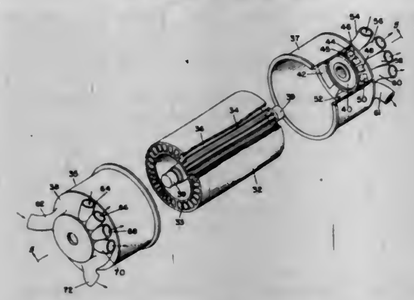
allowing the precipitate to settle out.

3,288,565

WAVE ENGINE REACTOR

David Alexander, Feasterville, and Hans U. Burri, Philadelphia, Pa., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed June 14, 1961, Ser. No. 117,134
4 Claims. (Cl. 23—252)



1. Apparatus for conducting chemical reactions which comprises a rotor having a plurality of channels spaced around the axis of the rotor; stationary end plates disposed at opposite ends of the rotor; a reactant gas inlet at at least one end of the channels; a driving gas inlet at at least one end of the channels; a plurality of driving gas outlets at at least one end of the channels; a reaction product outlet at at least one end of the channels; said rotor being rotatable to bring the ends of the channels successively in communication with the reactant gas inlet, the driving gas inlet, the driving gas outlets in series, and the reaction product outlet; first conduit means connecting one of said driving gas outlets with said driving gas inlet; and second conduit means connecting another of said driving gas outlets with said driving gas inlet.

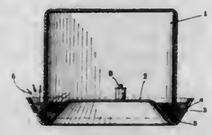
3,288,566

LABORATORY APPARATUS FOR THE CONTROL OF VAPORS

Amos Turk, 7 Tarrywile Lake Road, Danbury, Conn.

Filed Jan. 21, 1963, Ser. No. 252,912
4 Claims. (Cl. 23—259)

1. A laboratory apparatus for the control of vapors, characterized by (1) an impervious circular cover having an impervious cylindrically-shaped depending side wall, and (2) an impervious plate having a flat, circular-shaped central portion, the said plate being of somewhat greater outside diameter than the outside diameter of the cover, and the flat section of the plate merging downwardly, thereby forming a circular-shaped channel which extends outwardly beyond the said flat area section of the plate, the bottom of the channel matching the outside diameter of the cover, and being suitable for containing



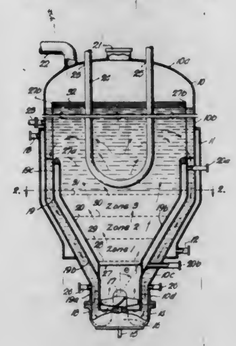
solids for controlling the vapors within the chamber formed by the said cover and plate, these two units being physically unattached to one another and not capable of touching one another in the assembled position except where the edge of the cover fits into the channel of the plate.

3,288,567

FLOATING CATALYST BED CONTACTOR

Ward A. Graham, Kansas City, Mo., assignor to Stratford Engineering Corporation, Kansas City, Mo., a corporation of Delaware

Continuation of application Ser. No. 127,726, July 28, 1961. This application Aug. 25, 1965, Ser. No. 486,263
4 Claims. (Cl. 23—288)



1. Apparatus for suspending material particles in substantial flow equilibrium within a circulation vessel comprising a vertically oriented liquid flow circulation vessel shell, a portion of said vertical shell thereof tapered downwardly in reducing diameter conical fashion, a vertically oriented circulating tube positioned within said vessel shell and conforming in shape thereof to that of the sides of the vessel shell immediately concentric thereto whereby to provide, interiorly thereof, in a portion of the height thereof, an inverted frusto-conical zone of upwardly increasing inner diameter, impeller means positioned in the lower end of said circulating tube operative to circulate liquid downwardly between the circulating tube and vessel shell and upwardly internally of the circulating tube, a concentric cylindrical section of tube and shell adjacent the bottom of the vessel receiving the impeller, a particle screening mesh positioned above the impeller means in the circulating tube at the bottom of said frusto-conical zone, a particle screening mesh blocking off the top of the annulus between the circulating tube and the vessel shell, said vessel liquid full in operation to a level above the top of the circulating tube.

3,288,568
DIRECT DISSOLUTION OF WATER-INSOLUBLE URANIUM COMPOUNDS BY CONTACT WITH NEUTRAL ORGANIC SOLVENTS PRETREATED WITH NITRIC ACID

Hiroshi Tomijima, Totsuka-ku, Yokohama, Kazushige Tsukui, Tokyo, and Yoshimi Okoshi, Kawasaki-shi, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan

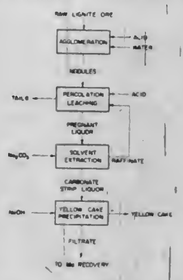
No Drawing. Filed Oct. 20, 1961, Ser. No. 146,447
Claims priority, application Japan, Nov. 18, 1960, 35/45,357
9 Claims. (Cl. 23—319)

1. A method of directly extracting uranium material from a water-insoluble uranium-containing compound without any preliminary dissolution thereof with acid which comprises treating a neutral organic solvent selected from the group consisting of trialkyl phosphates, dialkyl alkylphosphonates, alkyl dialkylphosphonates, trialkylphosphine oxides, ethers, esters and ketones with nitric acid, contacting said compound with said treated solvent whereby said uranium material is both separated from impurities and extracted into said organic solvent.

3,288,569
PROCESS FOR THE RECOVERY OF METALS

Angus V. Henrickson and George C. Kane, Golden, Colo., assignors, by mesne assignments, to Susquehanna-Western, Inc., Denver, Colo., a corporation of Wisconsin

Filed Aug. 12, 1963, Ser. No. 301,359
24 Claims. (Cl. 23—319)



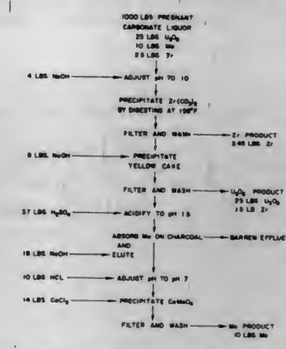
1. The process for the recovery of metals selected from the group consisting of uranium, zirconium and molybdenum from ores of said metals contained in carbonaceous material which comprises: agglomerating the ore-containing material to form porous nodules; forming a percolation leach bed of the nodules; leaching the metal from the nodules by percolation leaching with a leaching agent; and recovering the metal from the leach liquor.

3,288,570
PROCESS FOR THE SELECTIVE RECOVERY OF URANIUM, ZIRCONIUM AND MOLYBDENUM

Angus V. Henrickson, Golden, Colo., assignor, by mesne assignments, to Susquehanna Western, Inc., Denver, Colo., a corporation of Wisconsin

Filed Aug. 16, 1963, Ser. No. 302,627
19 Claims. (Cl. 23—328)

1. The process of selectively recovering uranium, zirconium and molybdenum values from carbonate solutions containing said values which comprises: adjusting the pH of the pregnant carbonate solution to a point not in excess of that slightly below the precipitation point of uranium for the solution to precipitate zirconium from the carbonate solution as the carbonate and separating the precipitate of zirconium carbonate from the remaining solution thereby forming a second solution; precipitating uranium from said second solution by adding to said second solution an excess of an alkali metal hydroxide to precipitate uranium as alkali metal diuranate, separating the precipitate of the last precipitation from the remaining solution and thereby forming a third solution; adjusting the pH of said third solution to acidic and adsorbing molybdenum from said third solution on charcoal.



3,288,571
PREPARATION OF URANIUM ALUMINIDES UAl_3 AND $UAl_{4.5}$

William J. Werner, Clinton, Tenn., Melvin C. McIlwain, Huntsville, Ala., and Joseph P. Hammond, Knoxville, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Oct. 14, 1965, Ser. No. 496,195
5 Claims. (Cl. 23—347)

1. A method of forming a sinterable powder aluminide of uranium selected from UAl_3 and $UAl_{4.5}$ which comprises heating a mixture of aluminum and uranium or uranium hydride powder to a temperature below the melting point of the desired compound for a period of time sufficient to allow interdiffusion of the said reactants.

3,288,572
PROCESS FOR MAKING CARBIDES OF FISSIONABLE AND FERTILE MATERIALS

Mario H. Fontana, Burlington, Mass., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware

No Drawing. Filed Aug. 6, 1964, Ser. No. 387,999
14 Claims. (Cl. 23—349)

1. A process of making uranium carbide comprising mixing uranium hexafluoride and carbon, and raising the temperature of said mixture to a reaction temperature at which the uranium hexafluoride and carbon are dissociated to react and form uranium carbide.

13. A process for making carbides of fissionable material comprising reacting a gaseous halide of fissionable material selected from the group consisting of uranium, plutonium, and thorium with carbon vapor.

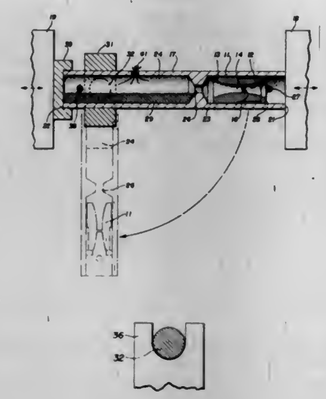
3,288,573
HIGH TEMPERATURE RESISTANT MEMBER AND PROCESS FOR FORMING

Ralph L. Abos, Whittier, Calif., assignor to Polycarbide Corporation, a corporation of California

Filed Oct. 3, 1960, Ser. No. 59,893
9 Claims. (Cl. 29—182.8)

1. A high temperature resistant member comprising, discrete graphite particles, a high temperature melting carbon combining metal of the group consisting of titanium, zirconium, hafnium, vanadium, niobium, tantalum, chromium, molybdenum, tungsten and silicon forming carbide envelopes around said particles and voids between said envelopes, and a metal having a melting point lower than said envelope alloy in said voids and bonded to said envelopes.

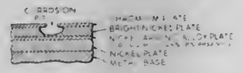
3. A process of producing a high temperature resistant product which consists of supporting a porous graphite body and a superimposed mass of carbide forming metal in a porous graphite crucible, supporting and heating said crucible with a viewable side wall co-extensive with the base of said body, continuing said heating to the molten point of said metal to thereby cause the flow of molten metal over and into said body and said crucible, maintaining said heat until the observable flow of metal extends to the base of said body, then quenching said body.



3,288,574
METAL LAMINATES AND METHOD OF FORMING BY ELECTROPLATING

Arthur H. Du Rose, Euclid, and William J. Pierce, Lyndhurst, Ohio, assignors to The Harshaw Chemical Company, Cleveland, Ohio, a corporation of Ohio

Filed Apr. 10, 1964, Ser. No. 358,872
20 Claims. (Cl. 29—194)



1. As an article of manufacture a laminate comprising three firmly bonded layers of nickel including an intermediate layer of a nickel-arsenic alloy sandwiched between and in adherent contact with an arsenic-free lower lower layer of nickel and an arsenic-free upper layer of nickel, said nickel-arsenic alloy consisting essentially of nickel and about 0.025 percent to about 8.0 percent arsenic.

3,288,575
WELDED NICKEL STEEL ARTICLE

Mikolaj Cyprian Tomasz Bystram, Turnford, and Michael Frank Stuchfield, Broxbourne, England, assignors to Murex Welding Processes Limited, Waltham Cross, Hertfordshire, England, a British company

No Drawing. Filed Nov. 7, 1963, Ser. No. 322,068
2 Claims. (Cl. 29—196.1)

1. An article useful at the temperature of liquefied gas comprising at least two members of 9% nickel steel joined at a weld seam by weld metal deposited by welding, said weld metal having, when cooled to —190° C., a tensile strength in the range of 45–53 tons/sq. in. and an impact resistance of over 25 ft. lbs. V-notch Charpy (10 x 10 mm.), said weld metal being of the following composition by weight:

Carbon—from 0.05% to 0.40%
Nickel—from 35% to 65%
Chromium—from 10% to 25%
Molybdenum—from 4% to 8%
Tungsten—from 0.5% to 3.0%
Columbium—from 0.5% to 3.0%
Manganese—from 0 to 8%
Cobalt—from 0 to 3%
Vanadium—from 0 to 3%
Silicon—from 0 to 1.0%
Iron—from 10% to 45%

3,288,576
TREATING COAL

Emile D. Pierron, Creve Coeur, and Philip E. McIntyre, Des Peres, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Sept. 3, 1963, Ser. No. 306,326
8 Claims. (Cl. 44—1)

1. A composition comprising coal having admixed therewith a small amount sufficient to inhibit oxidation of a phosphite ester antioxidant and a 1,2-dihydroquinoline antioxidant.

3,288,577
FUEL OIL COMPOSITION OF IMPROVED PUMPABILITY

Seymour H. Patinkin, Chicago, and William L. Steinhoff, South Holland, Ill., and James H. Kirk, Dyer, Ind., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed July 6, 1964, Ser. No. 380,622
5 Claims. (Cl. 44—62)

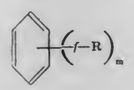
1. A fuel oil composition having improved pumpability over a wide range of low temperatures consisting essentially of a distillate hydrocarbon fuel boiling above the gasoline range having incorporated therein about 0.05 to 0.5 volume percent of a petroleum microcrystalline wax and about 0.002 to 0.5 volume percent of an additive selected from the group consisting of:

A. A fuel oil-soluble polymer of about 65 to 97.5 percent by weight normal alpha-olefin of 10 to 24 carbon atoms having at least 60% normal alpha-olefins of 16 to 18 carbon atoms and about 2.5 to 35 percent by weight of styrene, said polymer having a kinematic viscosity at 210° F. of about 20 to 600 centistokes;

B. A fuel oil-soluble normally liquid condensation product of a polyunsaturated monoester having the general formula:

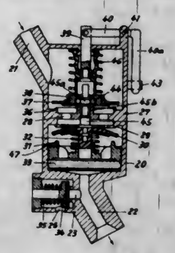
$$R_1-\overset{O}{\overset{\|}{C}}-O-R_2$$

wherein R_1 is an olefinic hydrocarbon radical of about 11 to 25 carbon atoms and R_2 is an olefinic hydrocarbon radical of 12 to 26 carbon atoms and an aromatic hydrocarbon having the general formula:



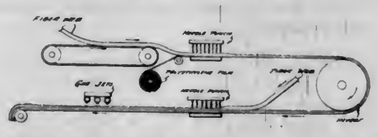
wherein R forms an aromatic hydrocarbon ring, —*f*— indicates the fused ring relationship and *m* is 0 to 2, the molar ratio of the aromatic hydrocarbon to the monoester being about 0.2 to 2:1, said condensation product boiling above about 200° F. at 1 mm. Hg, said amounts of wax and additive being sufficient to improve the low temperature pumpability of the fuel.

3,288,578
VALVED SAFETY DEVICE
Paul Witt, Witten-Annen, Germany, assignor to Tespa AG., Zurich, Switzerland, a corporation of Switzerland
Filed May 20, 1964, Ser. No. 368,894
5 Claims. (Cl. 48—192)



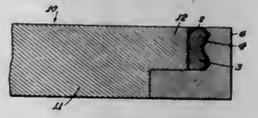
1. A combination safety device for preventing the formation of explosive gas mixtures and the further development of explosions in burner gas pipes, comprising a housing, a gas inlet and a spaced gas outlet in said housing, a flame trap arranged within said housing between said inlet and said outlet, an excess-pressure relief opening leading out of said housing on that side of said flame trap closer to said outlet, an excess-pressure relief valve in said relief opening, a back-pressure check valve arranged within said housing on that side of said flame trap closer to said inlet, said check valve comprising a movable double-acting check valve element, a further valve controlling the flow of gas through said inlet, locking means arranged to lock said further valve in an opening position, means operatively connecting said check valve element with said locking means whereby said check valve element is adapted to trigger the release of said locking means, and two valve seats for said check valve element whereby said valve element is arranged to close on one seat in one direction of gas-flow and to close on the other valve seat in the opposite direction of gas-flow.

3,288,579
METHOD OF MAKING A NON-WOVEN LAMINATED ABRASIVE ARTICLE
Herbert Wright Coates, Fairfax, and Gibson Orr Etchison, River View, Ala., assignors to West Point-Pepperell, Inc., a corporation of Georgia
Filed Sept. 10, 1963, Ser. No. 308,001
6 Claims. (Cl. 51—295)



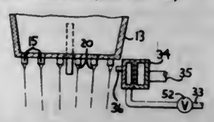
2. A method of manufacturing an article having a rough surface of hard granules of thermoplastic material comprising laminating to opposite surfaces of a sheet of continuous thermoplastic film about 3 to 30 mils thick two nonwoven fiber webs of thermoplastic fibers, needle punching from at least one side of the resulting laminate and through said film to cause fibers of at least one of said webs to protrude through said film, and into the web on the other side of said sheet, heating one side of said laminate where said fibers protrude to a temperature sufficient to melt a large portion of the web on the side of said film which is heated so that the fibers on the heated side melt, curl and collapse to form heavy nodules of thermoplastic against said thermoplastic film, without substantially melting the nonwoven fiber web on the opposite side of said sheet, said film functioning as a heat barrier, to prevent melting of fibers on its opposite side, because of the bulk and mass of the film, and cooling the web to reharden the thermoplastic material and provide a rough surface, the opposite side of said product being soft substantially unmelted nonwoven fiber web suited for adhesion to other articles.

3,288,580
METHOD OF PREPARING A DIAMOND TOOL
František Čurn, Prague, Czechoslovakia, assignor to Naradi, Narodni Podnik, Prague, Czechoslovakia
Filed Mar. 31, 1965, Ser. No. 445,863
Claims priority, application Czechoslovakia, May 13, 1963, PV 2,704/63
12 Claims. (Cl. 51—309)



1. A method of making a diamond tool, which comprises
(a) coating a mold surface with a layer of adhesive of predetermined thickness,
(b) depositing on said surface a body of loose diamond grains in an amount substantially greater than the amount of diamond grains required for covering said surface with a single, closely packed layer of said grains,
(1) the size of said grains being greater than said predetermined thickness,
(c) tumbling said body while in contact with said surface until a substantially continuous layer of said grains is retained by said layer of adhesive, the bottom portions of the retained grains projecting from the adhesive,
(d) removing the excess of loose grains not retained, and
(e) embedding the projecting bottom portions of said retained grains in a backing material while the backing material is at least partly liquid,
(f) solidifying the backing material, and
(g) separating the solidified backing material and said retained grains partly embedded in the backing material from said mold surface.

3,288,581
METHOD FOR PRODUCING FIBERS
John V. Schweppe, Shelby, N.C., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 28, 1963, Ser. No. 319,488
2 Claims. (Cl. 65—2)



1. A method of forming thermoplastic fibers which comprises drawing a plurality of filaments from streams of the thermoplastic material passing through orifices aligned in a plurality of rows in the flat planar bottom of a bushing, and directing a plurality of individual streams of a cooling gas initially between the rows of filaments just below the bushing and the orifices from at least one side of the bushing, said streams of gas each having a Reynolds number less than 2100 and a pressure sufficient to initially propel the gas into and throughout the

entire zone directly below the bushing avoiding direct impingement of any air stream below said bushing onto a filament providing a controlled atmosphere surrounding the orifices and the streams passing therethrough.

3,288,582
METHOD OF MAKING A BONDED MAT OF SURFACE TREATED GLASS FIBERS
Robert Wong, Belford D. Wise, and Albert R. Morrison, Newark, Ohio, assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed May 20, 1960, Ser. No. 30,643
1 Claim. (Cl. 65—3)



A method for producing a vitreous fiber pack article which includes the steps of pulling streams of a fiber forming vitreous material from a body thereof, attenuating the streams into fibers, applying to freshly formed surfaces of the vitreous material a surface active agent that produces an aqueous dispersion having a pH from about 6 to about 8½, and that has a molecular structure which includes a hydrophobic portion and a hydrophilic portion, whereby the hydrophilic portion of the surface active agent is bonded to the surfaces of the fibers which are formed by the attenuation, projecting the fibers with the surface active agent bonded thereto through a high velocity stream of compressible fluid which attenuates the fibers, applying a silica sol as a tackifying agent to the fibers after they have been attenuated by the compressible fluid, collecting the fibers and associated tackifying agent on a foraminous conveyor in mat form, applying a hardenable binder to the mat, and converting the binder to a hardened condition.

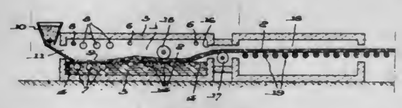
3,288,583
APPARATUS FOR PRODUCING OPTICAL FIBER
Gilbert J. Sheldon, Irondequoit, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed June 7, 1962, Ser. No. 200,814
2 Claims. (Cl. 65—11)

1. Apparatus for producing continuous coated optical fiber comprising:
first and second chambers for receiving fiber-making material and having means for maintaining the fiber-making material in a molten state;
center orifice means connected at an outlet portion of the first chamber for forming an optical fiber core from molten material flowing from the first chamber;
annular orifice means evenly spaced peripheral to the center orifice means for forming a continuous optical fiber coating on the fiber core from molten material flowing from the second chamber;
the center orifice means having land means for engaging inner peripheral portions of the annular orifice means adjacent terminal portions of the orifice



means and the annular orifice means; and
means for drawing molten material from the orifice means to form a coated optical fiber.

3,288,584
METHOD OF MAKING A MULTICELLULAR VITREOUS SHEET ON A MOLTEN METAL BATH
Bernard Long, Paris, France, assignor to Pittsburgh Corning Corporation, Port Allegany, Pa., a corporation of Pennsylvania
Filed Apr. 29, 1964, Ser. No. 363,485
Claims priority, application France, May 16, 1963, 935,101
7 Claims. (Cl. 65—22)



1. A method of making a sheet of multicellular vitreous material from an admixture of finely divided vitreous particles and a cellulating agent which comprises,
feeding said admixture at a controlled rate onto the surface of a molten metal bath,
heating said admixture on said molten metal bath until said finely divided vitreous particles soften and coalesce and said cellulating agent reacts to cellulate said admixture, and
thereafter cooling said cellulated admixture to form a sheet of multicellular vitreous material.

3,288,585
METHOD OF MAKING A MINIATURE LENS
Ford K. Clarke, Chalfont, Pa., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed June 22, 1962, Ser. No. 204,395
2 Claims. (Cl. 65—37)

1. In the fabrication of a small, mounted, spherical lens:
rotating a glass rod, of small diameter, about the axis thereof, in a cooling atmosphere, at a predetermined angular velocity, to provide cooling of the glass pursuant to heating thereof, and while holding the rotating rod in substantially vertical position;
simultaneously rotating a ring-shaped lens holder, hav-

ing similar diameter, at substantially the same angular velocity and in the same direction while holding said holder coaxially with said glass rod and vertically spaced therebelow a distance of the order of magnitude of said small diameter;

applying heat to the lower end of the rotating rod to provide a liquid glass drop dependent from and rotating with said lower end;

effecting slight relative movement between the drop-carrying rotating rod and the rotating holder to lessen said distance and fill a top part of said holder with a bottom part of said drop dependent from the rotating rod and thereby to seal said glass drop into said holder; then

slightly increasing the distance between the rotating rod and said holder and locally applying heat to the rod and to the top surface of the glass drop to sever the liquid glass drop therefrom, thereby allowing inner portions of the severed liquid glass drop gravitationally to sink into said holder; and

continuing said rotating of the drop with the lens holder to cool at least surface portions of the drop and thus to congeal it, while locally applying further heat to an upper inner part of said surface portions at least during part of the continued rotating, to permit surface tension of the sinking and congealing glass drop to develop approximately spherical form of said drop.

3,288,586

HERBICIDAL METHODS EMPLOYING AN ADDITION COMPOUND OF 3-(3,4-DICHLOROPHENYL)-1-METHYL-1-METHOXYUREA AND DODECYLBENZENESULFONIC ACID

Clarence A. Littler, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 15, 1965, Ser. No. 464,229
1 Claim. (Cl. 71—2.6)

A method of destroying weeds comprising applying to an area to be protected a herbicidally effective amount of a 1:1 mole ratio adition compound of 3-(3-4-dichlorophenyl)-1-methyl-1-methoxyurea and dodecylbenzenesulfonic acid.

3,288,587

PROCESS FOR MAKING A SLOW RELEASE FERTILIZER COMPRISING UREA, PARAFFIN WAX, AND A POLYMERIC UREA-PARAFFIN WAX ADDUCT INHIBITOR

Robert H. Campbell, Brookhaven, Pa., and Ivor W. Mills, Claymont, Del., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Sept. 11, 1963, Ser. No. 308,096
8 Claims. (Cl. 71—64)

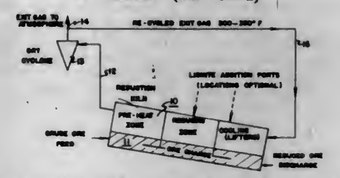
1. Method of forming a slow release fertilizer comprising a dispersion of solid urea in a solid paraffin wax which when in molten state normally reacts with solid urea to form an adduct which comprises (1) heating said paraffin wax to above its melting point whereby molten paraffin wax normally susceptible to adduction is obtained, (2) adding to and dissolving in the resulting molten paraffin wax a wax soluble adduct inhibitor selected from the group consisting of vinyl polymers, condensation polymers, polymers of olefin oxides containing 2–3 carbon atoms, and mixtures thereof, said polymer having a molecular weight of at least 400, having at least 5 repeating units, and being used in the amount of 1–25% by weight of said molten paraffin wax, (3) dispersing solid urea in the molten paraffin wax containing said adduct inhibitor, and (4) cooling the resulting dispersion to below the melting point of the wax whereby a slow release fertilizer comprising a dispersion of solid urea in solid paraffin wax is obtained.

3,288,588

USE OF KILN GAS FOR PRODUCTION OF MAGNETIC IRON OXIDE

Fred H. Bunge, Bay Village, Ohio, and Harry H. Vaughan, Hibbing, Minn., assignors to The Hanna Mining Company, Cleveland, Ohio, a corporation of Delaware

Filed Oct. 2, 1963, Ser. No. 313,353
6 Claims. (Cl. 75—1)



1. In a method of forming magnetic iron oxide from non-magnetic iron ore in which an admixture of such an ore and a solid carbonaceous reducing agent is heated, the improvement comprising roasting such an admixture at a temperature within the range of about 700° F. to about 1700° F. for about 15 minutes to about four hours in a heating apparatus to convert such ore into a magnetic form, removing the exit gas from such heating apparatus, recycling such gas to the heating apparatus in a sufficient quantity to control the composition of such heating atmosphere to proide a CO_2 to CO volume ratio of about 2 to about 10,000 and an H_2O and H_2 volume ratio of about 0.06 to about 11,000, and controlling the temperature of such recycled gas to maintain such gas at a temperature within the range of approximately 100° F. to about 500° F. to assist in providing the desired CO_2 to CO and H_2O to H_2 volume ratio therein.

3,288,589

PROCESS FOR THE PRODUCTION OF EXCEPTIONALLY-CLEAN STEEL

Thomas E. Perry, North Canton, John A. Rinebolt, Canton, Roderick J. Place, Massillon, and Sidney W. Poole, Canton, Ohio, assignors to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey

Filed June 18, 1962, Ser. No. 203,091
21 Claims. (Cl. 75—12)

1. A process for the preparation of an exceptionally clean steel comprising the steps of:

(a) melting a charge of iron at atmospheric pressure in the absence of an added metallic deoxidizer selected from the class consisting of strong deoxidizers of the class consisting of aluminum and titanium and significant amounts of weaker deoxidizers of the class consisting of manganese and silicon;

(b) adjusting the carbon content of the resultant melt while still in molten form to an amount sufficient to react with the oxygen content of said melt and also to supply an additional amount of carbon required for the ultimate carbon aim in the resultant steel,

(c) thereafter casting said melt into an ingot;

(d) melting said ingot as the consumable electrode in a vacuum, consumable-electrode electric arc furnace while the electrode region of said furnace is maintained at a reduced pressure of no more than 100 microns of mercury.

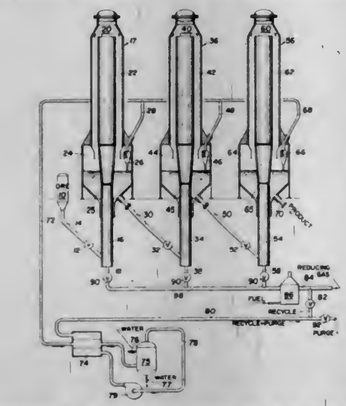
3,288,590

CONTINUOUS OXIDE REDUCTION PROCESS

Percival C. Keith, Peapack, N.J., George B. Farkas, Jackson Heights, N.Y., and Harold H. Stotler, Westfield, and William Volk, Princeton, N.J., assignors to Hydrocarbon Research, Inc., New York, N.Y., a corporation of New Jersey

Filed July 22, 1963, Ser. No. 296,524
6 Claims. (Cl. 75—26)

1. The method of continuously reducing an iron oxide in particulate solids form with a reducing gas largely hydrogen under dilute, phase suspension conditions which comprises (1) grinding said iron oxide to all pass 100 mesh and have an average particle size of about 200 mesh; (2) heating the reducing gas to a temperature in the range of 900° F. to 1350° F. under a pressure of 150 to 500 p.s.i.g.; (3) passing said gas upwardly through a substantially vertical reaction zone, at a velocity in the range of 5 to 25 feet per second; (4) preheating the iron oxide to at least about 900° F.; (5) continuously feeding the finely divided preheated iron oxide to said rising column



of reducing gas at a rate to maintain an average solids density in the range of 0.05 to 15.0 pounds of metallic oxide per cubic foot of gas under the conditions in the rising column, the sensible heat in the gas supplying substantially all of the endothermic heat of the reaction; (6) maintaining sufficient contact time between the reducing gas and the iron oxide to accomplish at least 90% reduction; and (7) separately removing from the effluent of the reaction zone, a substantially solids-free gas and the reduced iron fines.

3,288,591

METALLURGY

Joseph K. Stone, Berkeley, Calif., assignor to Kaiser Industries Corporation, Oakland, Calif., a corporation of Nevada

No Drawing. Filed July 24, 1963, Ser. No. 297,230
4 Claims. (Cl. 75—52)

1. A thermally balanced, cyclic, repetitive process for producing steel from iron ore, each cycle of the process including the sequence of steps comprising:

(a) maintaining a molten iron body and a slag layer in a converter suitable for effecting the oxygen steel conversion process,

(b) carbonizing the molten iron body in the converter to contain more carbon than that required to reduce subsequently added iron ore,

(c) removing excess slag from the surface of the molten iron body,

(d) heating the iron body by oxidation of dissolved carbon until the molten iron body is at a temperature of at least 2500° F.,

(e) adding ore to the molten iron body,

(f) adding fresh slag-forming material to the converter,

(g) blowing substantially pure oxygen downwardly onto the surface of the molten iron body until the carbon content is reduced to the desired content of carbon whereby steel is produced,

(h) recovering part of the resultant steel as product,

(i) retaining in the converter another part of the resultant steel as said molten iron body for the next cycle, and

(j) retaining slag within the converter for use in the next cycle.

3,288,592

PROCESS FOR REDUCING DETERIORATION IN EQUIPMENT HANDLING MOLTEN MATERIALS

Virgil S. Tadsen, Rossford, Ohio, and Gerhard J. Derge, Pittsburgh, Pa., assignors, by mesne assignments, to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 12, 1963, Ser. No. 323,087
5 Claims. (Cl. 75—52)

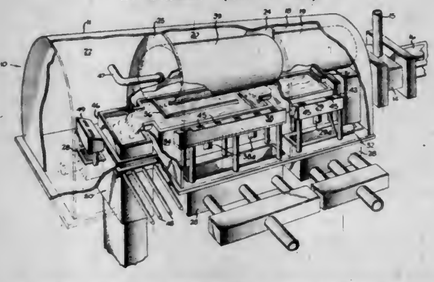
1. In the operation of metallurgical equipment of the type wherein molten metal is covered by molten calcia type refining slags having a final composition including at least 10 percent by weight of SiO_2 and a base to acid molal ratio of at least 1.6 to 1 in contact with a magnesia refractory and which is exposed to a highly oxidizing atmosphere: the method of reducing the deterioration of the magnesia refractory by charging to the metallurgical equipment slag forming ingredients containing active MgO and CaO in particulate form, the ingredients including from approximately 10.0 percent to approximately 30.0 percent by weight of exposed calcined dolomite, and the limiting of the concentration of fluoride containing salts in the slag to less than approximately 3.0 percent by weight.

3,288,593

PURIFICATION OF METALS

Hugh R. Smith, Jr., Piedmont, and Charles d'A. Hunt, Orinda, Calif., assignors to United Metallurgical Corporation, Berkeley, Calif., a corporation of California

Filed Nov. 8, 1963, Ser. No. 322,470
16 Claims. (Cl. 75—84)



1. The method of producing a highly purified metal or alloy selected from the group consisting of columbium, tantalum, molybdenum, tungsten, hafnium, zironium and rhenium from a mixture of an oxide of said metal and a reducing agent selected from aluminum and silicon, comprising reacting said mixture at reduced pressure of not more than about 2 microns of mercury and at an elevated temperature in an electron beam furnace to form reducing agent oxides, said reducing agent oxides being more volatile than said metal at said pressure and said temperature, vaporizing said reducing agent oxides from said metal and recovering said metal in a purified form.

3,288,594

PURIFICATION OF METALS

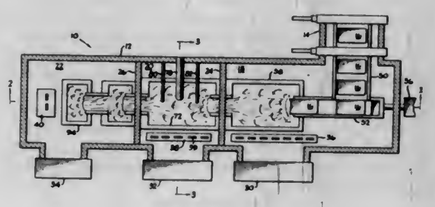
Hugh R. Smith, Jr., Piedmont, Calif., assignor to United Metallurgical Corporation, Berkeley, Calif., a corporation of California

Filed Dec. 5, 1963, Ser. No. 328,277
8 Claims. (Cl. 75—84)

1. A method for the manufacture of a highly purified metal selected from the group consisting of refractory

metals, lanthanide rare earth metals, actinide rare earth metals and alloys thereof from a mixture of said metal and an impurity metal which forms a volatile suboxide, which method comprises, melting said mixture in an electron beam furnace at a reduced pressure of not more than 1000 microns of mercury and at a temperature sufficient to provide a molten pool of said mixture, contacting said molten pool with oxygen, reacting said oxygen and said impurity metal to form an impurity metal suboxide that is capable of being substantially vaporized from said molten pool without vaporizing a substantial amount of said metal, and recovering said metal in a purified form.

3. A method for the manufacture of a highly purified metal selected from the group consisting of refractory metals, lanthanide rare earth metals, actinide rare earth metals and alloys thereof from a mixture of said metal



and an impurity substance selected from the group consisting of oxygen, sulfur, and mixtures thereof, which method comprises, melting said mixture in an electron beam furnace at a reduced pressure of not more than 1000 microns of mercury and at a temperature sufficient to provide a molten pool of said mixture, contacting said molten pool with an amount of a hydrocarbon gas selected from the group consisting of methane, ethane, and propane and mixtures thereof, sufficient to increase the pressure within said furnace by an amount from about 0.001 micron of mercury to 1 millimeter of mercury, reacting said hydrocarbon gas and said impurity substance to form a compound capable of being vaporized from said molten pool at said pressure and said temperature without vaporizing a substantial amount of said metal, and recovering said metal in a purified form.

3,288,595

NUCLEAR REACTOR FUEL PRODUCTION

Harold F. Reichard, Livingston, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 26, 1963, Ser. No. 290,607

7 Claims. (Cl. 75—84.1)

1. A process for the production of metal oxide nuclear fuels comprising providing a finely-divided mixture of uranosic oxide and an amount of at least one metal selected from the group consisting of aluminum, magnesium, beryllium, zirconium, calcium, strontium, barium, vanadium, columbium and chromium, said amount of said selected metal being between the stoichiometric amount required to convert said uranosic oxied to uranium dioxide and a 10% excess of said stoichiometric amount; compacting said mixture; heating the compact so formed to the initiation temperature of the uranium dioxide-forming reaction being at least 600° C., and maintaining said compact above said temperature until the substantial completion of the uranium dioxide-forming reaction and until there is substantially complete oxidation of said selected metal.

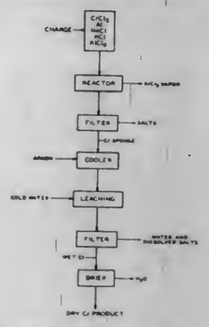
3,288,596

CHROMIUM METAL BY REDUCTION OF CHROMIC CHLORIDE WITH ALUMINUM

Ernest B. Hoyt, Geddes, and Alan G. Follows, Camillus, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Aug. 19, 1964, Ser. No. 390,657

4 Claims. (Cl. 75—84.5)



1. A process for the production of chromium metal which comprises intimately mixing chromic chloride with aluminum in an amount by weight of between 90–98% of the stoichiometric amount required to convert the chromic chloride to chromium, adding to said mixture of chromic chloride and aluminum a carrier salt having a melting point below 900° C. to provide a molten medium in which the chromic chloride may dissolve, said carrier salt being in an amount from 15–65% of the chromic chloride, adding also to said mixture, anhydrous aluminum chloride in an amount of 20–100% based on the chromic chloride, heating the mixture to a temperature of about 200–300° C. to effect initiation of the reaction with evolution of aluminum chloride vapor, releasing and recovering said aluminum chloride, continuing heating the reactants to a temperature within the range of 750–950° C. and maintaining the reactants at the elevated temperature for a sufficient length of time to complete the reaction, separating the molten carrier salt from the resultant chromium metal sponge, cooling the sponge to a temperature below 100° C., and leaching out the residue of salt adhering to the cooled chromium metal to produce high purity chromium metal.

3,288,597

PROCESS FOR THE RECOVERY OF CERTAIN METALLIC AND NON-METALLIC CONSTITUENTS OF WASTE SLAG FROM REVERBERATORY REFINING OF COPPER PYRITIC TYPE ORES

Harold W. Wilson, El Paso, Tex., assignor of fifty percent to Wilson Laboratories, Inc., El Paso, Tex., a corporation of Texas, ten percent to Jack W. Flowers, Waco, Tex., ten percent to James H. Maxey, Fresno, Calif., ten percent to David C. Casey, ten percent to Wesley D. Rogers, Jr., and ten percent to Vernon E. Thompson

Filed July 14, 1964, Ser. No. 382,602

8 Claims. (Cl. 75—108)

1. A wet process for the separation, isolation and recovery of the acid-soluble metallic and non-metallic values in waste slag resulting from the reverberatory refining of copper pyritic type ores which comprises:

crushing the slag;

adding a warm solution consisting of HCl and at least one oxidizing agent selected from the group consisting of perchloric, chloric, chlorous, and hypochlorous acids and their salts to said slag, said solution having a normality of between 3.0 and 4.5 at the time it is added to the slag;

mixing the slag and acid to dissolve the acid solubles in said slag and to oxidize the ferrous iron therein to ferric iron;

separating the solid insoluble residue from the solution of silicic acid and the acid salts of the acid soluble iron, aluminum, copper, zinc, manganese, magnesium and calcium originally present in said slag;

forming a gel by removal of water from said separated solution; and

recovering the iron, copper, calcium, silicon, zinc, magnesium and manganese values from said solution.

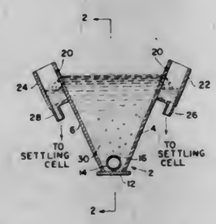
3,288,598

METHOD FOR RECOVERING METALS

William G. Hogue, Warren, Ariz., assignor to Phelps Dodge Corporation, New York, N.Y., a corporation of New York

Filed Apr. 11, 1963, Ser. No. 272,441

2 Claims. (Cl. 75—109)



1. A process for recovering copper values from pregnant liquor comprising:

(a) injecting pregnant liquor upwardly into a mass of sponge iron particles contained in a reaction vessel, at a sufficient velocity to effect motion of said sponge iron particles to cause them to abrade against one another;

(b) changing the velocity of the upwardly moving stream of reacting liquor in an amount so that the copper precipitate particles formed are carried upward with the flowing stream which is substantially free from iron particles;

(c) introducing the flowing stream containing said copper particles into a settling zone to effect separation of said copper particles.

3,288,599

COPPER RECOVERY PROCESS

Harmon E. Keyes, P.O. Box 8, Greer, Ariz.

Filed June 2, 1965, Ser. No. 460,665

8 Claims. (Cl. 75—109)

1. In a process of producing metallic copper, the steps which comprise:

leaching a copper ore with sulfuric acid solution to produce a pregnant solution containing copper sulfate and sulfuric acid;

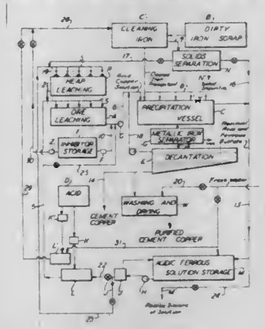
cleaning iron scrap containing dirt and rust by subjecting it to vigorous agitation in contact with a dilute sulfuric acid solution to remove adhering dirt and dissolve rust as ferrous sulfate;

separating the resulting acidic ferrous sulfate solution and the removed dirt from the cleaned iron;

passing said acidic ferrous sulfate solution downwardly through and in contact with a permeable heap of broken rock exposed to the air to remove iron from the solution by precipitation as ferric hydroxide and to produce sulfuric acid in the solution, by reactions involving oxidation and hydrolysis, while maintaining a relatively low acidity in the solution in contact with said heap so as to promote said reactions and the removal of iron from the solution;

adding the effluent solution from the last-mentioned step, depleted in iron and containing sulfuric acid, to the sulfuric acid solution in the leaching step, while maintaining in the solution during said leaching step an acidity higher than that in the solution in contact with said heap and sufficient to prevent precipitation of ferric hydroxide;

subjecting the cleaned iron to contact with the pregnant solution from the leaching step to precipitate



metallic copper and produce ferrous sulfate in solution, while maintaining sufficient free acid in the solution to prevent precipitation of iron hydroxide;

separating the precipitated copper from the remaining iron and from the residual acid solution containing ferrous sulfate;

returning a portion of said residual solution and passing it downwardly through and in contact with said heap of broken rock to remove iron therefrom as ferric hydroxide and produce sulfuric acid in the solution;

and adding sulfuric acid to another portion of said residual solution and returning it to the leaching step.

3,288,600

LOW CARBON, HIGH STRENGTH ALLOY STEEL

Arthur M. Johnsen, Jr., and George E. Kampschaefer, Jr., both of Middletown, Ohio, assignors to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio

Filed Nov. 7, 1960, Ser. No. 67,662

8 Claims. (Cl. 75—126)

1. A high strength, low carbon alloy steel consisting essentially of:

Carbon, substantially .08% to .21%,
Manganese, substantially .20% to .70%,
Phosphorus, .04% maximum,
Sulfur, .05% maximum,
Silicon, substantially .15% to 1.0%,
Chromium, substantially 1.0% to 2.5%,
Molybdenum, substantially .40% to 1.0%,
Boron, substantially .0015% to .01%.

said steel containing a material selected from a group consisting of titanium, vanadium, columbium, and combinations thereof in an amount of substantially .03% to .15%, the balance being substantially all iron with commercial impurities.

ERRATUM

For Class 75—128 see:
Patent No. 3,288,611

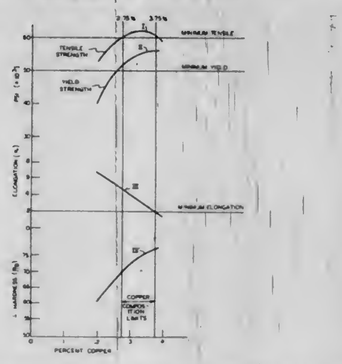
3,288,601

HIGH-STRENGTH ALUMINUM CASTING ALLOY CONTAINING COPPER-MAGNESIUM-SILICON-SILVER

Merton C. Flemings, 15 Percy Road, Lexington, Mass., and Richard F. Polich, 261 Marlboro St., Boston, Mass.

Continuation of application Ser. No. 286,630, June 10, 1963. This application Mar. 14, 1966, Ser. No. 534,249

2 Claims. (Cl. 75—142)



1. High-strength aluminum casting alloy having the properties of minimum tensile strength of essentially 60,000 pounds per square inch and minimum yield strength of essentially 50,000 pounds per square inch and having high ductility, said alloy consisting essentially of 2.75 to 3.75% copper, 0.4 to 0.6% magnesium, 0.7 to 1.2% silicon, and 0.35 to 0.45 silver with the balance aluminum.

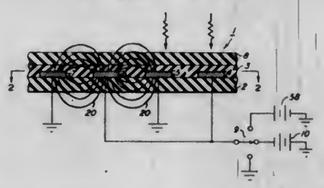
3,288,602

XEROGRAPHIC PLATE AND METHOD

Christopher Snelling, Penfield, Robert W. Gundlach, Victor, and George R. Mott and William D. Hope, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Apr. 4, 1962, Ser. No. 185,051

18 Claims. (Cl. 96—1)



1. A xerographic sensitizing process comprising applying a potential across two dielectrically separated conductive members one of which is a fine conductive screen, said screen being contiguous with a photoconductive layer so as to set up electric fields through said photoconductive layer, said two dielectrically separated conductive members lying on one side of a surface of said photoconductive layer, with at least a portion of said dielectric being in contact with said photoconductive layer, while uniformly subjecting said photoconductive layer to activating radiation, whereby competing electric fields are established in the radiation struck areas, removing said source of activating radiation and removing said potential source from said conductive members whereby charge is trapped at the photoconductive dielectric interface.

6. A xerographic apparatus comprising two conductive members, a dielectric material separating said two conductive members, at least one of said conductive members being a fine screen, a photoconductive layer contiguous to said conductive screen, said conductive members and said dielectric material all lying on one side of a surface of said photoconductive layer with at least a portion of said dielectric layer being in contact with said photoconductive layer, and means to apply an electric potential to said screen capable of creating a significant potential difference within said screen, whereby electric fields are established through said photoconductive layer.

3,288,603

METHOD OF RESTORING XEROGRAPHIC PROPERTIES TO A GLASS BINDER PLATE

Lester Corrsin, Penfield, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

No Drawing. Filed Apr. 29, 1964, Ser. No. 363,609

10 Claims. (Cl. 96—1)

1. The method of increasing the image reproducing properties of a xerographic glass binder plate having impaired image reproducing properties, which comprises heating said plate to a temperature of at least the fusing point of the glass binder material in said binder plate, said plate initially comprising a photoconductive layer composed of finely divided inorganic photoconductive particles dispersed in a highly insulating fused glass binder, said photoconductive particles constituting less than about 60 percent by weight of said photoconductive layer.

3,288,604

IMAGING METHOD USING AN ELEMENT HAVING A GLASS OVERCOATING

Lester Corrsin, Penfield, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Sept. 3, 1964, Ser. No. 394,228

5 Claims. (Cl. 96—1)

1. An imaging method comprising:
(a) providing an electrophotographic plate comprising a photoconductive layer including an inorganic glass binder and finely divided inorganic photoconductive particles overlaying a conductive substrate, said photoconductive layer comprising less than about 60 percent by weight of said photoconductive particles and having a glass overcoating overlaying said photoconductive layer, said glass overcoating containing less inorganic photoconductive particles than in said photoconductive layer;
(b) forming an electrostatic latent image on said plate; and
(c) developing said latent image, whereby a visible image is formed.

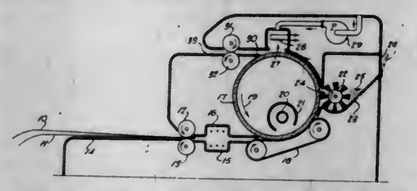
3,288,605

ELECTROPHOTOGRAPHIC PRINTING METHOD

F Sutherland Macklem, New Canaan, Conn., assignor to Equipment Development Corp., New Canaan, Conn.

Continuation of abandoned application Ser. No. 585,717, May 18, 1956. This application Nov. 19, 1965, Ser. No. 508,659

5 Claims. (Cl. 96—1)



4. The photo-reproduction method employing a sheet of translucent paper having a photoconductive insulative coating on one side thereof that is photoelectrically-responsive when subjected to an electrical charge, which comprises positioning a positive translucent master on said sheet, impressing an electrical potential on opposite sides of said master and sheet while in contact with each other, directing illumination through said master to the photoconductive side of said sheet, thereby producing an electrical charge pattern corresponding to the copy on said master, and developing said coating by applying developer to said photoconductive side.

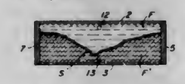
3,288,606

MAP MAKING AND APPARATUS THEREFOR

Donald Evan Myers, Horsham, and Joseph Francis List and James Clifford Bowman, Philadelphia, Pa., assignors, by mesne assignments, to Aero Service Corporation, a corporation of Delaware

Original application Apr. 4, 1960, Ser. No. 19,806, now Patent No. 3,050,872, dated Aug. 28, 1962. Divided and this application May 17, 1962, Ser. No. 202,340

6 Claims. (Cl. 96—27)



1. The method of making a two-dimensional map containing altitude data in terms of density of response to light which comprises disposing a transparent body having a plane surface and spaced therefrom a three-dimensional surface corresponding to the terrain to be mapped in complemental relation with another transparent body having a plane surface and a three-dimensional surface complementary to said first three-dimensional surface with said planes substantially parallel, both bodies having substantially identical indices of refraction and materially different light absorptive characteristics, placing a photosensitive emulsion-carrying sheet parallel to said planes and exposing it to light passing successively through said bodies normal to said planes.

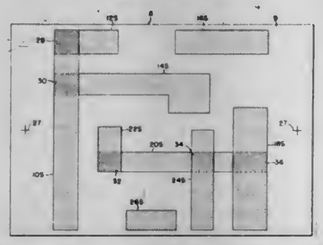
3,288,607

MASTER DRAWINGS AND METHOD OF MAKING TRANSPARENCIES FROM SAME

William J. Middleton, Jr., Orange County, Fla., assignor to Martin-Marietta Corporation, Middle River, Baltimore County, Md., a corporation of Maryland

Filed Aug. 16, 1962, Ser. No. 217,450

13 Claims. (Cl. 96—27)



1. A master drawing to be used for optically preparing transparencies comprising, in combination:
(a) a transparent base material; and
(b) a plurality of tapes disposed on said base material so as to represent a desired configuration, with each tape having geometric patterns of color formed thereon;
(c) said geometric patterns of color on at least two of said tapes having optically distinguishable characteristics, with each optical characteristics delineating at least one separately useable aspect of said configuration; and
(d) said two tapes being disposed on said base material in at least partially overlapping relationship with each other, with said geometric patterns of color of said tapes being relatively positioned at said areas of overlap so as to enable said optical characteristics of each of said aspects of said configuration to be photographically distinguishable from each other.

9. A method of optically preparing a plurality of transparencies each of which delineates different aspects of a desired circuit for subsequent use in the development of stencils for the fabrication of thin film substrates, said method comprising the following steps:
(a) attaching at least two configurations of geometric patterns of color upon a transparent base material in at least partially overlapping layers, with any one configuration having patterns of one color and the remaining configurations respectively having patterns of other colors;
(b) relatively positioning said configurations of geometric patterns of color with respect to each other so that any one pattern of color is photographically distinguishable from any other pattern of color of any other configuration at areas in which any one of said configurations overlap any other configuration;
(c) photographically exposing said master drawing through successive color filters whereupon first said one configuration of said one color is obtained, and successively exposing said other configurations of said other colors can be optically processed.

3,288,608

LIGHT-SENSITIVE COATING FOR PRE-SENSITIZED PLATES INTENDED FOR OFFSET PRINTING AND FOR ENGRAVED WIRING OF PRINTED CIRCUITS

Germain Yves Coutaud, Paris, Louis Armand Facquet, Vaucresson, Leon Rene Lehmann, Paris, and Harry Andre Joseph Schuh, Vimoutiers, France, assignors to Nobel-Bozel, Paris, France, a joint-stock company of France

No Drawing. Filed Dec. 9, 1963, Ser. No. 329,276

Claims priority, application France, Dec. 14, 1962, 918,720

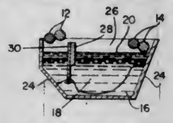
17 Claims. (Cl. 96—33)

1. A light-sensitive composition for pre-sensitized plates intended for offset printing and for engraved wiring for printed circuits, said composition comprising the products of the reaction of an anhydride, of diazo-naphthol-sulphonic acid and of at least one isomer of said anhydride, with a para-diazo-diphenylamine and a novolak resin.

14. In a method of preparation of a light-sensitive coating for pre-sensitized plates intended for engraved wiring for printed circuits, said method comprising:
(a) dissolving in an alcoholic medium an anhydride of diazo-naphthol-sulphonic acid and of at least one isomer of said anhydride;
(b) dissolving in said alcoholic medium a para-diazo-diphenylamine whereby there is produced in the cold state a reaction between the para-diazo-diphenylamine and part of said anhydrides of diazo-naphthol-sulphonic acid;
(c) dissolving in said alcoholic medium a novolak resin, whereby there is obtained an alcohol coating varnish comprising reactive constituents;
(d) coating a metallic surfaced plate with said alcohol varnish;
(e) heat treating said varnish coating whereby there is caused a slight poly-condensation of said novolak resin and a chemical reaction with the unreacted components of said anhydrides of diazo-naphthol-sulphonic acid which are in the free state in said medium to provide a sensitive surface;
(f) applying a positive film of the design to be reproduced against the sensitive surface;

(g) exposing said surface to ultra-violet rays;
(h) developing the sensitive surface by means of a dilute aqueous solution of tri-sodium phosphate having a concentration, in crystallized product, of 0.2% to 10%;
(i) treating the plate with a solvent of copper, comprising an aqueous solution of ferric chloride at 36° Baumé;
(j) dissolving in an appropriate solvent, comprising ethyl alcohol, the non-exposed coating which covers the unattacked copper of the plate.

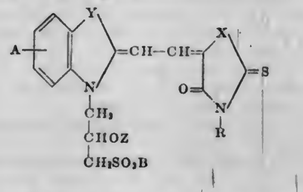
3,288,609
PHOTOGRAPHIC APPARATUS AND PROCESS FOR TREATING SHEETS WITH A LIQUID
Edwin H. Land, Cambridge, Richard J. Chen, Brockton, and Nicholas Gold, Arlington, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Oct. 12, 1964, Ser. No. 403,221
19 Claims. (Cl. 96—50)



1. The method of treating an exposed photosensitive image-recording sheet with a liquid to produce a visible image therein comprising:
providing a body of an aqueous liquid including reagents capable of reacting with differentially exposed photosenesitive image-recording material to produce a visible image;
floating a layer of another liquid substantially non-volatile at normal temperatures and immiscible with said aqueous liquid on the surface of the latter to protect said body of aqueous liquid from the atmosphere; and
advancing said sheet into and from said body of liquid at a rate such that said sheet absorbs a predetermined amount of said aqueous liquid.

3,288,610
OPTICALLY SENSITIZED PHOTOGRAPHIC SILVER HALIDE EMULSIONS
Johannes Götze, Bergisch-Neukirchen, and Helmut Kampfer, Cologne-Stammheim, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Oct. 6, 1964, Ser. No. 402,006
Claims priority, application Germany, Oct. 26, 1963, A 44,406
6 Claims. (Cl. 96—106)

1. An optically sensitive silver halide emulsion containing a sensitizing amount of a dimethine merocyanine dye having the following formula



wherein
Y represents a bivalent radical of the group consisting of oxygen and sulfur;
X stands for a radical of the group consisting of oxygen, sulfur, an imino radical of the formula

>N–R

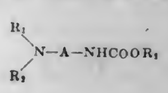
and a carbonimido radical of the formula —CONR—;
Z represents a member of the group consisting of hydrogen and acyl;
R represents a group of the class consisting of alkyl having up to 5 carbon atoms, phenyl, naphthyl and phenyl alkyl;
A stands for a substituent of the group consisting of hydrogen, alkyl having up to 5 carbon atoms, phenyl, phenyl alkyl, alkoxy having up to 5 carbon atoms, hydroxy, carboxyl, esterified carboxyl, heterocyclic groups and a fused-on phenyl ring;
B stands for a cation.

3,288,611
MARTENSITIC STEEL
Remus A. Lula, Natrona Heights, and Harry E. McCune III, Brackenridge, Pa., assignors to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania
No Drawing. Filed Oct. 14, 1963, Ser. No. 316,116
4 Claims. (Cl. 75—128)

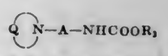
1. A martensitic stainless steel consisting essentially of from traces to 0.10% carbon, traces to 0.5% silicon, traces to 1.0% manganese, from 10.5% to 14% chromium, from 3% to 6% nickel, from 8 to 18 times the carbon content of titanium, and the balance essentially iron with incidental impurities.

3,288,612
PHOTOGRAPHIC EMULSION OF SILVER HALIDE
Yoshihide Hayakawa, Kosalji, Minamiashigara-machi, Ashigarakami-gun, Kanagawa-ken, Japan, assignor to Fuji Photo Film Co., Ltd., Kanagawa-ken, Japan, a corporation of Japan
No Drawing. Filed Nov. 27, 1962, Ser. No. 240,453
Claims priority, application Japan, Dec. 26, 1961, 36/47,419
4 Claims. (Cl. 96—114)

1. A light sensitive silver halide emulsion from which an image of high edge gradient may be obtained, said emulsion having the improvement which comprises the incorporation therein of an uniformly dispersed therein agent producing said effect and consisting of (1) the condensation products of alkylene oxides with a compound selected from the group consisting of water, aliphatic alcohols, glycols, fatty acids, aliphatic amines, phenols, and hexitol ring dehydration products and (2) at least one compound selected from the group consisting of lysine, ornithine, arginine and their mineral acid salts, carbamates represented by the following structural formulas:



and



wherein R_1, R_2 and R_3 each represents an alkyl group, A and Q each represent an alkylene group, and the total number of carbon atoms contained in the carbamate is not less than 10, and their mineral acid salts.

3,288,613
PREPARATION OF ALGAE AS HUMAN FOOD
Luther W. Reynolds, Philadelphia, Pa., assignor to General Electric Company, a corporation of New York
No Drawing. Filed May 23, 1963, Ser. No. 282,580
4 Claims. (Cl. 99—1)

1. The process of producing a digestible human food from algae comprising the addition of a 1% suspension of Chlorella a sufficient amount of 30% hydrogen peroxide to make a final solution of substantially 1% peroxide by weight, both solutions being, when mixed, at about 50° to 100° F., and allowing the mixture to react for about fifteen minutes.

3,288,614
PROCESS OF PRODUCING MILK FROM SOY BEANS
Charles P. Miles, Riverside, Calif., assignor to Pacific Union Association of Seventh Day Adventists, doing business as Loma Linda, Foods, Riverside Calif., a corporation of California
No Drawing. Filed Nov. 2, 1964, Ser. No. 408,334
15 Claims. (Cl. 99—64)

1. A process of producing soy milk, comprising the following steps: cracking a quantity of selected soy beans having a moisture content in the range of 10%–14% of water by weight; winnowing the cracked beans to remove the hulls; reducing the dehulled cracked beans to thin flakes while still in an unmoistened state; adding water to the resulting flakes to prepare a slurry therefrom; then pressure cooking the slurry for a period of time in the range from a mere flash to a maximum of 10 minutes duration; then subjecting the cooked slurry to high pressure homogenization; then centrifuging the homogenized slurry to remove fine solids; and then formulating the extracted liquid by the addition of selected ingredients, thus producing soy milk.

3,288,615
POROUS CERAMIC BODIES AND COMPOSITE MEMBERS AND METHODS OF MAKING THE SAME
Joseph F. Estes, Dundee, and Helmut Bruchmann, Woodstock, Ill., assignors to The Haeger Potteries, Inc., Dundee, Ill., a corporation of Illinois
Filed Sept. 17, 1964, Ser. No. 397,265
5 Claims. (Cl. 106—40)

1. The method of making a porous ceramic member comprising forming a mixture consisting essentially by weight of from about 44% to about 57% alumina and from about 8% to about 25% silica and from about 25% to about 39% of a carbonate of a metal selected from the group consisting of calcium and magnesium, shaping the mixture to form a body having a desired shape, heating said body to an elevated temperature in the range from about 2,300° F. to about 2,700° F. to fire said body, and cooling said body to provide a porous ceramic member having a plurality of open cells of capillary size distributed therethrough and interconnected to form passages extending from each area in said member to any other area in said member and to and terminating at the surface of said member.

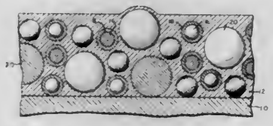
3,288,616
REFRACTORY AND METHOD OF MAKING
Jan Bowman, Los Gatos, Calif., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
No Drawing. Filed Nov. 15, 1963, Ser. No. 323,917
5 Claims. (Cl. 106—58)

4. A refractory composition adapted to be formed into shape with incorporation of tempering water consisting essentially of: from 2% to 10% pulverized pitch, all of which passes a 100 mesh screen, having a softening point of at least 250° F.; from 0.5% to 4% volatilized silica; the balance being nonacid refractory grain.

3,288,617
REFRACTORY BRICK OF BURNT MAGNESIA AND PROCESS OF MANUFACTURE
Russell Pearce Heuer, Villanova, Pa., assignor to General Refractories Company, a corporation of Pennsylvania
No Drawing. Filed Apr. 22, 1964, Ser. No. 361,867
Claims priority, application Austria, May 31, 1963, A 4,406/63
1 Claim. (Cl. 106—60)

A process of manufacturing refractory bricks suitable for the lining of an oxygen-blowing converter which comprises burning natural magnesite which contains in burned condition more than 4% lime, until it has a bulk specific gravity of at least 2.9, separating the magnesia particles by physical methods into particles containing more than 88% MgO and particles containing 80 to 88% MgO, at least 5% lime, up to 2% silica and at least 5% ferric oxide, reburning the said particles containing 80 to 88% MgO at a temperature exceeding 1350° C. to form dicalcium ferrite as a component in excess of 5%, mixing hot tar with the reburned magnesia and molding the mixture into a basic refractory brick at a pressure exceeding 300 kg./sq. cm.

3,288,618
COLORED REFLECTIVE COATING COMPOSITION
Eduard R. De Vries, Huntingdon, Pa., assignor to Prismo Safety Corporation, Huntingdon, Pa., a corporation of Pennsylvania
Filed Aug. 16, 1962, Ser. No. 217,436
1 Claim. (Cl. 106—148)



A reflective coating composition comprising a transparent binder material containing a sufficient number of opaque cured reflectively colored abrasive resistant resin coated glass beads having diameters in the range of ½–10 mils to constitute a color pigment in the binder material and a plurality of relatively larger uncoated transparent retroreflecting glass beads having diameters in the range of 10–50 mils.

3,288,619
DRY GRANULAR AZO DYESTUFF PREPARATIONS CONTAINING A CELLULOSE ESTER
Arthur Buehler, Rheinfelden, Christian Zickendraht, Binningen, and Robert Schoenenberg, Riehen, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland
No Drawing. Filed Oct. 10, 1962, Ser. No. 229,749
Claims priority, application Switzerland, Oct. 16, 1961, 12,008/61; Aug. 13, 1962, 9,686/62
17 Claims. (Cl. 106—193)

1. A dry, granular dyestuff preparation practically free from electrolyte which consists substantially of one part of a complex heavy metal compound of an azo dyestuff and 0.5 to 2 parts of a cellulose ester.

3,288,620
WAX COMPOSITIONS OF IMPROVED HARDNESS AND TENSILE STRENGTH AND PROCESS FOR PREPARING SAME
Richard F. Lippoldt, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Oklahoma
No Drawing. Filed Jan. 21, 1963, Ser. No. 252,561
11 Claims. (Cl. 106—271)

1. A paraffin wax composition of improved tensile strength and hardness comprising:

(a) at least 0.5 percent by weight of a polymeric material prepared by the process comprising:

(1) adding an aluminum alkoxide compound having the formula



wherein R_1, R_2 and R_3 are alkyl groups each containing between 1 and 40 carbon atoms, to a mixture of water and a polycarboxylic acid with the proportions of the reactants being from about 0.5 mole to about 4 moles of water to each neutral equivalent of acid used, and about 1 mole of the alkoxide for each neutral equivalent of the acid used,

(2) heating the admixture of step (1) to a temperature in the range of from about 30 to about 100° C.,

(b) the remainder consisting essentially of paraffin wax.

2. The method of improving the hardness and tensile strength properties of paraffin wax which comprises adding to said wax an amount in the range of from about 0.5 percent by weight to about 15 percent by weight of a polymeric material prepared by the process comprising:

(a) adding an aluminum alkoxide compound having the formula



wherein R_1, R_2, and R_3 are alkyl groups each containing between 1 and 40 carbon atoms, to a mixture of water and polycarboxylic acid with the proportions of the reactants being from about 0.5 mole to about 4 moles of water to each neutral equivalent of acid used, and about 1 mole of the alkoxide for each neutral equivalent of the acid used,

(b) heating the admixture of step (a) to a temperature in the range of from about 30 to about 100° C.

3,288,621

MANUFACTURE OF PIGMENT COMPOSITIONS

Gordon Barron, William Black, and Arthur Topham, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed June 11, 1964, Ser. No. 374,294
Claims priority, application Great Britain, Mar. 14, 1962, 9,804/62
14 Claims. (Cl. 106—288)

1. A pigment composition consisting essentially of a pigment intimately incorporated with an organic pigment derivative, the pigment being selected from the class consisting of blue copper phthalocyanine pigments, benzidine yellow pigments, quinacridone red pigments and chrome yellow pigments and the organic pigment derivative being of the formula

$$A—[CH_2—X]_m$$

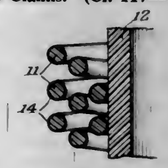
wherein A is the molecule of a pigment selected from the class consisting of copper phthalocyanine, isodibenzanthrone, 4,4′-bis(6-methylbenzthiazyl)azobenzene and linear quinacridone, X is a residue of a primary or secondary amine, the N atom thereof being bonded to the CH_2 and *m* is an integer from 1 to 5, and the proportion of organic pigment derivative in the composition being from 1% to 20% by weight.

3,288,622

METHOD TO IMPART SUPPLENESS TO MONOFILAMENT THREAD

Nathan M. Weiss, 1150 Westminster Ave., Alhambra, Calif.

Filed Oct. 2, 1964, Ser. No. 401,189
4 Claims. (Cl. 117—7)



1. The method of feeding monofilament thread from a spool thereof that consists in

(a) coating said thread with a solution consisting essentially of a liquid lubricant and softening agent,

(b) open-winding the coated thread on the spool from which the same is to be fed to form helical spaced convolutions defining a continuous and uninterrupted helical space between adjacent convolutions that extends continuously over the height of the spool, the convolutions of one winding layer being angularly related to the convolutions of the winding layers immediately therebeneath and thereabove, and

(c) lubricating and softening the coated thread to render it supple as the same leaves the spool.

3,288,623

METHOD OF FLAME SPRAYING GRAPHITE TO PRODUCE A LOW FRICTION SURFACE

Ervin Colton, Wauwatosa, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

No Drawing. Filed June 4, 1963, Ser. No. 285,244
5 Claims. (Cl. 117—8)

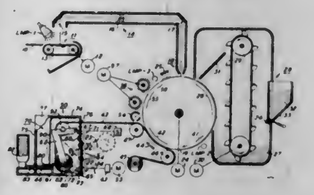
1. A method of applying a low friction coating onto the surface of an article comprising, flame spraying said article with a metallic powder wherein each metallic grain has a graphite core.

3,288,624

VAPOR FUSING METHOD FOR XEROGRAPHIC POWDER IMAGES

Harold E. Clark, Penfield, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Original application Aug. 15, 1962, Ser. No. 217,027, now Patent No. 3,215,116. Divided and this application June 1, 1965, Ser. No. 467,803
4 Claims. (Cl. 117—21)



1. In the method of xerography that includes the steps of forming a loosely supported powder image reproduction with powder material having a solvent soluble component onto a continuous web support surface, and fusing the loosely supported powder substantially permanently onto said support surface, the improvement in the fusing step comprising the steps of:

(a) forming a solvent vapor atmosphere for the solvent soluble component of the powder image and in which the web support is insoluble;

(b) exposing the powder images on said web to said vapor atmosphere for a sufficient time period to enable fusing of the solvent soluble component thereof and winding the web while in said vapor atmosphere into overlapping relation onto a take-up roll adapted to support the web being received thereon at least partially within said vapor solvent atmosphere; and,

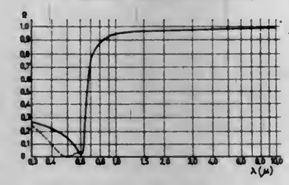
(c) removing the wound web having fused powder images thereon from the vapor atmosphere after a predetermined length of web has been wound on said roll.

3,288,625

OPTICAL DEVICE HAVING AN INFRARED RADIATION TRANSMITTING AND VISIBLE RADIATION REFLECTING LAYER OF LANTHANUM HEXABORIDE

Erhard Kauer, Aachen, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed May 13, 1964, Ser. No. 367,039
Claims priority, application Germany, May 24, 1963, N 23,220
4 Claims. (Cl. 117—33.3)



1. An optical device comprising a substrate provided with a coating of an infra-red reflecting layer having a low reflectivity for visible radiation, said layer being constituted of lanthanumhexaboride.

3,288,626

SCINTILLATORS FOR COUNTING-PARTICLES

René Delacoux, Nauterre, France, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Dec. 18, 1962, Ser. No. 245,549
Claims priority, application France, Dec. 18, 1961, 882,253, 882,254
8 Claims. (Cl. 117—33.5)



1. A scintillator for counting α-particles comprising a body of synthetic plastic material having a thickness of the order of 10 microns containing an inorganic fluorescent powder which emits visible light when bombarded with α-particles in a surface layer thereof.

3,288,627

HEAT-SENSITIVE DIAZOTYPE MATERIAL COATED SHEET

Edward C. Bialczak, Mount Prospect, Ill., assignor to Addressograph-Multigraph Corporation, Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed Aug. 5, 1965, Ser. No. 477,594
5 Claims. (Cl. 117—36.8)

1. A heat-sensitive diazotype material comprising a base sheet coated with a diazo compound, a coupling component and an alkaline donor metallic dialkyldithiocarbamate-amine complex, wherein the metal is selected from the group consisting of zinc, cadmium and tellurium, the alkyl radicals contain 1 to 5 carbon atoms, inclusive, and the amine is selected from the group consisting of aliphatic and alicyclicamines containing 4 to 10 carbon atoms, inclusive.

3,288,628

PROCESS FOR CHEMICALLY WATERMARKING PAPER AND PRODUCT THEREOF

Milton O. Schur, New Haven, Conn., and John H. Goldberger, Brevard, N.C., assignors to Olin Mathieson Chemical Corporation, New Haven, Conn., a corporation of Virginia

No Drawing. Filed Oct. 1, 1962, Ser. No. 227,578
10 Claims. (Cl. 117—38)

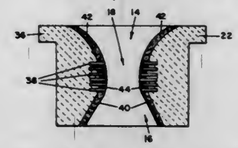
1. The process of marking paper sheets with a permanent colorless translucent design comprising printing on paper sheets a layer of liquid in the shape of the said design, which layer is adapted to penetrate rapidly the web of said sheets substantially without lateral diffusion beyond the periphery of the said design, said liquid consisting essentially of 55 to 90 percent by weight of liquid organic viscous ester having a molecular weight in the range of about 300 to 10,000 and 10 to 45 percent by weight of a monomeric non-volatile liquid organic ester plasticizer having a melting point below 45° C. and a boiling point over 250° C.

3,288,629

ORIENTED GRAPHITIC STRUCTURE

Louis R. McCreight, Wayne, Pa., assignor to General Electric Company, a corporation of New York

Filed Oct. 18, 1962, Ser. No. 231,451
3 Claims. (Cl. 117—46)



1. The method of forming deposits of pyrolytic carbon so attached to a substrate that the normal axes of the deposit are at a predetermined acute angle with the surface of the substrate which comprises:

providing the said substrate with protrusions each of circular symmetry around a central axis,

the central axis of each protrusion making with a normal to the surface of the substrate an angle equal to the said predetermined angle,

said protrusions having lengths sufficient to ensure orientation parallel to the surface of the protrusions in the interstices between the protrusions,

said protrusions also having limited space therebetween to prevent any substantial amount of orientation parallel to the surface of the substrate,

causing the deposition of pyrolytic carbon by destructive decomposition of carboniferous gases to occur on the said protrusions until the interstices between the protrusions are filled with pyrolytic carbon.

3,288,630

PROCESS FOR COATING CELLULOSIC SUBSTRATES

Mark Plunguian, Newark, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Feb. 23, 1965, Ser. No. 434,682
10 Claims. (Cl. 117—62)

1. The process which comprises applying a coating of a fluid dispersion of nitrocellulose particles in aqueous

medium to a cellulosic substrate, drying the applied coating, and thereafter activating the applied dried coating by treating said coating with a separate application of nitrocellulose plasticizer, said plasticizer being applied from aqueous medium.

3,288,631

PRODUCTION OF NON-WOVEN FIBER WEBS STABLE TO WATER

Helmut Jörder, Freiburg im Breisgau, Germany, assignor to Pellon Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Apr. 19, 1961, Ser. No. 103,972
Claims priority, application Germany, Apr. 28, 1960, F 31,105
2 Claims. (Cl. 117—62.1)

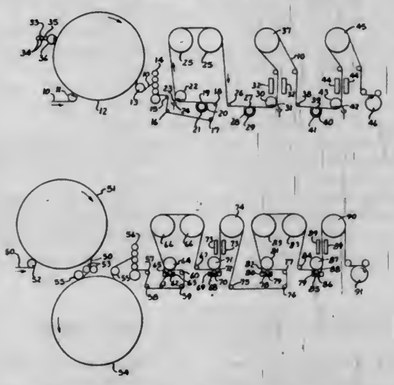
1. In the process for the production of non-woven sheet material in which a loose fiber fleece is impregnated with a binding agent and thereafter the binding agent set, bonding the fibers together at their crossing points, the improvement for imparting stability to water and hydrophobic properties to the resulting sheet material, which comprises impregnating the fleece with an aqueous solution of a bonding agent containing both hydroxyl and carboxyl groups in the molecule selected from the group consisting of water-soluble derivatives of carboxy alkyl cellulose and alginic acid, thereafter impregnating the resulting fleece with an aqueous solution of (1) a water-soluble synthetic resin capable of reacting at increased temperature and in the presence of an acid catalyst with the hydroxyl groups of the bonding agent in combination with (2) a water-soluble metal salt capable of reacting with the carboxyl groups of the bonding agent with coagulation of said bonding agent, and (3) an acid catalyst and heating to a temperature from 120 to 160° C., said synthetic resin being a member selected from the group consisting of tetramethylacetylenediurea, dimethyloldihydroxyethyleneurea, and dimethylolethyleneurea.

3,288,632

PRODUCTION OF COATED PAPER

James A. Rush, Stevens Point, and Sherwood G. Holt, Wisconsin Rapids, Wis., assignors to Consolidated Papers, Inc., Wisconsin Rapids, Wis., a corporation of Wisconsin

Filed Aug. 23, 1962, Ser. No. 218,928
4 Claims. (Cl. 117—68)



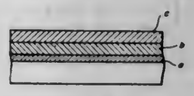
2. The method of making paper of enhanced smoothness and printability which can be used for fine rotogravure printing with little or no supercalendering which comprises applying onto each of the surfaces of a double machine glazed forwardly moving dry web of paper two separate layers of aqueous coating composition of from about 20 to about 65% solids content comprising mineral pigment and adhesive and separately heat drying each coating after it has been applied and leveled, the adhesive in the first coating being from about 10 to about 30% by weight of the pigment and the adhesive in the last coating being greater in amount by weight of the pigment than that of the preceding coating and being from 30% to 100% by weight of the pigment and comprised principally of a thermoplastic synthetic aqueous polymeric dispersion.

3,288,633

METHOD OF PRODUCING NON-FIRED DECORATIVE GLAZE COATINGS ON METAL SURFACES

Juro Kubo, 11 Higashi-Ashiyacho, Ashiya-shi, Japan

Filed Dec. 17, 1962, Ser. No. 244,984
2 Claims. (Cl. 117—70)



1. A process for manufacturing a cold glazed metal object cleaned so as to be substantially free of oxides, said process comprising the steps of;

applying on a surface of a metal object a first layer of quartz powder of grain size less than 0.1 mm. admixed with a sulfonamide or epoxy resin, the quartz powder being in an amount of from about ⅓ to ¼ of the volume of said resin;

applying on said first layer a second layer of quartz powder admixed with about an equal volume of a resin selected from the group consisting of polyisobutylene, polyvinyl chloride, polyurethane, polyvinyl acetate, polystyrene, and polyacrylate; and

applying on said second layer before the second layer hardens a cold glaze layer.

3,288,634

METHOD OF FORMING A COMPOSITE MEMBER

Henry S. Spacil, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Jan. 7, 1963, Ser. No. 249,705
7 Claims. (Cl. 117—123)

1. A method of forming a composite member which comprises providing a substrate, applying a slurry containing at least one metallic halide in a non-aqueous vehicle as a coating on at least one surface of said substrate thereby providing a coated substrate, heating said coated substrate to evaporate the non-aqueous vehicle and provide a metallic halide layer on said substrate, positioning said substrate with said metallic halide layer thereon within a stream of gas, the essential active reducing ingredient of which is hydrogen, and heating said substrate with said metallic halide layer thereon to a temperature in a temperature range having a lower limit determined by the ratio of the hydrogen halide partial pressure to the hydrogen partial pressure with the hydrogen halide and hydrogen gases being in equilibrium with both the metal of said metallic halide on said substrate and with said metallic halide on said substrate, said ratio having a value of from 0.001 to 0.01, and having as an upper limit the set of temperatures at which the vapor pressure of said metallic hydride multiplied by the number of halogen atoms per metal atom has a value between 0.001 and 0.01 whereby said layer is reduced to a coherent metallic layer on said substrate.

3,288,635

COATING PROCESS

William Green and Harry Hyman Topper, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Jan. 9, 1963, Ser. No. 250,239
Claims priority, application Great Britain, Jan. 15, 1962, 1,357/62
13 Claims. (Cl. 117—128.4)

1. Process for the coating of metal springs which comprises treatment with a solution of a silicone-modified alkyd resin coating composition in a chlorinated hydrocarbon solvent, substantial removal of the solvent, and curing of the residual film of coating composition during heat treatment of the spring.

3,288,636

PROCESS FOR COATING URANIUM ALLOY MEMBERS

Wolfgang Staubwasser, Bensberg-Refrath, Germany, assignor to Interatom Internationale Atomreaktorbau G.m.b.H., Bensberg, Germany

No Drawing. Filed June 21, 1963, Ser. No. 289,749
Claims priority, application Germany, Dec. 31, 1962, J 22,948
6 Claims. (Cl. 117—130)

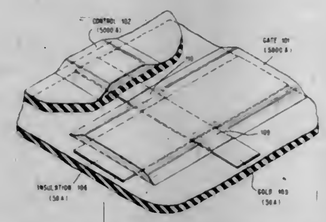
1. A process for applying a firmly adherent chromium intermediate layer to the fuel of a fuel element for a nuclear reactor wherein the fuel comprises a U–3.5 Mo–0.1 Al alloy member, the step of said process comprising cleaning said uranium alloy member, and immersing the cleaned uranium alloy member for approximately 1 to 3 minutes into an aqueous solution at a temperature of approximately 20° C.–30° C. and a pH value <1, said solution comprising approximately 70 grams per liter of chromium oxide CrO_3, approximately 2.5 grams per liter NaF, approximately 2.5 grams per liter NaCl, approximately 5 cubic centimeters per liter H_2SO_4, so that a metallic chromium layer is formed on the alloy member by a chemical displacement.

3,288,637

EDGE PASSIVATION

Irving Ames, Peekskill, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed June 28, 1962, Ser. No. 205,945
10 Claims. (Cl. 117—212)



1. The method of fabricating a cryotron device comprising a superconductive gating element having sharp transition characteristics comprising the steps of

vapor depositing a thin layer of gold having a uniform thickness, and

vapor depositing a gating element of indium through a mask upon said thin layer the edge portions of said gating element contacting said thin layer and being tapered,

a greater percentage of gold being provided adjacent said edge portions of said gating element than adjacent the center portion of said gating element whereby the critical temperature of said edge portions of said gating element is made lower than the critical temperature of said center portion of said gating element,

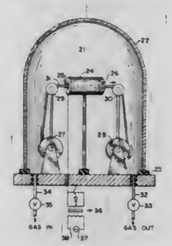
providing a control element insulated from said gating element and registered with said contacting edge portions to apply magnetic fields to said gating element.

3,288,638

METHOD AND APPARATUS FOR THE TREATMENT OF PLASTIC MATERIALS

Hugo L. L. van Paassen and Angelo Guimento, Baltimore, Md., assignors to Martin-Marietta Corporation, Baltimore, Md., a corporation of Maryland

Filed Oct. 9, 1962, Ser. No. 229,407
5 Claims. (Cl. 117—213)



1. In a process for improving the adherent characteristics of a surface of a polyethylene plastic material the steps of:

(a) establishing a gaseous discharge between a hollow cathode and an anode spaced a distance therefrom, and said hollow cathode being in the form of a can having an aperture in each end thereof of sufficient size to permit said material to be passed therethrough; and

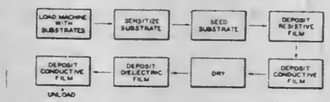
(b) passing said material through said apertures.

3,288,639

METHOD FOR MAKING A PLURAL LAYERED PRINTED CIRCUIT BOARD

Frederick H. Smith, Jr., Poughkeepsie, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Original application May 31, 1962, Ser. No. 199,193, now Patent No. 3,207,127, dated Sept. 21, 1965. Divided and this application Dec. 4, 1964, Ser. No. 416,033
5 Claims. (Cl. 117—213)



1. The method of making a laminated plate for use in forming printed circuits comprising the sequential steps of:

(a) immersing a dielectric base plate for a predetermined time period of approximately five to ten seconds in a solution of tin alcoholate which deposits thereon;

(b) heating the deposit on said plate to approximately 60° C. in the presence of oxygen so as to form an electrically resistive layer of tin oxide thereon;

(c) sensitizing and seeding the tin oxide surface of said plate; and

(d) immersing said plate in another solution for a predetermined time period to chemically and electrolessly deposit an electrically conductive layer selected from the group consisting of copper and nickel overlying said tin oxide layer.

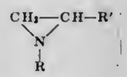
3,288,640

METHODS OF PREVENTING, CONTROLLING, AND REMOVING ALLUVIUM IN COOLING WATER SYSTEMS

Howard G. Flock, Bethel Park, Pa., assignor to Calgon Corporation, a corporation of Pennsylvania

No Drawing. Filed Jan. 11, 1965, Ser. No. 424,816
10 Claims. (Cl. 134—22)

1. The method of removing deposits of alluvium from a cooling water system comprising adding to the water of said system a polyimine having a molecular weight of at least 1000 polymerized from monomers of the general formula



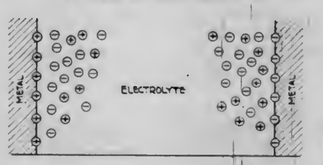
where R is selected from the group consisting of H and alkyl groups having up to 4 carbon atoms, and R′ is selected from the group consisting of R and hydroxyalkyl groups having up to 4 carbon atoms, flowing said water in contact with said deposits thereby forming a floc, and flushing said water containing said floc out of said system.

3,288,641

ELECTRICAL ENERGY STORAGE APPARATUS

Robert A. Rightmire, Twinsburg, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

Filed June 7, 1962, Ser. No. 200,723
4 Claims. (Cl. 136—6)



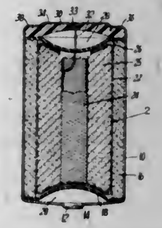
1. In an electrical energy storage device for storing energy in electrostatic condition as double layers of electron—ions and proton—ions at coacting interfaces, the combination of a pair of spaced, porous electrodes, one positive and one negative, each electrode comprising finely divided conductive carbon, having a specific surface area of at least 300 m.²/cc., and having a void volume in the range of about 25 percent to 60 percent, the positive electrode having a micro layer of an active material on the surface and within the pores of said carbon, said positive electrode having a micro layer selected from the group consisting of nickel, platinum, palladium and silver, the negative electrode having a micro layer of an active material on the surface and within the pores of said carbon, said negative electrode micro layer being selected from the group consisting of cadmium hydroxide and zinc oxide, said electrodes having a thickness in the range of 0.001 inch to 0.125 inch, a separator between said electrodes having a thickness of about 0.001 inch, the pores of said electrodes having a magnitude within the range of about 10 to 200 angstroms, an ion-containing and conducting medium being selected from the group consisting of potassium hydroxide and sodium hydroxide, said conducting medium in contact with both sides of both electrodes and having a conductivity that exceeds about 5 ohm-centimeters and said conducting medium forming interfaces with said electrodes, and means for applying an electrical potential across said electrodes to electrostatically form a double layer at each interface, respectively.

3,288,642

RECHARGEABLE DRY CELL HAVING GELLED ELECTROLYTE

Karl V. Kordesch, Lakewood, Ohio, assignor to Union Carbide Corporation, a corporation of New York

Filed Jan. 5, 1961, Ser. No. 81,668
11 Claims. (Cl. 136—14)



1. A rechargeable dry cell comprising a metallic container serving as the cathode terminal thereof and having an integral bottom and an opposite sealed end; an annular cathode fitting snugly in the container; an anode composed of finely divided anodic particles with a gelled alkaline electrolyte and situated within the annulus of the cathode; a semi-permeable separator means disposed between the anode and the cathode; an elastic spacer means extending over the lower extremity of the cathode annulus and defining an expansion space between the spacer means and the container bottom; an anode collector means in contact with the anode; and contact means passing through the sealed end and electrically contacting the anode collector means; said anode providing sufficient surface and quantity of anodic material to combine with oxygen released during overcharging of the cell and the separator means providing a path to the anode for oxygen produced in the cell during overcharge.

3,288,643

PROCESS FOR MAKING CHARGED CADMIUM ELECTRODES

Robert E. Stark, Avon Lake, Ohio, assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Jan. 6, 1964, Ser. No. 336,022
7 Claims. (Cl. 136—24)

1. A process for the manufacture of charged cadmium electrodes which comprises forming a homogeneous mixture comprising from about 80 to 90 weight percent of a cadmium compound selected from the group consisting of cadmium oxide, cadmium hydroxide, cadmium acetate, cadmium carbonate, cadmium chloride, cadmium chlorate, cadmium sulfate and cadmium nitrate, and from about 10 to 20 weight percent of a metal selected from the group consisting of aluminum and zinc, both based on the total weight of the mixture, compressing said mixture into a conductive carrier grid to about 40 to 80 percent of the theoretical density and immersing the grid containing the compressed mixture in an alkaline solution selected from the group consisting of potassium hydroxide and sodium hydroxide having a concentration of at least 6 normal at a temperature of about 100° C. for at least 5 minutes, removing residual hydroxide and drying the thus formed electrode in an inert atmosphere.

3,288,644

FUEL CELL MODULE WITH PALLADIUM-SILVER ALLOY ANODE

Joseph C. Delfino, Mamaroneck, N.Y., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts

Filed June 18, 1962, Ser. No. 203,056
5 Claims. (Cl. 136—86)



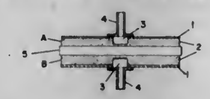
5. A self-contained fuel cell module suitable for cascading comprising a two piece metal outer-casing, an anode assembly containing a non-porous palladium-silver alloy membrane and a back-up plate, said membrane being attached to said back-up plate, said back-up plate structurally cooperating with the outer-casing to form a gas chamber behind said palladium-silver alloy membrane having opposed gas ports, and a cathode assembly containing a porous cathode and a back-up plate, said cathode being attached to said back-up plate, said cathode structurally cooperating with the outer-casing to form a gas chamber behind said cathode, said gas chamber having opposed gas ports, said anodes and cathodes being separated by spacing and support means, said spacing containing an electrolyte.

3,288,645

GAS ELECTRODE FOR FUEL CELL, METHOD OF PRODUCING SAME, AND FUEL CELL

Sven Gunnar Söredal, Stockholm, Sweden, assignor to Svenska Ackumulator Aktiebolaget Jungner, Stockholm, Sweden, a company of Sweden

Filed July 19, 1962, Ser. No. 210,924
Claims priority, application Sweden, July 21, 1961, 7,517/61
11 Claims. (Cl. 136—86)



6. An electro-chemical electrode for disposition in a gas chamber and between an electrolyte and a non-porous wall, comprising:

a gas permeable plaque formed of a porous conductive material and having a pair of opposed side surfaces for engagement with said electrolyte and in contact with said non-porous wall and a perimetrical edge surface for direct exposure to said gas chamber,

a cavity disposed within the center of said plaque, and

at least one gas impermeable flow passage extending through one of said opposed side surfaces of said plaque and connected to said cavity, gas supplied to said cavity through the flow passage diffusing radially from the cavity outwardly through the porous conductive material of said plaque and out said exposed perimetrical edge surface thereof.

8. A gas electrode for fuel cells comprising a porous plaque of conductive material having a pair of side surfaces with a common edge surface, an electrolyte layer in contact with one of said side surfaces of said porous plaque, a non-porous wall in contact with the other side surface of said porous plaque, said edge surface being in contact with a gas room, and means for supplying gas to the center of said electrode through one of said surfaces thereof whereby the gas is forced to pass through the porous plaque thus developing a radially directed gas flow from the center of the electrode towards the edge surface thereof and the gas room in contact therewith.

3,288,646

METHOD OF UTILIZING HYDROCARBON AS FUEL IN FUEL CELLS

Sven Gunnar Söredal, Stockholm, Sweden, assignor to Svenska Ackumulator Aktiebolaget Jungner, Stockholm, Sweden, a company of Sweden

Filed July 19, 1962, Ser. No. 210,932
Claims priority, application Sweden, July 21, 1961, 7,516/61, Patent 198,560
6 Claims. (Cl. 136—86)

1. A method of obtaining increased efficiency of utilization of hydrocarbon fuel for a fuel cell generating an electrical output which comprises:

hydrocracking the hydrocarbon fuel in a cracking zone to produce cracking products,

introducing said cracking products to the fuel cell for generation of electrical output and of effluent gases of combustion,

removing said effluent gases from the cell and initiating a water-gas reaction,

separating hydrogen from the reaction products of said water-gas reaction, and

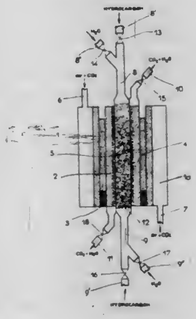
supplying said hydrogen to said hydrocracking zone.

3,288,647

FUEL BATTERY AND METHOD OF OPERATING SAME

Michel Beigelman, Villiers-Adam, and André Salvadori, Paris, France, assignors to Service National dit: Gaz de France, Paris, France

Filed Sept. 7, 1962, Ser. No. 222,088
Claims priority, application France, Sept. 14, 1961, 873,177, Patent 1,307,956
7 Claims. (Cl. 136—86)



1. A fuel battery adapted to operate with gaseous hydrocarbons, comprising an outer tubular porous combustion-agent electrode having combustion-agent duct means connected thereto, a central tubular porous fuel electrode having an inner space and two opposite ends, an annular space between said combustion-agent electrode and said fuel electrode, liquid electrolyte disposed within said annular space, steam cracking catalytic substance of said hydrocarbons in said inner space of said tubular fuel electrode, feeding duct means for fuel fluid and adjuvant fluid of the two-branch fork type connected to either of said opposite ends of said inner space of tubular fuel electrode, valve means disposed on said feeding duct means, discharging duct means for the oxidation products and fumes connected to either of said opposite ends of said fuel electrode and valve means disposed on said discharging duct means.

4. A method of generating electric current by using a fuel battery comprising the steps of supplying air to an outer tubular porous combustion-agent electrode, supplying a mixture of gaseous hydrocarbons and steam

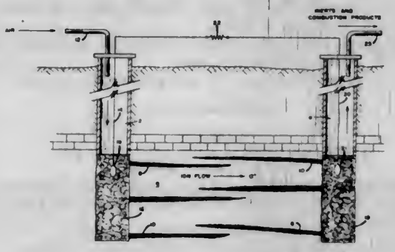
alternately in two opposite directions of flow through the inner space of a central tubular porous fuel electrode filled with a cracking catalytic substance and recovering the products of the combustion thereof successively and alternately at the opposite ends of said fuel electrode.

3,288,648

PROCESS FOR PRODUCING ELECTRICAL ENERGY FROM GEOLOGICAL LIQUID HYDROCARBON FORMATION

Loyd W. Jones, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware

Filed Feb. 4, 1963, Ser. No. 255,912
8 Claims. (Cl. 136—86)



1. A process for the direct conversion of hydrocarbons into electrical energy which comprises extending an electrode into each of two spaced wells, one of said wells penetrating an ionically conductive geological liquid hydrocarbon-containing formation, the electrode in said one of said wells being placed opposite said formation and in contact with both liquid hydrocarbon and an electrolyte which, in turn, contacts said formation,

connecting said electrodes to one another by means of an external circuit,

bringing an oxygen-containing gas in contact with the other of said electrodes which is also in contact with an electrolyte whereby oxygen ions are spontaneously produced at said other electrode thus establishing a potential difference in said formation between said electrodes,

thereafter effecting electrochemical oxidation of said hydrocarbons at the surface of said one of said electrodes in the presence of said electrolyte to produce electrons,

and recovering electrical energy thus formed via said one of said electrodes.

3,288,649

WATER-ACTIVATED BATTERY

John McCallum, Worthington, Ohio, assignor, by mesne assignments, to General Electric Company, Schenectady, N.Y., a corporation of New York

No Drawing. Filed July 24, 1963, Ser. No. 297,240
4 Claims. (Cl. 136—100)

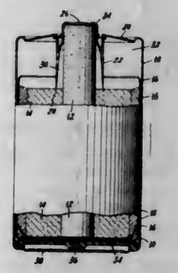
1. In a water-activated battery having housing means containing a cathode member employing a chloride compound selected from the class consisting of silver chloride and cuprous chloride operatively associated with an anode member of magnesium alloy for activation of the battery with introduction of aqueous electrolyte, the improvement in combination therewith wherein the magnesium alloy contains 3–9 parts by weight aluminum, 1–10 parts by weight lead, and the balance being magnesium per 100 parts by weight alloy.

3,288,650

LEAK-RESISTANT DRY CELL

Thomas A. Reilly, Johnson R. Beckman, and Harry K. Bishop, Cleveland, Ohio, assignors to Union Carbide Corporation, a corporation of New York

Filed May 1, 1961, Ser. No. 106,766
5 Claims. (Cl. 136—107)



1. A leak-resistant dry cell comprising, in combination, a cup electrode of a consumable metal containing depolarizer mix, electrolyte and a carbon electrode embedded within said depolarizer mix; and a plastic container encasing said cup electrode having a top closure provided with gas venting means therein, said top closure fitting tightly around said carbon electrode and having an integrally formed substantially tubular sleeve member surrounding but spaced from said carbon electrode providing a free space between said tubular sleeve member and said carbon electrode and an exudate chamber surrounding said tubular sleeve member, said tubular sleeve member being embedded within said depolarizer mix and defining a barrier which protects said carbon electrode from contact by liquid exudate from said cell, said tubular sleeve member in conjunction with said gas venting means in said top closure providing a path for venting gas from said cell.

3,288,651

ELECTRIC CELLS

Alfred Linton, 10 Sherbrook St., Dundee, Angus, Scotland

Filed Sept. 17, 1963, Ser. No. 309,572
Claims priority, application Great Britain, Sept. 20, 1962, 35,915/62
7 Claims. (Cl. 136—107)

1. An alkaline electric cell of cylindrical shape comprising a container, a cathode in the container, a depolarizer around the cathode, a separator around the depolarizer, an electrolyte and an anode comprising loose amalgamated zinc granules arranged in the form of an annulus on an inside wall of the container and immobilized by swelling of said separator, said granules prior to immobilization are suspended in a viscous fluid comprising an aqueous solution of a gelling agent, the whole mixture being of the consistency of a paste.

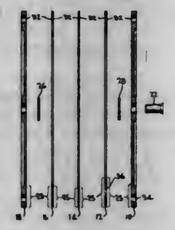
3,288,652

RIVETED FUEL CELL ELECTRODE ASSEMBLY

Stanley L. Leavitt, Simsbury, Conn., assignor, by mesne assignments, to Leesona Corporation, Cranston, R.I., a corporation of Massachusetts

Filed Mar. 27, 1962, Ser. No. 182,845
7 Claims. (Cl. 136—120)

1. A fuel cell bipolar electrode assembly comprising a first circular electrode, a first annular spacing ring, a circular gas impervious barrier, a second annular spacing ring, and a second electrode stacked in that order and axially aligned and having common peripheral dimensions, a rivet passing axially through said electrodes internally of the periphery and a pair of spacing washers on said rivet, each spacing washer being positioned in the place of one of said annular spacing rings, and solder means



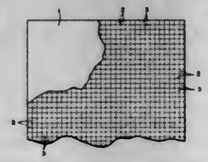
around the periphery of each of the electrodes, each of the annular spacing members and the gas barrier to define a fluid seal at the periphery of said assembly.

3,288,653

ELECTRODE

Eugene L. Holt, Forest Hills, N.Y., and William Kobasz, Menlo Park, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Jan. 11, 1963, Ser. No. 250,798
3 Claims. (Cl. 136—120)



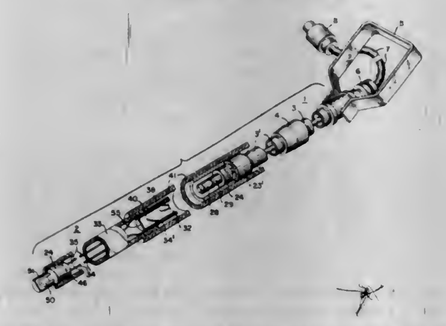
1. A non-porous electrode consisting of an electrically conductive metallic, solid base plate, a metal screen welded thereto and a finely divided metal catalyst pressed into the mesh of said screen, said base plate forming a continuous backing for said screen.

3,288,654

DISPOSABLE IMMERSION-TYPE THERMOCOUPLE

Howard W. Perrin, Wilkes-Barre, and Joseph D. Sine, Sellersville, Pa.; said Sine assignor to Honeywell Inc., a corporation of Delaware

Filed June 19, 1962, Ser. No. 203,607
9 Claims. (Cl. 136—234)



1. A disposable temperature sensing device for measuring the temperature of molten fluid comprising a U-shaped, refractory electrically non-conductive sheath, a thermocouple comprising a pair of wires of dissimilar metals joined together in said sheath to form a hot junction, a fiberboard tube for supporting the thermocouple with the sheathed hot junction projecting beyond the end of the tube so as to be contacted by the molten fluid when immersed therein, a cylindrical disc positioned transversely of said tube near the end thereof from which said thermocouple hot junction projects, electrical connectors molded in said disc and extending through said tube for connection of said thermocouple to a measuring instrument, a refractory, electrically non-conductive body filling the space between said disc and the said end of said tube with the ends of said sheath embedded in and extending part way only into said body and with a portion of said thermocouple wires and the junction of said thermocouple wires and said electrical conductors embedded in said body in close thermal contact therewith, whereby said body seals the end of said tube and serves also as a heat sink for the portions of said thermocouple embedded in said body, a second fiberboard tube, the outer diameter of said second tube being approximately equal to the inner diameter of said first-mentioned tube, said second tube being inserted in and permanently attached to the end of said first tube immersing said thermocouple with said conductor wires fitting between said tubes and the ends of said wires wrapped about said second tube to provide longitudinally displaced terminals for said conductors on the inner surface of said second tube.

3,288,655

PHOSPHATING A STEEL STRIP PRIOR TO ANNEALING AND TEMPER ROLLING

Earnest W. Harwell, Shaker Heights, and Thomas W. Mastin, Willoughby, Ohio, assignors to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Filed Dec. 18, 1963, Ser. No. 331,395
6 Claims. (Cl. 148—6.15)

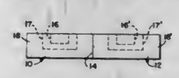
1. The process of preparing steel comprising treating a strip of cold-rolled steel in the full-hard state with a phosphating solution to deposit an integral coating thereon, said phosphating solution containing zinc, phosphate, calcium, and nitrate ions, collecting said phosphated strip as a coil, annealing said coil of phosphate strip in a non-oxidizing atmosphere at a temperature within the range of 900–2400° F., uncoiling said annealed coiled strip while it is under tension, and then temper rolling said strip.

3,288,656

SEMICONDUCTOR DEVICE

Tetsuro Nakamura, Tokyo, Japan, assignor to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan

Original application July 3, 1962, Ser. No. 207,242, now Patent No. 3,239,908, dated Mar. 15, 1966. Divided and this application Feb. 26, 1964, Ser. No. 347,474
Claims priority, application Japan, July 26, 1961, 36/26,869
2 Claims. (Cl. 148—33.5)



2. A unitary structure comprising

a plurality of transistors each having emitter, base and collector regions, said collector regions including silicon,

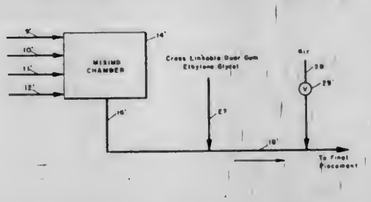
said transistors being permanently joined together at their collector regions by a bonding layer formed from silicon from said collector regions,

said layer comprising silicon oxide and having a temperature coefficient of expansion substantially the same as said collector regions, whereby internal stresses and cracking of said transistors is eliminated.

3,288,657
SPECIAL HEAT TREATING METHOD OF STEELS
Sadayoshi Morita, Makoto Sato, Mitsuo Furuya, Yoshinori Yamaguchi, and Teruo Umeda, Kitakyushu, Fukuoka Prefecture, Japan, assignors to Yawata Iron & Steel Co. Ltd., Tokyo, Japan
No Drawing. Filed Aug. 5, 1963, Ser. No. 300,041
Claims priority, application Japan, Aug. 8, 1962, 37/34,235
5 Claims. (Cl. 148—143)

2. A process for heat-treating carbon steel consisting of at least 50% ferrite and pearlite, which comprises (1) heating said carbon steel to a temperature between the Ac_3 transformation point and 950° C. and quenching the heated steel, (2) reheating the hardened steel to a temperature between the transformation points Ac_1 and Ac_3, holding it at this temperature for a maximum of 60 minutes per inch of plate thickness, and then quenching said steel, (3) reheating the hardened steel to a temperature between the transformation points Ac_1 and Ac_3, holding it at this temperature for a maximum of 60 minutes per inch of plate thickness, and then quenching said steel, and (4) subjecting the treated steel to a tempering treatment, in which the said steel is heated to a temperature below the Ac_1 transformation point, thereby obtaining carbon steel having good notch-toughness.

3,288,658
AERATED EXPLOSIVE COMPOSITIONS
John D. Ferguson, Wilmington, Del., and Robert B. Hopler, Jr., Kenvil, N.J., assignors to Hercules Incorporated, a corporation of Delaware
Filed July 20, 1965, Ser. No. 473,380
21 Claims. (Cl. 149—2)



1. In the manufacture of an inorganic oxidizer salt type blasting composition, wherein water, an inorganic oxidizer salt, a sensitizer, and a thickener are admixed to form a resulting blasting composition of the aqueous slurry type, the improvement comprising incorporating a gas into the resulting slurry in an amount sufficient to cause a predetermined lowering of the density of said slurry to thereby regulate its explosive strength.

3,288,659
METALLIZED ROCKET PROPELLANTS CONTAINING AZIDES
Douglas A. Rausch, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Jan. 24, 1962, Ser. No. 169,180
3 Claims. (Cl. 149—36)

1. A solid rocket propellant composition consisting essentially of a finely divided light metal and an inorganic oxidizer selected from the group consisting of ammonium perchlorate, ammonium nitrate, lithium perchlorate and mixtures thereof, said light metal and inorganic oxidizer being present in stoichiometric amounts based on the conversion of said metal to the corresponding metal oxide, and in admixture therewith a gas producing member selected from the group consisting of hydrazonium azide, hydrazonium azide hydrazide and mixtures thereof, said gas producing member being present in amount which utilizes and is expanded by the waste heat of combustion of said propellant while maintaining the combustion flame temperature of said propellant at a minimum of about 3000° K.

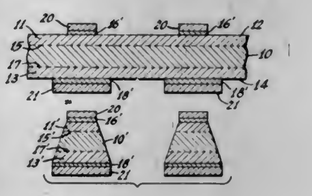
3,288,660
NITROGENOUS BASE COMPOSITION
Earl T. Niles, Danville, Calif., and Beverly H. Seaman, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Feb. 11, 1963, Ser. No. 258,664
6 Claims. (Cl. 149—36)

1. A nitrogenous base azide composition consisting of the double azide salts of a guanidine source material and a member selected from the group consisting of hydrazine and ammonia, said composition having the empirical formula $X'X^2(N_3)_2$ wherein X' is a guanidine source material selected from the group consisting of guanidine, monoaminoguanidine, diaminoguanidine and triaminoguanidine and X^2 is a member selected from the group consisting of ammonia and hydrazine.

3,288,661
AERATED AQUEOUS EXPLOSIVE COMPOSITION WITH SURFACTANT
Peter L. Swisstack, Bessemer, Ala., assignor to Hercules Incorporated, a corporation of Delaware
No Drawing. Filed Oct. 8, 1965, Ser. No. 494,264
16 Claims. (Cl. 149—60)

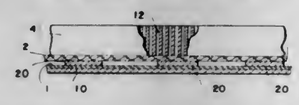
1. A process for the manufacture of an inorganic oxidizer salt blasting composition of the aerated aqueous slurry type which comprises aerating a slurry type blasting composition containing water, inorganic oxidizer salt, sensitizer, and thickener ingredients in the presence of at least 0.3 weight percent of a water-soluble surfactant.

3,288,662
METHOD OF ETCHING TO DICE A SEMICONDUCTOR SLICE
Harry Weisberg, Forty Fort, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed July 18, 1963, Ser. No. 295,880
3 Claims. (Cl. 156—11)



1. The method of dicing a slice of semiconductive material into frustum-shaped dice, comprising the steps of metallizing a plurality of paired concentric areas in registry on opposite major faces of said slice with a film of a metal selected from the group consisting of cobalt, nickel, rhodium, palladium, iridium, platinum, copper, silver and gold, one area of each said pair being larger than the opposite area, coating said metallized areas only with a metallic material selected from the group consisting of lead, tin and lead-tin alloys, and immersing said slice in an etchant capable of dissolving said semiconductive material but relatively inert with respect to said metallic material to dissolve the uncoated portions of said slice and produce a plurality of frustum-shaped dice.

3,288,663
METHOD OF PREPARING A THERMOPLASTIC MATERIAL HAVING PILE SURFACE
Walter Weston Webb and Norman Henry Brown, both of Hyde, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed Oct. 20, 1961, Ser. No. 146,491
Claims priority, application Great Britain, Nov. 21, 1960, 39,913/60
14 Claims. (Cl. 156—222)

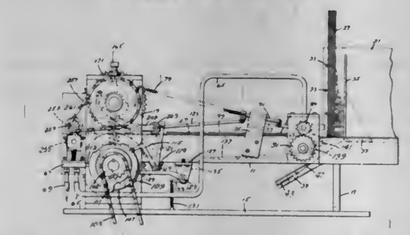


1. A method of preparing a thermoplastic material having a pile surface thereon which comprises placing a sheet of thermoplastic material in contact with one side of a restraining layer having a multitude of closely spaced interstices therein; thereafter placing a spacing element in contact with the other side of said restraining layer, said spacing element having openings therein each of said openings being aligned with and in communication with a plurality of the interstices in said restraining layer, said openings being of a sufficient depth to permit essentially unrestrained movement of thermoplastic material through the interstices of said restraining layer; heating the resulting sandwich to render the thermoplastic material soft and then compressing said sandwich to force the softened thermoplastic material through the interstices of the restraining layer into the openings of said spacing element to form the pile surface.

3,288,664
PROCESS FOR BONDING OF POLYAMIDES TO METAL
Manfred Hoppe, Chur, Switzerland, assignor to Inventa A.G. fur Forschung und Patentverwertung, Zurich, Switzerland
No Drawing. Filed Sept. 25, 1962, Ser. No. 226,157
Claims priority, application Switzerland, Sept. 27, 1961, 11,243/61
3 Claims. (Cl. 156—310)

1. A process for bonding nylon to metals, which comprises coating said metals with an adhesive prepared from an epoxy resin combined with a hardener and a nylon powder; coating said nylon with an adhesive consisting of a nylon solution in resorcinol; joining the surfaces thus coated face to face, and allowing them to set.

3,288,665
PERFORATING APPARATUS
John D. Conti, Elkins Park, Pa., assignor, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Mar. 7, 1963, Ser. No. 263,621
9 Claims. (Cl. 156—513)



1. Apparatus for forming reinforced openings in sheet materials having at least a surface coating of thermoplastic material including a pair of sealing jaws between which the sheet materials are adapted to be positioned, substantially parallel, annular sealing surfaces provided on opposing portions of said sealing jaws, means for moving said sealing jaws toward and away from each other, an opening formed in one of said sealing jaws substantially centrally of the sealing surface thereof, a spherical projection formed substantially centrally of the other of said sealing surfaces, said projection being only partially received within and cooperating with said opening in said one sealing surface for cutting an opening in sheet materials disposed therebetween when said jaws are moved toward each other, and means for heating at least one of the sealing surfaces for searing portions of sheet materials immediately adjacent to an opening formed therein concomitantly with the cutting thereof.

3,288,666
DECORATIVE LAMINATES
Raymond B. Dacey, Greenville, S.C., assignor to Celanese Corporation of America, New York, N.Y., a corporation of Delaware
Filed Apr. 12, 1963, Ser. No. 272,659
11 Claims. (Cl. 161—5)



1. As an article of manufacture, a composite decorative laminate comprising a sheet of a transparent thermoplastic material having a relief pattern in its under-surface and bonded at said under-surface to the upper surface of a thermoplastic supporting sheet, said upper surface of said supporting sheet having a gradient color appearance, the colored material producing said gradient color appearance comprising an oriented material characterized by a change in light reflectance when orientation is disrupted.

3,288,667
SEALING ELEMENT
Thomas P. Martin, West Caldwell, N.J., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 29, 1964, Ser. No. 363,513
7 Claims. (Cl. 161—44)



1. An elongated sealing element which comprises:
(1) a tacky, moisture and vapor impervious adhesive composition comprising an at least partially vulcanized mixture of (a) a polymer of a monoolefin containing 4 carbon atoms and having a molecular weight between 300 and 15,000, and (b) a copolymer of from about 70 to about 99.5 parts by weight of a monoolefin containing 4 carbon atoms, and from about 0.5 to about 30 parts by weight of a diolefin containing 4 to 6 carbon atoms, said copolymer having a molecular weight between 25,000 and about 100,000, said polymer being present in an

amount equal to about 45 to about 210 parts by weight per 100 parts of said copolymer; and

(2) an integral core within said adhesive composition composed of a resilient, flexible polymeric material having a Shore A Durometer hardness of from about 20 to about 100;

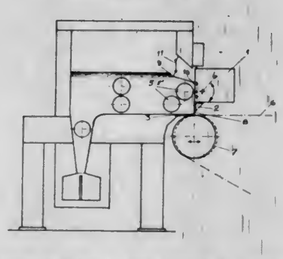
the surface of said sealing element being a layer of said adhesive composition at least 0.01 inch in thickness.

3,288,668

APPARATUS FOR REGULATING THE FLOW OF STOCK ONTO A FORMING WIRE IN FOURDRINIER TYPE PAPERMAKING MACHINES AND THE LIKE

Erkki O. Mustonen, Helsinki, Finland (Apt. 106, 1260 McGregor Ave., Montreal, Quebec, Canada)

Filed Nov. 18, 1963, Ser. No. 324,362
3 Claims. (Cl. 162—347)



1. Apparatus in a stock head box of a Fourdrinier type machine for regulating the stock stream from between two perforated flow equalizing rolls within a stock head box onto a forming wire between two opposite lips in an outlet gap of the head box, said apparatus comprising a vertically movable front wall for the stock head box, said front wall being pivotable around an axis which is located close to the upper of the two perforated flow equalizing rolls within the stack head box near the front wall, said pivot axis of the front wall being disposed in a plane through the resultant of the hydraulic forces of the stock acting on the front wall and through the center line of said upper perforated flow equalizing roll and also through the center of gravity of the front wall.

3,288,669

PESTICIDAL APPLICATION OF TRIHYDROCARBYLTIN SALTS OF NEOALKANOIC ACIDS AS FUNGICIDES, BACTERICIDES AND NEMATOCIDES

Ingenuin Hechenbleikner, Kenwood, Ohio, assignor to Carlisle Chemical Works, Inc., Reading, Ohio, a corporation of Ohio

No Drawing. Filed Mar. 25, 1965, Ser. No. 442,824
14 Claims. (Cl. 167—22)

1. A process of killing a pest from the group consisting of microorganisms and nematodes comprising applying to the pest a pesticidally effective amount of a trihydrocarbyltin neoalkanoate.

3,288,670

PROCESS AND COMPOSITIONS FOR CONTROLLING PLANT GALLS

Milton N. Schroth, El Cerrito, Calif., assignor to The Regents of the University of California, Berkeley, Calif.

No Drawing. Filed July 13, 1965, Ser. No. 471,755
17 Claims. (Cl. 167—31)

1. The process of controlling plant galls which comprises applying to the galls a plant gall controlling amount of a mixture comprising oil, cresol, and xylenol.

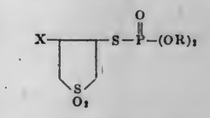
3,288,671

METHOD OF CONTROLLING PESTS WITH ORGANOTHIOPHOSPHATE DERIVATIVES OF HALOGENATED CYCLIC SULFONES

Sheldon B. Greenbaum, Tonawanda, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Mar. 8, 1965, Ser. No. 438,029
5 Claims. (Cl. 167—33)

1. A method of controlling pests which comprises applying to a locus to be treated an effective amount of



wherein X is a halogen selected from the group consisting of bromine and chlorine and the R's are independently selected from lower alkyl radicals.

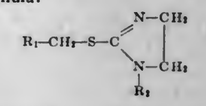
3,288,672

METHOD OF COMBATTING FUNGI EMPLOYING (POLYCARBOCYCLICMETHYLMERCAPTO)IMIDAZOLINES

Joseph A. Lambrech, deceased, late of Charleston, W. Va., by Vallah G. Lambdin, executrix, Charleston, W. Va., William H. Hensley, Raleigh, N.C., and Dewayne C. Torgeson, White Plains, N.Y., assignors to Union Carbide Corporation, New York, N.Y., a corporation of New York

No Drawing. Original application Aug. 31, 1961, Ser. No. 135,379, now Patent No. 3,190,887, dated June 22, 1965. Divided and this application Mar. 30, 1965, Ser. No. 444,517
8 Claims. (Cl. 167—33)

1. A method of combatting fungi which comprises applying to the host in an amount sufficient to be toxic to the fungi a compound selected from the group consisting of 2-(polycarbocyclicmethylmercapto)imidazoline of the formula:



and the biologically active acid salts thereof, wherein R_1 is a member selected from the group consisting of unsubstituted fused polycarbocyclic, mono-hydroxy substituted fused polycarbocyclic, dihydroxy substituted fused polycarbocyclic, methyl substituted fused polycarbocyclic, and halo-substituted fused polycarbocyclic radicals, with the proviso that each of said polycarbocyclic radicals has from two to four rings inclusive with each of said rings having from four to seven carbon atoms inclusive and at least one of said rings is the benzene ring, and R_2 is a member selected from the group consisting of hydrogen, alkyl of from one to twelve carbon atoms inclusive, β-mono-hydroxyalkyl of from two to twelve carbon atoms inclusive, and amino-substituted alkyl of from one to twelve carbon atoms inclusive in which the amino moiety has the formula:



wherein R_3 and R_4 are members selected from the group consisting of hydrogen and alkyl of from one to four carbon atoms inclusive.

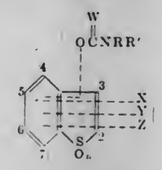
3,288,673

CONTROL OF PESTS WITH BENZOTHIENYL CARBAMATES

John R. Kilsheimer, Westfield, and Harold A. Kaufman, Piscataway Township, New Brunswick, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Sept. 14, 1965, Ser. No. 487,333
15 Claims. (Cl. 167—33)

1. The process of combating pests which comprises contacting them with one of the carbamates of benzothiophenes having the following formula:



where R is selected from H, alkyl (C_1–C_8), cycloalkyl (C_3–C_6), and alkenyl (C_2–C_8); R′ is selected from H, alkyl (C_1–C_8), alkenyl (C_2–C_8), phenyl, and chlorophenyl; X, Y, and Z are selected from hydrogen, halogen, nitro, alkyl (C_1–C_4), alkenyl (C_2–C_4), di(C_1–C_2)alkylamino, methylmercapto, cyano (—CN), thiocyano (—SCN), and alkoxy (—OCH_3 to —OC_8H_{17}); W is selected from O and S; *n* is an integer from 0 to 2; and in which the carbamate radical (—OCWNRR′) and X, Y, and Z may be on any separate 2–7 positions of the ring; and the partially hydrogenated derivatives of said carbamates.

3,288,674

PHENOXARSINE COMPOUNDS INCORPORATED INTO RESINS WITH PHENOLS

Charles C. Yeager, Glen Ellyn, Ill., assignor to Scientific Chemicals, Inc., a corporation of Illinois

No Drawing. Filed Mar. 15, 1965, Ser. No. 440,013
10 Claims. (Cl. 167—42)

7. A composition of matter comprising a uniform admixture of vinyl resin and a vinyl resin plasticizer containing a microbicidal amount of a phenoxarsine compound selected from the group consisting of 10-halophenoxarsines, alkyl substituted 10-halophenoxarsines, halogen substituted and derivatives of phenoxarsines wherein said derivatives are selected from the group consisting of 10,10′-oxybis phenoxarsine, 10-thiocyanato phenoxarsine and 10,10′-thiobis phenoxarsine present in said plasticizer as the solute in a solvent selected from the group consisting of phenol, alkyl phenols, chlorinated phenols, amino phenols, dihydric phenols, aliphatic alcohols having 5 to 12 carbon atoms and monocarbocyclic acids having 5 to 12 carbon atoms, said solvent and solute being uniformly distributed in said plasticizer to form a single phase system.

3,288,675

PARENTERAL SULFONAMIDE COMPOSITIONS AND PROCESSES

Harold Leon Newmark, Maplewood, and Raffaele Roncalli, South River, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 20, 1964, Ser. No. 353,595
5 Claims. (Cl. 167—51.5)

1. An aqueous composition for intramuscular injection comprising

(a) from about 30 to about 50 percent w./v. of N¹-(2,6-dimethoxy-4-pyrimidinyl)-sulfanilamide;

(b) from about 10 to about 35 percent v./v. of a solubilizing agent selected from the group consisting of propylene glycol, glycerine, polyethylene glycol 300, polyethylene glycol 400, ethyl alcohol, and dimethylacetamide;

(c) from about 0.2 to about 2.5 percent w./v. of a pharmaceutically acceptable antibacterial preservative selected from the group consisting of benzyl alcohol, phenol and cresol;

(d) from about 0.005 to about 0.1 percent w./v. of a salt of ethylenediamine tetraacetic acid;

(e) from about 0.05 to about 0.4 percent w./v. of a pharmaceutically acceptable antioxidant selected from the group consisting of sodium formaldehyde sulfoxylate, sodium bisulfite, sodium sulfite, sodium thiosulfate and monothioglycerol;

(f) sufficient sodium hydroxide to give a pH of from about 9 to about 10.5; and

(g) the remainder water.

3,288,676

ANTHELMINTIC PREPARATION

Gabriel Kauzal, 16 West End Flats, Crick Ave., Potts Point, New South Wales, Australia

No Drawing. Filed July 29, 1963, Ser. No. 298,418
Claims priority, application Australia, July 29, 1963, 20,634/62
11 Claims. (Cl. 167—53)

1. A veterinary preparation comprising a substantially colloidal mixture of molasess and an anthelmintic selected from the group consisting of phenothiazine, hexachloroethane, and thiabendazole in a proportion of the order of 2.5 to 40% by weight anthelmintic to molasses, a calcium soap of hydrogenated tallow added thereto and the components are fused together by heat and made solid by the extraction of liquid therefrom, said fusing and liquid extraction being carried out under a vacuum of the order of 20 to 26 inches and at a temperature up to 185° C.

3,288,677

ANTIHYPERTENSIVE COMPOSITIONS

Walter Edward Barrett, New Vernon, and Robert Paul Mull, Florham Park, N.J., assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 24, 1963, Ser. No. 290,200
9 Claims. (Cl. 167—65)

7. A solution for parenteral administration consisting essentially of from about 0.01 g./ml. to about 0.1 g./ml. of a member selected from the group consisting of p-halogeno-benzyl-guanidine, in which halogeno has an atomic weight between 19 and 80, both inclusive, and a pharmaceutically acceptable acid addition salt thereof, as the active antihypertensive ingredient, together with a pharmaceutically acceptable carrier.

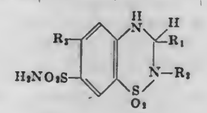
3,288,678

DIURETIC COMPOSITIONS

George de Stevens and Lincoln Harvey Werner, Summit, N.J., assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 12, 1963, Ser. No. 308,327
10 Claims. (Cl. 167—65)

1. A pharmaceutical composition, in oral dosage unit form, comprising about 1 to about 20 percent of a compound of the formula

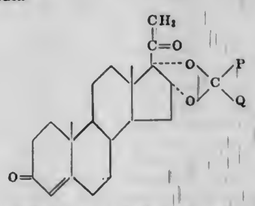


in which R_1 is a member selected from the group consisting of hydrogen, lower alkyl, halogeno-lower alkyl, phenyl, naphthyl, phenyl-lower alkyl, and naphthyl-lower

alkyl, R_2 is a member selected from the group consisting of hydrogen, lower alkyl, lower alkenyl, phenyl-lower alkyl, cyclopentyl, cyclohexyl, cyclopentenyl, cyclohexenyl, cyclopentyl-lower alkyl, cyclopentenyl-lower alkyl, cyclohexyl-lower alkyl and cyclohexenyl-lower alkyl, at least one of the substituents R_1 and R_2 being other than hydrogen and R_3 is a member selected from the group consisting of halogen, and halogeno-lower alkyl and about .01 to about 0.04 percent indole alkaloid of the Apocynaceae family selected from the group consisting of reserpine, deserpidine and rescinnamine.

3,288,679
STEROIDAL COMPOSITIONS AND METHOD OF USE
Josef Fried, Chicago, Ill., and Aleck Borman, East Brunswick, N.J., assignors to E. R. Squibb & Sons Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 23, 1966, Ser. No. 536,632
10 Claims. (Cl. 167—74)

1. A composition for use as a progestational agent comprising: (I) a substantial amount of an orally-acceptable pharmaceutical carrier; and (II) a steroid of the general formula



wherein P is lower alkyl, Q is selected from the class consisting of hydrogen and lower alkyl, and together P and Q is alkylene of less than ten carbon atoms.

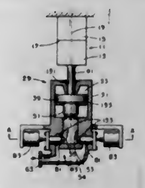
3,288,680
STABILIZED *CLOSTRIDIUM PERFRINGENS* β-TOXOID VACCINE
Max Sterne, London, England, assignor to Burroughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, N.Y., a corporation of New York
No Drawing. Filed Oct. 12, 1962, Ser. No. 230,263
Claims priority, application Great Britain, Nov. 23, 1959, 39,743/59
1 Claim. (Cl. 167—78)

A clostridial vaccine containing *Clostridium perfringens* β-toxoid having a pH value of about 5.7 to 6.3 and stabilized and preserved by the inclusion of an organic mercurial antiseptic.

3,288,681
ANHYDROUS ALUMINUM ANTIPERSPIRANT POWDER AEROSOL COMPOSITIONS AND METHODS OF PREPARATION
Melvin Arthur Goldberg, West Englewood, and William Roy Netzbandt, Dumont, N.J., assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine
No Drawing. Filed May 1, 1962, Ser. No. 191,446
8 Claims. (Cl. 167—90)

1. A composition under pressure for providing an aerosol antiperspirant powder spray on the skin which comprises about 4 to 10 parts of an aluminum compound which is not soluble in propellent and which has antiperspirant properties, said aluminum compound being aluminum chlorhydroxide complex, aluminum sulfate or aluminum chloride; about 2 to 4 parts of a lower aliphatic alcohol; and 79 to 94 parts of a liquefied gaseous propellent; said composition having been screened as an anhydrous dispersion of aluminum compound in propellent with a screen not larger than 200 mesh.

3,288,682
HYDRO-PNEUMATIC APPARATUS FOR CHANGING CRITICAL CONFIGURATION OF NUCLEAR FUEL MASS
Kurt Pollak, Havertown, Pa., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Aug. 10, 1964, Ser. No. 388,738
5 Claims. (Cl. 176—28)



1. In combination with a hydro-pneumatic device that holds a hydraulic fluid under pressure for pressurizing a gas for holding a nuclear fuel mass in a critical configuration, a pilot valve for explosively releasing said hydraulic fluid quickly to permit said gas to expand to separate said nuclear fuel mass into equal noncritical configuration, comprising a plurality of plungers that are loaded across said plungers for preventing the release of said hydraulic fluid having means for rapidly producing a large pressure differential across said plungers for biasing said plungers explosively to release said fluid under pressure, and means for directing said exploding fluid in a plurality of streams to reduce impedance to said release while shaping said flow to prevent shock waves from flow interference whereby said fuel mass is separated in a short time to prevent a fatal buildup of criticality.

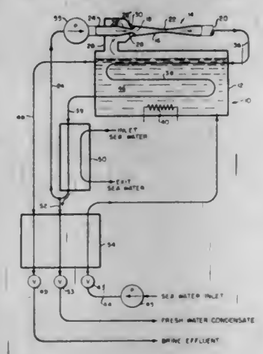
3,288,683
PRODUCTION OF ACID-STABLE PROTEOLYTIC AND AMYLOLYTIC ENZYME
Ichiro Tanaka, Nakanoku, Tokyo, Jiro Sawada, Kodaira, Tokyo, Tetsuo Misaki, Shinjukuku, Tokyo, and Hajime Yasui, Kitaku, Tokyo, Japan, assignors to Taisho Pharmaceutical Co., Ltd., Tokyo, Japan, a corporation of Japan
No Drawing. Filed Nov. 7, 1963, Ser. No. 322,583
4 Claims. (Cl. 195—66)

1. The process of producing an acid stable proteolytic and amylolytic enzyme which comprises cultivating *Paecilomyces varioti* TPR–220 (IAM 7999 and ATCC 14572) on acidic culture medium, and isolating the enzyme thus accumulated.

3,288,684
LIQUID MIXTURES OF THIOUREAS
John L. Eaton, Grosse Ile, Mich., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Nov. 19, 1963, Ser. No. 324,841
4 Claims. (Cl. 252—391)

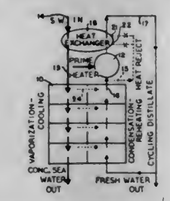
1. Liquid mixtures consisting essentially of N,N'-dialkylthioureas having alkyl groups selected from the class consisting of ethyl, and normal butyl groups and capable of remaining pourable and essentially in the liquid state at atmospheric pressure and at a temperature of about 25° C. for at least one week in the absence of agitation and without the addition of solvents.

3,288,685
MULTIPLE-PHASE EJECTOR DISTILLATION APPARATUS AND DESALINATION PROCESS
Clarence A. Kemper, Waltham, George F. Harper, Framingham, and George A. Brown, Lexington, Mass., assignors to Joseph Kaye & Company, Cambridge, Mass., a corporation of Massachusetts
Filed Aug. 17, 1962, Ser. No. 217,577
9 Claims. (Cl. 203—11)



1. A process for the distillation of a liquid and the partial regeneration of the latent heat of vaporization which process comprises:
increasing the pressure of a liquid stream;
accelerating and expanding the liquid stream by converging and then diverging it to obtain a high velocity stream;
accelerating a separate vapor stream, obtained from a body of liquid, by converging the vapor stream;
mixing the high velocity stream and the accelerated vapor stream by passing them together through a converging mixing chamber;
decelerating the resultant mixed vapor and liquid stream by diverging it to obtain an exit stream having a higher temperature than the vapor stream prior to acceleration; and
placing the exit stream in a heat exchange relationship with the body of liquid from which the vapor was obtained to condense at least a portion of the stream and thereby providing a partial return of the latent heat of vaporization to the liquid body.

3,288,686
METHOD FOR MULTI-FLASH EVAPORATION TO OBTAIN FRESH WATER FROM AQUEOUS SOLUTION
Donald F. Othmer, 333 Jay St., Brooklyn, N.Y.
Filed July 12, 1963, Ser. No. 294,704
10 Claims. (Cl. 203—11)



1. The system of flash evaporation of an original aqueous solution to produce fresh water, substantially free of solute, which comprises the following steps:
(a) heating the said original aqueous solution to the highest temperature it encounters in the system, in a countercurrent liquid heat exchanger with a stream of fresh water which is at a higher temperature during this step and is being cooled thereby, the said original solution being at a temperature below the boiling point of the solution at the pressure;
(b) passing the said original solution directly after said heating into plural stages at successively lower pressures and temperatures, reduced from that at the discharge of said liquid heat exchanger, to vaporize a part of the water in the solution and to obtain fresh water vapor in the respective plural stages;
(c) directing the said water vapor formed in the respective stages to respective condensing zones of said stages;
(d) passing fresh water at a relatively lower temperature through the respective condensing zones in counterflow relationship to the flow of solution passing through the stages, the said fresh water being maintained at temperatures below its boiling points at the pressures prevailing in the respective condensing zones;
(e) directly contacting the water vapor with the fresh water to condense the vapor and to form a combined stream of fresh water;
(f) removing the combined stream of fresh water from the last condensing zone, which is at the highest temperature, and passing the combined stream through a prime heater where heat is supplied from an external source at the highest temperature in the system of flash evaporation, the said external heat being the only external heat supplied to the system;
(g) passing the heated, combined stream of fresh water to the said countercurrent liquid heat exchanger; and
(h) withdrawing from the system a portion of the combined stream of fresh water, which amount is approximately equal to the total amount of the vapors formed in the said vaporizations of all the stages.

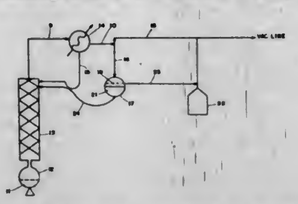
3,288,687
PROCESS FOR THE PURIFICATION OF EPSILON-CAPROLACTAM BY DILUTION, ACIDULATION AND DISTILLATION
Willi Zimmerli, Domat, Ems, and Heinz Füeg, Chur, Switzerland, assignors to Inventa A.G. für Forschung und Patentverwertung, Zurich, Switzerland
No Drawing. Filed Nov. 29, 1962, Ser. No. 241,015
Claims priority, application Switzerland, Nov. 30, 1961, 13,948/61
3 Claims. (Cl. 203—35)

1. A process for the purification of crude epsilon-caprolactam comprising the steps of diluting said crude epsilon-caprolcatam with water in the proportion of approximately 2 parts added water to 5 parts crude epsilon-caprolactam, acidulating the resultant crude to a pH range of 3.2 to 4.2 with an additive consisting essentially of sulfuric acid, subjecting the resultant mixture to distillation to vaporize the water contained in said crude caprolactam, and subjecting the resultant caprolactam to rectification.

3,288,688
p-CYMENE PURIFICATION PROCESS
Bernard J. Kane, Atlantic Beach, Fla., assignor to The Glidden Company, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 24, 1966, Ser. No. 522,428
9 Claims. (Cl. 203—58)

2. A process for separating p-cymene from a mixture thereof with a compound selected from the group consisting of menthenes and menthanes which comprises

forming a distilland of said mixture and furfural, and fractionally distilling from said distilland a composition



containing furfural and said compound in a fractional distillation zone.

3,288,689
METHOD FOR COATING METAL OBJECTS WITH ALUMINUM
Kuninori Azuma, Nara-ken, Japan, assignor to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan
No Drawing. Filed Feb. 27, 1963, Ser. No. 261,528
Claims priority, application Japan, Mar. 1, 1962, 37/8,063; Nov. 12, 1962, 37/51,160
5 Claims. (Cl. 204—29)

1. In the method for coating ferrous objects with aluminum using the anhydrous fused salt electroplating process, the improvement consisting first of immersing the object to be plated in an aqueous solution of water-soluble additives consisting of aluminum chloride, at least one chloride selected from the group consisting of alkali metal chloride and alkaline earth metal chloride and at least one fluoride selected from the group consisting of alkaline earth metal fluoride, aluminum fluoride and lead fluoride, said water-soluble additives consisting essentially of about 10% to 25% of aluminum chloride, about 0.1% to 10% of at least one chloride selected from the group consisting of alkaline earth metal chloride and alkali metal chloride and about 0.1% to 5% of at least one fluoride selected from the group consisting of alkaline earth metal fluoride, aluminum fluoride and lead fluoride, then drying the object whereby the surface is coated with the additives of said aqueous solution and then introducing the object into the electroplating bath.

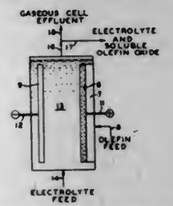
3,288,690
ELECTRODEPOSITION OF COPPER FROM ACIDIC BATHS
Hans-Gerhard Creutz, Wayne, and Henry Brown, Huntington Woods, Mich., assignors to The Udylite Corporation, Warren, Mich., a corporation of Delaware
No Drawing. Filed Mar. 11, 1966, Ser. No. 533,434
10 Claims. (Cl. 204—52)

1. A bath for electrodepositing fine-grained ductile copper, comprising an aqueous acidic copper plating bath containing a homo-polymer of 1,3-dioxolane of molecular weight greater than 296, in a concentration range of about 0.01 to at least 5 grams per liter.

3,288,691
METHOD OF ELECTROLYTICALLY CHEMICALLY TREATING METALS
Shigeru Yonezaki, Minoru Kamada, Kazukiyo Teruyama, and Katsunori Kanechika, all of Kitakyushu, Japan, assignors to Yawata Iron & Steel Co. Ltd., Tokyo, Japan, a corporation of Japan
No Drawing. Filed June 11, 1963, Ser. No. 286,918
Claims priority, application Japan, June 13, 1962, 37/23,910
8 Claims. (Cl. 204—56)

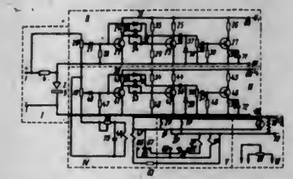
1. A method of electrolytically chemically treating metals comprising depositing a film on the metal by cathodically electrolyzing a metal in an aqueous solution consisting essentially of 10 to 300 grams per liter of hexavalent chromium compound and 1 to 200 grams per liter of a member selected from a group consisting of halogen oxy-acids and their alkali metal salts said solution being adjusted to have a pH value of less than 1.5.

3,288,692
ELECTROCHEMICAL PROCESS FOR THE PRODUCTION OF ORGANIC OXIDES
Joseph Adrien M. Leduc, Short Hills, N.J., assignor to Pullman Incorporated, a corporation of Delaware
Filed Sept. 20, 1962, Ser. No. 224,991
22 Claims. (Cl. 204—80)



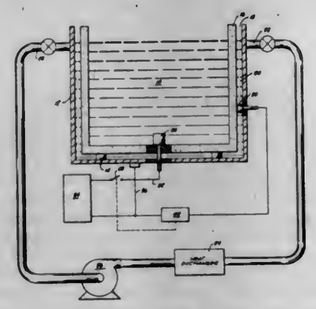
1. A process for the manufacture of olefin oxide which comprises (*a*) providing an electrochemical cell containing an aqueous electrolyte medium having a metal halide dissolved therein and having at least one anode compartment and at least one cathode compartment separated by a fluid permeable diaphragm, said anode compartment having an anode therein and said cathode compartment having a cathode therein; (*b*) subjecting said aqueous medium contained within the cell to the action of a direct electric current to form halogen in the anolyte and hydroxyl anions in the catholyte; (*c*) maintaining the flow of aqueous medium within the cell from the anode compartment through the fluid permeable diaphragm into the cathode compartment; (*d*) introducing an olefin to the cell such that olefin is contacted with anolyte to form the corresponding halohydrin derivative of the olefin, the halohydrin being transported from the anode compartment through the fluid permeable diaphragm into the cathode compartment by the said flow of aqueous medium within the cell; (*e*) dehydrohalogenating the halohydrin within the cell in the catholyte to form olefin oxide therein; and (*f*) withdrawing effluent containing olefin oxide product from the cathode compartment and recovering olefin oxide as a product of the process.

3,288,693
METHOD FOR AUTOMATICALLY CONTROLLING ELECTRODE DEVICE FEEDING IN ELECTRIC EROSION MACHINES AND AN ARRANGEMENT TO CARRY OUT THIS METHOD
Abram Lazarevich Livshits, Moscow, U.S.S.R., assignor to Experimentalny Nauchno-Issledovatelsky Institute Metallorezhushtchikh Stankov
Filed July 30, 1963, Ser. No. 298,771
4 Claims. (Cl. 204—143)



1. A method for optimal automatic control of electrode tool feeding in electric erosion machines, powered by a generator circuit, through electrical pulses derived from the generator circuit supplying the tool-to-load gap comprising the steps of: deriving electric pulses in accordance with the spacing of the tool-to-work with respect to minimum no-load voltage pulses for spacings greater than a predetermined minimum spacing, no-gap short circuit current pulses, and optimal spacing pulses, independently shaping said electrical pulses, detecting by digital logic which type spacing pulses are being developed, and controlling the tool feeding in accordance with the type pulses being detected whereby the optimal speed of electrode tool feeding in the machine is established in accordance with the minimum no-load voltage pulses, short circuit current pulses and optimal pulses.

3,288,694
METHODS AND APPARATUS FOR ANODIC PROTECTION OF VESSELS
William P. Banks, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Oklahoma
Filed Mar. 11, 1963, Ser. No. 264,385
9 Claims. (Cl. 204—147)



2. In a method for controlling the rate of corrosion of a metallic container by a corrosive electrolyte contained therein, by making the container an anode with respect to an inert cathode contained therein and passing an electrical current between the container and said cathode to vary the passivity of said container, measuring the potential of said container and said electrolyte with respect to a reference electrode, said measurement being indicative of the state of passivity of said container, and controlling said electrical current in order to maintain a predetermined potential, the improvement comprising:

(a) reducing the temperature of the corrosive electrolyte adjacent the metallic container; and

(b) providing an electrolytically-permeable, thermally insulating liner element between the reduced temperature corrosive electrolyte and the remainder of the corrosive electrolyte, said liner constructed so as to prevent any appreciable intermixing of electrolytes on opposite sides thereof.

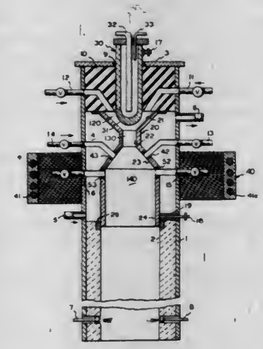
3,288,695
PIEZOELECTRIC QUARTZ CRYSTAL UNITS
James C. King, Whippany, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed May 9, 1962, Ser. No. 193,574
6 Claims. (Cl. 204—157.1)

1. A method for improving the piezoelectric properties of a synthetic quartz crystal which comprises the steps of electrolyzing the crystal by impressing an electric field in the range 500 volts/cm. to 10^6 volts/cm. across the crystal while maintaining it at a temperature in the range 350° C. to 550° C., exposing the crystal to high energy radiation of between 10^{17} *nvt* and $3 \cdot 10^{19}$



nvt capable of producing dislocation damage in the crystal and annealing said crystal at a temperature in the range of 300° C. to 573° C. and for at least 12 hours.

3,288,696
PRODUCTION OF CARBON BLACK
Harry K. Orbach, Orange, Calif., assignor to Ashland Oil & Refining Company, Houston, Tex., a corporation of Kentucky
Filed Mar. 12, 1963, Ser. No. 264,726
4 Claims. (Cl. 204—173)

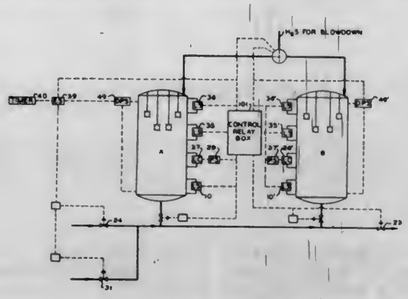


1. In the production of carbon black by reaction of an aromatic hydrocarbon within an electric arc the process comprising striking an electric arc having a negative characteristic between cathode and anode, feeding through the arc a substantially non-reactive stabilizing gas, forming a vortex within the gas stabilized electric arc, injecting into the vortex an aromatic hydrocarbon which dissociates into a stream consisting essentially of hydrogen and carbon, and then recovering the carbon produced in the reaction.

3,288,697
PHOTOREACTION CONTROL APPARATUS
Bobbie L. Whitson and Harold L. Boots, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed July 19, 1962, Ser. No. 210,900
7 Claims. (Cl. 204—193)

2. Apparatus for carrying out a controlled and simultaneous formation of mercaptans by the reaction of an olefin and hydrogen sulfide in at least two ultraviolet reactors which comprises, in combination, a first and second ultraviolet reactor, means to introduce an olefin to said reactors, means to introduce a first stream of hydrogen sulfide to said reactors, means to introduce a second

stream of hydrogen sulfide, liquid level controller means to regulate the amount of flow of said olefin and first hydrogen sulfide stream, means responsive to said liquid level controllers to activate said mixing means, a source of ultraviolet radiation, means responsive to said liquid level controllers to activate said source of radiation to maintain a predetermined temperature in said reactors, pressure sensing means so adapted as to determine when the reaction has gone to completion, means responsive to

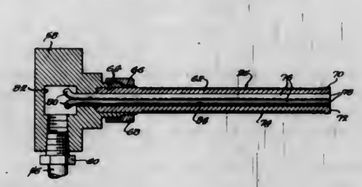


said pressure sensing means to regulate the flow of said second stream of hydrogen sulfide to remove the reactants from said reactor and interlocking means between said first and second reactors which is so adapted as to prevent introduction of said olefin and hydrogen sulfide to one of said reactors while the other is being filled and to prevent introduction of said second stream of hydrogen sulfide to one of said reactors while reactants are being removed from the other.

3,288,698
ELECTRODE FOR ELECTROLYTIC CAVITY SINKING

Norbert A. Bruns, Palatine, Ill., assignor to Anocut Engineering Company, Chicago, Ill., a corporation of Illinois

Filed Sept. 13, 1962, Ser. No. 223,508
9 Claims. (Cl. 204—224)

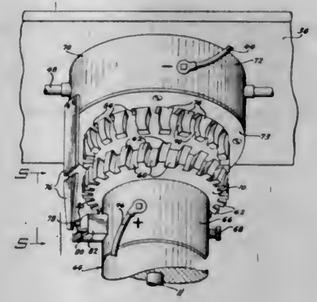


1. In an apparatus for electrolytically machining a cavity in an electrically conductive and electrochemically erodible workpiece including means for holding the workpiece, an electrode tool for said machining, means for moving the tool and the workpiece relatively toward each other and for maintaining a work gap therebetween, means for circulating an electrolyte through the work gap, and a source of direct current electricity connected to the electrode tool and the workpiece whereby the workpiece and the electrode tool function as an anode and a cathode respectively, the improvement wherein said electrode tool comprises an elongate electrically conductive tube having a working face at its outer end through which the electrolyte is pumped for circulation to and through the work gap, and at least one electrically conductive solid cylindrical element of substantially uniform cross section electrically connected to said tube, extending the length thereof, and having a cross sectional area of at least about 50 percent of the cross sectional area of the bore of said tube, said element having an end coplanar with said working face.

3,288,699
APPARATUS FOR ELECTROCHEMICAL SHAPING

Kempes F. Trager, Detroit, and Jack A. Cross, Harper Woods, Mich., assignors to Ex-Cell-O Corporation, Detroit, Mich.

Filed Feb. 12, 1964, Ser. No. 344,374
3 Claims. (Cl. 204—224)



1. Apparatus for the electro-erosion of material from an electrically conductive cylindrical workpiece blank having a plurality of outwardly radially extending sections so as to obtain a plurality of substantially identically contoured sections integral with the cylindrical wall of said blank, said apparatus comprising: an electrically conductive electrode tool provided with a base, a plurality of circumferentially spaced integral segments having working surfaces and projecting from said base in the general configuration of a cylinder, said plurality of segments comprising at least one array of segments having their working surfaces facing in one direction of rotation; means for holding said electrically conductive electrode tool in close proximity to the workpiece blank in such a manner that said integral segments intersect spaces between said sections; means connecting said electrode tool in an electric circuit so as to render said tool predominantly cathodic; means connecting said blank in said electric circuit so as to render said blank anodic; means for introducing a conductive electrolyte at substantially high velocity and high pressure between said working surfaces of said segments and said blank; means for moving said tool and said blank axially in relation to each other; and separate means for simultaneously impressing relative rotational movement upon said tool and said blank, to cause the segments of said tool to electrolytically erode portions of said blank whereby contoured sections are left attached to said blank.

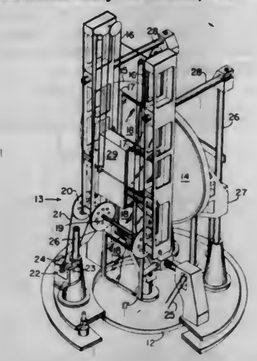
3,288,700
SPUTTERING APPARATUS INCLUDING A FOLDED FLEXIBLE CONVEYOR

James Garland Needham, Arnprior, Ontario, and Neville Cary Davies and James Hallam Ranshaw, Ottawa, Ontario, Canada, assignors to Northern Electric Company Limited, Montreal, Quebec, Canada

Filed Oct. 23, 1963, Ser. No. 318,226
14 Claims. (Cl. 204—298)

1. In a sputtering apparatus for the production of thin films on flat substrates the improvement comprising the combination of a vertical sputtering cathode, a vertical

sputtering anode positioned in juxtaposed relationship with said cathode and provided with an aperture through which said substrates may be coated, and a folded flexi-



ble conveyor adapted to carry substrates past said aperture on the side of said anode remote from said cathode to permit the deposition of the thin film thereon.

3,288,701
PROPANE-INSOLUBLE PITCH

Eugene M. Fauber, Hammond, Ind., and Harry J. Montag, Lansing, Ill., assignors to Sinclair Research, Inc., Wilmington, Del., a corporation of Delaware

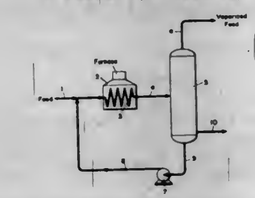
No Drawing. Filed Oct. 22, 1963, Ser. No. 318,105
5 Claims. (Cl. 208—22)

1. A propane-insoluble pitch having a specific gravity, 77/77° F., of about 1.0500 to 1.1900, a minimum viscosity SUS at 210° F. of about 60, and a minimum needle penetration at 77° F., 100 gms./5 sec. of about 20, prepared by solvent extracting a petroleum bottoms feedstock produced from the catalytic cracking of petroleum gas oil, said feedstock boiling primarily in the range of about 400 to 1000° F. and having a 5 volume percent distillation point of at least about 500° F. and a 95 volume percent distillation point of at least about 800° F. with at least about 100° F. units separating the 5 volume percent distillation point and 95 volume percent distillation point, said solvent extracting being with a C_3 to C_8 paraffinic solvent at a solvent-to-oil ratio of at least about 2 to 1 and a temperature of about 130 to 200° F. to provide an extract phase and a raffinate phase and separating the phases to provide said pitch.

3,288,702
VAPORIZATION PROCESS

Edward J. Dowd, Summit, and Eli Cutler, Scotch Plains, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Mar. 29, 1965, Ser. No. 443,454
5 Claims. (Cl. 208—48)

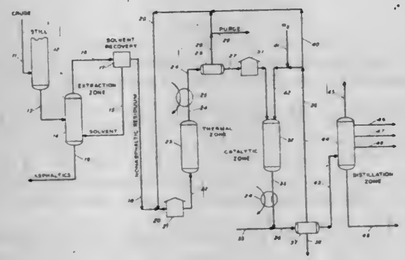


1. An improved hydrocarbon heating process which comprises passing a liquid hydrocarbon feedstream into a furnace zone, vaporizing at least a portion of said feedstream, passing said partially vaporized feedstream into a vessel, continuing to pass said feedstream into said vessel until an equilibrium is obtained in the vessel between liquid and vapor, raising the temperature within said zone to a temperature which is at least as high as the maximum boiling point of the said hydrocarbon feedstream but not sufficiently high to vaporize more than a portion of the recycled liquid removing vapor from the vessel, vapor having substantially the same composition as said feedstream, recycling said liquid into admixture with said feedstream whereby the presence of said liquid prevents the formation of coke deposits within said furnace.

3,288,703
RESIDUUM CONVERSION PROCESS TO OBTAIN LOWER BOILING PRODUCTS BY HYDROCRACKING

Byron G. Spars, Mill Valley, and Harold F. Mason, Berkeley, Calif., assignors to Chevron Research Company, a corporation of Delaware

Filed Jan. 2, 1964, Ser. No. 335,109
13 Claims. (Cl. 208—86)



1. The process for preparing noncoking, low-nitrogen-content, crackable oil from crude residua containing asphaltenes and nitrogen compounds, which comprises: solvent treating crude residua to remove asphaltenes and thereby obtain substantially nonasphaltic residua containing nitrogen compounds, thermally hydrocracking said nonasphaltic residua to convert a substantial portion, less than all, thereof to distillates in a noncatalytic contacting zone, catalytically hydrocracking at least the unconverted portion of residua remaining after thermal hydrocracking to convert a substantial portion of said remaining residua to distillate oils in a reaction zone containing a hydrocracking-denitrification catalyst, whereby the resulting distillate oils and unconverted residua are substantially denitrified, separating hydrogen-rich gas and removing NH_3 from the effluent of said reaction zone, and recovering as noncoking, low-nitrogen-content, crackable oil, unconverted residua remaining after said catalytic hydrocracking and at least the resulting distillate oils boiling above about 700° F.

3,288,704
AUTO-REGENERATION OF HYDROFINING CATALYSTS

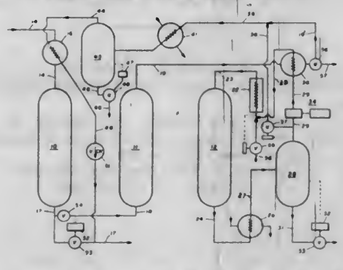
Mark J. O'Hara, Mount Prospect, and John G. Gatsis, Des Plaines, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Dec. 26, 1963, Ser. No. 333,693
10 Claims. (Cl. 208—106)

1. A process for regenerating an adsorptive hydrogenation catalyst containing asphaltenes in an amount of from about 35% to about 50% by weight, which comprises heating said catalyst to a temperature level above that at which thermal cracking of asphaltenes is effected and cracking said asphaltenes to produce normally liquid hydrocarbons therefrom and to regenerate the catalyst, maintaining the catalyst at said temperature level until the

asphaltenes on the catalyst are converted and removed from the catalyst, and recovering the resultant regenerated asphaltene-free catalyst.

3,288,705
HYDROCARBON ADSORPTION SYSTEM
Curtis L. Humphries, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed Oct. 23, 1963, Ser. No. 318,229
10 Claims. (Cl. 208—310)



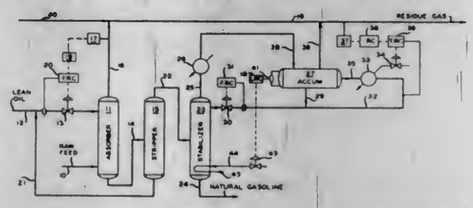
1. The process of recovering hydrocarbon liquids from a natural gas stream in a solid adsorbent hydrocarbon recovery unit using a plurality of beds of adsorbent performing adsorbing, cooling, and regenerating functions with closed-cycle regeneration, comprising the steps of:
(a) flowing the natural gas stream through a first adsorbent bed to remove adsorbable hydrocarbons and then discharging the stripped main gas stream from such bed,
(b) flowing a portion of the stripped main gas stream from the first bed through a previously regenerated second adsorbent bed for cooling the second adsorbent bed to suitable adsorbing temperatures and then discharging this portion of the stripped main gas stream,
(c) circulating a heated rich regeneration gas through a closed-cycle regeneration system including a third adsorbent bed, and separating the hydrocarbons desorbed from such bed which are carried in the regeneration gas into a rich regeneration gas and a hydrocarbon liquids fraction,
(d) combining at least the first portion of the stripped main gas stream discharged after cooling the second adsorbent bed with surplus rich regeneration gas from the closed-cycle regeneration system,
(e) separating the combined gas stream into a second stripped gas stream and a second hydrocarbon liquids fraction,
(f) repeating the above steps while switching the gas streams between each of the adsorbent beds until each adsorbent bed has performed an adsorbing, cooling, and regenerating function, and
(g) recovering the hydrocarbon liquids fractions.

3,288,706
METHOD OF AND APPARATUS FOR IMPROVED PROCESS CONTROL
Dale E. Lupfer, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Original application June 12, 1961, Ser. No. 116,580. Divided and this application Jan. 11, 1965, Ser. No. 424,699
13 Claims. (Cl. 208—341)

3. In a process which comprises passing a raw natural gas feed to an absorption zone, passing a lean absorption oil feed to said absorption zone, withdrawing from said absorption zone a residue gas, and withdrawing from said absorption zone a rich absorption oil containing natural gasoline; a method of control which comprises measuring the temperature of said lean absorption oil feed, forming and transmitting a first signal C representative of said measurement to a computing zone, applying said first signal to the inlet of a restriction zone to produce at the outlet of said restriction zone a second signal B, passing said second signal to said computing zone, said computing zone solving the equation

$$\text{Output}=g(-C)+B$$

where g is the adjustable gain of said computing zone,



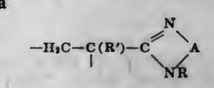
said computing zone and said restriction zone having a transfer function equivalent to

$$-\left(\frac{TS-1}{TS+1}\right)$$

where T is the time constant of a first order lag and S is the Laplace operator, and passing a third signal representative of said Output from said computing zone to a means for manipulating the rate of flow of lean absorption oil feed to said absorption zone responsive to said third signal and thereby manipulating said flow rate.

3,288,707
DEWATERING AQUEOUS SUSPENSIONS
Marvin J. Hurwitz, Elkins Park, and Herbert Aschkenasy, Levittown, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed Dec. 3, 1964, Ser. No. 415,776
7 Claims. (Cl. 210—54)

1. The process of facilitating the dewatering of an aqueous suspension of finely-divided water-insoluble solid materials which comprises mixing into such a suspension having a pH of about 0 to about 10, from 0.001% to 5% by weight, based on the weight of suspended matter, of a water-soluble polymer having a molecular weight from about 10,000 to 10,000,000 viscosity average selected from the group consisting of water-soluble polymers, and salts thereof, containing at least 50 mole percent of units of the formula



wherein:
A is a (C_2–C_3)-alkylene group having at least 2 carbon atoms extending in a chain between the adjoined N atoms,
R is selected from the group consisting of H and CH_3, and
R′ is selected from the group consisting of H and CH_3.

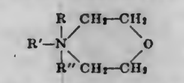
3,288,708
PROCESS FOR TREATING SEWAGE WITH IODINE
Harry J. Cordle, East Orange, N.J., and Alfred C. Loonam, New York, N.Y., assignors to Chilean Nitrate Sales Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Nov. 27, 1964, Ser. No. 414,458
6 Claims. (Cl. 210—62)

1. A process for treating aqueous sewage containing organic matter comprising:
(a) treating the sewage with elemental iodine;

(b) providing within said sewage a water-soluble iodate, said water-soluble iodate being provided to regenerate iodine from iodide which has formed during said treatment, said iodate being provided in an amount that is at least about four times the stoichiometric amount required to reach with all the iodide that can be produced from the iodine; and
(c) maintaining the pH of said sewage at a point where iodide will react with iodate to release elemental iodine.

3,288,709
FINISH COMPOSITION FOR POLYOLEFIN FIBERS
Ann S. Keller, Norristown, and Paul M. Des Coteaux, West Chester, Pa., assignors, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware
No Drawing. Filed Apr. 19, 1962, Ser. No. 188,866
9 Claims. (Cl. 252—8.75)

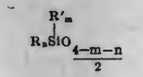
1. A finish composition for polyolefin fibers consisting essentially of
(a) from about 90 to 98% by weight of water, and
(b) from about 10 to 2% by weight of a finish consisting essentially of
(1) about 1 to 2 parts by weight of a morpholine derivative of the following general formula



wherein R is an alkyl sulfate having 1 to 2 carbon atoms, R′ is an aliphatic hydrocarbon radical having 12 to 30 carbon atoms and R″ is an alkyl radical having 1 to 2 carbon atoms, and
(2) about 2 to 4 parts by weight of a mixture of from 40 to 60% by weight of a C_{12}–C_{18} fatty acid monoester of sorbitan and from 60 to 40% of a polyoxyethylene modified fatty oil having from about 50 to about 300 ethylene oxide units per glyceride molecule.

3,288,710
HIGH LOAD CAPACITY DRY FILM LUBRICANTS
Rhynie F. Hollitz, Midland, Mich., assignor to Dow Corning Silicones Limited, Toronto, Ontario, Canada, a corporation of Canada
No Drawing. Filed Feb. 21, 1964, Ser. No. 346,409
11 Claims. (Cl. 252—25)

1. A dry film lubricant consisting essentially of
(1) from 50 to 85 weight percent of a dry lubricant, and
(2) from 15 to 50 weight percent of a resinous composition consisting essentially of a silicone-modified epoxy resin which is a condensation product of the following units:
(a) from 60 to 95% by weight of an aromatic epoxy resin; and,
(b) from 5 to 40% by weight of an organosilicon compound of the formula



where
R is selected from the group consisting of monovalent aromatic hydrocarbon radicals and lower alkyl radicals,
R′ is a hydrolyzable radical,
n has an average value of 0.8 to 2, and
m has an average value of 0.1 to 3.2, the sum of
m and n being not greater than 4.

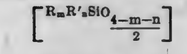
5. The lubricant of claim 1 where the dry lubricant is selected from the group consisting of CaF_2, MoS_2, BN, and mixtures thereof.

3,288,711
RADIATION RESISTANT LUBRICATING GREASE
Edwin C. Knowles and Joseph F. Lyons, Poughkeepsie, and Norman R. Odell, Wappingers Falls, N.Y., assignors to Texaco, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed May 13, 1963, Ser. No. 280,158
9 Claims. (Cl. 252—28)

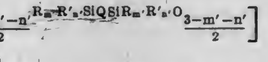
4. A lubricant composition of improved stability toward atomic radiation which comprises a lubricating oil thickened to a grease consistency with a finely-divided siliceous material consisting essentially of 40 to 80 percent by weight of lead orthosilicate and 20 to 60 percent by weight of silica, said siliceous material being present in the composition in an amount of from about 20 to about 60 percent by weight, based on the weight of the composition.

3,288,712
PHENYLSILOXANE GREASES
Forrest O. Stark, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Filed May 11, 1964, Ser. No. 366,633
3 Claims. (Cl. 252—49.6)

2. A grease, consisting essentially of an intimate mixture of
(a) from 10 to 35 weight percent based on the weight of the final product, of a solid, polymeric composition consisting essentially of units selected from the group consisting of



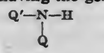
and



where each
R is a monovalent aryl radical, each
R′ is selected from the group consisting of monovalent hydrocarbon and halohydrocarbon radicals of no more than 8 carbon atoms,
Q is a divalent aryl radical,
m and n each have a value of 0 to 3,
$(m+n)$ being from 1 to 3,
m' and n' each have a value of 0 to 3, the average sum of all m' and n' groups per molecule being from 0 to 5;
there being at least three times as many monovalent aryl substitutents as there are non-aryl substituents present in the polymeric composition, and
(b) from 65 to 90 weight percent of a nonreactive, stable organopolysiloxane fluid having a viscosity of from 20 to 600,000 cs. at 25° C.

3,288,713
SYNTHETIC ESTER LUBRICANTS CONTAINING ANTIOXIDANTS
Daniel B. Eickemeyer, Park Forest, and Tai S. Chao, Homewood, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 14, 1963, Ser. No. 323,562
11 Claims. (Cl. 252—51.5)

1. A lubricating oil composition consisting essentially of an ester based synthetic fluid of lubricating viscosity, about 0.01 to 5% by weight of an ester based fluid-soluble aromatic amine having the general formula:



wherein Q is a monovalent aromatic hydrocarbon radical of 6 to 20 carbon atoms and Q' is an aromatic hydrocarbon radical of 6 to 16 carbon atoms and about 0.01 to 5% by weight of an N-substituted amino-compound represented by the general formula:

$$\left[X\text{—}NH\right]_n\text{—}R$$

wherein X is selected from the group consisting of pyridyl and quinolyl radicals; R is an *n*-valent aromatic hydrocarbon radical of 6 to 24 carbon atoms, and *n* is 1 to 2, said amounts being sufficient to retard oxidation of said ester based fluid at 450° F. and said ester based fluid being an ester of an alkanol of 4 to 12 carbon atoms and an alkane carboxylic acid of 4 to 12 carbon atoms.

3,288,714

LUBRICATING OIL COMPOSITIONS CONTAINING ALKENYL SUCCINIC ANHYDRIDES

Carl Osuch, Dubuque, Iowa, assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Original application Dec. 6, 1961, Ser. No. 157,575. Divided and this application Jan. 14, 1965, Ser. No. 425,630

6 Claims. (Cl. 252—57)

1. A composition comprising a lubricating oil and from about 0.05% to about 25% by weight of alkenyl succinic anhydrides wherein the alkenyl group has a molecular weight of from about 900 to about 2000 and is a polymer of a lower alkene.

3,288,715

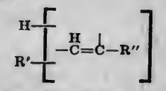
FABRICATING ALUMINUM PRODUCTS WITH OLEFIN LUBRICANTS

Robert S. Owens, Latham, and Leon E. St. Pierre, Schenectady, N.Y., and Robert V. Klint, Newtown Square, Pa., assignors to General Electric Company, a corporation of New York

No Drawing. Filed Oct. 24, 1963, Ser. No. 318,520

12 Claims. (Cl. 252—59)

1. In the process for fabricating an aluminum body by contacting the latter with a fabricating member pursuant to a process of fabricating selected from the class consisting of cutting, rolling, drawing and extruding, the improvement which comprises supplying to an interface between the aforesaid fabricating member and the aluminum body a film consisting essentially of a monomeric olefin having the general formula



where R' is a member selected from the class consisting of hydrogen and the methyl radical, and R'' is a monovalent alkyl radical having from 8 to 20 carbon atoms in which substantially all of the carbons of the alkyl radical are in a straight chain.

3,288,716

METHOD OF LUBRICATION EMPLOYING SYNTHETIC HYDROCARBON LUBRICANTS

Lloyd G. Becraft and Albert M. Durr, Jr., Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Oklahoma

No Drawing. Filed Sept. 10, 1964, Ser. No. 395,595

6 Claims. (Cl. 252—59)

1. A method of lubrication employing a lubricating material produced by the condensation of a substantially straight-chain paraffinic hydrocarbon, containing from about 8 to about 18 carbon atoms, with an aromatic hydrocarbon, characterized in that the lubricating material is prepared by a process comprising the steps of:

(*a*) preparing a substantially straight-chain alkylating agent, containing from about 8 to about 18 carbon atoms of a halogenation product prepared by substantially monohalogenating a paraffinic mixture, containing at least 90 percent straight chain material, to the extent whereby from about 10 to about 40 mole percent of the paraffins are so halogenated and that of the halogenated paraffins from about 80 to about 95 mole percent are monohalogenated;

(*b*) alkylating the alkylating agent of step (*a*) with an aromatic hydrocarbon to prepare an alkylation reaction mass;

(*c*) subjecting the alkylation reaction mass of step (*b*) to a distillation and recovering therefrom a lubricatting material comprising a bottoms fraction distilling above about 173° C. at 5 mm. Hg, said bottoms fraction being charcterized further as containing from about 50 parts to about 95 parts (by volume) dialkyl aromatic hydrocarbons, from about 5 to about 50 parts (by volume) diarylalkanes, having a viscosity index of at least 80, a viscosity at −40° F. of not more than 35,000 centistokes, a pour point of at least −50° F., and a flash point of at least 400° F.

3,288,717

METHOD FOR PREPARATION OF URANIA SOLS

Leon E. Morse, Oak Ridge, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Oct. 12, 1965, Ser. No. 495,355

2 Claims. (Cl. 252—301.1)

1. A method for preparing a stable urania sol comprising the steps of precipitating hydrous urania from the aqueous uranous nitrate solution by the addition of an alkaline reagent at a final solution pH of 6.0–7.3 under a non-oxidizing atmosphere, separating under a non-oxidizing atmosphere the resulting precipitate from the remaining mother liquor and thereafter heating said separated precipitate at a temperature between 60°–80° C. under a non-oxidizing atmosphere whereby the urania is peptized to form said stable urania sol.

3,288,718

STERILIZATION INDICATOR COATING

Constantine Carumpalos, Mountainside, N.J., assignor to United States Envelope Company, Springfield, Mass., a corporation of Maine

No Drawing. Filed Nov. 26, 1963, Ser. No. 326,190

6 Claims. (Cl. 252—408)

1. A composition for printing telltale insignia indicating, by a change in color, that sterilization conditions have been attained which comprises, by weight, approximately 20% partially hydrolyzed polyvinyl alcohol, approximately 40% water, approximately 10% of a leuco ester of an anthraquinonoid type vat dye, approximately 15% of a catalyst comprising an acid splitting agent, an oxidizing agent, and an alkali, approximately 15% anhydrous ethyl alcohol, an antifoam agent, and a mono-valent tertiary amine.

3,288,719

SIEVE REGENERATION PROCESS

William J. Asher, Cranford, Patrick P. McCall, Madison Township, Middlesex County, and William R. Epperly, Murray Hill, N.J., and Imre Zwiebel, Worcester, Mass., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Mar. 26, 1964, Ser. No. 354,992

9 Claims. (Cl. 252—416)

9. A process for regenerating an ammonia-containing molecular sieve the said sieve having been subjected to repeated adsorption and desorption cycles, said desorption employing ammonia which becomes adsorbed into said sieve and whereby a deactivating amount of non-desorbable carbonaceous deposits have been deposited on said molecular sieve which comprises: (a) passing a hydrocarbon feed at least a portion of which is adsorbable into said sieve over said sieve for a period of 8 to 48 hours whereby substantially all of said ammonia is removed from said sieve, (b) purging said sieve bed with an inert gas at a temperature of 600°–900° F. in order to remove at least a portion of said adsorbed hydrocarbon, (c) passing a stream of high temperature, oxygen-containing regeneration gas at a maximum temperature of 1100° F. through said sieve to combust at least a portion of the said carbonaceous deposits thereby forming CO_2 and H_2O and removing substantially all of the remaining portion of said hydrocarbon from the said sieve, (d) passing a stream of dry air at temperature of 800°–1100° F. for a period of 3 to 24 hours through said bed to combust the remaining carbonaceous deposits to CO_2 and H_2O, (e) cooling the said sieve bed to a temperature of 500°–800° F. by circulating dry inert gas through said bed, (f) passing substantially dry adsorbable hydrocarbon feed through said sieve bed to remove substantially all of said CO_2 and H_2O from the said bed, the said dry adsorbable hydrocarbon feed becoming adsorbed into the said sieve.

3,288,720

PROCESS FOR PREPARING A SUPPORTED CATALYST FOR THE STEREOSPECIFIC POLYMERIZATION OF ALPHA-OLEFINS

Giorgio Moretti and Gianfranco Corsi, Ferrara, Italy, assignors to Montecatini Societa Generale per l'Industria Mineraria e Chimica, Milan, Italy, a corporation of Italy

No Drawing. Filed Oct. 6, 1961, Ser. No. 146,067

Claims priority, application Italy, Oct. 10, 1960, 17,481/60

18 Claims. (Cl. 252—429)

1. A process for the preparation of a supported catalyst, suitable for the stereospecific, gaseous phase polymerization of an alpha-olefin containing a halide of a transition metal in a valence state immediately below its maximum valence state and at least one metal alkyl compound of the type R_mMX_n where M is a metal selected from the group consisting of the first, second and third groups of the Mendeleef Periodic Table, R is a hydrocarbon having 1 to 10 carbon atoms, X is a halogen selected from the group consisting of chlorine, bromine and iodine, *m* is an integer from 1 to 3, *n* is an integer from 0 to 1, and $m+n$ is the valance of M, wherein said halide of the transition metal in the valence state immediately below its maximum is obtained by reacting at a temperature of from 20° to 160° C. an excess of the halide of the transition metal selected from the group consisting of transition metals from Group IV*b*, V*b* and VI*b* of the Mendeleef Periodic Table in its maximum valence state with 0.5 to 3 g. for 100 g. support of an organometallic compound impregnated on a solid inorganic anhydrous salt support compound which is inert towards the catalyst components and has a melting point higher than 400° C. selected from the group consisting of support compounds which are soluble in water and support compounds which are soluble in the washing agents for the alpha-olefin polymer, heating to a temperature of from 50° C. to 400° C. the resulting reaction mixture, and subsequently adding a further amount of a metal alkyl compound to form the catalyst.

3,288,721

VANADIUM-PHOSPHORUS CATALYST CONTAINING ALKALI METALS

Ralph O. Kerr, Houston, Tex., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware

Filed Oct. 2, 1963, Ser. No. 313,187

5 Claims. (Cl. 252—435)

1. An improved vanadium-phosphorus catalyst complex having long catalyst life comprising as its main active constituent from about 1.0 to 2.0 atoms of phosphorus per atom of vanadium and wherein the phosphorus present therein is stabilized with from 0.003 to 0.125 atom of an element of Group I*a* of the Periodic Table per atom of phosphorus, said active constituent being present in catalytic amounts.

3,288,722

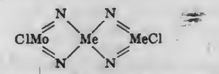
HYDROREFINING CATALYST CONTAINING DIIMINO MOLYBDENUM CHLORIDE AND CERTAIN COMPLEXES THEREOF

William K. T. Gleim, Island Lake, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Dec. 28, 1964, Ser. No. 421,723

6 Claims. (Cl. 252—438)

2. A hydrorefining catalyst comprising a molybdenum compound selected from the group consisting of diimino molybdenum chloride and a transitional metal complex of diimino molybdenum chloride having the following structural formula:



and wherein Me is a metal from the group consisting of iron, cobalt, nickel, platinum, palladium, ruthenium, rhodium and manganese.

3,288,723

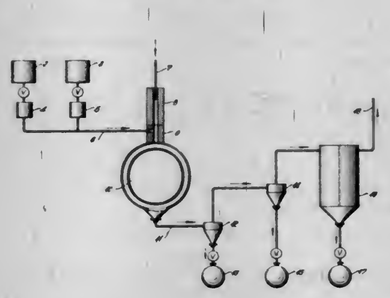
PROCESS FOR THE MANUFACTURE OF TITANIUM TRICHLORIDE AND ALUMINUM CHLORIDE MIXED CRYSTALS

Gero Heymer, Knapsack, near Cologne, Albert Gumboldt, Frankfurt am Main Hochst, and Heinz Harnisch, Lovenich, near Cologne, Germany, assignors to Knapsack-Griesheim Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

Filed June 26, 1963, Ser. No. 290,723

Claims priority, application Germany, Aug. 3, 1962, K 47,424

8 Claims. (Cl. 252—442)



1. A process for the manufacture of titanium trichloride/aluminum chloride mixed crystals from gaseous titanium trichloride and gaseous aluminum chloride comprising separately and continuously producing a gaseous mixture consisting essentially of titanium trichloride and aluminum chloride, supplying continuously said titanium trichloride and said aluminum chloride in a molar ratio of about 5:1 to 2:1 to a mixing zone, mixing therein said gases rapidly and intimately, immediately and continuously chilling the reaction products obtained in said mixing zone by discharging them from said mixing zone onto a cool surface, continuously collecting the chilled reaction products and recovering said titanium trichloride/aluminum chloride mixed crystals therefrom.

3,288,724
PROCESS FOR PREPARING A SILICON CARBIDE SUPPORTED VANADIUM-CONTAINING OXIDATION CATALYST

Joseph L. Russell, Ridgewood, and Mitchell Becker, Teaneck, N.J., assignors to Halcon International, Inc., a corporation of Delaware

No Drawing. Filed May 14, 1965, Ser. No. 455,944
6 Claims. (Cl. 252—443)

1. A process for preparing a silicon carbide supported vanadium-containing hydrocarbon oxidation catalyst which comprises:

coating a solution containing a vanadium salt convertible to vanadium oxide on a high purity silicon carbide support having less than 5% binder and having a surface area of less than one square meter per gram by contacting said support with said solution at a temperature of from 90° C. to 200° C. for a period of from ½ to 8 hours until the support reaches a state of dryness whereby a porcelain spatula is no longer wetted when placed in contact therewith, the coated support having a ratio of 1 part by weight of vanadium salt to from 5–20 parts by weight of support.

commencing final drying of the coated support within 30 minutes after the support reaches said state of dryness by raising the temperature of the support to from 260° C. to 450° C. in less than 30 minutes,

and continuing the heating within said temperature range to complete drying.

3,288,725
CATALYSTS FOR HYDROGENATION

Victor D. Aftandilian, Watertown, Mass., assignor to Cabot Corporation, Boston, Mass., a corporation of Delaware

No Drawing. Filed Oct. 25, 1963, Ser. No. 318,809
17 Claims. (Cl. 252—447)

8. A process for producing a hydrogenation catalyst which comprises activating by reduction the solid product of reaction produced by reacting (a) a finely-divided inorganic solid having an average particle diameter of less than about 0.1 micron and having a surface hydroxyl group concentration of at least about 1×10^{-4} equivalents per gram of solid and (b) a compound conforming to the formula

$$MX_aP_b$$

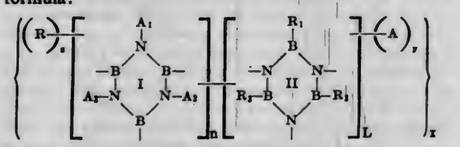
wherein M is a metal of Group VIII; each X is any halogen; a is a number from 1 to 2; each P is any hydrocarbon group having at least one unsaturated carbon to carbon bond and which is π-bonded to M; and wherein b is a number from 1 to 2, by reducing the Group VIII metal to zero valency.

3,288,726
B-N LINKED BORAZENE DERIVATIVES AND THEIR PREPARATION

Ross I. Wagner, Whittier, Calif., assignor to American Potash & Chemical Corporation, Los Angeles, Calif., a corporation of Delaware

No Drawing. Filed Nov. 30, 1961, Ser. No. 156,155
6 Claims. (Cl. 260—2)

1. A linear B–N linked borazene derivative having the formula:



wherein:

R, R_1, R_2 and R_3 are each independently selected from the group consisting of hydroxy, phenyl, cyclohexyl, cyclopentyl, and alkyl substituents, said alkyl substituents containing from 1 to 12 carbon atoms;

A, A_1, A_2 and A_3 are each independently selected from the group consisting of hydrogen, phenyl, cyclohexyl, cyclopentyl, and alkyl substituents, said alkyl substituents containing from 1 to 12 carbon atoms;

n, L and x are integers chosen so that x $(n+L)$ is from 2 to 3,000;

z is an integer equal to the number of annular boron atoms in said Formula I not linked to annular nitrogen atoms in said Formula II;

y is an integer equal to the number of annular nitrogen atoms in said Formula II not linked to annular boron atoms in said Formula I;

n being equal to L.

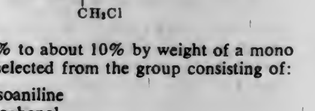
2. Poly (1′, 2, 3′, 4, 5, 5′, 6, 6′-octamethylbiborazylene).

3,288,727
ADHERENT POLYMERS OF 3,3-BIS-(CHLOROMETHYL) OXETANE CONTAINING A NITROSO COMPOUND

Douglas S. Richart, Reading, Pa., assignor to The Polymer Corporation, a corporation of Pennsylvania

No Drawing. Filed Aug. 9, 1965, Ser. No. 478,477
2 Claims. (Cl. 260—2)

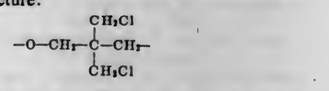
1. An adherent coating composition comprised of a major portion of a resinous binder of a chlorinated polyether prepared from 3,3-bis(chloromethyl)oxetane having the recurring structure:



and from about ¼% to about 10% by weight of a mono nitroso compound selected from the group consisting of:

N-methyl-4-nitrosoaniline
2-methyl-4-nitrosophenol
N-methyl-N-nitroso-p-toluenesulfonamide
N-nitrosocarbazole
N-nitrosodimethylamine
4-nitrosodiphenylamine, and
N-nitrosopiperidine.

2. An adherent coating composition comprised of a major portion of a resinous binder of a chlorinated polyether prepared from 3,3-bis(chloromethyl)oxetane having the recurring structure:



and from about ¼% to about 10% by weight of a dinitroso compound selected from the group consisting of:

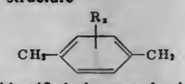
1-nitroso-4-(p-nitrosophenyl)piperazine
N,N′-dinitroso-N,N′-bis-(p-nitrosophenyl)ethylenediamine
N-ethyl-N,4-dinitroso-m-phenetidine, and
N,4-dinitroso-N-methylaniline.

3,288,728
PARA-XYLYLENE COPOLYMERS

William F. Gorham, Berkeley Heights, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Feb. 18, 1966, Ser. No. 528,609
8 Claims. (Cl. 260—2)

1. A method for the preparation of linear copolymers of p-xylylenes comprising the steps of heating at least one substituted cyclo di-p-xylylene having up to about six aromatic nuclear substituent groups selected from the class consisting of hydrocarbon, oxyhydrocarbon, thiohydrocarbon, hydroxyl, halogen, nitro, nitrile, amine, and mercapto groups to a temperature between about 450° and 700° C. for a time sufficient to cleave substantially all the di-p-xylylene into vaporous p-xylylene diradicals but insufficient to further degrade the said diradicals, and at a pressure such that the partial pressure of the vaporous p-xylylene diradicals is below about 0.75 mm. Hg and forming a vaporous mixture consisting essentially of at least two different vaporous p-xylylene diradicals each having the basic structure



wherein R is as identified above and x is an integer from 0 to 3, inclusive, and cooling the vaporous mixture of said diradicals to a temperature below 200° C. and below the ceiling condensation temperature of at least two of the different p-xylylene diradicals thereby condensing said diradicals and forming a random linear copolymer of p-xylylenes.

3,288,729
OPEN-CELL POLYVINYL CHLORIDE FOAM

Raymond R. Waterman, Easton, Kenneth M. Deal, Norwalk, and Peter A. Whitman, Haddam, Conn., assignors to R. T. Vanderbilt Company, Inc., New York, N.Y., a corporation of New York

No Drawing. Filed Dec. 6, 1962, Ser. No. 242,653
16 Claims. (Cl. 260—2.5)

1. A composition especially adapted for the formation of a fine, uniform, open-cell polyvinyl chloride foam by the incorporation of air therein which comprises an unfoamed polyvinyl chloride plastisol having substantially constant gel-free flow characteristics during storage and containing from about 1 to about 8 parts by weight of an alkali metal soap per 100 parts by weight of plastisol, said soap being an alkali metal salt of a fatty acid having from 12 to 24 carbon atoms, and from about 0.2 to about 1.8 parts by weight of water per 100 parts by weight of plastisol.

3,288,730
POLYADDITION PRODUCTS OF POLYBASIC ARALIPHATIC CARBOXYLIC ACIDS

Josef Baltes, Hamburg, and Friedrich Weghorst and Zdzislaw Makus, Hamburg-Harburg, Germany, assignors to Harburger Fettchemie Brinckman & Mergell G.m.b.H., Hamburg-Harburg, Germany, a corporation of Germany

No Drawing. Filed Apr. 25, 1963, Ser. No. 275,524
Claims priority, application Germany, Nov. 3, 1962, H 47,313
4 Claims. (Cl. 260—2.5)

1. Process for the production of polyaddition products which comprises reacting an organic polyisocyanate with a polyester resulting from the alcoholysis of a polyhydric alcohol with a polybasic araliphatic carboxylic compound, said compound having been prepared by subjecting a conjugated unsaturated fatty acid compound selected from the class consisting of conjugated unsaturated fatty acids and C_1 to C_4 alkanol esters of said acids to ionic copolymerization with an aromatic vinyl compound selected from the class consisting of styrene, alpha-methyl styrene and vinyl toluene in the proportion of 1 mole of fatty acid compound to 0.1 to 5 moles of aromatic vinyl compound and controlling the temperature of the reacting mass to prevent the mass temperature from exceeding at any time a temperature of about 200° C., the said polyester being one in which the sum of the acid number and the hydroxyl number lies in the range of 25 to 400.

3,288,731
METHOD FOR IMPROVING THE PROPERTIES OF POLYMERS CONTAINING ACRYLONITRILE

Alvin R. Ingram, Murrysville, and Edward H. Gleason, Monroeville, Pa., assignors to Koppers Company, Inc., a corporation of Delaware

Filed Sept. 24, 1963, Ser. No. 311,091
9 Claims. (Cl. 260—2.5)

1. A method of making acrylonitrile-containing polymeric beads which are substantially free of residual acrylonitrile and discoloration comprising the steps of:

(1) polymerizing at a temperature of 65–100° C. a monomeric mixture comprising 60–75 percent by weight of vinyl aryl monomer and 25–40 percent by weight of acrylonitrile in an aqueous suspension in the presence of a catalytic amount of a free radical initiator until the polymerization has progressed to about the bead identity point;

(2) adding a base selected from the group consisting of:

(a) alkali metal hydroxide and oxide;

(b) alkaline earth metal hydroxide and oxide wherein said alkaline earth metal has an atomic number of 20–56 inclusive;

(c) tetraalkyl quaternary ammonium compounds wherein said alkyl group is a member selected from the group consisting of methyl, ethyl, and n-propyl; and

(d) alkali metal salts of weak acids having a pK of at least 12.0;

said base being added in an amount sufficient to maintain said beads in a colorless condition;

(3) thereafter completing said polymerization; and

(4) recovering said polymeric beads.

3,288,732
PREPARATION OF OPEN-CELL RIGID POLYURETHANES

John Frederick Chapman and Ian David Rosbotham, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Dec. 16, 1963, Ser. No. 330,561
Claims priority, application Great Britain, Dec. 21, 1962, 48,474/62
7 Claims. (Cl. 260—2.5)

1. A process for the manufacture of rigid polyurethane foams having at least 90% of open cells and a density up to 2 lbs. per cubic foot which comprises reacting together (a) an organic polyisocyanate, (b) a mixture of hydroxyl group-containing resins which contains from 30% to 70% by weight of a polyester resin having at least 3 hydroxyl groups per 1000 units of molecular weight, and a second hydroxyl group-containing resin selected from the group consisting of linear polyether resins having 2 hydroxyl groups per molecule and lightly branched polyether resins having not more than 3 hydroxyl groups per 1500 units of molecular weight, wherein the polyester resin is incompatible with said polyether resin and (c) at least 6% by weight of water based on the polyester, in the presence of 20 to 200% by weight of said polyester of a halogenated hydrocarbon having a boiling point not exceeding 75° C. at atmospheric pressure.

3,288,733
POLYURETHANES PREPARED FROM OXYALKYLATED CYANOGUANIDINE

Donald W. Kaiser, Hamden, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Original application May 1, 1963, Ser. No. 277,123, now Patent No. 3,262,941. Divided and this application Oct. 18, 1965, Ser. No. 510,425
4 Claims. (Cl. 260—2.5)

2. The process of preparing a polyurethane foam which comprises admixing (A) an organic polyisocyanate, (B)

1 to 50 parts of a foaming agent, (C) 0.1 to 2 parts of reaction catalyst per 100 parts of (D) a liquid reaction product formed by admixing (1) a basic catalyst, (2) cyanoguanidine and (3) dimethyl sulfoxide to form a liquid reaction mixture, the weight ratio of (2) to (3) being between 1:1 and 1:5, heating said liquid reaction mixture to a temperature between 75° and 175° C. while passing into said liquid reaction mixture an alkylene oxide having 3 to 8 carbon atoms, the weight ratio of (2) to said alkylene oxide being between 1:5 and 1:125 and then removing said dimethyl sulfoxide, the proportion of (A) providing from 0.7 to 1.5 CNO groups for each hydroxyl group contained in (D).

3,288,734

PHENOLIC-FORMALDEHYDE RESOLE-POLYMERIZED UNSATURATED FATTY ACID MODIFIED BINDER COMPOSITION FOR BONDED MAT

Joseph P. Stalego, Newark, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware

No Drawing. Filed Apr. 3, 1963, Ser. No. 270,157
10 Claims. (Cl. 260—7)

1. A hardenable, aqueous binder composition containing from 12 to 22 percent of solids consisting essentially of from 5 to 35 percent of polymerized unsaturated fatty acids having a chain length of from 10 to 22 carbon atoms and from 10 to 40 percent of a heat-hardenable phenol-amino compound-formaldehyde resole wherein the formaldehyde to phenol mol ratio is at least 1¼:1 but not greater than about 2¾:1, 5–60 percent of bone glue, and up to about 50 percent of a water soluble film-forming constituent selected from the group consisting of starch, dextrinized starch and cationic starches, provided that the sum of bone glue and film former is from 35 percent to 75 percent.

7. A method for preparing a hardenable binder composition comprising dissolving in water a water soluble solid dispersing agent for a polymerized fatty acid, dispersing in the resulting solution, with agitation, polymers of unsaturated fatty acids having a chain length of from 10 to 22 carbon atoms, and mixing with the resulting dispersion a heat hardenable phenol-amino compound-formaldehyde resole wherein the formaldehyde to phenol mol ratio is at least 1¼:1 but not greater than about 2¾:1 and a water soluble film-forming constituent selected from the group consisting of starch, dextrinized starch and cationic starch, and wherein the proportions of the several ingredients are such that the binder composition has a solids content of from 5 percent to 35 percent, and the solids consist essentially of from 5 percent to 40 percent of the polymerized unsaturated fatty acids, from 10 percent to 40 percent of the heat-hardenable phenolic resole, from 5 percent to 70 percent of the water-soluble solid dispersing agent, and up to about 70 percent of the water-soluble film-forming constituent, provided that the sum of the dispersing agent and film former is from 35 percent to 75 percent.

3,288,735

PROCESS OF CURING UNSATURATED POLYESTER RESIN

Hiroshi Watanabe, Nobuo Tonami, Takeshi Watanabe, and Masayuki Nanba, all of Kamakura, Japan, assignors to Toyo Koatsu Industries, Incorporated, Tokyo, Japan, a corporation of Japan

No Drawing. Filed Feb. 3, 1960, Ser. No. 6,372
10 Claims. (Cl. 260—17.4)

1. The process of manufacturing articles from curable olefinically unsaturated polyester resins which comprises the steps of, (A) mixing said resin with (*a*) a monomeric organic compound having an olefinic double bond which reacts with the olefinic unsaturated bond of said polyester resin in copolymerization by a free radical polymerization catalyst, and a catalyst system consisting essentially of (*b*) a free radical polymerization catalyst which is active only at temperatures above 60° C., said free radical polymerization catalyst being in an amount of 0.01 to 1 part by weight for each 100 parts of the mixture of said resin and said monomeric organic compound, and (*c*) both a tetraorganic quaternary ammonium compound and an organic mercaptan; (B) allowing the resulting resinous mixture to react at a temperature below about 60° C. to form a deformable gel which is stable to prolonged storage; and (C) thereafter subjecting said gel to temperatures above about 60° C. to cure said gel to a hard product.

6. The process as claimed in claim 1 wherein said gel is formed in a mixer in the presence of a fibrous filler.

3,288,736

COATING COMPOSITIONS COMPRISING PARTIAL FATTY ACID ESTERS OF HYDROXYL INTERPOLYMERS

Howard J. Wright and Richard D. Kincheloe, Kansas City, Mo., assignors to Cook Paint & Varnish Company, Kansas City, Mo., a corporation of Delaware

No Drawing. Filed Nov. 15, 1962, Ser. No. 238,038
9 Claims. (Cl. 260—23)

1. The composition which comprises the oil fatty acid esterification product of a vinyl copolymer of (1) at least one hydroxy-free ethylenically unsaturated monomer selected from the group consisting of vinyl aromatic hydrocarbons, lower alkyl esters of acrylic and methacrylic acid and vinyl acetate and (2) a hydroxy ethylenically unsaturated monomer, selected from the group consisting of lower hydroxy alkyl acrylates and methacrylates, polymethylol lower alkane vinyl ethers and pentaerythritol monoallyl ether, the monomer ratios and degree of esterification being such that said esterification product has an acid number below 20 and a hydroxyl number of from 10–90.

3,288,737

PLASTIC ASBESTOS TILE

Morimasa Arakawa, Higashi-ku, Osaka-shi, and Hiroshi Yoshioka and Yosinori Hiro, Asahi-ku, Osaka-shi, Japan, assignors to Arakawa Rinsan Kagaku Kogyo Kabushiki Kaisha, Higashi-ku, Osaka-shi, Japan

No Drawing. Filed Mar. 9, 1964, Ser. No. 350,567
Claims priority, application Japan, Mar. 18, 1963, 38/14,612
5 Claims. (Cl. 260—27)

1. A plastic asbestos tile comprising:
(1) 6–30% of a vinyl resin selected from the group consisting of polyvinyl chloride homopolymers, vinyl chloride-vinylidene chloride copolymers, and vinyl chloride-vinyl acetate copolymers;
(2) 2–15% plasticizers;
(3) 20–60% fillers and pigments;
(4) 15–50% asbestos; and
(5) 1–15% of a metal modified rosin having a ball and ring softening point of from 70° to 190° C. consisting essentially of the reaction product at 200° to 250° C. of,
(A) the reaction product of
(i) a rosin selected from the group consisting of rosin and rosin esters, wherein at least 6 to 75 mol percent of the resin acid component of said rosin and rosin esters contains conjugated double bonds, and
(ii) an α,β-unsaturated dibasic acid; and
(B) at least one member of the group consisting of an oxide, hydroxide, and acetate of a metal selected from the group consisting of magnesium, calcium, zinc, cadmium, and barium.

3,288,738

SOLUTION OF POLYHEXAMETHYLENE TEREPHTHALAMIDE IN A SOLVENT COMPRISING FORMIC ACID AND A COMPOUND SELECTED FROM SULFURIC ACID, HYDROGEN CHLORIDE, AND MIXTURES THEREOF

Arnold J. Rosenthal, Whippany, and Cipriano Cipriani, Morristown, N.J., assignors to Celanese Corporation of America, New York, N.Y., a corporation of Delaware

No Drawing. Original application June 7, 1960, Ser. No. 34,364, now Patent No. 3,227,792, dated Jan. 4, 1966. Divided and this application June 30, 1965, Ser. No. 482,651
5 Claims. (Cl. 260—29.2)

1. A solution of polyhexamethylene terephthalamide in which the hexamethylene groups are straight chain, in a solvent consisting essentially of formic acid and a minor amount of a compound selected from the group consisting of sulfuric acid, hydrogen chloride, and mixtures thereof, said polyhexamethylene terephthalamide having an inherent viscosity of at least about one determined from a solution of 0.1% of polymer in concentrated sulfuric acid at 25° C.

5. The solution of claim 1 wherein said solvent contains up to 10% of water based on the weight of the solvent.

3,288,739

PROCESS FOR PREPARING GRAFT COPOLYMERS FROM LINEAR AMORPHOUS NON-CRYSTALLIZABLE POLYMERS OF ALPHA-OLEFINS OR COPOLYMERS OF ALPHA-OLEFINS WITH EACH OTHER AND/OR ETHYLENE

Giulio Natta, Enrico Beati, and Febo Severini, Milan, Italy, assignors to Montecatini Societa Generale per l'Industria Mineraria e Chimica, Milan, Italy, a corporation of Italy

No Drawing. Filed June 26, 1961, Ser. No. 119,285
Claims priority, application Italy, June 30, 1960, 11,632/60
14 Claims. (Cl. 260—29.6)

1. A process for preparing graft copolymers of a linear, amorphous polymeric material selected from the group consisting of homopolymers of higher alpha-olefins, copolymers of higher alpha-olefins with each other and copolymers of higher alpha-olefins with ethylene, which comprises (1) forming an aqueous suspension of said linear, amorphous polymeric material, (2) subjecting said aqueous suspension to the action of a gas containing molecular oxygen while employing a pressure above atmospheric but below 20 atmospheres and a temperature between 40° and 200° C. for a time less than five hours in the absence of peroxide compound initiator, thereby peroxidizing said polymeric material, and (3) polymerizing a monomer, which polymerizes by a free-radical mechanism, onto the linear chains of said peroxidized linear, amorphous polymeric material.

3,288,740

PROCESS FOR THE PREPARATION OF STABLE EMULSIONS FROM N-METHYLOL SUBSTITUTED AMIDES OF ACRYLIC ACID OR THE ETHERS OF SUCH N-METHYLOLAMIDES

Arthur Maeder, Therwil, and Hermann Nachbur, Riehen, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed July 3, 1963, Ser. No. 292,713
Claims priority, application Switzerland, July 5, 1962, 8,062/62
19 Claims. (Cl. 260—29.6)

1. A linear copolymer of additively combined units of
(a) 0.25 to 10 percent by weight of an alkaline earth metal salt of an α:β-monoethylenically unsaturated monocarboxylic acid containing 3 to 4 carbon atoms,
(b) 0.25 to 30 percent by weight of an amide selected from the group consisting of an N-methylolamide and an N-methylolamide ether derived from an aliphatic alcohol having at most 4 carbon atoms, the acid of said amide being an at most dicarboxylic acid which is α:β-ethylenically unsaturated and contains 3 to 5 carbon atoms, and
(c) 99.5 to 60 percent by weight of at least one other copolymerizable compound selected from the group consisting of an ester of acrylic acid and an alkanol with 1 to 18 carbon atoms, an ester of methacrylic acid and an alkanol with 1 to 18 carbon atoms, an N-substituted acrylamide, a vinylhalide, a vinylidene halide, a vinylester, a vinyl aryl compound and acrylonitrile.

3,288,741

GLYCOL AND ACID SALT TREATMENT FOR INCREASING THE PARTICLE SIZE OF SYNTHETIC RUBBER LATEX

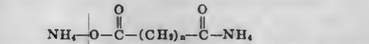
Shang-I Cheng, Avon Lake, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

No Drawing. Filed Aug. 30, 1963, Ser. No. 305,813
11 Claims. (Cl. 260—29.7)

1. The method of increasing the size of the polymer particles of a synthetic rubber latex comprising the aqueous emulsion polymerizate of 55 to 100 wt. percent of a 1,3-butadiene having 4 to 6 carbon atoms and 0 to 45 wt. percent of a compound copolymerizable with said 1,3-butadiene and selected from the group consisting of aryl olefins, acrylonitrile and methacrylonitrile, whereby the average size of the polymer particles in the latex is increased by at least about 40% and the amount of new coagulum formed therein is less than about 5% based on the weight of the rubber in the latex, which method comprises first mixing with the latex (A) at least 0.05 part of a polyalkylene glycol having an average molecular weight of from about 300 to about 7500 and selected from the group consisting of polyethylene glycol, polypropylene glycol, polybutylene glycol, polyepichlorohydrin glycol and mixtures thereof, and then mixing with the latex (B) from about 1 to 10 parts by weight of an ammonium salt of a carboxylic acid selected from the group consisting of:



where R is hydrogen and an alkyl radical having from 1 to 4 carbon atoms; and



where *n* is an integer of from 0 to 3; and mixtures of the foregoing ammonium salts, the amounts of the additives (A) and (B) being based on 100 parts by weight of rubber solids in the latex.

3,288,742

BASING OF ELECTRICAL LAMPS AND THE LIKE

Walter Donatelli, Boston, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Sept. 4, 1962, Ser. No. 221,030
5 Claims. (Cl. 260—30.4)

1. A basing cement consisting essentially of a phenolic resin, a filler and trioxane. there being between about 11 and 14 liquid pints of trioxane to about 150 pounds of the dry resin and filler.

3,288,743

PLASTICIZED POLYORGANOSILSESQUIOXANE COMPOSITIONS

David P. Spalding, Troy, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Dec. 26, 1961, Ser. No. 162,237
6 Claims. (Cl. 260—30.6)

1. Films comprising (A) 100 parts of a polyorganosilsesquioxane having an intrinsic viscosity in benzene when

measured at 25° C. of at least 0.4 deciliter per gram, which is produced by (1), heating to a temperature between 200° C. to 325° C., a mixture of an organosilsesquioxane prepolymer, an organic solvent for the organosilsesquioxane prepolymer, and a rearrangement catalyst, while maintaining the solids concentration of the organosilsesquioxane prepolymer in the mixture during the reaction at least about 70% by weight of the organosilsesquioxane prepolymer and the organic solvent and (2), recovering an organosilsesquioxane polymer having a molecular weight higher than the organosilsesquioxane prepolymer, said polyorganosilsesquioxane prepolymer being composed of from 90 to 100 mol percent of monoorganosiloxy units of the following formula

$$RSiO_{1.5}$$

and any remaining organosiloxy units being selected from the class consisting of organosiloxy units having the following formula

$$(R')_2SiO,\ R'(CN{-}[CH_2]_m)SiO,\ R''SiO_{1.5}$$

and

$$CN(CH_2)_mSiO_{1.5}$$

and (B) 10 to 100 parts of a plasticizer selected from the class consisting of bis(m-phenoxyphenyl)ether, m-nitrophenylphenyl ether, m-diphenoxybenzene, bis(3,3-phenoxyphenyl)ether, triphenyl phosphate, and pentachlorobiphenyl, where R is an aryl radical, R' is a member selected from the class consisting of aryl radicals, alkyl radicals and alkenyl radicals, R'' is a lower alkyl radical, and *m* is a whole number equal to from 2 to 4, inclusive.

3,288,744

VINYL HALIDE RESINS STABILIZED WITH TRIS-(HYDROXYMETHYL) AMINOMETHANE

Fred F. Holub, Scotia, and Moyer M. Safford, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

No Drawing. Filed Jan. 29, 1964, Ser. No. 341,100
7 Claims. (Cl. 260—30.6)

2. A composition of matter comprising a major portion of a mixture of (1) a vinyl halide resin, (2) a plasticizer for the vinyl halide resin and (3) from 0.5 to 12%, by weight, based on the weight of the vinyl halide resin, of a heat stabilizer comprising tris(hydroxymethyl) aminomethane.

3,288,745

COATING COMPOSITION CONTAINING PHENOL-FORMALDEHYDE RESIN AND A POLYETHYLENE GLYCOL

Charles H. Hempel and Herbert E. Pleuss, both of Manitowoc, Wis., assignors to Heresite & Chemical Company, a corporation of Wisconsin

No Drawing. Continuation of application Ser. No. 154,870, Nov. 24, 1961. This application Mar. 5, 1965, Ser. No. 437,548
2 Claims. (Cl. 260—33.2)

1. A coating composition having improved qualities of adhesion to unetched metal surfaces, said coating composition consisting essentially of an alkali phenol-formaldehyde resin having from 90 to 120 parts by weight of formaldehyde to each 100 parts by weight of phenol admixed with 20 to 50 percent by weight of the nonvolatiles of the resin of a polyethylene glycol having the formula $HO(C_2H_4O)_nC_2H_4OH$ where *n* is an integer sufficient to define a molecular weight of from 200 to 600, said admixture being dissolved in a solvent.

3,288,746

ZINC-ALUMINUM PAINTS

Lothar Kluth, Hallein, Austria, assignor to Walter Marx & Co., K.-G., a limited partnership of Austria

No Drawing. Filed Apr. 12, 1961, Ser. No. 102,396
Claims priority, application Austria, Apr. 12, 1960, A 2,881/60
1 Claim. (Cl. 260—37)

In a zinc aluminum paint of the type suitable for applying as a protective cathodic coating to a metal surface and having a paint vehicle in which there is dispersed a metallic zinc and aluminum pigment system and a binder for the pigment, the improvement in combination thereof comprising a zinc aluminum pigment system having from about 60% to about 98% by weight of a lamellar substantially pure zinc pigment, and from about 2% to about 40% by weight of a lamellar aluminum pigment, said lamellar zinc and aluminum pigments being about 0.1 to 0.5 micron thick.

3,288,747

MOLDING COMPOSITION OF POWDERED EPOXY RESIN, AND FILLER COATED WITH NORMALLY SOLID CURING AGENT

Vincent Sussman, Roseland, N.J., assignor, by mesne assignments, to Allied Products Corporation, Chicago, Ill., a corporation of Michigan

No Drawing. Filed June 8, 1962, Ser. No. 200,924
16 Claims. (Cl. 260—37)

1. A dry blend composition comprising particles containing a solid polyfunctional epoxy resin having more than two (2) epoxy groups per molecule and a melting point of approximately 130 to 340° F. in intimate mixture with filler particles, the filler particles being individually coated with a surface film of a curing agent to furnish a substantial surface area of curing agent for reaction with the resin at molding temperatures, substantially all of the curing agent of the composition being carried on filler particles, the curing agent coated filler particles having a size not more than approximately 60 mesh, the curing agent having a melting point of approximately 120 to 340° F.

3,288,748

STABILIZATION OF OLEFIN POLYMERS WITH N-HYDROCARBYL-ALKANOLAMINES

Henryk A. Cyba, Evanston, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed June 27, 1963, Ser. No. 290,917
11 Claims. (Cl. 260—45.9)

1. Olefin polymer normally subject to deterioration due to ultraviolet light containing, as an inhibitor against said deterioration, a stabilizing concentration of an N-hydrocarbyl-alkanolamine inhibitor in which said hydrocarbyl contains at least four carbon atoms.

3,288,749

STABILIZATION OF RUBBER WITH A MIXTURE OF PHENYLENE DIAMINES AND DIAMINODIPHENYL ETHERS OR THIOETHERS

William L. Cox, Cuyahoga Falls, Ohio, assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Sept. 16, 1965, Ser. No. 487,910
15 Claims. (Cl. 260—45.9)

1. A mixture of from about 50% to about 90% by weight of an N,N'-di-sec-alkyl-p-phenylene diamine in which each of the alkyl groups contains from 6 to 12 carbon atoms and from about 50% to about 10% by weight of a diaminodiphenyl compound selected from the group consisting of bis-4,4'-sec-alkyl-aminodiphenyl ether and bis-4,4'-sec-alkyl-aminodiphenyl sulfide, each alkyl group of said diaminodiphenyl compound containing from 3 to 20 carbon atoms.

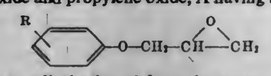
3,288,750

POLYMERIZATION OF PHENYL GLYCIDYL ETHER

Charles C. Price, Lansdowne, Pa., assignor, by mesne assignments, to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed July 3, 1958, Ser. No. 746,315
11 Claims. (Cl. 260—47)

1. The method for the production of a polyether which comprises polymerizing under substantially anhydrous conditions at a temperature of from about room temperature to 200° C., (1) a monomeric material selected from the class consisting of A and a mixture of A and at least one olefin oxide selected from the group consisting of ethylene oxide and propylene oxide, A having the formula:



where R is a radical selected from the group consisting of hydrogen, halogen, nitro, alkyl and phenyl radicals, where said alkyl radical has from 1 to 5 carbon atoms, in contact with (2) from about 0.5 to 2% by weight of said monomeric material of a catalyst comprising (C) aluminum triisopropoxide and (C') zinc chloride.

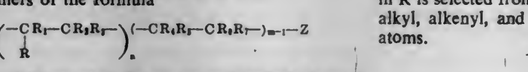
3,288,751

TELOMERS CONTAINING EPOXY GROUPS

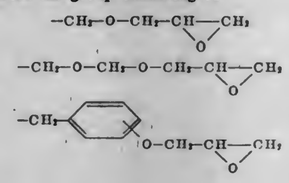
Daniel Porret, Basel, Gustav H. Ott, Arlesheim, and René Huwyler, Birsfelden, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed Sept. 22, 1961, Ser. No. 139,865
Claims priority, application Switzerland, Sept. 26, 1960, 10,860/60
7 Claims. (Cl. 260—47)

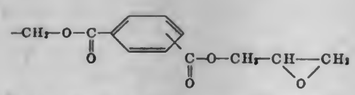
1. Telomers of the formula



where Y and Z represent the atoms and radicals formed by the scission of a telogen YZ, where Y is a member selected from the group consisting of hydrogen and chlorine, and Z is a member selected from the group consisting of halogenated hydrocarbons, dialkyl phosphites and cyclohexanone, from which the radical Y has been split off; R_1 to R_7 each represents a member selected from the class consisting of hydrogen, halogen atom and lower hydrocarbon radical, R represents an organic radical selected from the group consisting of



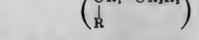
and



and n and m are small whole numbers, the sum

$$[n+(m-1)]$$

is at least 1 and at most 20, and in which the individual structural units



and $(CR_4R_5{-}CR_6R_7)$ occure in the telomer chain in any possible sequence.

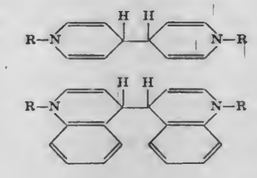
3,288,752

PROCESS OF CURING 1,2-DIEPOXY MONOMERS

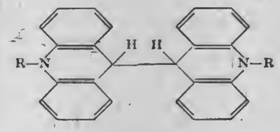
Louis A. Joo, Crystal Lake, Ill., assignor, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Dec. 15, 1961, Ser. No. 159,765
18 Claims. (Cl. 260—47)

1. In the curing of 1,2-diepoxy monomers with amines, the improvement which comprises curing said monomers with a small amount, effective to promote the hardening of said monomers, of an amine curing agent, said amine being selected from the group consisting of:



and



and C_1 to C_4 alkyl-substituted derivatives thereof, wherein R is selected from the group consisting of unsubstituted alkyl, alkenyl, and aryl radicals having 1 to 18 carbon atoms.

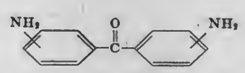
3,288,753

HARDENING OF EPOXIDE RESINS WITH A DIAMINODIPHENYL KETONE

Graham Winfield, Harlton, Cambridgeshire, Edward William Garnish, Saffron Walden, Essex, and Malcolm Paul Rainton, Cambridge, England, assignors to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed Feb. 5, 1962, Ser. No. 171,270
Claims priority, application Great Britain, Feb. 20, 1961, 6,227/61
4 Claims. (Cl. 260—47)

1. A curable composition which comprises a 1,2-epoxide compound having a 1,2-epoxide equivalency greater than 1 and as a hardener therefor, a diaminodiphenyl ketone of the general formula



wherein the total proportion of amine hardener in the composition is such that there is present one active amino hydrogen atom in the hardener to each 1,2-epoxide group in the 1,2-epoxide compound.

3,288,754

SILICON MODIFIED POLYAMIDE-POLYIMIDE POLYMERS

Donald E. Green, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Dec. 12, 1963, Ser. No. 329,995
14 Claims. (Cl. 260—47)

1. A composition of matter consisting essentially of an organo silicon-modified polyamide-polyimide prepared by reacting

(I) 45 to 99 inclusive weight percent, based on the total weight of (I) and (II), of an organic solvent soluble polyamide-polyimide prepolymer formed by reacting

(A) from 45 to 55 inclusive mol percent of at least one carbocyclic aromatic compound, containing atoms selected from the group consisting of carbon, hydrogen, oxygen and sulfur, and selected from the group consisting of aromatic acids, aromatic esters and aromatic anhydrides, having at least three carbonyl-containing groups per molecule selected from the group consisting of carboxyl groups, —COOH; ester groups, —COOR' in which R' is a monovalent hydrocarbon radical; and anhydride groups,



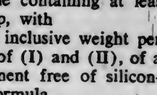
bonded only to another



and at least two of the carbonyl-containing groups are in ortho positions, with

(B) from 45 to 55 inclusive mol percent of diamines selected from the group consisting of organic aliphatic diamines, organic aromatic diamines and mixed aliphatic-aromatic diamines, each diamine containing at least one primary amine group, with

(II) from 1 to 55 inclusive weight percent, based on the total weight of (I) and (II), of a functional organosilyl component free of silicon-halogen bonds of the general formula



in which

Si* is a silicon atom which is a reference point used to define the functional organosilyl component,

Y is a functional group free of silicon atoms selected from the group consisting of carboxyl, hydroxyl, aldehyde, amide, primary amine, secondary amine, anhydride, carbamate, 1,2-epoxide, isocyanate, isocyanide, isothiocyanate, isothiourea, ketoxime, lactide, mercapto, oxime, ozonide, peroxide, thial, thiocyanate and ureido,

Z is a divalent organic radical bonded to the silicon* atom through a silicon*-carbon bond,

R''' is a monovalent organic radical selected from the group consisting of hydrocarbon radicals and halogenohydrocarbon radicals, bonded to the silicon* atom through a silicon*-carbon bond,

X is a hydrolyzable group,

G is a monovalent silicon-containing radical selected from the group consisting of siloxy radicals, silalkylene radicals, silarylene radicals, siloxanoxy radials, siloxanalkylene radicals, siloxanarylene radicals, cyclosiloxanoxy radicals, and silsesquioxanoxy radicals, bonded to the silicon* atom through a linkage selected from the group consisting of silicon*-silicon bonds, silicon*-oxygen-silicon bonds and silicon*-divalent hydrocarbon-silicon bonds,

g is an integer from 0 to 3 inclusive,

h is an integer from 0 to 3 inclusive, the sum of *g* and *h* does not exceed 3.

3,288,755
PROCESS FOR THE MANUFACTURE OF COPOLYETHERESTERS

Wolfgang Griehl and Hans Lückert, Chur, Graubunden, Switzerland, assignors to Inventa A.G. für Forschung und Patentverwertung, Zurich, Switzerland

No Drawing. Filed Feb. 19, 1964, Ser. No. 346,026
5 Claims. (Cl. 260—47)

1. A process for the production of copolyetheresters of high tensile strength, elasticity and dyeability, suitable for fabrication into fibers, which comprises subjecting to an ester interchange and simultaneous esterification and copolymerization a substance selected from the group consisting of p-oxybenzoic and vanillic acids, oxyalkyl carboxylic acid esters of said acids and mixtures thereof, in mixture with ethylene glycol, with compounds selected from the group consisting of terephthalic acid and its dimethyl ester; together with a catalyst promoting ester interchange selected from the group consisting of Al, Zn, Pb, Sn, Bi, Co, Ge, Ti, Zr, Cd, Mn, and Sb in the form of metals, oxides and carbonates; while simultaneously forming the glycol ether of said acids; condensing the reaction mixture thus obtained in a single stage reaction and thereby simultaneously producing the copolyetherester.

3,288,756
OXYMETHYLENE POLYMERS

Gerard Dunstan Buckley, Hitchin, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Dec. 31, 1962, Ser. No. 248,266
Claims priority, application Great Britain, Jan. 5, 1962, 474/62
6 Claims. (Cl. 260—67)

1. In a process which comprises polymerizing trioxane in the presence of a cationic initiator under substantially anhydrous conditions, the improvement of adding to the polymerization mixture from 0.003 to 3 moles per mole of trioxane of methacrolein dimer.

3. A rigid moldable random copolymer of trioxane and methacrolein dimer having a molecular weight of at least 15,000, substantially insoluble in cold water but appreciably soluble in p-chlorophenol, said copolymer consisting of 90 to 99.5% of oxymethylene units and 0.5 to 10% of 6-formyl-3,6-dimethyltetrahydropyran-2,3-diyl units.

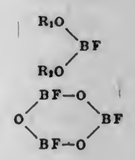
3,288,757
PROCESS FOR PRODUCING POLYMERIC PRODUCTS OF TRIOXANE

Walter Wilson, Cambridge, and Herbert May, Edgbaston, Birmingham, England, assignors to British Industrial Plastics Limited, London, England, a company of the United Kingdom

No Drawing. Filed Mar. 18, 1963, Ser. No. 266,069
Claims priority, application Great Britain, Mar. 19, 1962, 10,501/62, 10,502/62
14 Claims. (Cl. 260—67)

1. A process for the preparation of a trioxane polymer comprising polymerizing trioxane, with from 0 to about 50% of a comonomer, at a temperature of —100 to 100° C. under substantially anhydrous conditions in the presence of an electrophilic catalyst in which the catalyst is a compound having a formula selected from the group consisting of

$ROBF_2$



wherein R is one of the following:

(i) an alkyl radical;
(ii) a fluoro-substituted alkyl radical;
(iii) a fluoro-substituted alkoxy alkyl radical;
(iv) an alkoxy radical;
(v) an aryl radical;
(vi) a radical having the formula X·CO·CH=CY— wherein X and Y are selected from the group consisting of aryl and alkyl radicals;

and R_1 and R_2 are each selected from the group consisting of alkyl, alkoxy, aryl radicals.

3,288,758
STABLE POLYACETALDEHYDES AND PROCESS FOR THE PRODUCTION THEREOF

Maurice Joseph Amand Letort, Paris, and Bernard Fleureau, Verneuil-en-Halatte, France., assignors to Charbonnages de France, Paris, France, a public institution of France

No Drawing. Filed June 11, 1965, Ser. No. 463,355
Claims priority, application France, Apr. 21, 1960, 824,961; Nov. 9, 1964, 994,366
18 Claims. (Cl. 260—67)

1. Process for the thermal stabilization of polymers consisting of polyacetaldehyde elastomers of high molecular weight comprising treating said elastomers with a dissolving amount of pyridine, allowing the resulting solution to stand at room temperature, adding an alkaline aqueous solution selected from the group consisting of alkaline metal hydroxide, carbonates and bicarbonates solutions in an amount at least sufficient for precipitating effect, then separating the precipitated polymers from said solution whereby a stabilized polymer having a decomposition starting temperature of at least 85° C. is obtained.

3,288,759
POLYESTERS CONTAINING AN ORGANIC CARBOXYLIC ACID POLYANHYDRIDE, AND A TERTIARY AMINE AS CURE ACCELERATOR

Fred F. Holub, Scotia, and Matthew J. Smith, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

No Drawing. Filed Sept. 27, 1963, Ser. No. 311,953
16 Claims. (Cl. 260—75)

1. A composition of the matter comprising (1) a polyester resin obtained from the product of reaction of a dialkyl ester of a member selected from the class consisting of terephthalic acid and isophthalic acid, and mixtures of said members, ethylene glycol, and a saturated aliphatic polyhydric alcohol having at least three hydroxyl groups, (2) an organic carboxylic acid polyanhydride, and (3) a tertiary amine selected from the class consisting of quinoline and amines having the formula R_3N where R is a monovalent hydrocarbon radical.

3,288,760
POLYCARBOXYLAMIDES FROM 1,2-BIS(AMINOMETHYL)CYCLOBUTANE

Ralph Courtenay Schreyer, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Original application Mar. 22, 1961, Ser. No. 97,454. Divided and this application Nov. 20, 1963, Ser. No. 325,136
11 Claims. (Cl. 260—78)

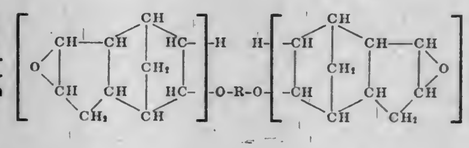
1. A fiber-forming, synthetic polycarboxylamide in which the carboxylamide linkages form an integral part of the polymer chains, of trans-1,2-bis(aminomethyl)-cyclobutane and at least one dicarboxylic acid selected from the group consisting of aromatic dicarboxylic acids and linear aliphatic dicarboxylic acids having from two to twelve carbon atoms in the molecule.

3,288,761
CURABLE MIXTURES OF DIEPOXY COMPOUNDS AND DICARBOXYLIC ACID ANHYDRIDES

Erwin Nikles, Allschwil, and Hans Batzer, Arlesheim, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed Mar. 5, 1962, Ser. No. 177,258
Claims priority, application Switzerland, Mar. 7, 1961, 2,726/61; Jan. 17, 1962, 550/62
4 Claims. (Cl. 260—78.4)

1. Thermocurable mixtures consisting essentially of (1) diepoxide of the formula



where R is the divalent radical which is obtained by elimination of two hydroxyl groups from a compound selected from the class consisting of aliphatic saturated trihydric alcohols containing 3 to 9 carbon atoms and aliphatic saturated trihydric ether alcohols containing 3 to 9 carbon atoms, and (2) a dicarboxylic acid anhydride, said mixtures being curable at a temperature of about 140° C.

3,288,762
CURING PROCESS AND COMPOSITION FOR CHLOROSULFONATED POLYETHYLENE

John T. Maynard, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 10, 1962, Ser. No. 222,612
15 Claims. (Cl. 260—79.3)

1. In a process for curing elastomeric chlorosulfonated polyethylenes in the presence of (A) a member selected from the group consisting of polyvalent metal oxides, polyvalent metal hydroxides and weak acid salts of polyvalent metals and (B) monocarboxylic acids selected from the group consisting of the aliphatic and cycloaliphatic series of molecular weight above 200 and mixtures thereof, the improvement which comprises adding 0.005 to 0.5 part per 100 parts by weight of said chlorosulfonated polyethylenes of at least one non-volatile compound selected from the group consisting of inorganic nitrites, organic nitro compounds, organic nitroso compounds and organic oximino compounds where in said respective organic compounds a nitro, nitroso or oximino group is directly attached to a carbon atom.

3,288,763
ALKYL HALIDES IN VULCANIZATION OF ELASTOMERS

Thomas Fredrick Waldron, Hillsborough Township, Somerset County, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed June 4, 1963, Ser. No. 285,201
14 Claims. (Cl. 260—79.3)

1. In the compounding and curing of a rubber stock from a synthetic, rubber-like, vulcanizable, active-halogen containing elastomeric polymer; the improvement which comprises: during said compounding, distributing through said polymer in combination (a) from about one to about twenty parts per 100 parts of copolymer of at least one ammonium salt of an acid having a pKa value of at least three and (b) from about one to about 25 parts per 100 parts of copolymer of at least one halide selected from the group consisting of the alkyl and alkylene

halides wherein the alkyl moiety contains from about two to about twenty carbons.

3,288,764
CURING OF CHLOROSULFONATED POLYETHYLENE
Moyer M. Safford, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Filed July 23, 1963, Ser. No. 296,928
9 Claims. (Cl. 260—79.3)

1. A vulcanizable composition of matter comprising (1) a chlorosulfonated polyethylene and (2) a minor proportion of a chloroplatinic acid compound prepared by forming a reaction mixture of (A) chloroplatinic acid with (B) at least 2 moles per gram atom of platinum of a member selected from the class consisting of alcohols having the formula R'OH, ethers having the formula R'OR', aldehydes having the formula R'CHO, and mixtures thereof, and heating said reaction mixture at a temperature of from about 60 to 80° C. at a reduced pressure until the reaction product has a ratio of from about 2.0 to about 3.5 atoms of chlorine per atom of platinum, where R is a member selected from the class consisting of alkyl radicals containing at least 4 carbon atoms, alkyl radicals substituted with an aromatic hydrocarbon radical, and alkyl radicals substituted with an OR'' group, where R'' is a member selected from the class consisting of monovalent hydrocarbon radicals free of aliphatic unsaturation and monovalent radicals free of aliphatic unsaturation and consisting of carbon, hydrogen and oxygen atoms, with each oxygen atom being attached to two other atoms, one of which is a carbon atom and the other of which is a member selected from the class consisting of a carbon atom and a hydrogen atom.

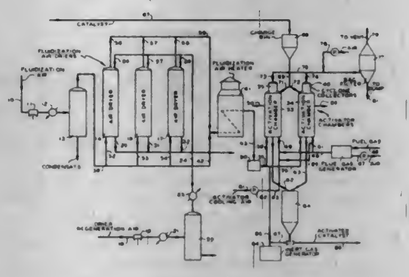
3,288,765
EMULSION POLYMERIZATION TECHNIQUES
Leo J. Novak, Union, John J. Miskel, East Orange, and Walter Schlesinger, Westfield, N.J., assignors to White Laboratories, Inc., Kenilworth, N.J., a corporation of New Jersey
No Drawing. Filed Sept. 9, 1963, Ser. No. 307,379
12 Claims. (Cl. 260—80.3)

1. In a process for preparing basic linear polymers by emulsion polymerization techniques including the polymerization of a monomeric system comprising a weighed quantity of basic monomeric material subject to polymerization and between 0.01 to 1.0 percent by weight based on said basic monomeric material of a polymerization initiator, the improvement which comprises: adding said monomeric system to an agitated aqueous system having dispersed therein between 50 to 1000 mg. per ml. of a water-miscible alkali metal silicate to form the emulsion polymerization system.

3,288,766
POLYEPOXIDE PRODUCTS CURED WITH SULFUR CONTAINING POLYACID COMPOUNDS
Sylvan O. Greenlee, West Lafayette, Ind., and Charles L. Weidner, Cranbury, and Guy J. Crocker, North Brunswick, N.J., assignors, by mesne assignments, to Ciba Limited, Basel, Switzerland, a Swiss corporation
No Drawing. Filed Jan. 27, 1961, Ser. No. 85,437
6 Claims. (Cl. 260—835)

3. A polyepoxide conversion product formed by reacting a polyepoxide having a functionality of greater than one vicinal epoxy group per molecule with a stable polyacid containing at least two thioether groups, each of which is connected through a carbon chain to a carboxylic acid group, wherein said polyacid is a reaction product of a mercapto acid and a polyallyl ether of a polyhydric alcohol.

3,288,767
CONTROL OF SHEAR RESPONSE OF POLYOLEFINS
John Paul Hogan and Alonzo G. Kitchen, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 20, 1962, Ser. No. 217,801
4 Claims. (Cl. 260—88.2)



1. A process for obtaining a polymer having a constant shear response which comprises forming a polymer of a 1-olefin by polymerizing at least one 1-olefin monomer in a polymerization zone under polymerization conditions in the presence of a previously activated catalyst consisting of chromium oxide having at least a portion thereof in the hexavalent state at the time of initial contacting, said activated catalyst having been prepared by treating same with an activating fluid containing from 0.01 to 6.0 vol. percent moisture therein at a temperature of 750 to 2000° F., and thereafter continually added to said polymerization zone, measuring the shear response of said polymer to obtain a value representative thereof and adjusting responsive to said value the moisture content of said activating fluid whereby the moisture content is increased responsive to a decrease in the measured shear response and conversely the moisture content is decreased responsive to increase in the measured shear response.

3,288,768
METHOD FOR MANUFACTURING AMORPHOUS LINEAR COPOLYMERS
Mamoru Shiga and Yasuo Fujikake, Yokohama, Japan, assignors to Chisso Corporation, Osaka, Japan, a corporation of Japan
No Drawing. Filed Apr. 2, 1963, Ser. No. 269,896
Claims priority, application Japan, Apr. 19, 1962, 37/15,293; Mar. 1, 1963, 38/10,856
13 Claims. (Cl. 260—88.2)

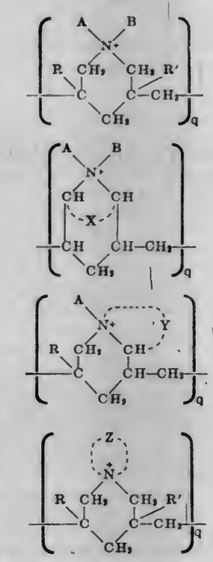
13. A method for producing amorphous linear copolymers of ethylene with alpha-olefins having from three to five carbon atoms containing pre-determined high proportions of alpha-olefin in the final copolymer, comprising effecting the copolymerization in the presence of a catalyst comprising a first component of a vanadium compound selected from the group consisting of vanadium tetrachloride, vanadium oxy-trichloride, vanadium tetrabromide, and vanadium oxy-tribromide, a second component of an alkyl aluminum dihalide having the general formula $RAlX_2$, wherein R is alkyl and X is halogen, and a third component of an alkylaluminum alkoxide of the general formula $R_2Al(OR)$ wherein R is alkyl and OR is an alkoxy group, and regulating the amount of said third component in accordance with the proportion of alpha-olefin sought in the final copolymer.

3,288,769
POLYMERIZATION CATALYSTS AND THEIR USE
Wilfrid Cooper, Aldridge, and George Vaughan, Sutton Coldfield, England, assignors to Dunlop Rubber Company Limited, London, England, a British company
No Drawing. Filed Feb. 26, 1963, Ser. No. 261,227
Claims priority, application Great Britain, Mar. 2, 1962, 8,120/62
24 Claims. (Cl. 260—88.2)

16. A method for polymerizing at least one unsaturated monomer selected from the group consisting of monoolefins and diolefins which comprises preparing a polymerization catalyst component by reacting, under substantially anhydrous conditions in the presence of an inert liquid diluent, a higher halide of a metal selected from Group IV–A of the Mendeleeff Periodic Table, with a reducing agent selected from the class consisting of the metals of Groups I to III of the Mendeleeff Periodic Table, hydrides of said metals and organo-metallic compounds of said metals to reduce said higher halide to a lower halide, mixing said lower halide with a further higher halide of a metal selected from Group V–A of the Mendeleeff Periodic Table, and reacting said further higher halide with said reducing agent to reduce it to a lower halide, mixing a further catalyst component with the reaction mixture selected from the class consisting of organic compounds of the metals of Groups I to III of the Mendeleeff Periodic Table, metal hydrides, organo-metallic hydrides, and organo-metallic halogen compounds, and mixing at least one unsaturated polymerizable monomer with the catalyst so formed to effect polymerization of each monomer.

3,288,770
WATER SOLUBLE QUATERNARY AMMONIUM POLYMERS
George B. Butler, Gainesville, Fla., assignor to Peninsular ChemResearch, Inc., Gainesville, Fla., a corporation of Florida
No Drawing. Filed Dec. 14, 1962, Ser. No. 244,596
20 Claims. (Cl. 260—88.3)

13. Linear high molecular weight water-soluble quaternary ammonium chloride polymers having a homopolymeric molecular chain of repeating units of a formula selected from the group consisting of:



and

said polymer having an intrinsic viscosity in 0.1 N potassium chloride of at least between about 0.5 and 2.0, and wherein

A and B independently represent a member selected from the class consisting of alkyl and phenyl radicals on which any substituents are selected from the group consisting of hydroxy, amido, carboloweralkoxy, loweralkoxy, phenoxy, naphthoxy, cyano, thiolower-alkoxy, thiophenoxy, loweralkoyl, 5- and 6-membered cycloalkyl, tri-(loweralkyl)ammoniumlower-alkyl, with, on the alkyl groupings only, a nitro group, and, on the phenyl radicals only, a halogen atom; and, taken together, A and B represents a member selected from the group consisting of

$$-CH_2-CH_2-,\ -CH(CH_3)-CH(CH_3)-$$
$$-CH=CH-CH=CH-,\ -CH=CH-CH=N-$$

and

$$-CH=CH-N=CH-$$

R and R' independently represent a member selected from the class consisting of hydrogen, chloro, bromo, loweralkyl, and phenyl radicals;

X represents a divalent radical of the formula

$$-CH_2-(O)_n-(CH_2)_m-$$

Y represents a divalent radical of the formula

$$-(CH_2)_p-(O)_n-CH_2-$$

Z represents a divalent radical of the formula

$$-(CH_2)_p-(O)_n-(CH_2)_2-$$

and

n is one of the numbers 0 and 1;

m is one of the numbers 1 and 2;

p is one of the numbers 2 and 3 and the symbol Q is an integer representing the number of units in the molecular chain.

3,288,771
PROCESS AND CATALYST FOR THE POLYMERIZATION OF ACRYLIC MONOMERS
James C. MacKenzie, Wellesley Hills, and Joel A. Yancey, Wellesley, Mass., assignors to Cabot Corporation, Boston, Mass., a corporation of Delaware
No Drawing. Filed Nov. 28, 1962, Ser. No. 240,725
17 Claims. (Cl. 260—88.7)

1. A process for polymerizing acrylic monomers and mixtures thereof which comprises contacting at temperatures between about −80° C. and about 190° C., a substance conforming to the formula

$$H_2C=C(D)-G$$

where D is chosen from the group consisting of any halogen, hydrogen, methyl, ethyl and propyl radicals; and G is a functional group chosen from the group consisting of —COOR''; $-CONH_2$; —CONHR''; $-CONR''_2$; —CHO; —C≡N; and —COR''; wherein each R'' is a hydrocarbon radical having a length of from one to eighteen carbon atoms, with a catalyst comprising

(a) a finely-divided inorganic solid having an average particle diameter of less than about 0.1 micron and carrying in chemical combination on the surface thereof at least about 1×10^{-4} equivalents per gram of structures conforming to the formula

$$TO_aX_b$$

wherein T is a metal chosen from the group consisting of the metals of Groups IV*a*, V*a* and VI*a*; O is oxygen; *a* is a number from 0 to 2; each X is any halogen; *b* is a number from 1 to 5; and where said structures are chemically linked directly from T to at least one oxygen atom in the surface of said solid; and

(b) an organometallic compound chosen from the group consisting of compounds conforming to the empirical formulae

(1) $MM'_vX_nR_{y-n}$

where M is chosen from the group consisting of the metals of Groups I, II and III; M′ is a metal of Group I; v is a number from 0 to 1; each X is any halogen; n is a number from 0 to 3; each R is chosen from the group consisting of any monovalent hydrocarbon radical and hydrogen; y is a number from 1 to 4; and wherein $y-n$ is at least one; and

(2) $R'_pH_mSiO_{\frac{4-(m+p)}{2}}$

wherein each R′ is chosen from the group consisting of hydrocarbon radicals, alkoxy radicals, aryloxy radicals and the halogens; p is a number from 0 to 3; each H is a hydride radical; m is a number from 1 to 4; Si is silicon; and O is oxygen.

3,288,772

POLYMERIZATION METHOD USING NOVEL SURFACE-ACTIVE AGENTS

Ewald Georg Becker, Hamburg-Bahrenfeld, and Theophil Wieske, Hamburg-Grossflottbek, Germany, assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine

No Drawing. Filed July 14, 1961, Ser. No. 123,991
17 Claims. (Cl. 260—89.5)

1. In a process for the free-radical initiated polymerization of water-insoluble unsaturated monomers, wherein the polymerization is effected in an aqueous medium in the presence of an initiator and a surface active agent, the improvement which is to employ as the surface active agent in the foregoing process a compound having:

(a) from 2 to 12 organic radicals R selected from the group consisting of aliphatic saturated and olefinically unsaturated hydrocarbons containing from 1 to 30 carbon atoms, cycloaliphatic hydrocarbon radicals containing from 5 to 30 carbon atoms, and heterocyclic organic radicals consisting of carbon, oxygen and hydrogen atoms and having from 4 to 30 carbon atoms;

(b) from 1 to 12 divalent carboxylic acid groups of the formula —COO—;

(c) the only additional divalent functional radical in said compound being from 0 to 2 acid anhydride acid groups of the formula —COOCO—;

(d) from 0 to 3 carboxylic groups of the formula —COOH, there being at least one free carboxylic acid group when said compound is free of acid anhydride groups and there being not more than one free carboxylic acid group when said compound contains from 1 to 2 acid anhydride groups;

(e) the only additional functional group in said compound being from 0 to 3 hydroxy groups of the formula —OH, the number of said hydroxy groups not exceeding the total number of acid anhydride and free carboxylic acid groups;

said acid formed by combining said radicals R of class (a) with divalent carboxyl groups of class (b) to form a skeletal structure, and attaching all the remaining radicals of classes (c), (d) and (e) to the carbon atoms of said radicals of class (a);

there further being in said compound at least 2 lipophilic radicals R having from 5 to 30 carbon atoms, at least 40 carbon atoms for each free carboxylic acid group and each free anhydride group, and at least 55 carbon atoms for each free carboxylic acid group and acid anhydride group when said molecule contains a hydroxyl group; and

said compound having a molecular weight not exceeding 2000.

3,288,773

POLYMERIZATION OF A 1-OLEFIN IN THE PRESENCE OF A TERTIARY AMINE OXIDE AND A COORDINATION CATALYST

Arthur A. Harban and Charles W. Moberly, Bartlesville, Okla., assignors to Phillips Petroleum Company, a Corporation of Delaware

No Drawing. Filed July 17, 1963, Ser. No. 295,843
11 Claims. (Cl. 260—93.7)

1. In a process for the production of a normally solid polymer of a 1-olefin having a low amorphous content comprising contacting under polymerization conditions a 1-olefin having the formula $R—CH=CH_2$ wherein R is an alkyl group having 1 to 4, inclusive, carbon atoms with a coordination catalyst prepared by admixing at least two essential components, one of said components being (1) a metal compound selected from the group consisting of Groups IV, V, VI and VIII metal compounds and another of said components being (2) selected from the group consisting of organometal compounds, metal hydrides, and metals of Groups I, II and III the improvement of conducting said polymerization in the presence of a tertiary amine oxide of the formula



in which R is an alkyl group containing from 1 to 16 carbon atoms, the R's being the same or different, and the sum of the carbon atoms being in the range between 6 and 48 whereby the pentane soluble polymer content is reduced.

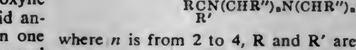
3,288,774

REACTION PRODUCT OF SUBSTITUTED-AMINOALKYL ALKANOLAMINE AND POLYCARBOXYLIC ACID OR THE LIKE

Henryk A. Cyba, Evanston, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Dec. 3, 1963, Ser. No. 327,815
11 Claims. (Cl. 260—97)

1. The composition of matter formed by reacting at a temperature of from about 80° to about 200° C. (1) a substituted-aminoalkyl alkanolamine of the following formula



where n is from 2 to 4, R and R′ are alkyl radicals and the total number of carbon atoms in R and R′ is from 2 to about 50, and R″ is selected from the group consisting of hydrogen and an alkyl group, with (2) a compound selected from the group consisting of polycarboxylic acid, anhydride thereof, ester thereof and the reaction product of a terpene and a compound selected from the group consisting of alpha,beta-unsaturated polycarboxylic acid, anhydride thereof and ester thereof.

3,288,775

METHOD OF HARDENING GELATIN BY REACTING WITH CONJUGATED HETEROCYCLIC COMPOUNDS CONTAINING HALOGEN ATOMS AND WATER-SOLUBILIZING ACID GROUPS

Walter Anderau, Aesch, Basel-Land, and Alfred Oetiker, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed Apr. 2, 1962, Ser. No. 184,581
6 Claims. (Cl. 260—117)

1. A process for hardening gelatin which comprises reacting the gelatin with a colorless compound which contains at least one acid group imparting solubility in water, which group is bound to a carbon atom, at least one heterocyclic six-membered ring consisting of 3 to 4 carbon atoms and 2 to 3 nitrogen atoms and having three conjugated double bonds, and at least one halogen atom bound to one of the ring carbon atoms of the heterocyclic ring, the carbon atoms in said heterocyclic ring having substituents selected from the group consisting of the aforesaid acid group, a halogen atom, a sulfophenylamino radical, a sulfonaphthylamino radical, a sulfatoalkylamino radical, a sulfophenoxy radical, a hydroxyalkylamino radical, a primary amino group, a β-(6-chloro-4-sulfophenylamino-1,3,5-triazine-2 - ylamino)-ethylamino radical, a β-(6-chloro-4-sulfophenylamino-1,3,5-triazine-2-ylamino)-phenylamino radical, and a β-(6-chloro-4-sulfophenoxy - 1,3,5 - triazine - 2 - ylamino)-ethylamino radical.

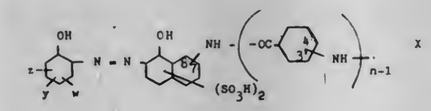
3,288,776

METALLIZED MONOAZO DYESTUFFS CONTAINING A POLYHALOGENOPYRIMIDYL RADICAL

Jakob Benz, Oberwil, Basel-Land, and Hanspeter Uehlinger, Basel, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

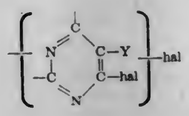
No Drawing. Filed July 1, 1963, Ser. No. 292,158
Claims priority, application Switzerland, Apr. 10, 1959, 71,848
9 Claims. (Cl. 260—146)

1. A member selected from the group consisting of the 1:2-chromium and the 1:2-cobalt complex compounds of the dyestuff of the formula



wherein

X is the polyhalogenopyrimidyl radical of the formula



hal being a halogen atom with an atomic number from 17 to 35, inclusive,

and Y being a member selected from the group consisting of hydrogen, chlorine and bromine,

w is a member selected from the group consisting of hydrogen and chlorine,

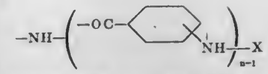
y is a member selected from the group consisting of hydrogen, chlorine and nitro,

z is a member selected from the group consisting of chlorine, bromine, nitro, lower alkyl, lower alkoxy, lower alkanoylamino, lower carboalkoxyamino, benzoylamino, lower alkylsulfonyl, sulfonic acid amide, sulfonic acid lower alkylamide, sulfonic acid lower hydroxyalkylamide, sulfonic acid lower alkoxyalkylamide, sulfonic acid di-(lower alkyl)-amide, sulfonic acid di-(lower hydroxyalkyl)-amide, sulfonic acid phenylamide, sulfonic acid carboxy-phenylamide, sulfonic acid sulfamylphenylamide, sulfonic acid N-lower alkyl-N-phenylamide, sulfonic acid N-lower hydroxyalkyl-N-phenylamide, sulfonic acid cyclohexylamide, sulfonic acid benzylamide, sulfonic acid lower alkylphenylamide, sulfonic acid lower alkoxyphenylamide and sulfonic acid chlorophenylamide,

and

n is one of the integers 1 and 2,

the group



stands in one of the positions 7 and 8 of the naphthalene nucleus, and the group, —NH— stands in one of the positions 3′ and 4′.

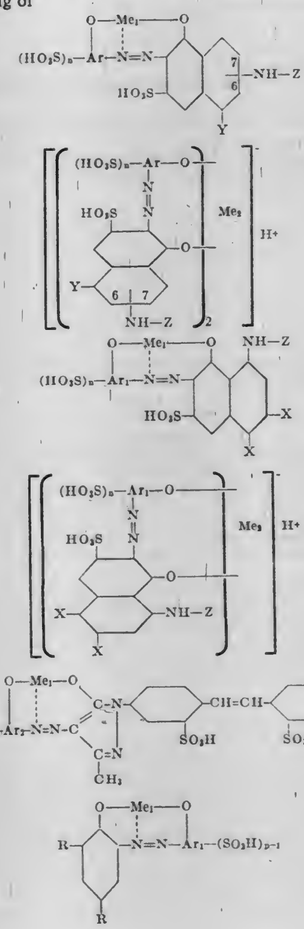
3,288,777

METALLIZED MONOAZODYESTUFFS CONTAINING A DIHALOPYRIMIDYL GROUP

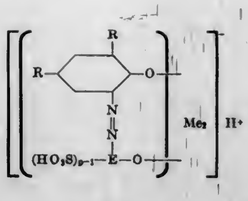
Jakob Benz, Oberwil, Basel-Land, and August Schweizer, Muttenz, Basel-Land, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed Mar. 4, 1963, Ser. No. 262,377
Claims priority, application Switzerland, Nov. 29, 1957, 53,195/57; July 27, 1961, 8,863/61; Dec. 18, 1962, 14,832/62
15 Claims. (Cl. 260—146)

1. A metal-complex dyestuff selected from the group consisting of



and



wherein

Ar is an aromatic radical selected from the benzene and naphthalene series bearing —O— in ortho-position to —N=N—,

Ar_1 is a naphthalene radical bearing —O— in ortho-position to —N=N—,

Ar_2 is a radical of the benzene series bearing —O— in ortho-position to —N=N—,

E—O— is the radical of a coupling component bearing —O— in a position vicinal to —N=N— and selected from the group consisting of the hydroxynaphthalene and the 5-pyrazolone series (in the enolized form),

Y is a member selected from the group consisting of hydrogen and —SO_3H,

one X is a hydrogen atom,

the other X is —SO_3H,

one R is —SO_3H,

the other R is —NH—Z,

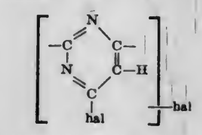
Me_1 is a metal atom selected from the group consisting of copper and nickel,

Me_2 is a metal atom selected from the group consisting of chromium and cobalt,

n is an integer from 1 to 2, inclusive,

p is an integer from 1 to 3 inclusive,

and Z is the radical



hal being a halogen atom with an atomic number from 17 to 35, inclusive.

3,288,778

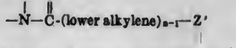
AZO AND ANTHRAQUINONE DYE DEVELOPERS

Elkan R. Blout, Belmont, Saul G. Cohen, Lexington, Milton Green, Newton Center, Howard G. Rogers, Weston, Myron S. Simon, Newton Center, and Robert B. Woodward, Belmont, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed Oct. 5, 1964, Ser. No. 401,714

13 Claims. (Cl. 260—163)

1. A compound selected from the group consisting of anthraquinone monoazo, and disazo dyes characterized in that they contain essentially not less than one and not more than two groups of the formula:



wherein R is selected from the group consisting of hydrogen and lower alkyl radicals, n is a positive integer from one to two, and Z' is a benzene nucleus substituted by at least two members of the group consisting of hydroxyl and amino groups in one of the ortho- and para-positions with respect to one another, said Z' providing the only benzene nucleus in said compound so substituted by at least two members of said group.

3,288,779

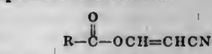
2-CYANOVINYL ESTERS OF ORGANIC CARBOXYLIC ACIDS

John Justin Randall, Somerville, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Aug. 22, 1962, Ser. No. 218,510

4 Claims. (Cl. 260—207.1)

1. A compound of the formula:



wherein R is the residue of a carboxylic acid selected from the group consisting of

(a) 1-aminoanthraquinone-2-carboxylic acid,

(b) 1-phenylpyrazolin-5-one-3-carboxylic acid,

(c) p-dimethylaminophenylazobenzoic acid, and

(d) N-(2-cyanoethyl)-N-methylphenylazobenzoic acid.

3,288,780

PROCESS FOR PREPARING 5'-RIBONUCLEOTIDES

Yoshio Tsuchiya, Yokohama-shi, Kanagawa-ken, Tadao Takenishi, Tokyo, Tetsuya Kato, Kawasaki-shi, Kanagawa-ken, Nobutoshi Muramatsu and Hisao Mori, Tokyo, and Masaharu Yoshikawa and Takehiko Ichikawa, Yokohama-shi, Kanagawa-ken, Japan, assignors to Ajinomoto Co., Inc., Tokyo, Japan

No Drawing. Filed Feb. 25, 1964, Ser. No. 347,115

Claims priority, application Japan, Jan. 30, 1962, 37/2,561; Apr. 11, 1962, 37/13,712; Sept. 10, 1962, 37/38,473; Nov. 21, 1962, 37/50,964

9 Claims. (Cl. 260—211.5)

1. A process for preparing a 5' ribonucleotide which comprises:

(a) dissolving a 2',3'-O-substituted ribonucleoside in a medium mainly consisting of phosphoryl chloride,

(1) the substituent in said ribonucleoside being selected from the group consisting of the divalent alkylidene and cycloalkylidene radicals;

(b) maintaining the resulting solution at a temperature between 0° C. and 30° C. until the corresponding 2',3' - O - substituted ribonucleoside - 5' - phosphorodichloridate is formed; and

(c) hydrolyzing said 2',3'-O-substituted ribonucleoside-5'-phosphorodichloridate to the corresponding nucleotide.

3,288,781

PROCESS FOR DEACYLATING ANHYDRO-LYXOFURANOSYL WITH NITROGEN BASE

James H. Hunter, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Dec. 18, 1964, Ser. No. 419,552

5 Claims. (Cl. 260—211.5)

1. The process which comprises reacting 1-(2',3'-anhydro-5'-O-benzoyl-lyxofuranosyl) - 2 - ketopyrimidine nucleoside with nitrogen base characterized by a dissociation constant in water, K_b, in the range about 1.0×10^{-3} to about 1.0×10^{-9}, in the presence of an inert solvent at a temperature in the range about —20° C. to about 25° C., and recovering 1-(2',3'-anhydro-lyxofuranosyl)-2-ketopyrimidine nucleoside.

3,288,782

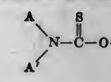
UNSATURATED HYDROCARBON ESTERS OF N,N-DISUBSTITUTED THIONOCARBAMIC ACIDS

John J. D'Amico, Charleston, W. Va., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed July 25, 1962, Ser. No. 212,449

10 Claims. (Cl. 260—239)

1. A compound of the formula



where A and A' are selected from the group consisting of cyclohexenyl, cyclohexyl, lower alkyl of at least two carbon atoms, lower alkoxy substituted lower alkyl, lower alkenyl, halogen substituted lower alkenyl, phenyl and alkylene radicals of five to eight carbon atoms inclusive which with the nitrogen form a heterocyclic ring containing at least six but not more than seven ring members and A'' is selected from the group consisting of cyclohexenyl, vinyl, allyl and methallyl.

3,288,783

AZIRIDINYL ANTHRAQUINONE PIGMENTS

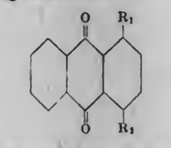
Roy A. Pizzarello, Mount Vernon, N.Y., and Alfred F. Schneid and John J. De Lucia, New Milford, N.J., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio

No Drawing. Filed Apr. 15, 1964, Ser. No. 360,057

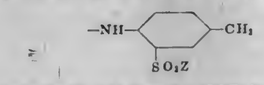
3 Claims. (Cl. 260—239)

1. A water-insoluble colored organic anthraquinone pigment selected from the group consisting of

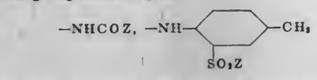
(A) a water-insoluble colored organic anthraquinone pigment having the formula



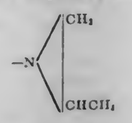
where R_1 is selected from the group consisting of



—$NHCOCH_2CH_2Z$, and —COZ; R_2 is selected from the group consisting of

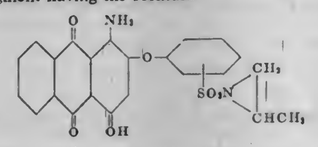


H, OH, —$NHCOCH_2CH_2Z$, and —COZ; and Z is



and

(B) a water-insoluble colored organic anthraquinone pigment having the formula



3,288,784

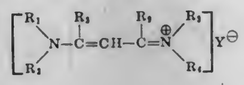
METHOD OF PREPARING SUBSTITUTED CHLOROIMINIUM SALTS

Angelo John Speziale and Gerhard H. Alt, both of Creve Coeur, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

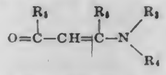
No Drawing. Filed Apr. 11, 1966, Ser. No. 541,495

10 Claims. (Cl. 260—239)

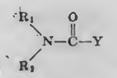
1. The method of preparing compounds of the structure



wherein R_1 and R_2 are each alkyl having up to four carbon atoms; wherein R_3 and R_4 are each selected from the class consisting of alkyl having up to four carbon atoms and such that R_3 and R_4 together form divalent structures selected from the class consisting of alkylene of from two to eight carbon atoms, —R—O—R— wherein R is alkylene of two to six carbon atoms and —R—S—R— wherein R is alkylene of two to six carbon atoms; wherein R_5 is selected from the class consisting of alkyl having up to four carbon atoms and such that R_5 and R_6 together are alkylene having from one to ten carbon atoms forming a closed ring of four to eight carbon atoms; wherein R_6 is selected from the class consisting of hydrogen, alkyl of up to four carbon atoms and radicals in which R_5 and R_6 together is alkylene as above described; wherein $Y^\ominus$ is an anion of the class consisting of $Cl^\ominus$, $Br^\ominus$, $HSO_4^\ominus$, $NO_3^\ominus$, $\frac{1}{2}SO_4^{\ominus\ominus}$, $ClO_4^\ominus$, $H_2PO_4^\ominus$, $BF_4^\ominus$, which comprises reacting a compound of the structure



with a compound of the structure:



at a temperature of 50° C. to 180° C.

3,288,785

SALTS OF PHENOXY METHYL PENICILLIN AND PROCESS OF MAKING SAME

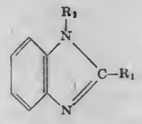
Herbert Kuntscher, Kufstein, Tirol, and Oswald Sellemond, Tirol, Austria, assignors to Biochemie G.m.b.H., Kundl, Tirol, Austria, a corporation of Austria

No Drawing. Filed Jan. 6, 1964, Ser. No. 336,036

Claims priority, application Austria, Jan. 10, 1963, 208/63

13 Claims. (Cl. 260—239.1)

1. In a process of producing substantially pure, well crystallizing, difficultly soluble salts of phenoxy methyl penicillin, the steps which comprise reacting a phenoxy methyl penicillin compound selected from the group consisting of phenoxy methyl penicillinic acid and its metal salts with a benzimidazole compound selected from the group consisting of a basically substituted benzimidazole compound of the following formula



wherein

R_1 is a member selected from the group consisting of an aliphatic hydrocarbon radical containing a secondary amino group and an aliphatic hydrocarbon radical containing a tertiary amino group, while

R_2 is a member selected from the group consisting of aralkyl and substituted aralkyl,

and its acid addition salts in a suspending liquid wherein the phenoxy methyl penicillin compound is difficultly soluble and the basically substituted benzimidazole compound is readily soluble at a temperature not substantially exceeding 60° C., adding to the resulting mixture seed crystals of the salt of said phenoxy methyl penicillin with said basically substituted benzimidazole compound in an amount between about 5% and about 10% calculated for the amount of the desired final salt, said seed crystals having a particle size between about 5μ and about 20μ, and slowly cooling the seeded reaction mixture.

11. The stable aqueous suspension, of crystals of the salt of phenoxy methyl penicillin with 1-p-chlorobenzyl-2-pyrrolidyl-N-methyl benzimidazole, said crystals having a particle size between about 5 microns and about 20 microns, the ration between breadth and length of said salt crystals not exceeding a ratio of 1:3.

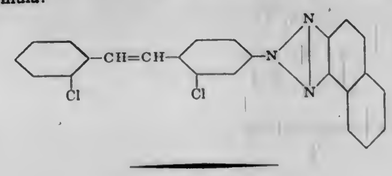
3,288,786

NAPHTHOTRIAZOLE OPTICAL BRIGHTENERS

Albert F. Strobel, Delmar, and Sigmund C. Catino, Castleton, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 10, 1962, Ser. No. 222,657
2 Claims. (Cl. 260—240)

1. A fluorescent naphthotriazole having the following formula:



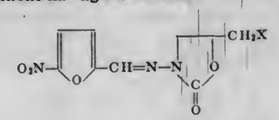
3,288,787

SUBSTITUTED OXAZOLIDINONES

Giangiacomo Massaroli, Milan, Italy, assignor, by mesne assignments, to Inphar S.A., Mesocco, Switzerland

No Drawing. Filed July 25, 1963, Ser. No. 297,696
Claims priority, application Italy, Aug. 1, 1962, 15,418/62
12 Claims. (Cl. 260—240)

1. N-(5'-nitro-2'-furfurylidene)-3-amino-5 - substituted 2-oxazolidinone having the formula



wherein X represents one of the groups—SR and —SO_2R, R being a saturated or monoethylenically unsaturated alkyl radical containing from one to six carbon atoms.

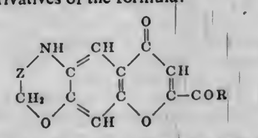
3,288,788

2H,6H-CHROMENO(7,6-b)-1,4-OXAZINES AND PROCESSES FOR THEIR PREPARATION

George R. Ramage, Kirkburton, Huddersfield, and John Hill, Salford, England, assignors to Benger Laboratories Limited, Holmes Chapel, Cheshire, England

No Drawing. Filed July 9, 1963, Ser. No. 293,896
Claims priority, application Great Britain, July 10, 1962, 26,406/62
10 Claims. (Cl. 260—244)

1. A compound selected from the group consisting of chromone derivatives of the formula:



and alkali metal salts, ammonium salts and lower alkyl esters thereof, wherein R is a member selected from the group consisting of hydroxy, —NH-lower alkylene-COOH, —O-lower alkylene-NH_2, —O-lower alkylene-lower alkylamino, —O-lower alkylene-di (lower) alkylamino and —O-lower alkylenepiperidino, and Z is a member selected from the group consisting of methylene, lower alkyl-substituted methylene and carbonyl.

3,288,789

PROCESS FOR THE PRODUCTION OF HARDENABLE COMPOUNDS CONTAINING EPOXIDE GROUPS

Manfred Budnowski and Manfred Dohr, Dusseldorf-Holthausen, Germany, assignors to Henkel & Cie. G.m.b.H., Dusseldorf-Holthausen, Germany, a corporation of Germany

No Drawing. Filed June 18, 1963, Ser. No. 288,593
Claims priority, application Germany, June 20, 1959, H 36,702; Jan. 31, 1963, H 48,117
16 Claims. (Cl. 260—248)

1. A process for the production of hardenable compounds containing more than one epoxide group in the molecule consisting of the steps of intimately mixing at temperatures between about 60° C. and 200° C. a mixture comprising cyanuric acid and at least 30 mols per mol of cyanuric acid of a mono-halogen-mono-vic.-epoxy-lower-alkane, said halogen being selected from the group consisting of chlorine and bromine and being vicinal to said epoxide group, and recovering said hardenable compounds containing more than one epoxide group in the molecule.

3,288,790

PRODUCTION OF HEXAMETHYLENE TETRAMINE

Andre G. F. Lefebvre, Liege, Roger D. G. Englebert, Angleur, and Arthur V. J. Geukenne, Brussels, Belgium, assignors to Societe Belge de l'Azote et des Produits Chimiques du Marly, Liege, Belgium

Filed Mar. 4, 1963, Ser. No. 262,413
Claims priority, application Great Britain, Mar. 5, 1962, 8,475/62
12 Claims. (Cl. 260—248.6)

1. In a process of the character described for synthesizing hexamethylene tetramine by the reaction of formaldehyde and ammonia, the steps which comprise continuously introducing anhydrous ammonia and a gaseous mixture containing formaldehyde into a reaction zone containing a substantially saturated aqueous solution of hexamethylene tetramine for reaction of said ammonia and formaldehyde in said solution to form hexamethylene tetramine and water, continuously withdrawing from said reaction zone portions of said aqueous solution and said hexamethylene tetramine formed therein as a saturated mother liquor having dispersed crystals of hexamethylene tetramine, separating said hexamethylene tetramine crystals from said mother liquor and recovering said crystals, diluting said separated mother liquor to a less saturated aqueous solution, recycling said less saturated solution through said reaction zone for formation of additional amounts of hexamethylene tetramine therein, and controlling the rate of said withdrawal of mother liquor from said reaction zone and the extent of said diluting of said recycled solution for maintaining a substantially constant liquid volume in said reaction zone.

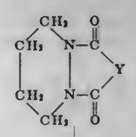
3,288,791

1,2-DIACYLHEXAHYDROPYRIDAZINES AND PREPARATION THEREOF

Robert L. Clarke, Bethlehem, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 31, 1959, Ser. No. 836,911
4 Claims. (Cl. 260—250)

1. Compound having the formula



wherein Y is lower-alkylene in which the free valence bonds are on adjacent carbon atoms.

2. 1,2,-diacetylhexahydropyridazine.

3. 1,2-dibenzoylhexahydropyridazine.

3,288,792

METHOD OF PREPARING 2,4-DIAMINO-6-ALKYLPYRIDO(2,3-d)PYRIMIDINES

George H. Hitchings, Yonkers, and Bernard S. Hurlbert, Tarrytown, N.Y., assignors to Burroughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, N.Y., a corporation of New York

No Drawing. Filed Apr. 9, 1964, Ser. No. 358,657
2 Claims. (Cl. 260—256.4)

1. The method of preparing 2,4-diamino-6-R-5,7-unsubstituted pyrido(2,3-d)pyrimidines that comprises reacting under anhydrous conditions a 3-tertiary amino-2-R-acrolein with a reagent selected from the class consisting of phosgene, phosphoryl chloride and thionyl chloride initially in the cold and thereafter warming the reaction mixture with 2,4,6-triaminopyrimidine at temperatures not exceeding 100° C., R being selected from a class consisting of alkyl, phenyl, phenyl lower alkyl and lower alkoxy benzyl, and wherein R is from 3 to 9 atoms.

3,288,793

2-TETRAHYDROFURFURYL-, 2-ALIPHATIC-, AND 2 - ALIPHATIC ETHER - SULFONAMIDO-5-ALKOXY-PYRIMIDINES

Hans Priewe and Klaus Gutsche, Berlin-Steglitz, Germany, assignors to Schering A.G., Berlin, Germany

No Drawing. Original application Oct. 12, 1961, Ser. No. 144,530. Divided and this application July 29, 1965, Ser. No. 514,156
17 Claims. (Cl. 260—256.5)

1. 2 - tetrahydrofurfurylsulfonamido-5-methoxypyrimidine.

5. 2-n-butylsulfonamido-5-methoxypyrimidine.

15. 2 - isopropoxyethoxyethylsulfonamido - 5-methoxypyrimidine.

3,288,794

METHOD OF MAKING AMIDES OF DIMETHYLAMINE AND PIPERAZINE

Vincent P. Kuceski, Chicago Heights, Ill., assignor to The C. P. Hall Company of Illinois, Chicago, Ill., a corporation of Ohio

No Drawing. Filed Sept. 9, 1963, Ser. No. 307,372
5 Claims. (Cl. 260—268)

1. The process of producing an amide which comprises bringing (1) an anhydrous amine of the class consisting of dimethylamine and piperazine and (2) an anhydrous carboxylic acid ester into reactive relation at a temperature between 20° C. and 60° C. in the presence of an alkoxide of an alkali metal of the class consisting of sodium and potassium in which the alkyl group contains 1 to 4 carbon atoms, the carboxylic acid comprising 1 to 4 carboxyl groups attached to a saturated or unsaturated, cyclic or acyclic, aliphatic-hydrocarbon or aromatic-hydrocarbon or hydroxy-substituted-hydrocarbon or keto substituted-hydrocarbon chain of 2 to 21 carbon atoms, and the ester group being derived from alcohols of 1 to 8 carbon atoms, except tertiary alcohols; producing a dimethylamide in the reaction with dimethylamine and producing a half-amide, half-amine of piperazine in the reaction with piperazine.

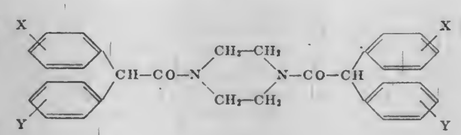
3,288,795

1,4-BIS-(DIPHENYLACETYL)PIPERAZINES

Tsutomu Irikura, 5 1-chome, Wakagi-cho, Itabashi-ku; Kuniyasu Masuzawa, 1–24 Toshima, Kita-ku; and Keigo Nishino, 5–25 Shimo, Kita-ku, all of Tokyo, Japan

No Drawing. Filed July 29, 1965, Ser. No. 476,230
Claims priority, application Japan, July 31, 1964, 39/43,702
8 Claims. (Cl. 260—268)

1. 1,4-bis-(diphenylacetyl)piperazine of the formula



wherein X and Y are selected independently from the group consisting of H, halogen and lower alkyl.

3,288,796

4-AMINO-3,5,6-TRICHLOROPICOLINIC ACID SALTS

Hugh T. Harrison, Tulsa, Okla., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 18, 1964, Ser. No. 412,236
3 Claims. (Cl. 260—271)

1. The salt of 4-amino-3,5,6-trichloropicolinic acid and a member of the group consisting of hexafluoroarsenic acid and hexafluorophosphoric acid.

3,288,797

LIPOIC ACID DERIVATIVES AND THEIR PREPARATION

Ulrich Schmidt, Freiburg im Breisgau, Germany, assignor to E. Merck Aktiengesellschaft, Darmstadt, Germany

No Drawing. Filed Aug. 17, 1964, Ser. No. 390,202
Claims priority, application Germany, Aug. 20, 1963, M 57,881
8 Claims. (Cl. 260—294.8)

1. Lipoylpyridoxamine.

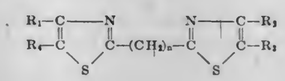
3,288,798

CERTAIN BIS-o-ALKYLHYDROXYPHENYL-THIAZOLES

John D. Spivack, Spring Valley, David H. Steinberg, Bronx, and Martin Dexter, Briarcliff Manor, N.Y., assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Filed May 9, 1962, Ser. No. 193,603
4 Claims. (Cl. 260—302)

1. A compound of the formula:



wherein

R_1 and R_2 each independently represent an alkyl-substituted hydroxyphenyl radical containing at least one alkyl group in ortho position to the hydroxyl group on the phenyl nucleus wherein said alkyl group has from 1 to 18 carbon atoms,

R_3 and R_4 are each independently selected from the group consisting of hydrogen and lower alkyl, and

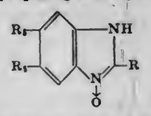
n is 0 or 1.

3,288,799
METHOD OF PREPARING BENZIMIDAZOLE N-OXIDES

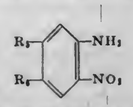
Meyer Sletzinger, North Plainfield, and George Gal, Summit, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Dec. 31, 1964, Ser. No. 422,544
5 Claims. (Cl. 260—302)

1. A process for preparing a compound of the formula



where R is selected from the group consisting of naphthyl, haloaryl and a heteroaromatic radical containing from 1–3 hetero atoms selected from the group consisting of nitrogen, oxygen and sulfur; and R_5 and R_6 are selected from the group consisting of hydrogen, loweralkyl, halo, phenyl, halophenyl, thienyl, loweralkoxy, loweralkylthio, phenoxy, and phenylthio, wherein at least one of R_5 and R_6 is hydrogen, which comprises treating a compound of the formula



where R_5 and R_6 are as defined above with a compound of the formula

R—CHO

where R is as defined above.

3,288,800
SCHIFF'S BASES OF 6-AMINO-PENICILLANIC ACID AND PURIFICATION OF 6-AMINO-PENICILLANIC ACID BY THE USE THEREOF

Leon J. Heuser, Princeton, and Noel A. Taylor, Westfield, N.J., assignors to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 29, 1962, Ser. No. 198,459
6 Claims. (Cl. 260—306.7)

1. The salt of an alkylamine of more than six carbon atoms and 6-salicylideneaminopenicillanic acid.

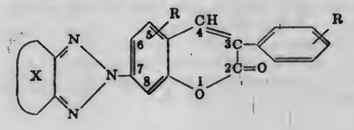
4. A process for purifying 6-aminopenicillanic acid, which comprises treating an impure aqueous solution of 6-aminopenicillanic acid with an amine of more than six carbon atoms and about one mole to about two moles per mole of 6-aminopenicillanic acid of an aldehyde of more than four carbon atoms at a pH of about 6 to about 7, whereby a crystalline precipitate of the amine salt of the Schiff's base of the aldehyde and 6-aminopenicillanic acid is formed, and recovering the precipitate.

3,288,801
FLUORESCENT 1,2,3-TRIAZOLE DERIVATIVES OF 3-PHENYL-COUMARIN

Fritz Fleck, Bottmingen, Basel-Land, Hans Balzer, Munchenstein, Basel-Land, and Horst Aebli, Basel, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed June 6, 1963, Ser. No. 285,883
Claims priority, application Switzerland, June 7, 1962, 6,887/62
11 Claims. (Cl. 260—308)

1. A compound of the formula



wherein

X is a member selected from the group consisting of benzene, naphthalene, acenaphthene, indazole, benztriazole, pyrazole, non-ionogenically-substituted benzene, non-ionogenically-substituted naphthalene, non-ionogenically-substituted acenaphthene, non-ionogenically-substituted indazole, non-ionogenically-substituted benzene, and non-ionogenically-substituted pyrazole, the non-ionegenic substituents being selected from the group consisting of methoxy, methyl, phenyl, naphthyl, chlorophenyl, tolyl, cyanophenyl, methoxyphenyl, and halogen, X being connected at two vicinal carbon atoms with the N-atoms of the triazole ring,

R is a member selected from the group consisting of hydrogen, lower alkyl, lower alkoxy, cyano, chloro, fluoro, lower alkylsulfonyl, phenylsulfonyl and sulfonamide, and

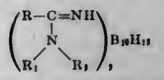
R_1 is a member selected from the group consisting of hydrogen, methyl and chlorine.

3,288,802
BORON-CONTAINING COMPOUNDS

Jack Bobinski, White Meadow Lake, Marvin M. Fein, Westfield, and Daniel Grafstein, Morristown, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

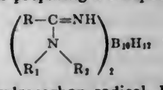
No Drawing. Filed Apr. 24, 1964, Ser. No. 363,340
10 Claims. (Cl. 260—308)

1. A compound of the formula

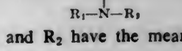


wherein R is a hydrocarbon radical, R_1, taken alone, is hydrogen or amino, R_2, taken alone, is amino, methyl, propargyl, or cyanoguanidinyl, but R_1 and R_2 are not both amino, and R_1 and R_2, taken together with the nitrogen atom to which they are attached, form a 5-amino-2-tetrazolyl group.

2. A process for preparing a compound of the formula



wherein R is a hydrocarbon radical, R_1, taken alone, is hydrogen or amino, R_2, taken alone, is amino, methyl, propargyl, or cyanoguanidinyl, but R_1 and R_2 are not both amino, and R_1 and R_2, taken together with the nitrogen atom to which they are attached, form 5-amino-2-tetrazolyl group, which process comprises reacting a bis(R-nitrilo)-decaborane with a compound of the formula



wherein R, R_1 and R_2 have the meanings given earlier herein.

3,288,803
PROCESS FOR THE CONVERSION OF CYCLODODECADIENE CARBOXYLIC ACID ESTERS TO 2,3,6,7,8,9-HEXAHYDRO-1H-BENZ[e] INDENE AND DERIVATIVES THEREOF

William F. Erman and Herbert C. Kretschmar, Cincinnati, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Sept. 17, 1964, Ser. No. 397,306
10 Claims. (Cl. 260—308)

1. In a process for the conversion of cyclododecadiene carboxylic acid esters to 2,3,6,7,8,9-hexahydro-1H-benz[e] indene and derivatives thereof, the improvement which comprises the step of heating said cyclododecadiene carboxylic acid esters in the presence of a Lewis acid having a pKa value of not greater than about 4.

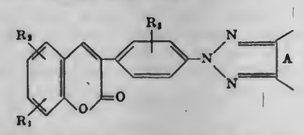
10. 5,6,7,8,9,10 - hexahydrobenz[g]-4H-indeno[4,5-e]-1H-triazole.

3,288,804
1,2,3-TRIAZOLE DERIVATIVES OF 3-PHENYL-COUMARIN COMPOUNDS

Fritz Fleck, Bottmingen, Hans Balzer, Munchenstein, and Horst Aebli, Basel, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed Oct. 12, 1964, Ser. No. 403,368
Claims priority, application Switzerland, Oct. 15, 1963, 12,619/63
9 Claims. (Cl. 260—308)

1. A compound of the formula



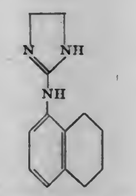
wherein A is a member selected from the group consisting of benzene, substituted benzene, naphthalene, substituted naphthalene, acenaphthene, substituted acenaphthene, indazole, substituted indazole, benztriazole, and substituted benztriazole, wherein the substituents are selected from the group consisting of methyl, methoxy, phenyl, benzoylamino, naphthyl, chlorophenyl, each of R_1, R_2, and R_3 is a member selected from the group consisting of H, lower alkyl, and lower alkoxy.

3,288,805
2-(5',6',7',8'-TETRAHYDRONAPHTHYL-1')-AMINO-IMIDAZOLINE

Alex Berg, Biberach an der Riss, Germany, assignor to Boehringer Ingelheim G.m.b.H., Ingelheim (Rhine), Germany, a corporation of Germany

No Drawing. Filed July 27, 1965, Ser. No. 475,226
Claims priority, application Germany, Aug. 4, 1961, T 20,558
4 Claims. (Cl. 260—309.6)

1. A compound selected from the group consisting of 2 - (5',6',7',8' - tetrahydronaphthyl - 1') - amino - imidazoline of the formula



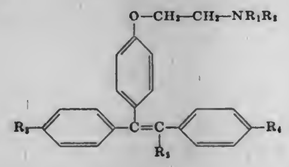
and its non-toxis, pharmacologically acceptable acid addition salts.

3,288,806
α-(AMINOETHOXYPHENYL)-α-ALKYLSTILBENES

Horace A. De Wald, Ann Arbor, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed Mar. 23, 1964, Ser. No. 354,134
5 Claims. (Cl. 260—326.5)

1. A member of the class consisting of compounds of the formula



and pharmaceutically-acceptable acid-addition and quaternary ammonium salts thereof, where R_1 and R_2 are members of the class consisting of lower alkyl and further members wherein R_1 and R_2 are combined and are selected from among

(a) oxydiethylene and

(b) lower alkylene of more than 3 and fewer than 9 carbon atoms, more than 3 and fewer than 6 of which are in annular position with the nitrogen atom;

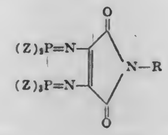
R_3 is a member of the class consisting of lower alkyl, lower alkoxy, lower alkylthio and halogen; R_4 is a member of the class consisting of hydrogen, lower alkyl, lower alkoxy, and halogen; and R_5 is alkyl of 1 to 3 carbon atoms inclusive.

3,288,807
DIPHOSPHORANYLIDENEAMINO DERIVATIVES OF MALEIMIDES

William Lindsay Mosby, North Plainfield, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Nov. 6, 1964, Ser. No. 409,608
3 Claims. (Cl. 260—326.5)

1. A compound of the formula:



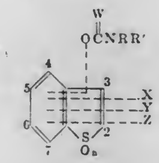
wherein R is lower alkyl, naphthyl, nitronaphthyl, or phenyl having up to two substituents selected from the group consisting of lower alkyl, lower alkoxy, halo, nitro and lower alkanamido; naphthyl or nitronaphthyl; and Z is lower alkyl, phenyl, naphthyl, lower alkenyl, alkoxy of up to 18 carbons, alkenoxy of up to 18 carbons or benzyloxy.

3,288,808
BENZOTHIENYL CARBAMATES

John R. Kilsheimer, Westfield, and Harold A. Kaufman, Piscataway Township, New Brunswick, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Jan. 21, 1965, Ser. No. 427,089
9 Claims. (Cl. 260—330.5)

1. Carbamates of benzothiophenes having the formula:



where R is selected from H, alkyl (C_1–C_8), cycloalkyl (C_3–C_6), and alkenyl (C_2–C_8); R' is selected from H, alkyl (C_1–C_8), alkenyl (C_2–C_8), phenyl, and chlorophenyl; X, Y, and Z are selected from hydrogen, halogen, nitro, alkyl (C_1–C_4), alkenyl (C_2–C_4), di (C_1–C_2)alkylamino, methylmercapto, cyano (—CN), thiocyano (—SCN), and alkoxy (—OCH_3 to —OC_8H_{17}); W is selected from O and S; *n* is 0–2; and in which the carbamate radical (—OCWNRR') and X, Y, and Z may be on any separate 2–7 positions of the ring; and the partially hydrogenated derivatives of said carbamates.

3,288,809
3-(1-PHENYL-2-PROPYNYL)-4-HYDROXYCOUMARIN AND METHOD OF PREPARING THE SAME

Karl Ernst Schulte and Johannes Reisch, both of Munster, Westphalia, Germany, assignors to W. Spitzner Arzneimittelfabrik G.m.b.H., Ettlingen, Baden, Germany, a corporation of Germany

No Drawing. Filed May 28, 1964, Ser. No. 371,117
Claims priority, application Germany, June 5, 1963, S 85,542
1 Claim. (Cl. 260—343.2)

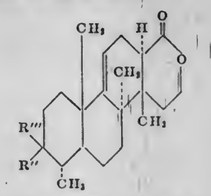
3-(1-phenyl-2-propynyl)-4-hydroxycoumarin.

3,288,810
SYNTHESIS OF STEROIDS

Gerald W. Krakower, Elizabeth, and Hilda A. Schwartz, Highland Park, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 20, 1965, Ser. No. 457,499
4 Claims. (Cl. 260—343.2)

1. A compound of the formula:



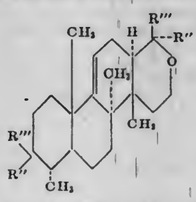
wherein R''' is hydrogen; R'' is selected from the group consisting of hydroxy and acyloxy, wherein the acyl radical is of a hydrocarbon carboxylic acid of less than twelve carbon atoms; and together R''' and R'' is oxo (O=).

3,288,811
SYNTHESIS OF STEROIDS

Gerald W. Krakower, Elizabeth, and Hilda Van Dine, Princeton, N.J., assignors to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 10, 1966, Ser. No. 526,356
4 Claims. (Cl. 260—345.2)

1. A compound of the formula



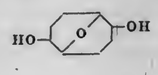
wherein R''' is hydrogen; R'' is selected from the group consisting of hydroxy and acyloxy, wherein the acyl radical is of a hydrocarbon carboxylic acid of less than twelve carbon atoms.

3,288,812
DIOL DERIVATIVE OF CYCLOOCTANE

Pierre Lafont, Sainte Foy-Les-Lyon, and Gilbert Vivant, Lyon, France, assignors to Rhone-Poulenc S.A., Paris, France, a French body corporate

No Drawing. Filed July 5, 1963, Ser. No. 293,165
Claims priority, application France, July 9, 1962, 903,378
1 Claim. (Cl. 260—345.9)

2,6-dihydroxy-9-oxabicyclo(3,3,31)nonane of the formula:



3,288,813
5,6,7,8,9,9 - HEXACHLORO - 1,2,3,4,4a,5,8,8a - OCTAHYDRO - 1,4,5,8 - DIMETHANONAPHTHALENE-2,3-DICARBOXYLIC ACID AND 5,6,7,8,9,9-HEXACHLORO - 1,2,3,4,4a,5,8,8a - OCTAHYDRO - 1,4,5,8-DIMETHANONAPHTHALENE - 2,3 - DICARBOXYLIC ANHYDRIDE

Morton Kleiman, Chicago, Ill., assignor to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Aug. 26, 1964, Ser. No. 392,310
2 Claims. (Cl. 260—346.3)

1. 5,6,7,8,9,9-hexachloro - 1,2,3,4,4*a*,5,8,8*a* - octahydro-1,4,5,8-dimethanonaphthalene-2,3-dicarboxylic acid.

2. 5,6,7,8,9,9-hexachloro - 1,2,3,4,4*a*,5,8,8*a* - octahydro-1,4,5,8-dimethanonaphthalene-2,3-dicarboxylic anhydride.

3,288,814
EPOXIDIZED 4 - METHYLENECYCLOHEXANEMETHYL ESTERS AND RESINS THEREFROM

Wayne V. McConnell and William H. Moore, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Nov. 7, 1962, Ser. No. 236,136
11 Claims. (Cl. 260—348)

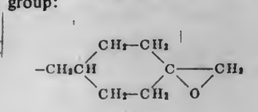
1. An epoxide selected from the group consisting of those represented by the following general formulae:

$$R(COOA)_n$$
$$R_1(COOA)_n$$
$$R_2(COOA)_2$$
$$R_3(COOA)_2$$
$$R_4(COOA)_2$$

and

$$R_5(COOA)_2$$

wherein *n* represents an integer of from 2–4, each A represents the group:



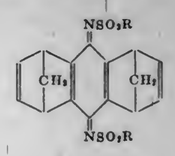
R represents a polyvalent benzene nucleus, R_1 represents a polyvalent cyclohexane nucleus, R_2 represents a 7-oxabicyclo[4.1.0]heptane nucleus, R_3 represents a divalent alkylene group of from 2–12 carbon atoms, R_4 represents a $—R_6—O—R_6—$ group wherein each R_6 represents a divalent alkylene group of from 2–4 carbon atoms and R_5 represents a —CH=CH— group.

3,288,815
1,4,5,8-TETRAHYDRO-1,4:5,8-DIMETHANO-9,10-ANTHRAQUINONE DISULFONIMIDES

Joseph E. Dunbar, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 8, 1964, Ser. No. 366,151
4 Claims. (Cl. 260—396)

1. A compound corresponding to the formula



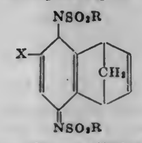
wherein R represents lower alkyl containing up to and including 4 carbon atoms.

3,288,816
DIALKANESULFONIMIDES

Joseph E. Dunbar, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 8, 1964, Ser. No. 366,157
7 Claims. (Cl. 260—396)

1. A compound corresponding to the formula



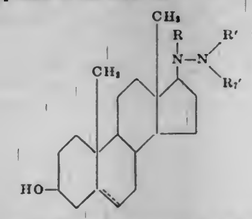
wherein R represents lower alkyl and X represents a member of the group consisting of hydrogen, chloro, bromo, fluoro, cyclohexylthio and phenylthio.

3,288,817
17β-(N,N-DIALKYLHYDRAZINO)-5α-ANDROSTAN-3β-OLS, Δ⁵ AND N'-ALKYL DERIVATIVES CORRESPONDING AND INTERMEDIATES THERETO

Paul D. Klimstra, Northbrook, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Oct. 21, 1965, Ser. No. 500,207
10 Claims. (Cl. 260—397.5)

1. A compound of the formula



wherein R' and R'' are lower alkyl radicals, R is selected from the group consisting of hydrogen and a lower alkyl radical and the dotted line represents an optionally double bonded linkage between carbon atoms 5 and 6.

3,288,818
16-METHYL DERIVATIVES OF PROGESTERONE

Arthur E. Oberster, North Canton, Ohio, and Lewis H. Sarett, Princeton, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Continuation of application Ser. No. 187,220, Apr. 13, 1962, which is a continuation of application Ser. No. 786,024, Jan. 12, 1959, now Patent No. 3,088,951, dated May 7, 1963. This application June 8, 1964, Ser. No. 373,540
1 Claim. (Cl. 260—397.45)

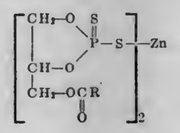
9α-fluoro-11β-hydroxy-16α-methylprogesterone.

3,288,819
ZINC SALTS OF GLYCEROL MONOESTER DITHIOPHOSPHATES

George R. Tichelaar, Carmichael, Calif., and Roger W. Watson, Highland, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Oct. 30, 1961, Ser. No. 148,684
3 Claims. (Cl. 260—399)

1. As a composition of matter, a salt having the following structural formula:



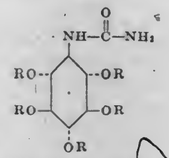
wherein R is an acyclic aliphatic hydrocarbon having from 9 to about 21 carbon atoms.

3,288,820
PENTAACYLBLUENSUREA AND PROCESS FOR MAKING SAME

Alexander D. Argoudelis and Brian Bannister, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 238,047, Nov. 15, 1962, now Patent No. 3,207,780, dated Sept. 21, 1965. This application Mar. 31, 1965, Ser. No. 444,385
2 Claims. (Cl. 260—404.5)

1. Pentaacylbluensurea having the following structural formula:



(VI)

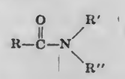
wherein R is hydrocarbon carboxylic acid acyl of from 2 to 12 carbon atoms, inclusive.

3,288,821
BROMINATED AND CHLORINATED AMIDES AND PROCESS FOR MAKING SAME

Vincent P. Kuceski, Chicago Heights, Ill., assignor to The C. P. Hall Company of Illinois, Chicago, Ill., a corporation of Ohio

Filed June 7, 1963, Ser. No. 286,224
16 Claims. (Cl. 260—404)

1. Amides of the formula



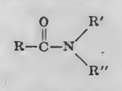
in which R is a naturally occuring fatty chain halogenated with bromine alone or with bromine and chlorine, and containing at least one pair of bromine substituents, the bromine atoms of each pair being on adjacent carbon atoms, with chlorine if present on adjacent carbon atoms, R' is from the class consisting of hydrogen and alkyl groups containing 1 to 4 carbon atoms and R'' is an alkyl group containing 1 to 8 carbon atoms; the total number of carbon atoms in R' and R'' being not over 8.

3,288,822
BROMINATED FATTY ACID AMIDES

Charles R. Hall, Akron, Ohio, and Joseph E. Stonis, Palos Park, Ill., assignors to The C. P. Hall Company of Illinois, Chicago, Ill., a corporation of Ohio

Filed June 7, 1963, Ser. No. 286,223
14 Claims. (Cl. 260—404)

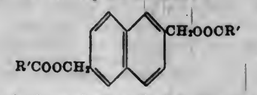
1. An amide having the formula



in which R is selected from the class consisting of (1) saturated fatty chains containing 1 to 21 carbon atoms and (2) fatty chains of 3 to 21 carbon atoms substituted by an even number of bromine atoms and derived from an initially ethylenically unsaturated fatty chain, and —NR'R'' is a brominated fatty amino group in which R' is a fatty chain of 3 to 21 carbon atoms and contains an even number of bromines in which R'' may be such a fatty chain or hydrogen.

3,288,823
2,6-BIS(HYDROXYMETHYL)NAPHTHALENE AND ESTERS THEREOF
William D. Vanderwerff, Wilmington, Del., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
No Drawing. Filed Mar. 22, 1963, Ser. No. 267,311
2 Claims. (Cl. 260—410.5)

1. A compound having the formula



where R' is a hydrocarbon radical having 1 to 12 carbon atoms.

3,288,824
ESTERIFICATION OF TRIGLYCERIDE WITH POLYETHYLENE GLYCOLS AND PRODUCT
Emile Mahler, 30 Rue Malesherbes, and Marcel Gattefosse, 33 Cours Eugenie, both of Lyon, France
No Drawing. Filed May 15, 1963, Ser. No. 281,858
14 Claims. (Cl. 260—410.6)

1. The method which comprises heating 2 mols of a member of the triglyceride group consisting of vegetable oils and the hydrogenated forms thereof and 1 mol of a polyethylene glycol having a molecular weight of 200 to 800 at a temperature of 205–225° C. in the presence of a catalyst selected from the group consisting of lime and caustic soda, the amount of the catalyst being about 0.05 to 0.2 percent by weight of the triglyceride, thereby to effect esterification of the polyethylene glycol.

3,288,825
CONTINUOUS RENDERING PROCESS
Jack G. Keith, Los Angeles, Calif., assignor to Duke, Inc., Germantown, Ohio, a corporation of Ohio
Filed Apr. 10, 1963, Ser. No. 272,098
13 Claims. (Cl. 260—412.6)

1. A continuous process for the dry rendering of raw materials in the form of animal, poultry and fish by-products to produce fat and tankage, including the steps of (a) reducing the raw materials to a mean particle size, (b) feeding the particles of raw materials into a holding vessel and thoroughly mixing the said particles while heating them to a temperature of from 190° F. to 210° F., including the step of maintaining the particles of raw materials in the holding vessel for a residence period at least equal to substantially one hour flow rate of the raw materials being processed, whereby to homogenize the raw materials and remove a portion of the moisture therefrom, (c) continuously withdrawing the homogenized raw materials from the holding vessel and further reducing the mean particle size thereof, (d) feeding the so reduced raw materials to a cooking vessel and heating the said materials to a temperature of from 225° F. to 275° F. to further reduce the moisture content thereof and to free the fats therefrom, and (e) continuously removing cooked materials from the cooking vessel and thereafter separating the freed fats from the tankage.

3,288,826
PROCESSES FOR MAKING DEC-2-EN-9-ONE-1-ACID
Karl Eiter, Leverkusen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed July 3, 1962, Ser. No. 207,408
Claims priority, application Germany, July 5, 1961, F 34,349
6 Claims. (Cl. 260—413)

1. Process for preparing trans-dec-2-en-9-one-1-acid that comprises reacting glutaric dialdehyde with an organophosphorus compound of the formula:

$$(C_6H_5)_3—P=CH—COOR$$

wherein R is a lower alkyl of from 1 to 2 carbon atoms, to form the corresponding hept-2-en-7-al-1-acid methyl ester of the formula:

$$OHC—(CH_2)_3—CH=CH—COOR$$

wherein R is as defined above; reacting said ester with acetone in the presence of a member selected from the group consisting of piperidine, piperidine acetate, ammonium acetate, an alkaline earth metal hydroxide and an alkali metal hydroxide to form a deca-2,7-dien-9-one-1-acid ester of the formula:

$$ROOC—CH=CH—(CH_2)_3—CH=CH—CO—CH_3$$

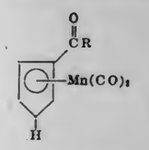
wherein R is again as defined above, reacting said latter ester with a palladium catalyst poisoned with a member selected from the group consisting of lead and quinoline to form a dec-2-en-9-one-1-acid ester of the formula:

$$ROOC—CH=CH—(CH_2)_5—CO—CH_3$$

wherein R is as defined above; and reacting said latter ester sequentially with a catalytic amount of iodine and sodium carbonate.

3,288,827
HALOACYLCYCLOPENTADIENYL MANGANESE TRICARBONYLS AND PROCESS FOR PREPARATION
John Kozikowski, Walled Lake, Mich., and Michael Cais, Haifa, Israel, assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Dec. 28, 1960, Ser. No. 78,820
3 Claims. (Cl. 260—429)

2. Process comprising reacting a halogen with an acylcyclopentadienyl manganese tricarbonyl compound having the formula:



in which R is a hydrocarbon group containing from one to 20 carbon atoms and the cyclopentadienyl ring can be substituted with hydrocarbon groups containing from one to 8 carbon atoms.

3,288,828
PREPARATION OF ORGANOMETALLIC COMPOUNDS
Thomas Wartik and Robert L. Barnes, State College, Pa., assignors to Koppers Company, Inc., a corporation of Delaware
Filed Feb. 26, 1963, Ser. No. 260,974
7 Claims. (Cl. 260—429)

1. A method of making organometallic compounds of the formula $(CH_3)_nMX_{4-n}$ wherein M is an element of Group IVA having an atomic number of 14–82 inclusive, X is a halogen having an atomic number of 9–35 and n is an integer having a value of 1–4, comprising reacting in an anhydrous, oxygen-free atmosphere, a metallic halide of the formula MX_m, wherein M and X are defined as aforesaid and m is an integer equal to the valence of M, with aluminum carbide in the presence of an anhydrous acid selected from the group consisting of hydrofluoric, hydrobromic, hydrocholric and acetic acid, at a temperature of 70–450° C.

6. A method of making methylaluminum compounds of the formula $(CH_3)_nAlX_{3-n}$ wherein X is a halogen having an atomic number of 9–35 and n is an integer having a value of 1–3, comprising reacting in an anhydrous, oxygen-free atmosphere, aluminum carbide with an anhydrous hydrogen halide of the formula HX wherein X is defined as aforesaid at a temperature of 150–450° C. and removing said methyl aluminum compounds as rapidly as they are formed.

3,288,829
PROCESS FOR PREPARING CYCLOPENTADIENYL GROUP VB AND VIB METAL HYDRIDES
Geoffrey Wilkinson, London, England, assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Dec. 29, 1961, Ser. No. 163,088
Claims priority, application Great Britain, Jan. 19, 1961, 2,173/61
10 Claims. (Cl. 260—429)

1. Process for the formation of a compound having the formula

$$Cy_2M^1H_x$$

wherein Cy is a cyclopentadienyl hydrocarbon radical having 5 to 13 carbon atoms and M^1 is an atom of a metal elected from the class consisting of Group VB metals of atomic number at least 41 and Group VIB metals, such that when M^1 is an atom of a Group VB transition metal of atomic number at least 41, $x=3$, and when M^1 is an atom of a Group VIB transition metal, $x=2$, said process comprising reacting

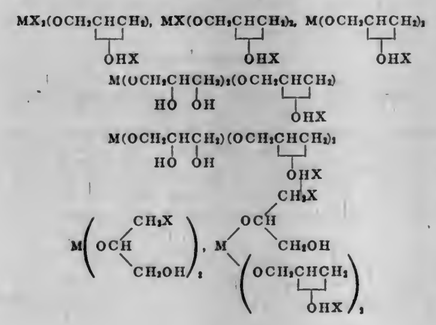
I. a salt selected from the class consisting of simple niobium, tantalum and Group VIB metal salts of inorganic acids and carboxylic acids having up to 7 carbon atoms with

II. a cyclopentadienyl metal compound having the formula Cy_tM^2 wherein Cy is a cyclopentadienyl hydrocarbon radical having 5 to 13 carbon atoms and M^2 an atom of a metal selected from the class consisting of Group IA and Group IIA metals, such that when M^2 is an atom of a Group IA metal $t=1$, and when M^2 is an atom of a Group IIA metal $t=2$, and

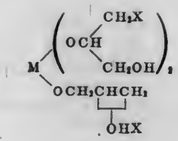
III. a reducing agent selected from the class consisting of sodium borohydride, sodium borodeuteride, lithium aluminum hydride and lithium aluminum deuteride.

3,288,830
POLYHYDROXYL COMPOUNDS CONTAINING A GROUP V ELEMENT
John P. Stallings, Mentor, and Frank B. Slezak, Painesville, Ohio, assignors to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware
No Drawing. Filed Sept. 20, 1962, Ser. No. 225,159
11 Claims. (Cl. 260—446)

1. A liquid composition for use as a polyhydroxy component and as a reaction initiator in flame-resistant, rigid polyurethane formulations comprising at least one hydroxyl-ended compound selected from the group consisting of



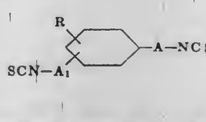
and



wherein M is an element of Group V of the Periodic Table of elements and X is halogen, and dimers and trimers of said polyols, said composition having a hydroxyl number within the range of 200 to 600 and containing at least 20 percent by weight of combined Group V element.

3,288,831
ISOTHIOCYANATO ALKYL CYCLOHEXANE DERIVATIVES
Andre Cometti, Maisons-Alfort, and Francois Debarre, Antony, France, assignors to Rhone-Poulenc S.A., Paris, France, a French body corporate
No Drawing. Filed July 1, 1963, Ser. No. 292,090
Claims priority, application France, July 6, 1962, 903,216; Jan. 21, 1963, 922,064
6 Claims. (Cl. 260—454)

1. A cyclohexane derivative selected from the class consisting of compounds of the formula:



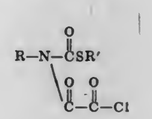
wherein R represents a member of the class consisting of hydrogen, alkyl of up to 4 carbon atoms, and alkoxy of up to 4 carbon atoms, A and A_1 represent alkylene groups of up to 6 carbon atoms, and the group

$$—A_1—NCS$$

is in one of the meta- and para-positions to the group —A—NCS.

3,288,832
THIOLCARBAMATE ESTERS AND METHOD OF PREPARATION
Paul J. Stoffel, St. Louis, Mo., assignor to Monsanto Company, a corporation of Delaware
No Drawing. Filed Sept. 23, 1963, Ser. No. 310,856
18 Claims. (Cl. 260—455)

1. A compound of the structure:



wherein R and R' are each selected from the class consisting of hydrogen; hydrocarbon radicals selected from the class consisting of alkyl having up to 12 carbon atoms, alkenyl having up to 12 carbon atoms, cycloalkyl having four to eight carbon atoms, phenyl and benzyl; and the said hydrocarbon radicals having up to four substituents selected from the class consisting of chlorine, nitro, bromine, alkyl having up to four carbon atoms, alkoxy having up to four carbon atoms and phenyl.

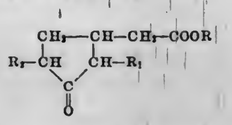
3,288,833

2-ALKENYL AND 4-ALKENYL DERIVATIVES OF 3-OXO-CYCLOPENTYLACETIC ACID ESTERS

Edouard Demole, Geneva, Switzerland, assignor to Firmenich et Cie, Geneva, Switzerland

No Drawing. Filed Feb. 18, 1963, Ser. No. 259,399
Claims priority, application Switzerland, Feb. 23, 1962, 2,258/62
6 Claims. (Cl. 260—468)

1. A compound of the formula



wherein one of the symbols R_1 and R_2 represents hydrogen and the other an unsubstituted alkenyl radical having 5 carbon atoms, and R represents one of the radicals methyl and ethyl.

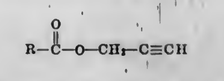
3,288,834

2-PROPYNYL ESTER OF SUBSTITUTED (2-PROPYNYLOXY)BENZOIC ACIDS

George B. Sterling, Mogadore, Ohio, and Chester E. Pawloski, Bay City, Mich, assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 26, 1963, Ser. No. 333,690
7 Claims. (Cl. 260—470)

1. A compound corresponding to the formula



wherein R represents a member of the group consisting of 2-(propargylthio)phenyl, 2-propargyloxyphenyl, 4-propargyloxyphenyl, 2,4-dipropargyloxyphenyl, 2,6-dipropargyloxyphenyl, 3,4,5 - tripropargyloxyphenyl, ar-monomethyl-propargyloxyphenyl, ar-monohalopropargyloxyphenyl and ar-monophenyl-2-propargyloxyphenyl.

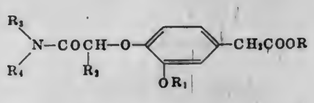
3,288,835

3-ALKOXY-4-[(N-SUBSTITUTED-CARBAMYL)-ALKOXY]-PHENYL ACETIC ACID ESTERS

Rudolf Hiltmann and Hartmund Wollweber, Wuppertal-Elberfeld, Friedrich Hoffmeister, Wuppertal-Vohwinkel, and Wolfgang Wirth, Wuppertal-Elberfeld, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Dec. 18, 1962, Ser. No. 245,406
Claims priority, application Germany, Dec. 20, 1961, F 35,599
4 Claims. (Cl. 260—471)

1. A chemical compound represented by the formula



wherein R is a member selected from the group consisting of lower alkyl radicals; R_1 is a member selected from the group consisting of methyl and ethyl; R_2 is a member selected from the group consisting of hydrogen, methyl and ethyl; R_3 is a member selected from the group consisting of hydrogen and lower alkyl radicals; R_4 is an alkoxy radical; and R_3 and R_4 may be joined with the nitrogen atom to form a heterocyclic ring member selected from the group consisting of 2-oxapyrrolidyl and 2-oxapiperidyl.

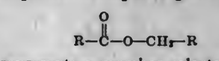
3,288,836

BENZOIC ACID ESTERS

George B. Sterling, Mogadore, Ohio, and Chester E. Pawloski, Bay City, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 26, 1963, Ser. No. 333,638
6 Claims. (Cl. 260—473)

1. The compound corresponding to the formula



wherein R represents a member selected from the group consisting of 2 - (2 - propynyloxy) - halophenyl and 2-(2-propynyloxy)-dihalophenyl.

3,288,837

2-PROPYNYL 3-NITRO-4-(2-PROPYNYLOXY) BENZOATE

George B. Sterling, Mogadore, Ohio, assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 26, 1963, Ser. No. 333,692
1 Claim. (Cl. 260—473)

2-propynyl 3-nitro-4-(2-propynyloxy)benzoate.

3,288,838

2-PROPYNYL ESTER OF 1-(2-PROPYNYLOXY)-2-NAPHTHOIC ACID

Chester E. Pawloski, Bay City, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 26, 1963, Ser. No. 333,699
1 Claim. (Cl. 260—473)

2 - propynyl ester of 1 - (2 - propynyloxy) - 2 - naphthoic acid.

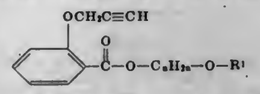
3,288,839

o-(2-PROPYNYLOXY)BENZOATES

Chester E. Pawloski, Bay City, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 26, 1963, Ser. No. 333,642
4 Claims. (Cl. 260—474)

1. Compounds corresponding to the formula



wherein R^1 represents a member of the group consisting of —H, $—C_3H_6OH$ and $—H_2C{\equiv}CH$ and *n* represents one of the integers 2 and 3.

3,288,840

2-PROPYNYL SALICYLATE

Chester E. Pawloski, Bay City, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 26, 1963, Ser. No. 333,705
1 Claim. (Cl. 260—474)

2-propynyl salicylate.

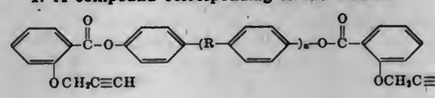
3,288,841

DIPHENOL DI-ESTERS OF (2-PROPYNYLOXY) BENZOIC ACIDS

George B. Sterling, Mogadore, Ohio, and Chester E. Pawloski, Bay City, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 26, 1963, Ser. No. 333,755
3 Claims. (Cl. 260—474)

1. A compound corresponding to the formula



wherein R represents a lower alkylidene and *n* represents one of the integers 0 or 1.

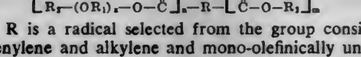
3,288,842

ALKOXYALKYL ESTERS OF CARBOXYLIC ACIDS

Joseph A. Verdol, Dolton, Ill., assignor to Sinclair Research, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 6, 1962, Ser. No. 177,747
9 Claims. (Cl. 260—475)

1. Tertiaryalkoxyalkyl esters having the formula



where R is a radical selected from the group consisting of phenylene and alkylene and mono-olefinically unsaturated alkylene radicals of about 2–20 carbon atoms, R_1 is a divalent aliphatic hydrocarbon radical of 2 to 12 carbon atoms, R_2 is a monovalent tertiary alkyl radical of 4 to 10 carbon atoms, R_3 is selected from the group consisting of hydrogen and lower alkyl, *x* is a number from 1 to 5, *n* is at least 1, and *m* plus *n* are 2 to 6.

3,288,843

PURIFICATION OF DIMETHYLTEREPHTHALATE

Lester Friedman, Beachwood, Ohio, assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Apr. 11, 1962, Ser. No. 186,660
3 Claims. (Cl. 260—475)

1. The method of improving the heat stability of dimethylterephthalate which comprises:

(a) heating molten dimethylterephthalate in the presence of from 0.05 to about 1.0 percent by weight of a treating agent selected from the group consisting of tri-stearyl phosphite and tris-eicosanyl phosphite for a period of 1.0 to 4.0 hours at sub-atmospheric pressure and at a temperature between about 150° C. and 250° C.; and

(b) fractionally distilling dimethylterephthalate therefrom so as to obtain a distillate substantially free of phosphorus and thermal decomposition products of said treating agent and having improved high temperature color stability.

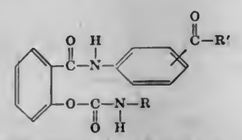
3,288,844

LOWER-ALKYL CARBAMATES OF ALKANOYL-SALICYLANILIDES

Richard S. P. Hsi, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Jan. 13, 1964, Ser. No. 337,184
3 Claims. (Cl. 260—480)

1. An alkylcarbamate of alkanoylsalicylanilide of the formula:



wherein R is a lower-alkyl having from 1 to 6 carbon atoms, inclusive, and wherein R′ is a lower-alkyl having from 1 to 4 carbon atoms, inclusive.

3,288,845

METHOD OF PREPARING UNSATURATED ESTERS BY OXIDATION OF OLEFINS

William D. Schaeffer, Pomona, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

Filed Sept. 30, 1963, Ser. No. 312,646
6 Claims. (Cl. 260—497)

1. The oxidation of an olefin having 2 to about 5 carbons to an unsaturated ester of an alkanoic acid having 2 to about 10 carbons that comprises contacting, in a reaction zone, said olefin with oxygen in the presence of a substantially anhydrous organic reaction medium comprising said alkanoic acid and

(1) between about 0.04 and about 2.0 weight percent of a platinum group metal,

(2) between about 0.05 and about 5.0 weight percent of a halogen containing compound selected from the class consisting of chlorine and bromine containing compounds,

(3) between about 0.1 and about 10 weight percent of an alkali metal salt of said alkanoic acid,

(4) between about 0.1 and about 5.0 weight percent of a soluble salt of a multivalent metal having an oxidation potential more positive than the platinum group metal in the solution;

said contacting being at a temperature between about 30° and about 300° centigrade and a pressure between about 1 and 100 atmospheres, sufficient to maintain liquid phase conditions and wherein the relative feed rates of said olefin and said oxygen are controlled to maintain the oxygen content of the gas phase of said reaction zone less than 1 volume percent so as to obtain a crude reaction product containing said unsaturated ester, withdrawing a liquid effluent from said reaction zone, containing platinum group metal and said multivalent metal in a reduced state, distilling said liquid effluent to recover said unsaturated ester from a liquid residue containing said platinum group metal and multivalent metal, returning said residue to said reaction zone, and preventing the precipitation of said multivalent metal as an insoluble salt during said oxidation and distillation by maintaining the atomic ratio of halogen to said multivalent metal greater than about 6.5:1 in said reaction medium.

3,288,846

PROCESSES FOR PREPARING ORGANO-PHOSPHONIC ACIDS

Riyad R. Irani, Florissant, and Kurt Moedritzer, St. Louis, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Nov. 13, 1961, Ser. No. 152,048
23 Claims. (Cl. 260—500)

1. A process which comprises forming an aqueous mixture having a pH below about 4 containing a nitrogenous material selected from the group consisting of ammonia, primary amines, and secondary amines; an organic carbonyl compound selected from the group consisting of aldehydes and ketones; and orthophosphorous acid, and subjecting said mixture to temperatures above about 70° C., whereby an aminoalkylenephosphonic acid compound having at least one N—C—P linkage (wherein said P is from said orthophosphorous acid) is formed.

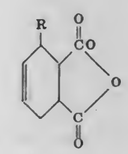
3,288,847

PREPARATION OF 1,4-CYCLOHEXADIENE-1-CARBOXYLIC ACID

Lawrence J. Hughes, Hitchcock, and William F. Yates, Dickinson, Tex., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Apr. 13, 1964, Ser. No. 359,421
7 Claims. (Cl. 260—514)

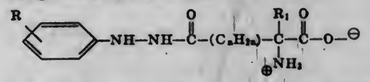
1. The method of preparing 1,4-cyclohexadiene-1-carboxylic acid which comprises reacting a compound of the formula



wherein R is chosen from the group consisting of halo, acetoxy, benzyloxy and tosyl radicals, with at least 4 equivalents of a strong base per mole of said compound, acidifying the resultant reaction mixture, and recovering 1,4-cyclohexadiene-1-carboxylic acid therefrom.

3,288,848
α-AMINO DIBASIC ACID HYDRAZIDES
Jack W. Hinman, Portage, and Ronald B. Kelly, Cooper Township, Kalamazoo County, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed Dec. 21, 1964, Ser. No. 420,137
3 Claims. (Cl. 260—518)

1. Compounds represented by the formula:



wherein R is selected from the group consisting of hydrogen, carboxy, halogen, alkyl of 1 to 4 carbon atoms, inclusive, and alkoxy of 1 to 4 carbon atoms, inclusive, R_1 is selected from the group consisting of hydrogen and alkyl of 1 to 4 carbon atoms, inclusive, and n is an integer from zero to 7, inclusive.

3,288,849
PROCESS FOR PURIFYING TEREPHTHALIC ACID
Delbert H. Meyer, Highland, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed Dec. 18, 1963, Ser. No. 331,377
3 Claims. (Cl. 260—525)

1. A method of purifying crude terephthalic acid having 4-carboxybenzaldehyde as its main impurity and said 4-carboxybenzaldehyde content of below 3% by weight which comprises treating a solution of said crude terephthalic acid dissolved in a solvent inert to hypophosphorous acid with at least one mole of hypophosphorus acid per mole of 4-carboxybenzaldehyde present in said crude terephthalic acid and separating solid terephthalic acid from said treated solution.

3,288,850
MANUFACTURE OF TRIFLUOROACETIC ACID
Henry R. Nychka, Randolph Township, Morris County, and Cyril Woolf, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed July 30, 1963, Ser. No. 298,597
5 Claims. (Cl. 260—539)

1. A cyclic process for making trifluoroacetic acid which includes the steps of:

(*a*) forming in a reaction zone a liquid reaction medium comprising a CF_3COOH–H_2O system containing at least 10% of H_2O,

(*b*) introducing CF_3COCl into said medium while maintaining the same at hydrolyzing temperatures substantially in the range of 20–60° C. to thereby effect reaction of CF_3COCl with H_2O to form a reaction mass comprising CF_3COOH,

(*c*) maintaining said introduction of CF_3COCl sufficient to raise the percentage of CF_3COOH in the system to an increasingly higher value which is not more than about 95% but is at least 85%,

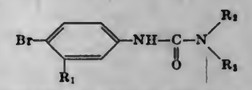
(*d*) subjecting the reaction mass to distillation under conditions to form an overhead boiling at substantially 72° C. at atmospheric pressure and comprising substantially anhydrous CF_3COOH, and to form a distillation heel comprising a CF_3COOH–H_2O system containing less CF_3COOH than said reaction mass, not more than 18% H_2O, and not less than 82% CF_3COOH,

(*e*) returning said heel to said reaction zone and

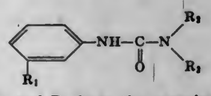
(*f*) subjecting said heel therein to repetition of steps (*b*) and (*c*) in the presence of added H_2O in amount at least equivalent to that needed for hydrolysis of incoming CF_3COCl.

3,288,851
PROCESS FOR THE BROMINATION OF PHENYLUREAS
Henry Martin, Basel, Hans Aebi, Riehen, and Ludwig Ebner, Stein, Aargau, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company
No Drawing. Filed May 1, 1962, Ser. No. 191,442
Claims priority, application Switzerland, May 6, 1961, 5,336/61
8 Claims. (Cl. 260—453)

1. A process for the manufacture of compounds of the formula



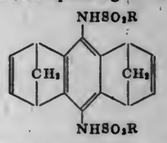
in which R_1 represents a member selected from the group consisting of a hydrogen atom, a lower alkyl radical, a lower alkoxy radical, a chlorine atom and a bromine atom, R_2 represents a member selected from the group consisting of a hydrogen atom, a lower alkyl radical and a lower alkoxy radical, R_3 represents a member selected from the group consisting of a lower alkyl radical and a radical forming together with the radical R_2 and the nitrogen atom the morpholine ring, wherein a compound of the formula



in which R_1, R_2 and R_3 have the meanings given in this claim, is treated with a brominating agent.

3,288,852
ANTHRACENE DIALKANESULFONAMIDES
Joseph E. Dunbar, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed May 8, 1964, Ser. No. 366,152
5 Claims. (Cl. 260—556)

1. A compound corresponding to the formula



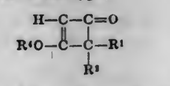
wherein R represents alkyl containing up to and including 4 carbon atoms.

3,288,853
METHOD FOR THE PREPARATION OF DICYCLOHEXYL KETONE
Werner Muench, Barlassina, Francesco Siclari, Cesano Maderno, Giuliana Silvestri and Teresa Argenziano, Milan, and Roberto Iacuone, Cesano Maderno, Italy, assignors to Snia Viscosa Società Nazionale Industria Applicazioni Viscosa S.p.A., Milan, Italy, an Italian company
No Drawing. Filed June 20, 1963, Ser. No. 289,432
4 Claims. (Cl. 260—586)

1. The method for producing dicyclohexyl ketone from hexahydrobenzoic acid, which consists of first dissolving manganous oxide in hexahydrobenzoic acid to provide a liquid catalytic compound, then feeding a further amount of hexahydrobenzoic acid into said catalytic compound, while maintaining the further amount of acid and said catalytic compound between 330° and 450° to produce the said ketone from said acid, and then removing the ketone produced.

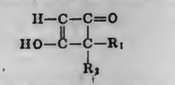
3,288,854
ADDITION OF DIALKYLKETENES TO ALKOXYACETYLENES
James C. Martin, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed July 5, 1963, Ser. No. 293,203
6 Claims. (Cl. 260—586)

1. A cyclobutenone of the type,



wherein R^1 and R^2 are from the group consisting of alkyl radicals of 1 to 8 carbon atoms and alkylene radicals which, with the carbon atom to which they are attached, form a saturated carbocyclic ring of 5 to 6 carbon atoms; and R^4 is a lower alkyl radical.

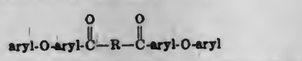
3. A ketene dimer having an enolic form of the type,



wherein R^1 and R^2 are lower alkyl radicals.

3,288,855
FLUORINATED DIONES
Robert M. Schisla, Kirkwood, and William C. Hammann, St. Louis, Mo., assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Mar. 25, 1963, Ser. No. 267,770
3 Claims. (Cl. 260—590)

1. A compound of the formula



wherein R is a perfluorinated alkylene radical of from 1 to 6 carbon atoms and aryl denotes a benzenoid hydrocarbon radical having from 6 to 10 carbon atoms and being free of olefinic and acetylenic unsaturation.

3,288,856
GLYCEROL ETHERS
Silvano Casadio, Milan, Italy, assignor to Istituto de Angeli, Milan, Italy, a corporation of Italy
No Drawing. Filed Oct. 3, 1963, Ser. No. 313,452
Claims priority, application Great Britain, Oct. 10, 1962, 38,407/62
4 Claims. (Cl. 260—592)

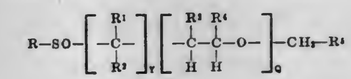
1. 3 - (2 - methoxy - 4 - propionyl-phenoxy)-1,2-propanediol.

3,288,857
OXO PROCESS
Harold E. Kyle, St. Albans, W. Va., and Marvin Echols, Victoria, Tex., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Apr. 9, 1962, Ser. No. 185,831
3 Claims. (Cl. 260—604)

1. In the Oxo process wherein olefins, carbon monoxide and hydrogen are reacted in a carbonylation zone with a cobalt carbonylation catalyst under carbonylation conditions to produce a reaction product mixture containing aldehydic products which have at least one more carbon atom than said olefins; contacting said reaction product mixture with an aqueous solution of acetic acid under conditions sufficient to decompose said cobalt carbonylation catalyst; thereafter recovering said aldehydic products from the resulting cobalt-containing aqueous solution; the improvement which comprises contacting said cobalt-containing aqueous solution with isobutyl alcohol in a distillation zone at a temperautre of from about 50° C. to about 300° C. under at least atmospheric pressure whereby the cobalt formate in said cobalt-containing solution is essentially converted to cobalt acetate, while removing isobutyl formate from said distillation zone.

3,288,858
SULFOXIDES AND SYNTHESES THEREOF
Warren I. Lyness, Mount Healthy, and David E. O'Connor, Cincinnati, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed Mar. 30, 1965, Ser. No. 444,069
7 Claims. (Cl. 260—607)

1. Sulfoxide compounds having the formula



wherein R is an organic group consisting of moieties selected from the group consisting of (A) alkyl moieties selected from the group consisting of straight chain and branched chain alkyl moieties containing from 1 to about 22 carbon atoms; (B) cycloaliphatic moieties containing from 5 to about 22 carbon atoms; (C) aryl moieties selected from the group consisting of phenyl, naphthyl, and biphenyl moieties; (D) unsaturated hydrocarbon moieties selected from the group consisting of straight chain and branched chain hydrocarbon moieties containing from 2 to about 22 carbon atoms and containing a double bond; (E) unsaturated hydrocarbon moities selected from the group consisting of straight chain and branched chain hydrocarbon moieties containing from 2 to about 22 carbon atoms and containing a triple bond in an interior position; (F) heterocyclic moieties selected from the group consisting of (1) five and (2) six membered rings containing from 1 to 3 hetero atoms selected from the group consisting of sulfur, nitrogen and oxygen and wherein said hetero atoms are attached only to carbon atoms and hydrogen atoms; (G) from 1 to about 10 moieties selected from the group consisting of ether, thioether and imino linkages; (H) saturated alkylene moieties containing from 1 to about 12 carbon atoms; and (I) from 1 to about 5 amino group moieties; said moieties being attached to each other and to the sulfinyl group to form a complete group R according to the following: (a) a moiety selected from the group consisting (A), (B), (C), (D), (E), and (F) can be the entire R group; (b) a moiety selected from the group consisting of (A), (B), (C), (D), (E), (F), and (H) can be attached directly to the sulfinyl group by means of a carbon atom; (c) a moiety selected from the group consisting of (A), (B), (C), (D), (E), and (F) can be attached to a (G) moiety which is attached as hereinafter described; (d) a moiety selected from the group consisting of (A), (D), and (E) can be attached to a moiety selected from the group consisting of (B), (C), and (F); (e) moiety (G) is attached to two carbon atoms in an acyclic structure, said moiety being separated from other (G) moieties and the sulfinyl group by at least two carbon atoms; (f) moiety (H) is attached to two moieties, one of which is selected from the group consisting of (B), (C), (F), (G), and the sulfinyl group, and the other of which is selected from the group consisting of (B), (C), (F), and (G); and (g) wherein moiety (I) is attached as a substituent to a moiety selected from the group consisting of (A), (B), (C), (D), (E), (F), and (H); said organic group containing from 1 to about 30 carbon atoms, and wherein R is attached to the

sulfur atom of the sulfoxide group by a single covalent bond between carbon and sulfur, where R^1, R^2, R^3, R^4, and R^5 are each selected from the group consisting of hydrogen and organic groups having the same definition as R, and wherein Q is an integer from 1 to about 50 and wherein Y is selected from the group consisting of 0 and 1.

3,288,859

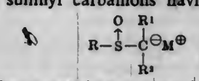
REACTIONS OF ALKALI METAL SALTS OF SULFINYL CARBANIONS AND ALKANESULFENATES WITH EPOXY COMPOUNDS AND NOVEL COMPOUNDS DERIVED THEREFROM

Warren I. Lyness, Mount Healthy, and David E. O'Connor, Cincinnati, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Mar. 30, 1965, Ser. No. 448,228
15 Claims. (Cl. 260—607)

1. The process of forming an alkali metal alkoxide containing a sulfinyl group in the gamma position comprising the step of reacting

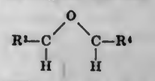
(A) salts of sulfinyl carbanions having the formula



wherein R is an organic group consisting of moieties selected from the group consisting of (A) alkyl moieties selected from the group consisting of straight chain and branched chain alkyl moieties containing from 1 to about 22 carbon atoms; (B) cycloaliphatic moieties containing from 5 to about 22 carbon atoms; (C) aryl moieties selected from the group consisting of phenyl, naphthyl, and biphenyl moieties; (D) unsaturated hydrocarbon moieties selected from the group consisting of straight chain and branched chain hydrocarbon moieties containing from 2 to about 22 carbon atoms and containing a double bond; (E) unsaturated hydrocarbon moieties selected from the group consisting of straight chain and branched chain hydrocarbon moieties containing from 2 to about 22 carbon atoms and containing a triple bond in an interior position; (F) heterocyclic moieties selected from the group consisting of (1) five and (2) six membered rings containing from 1 to 3 hetero atoms selected from the group consisting of sulfur, nitrogen and oxygen and wherein said hetero atoms are attached only to carbon atoms and hydrogen atoms; (G) from 1 to about 10 moieties selected from the group consisting of ether, thioether and imino linkages; (H) saturated alkylene moieties containing from 1 to about 12 carbon atoms; and (I) from 1 to about 5 amino group moieties; said moieties being attached to each other and to the sulfinyl group to form a complete group R according to the following: (a) a moiety selected from the group consisting of (A), (B), (C), (D), (E) and (F) can be the entire R group; (b) a moiety selected from the group consisting of (A), (B), (C), (D), (E), (F), and (H) can be attached directly to the sulfinyl group by means of a carbon atom; (c) a moiety selected from the group consisting of (A), (B), (C), (D), (E) and (F) can be attached to a (G) moiety which is attached as hereinafter described; (d) a moiety selected from the group consisting of (A), (D) and (E) can be attached to a moiety selected from the group consisting of (B), (C) and (F); (e) moiety (G) is attached to two carbon atoms in an acyclic structure, said moiety being separated from other (G) moieties and the sulfinyl group by at least two carbon atoms; (f) moiety (H) is attached to two moieties, one of which is selected from the group consisting of (B), (C), (F), (G) and the sulfinyl group, and the other of which is selected from the group consisting of (B), (C), (F) and (G); and (g) wherein moiety (I) is attached as a substituent to a moiety selected from the group consisting of (A), (B), (C), (D), (E), (F) and (H); said organic group containing from 1 to about 30 carbon atoms, and wherein R is attached to the sulfur atom of the sulfoxide group by a single covalent bond between carbon and sulfur, where R^1 and R^2 are each selected from the group consisting of hydrogen and organic groups having the same definition as R, and wherein the total number of carbon atoms in the sulfoxide compound does not exceed about 32, and not more than two of the hydrocarbon groups in the compound contain aryl groups, and wherein M is an alkali metal,

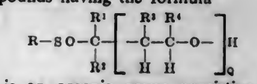
with

(B) a compound having the formula



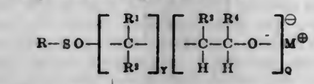
wherein R^3 and R^4 are each selected from the group consisting of hydrogen and organic groups having the same definition as R, the reaction being carried out at a temperature at from about 0° C. to about 100° C.

10. Compounds having the formula



wherein R is an organic group consisting of moieties selected from the group consisting of (A) alkyl moieties selected from the group consisting of straight chain and branched chain alkyl moieties containing from 1 to about 22 carbon atoms; (B) cycloaliphatic moieties containing from 5 to about 22 carbon atoms; (C) aryl moieties selected from the group consisting of phenyl, naphthyl and biphenyl moieties; (D) unsaturated hydrocarbon moieties selected from the group consisting of straight chain and branched chain hydrocarbon moieties containing from 2 to about 22 carbon atoms and containing a double bond; (E) unsaturated hydrocarbon moieties selected from the group consisting of straight chain and branched chain hydrocarbon moieties containing from 2 to about 22 carbon atoms and containing a triple bond in an interior position; (F) heterocyclic moieties selected from the group consisting of (1) five and (2) six membered rings containing from 1 to 3 hetero atoms selected from the group consisting of sulfur, nitrogen and oxygen and wherein said hetero atoms are attached only to carbon atoms and hydrogen atoms; (G) from 1 to about 10 moieties selected from the group consisting of ether, thioether and imino linkages; (H) saturated alkylene moieties containing from 1 to about 12 carbon atoms; and (I) from 1 to about 5 amino group moieties; said moieties being attached to each other and to the sulfinyl group to form a complete group R according to the following: (a) a moiety selected from the group consisting of (A), (B), (C), (D), (E) and (F) can be the entire R group; (b) a moiety selected from the group consisting of (A), (B), (C), (D), (E), (F) and (H) can be attached directly to the sulfinyl group by means of a carbon atom; (c) a moiety selected from the group consisting of (A), (B), (C), (D), (E) and (F) can be attached to a (G) moiety which is attached as hereinafter described; (d) a moiety selected from the group consisting of (A), (D) and (E) can be attached to a moiety selected from the group consisting of (B), (C) and (F); (e) moiety (G) is attached to two carbon atoms in an acyclic structure, said moiety being separated from other (G) moieties and the sulfinyl group by at least two carbon atoms; (f) moiety (H) is attached to two moieties, one of which is selected from the group consisting of (B), (C), (F), (G) and the sulfinyl group, and the other of which is selected from the group consisting of (B), (C), (F) and (G); and (g) wherein moiety (I) is attached as a substituent to a moiety selected from the group consisting of (A), (B), (C), (D), (E), (F) and (H); said organic group containing from 1 to about 30 carbon atoms, and wherein R is attached to the sulfur atom of the sulfoxide group by a single covalent bond between carbon and sulfur, where R^1 and R^2 are each selected from the group consisting of hydrogen and organic groups having the same definition as R, and not more than two of the hydrocarbon groups in the compound contain aryl groups, and wherein Q is an integer from 1 to about 50.

15. Compounds having the formula



wherein R is an organic group consisting of moieties selected from the group consisting of (A) alkyl moieties selected from the group consisting of straight chain and branched chain alkyl moieties containing from 1 to about 22 carbon atoms; (B) cycloaliphatic moieties containing from 5 to about 22 carbon atoms; (C) aryl moieties selected from the group consisting of phenyl, naphthyl and biphenyl moieties; (D) unsaturated hydrocarbon moieties selected from the group consisting of straight chain and branched chain hydrocarbon moieties containing from 2 to about 22 carbon atoms and containing a double bond; (E) unsaturated hydrocarbon moieties selected from the group consisting of straight chain and branched chain hydrocarbon moieties containing from 2 to about 22 carbon atoms and containing a triple bond in an interior position; (F) heterocyclic moieties selected from the group consisting of (1) five and (2) six membered rings containing from 1 to 3 hetero atoms selected from the group consisting of sulfur, nitrogen and oxygen and wherein said hetero atoms are attached only to carbon atoms and hydrogen atoms; (G) from 1 to about 10 moieties selected from the group consisting of ether, thioether and imino linkages; (H) saturated alkylene moieties containing from 1 to about 12 carbon atoms; and (I) from 1 to about 5 amino group moieties; said moieties being attached to each other and to the sulfinyl group to form a complete group R according to the following: (a) a moiety selected from the group consisting of (A), (B), (C), (D), (E) and (F) can be the entire R group; (b) a moiety selected from the group consisting of (A), (B), (C), (D), (E), (F) and (H) can be attached directly to the sulfinyl group by means of a carbon atom; (c) a moiety selected from the group consisting of (A), (B), (C), (D), (E) and (F) can be attached to a (G) moiety which is attached as hereinafter described; (d) a moiety selected from the group consisting of (A), (D) and (E) can be attached to a moiety selected from the group consisting of (B), (C) and (F); (e) moiety (G) is attached to two carbon atoms in an acyclic structure, said moiety being separated from other (G) moieties and the sulfinyl group by at least two carbon atoms; (f) moiety (H) is attached to two moieties, one of which is selected from the group consisting of (B), (C), (F), (G) and the sulfinyl group, and the other of which is selected from the group consisting of (B), (C), (F) and (G); and (g) wherein moiety (I) is attached as a substituent to a moiety selected from the group consisting of (A), (B), (C), (D), (E), (F) and (H); said organic group containing from 1 to about 30 carbon atoms, and wherein R is attached to the sulfur atom of the sulfoxide group by a single covalent bond between carbon and sulfur, where R^1, R^2, R^3 and R^4 are each selected from the group consisting of hydrogen and organic groups having the same definition as R, and not more than two of the hydrocarbon groups in the compound contain aryl groups, and wherein Q is an integer from 1 to about 50.

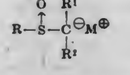
3,288,860

ALKALI METAL SALTS OF SULFINYL CARBANIONS AND ALKALI METAL ALKANESULFENATES, PROCESSES FOR THEIR PREPARATION AND REACTIONS THEREOF WITH ALKYL HALIDES

Warren I. Lyness, Mount Healthy, and David E. O'Connor and Jim S. Berry, Cincinnati, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Mar. 30, 1965, Ser. No. 448,229
20 Claims. (Cl. 260—607)

1. A compound having the formula



wherein R is an organic group consisting of moieties selected from the group consisting of (A) alkyl moieties selected from the group consisting of straight chain and branched chain alkyl moieties containing from 1 to about 22 carbon atoms; (B) cycloaliphatic moieties containing from 5 to about 22 carbon atoms; (C) aryl moieties selected from the group consisting of phenyl, naphthyl, and biphenyl moieties; (D) unsaturated hydrocarbon moieties selected from the group consisting of straight chain and branched chain hydrocarbon moieties containing from 2 to about 22 carbon atoms and containing a double bond; (E) unsaturated hydrocarbon moieties selected from the group consisting of straight chain and branched chain hydrocarbon moieties containing from 2 to about 22 carbon atoms and containing a triple bond in an interior position; (F) heterocyclic moieties selected from the group consisting of (1) five and (2) six membered rings containing from 1 to 3 hetero atoms selected from the group consisting of sulfur, nitrogen and oxygen and wherein said hetero atoms are attached only to carbon atoms and hydrogen atoms; (G) from 1 to about 10 moieties selected from the group consisting of ether, thioether and imino linkages; (H) saturated alkylene moieties containing from 1 to about 12 carbon atoms; and (I) from 1 to about 5 amino group moieties; said moieties being attached to each other and to the sulfinyl group to form a complete group R according to the following: (a) a moiety selected from the group consisting of (A), (B), (C), (D), (E) and (F) can be the entire R group; (b) a moiety selected from the group consitsing of (A), (B), (C), (D), (E), (F) and (H) can be attached directly to the sulfinyl group by means of a carbon atom; (c) a moiety selected from the group consisting of (A), (B), (C), (D), (E) and (F) can be attached to a (G) moiety which is attached as hereinafter described; (d) a moiety selected from the group consisting of (A), (D) and (E) can be attached to a moiety selected from the group consisting of (B), (C) and (F); (e) moiety (G) is attached to two carbon atoms in an acyclic structure, said moiety being separated from other (G) moieties and the sulfinyl group by at least two carbon atoms; (f) moiety (H) is attached to two moieties, one of which is selected from the group consisting of (B), (C), (F), (G) and the sulfinyl group, and the other of which is selected from the group consisting of (B), (C), (F) and (G); and (g) wherein moiety (I) is attached as a substituent to a moiety selected from the group consisting of (A), (B), (C), (D), (E), (F) and (H); said organic group containing from 1 to about 30 carbon atoms, and wherein R is attached to the sulfur atom of the sulfoxide group by a single covalent bond between carbon and

sulfur, where R^1 and R^2 are each selected from the group consisting of hydrogen and organic groups having the same definition as R and wherein the total number of carbon atoms in the sulfoxide compound does not exceed about 32, and not more than two of the organic groups in the compound contain aryl moieties, and wherein M is an alkali metal.

6. A compound having the formula



wherein R is an organic group consisting of moieties selected from the group consisting of (A) alkyl moieties selected from the group consisting of straight chain and branched chain alkyl moieties containing from 1 to about 22 carbon atoms; (B) cycloaliphatic moieties containing from 5 to about 22 carbon atoms; (C) aryl moieties selected from the group consisting of phenyl, naphthyl and biphenyl moieties; (D) unsaturated hydrocarbon moieties selected from the group consisting of straight chain and branched chain hydrocarbon moieties containing from 2 to about 22 carbon atoms and containing a double bond; (E) unsaturated hydrocarbon moieties selected from the group consisting of straight chain and branched chain hydrocarbon moieties containing from 2 to about 22 carbon atoms and containing a triple bond in an interior position; (F) heterocyclic moieties selected from the group consisting of (1) five and (2) six membered rings containing from 1 to 3 hetero atoms selected from the group consisting of sulfur, nitrogen and oxygen and wherein said hetero atoms are attached only to carbon atoms and hydrogen atoms; (G) from 1 to about 10 moieties selected from the group consisting of ether, thioether and imino linkages; (H) saturated alkylene moieties containing from 1 to about 12 carbon atoms; and (I) from 1 to about 5 amino group moieties; said moieties being attached to each other and to the sulfinyl group to form a complete group R according to the following: (a) a moiety selected from the group consisting of (A), (B), (C), (D), (E) and (F) can be the entire R group; (b) a moiety selected from the group consisting of (A), (B), (C), (D), (E), (F) and (H) can be attached directly to the sulfinyl group by means of a carbon atom; (c) a moiety selected from the group consisting of (A), (B), (C), (D), (E) and (F) can be attached to a (G) moiety which is attached as hereinafter described; (d) a moiety selected from the group consisting of (A), (D) and (E) can be attached to a moiety selected from the group consisting of (B), (C) and (F); (e) moiety (G) is attached to two carbon atoms in an acyclic structure, said moiety being separated from other (G) moieties and the sulfinyl group by at least two carbon atoms; (f) moiety (H) is attached to two moieties, one of which is selected from the group consisting of (B), (C), (F), (G) and the sulfinyl group, and the other of which is selected from the group consisting of (B), (C), (F) and (G); and (g) wherein moiety (I) is attached as a substituent to a moiety selected from the group consisting of (A), (B), (C), (D), (E), (F) and (H); said organic group containing from 1 to about 30 carbon atoms, and wherein R is attached to the sulfur atom of the sulfoxide group by a single covalent bond between carbon and sulfur, and wherein M is an alkali metal.

12. The process of forming alkali metal salts of sulfinyl-substituted carbanions comprising the step of reacting a strong base selected from the group consisting of sodium metal, potassium metal, alkali metal amides, alkali metal hydrides, alkali metal oxides, and alkali metal alkyls with a sulfoxide compound having the formula



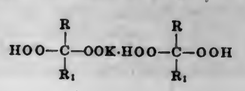
wherein R is an organic group consisting of moieties selected from the group consisting of (A) alkyl moieties selected from the group consisting of straight chain and branched chain alkyl moieties containing from 1 to about 22 carbon atoms; (B) cycloaliphatic moieties containing from 5 to about 22 carbon atoms; (C) aryl moieties selected from the group consisting of phenyl, naphthyl, and biphenyl moieties; (D) unsaturated hydrocarbon moieties selected from the group consisting of straight chain and branched chain hydrocarbon moieties containing from 2 to about 22 carbon atoms and containing a double bond; (E) unsaturated hydrocarbon moieties selected from the group consisting of straight chain and branched chain hydrocarbon moieties containing from 2 to about 22 carbon atoms and containing a triple bond in an interior position; (F) heterocyclic moieties selected from the group consisting of (1) five and (2) six membered rings containing from 1 to 3 hetero atoms selected from the group consisting of sulfur, nitrogen and oxygen and wherein said hetero atoms are attached only to carbon atoms and hydrogen atoms; (G) from 1 to about 10 moieties selected from the group consisting of ether, thioether and imino linkages; (H) saturated alkylene moieties containing from 1 to about 12 carbon atoms; and (I) from 1 to about 5 amino group moieties; said moieties being attached to each other and to the sulfinyl group to form a complete group R according to the following: (a) a moiety selected from the group consisting of (A), (B), (C), (D), (E) and (F) can be the entire R group; (b) a moiety selected from the group consisting of (A), (B), (C), (D), (E), (F) and (H) can be attached directly to the sulfinyl group by means of a carbon atom; (c) a moiety selected from the group consisting of (A), (B), (C), (D), (E) and (F) can be attached to a (G) moiety which is attached as hereinafter described; (d) a moiety selected from the group consisting of (A), (D) and (E) can be attached to a moiety selected from the group consisting of (B), (C) and (F); (e) moiety (G) is attached to two carbon atoms in an acyclic structure, said moiety being separated from other (G) moieties and the sulfinyl group by at least two carbon atoms; (f) moiety (H) is attached to two moieties, one of which is selected from the group consisting of (B), (C), (F), (G) and the sulfinyl group, and the other of which is selected from the group consisting of (B), (C), (F) and (G); and (g) wherein moiety (I) is attached as a substituent to a moiety selected from the group consisting of (A), (B), (C), (D), (E), (F) and (H); said organic group containing from 1 to about 30 carbon atoms, and wherein R is attached to the sulfur atom of the sulfoxide group by a single covalent bond between carbon and sulfur, where R^1 and R^2 are each selected from the group consisting of hydrogen and organic groups having the same definition as R and wherein the total number of carbon atoms in the sulfoxide compound does not exceed about 32, and not more than two of the organic groups in the compound contain aryl moieties, the reaction being carried out at a temperature of from about 0° C. to about 100° C.

3,288,861
ALKYL PEROXIDE ADDITION COMPOUNDS

Kazuo Higashiuchi, Chicago, Ill., assignor to J. R. Short Milling Company, Chicago, Ill., a corporation of Illinois

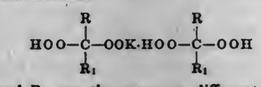
No Drawing. Filed Aug. 31, 1962, Ser. No. 220,895
10 Claims. (Cl. 260—610)

1. An addition compound of the general formula



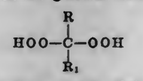
where R and R_1 are the same or different alkyl groups having 1–4 carbon atoms.

7. The method for producing an addition compound of the general formula

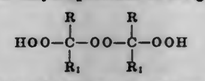


where R and R_1 are the same or different alkyl groups having 1–4 carbon atoms, comprising

mixing a potassium base selected from the group consisting of potassium hydroxide and potassium carbonate with a solution containing both a monomeric dihydroperoxide of the general formula



and a dimeric dihydroperoxide of the general formula



the molar ratio of said base to said monomeric dihydroperoxide being in the range of from 1:2 to 1.5:1,

and thereby causing said base to react selectively with said monomeric dihydroperoxide with the precipitation of a solid crystalline product, and

separately recovering said solid product,

said mixing step being carried out at a temperature not substantially exceeding room temperature.

3,288,862
CYCLOPENTENYL COMPOUNDS

Rostyslaw Dowbenko, Gibsonia, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 17, 1965, Ser. No. 440,592
3 Claims. (Cl. 260—611)

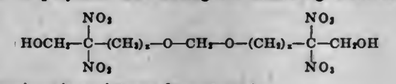
1. A 5-(alkenoxymethyl)-3-chlorocyclopentene wherein the alkenyl portion of the alkenoxymethyl group contains 1 to 12 carbon atoms.

3,288,863
POLYNITRODIOL AND METHOD OF PREPARATION

Thomas N. Hall, Adelphi, and Kathryn G. Shipp, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed Sept. 30, 1963, Ser. No. 312,790
5 Claims. (Cl. 260—615)

1. A polynitro diol having the following formula:



wherein x is an integer from 1 to 4.

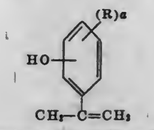
4. The method of preparing 2,2,8,8-tetranitro-4,6-dioxa-1,9-nonanediol monohydrate which comprises reacting in solution, at a temperature ranging from about 25° C. to about 60° C., the dialkali metal salt of bis(2,2-dinitroethyl) formal with aqueous formaldehyde and subsequently acidifying the solution with a mineral acid.

3,288,864
REACTION PRODUCTS OF ISOPROPENYL PHENOLS AND OF LINEAR DIMERS THEREOF

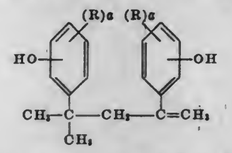
Alford G. Farnham, Mendham, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed May 11, 1962, Ser. No. 194,186
16 Claims. (Cl. 260—619)

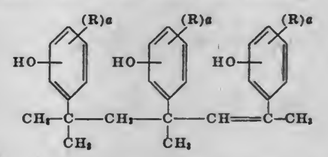
1. Process for preparing a linear trimer which comprises self-condensing, in a reaction medium having a pH of less than about 2, a compound which is a member of the group consisting of isopropenyl phenols having the formula:



wherein R is a member selected from the group consisting of halogens and alkyls, a has a value of 0 to 4 inclusive and OH is in a position other than meta with respect to the alkenyl group, and a linear dimer having the formula:

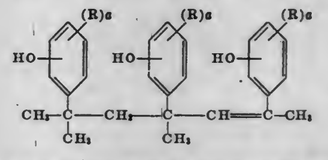


wherein R, a and the position of each OH are as defined. to produce a linear trimer having the formula:



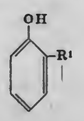
wherein R, a and the position of each OH are as defined.

7. A linear trimer having the formula:

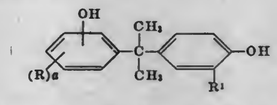


wherein R is a member selected from the group consisting of halogens and alkyls, a has a value of 0 to 4 inclusive, each OH is in a position other than meta with respect to the group linking the aromatic nuclei.

10. Process for the preparation of a dihydric, polynuclear phenol which comprises reacting, in a reaction medium having a pH of less than about 2, a linear trimer as defined in claim 7 with a phenol having the formula:

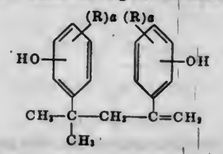


wherein R^1 is a member selected from the group consisting of alkyl and hydrogen, to produce a dihydric, polynuclear phenol having the formula:

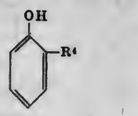


wherein R and a are as defined and OH is in a position other than meta with respect to the group linking the aromatic nuclei.

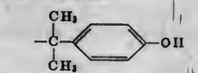
16. Process for preparing a trisphenol which comprises reacting, in a reaction medium having a pH of less than about 2, a linear dimer having the formula:



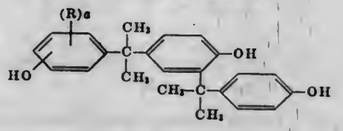
wherein R is a member selected from the group consisting of alkyls and halogens, *a* has a value of 0 to 4 inclusive and OH is in a position other than meta with respect to the group linking the aromatic nuclei, with a phenol having the formula:



wherein R^4 has the formula:



to form a trisphenol having the formula:



3,288,865

PROCESS FOR REMOVAL OF TAR FROM BENZOIC ACID OXIDATION REACTOR MASS

Donald F. Pontz, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 7, 1963, Ser. No. 322,036
2 Claims. (Cl. 260—621)

1. In the oxidation of benzoic acid to phenol in the presence of copper and magnesium catalysts, the improved method for the removal of tars from the reactor mass and recovery of the catalysts and other values which consists essentially of treating a portion of the reactor mass with an aqueous acetone solution having an acetone content of about 70% to 90% by volume, at a temperature of from about the atmospheric reflux temperature of acetone to about 240° C. with agitation to produce a homogeneous mass, separating the values laden acetone solvent from the insolubles and recovering the acetone, copper, magnesium, and benzoic acid values from the extract acetone solution.

3,288,866

PLURAL STAGE HYDROGENATION OF ALKENALS TO ALCOHOLS USING COPPER CATALYST AND THEN PALLADIUM CATALYST

Leslie Ernest Cooper, Hull, England, assignor to The Distillers Company Limited, Edinburgh, Scotland, a British company

No Drawing. Filed Mar. 6, 1963, Ser. No. 263,128
Claims priority, application Great Britain, Mar. 15, 1962, 9,895/62
10 Claims. (Cl. 260—638)

1. The process for production of an alkanol which comprises reacting an olefinically unsaturated aliphatic aldehyde having from three to twelve carbon atoms in the molecule in the vapor phase with an excess of hydrogen at a temperature of from 130° to 200° C. over a heated supported copper catalyst wherein at least 80% of the aldehyde is converted to the alkanol, and subsequently reacting the vaporized product with an excess of hydrogen at a temperature of 80° to 200° C. over a heated supported palladium catalyst to convert the olefinically unsaturated aliphatic aldehyde to the alkanol.

4. The process as claimed in claim 1 in which the copper catalyst contains a proportion of a modifier selected from the group consisting of zinc, magnesium, chromium, iron, compounds of these metals, and metal phosphates, tungstates, chromates, dichromates, molybdates, silicates, carbonates and metaborates.

7. The process as claimed in claim 1 in which the reactants are passed over a heated supported nickel catalyst in addition to the supported palladium catalyst and after passage over the supported copper catalyst.

3,288,867

STABLE NITROMETHANE COMPOSITION

Richard S. Egly, West Terre Haute, and Quentin R. Jeffries, Terre Haute, Ind., assignors to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland

No Drawing. Filed Feb. 17, 1965, Ser. No. 433,519
10 Claims. (Cl. 260—644)

1. In combination, a liquid composition having improved stability to detonation by shock comprising liquid nitromethane and a stabilizing amount of a stabilizing liquid, said stabilizing amount and said stabilizing liquid being:

(a) toluene in a stabilizing amount of not less than 21% by weight,
(b) benzene in a stabilizing amount of not less than 24% by weight,
(c) acetone in a stabilizing amount of not less than 24% by weight,
(d) cyclohexanone in a stabilizing amount of not less than 23% by weight,
(e) 1-nitropropane in a stabilizing amount of not less than 31% by weight,
(f) 2-nitropropane in a stabilizing amount of not less than 45% by weight,
(g) methylene chloride in a stabilizing amount of not less than 42% by weight, or
(h) methyl chloroform in a stabilizing amount of not less than 50% by weight.

3,288,868

OXYCHLORINATION PROCESS

Loyd W. Piester, New Martinsville, W. Va., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 5, 1963, Ser. No. 321,581
9 Claims. (Cl. 260—654)

1. In a method of oxychlorinating aliphatic hydrocarbons and their incompletely chlorinated derivatives in a fluidized bed of oxychlorination particles by passing the material to be chlorinated, oxygen and a member of the group consisting of elemental chlorine, HCl and mixtures thereof in contact with said catalyst particles, the improvement comprising introducing the oxygen, the material to be chlorinated and a member of said group into a fluidized bed of inert particles to thereby mix the material so introduced into said bed of inert particles, introducing the mixed material into a plurality of small fluidized beds, said plurality of beds comprising particles of oxychlorination catalyst and having a total cross-sectional area at least ¼ total cross-sectional of said inert bed while controlling the temperature of said inert particles below 500° F. and operating the said plurality of beds at a temperature sufficient to cause a reaction of the mixed materials to take place therein.

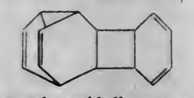
3,288,869

PROCESS FOR THE PREPARATION OF TRICYCLO-[3.3.2.0^{4,6}]DECA-2,7,9-TRIENE

Gerhard Friedrich Schroeder, Brussels, Belgium, assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Feb. 7, 1964, Ser. No. 343,219
9 Claims. (Cl. 260—666)

1. A process for the preparation of tricyclo[3.3.2.0^{4,6}] deca-2,7,9-triene which comprises heating cyclooctatetraene to a temperature sufficient to form the dimer of the formula:



recovering and exposing said dimer to a radiation source having wavelengths shorter than 7000 angstroms and thereby cleaving the dimer across the cyclobutyl nucleus, and thereafter recovering said tricyclo[3.3.2.0^{4,6}]deca-2,7,9-triene.

3,288,870

PREPARATION OF $\Delta^{1,2}$OCTALIN

Ted Symon, Lombard, and Edwin L. De Young, Chicago, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Oct. 5, 1964, Ser. No. 401,703
8 Claims. (Cl. 260—666)

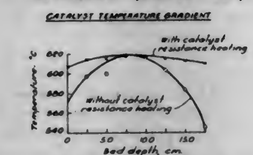
1. A process for the production of Δ^{12}-octalin which comprises dehydrohalogenating a 1-halodecalin in the presence of an alcoholic alkaline substance at dehydrohalogenating conditions, and recovering the resultant $\Delta^{1,2}$-octalin.

3,288,871

CATALYTIC DEHYDROGENATION OF HYDROCARBONS

Frederick J. Soderquist, Essexville, Harold D. Boyce, Coleman, and Paul E. Kline, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Aug. 7, 1963, Ser. No. 300,607
10 Claims. (Cl. 260—669)



1. In a process for the preparation of vinyl monomers by the catalytic dehydrogenation of hydrocarbons in the presence of water vapor and a self-regenerative metal oxide catalyst, the improvement which comprises

(a) using a self-regenerative metal oxide catalyst comprising in major proportion an oxide selected from the group consisting of iron oxide, zinc oxide and mixtures thereof, and
(b) passing an electric current through at least a portion of said catalyst so that the catalyst itself becomes a resistance heating element and provides part of the heat required to maintain the desired catalyst temperature.

3,288,872

ALKALI METAL POLYMERIZATION OF CONJUGATED DIENES

William Thomas House, Baton Rouge, La., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed May 14, 1963, Ser. No. 280,451
2 Claims. (Cl. 260—669)

1. A polymerization process which comprises mixing 50 to 100 parts of a conjugated diene of 4 to 6 carbon atoms and 50 to 0 parts of a vinyl aromatic hydrocarbon, 50 to 500 parts of an inert hydrocarbon diluent boiling between −15 and +250° C., 1 to 100 parts of a co-diluent selected from the group consisting of open-chain ethers having 4 to carbon atoms and cyclic diethers having 4 to 8 carbon atoms and cyclic diethers having 4 to 8 carbon atoms wherein the two oxygen atoms are separated by at least two carbon atoms, 1 to 5 parts of finely divided alkali metal catalyst and 1 to 26 percent of hexamethyl phosphoramide based on the weight of alkali metal and maintaining the resulting mixture at 25 to 95° C. until substantially 100% conversion of monomers is reached.

3,288,873

THERMAL HYDRODEALKYLATION OF NAPHTHALENE PRECURSORS

Edward J. Moll, Jr., Pitman, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed June 27, 1963, Ser. No. 290,942
9 Claims. (Cl. 260—672)

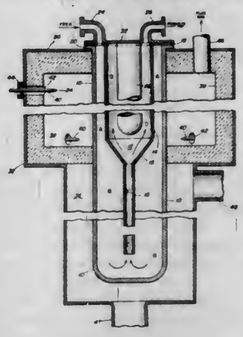
1. A process for the production of naphthalene which comprises reacting a charge comprising between about 8,400 and 21,000 standard cubic feet of hydrogen per barrel of a normally liquid hydrocarbon feed stock containing a naphthalene precursor at a pressure between about 250 and 800 p.s.i.g. and at reaction temperatures maintained constant within about 20° F. of a predetermined temperature but not below about 1200° F. and not above about 1,400° F.

3,288,874

APPARATUS AND METHOD FOR HIGH TEMPERATURE REACTIONS

Vernon O. Bowles, Katonah, N.Y., assignor to Mobil Oil Corporation, a corporation of New York

Filed June 27, 1963, Ser. No. 291,077
20 Claims. (Cl. 260—672)



1. A method for conducting high temperature conversions of fluid reactants which comprises passing a fluid reactant feed longitudinally through at least one confined continuous passage along an initial section of which the fluid reactant is simultaneously in indirect heat transfer relationship with a first heat exchange fluid through a confining wall of the passage having high heat transfer characteristics and in indirect heat transfer relationship through a confining wall having high heat transfer characteristics with a fluid conversion product flowing in a reverse direction through at least one confined return passage disposed longitudinally along said continuous passage, then circulating the fluid reactant through a final section of said continuous passage in which it is converted while in indirect heat transfer relationship through a confining wall with a second heat exchange fluid maintained apart both from said first heat exchange fluid and from said conversion

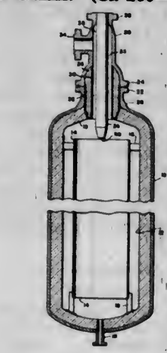
product and acting to control the temperature of the reactant fluid at the desired conversion level, introducing the resulting fluid conversion product at the end of said continuous passage into the communicating open end of a return passage, passing the product through said return passage in reverse direction to the flow in said continuous passage and withdrawing the product from said return passage.

3,288,875

HYDRODEALKYLATION OF ALKYLAROMATIC HYDROCARBONS

John W. Payne, Woodbury, and Edward J. Moll, Jr., Pitman, N.J., assignors to Mobil Oil Corporation, a corporation of New York

Filed June 27, 1963, Ser. No. 291,100
9 Claims. (Cl. 260—672)



1. A continuous process for the production of naphthalene by thermal hydrodealkylation which comprises preheating a charge comprising hydrogen and a normally liquid hydrocarbon feed stock containing a substantial amount of naphthalene precursor material and more than about 10% by weight of nonaromatic hydrocarbons and having an end boiling point substantially above 525° F. in which the quantity of hydrogen amounts to between about 8400 and 21,000 standard cubic feet per barrel of said liquid feed stock, injecting said preheated charge in gaseous form into a closed reaction vessel as a jet having an initial velocity between about 100 and 850 feet per second to induce rapid and thorough mixing of the reaction mixture in said vessel and maintain the reaction temperatures throughout said vessel substantially constant within 20° F. of a preselected hydrodealkylation reaction temperature but not below about 1200° F. and not above about 1400° F., maintaining said vessel under a substantially constant reaction pressure of between about 250 and 800 p.s.i.g., and withdrawing said reaction mixture from said vessel as the dealkylation product at a rate corresponding to the rate of introducing said charge therein.

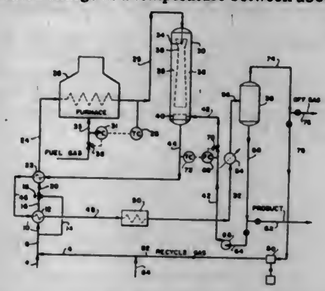
3,288,876

HYDROCARBON DEALKYLATION PROCESS

James D. Hammond, Fanwood, and John W. Payne, Woodbury, N.J., and Leo A. Castler, Weston, Conn., assignors to Mobile Corporation, a corporation of New York

Filed June 27, 1963, Ser. No. 291,208
17 Claims. (Cl. 260—672)

1. A process for the dealkylation of an alkylaromatic hydrocarbon which comprises indirectly preheating a charge comprising hydrogen and a normally liquid alkylaromatic hydrocarbon feed stock in a ratio of at least 4000 s.c.f. of hydrogen per barrel of said feed stock in a preheating zone wherein the maximum temperature of heat transfer surfaces in contact with said charge is maintained at not more than about 65° F. above the temperature of the proximate portion of the charge, introducing said preheated charge at a temperature between about 1100



and 1175° F. into a dealkylation zone and dealkylating said preheated charge therein at temperatures above about 1200 and not exceeding about 1275° F. for a period of time sufficient to effect the conversion of at least 65% of the alkylaromatic hydrocarbon content of said feed stock.

3,288,877

SEPARATION OF ALKYL BROMIDE FROM HYDROCARBONS BY EXTRACTIVE DISTILLATION

William H. Taylor and Cecil A. Newton, Houston, Tex., assignors to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware

No Drawing. Filed June 29, 1962, Ser. No. 206,170
18 Claims. (Cl. 260—680)

1. A process for separating methyl bromide from aliphatic hydrocarbons of 4 carbon atoms comprising unsaturated hydrocarbons, said methyl bromide being present in an amount of less than 25 mol percent based on the C_4 hydrocarbons present, which comprises fractionally distilling the said aliphatic hydrocarbons while feeding to the distillation an organic contacting solvent having from one to 15 carbon atoms and not having atoms other than carbon, hydrogen, oxygen, nitrogen, sulphur, chlorine, bromine and iodine, said organic contacting solvent having a dielectric constant at 25° C. of at least about 10, a boiling point of about 25° C. to 250° C., and a molecular weight of at least 35, with a purified aliphatic hydrocarbon stream being taken off overhead from the distillation and the methyl bromide being dissolved in the said organic contacting solvent taken off as a bottoms.

3,288,878

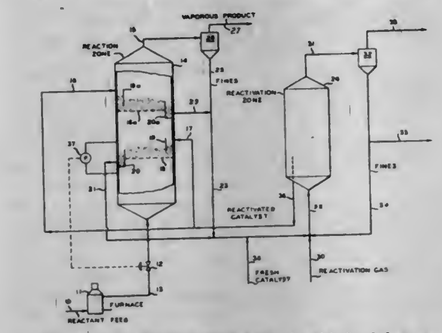
FLUIDIZED DEHYDROGENATION PROCESS AND APPARATUS

Karl H. Hachmuth, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Jan. 28, 1964, Ser. No. 340,659
10 Claims. (Cl. 260—683.3)

4. A method for dehydrogenation which comprises,
preheating a dehydrogenatable feed material to a dehydrogenation temperature,
introducing said preheated feed into a lower portion of a dehydrogenation zone containing a series of spaced shallow fluidized beds of finely divided dehydrogenation catalyst,
introducing fresh heated dehydrogenation catalyst into said zone and onto each of said beds from alternate sides of said dehydrogenation zone,
withdrawing used dehydrogenation catalyst from each of said beds and from said zone from the side opposite that where fresh dehydrogenation catalyst is introduced into said zone and each bed so as to provide a transversely moving bed of catalyst with respect to the flow of said feed through said zone,

flowing said preheated feed to said zone and into contact with said dehydrogenation catalyst on each of said beds at a velocity such that the dehydrogenation catalyst on each bed is fluidized by said feed, there-



by effecting dehydrogenation of said feed by contacting same with said catalyst, and
removing from an upper portion of said zone dehydrogenation product.

3,288,879

VULCANIZATION OF RUBBER WITH AN ORGANOHYDROGEN POLYSILOXANE AND A CHLOROPLATINIC ACID COMPOUND

Moyer M. Safford, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed July 23, 1963, Ser. No. 296,929
13 Claims. (Cl. 260—827)

1. A vulcanizable composition of matter comprising (1) a synthetic rubber selected from the class consisting of copolymers of a butadiene and acrylonitrile, and copolymers of a butadiene and styrene and (2) a vulcanizing agent for (1) comprising a minor proportion sufficient to effect vulcanization of (1) of a mixture of ingredients composed of (*a*) an organohydrogen polysiloxane having the formula:

$$(Z)_e Si(H)_f O_{\frac{4-e-f}{2}}$$

and (*b*) a chloroplatinic acid compound prepared by forming a reaction mixture of (A) chloroplatinic acid with (B) at least 2 moles per gram atom of platinum of a member selected from the class consisting of alcohols having the formula R'OH, ethers having the formula R'OR', aldehydes having the formula R'CHO, and mixtures thereof and heating said reaction mixture at a temperature of from about 60 to 80° C. at a reduced pressure until the reaction product has a ratio of from about 2.0 to about 3.5 atoms of chlorine per atom of platinum, where R' is a member selected from the class consisting of alkyl radicals containing at least 4 carbon atoms, alkyl radicals substituted with an aromatic hydrocarbon radical, and alkyl radicals substituted with an OR'' group, where R'' is a member selected from the class consisting of monovalent hydrocarbon radicals free of aliphatic unsaturation and monovalent radicals free of aliphatic unsaturation and consisting of carbon, hydrogen and oxygen atoms, with each oxygen atom being attached to two other atoms, one of which is a carbon atom and the other of which is a member selected from the class consisting of a carbon atom and a hydrogen atom, Z is a member selected from the class consisting of monovalent hydrocarbon radicals, halogenated monovalent hydrocarbon radicals and cyanoalkyl radicals, *e* has a value of from 0.5 to 2.49, inclusive, *f* has a value of from 0.001 to 1.0, inclusive, and the sum of $e+f$ is equal to from 1.0 to 2.5, inclusive.

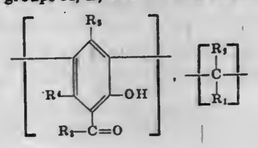
3,288,880

CONDENSATION POLYMERS, FOR STABILIZING POLYMERIC STRUCTURES, COMPOSED OF HYDROXYAROMATIC KETONE, ALDEHYDE, AND PHENOL

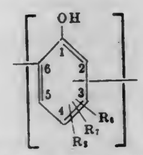
Stanley Tocker, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 8, 1964, Ser. No. 395,080
21 Claims. (Cl. 260—828)

1. A thermoplastic linear polymer consisting essentially of recurring groups A, B, and C of the formulae



and



respectively, wherein R_1 and R_2 are selected from the group consisting of hydrogen, alkyl groups having from 1 to 6 carbon atoms, chloroalkyl, furyl, vinyl, propenyl and phenyl; R_3 is selected from the group consisting of alkyl groups having from 1 to 6 carbon atoms and aryl groups; R_4 and R_5 are selected from the group consisting of hydrogen, hydroxyl, halogen, alkyl and alkoxy groups; the substituent groups R_6, R_7 and R_8 are selected from the group consisting of hydrogen, hydroxyl, halogen, aryl, aryloxy, alkyl and cycloalkyl; wherein the recurring groups A and C are joined to similar groups and to each other by means of the recurring group B, wherein the points of attachment of group C are at position 6 and at no more than one other position; wherein the molar ratio of *A*:*B*:*C* is 0.5–1.5:2:1.5–0.5 and wherein the polymer has a molecular weight of at least 400.

3,288,881

POLYEPOXIDE CURED WITH POLYCARBOXYLIC ACID AND TERTIARY AMINE ADDUCT OF A POLYEPOXIDE AND A MONOFUNCTIONAL SECONDARY AMINE

Henry L. Lee, Jr., San Marino, Calif., assignor to The Epoxylite Corporation, South El Monte, Calif., a corporation of California

No Drawing. Filed Mar. 20, 1964, Ser. No. 353,602
37 Claims. (Cl. 260—830)

1. Curable composition comprising (1) a first polyepoxide having an epoxy functionality greater than 1.0, (2) a hardening agent selected from the group consisting of polycarboxylic acids, polycarboxylic acid anhydrides and mixtures thereof in sufficient amounts to provide from about 0.8 to about 5 carboxy groups for each epoxy group in said first polyepoxide, and (3) a cure accelerator comprising a preformed tertiary amine adduct of a second polyepoxide having an epoxy functionality greater than 1.0 with sufficient amounts of a monofunctional secondary amine to provide at least about one mole of amine per epoxy group in said second polyepoxide, said adduct being present in said composition in an amount sufficient to provide at least about .001 tertiary amine group per epoxy group in said first polyepoxide.

20. Polyester reaction product of (*a*) a preformed tertiary amine adduct of a polyepoxide having an epoxy functionality greater than 1.0 with sufficient amounts of a monofunctional secondary amine to provide at least about

one mole of amine per epoxy group in said polyepoxide with (*b*) sufficient amounts of a material selected from the group consisting of polycarboxylic acids, polycarboxylic acid anhydrides and mixtures thereof to provide at least about 2 carboxy groups for each hydroxyl group in said pretormed adduct.

3,288,882

HARDENABLE EPOXY RESIN COMPOSITIONS

Bernard Peter Stark, Stapleford, Keith Wood Humphreys, Cambridge, and Eric Johnston, Stapleford, England, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

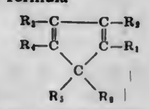
No Drawing. Filed Nov. 29, 1961, Ser. No. 155,836
Claims priority, application Great Britain, Dec. 8, 1960, 42,342/60
3 Claims. (Cl. 260—836)

1. A heat-hardenable flame-retardant resin composition which comprises:

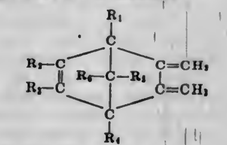
(1) an 1,2-epoxy compound having an 1,2-epoxy equivalency greater than 1,

(2) a polycarboxylic acid anhydride containing one dienophile C=C double bond, and

(3) a diene selected from the class consisting of compounds of the formula



and compounds of the formula



wherein R_1, R_2, R_3 and R_4 represent a member selected from the group consisting of chlorine and fluorine and R_5 and R_6 each are selected from the class consisting of hydrogen atom, halogen atom, lower alkyl and lower alkoxy group.

3,288,883

COPOLYMERS OF ALKYL ALPHA-HYDROXYMETHYL ACRYLATES AND OTHER UNSATURATED MONOMERS

Samuel C. Temin, Pittsburgh, and Melvin E. Baum and Edward H. Gleason, Monroeville, Pa., assignors to Koppers Company, Inc., a corporation of Delaware

No Drawing. Filed May 31, 1962, Ser. No. 198,716
8 Claims. (Cl. 260—836)

2. A vinyl copolymer consisting essentially of from 1–50 percent a lower alkyl alpha-hydroxymethylacrylate prepared by polymerizing said lower alkyl alpha-hydroxymethylacrylate with at least one vinyl comonomer of the formula:

$$CH_2=CRR'$$

wherein R is a member selected from the group consisting of hydrogen, lower alkyl, vinyl, phenyl, lower alkylphenyl, cyano, carboxyl, carbalkoxy, carbamido, and chlorine, and R' is a member selected from the group consisting of methyl and hydrogen.

5. A method of crosslinking the polymer of claim 2 through the hydroxymethyl group comprising reacting said polymer with a polyfunctional compound selected from the group consisting of diepoxides, dianhydrides, diisocyanates, alkoxy methyl melamines, hydroxymethyl melamines, N-alkoxymethylureas, N-hydroxymethylureas, diacid halides, phosphonic dihalides and disulfonylhalides.

3,288,884

RESINOUS COMPOSITION COMPRISING A VINYL CHLORIDE POLYMER AND A HALOGENATED POLYEPOXIDE

Lawrence F. Sonnabend and James N. Schramm, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed July 20, 1964, Ser. No. 383,938
6 Claims. (Cl. 260—837)

1. A rigid thermoplastic composition comprising an intimate mixture of:

(1) between about 70 and 95 parts by weight of a vinyl chloride polymer containing at least about 80 weight percent of polymerized vinyl chloride in the polymer molecule with the remainder being at least one monoethylenically unsaturated comonomer and

(2) between about 5 and 30 parts by weight of a thermoplastic polymeric modifying agent having a molecular weight of at least about 30,000 and a softening temperature of at least about 90° C., which consists of a halogenated derivative of epichlorohydrin and 4,4'-alkylidene bisphenol wherein said halogenated derivative is produced by the reaction of essentially stoichiometric amounts of a 4,4'-alkylidene bisphenol with a diglycidyl ether of a 4,4'-alkylidene bisphenol in the presence of a tertiary amine catalyst in an amount sufficient to provide at least 0.02 percent nitrogen by weight of said composition added as NR_3 where each R is an alkyl substituent containing between 2 and 6 carbon atoms and wherein one of said 4,4'-alkylidene bisphenol and diglycidyl ether of 4,4'-alkylidene bisphenol has from about 3 to 4 halogen atoms selected from the group consisting of bromine and chlorine attached to the nuclear carbon atoms said halogen being present in amount sufficient to provide at least 10.5 weight percent bromine or at least 19 weight percent chlorine based on the weight of said mixture.

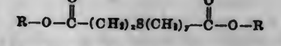
3,288,885

COMPOSITION FOR STABILIZING POLYACETALS COMPRISING (1) N-ACYL-p-AMINOPHENOL, (2) A SUPERPOLYAMIDE, AND (3) A DIESTER OF A THIODIALKANOIC ACID

Richard Green, Livingston, and Roy T. Gottesman, Glen Rock, N.J., assignors, by mesne assignments, to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Filed Apr. 4, 1963, Ser. No. 270,565
9 Claims. (Cl. 260—857)

1. A thermally stable polyacetal composition comprising a high molecular weight polymer of formaldehyde having a molecular weight in the range from about 10,000 to about 200,000 and a melting point in excess of 170° C. and containing a stabilizer system comprising (i) from about 0.001 to about 10 percent by weight of an N-acyl-p-aminophenol in which the acyl group contains from 2 to 20 carbon atoms, (ii) from about 0.01 to about 50 percent by weight of a superpolyamide formed upon the polymerization of monomeric compounds selected from the group consisting of mixtures of dicarboxylic acids and diamines, and ω-aminomonocarboxylic acids, and having a degree of polymerization in the range between about 100 to about 200, and (iii) from about 0.0001 to about 1 percent by weight of a diester of a thiodialkanoic acid having a structure represented by the formula



in which R is a radical selected from the group consisting of alkyl groups having from 8 to 20 carbon atoms, hydroxyalkyl groups having from 1 to 4 carbon atoms, cycloalkyl groups, and polyoxyalkyl groups, and *x* and *y* each represent an integer from 1 to 3, all per-

centages being based on the weight of the formaldehyde polymer in the polyacetal composition.

3,288,886

BLEND OF VINYL CHLORIDE RESIN AND GRAFT COPOLYMER PREPARED BY CONSECUTIVE POLYMERIZATION OF MONOMERS ONTO BUTADIENE POLYMER

Shinichiro Himei, Ashiya, and Masamichi Takine and Kunio Akita, Osaka, Japan, assignors to Kanegafuchi Chemical Industry Company, Limited, Osaka, Japan, a corporation of Japan

No Drawing. Filed Jan. 15, 1964, Ser. No. 337,736
Claims priority, application Japan, Jan. 25, 1963, 38/3,685
1 Claim. (Cl. 260—876)

A composition consisting essentially of (A) 70 to 95 parts by weight of a resin selected from the group consisting of vinyl chloride homopolymers and copolymers of at least 80% by weight vinyl chloride and up to 20% by weight of a monoethylenically unsaturated compound copolymerizable therewith, and (B) 30 to 5 parts by weight of a graft copolymer of (1) 10 to 70 parts by weight of a rubbery polymer selected from the group consisting of butadiene homopolymers and copolymers of at least 50% butadiene and up to 50% styrene and (2) 90 to 30 parts by weight of monomers consisting of 50 to 90% by weight styrene and 10 to 50% by weight methyl methacrylate, said graft copolymer being prepared by first completely polymerizing styrene in the presence of an aqueous dispersion of the rubbery polymer, adding the methyl methacrylate to the reaction mixture, and polymerizing said methyl methacrylate.

3,288,887

METHOD FOR MANUFACTURE OF ACRYLONITRILE-BUTADIENE-AROMATIC VINYL RESINOUS COMPOSITIONS

Masaaki Yoshino and Hisashi Morikawa, Kobe, Japan, assignors to Kanegafuchi Chemical Industry Company, Limited, Osaka, Japan, a corporation of Japan

No Drawing. Filed Jan. 2, 1963, Ser. No. 248,895
Claims priority, application Japan, Mar. 13, 1962, 37/10,058
5 Claims. (Cl. 260—880)

1. A method for manufacturing an acrylonitrile-butadiene-aromatic vinyl monomer composition having, by weight, 17% to 33% acrylonitrile, 18% to 36% butadiene and 31% to 65% aromatic vinyl component, which comprises graft-polymerizing acrylonitrile and aromatic vinyl monomers onto a selected styrene-butadiene latex in the presence of a selected polymerization catalyst system; the selected styrene-butadiene latex containing substantially 17% to 24% by weight combined styrene, having particles with an average diameter of from 0.1 to 1.0 micron, at least 50% by weight of such particles having a diameter larger than 0.5 micron, and being polymerized so as to contain relatively no gel, and any gel so contained is one having high swelling capabilities; the selected polymerization catalyst system includes an organic hydroperoxide as an initiator, a mixture of sodium formaldehyde sulfoxylate, ascorbic acid and dihydroxyacetone as an activator, and an iron chelate complex of an ethylenediaminetetraacetic acid salt as an auxiliary agent; and in which such graft-polymerization includes the steps of initially charging the polymerization reactor with a mixture containing the total amount of styrene-butadiene latex to be used, less than 20% by weight of the total acrylonitrile and aromatic vinyl monomers to be used and less than 20% by weight of the initiator to be used, and adding the residual amounts of acrylonitrile and aromatic vinyl monomers and the initiator as polymerization progresses.

3,288,888

ACRYLONITRILE VINYLIDENE CHLORIDE POLYMER BLEND COMPOSITIONS

Erwin Wieckowski, Raleigh, N.C., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed May 14, 1963, Ser. No. 280,456
2 Claims. (Cl. 260—898)

2. A new composition of matter comprising a compatible blend of from 2 to 98 percent of

(A) an acrylonitrile polymer containing at least 70 percent acrylonitrile and up to 30 percent of at least one ethylenically unsaturated monomer copolymerizable therewith other than vinylidene chloride and a dyeability enhancer selected from the group consisting of methallyloxybenzene sulfonate, acrylamidobenzene sulfonic acid and cinnamic acid with from 98 to 2 percent of

(B) an acrylonitrile vinylidene chloride copolymer containing less than 50 percent vinylidene chloride.

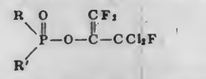
3,288,889

ORGANOPHOSPHORUS COMPOUNDS CONTAINING FULLY HALOGENATED ISOPROPENYL GROUPS

Karoly Szabo, Pleasantville, N.Y., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 15, 1963, Ser. No. 251,474
3 Claims. (Cl. 260—955)

1. An organophosphorus compound of the formula:



wherein R is selected from the group consisting of lower alkoxy of from 1 to 8 carbon atoms, lower alkylamino having from 1 to 18 carbon atoms, and allyloxy; R' is selected from the group consisting of allyloxy and lower alkyl amino having from 1 to 18 carbon atoms.

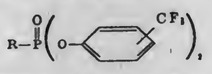
3,288,890

FLUORINE-CONTAINING ORGANIC COMPOUNDS OF PHOSPHORUS

Edward S. Blake, Dayton, David R. Dalton, Columbus, and Ralph E. De Brunner, Dayton, Ohio, assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Mar. 26, 1963, Ser. No. 267,913
5 Claims. (Cl. 260—955)

1. A compound of the formula



wherein R is hydrocarbyl from 1 to 12 carbon atoms and is free of olefinic and acetylenic unsaturation.

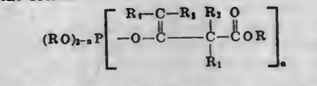
3,288,891

PROCESS FOR PREPARING DIALKYL CARBALKOXYALKENYL AND CARBAROXYALKENYL PHOSPHATE ESTERS

Edward U. Elam, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

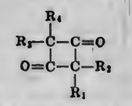
No Drawing. Filed Oct. 29, 1963, Ser. No. 319,647
11 Claims. (Cl. 260—971)

1. A process for preparing esters of phosphorous acid having the formula



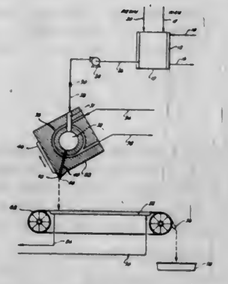
which comprises heating in the presence of alkali and a

phosphite having the formula $(RO)_3P$, a cyclobutanedione having the formula



wherein R represents a member of the class consisting of alkyl of from 1 to 8 carbon atoms and a benzene radical, each pair of groups R_1, R_2 and R_3, R_4 represents a member of the class consisting of alkyl groups of from 1 to 8 carbon atoms and alkylene groups which together with the carbon atom to which they are attached form a saturated carbocyclic ring of 5 to 6 carbon atoms, and *n* represents a positive integer of from 1 to 3.

3,288,892
APPARATUS AND METHOD FOR FORMING PELLETS
William L. Bewley, Long Beach, and Odell L. Whitfield, Fullerton, Calif., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed Jan. 18, 1965, Ser. No. 426,256
13 Claims. (Cl. 264—13)



1. Apparatus for producing pellets of a normally solid meltable material such as wax comprising: a body portion enclosing a reservoir for said material, said body portion having first and second exterior faces intersecting at an angle less than 90° to form a cutting edge; means for introducing said material into said reservoir; conduit means extending from said reservoir to an opening in said first face adjacent said cutting edge; a scraper in register with said first face and in alignment with said opening; means for reciprocating said scraper between a first position whereby said molten material is permitted to flow from said opening, and a second position whereby molten material which has issued from said opening is scraped from said first face and flow of said material from said opening is prevented; and means for receiving said material scraped from said first face, said last-named means being maintained at a temperature below the solidification temperature of said material.

13. A method for producing substantially uniformly sized pellets of a meltable composition of matter which comprises:

maintaining a liquid reservoir of said molten composition;

flowing said molten composition from said reservoir through a conduit communicating with said reservoir and terminating at an opening in a first plane surface adjacent a downwardly directed cutting edge formed by the juncture of said first plane surface and a second plane surface intersecting at an acute angle of less than 90°, so that a drop of said molten composition is formed at said opening which extends outwardly from said opening beyond said first plane surface;

passing a scraper reciprocally along said first plane surface so as to sever said drop causing it to fall by gravity from said first plane surface, said scraper obstructing the flow of said molten composition from said conduit immediately upon severing said drop; and

collecting said severed drop on a receiving surface located beneath said opening and maintained at a temperature below the solidification temperature of said composition whereby said severed drop is solidified.

3,288,893
DENTURE PRIMING
Leo F. Stebleton, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Filed Jan. 8, 1964, Ser. No. 336,372
2 Claims. (Cl. 264—17)

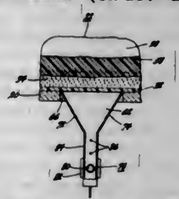
1. In a process of lining a denture with silicone rubber, the improvement comprising priming the surface of the denture with a silane having the formula Q_nSiZ_{4-n}, wherein

Q is an aliphatic substituent attached to the silicon atom via a silicon-carbon bond and contains unsaturation in the terminal position, said Q being composed of carbon and hydrogen atoms or carbon, hydrogen and oxygen atoms,

Z is a member selected from the group consisting of alkoxy and acyloxy groups containing from 1 to 3 carbons atoms and

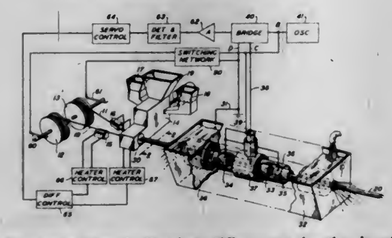
n is an integer from 1 to 3 inclusive, prior to bonding the rubber to the denture.

3,288,894
METHOD OF INSULATING A HOLLOW-WALLED CABINET WHICH INCLUDES USING UNIFORMLY DISTRIBUTED AND SPREAD MICROWAVES FOR HEATING
Homer W. Deaton, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 26, 1963, Ser. No. 304,486
5 Claims. (Cl. 264—25)



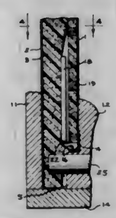
1. The method of insulating a hollow walled cabinet having spaced inner and outer metal side and top and bottom and rear walls with an open side and spaced rims bordering the open side which includes introducing plastic resin foam forming materials in between the inner and outer walls, fitting to said spaced inner and outer walls closely adjacent said spaced rims a metal flat sided diverging wave guide with the flat sides thereof substantially in alignment with the space between and substantially parallel to the inner and outer side walls adjacent said open side, and while the foam forming materials react directing wave energy of between 10^7 and 10^{13} cycles per second through the wave guide between said spaced rims into the space between the inner and outer walls to obtain an adequate spreading and uniform distribution of the microwaves within the space between said walls to treat and accelerate the foaming of the foam forming materials between the walls.

3,288,895
CONTROL OF CAPACITANCE OF INDIVIDUAL WIRES OF MULTIWIRE STRUCTURE
Alfred S. Windeler, Madison, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 13, 1963, Ser. No. 264,876
12 Claims. (Cl. 264—40)



1. Apparatus for indicating differences in the insulation capacitance between the individual wires of a multiwire structure which comprises a first electrode, a guard electrode structure insulated from and mounted in spaced alignment with said first electrode, means for submerging said first electrode and said guard structure in a bath of conductive fluid, means for advancing said multiwire structure through said bath in proximity to said electrodes, a bridge circuit which includes first and second pairs of impedance arms, bridge energizing means, and means for indicating impedance unbalance in either of said pairs of arms, means for connecting said first electrode to one end of one arm of said first pair of arms, means for generating a periodic switching signal, means actuated by said switching signal for systematically and individually connecting each wire of said multiwire structure to the second end of said one arm, means for connecting said guard electrode structure to the junction of the arms of said second pair of impedance arms, means actuated by said switching signal for connecting all of the wires of said multiwire structure not momentarily connected in said arm of said first pair to said junction, and means for indicating the algebraic magnitude of the differences in impedance unbalance in said first pair of arms as the wires of said multiwire structure are connected therein.

3,288,896
MANUFACTURE OF FOAM INSULATED REFRIGERATOR CABINETS
Mervin E. Hendricks, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed June 8, 1964, Ser. No. 373,198
5 Claims. (Cl. 264—45)

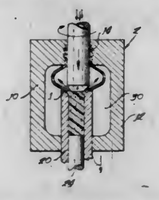


1. In the method of manufacturing a foam insulated cabinet including the method steps of positioning said liner in a foaming mold, positioning a cabinet shell in said mold over said liner, and foaming resin in the space between said liner and shell; the improvement which comprises mounting an electrical lead on said liner, enclosing portion of said lead in an enclosure and securing said enclosure to and in normally spaced relationship with the foam side of said liner by resilient means adapted to permit said enclosure to move from its normal position towards said liner upon contact of a portion of said shell therewith during positioning of said shell in said mold and to return said enclosure to its normal position after said shell portion moves past said enclosure.

3,288,897
DYEABLE MATERIALS
Giorgio Leicht, Terni, Italy, assignor to Montecatini Societa Generale per l'Industria Mineraria e Chimica, Milan, Italy
No Drawing. Filed May 14, 1963, Ser. No. 280,417
Claims priority, application Italy, May 18, 1962, 10,000/62
21 Claims. (Cl. 264—78)

1. A process for preparing, by molten mass extrusion followed by stretching, dyeable textile fibers, films, tapes, and other shaped articles from polyolefins consisting essentially of isotactic macromolecules, this process comprising mixing with a polyolefin from about 1 to 25%, by weight of said mixture, of a crystalline polyepichlorohydrin, and extruding said mixture.

3,288,898
PROCESS OF BLOW MOLDING HOLLOW ARTICLES
Walter H. West, Bay City, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Nov. 13, 1963, Ser. No. 323,406
7 Claims. (Cl. 264—98)



1. A method for blow molding hollow thermoplastic articles whereby multidirectional orientation is imparted to the molecules of said thermoplastic for multidirectional strength comprising

placing a body of thermoplastic out of which said article is to be formed within a cavity having an open end within a blow mold, forcing a blow plunger against said body of thermoplastic,

progressively extruding a portion of said parison through an annular die orifice while rotating at least one lip element of said orifice with a torque sufficient to impart multidirectional orientation to the molecules of the thermoplastic being extruded.

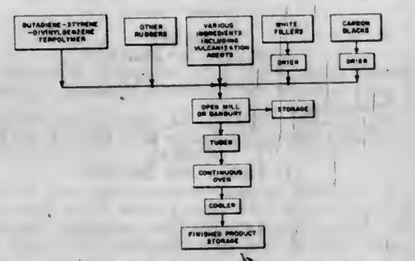
and blowing said extruded portion outwardly to conform to the walls of said blow mold,

whereby a blow molded object of multidirectional strength will be formed.

3,288,899
METHOD FOR THE CONTINUOUS MANUFACTURE OF SHAPED ELASTOMERIC MATERIAL
Attilio Angioletti, Milan, Italy, assignor to Pirelli S.p.A., Milan, Italy
Filed May 3, 1963, Ser. No. 277,679
Claims priority, application Italy, June 6, 1962, 11,189/62
9 Claims. (Cl. 264—102)

1. A method for the continuous manufacture of shaped elastomeric material comprising the steps of (1) mixing a vulcanizable elastomeric composition containing at least 50% based on the total elastomer content of a butadiene-

styrene-divinylbenzene terpolymer and, constituting the remaining part of the elastomer content, at least one additional elastomer selected from the group consisting of natural rubber, butadiene-styrene copolymer, polybutadiene, polyisoprene, butadiene-acrylonitrile copolymer and polychloroprene; vulcanization agents; and at least one

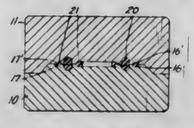


filler substantially free from moisture, gases, and adsorbed fluids; (2) of extruding said composition, and (3) of subjecting the shaped elastomeric material, after it emerges from the extruder, to continuous vulcanization in hot air at a curing temperature and at substantially atmospheric pressure.

3,288,900
METHOD OF MAKING TRAVELER FROM REINFORCED THERMOSETTING MATERIAL

Louis H. Morin, Bronx, N.Y., assignor to Coats & Clark Inc., New York, N.Y., a corporation of Delaware

Filed Aug. 22, 1962, Ser. No. 218,734
1 Claim. (Cl. 264—149)



The method of producing textile travelers, which comprises first producing an elongated strand of unvulcanized rubber with a wire reinforcing core extending longitudinally thereof, cutting said strand into workpiece lengths, shaping the workpiece length by suitable swaging tools to form a workpiece of approximately the shape of a finished traveler, positioning the formed workpiece between a pair of heated molds wherein the ends of said workpiece are spaced from the ends of the mold cavities adapted to receive said workpiece so that upon heating and pressing said workpiece in said molds the ends of said reinforcing wire are covered and spaced from the ends of the finished product, moving the molds toward each other under predetermined pressure and heating and holding the molds under such pressure in final shaping and vulcanizing of the rubber of said workpiece into the formed traveler, including an overflow of the periphery of said traveler, and then removing such overflow in producing the resulting traveler of a predetermiend contour.

3,288,901
METHOD OF MAKING CATHETER

James L. Clark, Whitefish Bay, Wis., assignor, by mesne assignments, to Plastronics, Inc., Milwaukee, Wis., a corporation of Wisconsin

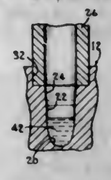
Filed Feb. 24, 1964, Ser. No. 346,888
4 Claims. (Cl. 264—267)

1. The method of making a catheter comprising the steps of:

introducing a liquid plastic material into a mold cavity having a smoothly rounded bottom portion;

inserting a plastic tube into the mold cavity so that the end of the tube is in contact with the liquid plastic in the mold;

heating the liquid plastic and tube end in the mold to cure the liquid plastic material and cause it and the tube end to fuse together, said liquid plastic and



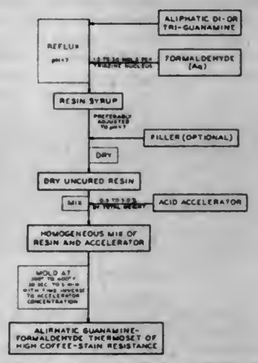
tube end being heated to a curing temperature within the range of about 250°–450° F. at a rate of at least 30° F. per minute within the curing range; and

cooling the heated plastic to cause it to harden to a firm consistency.

3,288,902
MOLDING OF AMINOTRIAZINE-FORMALDEHYDE RESINS TO PRODUCE COFFEE-STAIN RESISTANT MOLDINGS

Barry Schuller, Florham Park, and August J. Specht, Madison, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Dec. 4, 1963, Ser. No. 328,110
12 Claims. (Cl. 264—300)

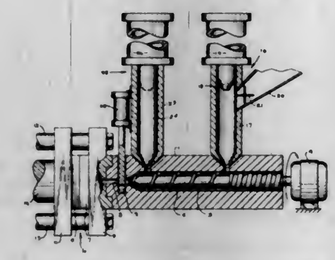


1. The process of producing aminotriazine formaldehyde moldings resistant to coffee-staining which comprises reacting formaldehyde with an aliphatic guanamine selected from the group of diguanamines and triguanamines in the molar proportions of from 1.5 to 3 mols of formaldehyde per triazine nucleus in the aliphatic guanamine to produce a resin syrup in the uncured state, drying the resin syrup thus produced to produce dry uncured resin; mixing the dry uncured resin with an acid accelerator which will not effect curing of the resin under the conditions of the mixing to produce a substantially homogeneous mixture having a concentration of from 0.5% to 5% by weight of the accelerator; molding this mixture for from 30 seconds to 5 minutes at a temperature of from 300° F. to 400° F. with the molding time correlated with the concentration of the accelerator so that with concentrations near the lower portion of the accelerator concentration range of from 0.5% to 5% longer curing times within the 30 seconds to 5 minutes range are used and with accelerator concentrations nearer the upper portion of said range of from 0.5% to 5% shorter curing times nearer the lower portion of the 30 seconds to 5 minutes range are used.

3,288,903
METHOD FOR PLASTICIZING AND MOLDING

James W. Hendry, Scottsburg, Ind., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed May 10, 1963, Ser. No. 279,539
6 Claims. (Cl. 264—329)



1. In a process for molding plastic material, the steps consisting of: providing a plasticizing chamber having fixed wall means and screw means rotatably supported within said chamber and defining with said wall means a tortuous path therethrough; first and second variable volume chambers communicating with said path at spaced points therealong, each variable volume chamber containing a ram movable therein to vary the volume in said volume chambers; and a molding chamber connectible to said path;

placing plastic material in the first volume chamber and causing the ram therein to move a quantity of said material from said first volume chamber into said path;

causing all of said quantity of material to move in one direction along said path and thence into said second volume chamber;

subjecting said material to simultaneous frictional heating, agitation and compression as it moves along said path through said plasticizing chamber to raise the temperature and reduce the viscosity of the material;

causing the ram in the second volume chamber to move all of said quantity of material from said second volume chamber back into said path;

causing said quantity of material to move along said path in the opposite direction and thence into said first volume chamber, and again subjecting said material to frictional heating, agitation and compression;

repeating the foregoing steps until said quantity of material reaches a desired viscosity and temperature for molding; and

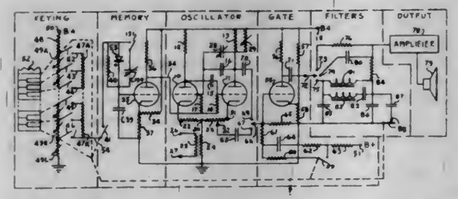
conducting the quantity of plasticized material from said path to said molding chamber.

ELECTRICAL

3,288,904
TONE FREQUENCY CONTROL SYSTEM FOR ELECTRONIC MUSICAL INSTRUMENTS

Thomas J. George, North Hollywood, Calif., assignor to Hammond Organ Company, Chicago, Ill., a corporation of Delaware

Filed Sept. 25, 1962, Ser. No. 226,085
39 Claims. (Cl. 84—1.01)



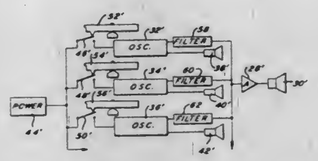
1. An electronic musical instrument comprising a variable frequency tone generator having a control terminal, a keyboard, and means for applying signals to the control terminal to change the frequency of operation of the generator in response to the manipulation of the keyboard, said signal applying means including unilaterally conductive means for decreasing the frequency in discrete intervals and means for imparting a portamento effect to increases in the frequency of operation of the generator.

3,288,905
ELECTRONIC MULTI-SOURCE SOUND PATTERN

Jerome Markowitz, Allentown, Pa., assignor to Allen Organ Company, Inc., Macungie, Pa., a corporation of Pennsylvania

Filed Apr. 2, 1964, Ser. No. 356,915
11 Claims. (Cl. 84—1.01)

1. In an electronic organ, means to duplicate the multiple point-source sound effect of pipe organs comprising signal generating means, key means to selectively actuate said signal generating means, amplification and transducer means to amplify the generated signal and transduce it into sound, and high frequency transducer means



connected directly to said generator means for transducing high frequency portions of said signal into sound.

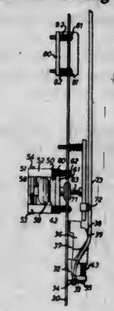
3,288,906
STRINGED MUSICAL INSTRUMENTS WITH PICK-UP AND DAMPING MEANS BETWEEN BRIDGE AND FINGERBOARD

James Ormston Burns, Buckhurst Hill, Essex, and Gordon Spencer Chandler, Frimley, near Aldershot, England, assignors to Ormston Burns Limited, London, England

Filed Apr. 23, 1964, Ser. No. 362,088
Claims priority, application Great Britain, Apr. 25, 1963, 16,256/63
17 Claims. (Cl. 84—1.16)

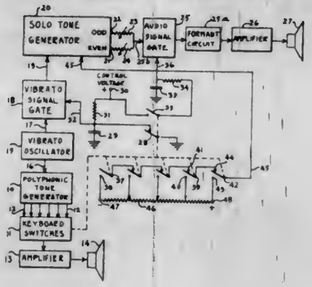
1. A contact pick-up unit for a stringed musical instrument having a body, a neck and fingerboard, a bridge on the body and means on the body and neck for stretching at least one string in spaced relationship to the fingerboard and in engagement with the bridge, comprising a magnetic core structure, at least one permanent magnet in said core structure, said magnetic core structure defining at least one air gap, an armature resiliently mounted in said air gap, a damping contact member for engagement with a string of a musical instrument at a location between the bridge and the fingerboard separately from and independently of its engagement with the bridge and

connected to said armature, and a coil surrounding part of said core structure for having induced therein elec-



trical signals derived from vibration of a string engaging said contact member.

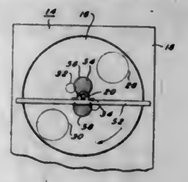
3,288,907
ELECTRONIC MUSICAL INSTRUMENT WITH DELAYED VIBRATO
Thomas J. George, Los Angeles, Calif., assignor to Hammond Organ Company, Chicago, Ill., a corporation of Delaware
Filed May 7, 1962, Ser. No. 192,922
19 Claims. (Cl. 84—1.25)



1. In an electronic musical instrument having a tone generator and a playing key for controlling the output of the generator, means for providing a delayed vibrato effect comprising a source of continuous vibrato signal voltage, a circuit means coupling said source to said tone generator for affecting the output tone of said generator at a vibrato rate, said circuit means including a normally inactive conductive device, a control switch adapted to be operated by said playing key, a control circuit coupled to said conductive device for rendering it active, said control circuit including said switch and said control circuit including means for providing a selected time delay in the rendering active of said conductive device.

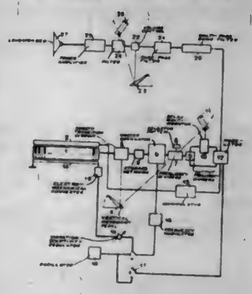
3,288,908
LOUDSPEAKER SYSTEM UTILIZING ROTATABLE SPEAKERS AND AN ACOUSTIC SHIELD FOR TREMOLO AND VIBRATO
Jerome Markowitz, Allentown, Pa., assignor to Allen Organ Company, Inc., Macungie, Pa., a corporation of Pennsylvania
Filed Nov. 18, 1963, Ser. No. 324,430
17 Claims. (Cl. 84—1.25)

1. Apparatus comprising a source of electrical frequency signals within the audio range, an acoustic transducer for transducing electrical signals into audio signals, connecting means connecting said source to said transducer to transmit high frequency electrical signals within the audio range to said transducer, an acoustic shield spaced adjacent said transducer, motive power means for



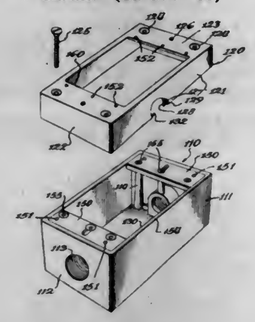
moving said transducer with respect to said acoustic shield to periodically pass said transducer by said shield, said acoustic shield periodically attenuating the audio output signals of said transducer.

3,288,909
KEYBOARD ELECTRIC MUSICAL INSTRUMENT
Andrey Alexandrovich Volodin, ul. Zemljachki 36, Apt. 26, Moscow, U.S.S.R.
Filed Nov. 21, 1960, Ser. No. 72,832
8 Claims. (Cl. 84—1.26)



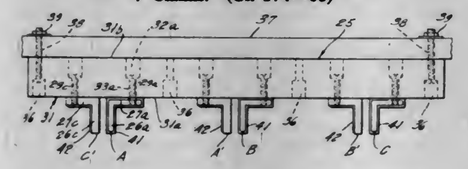
1. In an electrical musical instrument having a keyboard, a base therefor, and including an electrical sound frequency master oscillator, frequency dividers coupled to the output of the master oscillator, frequency filters coupled to the frequency dividers for shaping the wave form to provide a desired timbre of the sound, and means for converting the electrical oscillations to sound waves, the improvement comprising means for obtaining vibratory sound effects by vibrations of the keys of the keyboard by the fingers of a performer, said means including means mounting the keys of the keyboard for vertical movement and horizontal movement relative to and lengthwise of the keyboard, said means mounting the keys including spring means connecting the rear portion of each key to the keyboard base to permit said vertical and horizontal movements of the keys, the rear portions of the keys being wider than the remaining portions thereof, the rear portions of alternate keys overlapping those of adjacent keys, an elongated bar member beneath the keyboard extending along the length thereof and serving as a seat for the keys when depressed by the fingers, flexible means mounting the bar member for vibratory movements lengthwise of the keyboard by a key when seated thereon, means operated by the mechanical vibrations of the bar member for deriving an oscillating voltage of a frequency corresponding to the vibrations of the bar member, and means for applying said oscillating voltage to the input of said sound frequency oscillator to frequency modulate the latter at the frequency of the mechanical vibrations.

3,288,910
WEATHERPROOF EXTENSION FOR OUTLET BOX
Paul J. Zerwes, Chicago, Ill., assignor to Bell Electric Company, Chicago, Ill., a corporation of Illinois
Filed Jan. 21, 1964, Ser. No. 339,295
7 Claims. (Cl. 174—53)



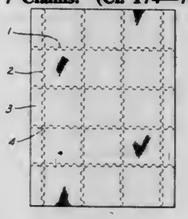
5. In an electrical outlet box including a lower body portion, said body portion having spaced vertical end and side walls; the improvement comprising an extension ring adapted to be mounted on said body portion and have electrical apparatus secured thereto instead of to said body portion, said ring having spaced end and side walls, the walls of said ring being thicker than the walls of said body portion and adapted to fit flush therewith along the outer surface of said body portion, a groove formed in the peripheral bottom face of said extension ring, said groove being defined by a short outer lip and a long inner lip, said inner lip being adapted to overlie a section of the inner faces of said body portion walls when the ring is secured to said body portion, the inner edge of the top peripheral face of said body portion being curved, resilient gasket means fitted within said groove and adapted to be seated against the top peripheral face of said body portion, and means to secure said extension ring tightly to said body portion, whereby said gasket is compressed and extruded into a generally triangular cross-sectional space between the long inner lip and the curved inner edge of the top peripheral face of said body portion.

3,288,911
HIGH CAPACITY LOW IMPEDANCE CRANEWAY DUCT HAVING L-SHAPED BUS BARS MOUNTED IN A PAIRED PHASE ARRANGEMENT
Keith H. Grimm, Detroit, Mich., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Feb. 28, 1964, Ser. No. 348,066
7 Claims. (Cl. 174—68)



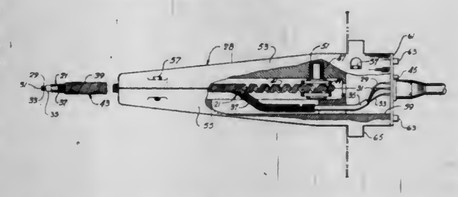
1. An elongated duct system for the distribution of multiphase electrical energy; said system including a first and second conductor for each phase of said system; mounting means positioning said conductors of all phases spaced from each other and generally parallel to the longitudinal axis of the duct; means electrically connecting said conductors in a paired phase arrangement; said first of the conductors of each phase having a generally L-shaped cross-section including a first leg and a second leg; said first leg being in engagement with said mounting means; said first legs of all of said first conductors positioned in substantially the same plane; said second legs of all of said first conductors extending in the same direction from said plane and generally parallel to each other; said mounting means being comprised of a plurality of insulating members extending transverse to the longitudinal axis of the duct and spaced along said axis; all of said conductors being disposed forward of said members.

3,288,912
CARPETS WIRED FOR SOUND
Ray W. Hussey, 1335 N. McCadden Place, Los Angeles, Calif.
Filed Sept. 17, 1964, Ser. No. 397,341
7 Claims. (Cl. 174—70)



1. As an article of manufacture, a multi-edged carpet element including near the bottom surface thereof extensible audio-frequency wires extending from edge to edge thereof with each such wire undulating throughout its length and initially terminating in opposed end portions substantially flush with a corresponding edge of the carpet element, each end portion being extendable beyond the corresponding edge forming a terminal portion connectable to audio components for transmission of audio-frequency signals along the wire.

3,288,913
STRAIN TERMINATION COUPLING
Duane E. Maddux, Santee, Calif., assignor, by mesne assignments, to Marine Advisers, Inc., La Jolla, Calif., a corporation of Delaware
Filed Dec. 14, 1964, Ser. No. 418,066
5 Claims. (Cl. 174—79)

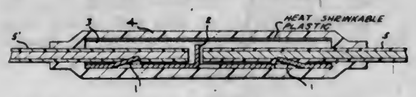


1. A heavy duty strain termination device for use with a transmission line, comprising:
- a hollow body portion having an opening at one end;
- a load bearing support inside said body portion;
- a flexible fastening member positioned in engagement with said load bearing support and extending out of said opening to closely engage said transmission line and take mechanical loads imposed upon said body portion and transmission line;
- connecting means in said body portion for connection with the transmission line; and
- a sealing and supporting compound disposed in said hollow body portion and filling the interior thereof.

3,288,914
ELECTRICAL CONNECTOR HAVING A RESILIENT CONDUCTOR-ENGAGING AREA

Glenwood Arthur Fuller, Hershey, and Kenneth Leon Whitmoyer, Camp Hill, Pa., assignors to AMP Incorporated, Harrisburg, Pa.

Filed Apr. 5, 1965, Ser. No. 445,352
2 Claims. (Cl. 174—84)

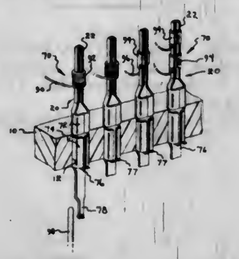


1. In a connector of the type described, a conductive tubular member having at least three sides, spring projections disposed in each side of said tubular member and including free ends extending away from an end of said tubular member, said spring projections having a truncated configuration with said free ends being of less width than the width of opposite ends integrally connected to said sides, said free ends being directed toward each other and being disposed adjacent each other to define a common conductor-engaging area disposed in a plane substantially normal to a longitudinal axis of said tubular member, said conductor-engaging area defining a configuration similar to that of said tubular member to provide uniform engagement pressure on an electrical conductor means when placed within said conductor-engaging area with the free ends of the spring projections biting into the electrical conductor means upon the electrical conductor means being moved in a direction opposite to its direction of insertion to provide a mechanical and electrical connection.

3,288,915
ELECTRICAL TERMINAL MEANS

John G. Hatfield, Camp Hill, and Robert M. Murray, Elizabethtown, Pa., assignors to AMP Incorporated, Harrisburg, Pa.

Filed July 25, 1963, Ser. No. 298,002
5 Claims. (Cl. 174—94)

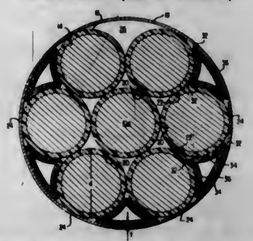


1. In an article adapted to be mounted in a board member to receive electrical leads applied thereto, a terminal device formed of one piece, thin metal sheet material including an anchoring portion for supporting said device in the board member, a transition portion axially extending from said anchoring portion and a post portion axially extending from said transition portion, the said transition portion including walls shaped to resist bending and twisting movements of said post portion relative to said anchoring portion, the said post portion having four sharp, parallel edges each comprised of a zone of work-hardened material localized to each edge with each edge exteriorly disposed on said post about at least three distinct walls separated by at least two distinct interior corners, the material adjacent each said corner having a zone of work-hardened material extending outwardly therefrom to rigidly join said walls against relative movement so as to define a cross-sectional configuration of said post portion to resist bending and twisting movements therein and to preclude collapse of said walls under forces developed by the application of electrical leads thereto.

3,288,916
MULTIPLE CONDUCTOR CABLE WITH TUBULAR FOAM FILLER INSULATION

Archie W. Koon, Auburn, N.Y., assignor to Columbian Rope Company, Auburn, N.Y., a corporation of New York

Filed July 28, 1964, Ser. No. 385,600
4 Claims. (Cl. 174—116)

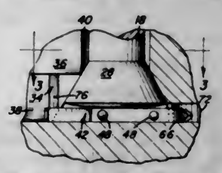


1. A conductor cable comprising a number of elongate conductors, a tubular sheath enclosing and engaging the conductors and defining therewith a number of elongate cavities, and a number of elongate tubular fillers of foam plastic received in the cavities, each filler having two concave walls in contour engagement with an associated pair of conductors and a convex third wall in contour engagement with the inner surface of said sheath, said convex and concave walls having a total cross-sectional area equal to approximately 80% of the cross-sectional area of one cavity.

3,288,917
INSULATOR LOCKING PIN

Harold C. Preston, 12 Linden St., Avon, N.Y.

Filed Sept. 17, 1965, Ser. No. 488,162
2 Claims. (Cl. 174—150)



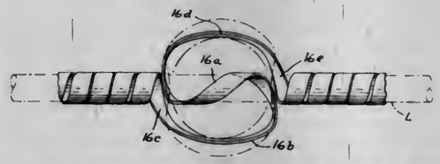
1. An insulator and hanging pin therefor, said insulator including a base cap mounted thereon and projecting upwardly therefrom, said cap having an enlarged internal recess therein, an upwardly directed reduced diameter bore extending from said recess through said cap, a lateral slot communicating with said recess and bore throughout the height thereof, a passage through said cap diametrically opposed to the lower end of the slot, said hanging pin having an elongated shank and an enlarged head on the lower end thereof, said hanging pin being received within said recess and bore laterally through said slot, said bore receiving said shank and excluding said enlarged head from passage upward therethrough, said head being vertically adjustable to a limited degree within said recess, said head being laterally movable through said slot solely in the plane of the lowermost position of the head within the recess, and locking means positioned within the recess below the head, subsequent to the insertion of the head, for retaining said head in a raised position within said recess so as to prevent withdrawal of the head through the slot, said locking means comprising an elongated rigid

body extending diametrically across said recess, a pair of laterally directed rigid legs on one end of said body extending beyond said recess and into said slot, said slot including shoulder means therein, said legs being engaged behind said shoulder means and retained against movement inward toward said recess, a second pair of generally longitudinally directed legs on the second end of said body, said second pair of legs extending beyond said recess and into said passage, laterally directed shoulder means located at opposite sides of said passage, said second pair of legs being laterally deformed into engagement behind the passage shoulder means for retention thereby against inward movement toward said recess.

3,288,918
APPARATUS FOR SECURING LINES TO SUPPORTS

Seymour N. Schlein, University Heights, Ohio, assignor to The Fanner Manufacturing Company, a division of Textron Inc., Cleveland, Ohio, a corporation of Rhode Island

Filed Feb. 16, 1965, Ser. No. 433,048
9 Claims. (Cl. 174—173)

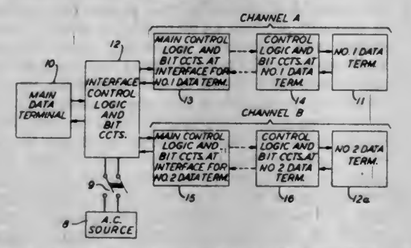


1. In combination with a line and a support having a groove forming a neck on the support with said line being disposed in the groove, a preformed line tie tying the line to the support which comprises a helical ribbon having close wound convolutions which are wide, and the thickness thin, formed of a highly resilient material, said convolutions being capable of being easily spread and uncoiled by hand and to be held in a straightened position and capable of returning to its original helical conformation when released, said ribbon being temporarily straightened intermediate its opposite ends and said straightened portion being wrapped around the support on the opposite side of the groove from the line and said remaining helical ends being wrapped around the line on opposite sides of the support and extending in opposite directions.

3,288,919
DATA TRANSMISSION SYSTEM

Henry H. Abbott and Renato D. Fracassi, Middletown, Edward G. Hughes, Leonardo, and Chester W. Lonnquist, Eatontown, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 10, 1962, Ser. No. 243,668
25 Claims. (Cl. 178—3)



1. A system for communicating data messages, each comprising a plurality of digital data components,

a main station and a plurality of other stations for processing said components of each of said messages, each of said stations having a plurality of terminal leads,

a plurality of channels for communicating said messages between said stations, each of said channels having a plurality of terminal leads at one end connectable to the plurality of terminal leads at one of said other stations, each of said channels also having a plurality of terminal leads at its opposite end, and

means for connecting said main station to the opposite end of each of said channels and thereby to the one of the other stations connected thereto,

said connecting means including a plurality of input terminal leads connected to the plurality of terminal leads at said main station and two additional pluralities of output terminal leads, each of said last-mentioned two pluralities of terminal leads connectable to the plurality of terminal leads at the opposite end of one of said channels, each lead of each of said pluralities of leads communicating one of said components of each of said messages whereby all components of each message are communicated in parallel at one time,

said connecting means activated by a preselected signal received from said main station for connecting the plurality of terminal leads of said main station to the plurality of terminal leads at the opposite end of a predetermined one of said channels and thereby to the one of said other stations,

additional means in said connecting means responsive to a clock signal originated at said main station establishing a preference for connecting to a particular one of said plurality of channels,

other means in said connecting means transmitting a make-busy signal to the particular preferred one of said channels upon connection thereof to said main station,

means in said particular preferred channel responsive to said make-busy signal for simultaneously exchanging idle and busy signal voltages with said connecting means,

other means in said preferred channel transmitting to said connecting means a predetermined signal voltage indicating the communication of a discrete message thereover,

corresponding means in said connecting means relaying said predetermined signal voltage to said main station,

said corresponding means comprising flip-flop means normally activated to manifest two different states at the same time in response to said predetermined signal voltage,

switch means in said preferred channel communicating said predetermined signal voltage to said connecting means, said switch when activated tending to provide such an amount of chatter as to constitute an extraneous voltage having the effect of locking said flip-flop means in two identical states at the same time thereby precluding the translation of said predetermined signal voltage reliably to said connecting means, and

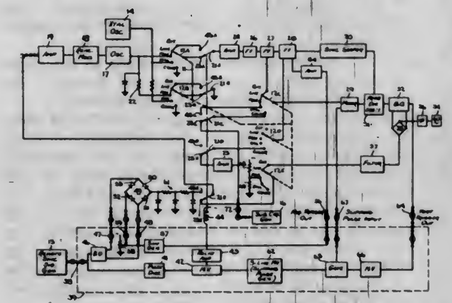
interlocking means within said flip-flop means overcoming the precluding effect of said extraneous voltage and forcing said flip-flop means to manifest said two different simultaneous states,

said connecting means and predetermined channel further activated by said preselected signal for communicating all components of each of said messages in parallel at the same time on said connected pluralities of terminal leads from said main station to said one station connected to said predetermined one channel.

3,288,920
SYNCHRONIZING SIGNAL GENERATOR FOR MULTI-MODE OPERATION

Albert J. Baracket, Cedar Grove, N.J., assignor to Diamond Power Specialty Corporation, Lancaster, Ohio, a corporation of Ohio

Filed Sept. 5, 1962, Ser. No. 221,461
3 Claims. (Cl. 178—5.4)

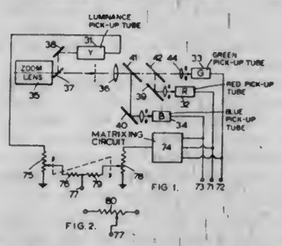


1. A television synchronizing signal generator system comprising: a first oscillator; a reactance modulator to control the frequency thereof; a frequency divider circuit; first means connecting said oscillator to said frequency divider circuit to control the operation thereof; second means to generate a direct voltage signal; a circuit including a switch to connect said second means to said reactance modulator to control the frequency of said first oscillator in accordance with the magnitude of said direct voltage; a second synchronizing signal generator having a second oscillator; third means to derive a direct voltage having a magnitude dependent upon the relative frequencies of said first and second oscillators; a relay connected to said second generator and having contact means to disconnect said circuit and to connect said second oscillator to said third means to control the frequency of said first oscillator in accordance with the frequency of said second oscillator when said second generator is operating; and a color sub-carrier generator, said first means comprising a second switch to connect said sub-carrier generator or said first oscillator to said frequency divider circuit to control the same.

3,288,921
TELEVISION CAMERA INCLUDING MEANS FOR VARYING THE DEPTH OF FOCUS

Ivanhoe John Penfound James, Ealing, London, and Denis Gordon Perkins, Gerrards Cross, England, assignors to Electric & Musical Industries Limited, Hayes, England, a British company

Filed Oct. 28, 1963, Ser. No. 319,401
Claims priority, application Great Britain, Nov. 9, 1962, 42,516/62
5 Claims. (Cl. 178—5.4)

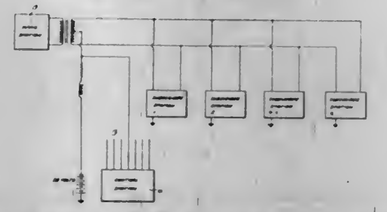


1. A colour television camera arrangement comprising a luminance pick-up tube for generating a signal representing the luminance of an object, means including at least one other pick-up tube for generating a second signal representing the luminance of said object, an optical system for applying light to said tubes, said system including means to select axial rays to form an image on the target of said luminance pick-up tube and to select marginal rays to form an image on the target of said other pick-up tube, and control means for combining the two luminance signals in different proportion to produce a resultant luminance signal which effectively relates to an image of said object the depth of focus of which is variable in response to said control means.

3,288,922
COMMUNICATION SYSTEM

Harold R. Walker, Metuchen, N.J., assignor to Teleglobe Pay-TV System, Inc., New York, N.Y.

Filed Apr. 3, 1963, Ser. No. 270,345
10 Claims. (Cl. 178—6)

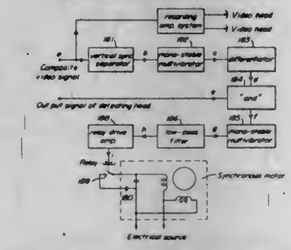


1. A pay TV system for determining the operation condition of each of a plurality of subscriber stations comprising, in combination,
a central station;
a plurality of subscriber stations;
wire means extending from said central station to each of said subscribed stations;
audio means for transmitting an audio signal to said subscriber stations via said wire means;
signal generating means connected to said wire means at each subscriber station producing an identification signal of a predetermined frequency different from the frequencies of the signal generating means at the other subscriber stations;
transducer means at each subscriber station for reproducing an audio signal;
switch means at each subscriber station movable between a first position in which said switch means makes the signal generating means at said subscriber station operative and opens a circuit from said wire means to the transducer means at said subscriber station and a second position in which said switch means makes said signal generating means inoperative and closes a circuit from said wire means to said transducer means so that in the first position of said switch means an identification signal is transmitted from said signal generating means via said wire means to said central station and an audio signal in said wire means is not reproduced by said transducer means and in the second position of said switch means an identification signal is not transmitted from said signal generating means to said central station and an audio signal in said wire means is reproduced by said transducer means; and
indicating means at said central station connected to said wire means for indicating the position of the switch at each subscriber station thereby indicating that the associated transducer means is connected to said wire means.

3,288,923
SYNCHRONIZING APPARATUS USING CONTROLLED SLIP SYNCHRONOUS MOTOR

Ichiro Arimura, Kyoto, and Sadaharu Wada, Osaka, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan

Filed Oct. 19, 1962, Ser. No. 231,793
Claims priority, application Japan, Oct. 21, 1961, 36/38,190; Sept. 27, 1962, 37/42,361, 37/42,362
10 Claims. (Cl. 178—6.6)

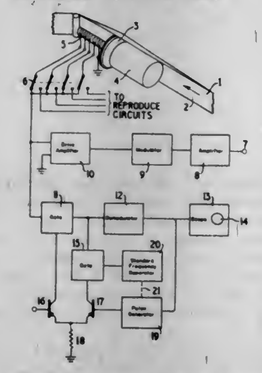


7. A magnetic recording and reproducing system comprising a synchronous motor adapted to be driven by a suitable electrical source, means for producing a first signal in synchronism with the rotation of said synchronous motor, means for recording an input signal including a signal having a frequency and a phase responsive to the frequency and the phase of said electrical source, respectively, means for providing a second signal having synchronous relation with said electrical source from said input signal, means for comparing the phases of said first and second signals with each other and for providing an error output signal corresponding to the difference between said phases, and means for controlling the rotational phase of said synchronous motor by utilization of the slip of said synchronous motor to keep said error output signal at a constant value.

3,288,924
MAGNETIC TAPE APPARATUS

John Lewis Edwin Baldwin, Croydon, Surrey, England, assignor to Rank-Bush Murphy Limited, London, England, a British company

Filed July 23, 1963, Ser. No. 297,102
Claims priority, application Great Britain, July 24, 1962, 28,432/62
11 Claims. (Cl. 178—6.6)

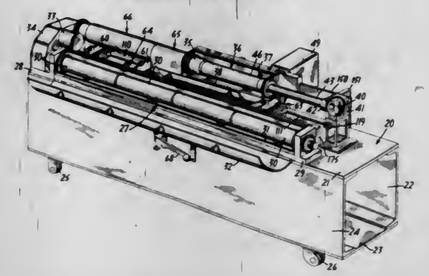


6. Magnetic tape apparatus comprising, in combination: a magnetic tape carrying in tracks extending transversely thereof a magnetic record of a frequency-modulated signal having a predetermined modulation range; drive means for traversing said tape through a reproducing position; a rotating member at said reproducing position carrying a plurality of transducer heads; guide means at said reproducing position constraining said tape to embrace said member whereby said transducer heads engage said record tracks in succession to reproduce said signal therefrom; an output terminal; a plurality of gating means each operable to connect a respective one of said transducer heads to said output terminal; a signal generator yielding a standard signal having a frequency within said modulation range; further gating means operable to connect said signal generator to said output terminal; and gate control means operating said gating means to cause said standard signal to be connected to said output terminal in place of said reproduced signal during a portion of the period in which each said transducer head is operative.

3,288,925
APPARATUS FOR PREPARING COLOR SEPARATION NEGATIVES

William West Moe, Stratford, Conn., assignor to Time, Incorporated, New York, N.Y., a corporation of New York

Filed Nov. 28, 1962, Ser. No. 240,642
34 Claims. (Cl. 178—6.7)



1. Image reproducing apparatus comprising a base member, a first image medium support member for supporting an image-bearing medium for angular motion about a first axis, a second image medium support member for supporting an image receiving medium for angular motion about a second axis which is displaced from the first axis, mounting means for mounting one of the first and second image medium support members in longitudinally fixed position on the base member, means for detecting an image on a medium supported on the first member and producing a corresponding image on a medium supported on the second member, drive means connected to impart angular motion to one of the members, and coupling means connecting the two members for simultaneous angular motion in precisely repetitive angular relation.

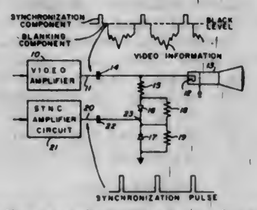
3,288,926
DIRECT CURRENT RESTORATION CIRCUIT

Gordon B. Thompson, Belleville, Ontario, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada

Filed July 1, 1963, Ser. No. 291,836
8 Claims. (Cl. 178—7.3)

1. A direct current restoration circuit for an image reproducing device, said circuit being adapted to receive a synchronization pulse and a video signal having a blanking component and a synchronization component superimposed on the blanking component, said synchronization pulse being coincident with said synchronization component, said circuit comprising input and output connections for connecting the video signal thereto and therefrom respectively, a first coupling capacitor serially con-

nected between said input and output connections, a first and a second unidirectional device serially connected in reverse polarity across said output connections, means for coupling the synchronization pulse to the junction of the first and the second unidirectional devices through a

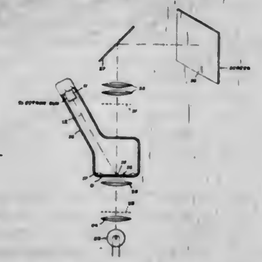


second coupling capacitor so as to render said unidirectional devices non-conductive during the presence of said synchronization pulse, and resistive means for controlling the conduction of said unidirectional devices so as to clamp the blanking component of the video signal to a predetermined potential.

3,288,927
PROJECTION SYSTEM

Ralph E. Plump, Taftsville, Vt., assignor to General Electric Company, a corporation of New York

Filed Jan. 2, 1964, Ser. No. 335,151
6 Claims. (Cl. 178—7.5)



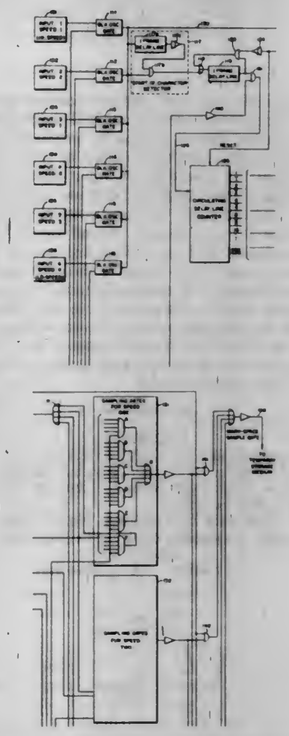
1. In a projection system comprising a container having conducting interior, a deformable medium in said container, electron beam means for producing an electrical charge on the surface of said deformable medium as a function of an applied electrical signal and cooperating with said conducting interior to subject the medium to a deforming force to produce deformations in the surface of said medium and a light and optical system for projecting light as a function of the deformations in the surface of said medium, the improvement which comprises using as said deformable medium the Friedel-Crafts reaction product of benzyl chloride and a material selected from the class consisting of benzene, toluene, xylene, benzyl toluene, diphenyl methane, and mixtures thereof, said product having a viscosity of at least 100 centistokes (cs.) at 25° C.

3,288,928
SAMPLING DETECTOR

William F. Bartlett, Rochester, and Barrie Brightman, Webster, N.Y., assignors to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware

Filed Aug. 21, 1963, Ser. No. 303,519
12 Claims. (Cl. 178—50)

1. In a data handling system, a common signaling channel, first and second signal sources for providing groups of signals at first and second predetermined bit-per-second rates, respectively, time division multiplex means coupled to said sources for applying signal samples from said first and second signal sources to said common signaling channel once per repetitive time frame in first and second time slots, respectively, common detecting means coupled to said common signaling channel for providing first and second start signals in said first and second time slots in response to the start of a group of signals from said first and second source, respectively, common counting means coupled to said detecting means and responsive to said first and second start signals for producing a first and second series of indications in said first and second time slots, respectively, which are indicative of the duration of the elapsed time, as measured in time periods comprising a predetermined number of frame periods, subsequent to the generation of said first and second start signals, respectively, a common signal output channel, a first group of sampling gates coupling said common sig-

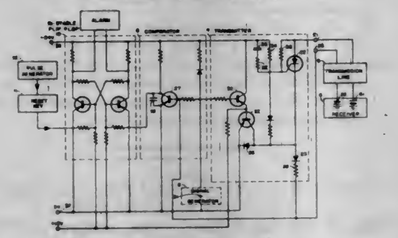


naling channel and said common signal output channel and associated with said first signal source for gating a first signal sampled from said first source to said common signal output channel in said first time slot only when said common counting means produces a signal in said first time slot indicating that a first predetermined time has elapsed subsequent to the generation of said first start signal, and a second group of sampling gates coupling said common signaling channel and said common signal output channel and associated with said second signal source for gating a first signal sampled from said second source to said common signal output channel in said second time slot only when said common counting means produces a signal in said second time slot indicating that a second predetermined time has elapsed subsequent to the generation of said second start signal.

3,288,929
TRANSMISSION LINE BREAK DETECTING CIRCUIT

David Norman Hutchinson, Dorval, Quebec, Canada, assignor, by mesne assignments, to The Bell Telephone Company of Canada

Continuation of application Ser. No. 280,845, May 16, 1963. This application June 21, 1965, Ser. No. 465,610
5 Claims. (Cl. 178—69)

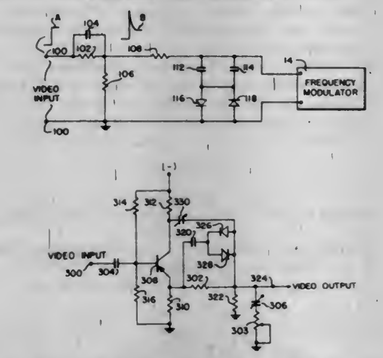


1. In an electrical data transmission system, a transmission line break detecting circuit comprising:
(a) a signal generator, responsive to a data source for generating electrical signals representing the data;
(b) a transmission line;
(c) a transmitter, including a silicon controlled rectifier responsive to the signal generator for transmitting the electrical signals to the transmission line; and
(d) a comparator, connected to the signal generator and to the transmission line, arranged to compare the electrical signals from the signal generator and from the transmission line, and to generate a comparator output signal if the electrical signals are different when no current is flowing in the transmission line.

3,288,930
WIDE-BAND SIGNAL-TRANSLATING CHANNEL

Wayne R. Johnson, Woodland Hills, Calif., assignor to Winston Research Corporation, a corporation of California

Filed Nov. 12, 1964, Ser. No. 410,529
8 Claims. (Cl. 179—1)

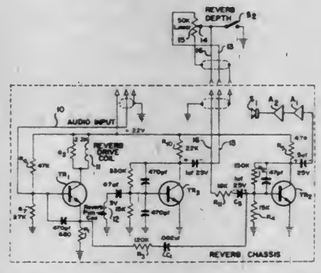


1. A wide-band signal-translating channel subject to undesired broad-spectrum noise comprising in cascade, in the order named:
an input circuit for supplying a signal within a given amplitude range comprising components within a wide band of frequencies;
a pre-emphasis circuit coupled to said input circuit and having a frequency-response characteristic accentuating the components of a translated signal as a continuous direct function of their frequencies;
a signal-attenuating circuit coupled to said pre-emphasis circuit and having a nonlinear amplitude-response characteristic over said amplitude range as modified by said pre-emphasis circuit accentuating attenuation of high-frequency signals of high amplitude;
a frequency-discriminating signal-translating circuit coupled to said signal-attenuating circuit having a nonlinear amplitude-response characteristic over the amplitude range of the signals applied thereto accentuating high-frequency signals of high amplitude;
and a de-emphasis circuit coupled to said frequency-discriminating circuit having a frequency-response characteristic which is substantially a continuous inverse function of frequency.

3,288,931
TAPERED SPRING REVERBERATION DELAY LINE DRIVE APPARATUS

David A. Bunger, Cincinnati, Ohio, assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio

Filed July 30, 1965, Ser. No. 476,138
6 Claims. (Cl. 179—1)



1. A driver amplifier for an audio frequency band electromagnetic transducer, comprising
a transistor including a collector, a base and an emitter,
a voltage supply point,
a drive coil of said transducer,
means connecting said drive coil intermediate said voltage supply point and said collector,
means biasing said base to provide a sufficiently high resistance at said collector as seen by said drive coil to provide a constant current drive source for said drive coil,
said drive coil having low impedance relative to said high resistance for all frequencies of said audio band,
a resistance connected in shunt to said drive coil,
said resistance having a value greater than the impedance of said drive coil at low audio frequencies and smaller than the impedance of said drive coil at high audio frequencies,
said resistance having a value taken in parallel with the impedance of said drive coil such as to maintain said transistor operative in a substantially linear region over said audio frequency band.

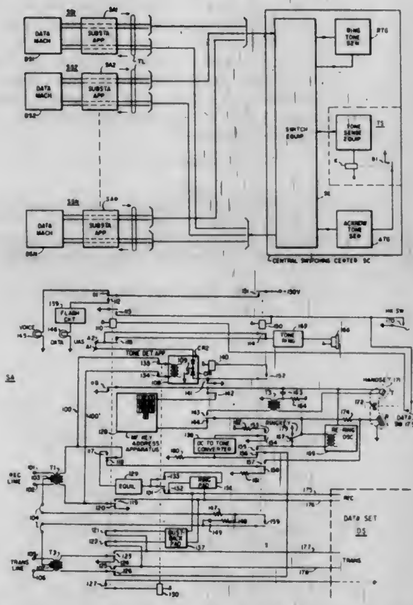
3,288,932
VOICE-DATA SUBSTATION APPARATUS ACTUATED BY TONE FROM CENTRAL SWITCHING OFFICE

Robert T. Cleary, Lockport, and Robert V. Burns, Markham, Ill., assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed Apr. 24, 1963, Ser. No. 275,373
3 Claims. (Cl. 179—2)

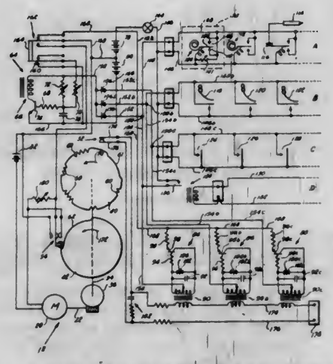
1. In a communication system, a central switching office including switching means operated in response to

voice-frequency address signals and means for generating an acknowledgment tone operated in response to the receipt of a voice-frequency address, a substation including voice-frequency signalling apparatus for providing said address signals, a normally disabled transmitter for pro-



viding voice transmission, and means comprising tone detecting means and relay means controlled by said tone detecting means to enable said transmitter and disable said voice-frequency signalling apparatus in response to said acknowledgment tone.

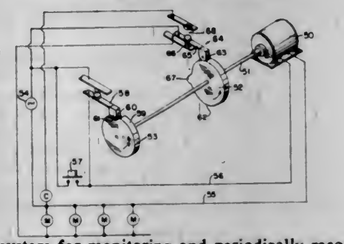
3,288,933
AUTOMATIC DIAL TELEPHONE ALARM WITH TWO-SPEED MOTOR
John T. Beeston, Jr., 712 32nd St., Des Moines, Iowa
Filed May 8, 1963, Ser. No. 278,882
20 Claims. (Cl. 179—5)



1. In a telephone dialing system adapted to automatically dial a telephone number, the combination of:

(a) switching means adapted to be connected across a telephone line to transmit information thereto;
(b) drivable switch operating means for opening and closing said switching means to simulate the dialing of a telephone number and for maintaining said switching means closed for a given interval of time preceding a simulated dialing;
(c) electrical motor means for driving said switch operating means;
(d) electrical means for energizing said motor at a first speed and a second faster speed; and,
(e) control means for selectively operating said electrical means whereby said switch operating means is driven at a faster speed during a simulated dialing than during said given interval.

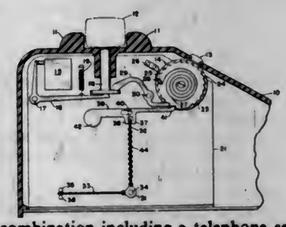
3,288,934
TIME TOTALIZER SYSTEM FOR TELEPHONE CIRCUITS AND THE LIKE
Arthur W. Haydon, Milford, Conn., assignor to Tri-Tech, Inc., a corporation of Connecticut
Filed June 10, 1963, Ser. No. 286,641
17 Claims. (Cl. 179—8)



1. A system for monitoring and periodically recording the time usage of a plurality of telephone circuits or the like, which comprises

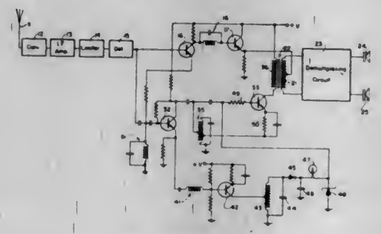
(a) a transfer counter type indicator for each circuit or the like,
(b) a substantially instant start-stop, controlled-speed motor for each indicator, for driving the indicator,
(c) overcentering, lost motion drive means coupling each motor with its indicator, whereby each indicator has substantially instantaneous, unrestricted transfer motion, and
(d) control means operable to deactivate the motors of a predetermined group, after a predetermined interval to effect a recordation of the condition of the individual counters of the group, and immediately thereafter to reactivate the motors of said group.

3,288,935
APPARATUS FOR REGISTERING TELEPHONE CALLS
Neal Hepner, 4246 Sandy Lane, Birmingham, Mich.
Filed Nov. 20, 1963, Ser. No. 324,917
5 Claims. (Cl. 179—11)



1. The combination including a telephone set having a switchhook operable as a function of normal use of the telephone, register means for recording the incidence of incoming telephone calls, and clearing means for removing recorded information stored in said register means, said clearing means being controllable by movement of said switchhook.

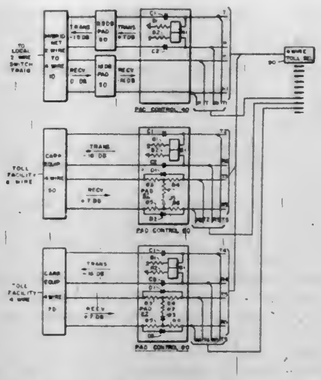
3,288,936
FREQUENCY MODULATION MULTIPLEX RECEIVER USING A VISUAL INDICATOR TO CONTROL LOCAL OSCILLATOR
Kamil Y. Jabbar, Chicago, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Oct. 6, 1964, Ser. No. 401,809
4 Claims. (Cl. 179—15)



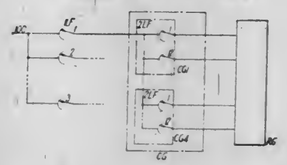
1. An indicator and control circuit for a frequency modulation receiver capable of receiving multiplex and non-multiplex signals and having a local oscillator operable upon the application of a given bias voltage thereto for producing carrier signals representative of the suppressed carrier signals at the transmitter, said indicator and control circuit including in combination, circuit means for detectng and amplifying the multiplex pilot signals upon receipt of multiplex signals by the receiver, rectifier means connected to said circuit means for rectifying the pilot signals detected and amplified thereby, a neon bulb and a reverse poled zener diode connected in series to said rectifier means, and conducting rectified pilot signals therefrom, said zener diode having a given voltage drop thereacross when in reverse conduction, and conductor means for connecting the local oscillator across said zener diode to supply operating bias voltage thereto according to the given voltage drop across said zener diode in the presence of rectified pilot signals conducted through said neon bulb, said neon bulb presenting a high resistance in the absence of rectified pilot signals to prevent reverse conduction through said zener diode thereby removing bias voltage from the local oscillator.

3,288,937
DIODE SWITCHED PAD CIRCUIT
Marcus L. Donaldson, Mount Prospect, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Nov. 26, 1963, Ser. No. 325,858
8 Claims. (Cl. 179—16)

1. Transmission means including: a first signal path for the conduction of signals through said means; a second signal path including attenuation means; control means; said first signal path including unidirectional conducting means connected to said control means, operated in response to said control means to block conduction of signals through said signal path; whereby signals transmitted through said transmission means will be conducted via said second signal path, and attenuated by said attenuation means.



3,288,938
LINE FINDER START CIRCUIT
Egide Jacob Hendrik De Raedt and Andreas Michiel Cyriel Corneel Peeters, Antwerp, Belgium, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 15, 1963, Ser. No. 273,228
Claims priority, application Netherlands, Apr. 26, 1962, 277,690
9 Claims. (Cl. 179—18.6)



1. A telecommunication system for establishing a connection between a first circuit out of a first group of first circuits and a second circuit out of a second group of second circuits, said system comprising a first and a second hunting switch of at least a first and a second stage, said stages being arranged in cascade, a first circuit for receiving a marking signal, said first hunting switch having access to said first circuit, a second circuit, said second hunting switch having access to said second circuit, means responsive to a mark on said first circuit for seizing said first and second hunting switches substantially simultaneously, said first hunting switch and said second hunting switch responding to said seizure to be connected to said marked first circuit and to said seized first hunting switch respectively.

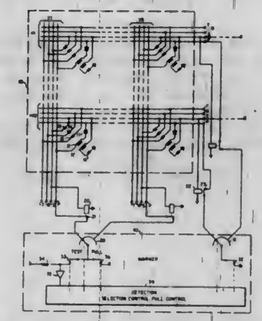
3,288,939
CROSSPOINT SWITCHING ARRAY AND CONTROL ARRANGEMENT THEREFOR
Kore K. Spellnes, Glen Ellyn, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Dec. 17, 1963, Ser. No. 331,282
3 Claims. (Cl. 179—18)

1. In a communication switching system, a first set and a second set of links, each link having a plurality of conductors including an operate conductor and a hold conductor, a switching matrix comprising a plurality of relays arranged in a coordinate array to selectively connect any link of the first set to any link of the second set under control of a marker arrangement,

each relay comprising two windings, for operate and hold respectively, a unidirectional device individual to each relay connected in series with the operate winding between the operate conductors of a link of the first set and a link of the second set, with the device poled for forward conduction at the first link with respect to the second link, each relay having a normally open contact set connected in series with its hold winding to the hold conductor of one of said links;

a busy relay individual to each link having a winding connected to the hold conductor and a normally closed contact set connecting the operate conductor to the marker arrangement;

said marker arrangement including means to establish a test circuit to the operate conductors of a link of the first set and a link of the second set with a source of potential placing the link of the first set at a different polarity with respect to the link of the second set, detecting means in the test circuit operated in response to the busy relay contacts in both the first-set link and the second-set link being closed to



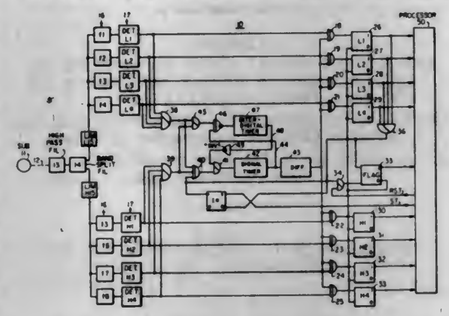
signal the availability of the path, means in the test circuit to limit the current flow through the relay operate winding to a value less than required to operate the relay, selecting means connected to the detecting means operative responsive to the availability signals to select an available path, means to establish an operate circuit to the operate conductors of the link of the first set and the link of the second set of the selected path with a source of potential placing the link of the first set at a different polarity with respect to the link of the second set to produce a current flow through the coordinate point relay operate winding of sufficient value to operate the relay, and thereby establish the link connection;

means responsive to establishment of the link connection to complete a hold circuit via the hold conductors thereof to the hold winding of the coordinate point relay and to the busy relay windings of both links, to thereby hold the link connection and to open the busy-relay contacts, which prevents selection of either link for another connection; the operate circuit being then released.

3,288,940
MULTIFREQUENCY SIGNAL RECEIVER
Thomas H. Bennett, Villa Park, and Ronald F. Kowalik, Lombard, Ill., assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Oct. 24, 1963, Ser. No. 318,576
12 Claims. (Cl. 179—84)

3. A signal receiver for sensing multifrequency signal bursts each comprising frequencies from a plurality of frequency groups, said receiver including means for separating said signal bursts into their component frequencies, means for detecting said component frequencies, and means for preventing signal burst simulation, said last-mentioned means comprising:

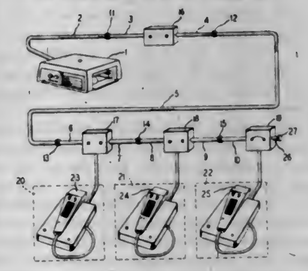
first means connected to and controlled by said detect-



ing means for timing a predetermined signal duration upon receipt of a signal burst;

and second means connected to and controlled by said detecting means for timing a predetermined interval upon the loss of a signal burst.

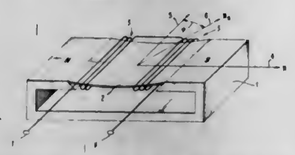
3,288,941
DICTATING SYSTEM
Matthew P. Langendorf and Lloyd E. West, Lexington, Ky., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 30, 1963, Ser. No. 334,210
20 Claims. (Cl. 179—100.1)



1. A control system for use with a central dictating machine having recording-reproducing means and a recording medium, the recording-reproducing means having a single record winding, at least one remote dictating station, each station having means to actuate the recording-reproducing means of the dictating machine for dictating from the station on the recording medium, means to actuate the recording-reproducing means for reviewing the material on the recording medium from the station, and means to connect the dictating means and the review means of only one station with the dictating machine at any time, said control system including:

means to automatically record a distinctive signal on the recording medium through the single record winding of the recording-reproducing means after the end of the recorded material of the disconnected station on the recording medium and on the same track as the recorded material of the disconnected station; and means responsive to said recorded distinctive signal to prevent listening at the next connected remote station to the material recorded on the recording medium prior to said distinctive signal.

3,288,942
TRANSDUCER DEVICE
Otto Voegeli, Lafayette, Ind., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 23, 1963, Ser. No. 332,703
11 Claims. (Cl. 179—110)



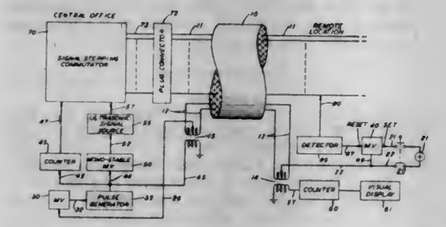
1. A transducer for converting mechanical to electrical energy comprising:

means for establishing a magnetic field,

a body of magnetostrictive material disposed in said magnetic field, said body having the easy axes of all the domains thereof in parallel,

and a pick-up coil associated with said body of magnetostrictive material.

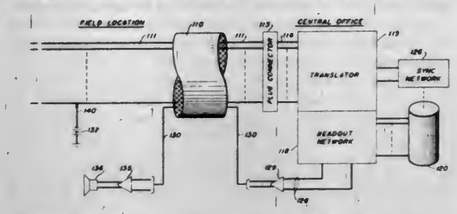
3,288,943
APPARATUS TO VISUALLY IDENTIFY CONDUCTOR PAIRS IN A MULTIPAIR CABLE
Clarence E. Bohnenblust, Saratoga, Calif., assignor to American Telephone and Telegraph Company, New York, N.Y., a corporation of New York
Filed Oct. 10, 1963, Ser. No. 315,128
9 Claims. (Cl. 179—175.3)



1. In combination, a multiconductor cable, means at one end of said cable to sequentially apply signals to individual conductors of said cable, counting means at the other end of said cable to count in synchronism with said sequential signal application means at said one end of said cable, visual display means to indicate the progress of said counting means, probing means at said other end of said cable, and inhibiting means to stop said sequential application means in response to a signal detected by said probing means.

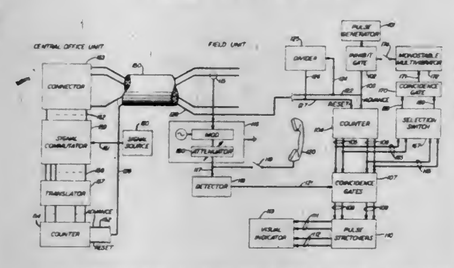
3,288,944
APPARATUS TO AUDIBLY IDENTIFY INDIVIDUAL CONDUCTORS IN A MULTICONDUCTOR CABLE
Norman P. Fleming, Los Angeles, Calif., assignor to American Telephone and Telegraph Company, New York, N.Y., a corporation of New York
Filed Oct. 10, 1963, Ser. No. 315,130
11 Claims. (Cl. 179—175.3)

11. A conductor pair identification system for a cable including a plurality of conductor pairs and having first and second terminations, said system comprising means at said first termination for applying a signal to a randomly selected one of said conductor pairs to be identified, identification storage means at said second termination, translation means at said second termination serving in response to the applied signal received at said second termination to gate out identification data stored in said storage means corresponding to said randomly selected



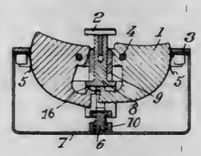
conductor pair, means to transmit said identification data to said first termination, and means at said first termination for indicating said identification data.

3,288,945
APPARATUS FOR VISUALLY IDENTIFYING CONDUCTOR PAIRS IN A MULTICONDUCTOR TELEPHONE CABLE WITH MULTIDIGITAL NUMBERS
Irving M. McNair, Jr., and Charles A. Young, Scotch Plains, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 10, 1963, Ser. No. 315,131
11 Claims. (Cl. 179—175.3)



1. In combination, a cable including a plurality of conductors connecting a central office to a remote location, signaling means at said central office to sequentially apply a signal to each one of said conductors, counting means at said remote location to sequentially advance in synchronism with said signaling means, probing means at said remote location to detect signals on individual ones of said conductors, and means responsive to said detected signal to indicate the state of said counting means.

3,288,946
SAFETY RELEASE FOR PUSH BUTTON SWITCH
Jean Paul Georges Borne, Paris, France, assignor to Laboratoires d'Electronique et de Physique Appliquees L.E.P.
Filed Dec. 7, 1965, Ser. No. 512,115
Claims priority, application France, Dec. 9, 1964, 998,025
2 Claims. (Cl. 200—5)



1. A safety release for a plurality of radially arranged push buttons and associated switches comprising a hous-

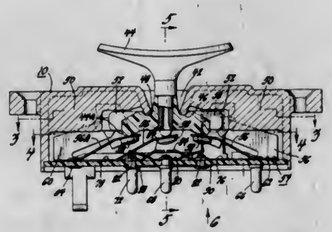
ing member having a plurality of switches and an associated push button, journal means for rotatably mounting each said push button on said housing member in radially spaced relation, and movable control means connected with each said push button, said control means being centrally located with respect to each said push buttons; said control means comprising an axially movable member having an enlarged portion at one end, a plurality of axially and radially extending slots in said enlarged portion, said slots intersecting within said enlarged portion for defining an axial central cavity terminating in a surface, said surface engaging with each said push button in its actuated position for preventing effective actuation of successive ones of said push buttons, axial movement of said control means displacing an actuated push button to its non-actuated position, and means coupled with each said push button for holding said buttons in their actuated position.

3,288,947

PIVOTABLE AND RECIPROCATING SIX-WAY ROTARY SEAT ADJUSTER

Bert R. Wanlass and Douglas C. B. Robertson, Warren, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Sept. 29, 1964, Ser. No. 399,964
7 Claims. (Cl. 200—6)



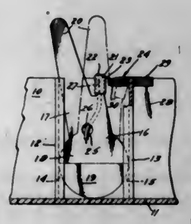
1. An electric switch for selecting and sequentially energizing a plurality of electrical circuits, said electric switch comprising: a switch body having an opening through one wall thereof; actuator means pivotally supported by portions of the opening in the switch body; means formed on said actuator means coacting with means on said switch body to provide said actuator means with an axial movement capability; first contact means carried in a fixed manner by the switch body and engaging leads to electrical circuits controllable by said electrical switch; second contact means arranged to bias said actuator means toward the opening in the switch body and including portions engaging leads to electrical circuits external to the switch body, said second contact means being deflectable toward said first contact means in response to a pivoting of the actuator means; and third contact means carried by the switch body and including deflectable portions interposed between the first and second contact means and being adapted to be engaged by the second contact means during deflection thereof to energize a first series of electrical circuits and being deflectable by the second contact means into conductive engagement with the first contact means wherein a second series of selected electrical circuits are energized while the first mentioned energized circuits remain energized; said second contact means including resilient portions arranged to center said actuator means after axial movement thereof, said second means adapted to center said actuator means in the opening of the switch body after tilting pivotal movement thereof.

3,288,948

ELECTRIC SWITCH WITH COIL SPRING CONTACT

Leonard H. McRoskey, Los Angeles, Calif., assignor to Republic Tool & Manufacturing Corp., a corporation of California

Filed Sept. 20, 1965, Ser. No. 488,431
6 Claims. (Cl. 200—6)



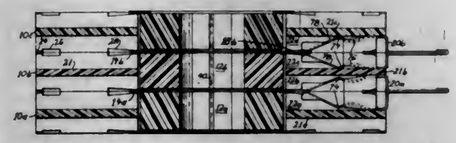
1. An electric switch, comprising:
(a) a support member;
(b) a coiled spring grippingly engaging an edge of said support member between adjacent of its coils, and having means for attaching a conductor connection therewith, and coils at one of its ends providing a laterally deflectable contact; and
(c) a manually movable member having a contact movable generally in the direction of the coiled spring axis and being engageable and disengageable by the movements of said member with the coils at said one end of the spring and in the engageable position being frictionally retained by the force and coils of the deflected spring.

3,288,949

MULTIPLE SWITCH ASSEMBLY HAVING STATOR CONTACTS WITH PRESTRESSED JAWS AND ALIGNMENT MEANS

Sidney L. Brown, Jr., Union, Ohio, assignor to Ledex, Inc., Dayton, Ohio, a corporation of Ohio

Filed Jan. 17, 1964, Ser. No. 338,431
29 Claims. (Cl. 200—11)



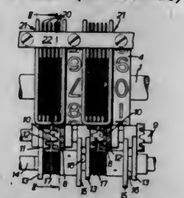
7. In a device of the class described, an electrically insulating mounting having spaced confronting wall portions, a conductive contact element, said contact element comprising a supporting body supported by said mounting and generally parallel elongated and coextensive finger portions supported at proximal ends thereof by said supporting body, said finger portions projecting laterally between said wall portions, said finger portions having confronting contact plates at the distal ends thereof and having confronting arched portions intermediate the proximal and distal ends thereof, said confronting arched portions arching oppositely away from one another toward said opposing wall portions, a contact blade, and means supporting said contact blade for movement relative to said mounting along a path passing between said contact plates, the thickness of said blade exceeding any difference between the distance between said wall portions and the distance between said arched portions at their outer apices.

3,288,950

CLUTCH APPARATUS FOR COUNTER SWITCH MECHANISM

John Robert Ashman, Fareham, England, assignor to Plessey-UK Limited, Ilford, England, a British company

Filed May 27, 1964, Ser. No. 370,733
Claims priority, application Great Britain, May 31, 1963, 21,805/63
7 Claims. (Cl. 200—18)



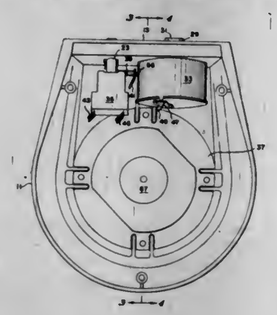
1. A switch mechanism having a plurality of switch units, a plurality of clutch means, one for each switch unit, first and second engageable clutch elements in each clutch means, means urging said first and second clutch elements of each clutch means to a disengaged position, means mechanically coupling the first clutch element of each clutch means to an associated switch unit, a first rotatable member carrying the second clutch element of all of said clutch means, a second rotatable member, a plurality of clutch actuating members, one for each clutch means, mounted on said second rotatable member, means coupling each clutch actuating member to one of the first and second clutch elements of the associated clutch means and means on each of said clutch actuating members, angularly distributed about the axis of rotation of the second rotatable member, for producing sequential engagement of the first and second clutch elements of said clutch means through said coupling means in response to rotation of said second rotatable member.

3,288,951

BLENDER CONTROL WITH MECHANICAL COUPLING BETWEEN SWITCH MECHANISM AND TIMER DRIVE

Edward J. Doyle, Avon, Conn., and Richard M. Pustinger, Tolland, Mass., assignors to Dynamics Corporation of America, New York, N.Y., a corporation of New York

Filed June 22, 1964, Ser. No. 376,804
6 Claims. (Cl. 200—35)



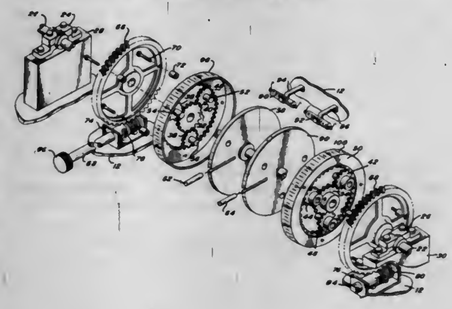
1. In a blending device, automatic control apparatus for said device comprising,
an electric motor,
an on-off electrical switching device,
a manually settable timing mechanism including a spring drive motor, and electrical contacts mechanically coupled to said spring drive motor,
circuit means for connecting said motor, said switching device and said timing mechanism in series, said timing mechanism closing said electrical contacts when said mechanism is operative, and
mechanical coupling means between said switching device and said timing mechanism for mechanically locking said timing mechanism when said switching device is in the off position.

3,288,952

ELECTRO-MECHANICAL TIMER

Robert L. Scott, Vineland, N.J., assignor to Maul Brothers Incorporated, Millville, N.J., a corporation of New Jersey

Filed July 13, 1964, Ser. No. 382,116
4 Claims. (Cl. 200—35)



1. Apparatus comprising a rotatable drive shaft, a sun gear fixed on said drive shaft and rotatable therewith, planet gears mechanically connected to said sun gear, an internal gear meshed with said planet gears and co-axial with said sun gear, said internal gear being normally held in a fixed position, a follower member adjustably mounted on said shaft, a plurality of shafts connecting said follower member to said planet gears, magnetic means mounted on said follower member, said magnetic means being adapted to actuate a magnetic switch, adjustment means connected to said internal gear for rotating said internal gear with respect to said sun gear to thereby rotate said planet gears for adjusting the rotative position of said follower member relative to said drive shaft, a calibrated drum mounted on said internal gear, said calibrated drum circumscribing the entire periphery of said internal gear, said adjustment means comprising a worm gear having teeth circumscribing the entire periphery thereof, said worm gear being rotatably mounted on said drive shaft, worm gear drive means for rotating said worm gear, said worm gear drive means being operable to rotate said worm gear throughout the entire periphery of said worm gear in either rotative direction to thereby adjust the rotative position of said follower member relative to said drive shaft.

3,288,953

CONTROL FOR ELECTRIC BLENDERS

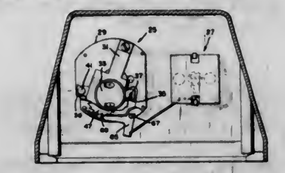
Roy L. Swanke, Newington, Conn., assignor to Dynamics Corporation of America, New York, N.Y., a corporation of New York

Filed May 26, 1966, Ser. No. 553,143
2 Claims. (Cl. 200—35)

1. In a blending device, automatic control apparatus for said device comprising,
an electric motor,
a rotatable switch having an off position and a plurality of on positions,
a manually settable timing mechanism including a

spring drive motor, and electrical contacts mechanically coupled to said spring drive motor,

circuit means for connecting said motor, said rotatable switch and said timing mechanism in series, said timing mechanism closing said electrical contacts when said mechanism is operative,



a rigid link secured to the shaft of said rotatable switch,

an arm rotatably secured to said switch and movable into a position to lock said timing mechanism, and

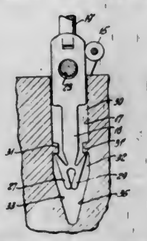
means coupling said arm to said rigid link, said link moving said arm into said positon to lock said timing mechanism when said switch is in said off position.

3,288,954

CIRCUIT BREAKER LOCKING MECHANISM

Alexander R. Norden, New York, N.Y., assignor to Murray Manufacturing Corporation, Brooklyn, N.Y., a corporation of New York

Filed Apr. 28, 1964, Ser. No. 363,233
9 Claims. (Cl. 200—42)



5. The combination with a permanently deformable locking member of a circuit controlling instrumentality having an enclosing insulator housing, an actuating handle passing through said housing for manual displacement between OFF and ON positions, and a recessed housing passage adjacent said handle for receiving, deforming and retaining a deformable locking member insert, said passage including flange means for snugly admitting an undeformed section of said locking member therethrough and an interior camming section for permanently deforming said locking member section and thereby preventing its retrograde through said flange means.

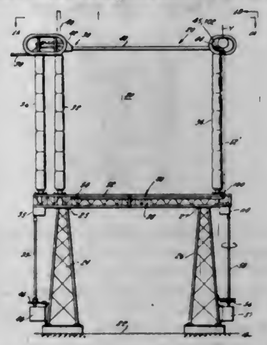
3,288,955

SWITCH OPERATING MECHANISM

Joseph A. Turgeon, Toronto, Ontario, Canada, assignor to I-T-E Circuit Breaker (Canada) Limited, Port Credit, Ontario, Canada, a company of Canada

Filed Mar. 19, 1965, Ser. No. 441,215
18 Claims. (Cl. 200—48)

1. In an electrical switch, an elongated contact blade pivotally supported at one end for compound angular movement in at least two directions to switch-closing and switch-opening positions respectively; contact means at the opposite end of said contact blade; a jaw contact positioned for cooperative engagement with said contact means when said contact blade is in said switch-closed position; said contact blade contained within a substantially vertically extending plane in said open position, with the longitudinal axis of said contact blade horizontally extending in said vertical plane, said jaw contact vertically displaced from said one end of said contact blade, said elongated blade substantially contained within said vertical plane in said closed position, with the longitudinal axis of said contact blade vertically extending in said vertical plane, blade operating means operatively connected to said one end of said elongated contact blade for moving



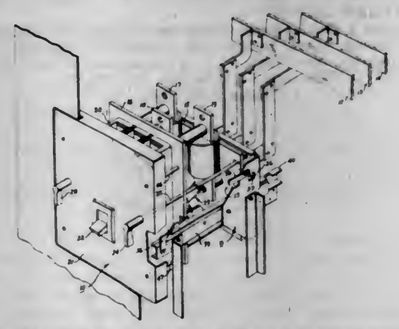
said contact blade in a predetermined path between said open and closed positions, said blade operating means including means for moving said contact blade about a vertically extending axis to define movement in a first angular direction and for moving said contact blade about a horizontal axis to define movement in a second angular direction.

3,288,956

DRAW-OUT SWITCH-GEAR INTERLOCK APPARATUS

Charles L. Jencks, Avon, and Frank H. Murphy, West Hartford, Conn., assignors to General Electric Company, a corporation of New York

Filed Mar. 1, 1965, Ser. No. 435,885
2 Claims. (Cl. 200—50)



1. Drawout electrical switchgear apparatus comprising:

(a) a main support;

(b) a secondary support;

(c) said main support and said secondary support including cooperating means slidably supporting said secondary support for reciprocal movement on said main support in a predetermined direction;

(d) an electrical control device mounted on said secondary support for movement therewithin between inserted and retracted positions, said control device including at least one contact member and a manually operable handle movable between open and closed circuit positions and means connecting said handle to said movable contact to move said contact to open and closed circuit positions upon movement of said handle to said open and closed circuit positions respectively;

(e) interlock means preventing movement of said secondary support so as to move said electrical control device from said inserted toward said retracted position while said movable contact member is in said closed circuit position;

(f) said interlock means comprising an elongated rod carried by said secondary support member, said rod extending substantially in said predetermined direction;

(g) manually operable handle means connected to said rod for rotating said rod between an interlocking position and a releasing position;

(h) a first extension extending from said rod and extending into an aperture in said main support when said secondary support is in a position corresponding to said inserted position of said control device;

(i) a second extension on said rod;

(j) a blocking member movably carried by said control device and means interconnecting said movable contact member and said blocking member and moving said blocking member to a blocking position when said contact member is in said closed circuit position and moving said blocking member to a non-blocking position when said movable contact is in said open circuit position;

(k) said blocking member when in said blocking position obstructing movement of said second extension of said rod to thereby obstruct movement of said rod such as to move said first extension out of said aperture when said circuit control device is in said inserted position;

(l) means engaging said interlock means and retaining said elongated rod of said interlock means in said releasing position while said circuit breaker is in a position other than said inserted position;

(m) said second extension being positioned in the path of movement of said blocking member while said interlocking rod is in said releasing position;

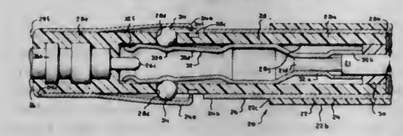
(n) said blocking member engaging said second extension and preventing movement of said movable contact member to said closed circuit position while said interlocking rod is in said releasing position.

3,288,957

CONTACTOR HAVING NON-SHORT FEATURE

Melvin Lawrence Fraley, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.

Filed June 15, 1964, Ser. No. 375,390
31 Claims. (Cl. 200—51.09)



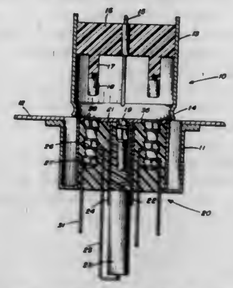
1. A plug contactor adapted to connect an electrical current path upon being engaged in a receptacle including a body having an insulating sleeve, first and second conductive members fixed in said sleeve against relative axial movement and having overlapping contact surfaces normally spaced apart, the said first member extending from said sleeve and the said second member terminated to a lead, means secured to said body and actuated by the body being inserted in a receptacle to drive one of the said members in a radial sense to effect a connection between the contact surfaces of the first and second members and thereby connect said lead to the first member extending from said sleeve.

3,288,958

ELECTROMAGNETIC RADIATION PROOF PLUG AND RECEPTACLE

Mark F. Walther, Newburg, Md., and Leon J. Lysher, Dahlgren, Va., assignors to the United States of America as represented by the Secretary of the Navy

Filed Feb. 11, 1965, Ser. No. 432,023
5 Claims. (Cl. 200—51.12)



1. An electrical connector for use in high energy fields that prevents low frequency transient energy generated by radio frequency arcing from entering an output circuit comprising

a first connector body having contained therein a first insulating means,

first and second pin members protruding from said first insulating means, said first pin member having a relatively long thin shape and substantially longer length with respect to the external dimensions of said second pin member,

a second connector body having contained therein a second insulating means,

first, second and third electrical contact means positioned internally of said second insulating means, said first and second electrical contact means substantially in juxtaposition with one another, said first electrical contact means positioned so as to mate with said first pin member and said second and third electrical contact means positioned to mate with said second pin member,

whereby the mating of the first connector body with the second connector body causes the first pin member to mate with the first electrical contact means before the second pin member contacts the second and third contact means.

3,288,959

LAMPHOLDER WITH CURRENT TAP

Joseph Frederick Duffield, Georgetown, Ontario, Canada, and Charles Richard Dirom Kindersley, deceased, late of Georgetown, Ontario, Canada, by the Royal Trust Company, administrator, Toronto, Ontario, Canada, assignors to Smith & Stone Limited, Toronto, Ontario, Canada, a company of Canada

Filed Dec. 10, 1964, Ser. No. 417,447
Claims priority, application Canada, Sept. 29, 1964, 912,800
1 Claim. (Cl. 200—51.14)

A lampholder with current tap comprising a hollow body member split into two separable parts along a longitudinal plane and formed of moldable insulating material, said body including:

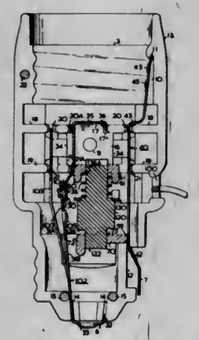
(a) lamp receiving means at one end thereof,

(b) a male plug at the other end thereof for reception in a plug receptacle,

(c) a pair of apertures through the wall for receiving a duplex plug,

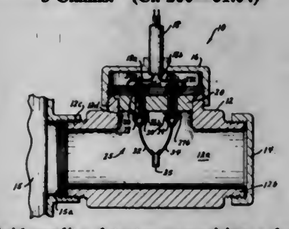
(d) a first transverse partition adjacent said lamp having first and second slots for receiving and locating first and second strip contacts respectively,

(e) a second transverse partition adjacent said male plug having a third slot for receiving and locating said second strip contact,
(f) a fourth slot in the male plug for receiving and locating said first strip contact, one of said slots and said fourth slot, and the other of said first slots and said third slots having a predetermined alignment, all of said slots permitting the assembly and testing of said strip contact members into one of said two separable parts without the co-operation of the other of said two separable parts, one part of said hollow body member including
(g) a fifth slot in the first transverse partition, for receiving and retaining an independent center contact,
(h) upper and lower cam shaft receiving apertures,
(i) a ratchet tooth,
(j) a cam plate stop, and,
(k) spring receiving and stop means, the other part of said hollow body member including upper and lower cam shaft retaining projections; a cam member including:
(l) upper and lower cam shafts for reception into (h),
(m) a boss having a cam lobe, upper cam plate engaging teeth, and ratchet engaging teeth, thereon; a cam plate including:
(n) detents thereon for co-operation with said upper cam plate engaging teeth on said cam member,



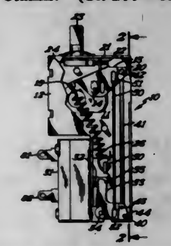
(o) a stop,
(p) a pull-cord attachment means, and,
(q) spring engaging means; a pull cord attached to said cam plate; a spring having first and second torque arms; a first strip contact member including,
(r) a central region for reception in said first and fourth slots,
(s) a first center contact region forming a center contact at said lamp receiving end,
(t) a second center contact region forming a center contact at said male plug receiving end, and,
(u) a duplex plug contact region aligned with one of said pair of apertures, said central region of the said first strip contact member being divided into two parts, the first part of which extends upwardly to join said duplex plug region and the second part of which forms a cam operated deformable region having a contact area thereon, and wherein said center contact region is physically separated from said central region; a second strip contact member including:
(v) a central region for reception in said second and third slots,
(w) a first side contact region forming a side contact for said lamp receiving end,
(x) a second side contact region forming a side contact for said plug end, and,
(y) a duplex plug contact region aligned with the other of said pair of apertures; a central portion for reception and retention in said fifth slot; a center contact region forming said center contact and said lamp receiving end; a switch contact region, for selective electrical connection with said contact area on said first contact; and, means fastening said two separable parts together.

3,288,960
FLUID QUALITY DETECTOR
Eddy J. Miller, P.O. Box 228, Newburgh, Ind.
Filed Aug. 26, 1964, Ser. No. 392,265
3 Claims. (Cl. 200—61.04)



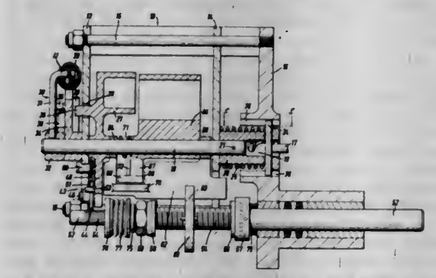
1. A fluid quality detector comprising a hollow body member containing a fluid therewithin, electrical sensing elements disposed in said fluid, means mounting said electrical sensing elements on said hollow body member, and a coating electrically isolating said electrical sensing elements at a first quality condition of said fluid and being disintegratable at a second quality condition of said fluid.

3,288,961
HUMIDITY CONTROL WITH POSITIVE SWITCH ACTUATION MEANS
Maynard L. Thompson, Bloomington, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed June 4, 1965, Ser. No. 461,237
9 Claims. (Cl. 200—61.06)



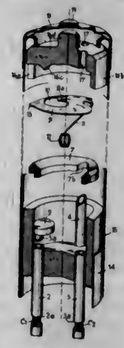
1. In a humidity responsive device, a base, switch means mounted on said base, said switch means having an operating button which is spring biased outward, an adjusting lever, means pivotally mounting said lever at one end of said base, an adjusting member mounted in said base and connected to said adjusting lever for positioning said adjusting lever, a switch operating lever, means pivotally connecting said switch operating lever at another end of said base, said switch operating lever engaging said button, a moisture responsive element changing in length as the quantity of moisture in the surrounding air changes, means connecting said element between free ends of said adjusting lever and said switch operating lever, mechanical connection means, means loosely connecting said connection means between said adjusting lever and said switch operating lever in parallel with said element whereby upon a need for positive operation of said switch means independent of said element said adjusting member can be moved to one extreme position to operate said switch.

3,288,962
VALVE-ACTUATING DEVICE
Jeremy Joseph Fry, Somerset, England, assignor to Rotork Engineering Company Limited, Somerset, England
Filed July 16, 1964, Ser. No. 383,112
7 Claims. (Cl. 200—61.39)



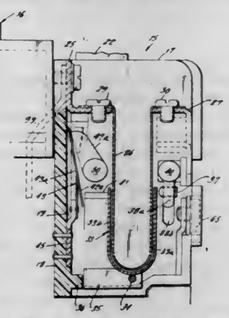
1. An actuator for operating valves and the like comprising a main drive shaft which is drivably connected with an output shaft through a worm mounted on the drive shaft and meshing with a worm wheel mounted on the output shaft, said main drive shaft being movable axially to operate a torque switch to deenergize the circuit of a motor driving said main drive shaft, wherein the torque switch is provided with latching means which maintain the torque switch in its inoperative position until the output shaft is moved at least one full rotation in the opposite direction.

3,288,963
MINIATURE SNAP-ACTION SWITCH
Jean Joseph Gilbert Mondy, Beauvais, France, assignor to Etablissements Demoly Freres, Beauvais, France, a French body corporate
Filed Aug. 4, 1964, Ser. No. 387,373
Claims priority, application France, Jan. 29, 1964, 961,915
3 Claims. (Cl. 200—67)



1. A snap-action device comprising a resilient deformable dished washer, normally concave relative to the general mean plane of said washer and having a symmetry plane, said washer comprising; a substantially C-shaped portion having an inner edge and an outer edge and two end portions, and an intermediate arcuate reentrant portion bridging the gap between said two end portions and having a curved inner edge and a curved outer edge, said latter inner edge having a radius of curvature smaller than that of the former inner edge whereby said two inner edges define a substantially crescent shaped aperture, a tab integral with said intermediate portion, extending from the middle point of said outer edge of said intermediate portion and bent in said symmetry plane and having a free end portion; said snap-action device further comprising a pressure means movable relative to said C-shaped portion along a line perpendicular to the general mean plane of said washer and comprising a projection so positioned as to be capable of engaging said C-shaped portion at a point near the middle point of the inner edge thereof upon application of a pressure on said pressure means, whereby the concavity of said washer is inverted with a snap-action and the free end portion of said tab is rapidly displaced in said symmetry plane, the device returning to its normal state upon release of the pressure application.

3,288,964
SPRING TRIP MULTI-PHASE OVERLOAD RELAY HAVING A U-SHAPED BIMETAL WITH A PIVOT PIN AT ITS WEB PORTION
John B. Cataldo, Bloomfield Hills, Elwood T. Platz, Grosse Pointe, Frank W. Kussy, Birmingham, and Bernard Di Marco, Lincoln Park, Mich., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed June 1, 1965, Ser. No. 460,204
15 Claims. (Cl. 200—116)

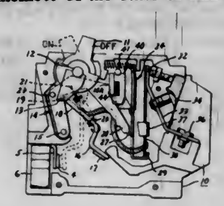


1. An overload protective device including an electric heater, a generally U-shaped bimetal element having spaced arms connected by a web portion, said bimetal element mounted in spaced relation with respect to said heater and in close proximity thereto so that heat generated by current flow through said heater heats said bimetal element causing said arms to diverge, pin means pivotally mounting said bimetal element at said web portion, calibrating means engageable with one of said arms, overcenter means, the other of said arms, upon predetermined deflection thereof engaging and thereby actuating said overcenter means, and contact means operable by said overcenter means upon actuation thereof.

3,288,965
MULTIPLE CIRCUIT BREAKER ASSEMBLY WITH COMMON TRIPPING
Keith W. Klein, Simsbury, Conn., assignor to General Electric Company, a corporation of New York
Filed Aug. 5, 1965, Ser. No. 477,393
1 Claim. (Cl. 200—116)

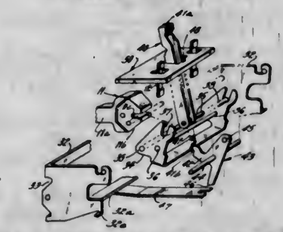
A multiple circuit breaker assembly comprising:
(a) a pair of circuit breaker pole units;
(b) means supporting said pole units in closely-spaced side-by-side relation;
(c) each of said pole units comprising a stationary contact, a movable contact, and manually operable mechanism for moving said movable contact between open and closed circuit positions with respect to said stationary contacts;

(d) said manually operable mechanism including a member releasable to cause automatic opening of said contacts;
(e) a latch member normally restraining said releasable member;
(f) each of said pole units further comprising a latch actuating member;
(g) common trip means interconnecting said latch actuating members of said pole units and causing simultaneous movement thereof;
(h) means carried by said releasable member of one of said pole units engaging said latch actuating member of said one pole unit upon release of said releasable member and causing movement of said latch actuating member;
(i) said movement of said latch actuating member of said one pole unit being transmitted to said latch actuating member of the other of said pole units by



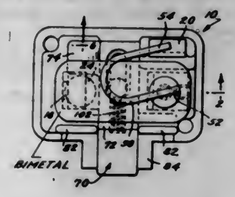
said common trip means and moving said latch actuating member into engagement with said latch member of said other pole unit and causing release of said releasable member of said other pole unit;
(j) each of said latch members comprising a first, rigid, portion and a second, resilient, portion, said resilient portion being resiliently movable by said latch actuating member in releasing direction with respect to said rigid portion;
(k) each of said rigid portions of said latch members including a generally rectangular cut-out and said resilient portion comprising a resilient strip extending across at least part of said cut-out at one side of said latch member, said rigid portion further including an integral lug portion projecting into the general area of said cut-out and acting as a stop for said resilient strip and also as a stop for movement of said latch actuating member in at least one direction.

3,288,966
MANUAL AND AUTOMATIC SWITCH WITH HANDLE LOCK AND INDICATOR
Elwood T. Platz, Grosse Pointe Farms, Bernard Di Marco, Lincoln Park, and Albert F. Kendall, Detroit, Mich., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 7, 1965, Ser. No. 512,152
9 Claims. (Cl. 200—116)



1. An electric switch including a releasable cradle, a fault responsive trip means normally maintaining said cradle in a reset position, a first actuator, a main spring connecting said first actuator to said cradle, a second actuator, a movable pivot connecting said actuators to each other, contact means including a movable portion connected to said first actuator for operation thereby, a fixed pivot about which said second actuator is movable between a first and a second position; with said cradle in said reset position operation of said second actuator to said second position moves said movable pivot in a first direction over center with respect to said spring whereupon said spring is effective to open said contact means and operation of said second actuator to said first position moves said movable pivot in a second direction, opposite to said first direction, over center with respect to said spring whereupon said spring is effective to close said contact means; release of said cradle by said trip means permitting said spring to move past said movable pivot to open said contact means and to prevent said actuator from operating said contact means closed; a housing wherein said cradle, said trip means, said actuators, said contact means, and said main spring are disposed; said housing having an opening; additional means mounted to said housing for positioning a member extending through said opening into operative engagement with said second actuator and guiding movement of such member for operation of said second actuator between said first and second position.

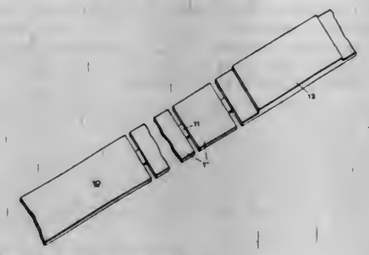
3,288,967
ELECTRIC SWITCH HAVING IMPROVED CALIBRATION AND ADJUSTING MEANS
Frederick G. Perry, Barrington, R.I., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed June 27, 1963, Ser. No. 291,022
4 Claims. (Cl. 200—122)



1. An electrical switch comprising a base formed of electrically insulating material, a first electrically conductive terminal mounted on said base; a first electrical contact carried by said first terminal; a second electrically conductive terminal mounted on said base; said second terminal having a first portion connected to said base and a second portion overlying said base and extending at an angle to said first portion; an elongated snap acting thermally responsive element having a deformed portion therein responsible for its snap action, a welding slug mounted on said element adjacent one end thereof; said slug having portions projecting from opposite sides of said element, one of said portions thicker than said thermally responsive element and welded to said second portion of said second terminal thereby cantilever mounting said thermally responsive element on said second portion in spaced relation thereto preventing deleterious effects on the calibration of said thermally responsive element, said element electrically connected to said second portion of said second terminal; a second electrical contact electrically mounted on the other end of said element for movement into and out of engagement with said first electrical contact; and manually operable resetting means mounted on said base intermediate said base and snap acting element; said base providing a guideway for receiving said

resetting means for reciprocal sliding movement therein between a contacts-closed position and a contacts-open resetting position, said resetting means having a portion formed of electrically insulating material; said resetting means portion in the contacts-open resetting position being disposed intermediate said stationary and movable contacts preventing interengagement of said contacts; means urging said portion of said resetting means for movement from the contacts closed to the resetting position; said resetting means portion abutting a side of said movable contact when the latter is in the contacts closed position and being inoperative to move to the resetting position until after said movable contact moves out of engagement with said stationary contact.

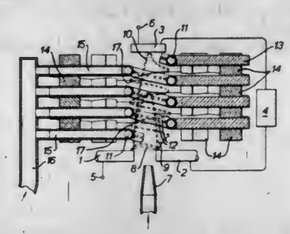
3,288,968
ELECTRICAL FUSIBLE ELEMENT HAVING THREE PORTIONS OF DIFFERENT CROSS-SECTIONS
John Feenan, Eric Jacks, and John Eric Murphy, all of Liverpool, England, assignors to The English Electric Company Limited, London, England, a British Company
Filed Jan. 30, 1964, Ser. No. 341,267
Claims priority, application Great Britain, Feb. 8, 1963, 5,145/63
1 Claim. (Cl. 200—135)



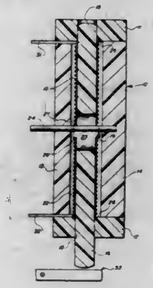
A fuse element comprising
a strip of silver substantially rectangular in cross-section throughout its length, said strip having
a plurality of first portions,
a plurality of second portions, each said first portion being located between, and integral with, said second portions, and the width and thickness of each first portion being less than the width and thickness, respectively, of each second portion by an amount such that the ratio of the cross-sectional area of each second portion to each first portion is between about 8:1 to about 12:1, and
a third portion integral with at least one second portion, said third portion having a thickness greater than, and a width equal to, said second portion, the width of each said first, second and third portions being substantially constant throughout their length.

3,288,969
GAS-BLAST ELECTRIC CIRCUIT INTERRUPTER
Michael Peter Reece, London, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed July 13, 1964, Ser. No. 382,082
Claims priority, application Great Britain, July 31, 1963, 30,416/63
9 Claims. (Cl. 200—148)

1. A gas-blast electric circuit interrupter comprising two contacts movable in relation to each other to form a gap, a third contact, said third contact being arranged at one side of an imaginary straight line extending from one of said two contacts to the other, a gas jet exit opening situated at the other side of the said line in the gap, a plurality of additional gas jet exit openings situated between said gap and said third contact, the additional jets being directed towards an imaginary straight line extending from the third contact to said first exit opening, and being angularly spaced from one another along at least one complete 360° turn of a helix.



3,288,970
BOUNCELESS SWITCH CONSTRUCTION
Guillermo Perez, Bristol, Conn., assignor, by mesne assignments, to Royal Typewriter Company, Inc., New York, N.Y., a corporation of Delaware
Filed June 22, 1964, Ser. No. 376,932
3 Claims. (Cl. 200—159)

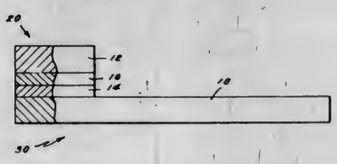


1. A bounceless switch comprising a housing having an interior wall defining a first fixed boundary,
a conductor comprising a switch contact extending through said housing defining a second fixed boundary parallel to said first fixed boundary,
a plunger element mounted for movement within said housing defining a movable boundary, said plunger element having an enlongated slot adapted to receive said conductor whereby said movable boundary may move relative thereto,
a conductive coiled spring comprising a movable switch contact mounted about said plunger between said movable and first fixed boundary, said spring having a free length longer than the distance between said first and second fixed boundaries,
yieldable means acting on said plunger element to cause the movable boundary to compress said spring to a length shorter than the distance between said first and second fixed boundaries thereby to open a circuit through said spring,
and keying means operative on said plunger element and against said yieldable means whereby the distance between said movable and said first fixed boundary becomes greater than the distance between said first and second fixed boundaries thereby permitting said spring to contact said conductor completing a circuit through said spring.

3,288,971
ELECTRICAL CONTACT ELEMENT AND SUBASSEMBLY

William V. Polleys, Barrington, R.I., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed June 16, 1965, Ser. No. 464,426
7 Claims. (Cl. 200—166)



1. An electrical contact element comprising:
(a) a first layer formed of a first alloy of a refractory material and silver, the refractory material constituting a predetermined percent by weight of the first alloy;
(b) a second layer, metallurgically bonded on one side to the first layer, formed of a second alloy comprising the refractory material and silver, the refractory material constituting a second predetermined percent by weight of the second alloy which second predetermined percent is less than the first predetermined percent; and
(c) a third layer, metallurgically bonded to the other side of the second layer, and formed of substantially pure silver.

3,288,972
MAGNETICALLY ACTUATED SWITCHING CONTACT SET

Hugo Angermaier, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft, Munich, Germany

Filed July 23, 1965, Ser. No. 474,325
Claims priority, application Germany, Aug. 13, 1964, S 92,626
12 Claims. (Cl. 200—166)

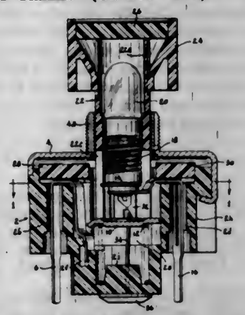


1. In a sealed electrical contact set including a pair of spring contacts of magnetic material having end portions opposite each other which engage upon switch actuation and which must carry both magnetic flux and electrical current, the improvement comprising:
at least one of said spring contacts having at least a pair of longitudinally-extending tongues at said end portion defined by at least one slot extending inwardly of the contact from the end thereof, said tongues being of unequal width,
and at least one electrical contact layer on one of the spring contacts in position such as to be between the narrower of said tongues and the opposite contact, so that the wider tongue may be directly engaged with the other contact when the switch is actuated.

3,288,973
PUSH-PUSH SWITCH CONVERTIBLE TO MOMENTARY SWITCH

Earl T. Piber, Milwaukee, Wis., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware

Filed Apr. 16, 1965, Ser. No. 448,678
8 Claims. (Cl. 200—169)



1. A pushbutton switch of the latching type comprising:
an insulating base having an open-top cavity therein;
stationary contacts within said cavity having connector terminals extending through said base to the exterior thereof and being adapted for connecting the stationary contacts to an external circuit;
spring biased movable contact means in said cavity for engaging said stationary contacts to complete an electrical connection;
a cover for said base having a bushing therein;
a pushbutton having a hollow plunger slidably extending through said bushing into said cavity for actuating said movable contact means from normal to operated position;
a latch insert mounted in an aperture in one wall of the lower portion of said plunger within said cavity and having a latching face directed inwardly and being held in said plunger aperture by an adjacent wall of said base;
and a latch hook mounted in the bottom of said base and extending within said hollow plunger into engagement with the latching face of said latch insert for latching said switch in operated position when said pushbutton is depressed and being operable to release said switch to allow spring-return thereof to its normal position in response to further depression of said pushbutton thereby to provide a switch of the push-push type and said latch insert being removable from said aperture to convert said switch to momentary type.

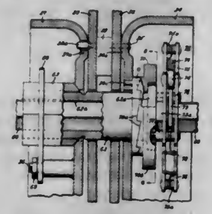
3,288,974
CONTACT PRESSURE CLAMP FOR A MULTIPOLE ELECTRIC SWITCH

Ralph J. Baskerville, Drexel Hill, Pa., assignor to General Electric Company, a corporation of New York

Filed Jan. 28, 1965, Ser. No. 428,659
7 Claims. (Cl. 200—170)

1. A multi-pole fusible pressure switch comprising:
(a) a relative stationary frame;
(b) a plurality of pairs of generally flat, parallel jaw-like contacts mounted in side-by-side but electrically isolated relation to each other on said frame;
(c) a switch member adapted removably to support in side-by-side relation to each other a plurality of cartridge fuses each having a blade-like terminal at one end thereof, said member being movable relative to said frame to and from a predetermined

position in which the blade-like terminals of said fuses are inserted respectively in said pairs of jaw-like contacts for broad area contact therewith;
(d) a rotatable drive shaft extending through aligned apertures in all of said pairs of jaw-like contacts, said drive shaft being electrically insulated from said contact pairs which are thereby isolated from each other, and
(e) a plurality of separate clamping means respectively associated with said pairs of jaw-like contacts, each of said clamping means including
(i) first and second annular members surrounding said shaft in coaxial relationship therewith, a portion of the first member being located adjacent to one side of one contact of the associated pair of jaw-like contacts and a portion of the second member being located adja-

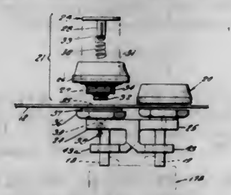


cent to an opposite side of the other contact of that pair,
(ii) said first and second members having mating parts respectively provided with internal and external screw threads, whereby the associated blade-like fuse terminals can be tightly clamped over a broad area between said jaw-like contacts by turning one of the members relative to the other,
(iii) the portion of said first member adjacent to the one side of said one contact being convex and being disposed in a concave seat associated with said one contact to promote the transmittal of a high clamping force to said jaw-like contacts in a direction parallel to said drive shaft, and
(iv) connecting means between said shaft and said one member for turning the one member relative to the other member in response to predetermined rotation of the shaft.

3,288,975
PUSH BUTTON OPERATED CRISS CROSS ACTUATORS

Frank W. Kussy, Birmingham, and George H. Farnsworth, Grosse Pointe Woods, Mich., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Dec. 28, 1964, Ser. No. 421,567
10 Claims. (Cl. 200—172)

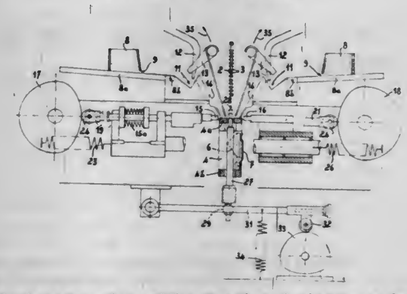


1. In a combination of the class described an electrical device including a first and a second control, an enclosure wherein said device is mounted, said enclosure including a wall, a first and a second push button device, first means secured to said first device and movable therewith for operating said first control when said first device is depressed, second means secured to said second device and movable therewith for operating said second control, said first means including a first guide formation received by and cooperating with a second guide formation of said second means to guide relative movement between said first and second means, said first device positioned closer to said second control than said first control and said second device positioned closer to said first control than said second control.

3,288,976
APPARATUS FOR WELDING WIRES ON CONDENSER COILS

Robert Sandret, 5 Rue Ferdinand Buisson, Lyon, France

Filed Feb. 16, 1965, Ser. No. 433,079
Claims priority, application France, Feb. 19, 1964, 44,485, Patent 1,394,957
9 Claims. (Cl. 219—56)



1. Apparatus for welding a series of wires on at least one side of a flat condenser coil along parallel lines spaced by predetermined uniform intervals, the coil having a plurality of parallel straight interconnected legs and the wires being perpendicular to said straight legs, comprising means for feeding wires one by one to at least one side of the coil, welding means for successively welding said wires to the coil, and reciprocating conveyor means engageable with the immediately previously welded wire to move said coil in its plane a distance equal to said predetermined interval, said feeding means feeding wires simultaneously to opposite sides of said coil in opposed relation to each other.

3,288,977
APPARATUS FOR MAKING GIRDERS

Julius Georg Stefan Keller, Paulastrasse 5a, Munich-Solln, Germany

Filed Nov. 13, 1964, Ser. No. 411,077
Claims priority, application Germany, Nov. 18, 1963, K 51,394
16 Claims. (Cl. 219—79)

1. Apparatus for making endless lattice girders having spaced-apart upper and lower chords and zig-zag latticing of channel-shaped transverse cross section joining the chords, said apparatus comprising, in combination:
(a) means forming a production line having at least three parallel paths for the upper and lower chords and the latticing;
(b) drum means arranged at the start of the production line for supplying at least three strips which are to constitute the upper and lower chords and the latticing;
(c) pulling means arranged at the delivery end of the production line for pulling said strips along their respective paths through the production line in a

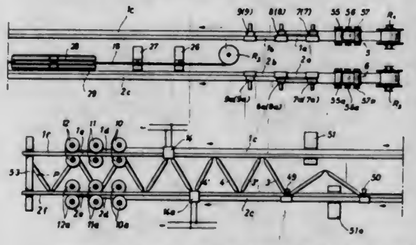
step-by-step manner, there being pauses between the steps;

(d) means arranged along the paths traversed by the strips which are to constitute the upper and lower chords for continuously imparting thereto the shape of the upper and lower chords while the strips move along their respective paths;

(e) means arranged along the path traversed by the strip which is to constitute the latticing for imparting thereto, during said pauses, a channel-shaped transverse cross section as well as a zig-zag configuration, and for placing the zig-zag lattice of channel-shaped transverse cross section against the chords, said last-mentioned means comprising

(i) a first device for imparting said channel-shaped transverse cross section to the latticing strip throughout lengths equal to the reaches of the zig-zag, the strip being left flat at those regions where the same is to be secured to the chords of the girder, and

(ii) a second device for imparting the zig-zag configuration to the last-mentioned strip, said

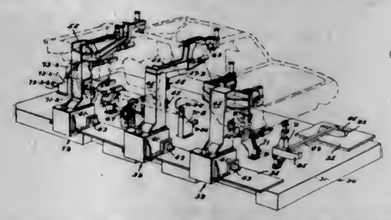


second device being arranged at a point subsequent to said first device, considered in the direction of the production line, and comprising a stationary clamping unit and a movable clamping unit, the latter being movable toward and away from said stationary clamping unit in a direction coextensive with the direction of the production line, there being means for causing said clamping units to hold the latticing strip during the pauses and, after each two steps of said pulling means, for moving the movable clamping unit toward the stationary clamping unit for buckling the latticing strip into its zig-zag configuration with the latticing strip bending at three successive flat regions, which regions are brought into engagement with the strips which are to constitute the chords substantially along lines which represent the centers of gravity of the respective chords; and

(f) means for resistance welding said latticing to said chords in synchronism with the movement of the strips under the influence of said pulling means.

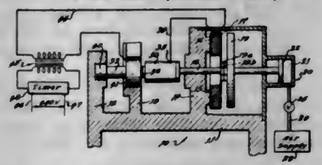
3,288,978
METHOD AND DEVICE FOR POSITIONING AND WELDING
Michael Henry Trygar, Southfield, Mich., assignor to The Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Oct. 17, 1963, Ser. No. 316,890
52 Claims. (Cl. 219—80)

1. A device for holding an automobile body for welding comprising in combination a first holding unit positioned along one side of a holding zone, a second holding unit in substantially parallel relationship with said first holding unit and positioned on the opposite side of said holding zone, each of said holding units comprising a plurality of spaced apart pivotable standards with clamping means mounted thereon and extending therefrom toward the longitudinal axis of said holding device, each of said standards being pivotable between a clamping position wherein said clamping means are positioned to grip an automobile body within said holding zone and an open position wherein said clamping means are outside said holding zone, at least one of said clamping means being constructed and arranged to move in two mutually perpendicular planes simultaneously when its supporting standard is moved from said open position to said clamp-



ing position, operatively interconnected power means for moving said standards between said open position and said clamping position, locating means including elevator means constructed and arranged to receive and position an automobile body within said holding zone in three mutually perpendicular planes for seizure by clamping means of each of said holding units, and actuating means operatively interconnected for closing clamping means of each of said holding units upon an automobile body within said holding zone in predetermined sequence.

3,288,979
GRAPHITE WELDING
Loring E. Mills, Kennewick, and Richard F. Booker, Richland, Wash., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Oct. 28, 1963, Ser. No. 319,622
8 Claims. (Cl. 219—104)



1. A method of welding a graphite-to-graphite interface, comprising exerting an initial pressure of about 14,000 p.s.i. across the interface, and while continuing said initial pressure, passing an alternating electrical current across said interface so as to produce a peak current density of from 310,000 to 1,000,000 amperes per square inch of interface thereby producing resistance heating, while simultaneously exerting a second pressure of such magnitude that the total pressure shall equal about 15,000 p.s.i. across the entire interface as enlarged by plasticity due to the resistance heating.

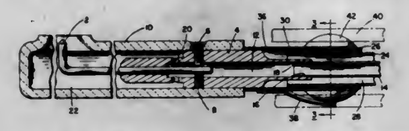
3,288,980
HEAT STRESS RELIEVING APPARATUS
Roderick G. Rohrberg, Inglewood, Calif., Harry J. Heckler, Cincinnati, Ohio, and Donald D. Gaston, Santa Monica, Calif., assignors to North American Aviation Inc.
Filed Nov. 18, 1963, Ser. No. 324,367
5 Claims. (Cl. 219—125)

1. In a heating probe for applying heat at relatively inaccessible locations within a hollow workpiece:
an electrode for producing an electric arc,

elongate support means including a hollow metallic plug for supporting said electrode,

track means on said workpiece including a track for guiding movement of said elongate support means,

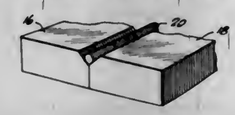
cam means on said elongate support means and movable together therewith, said cam means com-



prising a cam engageable with said track for guiding movement of said electrode, and

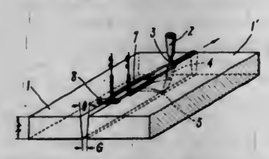
said elongate support means comprising a plurality of elongate hollow tubes concentrically secured together to form a plurality of annular passages and secured to said plug for flowing a cooling fluid through said passages and over a portion of said plug.

3,288,981
IMPLANT WELDING
Milton M. Mabry, Torrance, George R. Prescott, Pasadena, and Zalman P. Saperstein, Long Beach, Calif., assignors to Douglas Aircraft Company, Inc., Santa Monica, Calif.
Filed Feb. 3, 1965, Ser. No. 430,027
4 Claims. (Cl. 219—137)



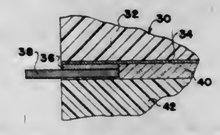
1. A method of obtaining deeper weld penetration, i.e., increased weld depth-to-width ratios, by selectively choosing an implant material from a group having the quality of modifying the arc plasma energy distribution to achieve deeper welding penetration, said group consisting of commercially pure titanium, cobalt, aluminum, and 18Ni—9Co—5Mo alloy and technical grade quality of calcium chloride, potassium nitrate, lithium borate, and sodium carbonate, placing said implant material in contact with portions of material to be welded, and thereafter welding said portions together.

3,288,982
HIGH SPEED ARC WELDING METHOD
Haruyoshi Suzuki, 193—5 Sekimachi, Nerima-ku, Tokyo, Japan; Teiji Ito, 486 Ohaza, Ohkura, Yawata-ku, Kitakyushu, Fukuoka Prefecture, Japan; Takeshi Nishi, 9 Kobai-cho, Ohaza, Yawata-ku, Kitakyushu, Fukuoka Prefecture, Japan; and Arinobu Yamada, 1—873 Helga Sakamachi, Ohaza Itozu, Kokura-ku, Kitakyushu, Fukuoka Prefecture, Japan
Filed Mar. 8, 1965, Ser. No. 437,731
Claims priority, application Japan, Mar. 14, 1964, 39/14,168
9 Claims. (Cl. 219—137)



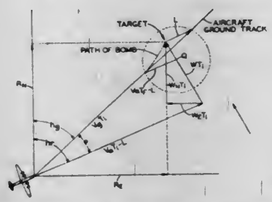
1. A non-pressure arc welding method for arc welding thick metal plates at high speed and with a welding rod, consisting essentially of the steps of providing a small angle groove between the plates to be welded, passing a high frequency current through the surface portions of the plates defining said groove and through weld metal deposited in said groove from the arc welding rod and electrode, to heat the said surface portions to a temperature above 900° C., and continuing to pass said high frequency current and deposit weld metal from said welding rod and electrode at a rate sufficient to completely fill said said plates in a single pass at a speed of more than two groove during a single pass by arc welding and arc welding meters per minute.

3,288,983
ELECTRICAL RESISTANCE DE-ICING MEANS FOR AIRCRAFT WINDSHIELDS
William P. Lear, Sr., Wichita, Kans., assignor to Lear Jet Corporation, Wichita, Kans., a corporation of Delaware
Filed July 29, 1963, Ser. No. 298,318
1 Claim. (Cl. 219—522)



An unobstructed, optically distortion-free electrical resistance de-icing means for a windshield of an aircraft comprising, a thin, transparent plastic sheet of polytetrafluoroethylene having a uniform thickness in the range of 2 to 3 mils, a thin, uniform vacuum deposited transparent coating of gold on said plastic sheet of a thickness adapted to allow approximately 85 percent transmission of light therethrough, said de-icing means adapted in use to be adhered to the windshield of an aircraft and, when operably connected to a source of electrical current, adapted to melt ice and prevent formation of same on the windshield.

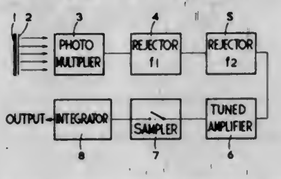
3,288,984
BOMBING COMPUTER
Jerome R. Bernier, Dayton, Ohio, and Robert W. Madden, Binghamton, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Feb. 25, 1955, Ser. No. 490,594
6 Claims. (Cl. 235—61.5)



1. Apparatus for determining the true values of the vectorial components of wind in a prescribed system of coordinates which affect an aircraft in flight, first integrator means storage means having output potentials proportional to preset values of said vectorial components of wind, velocity obtaining means for providing output potentials proportional to the true values of the vectorial components of the velocity of the aircraft in air, summing means, said summing means being connected to receive the outputs from said storage means and said velocity obtaining means and supplying output potentials proportional to the sums thereof to said first integrator means, manual control means including a potential source

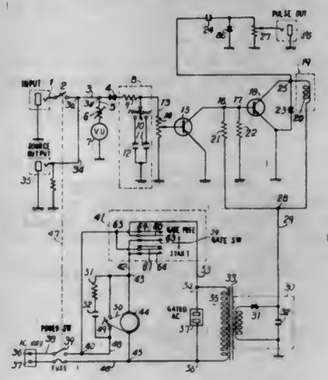
capable of being varied as a function of the degree of manual control exercised, said potential source being connected to said summing means, observing means for scanning an area beneath said aircraft and providing a manifestation thereof on a display device which includes a reference, said observing means being connected to receive the outputs from said first integrator means and to be directed thereby, said manual control means being adapted to be manipulated to establish a condition wherein said reference is related to some point in said manifestation in a prescribed manner, said condition being upset and changed thereafter at a rate which is a function of the error of said preset values of the components of wind with respect to the true values thereof, second integrator means which includes said storage means as a part thereof, multiplying means, controlled switching means for initiating a wind correction operation, said switching means switching said manually controlled potential source and the potentials from said storage means from said summing means to said second integrator means and said multiplying means, respectively, said multiplying means multiplying the potentials received by the time duration of said wind correction operation, the output from said multiplying means being supplied to said first integrator means to be summed with the output thereof, said, manual control means being adapted to be manipulated in a manner to return said reference to its original relationship with said point within a prescribed time, the last-mentioned manipulation of said manual control means varying the outputs from said storage means such that upon return of the reference to its prescribed relationship with said point the true proportional values of said vectorial components of wind are stored in said storage means, and means for operating said switching means to return the connections changed to their original state after said condition is reestablished.

3,288,985
DIGITAL INFORMATION STORAGE APPARATUS
George Richard Hoffman, Sale, and Peter Lumsden Jones, Bramhall, Stockport, England, assignors to National Research Development Corporation, London, England, a corporation of Great Britain
Filed Sept. 4, 1962, Ser. No. 221,199
Claims priority, application Great Britain, Sept. 5, 1961, 31,926/61
3 Claims. (Cl. 235—61.11)



1. Digital information storage apparatus comprising a matrix of electro-luminescent cells each corresponding to a digit location and electrically connected in rows and in columns, a stored binary digit being represented by the screening or not screening of a cell, and means for reading the digital information at a selected location comprising means for energising the row containing the selected location at a first frequency, means for energising the column containing the selected location at a second frequency, and a light sensitive device arranged to receive light from unscreened cells to provide an electrical signal corresponding in frequency to the frequency of incident light, rejection circuits for filtering out components of said signal at said first and second frequencies, an amplifier tuned to said difference frequency for amplifying the filtered signal, a sampler comprising an electronic switch operated at said difference frequency and adjustable in phase for sampling the output of said amplifier and an integrator fed with the output of the sampler for providing a signal of one polarity when the cell at a selected location is not screened and for providing no output when said cell is screened.

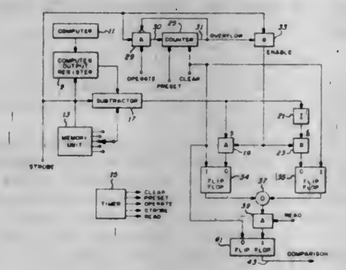
3,288,986
DROP-OUTS COUNTER
Kenji Muto, Setagaya-ku, Tokyo, Japan, assignor to Akai Electric Co., Ltd., Tokyo, Japan, a corporation of Japan
Filed July 9, 1963, Ser. No. 293,735
6 Claims. (Cl. 235—92)



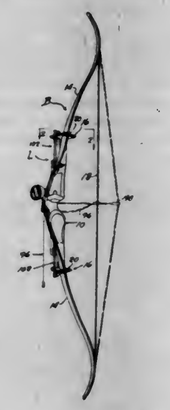
1. In a drop-outs counter for magnetic tape, a rectifier for converting a delivered A.C. signal having a scheduled constant level from a tape recorder into a corresponding D.C. signal, a transistored circuit electrically connected with said rectifier for subjecting said rectified signal to phase conversion and amplification, a timer electrically connected to said circuit for limiting the output therefrom for a predetermined time period such as a minute, and an electromagnetically operated counter having a drive coil and a digital type counter mechanism and means for initiating operation of said counter mechanism, upon energization of said coil by a pulsative output higher than a predetermined level from said circuit said level being determined as a function of a drop-out of a predetermined deviation and for a predetermined time period in said received signal.

3,288,987
DIGITAL COMPARATOR
Joseph A. Amato, Queens Village, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Dec. 9, 1963, Ser. No. 328,933
15 Claims. (Cl. 235—177)

4. A device for comparing two binary coded numbers comprising means to store each of the numbers to be compared; means to read each of the numbers out of their respective storage means serially and in order of increasing significance; means to provide ENABLE pulses as digits are read out of the storage means; means to withhold said ENABLE pulses until the first significant digit is read out of the storage means; means to subtract one of the words to be compared from the other; means to provide a first steady switching signal until the concurrence of an ENABLE pulse and a positive difference output signal from the subtraction means; means to provide a second steady switching signal until the concurrence of an ENABLE pulse and a negative difference output signal from said subtraction means; means to provide a READ pulse after each pair of corresponding digits in the two words have been compared; and means to provide a comparison signal in response to the concurrence of a READ pulse and either of the steady switching signals.



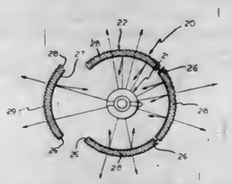
3,288,988
ARCHER'S BOW LAMP ASSEMBLY
Jay Boggs, Rte. 1, Box 45, Kinta, Okla.
Filed Sept. 11, 1964, Ser. No. 395,782
7 Claims. (Cl. 240—6.4)



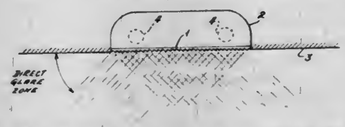
1. The combination with an archer's bow having a middle portion, limbs extending from the ends of said middle portion, and lateral brackets on the limbs, said brackets being spaced from opposite ends of said middle portion of the bow, of a lamp assembly extending between and secured to the lateral brackets, said lamp assembly comprising a vertical battery case containing battery means, vertical mounting brackets secured to the battery case adjacent its ends, said lateral brackets being formed with openings through which the mounting brackets extend, and means for securing the mounting brackets adjustably to the lateral brackets.

3,288,989
LIGHT UNIT
George D. Cooper, 1136 Vista Place, Edmonds, Wash.
Filed Mar. 20, 1964, Ser. No. 353,418
13 Claims. (Cl. 240—11.4)

1. A light unit comprising, means defining a source of radiant energies, a tubular wrap-around reflector surrounding said source, said reflector including a plurality of segments of a transparent carrier, said segments being slightly spaced from each other to define an opening between adjacent segments, each segment having a coating on all of one surface thereof selectively reflecting one part of the radiant energies and selectively transmitting the other part of the radiant energies, and opaque closure means at each end of said reflector closing same.

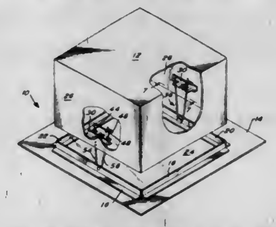


3,288,990
PANEL
Leo G. Stahlhut, Kirkwood, Mo., assignor to K–S–H Plastics, Inc., Kirkwood, Mo., a corporation of Missouri
Filed Sept. 25, 1964, Ser. No. 399,237
7 Claims. (Cl. 240—106)



1. A lighting panel comprising a transparent prismatic plate with one prismatic surface and an opposite smooth planar surface and a diffusing film overlying said planar surface, bonded thereto in spaced bonded areas and spaced therefrom intermediate said bonded areas, said bonded areas constituting a minor part of the total area of the plate overlain by said film.

3,288,991
LIGHT FIXTURE
Jerome H. Feig, Beverly Hills, Calif., assignor to Marvin Electric Manufacturing Co., Los Angeles, Calif., a corporation of California
Filed Mar. 24, 1964, Ser. No. 354,301
6 Claims. (Cl. 240—147)

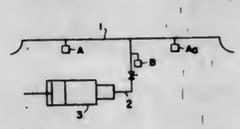


6. In a light fixture comprising a lamp carrying member, a light diffusing member, means connected to at least one of said lamp carrying member and light diffusing member for supporting and limiting the extent of displacement of said light diffusing member with respect to said lamp carrying member, said means including at least one diffuser holding means concealed from view in the operative position of said members, said diffuser holding means including a pair of legs, spring means joining said legs at one of their ends for urging said legs away from each other, and at least one of said legs including a series of crimps extending therealong intermediate their ends for frictionally binding said light diffusing member to said lamp carrying members in their operative disposition.

3,288,992
DERAILMENT DETECTOR ACTUATED BRAKE SYSTEM

Tadashi Matsudaira and Yoshio Nomura, Tokyo-to, Japan, assignors to Nippon Kokuyu Tetsudo (known in English as Japanese National Railways), Tokyo-to, Japan, a juridical person organized under the Public Law of Japan

Filed July 30, 1964, Ser. No. 386,334
3 Claims. (Cl. 246—173)

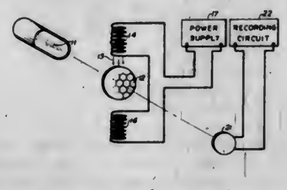


1. A safety device adapted to be connected to a brake pipe of the pneumatic braking system of a railway vehicle for detecting derailment of the vehicle and automatically causing braking action, said device comprising a housing adapted to be connected with the brake pipe in communicating relation thereto and having a vertically extending internal chamber therein, said chamber having a vent port leading to the atmosphere, intercepting means for normally preventing communication from said brake pipe into said chamber, a weight vertically movable within said chamber, and spring means for urging said weight toward one vertical end of said chamber so as to hold the weight at rest under normal running condition of the vehicle but to allow the same to move vertically by the force of acceleration due to derailment of the vehicle against the force of the spring means toward the other vertical end of the chamber, the relation between said intercepting means and said weight being such that when the weight moves toward said other vertical end of the chamber, said intercepting means is caused to allow communication from said brake pipe into said chamber, thereby venting the pressurized air within the brake pipe into the atmosphere through said vent port to cause braking action of the brake system.

3,288,993
PLASMA PARTICLE SEPARATOR AND ANALYZER HAVING A GRID STRUCTURE CONSISTING OF LINEAR TUBULAR PORTIONS

James F. Steinhaus, Livermore, and Thomas O. Passell, Palo Alto, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Nov. 8, 1963, Ser. No. 322,555
6 Claims. (Cl. 250—41.9)



1. In apparatus for separating and analyzing atomic particles of a mixture including charged particles having different momentum to charge ratios and traveling along linear paths, the combination comprising:

(*a*) a grid structure comprising linear tubular portions defining a plurality of channels each providing a lineal free path of a generally uniform radial diameter, $\bar{d}$, along its length, *l*, said free lineal paths being disposed in parallel relationship, said grid structure being adapted for positioning to align said lineal paths with said linear particle paths to direct the particles in said mixture to be analyzed into one end of said channels, said average diameter, $\bar{d}$, and length, *l*, of said free lineal path determined by the expression,

$$\alpha = 2 \tan^{-1} \frac{\bar{d}}{l}$$

wherein α is the angle of acceptance of said free lineal paths for particles of the mixture traveling along said linear paths;

(*b*) means for establishing a magnetic field in said grid structure, said magnetic field having a selected intensity component, B, perpendicular to said lineal path, to confine particles of said mixture having a desired momentum to charge ratio to travel a path therein to emerge from the second end of said channels, said path defined by the equation

$$R = \frac{mv}{eB}$$

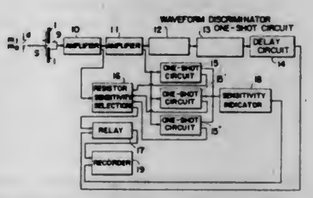
where *m* equals the mass of the particles, *v* the velocity of the particles, *e* equals the electrostatic charge of the particles, and R equals the radius of curvature of the path followed by the particles of desired momentum to charge ratio; and

(*c*) particle detector means disposed to intercept atomic particles emerging from the second end of said channels.

3,288,994
AUTOMATIC SENSITIVITY SELECTOR FOR A MASS SPECTROMETER MULTISCALE RECORDER USING A SINGLE ION COLLECTOR

Ichiro Omura, Kodaira-shi, and Masao Kuroda, Nerima-ku, Tokyo-to, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan

Filed Feb. 12, 1964, Ser. No. 344,276
Claims priority, application Japan, Feb. 13, 1963, 38/5,943, 38/5,944; Apr. 5, 1963, 38/17,211
5 Claims. (Cl. 250—41.9)



1. An automatic sensitivity selector for a mass spectrometer recording system comprising

(a) a single ion collector with two signal voltage pulse outputs;

(b) a multiscale recorder;

(c) time delay means having a predetermined time delay connected to one of the collector outputs;

(d) switch means connected to the time delay means, adapted to be activated by the signal voltage pulse and to permit the intensity of the pulse to be recorded on the recorder;

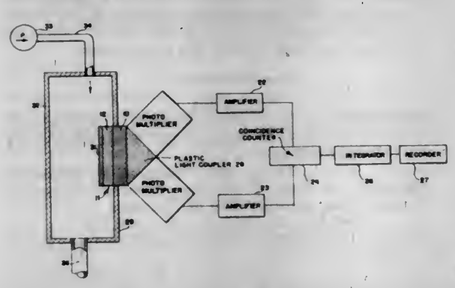
(e) sensitivity selecting means connected to the other of the collector outputs to select within the time delay period one of the scales on the multiscale recorder in accordance with the magnitude of the signal pulse to avoid off scale readings; and

(f) means for connecting the input of the selected scale to the switch means so that the recorder will respond to the signal pulse.

3,288,995
METHOD AND APPARATUS FOR MONITORING RADIOACTIVE CONTAMINATION OF AIR USING A FILM OF WATER AND A SCINTILLATION DETECTOR

Howard L. Demorest, Minneapolis, Minn., assignor, by mesne assignments, to Litton Systems Inc., Beverly Hills, Calif., a corporation of Maryland

Filed May 28, 1962, Ser. No. 198,169
10 Claims. (Cl. 250—71.5)

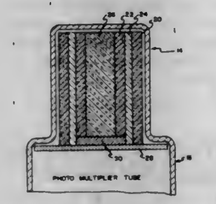


1. A radiation monitoring apparatus which comprises means for sorbing water vapor containing radioactive contamination to form a thin layer of water containing said radioactive contamination, a radioactive radiation responsive scintillation material, said material having a surface coated with said sorbing means, said scintillation material being effective to generate light pulses indicative of the concentration of said contamination, a photoelectric multiplier means associated with said scintillation material for detecting said light pulses and means for correlating the quantity of said light pulses with the concentration of said radioactive contamination in said layer.

3,288,996
COMPOUND SCINTILLATION DETECTOR FOR SIMULTANEOUS DETECTION OF THERMAL AND EPITHERMAL NEUTRONS

Ralph Monaghan, Needham Heights, Mass., assignor, by mesne assignments, to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware

Filed June 13, 1963, Ser. No. 287,643
9 Claims. (Cl. 250—71.5)

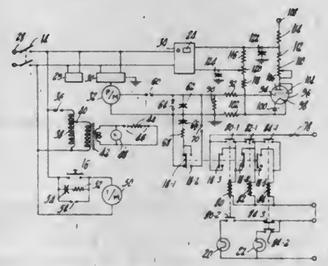


1. A compound scintillation detector comprising a first radiation sensitive scintillation phosphor, a second radiation sensitive scintillation phosphor, a radiation absorbing shield separating said phosphors, said phosphors being so positioned that incident radiation must pass through said first phosphor and said shield to reach said second phosphor, a photomultiplier tube optically coupled to both of said phosphors, and means for attenuating light passing from one of said phosphors to said photomultiplier tube.

3,288,997
THERMOLUMINESCENT DOSIMETER ELEMENT READOUT APPARATUS

Richard C. McCall, Watertown, Mass., assignor to Controls for Radiation, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed Aug. 29, 1963, Ser. No. 305,292
6 Claims. (Cl. 250—71.5)



1. Radiation dosimetry readout apparatus comprising a light sensor,

means to dispose thermoluminescent material that has been exposed to radiation in optically coupled relation to said light sensor,

means to heat said thermoluminescent material to release light as a function of the radiation to which said material has been exposed,

a first capacitor,

means to charge said first capacitor as a function of the output of said light sensor,

potential indicating apparatus including a high impedance electronic circuit connected to said first capacitor,

a readout indicator to indicate the detected radiation dosage as a function of the charge on said first capacitor,

a second capacitor having a capacitance value of a known multiple of the capacitance value of said first capacitor, the capacitance value of said second capacitor being larger than the capacitance value of said first capacitor,

means to completely discharge said second capacitor,

means to connect said completely discharged second capacitor in parallel with said first capacitor to reduce the charge on said first capacitor by transfer of a portion of that charge to said second capacitance as a function of the ratio of the capacitance value of the two capacitors,

and means to provide an indication of the multiplication factor of the integrated readout quantity as a function of the number of times said second capacitor is paralleled with said first capacitor.

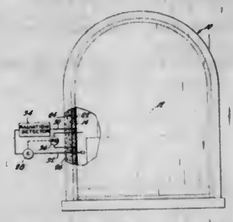
3,288,998
WALL STRUCTURE FOR A NUCLEAR REACTOR CONTAINMENT VESSEL

Reece W. Press, Jr., Glassboro, N.J., assignor to United Engineers & Constructors Inc., Philadelphia, Pa., a corporation of Delaware

Filed Aug. 16, 1963, Ser. No. 302,597
1 Claim. (Cl. 250—83.3)

A wall structure for a nuclear reactor containment vessel comprising a gas-tight inner wall, a dimpled sheet adjacent the outer surface of said inner wall forming continuously connected passages therebetween, said dimpled sheet including a plurality of spaced indentations having flat surface faces engaging the outer surface of said inner wall, a substantially gas-tight outer wall in continguous conforming relation with said dimpled sheet,

said continuously connected passages defining an air space extending around the entire area of said inner wall, and



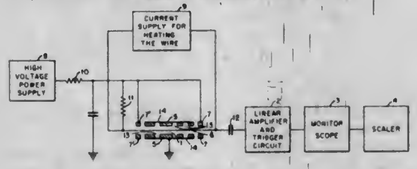
means connecting with said air space for detecting leaks in said inner wall.

3,288,999

HUMIDITY INSENSITIVE PROPORTIONAL COUNTER HAVING A HEATING SOURCE CONNECTED TO A WIRE ANODE

Casimer J. Borkowski, Angel M. R. Ferrari, and Richard J. Fox, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Oct. 21, 1963, Ser. No. 317,853
1 Claim. (Cl. 250—83.6)



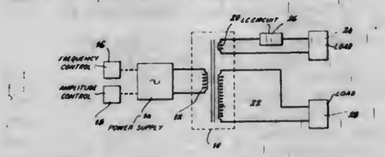
In an air proportional counter for detecting alpha particles including a tubular cathode, a center platinum wire anode, a source of air to be monitored and a high voltage source of potential connected between said anode and said cathode, said cathode interior being gold plated and said cathode being provided with a plurality of apertures covered with a thin Mylar film, the improvement for substantially reducing the effect of all values of relative humidity on said counter comprising a small battery for supplying a source of heating current and being connected to opposite ends of said wire anode, said heating current having a minimum value of at least 13 milliamperes, whereby said counter is substantially insensitive to said relative humidity effect.

3,289,000

MEANS FOR SEPARATELY CONTROLLING THE FILAMENT CURRENT AND VOLTAGE ON AN X-RAY TUBE

James F. McNulty, Westbury, N.Y., assignor to Automation Industries, Inc., El Segundo, Calif., a corporation of California

Continuation of application Ser. No. 263,043, Mar. 5, 1963. This application Feb. 23, 1965, Ser. No. 434,529
17 Claims. (Cl. 250—103)



1. Apparatus for separately controlling the voltages to a plurality of loads which comprises:

transformer means having a primary winding and at least first and second secondary windings;

power supply means connected to said primary winding, said power supply means being controllable to selectively vary both the frequency and amplitude of the voltage applied to said primary winding;

frequency-responsive resonant circuit means connected to said first secondary winding;

first load means electrically connected to said first secondary winding and said resonant circuit means; and

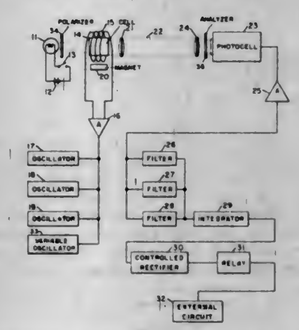
second load means electrically connected to said second secondary winding, whereby variation of the output voltage frequency of said power supply varies the voltage amplitude to said first load means.

3,289,001

SYSTEM FOR ACTUATING REMOTE ELECTRICAL CIRCUITS WITH A BEAM OF ELECTROMAGNETIC RADIATION

Robert L. Wilcox, Tulsa, Okla., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware

Filed Jan. 23, 1964, Ser. No. 339,739
19 Claims. (Cl. 250—199)



1. Apparatus for actuating an electrical circuit which comprises means for generating a beam of electromagnetic radiation; a cell containing a polymeric material including metallic particles with magnetic properties through which said beam passes, the radiation transmissibility of said material varying with changes in a surrounding magnetic field; means for establishing and changing a magnetic field about said polymeric material; a radiation sensitive device for generating an electrical signal in response to energy transmitted by said beam; means for eliminating all but selected transients from said electrical signal; and means for energizing an external circuit in response to said selected transients.

3,289,002

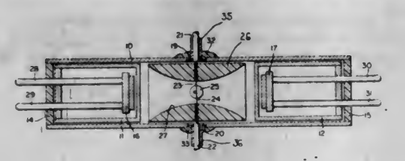
ELECTRO-OPTICAL SWITCHING DEVICE USING TWO PHOTOSENSITIVE CELLS WITHIN AN OPAQUE HOUSING

Robert M. Goodman, 200 E. Township Line Road, Elkins Park, Pa.

Filed Apr. 25, 1961, Ser. No. 105,465
5 Claims. (Cl. 250—209)

1. An electro-optical device comprising: first and second photoconductive cells having photo-sensitive areas disposed toward the respective ends thereof, said cells being coaxially aligned with said ends having said photosensitive areas facing one another, tubular means surrounding said cells and being substantially coaxial therewith, means between said photosensitive areas having an axial aperture therethrough, and incandescent means disposed in said aperture and constructed to emit light onto

both of said areas, said apertured means having said aperture larger at opposite ends thereof and decreasing toward the center thereof, the inner surfaces of said apertured means being substantially reflective of said light, said tubular means being opaque to said light and also



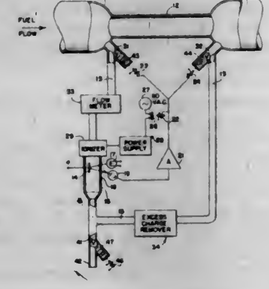
being provided with apertures, conductors passing through said apertures to permit application of potentials to said incandescent means and to said cells, seals in said apertures and around said conductors to prevent the passage of ambient light therethrough.

3,289,003

CONTAMINANT MONITORING SYSTEM INCORPORATING IONIZATION AND DETECTION OF CONTAMINANT PARTICLES

Gordon V. Jorgenson, Hopkins, Minn., assignor, by mesne assignments, to Litton Systems, Inc., Beverly Hills, Calif., a corporation of Maryland

Filed May 29, 1963, Ser. No. 284,217
7 Claims. (Cl. 250—218)



1. An apparatus for continuously monitoring the contaminant concentration in a flowing liquid which comprises a line for continuously capturing a portion of the flowing liquid and for returning the captured liquid to the flow, means associated with said line for measuring the flow of the captured liquid, means mounted in said line for placing a charge on liquid contaminating particles, means mounted in said line for collecting said charged particles, means associated with said line and said collecting means for detecting the collected particles, and means responsive to said detecting means for terminating the flow of captured liquid when a predetermined amount of particles is collected.

3,289,004

PHOTOSENSITIVE ELECTRONIC SERVO APPARATUS FOR CURVE FOLLOWING

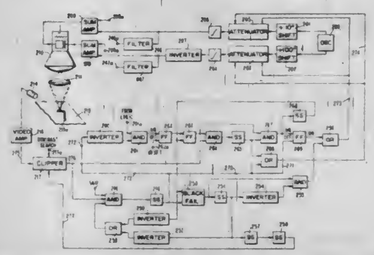
Evon C. Greanias, Chappaqua, and Philip F. Meagher, Mount Kisco, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Sept. 3, 1963, Ser. No. 306,119
9 Claims. (Cl. 250—219)

8. Means for controlling the operation of an electronic curve following apparatus to test line ends for legitimacy and to bridge breakes in the formation of the curve being followed comprising:

(a) means for imaging a spot of light upon a document containing the curve to be followed;

(b) means for moving the spot of light in a succession of semi-circular arcs of small radius joined by arcs of varying angularity having a greater radius, the



said small arcs travelling totally within the line defining the curve being followed, and the larger radius arcs travelling outside of the line being followed;

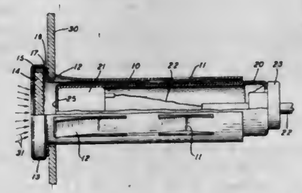
(c) means responsive to the travel of said larger radius arc for more than $3/2\pi$ radians for moving said spot of light in an arcuate path having a radius in excess of said greater radius until said spot of light intercepts the line of the curve.

3,289,005

ADJUSTABLE MOUNTING MEANS FOR PHOTOCELLS LOCATED IN OUTDOOR STRUCTURES

Robert E. Prescott, Rumson, and William E. Whidden, Middletown, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Feb. 25, 1964, Ser. No. 347,168
5 Claims. (Cl. 250—239)

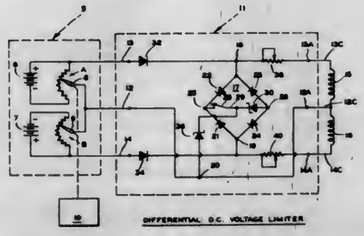


4. Lighting control apparatus for outdoor telephone booths, comprising in combination: an outer hollow member having an outwardly-extending end flange; a translucent window sealed within said flange; means including a plurality of raised surface portions of said outer member for locking same within a passage through a wall of said booth, said flange abutting the exterior of said booth wall with said window exposed to ambient light; an inner member insertable into said outer member and including a photocell at one end; means including a plurality of depressed surface portions of said outer member for frictionally retaining said inner member at various points of adjustment between said window and photocell; lighting means including a switch; and means connecting said photocell to said switch; whereby control of the lighting means is governed by the distance between said cell and window selected with regard to ambient-light conditions.

3,289,006
DIFFERENTIAL DIRECT CURRENT VOLTAGE LIMITER

Vincent A. Wilhelm, Mahwah, and Donald Gabin, Teaneck, N.J., assignors to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware

Filed June 12, 1963, Ser. No. 287,403
13 Claims. (Cl. 307—24)



1. For use with a source of differential signal voltage, a differential direct current voltage limiter comprising a three-wire electrical input for receiving differential voltage signals from said source

a three-wire electrical output from said limiter,

two control elements to which said differential voltage signals may be applied through said output,

a bridge network connected to said input and said output,

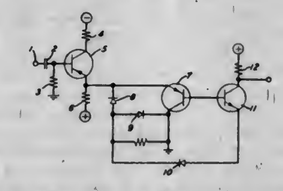
first means in said bridge network having a substantially constant threshold potential below which it is nonconductive and above which it is conductive and a substantially constant impedance when conductive for cooperating with said bridge network so as to limit to a predetermined maximum differential value the voltages applied through said output to said control elements,

second means included in said bridge network having a substantially constant threshold potential below which it is nonconductive and above which it is conductive and a substantially constant impedance when conductive for cooperating with said first means and said bridge network to limit the voltages applied through said output to said control elements to a predetermined maximum value and within a range determined by said predetermined maximum differential value.

3,289,007
SIGNAL RECTIFIER UTILIZING OPPOSITE CONDUCTIVITY TRANSISTORS

Herbert M. Zydney, New York, N.Y., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 28, 1962, Ser. No. 248,145
7 Claims. (Cl. 307—88.5)

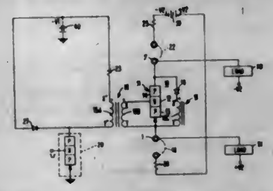


1. A full wave signal rectifier circuit comprising a transistor including a base, emitter and collector, a first and second impedance connected in series across the emitter-to-collector path of said transistor, a source of input signals connected across the emitter-to-collector path of said transistor, and a load circuit interconnecting the base of said transistor and the junction of said first and second impedance.

3,289,008
FLOATING NONSATURATING SWITCH

Edward H. Sommerfield, Endicott, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Apr. 1, 1963, Ser. No. 269,370
8 Claims. (Cl. 307—88.5)



6. A floating nonsaturating switch comprising, in combination:

(a) a normally conductive transistor having a base, emitter and collector;

(b) a transformer having a primary winding, and first and second secondary windings;

(c) said first secondary winding being connected from said base to said emitter;

(d) a diode;

(e) means for connecting said diode and said second secondary winding in series from said collector to said emitter, said diode being connected in relatively opposed polarity with respect to said emitter to collector polarity;

(f) a source of potential;

(g) an impedance element connected in series with said primary winding to said source;

(h) means for pulsing said primary winding;

(i) said source of potential and said impedance element each being of a magnitude to provide a constant current flow through said primary winding when said primary winding is pulsed to thereby provide a first magnetic field having a constant magnetizing force during the pulse period;

(j) said primary winding inducing energization of said secondary windings;

(k) said first secondary winding, when energized, causing said transistor to conduct;

(l) the magnitude of the current flowing through said transistor increasing to a point where said diode is forward biased and a current is permitted to flow through said second secondary winding; and

(m) said current flowing in said second secondary winding developing a magnetic field which subtracts from said first magnetic field to thereby oppose further increase in current flowing through said transistor, whereby the transistor is maintained below its saturation level.

3,289,009
SWITCHING CIRCUITS EMPLOYING SURFACE POTENTIAL CONTROLLED SEMICONDUCTOR DEVICES

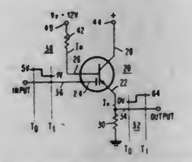
Algirdas J. Gruodis, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed May 7, 1963, Ser. No. 278,653
4 Claims. (Cl. 307—88.5)

3. A switching circuit comprising

a surface potential controlled semiconductor device having collector, base, gate and emitter electrodes, said semiconductor device having a base-emitter voltage drop (V_d) and being connected in a common collector circuit configuration whereby a load resistor (R_1) is connected to the emitter electrode, the gate electrode adapted to receive an input signal, and output circuit connected across the load resistor, and

a base supply including a voltage supply (V_s) and a base resistor (R_b) connected to the base electrode, the base supply providing a base current (I_b) in the



vicinity of a zero volt gate-to-emitter voltage, the base current being defined by

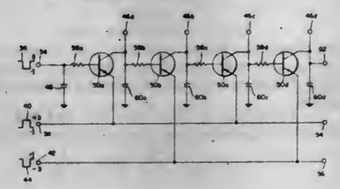
$$I_b = \frac{V_s - V_d}{R_1 + R_b}$$

whereby a maximum base current is provided to keep the device in a saturating condition when the input signal is at a first level and a minimum base current is provided to keep the device in a nonconducting condition when the input signal is at a second level.

3,289,010
SHIFT REGISTER

James R. Bacon, Philadelphia, and George H. Barnes, West Chester, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Nov. 21, 1963, Ser. No. 325,295
8 Claims. (Cl. 307—88.5)



4. The combination comprising:

an input terminal electrically coupled to receive signal input voltages;

an output terminal;

first energy storage means, electrically connected to said input terminal, for storing energy received in the form of voltage pulses from said input terminal;

second energy storage means, electrically connected to said output terminal, for storing energy in the form of a voltage;

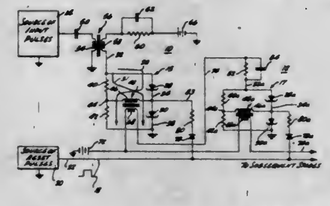
advance terminal means for receiving voltages of a first polarity and voltages of a second polarity; and

transfer means electrically connected to said advance terminal means comprising intermediate energy storage means having a signal receiving terminal, first polarity responsive switch means electrically coupled to said first energy storage means and to the signal receiving terminal of said intermediate energy storage means and second polarity responsive switch means electrically coupled to said second energy storage means and to the signal receiving terminal of said intermediate energy storage means independently of said intermediate energy storage means, for discharging said first energy storage means when receiving a voltage pulse of said first polarity from said advance terminal means and for providing energy to said second energy storage means when receiving a voltage pulse of said second polarity from said advance terminal means.

3,289,011
TUNNEL DIODE BINARY CIRCUITS EMPLOYING SERIES CONNECTED TUNNEL DIODES AND TRANSFORMER COUPLING

Michael May, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Dec. 2, 1963, Ser. No. 327,264
6 Claims. (Cl. 307—88.5)



1. A bistable element responsive to first and second sources of input pulses comprising

first and second negative resistance means coupled in series across said first source of pulses,

first and second impedance means coupled in series across said first source of pulses,

means coupling said second source of pulses to a point between said first and second tunnel diodes,

means intercoupling said first and second sources of pulses,

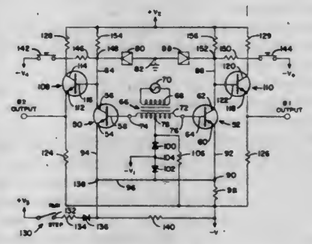
a transformer having first and second windings with the first winding coupled from a point between said first and second impedance means to a point between said first and second tunnel diodes,

and output means coupled to said second winding.

3,289,012
PULSE CIRCUIT GENERATING UNDERLAPPED CLOCK PULSES EMPLOYING TWO CONTROLLED SEMICONDUCTIVE SWITCHES COUPLING TWO TUNNEL DIODES

Walfred R. Raisanen, St. Paul, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 20, 1964, Ser. No. 338,720
3 Claims. (Cl. 307—88.5)



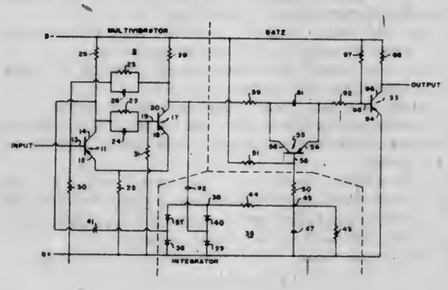
1. A pulse forming circuit for generating underlapped positive and negative going rectangular pulses having short rise and fall time characteristics comprising: first and second semiconductor current controlling means, each

having an input electrode, an output electrode and a control electrode; a constant current source having first and second terminals; means connecting the input electrode of said first and second semiconductor current controlling means in common to the first terminal of said constant source; first and second tunnel diodes connected between the second terminal of said constant current source and respectively to the output electrodes of said first and second of semiconductor current controlling means; a source of cyclic input signals connected to the control electrodes of said first and second current control means for periodically and alternately rendering said first and second semiconductor current controlling means conductive and non-conductive on successive half-cycles of said source of input signals; and biasing means connected to said contol electrodes of said first and second semiconductor current controlling means for maintaining both of said semiconductor current control means simultaneously non-conductive for predetermined portions of each half cycle of the input signals from said source.

3,289,013
TRANSISTOR A.C. GATE CIRCUIT

George A. Gallant and Conrad N. White, Burlington, Vt., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Feb. 26, 1964, Ser. No. 347,632
13 Claims. (Cl. 307—88.5)



13. A gating system in which the signal to be gated is utilized to cause the gate to be turned on and off comprising:

a bistable multivibrator having an input and a pair of outputs;

means for sampling a portion of said signal having a pair of outputs and a pair of inputs, each of said inputs connected to a respective output of said bistable multivibrator:

a gate transistor having an input electrode and an output electrode;

a capacitor connected between one of the outputs of said multivibrator and the input electrode of said gate transistor;

a rectifying network having its inputs connected to the outputs of said sampling means; and

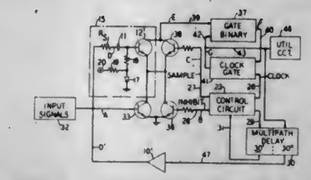
an integrating means;

the output of said rectifying network connected to said integrating means and a second transistor having a base electrode, emitter electrode and a collector electrode, the emitter electrode of said second transistor connected to one end of said capacitor and said collector electrode of said second transistor connected to the other end of said capacitor, said base electrode of said second transistor connected to said integrating means whereby signals are gated to the output electrode of said gate transistor in response to a control signal developed by said integrating means.

3,289,014
DIGITAL TIME COMPRESSOR WITH SELF-BIASED THRESHOLD

Peter S. Fuss, Randolph Township, Morris County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Original application July 20, 1964, Ser. No. 383,995. Divided and this application Dec. 16, 1965, Ser. No. 518,513
7 Claims. (Cl. 307—88.5)



3. In combination,

means receiving input signal pulses,

an amplifier,

means coupling said pulses from said receiving means to an input of said amplifier, output pulses from said amplifier being subject to pulse amplitude and occurrence time variations,

means connected to said coupling means for inhibiting the coupling of said input pulses at predetermined intervals, and

gating means coupling said output pulses from said amplifier to an input of said coupling means during said intervals to substitute said output pulses for a pulse from said receiving means, said gating means including means stabilizing the amplitude and occurrence time of said pulses so substituted.

3,289,015
PULSE GENERATOR

Richard Anthony Fitch, Reading, and Vernon Thomas Seymour Howell, Newbury, England, assignors to United Kingdom Atomic Energy Authority, London, England

Filed Oct. 1, 1964, Ser. No. 403,688
Claims priority, application Great Britain, Oct. 10, 1963, 39,995/63
11 Claims. (Cl. 307—110)

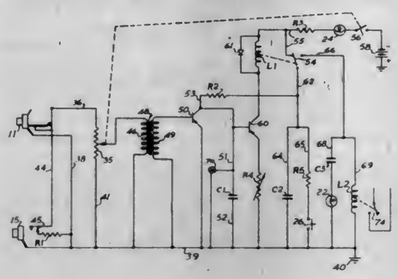


1. A pulse generator comprising two sheets of electrically conductive material and two sheets of electrically insulating material arranged alternately and wound together into a roll thereby forming two open-ended strip transmission lines having in common a sheet of electrically conductive material, connection means for connecting the sheets of electrically conductive material to an electrical source to charge the transmission lines, connection means for connecting a load across opposite ends of one of the conductors, switch means, and connection means located at substantially the mid-point of the transmission line for connecting the two sheets of electrically conductive material together through said switch means to discharge not more than one of the said two transmission lines.

3,289,016
COUPLING CONTROL DEVICE

Walter L. Bloom, Bloomland Farm, Rte. 3, Marietta, Ga., and Robert E. Meek, 1009 Adair Ave. NE., Atlanta, Ga.

Filed July 22, 1963, Ser. No. 296,672
5 Claims. (Cl. 307—116)

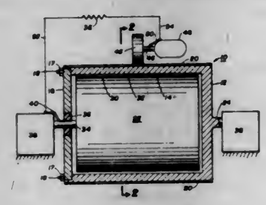


4. A timing device for determining when a switch has been open for a predetermined length of time including a capacitor and a first resistor connected in series and forming a first circuit, an electronic switch, a second resistor and a relay coil being connected in series and forming a second circuit, said first circuit and said second circuit being connected in parallel, means for impressing a voltage across said first circuit and said second circuit, said switch being connected in parallel with said capacitor so that, when said switch is open, said capacitor will be charged, said electronic switch means being controlled by the charge on said capacitor.

3,289,017
SHEAR RESPONSIVE LIQUID GENERATOR

Donald L. Klass, Barrington, Robert M. Haines, Crystal Lake, Robert B. McEuen, Barrington, and Thomas W. Martinek, Crystal Lake, Ill., assignors, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California

Filed Dec. 23, 1963, Ser. No. 332,483
17 Claims. (Cl. 310—2)



1. An apparatus for generating pulsating direct current comprising

(a) first and second spaced members mounted for movement with respect to each other and having opposing electrically conductive surfaces substantially uniformly spaced from each other,

(b) means for confining a shear-responsive liquid in the space between said members,

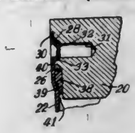
(c) means for moving said members with respect to each other, and

(d) means for intermittently connecting said electrically conductive surfaces across an external circuit.

3,289,018
SECURING OF ELECTRIC MOTOR END MEMBERS

Edward J. Schaefer, Bluffton, Ind., assignor to Franklin Electric Company, Inc., Bluffton, Ind., a corporation of Indiana

Filed May 6, 1964, Ser. No. 365,282
11 Claims. (Cl. 310—42)

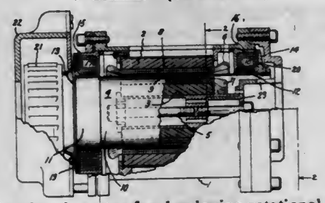


1. In an electric motor construction including a stator and a rotor, a frame for housing and supporting the stator and the rotor comprising a tubular shell member and at least one end member, said end member having a portion positioned in an end of said shell member, said shell member and said end member including substantially lateral abutting surfaces for accurately locating said members longitudinally relative to each other, and said shell member being deformed into rigid interlocking engagement with said end member at intermittent spaced locations, said abutting surfaces comprising the end surface of said shell member and a lateral shoulder on said end member, and said interlocking engagement of said members including at least one recess formed in the outer periphery of said portion of said end member, the axially inner surface of said recess being spaced axially inwardly from said shoulder, and said shell member including a portion deformed into tight engagement with said inner surface of said recess.

3,289,019
ROTATING MACHINE

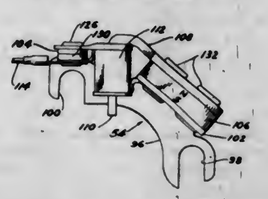
Theodor Adam Buchhold, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed May 6, 1965, Ser. No. 453,586
9 Claims. (Cl. 310—52)



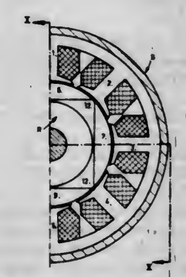
1. An electric motor for developing rotational mechanical power in a cryogenic environment comprising a motor housing, a stator supported by said housing and provided with alternating current windings for producing a magnetic field rotating in proportion to the frequency of the alternating current provided said windings, a metallic rotor adapted for continuous rotation about its axis, said rotor being provided with a superconductive portion as well as a non-superconductive portion in the same cryogenic environment, wherein the said non-superconductive portion is disposed in juxtaposition with respect to said stator at a substantially constant spacing from said stator in the magnetic field thereof, and magnetic bearing means supported by said housing positioned in confronting relation around a superconductive portion of said rotor for providing a magnetic field confining the rotor in aligned relation with said axis by virtue of the said superconductive portion's excluding the magnetic field of said bearing means, said rotating field of said stator penetrating only the non-superconductive portion of said rotor inducing heavy currents therein as aided by the resistance reducing property of said cryogenic environment and reacting with said rotating field to produce rotation of said rotor about said axis.

3,289,020
IGNITION DISTRIBUTOR
Robert K. Frank, Mount Clemens, Alfred Schneider, Detroit, and William F. Shunn, Fraser, Mich., assignors to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed Dec. 9, 1963, Ser. No. 328,795
10 Claims. (Cl. 310—70)



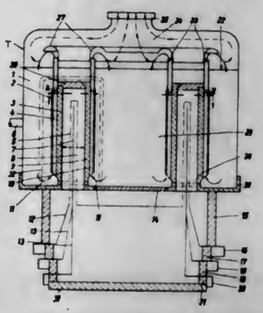
1. A magnetic pick-up unit adapted to be secured within the housing of an ignition distributor having a cam so as to provide a pulse generator, said unit comprising a bracket having means for securing the same within said housing, a permanent magnet secured to said bracket, said magnet having parallel oppositely-disposed pole faces, the combined surface area of said pole faces exceeding the other surface area of said magnet, said magnet being positioned along the outer edge of said bracket, a pole piece secured to one pole of said magnet, said pole piece having a free end portion extending across said bracket and toward the axis of said cam, said free end portion of said pole piece and a pole surface of said magnet forming an acute angle, and a coil mounted on said free end portion, the arrangement of the above recited elements of said magnetic pick-up being such that magnetic flux normally passes from one pole face of said magnet through said pole piece and thence across said coil and back to the other pole face of said magnet.

3,289,021
ROTARY ELECTRIC MACHINE
Robert Favre, Lausanne, Switzerland, assignor to Golay, Buchel & Cie. S.A., Malley-Lausanne, Vaud, Switzerland
Filed Dec. 3, 1963, Ser. No. 329,347
Claims priority, application Switzerland, Dec. 3, 1962, 14,145/62
1 Claim. (Cl. 310—168)



A rotary electric machine comprising a stator, field poles of both polarities and induced poles rigid with the stator, a rotor coaxial with the stator, magnetizable armature sections rigid with the rotor and adapted upon rotation of the rotor to direct the magnetic fluxes produced by field poles of opposite polarities alternatingly into the induced poles, and a short-circuiting ring carried by each field pole and opposing the alternating flux components produced by the reaction of the armature sections.

3,289,022
ELECTRIC DISCHARGE TUBE EQUIPPED WITH ANODE COOLED BY THE BOILING COOLING PRINCIPLE
Hermann Oberländer, Berlin, Germany, assignor to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany
Filed Sept. 4, 1964, Ser. No. 394,530
Claims priority, application Germany, Sept. 7, 1963, T 24,667
16 Claims. (Cl. 313—35)

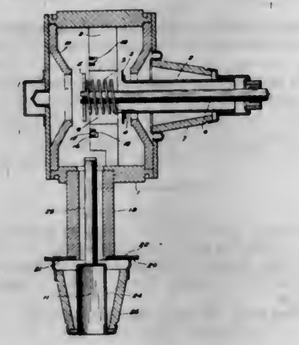


1. An electric discharge tube equipped with an anode which is cooled by the boiling cooling principle, the tube comprising, in combination: a tank, and an anode arranged in said tank, said anode being constituted by two vertically oriented concentric cylinders which are connected together across the top, thereby to form an anode of inverted U-shaped cross section, there being arranged within the annular space formed between said two cylinders a cathode that emits radially in both directions; a plate closing the lower end of the inner of said two concentric cylinders for forming a vacuum tight seal for the anode and cathode; there being an outer coolant chamber formed between the outer surface of the outer one of said two concentric cylinders and the inner surface of said tank within which said anode is arranged, and there being an inner coolant chamber formed within the cylindrical space defined by the inner surface of the inner of said two concentric cylinders and said plate; said outer cylinder being provided, in the region of said outer surface thereof, with a plurality of circumferentially distributed, axially extending cooling channels whose lower ends communicate with said outer coolant chamber; and said inner cylinder being provided, in the region of said inner surface thereof, with a plurality of further circumferentially distributed, axially extending cooling channels whose lower ends communicate with said inner coolant chamber; in consequence of which coolant in said coolant chambers will, upon heating up of said anode cylinders and the resultant vaporization of some of the coolant in said channels, be drawn into said channels.

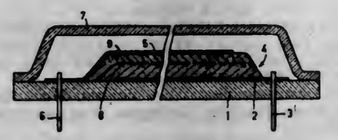
3,289,023
MAGNETRON WITH HELICAL CATHODE HELD BY SUPPORT, THE OUTPUT AND MODE SUPPRESSION MEANS BEING REMOTE FROM THE CATHODE SUPPORT
William L. Adikes, Huntington, and Kenneth V. Spitzer, North Babylon, N.Y., assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 30, 1963, Ser. No. 276,838
2 Claims. (Cl. 315—39.53)

1. An electron discharge device comprising an enclosure, a cathode support extending into said enclosure, a slow-wave structure within said enclosure and comprising an annular anode block having a plurality of resonant

cavities opening into a central aperture in the anode block, magnetic field producing means within said enclosure and spaced from the end of said anode block remote from the cathode support, a helical cathode mounted on said cathode support extending into and coaxial with the central aperture of the anode block, said helical cathode being coextensive with and extending beyond the anode a distance not exceeding about 25% of the anode length in the axial direction, mode suppressing straps interconnecting the resonant cavities of the anode block only on the side thereof remote from the cathode support, and means to couple said resonant cavities to an output system disposed on the side of the anode block remote from the cathode support, said coupling means comprising an inner conductor element having a cup-shaped end portion adapted to receive one end of an inner conductor of a coaxial line and having dimensions for which maximum energy at a given frequency can be radiated into a wave-guide, an outer tubular conductor element coaxial with said inner conductor element and terminating adjacent to the base of said cup-shaped end portion, flange means secured to said outer conductor element for connecting the same to an outer conductor of a coaxial conductor system, and a coaxial insulating member connecting said flange to the open end of said cup-shaped portion of the inner conductor element for fixedly positioning the same within said outer conductor element whereby the output of the device may be connected to a coaxial conductor system or a waveguide.

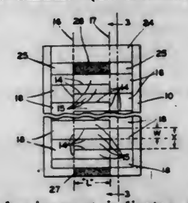


3,289,024
PHOTO-SENSITIVE DEVICE INCLUDING LAYERS OF DIFFERENT CONDUCTIVITY TYPES
Edward Fokko de Haan, Paulus Philippus Maria Schampers, and Abraham van der Drift, all of Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 10, 1964, Ser. No. 350,870
Claims priority, application Netherlands, Mar. 12, 1963, 290,121
9 Claims. (Cl. 313—65)



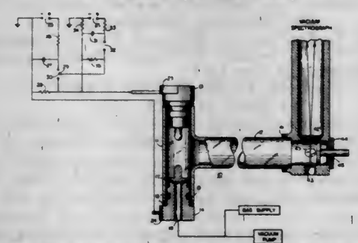
1. A photo-sensitive device selectively responsive to radiation having a wave-length longer than at least part of the visible range comprising a support, a photo-sensitive layer on said support, said layer having in the direction of thickness zones having different electrical conductivities superposed over one another, and means to supply an electrical current to one side of said layer, said layer having a first zone of a thickness of the order of microns and of an intrinsic conductivity type, and a second adjacent zone of the same material as that of said first zone but of p-type conductivity type and having a conductivity substantially greater than that of said first zone whereby said second zone serves as an electrode for said first zone, said second zone having a thickness at which wave-lengths shorter than at least part of the visible range are absorbed whereby said latter zone serves as an optical filter when said first zone is irradiated through said second zone.

3,289,025
CONTACT ARRANGEMENT FOR AN ELECTRO-LUMINESCENT INDICATOR DEVICE
Hans B. Bullinger, Nutley, N.J., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed July 23, 1963, Ser. No. 297,099
6 Claims. (Cl. 313—108)



1. An electroluminescent indicator device comprising a plurality of electrically conductive members,
each of said members including an indicator portion and a contact portion at one end of said indicator portion,
said contact portion having a width substantially twice the width of the indicator portion,
the members being arranged so that the contact portions thereof are disposed at opposite ends of adjacent indicator portions,
said contact portions all extending in a like direction and parallel one to the other,
and each of the indicator portions being positioned in parallel spaced relation one to the other and having an end thereof positioned in spaced relation to a contact portion of another of said members.

3,289,026
HIGH INTENSITY REPRODUCIBLE SHOCK RADIATION SOURCE
Raymond C. Elton, Hyattsville, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Jan. 7, 1964, Ser. No. 336,324
6 Claims. (Cl. 313—231)



1. A device for generating highly reproducible gaseous shock waves which comprises;
a quartz shock-tube,

said shock-tube including an open ended elongated tubular portion of about eight times the length of a cross-arm portion.

oppositely disposed nickel electrodes assembled in said cross-arm portion with their longitudinal axis perpendicular to the longitudinal axis of said elongated tubular portion,

said nickel electrodes comprising O-ring cushioning means between themselves and said cross-arm,

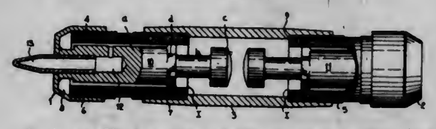
and an adapter to be secured to the end of said elongated tubular portion with the inner wall surface thereof in alignment with the inner wall surface of said open ended tubular portion of said shock tube for connecting a vacuum spectrograph thereto at an angle relative to the axis thereof for observing gaseous shock waves produced in said shock-tube.

3,289,027

GAS FILLED EXCESS VOLTAGE PROTECTOR HAVING ELECTRODES OF NON-UNIFORM DIAMETER

Raymond Dennis Jones, Cheam, England, assignor to Associated Electrical Industries Limited, London, England, a British company

Filed Jan. 4, 1965, Ser. No. 423,219
Claims priority, application Great Britain, Jan. 7, 1964, 747/64
6 Claims. (Cl. 313—231)



1. A gas-filled excess voltage protector comprising a conductive sleeve, two cup-shaped metal end caps, two cylindrical insulating spacers fitting within and hermetically sealed to respective ends of the sleeve on the one hand and the respective end caps on the other hand, whereby said spacers cooperate with the sleeve and end caps in forming a sealed enclosure, and two internal electrodes carried by the respective end caps and extending towards each other through the spacers into the sleeve in which they terminate with protective gaps between these electrodes themselves, and between each of them and the sleeve which constitutes a third electrode, characterised in that, as regards each of the internal electrodes, a self-supported portion of its length which extends to a point short of the inner end of the electrode from a point within the cylindrical spacer through which it passes, has a cross-section smaller than that of the remainder of the electrode at its inner end and also sufficiently smaller than the internal diameter of the spacer to be radially spaced from the inner surface thereof.

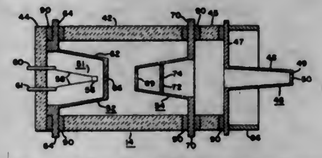
3,289,028

APPENDAGE ELECTRON GUN FOR LIGHT VALVE PROJECTION APPARATUS

Edmund F. Schilling, De Witt, and Von C. Campbell, Syracuse, N.Y., assignors to General Electric Company, a corporation of New York

Filed Oct. 3, 1963, Ser. No. 313,693
3 Claims. (Cl. 313—318)

1. An electron discharge device for a light valve apparatus comprising: an envelope member forming a writing chamber for the device; an appendage electron gun member mounted and hermetically sealed to said envelope member; said gun member having a base, a body and a spacer element formed of an electrically insulative refractory material; said body and spacer elements having an annular hollow configuration; said base, body and spacer elements axially adapted to form an annular hollow electron gun chamber having a closure at an end thereof; a cathode electrode mounted to said base element and extending into the hollow of said body and spacer elements; an electron gun lens having first and second electrodes; said first and second electrodes having annular integral surface segments spaced between said base and body and between said body and spacer elements respectively and secured thereto by a brazing filler metal; each of



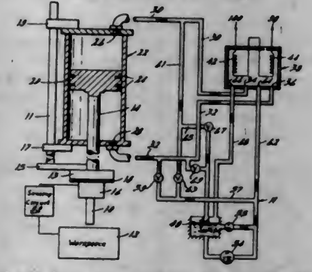
said electrodes extending inwardly from a respective end of said body member and toward the axis of said body element and terminating in a disc having an aperture on said axis; an end element axially adjacent said spacer element and secured thereto by a brazing filler metal; said end element having an aperture located therein, said apertures being aligned to provide for the passage of an electron beam from the gun member to the writing chamber.

3,289,029

SERVO FEED APPARATUS FOR ELECTRICAL DISCHARGE MACHINING

Robert S. Webb, Bloomfield Hills, Mich., assignor to Elox Corporation of Michigan, Troy, Mich., a corporation of Michigan

Filed Sept. 16, 1965, Ser. No. 487,711
26 Claims. (Cl. 314—61)



21. A closed loop servo system for a controlled state device including reversible motive means comprising, a sensing means operable to provide an electrical output representative of a characteristic of the state of the device, means for establishing a level of operation of said characteristic, means for inhibiting the operation of said motive means below a predetermined deviation from said level and for activating said motive means above said predetermined deviation, and balancing means operatively connected to said motive means to provide a balancing force thereto to maintain it stationary in a null output condition of said sensing means.

3,289,030

ELECTRON TUBE WITH APERTURED INTERDIGITAL DELAY LINE, ADJACENT APERTURES BEING OF DIFFERENT SIZE AND AT DIFFERENT VOLTAGES

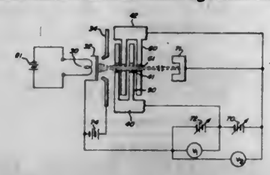
Rudolf C. Hergenrother, West Newton, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware

Filed Apr. 26, 1963, Ser. No. 275,942
7 Claims. (Cl. 315—3.5)

1. In a delay line structure:

a plurality of interdigitated members having alternately smaller and larger apertures therein;

and voltage means coupled to alternate interdigitated members such that the interdigitated members hav-



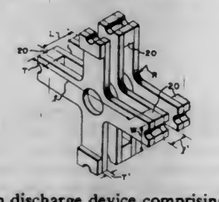
ing the smaller apertures are at a higher potential than the interdigitated larger apertured members.

3,289,031

HIGH FREQUENCY ELECTRON DISCHARGE DEVICES AND SLOW WAVE STRUCTURES THEREFOR

Yukio Hiramatsu, Los Altos, and Norman R. Vanderplaats, Palo Alto, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Jan. 28, 1963, Ser. No. 254,268
17 Claims. (Cl. 315—3.5)



1. An electron discharge device comprising,

(a) an electron gun adapted and arranged to generate an electron beam along a predetermined path, said electron gun being positioned at one end of said path,

(b) a collector structure positioned at the other end of said path,

(c) a slow wave structure positioned along said predetermined path, said slow wave structure having a generally X-shaped transverse cross-sectional area defined by a plurality of axially spaced cruciform shaped members having their major axes lying in a plurality of axially spaced substantially parallel planes extending along and transversely oriented with respect to said predetermined path, each of said cruciform shaped members having an aperture in the central portion thereof for permitting passage of said electron beam traversing said predetermined path, at least two of the diametrically opposed arm members of each of said cruciform shaped members being conductively connected to the axially opposed arm members of an adjacent cruciform member at the peripheral end portions of said arm members.

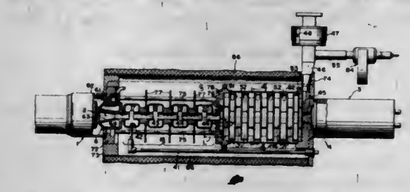
3,289,032

MICROWAVE HYBRID TUBE APPARATUS

Rodney R. Rubert, Santa Clara, and Robert L. Perry, San Jose, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Dec. 30, 1963, Ser. No. 334,496
13 Claims. (Cl. 315—3.6)

1. A hybrid microwave tube apparatus including; means for forming a stream of electrons; means disposed along said stream for electromagnetic interaction with said beam; said interacting means including, a traveling wave circuit disposed along said stream path for cumulative interaction between the stream and a wave of increasing amplitude moving on said wave circuit; output terminal means for extracting wave energy from said stream for transmission to a utilization device; said interacting means also including a plurality of resonators spatially separated along said stream path upstream of said wave circuit and forming a buncher section for current density modulating said stream before interaction with said wave circuit, said resonators being dimensioned and tuned to provide a signal gain characteristic for the buncher section which is supplementary to the gain char-



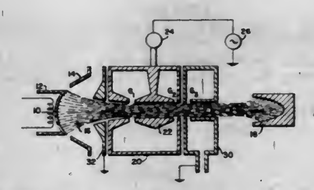
acteristic of said traveling wave section, and wherein certain of said resonators of said buncher section are cavity resonators tuned to different frequencies corresponding to the opposite band edges of the gain characteristic of said traveling wave circuit to thereby peak up the composite gain characteristic of the tube at the band edges, whereby the total gain characteristic for the tube apparatus is rendered more uniform than that obtained from said wave circuit section taken alone.

3,289,033

MICROWAVE ELECTRONIC TUBE

Akio Saburi, Tokyo, Japan, assignor to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan

Filed Aug. 23, 1962, Ser. No. 218,949
Claims priority, application Japan, Oct. 23, 1961, 36/38,399
3 Claims. (Cl. 315—5)



1. A klystron type electronic tube comprising

an electron emitting source and a collector spaced therefrom for producing an electron beam between said source and said collector,

first means disposed in the path of said beam for generating oscillations including a pair of gaps disposed at spaced points along said beam,

said first means including a cavity resonator body of generally annular shape in which said gaps are formed between portions of said resonator body and a drift tube located entirely within said body, said drift tube also being electrically connected to said body,

second means disposed in the path of said beam between said first means and said collector for developing output power from said beam, said second means being electrically independent of said first means,

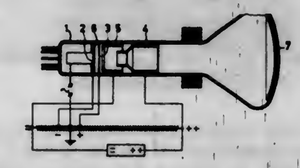
a control electrode disposed in the path of said beam for maintaining the beam current substantially constant,

and means for connecting a source of modulating potential across said first means and said second means whereby electronic tuning is effected by varying the transit angle between said gaps.

3,289,034
CATHODE-RAY TUBE HAVING AN AUXILIARY ELECTRODE BETWEEN THE CONTROL GRID AND THE ANODE ELECTRODE

Cornelis Weber and Johannes van Esdonk, both of Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Continuation of application Ser. No. 190,582, Apr. 27, 1962. This application May 4, 1966, Ser. No. 548,819
Claims priority, application Netherlands, June 24, 1961, 265,121
4 Claims. (Cl. 315—31)

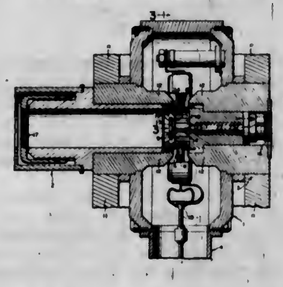


1. An image-reproducing device comprising a cathode-ray tube having a beam-forming electrode system comprising a cathode, a first anode, means to apply a positive potential to said anode, a disc-shaped control electrode having an aperture for the passage of a cathode-ray positioned in proximity to the cathode between the anode and cathode, a plurality of parallel wire conductors extending across said aperture in said control electrode, means to apply to said control electrode a positive potential less than that applied to said anode, an auxiliary electrode having an aperture whose diameter is at least three times that of the cathode-ray at the control electrode positioned between said control electrode and said anode, and means to apply a negative potential of more than —50 volts to said auxiliary electrode.

3,289,035
REVERSE MAGNETRON HAVING MEANS TO SUPPRESS UNDESIRED MODES

Jerome Drexler, New Providence, N.J., assignor to S-F-D Laboratories, Inc., Union, N.J., a corporation of New Jersey

Filed Aug. 10, 1962, Ser. No. 216,228
11 Claims. (Cl. 315—39.51)



1. A coupling device for wave energy communication between a hollow cavity resonator operating in a circular electric mode and a load including, a circular electric mode cavity resonator having an end wall, said end wall having an elongated coupling hole therethrough, a hollow circular electric mode wave supporting structure axially aligned with said coupling hole for wave communication between said cavity and the load, said elongated coupling hole being elongated in the circumferential direction of said cavity end wall to provide coupling to the desired circular electric mode while more heavily coupling the load to the undesired non-circular electric modes of said cavity having radial currents in said end wall to thereby load said undesired modes for suppression thereof.

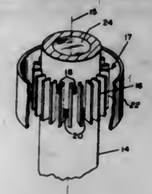
ERRATUM

For Class 315—39.53 see:
Patent No. 3,289,023

3,289,036
INVERTED MAGNETRON HAVING ADJACENT ANODE CAVITIES COUPLED IN OPPOSITE PHASE TO A CENTRAL STABILIZING CAVITY

Edward T. Downing, Winchester, and William A. Bowers, Berlin, Mass., assignors to Raytheon Company, Lexington, Mass., a corporation of Delaware

Filed Aug. 5, 1964, Ser. No. 387,572
9 Claims. (Cl. 315—39.53)

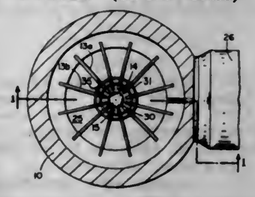


1. An electrode structure comprising:
an anode cylinder having inner and outer longitudinal surfaces and defining an integral stabilizing cavity;
a cathode cylinder encircling said anode cylinder;
a plurality of anode vanes attached to an outer surface of said anode cylinder and forming resonant anode cavities between said vanes;
a first plurality of slots extending through said anode cylinder and coupling alternate anode cavities to the upper portion of said stabilizing cavity;
and a second plurality of slots extending through said anode cylinder and coupling the remaining anode cavities to the lower portion of said stabilizing cavity;
adjacent slots of said first and second pluralities being spaced apart axially of the anode cylinder.

3,289,037
TEMPERATURE COMPENSATED MAGNETRON ANODE STRUCTURE HAVING ALTERNATE SEGMENTS OF DIFFERING THERMAL EXPANSION COEFFICIENT

Edward J. Whitmore, Williamsport, Pa., assignor, by mesne assignments, to Litton Industries, Inc., Beverly Hills, Calif., a corporation of Delaware

Filed Apr. 29, 1963, Ser. No. 276,320
5 Claims. (Cl. 315—39.55)

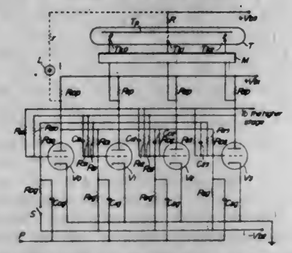


1. A magnetron anode structure comprising
an annular block,
a plurality of anode segments extending radially inward from said annular block,
alternate segments being fabricated of a material having a high coefficient of thermal expansion,
the intervening segments being fabricated of a material having a low coefficient of thermal expansion,
a first conductive ring adjacent to the inner edges of said segments connected to said alternate segments, and
a second conductive ring of larger diameter than the first ring adjacent to said first ring and connected to the intervening segments.

3,289,038
COUNTING DEVICES USING NUMERAL-INDICATING DISCHARGE TUBES

Naosuke Tsubakimoto, Osaka, Japan, assignor to Matsushita Electronics Corporation, Osaka, Japan, a corporation of Japan

Filed Feb. 20, 1964, Ser. No. 346,300
Claims priority, application Japan, Feb. 25, 1963, 38/9,499
7 Claims. (Cl. 315—84.6)



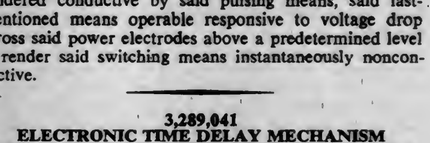
1. A counting device comprising a ring counter having a plurality of sequentially arranged counting elements for counting the number of incoming pulses, each of said counting elements having a control electrode and two output electrodes, a numeral indicating discharge tube having a plate and a plurality of numeral shaped cold cathodes opposed to the plate, matrix circuit means operatively connecting one of said output electrodes of each said counting element to respective cathodes of said discharge tube, the other output electrode of each said counting element being connected to a common ground, a bias voltage and an incoming pulse receiving terminal each connected to the control electrode of each said counting element, first means connecting an output electrode of the first counting element to the control electrodes of each subsequent counting element, a condenser interconnecting the control electrode of a third counting element with said first counting element output, second means including a condenser connecting an output electrode of a last counting element to the control electrode of a second counting element, said first and second means forming circuit means for rendering said discharge tube inoperative only during the time interval from the instant of resetting of the device to the arrival of the first of successive incoming pulses.

3,289,039
DISCHARGE AND COUNTING CIRCUITS FOR FLASHING BEACON

Gordon L. Stamm, Washington, D.C., and Lewis Scott, Deale, Md., assignors to the United States of America as represented by the Secretary of the Navy

Filed Jan. 20, 1964, Ser. No. 339,038
3 Claims. (Cl. 315—243)

1. A flashtube control circuit which comprises:
an arc discharge flashtube,
an inductance coil connected in series with said flashtube,
a plurality of parallel connected capacitors connected across said flashtube and said inductance coil to discharge a current therethrough to establish an arc in said flashtube,
said inductance coil reducing the current through said flashtube subsequent to discharge of said capacitors to extinguish the arc produced in said flashtube,
a high voltage power supply for charging said capacitors,

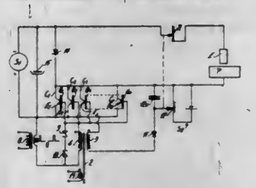


and a plurality of current limiting resistors connected in the circuit between said power supply and said plurality of capacitors,
an electrical pulse counter, said counter connected to said voltage supply and to one of said current limiting resistors,
whereby said counter records surges of current through said resistor during charging said capacitors.

3,289,040
CURRENT PULSING CIRCUIT

Jean Pfau and Heinz Rhyner, Geneva, Switzerland, assignors, by mesne assignments, to Elox Corporation of Michigan, Troy, Mich., a corporation of Michigan

Filed June 21, 1962, Ser. No. 204,188
25 Claims. (Cl. 315—307)



1. In an electrical circuit comprising a main voltage supply, a load, and at least one electronic switching means, a control electrode and having its power electrodes operatively connected between said supply and the load, a control circuit comprising a pulsing means operable to provide triggering pulses for rendering said switching means periodically conductive to deliver power pulses to the load, means operatively connected across the power electrodes of said switching means and operatively connected to the control electrode of said switching means for maintaining it conductive a predetermined time after its being rendered conductive by said pulsing means, said last-mentioned means operable responsive to voltage drop across said power electrodes above a predetermined level to render said switching means instantaneously nonconductive.

3,289,041
ELECTRONIC TIME DELAY MECHANISM

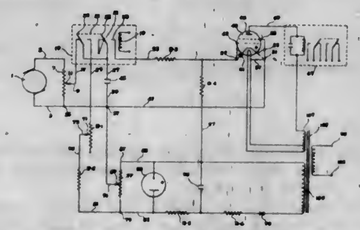
Charles A. Sherman, Tacoma, Wash., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington

Filed Dec. 11, 1963, Ser. No. 329,726
6 Claims. (Cl. 317—5)

1. A speed-compensating control apparatus comprising in combination
capacitor means
first means for charging said capacitor means to a voltage proportional to the speed of the machine element being compensated for
means for energizing a control execution relay to actuate the apparatus being controlled
said energizing means being inoperative below a standard voltage

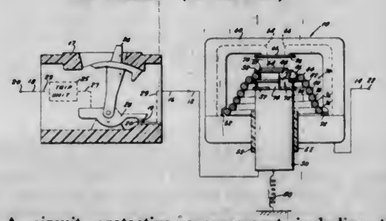
second means for charging said capacitor to said standard voltage

command control means for receiving a command control signal and, upon receipt of said signal, for disconnecting said first charging means from said ca-



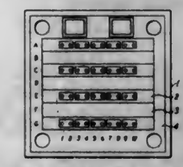
pacitor means and for connecting said energizing means and said second charging means with said capacitor means whereby said capacitor means discharges through said energizing means responsive to said capacitor means being charged to said standard voltage by said first and second charging means.

3,289,042
CURRENT LIMITING DEVICE
August Bodenschatz, Philadelphia, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Jan. 24, 1963, Ser. No. 253,573
15 Claims. (Cl. 317—11)



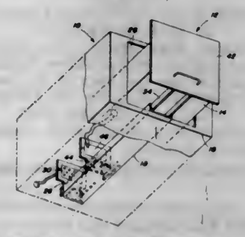
11. A circuit protective arrangement including the series connection of a current interrupting circuit breaker and a non-interrupting current limiting device; said current interrupting circuit breaker including an operating mechanism responsive to overload above a first predetermined value to interrupt current flow through said circuit breaker; said current limiting device responsive to overload above a second predetermined value to limit current flow therethrough; said second predetermined value corresponding to a severe short condition, and being of a substantially greater magnitude than said first predetermined value; said current limiting device including a first and second terminal; electrical circuit means forming a variable impedance between said first and second terminals; said electrical circuit means operatively including an elongated conductive member, coil wound to form a plurality of turns; first means adapted to progressively move adjacently located ones of said turns between an abutting and non-abutting relationship about their peripheral region; said turns in their abutting relationship effecting a low impedance value between said first and second terminals; said turns in their progressive non-abutting condition progressively increasing the impedance magnitude between said first and second terminals without interrupting the current flow therethrough; said first means constructed to initiate movement of said turns between their abutting and non-abutting relationship responsive to a current presented to said first and second terminals exceeding said second predetermined value, and independent of said circuit breaker operating mechanism.

3,289,043
SELECTIVE PLUG-IN ASSEMBLY
Erik J. Nielsen, Mequon, Wis., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Continuation of application Ser. No. 174,878, Feb. 21, 1962. This application Apr. 6, 1965, Ser. No. 449,361
6 Claims. (Cl. 317—99)



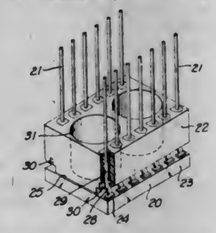
1. A selective plug-in assembly of electrical components and comprising a casing having an open side, a plurality of electrical components in the casing, a support of relatively rigid insulating material and having an outer face and an inner face, and having a plurality of separate passages extending therethrough from the outer to the inner face and arranged side by side, connecting means securing the support to the casing in closing relation to the open side of the casing with the inner face of the support exposed within the casing, conducting inserts secured in the passages, respectively, and electrically insulated from each other by the walls of the passages, each insert having an outer end exposed for access at said outer face and an inner end portion exposed for access at said inner face, and each insert having at least one pin-received socket which is open at the outer end of the insert and is closed at its inner end and extends inwardly toward the inner end of the insert and terminates in spaced relation to the inner end of the insert, at least some of the inserts having cavities, respectively, in their inner end portions and uncommunicated with their sockets, each of said cavities accommodating the end of a component terminal wire soldered in place in the associated cavity, encapsulating plastic material in set condition in the casing in embedding relation to, and bonded to, the components, and to inner end portions of the inserts, each passage having a portion with a cross section which, beginning at a location in spaced relation to the outer and inner faces, is progressively reduced in a direction toward the inner face, and each insert having a portion correspondingly progressively reduced and fitting said portion of the passage, and said insert and passage being of substantially uniform cross section from the outer face of the support to said location.

3,289,044
SLIDABLE TERMINAL CONTACTOR
Julius A. Ginsberg, Maplewood, N.J., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 21, 1965, Ser. No. 449,813
3 Claims. (Cl. 317—99)



1. For use with an electrical component chassis removably mountable in a chassis rack, the electrical component chassis including a base portion, a terminal contactor comprising: a first elongated channel-like slide member including a base portion fixed to the base portion of the electrical component chassis and arm portions integrally extending from the base portion thereof downwardly from the base portion of said electrical component chassis; a second elongated channel-like slide member including a base portion fixed to the chassis rack and arm portions integrally extending from the base portion thereof upwardly from the chassis rack; said slide members being disposed in opposed relationship so that the arm portions of one of said slide members slide over the base portion of the other of said slide members and the arm portions of said first slide member slidingly contact the arm portions of said second slide member to constrain said slide members to slidably move only longitudinally with respect to each other; a first connector fixed to and laterally extending from one end of the base portion of said first slide member; and a mating connector fixed to and laterally extending in the same direction as said first connector from a corresponding end of the base portion of said second slide member; said connectors being mutually aligned through the agency of said slide members so that when the electrical component chassis is fully inserted into the chassis rack said connectors mutually engage each other.

3,289,045
CIRCUIT MODULE
Nathan Pritikin, Santa Barbara, Bernard Feldman, Ventura, and Andres Romero, Santa Barbara, Calif., assignors to Intellux Inc., Santa Barbara, Calif., a corporation of California
Filed Mar. 2, 1964, Ser. No. 348,543
11 Claims. (Cl. 317—101)

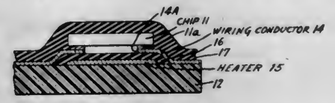


1. In a circuit module, the combination of:
a circuit carrying chip having opposed faces with a plurality of terminals in a plane on one face only thereof and disposed wholly within the periphery of said chip;
a plurality of leads, with one end of each lead connected to a corresponding terminal at said one face; and
an insulating housing overlying substantially the entire one face of said chip and fixed to said one face and enclosing and fixed to said leads adjacent the terminal ends thereof with the other ends of said leads projecting outwardly from said housing perpendicular to said one face for connecting said chip into an electrical circuit.

3,289,046
COMPONENT CHIP MOUNTED ON SUBSTRATE WITH HEATER PADS THEREBETWEEN
Everett Quentin Carr, Frankfort, N.Y., assignor to General Electric Company, a corporation of New York
Filed May 19, 1964, Ser. No. 368,610
1 Claim. (Cl. 317—101)

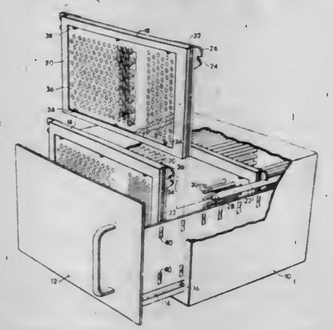
An assembly of a multiple component chip device mounted on a substrate having interconnecting wiring runs comprising:

(a) a multiple component chip device adapted for inverted mounting by having its terminal regions arranged in a single plane;
(b) a substrate;
(c) heater pads formed on said substrate in a pattern registering with said chip terminal regions;
(d) wiring runs formed on said substrate, the runs



having terminal portions geometrically spaced to register and mate with corresponding terminal portions on said chip;
(e) electrical and mechanical bonds formed between said terminal region and said terminal portion on said inverted chip and said substrate runs, respectively.

3,289,047
HOUSING FOR A MECHANICALLY ALTERABLE MEMORY SYSTEM
George G. Pick, Lexington, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Oct. 16, 1964, Ser. No. 404,438
4 Claims. (Cl. 317—101)

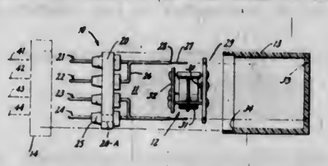


1. Packaging apparatus for a memory system which includes a plurality of data planes stacked one upon the other, and a plurality of elongated solenoids passing through all of said planes, said apparatus comprising, a rectangular cabinet having one open side therein, means for securing said solenoids to the side of said cabinet opposite said open side, said solenoids extending toward said open side, a drawer slidably mounted in the open side of said cabinet, means for removably mounting said data planes in said drawer orthogonal to said solenoids, and means for aligning said data planes with respect to said solenoids when said drawer is inserted into said cabinet.

3,289,048
ELECTRIC CIRCUIT MODULE
John M. Allegretti, San Jose, Roy J. Levy and Robert Snyder, Sunnyvale, and John W. Sullivan, Los Altos, Calif., assignors to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Oct. 27, 1964, Ser. No. 406,738
2 Claims. (Cl. 317—101)

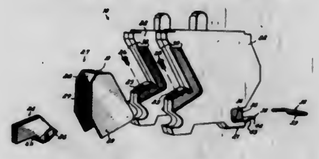
1. A circuit module comprising a panel with circuit means thereon and with two rows of apertured circuit terminals, each row being disposed along one of a pair of substantially parallel edges of the panel; a mounting plate underlying the panel at a distance therefrom and

having a series of apertures, said apertures being distributed over the area of the plate; a series of electric connectors, each having a portion extending through a corresponding one of said apertures, beyond the plate surface facing the panel, to and through one of the apertured circuit terminals, at least some of said por-



tions extending over said plate from inner parts toward side edges thereof, each connector extending beyond the other surface of the plate, at right angles to the plate, for connecting the various circuit terminals with external circuit structure; and housing means substantially covering the end portions of the connectors extending through said circuit terminals.

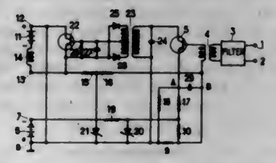
3,289,049
CIRCUIT BREAKERS
William H. Middendorf, Covington, Ky., assignor to Wadsworth Electric Manufacturing Company, Covington, Ky., a corporation of Kentucky
Filed Apr. 1, 1964, Ser. No. 356,573
4 Claims. (Cl. 317—119)



1. A circuit breaker unit comprising;
two circuit breakers having identical casings, line terminals at one end and load terminals at the other end,
removable means connecting the line ends of said circuit breakers when said circuit breakers are positioned side by side including an electrical connector having ears connected to said line terminals of each circuit breaker, and a portion adapted to make electrical contact with a bus bar conductor,
removable means connecting the load ends of said circuit breakers when said circuit breakers are positioned side by side including a clip engageable with the load end of each circuit breaker, and
a removable insulative shield having side flanges projecting from said casings along each side of said electrical connector thereby providing insulation of the electrical connector from the line contacts of an adjacent circuit breaker.

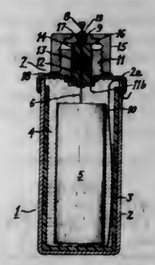
3,289,050
SIGNAL SHAPE RESTITUTING RECEIVER FOR CARRIER-CURRENT CODED SIGNALS
Jean-Claude Maurice Raoul Duval, Conflans-Sainte-Honorine, France, assignor to Lignes Telegraphiques & Telephoniques, Paris, France
Filed Dec. 23, 1963, Ser. No. 332,618
Claims priority, application France, Apr. 11, 1963, 931,215
9 Claims. (Cl. 317—148.5)

1. A receiving and shaping device for coded carrier-current signals, comprising input terminals for receiving signals, a bandpass filter for filtering said signals, an input transformer having a primary winding fed from the output of said filter and a secondary winding having a first and a second terminal, said first terminal being connected to the base electrode of a first transistor having base, collector and emitter electrodes and so biassed as to have only a very low gain in its rest condition, means for transmitting signals amplified by said first transistor to a rectifying circuit, means for applying the rectified voltage from said rectifying circuit to the base electrode of a second transistor having base, collector and emitter electrodes and so biassed as to have in its rest condition a substantially zero collector current, a two-terminal load impedance inserted in the collector circuit of said second transistor, a first and a second direct-current supply source for said first and second transitors, a biassing circuit for biassing all electrodes of said transistors from said sources, a first point at a constant reference potential and common to said sources in said biassing circuit, a connection connecting the emitter of said first transistor to a second point in said biassing circuit, a connection



connecting a second terminal of said secondary winding of said transformer to a third point in said biassing circuit, a condenser having one of its terminals connected to said emitter of said first transistor and its other terminal connected to said second terminal of said secondary winding, and a feedback circuit including direct-current voltage threshold means and connecting one terminal of said load impedance to said second terminal of said secondary winding, wherethrough part of the direct-current voltage across said load impedance is applied to said base electrode of said first transistor, whereby the gain of said first transistor is suddenly increased by the operation of said feedback circuit when signals are suddenly applied to said input terminals and suddenly decreased by the direct-current charge stored in said condenser when signals cease to be applied to same said input terminals; said receiving device further comprising means for causing the collector current of said second transistor to operate a working circuit.

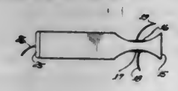
3,289,051
SEALED ELECTRICAL APPARATUS
Richard T. Sloan, Columbia, S.C., assignor to General Electric Company, a corporation of New York
Filed Mar. 4, 1963, Ser. No. 262,732
6 Claims. (Cl. 317—230)

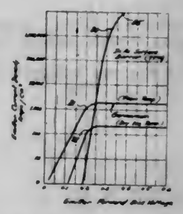


1. A sealed electrical assembly comprising, in combination, a casing containing an electrolyte and an electrical component immersed therein, said casing having an opening therein and said electrical component having a lead

extending therefrom outwardly through said casing opening, a metal seal housing fixed to said casing at said casing opening and projecting into the casing interior and having an opening into said interior, an assembly of superposed electrically insulating bushing members fitting within said metal seal housing and closing said housing opening, said housing opening having a lesser area than the superposed bushing surfaces, said lead passing through the housing opening, at least one of said bushing members being composed of a rigid fluid-impermeable material and another of said bushing members being composed of an elastomeric material, and a metal cap member electrically insulated from said lead and cooperating with said seal housing for compressing said bushing members therebetween and providing fluid-tight seals between said bushing members and said lead and between said bushing members and said seal housing.

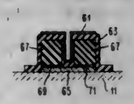
3,289,052
SURFACE BARRIER INDIUM ARSENIDE TRANSISTOR
Carver A. Mead, Pasadena, Calif., assignor to California Institute Research Foundation, Pasadena, Calif., a corporation of California
Filed Oct. 14, 1963, Ser. No. 316,013
6 Claims. (Cl. 317—234)





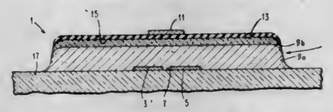
5. A surface barrier electrical translating device comprising a wafer of P-type conductivity indium arsenide, metal contacts on said wafer, and biasing means to said metal contacts for producing a current density substantially in excess of 2,000 amps/square centimeters.

3,289,053
THIN FILM TRANSISTOR
Rudolph R. Haering, Kitchener, Ontario, Canada, and Mark G. Miksic, Yorktown Heights, and William B. Pennebaker, Ossining, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 26, 1963, Ser. No. 333,279
13 Claims. (Cl. 317—235)



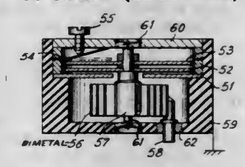
1. A thin film transistor comprising a source and drain electrode conductively joined by a layer of semiconductor material, a gate electrode positioned over said semiconductor layer and overlapping portions of said source and drain electrodes, a first dielectric layer positioned between and electrically insulating said gate electrode and said semiconductor layer, the improvement comprising a second dielectric layer intermediate overlapping portions of said source and drain electrodes and said gate electrode, respectively, to provide a capacitance between said overlapping portions less than the capacitance provided by said first dielectric layer between said gate electrode and said semiconductor layer.

3,289,054
THIN FILM TRANSISTOR AND METHOD OF FABRICATION
Rudolph R. Haering, Kitchener, Ontario, Canada, and Mark G. Miksic, Yorktown Heights, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 26, 1963, Ser. No. 333,443
6 Claims. (Cl. 317—235)



6. A thin film transistor comprising a source and a drain electrode defining a source-drain gap, semiconductor material formed within said gap to define an active layer electrically connecting said source and drain electrodes, a dielectric layer formed over said active layer, and a control gate formed over said dielectric layer and arranged in electrical field-applying relationship at one surface of said active layer, surface portions of said active layer adjacent said one surface and to a depth less than a Debye length having a lower resistivity than remaining portions of said active layer whereby majority carrier flow along said active layer and between said source and drain electrodes in response to said control gate is essentially determined by carrier modulation in said surface portions, said remaining portions of said active layer being of sufficiently high resistivity so as not to substantially contribute to majority carrier flow between said source and drain electrodes.

3,289,055
TEMPERATURE COMPENSATING CAPACITOR FOR QUARTZ CRYSTAL OSCILLATOR
Susumu Aizawa, Shimosuwa-machi, and Yoshibumi Gomi, Miyagawa, Chino-shi, Japan, assignors to Kabushiki Kaisha Suwa Seikosha, Tokyo, Japan, a corporation of Japan
Filed Sept. 30, 1965, Ser. No. 491,660
10 Claims. (Cl. 317—248)

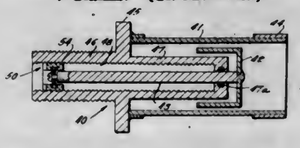


1. A capacitor for temperature compensating the frequency-temperature characteristics of a quartz crystal oscillator comprising
a first stationary electrode and a first rotatable electrode,
means for rotating said first rotatable electrode in capacitive relation with said first stationary electrode as a function of change in ambient temperature,
said first stationary and rotatable electrodes having shapes to approximately compensate for the frequency-temperature characteristics of said oscillator upon rotation of the electrodes one with respect to the other,
a second rotatable electrode secured to and electrically

connected to said first rotatable electrode for rotation therewith, and

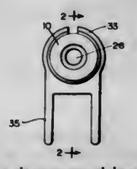
adjusting means including a second stationary electrode for varying the clearance between said second stationary electrode and said second rotatable electrode to provide precise compensation for said frequency-temperature characteristics.

3,289,056
CAPACITOR WITH DIRECT TRAVEL MECHANISM
David Taub, Paris, France, and Ralph Spielman, Brooklyn, N.Y., assignors to JFD Electronics Corporation, Brooklyn, N.Y., a corporation of New York
Filed May 25, 1965, Ser. No. 458,691
7 Claims. (Cl. 317—249)



1. A trimmer capacitor comprising a support bushing having a central opening therethrough, an elongated dielectric cylinder secured to said support bushing and coaxial with said central opening, an electrode band on said dielectric cylinder, an elongated adjustment shaft extending through said opening, a piston within said dielectric cylinder and connected to one end of said adjustment shaft, an adjustment nut having an internal annular groove, and radially extending connection means connected to said elongated adjustment shaft and extending into said annular groove; said support bushing having a threaded surface, said adjustment nut having a threaded surface, said threaded surface of said adjustment nut being threaded onto said threaded surface of said support bushing; and rotation prevention means; said rotation prevention means connected between said elongated adjustment shaft and said support bushing; said rotation prevention means preventing rotation of said elongated adjustment shaft responsive to rotation of said adjustment nut.

3,289,057
ADJUSTABLE CAPACITOR WITH MOVING DIELECTRIC
William A. Melanson, Lexington, Mass., assignor to Cambridge Thermionic Corporation, Cambridge, Mass., a corporation of Massachusetts
Filed June 9, 1965, Ser. No. 462,498
8 Claims. (Cl. 317—249)



1. A variable capacitor comprising:

a hollow electrode;

a guiding sleeve;

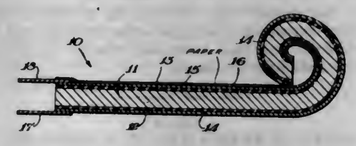
tubular support means for carrying said hollow electrode at one end and said guiding sleeve at the other end, and having the same cross sectional inner configuration as said hollow electrode;

a second electrode;

an adjustment stud engaging at one end said sleeve and carrying at the other end said second electrode; and

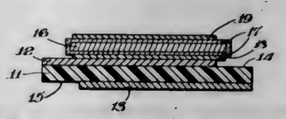
a tubular dielectric body surrounding, and permanently fixed to, said second electrode and slidable within said hollow electrode and said support means which together provide a continuously smooth guide for the dielectric body through its entire path of sliding adjustment.

3,289,058
CAPACITOR
Henry D. Hazzard, Williamstown, Mass., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed May 5, 1965, Ser. No. 453,416
3 Claims. (Cl. 317—258)



1. A capacitor consisting essentially of a valve metal foil convolutely wound with an insulating spacer material, said foil having a dielectric compound of the same valve metal formed on opposite surfaces thereof, an electrode positioned on each of said formed surfaces, terminals affixed to said electrodes, said foil, dielectric coated surfaces and electrode arrangement defining a pair of series connected capacitors.

3,289,059
DRY FILM CAPACITOR
Walter J. Bernard, Williamstown, Mass., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed May 5, 1965, Ser. No. 453,417
3 Claims. (Cl. 317—258)



1. An electrical component comprising an organic dielectric film having separated metallized layers on both sides thereof, convolutely wound with a valve metal foil which has a dielectric compound of the same valve metal coated on opposite sides thereof and a pair of electrodes positioned on the dielectric coated surfaces, said metallized layers being in face to face contact with said electrodes; said foil, dielectric coated surfaces, electrodes and metallized film arrangement defining a pair of series-connected capacitors in parallel with the metallized film.

3,289,060
ELECTRICAL DEFLECTION OF RAINDROPS
Norman N. Rubin, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Nov. 27, 1963, Ser. No. 326,641
7 Claims. (Cl. 317—262)

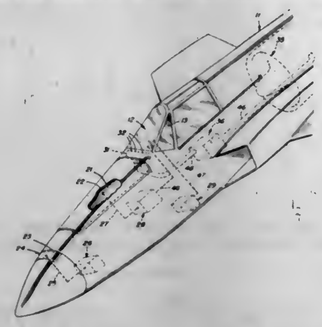
1. A windshield clearing apparatus for windshields of high speed vehicles which provides increased pilot visibility under adverse climatic flying conditions comprising:

charging means for increasing charges in individual particles passing thereover;

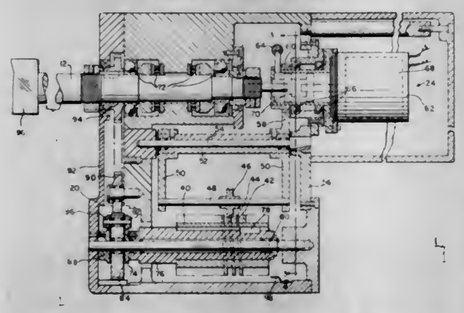
attracting means, positioned behind said charging means in the path of the particles for attracting the charged particles; and

repelling means positioned behind said attracting means;

whereby the particles are charged by passage over the charging means to provide increased force of attraction by the attracting means and increased force of repulsion by the repelling means.

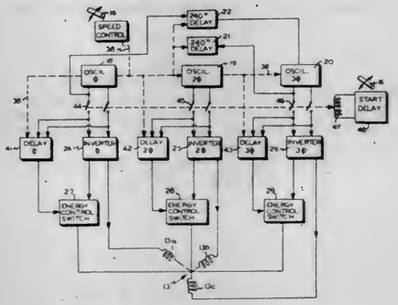


3,289,061
LEAD SCREW COMPENSATOR
Millard F. Stratman, Cincinnati, Ohio, assignor to The R. K. Le Blond Machine Tool Co., Cincinnati, Ohio, a corporation of Delaware
Filed Oct. 14, 1963, Ser. No. 315,837
9 Claims. (Cl. 318—18)



1. In a computer controlled machine having a lead screw and a nut driven thereby and a feed back unit driven by the lead screw to feed positional information back to the control unit of the machine, said unit comprising a rotor connected to the lead screw and a stator, means rotatably supporting said stator, and means for adjusting said stator angularly to compensate for errors in the lead screw comprising cam means having a cam surface and connected to the lead screw and driven thereby, a follower bearing on the cam surface and connected to said stator to move the stator angularly in conformity with the contour of said cam surface, said cam surface having a length such that the nut on the lead screw will make a single traverse thereof while the follower makes a single traverse of the cam surface, said cam surface being shaped to deflect such follower from a normal position in conformity with the lead screw error at the point thereof corresponding to the point on the cam surface engaged by the follower, said cam means comprising a cylindrical member having a spiral rib thereof forming the said cam surface, said follower comprising a grooved roller engaging said rib and supported to follow the rib as the member rotates, and means for effecting relative adjustment between said cam means and said follower in conformity with the temperature of the lead screw so as to effect a straight line adjustment of the angular position of said stator as the follower moves along said cam means.

3,289,062
ELECTRIC DRIVE SYSTEM FOR INDUSTRIAL TRUCK
Alan C. Dannettell, Philadelphia, Pa., assignor, by mesne assignments, to Eaton Yale & Towne Inc., a corporation of Ohio
Filed Apr. 2, 1963, Ser. No. 270,093
14 Claims. (Cl. 318—139)



1. In a battery driven industrial truck,

a multiple phase alternating current induction motor,

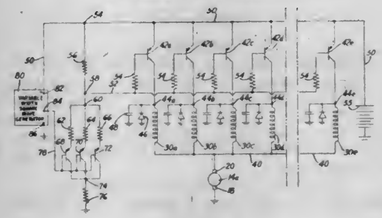
a plurality of power inverter circuits energizable by the battery for producing alternating current impulses at the constant amplitude of the battery, to energize each phase of the motor,

frequency adjustable oscillator means producing a series of phase displaced signals, one of each phase of the motor, and controlling the power inverter circuits to produce the alternating impulses at the frequency of the oscilaltor means,

a plurality of adjustable power regulator circuits, with one for each phase of the motor, for regulating the duration of the constant amplitude alternating current impulses from the inverter circuits energizing each phase of the motor,

and a single manual control for enabling simultaneous and continuous adjustment of the oscillator means to change frequency, and simultaneous and continuous adjustment of the plurality of power regulator means to vary the power applied to the motor at each frequency.

3,289,063
TRANSISTOR MOTOR CONTROL
Brooks H. Short, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 26, 1962, Ser. No. 169,054
10 Claims. (Cl. 318—252)



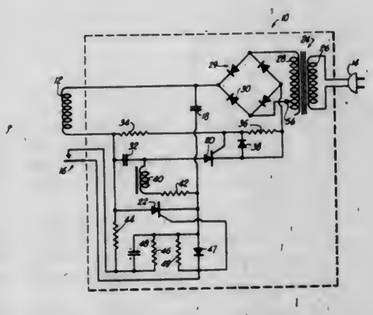
6. An electrical circuit which is capable of substantially balancing the current carried by a plurality of parallel

connected transistors without the use of balancing resistors comprising, a source of voltage, a plurality of transistors, an electrical load comprised of a plurality of load segments, means connecting individual transistors and load segments in parallel with each other and across said source of voltage whereby said transistors share the current supplied to said electrical load when said transistors are conductive, said load segments tending to cause a balance of current flow through said parallel connected transistors while serving as the electrical load for the system, and means for controlling the conductivity of all of said transistors simultaneously whereby said transistors under one condition of operation are all conductive at the same time.

3,289,064
ENERGY SUPPLY CIRCUIT

Richard H. Doyle, Mount Prospect, Joseph S. Naber, Wheeling, and Le Roy N. Hermann, St. Charles, Ill., assignors to Fastener Corporation, Franklin Park, Ill., a corporation of Illinois

Filed Dec. 22, 1961, Ser. No. 161,653
12 Claims. (Cl. 320—1)



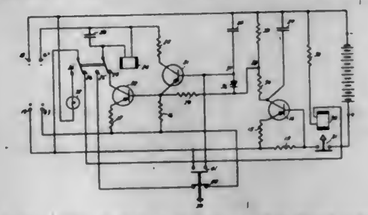
1. A circuit for supplying energy to a load comprising a potential source, first capacitive means, a first controlled conduction device for connecting said first capacitive means to said potential source, a second controlled conduction device for connecting said first capacitive means to said load, means controlled by the potential across said first capacitive means for controlling the conductivity of said second controlled conduction device, second capacitive means connected to said potential source by said first controlled conduction device and isolated from the load, and means including a conductive path through the second controlled conduction device for connecting both said first and second capacitive means in series with the first controlled conduction device for controlling the conductivity of said first controlled conduction device.

3,289,065
EXTREME VALUE SWITCHING DEVICE

Klaus Dehmelt, Frankfurt am Main, Guenter Strasen, Sprendlingen, and Georg Graeber, Ruesselsheim am Main, Germany, assignors to Varta Deutsche Edison-Akkumulatoren-Company Gesellschaft mit beschraenkter Haftung, Frankfurt am Main, Germany, a corporation of Germany

Filed Nov. 14, 1963, Ser. No. 323,784
Claims priority, application Germany, Nov. 17, 1962, D 40,301
8 Claims. (Cl. 320—40)

4. An electrical switching device which effects a switching operation as soon as the input voltage has traversed an extreme value, characterized by the feature, that it consists of the series connection of a condenser and a diode

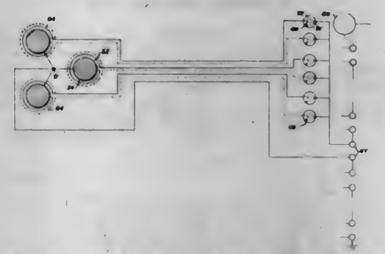


and that the input voltage is applied to said series connection while the output voltage is tapped off over the diode.

3,289,066
HIGH VOLTAGE ELECTROMAGNETIC APPARATUS HAVING AN INSULATING MAGNETIC CORE

Robert J. Van De Graaff, Lexington, Mass., assignor to High Voltage Engineering Corporation, Burlington, Mass., a corporation of Massachusetts

Application Nov. 21, 1961, Ser. No. 154,937, now Patent No. 3,187,208, dated June 1, 1965, which is a continuation of application Ser. No. 647,915, Mar. 22, 1957. Divided and this application Apr. 19, 1965, Ser. No. 469,954
3 Claims. (Cl. 321—1)



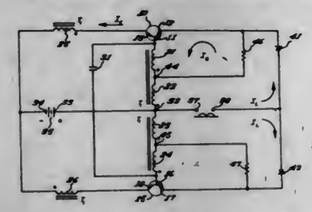
1. Electromagnetic apparatus for converting high-voltage D.C. power to low-voltage A.C. power comprising in combination an insulating magnetic circuit having a high-voltage crown and a grounded base connected by a plurality of insulating magnetic paths, a multiplicity of conductive paths linking said insulating magnetic paths, means for dividing high-voltage D.C. power into small D.C. increments, a series of inverters adapted to transform said D.C. increments into a changing electric current in each of said conductive paths, said inverters being so phased as to produce an intense changing magnetic field in said insulating magnetic circuit, and means for deriving low voltage A.C. power from said intense changing magnetic field.

3,289,067
SEMICONDUCTOR SINE WAVE INVERTER

Balthasar H. Pinckaers, Edina, Minn., assignor to Honeywell Inc., a corporation of Delaware

Filed Sept. 23, 1963, Ser. No. 310,529
25 Claims. (Cl. 321—2)

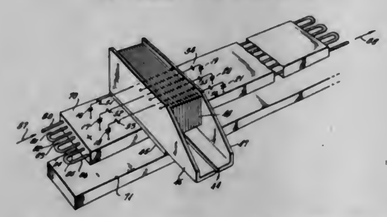
1. Sine wave inverter apparatus comprising: resonant circuit means, including a number of serially connected inductance means wound on a common magnetic core; current amplifying means; further inductance means wound on said common magnetic core; a source of potential; said current amplifying means connected intermediate said resonant circuit means and said further inductance means; said source of potential connected intermediate said further inductance means and said resonant circuit means; said connections made such that current from the output of said amplifying means must flow through further inductance means in a direction to create an additive magnetic potential in said common magnetic core, thus restoring magnetic potential lost in the resonating of said resonant circuit means; feedback means, said feedback means connected intermediate said resonant circuit means and said current amplifying means, such as to cause a current flow in said amplifying means even under no load conditions; and output means connected intermediate said amplifying means and said resonant circuit.



3,289,068
BUS ARRANGEMENT FOR SEMICONDUCTOR RECTIFIERS

George A. Healis, Lansdowne, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed May 2, 1963, Ser. No. 277,559
6 Claims. (Cl. 321—8)



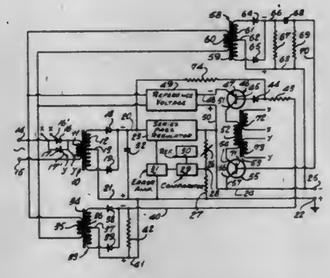
1. A bus structure for a multiphase power converter; said bus structure including a longitudinally extending bus member; said multiphase power converter including a multiphase transformer and a plurality of rectifier elements connected to each phase of said multiphase power transformer; said plurality of rectifier elements connected to said longitudinally extending bus member in separated groups at longitudinally spaced locations along said bus member and being in mechanical and electrical engagement with respect to said bus member; the terminals of said multiphase transformer for said respective groups of rectifier elements being mechanically supported from said elongated bus and being located between its respective first and second groups of rectifier elements.

3,289,069
PHASE CONTROLLED VOLTAGE REGULATING SYSTEM

Paul G. Todd, Glen Head, N.Y., assignor to Trygon Electronics Inc., Roosevelt, Long Island, N.Y., a corporation of New York

Filed July 30, 1962, Ser. No. 213,473
5 Claims. (Cl. 321—18)

1. A voltage regulator comprising a power transformer having a primary winding and secondary winding, rectifier means connected to said secondary, at least one filter condenser connected to said rectifier means, switch means connected in series with said primary winding to control the application of alternating current energy thereto, said transformer and rectifier means applying interrupted direct current to said condenser, output means including terminals connected to said condenser for applying direct current energy to a load, second transformer and rectifier means energized by said alternating current and producing interrupted D.C. voltage, means including a differentiating network for producing a voltage corresponding to the differential of the last said interrupted D.C. voltage, control means connected to and energized by

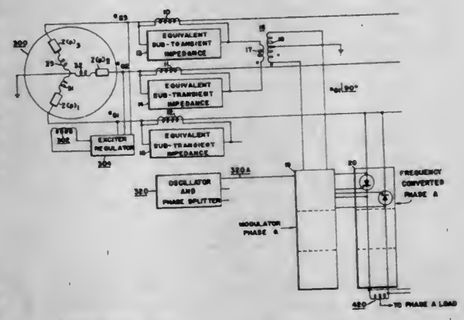


said second transformer and rectifier means, and said differentiating means whereby said control means is activated only during the latter half of each alternating current cycle, connections between said terminals and said switch means, said control means being responsive to an increase in the magnitude of the voltage on said terminals to delay the closure of said switch means and responsive to a decrease in the magnitude of the last said voltage to advance closure of said switch means.

3,289,070
CIRCUITRY FOR OBVIATING THE EFFECTS CAUSED BY SUBTRANSIENT IMPEDANCES IN SCR GENERATING SYSTEM

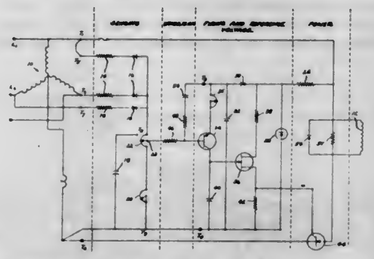
Samuel C. Caldwell, Chagrin Falls, Ohio, and Lawrence R. Peaslee, Waynesboro, Va., assignors to General Electric Company, a corporation of New York

Filed Apr. 5, 1963, Ser. No. 274,373
7 Claims. (Cl. 321—69)



1. A circuit for reconstructing the waveform of the voltage generated by the air gap flux of an alternator comprising, means for generating an instantaneous voltage equal to the voltage dropped across the subtransient impedance of said alternator, and means serially connecting said instantaneous voltage in additive relationship with the voltage at the terminals of said alternator.

3,289,071
VOLTAGE REGULATOR
George M. Rosenberry, Jr., Schenectady, N.Y., assignor to General Electric Company, a New York corporation
Filed Nov. 20, 1963, Ser. No. 325,041
8 Claims. (Cl. 322—28)



1. A voltage regulator useful in controlling the operation of rotating electrical equipment including an alternator having an output winding and corresponding output terminals, said regulator comprising

a sensing circuit connected to the output terminals of the alternator and including voltage reduction and rectifying means for providing a sensed voltage proportional to the voltage at the output terminals,

a field winding and a first semiconductor device connected to at least one phase of the alternator winding,

a firing and reference voltage circuit connected to the output terminals of said alternator winding,

said circuit including a constant voltage semiconductor device effective in establishing a reference voltage,

selectively operable conducting means connected to said constant voltage semiconductor device and to said sensing circuit,

said conducting means being responsive to the difference voltage resulting from the difference between the reference voltage and the sensed voltage furnished by the sensing circuit, the arrangement being such that when the difference voltage reaches a predetermined value, the conducting means is converted to a conducting state to charge a capacitor associated therewith,

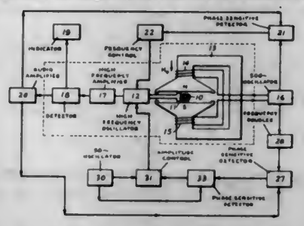
stabilizing means between the sensing and firing and reference voltage circuits for improving the performance of the alternator,

synchronizing means in the firing and voltage reference circuit including a conductive element connected between said capacitor and the first semiconductor device,

said synchronizing means being effective in permitting the firing circuit voltage to decrease to zero at least once per cycle and permitting the capacitor to discharge at least one per cycle, thereby obtaining synchronization between the line voltage and the time the capacitor begins to charge.

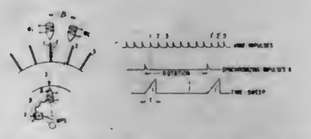
3,289,072
ANALYSIS OF SUBSTANCES BY MEASUREMENT OF NUCLEAR MAGNETIC RELAXATION TIMES
Nick A. Schuster, assignor, by mesne assignments, to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas
Filed Jan. 13, 1953, Ser. No. 330,978
13 Claims. (Cl. 324—.5)

2. In apparatus for geophysical exploration in wells drilled into the earth, the combination of means mounted for movement through a well for establishing a substantially constant magnetic field at a given region in a well, means for establishing an alternating magnetic field at said region and disposed at an angle to said constant field, the frequency of said alternating field being substantially equal to the frequency of precession of nuclei embodying magnetic properties and comprising molecules of material in said region, means for automatically main-



taining the energy of said alternating field at an optimum value to facilitate the determination of the relaxation time for said nuclei, and means for obtaining indications of energy absorbed by said nuclei from said alternating field.

3,289,073
METHOD AND APPARATUS FOR MEASURING THE OSCILLATION OF VANES, PARTICULARLY IN JET PROPELLING UNITS
Kurt Loeffler, 55 Werastrasse, Stuttgart, Germany
Continuation of application Ser. No. 817,555, June 2, 1959. This application Mar. 28, 1963, Ser. No. 268,644
Claims priority, application Germany, June 4, 1958, D 28,240
10 Claims. (Cl. 324—34)



9. A method of testing rotary or non-rotary vanes or blades of turbo-engines through the use of electric signal pulse-generating means arranged at particular points around the periphery of the blades or vanes and means for producing an appropriate time base display, the method comprising generating a first electric signal pulse at the time at which a synchronizing reference point on the rotor of the turbo-engine which locates a radius vector rotating rigidly with the rotor passes a fixed point in space adjacent the rotor, generating a second electric signal pulse at the time at which the tip of a selected blade or vane passes a second fixed point, triggering the time scan of the time base display with the first signal pulse, and modulating the time scan thus triggered with the second signal pulse whereby the magnitude, angular position, and duration of the second signal pulse is displayed together with appropriate calibration marks for ascertaining the oscillation frequency and angular displacement of the blade tips.

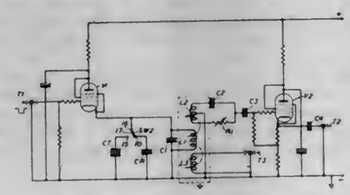
3,289,074
METHOD FOR DETERMINING DIELECTRIC LOSS OF COAXIAL CABLE BY MEASURING THE DECREMENT OF THE TEST OSCILLATION
Frederick Jones, Wembley, Middlesex, England, assignor to Her Majesty's Postmaster General, London, England
Filed May 16, 1963, Ser. No. 281,000
Claims priority, application Great Britain, May 18, 1962, 19,336/62
5 Claims. (Cl. 324—54)

1. A method of testing co-axial cable by measurement of the power factor of its dielectric material, including, in combination, the steps of:

(i) setting up, in a reference parallel resonant circuit including a low-loss reference capacitor and an inductor, a reference oscillation initiated by a given amount of energy and reinforced by supplying to said circuit an amount of power that is a function of the energy of the reference oscillation and just sufficient to maintain said reference oscillation in an undamped constant amplitude condition in said reference circuit;

(ii) then substituting for the said reference capacitor a test capacitor comprising a specimen of cable to be tested and having a capacitance similar to that of the reference capacitor;

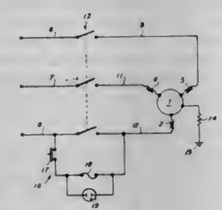
(iii) then setting up in the test parallel resonant circuit provided by step (ii) a test oscillation having



a frequency and initial magnitude substantially equal to those of the reference oscillation in step (i) and initiated by the same amount of energy as that employed to initiate the reference oscillation in step (i) and reinforced by supplying to said test reference circuit an amount of power that is the same function of the energy of the oscillation as that employed in step (i) so that any difference in power factor of the dielectric material of said cable specimen from that of said reference capacitor is reflected as damping or decrement of said test oscillation, and

(iv) measuring the damping or decrement of said test oscillation under the conditions of step (iii) as a measure of the power factor of the dielectric material of the cable specimen.

3,289,075
APPARATUS INCLUDING PARALLEL CONNECTED FUSE AND LAMP MEANS FOR TESTING MOTOR INSULATION
Martin V. Jones, 4750 Malta St., Long Beach, Calif.
Filed Apr. 24, 1964, Ser. No. 362,536
2 Claims. (Cl. 324—54)



1. A polyphase induction motor comprising:

plural induction windings,

insulation normally isolating said windings from ground potential,

a power switch having plural contacts,

a separate input line electrically connecting each of said contacts with each of said windings,

a power source, and

an electrically-conductive circuit coupling said power source to one of said windings across said power switch,

said circuit including:

a normally open manually operable test switch,

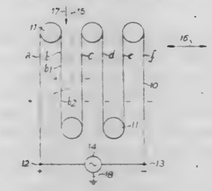
a fuse in series with the switch, and

a glow discharge indicator lamp connected in parallel with said fuse,

said circuit arrangement concurrently electrically energizing both the fuse and the indicator device when the normally-open switch is manually closed and said fuse being sized to break down when said insulation permits a leakage current of a predetermined amount, and

said glow discharge indicator lamp having a striking voltage lower than said power supply voltage whereby the lamp lights when placed in series with said power source and ground potential.

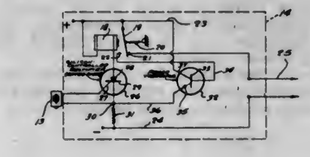
3,289,076
LOCATION AND REPAIR OF FAULTS IN ELECTRICAL CONDUCTORS
Edward Alexander Edis, Potters Bar, England, and Robert Vandenbergh Turner, deceased, late of London, England, by Ralph Samuel Turner, administrator, Hastings, England, assignors to A. C. Cossor Limited, London, England, a British company
Continuation of application Ser. No. 69,040, Nov. 14, 1960. This application June 18, 1965, Ser. No. 470,268
Claims priority, application Great Britain, Nov. 24, 1959, 39,910/59
1 Claim. (Cl. 324—67)



A method of locating a break in an electric conductor which is not readily accessible, the conductor having its ends connected to first and second accessible terminals and being formed as a grid in which linear sections of the conductor are arranged in spaced parallel relation and, in the absence of a break, are connected in conductive series circuit relation between said accessible terminals, whereby when a potential difference is applied between said terminals, current will flow through all of said conductor sections simultaneously, each pair of adjacent conductor sections forming one section of the grid and producing an electric field between said adjacent conductor sections in dependence upon the potentials at which said adjacent conductor sections are maintained, the field created in each grid section along a path midway between said adjacent conductor sections having a maximum value when the two conductor sections thereof are maintained at potentials of the same polarity and being of zero value when the two conductor sections thereof are maintained at potentials of opposite polarity, said method comprising the steps of applying fluctuating potentials of opposite instantaneous polarities to said first and second terminals, whereby when a break of said conductor appears in one of said conductor sections, all of the conductor sections on one side of said break assume the potential of said first terminal to which they are connected, and all of the conductor sections on the opposite side of said break assume the potential of said second terminal which is of opposite polarity with respect to said first terminal, whereby one grid section located on one side of the conductor section containing said break will have a linear section thereof located on one side of said break in which the

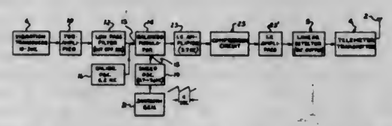
electric field is of zero value, and the grid section on the opposite side of said conductor section containing said break will have a linear section thereof on the opposite side of said break in which the electric field is of zero value, moving said detector across said grid to determine the location and direction of the field paths established by the grid sections and the two grid sections having zero field value, and thereby locating the position of the conductor section containing said break and exploring the electric field in said two grid sections containing portions having zero electric field by moving said field detector along the length of said grid sections and determining the point at which the condition of zero electric field shifts from one grid section to the adjacent grid section.

3,289,077
DIESEL ENGINE TACHOMETER
Sidney S. Miller, San Diego, Calif. (% Yacht Haven Marina, Charlotte, Amalie, St. Thomas, Virgin Islands)
Filed July 12, 1963, Ser. No. 294,636
4 Claims. (Cl. 324—70)



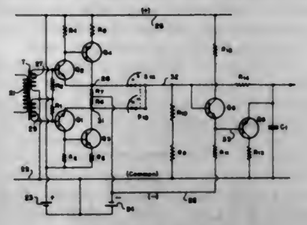
1. In a diesel engine having a fuel injector, a transducer mounted on said fuel injector so as to generate an electrical signal responsive to each vibration of the injector produced by the opening thereof, a source of current, a relay, a pair of output terminals, said relay, when deenergized completing a circuit between the source and the output terminals, a gated diode having a gate electrode, means connecting said gated diode and relay in a series circuit to said source of current, circuit means connecting said transducer to said gate electrode to trigger said diode responsive to each of said electrical signals, whereby to energize said relay, means to short circuit said series circuit responsive to energization of the relay, whereby to cut off the gated diode, and deenergize the relay, and means connected to the output terminals to count and indicate the frequency of said electrical signal pulses.

3,289,078
SPECTRUM ANALYZER WITH SIGNAL COMPRESSION MEANS IN A TELEMETRY SYSTEM
Alfred G. Ratz, Trenton, N.J., assignor to Gulton Industries, Inc., Metuchen, N.J., a corporation of New Jersey
Filed June 28, 1961, Ser. No. 120,415
2 Claims. (Cl. 324—77)



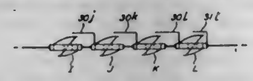
1. In combination with a wireless airborne telemeter transmitter for transmitting data information modulated in accordance with the instantaneous amplitude of a direct current input signal fed thereto, and a source of alternating current data signals having a relatively wide amplitude range, an amplifying system connected between said source of data signals and said telemeter transmitter including: a substantially non-frequency-responsive compression circuit comprising first impedance means in series with said source of data signals, a number of parallel branch circuits connected in series with said source of data signals and said first impedance means, an output circuit coupled across said parallel branch circuits, said parallel branch circuits comprising a first group of branch circuits having impedance means and means for rendering the branch circuits conductive at different amplitude levels of the data signal of a first polarity, to provide a compression characteristic at the higher amplitude level, a second group of branch circuits having respective impedance means and means for rendering the branch circuits conductive at said different amplitude levels of the data signal when of an opposite polarity, to provide a symmetrical progressive compression characteristic for the positive and negative going portions of the data signal, alternating current amplifier means for amplifying the output of said compression circuit, and detector means coupled to the output of said amplifier means compression circuit for providing a varying amplitude direct current output proportional to the amplitude of the compressed alternating current signal fed thereto.

3,289,079
R.M.S. MEASURING SYSTEM HAVING AN INTEGRATING CIRCUIT INCLUDING A TRANSISTORIZED CAPACITOR DISCHARGE MEANS CONTROLLED BY THE MEASURED SIGNAL
Hugo S. Ferguson, Averill Park, N.Y., assignor to Duffers Associates, Inc., Wynantskill, N.Y., a corporation of New York
Filed Mar. 4, 1963, Ser. No. 262,565
5 Claims. (Cl. 324—103)



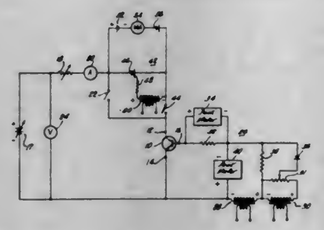
1. In a meter for indicating the R.M.S. value of A.-C. pulses including a resistance-capacitance integrating circuit, means for supplying A.-C. pulses to said integrating circuit to charge said capacitance, discharge means for halting charging of the said capacitance when the integrated signal thereon becomes substantially equal to the instantaneous value of the trailing edge of the respective pulse and discharging the capacitance prior to the integration of a succeeding pulse, and indicating means responsive to said integrated signal, the improvement in said discharge means which comprises
(a) a discharge transistor having the emitter-collector circuit thereof connected across said capacitance,
(b) a control transistor having the base thereof connected to receive said A.-C. pulses and the emitter thereof direct-connected to the base of the discharge transistor,
(c) and means for biasing said direct-connected emitter and base through a load impedance to a potential of opposite polarity to the potential across said capacitance during the charging thereof,
(d) said discharge and control transistors being of opposite polarity types with the control transistor conducting and the discharge transistor non-conducting during the charging of said capacitance.

3,289,080
FUSE ARRAY MAXIMUM CURRENT INDICATOR
phone Laboratories, Incorporated, New York, N.Y., a George W. Wells, Lincroft, N.J., assignor to Bell Telecorporation of New York
Filed Jan. 21, 1964, Ser. No. 339,206
6 Claims. (Cl. 324—103)



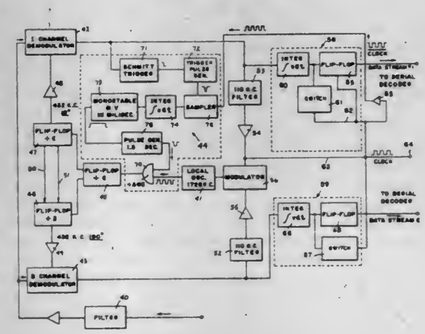
6. A maximum current indicator comprising:
an array of fuses, each of different higher maximum current rating;
each fuse comprising first and second conductors interconnected by a fuse wire which severs when the current therethrough substantially exceeds its rated capacity;
the second conductor of each fuse being electrically connected to the first conductor of the succeeding fuse;
means responsive to the severance of the fuse wire of each fuse for interconnecting the first conductor of said fuse to the first conductor of the successive fuse;
said last-mentioned means comprising a third conductor in juxtaposition with the second conductor;
said second conductor being spring-biased toward the third conductor in opposition to the fuse wire, whereby the second conductor makes physical contact with the third conductor on severance of the fuse wire.

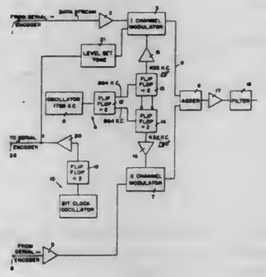
3,289,081
TEST CIRCUIT FOR DETERMINING OPERATING PARAMETERS OF A GATE TURN-OFF SOLID STATE SWITCH
Frank Brunetto, Brooklyn, N.Y., assignor to the United States of America as represented by the Secretary of the Navy
Filed Feb. 27, 1963, Ser. No. 261,548
3 Claims. (Cl. 324—158)



3. A test circuit for a gate turn-off solid state switch device having an anode, a cathode, and a gate comprising:
(A) an anode-cathode circuit having terminals for connection to anode and cathode respectively and including means for supplying an adjustable level of load current when the switch device connected to the anode and cathode terminals is in the conducting state and including another means for applying a selected no load voltage between the anode and cathode terminals when the switch device connected to the anode and cathode terminals is in the blocking state,
(B) said anode-cathode circuit further including two parallel paths wherein one of the paths is operable during the conducting state of the switch device to present much lower impedance to load current than the other path and is operable during the blocking state of the switch device to present much higher impedance to leakage current than the other path,
(C) said other path including leakage current measuring means,
(D) a gate-cathode circuit having terminals for connection to gate and cathode for applying turn-on voltage between the gate and cathode terminals and for supplying turn-on current to the switch device connected to said terminals and for applying selectively adjustable turn-off voltage between the gate and cathode terminals, and for supplying turn-off current to the switch device connected to said terminals,
(E) said gate cathode circuit including means for registering the minimum peak turn-off voltage and current.

3,289,082
PHASE SHIFT DATA TRANSMISSION SYSTEM WITH PHASE-COHERENT DATA RECOVERY
Robert Hanger Shumate, Forest, Va., assignor to General Electric Company, a corporation of New York
Filed May 31, 1963, Ser. No. 284,395
11 Claims. (Cl. 325—30)





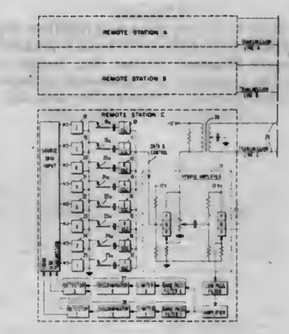
1. A Communication System for transmitting digital data comprising means to modulate a carrier with data in the form of digital bits and with a tone signal having a repetition rate equal to the data bit rate to produce a double sideband carrier suppressed signal, means to receive said modulated carrier, a demodulator, a local oscillator means to supply a signal at the carrier frequency, said local oscillator being capable of assuming zero and 180° phase positions, means to apply the carrier signal to said demodulator to recover the data bits and the tone signal, means to control the local oscillator means to insure that the zero phase position is maintained, including means to compare the phase of the data bit zero crossings and the phase of the tone signal and to produce, an inhibiting signal for an incorrect phase condition, inhibit-

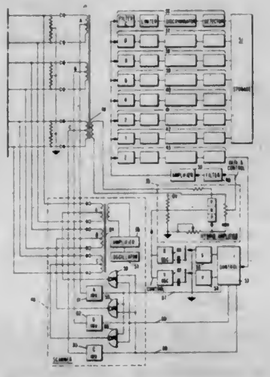
ing means for said local oscillator means responsive to said inhibiting signal to interrupt application of the signal from the local oscillator for a time sufficient to change the phase of the signal.

3,289,083
FREQUENCY SHIFT KEYED DATA TRANSMISSION SYSTEM

Joseph E. Barr, Endicott, Harry C. Kuntzleman, Newark Valley, and Henry A. Reitfort, Vestal, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed May 28, 1963, Ser. No. 283,871
4 Claims. (Cl. 325—59)



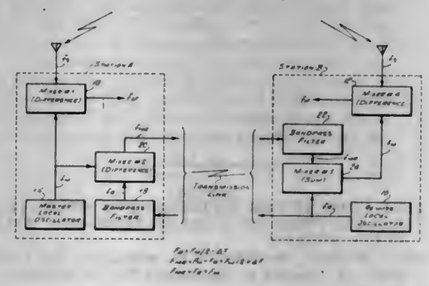


1. A data communication system comprising:
(a) a plurality of remote data stations;
(b) a central data station;
(c) transmission line means coupling each of said remote data stations with said central data station;
(d) oscillator means at each of said remote data stations for generating a frequency control signal and transmitting same to said central data station;
(e) means at said central data station responsive to a frequency control signal for selecting the remote data station whose control signal was transmitted;
(f) frequency control signal generating means at said central data station responsive to the frequency control signal from a remote station for transmitting to the operative remote data station a send data frequency control signal;
(g) means at the operative remote data station responsive to the send data frequency control signal for initiating a data transmission operation;
(h) source data reading means at said operative remote data station being responsive to the send data control signal to enable data reading operations;
(i) a plurality of frequency signal generating means responsive to the source data reading means for generating character representing frequency signals according to a predetermined code configuration for transmission to said central data station via one of said transmission lines;
(j) means at said central data station for receiving the coded frequency signals and decoding them; and
(k) means for storing the decoded data representing signals.

3,289,084
SYSTEM FOR GENERATING PHASE COHERENT SIGNALS AT REMOTELY LOCATED STATIONS

Robert T. Adams, Short Hills, N.J., assignor, by mesne assignments, to Communication Systems, Incorporated, Carson City, Nev., a corporation of Nevada

Filed Sept. 16, 1963, Ser. No. 309,033
6 Claims. (Cl. 325—63)



1. A phase coherent oscillator system for remotely located oscillators comprising: a master oscillator for producing a signal having a frequency F_M; a remote oscillator for producing a signal having a frequency F_R, where F_R is a function of F_M; a two-way transmission link coupling the separate oscillator locations, said link imparting substantially equal phase shifts to signals transmitted in either direction; means for transmitting the remote oscillator signal F_R through said link to the location of said master oscillator; means at the location of said master oscillator coupled to said link and to said master oscillator for combining signals F_R and F_M and transmitting the combined signal through said link to the remote oscillator location; and means at the location of said remote oscillator coupled to said link and to said remote oscillator for combining F_R and the transmitted signal of the first-mentioned combining means to derive F_M.

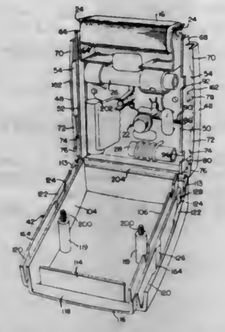
3,289,085
PORTABLE TRANSMITTER STRUCTURE

Robert D. Leland, Royal Oak, Mich., assignor to Multi-Elmac Company, Oak Park, Mich., a corporation of Michigan

Filed Oct. 9, 1963, Ser. No. 314,971
16 Claims. (Cl. 325—119)

1. In a portable transmitter case,
a pair of substantially complementary sections connected together and forming a housing having compartments for components of said transmitter,
said sections having substantially aligned adjacent lateral inner and outer walls defining slots therebetween at the sides of said sections,
and a removable cover for and at one end of said sections having tines projecting therefrom,

said tines adapted to slide within said slots between said inner and outer lateral walls and to engage

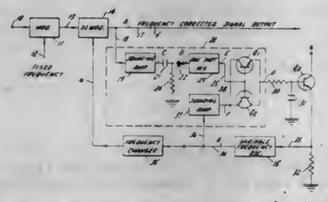


said sections in cover securing relationship with said sections.

3,289,086
AUTOMATIC FREQUENCY CONTROL FOR PHASE PULSE RECEIVERS

George W. Hallquist, Orange, and David Peter Kane, Sunnyvale, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Jan. 24, 1963, Ser. No. 253,775
8 Claims. (Cl. 325—320)

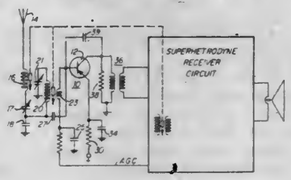


1. An automatic frequency control circuit for phase pulse receivers comprising:
a demodulator having two inputs, one input receiving discretely phase shifted signals and a second input receiving modulating signals maintaining the discretely phase shifted signals correct for phase discrimination on an output thereof;
a variable frequency oscillator generating frequency signals in multiples of said discretely phase shifted signals on an output thereof in accordance with a control signal on an input thereof;
a phase comparison circuit having one input coupled to the output of said demodulator and a second input coupled to the output of said variable frequency oscillator, each of said inputs having a squaring amplifier therein producing square waves, respectively, of said discretely phase shifted signals and said generated signals of said variable frequency oscillator, the output of the squaring amplifier squaring said discretely phase shifted signals being coupled through a differentiating network and a one-shot multivibrator to one input of a phase comparator network, and the output of the other squaring amplifier being coupled to another input of said phase comparator network comparing the phase relation of said signals producing on an output of said phase comparison circuit a control signal, said output being coupled to said variable frequency oscillator input; and
a frequency changer circuit having an input coupling the output of said variable frequency oscillator and an output coupling the demodulator second input modulating said discretely phase shifted signals correcting same for phase discrimination out of said demodulator without phase discrimination of sidebands.

3,289,087
IMAGE REJECTION CIRCUIT

Bernhard Birkenes, Chicago, Ill., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Original application Mar. 24, 1959, Ser. No. 801,553, now Patent No. 3,089,087, dated May 7, 1963. Divided and this application Feb. 7, 1963, Ser. No. 266,121
2 Claims. (Cl. 325—388)

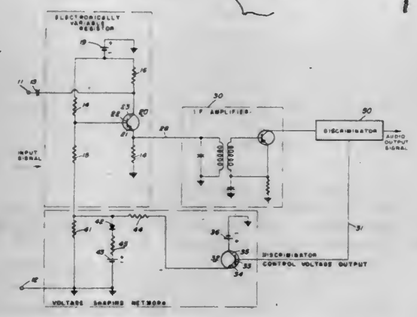


2. A wave signal receiver of a superheterodyne type having an antenna input network coupled in a stage for translating a received signal, said stage including an amplifier transistor, said network comprising a first inductor series coupled with first capacitor means, a second inductor series coupled with a second capacitor across at least a portion of said first capacitor means, said network having a further circuit tunable to the image of the received signal including a third capacitor and a third inductor series coupled across a portion of said first capacitor means, said second and third inductors being inductively coupled to cancel image signals therebetween, means connecting said transistor to said third inductor to apply signals to said transistor, and means for adjusting the tuning of said first, second and third inductors.

3,289,088
AUTOMATIC NON-LINEAR GAIN CONTROL CIRCUIT

Gerald M. Berger, Skokie, Ill., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed May 29, 1963, Ser. No. 284,273
2 Claims. (Cl. 325—408)



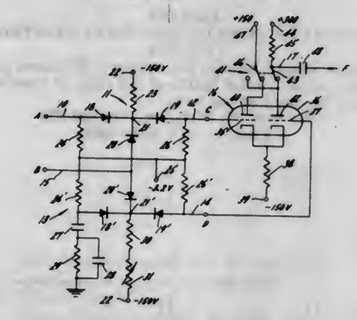
1. In a signal translation system having an electronically controlled variable resistance for controlling an input signal to an intermediate frequency amplifier stage for providing a logarithmic output voltage comprising:
first and second input terminals,
a signal voltage applied to said terminals,

a first transistor having base, collector and emitter elements,
a fixed emitter resistance coupled from the first transistor emitter element to ground potential,
coupling capacitor coupled between the first of said input terminals and said collector element, said input signal coupled via the coupling capacitor to the first transistor collector element for providing the signal voltage across the first transistor collector-emitter and said fixed emitter resistance,
said fixed emitter resistance being coupled to the input of said intermediate frequency amplifier for providing amplification of said signal voltage,
a detection stage coupled to the output of the said intermediate frequency amplifier for demodulating the signal input voltage,
a second transistor having base, emitter and collector elements, and
means for coupling a control voltage developed in said detection stage to the base of the second transistor,
said emitter of the second transistor coupled through a resistor diode circuit to ground potential,
said resistor diode circuit developing a bias current for controlling the impedance of said first transistor, and
means for coupling the bias current to the base of said first transistor,
whereby the input signal voltage appearing across the emitter-collector of the first transistor and the fixed resistor is attenuated in response to the variation of the bias current developed in the resistor diode circuit thereby providing an output signal varied in accordance with the variation of the bias current.

3,289,089
BALANCED VIDEO GATE

Richard A. Linder, Baltimore, Md., assignor, by mesne assignments, to The United States of America as represented by the Secretary of the Navy

Filed July 5, 1963, Ser. No. 293,211
8 Claims. (Cl. 328—69)

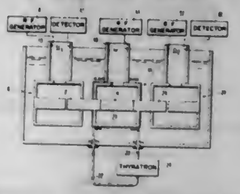


1. A balanced video gate comprising:
a gate circuit having a video input, a gate control input, and a video output for gating video signals applied to the input thereof;
a duplicate gate circuit having a compensating circuit input, a gate control input coupled in common with the gate control input of said gate circuit, and having an output;
a compensating circuit coupled to said compensating circuit input to match the impedance on said video input;
a differential amplifier having two inputs coupled to one each output of said gate and duplicate gate circuits and having an output; one input receiving the gated video signals and the gate switching transient voltages and the other input receiving the gated switching transient voltages of the duplicate gate circuit whereby the gate switching transient voltages essentially cancel in said differential amplifier and said video signals are amplified on the output thereof.

3,289,090
DOUBLE QUANTUM PHONON MASER AMPLIFIER

Norman S. Shiren, Mount Kisco, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed June 1, 1965, Ser. No. 460,046
6 Claims. (Cl. 330—4)

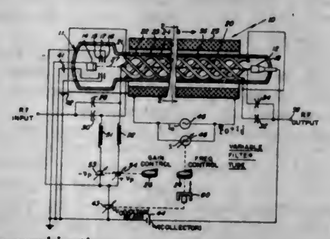


5. A wave amplifier comprising means for generating an acoustical signal pulse having a frequency Ω,
an acoustic propagating medium coupled to said transducer,
ions having a large spin phonon coupling incorporated in said propagating medium,
means for employing the method of adiabatic fast passage to invert the populations of said ions in said propagating medium, the R.F. field employed in said adiabatic fast passage method providing a frequency ω, the sum of said frequencies Ω and ω being equal to the resonant frequency of said inverted ion population.

3,289,091
CYCLOTRON WAVE TUNABLE FILTER-CONSTANT GAIN PARAMETRIC AMPLIFIER TUBE

Shing Mao, Burlington, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware

Filed May 20, 1964, Ser. No. 368,835
2 Claims. (Cl. 330—4.7)



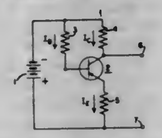
1. In combination:
means for forming and projecting a beam of electrons;
means for producing a longitudinal magnetic field along the beam;
a quadrifilar helix comprising four helices of equal diameter and pitch equally spaced from one another and coaxial to said beam for coupling R.F. circuit energy excited in the –0– mode into and out of the beam and for providing a twisted quadrupole D.C. electrostatic field about the beam;
and means for simultaneously varying the beam voltage and magnetic field strength to thereby yield a velocity

synchronous interaction relationship between the R.F. circuit wave and the fast cyclotron beam wave in a predetermined narrow frequency range.

3,289,092
DIRECT-CURRENT LOW VOLTAGE REGULATOR UTILIZING A TRANSISTOR

Raymond F. Hanson, Whitesboro, N.Y., assignor to General Electric Company, a corporation of New York

Filed Dec. 31, 1962, Ser. No. 248,469
4 Claims. (Cl. 330—15)

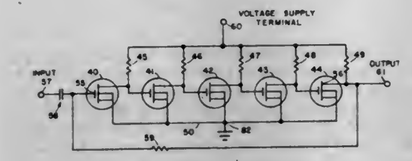


1. A direct-current low voltage regulator for providing a compensated output voltage, from a source of unregulated direct-current voltage, comprising:
(a) a transistor having emitter, base and collector electrodes;
(b) impedance means connected from said emitter electrode to a first terminal of said source;
(c) impedance means respectively connecting said base and collector electrodes to a second terminal of said source, said last-named impedance means having values of impedance relatively higher than that of the first-named impedance means and being arranged to provide a bias of said transistor near the origin of its collector saturation characteristic;
(d) whereby the collector-emitter voltage of said transistor varies inversely with changes in the voltage of said source; and
(e) stabilized output voltage terminal means respectively connected to said collector electrode and to said first terminal of said source.

3,289,093
A.C. AMPLIFIER USING ENHANCEMENT-MODE FIELD EFFECT DEVICES

Frank M. Wanlass, Mountain View, Calif., assignor to Fairchild Camera and Instrument Corporation, Syosset, Long Island, N.Y., a corporation of Delaware

Filed Feb. 20, 1964, Ser. No. 346,163
3 Claims. (Cl. 330—35)

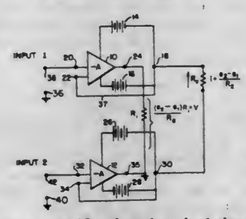


1. An A.-C. amplifier comprising:
a plurality of insulated-gate field-effect semiconductor devices capable of operation in the enhancement mode, each having a gate, a source, a drain, and a load resistor connected in series with its drain, the free terminals of each of said load resistors being connected together and the sources of said devices being common, said devices being cascaded, the drain of one being coupled to the gate of the next, said devices acting as a cascaded amplifier with the gate of the first being the input and the drain of the last being the output;
a fixed resistor directly coupling said gate of the first device and said drain of the last device;
means including an input terminal and a coupling capacitor for A.-C. coupling an input signal to said gate of said first device;
means for passing a current between said connected free resistor terminals and said common sources; and
output means coupled to said drain of the last device for coupling the amplified output signal of the amplifier to external circuitry.

3,289,094
DIFFERENTIAL AMPLIFIER

Frink Mansfield Young, Boston, Mass., assignor to Adage, Inc., Boston, Mass., a corporation of Massachusetts

Continuation of application Ser. No. 151,849, Nov. 13, 1961. This application June 3, 1965, Ser. No. 461,128
7 Claims. (Cl. 330—69)



1. A difference amplifier for electrical signals, said amplifier providing an output signal which is dependent upon the difference between two input signals comprising, in combination, first and second pairs of signal input terminals for connection to two separate input signals, an amplifier having an active input terminal, an active output terminal, and a reference terminal, means connecting a first terminal from said first pair of signal input terminals to the active input terminal of said amplifier, a direct current voltage supply means connected between said amplifier reference terminal and said amplifier for supplying operating potentials to said amplifier, a first electrical impedance, means connecting said impedance between the active output terminal of said amplifier and a second terminal of said second pair of signal input terminals, a second electrical impedance, means connecting said second impedance between said amplifier reference terminal and a first input terminal of the second pair of signal input terminals, means connecting each said second input terminal of said first and second pairs of signal input terminals and the end of said first impedance not connected to said amplifier active output terminal to a common reference potential, the current flowing through said impedances being directly proportional to the difference in the voltages applied to said pairs of signal input terminals.

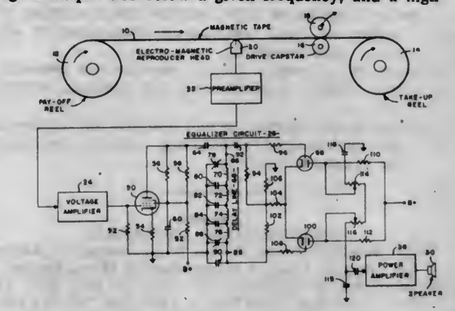
3,289,095
EQUALIZER CIRCUIT

Wayne R. Johnson, Woodland Hills, Calif., assignor to Winston Research Corporation, a corporation of California

Filed Feb. 15, 1966, Ser. No. 527,593
4 Claims. (Cl. 330—69)

1. An equalizer system for passing signals extending through a predetermined frequency range and for providing an increasing response characteristic at both the high and low ends of said predetermined frequency range, said equalizer system including: a differential amplifier having first and second electronic signal repeaters; an input circuit coupled to said first and second repeaters and having a delay network controlling the signals applied to said

first and second repeaters so as to cause said differential amplifier to exhibit a response increasing with increasing signal frequencies and a substantially uniform response to signal frequencies below a given frequency; and a high-

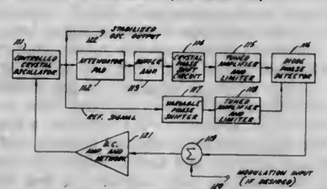


pass filter network coupled between said input circuit and one of said repeaters for causing said differential amplifier to exhibit a response increasing with decreasing signal frequencies.

3,289,096
CRYSTAL OSCILLATOR FREQUENCY STABILIZATION SYSTEM

Robert Noel Longuemare, Jr., Ellicott City, and Halsey L. Tribble, Glen Burnie, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Sept. 21, 1964, Ser. No. 398,136
2 Claims. (Cl. 331—1)



1. An electronic oscillator stabilization system for providing an output signal having a high degree of frequency and phase stability comprising:

a high quality crystal controlled transistor oscillator means having output means for providing a frequency controlled output signal, and having input means for receiving a signal for regulating a solid state varactor diode element which comprises a vernier frequency control element in said oscillator means;

an electrical attenuation means having input and output terminal means, said input terminal means being coupled to said output means of said electronic oscillator means;

a buffer amplifier means having input and output means, said input means thereof being coupled to said output terminal means of said electrical attenuation means for receiving a signal from said oscillator means therethrough;

a series crystal phase shifting means comprising a first phase shifting means for sensing any deviations from a predetermined frequency in signals passing therethrough and introducing a phase shift in said signals proportional to said deviations in frequency, said phase shifting means having input and output means, said input means thereof being coupled to said output means of said buffer amplifier means;

a first tuned amplifier and limiter means having input and output means, said input means thereof being coupled to said output means of said first phase shifting means;

a second phase shifting means for introducing a phase shift of predetermined amount into any signal passed therethrough, having input and output means, said input means thereof being coupled to said output means of said oscillator means;

a second tuned amplifier and limiter means having input and output means, said input means thereof being coupled to said output means of said second phase shifting means;

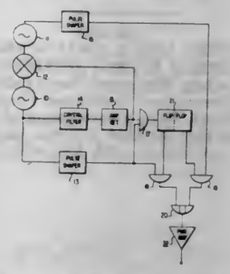
a phase detector means having a first input means coupled to said output means of said first tuned amplifier and limiter means for receiving a first signal therefrom, having a second input means coupled to said output means of said second tuned amplifier and limiter means for receiving a reference signal therefrom, and having an output means coupled to said input means of said oscillator means for providing thereto a direct current potential proportional to the amount of deviation from a predetermined relative phase difference between said first signal and said reference signal, to regulate said vernier frequency control element within said oscillator means thereby causing said oscillator means to maintain a very stable frequency output signal; and

an output terminal means coupled to said output means of said oscillator means, to provide said very stable frequency output signal thereat for utilization in subsequent circuitry.

3,289,097
EMERGENCY CLOCK PULSE STANDBY SYSTEM

Joseph F. Martin, Webster, N.Y., assignor to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware

Filed May 11, 1964, Ser. No. 366,368
3 Claims. (Cl. 331—49)

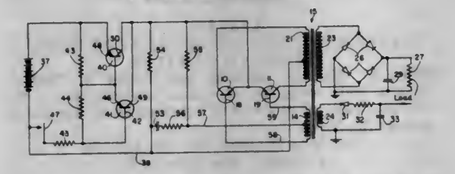


2. An emergency standby system for clock pulse generators comprising: first and second generating means for generating respectively a first and second series of pulses, means for synchronizing said generating means connected therebetween, normally closed gating means for connecting the output of said first generating means to the system output only when operated from its normally closed condition, normally open gating means for disconnecting the output of said second generating means to said system output only when operated from its normally open condition, frequency sensitive filter means interconnected between the output of said first generator means, and control means, said control means being responsive to variations of the frequency of said first series of pulses beyond a selected range for switching said normally open gating means and said normally closed gating means from their said normal conditions so that said output of said first generating means is connected to said system output when said variations of the frequency of said first series of pulses exist.

3,289,098
STARTING CIRCUIT FOR SEMICONDUCTOR OSCILLATOR

Gary A. Cannalte, Hoffman Estates, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed June 15, 1964, Ser. No. 375,143
6 Claims. (Cl. 331—62)

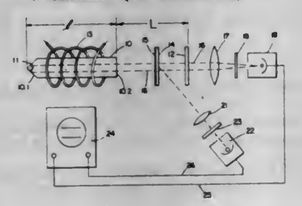


1. A transistor oscillator starting circuit including in combination, first and second input terminals adapted to be coupled to direct current supply means, a plurality of switching transistors each having base and emitter electrodes, first circuit means coupled to said plurality of switching transistors forming therewith an oscillator circuit, second circuit means coupling said emitter electrodes of each of said plurality of switching transistors to said first input terminal, capacitor means coupled to said second terminal, first and second resistors series connected between said first input terminal and said capacitor means, and third circuit means coupling the common junction point of said first and second resistors to said base electrodes of each of said plurality of switching transistors, said first and second resistors being responsive to the charging current of said capacitor means to generate a bias potential whereby said switching transistors are biased to conduction, with only said first and second resistors and said capacitor means acting to provide said bias potential for said oscillator circuit.

3,289,099
COHERENT LIGHT OSCILLATORS

Joseph I. Masters, Concord, Mass., assignor to Technical Operations, Inc., Burlington, Mass., a corporation of Delaware

Filed Feb. 27, 1963, Ser. No. 261,327
7 Claims. (Cl. 331—94.5)



1. Laser system comprising: a negative temperature medium containing atoms having the property that, when they are struck by stimulating photons, they emit a cascade of coherent photons, said medium providing a path within the medium along which a collection of such coherent photons can build up into a wave directed along said path, an optical resonant cavity containing said medium, reflector means forming the boundaries of said cavity and defining a laser enclosure for said wave, and means for attenuating said wave located in said enclosure in the path of said wave for degrading the quality factor of said enclosure, said attenuating means including a layer of material which in one physical state is only partially transparent to, and is capable of substantial attenuation of and exhibits low reflectivity to light energy in a prescribed optical frequency band containing the frequency of said wave, said material being capable of being so acted upon by said energy traversing the same at an intensity level above a prescribed threshold value as to destroy said material in said path in a time interval which is short compared with the lifetime of stimulated radiation in said medium thereby substantially to remove said material from said path, said layer presenting its smallest dimension in said path.

3,289,100
NIOBATE MASER MATERIALS AND DEVICES MADE THEREFROM

Albert A. Ballman, Woodbridge, and Sergio P. S. Porto, North Plainfield, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 25, 1963, Ser. No. 275,677
3 Claims. (Cl. 331—94.5)

1. A crystalline composition of matter having the empirical formula

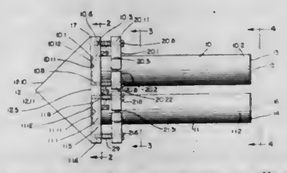
$$ANb_2O_6$$

where A is at least one divalent host ion selected from the group consisting of calcium, magnesium, zinc and strontium and in which from about 0.01 percent to 10 percent of the divalent host ions have been replaced by at least one active ion selected from the group consisting of rare earth ions in the +3 valency state having atomic numbers 59, 60, 62–70, 92; rare earth ions in the +2 valency state having atomic numbers 59, 62–66, 69; Fe, Mn, Ni, Co, Cu transition metal ions in the +2 valency state; and Fe, Cu transition metal ions in the +3 valency state and in which up to 40 percent of said calcium and strontium ions have been replaced by barium ions.

3,289,101
LASER SYSTEM WITH OPTICAL COHERENCE COUPLING MEANS

Joseph I. Masters, Lexington, and George B. Parrent, Jr., Carlisle, Mass., assignors to Technical Operations, Incorporated, Burlington, Mass., a corporation of Delaware

Continuation of application Ser. No. 159,876, Dec. 18, 1961. This application Apr. 15, 1965, Ser. No. 450,245
17 Claims. (Cl. 331—94.5)

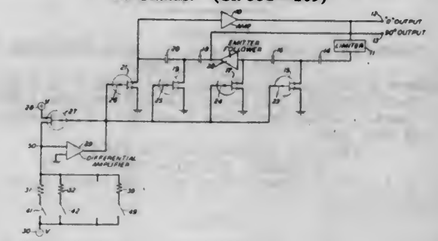


5. Apparatus for producing coherent radiation comprising a plurality of units of an active medium containing atoms having the property that, when they are struck by a stimulating photon, they emit a cascade of coherent photons; each unit having first and second ends; wave reflector means associated one with each of said second ends defining ends of paths traversing each unit along which a collection of such photons can build up into a wave directed along said paths, each of said paths being several wave lengths long relative to said wave; said first ends having substantially total transparency to said wave, coupling means including a medium adapted to propagate said waves optically coupled between said first ends for propagating said waves between said units, said coupling means providing at least one radiation path between said first ends which is adapted to maintain coherence between all of said waves, propagating therethrough between any pair of said reflector means associated with said second ends; and, at least one of said wave reflector means associated with one of said second ends adapted to transmit a portion of the incident waves as coherent radiation.

3,289,102
VARIABLE FREQUENCY PHASE SHIFT OSCILLATOR UTILIZING FIELD-EFFECT TRANSISTORS

Izuo Hayashi, Fanwood, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 29, 1965, Ser. No. 451,706
10 Claims. (Cl. 331—109)

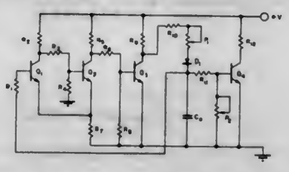


10. In a variable impedance circuit having a plurality of signal-controlled variable impedance elements, means for stabilizing said variable impedance elements against variations in ambient conditions comprising a standard variable impedance relatively insensitive to said ambient conditions, circuit means for detecting the difference in impedance between said standard variable impedance and one of said signal-controlled variable impedances and for generating a signal to be applied to all of said signal-controlled variable impedances so as to reduce said difference.

3,289,103
ULTRA LOW FREQUENCY TRANSISTOR RELAXATION SWEEP GENERATOR

James P. Campman, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Jan. 26, 1965, Ser. No. 428,269
4 Claims. (Cl. 331—111)

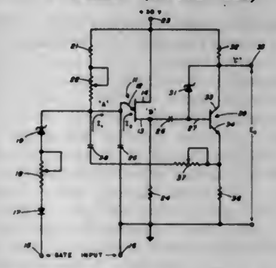


1. An ultra low frequency sweep generator comprising;
(a) a monostable trigger circuit having two conductive states including a pair of transistors connected in cascade;
(b) switch means including a transistor connected to the output of said trigger circuit and conductive only when said trigger circuit is in one of its two conductive states;
(c) a charging circuit including a capacitor connected to the output of said switch means; said capacitor chargeable to a predetermined voltage when said switch means is open; said charging circuit further including a serially connected diode and resistors connected between said transistor switch means and said capacitor for providing a conductive path therebetween when said transistor switch means is open;
(d) feedback circuit means connected between said capacitor and the input of said monostable trigger circuit for changing the conductive state of said trigger circuit when said capacitor becomes charged to said predetermined voltage;
(e) an output transistor having an emitter-base diode,
(f) a discharge circuit connected to said capacitor and including said emitter-base of said output transistor whereby the conduction in said output transistor is proportional to the voltage rise and fall on said capacitor; and
(g) a source of charging voltage connected to said monostable trigger circuit and said switch means.

3,289,104
GATED UNIJUNCTION OSCILLATOR WITH FEEDBACK CONTROL

William C. McClay, Ruxton, and James A. Walker, Severn, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed June 30, 1965, Ser. No. 468,652
4 Claims. (Cl. 331—111)

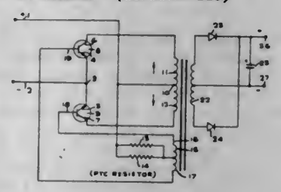


1. A gated clock pulse generator comprising:
an input terminal for receiving a gating signal;
a solid state oscillator for producing a plurality of output pulses;
adjustable means connected between the input terminal and the oscillator for determining the level at which the oscillator conducts;
another solid state device for shaping the output pulses from the oscillator;
feedback means for conducting a portion of the output of the other solid state device to the input of the oscillator; and
diode means connected across the base and collector of the other solid state device for clamping the operating point of the solid state device at a desired level.

3,289,105
TEMPERATURE COMPENSATED TRANSISTOR INVERTER

Horst Funfstuck, Los Angeles, Calif., assignor to Statham Instruments, Inc., Los Angeles, Calif., a corporation of California

Filed Jan. 27, 1964, Ser. No. 340,323
14 Claims. (Cl. 331—113)

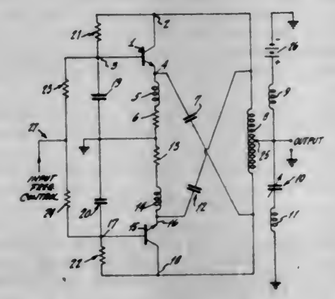


4. A temperature compensated transistor inverter for a direct-current source of potential having first and second output terminals, said inverter comprising: a pair of transistors connected in push-pull configuration, each of said transistors having a collector, an emitter and a base; a saturable core transformer having a primary winding, a control secondary winding and an output secondary winding, said primary winding and said control secondary winding each having an intermediate tap thereon; first and second input terminals for connection with said first and second output terminals, respectively, said first input terminal being connected to each of said emitters, one of said collectors being connected to one end of said primary winding, and the other of said collectors being connected to the other end of said primary winding, said second input terminal being connected to said tap on said primary winding, one of said bases being connected to one end of said control secondary winding, and the other of said bases being connected to the other end of said control secondary winding; and means including a temperature sensitive resistor connected from said second input terminal to said tap on said control secondary windings, thereby establishing a direct-current circuit with a transistor base to increase the current thereof when the ambient temperature decreases, the connections of said bases with the said ends of said control secondary winding being such that an alternating voltage induced in said control secondary winding alternately switches one of said transistors to cut off while the other is switched to saturation, and vice versa, to develop a square wave in said output secondary.

3,289,106
TRANSISTOR OSCILLATOR USING PARAMETRIC ACTION

Herbert Berkowitz, West Orange, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Aug. 10, 1965, Ser. No. 478,676
10 Claims. (Cl. 331—117)

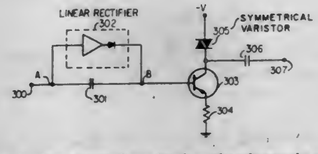


7. A high frequency transistor oscillator comprising:
(a) a first and second transistor each having a base, collector, and emitter electrode,
(b) means for coupling said first transistor's emitter with said second transistor's collector and said first transistor's collector with said second transistor's emitter,
(c) means to apply suitable operating potentials to said first and second transistor's electrodes,
(d) an inductor with a center tap connected between said first and second transistor's collectors,
(e) said first and second transistors having a base-to-collector capacity which is a function of a voltage applied to said first and second transistor's base,
(f) said inductor and said base-to-collector capacitors forming a resonant circuit by which said oscillator oscillates at a primary frequency, and
(g) means for applying a control voltage to said first and second transistor's bases to bring about a change in said primary frequency in accordance with said applied voltage.

3,289,107
COMPANDOR SYSTEM EMPLOYING SYMMETRICAL VARISTORS

Neale A. Zellmer, Belmont, and George S. Wu, Santa Clara, Calif., assignors, by mesne assignments, to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed Aug. 6, 1963, Ser. No. 300,217
7 Claims. (Cl. 333—14)

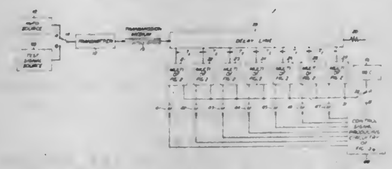


1. An arrangement for altering the dynamic amplitude range of an alternating current input signal nonlinearly as a function of various levels of said signal, said arrangement comprising an alternating current signal path, linear rectifier means including an input and an output, said input connected to said signal path for deriving a direct current control signal of a level varying as a function of the levels of said input signal, and amplifier means interposed in said signal path and including transistor means having at least three electrodes, one of said electrodes receiving said input signal and coupled to said output of said rectifier means to receive said control signal superimposed upon said alternating input signal, and symmetrical nonlinear resistance means serially connected to another of said electrodes for automatically varying the gain of said amplifier means in accordance with the variations of said control signal and said input signal.

3,289,108
AUTOMATIC ADJUSTMENT OF TRANSVERSAL FILTER SO THAT RECEIVED PULSE IS CORRECTED TO CONFORM WITH STANDARDIZED SHAPE

James R. Davey, Franklin Township, Somerset County, and Burton R. Saltzberg, Middletown, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 12, 1963, Ser. No. 264,593
6 Claims. (Cl. 333—18)

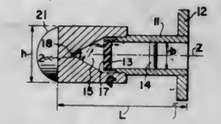


1. Apparatus for adjusting the transmission characteristics of a transversal filter having a plurality of adjustable multipliers determining the transmission characteristics of said filter, an input terminal, and an output terminal comprising a source of periodic signals connected to said input terminal, means for deriving samples at different points of the wave form actually appearing at said output terminal, said samples being equal in number to the number of multipliers on said filter, a source of reference signals the values of which define a specified wave form, said reference signals being equal in number to the number of multipliers, and means responsive to the difference in value between each sample and a corresponding reference signal for adjusting one of said multipliers to change the filter transmission characteristic toward a condition that results in coincidence of said actual wave form with said specified wave form.

3,289,109
HIGH FREQUENCY WAVEGUIDE WATERLOAD FOR ELECTROMAGNETIC WAVE ENERGY WITH FLOW CHANNEL HAVING WEDGE SHAPED INTERNAL GEOMETRY

Richard B. Nelson, Los Altos, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed July 23, 1965, Ser. No. 474,303
19 Claims. (Cl. 333—22)

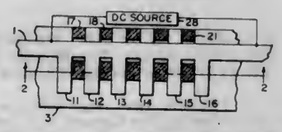


14. A waveguide waterload for dissipating high frequency electromagnetic wave energy including a waveguide having a dielectric window disposed therein, said dielectric window forming a fluid impervious seal across said waveguide and the said dielectric window being permeable to electromagnetic wave energy, a lossy coolant fluid channel coupled to said waveguide about said portion thereof wherein said dielectric window is disposed, said flow channel having a wedge shaped internal geometry.

3,289,110
NON-RECIPROCAL MULTI-ELEMENT TEM TRANSMISSION LINE DEVICE

Jerald A. Weiss, Wayland, Mass., assignor to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts

Filed Jan. 27, 1964, Ser. No. 340,441
7 Claims. (Cl. 333—24.1)

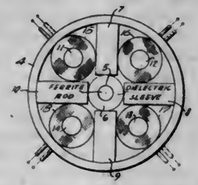


1. A non-reciprocal wave conducting device comprising means for producing electromagnetic waves, means for conducting said waves along a plurality of paths which are spaced so that the magnetic fields of waves in adjacent paths overlap and are in different phase, at least one body of ferrite material disposed in the path of said overlapping fields and means for controlling the magnetization of said ferrite body including means for conducting D.C. current through at least a part of said wave conducting means.

3,289,111
FERRITE DEVICE UTILIZING THE SHORTED TURN EFFECT, WITH ELECTROMAGNET WINDING INSIDE WAVEGUIDE AND ADJACENT TO FERRITE MATERIAL

Kenneth L. Carr, Bedford, Mass., assignor to Ferrotec, Inc., Newton, Mass., a corporation of Massachusetts

Filed Mar. 4, 1964, Ser. No. 349,334
4 Claims. (Cl. 333—24.2)

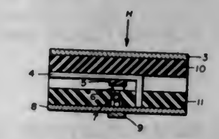


1. In a device having a waveguide bounded by an electrically conductive wall, the device being of the type utilizing a magnetic field internally of the waveguide and the waveguide having in it a ferrite situated in the internal magnetic field, the improvement of an electromagnet for establishing the internal magnetic field, the electromagnet being within the waveguide and disposed so that it is inductively coupled to the electrically conductive wall, and the ferrite being located outside of the electromagnet's winding.

3,289,112
STRIP TRANSMISSION LINE FERRITE FILTER-LIMITER HAVING A FERRITE SPHERE POSITIONED BENEATH OVERLAPPING CONDUCTORS

Charles E. Brown, Laurel, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Aug. 31, 1964, Ser. No. 393,449
3 Claims. (333—24.2)



1. A strip transmission line ferrite filter-limiter adapted for use as a narrow bandpass filter and power limiter for R.F. signals comprising:

a pair of closely spaced, plane parallel dielectric members having a pair of ground planes mounted on their outer faces and a pair of mutually perpendicular, overlapping center conductors printed on their inner opposing faces, the end portions of each of said conductors extending perpendicularly from the faces of said dielectric members through one of said dielectric members to its associated ground plane and making contact therewith to form an R.F. short circuit,

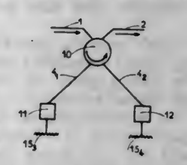
a ferrite sphere positioned within a cavity in said one dielectric member beneath said overlapping conductors, and

means for magnetically biasing said ferrite sphere to resonance.

3,289,113
NON-RECIPROCAL ATTENUATION EQUALIZATION NETWORK USING CIRCULATOR HAVING PLURAL MISMATCHED PORTS BETWEEN INPUT AND OUTPUT PORT

Paul Boutelant, Bobigny, France, assignor to Compagnie Generale d'Electricite, Paris, France, a corporation of France

Filed Mar. 18, 1964, Ser. No. 352,806
Claims priority, application France, Mar. 21, 1963, 928,787
20 Claims. (Cl. 333—28)

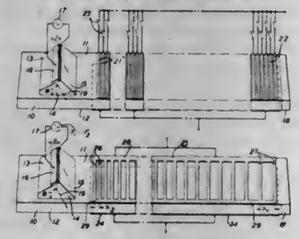


1. An equalizer network producing attenuation of electric wave signals applied therethrough within a frequency band having a mid-frequency f_0, said network being adapted to be inserted between an input transmission line and an output transmission line and comprising of circulator having a number n of ports of respective ranks 1 to n and so arranged that transmission of said signals be possible only unidirectionally from any one of said ports having a given rank to that of said ports having the rank immediately higher than said given rank, means for connecting said input line to that of said ports having rank 1, means for connecting said output line to that of said ports having rank m, and a plurality in number $(m-2)$ of complex impedances each having a resistive part and a reactive part in said frequency band and respectively connected to the ports of ranks intermediate 1 and m, each of said complex impedances having such a value as to mismatch the output wave impedance of said circulator at that of latter said ports connected thereto at any frequency within said band and to an extent which is a predetermined function of latter said frequency, and all of said complex impedances being passive independent-of-time impedances.

3,289,114
TAPPED ULTRASONIC DELAY LINE AND USES THEREFOR

John H. Rowen, Florham Park, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 24, 1963, Ser. No. 333,022
15 Claims. (Cl. 333—30)

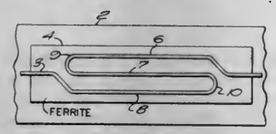


1. An ultrasonic device comprising a body of piezoelectric material, means for launching within said body an ultrasonic wave having a particle displacement that is normal to one surface of said body and has a maximum amplitude at said surface that decreases with distance away from said surface, electrode means including a plurality of conductive members spaced apart on said one surface uniformly from each other by one wavelength of said ultrasonic wave for detecting a piezoelectric field normal to said surface that is generated by said particle displacement at a multiplicity of spaced points along the direction of propagation of said wave, and means for electrically connecting said conductive members together to produce an output representative of the simultaneous sum of said fields detected at said multiplicity of points.

3,289,115
RECIPROCAL STRIPLINE FERRITE PHASE SHIFTER HAVING A FOLDED CENTER CONDUCTOR

Kenneth L. Carr, Bedford, Mass., assignor to Ferrotec, Inc., Newton, Mass., a corporation of Massachusetts

Filed Feb. 12, 1964, Ser. No. 344,371
4 Claims. (Cl. 333—31)



1. Apparatus for shifting the phase of an electrical signal comprising:

a strip transmission line having its center conductor disposed between spaced ground plane plates;

a pair of ferrite slabs disposed between the ground plane plates;

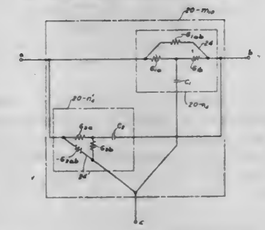
the center conductor of the strip transmission line having folds situated between the pair of ferrite slabs whereby wave propagation along the folded portion of the line occurs in the ferrite medium;

and means for establishing a magnetic field to which the ferrite slabs are subject for controlling wave propagation in the ferrite medium.

3,289,116
PRESCRIPTIVE TRANSFORMERLESS NETWORKS

Sidney Darlington, Passaic Township, Morris County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 21, 1962, Ser. No. 181,242
14 Claims. (Cl. 333—70)



1. Apparatus presenting prescribed driving point and transfer admittance characteristics $Y_{ij}=K_{ij}s/(s+s_1)+K\infty$ with respect to those terminals a, b and $c=i$, j for $i\neq j$, where K is a residue, s is a complex frequency variable, and s_1 is a complex frequency constant, which comprises

a capacitor of capacitance $C_a=K_{ac}/s_1$ connected to a first terminal a of said terminals,

a capacitor of capacitance $C_b=K_{bc}/s_1$ connected to a second terminal b of said terminals,

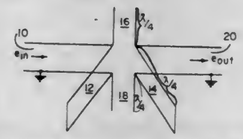
a resistor of conductance $G=K_{ac}+K_{bc}$ interconnecting the capacitors jointly with a third terminal c of said terminals,

and a capacitor of capacitance $K_\infty+K_{ab}/s_1$, where K_{ab} is a negative quantity, interconnecting said first terminal a with said second terminal b.

3,289,117
SURGE ARRESTOR UTILIZING QUARTER WAVE STUBS

Robert F. Kearns, Westwood, and Francis H. Stites, Wayland, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Mar. 23, 1964, Ser. No. 353,721
7 Claims. (Cl. 333—73)



6. For electronic equipment operating at microwave frequencies, a surge arrestor operative to protect said equipment from voltage and current surges of lower frequencies comprising:

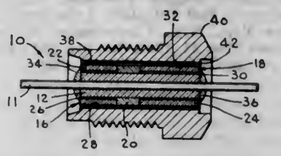
an input circuit for connecting said arrestor to a source of signals;

a short circuited quarter wave stub connected across said input circuit and operative to direct to ground the voltage and current surges of lower frequency;

an output circuit for connecting said arrestor to utilization equipment; and

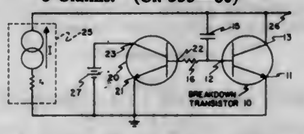
first and second open circuited quarter wave stubs connected between said input and output circuits to thereby provide signal and ground transmission paths at the microwave frequencies between said input and output circuits.

3,289,118
FILTER
William W. Garstang, Milwaukee, Wis., assignor to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware
Filed Mar. 29, 1962, Ser. No. 183,429
10 Claims. (Cl. 333—79)



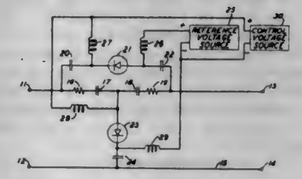
1. A broad band filter comprising, in combination, a through conductor, an impedance element inductively related with said conductor, and a pair of capacitor assemblies each including a reduced titanate portion having oppositely facing surfaces, electrically conductive means on the surfaces of each of said reduced titanate portions to provide a capacitance in excess of 100 times that obtained from a capacitor of same physical size but made of unreduced titanate, and means electrically connecting said capacitor assemblies in parallel circuit relationship in the circuit of said filter with said increased capacitance rendering said filter capable of providing attenuation below 50–100 megacycles.

3,289,119
SEMICONDUCTOR APPARATUS PROVIDING INDUCTIVE REACTANCE
Harold C. Josephs, Plymouth, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed May 6, 1965, Ser. No. 453,652
5 Claims. (Cl. 333—80)



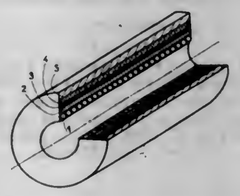
3. A semiconductor inductive apparatus comprising:
semiconductor means having a first emitter, a first base, and a first collector, and operable in a common emitter breakdown mode, the semiconductor means exhibiting an interelectrode capacitance between the collector and the base;
further semiconductor means having a second emitter, a second base, and a second collector;
circuit means connecting the first base to the second base;
further circuit means connecting the first emitter to the second emitter;
means for connecting the first emitter and first collector across a first source of electrical energy having sufficient magnitude to cause the semiconductor means to operate in the common emitter breakdown mode; and
means for connecting the second emitter and second collector across a second source of electrical energy having a magnitude less than that of the first source so that the impedance between the first emitter and first collector is inductive.

3,289,120
VARIABLE ELECTRIC ATTENUATOR NETWORKS
James V. Anders, Succasunna, and Edwin C. Snyder, Jr., Mendham, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 18, 1963, Ser. No. 317,385
11 Claims. (Cl. 333—81)



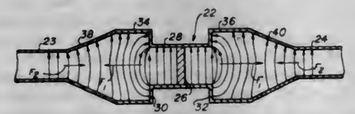
1. An electrical network comprising
a pair of input terminals,
a pair of output terminals,
first and second paths connecting one of said input terminals to one of said output terminals and the other of said input terminals to the other of said output terminals, respectively, wherein at least one of said paths includes impedance elements,
means including at least one diode having one terminal connected to substantially the impedance midpoint of said first path and the other terminal connected to substantially the impedance midpoint of said second path and providing alternating current continuity and direct current isolation between said first and second paths,
means, each of which includes a diode and has alternating current continuity and direct current discontinuity, connected in parallel with said paths including impedance elements, respectively,
first voltage means serially connecting all of said diodes and applying a first direct current voltage thereacross to forward bias said diodes, and
second voltage means connected to apply to at least one of said diodes a second direct current voltage.

3,289,121
HELICAL-WALLED WAVEGUIDES
Georges Comte, Taverny, France, assignor to Compagnie Generale d'Electricite, Paris, France, a corporation of France
Filed June 16, 1964, Ser. No. 375,432
Claims priority, application France, June 21, 1963, 938,978
3 Claims. (Cl. 333—95)



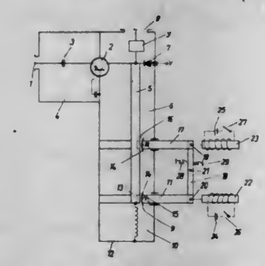
1. Circular waveguide having a helical wall, comprising a dielectric substance between the said wall and an external metallic screen, characterised in that there is incorporated in the dielectric substance an insulating material comprising polar or ferroelectric molecules which has a relaxation effect in the frequency band transmitted by the guide such that the electrical thickness of the dielectric substance is constant over substantially the entire frequency band.

3,289,122
BOMBARDMENT-FREE MICROWAVE WAVEGUIDE WINDOW
Bayram Vural, Princeton, N.J., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
Filed Mar. 18, 1963, Ser. No. 266,115
3 Claims. (Cl. 333—98)



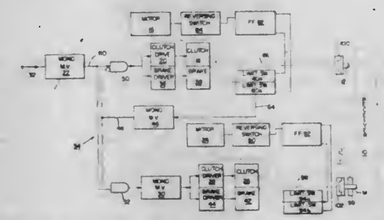
1. A waveguide window for use within a rectangular waveguide system wherein bombardment of a wave-permeable window disc by ions and electrons is substantially reduced comprising a length of circular support waveguide, said wave-permeable window disc being supported in sealed transverse relation within said length of circular support waveguide at the midpoint therein, an annular waveguide wall extending generally radially outward from the ends of said circular support waveguide, a circular wave-guide wall member coaxially secured in sealed relation to the outer circumference of said annular waveguide wall, wherein the outside diameter of said circular waveguide wall member is approximately twice the diameter of the circular support waveguide, said annular waveguide wall and circular waveguide wall member defining an abrupt transition region having an electromagnetic field configuration with a time-average force acting in a direction away from said window disc, a length of tapered waveguide secured at its large end to said circular waveguide wall member and at its small end to the rectangular waveguide of the waveguide system in sealed coaxial relation thereto, said tapered waveguides thereby inherently having an electromagnetic field configuration with a time-average force acting in a direction towards the window disc but counterposed by a force created by the abrupt transition region which is greater than that of the tapered region, resultingly causing particles approaching the waveguide window to experience a net acceleration in a direction away from the window disc.

3,289,123
TANK CIRCUIT WITH BAND SELECTION SWITCH AND CAPACITIVE TUNING MEANS
Klaus Bomhardt, Rolf Hartrumpf, Josef Neuhauser, and Peter Lackner, all of Heilbronn, Germany, assignors to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany
Filed Feb. 1, 1965, Ser. No. 429,240
Claims priority, application Germany, Feb. 1, 1964, T 25,536; Sept. 2, 1964, T 26,926
21 Claims. (Cl. 334—19)



1. For use in a piece of communication equipment, a tank circuit comprising, in combination:
(a) an outer conductor;
(b) an inner conductor arranged within said outer conductor;
(c) capacitative tuning means connected to said inner conductor in the region of one end thereof;
(d) an inductance interposed between the other end of said inner conductor and said outer conductor; said inner conductor, when the tank circuit operates in the region of the lowest frequency, serving as a lead for said inductance; and
(e) means for selectively short-circuiting said inner conductor to said outer conductor at any one of a plurality of points along the length of said inner conductor, thereby to enable the tank circuit to operate in higher frequency ranges, said short-circuiting means comprising two short-circuit slides each movable between open and closed positions in which latter they engage said inner conductor at different points along its length, and linkage means interconnecting said slides for causing one of said slides to be in its open position while the other of said slides is in its closed position.

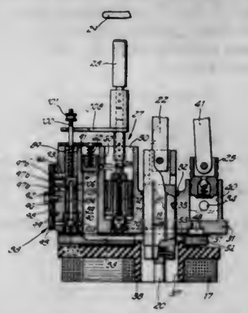
3,289,124
SWEEP SYSTEM
Everett W. Farmer, Merrimack, and Frank A. Bellucci and Michael Dinolfo, Nashua, N.H., assignors to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed May 29, 1963, Ser. No. 284,213
13 Claims. (Cl. 334—22)



1. A system for sweeping a tunable device through its tuning range in at least one direction, said device having fine and coarse tuning controls, said system comprising
(a) first means for tuning said device by movement of said fine and coarse tuning controls,
(b) said first means being operable to move said fine tuning control in a first direction through a first fine tuning range in a series of fine tuning steps,
(c) second means responsive to the movement of said fine tuning control for rendering said first means effective to interrupt movement of said fine tuning control and to move said coarse tuning control through a single coarse tuning increment in said one direction, equal to said series of fine tuning steps,
(d) third means included in said second means for causing said first means to move said fine tuning control in a second direction through a second fine tuning range in a series of discrete fine tuning steps,
(e) said second means being responsive to the movement of said fine tuning control in said second direction to interrupt movement of said fine tuning control and to cause said first means to move said coarse tuning control through a second coarse tuning increment in said one direction equal to said first coarse tuning increment,
(f) said third means again being operable to cause said first means to move said fine tuning control in said first direction through a third fine tuning range in a series of discrete fine tuning steps, and
(g) said second means being further operable in response to movement of said fine tuning control to

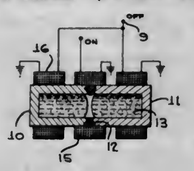
control said first means in a manner to move said fine tuning control alternately in one said direction and then the other direction through succeeding fine tuning ranges and to move said coarse tuning control one coarse tuning increment in said one direction between alternations in the direction of movement of said fine tuning control thereby sweeping said device through the tuning range of said device.

3,289,125
REPEATING CIRCUIT INTERRUPTER
Kazuo H. Date, South Milwaukee, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed June 15, 1965, Ser. No. 464,095
8 Claims. (Cl. 335—33)



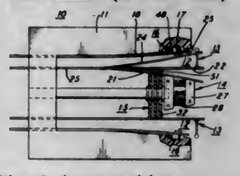
1. An automatic protective device including switch means in circuit with the system being protected, hydraulic integrating means, coupled to said switch means, circuit condition responsive means coupled to said system and to said switch means for opening said switch means and for actuating said integrating means upon the occurrence of predetermined circuit condition, switch closing means for closing said switch means after an opening operation thereof, said hydraulic integrating means including valve means coupled to said switch means and having an initial position and a plurality of alternate positions and being sequentially movable through said alternate positions upon each switch opening operation, hydraulic time delay means coupled to said switch closing means, said valve means being coupled to said time delay means and being operative in each of its alternate positions for controlling the delay thereof.

3,289,126
MERCURY SWITCH EMPLOYING MAGNETIZABLE FLUID
Hyman Hurvitz, Washington, D.C., assignor to Fifth Dimension Inc., Princeton, N.J., a corporation of New Jersey
Filed Jan. 10, 1963, Ser. No. 250,651
4 Claims. (Cl. 335—47)



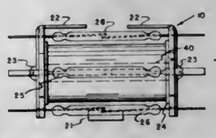
4. A mercury switch comprising
an elongated cylinder of capillary diameter having an open end,
an electrode,
said cylinder and said electrode being mercury wettable,
an insulating ring joining said electrode and said cylinder at said open end,
said ring being fabricated of mercury unwettable material,
a quantity of mercury in said cylinder having a sufficient quantity of magnetic particles therein to form a magnetic fluid, the magnetic fluid contained in said cylinder being of such an amount that said fluid is retained in said cylinder spaced from said electrode by the capillary action of said cylinder, and
magnetic means for distorting said magnetic fluid into and out of contact relation to said electrode while said magnetic fluid is retained in said cylinder.

3,289,127
CODE-BAR CONTROLLED COORDINATED SWITCH
Terrell N. Lowry, Columbus, Ohio, assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Jan. 19, 1965, Ser. No. 426,569
11 Claims. (Cl. 335—118)



1. A switching device comprising:
a contact;
a flexible member including a contact portion arranged to cooperate with said contact to form an electrical connection, said contact portion normally separated from said contact;
means for bending said flexible member to move said contact portion away from said contact a predetermined distance and for releasing said flexible member after said contact portion has moved away from said contact said predetermined distance, said flexible member arranged to rebound and transport said contact portion towards said contact and into engagement therewith after it has been released; and
means for holding said contacting portion and said contact together after engagement.

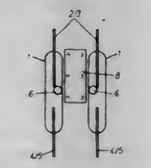
3,289,128
REED RELAY HAVING PRELIMINARILY OPERATING CONTACTS
Robert K. Else, Glen Ellyn, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Oct. 14, 1965, Ser. No. 495,838
8 Claims. (Cl. 335—152)



1. A reed relay comprising:
first, second, and third pairs of magnetically actuable reed contacts;
electromagnetic winding means for actuating said three pairs;
said first and second pairs of reed contacts being normally open;

a permanent magnet adjacent said third reed contact pair to hold said pair normally closed;
and means for rendering said first reed contact pair more sensitive to the magnetic field produced by said winding means than said second contact pair so that upon a relatively low-level energization of said winding means, a flux is produced which is sufficient only to close said first, normally open, contact pair, whereas only upon a relatively high-level energization of said winding means, a flux is produced which is sufficient to also close said second, normally open, contact pair, said last-mentioned flux also being of sufficient magnitude to overcome said permanent magnet so as to open said third, normally closed, contact pair.

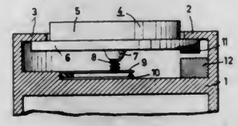
3,289,129
PUSH AND PULL KEY WITH REED CONTACTS
Gerhard Wessel, Kornwestheim, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 2, 1964, Ser. No. 393,996
Claims priority, application Germany, Sept. 21, 1963, St 21,101
4 Claims. (Cl. 335—153)



1. A push-pull key having a snap-action effect comprising
a container having walls the inner faces of which form a closed body,
reed contacts having pairs of contact points enclosed at one end of said container and connecting to terminate outside said container,
a movable armature in said container,
said movable armature being substantially spherical in form, large enough to bridge pairs of contact points and having a diameter substantially less than the spaces between the inner faces of the closed body, and
an annular permanent magnet of substantially cylindrical external form with an internal bore forming an inner opening of elongated cross section at right angles to a long axis through its own center,
said permanent magnet being linked magnetically to said movable armature so that motion of said permanent magnet will cause said movable armature to move quickly along and in contact with a selected portion of the inner faces of the closed body of the container to make and break circuits between the contact points at said one end of the container and to provide a snapping action relative to the contact points.

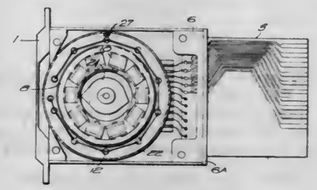
3,289,130
TILTING SWITCH WHICH CAN BE LOCKED IN A DEPRESSED STATE
Derk Kleis, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 1, 1965, Ser. No. 484,303
Claims priority, application Netherlands, Sept. 1, 1964, 6410146
3 Claims. (Cl. 335—157)

1. A push button switch for a microphone comprising a microphone housing member having a cavity therein and at least one slot communicating with said cavity, a lever having a first portion projecting through said slot and a second portion within said cavity, resilient means normally urging said second portion of said lever against the portions of said housing member defining said slot and located at the ends of said second portion of said lever, at least one switch contact means in said cavity, fulcrum



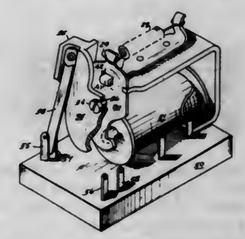
means about which said lever tilts, said fulcrum means connecting said lever and said contact means for closing said contact means upon arbitrary tilting movement of said lever, and means coupled with one end of said lever for locking said lever in one of its tilted, contact closed positions, said lever in the other titled position thereof being freely movable between its tilted and non-tilted positions.

3,289,131
ELECTROMAGNETIC SWITCH SELECTOR
John A. Watkins, Cheshire, and Elliot R. Lang, Hamden, Conn., assignors to The Patent Button Company, Waterbury, Conn., a corporation of Connecticut
Filed Nov. 12, 1964, Ser. No. 410,576
2 Claims. (Cl. 335—162)



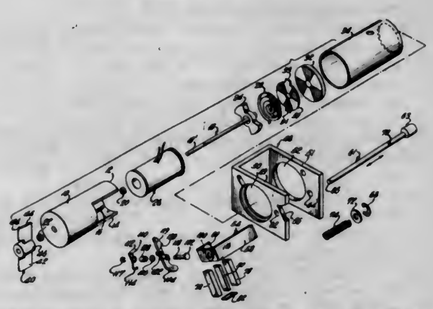
1. Switching apparatus comprising:
(1) a panel having a window for displaying symbols;
(2) a stator having a ferromagnetic annular core for establishing any one of a plurality of discretely oriented magnetic fields, the core having a plurality of inwardly protruding radial poles, and a plurality of windings, each winding being mounted upon a different radial pole and being connected to permit the winding to be separately energized by an electrical signal;
(3) a plurality of switches disposed outside the annular core and fixed in an array that closely encircles the annular core, the switches being of the type operative by magnetic induction; and
(4) a rotor having a magnet mounted to turn within the enclosure of the annular core the magnet having salient poles of opposite magnetic polarity whereby the magnet is constrained to rotate into substantial alignment with the magnetic field established by the stator, the rotor further including a drum bearing the symbols to be displayed in the window, the drum having a second magnet attached to it in a position where rotation of the drum carries the second magnet about a circular path outside the annular core and closely adjacent to the circular array of switches.

3,289,132
ELECTROMAGNETIC SWITCH WITH CANTED CONTACTS
Otmar M. Ulbing, Johnson City, N.Y., assignor, by direct and mesne assignments, of fifty percent to Robert S. Rinehuls, Binghamton, N.Y., and twenty-five percent to Richard Rinehuls, Port Crane, N.Y.
Filed Feb. 1, 1963, Ser. No. 255,578
12 Claims. (Cl. 335—189)



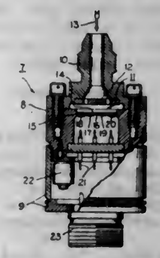
1. An electromagnetic switch, comprising, in combination: a base structure; a pair of stationary contacts mounted on said base structure and spaced apart at the ends of an arcuate path, each of said stationary contacts having a contact surface area the plane of which intersects the plane of said arcuate path substantially non-perpendicularly; a flexible contact arm mounted on said base structure to pivot between said stationary contacts about an axis situated substantially at the center of curvature of said arcuate path, said contact arm having a pair of contact surface areas on opposite sides of said contact arm, the planes of which are arranged substantially non-perpendicularly to the plane of said arcuate path; and electromagnet means mounted on said base structure in driving relationship to said arm to pivot said flexible contact arm and urge one of said contact surface areas of said contact arm against the contact surface area of one of said stationary contacts.

3,289,133
LATCHING ASSEMBLY FOR A ROTARY ELECTROMAGNETIC DEVICE
Jacob J. Bieger, Queens, and Alois Stauber, Great Neck, N.Y., and William Henninger, Paramus, N.J., assignors to Daco Instrument Company, Brooklyn, N.Y., a corporation of New York
Filed Aug. 6, 1964, Ser. No. 387,895
11 Claims. (Cl. 335—253)



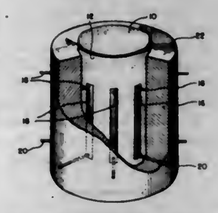
1. A latching device for use with a rotary device having an armature rotatable to a predetermined position, comprising a latching rotor connected from said armature, a support yoke secured to said rotary device, a movable bracket mounted on said yoke for movement in the direction of the rotational axis of said armature, and means mounted in said bracket for holding the latching rotor when said armature is rotated to said predetermined position, said means releasing said latching rotor when said bracket is moved a predetermined distance in said direction.

3,289,134
GAGED DIAPHRAGM PRESSURE TRANSDUCER
Eric Laimins and Anthony H. Brackett, Jr., both of Cambridge, Mass., assignors to BLH Electronics, Inc., Waltham, Mass., a corporation of Delaware
Filed Apr. 24, 1964, Ser. No. 362,267
7 Claims. (Cl. 338—4)



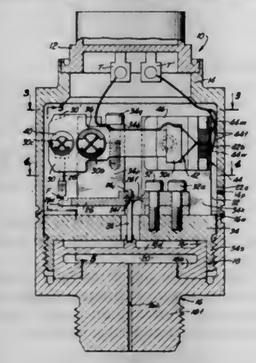
1. A gaged diaphragm transducer comprising an elastic diaphragm having oppositely-disposed surfaces at least one of which has a concave curvature and wherein the thicknesses of the diaphragm increase progressively from substantially the middle to the outer periphery thereof, means supporting said diaphragm about the outer periphery thereof, means for deflecting said diaphragm relative to said supporting means, and measurement means including strain gages connected to said one of said diaphragm surfaces having said concave curvature and developing electrical output signals responsive to deflections near the center and outer periphery thereof, respectively said thicknesses of said diaphragm at the middle and outer periphery thereof being of relative proportions making the maximum co-existing radial strains in tension and compression on each surface of the deflected diaphragm substantially equal.

3,289,135
STRAIN GAUGES
Eugene L. Anderson and Leonard U. Rastrelli, both of San Antonio, Tex., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Dec. 4, 1963, Ser. No. 328,144
5 Claims. (Cl. 338—5)



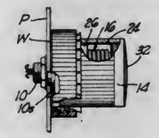
4. A flexible electrical resistance gauge for measuring the deformation of an elastomeric body, comprising:
(a) a first cylindrical member;
(b) a plurality of slots formed in the periphery of said first member;
(c) a second cylindrical member in juxtaposition with said periphery;
(d) an elastomeric slurry in said slots and maintained there between said first and second members; and
(e) means, including individual pairs of wire connected to each of said slots, for providing an electrical path to said slurry, said slurry having a unit electrical resistance substantially lower than that of said first and second cylindrical members.

3,289,136
DRY HIGH-PRESSURE POTENTIOMETRIC TRANSDUCER
Eugene A. Marks and Roger B. Sperling, Riverside, Calif., assignors to Bourns, Inc., a corporation
Filed Nov. 27, 1964, Ser. No. 414,069
3 Claims. (Cl. 338—42)



1. A high pressure potentiometric transducer for translating directly into electrical signal form the pressure exhibited by a fluid under high pressure admitted thereto, said transducer comprising:
first means, including housing and support means and providing a chamber and an opening into the chamber for admission thereinto of fluid under pressure, said first means including a thick elastic diaphragm of high resistance to deformation and of high natural frequency of oscillation said diaphragm forming at least a portion of the interior wall bounding said chamber and having a center portion which travels incident to change of deformation of the diaphragm incident to change of exhibited pressure;
second means, including potentiometer means having first and second electrical components the first of which is a resistance element and the second of which is a wiper contact, one of said components being supported by said first means and the other of said components being movable;
third means, including first integral lever means comprising a first lever device comprising a rigid portion connected to said first means for support thereby and comprising first substantially frictionless flexible means forming part of said lever device and permitting limited movement of a movable portion of the lever device about a zone of flexure and said third means including first transmitter means integrally interconnecting said diaphragm and said first lever device for lossless transmission of motion of said center portion of said diaphragm to said first lever device to move the said portion thereof incident to change of deformation of the diaphragm;
and fourth means, including second lever means comprising a second lever device comprising an intermediate portion pivotally affixed to said first means for support thereby and comprising a substantially frictionless flexible means permitting limited movement of a movable portion of the said second lever device about a pivot zone, said fourth means integrally comprising a second transmitter means interconnecting said first lever device and said second lever device for movement of the movable portion of said second lever device incident to movement of the movable portion of the first lever device, and the movable portion of said second lever device carrying said other of said electrical components to move the latter to cause relative movement between said components to vary said potentiometer means incident to movement of the movable portion of said second lever device,
said first and second lever means and said transmitter means being effective to provide substantially frictionless compound amplification of the travel of said center portion of said diaphragm incident to change of pressure in said chamber,
said transducer having characteristics such that the natural frequencies of movable parts of said transducer are very high and are such that said transducer may in the complete absence of liquid damping means for said movable parts furnish highly accurate pressure-representing signals of high pressures in environments including environments of intense high-frequency vibration and environments of very low ambient temperature.

3,289,137
BRAKE MEANS FOR ROTARY VARIABLE RESISTOR
Robert L. Jones and Harold L. Kruse, Riverside, Calif., assignors to Bourns, Inc., a corporation
Filed Mar. 4, 1964, Ser. No. 349,296
2 Claims. (Cl. 338—162)



1. A variable resistor comprising:
first means, including stationary means arranged for attachment at a location thereon to a supporting panel or the like, and resistance element means supported on said stationary means;
second means, including a hollow rotatable part supported by said stationary means and adapted to be manually rotated about an axis for effecting adjustment of the variable resistor, said rotatable part having the characteristics of a knob and having a generally cylindrical exterior surface encircling said element means and said axis and extending generally forwardly from a region adjacent said location;
third means, including a stationary member having a generally cylindrical portion encircling said generally cylindrical exterior surface of said rotatable part and having an exteriorly threaded rear portion and a forward portion comprising a circular series of resilient flexible grips closely encircling said rotatable part and extending from said cylindrical portion with forwardly and outwardly rising cam surfaces and capable of flexing into and out of contact with said rotatable part, said third means comprising means to hold stationary said stationary member relative to said stationary means; and
fourth means, including a ring-like internally threaded member encircling and rotatable on said stationary member and adjacent said grips and having the thread thereof coacting with the thread of said stationary

member and having rearwardly of said flexible grips a portion of diameter less than the maximum diameter of said series of grips and having a cam surface complementary to and engageable with said cam surfaces of said flexible grips whereby to force said grips inwardly into frictional engagement with said forward movement part incident to rotation of said ring-like member due to rotation thereof in a first direction;

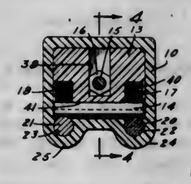
whereby incident to rotation of said ring-like member in said first direction said grips are forced into frictional engagement with said rotatable part to hold the latter against rotation,

and whereby incident to rotation of said ring-like member in the opposite direction said grips are released from said hollow rotatable part.

3,289,138
LINEAR POTENTIOMETERS

Edwin F. Pierce, Pasadena, Calif., assignor to E. and P. Engineering Research and Delevopment Corporation, Reno, Nev., a corporation of Nevada

Filed Dec. 3, 1962, Ser. No. 241,674
5 Claims. (Cl. 338—183)



1. A linear potentiometer comprising:

(a) an elongated housing of insulating material having two substantially parallel spaced recesses therein of substantially circular cross section and open toward the interior of said housing;

(b) a conductive rod shaped element disposed in one of said recesses of said housing to expose a contact surface;

(c) a resistive rod shaped element disposed in the other one of said housing portions to expose a contact surface;

(d) a brush holder of insulating material movably disposed in said housing for movement parallel to the elongate extents of said conductive and resistive elements and having an elongated first recess therein facing said elements;

(e) an elongated brush of conductive material disposed in the first recess of said brush holder;

(f) two coil springs disposed in said brush holder and urging each end of said brush into electric contact with a respective one of said elements;

(g) an adjusting screw extending through said housing parallel to said conductive and resistive elements and rotatable therein and further extending through said brush holder, said brush holder having a second recess;

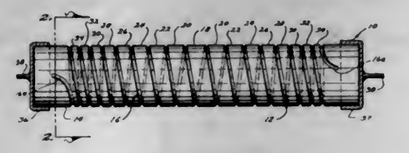
(h) a nut of insulating material in threaded engagement with said screw and disposed in said second recess of said brush holder, said second recess in said brush holder being so shaped as to prevent rotation of said nut, whereby rotation of said screw will adjust the relative position of said brush holder and brush with respect to said elements to adjust the electric resistance between said conductive element and said resistive element; and

(i) terminal means for each of said conductive and resistive elements connected to the elements through the housing.

3,289,139
FILM RESISTANCE UNIT

Clyde M. Hyde, Lincoln, Nebr., assignor to Dale Electronics, Inc., Columbus, Nebr., a corporation of Nebraska

Filed Feb. 24, 1964, Ser. No. 346,615
9 Claims. (Cl. 338—218)



1. In a resistor device,

an elongated core of non-electro-conducting material,

a resistance film on the outer surface of said core,

electro-conducting terminal means on the ends of said core in electrical contact with said film,

a helical groove being cut in said film to divide said film into a continuous ribbon comprised of a plurality of convolutions,

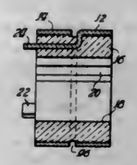
the lateral width of the convolutions near the center of said core being wider than the convolutions adjacent the end of said core,

the ends of said groove departing from a helical pattern and terminating in an arcuate shape and extending substantially horizontally and longitudinally towards the respective ends of said core.

3,289,140
SLIP RING ASSEMBLY

James E. Slack, Westchester, Ill., assignor to Borg-Warner Corporation, a corporation of Illinois

Filed Feb. 26, 1962, Ser. No. 176,869
2 Claims. (Cl. 339—5)

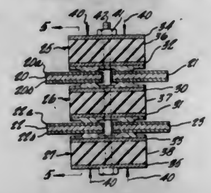


1. A unitary molded slip ring assembly comprising a plurality of substantially cylindrically shaped spaced-apart circumferentially extending electrically conductive strips forming a plurality of slip ring elements and defining a circumferentially extending annular groove between adjacent cylindrically shaped spaced-apart circumferentially extending strips, a substantially cylindrical core of molded insulating material circumscribed by and supporting each slip ring element and being provided with a peripheral surface portion defining a part of said circumferentially extending annular groove, each slip ring element being provided with an integral extension struck out and offset from said structure and extending radially inwardly and axially of a respective element to define an integral conductor lead for a respective slip ring element, each of said slip rings being provided with an internal circumferential portion having plurality of alternating dove-tailed ribs and grooves, and said core having an outer circumferential portion having a plurality of alternating dove-tailed ribs and grooves in complemental axially keyed locking relation with the ribs and grooves of each slip ring.

3,289,141
ELECTRICAL CONNECTOR FOR PRINTED CIRCUIT BOARDS

Kenneth H. White, West Covina, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed July 22, 1963, Ser. No. 296,525
3 Claims. (Cl. 339—17)



1. In combination, at least one thin circuit board having a rectangular configuration with n parallel conductors terminating at opposite edges of the rectangle on both the top and bottom surfaces and m parallel conductors terminating at opposite edges of the rectangle on both the top and the bottom surfaces, a plurality of thin circuit boards having n parallel conductors terminating at one edge on both the top and the bottom surfaces of the board, a plurality of circuit boards having m parallel conductors terminating at one edge on both the top and the bottom surfaces of the board, the n conductors of the rectangular circuit board and the conductors of the plurality of circuit boards having n conductors being of equal width and spaced at equal intervals, the m conductors of the rectangular circuit board and the conductors of the plurality of circuit boards having m conductors being of equal width and spaced at equal intervals, a connector board having a rectangular configuration of larger dimensions than the rectangular circuit board, the connector board having n parallel conductors terminating at opposite edges, the n parallel conductors being of sufficient length to extend from the n conductors on the rectangular board to the n conductors on the circuit boards when a circuit board is placed adjacent to one edge of the rectangular circuit board, the m parallel conductors of the connector board being of sufficient length to extend from the m parallel conductors on the rectangular circuit board to the m parallel conductors on the circuit boards when a circuit board is placed adjacent to the terminating edge of the m parallel conductors of the rectangular circuit board, a connector board located on top of each rectangular circuit board and overlapping onto an adjacent circuit board, the n parallel conductors of the connector board interconnecting the n parallel conductors of the rectangular circuit board and the adjacent circuit board, the m parallel conductors of the connector board interconnecting the m parallel conductors of the rectangular circuit board and the m parallel conductors of the adjacent circuit board, and means for applying pressure to the outside connector boards to insure the positive connection between the conductor contacts.

3,289,142
MULTI-PHASE PANEL ASSEMBLY AND PLUG-IN CONTACT ASSEMBLY THEREFOR

Norbert J. Wasileski, Farmington, Conn., assignor to General Electric Company, a corporation of New York

Continuation of application Ser. No. 328,232, Dec. 5, 1963. This application Mar. 30, 1966, Ser. No. 552,656
9 Claims. (Cl. 339—22)

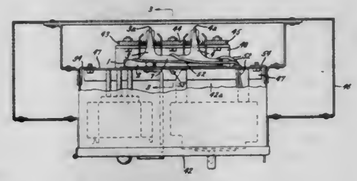
1. A three-phase electrical apparatus assembly comprising:

(a) a main enclosure;

(b) at least three electrically separate power bus bars supported in insulated relation in said enclosure in parallel spaced-apart generally co-planar relation, each for connection to a different phase of a three-phase power system and each mutually adjacent pair of said bus bars defining an elongated space therebetween defined by mutually confronting portions of said adjacent pair of bus bars;

(c) an electrical control unit supported on said main enclosure, said control unit comprising a control unit enclosure for enclosing and supporting electrical control apparatus, said control unit enclosure including a back wall extending generally parallel to said power bus bars;

(d) at least two pairs of adjacent electroconductive strips supported on said control unit and extending outwardly from said back wall thereof substantially perpendicular to said back wall;



(e) each of said pairs of electroconductive strips extending into one of said spaces between a pair of said bus bars;

(f) each of said strips of each of said pairs having a portion thereof resiliently held in electrical engagement with a different one of said bus bars;

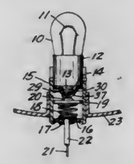
(g) means electrically insulating each strip of each pair of said pairs from said control unit enclosure and from the other one of said strips comprising said pair, and

(h) at least three electrical connectors in said control unit enclosure each connected to a corresponding different one of said electroconductive strips for connecting three electrical conductors in said control unit enclosure each to a different one of said phase bus bars.

3,289,143
ELECTRICAL DEVICE

Charles W. Williams, 222 Greenview, Mundelein, Ill.

Filed Dec. 23, 1964, Ser. No. 420,545
5 Claims. (Cl. 339—145)



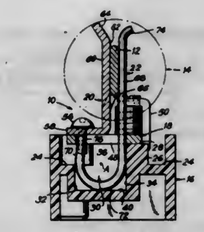
1. A spring contact adaptor for providing a sound electrical connection between the base terminal of a light bulb and the corresponding socket terminal,

comprising an insulator disc having an upper face with adhesive thereon to engage and adhere to the end of such a light bulb base to be carried by the base into the socket, said disc having a central portion recessed below said upper face, and said disc having an opening therethrough,

and a U-shaped leaf spring contact having opposite end

portions respectively disposed above and below said disc and also having a central portion in the opening of said disc, said opposite end portions bearing upwardly and downwardly against the base terminal of the bulb and the socket terminal, said spring contact flexing to apply pressure against said terminal.

3,289,144
FUSE TERMINAL CLIP
Anatole Bachman, Willowdale, Ontario, Canada, assignor to Federal Pacific Electric Company, Newark, N.J., a corporation of Delaware
Filed Mar. 5, 1965, Ser. No. 437,415
9 Claims. (Cl. 339—149)



1. A terminal clip for receiving the knife blade terminal of a fuse, said terminal clip including a bias member having a short arm and a long arm connected by a bight portion of constant radius whose axis of curvature lies between said arms, an insulating base, said base including means for supporting said bias member for limited rotational movement about said axis, a contact member having a fuse terminal engaging portion, said contact member being mounted on said base, means for engaging said bias member for rotating said member about said axis whereby said long arm is urged into engagement with said fuse terminal engaging portion of said contact member.

3,289,145
APPLIANCE CONNECTOR
Herbert E. Ruehlemann, Huntingdon Valley, and Frank Frompovicz, Cornwells Heights, Pa., assignors to Elco Corporation, Willow Grove, Pa., a corporation of Pennsylvania
Filed Apr. 9, 1964, Ser. No. 358,444
8 Claims. (Cl. 339—176)



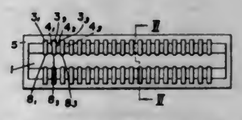
1. In combination at least two insulators ganged together in a locking action, each of said insulators having side walls, one of said insulators having a pair of tongues projecting from a side wall thereof, a depression formed between said tongues having a ridge inclined outwardly toward said tongues, the other insulator including a projecting key along a side wall thereof and slots adjacent said key with said locking action being achieved by the interfitting of said tongues and said slots with said ridge being snapped behind said key.

3,289,146
CONTACT ARRANGEMENT
Ulrich Tuchel, Neckartalstrasse 51, Heilbronn (Neckar), Germany
Filed Apr. 29, 1964, Ser. No. 363,433
Claims priority, application Germany, Apr. 29, 1963, T 23,927
18 Claims. (Cl. 339—176)



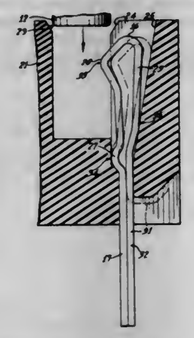
1. An electric contact arrangement for receiving a plug, said contact arrangement comprising a housing and two springs arranged in said housing, said springs being bent to form first and second pairs of contact-making portions which pairs are arranged one behind the other in the direction in which the plug is to be inserted, the contact-making portions of each pair being, in rest position of said springs when no plug is in contact therewith, at least nearly in contact with each other, each spring having a first arm which extends from the first contact-making portion of the respective spring to a first support point at which the respective spring, already in its rest position, engages an interior surface of said housing at which point said housing takes up the inserting pressure as the plug is inserted, each spring further having a second arm which extends from said second contact-making portion of the respective spring to a second support point at which the respective spring, already in its rest position, engages a portion of the first arm of the respective spring which arm portion extends between said second arm and said interior surface of said housing, said first arm being longer than said second arm, and said portion of said first arm exerting on said second arm a progressively increasing pressure during the transition of each spring from rest position to a stressed position in which said springs contact the plug.

3,289,147
MICROSOCKETS
Koichi Takeuchi, Shinagawa-ku, Tokyo, Asao Shikama, Kawasaki-shi, and Sbozo Takeno, Yokohama-shi, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed June 15, 1964, Ser. No. 374,917
Claims priority, application Japan, June 22, 1963 (utility model), 38/46,409
3 Claims. (Cl. 339—176)



1. A microsocket comprising a trough shaped inner frame member made of a plastic material and formed with a plurality of electrode pin receiving slots on the opposing inner walls of the trough, a trough shaped outer frame member made of a plastic material and provided with a plurality of electrode pin receiving slots on its inner walls corresponding to said electrode pin receiving slots of said inner frame member, said inner frame member being fit in said outer frame member, and a plurality of U-shaped electrode pins, one leg of each of said pins being received in a perforation defined by one of said slots of the outer frame member to extend beyond the bottom wall thereof and the other leg being bent into engagement with a corresponding one of said slots of said inner frame member, said inner and outer frame members and said electrode pins being bounded into a unitary structure by means of an adhesive.

3,289,148
CONNECTORS
Jack E. Antes, Greenwich, Conn., assignor to Litton Systems, Inc., Beverly Hills, Calif.
Filed July 29, 1964, Ser. No. 385,848
4 Claims. (Cl. 339—176)



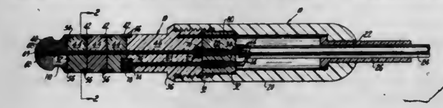
1. In combination with a connector body part having a passage extending through said body part from top to bottom said passage having varying width and being larger near the top thereof and having a recessed portion to receive the male contact element of the mating connector at one side of the variable width section of the passage,

a contact member mounted in the passage in said connector body and extending through the bottom thereof to provide a terminal portion,

said contact member being formed by folding a strip of metal back upon itself to define an upper open-loop portion where it is engaged by the contact of the mating connector in the recessed portion of said body part and a lower terminal portion where the ends of the said strip touch when the strip is folded, the width of the open-loop portion of the contact member being less than the width of said passage at the point where the contact member is mounted in said passage to permit deflection of the contact member when it is engaged by the contact of the mating connector, one side of the open-loop portion of the contact member opposite the recessed portion of the body part being bent to provide a protuberance engaging the wall of said passage over a small area to act as a fulcrum for the upper part of the contact member which is deflected upon insertion of the mating connector contact, the other side of said open-loop portion of the contact member having a convex portion engaging the side of said passage at the narrow end thereof to prevent downward displacement of the contact member in said connector body part.

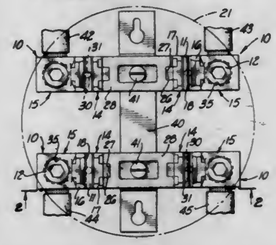
3,289,149
MULTIPLE CONTACT JACK ASSEMBLY
James A. Pawloski, East Woodstock, Conn., assignor to The Linemaster Switch Corporation, Woodstock, Conn., a corporation of Connecticut
Filed Apr. 28, 1964, Ser. No. 363,139
10 Claims. (Cl. 339—183)

1. A multiple contact jack plug comprising; in coaxial relationship a front end contact, a rear end insulator, a plurality of additional insulators intermediate the end contact and end insulator, said end and intermediate insulators having front and rear axial faces with opposing faces of adjacent insulators in contiguous relationship, said insulators being contoured to define peripheral axially extending annular grooves about their opposing contiguous faces and with the contiguous faces intermediate the axial ends of the grooves, and a plurality of ring contacts of cylindrical shape received in said annular grooves; the contiguous faces of the insulators being contoured to define pockets inwardly of and in communica-



tion with the annular grooves, said insulators having a central passage extending rearwardly from said end contact and a plurality of angularly spaced axial passages extending rearwardly from said pockets to the rear face of the end insulator, bare wire conductors in said axial passages extending rearwardly from the end contact and from the pockets and conductor lugs within said pockets integrally secured to the wire conductors extending rearwardly from the pockets respectively and in electrical engagement with the internal cylindrical surface of the ring contacts.

3,289,150
PLUG-IN METER JAW
Rex E. Sturdivan, Whittier, Calif., assignor to Zinsco Electrical Products, Los Angeles, Calif., a corporation of California
Filed Apr. 27, 1964, Ser. No. 362,590
8 Claims. (Cl. 339—192)



6. In a plug-in meter socket, the combination of:

a unitary jaw and lug of cast aluminum and having a jaw portion including a pair of spaced upstanding arms defining a meter stab receiving slot therebetween, and having a U-shaped lug portion with the bight of said U forming the base of said slot and with the ends of the arms of said U turned outwards providing tab means for clamping to an electrical conductor; and

a spring member carried in said slot adjacent one of said arms for urging a meter stab in said slot against the other of said arms.

3,289,151
CONNECTOR
Joseph A. Mas, Woodbury, and Melvin F. Walker, Deer Park, N.Y., assignors to Dynamic Instrument Corp., a corporation of New York
Original application Jan. 22, 1963, Ser. No. 253,168, now Patent No. 3,246,282, dated Apr. 12, 1966. Divided and this application Aug. 17, 1965, Ser. No. 485,976
2 Claims. (Cl. 339—257)

1. A clip comprising an essentially rectangular plate of thin resilient material, the center of said plate being

dished to form a depression in one side thereof, said plate further including a pair of slots extending from one edge thereof inwardly and partially about said dished portion to partially sever it from said plate and means on said

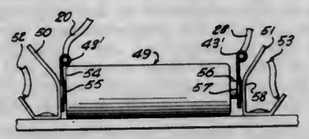
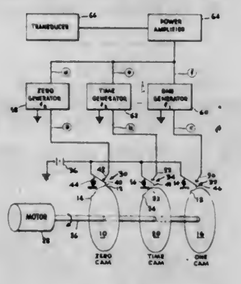
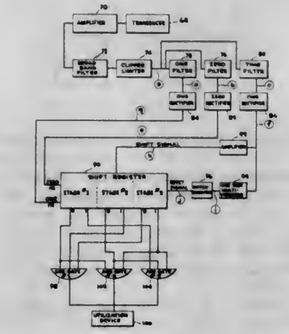


plate for electrically connecting a lead wire thereto, the concave side of said dished portion being adapted to engage the post of a dry cell and the convex side being adapted to engage the base of a dry cell.

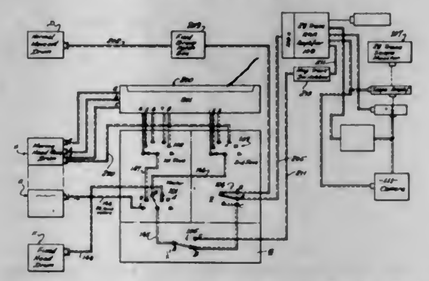
3,289,152
ACOUSTIC SIGNALING SYSTEM
Charles G. McIlwraith, Rancho Sante Fe, and Kerry E. Coughlin, Solana Beach, Calif., assignors to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware
Filed Feb. 6, 1964, Ser. No. 343,064
5 Claims. (Cl. 340—5)





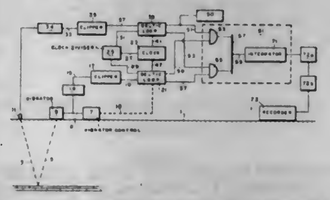
2. A communications system comprising
means for transmitting through a medium information containing a plurality of different frequency signals, a pair of said signals representing the bits of a binary coded message and spaced by another of said signals representing timing bits
filter means for separating said plurality of signals
binary shift register means for storing said pair of signals representing the bits of the binary coded message, said signals representing timing bits being applied to shift said register means to serially store said pair of signals
gate means responsive to said stored pair of signals for generating a signal to actuate a device, and
means responsive to said signals representing timing bits for generating a negative signal to reset said register means to clear therefrom said stored pair of signals.

3,289,153
APPARATUS FOR COMPOSITING SEISMOGRAPHIC SIGNALS
Carl H. Savit, Van Nuys, Melvin J. Wells, Torrance, and Thomas L. Slaven, Los Angeles, Calif., assignors to Western Geophysical Company of America, Los Angeles, Calif., a corporation of Delaware
Filed Jan. 27, 1964, Ser. No. 340,437
16 Claims. (Cl. 340—15.5)



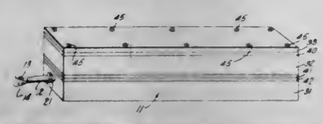
1. Apparatus for combining preselected pluralities of seismographic signals comprising:
reproduce means operative to reproduce a multichannel recording of time-variant signals,
record means operative to record a multichannel recording of preselected pluralities of time-variant signals,
time alignment means coacting with said record means to align indicial times of the individual signals comprising said composite time-variant signals,
programable routing and control means acting to route signals from selected channels of said reproduce means for recordation and combination in selected channels of said reproduce means to said record means.

3,289,154
METHOD OF CONTINUOUS WAVE SEISMIC PROSPECTING
Allen B. Cunningham, Houston, Tex., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Aug. 24, 1964, Ser. No. 391,807
7 Claims. (Cl. 340—15.5)



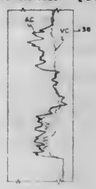
1. In the method of measuring the travel time along at least one path of propagation through the earth between spaced first and second points thereon of a vibratory signal injected into the earth at said first point which is substantially longer than the travel time of such signal along any of those paths of its propagation through the earth by which it reaches said second point at usable energy levels, the improvement which comprises:
forming a shift register binary code of maximal length;
varying a characteristic of said vibratory signal injected into the earth at said first point in accordance with said binary code of maximal length for a time interval which is substantially longer than the travel time of said signal along any of those paths of its propagation through the earth by which it reaches said second point at usable energy levels before repeating said binary code;
producing a first electrical signal which is a replica of said varied vibratory signal and a second electrical signal representative of the varied vibratory signal as received at said second point;
producing a third electrical signal which is the time differential of said first electrical signal;
producing a fourth electrical signal which is the time differential of said second electrical signal;
producing electrical pulses at salient points in the third electrical signal to form a first pulse train and at salient points in the fourth electrical signal to form a second pulse train;
compressing said first and second pulse trains in real time by decreasing the real time spacing between individual pulses thereof while maintaining constant the relative time spacing between said individual pulses;
cross-correlating said first and second pulse trains at a predetermined number of time-phase relationships therebetween to produce a first correlation signal having an amplitude varying in accordance with the degree of correlation between said pulse trains at various time-phase relationships therebetween; and
doubly integrating the first correlation signal to produce a second correlation signal whereby travel time is established in accordance with the value of time-phase relationship between said pulse trains corresponding to a maximum value of magnitude of said second correlation signal.

3,289,155
SEISMIC ACCELERATION DETECTOR
Alvin L. Parrack, Bellaire, and Steven A. Stubblefield, Houston, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 24, 1965, Ser. No. 497,586
7 Claims. (Cl. 340—17)



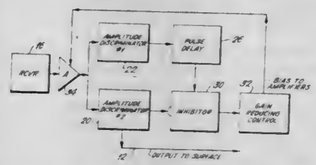
1. A seismic acceleration detector comprising an elongated housing, an elongated spring member having substantially parallel longitudinal edges fixedly supported by said housing, an elongated inertia mass supported along the entire longitudinal dimension of said spring member intermediate said longitudinal edges, said inertia mass having a substantially smaller width than said spring member, a piezoelectric crystal transducer means having one face bonded to a face of said spring member, the dimension of said crystal transducer means co-longitudinal with said spring member being selected to provide the necessary capacitance to establish the desired impedance of said detector whereby accelerations of said housing produces mechanical vibrations of said spring member and crystal transducer means thereby converting said accelerations to electrical signals of predetermined strength.

3,289,156
ACOUSTICAL LOGGING FOR DETERMINING FRACTURES
John C. Wilson, Houston, Tex., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Dec. 30, 1963, Ser. No. 334,181
6 Claims. (Cl. 340—18)



1. A method of acoustic logging of the formations encircling an earth borehole to determine fractures in said formations comprising:
repetitively generating acoustic waves in the borehole;
detecting arrival of each of such waves at each of a pair of detecting stations spaced at a fixed distance apart longitudinally and deriving electrical signals indicative of said arrivals;
determining from said signals the time interval between the respective arrivals of said acoustic wave at said two stations to determine the velocity of said waves in said formation;
detecting at one of said stations the total amplitude of the acoustic wave arriving at the station, deriving an electrical signal characteristic of the acoustic pattern of said acoustic energy traveling in said formation, integrating said signal to determine the total energy loss of each of said waves in said formation;
recording relative to depth a log of the velocity and superimposing thereon a log of total energy loss and noting areas of departure whereby areas of fracture in the formation may be determined.

3,289,157
AUTOMATIC GAIN CONTROL IN ACOUSTIC WELL LOGGING SYSTEMS
Adrian P. Brokaw, Woburn, Mass., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Dec. 16, 1965, Ser. No. 520,025
7 Claims. (Cl. 340—18)



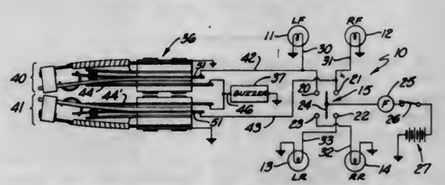
7. An acoustic well logging system comprising
at least one acoustic energy receiver arranged and adapted to develop an electrical signal functionally related to a received acoustic energy signal;
amplifier means for receiving and amplifying said electrical signal; and
logical circuit means interconnected with said amplifier means for developing information relative to the occurrence of said received acoustic energy signals; said logical circuit means including
means for developing an indicating signal indicating that said acoustic signal was received by said receiver during a period other than the period within which an acoustic signal should have been received,
means for developing a synchronizing pulse for initiating a cycle of operation of said system,

a delay means coupled to receive and to delay said synchronizing pulse, and

an AND circuit producing an output in response to the coincidence of said indicating signal and the output of said delay means;

said acoustic well logging system further comprising means connecting said output from said AND circuit to adjust the gain of said amplifier means.

3,289,158
TURN SIGNAL WARNING DEVICE
Clarence S. Olson, 947 E. Olive St., Colton, Calif.
Filed May 10, 1963, Ser. No. 279,489
3 Claims. (Cl. 340—75)



1. A warning device for use in a vehicle having right turn and left turn signal lights, a flasher unit connected to both of said signal lights, and a manually operable turn signal switch for selectively sending current through said flasher unit to one or the other of said signal lights, said device comprising:

a warning signal device disposed within said vehicle to attract the driver's attention when activated;

a resilient switch blade having a fixed end and a movable end;

first and second stationary contact points disposed on opposite sides of said resilient switch blade and alternatively engageable thereby when said switch blade is bent in one direction or the other;

a bi-metal strip having a free end that is movable between a first position when the strip is cool, and a second position when the strip is hot;

a heater wire wrapped around said bi-metal strip and electrically connected at one end to said first stationary contact point;

means operable to close said resilient switch blade against said first stationary contact point when said free end of said bi-metal strip is at said first position, and against said second stationary contact point when said free end of said bi-metal strip is at said second position;

an electrical connection between said resilient switch blade and at least one of said turn signal lights; and

an electrical connection between said second stationary contact point and said warning signal device;

said warning signal device being activated, after said turn signal lights have been flashing for a predetermined interval of time, by movement of the free end of said bi-metal strip from said first position to said second position responsive to being heated by said heater wire, and thereafter producing a warning signal with each flash of said turn signal lights, until said bi-metal strip has cooled off and returned to said first position.

3,289,159
DIGITAL COMPARATOR
Morton P. Woodward, Jr., Vestal, N.Y., assignor to General Electric Company, a corporation of New York
Filed Mar. 18, 1963, Ser. No. 265,845
6 Claims. (Cl. 340—146.2)

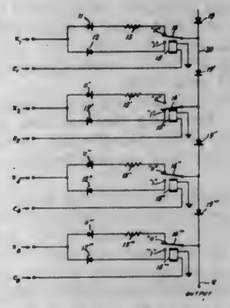
2. A digital comparator in which an unknown number, having digits represented by electrical signals on one or more lines, is compared in magnitude with a second digit number, representing a predetermined limit, the number system having the characteristics that each digit is assigned a fixed value and there being a fixed order of significance for the digits, the comparator comprising:

(a) a trunk line providing a common output connection;

(b) a plurality of switching circuits for receiving respective unknown digit signals and comparing them with the corresponding limit digits, each switching circuit including:

(1) two parallel branches, each branch having a rectifier with opposite polarity terminals connected to said trunk line,

(2) switching means for selectively closing the circuit for the unknown digit signals through said branches to said trunk line in accordance with a predetermined limit number in such a



manner that unknown digit signals greater than the limit digit apply a "NO-GO" signal through one branch to said trunk line and unknown digit signals less than the limit digit apply a "GO" signal to said trunk line which override "NO-GO" signals from less significant digit switching circuits by connecting said trunk line to a signal ground so that any number of signals from lower switching circuits can be shunted away from the comparator output; and

(c) rectifier means connected in said trunk line for steering "NO-GO" signals towards more significant digit switching circuits so that the most significant digit switching circuit produces the comparator "GO," "NO-GO" output signal or is effective to "PASS" to the next most significant digit switching circuit.

3,289,160
MEANS FOR COMPARING DIGITAL VALUES
Richard S. Carter and Walter W. Welz, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 23, 1963, Ser. No. 332,727
3 Claims. (Cl. 340—146.2)

1. In a data processing system, a comparing means comprising:

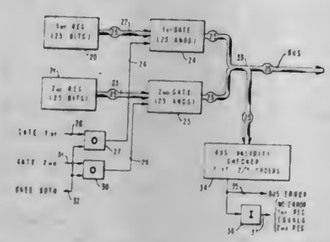
a validity checking circuit;

a data bus, said data bus being connected to said bus validity checking circuit, said bus validity checking circuit being operative to generate an error signal or a no-error signal in dependence upon the validity of said data on said bus;

first and second data sources, each of said data sources containing data which data is to be compared;

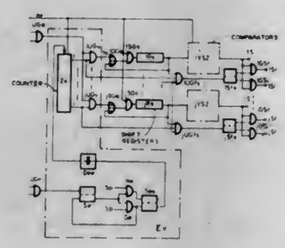
first and second gates, one for each of said sources, each of said gates being selectively operable to connect the corresponding source to said bus;

and first and second gate control means, one for each of said gates, each operative to cause the corresponding gate to connect the related source to said bus, said first and second gate control means being simultaneously operable;



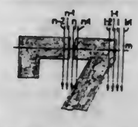
whereby the contents of both of said sources may be applied to said bus simultaneously, and the presence of a no-error signal will indicate that said contents are equal to one another.

3,289,161
METHOD AND CIRCUIT FOR THE ASCERTAINING OF STRAIGHT LINE FORM ELEMENTS IN THE AUTOMATIC IDENTIFICATION OF CHARACTERS
Günther E. Gattner and Rolf Jurk, both of Munich, Germany, assignors to Siemens & Halske Aktiengesellschaft, Berlin, Germany, a corporation of Germany
Filed Apr. 9, 1964, Ser. No. 358,472
Claims priority, application Germany, Apr. 11, 1963, S 84,670
20 Claims. (Cl. 340—146.3)



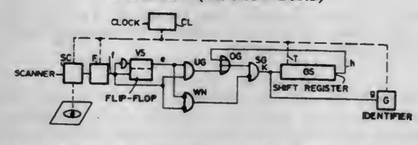
5. A system for identifying a straight-line portion as a form element of a character to be identified from "1" and "0" sensing-signal elements supplied from a columnal scanner, comprising a scanner signal input line, signal sequence identifying means connected to said line for identifying the sequences of scanner signal elements "1" which directly follow each other during a scan column in a number at least equal to a given minimum, register means connected to said signal input line under control by said sequence identifying means for storing said sequences in accordance with their position in the column conjointly with any such sequences identified in preceding columns and also storing positionally the projection of the scanned character when the scanning just proceeds beyond the rear boundary of the character; comparator means connected to said register means for comparing said stored sequences with said stored projection; and coincidence gate means connected to said comparator means for issuing an output signal indicative of the presence of said straight-line form element in dependence upon coincidence, within given limits, of said projection with said compared sequences.

3,289,162
METHOD AND SYSTEM FOR SUPPRESSING DEFECTS OF SCANNING SIGNALS IN THE AUTOMATIC IDENTIFICATION OF CHARACTERS
Rolf Jurk and Norbert Schürzinger, both of Munich, Germany, assignors to Siemens & Halske Aktiengesellschaft, Berlin, Germany, a corporation of Germany
Filed Apr. 9, 1964, Ser. No. 358,478
Claims priority, application Germany, Apr. 11, 1963, S 84,676
22 Claims. (Cl. 340—146.3)



4. A scanner signal transfer system for suppressing error signals caused by defects in characters to be identified from "1" and "0" signal elements produced by columnar scanning, comprising a signal input bus; first storer means connected to said bus to receive the scanner signal elements, said first storer means having a bit storage capacity corresponding to a given scanning travel progression for issuing the stored signal elements after a delay corresponding to the length of said progression; an inhibit gate connected to said first storer means to receive the delayed signal elements therefrom and having a lockout input connected to said bus; second storer means of said capacity connected to the output of said inhibit gate; third storer means of said capacity, and means connecting said third storer means to said bus; a coincidence gate network having a signal output lead to provide the corrected output signals and having respective inputs connected to the output of said second storer means and to the output of said third storer means and to said bus, said gate network being conductive between said third storer means and said signal output lead only at coincidence of a given minimum number of scanner signal elements "1" in said bus with simultaneous activation of said second storer means, whereby corrected scanner signals are passed from said third storer means to said output lead.

3,289,163
CIRCUIT FOR SUPPRESSING SCANNER-SIGNAL DEFICIENCIES IN SYSTEMS FOR IDENTIFICATION OF CHARACTERS
Rolf Jurk and Norbert Schurzinger, Munich, Germany, assignors to Siemens & Halske Aktiengesellschaft, Berlin, Germany, a corporation of Germany
Filed Apr. 9, 1964, Ser. No. 358,498
Claims priority, application Germany, Apr. 11, 1963, S 84,675
4 Claims. (Cl. 340—146.3)



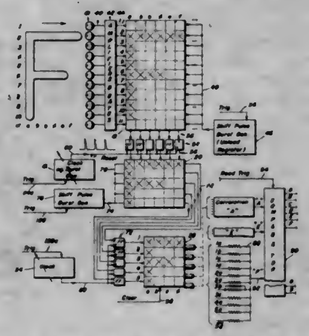
1. A circuit for suppressing character-irregularity defects in signals produced by columnar scanning of characters to be identified, comprising a signal input lead, an AND gate and a NOR gate and a bistable flip-flop stage having respective inputs connected to said signal input lead, said two gates having respective second inputs connected to the output of said flip-flop stage, an inhibit gate having a lock-out input connected with the output of said NOR gate and having another input, an OR gate having an input connected to the output of said AND gate and having an output connected with said other input of said

inhibit gate, a shift register connected to the output of said inhibit gate and having a bit storage capacity sufficient for simultaneous storage of the scanner signals receivable by said signal input lead during a scan column, said register having an output connected with another input of said OR gate, and a signal output lead connected to a circuit point subsequent to said inhibit gate, whereby character-irregularity defects of signals received at said input line are reduced in the signals issuing at said output line.

3,289,164
CHARACTER NORMALIZING READING MACHINE

Jacob Rabinow, Bethesda, Md., assignor to Control Data Corporation, Rockville, Md.

Filed Apr. 29, 1964, Ser. No. 363,358
10 Claims. (Cl. 340—146.3)



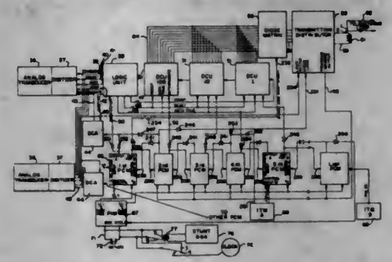
1. In a reading machine for identifying characters of various sizes, wherein the machine has recognition logic circuitry for characters within a predetermined size parameter, the improvement comprising means for enabling said recognition logic to function with characters of a size outside of said parameter, said means including a first storage means to store information extracted from an unknown character, means to unload the first storage means at a first rate, sampling means to sample said information unloaded from said first storage means at a frequency different from the unloading frequency of said first storage means, second storage means for storing said sampled information, and means for operatively connecting said second storage means with said recognition logic circuitry.

3,289,165
PROGRAMMING AND TELEMETERING SYSTEM AND APPARATUS

Jack S. Hawley, Berkeley, and George R. Towner, Oakland, Calif., assignors to Berkeley Instruments, Emeryville, Calif., a partnership

Filed Oct. 12, 1962, Ser. No. 230,149
14 Claims. (Cl. 340—151)

1. In a telemetering system, a digitizer, a logic unit connected to the digitizer, counting means including a plurality of counting units having parallel 10-line output information connected to the logic unit, said logic unit including means for interrogating said digitizer and causing said digitizer to send information pulses through the logic unit to the counting means, a transmitting distributor connected to said parallel 10-line output of the counting means, a plurality of program control modules each having on and off conditions, one module being provided for and coupled to each counting unit, and means for sequentially placing each module in an on condition, each of such on modules performing a predetermined and unique function, said modules coupled to said counting units causing said transmitting distributor to interrogate the counting means and to supply pulses in accordance with in-

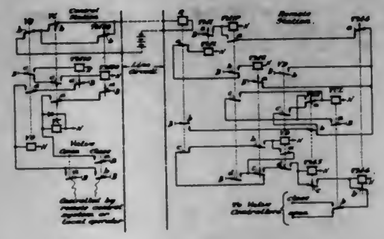


formation contained in the counting means and means including another of said modules connected to said logic unit and causing operation of said logic unit.

3,289,166
REMOTE FUNCTION CONTROL BY DISCRETE PULSE PATTERNS

David G. Emmel, Castle Shannon, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania

Filed July 26, 1962, Ser. No. 212,584
5 Claims. (Cl. 340—163)



1. A system for remotely controlling from a control station a function at a remote station between its first and second condition, comprising in combination;

(a) a line circuit means connecting said control and remote station and having a first and a second condition, said line circuit being normally in its first condition,

(b) a first control means at said control station for controlling said line circuit means to its second condition for a selected period of time to initiate a control transmission,

(c) a second control means at said control station having connections for at times controlling said line circuit means to a brief period of second condition a preselected time interval after the termination of the second condition period controlled by said first means in accordance with the desired condition of said function,

(d) a first monitor means at said remote station controlled by said line circuit means for detecting the end of the second condition period controlled by said first control means only during a first predetermined time interval after the beginning of that second condition period,

(e) a second monitor means at said remote station controlled jointly by said line circuit means and said first monitor means for detecting said brief period of line circuit second condition only during another preselected time interval after the beginning of the first second condition period and only if said first monitor

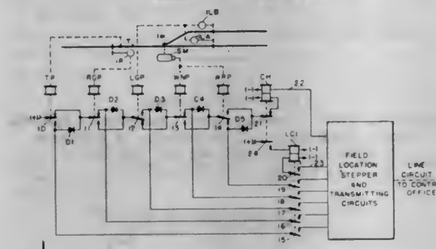
means has detected the end of that first second condition period during said first predetermined time interval,

(f) said second monitor means having connections for operating said function to its second condition when said brief second condition period of said line circuit means is detected during the proper interval and to its first condition when only said first second condition period of said line circuit means is detected.

3,289,167
CONTROL CIRCUIT FOR TRANSMITTING CODE INDICATING POSITION OF CONDITION RESPONSIVE RELAYS

Peter H. Swane, Rochester, N.Y., assignor to General Signal Corporation

Filed Sept. 19, 1962, Ser. No. 224,624
4 Claims. (Cl. 340—163)



1. In a code communication system for transmitting a code indicative of the existing position of a two-position device, the combination of,

(a) an energy source,

(b) a switching circuit means including a movable contact closing element connected to said energy source and operable between first and second contacts to repeat the existing position of said two-position device,

(c) code initiating control circuit means connected to each of said first and second contacts to be energized from said source when said movable contact closing circuit means is closing either of said first or second contacts for initiating a transmission cycle when deenergized each time the existing position of said two-position device is changed,

(d) code selecting circuit means adapted to be connected to only one of said first and second contacts to be selectively energized or deenergized for representing a distinctive code to be transmitted during said transmission cycle indicative of the existing position of said two-position device, and

(e) unilateral conducting circuit means connected between said first and second contacts effective to prevent said code selecting circuit means from being energized from said source while the other of said contacts is being closed, but at the same time being effective to permit said initiate control circuit means to be energized if either of said first or second contacts are closed.

3,289,168
INTERRUPT CONTROL SYSTEM

Charles A. Walton, Los Gatos, Calif., and Richard W. Bennett, Yorktown Heights, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed July 31, 1962, Ser. No. 213,772
3 Claims. (Cl. 340—172.5)

1. In an interrupt control system for use with a computer having an internally stored program, auxiliary control means for signalling an interrupt to said computer in response to an external event comprising:

means for monitoring a plurality of interrupt conditions,

counter means for sequentially scanning said monitoring means,

control means for holding said counter means at a position indicating an interrupt condition,

multiposition register means for indicating the position of said counter means to said computer,

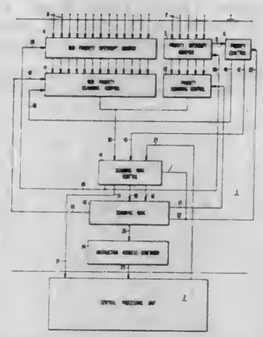
means for transferring the position of said counter means into predetermined positions of said register while holding all other positions of said register unchanged at predetermined values for all values of said counter means,

priority means for resetting said counter means to the initial position in response to an interrupt condition indicated by selected of said monitoring means,

timing means responsive to said resetting means for establishing an interval beginning with a reset of said counter means,

means responsive to the last position of said counter means for resetting said timing means, and

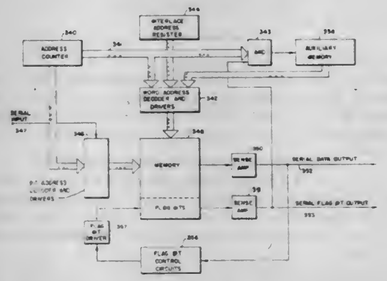
means responsive to said timing means whereby said reset is suppressed when said counter means fails to complete a scan of said monitoring means within said interval.



3,289,169
REDUNDANCY REDUCTION MEMORY

Marion J. Marosz, Downey, Calif., assignor to Beckman Instruments, Inc., a corporation of California

Filed Sept. 27, 1962, Ser. No. 226,675
12 Claims. (Cl. 340—172.5)



1. In a memory comprising a first and second plurality of devices having at least two states and arranged in an array, first means connected with said array for receiving data and for controlling the storage thereof in

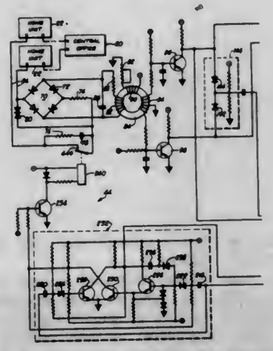
one or more of said first plurality of devices, second means connected with said first plurality of devices for reading data therefrom, the improvement comprising

third means connected with said second means and with said second plurality of devices for controlling the storage of "flag bits" in said second plurality of devices when new data stored under the control of said first means is different from data previously stored in a particular location in said array.

3,289,170
DATA TRANSMITTING AND RECEIVING SYSTEM USING PULSE WIDTH MODULATION

Charles H. Currey, Palatine, Curtis B. Bendell, Park Ridge, Arthur Charles Lewis Brown, Evanston, and Donald E. Haselwood, Deerfield, Ill., assignors to A. C. Nielsen Company, Chicago, Ill., a corporation of Delaware

Filed Oct. 24, 1962, Ser. No. 232,684
30 Claims. (Cl. 340—172.5)



1. A selecting system using discrete bit representing signals of a first duration and a second duration, comprising a signaling channel to which said discrete signals of said first and second durations can be applied, counting means successively operated to different settings in response to the discrete signals applied to said channel, a detecting circuit, control means controlled by said counting means and coupled to the detecting circuit for conditioning said detecting circuit to receive the next bit of a known pattern of bit representing signals of said first and second durations, means controlled by each signal received from said channel for supplying a corresponding signal to said detecting circuit, and means controlled by said detecting means for providing an indication when any signal received from said channel has a duration other than the duration for which the detecting circuit has been conditioned.

3,289,171
PUSH-DOWN LIST STORAGE USING DELAY LINE

Allan L. Scherr, Pikesville, Md., and Cyril J. Tunis, Endwell, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 3, 1962, Ser. No. 241,892
8 Claims. (Cl. 340—172.5)

1. A circuit for providing a push-down list or last-in-first-out type of storage control for a list of data being circulated in a dynamic storage device comprising in combination:

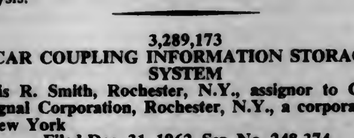
(a) a data register;

(b) means connecting said data register to said storage device for serially circulating the list of data through said data register and said storage device;

(c) means for selectively inserting or reading in new data into said data register to position said new data at the beginning of said circulating list;

(d) means including said data register for selectively deleting or reading out data from the beginning of said circulating list;

(e) means for inserting a marker pulse at the head of said circulating list of data;



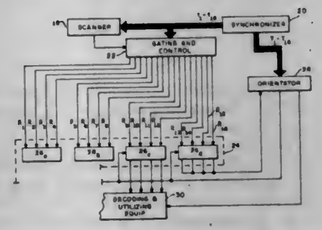
(f) means for effectively repositioning said marker pulse when new data is inserted at the beginning of said circulating list; and,

(g) means for effectively repositioning said marker pulse when data is deleted from the beginning of said circulating list.

3,289,172
DATA PROCESSING

William C. Towle, Sudbury, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Dec. 21, 1962, Ser. No. 246,596
11 Claims. (Cl. 340—172.5)



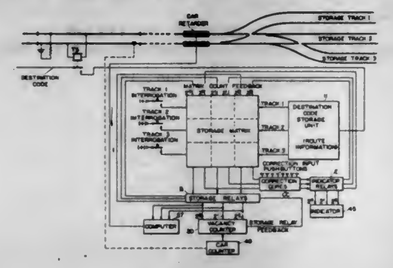
1. In a data processing system wherein an item coded with sensible marks serves as a system input: means for scanning said marks and transducing them to discrete electrical signals; signal gating and control means for arranging said signals into two or more separate groups; two or more pulse shifting registers each having a plurality of stages and a feedback connection from its final to its first stage; means for analyzing the signal content of one of said registers; and, means for shifting the contents of all of said registers in response to said signal analysis.

3,289,173
CAR COUPLING INFORMATION STORAGE SYSTEM

Willis R. Smith, Rochester, N.Y., assignor to General Signal Corporation, Rochester, N.Y., a corporation of New York

Filed Dec. 31, 1962, Ser. No. 248,374
9 Claims. (Cl. 340—172.5)

1. In a railroad classification yard having storage tracks and car retarder means to control speed of rolling cuts destined for preselected storage tracks, distance-to-coupling storage means comprising a matrix of apertured magnetic cores, each row of the matrix being responsive to the number of cuts stored on a particular track in the yard, means including a computer coupling the matrix to the car retarder means, automatic means energizing a route relay associated with any particular track and thereupon causing readout of track fullness information to the computer from the matrix row responsive to stored cuts on said particular track, and manual means for causing readout of the row of cores responsive to the number of cuts stored on any other track in the classification yard for energizing the track relay associated with said

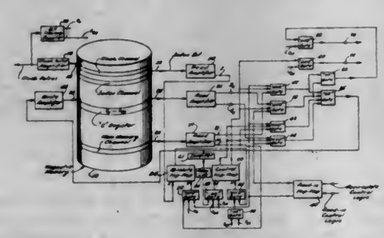


other track whereby output information as to fullness of said other track is produced simultaneously with the output indicative of fullness of said particular track.

3,289,174
MEMORY SECTOR SELECTION CIRCUIT

Charles W. Brown, Burbank, and Grey E. Stone, Covina, Calif., assignors to General Precision, Inc., a corporation of Delaware

Filed Jan. 22, 1963, Ser. No. 253,205
2 Claims. (Cl. 340—172.5)

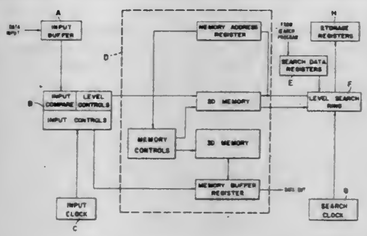


1. In a digital computer system which includes a rotatable member in which a plurality of multi-bit words of binary-coded data may be stored in a plurality of sectors in each of a plurality of tracks extending around the memory member, and in which an index bit is stored in one track on said memory member at a selected position thereon to indicate when said memory member has a predetermined angular position, the combination of: a dynamic register for storing a multi-bit binary signal corresponding to one of said words, said signal being derived from a particular sector in a particular track of said memory and including a portion representing a multi-bit number designating a selected sector in any one of said tracks and further including a binary control bit; sensing means coupled to said register for serially deriving said multi-bit binary signal therefrom; writing means coupled to said register for serially introducing said multi-bit binary signal thereto; circulating circuitry inter-coupling said sensing means and said writing means for circulating said binary signal through said register and including binary counter means for causing said portion of said multi-bit binary signal in said register to undergo a binary count in each successive circulation thereof to said circulating register; control circuitry coupled to said circulating circuitry for activating said binary counter means; further circuitry coupled to said memory member and to said control circuitry for deriving said index bit and for selecting the control bit from the signal introduced to said register, said further circuitry enabling said control circuitry at a time independent of said index bit when said control bit has a first binary value and for enabling said control circuitry at a time determined by said predetermined angular position of said memory member when said control bit has a second binary value; and output circuitry coupled to said binary counter means for providing a selection control signal when said portion of said multi-bit binary signal in said register has been counted to a reference number by said binary counter means, said selection control signal serving to control the transfer of information with respect to said selected sector of said memory member.

3,289,175
COMPUTER DATA STORAGE SYSTEM

Rex Rice, Los Altos, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed May 23, 1963, Ser. No. 282,807
49 Claims. (Cl. 340—172.5)



1. An input and search system for hierarchically organized variable field length data for use with a high-speed random access main memory having a plurality of individually addressable fixed field length storage locations wherein the data to be stored and searched contains hierarchical level identifier symbols separating said levels, said system comprising,

means for detecting said level identifiers in the input data string and,

means for storing an occurrence mark in an auxiliary storage means indicative of the presence of a level identifier in the data string simultaneously with its storage in the main memory, and

search means for locating the address of data in the main memory comprising,

means for searching said auxiliary storage means for said occurrence marks,

means for counting certain of said marks to locate a desired one and,

means for deriving an address is main memory for the desired data from said mark.

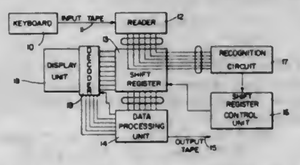
3,289,176
DATA PROCESSING APPARATUS

William W. Garth, Jr., Concord, and Ellis P. Hanson, Rockport, Mass., assignors to Compugraphic Corporation, Reading, Mass., a corporation of Massachusetts

Filed Dec. 11, 1963, Ser. No. 329,712
5 Claims. (Cl. 340—172.5)

1. Typesetting control apparatus for a producing a series of output signals for controlling a typesetting machine to produce lines justified within a predetermined line length from information keyboarded in word and paragraph form, which may include erroneously key-

boarded information followed by error correction signals, comprising: a sensing device responsive to said keyboarded information for providing electrical signals representing said information; a storage medium coupled to the output of said sensing device, said storage medium including a plurality of storage positions, means for normally processing signals from the input of said storage medium in a particular sequence through said storage positions to the output of said storage medium; a data processing unit coupled to the output of said storage medium for generating in response to signals from the output of said storage medium control signals for controlling a typesetting machine to produce lines justified within a

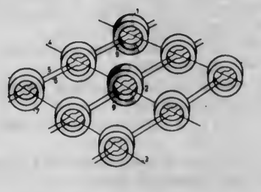


predetermined line length; a display means for displaying any one of the said words within which any one of said justified lines is terminated, said display means being coupled to said storage medium and said data processing unit in such a way that information contained in said storage medium and said data processing unit is available to said display means; a recognition element coupled to said reader and adapted to receive said electrical signals in parallel with said storage medium; means with said recognition element responsive to said error correction signal for deleting from said storage medium all of said electrical signals preceding said error correction signal, which signals are contained within a single word or a portion of a word.

3,289,177
MAGNETIC STORAGE MATRIX CAPABLE OF STORING FIXED WORDS

Anthonius Maria Schulte, Delden, and Johannes Steenberg, Enschede, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed May 8, 1962, Ser. No. 193,249
Claims priority, application Netherlands, May 10, 1961, 264,643
2 Claims. (Cl. 340—174)

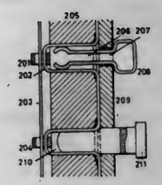


1. A magnetic storage matrix comprising a plurality of magnetic cores, each of said cores being composed of a magnetic material having a large remanence and a substantially rectangular hysteresis loop, a first set of electrical conductors and a second set of electrical conductors, each of said cores being inductively coupled with a conductor of said first set of conductors and with a conductor of said second set of conductors, and means for effectively disabling selected ones of said cores comprising a short circuit path for electric current encircling said selected ones of said cores, said short circuit path comprising a layer of electrically conductive paint on each of said selected cores and covering at least a portion of said cores.

3,289,178
MAGNETIC STORAGE MATRIX CAPABLE OF STORING FIXED WORDS

Anthonius Maria Schulte, Delden, and Johannes Steenberg, Enschede, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed May 8, 1962, Ser. No. 193,250
Claims priority, application Netherlands, May 10, 1961, 264,643
8 Claims. (Cl. 340—174)

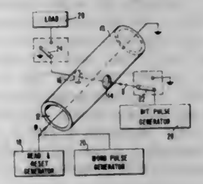


1. A magnetic storage matrix comprising a plurality of magnetic cores each of which is constituted of a material possessing a large remanence, a plurality of first electrical conductor means linking each of said cores, a plurality of second electrical conductor means linking each of said cores, a plate for supporting said cores having a plurality of openings therein, each of said openings being located adjacent a particular core, said second conductor means comprising a crenel shaped conductor having a plurality of crenels wherein each crenel comprises first and second portions mounted in an individual opening in said plate and a third portion linking the adjacent core, and means for effectively disabling particular cores of said matrix, said disabling means comprising a conductive plug mounted in an opening of said plate in contact with said first and second portions of said crenel shaped conductor.

3,289,179
MAGNETIC MEMORY

Robert F. Elfant, Yorktown Heights, and Kurt R. Grebe, Beacon, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed June 29, 1962, Ser. No. 206,356
11 Claims. (Cl. 340—174)

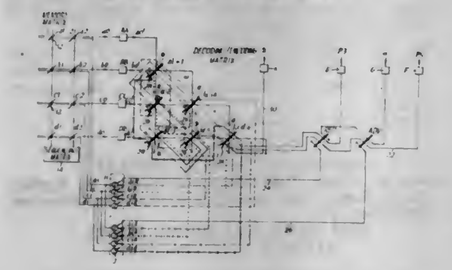


1. A storage device comprising:
(a) a magnetic medium capable of being established in a plurality of stable states of flux remanence,
(b) means for establishing said medium in one of said plurality of stable states with flux remanence directed along a first flux path within a given plane,
(c) means for establishing said medium in a second of said plurality of stable states with flux remanence directed along a second flux path without said given plane, and
(d) means for sensing the stable states of said medium.

3,289,180
MAGNETIC CORE MATRICES

William Albert Edward Loughhead, Beeston, Nottingham, England, assignor to Ericsson Telephones Limited, Beeston, Nottingham, England, a British company

Filed Nov. 5, 1962, Ser. No. 235,458
Claims priority, application Great Britain, Nov. 6, 1961, 39,713/61
10 Claims. (Cl. 340—174)

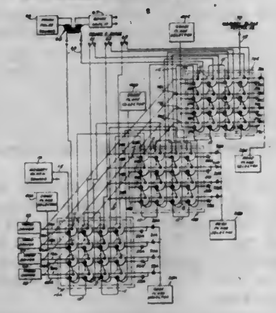


1. In magnetic core memory apparatus the combination of:
a main matrix having a plurality of groups of magnetic cores switchable to A and B states, said columns storing respective, individual items of information in accordance with which cores thereof are in the A state and which in the B state;
a plurality of temporary storage cores;
means for reading into said temporary storage cores one item at a time of information from a selected group of said main matrix;
first and second selectively switchable circuits coupling said temporary storage cores back to said main matrix in two different ways; and
means for reading out of said temporary storage cores and simultaneously enabling one of said first and second circuits so as to write back into said main matrix information related to the information originally read out in one of two different ways corresponding to said first and second circuits.

3,289,181
MULTIAPERTURE CORE MEMORY MATRIX

Albert Zaretsky, Brooklyn, and Ottavio C. Cataldo, East Northport, N.Y., assignors to American Bosch Arma Corporation, Garden City, N.Y., a corporation of New York

Filed May 1, 1963, Ser. No. 277,254
14 Claims. (Cl. 340—174)

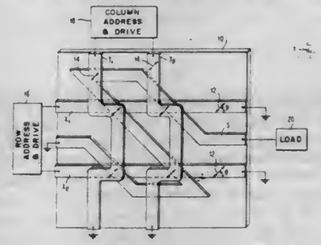


1. Memory core apparatus comprising:
a plurality of magnetic cores each having a first relatively larger aperture and a second relatively smaller aperture;
a first conductor threading all of said first apertures in sequence in the same sense;
a second conductor threading all of said second apertures in sequence in the same sense;
means for applying a potential of a given polarity to one end of said second conductor with respect to its other end to pass a current through said second conductor;
switch means for connecting one end of said first conductor to said other end of said second conductor when said switch means is closed; and
means for applying to the other end of said first conductor a potential, with respect to said one end thereof, which is of a polarity opposite to said given polarity while said switch means is closed to pass a common current through said first and second conductors.

3,289,182
MAGNETIC MEMORY

James C. Suits, Mount Kisco, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 29, 1961, Ser. No. 163,245
9 Claims. (Cl. 340—174)



1. A data storage device comprising,
a first and a second planar magnetic element, each of said elements made of uniaxial anisotropic metallic magnetic material having an easy axis of remanent flux orientation angularly displaced with respect to a given axis in the plane of the element, said elements positioned one over the other in field coupling proximity,
means for coincidently passing in a common direction a first current impulse through said first element along the given axis thereof to produce a magnetic field in said second element and a second current impulse through said second element to produce a magnetic field in said first element for switching both said first and second elements from an initial remanent orientation state to an opposite orientation state and means for sensing the orientation states.

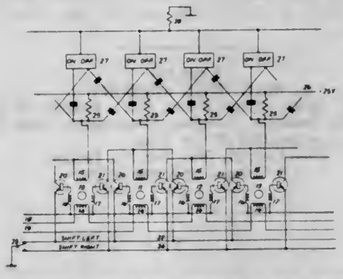
3,289,183
MULTI-DIRECTIONAL SHIFTING DEVICE

Anthony Hugh Parker, Hitchin, and Thomas George Burgess, Stevenage, England, assignors to The De Havilland Aircraft Company Limited, Hatfield, England, a company of Great Britain

Filed Aug. 21, 1962, Ser. No. 218,278
7 Claims. (Cl. 340—174)

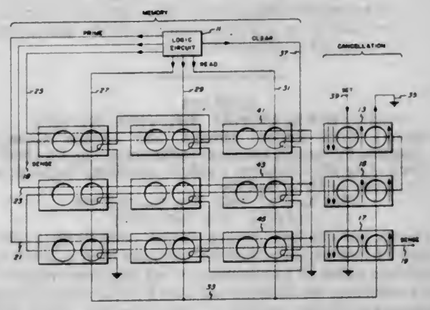
1. An information storage device comprising a plurality of ferromagnetic bistable elements each capable of assuming either of two conditions and connected together in a sequence, the information stored in the device being represented by the position in the sequence of that one of said elements which is in one of said two conditions, each said element being provided with separate corresponding first and second input windings and with separate corresponding first and second output windings and

with separate corresponding first and second transistors, the device including an electric circuit for supplying a current pulse to said first input winding of said one element which is in said one condition to change the condition of that said one element to the other of said two conditions and thereby to produce output pulses in said first and second output windings of the said one element, each said first transistor having its collector connected to said second input winding of the next adjacent one of said elements in one direction in said sequence and having its base connected to said corresponding first output winding, each said second transistor having its collector connected to said second input winding of the next adjacent one of



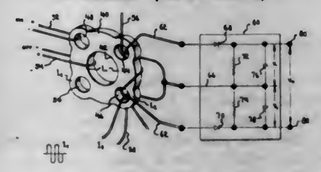
said elements in the other direction in said sequence and having its base connected to said corresponding second output winding, whereby said output pulses are transmitted to said second input windings of both of said next adjacent elements to change the condition of those elements from said other to said one condition, the emitter electrodes of all of said first transistors being connected together, and the emitter electrodes of all of said second transistors being connected together and the device including circuit means for selectively rendering one of the said first and the said second transistors non-conducting so as to prevent one of said next adjacent elements from changing its condition when said one element which is in said one condition changes its condition.

3,289,184
MAGNETIC CORE MEMORY READOUT
Douglas M. Brown, Bronx, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Dec. 4, 1962, Ser. No. 242,206
11 Claims. (Cl. 340—174)



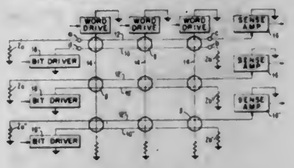
1. An improved magnetic core memory system comprising:
(a) an array of bi-aperture memory cores,
(b) means to read selected groups of memory cores,
(c) a group of bi-aperture cancelling cores,
(d) a common bus connected to receive read signals from the array of memory cores, said bus being threaded through each cancelling core,
(e) means to establish predetermined flux patterns in the cancelling cores previous to a reading,
(f) a sense wire magnetically coupled to the center leg of each core in the system so that a flux change in any core resulting from a read signal induces a voltage in the sense wire,
(g) said sense wire being threaded through the various cores so that the voltages induced by the cancelling cores oppose the voltages induced by the memory cores.

3,289,185
MAGNETIC SWITCH CIRCUIT
Hewitt D. Crane, Palo Alto, and William K. English, Menlo Park, Calif., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Jan. 24, 1963, Ser. No. 253,722
24 Claims. (Cl. 340—174)



1. An improved magnetic switch for controllably interconnecting intelligence channels including a saturable magnetic material structure having a geometry defining distinct paths of flux closure, means adapted to switch flux in said paths including a carrier signal source linking both said paths and an intelligence signal source linking at least one of said paths, means adapted to produce distinct voltages responsive to flux switched to each said path and means for differencing said distinct voltages to produce an output voltage linearly related to the intelligence signal.

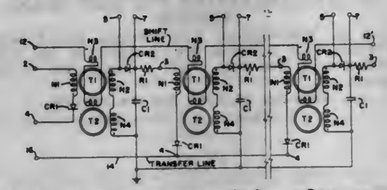
3,289,186
LOW-NOISE MEMORY
George F. Bland, White Plains, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Apr. 1, 1963, Ser. No. 269,545
12 Claims. (Cl. 340—174)



1. In a memory array having a plurality of memory elements:
a first line linking each of said memory elements;
a second line linking each of said memory elements;
said first and second lines each having a first and a second end, the first ends for each of the lines being positioned adjacent to each other and the second ends for each of the lines being positioned adjacent to each other;
means for applying a drive signal to the first end of said first line;
and impedance connected to the first end of said second line and to the second end of said first line, the values of said impedance means being such as to

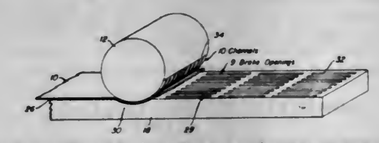
cause substantially all of the signal induced on said second line due to a drive signal being applied to said first line to appear at the first end of said second line.

3,289,187
HIGH STABILITY MAGNETIC CORE SHIFT REGISTER
Burton F. Wagner, North Syracuse, N.Y., assignor to General Electric Company, a corporation of New York
Filed May 29, 1963, Ser. No. 284,078
11 Claims. (Cl. 340—174)



1. In a magnetic core storage device, a first magnetic core disposed to be driven to alternate magnetic states by magnetic fields produced by current in an input winding in response to input signals, a second magnetic core, a shift winding disposed in response to shift signals to produce changing magnetic fields in said first and second magnetic cores to drive said cores toward a ZERO magnetic saturation state, a first output winding coupled to sense the presence of changes in the magnetic field in said first magnetic core in response to said shift signals, a second output winding coupled to sense the presence of changes in the magnetic field in said second magnetic core in response to said shift signals, and means connecting said first and second output windings in series opposition.

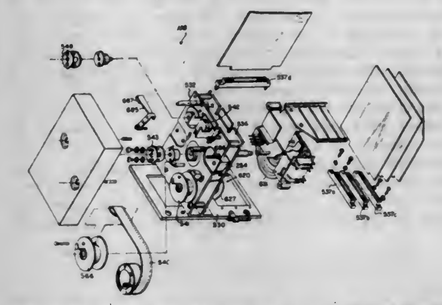
3,289,188
MECHANICAL APPARATUS FOR CONTROLLING MOVEMENT OF A FLEXIBLE MEDIUM
Robert A. Pendleton, Dedham, Mass., assignor to Honeywell Inc., a corporation of Delaware
Filed Jan. 22, 1962, Ser. No. 167,615
9 Claims. (Cl. 340—174.1)



7. In combination in a data transfer tape transport, a tape movement control apparatus being adapted to operatively engage the tape at a plurality of restricted positions across the tape so that, as the tape is moved, said positions define a plurality of longitudinal paths extending along the length of the tape, and a plurality of data transfer means being positioned relative to said tape to transfer data with respect to said tape between each of said paths.

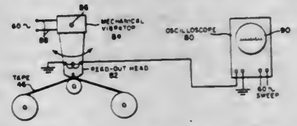
3,289,189
APPARATUS FOR FEEDING AND STEPPING A MAGNETIC TAPE
Clayton H. Clark, Mundelein, and Donald J. Stefanik, Berwyn, Ill., assignors to SCM Corporation, New York, N.Y., a corporation of New York
Original application Apr. 3, 1962, Ser. No. 184,820. Divided and this application Aug. 23, 1965, Ser. No. 481,798
6 Claims. (Cl. 340—174.1)

1. A magnetic tape recorder and playback apparatus including a magnetic tape supply, recorder-reader head means, and means for moving the tape in steps past the head means during recording and reading including a combination tape feed and tape stepping drive mechanism comprising: means in said drive mechanism operable to



provide a direct driven tape feed movement ahead of said head means, and means operable subsequent to said tape feed movement for accomplishing a constant rate stepping movement of said tape past the head under power derived and stored from the preceding tape feed movement.

3,289,190
MAGNETIC READOUT AND DISPLAY SYSTEM
Fritz A. Guerth, 50 Lori Road, Camarillo, Calif.
Application May 8, 1962, Ser. No. 193,343, now Patent No. 3,258,755, which is a division of application Ser. No. 767,239, Oct. 14, 1958. Divided and this application Aug. 26, 1965, Ser. No. 489,458
1 Claim. (Cl. 340—174.1)

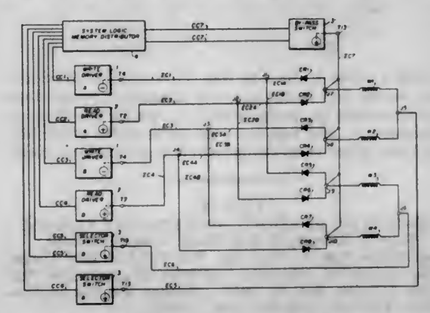


In a system for permitting a steady-state readout of information recorded on a storage medium, the combination of a playback head having a gap located in close proximity to a selected portion of said storage medium, a mechanical vibrator, means for mounting said playback head on said vibrator, means for energizing said vibrator at a substantially constant amplitude and frequency so that said playback head will in effect periodically scan the selected portion of said storage medium with which it is in proximity, an oscilloscope connected to receive the output of said playback head, and means for applying a time-base deflection voltage to said oscilloscope of the same frequency as that of the energy supplied to said vibrator, so that the information derived from the said storage medium will be visually presented by said oscilloscope in a steady-state condition.

3,289,191
SOLENOID SELECTION ARRANGEMENT
Ronald E. Schauer, Chicago, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Apr. 12, 1963, Ser. No. 272,607
1 Claim. (Cl. 340—176)

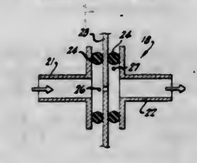
An arrangement for addressing and interrogating the memory of a magnetic memory system, in combination comprising: logic control means; a plurality of two terminal solenoids, one of said two terminals of each said solenoid being connected to one terminal of another solenoid to form solenoid pairs; a plurality of diode

pairs, each diode pair being connected to separate ones of the other of said two terminals of each said solenoid, the individual diodes of each diode pair being oppositely poled with respect to said other terminal; a plurality of first current generators, each said generator having an output current of one sense and each said generator being connected to one solenoid of each said solenoid pair by way of the diode of that solenoid having its low impedance direction corresponding to said one sense; a plurality of second current generators each having an output current in a sense opposite to that of said first generators, each said second generator being connected to one solenoid of each said solenoid pair by way of the diode of that solenoid having its low impedance direction corresponding to said opposite current sense; a plurality of switch means each including two transistors each having a base, a collector and an emitter, said col-



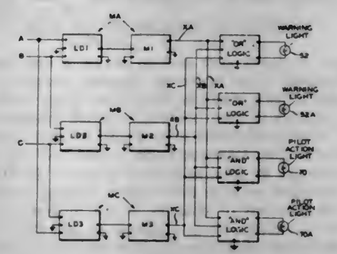
lectors being connected to the junction of said one terminal of separate ones of said solenoid pairs, the normal collector-emitter current direction of said two transistors being of opposite sense, said switch means and said first and second solenoid generators being connected to and operable responsive to said logic control means to selectively energize said solenoids by a current of either of said current senses; and other switch means each including two transistors each having a base coupled to said logic control means, a collector and an emitter, said collectors being connected to each of said other terminals of said solenoids, the normal collector-emitter current direction of said two transistors being of opposite sense, said other switch means being operable responsive to said logic control means to divert the output of said first and second current generators to by-pass said solenoids and prevent said solenoids from being energized.

3,289,192
AIR FLOW MONITORING ENCLOSURE INTRUSION ALARM HAVING RETARDED FLOWMETER
Peter G. Davey, 2125 Hearst Ave., Berkeley, Calif.
Filed Apr. 10, 1964, Ser. No. 358,710
2 Claims. (Cl. 340—239)



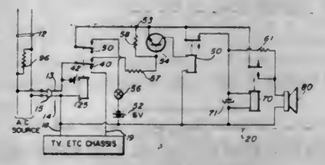
1. An alarm system for a substantially sealed enclosure comprising a flowmeter disposed within said enclosure and having a tube extending through a wall of said enclosure for producing a signal responsive to air flow through said tube as established by a pressure differential across said wall, means defining a restriction in the tube of the flowmeter, means defining an air chamber connected between the flowmeter and restriction for delaying flowmeter response to changes in air flow thereto, and pump means extending through said wall and producing a substantially steady pressure differential across said wall, whereby opening of the enclosure varies said pressure differential to vary the flowmeter signal as an indication of enclosure opening.

3,289,193
MONITORING SYSTEM FOR REDUNDANT SYSTEMS
Robert L. Worthington, East Orange, and Frank J. Thomas, West Paterson, N.J., assignors to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed Oct. 22, 1963, Ser. No. 318,050
7 Claims. (Cl. 340—248)



1. A monitor system comprising an input for receiving a plurality of signals:
plural means for producing output signals as a result of instantaneous differences in amplitude between pairs of the input signals;
plural memory means responsive to a change in said output signals;
means responsive to a change of state of any of said memory means for indicating an out of tolerance signal; and
further means responsive to a change of state of all of the memory means for indicating the presence of more than one out of tolerance signal.

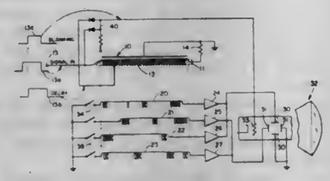
3,289,194
POWER LINE SENSING APPLIANCE THEFT ALARM
John G. King, 801 S. 11th Ave., Maywood, Ill.
Filed May 21, 1965, Ser. No. 457,665
3 Claims. (Cl. 340—280)



1. Alarm apparatus for installation within the housing of an equipment adapted to be powered from a pair of leads energized by an alternating current source which comprises, high resistor means for connection across said pair of leads, an electric lead pair for connection from said pair of leads to said apparatus, first and second relay switches, an operating winding responsive to applied alternating currents of operating said switches from a first

condition to a second condition, a common lead, a battery for energizing said common lead by way of said second switch in a first condition, an electrically operated alarm horn, connecting means for energizing said alarm device from said common lead, said connecting means comprising relay operated switch means having an operating winding and being operable to interrupt energizing current flow to said alarm device upon current flow through said last named operating winding, a transistor having first and second conduction electrodes connected in circuit from said last named common lead to said operating winding and having a control base electrode connected in circuit with said conduction electrodes by way of said first switch in a first condition and by way of said resistor means, whereby power supply from said battery to said alarm device is interrupted by transistor current flow through said operating winding thus to preclude energizing said alarm device by failure of power in said pair of leads.

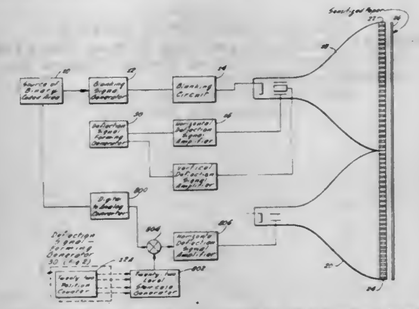
3,289,195
DELAY LINE WAVE SHAPE GENERATOR
Stephen E. Townsend, Rochester, N.Y., assignor to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware
Filed Nov. 9, 1962, Ser. No. 236,660
5 Claims. (Cl. 340—324)



2. The combination in a character display system comprising a cathode-ray tube with orthogonal deflection circuits, a delay line, means connected to one end of said line for propagating a wave front toward the other end of said line, a pair of windings disposed on said delay line and inductively coupled to primary current flowing in said delay line, said windings being connected, respectively, to said deflection circuits, the pitch of said windings being nonuniform and being a function, respectively, of the instantaneous orthogonal deflection voltages required in said deflection circuits for displaying a predetermined character.

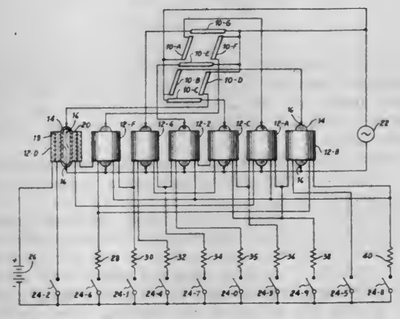
3,289,196
CATHODE RAY TUBE DISPLAY WITH MEANS FOR RECORDING THE TUBE DISPLAY
Otis E. Hull, South Pasadena, Calif., assignor to Hull Instruments, Inc., South Pasadena, Calif., a corporation of California
Filed Dec. 7, 1962, Ser. No. 244,237
6 Claims. (Cl. 340—324)

1. A read-out system including: input circuit means for receiving input signals representative of certain data; cathode-ray tube means including at least one viewing screen, means for forming a cathode-ray beam in the tube and means for deflecting the beam across the viewing screen; means coupled to said beam deflecting means for producing deflection signals for deflecting the beam across said viewing screen in a predetermined manner to enable a series of predetermined characters to be displayed on the viewing screen; means coupled to said input circuit means and to said deflection signal producing means for controlling the intensity of said beam in accordance with said input signals and in synchronism with said deflection signals selectively to cause different ones of said characters to be displayed on said screen; converter circuit means coupled to said input circuit means for converting said input signals into corresponding analog signals; and display means coupled to said con-



verter circuit means and responsive to said analog signals therefrom for displaying representations corresponding thereto.

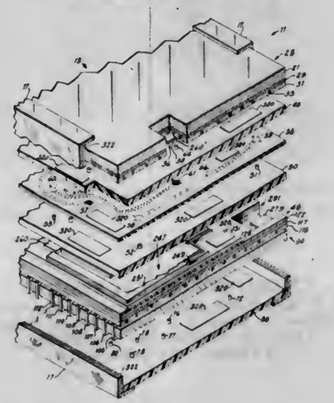
3,289,197
CHARACTER DISPLAY SYSTEM
Mark B. Knight, North Caldwell, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Aug. 12, 1963, Ser. No. 301,289
9 Claims. (Cl. 340—324)



4. A display device comprising
(a) a plurality of display elements arranged in character configuration,
(b) a like plurality of reed switches,
(1) each reed switch comprising a pair of reed contact members of magnetic material, the ends of said reed contact members being spaced from each other in overlapping relation, and a pair of actuating coils for each reed switch producing a magnetic field along the reeds thereof, the field produced by one coil along said reeds causing attraction and contact of the said ends of said contact members to each other, the fields produced by said coils being in opposition to neutralize each other to prevent motion of said contact members,
(c) a plurality of character switches,
(d) circuit means including one of said plurality of character switches for energizing at least one of the coils of one reed switch and for energizing both of the coils of at least one other reed switch,
(e) said circuit means including a second of said plurality of said character switches for energizing at least one coil of said one reed switch or of said other reed switch and for energizing both coils of at least a third of said reed switches, and

(f) further circuit means for interconnecting said display elements and said reed switches.

3,289,198
TRANSLATOR-DISPLAY DEVICE
Herbert F. Dickson, Jr., and Elmer O. Stone, Seneca Falls, N.Y., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Nov. 18, 1963, Ser. No. 324,547
5 Claims. (Cl. 340—324)



3. An integrated electroluminescent-photoconductor laminated translator-display device for converting binary input signals to visual readout information on a discretely patterned electroluminescent readout display comprising:

an insulative translator substrate having first and second oppositely disposed surfaces and a perimetric edge therebetween;

a plurality of binary input supply terminals, insulatively spaced and disposed on the first surface of said substrate and extending to said edge thereof;

a plurality of separate electrical supply and ground conductor terminals insulatively spaced and disposed on the first surface of said substrate being removed from said binary input terminals and extending to said edge thereof to provide at least a first supply conductor terminal and a first and a second ground conductor terminals;

a plurality of insulatively spaced electrode strips disposed on the second surface of said substrate and extending to said edge thereof;

a plurality of electrical conductive termination areas insulatively spaced and disposed on the second surface of said translator substrate being removed from said electrode strips and extending to said edge thereof;

a first set and a second set of electrical connective means spacedly disposed on said perimetric edge perpendicular to said surfaces, said first set individually joining said binary input supply terminals on said first surface to said electrode strips on said second surface of said substrate and said second set individually joining said supply and ground terminals on said first surface to said termination areas on said second surface of said substrate thereby providing at least a first supply termination area and first and second ground termination areas on the second surface thereof;

a layer of electric field responsive phosphor disposed over said electrode strips;

a transparent electrically conductive layer disposed on said layer of electric field responsive phosphor said conductive layer being utilized with said electrode strips and said phosphor layer therebetween to provide a plurality of strip-like electroluminescent lamps;

first ground connective means electrically joining said transparent conductive layer with the first of said ground termination areas to provide a common input ground connection for said lamps;

a transparent insulative layer overlaying said transparent electrically conductive layer;

a mosaic layer of opaque insulative material having a plurality of apertures discretely positioned therein in registration with said strip-like electroluminescent lamps to provide a plurality of electroluminescent windows;

a photoconductive layer overlaying said mosaic and covering said windows to provide a plurality of photoconductive window gates thereon;

a translator matrix layer in the form of a plurality of conductive elements, having a common supply electrode, providing a discrete network of individual conductive patterns having areas of electrical interconnection therebetween in the form of said photoconductive gates, said patterns having individual electrical terminal portions;

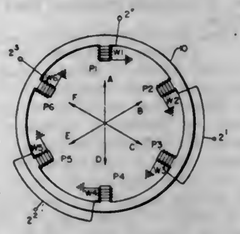
an electrical transfer plane of insulative material having first and second surfaces with electrical transfer conductors embedded therein and extending nonperpendicularly therethrough with each end thereof emerging as a transfer terminal area at one of said surfaces;

translator connective means electrically connecting said translator terminal portions with transfer terminal areas disposed on said first surface of said transfer plane;

a planarly-layered electroluminescent readout display superjacently disposed relative to said electrical transfer plane and having a plurality of electrode segments disposed for connection; and

readout connective means oriented intermediate said readout display and said transfer plane connecting said readout electrode segments with said transfer terminal areas disposed on said second surface of said transfer plane.

3,289,199
BINARY CODE CONVERTER
John A. Watkins, Cheshire, Conn., assignor to The Patent Button Company, Waterbury, Conn., a corporation of Connecticut
Filed Dec. 20, 1965, Ser. No. 515,004
8 Claims. (Cl. 340—347)



1. In a code converter of the type utilizing

a stator for selectively establishing any one of a plurality of discretely oriented magnetic fields the stator having a ferromagnetic core, and

a rotor having a magnet, the magnet being surrounded by the core, the rotor being mounted to permit the magnet to rotate into alignment with the discretely oriented magnetic field established by the stator,

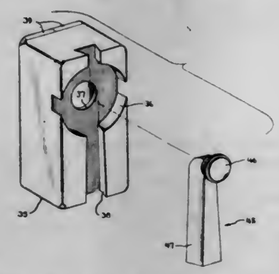
the improvement whereby the converter responds to a coded set of simultaneous electrical signals, each bit in the code being represented by a different signal of the set, the improvement residing in

a plurality of electrically energizable windings mounted upon the stator's ferromagnetic core,

means for applying the set of simultaneous electrical signals to the windings, and

some of the windings being arranged to be energizable together by one signal of the set to cause those windings to be jointly effective in the establishment of the stator's discretely oriented magnetic field and being arranged so that another signal in the set can cause one of those windings to be ineffective in the establishment of the stator's discretely oriented magnetic field.

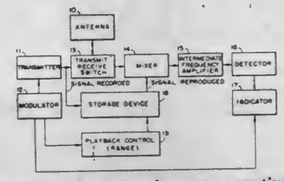
3,289,200
HOUSING FOR INDICATING LAMP OR OTHER ELECTRICAL COMPONENTS
Herman Rueger, Lancaster, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Mar. 2, 1965, Ser. No. 436,514
11 Claims. (Cl. 340—381)



5. A signal light housing comprising a body member having a hollow portion for receiving a light means, said body member having an opening communicating with said hollow portion and with said light means, said body member having a slot therein and in communication with said opening, and lens means for securing said body member to a panel, said lens means having a lens section and stem section, said lens section being adapted to be disposed in an aperture of said panel and said stem section mating with said slot to hold said body member in a parallel manner against said panel.

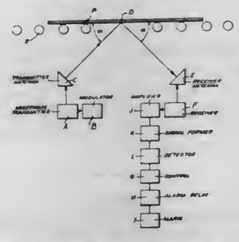
3,289,201
RADAR SYSTEM WITH PHASE COHERENT INTERMEDIATE FREQUENCY SIGNALS
Robert M. Page, Camp Springs, Md.
Filed Sept. 7, 1949, Ser. No. 114,450
8 Claims. (Cl. 343—5)

8. In an electrical signal device having a transmitter and receiver wherein energy emitted by the transmitter and returned by an object spaced therefrom is taken by the receiver and analyzed wtih respect to emitted energy, storage means for retaining a part of the transmitter energy, control means for said storage means connected to the receiver for initiating the delivery of the retained transmitter energy to the receiver in coincidence with the receipt of return signals, means for altering the frequency characteristics of the retained transmitter energy delivered by said storage means to produce a resultant signal, mixing means in said receiver combining the resultant signal thus delivered and return signals to obtain a receiver intermediate frequency signal at a selected carrier frequency, and an intermediate frequency amplification system connected



to the output of said last named means operative to selectively amplify the intermediate frequency signals and reject signals of other frequencies.

3,289,202
APPARATUS FOR DETECTING THE PRESENCE OF OBJECTS BY ELECTROMAGNETIC RADIATION
Jean-Claude Preti, Clamart, France, assignor to Societe de Fabrication d'Instruments de Mesure (S.F.I.M.), Seine-et-Oise, France
Filed Oct. 12, 1964, Ser. No. 403,261
Claims priority, application France, Mar. 4, 1964, 966,019, Patent 1,395,838
3 Claims. (Cl. 343—5)



1. A detecting apparatus comprising, in combination:

(a) conveying means for guiding an object having a flat face in a predetermined path parallel to said face;

(b) a microwave transmitter;

(c) first directional antenna means operatively connected to said transmitter and directed toward said path for directing an incident beam of electromagnetic radiation toward a predetermined portion of said path in a direction obliquely inclined relative to the face of an object guided in said portion of the path by said conveying means, whereby said beam is reflected from said face in another direction obliquely inclined relative to said face;

(d) a microwave receiver;

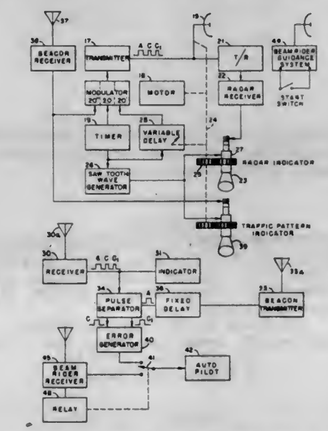
(e) second directional antenna means operatively connected to said receiver and directed toward said portion of said path for receiving said reflected beam; and

(f) signal generating means connected to said receiver for generating a perceptible signal in response to the reception of the reflected beam by said second antenna means.

3,289,203
AUTOMATIC CONTROL SYSTEM FOR AIRCRAFT
Russell E. Gaylord, % Naval Research Laboratory, Anacostia Station, Washington, D.C.
Filed May 1, 1953, Ser. No. 352,601
14 Claims. (Cl. 343—6)

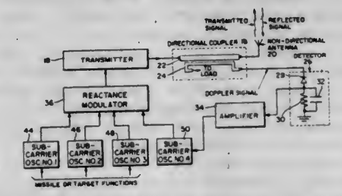
1. Apparatus for automatically guiding an aircraft about a base point, comprising at the base point, transmitting means adapted to provide a directional, azimuth-

ally scanned radiant energy beam, means modulating said radiant energy beam to indicate a desired range to said base point, means operative to vary the modulation of said radiant energy beam with variations in bearing thereof; at said aircraft, means for receiving said directional energy beam, means to determine the actual range of said



aircraft to the base point, means to generate a control signal dependent upon the range displacement of the aircraft from the desired range, and means responsive to said control signal for controlling the flight of said aircraft along a path where the aircraft's range and the desired range are one and the same.

3,289,204
COMBINED MISS-DISTANCE INDICATOR AND TELEMETRY SYSTEM
Darrell E. Murray, 2605 3rd Ave., Scottsbluff, Nebr.; Emmett F. Miller, Jr., 1119 S. "L" St., Oxnard, Calif.; and Herold R. Williams, 520 Big Pine Drive, Virginia Beach, Va.
Filed Apr. 16, 1964, Ser. No. 360,461
5 Claims. (Cl. 343—7.5)



1. A system for yielding information as to the miss distance between a target and a projectile launched with the intention of impacting such target, said system comprising:

a variable-frequency transmitter;

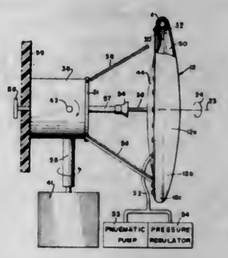
an antenna;

a transmission line connecting said transmitter to said antenna, said transmission line including means for sampling a backward wave traveling in said line from said antenna toward said transmitter along with a portion of the transmitted energy;

circuit means, including means for deriving a Doppler signal, for coupling said sampling means to said transmitter to change the operating frequency thereof in accordance with the output of such sampling means;

whereby, when energy is radiated from said antenna and reflected back thereto, such reflected energy will create a backward wave in said transmission line which will be picked off together with said transmitted energy by said sampling means and applied as a Doppler signal to said transmitter to modify the operating frequency thereof as a function of changes in the output of said sampling means.

3,289,205
METHOD AND APPARATUS FOR DETERMINING ELECTROMAGNETIC CHARACTERISTICS OF LARGE SURFACE AREA PASSIVE REFLECTORS
Abe Kampinsky, Lanham, Md., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed May 17, 1965, Ser. No. 456,578
15 Claims. (Cl. 343—18)



1. The method of determining the backscatter of an electromagnetic wave incident on a large reflecting surface, said reflecting surface being formed from an inflated membrane, with the dimensions of said reflecting surface being large with respect to the wavelength of said electromagnetic wave, said method comprising the steps of providing a sample of the membrane having a central area encompassing at least the first Fresnel Zone of electromagnetic energy incident thereon, contouring the central area and the adjacent peripheral area of said sample of membrane to conform to a segment of said reflecting surface, illuminating the central area of said sample of membrane with an electromagnetic wave, said electromagnetic wave being directed so that the periphery of said sample of membrane is underilluminated a specified amount with respect to said central area, and receiving reflections of said electromagnetic energy from said sample segment of membrane, said reflections being indicative of the backscatter from the total reflective surface to be formed from said membrane.

3,289,206
PHASE-COMPARISON NAVIGATION SYSTEM UTILIZING SPIRAL PHASE CONTOURS
Harold A. Wheeler, Great Neck, N.Y., assignor to Hazeltine Research Inc., a corporation of Illinois
Filed Dec. 9, 1963, Ser. No. 328,963
9 Claims. (Cl. 343—105)

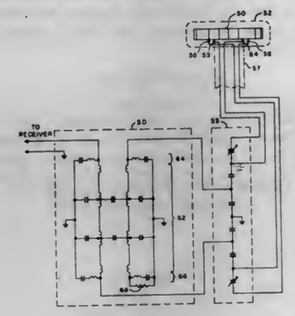
1. A phase-comparison navigation system comprising:

a plurality of transmitting antennas of a first type mounted at fixed positions, for transmitting signals which are useful for purposes of navigation;

and a receiving antenna of a second type mounted on a movable vehicle, for receiving signals from a plurality of said transmitting antennas simultaneously;

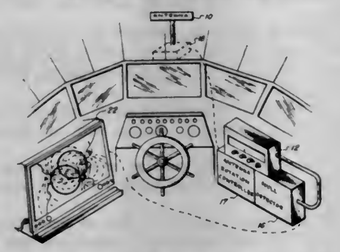
at least one of said types of antenna comprising a crossed-loop antenna having a pair of loops electrically coupled in quadrature so as to provide an

omnidirective antenna pattern with spiral phase contours for enabling the position of said receiving antenna to be determined by phase comparison of sig-



nals received from a set of three of said transmitting antennas located at the points of a triangle within which the receiving antenna is located.

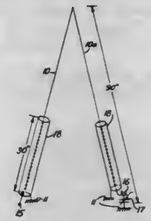
3,289,207
AUTOMATIC RADIO NAVIGATION AND DISPLAY UNIT DEVICE
Martin Lent, 14 Sandalwood Ave., Valley Stream, N.Y.
Filed July 18, 1963, Ser. No. 295,910
50 Claims. (Cl. 343—112)



1. Apparatus for providing an indication of the instant position of a movable vehicle comprising, means for determining the directional bearings between each of a plurality of known fixed positions and the instant position of a movable vehicle, means for determining and temporarily storing the angular dispersions between selected ones of said directional bearings, means for reading out said angular dispersions from said storage means and translating said determined angular dispersions into selected visual representations thereof, indicating means for visually indicating said instant position including a pictorial representation of said known fixed positions, and means for associating said selected visual representations of said angular dispersions with said known fixed positions on said pictorial representation in a manner such that a common point of intersection of said visual representations indicates visually said instant position.

3,289,208
ANTI-SKY WAVE RADIATING SYSTEM
R. Lee Hollingsworth, Massapequa, N.Y.
(266 Maple Place, Mineola, N.Y.)
Filed Feb. 12, 1962, Ser. No. 172,581
4 Claims. (Cl. 343—752)

1. A radio wave transmitting antenna comprising an input terminal at substantially earth level and connectable to radio wave energy to be radiated, a radiator having a slope in degrees from true vertical and substantially one-quarter wavelength long connected from said terminal to the top of a vertical supporting means, at least one second radiator one-quarter wavelength long connected to the first said one-quarter wave radiator and sloped downward and equally angled opposite of the first said radiator and connected to a complex tuning means, said antenna comprising one-half wavelength from the



input terminal through first and second said radiators and through said complex tuning means, the current fed to said antenna being zero at said input and rising sinusoidally to maximum at the top of said radiators, said current descending with radiation field reversal sinusoidally through the said second radiator and the said complex tuning means through zero.

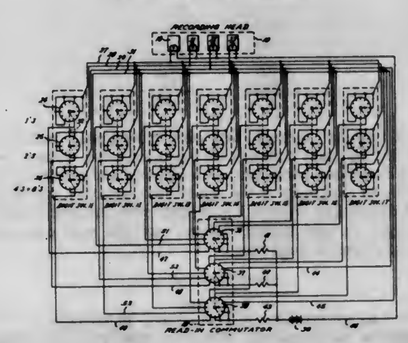
3,289,209
ELECTROSTATIC MATRIX PRINTER
Frederick A. Schwertz, Pittsford, and Paul F. King, Webster, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Mar. 22, 1962, Ser. No. 181,661
13 Claims. (Cl. 346—74)



1. An electrostatic printing system comprising at least two spaced electrodes defining a gap therebetween, a recording member positioned in said gap and spaced from at least one of said electrodes, a first electrode on one side of said gap having a surface configuration comprising a plurality of electrically continuous bars arranged in a pattern adapted to compose any one of a plurality of complex symbols, a second electrode on the opposite side of said gap being a composite electrode having upon its discharge surface a plurality of electrically conducting members insulated from each other and arranged in a pattern adapted to compose any one of a plurality of complex symbols similar to the symbols composable by said first electrode, means for individually coupling each of said mutually insulated conducting members of said second electrode with a voltage source of sufficient magnitude to initiate an ionizing discharge across said gap, and control means cooperating with said coupling means to simultaneously couple selected ones of said mutually insulated conducting members of said second electrode to said potential source so as to initate discharge across said gap between said selected conducting members of said second electrode and corresponding portions of said electrically continuous electrode of said first electrode whereby a high

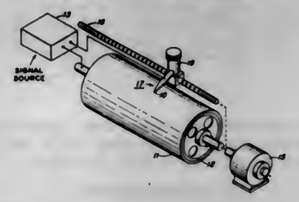
resolution charge pattern representing all the components of at least one selected complex character are simultaneously formed on said recording member in a continuous and developable pleasing appearance.

3,289,210
MAGNETIC DIGITAL RECORDER
John R. Davis, Edwin D. Nuttall, Albert M. Randolph, and William C. Tomerlin, Jr., all of Shreveport, La., assignors to United Gas Corporation, a corporation of Delaware
Filed Jan. 4, 1962, Ser. No. 165,717
23 Claims. (Cl. 346—74)



1. A magnetic digital recorder comprising, a multichannel recording head, a reel assembly for passing magnetic tape past said head, a plurality of digit switches, electrical conductors for selectively connecting each digit switch to selected channels of said recording head in accordance with selective switch positions, a capstan for operating said reel assembly to advance a magnetic tape across said recording head, a read-in interrogating switch having a plurality of selective switch positions, a source of power, means connecting said read-in interrogating switch to said source of power, electrical connecting means connected to said read-in interrogating switch and to said digit switches for energizing successive ones of said digit switches in accordance with successive read-in switch positions with rotation of said capstan, wherein a releasable latch means locks the capstan against rotation with each full revolution of the capstan, and means operable in response to release of the latch means for moving the capstan a sufficient distance to prevent re-engagement of the latch means until the capstan has been rotated a full turn.

3,289,211
ELECTRICAL RECORDING PEN
Uldis Klavsons, Penfield, and James E. Kennedy, East Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed May 15, 1964, Ser. No. 367,777
8 Claims. (Cl. 346—140)



1. A recorder comprising:
(a) a liquid reservoir containing a quantity of liquid recording ink;
(b) an electrically conductive stylus terminating at one end in an integrally continuous writing tip capable of retaining a quantity of liquid ink continuously thereat;
(c) means to supply liquid ink from said reservoir to the writing tip of said stylus and including capillary means extending to near said writing tip but terminating prior thereto;
(d) electrically conductive means to support a recording surface in physical contact with the writing tip of said stylus;
(e) means to provide relative motion between said stylus and a recording surface on said means to support; and,
(f) electrical signal means to apply an electrical potential between said means to support and said stylus to effect in response to said signal a selective transfer of liquid ink from said stylus to a recording surface on said means to support.

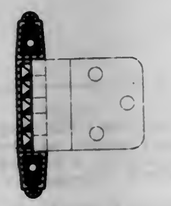
DESIGNS

NOVEMBER 29, 1966

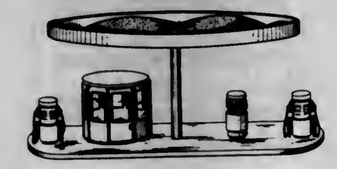
206,317
BEVERAGE COOLER
Herbert P. Moglin, 309 Fairlane Drive, Spartanburg, S.C.; Barry S. Kalen, Paterson, N.J. (14 Dapp Court, East Paterson, N.J.); Walter J. Robbins, 27 Parker Blvd., Monsey, N.Y.; and Anthony J. Basile, 77 Ayers Court, Teaneck, N.J.
Filed Sept. 30, 1965, Ser. No. 87,238
Term of patent 3½ years
(Cl. D2—3)



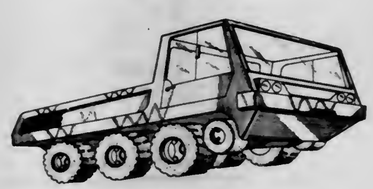
206,318
HINGE
David F. James, Los Angeles, and James W. Maize, Fullerton, Calif., assignors to Hyer Hardware Mfg. Co., Anaheim, Calif., a corporation of California
Filed Mar. 28, 1966, Ser. No. 1,660
Term of patent 14 years
(Cl. D10—9)



206,319
DISPENSING ISLAND
Eliot F. Noyes, New Canaan, Ernest M. Bevilacqua, Wilton, and Robert E. Graf, New Canaan, Conn., assignors to Mobil Oil Corporation, a corporation of New York
Filed Mar. 21, 1966, Ser. No. 1,574
Term of patent 14 years
(Cl. D13—1)



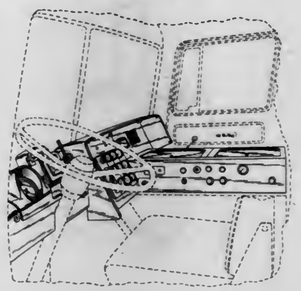
206,320
MOTOR VEHICLE
Eugene R. Fox, Minneapolis, Minn., assignor to Cat-A-Gator Corporation, Hopkins, Minn., a corporation of Minnesota
Filed Dec. 2, 1965, Ser. No. 25
Term of patent 14 years
(Cl. D14—3)



206,321
MIRROR FOR A MOTOR VEHICLE
David Warwick Neale, Waterfall Lane, Old Hill, Staffordshire, England
Filed Aug. 18, 1965, Ser. No. 86,630
Term of patent 14 years
(Cl. D14—6)



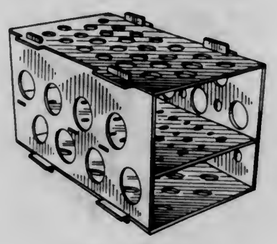
206,322
MOTOR VEHICLE INSTRUMENT PANEL WITH INTEGRAL AUXILIARY CONTROL PANEL
Theodore Ornas, Jr., Ronald N. Brunger, and Charles B. McGrew, Jr., all of Fort Wayne, Ind., assignors to International Harvester Corporation, a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 87,787
Term of patent 14 years
(Cl. D14—6)



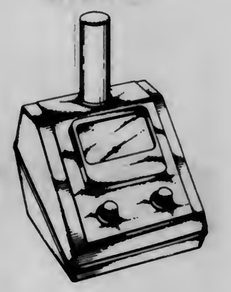
206,323
BAR STOOL
George Kasparian, Los Angeles, Calif., assignor to Kasparians, Inc., Los Angeles, Calif., a corporation of California
Original design application Feb. 11, 1964, Ser. No. 78,598. Divided and this application Oct. 22, 1965, Ser. No. 619
Term of patent 14 years
(Cl. D15—8)



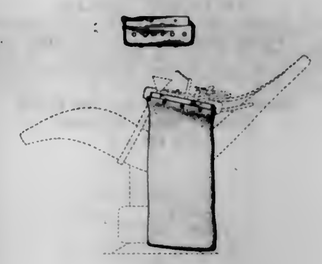
206,324
TEST TUBE STORAGE RACK OR SIMILAR ARTICLE
Samuel M. Broadwin, New York, N.Y., assignor to Maryland Plastics Incorporated, New York, N.Y., a corporation of Maryland
Filed Dec. 27, 1965, Ser. No. 323
Term of patent 14 years
(Cl. D16—1)



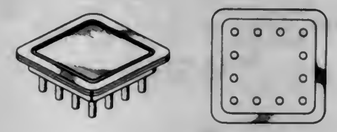
206,325
LABORATORY TURBIDIMETER
Michael D. Buck, Ames, Iowa, assignor to Hach Chemical Company, Ames, Iowa, a corporation of Iowa
Filed Nov. 12, 1965, Ser. No. 88,075
Term of patent 14 years
(Cl. D16—2)



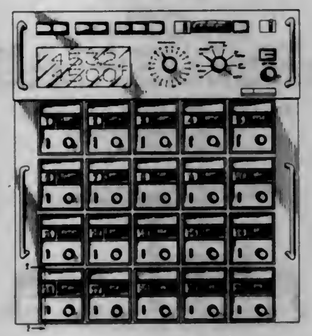
206,326
COMBINED DENTAL CHAIR TOOL SUPPORT AND CONDUIT SHROUD
John N. Jordan, 7501 Mission Road, Prairie Village, Kans.
Filed Dec. 28, 1965, Ser. No. 355
Term of patent 14 years
(Cl. D24—1)



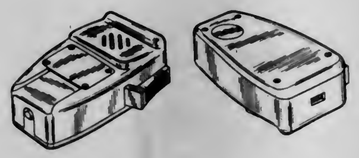
206,327
SEMICONDUCTOR PACKAGE
Richard V. Keys, Whittier, Calif., assignor to Hoffman Electronics Corporation, El Monte, Calif., a corporation of California
Filed Mar. 12, 1964, Ser. No. 78,970
Term of patent 14 years
(Cl. D26—1)



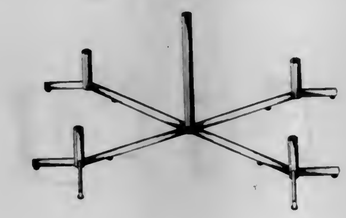
206,328
FRONT PANEL FOR A PROCESS CONTROLLER
Howard S. Noel, Cupertino, and Jack W. Stringer, Los Gatos, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Oct. 4, 1965, Ser. No. 87,309
Term of patent 14 years
(Cl. D26—13)



206,329
MICROPHONE
Cory O. Gulbrandsen, St. Louls Park, Minn., assignor to The Telex Corporation, Tulsa, Okla., a corporation of Delaware
Filed Mar. 29, 1966, Ser. No. 1,679
Term of patent 14 years
(Cl. D26—14)



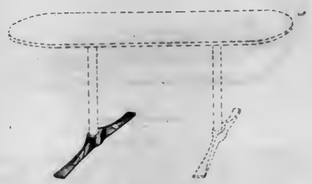
206,330
SUPPORT BASE FOR A COMBINED TABLE AND SEATING UNIT
George Kasparian, Los Angeles, Calif., assignor to Kasparians, Inc., Los Angeles, Calif., a corporation of California
Original design application Feb. 11, 1964, Ser. No. 78,598. Divided and this application Oct. 22, 1965, Ser. No. 430
Term of patent 14 years
(Cl. D33—14)



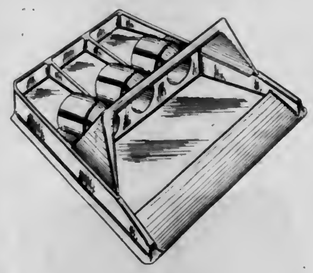
206,331
SUPPORT BASE FOR A COMBINED TABLE AND SEATING UNIT
George Kasparian, Los Angeles, Calif., assignor to Kasparians, Inc., Los Angeles, Calif., a corporation of California
Original design application Feb. 11, 1964, Ser. No. 78,598. Divided and this application Oct. 22, 1965, Ser. No. 620
Term of patent 14 years
(Cl. D33—14)



206,332
TABLE
John R. Dresser, Libertyville, Ill., assignor to The Chicago Hardware Foundry Company, North Chicago, Ill., a corporation of Illinois
Filed Mar. 15, 1965, Ser. No. 84,274
Term of patent 3½ years
(Cl. D33—14)



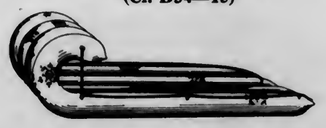
206,333
GOLF PUTTING TARGET
James G. Portteus, Toledo, Ohio, assignor to Phillip A. Portteus
Filed July 26, 1965, Ser. No. 86,286
Term of patent 7 years
(Cl. D34—5)



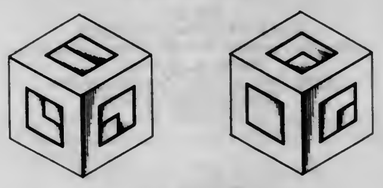
206,334
VELOCIPEDE
John W. Ryan, Bel Air, and Gerald W. Schmidt, Tarzana, Calif., assignors to Mattel, Inc., a corporation of California
Filed June 2, 1966, Ser. No. 2,521
Term of patent 14 years
(Cl. D34—15)



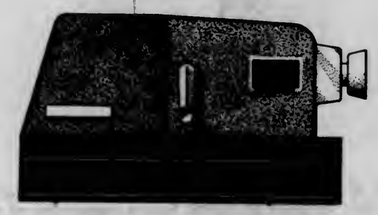
206,335
INFLATABLE SLED
Victor M. Solipasso, Sanger, Calif., assignor of one-fifth to Harvey A. Jacobsen, Fresno, Calif., and one-fifth to Ronald H. Metzler, Del Rey, Calif.
Filed July 11, 1966, Ser. No. 3,024
Term of patent 14 years
(Cl. D34—15)



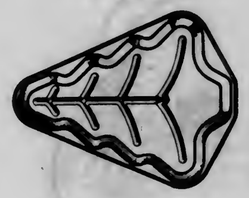
206,336
COMBINED PUZZLE AND CONTAINER
Lee N. Wilson, 503 N. 102nd Ave., Seattle, Wash. 98133
Filed Sept. 22, 1964, Ser. No. 81,834
Term of patent 14 years
(Cl. D34—15)



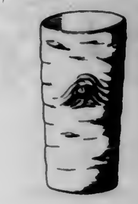
206,337
TOY MOVIE PROJECTOR
Karl A. Utrecht, Cincinnati, Ohio, assignor to Kenner Products, Cincinnati, Ohio, a corporation of Delaware
Filed Nov. 26, 1965, Ser. No. 88,221
Term of patent 14 years
(Cl. D34—15)



206,338
FOOD PAN
Myron M. Levin, Lincolnwood, and Norton R. Sachnoff, Wilmette, Ill. (both of 4315 N. Lincoln Ave., Chicago, Ill. 60618)
Filed Aug. 16, 1966, Ser. No. 3,492
Term of patent 14 years
(Cl. D44—1)



206,339
TUMBLER OR THE LIKE
Roland W. Gregory, Commerce City, Colo. (7531 Niagara St., Denver, Colo. 80216)
Design application Mar. 9, 1964, Ser. No. 79,163, now Patent No. 203,054, dated Nov. 30, 1965, which is a continuation of design application Ser. No. 69,443, Mar. 26, 1962. Divided and this application Oct. 18, 1965, Ser. No. 459
Term of patent 14 years
(Cl. D44—9)



206,340
CUP
Roland W. Gregory, Commerce City, Colo. (7531 Niagara St., Denver, Colo. 80216)
Design application Mar. 9, 1964, Ser. No. 79,163, now Patent No. 203,054, dated Nov. 30, 1965, which is a continuation of design application Ser. No. 69,443, Mar. 26, 1962. Divided and this application Oct. 12, 1965, Ser. No. 460
Term of patent 14 years
(Cl. D44—9)



206,341
CUP
Roland W. Gregory, Commerce City, Colo. (7531 Niagara St., Denver, Colo. 80216)
Design application Mar. 9, 1964, Ser. No. 79,163, now Patent No. 203,054, dated Nov. 30, 1965, which is a continuation of design application Ser. No. 69,443, Mar. 26, 1962. Divided and this application Oct. 15, 1965, Ser. No. 462
Term of patent 14 years
(Cl. D44—9)



206,342
BOWL
Roland W. Gregory, Commerce City, Colo. (7531 Niagara St., Denver, Colo. 80216)
Design application Mar. 9, 1964, Ser. No. 79,163, now Patent No. 203,054, dated Nov. 30, 1965, which is a continuation of design application Ser. No. 69,443, Mar. 26, 1962. Divided and this application Oct. 15, 1965, Ser. No. 461
Term of patent 14 years
(Cl. D44—15)



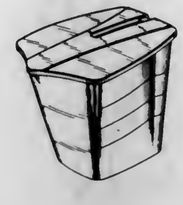
206,343
PITCHER OR THE LIKE
Roland W. Gregory, Commerce City, Colo. (7531 Niagara St., Denver, Colo. 80216)
Design application Mar. 9, 1964, Ser. No. 79,163, now Patent No. 203,054, dated Nov. 30, 1965, which is a continuation of design application Ser. No. 69,443, Mar. 26, 1962. Divided and this application Oct. 15, 1965, Ser. No. 457
Term of patent 14 years
(Cl. D44—21)



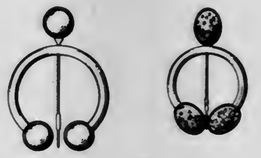
206,344
PITCHER OR THE LIKE
Roland W. Gregory, Commerce City, Colo. (7531 Niagara St., Denver, Colo. 80216)
Design application Mar. 9, 1964, Ser. No. 79,163, now Patent No. 203,054, dated Nov. 30, 1965, which is a continuation of design application Ser. No. 69,443, Mar. 26, 1962. Divided and this application Oct. 15, 1965, Ser. No. 458
Term of patent 14 years
(Cl. D44—21)



206,345
PITCHER OR THE LIKE
Burton Kelly, Bellwood, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed July 2, 1965, Ser. No. 86,018
Term of patent 14 years
(Cl. D44—21)



206,346
BROOCH OR SIMILAR ARTICLE
Theodore C. Steinman, Purchase, N.Y., assignor to Accessocraft Products Corporation, New York, N.Y., a corporation of New York
Filed July 13, 1965, Ser. No. 86,143
Term of patent 3½ years
(Cl. D45—19)



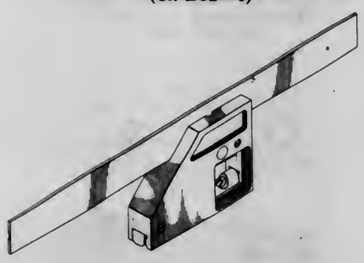
206,347
HIGH INTENSITY LAMP
Harold S. Boutin, Northwood, Ohio (31217 Fostoria Road, Rte. 2, Box 238, Curtice, Ohio 43412)
Filed Jan. 17, 1966, Ser. No. 622
Term of patent 14 years
(Cl. D48—20)



206,348
HIGH INTENSITY LAMP
Harold S. Boutin, Northwood, Ohio (31217 Fostoria Road, Rte. 2, Box 238, Curtice, Ohio 43412)
Filed Jan. 24, 1966, Ser. No. 727
Term of patent 14 years
(Cl. D48—20)



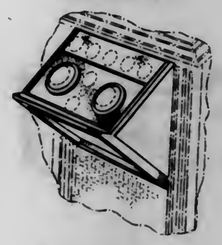
206,349
COMBINATION T-SQUARE AND LEVEL
Boyd D. Barbee, 1941 63rd Ave., Sacramento, Calif. 95822
Filed Nov. 16, 1965, Ser. No. 88,117
Term of patent 14 years
(Cl. D52—6)



206,350
WEATHER INDICATING INSTRUMENT
Hervey L. MacCowan, Glenview, Ill., assignor to Airguide Instrument Company, Chicago, Ill., a corporation of Illinois
Filed Feb. 26, 1965, Ser. No. 84,073
Term of patent 14 years
(Cl. D52—7)



206,351
TILT OUT CONTROL PANEL
Clement W. Alley, Lombard, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware
Filed July 7, 1964, Ser. No. 80,746
Term of patent 7 years
(Cl. D56—4)



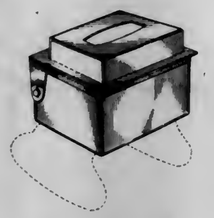
206,352
SUNSHADE ATTACHMENT FOR A PAIR OF SPECTACLES OR THE LIKE
Steve Boxer, 4414 Woodman Ave., Sherman Oaks, Calif. 91403, and Norman C. Bouse, 1655 Chelsea Road, San Marino, Calif. 91108
Filed Oct. 4, 1965, Ser. No. 87,296
Term of patent 14 years
(Cl. D57—1)



206,353
PAIR OF SPECTACLES
Jack Bloch, 73 Cloverleaf Road, Leominster, Mass. 01453, and Vitalino Marchi, 14 Nimrod Drive, Concord, Mass. 01742
Filed Oct. 8, 1965, Ser. No. 87,378
Term of patent 14 years
(Cl. D57—1)



206,354
COMBINED TISSUE DISPENSER AND LITTER CONTAINER FOR AUTOMOBILES
Daniel C. Larkin, 3134 Woodstock Drive, Detroit, Mich. 48221
Filed Mar. 30, 1965, Ser. No. 84,516
Term of patent 14 years
(Cl. D58—12.6)



206,355
REMOVABLE INNER COMPARTMENT FOR A CAN
Charles A. Speas, Towson, Md., assignor to Hedwin Corporation, New York, N.Y., a corporation of Maryland
Filed Apr. 9, 1965, Ser. No. 84,697
Term of patent 14 years
(Cl. D58—17)



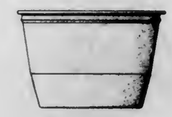
206,356
REMOVABLE INNER COMPARTMENT FOR A CAN
Charles A. Speas, Towson, and Charles T. Jordan, Baltimore, Md., assignors to Hedwin Corporation, New York, N.Y., a corporation of Maryland
Filed Apr. 9, 1965, Ser. No. 84,699
Term of patent 14 years
(Cl. D58—17)



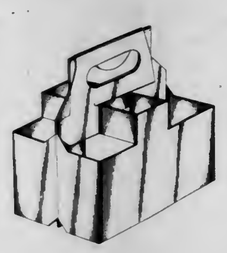
206,357
COMPOSITE LIQUID CONTAINER OR SIMILAR ARTICLE
John Donald Sullivan, 59 Elva Ave., Killara, New South Wales, Australia
Filed Oct. 15, 1965, Ser. No. 87,490
Term of patent 14 years
(Cl. D58—17)



206,358
PACKAGING CONTAINER FOR FOOD OR THE LIKE
Elmer W. Griese, Jr., Skokie, Ill., assignor to Ekco Products, Inc., Wheeling, Ill., a corporation of Illinois
Filed Oct. 21, 1965, Ser. No. 87,691
Term of patent 14 years
(Cl. D58—17)



206,359
BOTTLE CARRIER
Prentice J. Wood, Jonesboro, Ga., assignor to The Mead Corporation, a corporation of Ohio
Continuation of design application Ser. No. 81,208, Aug. 10, 1964. This application Apr. 4, 1966, Ser. No. 1,782
Term of patent 14 years
(Cl. D58—26)



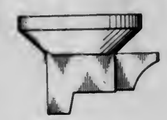
206,360
POURING SPOUT FOR A JAR OR THE LIKE
Louis E. Pastorius III, 2133 Brownsville Road, Pittsburgh, Pa. 15210
Filed Jan. 26, 1965, Ser. No. 83,577
Term of patent 14 years
(Cl. D58—26)



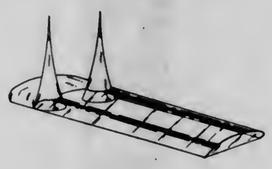
206,361
BOTTLE CARRIER
Leon Dolgins, 328 Lantana Ave., Englewood, N.J.
Filed Sept. 24, 1965, Ser. No. 87,435
Term of patent 3½ years
(Cl. D58—26)



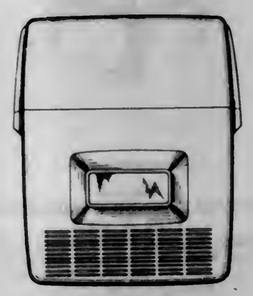
206,362
MEASURING AND DISPENSING ATTACHMENT FOR A COFFEE CONTAINER
Steven G. Groover, 9944 Cornwall Drive, Huntington Beach, Calif.
Filed Oct. 19, 1965, Ser. No. 87,589
Term of patent 3½ years
(Cl. D58—26)



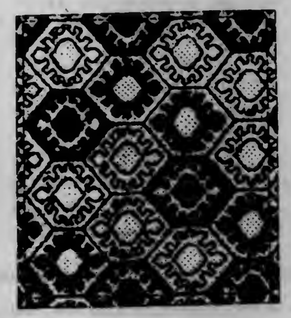
206,363
RECREATIONAL BUILDING OR THE LIKE
Mike Tecton, 5105 45th St. NW., Washington, D.C. 20016
Filed Oct. 24, 1965, Ser. No. 87,919
Term of patent 14 years
(Cl. D83—1)



206,364
PORTABLE HAIRDRYER CASING
Douglas N. Cabell, Birmingham, Mich., assignor to Ronson Corporation, Woodbridge, N.J., a corporation of New Jersey
Filed Sept. 28, 1965, Ser. No. 87,207
Term of patent 14 years
(Cl. D86—10)



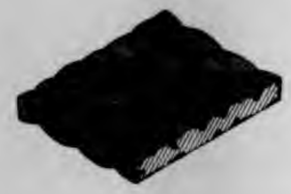
206,365
PLASTIC COATED SHEET MATERIAL
Richard A. Mazur, McFarland, Wis., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 3, 1965, Ser. No. 39
Term of patent 14 years
(Cl. D87—3)



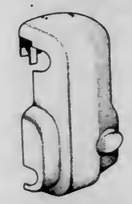
206,366
SUPPORT FOR A WATERING HOSE
Edwin C. Wood, P.O. Box 274, Denville, N.J. 07834
Filed Oct. 18, 1965, Ser. No. 87,573
Term of patent 3½ years
(Cl. D91—1)



206,367
NON-WOVEN TEXTILE FABRIC
George H. Hughes, Granby, Quebec, Canada, assignor to Beacon Manufacturing Company, Swannanoa, N.C., a corporation of Delaware
Filed Aug. 5, 1965, Ser. No. 86,449
Term of patent 14 years
(Cl. D92—1)



206,368
LOOM LET-OFF PROTECTOR
William T. McIntyre, 32 Henry St., Greenville, S.C. 29605
Filed Feb. 14, 1966, Ser. No. 1,025
Term of patent 14 years
(Cl. D92—15)



206,369
HAND SAW
Russell D. Knapp, 169 W. Cedar St., Elko, Nev. 89801
Filed Mar. 23, 1966, Ser. No. 1,596
Term of patent 14 years
(Cl. D93—4)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 29TH DAY OF NOVEMBER, 1966

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Amori, Joseph A. Fruit orienting and cutting system. Re. 26,117, 11–29–66, Cl. 146—73.

Swenson, Charles. Timer with reversible motor. Re. 26,118, 11–29–66, Cl. 318—265.

LIST OF PLANT PATENTEES

Amling-Devor Nurseries, Inc.: *See*—
Lammerts, Walter E. 2,687.

Lammerts, Walter E., to Amling-Devor Nurseries, Inc. Rose plant. 2,687, 11–29–66, Cl. 11.

LIST OF DESIGN PATENTEES

Accessocraft Products Corp.: *See*—
Steinman, Theodore C. 206,346.

Admiral Corp.: *See*—
Alley, Clement W. 206,351.

Airguide Instrument Co.: *See*—
MacCowan, Hervey L. 206,350.

Alley, Clement W., to Admiral Corp. Tilt out control panel. 206,351, 11–29–66, Cl. D56—4.

Barbee, Boyd D. Combination T-square and level. 206,349, 11–29–66, Cl. D52—6.

Basile, Anthony J.: *See*—
Moglin, Herbert P., Kalen, Robbins, and Basile. 206,317.

Beacon Mfg. Co.: *See*—
Hughes, George H. 206,367.

Bevilacqua, Ernest M.: *See*—
Noyes, Eliott F., Bevilacqua, and Graf. 206,319.

Bloch, Jack, and V. Marchi. Pair of spectacles. 206,353, 11–29–66, Cl. D57—1.

Bouse, Norman C.: *See*—
Boxer, Steve, and Bouse. 206,352.

Boutin, Harold S. High intensity lamp. 206,348, 11–29–66, Cl. D48—20.

Boxer, Steve, and N. C. Bouse. Sunshade attachment for a pair of spectacles or the like. 206,352, 11–29–66, Cl. D57—1.

Broadwin, Samuel M., to Maryland Plastics Inc. Test tube storage rack tor similar article. 206,324, 11–29–66, Cl. D16—1.

Brunger, Ronald N.: *See*—
Ornas, Theodore, Jr., Brunger, and McGrew. 206,322.

Buck, Michael D., to Hach Chemical Co. Laboratory turbidimeter. 206,325, 11–29–66, Cl. D16—2.

Boutin, Harold S. High intensity lamp. 206,347, 11–29–66, Cl. D48—20.

Cabell, Douglas N., to Ronson Corp. Portable hairdryer casing. 206,364, 11–29–66, Cl. D86—10.

Cat-A-Gator Corp.: *See*—
Fox, Eugene R. 206,320.

Chicago Hardware Foundry Co., The: *See*—
Dresser, John R. 206,332.

Dolgins, Leon. Bottle carrier. 206,361, 11–29–66, Cl. D58—26.

Dresser, John R., to The Chicago Hardware Foundry Co. Table. 206,332, 11–29–66, Cl. D33—14.

Fox, Eugene R., to Cat-A-Gator Corp. Motor vehicle. 206,320, 11–29–66, Cl. D14—3.

Ekco Products, Inc.: *See*—
Griese, Elmer W., Jr. 206,358.

Gregory, Roland W. Tumbler or the like. 206,339, 11–29–66, Cl. D44—9.

Gregory, Roland W. Cup. 206,340, 11–29–66, Cl. D44—9.

Gregory, Roland W. Cup. 206,341, 11–29–66, Cl. D44—9.

Gregory, Roland W. Bowl. 206,342, 11–29–66, Cl. D44—15.

Gregory, Roland W. Pitcher or the like. 206,343, 11–29–66, Cl. D44—21.

Gregory, Roland W. Pitcher or the like. 206,344, 11–29–66, Cl. D44—21.

Kelly, Burton, to Sunbeam Corp. Pitcher or the like. 206,345, 11–29–66, Cl. D44—21.

Graf, Robert E.: *See*—
Noyes, Eliot F., Bevilacqua, and Graf. 206,319.

Griese, Elmer W., Jr., to Ekco Products, Inc. Packaging container for food or the like. 206,358, 11–29–66, Cl. D58—17.

Groover, Steven G. Measuring and dispensing attachment for a coffee container. 206,362, 11–29–66, Cl. D58—26.

Gulbrandsen, Cory O., to The Telex Corp. Microphone. 206,329, 11–29–66, Cl. D26—14.

Hach Chemical Co.: *See*—
Buck, Michael D. 206,325.

Hedwin Corp.: *See*—
Speas, Charles A., and Jordon. 206,356.

Hoffman Electronics Corp.: *See*—
Keys, Richard V. 206,327.

Hedwin Corp.: *See*—
Speas, Charles A. 206,355.

Hughes, George H., to Beacon Mfg. Co. Non-woven textile fabric. 206,367, 11–29–66, Cl. D92—1.

Hyer Hardware Mfg. Co.: *See*—
James, David F., and Maize. 206,318.

International Business Machines Corp.: *See*—
Nole, Howard S., and Stringer. 206,328.

International Harvester Corp.: *See*—
Ornas, Theodore, Jr., Brunger, and McGrew. 206,322.

Jacobsen, Harvey A.: *See*—
Solipasso, Victor M. 206,335.

James, David F., and J. W. Maize, to Hyer Hardware Mfg. Co. Hinge. 206,318, 11–29–66, Cl. D10—9.

Jordon, Charles T.: *See*—
Speas, Charles A., and Jordon. 206,356.

Jordan, John N. Combined dental chair tool support and conduit shroud. 206,326, 11–29–66, Cl. D24—1.

Kalen, Barry S.: *See*—
Moglin, Herbert P., Kalen, Robbins, and Basile. 206,317.

Kasparian, George, to Kasparians, Inc. Bar stool. 206,323, 11–29–66, Cl. D15—8.

Kasparians, Inc.: *See*—
Kasparian, George. 206,330.

Kasparian, George, to Kasparians, Inc. Support base for a combined table and seating unit. 206,330, 11–29–66, Cl. D33—14.

Kasparian, George, to Kasparians, Inc. Support base for a combined table and seating unit. 206,331, 11–29–66, Cl. D33—14.

Kasparians, Inc.: *See*—
Kasparian, George. 206,331.
Kasparian, George. 206,323.

Sunbeam Corp.: *See*—
Kelly, Burton. 206,345.

Kenner Products: *See*—
Utrecht, Karl A. 206,337.

Keys, Richard V., to Hoffman Electronics Corp. Semiconductor package. 206,327, 11–29–66, Cl. D26—1.

Knapp, Russell D. Hand saw. 206,369, 11–29–66, Cl. D93—4.

Larkin, Daniel C. Combined tissue dispenser and letter container for automobiles. 206,354, 11–29–66, Cl. D58—12.6.

Levin, Myron M., and N. R. Sachnoff. Food pan. 206,338, 11–29–66, Cl. D44—1.

Maize, James W.: *See*—
James, David F., and Maize. 206,318.

Marchi, Vitalino: *See*—
Bloch, Jack, and Marchi. 206,353.

Maryland Plastics Inc.: *See*—
Broadwin, Samuel M. 206,324.

Mattel, Inc.: *See*—
Ryan, John W., and Schmidt. 206,334.

Mazur, Richard A., to United States Rubber Co. Plastic coated sheet material. 206,365, 11–29–66, Cl. D87—3.

Mead Corp., The: *See*—
Wood, Prentice J. 206,359.

Mitzler, Ronald H.: *See*—
Solipasso, Victor M. 206,335.

Mobil Oil Corp.: *See*—
Noyes, Eliot F., Bevilacqua, and Graf. 206,319.

Moglin, Herbert P., B. S. Kalen, W. J. Robbins, and A. J. Basile. Beverage cooler. 206,317, 11–29–66, Cl. D2—3.

McGrew, Charles B., Jr.: *See*—
Ornas, Theodore, Jr., Brunger, and McGrew. 206,322.

MacCowan, Hervey L., to Airguide Instrument Co. Weather indicating instrument. 206,350, 11–28–66, Cl. D52—7.

McIntyre, William T. Loom let-off protector. 206,368, 11–29–66, Cl. D92—15.

Neale, David W. Mirror for a motor vehicle. 206,321, 11–29–66, Cl. D14—6.

Nole, Howard S., and J. W. Stringer, to International Business Machines Corp. Front panel for a process controller. 206,328, 11–29–66, Cl. D26—13.

Noyes, Eliot F., E. M. Bevilacqua, and R. E. Graf, to Mobil Oil Corp. Dispensing island. 206,319, 11–29–66, Cl. D13—1.

Ornas, Theodore, Jr., R. N. Brunger, and C. B. McGrew, Jr., to International Harvester Co. Motor vehicle instrument panel with integral auxiliary control panel. 206,322, 11–29–66, Cl. D14—6.
Pastorius, Louis E., III. Pouring spout for a jar or the like. 206,360, 11–29–66, Cl. D58—26.
Portteus, James G., to P. A. Portteus. Golf putting target. 206,333, 11–29–66, Cl. D34—5.
Portteus, Phillip A.: *See*—
Portteus, James G. 206,333.
Robbins, Walter J.: *See*—
Moglin, Herbert P., Kalen, Robbins, and Basile. 206,317.
Ronson Corp.: *See*—
Cabell, Douglas N. 206,364.
Ryan, John W., and G. W. Schmidt, to Mattel, Inc. Velocipede. 206,334, 11–29–66, Cl. D34—15.
Sachnoff, Norton R.: *See*—
Levin, Myron M., and Sachnoff. 206,338.
Schmidt, Gerald W.: *See*—
Ryan, John W., and Schmidt. 206,334.
Solipasso, Victor M., ½ each to H. A. Jacobsen and R. H. Mitzler. Inflatable sled. 206,335, 11–29–66, Cl. D34—15.
Speas, Charles A., to Hedwin Corp. Removable inner compartment for a can. 206,355, 11–29–66, Cl. D58—17.
Speas, Charles A., and C. T. Jordon, to Hedwin Corp. Removable inner compartment for a can. 206,356, 11–29–66, Cl. D58—17.
Steinman, Theodore C., to Accessocraft Products Corp. Brooch or similar article. 206,346, 11–29–66, Cl. D45—19.
Stringer, Jack W.: *See*—
Nole, Howard S., and Stringer. 206,328.
Sullivan, John D. Composite liquid container or similar article. 206,357, 11–29–66, Cl. D58—17.
Tecton, Mike. Recreational building, or the like. 206,363, 11–29–66, Cl. D83—1.
Telex Corp., The: *See*—
Gulbrandsen, Cory O. 206,329.
United States Rubber Co.: *See*—
Mazur, Richard A. 206,365.
Utrecht, Karl A., to Kenner Products. Toy movie projector. 206,337, 11–29–66, Cl. D34—15.
Wilson, Lee N. Combined puzzle and container. 206,336. 11–29–66, Cl. D34—15.
Wood, Edwin C. Support for a watering hose. 206,366. 11–29–66, Cl. D01—1.
Wood, Prentice J., to The Mead Corp. Bottle carrier. 206,359, 11–29–66, Cl. D58—26.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 29TH DAY OF NOVEMBER, 1966

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AMP Inc.: *See*—
Crane, Hewitt D., and English. 3,289,185.
Fraley, Melvin L. 3,288,957.
Fritz, Coey W., and Over. 3,287,790.
Fuller, Glenwood A., and Whitmoyer. 3,288,914.
Hatfield, John G., and Murray. 3,288,915.
Rueger, Herman. 3,289,200.
Abbott, Adrian: *See*—
Croft, Brian H., and Abbott. 3,288,879.
Abbott, Henry H., R. D. Fracassi, E. G. Hughes, and C. W. Lonnquist, to Bell Telephone Laboratories, Inc. Data transmission system. 3,288,919, 11–29–66, Cl. 178—3.
Abercrombie, Hinemon L., Jr., to Mobil Oil Corp. Method and apparatus for testing and treating liquids. 3,287,960, 11–29–66, Cl. 73—52.
Abermeth, Hubert, to Klockner-Humboldt-Deutz Aktiengesellschaft. Circular piston machine. 3,288,118, 11–29–66, Cl. 123—8.
Abernathy, William J. Abrasive articles and method of making abrasive articles. 3,287,862, 11–29–66, Cl. 51—204.
Aboe, Ralph L., to Polycarbide Corp. High temperature resistant member and process for forming. 3,288,573, 11–29–66, Cl. 29—182.8.
Acker, George M. Cable support. 3,288,408, 11–29–66, Cl. 248—61.
Acme Highway Products Corp.: *See*—
Crone, Alfred F. 3,288,039.
Adage, Inc.: *See*—
Young, Frink M. 3,289,094.
Adams, Ralph D.: *See*—
Winslow, James C., and Adams. 3,287,955.
Adams, Robert T., to Communication Systems, Inc. System for generating phase coherent signals at remotely located stations. 3,289,084, 11–29–66, Cl. 325—63.
Addressograph-Multigraph Corp.: *See*—
Bialecak, Edward C. 3,288,627.
Mignone, Albert E. 3,287,816.
Adikes, William L., and K. V. Spitzer, to North American Philips Co., Inc. Magnetron with helical cathode held by support, the output and mode suppression means being remote from the cathode support. 3,289,023, 11–29–66, Cl. 315—39.53.
Aebi, Hans: *See*—
Martin, Henry, Aebi, and Ebner. 3,288,851.
Aebli, Horst: *See*—
Fleck, Fritz, Balzer, and Aebli. 3,288,801.
Fleck, Fritz, Balzer, and Aebli. 3,288,804.
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Fitzpatrick, John R. 3,288,897.
Aero Service Corp.: *See*—
Myers, Donald E., List, and Bowman. 3,288,606.
Aerojet-General Corp.: *See*—
Boydston, William M. 3,287,913.
Gongwer, Calvin A. 3,288,064.
Aeroprojects Inc.: *See*—
Bancroft, Dennison, Maropis, DePrisco, and Elmore. 3,288,241.
Afga Aktiengesellschaft: *See*—
Gersch, Josef, and Meglin. 3,288,389.
Gotze, Johannes, and Kampfer. 3,288,610.
Winkler, Alfred. 3,288,388.
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Beyeler, Pierre-Edouard and J. M. 3,287,798.
Beyeler, Pierre-Edouard and J. M., to Beyeler & Co., S.A. Method of making hour symbols for timepiece dials. 3,287,798, 11–29–66, Cl. 29—177.
Beyl, Jean J. A. Safety ski binding device. 3,288,477, 11–29–66, Cl. 280—11.35.
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Hanne, Albert W. 3,288,231.
Bigden, Shelby R., to R. Langston. Tilt-lift trailer. 3,288,315, 11–29–66, Cl. 214—506.
Bill, Arthur, to Rolls-Royce Ltd. Gas turbine engine exhaust dust structure. 3,287,907, 11–29–66, Cl. 60—39.66.
Billeter, Henry R., to Sloan Valve Co. Coupling for angle cocks. 3,288,498, 11–29–66, Cl. 285—334.1.
Bimberg, Elmer M., to The Bendix Corp. Carburetor. 3,288,446, 11–29–66, Cl. 261—41.
Binding, Kenneth W., and J. D. Mahoney, to Market Forge Co. Ski boot fastening comprising step adjusted toggle means. 3,287,774, 11–29–66, Cl. 24—70.
Bintz, Louis J., to Norris-Thermador Corp. Air pollution control system for internal combustion engine. 3,287,899, 11–29–66, Cl. 60—30.
Birath, Åke J. A., to Aktiebolaget Bofors. Closure device for a casing discharge port of a gun. 3,288,029, 11–29–66, Cl. 89—33.
Birkenes, Bernhard, to Motorola, Inc. Image rejection circuit. 3,289,087, 11–29–66, Cl. 325—388.
Bishop, Harry K.: *See*—
Reilly, Thomas A., Beckman, and Bishop. 3,288,650.
Bittner, Frank W. Foot steering control for outboard motors. 3,288,099, 11–29–66, Cl. 114—153.
Bjalme, Bengt G.: *See*—
Brown, Thomas G., and Bjalme. 3,288,004.
Bjorndal, Oystein. Hydraulic means. 3,288,076, 11–29–66, Cl. 103—126.
Black Clawson Co., The: *See*—
Swickard, James L., Jr., and Gove. 3,287,764.
Black, William: *See*—
Barron, Gordon, Black, and Topham. 3,288,621.
Blackmore, Joseph J., and P. G. Glunt. Pre-heating and de-aeration system for boiler feed water. 3,288,208, 11–29–66, Cl. 165—108.
Blake, Edward S., D. R. Dalton, and R. E. De Brunner, to Monsanto Research Corp. Fluorine-containing organic compounds of phosphorus. 3,288,890, 11–29–66, Cl. 260—955.
Blake, Kenneth R., to Micromatic Hone Corp. Interface energy control. 3,287,860, 11–29–66, Cl. 51—165.
Bland, George F., to International Business Machines Corp. Low-noise memory. 3,289,186, 11–29–66, Cl. 340—174.
Blenkarn, Kenneth A., to Pan American Petroleum Corp. Method for lining pipe under pressure. 3,287,801, 11–29–66, Cl. 29—460.
Bletzinger, John C.: *See*—
Mathison, Robert V., Bletzinger, and Richard. 3,288,141.
Blickensderfer, Marne M., and C. F. Brandner, to Mobil Oil Corp. Increasing well injectivity. 3,288,216, 11–29–66, Cl. 166—42.
Bloon., Walter L., and R. E. Meek. Coupling control device. 3,289,016, 11–29–66, Cl. 307—116.
Blumenfeld, Charles M. Photographic type sedimentation recorder. 3,288,019, 11–29–66, Cl. 88—14.
Board, Richard G., and N. H. Shapiro. Retractable safety belts. 3,288,528, 11–29–66, Cl. 297—388.

Bobinski, Jack, M. M. Fein, and D. Grafstein, to Thiokol Chemical Corp. Boron-containing compounds. 3,288,802, 11-29-66, Cl. 260—308.

Bodenschatz, August, to I-T-E Circuit Breaker Co. Current limiting device. 3,289,042, 11-29-66, Cl. 317—11.

Boehringer Ingelheim G.m.b.H.: *See*—
Berg, Alex. 3,288,805.

Bofors, Aktiebolaget: *See*—
Birath, Åke J. A. 3,288,029.
Lind, Karl G. F. 3,288,030.

Boggs, Jay. Archer's bow lamp assembly. 3,288,988, 11-29-66, Cl. 240—6.4.

Bohnenblust, Clarence E., to American Telephone and Telegraph Co. Apparatus to visually identify conductor pairs in a multiple cable. 3,288,943, 11-29-66, Cl. 179—175.3.

Boldrini, Prosperino R. Machine for curving sheets, in particular to obtain conical workpiece and the like. 3,287,953, 11-29-66, Cl. 72—171.

Bolkow Gesellschaft mit beschrankter Haftung: *See*—
Derschmidt, Hans. 3,288,227.

Bolidén, Sven E., and J. E. Vifot. Drivers' seats for tractors. 3,288,523, 11-29-66, Cl. 296—65.

Bolinger, Carl G. Bolt-like member and mounting therefor. 3,288,192, 11-29-66, Cl. 151—41.75.

Bomhardt, Klaus, R. Hartrumpf, J. Neuhauser, and P. Lackner, to Telefunken Patentverwertungsgesellschaft m.b.H. Tank circuit with band selection switch and capacitive tuning means. 3,289,123, 11-29-66, Cl. 334—19.

Boolen, Richard F.: *See*—
Mills, Loring E., and Boolen. 3,288,879.

Boots, Harold L.: *See*—
Whitson, Bobbie L., and Boots. 3,288,697.

Borg-Warner Corp.: *See*—
Egbert, Charles W. 3,288,205.
Fox, Clarence D., and Lair. 3,288,207.
Hendry, James W. 3,288,903.
Keats, John B. 3,287,840.
Mamo, Anthony C. 3,287,908.
Slack, James E. 3,289,140.
Waldrop, Charles R. 3,287,752.

Borkowski, Casimer J., A. M. R. Ferrari, and R. J. Fox, to United States of America, Atomic Energy Commission. Humidity insensitive proportional counter having a heating source connected to a wire anode. 3,288,999, 11-29-66, Cl. 250—83.6.

Borman, Aleck: *See*—
Fried, Josef, and Borman. 3,288,679.

Borne, Jean P. G., to Laboratories d'Electronique et de Physique Appliquees L.E.P. Safety release for push button switch. 3,288,946, 11-29-66, Cl. 200—5.

Borsuk, Alvin, W. R. Kohrs, R. J. Millenaar, and W. J. Higgins, to Oscar Mayer & Co., Inc. Skinless sausage making machine. 3,287,761, 11-29-66, Cl. 17—32.

Borsym, Alexander. Flying cutoff machine with swinging ram. 3,288,011, 11-29-66, Cl. 83—310.

Borsym, Alexander. Flying cutoff machine with orbital ram. 3,288,012, 11-29-66, Cl. 83—310.

Boser, Ronald J. Zigzag attachment for a two needle sewing machine. 3,288,092, 11-29-66, Cl. 112—100.

Bosley, Alfred D., Jr., R. N. Frantz, V. J. Ryszewski, and W. N. Scott, to Chrysler Corp. Torsion bar wheel suspension. 3,288,497, 11-29-66, Cl. 280—124.

Boston Machine Works Co.: *See*—
Heiseller, George W. 3,288,106.

Boston, Robert S., to Marconi Corp. Combination oil-ore-bulk cargo ship. 3,288,097, 11-29-66, Cl. 114—73.

Bostrom, John D., to Illinois Tool Works Inc. Composite package. 3,288,280, 11-29-66, Cl. 206—56.

Bottani, Angelo, to Societa Internazionale Fonovisione S.p.A. Combined film and slide projector. 3,288,549, 11-29-66, Cl. 352—131.

Bouchillon, Charles W., to The Bauer Bros. Co. Centrifugal cleaner. 3,288,300, 11-29-66, Cl. 210—512.

Boulton Paul Aircraft: *See*—
Lomnicki, Zbigniew A. 3,287,993.

Bourns, Inc.: *See*—
Jones, Robert L., and Kruse. 3,289,137.
Marks, Eugene A., and Sperling. 3,289,136.

Boutelant, Paul, to Compagnie Generale d'Electricite. Non-reciprocal attenuation equalization network using circulator having plural mismatched ports between input and output port. 3,289,118, 11-29-66, Cl. 333—28.

Bowen, L. H.: *See*—
Oliver, Joseph E. 3,288,518.

Bowen, Milly B.: *See*—
Oliver, Joseph E. 3,288,518.

Bowers, William A.: *See*—
Downing, Edward T., and Bowers. 3,289,036.

Bowles, Vernon O., to Mobil Oil Corp. Apparatus and method for high temperature reactions. 3,288,874, 11-29-66, Cl. 260—672.

Bowling, Joseph E., Jr.: *See*—
Moore, Ralph W., and Bowling. 3,287,858.

Bowman, James C.: *See*—
Myers, Donald E., List, and Bowman. 3,288,606.

Bowman, Jan, to Kaiser Aluminum & Chemical Corp. Refractory and method of making. 3,288,616, 11-29-66, Cl. 106—58.

Bowser, Inc.: *See*—
Romanowski, Albert F. 3,288,179.

Boyce, Harold D.: *See*—
Soderquist, Frederick J., Boyce, and Kline. 3,288,871.

Boydston, William M., to Aerojet-General Corp. Igniter. 3,287,913, 11-29-66, Cl. 60—256.

Brackett, Anthony H., Jr.: *See*—
Laimins, Eric, and Brackett. 3,289,134.

Brackett, John C., to Waldorf Paper Products Co. Carton blank. 3,288,848, 11-29-66, Cl. 229—37.

Brackman, Donald A., and B. L. Brucken, to General Motors Corp. Washing machine and roller drive mechanism therefor. 3,287,942, 11-29-66, Cl. 68—23.

Bradley, John J., to Paper Converting Machine Co., Inc. Flying-cutter apparatus with work feed compressing means. 3,288,009, 11-29-66, Cl. 83—176.

Bradley, John J., to Paper Converting Machine Co., Inc. Cartoner loader. 3,288,266, 11-29-66, Cl. 198—33.

Brahm, Charles B., and R. A. Haverl, to United Aircraft Corp. Engine performance indicator. 3,287,965, 11-29-66, Cl. 73—116.

Bramer, Donald W., to Graflex, Inc. System for triggering flashlamp. 3,288,044, 11-29-66, Cl. 95—11.5.

Brandner, Carl F.: *See*—
Blickensderfer, Marne M., and Brandner. 3,288,216.

Brashler, Clarence J.: *See*—
Nydam, James A. 3,288,497.

Braun, Frank A., and R. F. Trambarulo, to Bell Telephone Laboratories, Inc. Method of making a capacitor. 3,287,789, 11-29-66, Cl. 29—25.42.

Braunlich, Frank H., Jr., and W. M. Zingg, to The Dow Chemical Co. Method of preventing gas loss during gas drilling. 3,288,230, 11-29-66, Cl. 175—72.

Brech, Killian H., D. P. Reiyea, and R. L. Uphoff. Ultrasonic inspection apparatus. 3,287,962, 11-29-66, Cl. 73—67.9.

Bremer, Georg F., to Dymo Industries, Inc. Embossing tool for selectively accommodating material of different sizes. 3,288,259, 11-29-66, Cl. 197—6.7.

Bresler, Sidney A., to Chemical Construction Corp. Removal of acid gases from gas streams. 3,288,557, 11-29-66, Cl. 23—2.

Bridgeport Brass Co., Division of National Distillers and Chemical Corp.: *See*—
Sommer, Fritz. 3,287,885.

Briggs, Warren S., W. A. Stover, and D. S. Henderson, to W. R. Grace & Co. Internal combustion engine exhaust gas treating process. 3,288,558, 11-29-66, Cl. 23—2.

Briggs, William D., to Joslyn Mfg. and Supply Co. Structural brace. 3,288,504, 11-29-66, Cl. 287—189.36.

Bright, James A., to General Motors Corp. Refrigerating apparatus. 3,287,924, 11-29-66, Cl. 62—5.

Brightman, Barrie: *See*—
Bartlett, William F., and Brightman. 3,288,928.

Brilliant Products Inc.: *See*—
Brunette, Fredrick F. 3,288,484.

British Industrial Plastics Ltd.: *See*—
Wilson, Walter, and May. 3,288,757.

Brokaw, Adrian P., to Dresser Industries, Inc. Automatic gain control in acoustic well logging systems. 3,289,157, 11-29-66, Cl. 340—18.

Brosnan, Dennis W. Rail handling apparatus. 3,288,082, 11-29-66, Cl. 104—2.

Broughton, Arthur E. Spray shower assembly with self cleaning nozzle. 3,288,371, 11-29-66, Cl. 239—107.

Brown, Arthur C. L.: *See*—
Currey, Charles H., Bendell, Brown, and Haselwood. 3,289,170.

Brown, Boveri & Cie, Aktiengesellschaft: *See*—
Chaboseau, Jean. 3,288,434.

Brown, Charles E., to United States of America, Navy. Strip transmission line ferrite filter-limiter having a ferrite sphere positioned beneath overlapping conductors. 3,289,112, 11-29-66, Cl. 333—24.2.

Brown, Charles W., and G. E. Stone, to General Precision, Inc. Memory sector selection circuit. 3,289,174, 11-29-66, Cl. 340—172.5.

Brown, Cicero C. Multiple string manual operated elevator. 3,287,776, 11-29-66, Cl. 24—81.

Brown, Cicero C. Coupling device for underwater wellheads. 3,288,493, 11-29-66, Cl. 285—3.

Brown, Douglas M., to Sperry Rand Corp. Magnetic core memory readout. 3,289,184, 11-29-66, Cl. 340—174.

Brown, George A.: *See*—
Kemper, Clarence A., Harper, and Brown. 3,288,685.

Brown, Henry: *See*—
Creutz, Hans-Gerhard, and Brown. 3,288,690.

Brown, Norman H.: *See*—
Webb, Walter W., and Brown. 3,288,663.

Brown, Sidney L., Jr., to Ledex, Inc. Multiple switch assembly having stator contacts with prestressed jaws and alignment means. 3,288,949, 11-29-66, Cl. 200—11.

Brown, Thomas G., and B. G. Bjaime, to Reed Mfg. Co. Pipe finishing machine. 3,288,004, 11-29-66, Cl. 82—4.

Bruce & Brosler: *See*—
Myers, Leon O. 3,288,496.

Bruchmann, Helmut: *See*—
Estes, Joseph F., and Bruchmann. 3,288,615.

Brucken, Byron L.: *See*—
Brackman, Donald A., and Brucken. 3,287,942.

Brunetto, Frank, to United States of America, Navy. Test circuit for determining operating parameters of a gate turn-off solid state switch. 3,289,081, 11-29-66, Cl. 324—158.

Brunette, Fredrick F., to Brilliant Products Inc. Bottle return cart. 3,288,484, 11-29-66, Cl. 280—79.2.

Bruns, Norbert A., to Anocut Engineering Co. Electrode for electrolytic cavity sinking. 3,288,698, 11-29-66, Cl. 204—224.

Brunswick, N. J.: *See*—
Killaheimer, John R., Kaufman, and Brunswick. 3,288,673.

Bryant, Floyd C., and W. F. Teal. Garbage can holder. 3,288,305, 11-29-66, Cl. 211—71.

Bryant, Harvey L., to Esso Production Research Co. Orienting method for use in wells. 3,288,210, 11-29-66, Cl. 166—4.

Buchhold, Theodor A., to General Electric Co. Rotating machine. 3,289,019, 11-29-66, Cl. 310—52.

Buchhols, Willi: *See*—
Detert, Ernst-Rolf, and Buchhols. 3,288,148.

Buckley, Gerard D., to Imperial Chemical Industries Ltd. Oxymethylene polymers. 3,288,756, 11-29-66, Cl. 260—67.

Buehler, Arthur, C. Zickendraht, and R. Schoenenberg, to Ciba Ltd. Dry granular azo dyestuff preparations containing a cellulose ester. 3,288,619, 11-29-66, Cl. 106—193.

Bueler, Richard C., to Wagner Electric Corp. Control valve. 3,288,539, 11-29-66, Cl. 303—13.

Buesing, Arthur C., and B. Vitez, to Allis-Chalmers Mfg. Co. Temperature compensating mounting for basic oxygen furnace. 3,288,453, 11-29-66, Cl. 266—36.

Bullinger, Hans B., to The Bendix Corp. Contact arrangement for an electroluminescent indicator device. 3,289,025, 11-29-66, Cl. 313—108.

Bullock, John C. Baseball pitching machine with ball curving device. 3,288,127, 11-29-66, Cl. 124—11.

Bungay, George W., Jr., to Electrographic Corp. Method and apparatus for preparing multipage printing plates and the like. 3,288,063, 11-29-66, Cl. 101—401.1.

Bunge, Fred H., and H. H. Vaughan, to The Hanna Mining Co. Use of kiln gas for production of magnetic iron oxide. 3,288,588, 11-29-66, Cl. 75—1.

Bunger, David A., to D. H. Baldwin Co. Tapered spring reverberation delay line drive apparatus. 3,288,931, 11-29-66, Cl. 179—1.

Bunting, Norman W., to Koppers Co., Inc. Transfer apparatus. 3,288,270, 11-29-66, Cl. 198—103.

Bunting, Norman W., to Koppers Co., Inc. Method and apparatus for cleaning conveyor belts. 3,288,275, 11-29-66, Cl. 198—230.

Burford Co., The: *See*—
Burford, Charles E. 3,288,271.

Burford, Charles E., to The Burford Co. Conveyer. 3,288,271, 11-29-66, Cl. 198—131.

Burgess, Thomas G.: *See*—
Parker, Anthony H., and Burgess. 3,289,183.

Burke Concrete Accessories, Inc.: *See*—
Gaetke, George O. 3,288,042.

Burke, Oliver W., Jr., and E. E. Stahly; said Stahly assor. to said Burke. Process for the purification of tobacco smoke. 3,288,150, 11-29-66, Cl. 131—261.

Burke, Oliver W., Jr., and E. E. Stahly; said Stahly assor. to said Burke. Process for the purification of tobacco smoke. 3,288,151, 11-29-66, Cl. 131—262.

Burke, Oliver W., Jr., and E. E. Stahly; said Stahly assor. to said Burke. Process for the purification of tobacco smoke. 3,288,152, 11-29-66, Cl. 131—267.

Burnett, Arthur H., to Berkley Machine Co. Side flap folding section of a rotary envelope making machine. 3,288,037, 11-29-66, Cl. 93—61.

Burns, James O., and G. S. Chandler, to Ormston Burns Ltd. Stringed musical instruments with pickup and damping means between bridge and fingerboard. 3,288,906, 11-29-66, Cl. 84—1.16.

Burns, Robert V.: *See*—
Cleary, Robert T., and Burns. 3,288,932.

Burri, Hans U.: *See*—
Alexander, David, and Burri. 3,288,565.

Burroughs Corp.: *See*—
Bacon, James R., and Barnes. 3,289,010.
White, Kenneth H. 3,289,141.

Burroughs Wellcome & Co. (U.S.A.): *See*—
Hitchings, George H., and Hurlbert. 3,288,792.

Burroughs Wellcome & Co. (U.S.A.) Inc.: *See*—
Sterne, Max. 3,288,680.

Burrows, Raymond C., to Archer-Daniels-Midland Co. Soil stabilization. 3,288,040, 11-29-66, Cl. 94—25.

Buruchian, Nishan E. Rug and carpet cleaning device. 3,287,941, 11-29-66, Cl. 68—20.

Butler, George B., to Peninsular ChemResearch, Inc. Water soluble quaternary ammonium polymers. 3,288,770, 11-29-66, Cl. 260—88.3.

Butler, George W.: *See*—
Meredith, Paul A. 3,288,132.

Butler, Gladys A.: *See*—
Meredith, Paul A. 3,288,132.

Bystram, Mikolaj C. T., and M. F. Stuchfield, to Murex Welding Processes Ltd. Welded nickel steel article. 3,288,575, 11-29-66, Cl. 29—196.1.

Cabot Corp.: *See*—
Aftandilian, Victor D. 3,288,725.
MacKenzie, James C., and Yancey. 3,288,771.

Cais, Michael: *See*—
Kosikowski, John, and Cais. 3,288,827.

Cahill, Edward P. Collapsible container. 3,288,319, 11-29-66, Cl. 217—12.

Cahlik, Jim C., to Parke, Davis & Co. Packaging of surgical gauze sponges and the like. 3,288,327, 11-29-66, Cl. 221—70.

Cajon Co.: *See*—
Callahan, Francis J., Jr., and Wennerstrom. 3,288,494.

Caldwell, Samuel C., and L. R. Peaslee, to General Electric Co. Circuitry for obviating the effects caused by subtransient impedances in SCR generating system. 3,289,070, 11-29-66, Cl. 321—69.

Calgon Corp.: *See*—
Flock, Howard G. 3,288,640.
Ralston, Paul H. 3,288,217.

California Institute Research Foundation: *See*—
Baerg, Herbert R. 3,287,832.
Mead, Carver A. 3,289,052.

Calkins, Dwight L. and O. C., and L. K. Carrick, to Calkins Mfg. Co. Rod weeder. 3,288,480, 11-29-66, Cl. 280—43.23.

Calkins Mfg. Co.: *See*—
Calkins, Dwight L. and O. C., and Carrick. 3,288,480.

Calkins, Oscar C.: *See*—
Calkins, Dwight L. and O. C., and Carrick. 3,288,480.

Callahan, Francis J., Jr., and E. G. Wennerstrom, to Cajon Co. Union coupling. 3,288,494, 11-29-66, Cl. 285—14.

Calmar, Inc.: *See*—
Corsette, Douglas F. 3,288,334.

Calumet & Hecla, Inc.: *See*—
Sommer, Fritz. 3,287,885.

Cambridge Thermionic Corp.: *See*—
Melamson, William A. 3,289,057.

Campbell, Robert H., and I. W. Mills, to Sun Oil Co. Process for making a slow release fertilizer comprising ure, paraffin wax, and a polymeric ure-paraffin wax adduct inhibitor. 3,288,587, 11-29-66, Cl. 71—64.

Campbell, Von C.: *See*—
Schilling, Edmumd F., and Campbell. 3,289,028.

Campman, James P., to United States of America, Navy. Ultra low frequency transistor relaxation sweep generator. 3,289,103, 11-29-66, Cl. 331—111.

Cannalte, Gary A., to Motorola, Inc. Starting circuit for semiconductor oscillator. 3,289,098, 11-29-66, Cl. 331—62.

Cannizzaro, Joseph N. Coupling for steering cable. 3,287,778, 11-29-66, Cl. 24—123.

Capshaw, Louis E.: *See*—
Horton, Truman P., and Capshaw. 3,288,288.

Cardiosonics Medical Instruments Corp.: *See*—
Littmann, David. 3,287,814.

Carlisle Chemical Works, Inc.: *See*—
Hechenbleikner, Ingenium. 3,288,669.

Carnation Co.: *See*—
Ballo, James A. 3,288,095.

Carpenter, Robert D.: *See*—
Bayley, Abraham, Robb, and Carpenter. 3,288,146.

Carr, Everett Q., to General Electric Co. Component chip mounted on substrate with heater pads therebetween. 3,289,046, 11-29-66, Cl. 317—101.

Carr, Kenneth L., to Ferrotec, Inc. Ferrite device utilizing the shorted turn effect, with electromagnet winding inside waveguide and adjacent to ferrite material. 3,289,111, 11-29-66, Cl. 333—24.2.

Carr, Kenneth L., to Ferrotec, Inc. Reciprocal stripline ferrite phase shifter having a folded center conductor. 3,289,115, 11-29-66, Cl. 333—31.

Carrick, Lawrence K.: *See*—
Calkins, Dwight L. and O. C., and Carrick. 3,288,480.

Carrier Corp.: *See*—
Leonard, Louis H., Jr. 3,288,203.

Carter, Richard S., and W. W. Welz, to International Business Machines Corp. Means for comparing digital values. 3,289,160, 11-29-66, Cl. 340—146.2.

Carumpalos, Constantine, to United States Envelope Co. Sterilization indicator coating. 3,288,718, 11-29-66, Cl. 252—406.

Carver, Harold E., to Union Oil Co. of California. Continuous mining machine and method. 3,288,532, 11-29-66, Cl. 299—18.

Casadio, Silvano, to Istituto de Angeli. Glycerol ethers. 3,288,856, 11-29-66, Cl. 260—592.

Cascade Corp.: *See*—
Frey, Max. 3,288,294.

Casey, David C.: *See*—
Wilson, Harold W. 3,288,597.

Castler, Leo A.: *See*—
Hammond, James D., Payne, and Castler. 3,288,876.

Cataldo, John B., F. T. Platz, F. W. Kussy, and B. Di Marco, to I-T-E Circuit Breaker Co. Spring trip multi-phase overload relay having a U-shaped bimetal with a pivot pin at its web portion. 3,288,964, 11-29-66, Cl. 200—116.

Cataldo, Ottavio C.: *See*—
Zaretsky, Albert, and Cataldo. 3,289,181.

Cawley, William E.: *See*—
Frantz, Charles E., Cawley, Vlacil, and Astley. 3,287,947.

Celanese Corp. of America: *See*—
Conrad, Peter. 3,288,107.
Dacey, Raymond B. 3,288,666.
Loftin, Robert J., and Roberts. 3,287,784.
Rosenthal, Arnold J., and Cipriani. 3,288,738.

Cerf, Donald B. Orthopedic chair. 3,288,525, 11-29-66, Cl. 297—284.

Cerro Copper & Brass Co.: *See*—
Sommer, Fritz. 3,287,885.

Chaboseau, Jean, to Brown, Boveri & Cie, Aktiengesellschaft. Gas turbine adapted for partial activation. 3,288,434, 11-29-66, Cl. 253—78.

Chabot, Leo L., to Draper Corp. Bobbin doffing mechanism. 3,287,889, 11-29-66, Cl. 57—53.

Challenge Machinery Co., The: *See*—
Westra, Dan P. 3,288,062.

Chambers, Edwin G., and K. W. Fisher, to Western Electric Co., Inc. Methods of assembling electrical components with circuits. 3,287,795, 11-29-66, Cl. 29—155.5.

Chandler, Gordon S.: *See*—
Burns, James O., and Chandler. 3,288,906.

Chao, Tai S.: *See*—
Eickemeyer, Daniel B., and Chao. 3,288,713.

Chapman, John F., and I. D. Rosbotham, to Imperial Chemical Industries Ltd. Preparation of open-cell rigid polyurethanes. 3,288,732, 11-29-66, Cl. 260—2.5.

Chappuis, Louis, to Societe d'Etude et de Construction de Machines Pour Toutes Industries (Secoma). Drilling slide for large holes with traversing bar concentric to the drill and automatic regulation of the drilling feed. 3,288,229, 11-29-66, Cl. 173—9.

Charbonnages de France: *See*—
Letort, Maurice J. A., and Fleureau. 3,288,758.

Chase Brass & Copper Co., Inc.: *See*—
Sommer, Fritz. 3,287,885.

Chemical Construction Corp.: *See*—
Bresler, Sidney A. 3,288,557.

Chen, Richard J.: *See*—
Land, Edwin H., Chen, and Gold. 3,288,609.
Cheng, Shang-I., to The B. F. Goodrich Co. Glycol and acid salt treatment for increasing the particle size of synthetic rubber latex. 3,288,741, 11–29–66, Cl. 260—29.7.
Chevron Research Co.: *See*—
Spars, Byron G., and Mason. 3,288,703.
Chicago Metallic Sash Co.: *See*—
Jahn, Martin D. 3,288,489.
Chico Garate, J. J. Ships for transporting liquid cargoes. 3,288,098, 11–29–66, Cl. 114—74.
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Condon, Stanley E., to American Machine & Foundry Co. Bowling score sheet film posttioning and holding device. 3,288,026, 11–29–66, Cl. 88—24.
Conover, Sara A. Electric clothes sprinkler. 3,288,375, 11–29–66, Cl. 239—332.
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Cooper, Leslie E., to The Distillers Co. Ltd. Plural stage hydrogenation of alkenals to alcohols using copper catalyst and then palladium catalyst. 3,288,866, 11–29–66, Cl. 260—638.
Cooper, Wilfrid, and G. Vaughan, to Dunlop Rubber Co. Ltd. Polymerization catalysts and their use. 3,288,769, 11–29–66, Cl. 260—88.2.
Cooperberg, Henry A., to Star Fasteners of Canada Ltd. Automatic locking slider of slide fastener. 3,287,780, 11–29–66, Cl. 24—205.14.
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Corbin, John F.: *See*—
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Cordle, Harry J., and A. C. Loonam, to Chilean Nitrate Sales Corp. Process for treating sewage with iodine. 3,288,708, 11–29–66, Cl. 210—62.
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Vockroth, Richard W., Jr. 3,288,364.
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Corrsin, Lester, to Xerox Corp. Method of restoring xerographic properties to a glass binder plate. 3,288,603, 11–29–66, Cl. 96—1.
Corrsin, Lester, to Xerox Corp. Imaging method using an element having a glass overcoating. 3,288,604, 11–29–66, Cl. 96—1.
Corsette, Douglas F., to Calmar, Inc. Dispenser with collapsible container and pump. 3,288,334, 11–29–66, Cl. 222—107.
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Mellwraith, Charles G., and Coughlin. 3,289,152.
Coutaud, Germain Y., L. A. Facquet, L. R. Lehmann, and H. A. J. Schuh to Nobel-Bozel. Light-sensitive coating for pre-sensitized plates, intended for offset printing and for engraved wiring or printed circuits. 3,288,608, 11–29–66, Cl. 96—33.
Cowles, John H., and J. W. Rollins, to The Torrington Co. Method of rolling bearing races. 3,288,542, 11–29–66, Cl. 308—216.
Cox, Clifford B., and J. M. Valdespino, to C. B. Cox, J. M. Valdespino, J. C. Robinson, and F. Groo. Boat and jet propulsion means therefor. 3,288,100, 11–29–66, Cl. 115—11.
Cox, William L., to Universal Oil Products Co. Stabilization of rubber with a mixture of phenylene diamines and diaminodephenyl ethers thioethers. 3,288,749, 11–29–66, Cl. 260—45.9.
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Bentley, William, Cozens, and Strong. 3,287,936.
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Cranage, Bidwell C., to Stile-Craft Manufacturers, Inc. Combined gauge and regulator. 3,288,165, 11–29–66, Cl. 137—505.13.
Crane, Hewitt D., and W. K. English, to AMP Inc. Magnetic switch circuit. 3,289,185, 11–29–66, Cl. 340—174.
Cranwell, James N. Reel clip assembly. 3,287,777, 11–29–66, Cl. 24—81.
Craven, Milton H., to Grove Valve and Regulator Co. Wiper ring for a fluid system flow interrupting device. 3,288,163, 11–29–66, Cl. 137—242.
Craven, William J., Jr. Paper towel dispenser. 3,288,387, 11–29–66, Cl. 242—55.53.
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Lennon, Fred A., and Zahuranec. 3,287,813.
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Perenyi, Louis, Creager, and Zinck. 3,288,135.
Creutz, Hans-Gerhard, and H. Brown, to The Udylite Corp. Electrodeposition of copper from acidic baths. 3,288,690, 11–29–66, Cl. 204—52.
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Cronquist, Donald H., and A. H. Higginson. Record sheet selection and transport means. 3,288,024, 11–29–66, Cl. 88—24.
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Trager, Kempes F., and Cross. 3,288,699.
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Cumings, Warren H. Tethered basketball practice device. 3,288,466, 11–29–66, Cl. 273—1.5.
Cumming, Ronald W., to Commonwealth of Australia, Crown Solicitor's Office. Low visibility simulation screen. 3,287,828, 11–29–66, Cl. 35—12.
Cunningham, Allen B., to Esso Production Research Co. Method of continuous wave seismic prospecting. 3,289,154, 11–29–66, Cl. 340—15.5.
Cunningham, Arthur R., to Cunningham & Sons. Golfer's arm bend restraining device. 3,288,468, 11–29–66, Cl. 273—180.
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Cunningham, Arthur R. 3,288,468.
Curn, Frantisek, to Naradi, narodni podnik. Method of preparing a diamond tool. 3,288,580, 11–29–66, Cl. 51—309.
Currey, Charles H., C. B. Bendell, A. C. L. Brown, and D. E. Haselwood, to A. C. Nielsen Co. Data transmitting and receiving system using pulse width modulation. 3,289,170, 11–29–66, Cl. 340—172.5.
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Oliver, Joseph E. 3,288,518.
Curutchet, Pete: *See*—
Oliver, Joseph E. 3,288,518.
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Dowd, Edward J., and Cutler. 3,288,702.
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Piber, Earl T. 3,288,973.
Cyba, Henryk A., to Universal Oil Products Co. Stabilization of olefin polymers with N-hydrocarbyl alkanolamines. 3,288,748, 11–29–66, Cl. 260—45.9.
Cyba, Henryk A., to Universal Oil Products Co. Reaction product of substituted-aminoalkyl alkanolamine and polycarboxylic acid or the like. 3,288,774, 11–29–66, Cl. 260—97.
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Keesling, Thomas B. 3,288,301.
Dacey, Raymond B., to Celanese Corp. of America. Decorative laminates. 3,288,666, 11–29–66, Cl. 161—5.
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Inazawa, Oki. 3,288,431.
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Dalton, David R.: *See*—
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Dannettell, Alan C., to Eaton Yale & Towne Inc. Electric drive system for industrial truck. 3,289,062, 11–29–66, Cl. 318—139.
Darlington, Sidney, to Bell Telephone Laboratories, Inc. Prescriptive transformerless networks. 3,289,116, 11–29–66, Cl. 333—70.
Dasovic, Steve Z., and H.-G. R. Wolf. Structural panel. 3,287,854, 11–29–66, Cl. 49—501.
Date, Kazuo H., to McGraw-Edison Co. Repeating circuit interrupter. 3,289,125, 11–29–66, Cl. 335—33.
Daugherty, Charles E., and D. K. Fleming, to The Elmco Corp. Articulated aligning means for filter media webs. 3,288,298, 11–29–66, Cl. 210—401.
Da Valle, Bruno. Perforated plastic film. 3,287,850, 11–29–66, Cl. 47—9.
Davey, James R., and B. R. Saltzberg, to Bell Telephone Laboratories, Inc. Automatic adjustment of transversal filter so that received pulse is corrected to conform with standardized shape. 3,289,108, 11–29–66, Cl. 333—18.
Davey, Peter G. Air flow monitoring enclosure intrusion alarm having retarded flowmeter. 3,289,192, 11–29–66, Cl. 340—239.
Davidson, Robert W., to American Machine & Foundry Co. Cargo handling apparatus. 3,288,411, 11–29–66, Cl. 248—119.
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Needham, James G., Davies, and Ranshaw. 3,288,700.
Davis, Elmer H. Cover for golf bag. 3,288,189, 11–29–66, Cl. 150—52.
Davis, John, E. D. Nuttall, A. M. Randolph, and W. C. Tomerlin, to United Gas Corp. Magnetic digital recorder. 3,289,210, 11–29–66, Cl. 346—74.
Davis, Wilton J., to Posture Products, Inc. Machine and method for assembling coil springs in the production of mattresses. 3,288,176, 11–29–66, Cl. 140—3.
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Troglon, Thomas W., and Fultz. 3,287,748.
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Waterman, Raymond R., Deal, and Whitman. 3,288,729.
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Deaton, Homer W., to General Motors Corp. Method of insulating a hollow walled cabinet which includes using uniformly distributed and spread microwaves for heating. 3,288,894, 11–29–66, Cl. 264—25.
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De Haan, Edward F., P. P. M. Schampers, and A. Van der Drift, to North American Philips Co. Inc. Photo-sensitive device including layers of different conductivity types. 3,289,024, 11–29–66, Cl. 313—65.
De Haviland Aircraft Co. Ltd., The: *See*—
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Dehmelt, Klaus, G. Strasen, and G. Graeber, to Varto Deutsche Edison-Akkumulatoren-Co. Gesellschaft mit beschrankter Haftung. Extreme value switching device. 3,289,065, 11–29–66, Cl. 320—40.
Delacoux, Rene, to North American Philips Co. Inc. Scintillators for counting-particles. 3,288,626, 11–29–66, Cl. 117—33.5.
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Wagner, Vincent S. 3,288,166.
Delfino, Joseph C., to Leesona Corp. Fuel cell module with palladium-silver alloy anode. 3,288,644, 11–29–66, Cl. 136—86.
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De Marcellus, Roland. Power assisted braking system. 3,288,538, 11–29–66, Cl. 303—11.
Demole, Eduard, to Firmenich et Cie. 2-alkenyl and 4-alkenyl derivatives of 3-oxo-cyclopentylacetic acid esters. 3,288,833, 11–29–66, Cl. 260—468.
Demorest, Howard L., to Litton Systems Inc. Method and apparatus for monitoring radioactive contamination of air using a film of water and a scintillation detector. 3,288,995, 11–29–66, Cl. 250—71.5.
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Dennis, Nigel T. M., to Edwards High Vacuum International Ltd. Vapor diffusion pumps. 3,288,354, 11–29–66, Cl. 230—101.

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Derndinger, Hans-Otto: *See*—
Lamm, Heinz, Kortner, and Derndinger. 3,288,120.

Derschmidt, Hans, to Bolkow Gesellschaft mit beschrankter Haftung. Helicopter rotor system. 3,288,227, 11–29–66, Cl. 170—160.26.

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Deshusses, Edmond, to Constructions Mecaniques du Leman SA of Geneva. Tablet making machine. 3,288,087, 11–29–66, Cl. 107—18.

De Stevens, George, and L. H. Werner, to Ciba Corp. Diuretic compositions. 3,288,678, 11–29–66, Cl. 167—65.

Detert, Ernst-Rolf, and W. Buchholz, to Eduard Gerlach G.m.b.H. Method of producing tobacco foils. 3,288,148, 11–29–66, Cl. 131—140.

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De Vries, Eduard R., to Prismo Safety Corp. Colored reflective coating composition. 3,288,618, 11–29–66, Cl. 106—148.

De Wald, Horace A., to Parke, Davis & Co. α-(Aminoethoxyphenyl)-α-alkylstilbenes. 3,288,806, 11–29–66, Cl. 260—326.5.

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Spivack, John D., Steinberg, and Dexter. 3,288,798.

De Young, Edwin L.: *See*—
Symon, Ted, and De Young. 3,288,870.

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Diamond International Corp.: *See*—
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Diamond Power Specialty Corp.: *See*—
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Dickson, Herbert F., Jr., and E. O. Stone, to Sylvania Electric Products Inc. Translator-display device. 3,289,198, 11–29–66, Cl. 340—324.

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Perlow, Milton A., and Dieckamp. 3,288,070.

Diener, Rudolf, to Eldima A.G. Feed and control device for linking an extruder to a processing machine. 3,287,763, 11–29–66, Cl. 18—12.

Dilot, Rolf M., to Akerlund & Rausing, AB. Packaging box. 3,288,345, 11–29–66, Cl. 229—14.

Di Marco, Bernard: *See*—
Cataldo, John B., Platz, Kussy, and Di Marco. 3,288,964.
Platz, Elwood T., Di Marco, and Kendall. 3,288,966.

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Dobson, Robert A. Nozzle providing a quick change from hard spray to soft flow. 3,288,378, 11–29–66, Cl. 239—547.

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Dodgen, John N., M. D. Snapp, and K. R. Johnson, to Dodgen Industries, Inc. Apparatus for producing pellets for livestock feed. 3,288,051, 11–29–66, Cl. 99—233.

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Domas, Ben V., and G. B. Morse. Pneumatic door-control device. 3,287,758, 11–29–66, Cl. 16—84.

Donaldson, Marcus L., to Automatic Electric Laboratories, Inc. Diode switched pad circuit. 3,288,937, 11–29–66, Cl. 179—16.

Donatelli, Walter, to Sylvania Electric Products Inc. Basing of electrical lamps and the like. 3,288,742, 11–29–66, Cl. 260—30.4.

Dornberger, Georg, to Western Electric Co., Inc. Detecting apparatus for strands. 3,287,887, 11–29–66, Cl. 57—19.

Dorris, John P. Form for hollow concrete structures. 3,288,425, 11–29–66, Cl. 249—153.

Douglas Aircraft Co.: *See*—
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Dunbar, Joseph E. 3,288,815.
Dunbar, Joseph E. 3,288,816.
Dunbar, Joseph E. 3,288,852.
Harrison, Hugh T. 3,288,796.
Johnson, Hjalmar E. 3,288,178.
Ketchem, Donald J. 3,288,329.
Niles, Earl T., and Seaman. 3,288,660.
Pawloski, Chester E. 3,288,838.
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Pontz, Donald F. 3,288,865.
Rausch, Douglas A. 3,288,659.
Soderquist, Frederick J., Boyce, and Kline. 3,288,871.
Sonnabend, Lawrence F., and Schramm. 3,288,884.
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Sterling, George B., and Pawloski. 3,288,834.

Dow Chemical Co., The: *See*—Continued
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West, Walter H. 3,288,898.

Dow Corning Corp.: *See*—
Green, Donald E. 3,288,754.
Stark, Forrest O. 3,288,712.
Stebleton, Leo F. 3,288,893.

Dow Corning Silicones Ltd.: *See*—
Hollitz, Rhynie F. 3,288,710.

Dowbenko, Rostyslaw, to Pittsburgh Plate Glass Co. Cyclopentenyl compounds. 3,288,862, 11–29–66, Cl. 260—611.

Dowd, Edward J., and E. Cutler, to Esso Research and Engineering Co. Vaporization process. 3,288,702, 11–29–66, Cl. 208—48.

Downer, Charles E., and A. C. Piper, to United-Carr Inc. Grommets. 3,288,407, 11–29–66, Cl. 248—56.

Downing, Edward T., and W. A. Bowers, to Raytheon Co. Inverted magnetron having adjacent anode cavities coupled in opposite phase to a central stabilising cavity. 3,289,036, 11–29–66, Cl. 315—39.53.

Doyle, Edward J., and R. M. Pustinger, to Dynamics Corp. of America. Blender control with mechanical coupling between switch mechanism and timer drive. 3,288,951, 11–29–66, Cl. 200—35.

Doyle, Frank J., to Miehle-Goss-Dexter, Inc. Press inking arrangement. 3,288,061, 11–29–66, Cl. 101—210.

Doyle, James T. Drill feed. 3,287,996, 11–29–66, Cl. 77—33.5.

Doyle, Richard H., J. S. Naber, and L. N. Hermann, to Fastener Corp. Energy supply circuit. 3,289,064, 11–29–66, Cl. 320—1.

Drabert, Fred, and G. Zwicker, to Drabert, Sohne. Two plunger injection molding machine. 3,287,766, 11–29–66, Cl. 18—30.

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Drabert, Fred, and Zwicker. 3,287,766.

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Monaghan, Ralph. 3,288,996.
Newell, Frederick T., and Silvinski. 3,288,495.
Rose, Willis E. 3,288,197.
Wilson, John C. 3,289,156.

Drews, Gustav, to Eclipse Sleep Products, Inc. Stabilizer equipped mattresses. 3,287,744, 11–29–66, Cl. 5—260.

Drexler, Jerome, to S-F-D Laboratories, Inc. Reverse magnetron having means to suppress undesired modes. 3,289,035, 11–29–66, Cl. 315—34.51.

Dreyfus, Marc G., and H. W. Yates, to Barnes Engineering Co. Space simulator. 3,287,956, 11–29–66, Cl. 73—1.

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Beckwith, Sterling. 3,287,929.

Du Charme, Paul E. Hair clipper with cut regulator indicator. 3,287,805, 11–29–66, Cl. 30—202.

Duffers Associates, Inc.: *See*—
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Duffield, Joseph F., and C. R. D. Kindersley, deceased (by The Royal Trust Co., administrator), to Smith & Stone Ltd. Lampholder with current tap. 3,288,959, 11–29–66, Cl. 200—51.14.

Dukas, John. Door frames. 3,287,857, 11–29–66, Cl. 49—504.

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Keith, Jack G. 3,288,825.

Dunbar, Joseph E., to The Dow Chemical Co. 1,4,5,8-tetrahydro-1,4:5,8-dimethano-9,10-anthraquinone disulfonimides. 3,288,815, 11–29–66, Cl. 260—396.

Dunbar, Joseph E., to The Dow Chemical Co. Dialkanesulfonimides. 3,288,816, 11–29–66, Cl. 260—396.

Dunbar, Joseph E., to The Dow Chemical Co. Anthracene dialkanesulfonamides. 3,288,852, 11–29–66, Cl. 260—556.

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Goy, Ronald S. 3,287,786.

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Maynard, John T. 3,288,762.
Monroe, Elmer S., Jr. 3,288,367.
Schreyer, Ralph C. 3,288,760.
Tocker, Stanley. 3,288,880.
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Du Rose, Arthur H., and W. J. Pierce, to The Harshaw Chemical Co. Metal laminates and method of forming by electroplating. 3,288,574, 11–29–66, Cl. 29—194.

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Becraft, Lloyd G., and Durr. 3,288,716.

Du Shane, Raymond N., Jr.: *See*—
Maize, James W., and Du Shane. 3,288,508.

Duval, Jean-Claude M. R., to Lignes Telegraphiques & Telephoniques. Signal shape restituting receiver for carrier-current coded signals. 3,289,050, 11–29–66, Cl. 317—148.5.

Dwork, Harold K. Envelope having an elastic tie. 3,288,352, 11–29–66, Cl. 229—77.

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McConnell, Wayne V., and Moore. 3,288,814.
Martin, James C. 3,288,854.

Eaton, John L., to Pennsalt Chemicals Corp. Liquid mixtures of thioureas. 3,288,684, 11–29–66, Cl. 202—391.

Eaton Yale & Towne Inc.: *See*—
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Echols, Marvin: *See*—
Kyle, Harold E., and Echols. 3,288,857.

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Eda, Masumi, and Y. Fujishiro. Paper holding apparatus for cutting cylinder in a rolling press. 3,288,007, 11–29–66, Cl. 83—117.

Edis, Edward A., and R. V. Turner, deceased (by R. S. Turner, administrator), to A. C. Cossor Ltd. Location and repair of faults in electrical conductors. 3,289,076, 11–29–66, Cl. 324—67.

Edwards High Vacuum International Ltd.: *See*—
Dennis, Nigel T. M. 3,288,354.

Egbert, Charles W., to Borg-Warner Corp. Three pipe air conditioning system and control arrangement therefor. 3,288,205, 11–29–66, Cl. 165—22.

Eggenberger, Markus A., and P. H. Troutman, to General Electric Co. Acceleration limiting long range speed control. 3,288,160, 11–29–66, Cl. 137—27.

Egly, Richard S., and Q. R. Jeffries, to Commercial Solvents Corp. Stable nitromethane composition. 3,288,867, 11–29–66, Cl. 260—644.

Eichorn, Roger H., to Xerox Corp. Paper feed mechanism. 3,288,460, 11–29–66, Cl. 271—19.

Eickemeyer, Daniel B., and T. S. Chao, to Sinclair Research, Inc. Synthetic ester lubricants containing antioxidants. 3,288,713, 11–29–66, Cl. 252—51.5.

Eickhoff, Thomas H. Support stand. 3,288,415, 11–29–66, Cl. 248—226.

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Elter, Karl, to Farbenfabriken Bayer Aktiengesellschaft Leverkusen. Process for making dec-2-en-9-one-1-acid. 3,288,826, 11–29–66, Cl. 260—413.

Elam, Edward U., to Eastman Kodak Co. Process for preparing dialkyl carbalkoxyalkenyl and carbaroxyalkenyl phosphate esters. 3,288,891, 11–29–66, Cl. 260—971.

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El Dor Corp.: *See*—
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Elfant, Robert F., and K. R. Grebe, to International Business Machines Corp. Magnetic memory. 3,289,179, 11–29–66, Cl. 340—174.

Elfving, Thore M. Thermoelectric assembly. 3,287,923, 11–29–66, Cl. 62—3.

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Ellerd, Charles J. Articulated cargo vehicle. 3,288,491, 11–29–66, Cl. 280—410.

Ellery, George L., and A. P. Weissmuller, to The Grover Co. Magnetic signalling device for pneumatic dispatch system. 3,288,394, 11–29–66, Cl. 243—16.

Elliff, Orin S., to Justin Leather Goods Co. Billfold. 3,288,188, 11–29–66, Cl. 150—36.

Ellinger, Oscar R., to Controlex Corp. of America. Flexible remote control device. 3,287,990, 11–29–66, Cl. 74—501.

Ellsworth, Orval T. Maternity abdominal cushion. 3,287,747, 11–29–66, Cl. 5—338.

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Else, Robert K., to Automatic Electric Laboratories, Inc. Reed relay having preliminarily operating contacts. 3,289,128, 11–29–66, Cl. 335—152.

Elton, Raymond C., to United States of America, Navy. High intensity reproducible shock radiation source. 3,289,026, 11–29–66, Cl. 313—231.

Emmel, David G., to Westinghouse Air Brake Co. Remote function control by discrete pulse patterns. 3,289,166, 11–29–66, Cl. 340—163.

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Macklem, F. Sutherland. 3,288,605.

Ericsson Telephone Ltd.: *See*—
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Erlandson, Paul M., to Continental Can Co., Inc. Magnetic impulse scoring and/or cutoff of electrically conductive sections. 3,288,006, 11–29–66, Cl. 83—6.

Erlbacher, Robert W. Slip box with liner. 3,287,771, 11–29–66, Cl. 22—112.

Erman, William F., and H. C. Kretschmar, to The Procter & Gamble Co. Process for the conversion of cyclododecadiene carboxylic acid esters to 2,3,6,7,8,9-hexahydro-1H-benz[e]indene and derivatives thereof. 3,288,803, 11–29–66, Cl. 260—308.

Essel, Hermann. Pressure filter. 3,288,293, 11–29–66, Cl. 210—107.

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Cunningham, Allen B. 3,289,154.
Kirby, Robert A. 3,288,244.
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Estes, Joseph F., and H. Bruchmann, to The Haeger Potteries, Inc. Porous ceramic bodies and composite members and methods of making the same. 3,288,615, 11–29–66, Cl. 106—40.

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Eubank, William J., to American Safety Equipment Corp. Buckles for safety belts and the like. 3,287,775, 11–29–66, Cl. 24—77.

European Atomic Energy Community-Euratom: *See*—
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Euser, Pieter, to Nederlandse Centrale Organisatie Voor Toegepast-Natuurwetenschappelijk Onderzoek. Compensation radiation pyrometer. 3,287,976, 11–29–66, Cl. 73—355.

Eveson, Geoffrey F., and G. T. Richards, to Head, Wrightson, & Co. Ltd. Method and apparatus for drying and separating solid articles. 3,288,282, 11–29–66, Cl. 209—11.

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Fry, Horace P., Jr. 3,288,514.
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Farmer, Everett W., F. A. Bellucci, and M. Dinolfo, to Sanders Associates, Inc. Sweep system. 3,289,124, 11–29–66, Cl. 334—22.

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Farnham, Alford G., to Union Carbide Corp. Reaction products of isopropenyl phenols and of linear dimers thereof. 3,288,864, 11–29–66, Cl. 260—619.
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Faulconer, William M., and W. G. Fisher, to Phillips Petroleum Co. Earthen storage for volatile liquids and method of constructing same. 3,287,914, 11–29–66, Cl. 61—.5.
Favre, Robert, to Golay, Buchel & Cie, S.A. Rotary electric machine. 3,289,021, 11–29–66, Cl. 310—168.
Federbush, Max W. and A. P. Loose leaf book lock. 3,288,143. 11–29–66, Cl. 129—13.
Feenan, John, E. Jacks, and J. E. Murphy, to The English Electric Co. Ltd. Electrical fusible element having three portions of different cross-sections. 3,288,968, 11–29–66, Cl. 200—135.
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Feig, Jerome H., to Marvin Electric Mfg. Co. Light fixture. 3,288,991, 11–29–66, Cl. 240—147.
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Bobinski, Jack, Fein, and Grafstein. 3,288,802.
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Felis, Jack M. Stair climbing conveyance. 3,288,234, 11–29–66, Cl. 180—6.5.
Fellman, Morton R. Apparatus for cutting teeth in wood members. 3,288,181, 11–29–66, Cl. 144—1.
Ferguson, David. Cushioned race horseshoe. 3,288,223, 11–29–66, Cl. 168—12.
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Carr, Kenneth L. 3,289,116.
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Field, Albert. Belt holder assembly. 3,287,863, 11–29–66, Cl. 51—375.
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Fisher, Robert M. Multiple linear actuating cylinder. 3,288,036, 11–29–66, Cl. 92—62.
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Fitzpatrick, Allyn H., and T. Krzewina, to General Electric Co. Rack support system. 3,288,302, 11–29–66, Cl. 211—41.
Fitzpatrick, John R., to Aereon Corp. Aircraft. 3,288,397, 11–29–66, Cl. 244—29.
Fleck, Fritz, H. Balzer, and H. Aebli, to Sandoz Ltd. (a/k/a Sandoz A.G.). Fluorescent 1,2,3-triazole derivatives of 3-phenyl-coumarin. 3,288,801, 11–29–66, Cl. 260—308.
Fleck, Fritz, H. Balzer, and H. Aebli, to Sandoz Ltd. (a/k/a Sandoz A.G.). 1,2,3-triazole derivatives of 3-phenyl-coumarin compounds. 3,288,804, 11–29–66, Cl. 260—308.
Fleer, Thomas P., to Aurora Corp. of Illinois. Thermostatic gas regulator for baking and broiling. 3,288,366, 11–29–66, Cl. 236—15.
Fleisch, Robert. Handling apparatus. 3,288,309, 11–29–66, Cl. 212—128.
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Fleming, Norman P., to American Telephone and Telegraph Co. Apparatus to audibly identify individual conductors in a multiconductor cable. 3,288,944, 11–29–66, Cl. 179—175.3.
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Ford, Peter, J. W. Watson, and R. J. Ottewell, to Dunlop Rubber Co. Ltd. Injection mould. 3,287,767, 11–29–66, Cl. 18—30.
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Fore, Deanna: *See*—
Oliver, Joseph E. 3,288,518.
Fortunato, Vincent, to Henschel-Steinau Co. Product support engaged in the inwardly-turned lips of a channel member. 3,288,414, 11–29–66, Cl. 248—223.
Fortune, William J. Clamp saw guide. 3,287,808, 11–29–66, Cl. 33—32.
Foster, James L. Supporting and positioning mechanism for power tongs. 3,288,000, 11–29–66, Cl. 81—54.
Fox, Clarence D., and J. E. Lair, to Borg-Warner Corp. Liquid to gas converter. 3,288,207, 11–29–66, Cl. 165—40.
Fox, John J. Food warmer. 3,288,129, 11–29–66, Cl. 126—19.5.
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Frank, Robert K., A. Schneider, and W. F. Shunn, to Holley Carburetor Co. Ignition distributor. 3,289,020, 11–29–66, Cl. 310—70.
Franklin, Edmond G., to The Hoover Co. Steam and spray iron. 3,287,837, 11–29–66, Cl. 38—77.
Franklin, Virgil L. Tissue box holder for vehicles. 3,288,416, 11–29–66, Cl. 248—311.
Frankowski, Jerome J., and C. S. Garski, to Holley Carburetor Co. Governor control valve with adjustable self-locking device. 3,288,161, 11–29–66, Cl. 137—56.
Frantz, Charles E., W. E. Cawley, F. F. Vlacil, and E. R. Astley, to United States of America, Atomic Energy Commission. Explosion apparatus for flanging a tube. 3,287,947, 11–29–66, Cl. 72—56.
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Franzel, Richard M. Automatic stability control means for towed vehicles. 3,288,240, 11–29–66, Cl. 180—82.
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Fried, Josef, and A. Borman, to E. R. Squibb & Sons Inc. Steroidal compositions and method of use. 3,288,679, 11–29–66, Cl. 167—74.
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Fulton, William H. Bag holder waste basket. 3,288,325, 11–29–66, Cl. 220—65.
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Gaddis, Ray R. Shower pan drain. 3,287,742, 11–29–66, Cl. 4—191.
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Galena, Louis. Window sash latch. 3,288,509, 11–29–66, Cl. 292—238.
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Gallant, George A., and C. N. White, to United States of America, Navy. Transistor A.C. gate circuit. 3,289,013, 11–29–66, Cl. 307—88.5.
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Gary, Charles V., to Henry Valve Co. Charging and sampling valve in a closed fluid system. 3,288,162, 11–29–66, Cl. 137—223.
Gaster, Michael. Means for controlling the boundary layer over an aerofoil body. 3,288,399, 11–29–66, Cl. 244—41.
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George, Thomas J., to Hammond Organ Co. Electronic musical instrument with delayed vibrato. 3,288,907, 11–29–66, Cl. 84—1.25.
Gerfast, Sten R., and S. L. Pastor, to Minnesota Mining and Mfg. Co. Tape transport control mechanism. 3,288,386, 11–29–66, Cl. 242—55.12.
Gerhardt, Andrew H., and J. J. Schmidt, to American Motors Corp. Washing machine lint filter. 3,287,940, 11–29–66, Cl. 68—18.
Gerlach, Eduard, G.m.b.H.: *See*—
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Gersch, Josef, and H. Meglin, to Agfa Aktiengesellschaft. Film cartridge. 3,288,389, 11–29–66, Cl. 242—71.1.
Gesell, Frank A. Flexible sponge mop head. 3,287,756. 11–29–66, Cl. 15—119.
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Gibson, George M. Clothes support means for blower type dryer. 3,287,820, 11–29–66, Cl. 34—151.
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Ginaven, Marvin E., to The Bauer Bros. Co. Iris type valve. 3,288,056, 11–29–66, Cl. 100—98.

Gingher, Carl E. Clothes hanger suspension device. 3,288,308, 11–29–66, Cl. 211—123.

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Goernert, Hans J. and C. L. Fluid pressure drill guide. 3,287,998, 11–29–66, Cl. 77—55.

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Goldberg, Melvin A., and W. R. Netzbandt, to Lever Bros. Co. Anhydrous aluminum antiperspirant powder aerosol compositions and methods of preparation. 3,288,681, 11–29–66, Cl. 167—90.

Goldberg, Morris, to Goldberg Bros., Inc. Film reel. 3,288,392, 11–29–66, Cl. 242—74.

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Gongwer, Calvin A., to Aerojet-General Corp. Method and apparatus for projecting underwater explosive. 3,288,064, 11–29–66, Cl. 102—22.

Gonski, Joseph, to Westinghouse Air Brake Co. Variable width boring head assembly for continuous mining machine. 3,288,535, 11–29–66, Cl. 299—59.

Goodbar, Reid C., and R. M. Simril, to Riegel Textile Corp. Method of making stretchable cotton fabrics. 3,287,788, 11–29–66, Cl. 28—76.

Goodman, Robert M. Electro-optical switching device using two photosensitive cells with an opaque housing. 3,289,002, 11–29–66, Cl. 250—209.

Goodman, Stanley E. Bandages. 3,288,139, 11–29–66, Cl. 128—156.

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Gonski, Joseph, to Westinghouse Air Brake Co. Continuous mining machine. 3,288,533, 11–29–66, Cl. 299—57.

Gonski, Joseph, to Westinghouse Air Brake Co. Continuous miner having relatively adjustable transmission housing for boring shafts. 3,288,534, 11–29–66, Cl. 299—59.

Gordon, Edward L. Automobile door safety lock. 3,288,524, 11–29–66, Cl. 296—146.

Gorham, William F., to Union Carbide Corp. Para-xylylene copolymers. 3,288,728, 11–29–66, Cl. 260—2.

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Gotze, Johannes, and H. Kampfer, to Agfa Aktiengesellschaft. Optically sensitized photographic silver halide emulsions. 3,288,610, 11–29–66, Cl. 96—106.

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Gough, Martin J. and M. E. Window sash locks. 3,288,510, 11–29–66, Cl. 292—251.

Gouin, Robert L. A. Aircraft having disc-shaped rotating wings. 3,288,396, 11–29–66, Cl. 244—17.23.

Goulding, Geoffrey L., and K. P. Barr, to Imperial Chemical Industries Ltd. Method of selectively weakening crimped polyester filaments and fibers. 3,287,787, 11–29–66, Cl. 28—76.

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Graham, Ward A., to Stratford Engineering Corp. Floating catalyst bed contactor. 3,288,567, 11–29–66, Cl. 23—288.

Grames, Lloyd D., and W. H. Rayburn, to The Air Preheater Co. Suspended chain matrix. 3,288,204, 11–29–66, Cl. 165—5.

Grankowski, Eugene E., to Verson Allsteel Press Co. Diaphragm type hydraulic press. 3,287,950, 11–29–66, Cl. 72—63.

Graves, John C. Gun rack for shoulder weapon having telescope sight. 3,288,304, 11–29–66, Cl. 211—64.

Greanias, Evon C., and P. F. Meagher, to International Business Machines Corp. Photosensitive electronic servo apparatus for curve following. 3,289,004, 11–29–66, Cl. 250—219.

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Green, Donald E., to Dow Corning Corp. Silicon modified polyamide-polyimide polymers. 3,288,754, 11–29–66, Cl. 260—47.

Green, Richard, and R. T. Gottesman, to Tenneco Chemicals, Inc. Composition for stabilizing polyacetals comprising (1) N-acyl-p-aminophenol, (2) a superpolyamide, and (3) a diester of a thiodialkanoic acid. 3,288,885, 11–29–66, Cl. 260—857.

Green, William, and H. H. Topper, to Imperial Chemical Industries Ltd. Coating process. 3,288,635, 11–29–66, Cl. 117—128.4.

Greenbaum, Sheldon B., to Hooker Chemical Corp. Method of controlling pests with organothiophosphate derivatives of halogenated cyclic sulfones. 3,288,671, 11–29–66, Cl. 167—33.

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Greenlee, Sylvan O., C. L. Weldner, and G. J. Crocker, to Ciba Ltd. Polyepoxide products cured with sulfur containing polyarid compounds. 3,288,766, 11–29–66, Cl. 260—835.

Gregory, Jack E. Portable gymnasium standard. 3,288,413, 11–29–66, Cl. 248—158.

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Grlehl, Wofgang, and H. Luckert, to Inventa A.G. Fur Forschung and Patentverwertung. Process for the manufacture of copolyetheresters. 3,288,755, 11–29–66, Cl. 260—47.

Grimm, Keith H., to I-T-E Circuit Breaker Co. High capacity low impedance craneway duct having L-shaped bus bars mounted in a paired phase arrangement. 3,288,911, 11–29–66, Cl. 174—68.

Groff, Emory L., to Poor & Co. Rail joint. 3,288,360, 11–29–66, Cl. 238—243.

Groo, Floyd: *See*—
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Grover Co., The: *See*—
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Grunbaum, Heinrich, to Dr. C. Schachenmann & Co. Friction clutch. 3,287,935, 11–29–66, Cl. 64—30.

Gruodis, Algirdas J., to International Business Machines Corp. Switching circuits employing surface potential controlled semiconductor devices. 3,289,009, 11–29–66, Cl. 307—88.5.

Guerth, Fritz A. Magnetic readout and display system. 3,289,190, 11–29–66, Cl. 340—174.1.

Guglielotta, Paul. Movable roof structure. 3,288,158, 11–29–66, Cl. 135—5.

Guimento, Angelo: *See*—
Van Paassen, Hugo L. L., and Guimento. 3,288,638.

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Gumboldt, Albert: *See*—
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Gundlach, Robert W.: *See*—
Snelling, Christopher, Gundlach, Mott, and Hope. 3,288,602.

Gurian, Steven D., and M. M. Bernstein. Pool ladder. 3,288,248, 11–29–66, Cl. 182—118.

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Gutzman, Edward H., to Hoover Ball and Bearing Co. Spring assemblies. 3,288,458, 11–29–66, Cl. 267—107.

Guyton, William V., and H. Bartch. Transistorized ignition system. 3,288,125, 11–29–66, Cl. 123—148.

Haan, Gordon J., J. M. Jessup, and R. Namon, to Lear Siegler, Inc. Method and apparatus for presetting axial load on a bearing assembly. 3,287,966, 11–29–66, Cl. 73—140.

Hachmuth, Karl H., to Phillips Petroleum Co. Fluidized dehydrogenation process and apparatus. 3,288,878, 11–29–66, Cl. 260—683.3.

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Haering, Rudolph R., and M. G. Miksic, to International Business Machines Corp. Thin film transistor and method of fabrication. 3,289,054, 11–29–66, Cl. 317—235.

Hahn, Laurence C. Dock and dock bracket. 3,287,919, 11–29–66, Cl. 61—48.

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Kuceski, Vincent P. 3,288,794.
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Hall, Charles R., and J. E. Stonis, to The C. P. Hall Co. of Illinois. Brominated fatty acid amides. 3,288,822, 11–29–66, Cl. 260—404.

Hall, Henry J. Method of making and harvesting ice. 3,287,926, 11–29–66, Cl. 62—71.

Hall, Malcolm S., to Weber Industries, Inc. Submersible pump. 3,288,074, 11–29–66, Cl. 103—87.

Hall, Thomas N., and K. G. Shipp, to United States of America, Navy. Polynitrodiol and method of preparation. 3,288,863, 11–29–66, Cl. 260—615.

Hallerbach, Dieter, to Richardson-Merrell Inc. Dispensing container. 3,288,277, 11–29–66, Cl. 206—42.

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Hamel, Denis, to Societe Anonyme dite: Pneumatiques, Caoutchouc Manufacture et Plastiques Kleber Colombes. Flexible joints. 3,288,500, 11–29–66, Cl. 287—85.

Hamilton, Douglas D. Boom and grapple. 3,288,313, 11–29–66, Cl. 214—147.

Hammann, William C.: *See*—
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Hammond, James D., J. W. Payne, and L. A. Castler, to Mobil Corp. Hydrocarbon dealkylation process. 3,288,876, 11–29–66, Cl. 260—672.

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George, Thomas J. 3,288,907.

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Hanneman, Walter M. Drilling and thread forming screw. 3,288,015, 11–29–66, Cl. 85—47.

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Hanson, Raymond F., to General Electric Co. Direct-current low voltage regulator utilizing a transistor. 3,289,092, 11–29–66, Cl. 330—16.

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Harnan, Arthur A., and C. W. Moberly, to Phillips Petroleum Co. Polymerization of a 1-olefin in the presence of a tertiary amine oxide and a coordination catalyst. 3,288,773, 11–29–66, Cl. 260—93.7.

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Hatfield, John G., and R. M. Murray, to AMP Inc. Electrical terminal means. 3,288,915, 11–29–66, Cl. 174—94.

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Hayakawa, Yoshihide, to Fuji Photo Film Co., Ltd. Photographic emulsion of silver halide. 3,288,612, 11–29–66, Cl. 96—114.

Hayashi, Izuo, to Bell Telephone Laboratories, Inc. Variable frequency phase shift oscillator utilizing field-effect transistors. 3,289,102, 11–29–66, Cl. 331—109.

Haydon, Arthur W., to Tri-Tech, Inc. Time totalizer system for telephone circuits and the like. 3,288,934, 11–29–66, Cl. 179—8.

Hayner, Paul F., and K. E. Mayo, to Sanders Associates, Inc. Gyroscope. 3,287,982, 11–29–66, Cl. 74—5.7.

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Hechtle, Emil, to Raliant Pen Corp. Ball-point pen mechanism. 3,288,115, 11–29–66, Cl. 120—42.03.

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Heiseller, George W., to Boston Machine Works Co. Coating mechanism for skived shoe soles. 3,288,106, 11–29–66, Cl. 118—100.

Hempel, Charles H., and H. E. Pleuss, to Heresite & Chemical Co. Coating composition containing phenol–formaldehyde resin and a polyethylene glycol. 3,288,745, 11–29–66, Cl. 260—33.2.

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Heymer, Gero, A. Gumboldt, and H. Harnisch, to Knapsack-Griesheim Aktiengesellschaft. Process for the manufacture of titanium trichloride and aluminum chloride mixed crystals. 3,288,723, 11–29–66, Cl. 252—442.

Higashiuchi, Kazuo, to J. R. Short Milling Co. Alkyl peroxide addition compounds. 3,288,861, 11–29–66, Cl. 260—610.

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Himel, Shinichiro, M. Takine, and K. Akita, to Kanegafuchi Chemical Industry Co., Ltd. Blend of vinyl chloride resin and graft copolymer prepared by consecutive polymerization of monomers onto butadine polymer. 3,288,886, 11–29–66, Cl. 260—876.

Hinds, Cyril, to Oil Center Research, Inc. Stuffing box. 3,288,473, 11–29–66, Cl. 277—58.

Hinman, Jack W., and R. B. Kelly, to The Upjohn Co. a-Amino dibasic acid hydrazides. 3,288,848, 11–20–66, Cl. 260—518.

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Hirs, Gene. Filter screen. 3,288,296, 11–29–66, Cl. 210—232.

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Kuceski, Vincent P., to The C. P. Hall Co. of Illinois. Method of making amides of dimethylamine and piperazine. 3,288,794, 11–29–66, Cl. 260—268.

Kuceski, Vincent P., to The C. P. Hall Co. of Illinois. Brominated and chlorinated amides and process for making same. 3,288,821, 11–29–66, Cl. 260—404.

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Monsanto Research Corp.: *See*—
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Murray, Darrell E., E. F. Miller, Jr., and H. R. Williams. Combined miss-distance indicator and telemetry system. 3,289,204, 11–29–66, Cl. 343—7.5.

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Mustonen, Erkki O. Apparatus for regulating the flow of stock onto a forming wire in fourdrinier type paper making machines and the like. 3,288,668, 11–29–66, Cl. 162—347.

Muto, Kenji, to Akai Electric Co., Ltd. Drop-outs counter. 3,288,986, 11–29–66, Cl. 235—92.

Myers, Donald E., J. F. List, and J. C. Bowman, to Aero Service Corp. Map making and apparatus therefor. 3,288,606, 11–29–66, Cl. 96—27.

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McCall, Richard C., to Controls for Radiation, Inc. Thermoluminescent dosimeter element readout apparatus. 3,288,997, 11–29–66, Cl. 250—71.5.

McCallum, John, to General Electric Co. Water-activated battery. 3,288,649, 11–29–66, Cl. 136—100.

McCarthy, John J. Means for treating surface wounds. 3,288,140, 11–29–66, Cl. 128—248.

McClarney, Harry W. Apparatus to construct masonries. 3,287,782, 11–29–66, Cl. 25—1.

McClay, William C., and J. A. Walker, to United States of America, Navy. Gated unijunction oscillator with feedback control. 3,289,104, 11–29–66, Cl. 331—111.

McConnell, Wayne V., and W. H. Moore, to Eastman Kodak Co. Epoxidized 4-methylenecyclohexanemethyl esters and resins therefrom. 3,288,814, 11–29–66, Cl. 260—348.

McCormick, Hamilton L., deceased; by S. M. McCormick, executrix, to General Motors Corp. Cooled gas turbine vanes. 3,287,906, 11–29–66, Cl. 60—39.51.

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McDill, Laura. Light regulating panel screen. 3,287,873, 11–29–66, Cl. 52—675.

McEuen, Robert B.: *See*—
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McGhee, John W.: *See*—
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McGill, Howard L.: *See*—
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McIlwain, Melvin C.: *See*—
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McIlwraith, Charles G., and K. E. Coughlin, to General Dynamics Corp. Acoustic signaling system. 3,289,152, 11–29–66, Cl. 340—5.

McIntosh, Euell K., and K. R. Baugh, to Monsanto Co. Apparatus for twisting yarn. 3,287,890, 11–29–66, Cl. 57—77.4.

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McKenzie, William G., to Walker Mfg. Co. Pump. 3,288,072, 11–29–66, Cl. 103—43.

McLean, Clarence F., J. C. and D. R. Inserted tooth saw. 3,288,180, 11–29–66, Cl. 143—145.

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McLean, Clarence F., J. C. and D. R. 3,288,180.

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McLean, Clarence F., J. C. and D. R. 3,288,180.

McMath, Paul L.: *See*—
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McMillan, George W. Fluid pressure operated bottom hole pump. 3,288,081, 11–29–66, Cl. 103—234.

McMurray, Thomas E., and E. C. Knoblock, to M. B. Spinner Co.—a Division of Textron, Inc. Slug retaining pipe tap. 3,287,997, 11–29–66, Cl. 77—42.

McNair, Irving M., Jr., and C. A. Young, to Bell Telephone Laboratories, Inc. Apparatus for visually indentifying conductor pairs in a multiconductor telephone cable with multidigital numbers. 3,288,945, 11–29–66, Cl. 179—175.3.

McNulty, James F., to Automation Industries, Inc. Means for separately controlling the filament current and voltage on an X-ray tube. 3,289,000, 11–29–66, Cl. 250—103.

McRoskey, Leonard H., to Republic Tool & Mfg. Corp. Improved electric switch with coil spring contact. 3,288,948, 11–29–66, Cl. 200—6.

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Nagaoka, Noriyuki, to Kabushiki Kaisha Taihei Seisakusho. Work ejection device for multiplaten hot presses and the like. 3,288,274, 11–29–66, Cl. 198—221.

Nakamura, Tetsuro, to Nippon Electric Co. Ltd. Semiconductor device. 3,288,656, 11–29–66, Cl. 148—33.5.

Namon, Richard: *See*—
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Napier, Donald R., and O. L. Riggs, Jr., to Continental Oil Co. Method of inhibiting corrosion. 3,288,555, 11–29–66, Cl. 21—2.7.

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Nash, Floyd M., to Jacuzzi Bros., Inc. Hydrotherapy equipment. 3,287,741, 11–29–66, Cl. 4—180.

Nasvytis, Algirdas L., to TRW Inc. Multiroller drive assembly and disengaging apparatus. 3,287,986, 11–29–66, Cl. 74—204.

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National Frost Protection Co., Inc.: *See*—
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Natta, Giulio, E. Beati, and F. Severini, to Montecatini Societa Generale per l'Industria Mineraria e Chimica. Process for preparing graft copolymers from linear amorphous non-crystallizable polymers of alpha-olefins or copolymers of alpha-olefins with each other and/or ethylene. 3,288,739, 11–29–66, Cl. 260—29.6.

Nayler, Irenie M.: *See*—
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Marshall, David D., and Nayler. 3,288,322.

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Newmark, Harold L., and R. Roncalli, to Hoffman-La Roche Inc. Parenteral sulfonamide compositions and processes. 3,288,675, 11–29–66, Cl. 167—51.5.

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Niles, Earl T., and B. H. Seaman, to The Dow Chemical Co. Nitrogenous base composition. 3,288,660, 11–29–66, Cl. 149—36.

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Nippon Kokuyn Tetsudo (known in England as Japanese National Railways): *See*—
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Schulte, Anthonius M., and Steenberg. 3,289,178.
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Norton, Theodore A. Dock board assembly for a vehicle. 3,288,522, 11–29–66, Cl. 296—61.

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Oberster, Arthur E., and L. H. Sarett, to Merck & Co., Inc. 16-methyl derivatives of progesterone. 3,288,818, 11–29–66, Cl. 260—397.45.

O'Brien, Leo J., L. R. W. Holm, and F. Walter, to Union Oil Co. of California. Secondary oil recovery method. 3,288,212, 11–29–66, Cl. 166—9.

O'Connell, John J., and L. J. Mann, to General Motors Corp. Refrigerating apparatus. 3,287,930, 11–29–66, Cl. 62—277.

O'Connell, John J., and L. J. Mann, to General Motors Corp. Refrigerating apparatus. 3,287,933, 11–29–66, Cl. 62—441.

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Salto, Rinaldo. 3,288,263.

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Omura, Ichiro, and M. Kuroda, to Kabushiki Kaisha Hitachi Seisakusho. Automatic sensitivity selector for a mass spectrometer multiscale recorder using a single ion collector. 3,288,994, 11–29–66, Cl. 250—41.9.

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Osuch, Carl, to Monsanto Co. Lubricating oil compositions containing alkenyl succinic anhydrides. 3,288,714, 11–29–66, Cl. 252—57.

Othmer, Donald F. Method for multi flash evaporation to obtain fresh water from aqueous solution. 3,288,686, 11–29–66, Cl. 203—11.

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Ott, Gustav H.: *See*—
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Page, Robert M. Radar system with phase coherent intermediate frequency signals. 3,289,201, 11–29–66, Cl. 243—5.

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Palmer, Charles E., and J. S. Lemanski, to Monsanto Co. Plastic container and blank. 3,288,349, 11–29–66, Cl. 229—39.

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Pansini, Andrew L. Device for cleaning swimming pools. 3,287,755, 11–29–66, Cl. 15—1.7.

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Passovoy, Alexander E. Door frame assembly. 3,287,856, 11–29–66 Cl. 49—504.

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Patent Button Co., The: *See*—
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Patnode, Leroy K. Foldable A-frame trailer body. 3,288,521, 11–29–66, Cl. 296—23.

Paton, Joseph H., and A. F. Pettet, to Frame Corp. Oil filter cartridge. 3,288,299, 11–29–66, Cl. 210—487.

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Pawloski, Chester E., to The Dow Chemical Co. o-(2-propynyloxy)benzoates. 3,288,839, 11–29–66, Cl. 260—474.

Pawloski, Chester E., to The Dow Chemical Co. 2-Propynyl salicylate. 3,288,840, 11–29–66, Cl. 260—474.

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Pereny, Louis; deceased by E. Pereny, executrix, P. Creager, Jr., and T. N. Zinck, to Protective Treatments, Inc. Drape. 3,288,135, 11–29–66, Cl. 128—132.

Perez, George R. and J. A., to American Machine & Foundry Co. Automatically released couplings. 3,287,781, 11–29–66, Cl. 24—230.

Perez, Guillermo, to Royal Typewriter Co., Inc. Bounceless switch construction. 3,288,970, 11–29–66, Cl. 200—159.

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Perrault, Ralph E., A. C. Halter, and P. L. McMath, to Allis-Chalmers Mfg. Co. Automatic gauge control with manual adjustment. 3,287,946, 11–29–66, Cl. 72—8.

Perrin, Howard W., and J. D. Sine, said Sine assor. to Honeywell Inc. Disposable immersion-type thermocouple. 3,288,654, 11–29–66, Cl. 136—234.

Perry, Frederick G., to Texas Instruments Inc. Electric switch having improved calibration and adjusting means. 3,288,967, 11–29–66, Cl. 200—122.

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Pezzillo, Rinaldo F., to Pall Corp. Canned pump having reduced hydraulic thrust. 3,288,073, 11–29–66, Cl. 103—87.

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Pfeifer, Willi, to Zinser-Textilmaschinen Gesellschaft. Apparatus for controlling winding operations in a spinning machine. 3,287,891, 11–29–66, Cl. 57—99.

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Harnan, Arthur A., and Moberly. 3,288,773.
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Massey, Phillip S. 3,287,915.
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Piber, Earl T., to Cutler-Hammer, Inc. Push-push switch convertible to momentary switch. 3,288,973, 11-29-66, Cl. 200—169.

Pick, George G., to Sylvania Electric Products Inc. Housing for a mechanically alterable memory system. 3,289,047, 11-29-66, Cl. 317—101.

Pierce, Edwin F., to E. and P. Engineering Research and Development Corp. Linear potentiometers. 3,289,138, 11-29-66, Cl. 338—183.

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Piester, Loyd W., to Pittsburgh Plate Glass Co. Oxychlorination process. 3,288,868, 11-29-66, Cl. 260—654.

Pittsburgh Plate Glass Co.: *See*—
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Piguet, Alfred R.: *See*—
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Pinckaers, Balthasar H., to Honeywell Inc. Semiconductor sine wave inverter. 3,289,067, 11-29-66, Cl. 321—2.

Piper, Alfred C.: *See*—
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Pittenger, John L., to North American Properties, Inc. Pallet cart. 3,288,483, 11-29-66, Cl. 280—79.1.

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Platz, Elwood T., B. Di Marco, and A. F. Kendall, to I-T-E Circuit Breaker Co. Manual and automatic switch with handle lock and indicator. 3,288,966, 11-29-66, Cl. 200—116.

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Pluckebaum, Paul. Assemblable formwork for reinforced concrete structures. 3,288,427, 11-29-66, Cl. 249—184.

Plump, Ralph E., to General Electric Co. Projection system. 3,288,927, 11-29-66, Cl. 178—7.5.

Plunguian, Mark, to Hercules Inc. Process for coating cellulosic substrates. 3,288,630, 11-29-66, Cl. 117—62.

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Polaroid Corp.: *See*—
Land, Edwin H., Chen, and Gold. 3,288,609.

Polich, Richard L.: *See*—
Flemings, Merton C., and Polich. 3,288,601.

Pollak, Kurt, to United States of America, Atomic Energy Commission. Hydro-pneumatic apparatus for changing critical configuration of nuclear fuel mass. 3,288,682, 11-29-66, Cl. 176—28.

Pollock, Mary M. Device for leveling pans. 3,288,130, 11-29-66, Cl. 126—215.

Polleys, William V., to Texas Instruments Inc. Electrical contact element and subassembly. 3,288,971, 11-29-66, Cl. 200—166.

Polycarbide Corp.: *See*—
Abos, Ralph L. 3,288,573.

Polymer Corp., The: *See*—
Richart, Douglas S. 3,288,727.

Polysius G.m.b.H.: *See*—
Bade, Erich. 3,288,450.

Ponts, Donald F., to The Dow Chemical Co. Process for removal of tar from benzoic acid oxidation reactor mass. 3,288,865, 11-29-66, Cl. 260—621.

Poole, Sidney W.: *See*—
Perry, Thomas E., Rinebolt, Place, and Poole. 3,288,589.

Poor & Co.: *See*—
Groff, Emory L. 3,288,369.

Pope, Karl D.: *See*—
Price, Thomas D., and Pope. 3,287,754.

Poritz, Nathan. Multi-color adapted ball point pen. 3,288,116, 11-29-66, Cl. 120—42.1.

Porret, Daniel, G. H. Ott, and R. Huwyler, to Ciba Ltd. Telomers containing epoxy groups. 3,288,751, 11-29-66, Cl. 260—47.

Portal, Marcel L.: *See*—
Hess, Ernst-Gunter, and Portal. 3,287,769.

Porto, Sergio P. S.: *See*—
Ballman, Albert A., and Porto. 3,289,100.

Post, Charles W. Golf tee for correcting a hook or slice. 3,288,470, 11-29-66, Cl. 273—207.

Posture Products, Inc.: *See*—
Davis, Wilton J. 3,288,176.

Postmaster General, Her Majesty's: *See*—
Jones, Frederick. 3,289,074.

Powell, Gordon F. W.: *See*—
Molins, Desmond W., Powell, and Pocock. 3,288,147.

Powell River Ltd.: *See*—
Hallonquist, Earland G., Jaworsky, and Sturmlinger. 3,287,855.

Power Jets (Research and Development) Ltd.: *See*—
Flint, John A., and George. 3,288,225.

Powers, Wesley H. Coin operated adding machine for grocery chain store carts. 3,288,478, 11-29-66, Cl. 280—33.99.

Pratt Mfg. Corp.: *See*—
Cochrane, Richard H. 3,288,013.

Pratt & Whitney, Inc.: *See*—
Hollis, Everett A. 3,287,811.

Prescott, George R.: *See*—
Mabry, Milton M., Prescott, and Saperstein. 3,288,981.

Prescott, Robert E., and W. E. Whidden, to Bell Telephone Laboratories Inc. Adjustable mounting means for photocells located in outdoor structure. 3,289,005, 11-29-66, Cl. 250—239.

Press, Reece W., Jr., to United Engineers & Constructors Inc. Wall structure for a nuclear reactor containment vessel. 3,288,098, 11-29-66, Cl. 250—83.3.

Preston, Harold C. Insulator locking pin. 3,288,917, 11-29-66, Cl. 174—150.

Preti, Jean-Claude, to Societe de Fabrication d'Instruments de Mesure (S.F.I.M.). Apparatus for detecting the presence of objects by electromagnetic radiation. 3,289,202, 11-29-66, Cl. 343—5.

Price, Charles C., to The General Tire & Rubber Co. Polymerization of phenyl glycidyl ether. 3,288,750, 11-29-66, Cl. 260—47.

Price, George B.: *See*—
Marshall, John L., Jr., and Price. 3,287,977.

Price, George R., to Safety Devices, Inc. Safety device for typesetting machines. 3,288,276, 11-29-66, Cl. 199—52.

Price, Thomas D., and K. D. Pope. Collapsible surfboard. 3,287,754, 11-29-66, Cl. 9—310.

Priese, Werner K., to Hills-McCanna Co. Ball valve unit. 3,288,430, 11-29-66, Cl. 251—315.

Priewe, Hans, and K. Gutsche, to Schering A.G. 2-tetrahydrofurfuryl-, 2-aliphatic-, and 2-aliphaticet sulfonamido-5-alkoxy-pyrimidines. 3,288,793, 11-29-66, Cl. 260—256.5.

Prins, Klaas, and H. Dunfee. Centrifugal type separator. 3,288,286, 11-29-66, Cl. 209—211.

Priamo Safety Corp.: *See*—
De Vries, Eduard R. 3,288,618.

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Procter & Gamble Co., The: *See*—
Erman, William F., and Kretschmar. 3,288,803.
Lyness, Warren I., and O'Connor. 3,288,858.
Lyness, Warren I., and O'Connor. 3,288,859.
Lyness, Warren I., O'Connor, and Berry. 3,288,860.

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Weber, Robert L., III. 3,288,556.

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Pereny, Louis, Creager, and Zinck. 3,288,135.

Proudlove, Joseph, to Pennsalt Chemicals Corp. Drag bushing for a centrifuge. 3,288,361, 11-29-66, Cl. 233—23.

Puente, Jose R., to Leaming Industries, Inc. Adjustable framework for molding. 3,287,765, 11-29-66, Cl. 18—19.

Pullman Inc.: *See*—
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Leduc, Joseph A. M. 3,288,692.

Pustinger, Richard M.: *See*—
Doyle, Edward J., and Pustinger. 3,288,951.

Pyrotel Corp.: *See*—
Mason, Albert C., and Baker. 3,287,975.

Quarles, Frederick H., III: *See*—
Goff, Milton L., III, and Quarles. 3,288,403.

Rabinow, Jacob, to Control Data Corp. Character normalizing reading machine. 3,289,164, 11-29-66, Cl. 340—146.3.

Race, Richard T., to Motorola, Inc. Oceanographic apparatus. 3,287,753, 11-29-66, Cl. 9—8.

Radiant Pen Corp.: *See*—
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Radiation Inc.: *See*—
Kent, Harry W., France, and Likens. 3,288,301.

Radio Corp. of America: *See*—
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Knight, Mark B. 3,289,197.
Weisberg, Harry. 3,288,662.

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Rainton, Macolm P.: *See*—
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Raisanen, Walfred R., to Sperry Rand Corp. Pulse circuit generating underlapped clock pulses employing two controlled semiconductive switches coupling two tunnel diodes. 3,289,012, 11-29-66, Cl. 307—88.5.

Rakhorst, Albertus, to N. V. Stoompspinnerij "Twenthe." High speed cotton draw frame. 3,287,768, 11-29-66, Cl. 19—200.

Rakus, Josef M. Shoe heel and attachment means therefor. 3,287,833, 11-29-66, Cl. 36—36.

Ralston, Paul H., to Calgon Corp. Method and composition for inhibiting scale deposition in oil-producing formations and equipment. 3,288,217, 11-29-66, Cl. 166—42.

Ramillon, Rene. Securing system of the abutment type for skis. 3,288,476, 11-29-66, Cl. 280—11.35.

Randolph, Albert M.: *See*—
Davis, John, Nuttall, Randolph, and Tomerlin. 3,289,210.

Rank-Bush Murphy Ltd.: *See*—
Baldwin, John L. E. 3,288,924.

Ranshaw, James H.: *See*—
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Rausch, Douglas A., to The Dow Chemical Corp. Metallized rocket propellants containing azides. 3,288,659, 11-29-66, Cl. 149—36.

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Grames, Lloyd D., and Rayburn. 3,288,204.

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Reagan, Eileen S.: *See*—
Reagan, Eugene P., and Reed. 3,288,102.

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Gale, William A., and Reburn. 3,288,560.

Reece, Michael P., to Associated Electrical Industries Ltd. Improved gas-bast electric circuit interrupter. 3,288,969, 11-29-66 Cl. 200—148.

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Reedy Corp., The: *See*—
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Regiutti, Aristide. Handle for closing the garment-pressing plates of room valets. 3,287,836, 11-29-66, Cl. 38—71.

Reichard, Harold F., to Union Carbide Corp. Nuclear reactor fuel production. 3,288,595, 11-29-66, Cl. 75—84.1.

Reich, Gilbert H. Hydrotherapy installation for conventional bathtub. 3,288,134, 11-29-66, Cl. 128—66.

Reid, John G., Jr., to American Radiator & Standard Sanitary Corp. Decrystallizer means for double effect absorption refrigeration system. 3,287,928, 11-29-66, Cl. 62—141.

Reilly, Thomas A., J. R. Beckman, and H. K. Bishop, to Union Carbide Corp. Leak-resistant dry cell. 3,288,650, 11-29-66, Cl. 136—107.

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Schulte, Karl E., and Reisch. 3,288,809.

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Replogle, Edward H., to American Safety Equipment Corp. One way restraint apparatus. 3,288,254, 11-29-66, Cl. 188—82.3.

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Reserve Mining Co.: *See*—
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Reynolds, Perry J., to Huck Mfg. Co. Blind tow-piece fastener. 3,288,016, 11-29-66, Cl. 85—70.

Rheinmetall G.m.b.H., Firma: *See*—
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Rheinstahl Huttanwerke Aktiengesellschaft: *See*—
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Rhone-Poulenc S.A.: *See*—
Cometti, Andre, and Debarre. 3,288,831.
Lafont, Pierre, and Vivant. 3,288,812.

Rhodes, Herbert C. Sifter and lifter for flour and the like. 3,288,287, 11-29-66, Cl. 209—236.

Rhyner, Heinz: *See*—
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Rice, Rex, to International Business Machines Corp. Computer data storage system. 3,289,175, 11-29-66, Cl. 340—172.5.

Rich, Harold M., and B. L. Weller, to Kitchens of Sara Lee, Inc. Crush-proof sealed package. 3,288,278, 11-29-66, Cl. 206—46.

Richards, George T.: *See*—
Eveson, Geoffrey F., and Richards. 3,288,282.

Richardson-Merrell Inc.: *See*—
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Richart, Douglas S., to The Polymer Corp. Adherent polymers of 3,3-bis-(chloromethyl)oxetane containing a nitroso compound. 3,288,727, 11-29-66, Cl. 260—2.

Rickard, Charlotte I.: *See*—
Mathison, Robert V., Bletzinger, and Rickard. 3,288,141.

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Bevilacqua, Joseph. 3,287,860.

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Goodbar, Reid C., and Simril. 3,287,788.

Riggs, Olen L., Jr.: *See*—
Napier, Donald R., and Riggs. 3,288,555.

Rightmire, Robert A., to The Standard Oil Co. Electrical energy storage apparatus. 3,288,041, 11-29-66, Cl. 136—6.

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Rinehuls, Richard: *See*—
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Rinehuls, Robert: *See*—
Ulbing, Otmar M. 3,289,132.

Riordan, John D.: *See*—
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Ristau, Theodore F., to General Motors Corp. Adjustable toeboard and control pedal for vehicles. 3,288,239, 11-29-66, Cl. 180—78.

Ritter, Jacob Kom. Ges., Firma: *See*—
Ritter, Wilhelm. 3,288,114.

Ritter, Wilhelm, to Firma Jacob Ritter Kom. Ges. Writing implement. 3,288,114, 11-29-66, Cl. 120—43.03.

Robb, Ernest W., II: *See*—
Bayley, Abraham, Robb, and Carpenter. 3,288,146.

Roberts, Richard S.: *See*—
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Robertshaw Controls Co.: *See*—
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Robertson, Douglas C. B.: *See*—
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Cox, Clifford B., and Valdespino. 3,288,100.
Cox, Clifford B., and Valdespino. 3,288,100.

Robinson, Cecil S., to Robinson Technical Products, Inc. Shock absorber for pumps. 3,288,455, 11-29-66, Cl. 267—1.

Robinson Technical Products, Inc.: *See*—
Robinson, Cecil S. 3,288,455.

Robinson, Myron L., and D. C. Hill. Method for coupling a plastic pipe to a metal pipe. 3,287,802, 11-29-66, Cl. 29—508.

Roethel, John H. Door lock. 3,288,507, 11-29-66, Cl. 292—53.

Rogers, Wesley D., Jr.: *See*—
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Rohm & Haas Co.: *See*—
Hurwitz, Marvin J., and Aschkenasy. 3,288,707.

Rohrberg, Roderick G., H. J. Heckler, and D. D. Gaston, to North American Aviation Inc. Heat stress relieving apparatus. 3,288,980, 11-29-66, Cl. 219—125.

Roitz, Felix F.: *See*—
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Bill, Arthur. 3,287,907.
Colville, Francis J. 3,288,374.
Pike, Malcolm R. 3,288,373.

Romanowski, Albert F., to Bowser, Inc. Automatic nozzle with safety shutoff valve. 3,288,179, 11-29-66, Cl. 141—225.

Romay, Cletus, to Welsh Co. Swivel connection. 3,288,502, 11-29-66, Cl. 287—91.

Romero, Andres: *See*—
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Roncalli, Raffaele: *See*—
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Roosa, Vernon D. Pump governor. 3,288,124, 11-29-66, Cl. 123—140.

Rosaen, Borje O., to The Rosaen Filter Co. Mobile filter with contaminant collecting means. 3,288,289, 11-29-66, Cl. 210—96.

Rosaen, Borje O., to The Rosaen Filter Co. Bayonet filter device. 3,288,291, 11-29-66, Cl. 210—90.

Rosaen Filter Co., The: *See*—
Rosaen, Borje O. 3,288,289.
Rosaen, Oscar E. 3,288,290.
Rosaen, Borje O. 3,288,291.

Rosaen, Oscar E., to The Rosaen Filter Co. Filter device. 3,288,290, 11-29-66, Cl. 210—90.

Rosbotham, Ian D.: *See*—
Chapman, John F., and Rosbotham. 3,288,732.

Rose, Willis E., to Dresser Industries, Inc. Braking device for rotary positive displacement gas meter in a pilot-lighted gas burning system. 3,288,197, 11-29-66, Cl. 158—115.

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Goldman, Jerome and M., and Rosen. 3,288,110.

Rosenberry, George M., Jr., to General Electric Co. Voltage regulator. 3,289,071, 11-29-66, Cl. 322—28.

Rosenthal, Arnold J., and C. Cipriani, to Celanese Corp. of America. Solution of polyhexamethylene terephthalamide in a solvent comprising formic acid and a compound selected from sulfinic acid hydrogen chloride and mixtures thereof. 3,288,738, 11-29-66, Cl. 260—29.2.

Rosenthal, Sol R. Tobacco article. 3,288,145, 11-29-66, Cl. 131—4.

Ross, William D., and D. K. Moeller, to J. J. Tourek Mfg. Co. Ball joint. 3,288,501, 11-29-66, Cl. 287—90.

Rotn, Ernest E., and H. E. Tanner, to Alvey Conveyor Mfg. Co. Case stacking conveyor system. 3,288,269, 11-29-66, Cl. 198—35.

Roth, Gerald C., R. C. Tringali, and J. F. Hopp, to Union Special Machine Co. Blindstitch sewing machine. 3,288,094, 11-29-66, Cl. 112—178.

Rotork Engineering Co., Ltd.: *See*—
Fry, Jeremy J. 3,288,962.

Rotwein, Joseph, and A. E. Friedrich; said Friedrich assor. to said Rotwein. Identification card provided with combination locking means. 3,287,839, 11-29-66, Cl. 40—2.2.

Rouse, Melvin L. Combination packer, and pump anchor, 3,288,220, 11-29-66, Cl. 166—138.

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Rowen, John H., to Bell Telephone Laboratories, Inc. Tapped ultrasonic delay line and uses therefor. 3,289,114, 11-29-66, Cl. 333—30.

Royal Trust Co., The: *See*—
Duffield, Joseph F., and Kindersley. 3,288,959.

Royal Typewriter Co., Inc.: *See*—
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Rubert, Rodney R., and R. L. Perry, to Varian Associates. Microwave hybrid tube apparatus. 3,289,032, 11-29-66, Cl. 315—3.6.

Rubin, Norman N., to United States of America, Navy. Electrical deflection of raindrops. 3,289,060, 11-29-66, Cl. 317—262.

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Rudolph, Donald J. 3,288,467.

Rudolph, Donald J., to Rudek, Inc. Simulated golf game with direction indicating target. 3,288,467, 11-29-66, Cl. 273—87.4.

Rueger, Herman, to AMP Inc. Housing for indicating lamp or other electrical components. 3,289,200, 11-29-66, Cl. 340—381.

Ruehlemann, Herbert E., and F. Frompovics, to Elco Corp. Appliance connector. 3,289,145, 11-29-66, Cl. 339—176.

Runsey, Rollin D., to Houdaille Industries, Inc. Piston-lever rotary actuators for hatch covers and the like. 3,288,202, 11-29-66, Cl. 160—188.

Rush, James A., and S. G. Holt, to Consolidated Papers, Inc. Production of coated paper. 3,288,632, 11-29-66, Cl. 117—68.

Russell, Joseph L., and M. Becker, to Halcon International Inc. Process for preparing a silicon carbide supported vanadium-containing oxidation catalyst. 3,288,724, 11-29-66, Cl. 252—443.

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Růžička, Antonín, to Meopta, narodní podnik. Two-part negative holder. 3,288,027, 11-29-66, Cl. 88—24.

Ryan Aeronautical Co., The: *See*—
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Ryan, John W., and C. B. Sloop. Code game. 3,287,825, 11-29-66, Cl. 35—2.

Ryszewski, Vincent J.: *See*—
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Rysner, Clemens, to Paul Pleiger Maschinenfabrik. Motion transmitting apparatus. 3,288,035, 11-29-66, Cl. 91—467.

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Drexler, Jerome. 3,289,035.

Saburi, Akio, to Nippon Electric Co. Ltd. Microwave electronic tube. 3,289,033, 11-29-66, Cl. 315—5.

Sachs, Louis. Surgical mask. 3,288,138, 11-29-66, Cl. 128—139.

Safety Devices, Inc.: *See*—
Price, George R. 3,288,276.

Safford, Moyer M.: *See*—
Holub, Fred F., and Safford. 3,288,744.

Safford, Moyer M., to General Electric Co. Curing of chlorosulfonated polyethylene. 3,288,764, 11-29-66, Cl. 260—79.3.

Safford, Moyer M., to General Electric Co. Vulcanization of rubber with an organohydrogen polysiloxane and a chloroplatinic acid compound. 3,288,879, 11-29-66, Cl. 260—827.

Saiki, Koichiro. Adjustable grill. 3,288,050, 11-29-66, Cl. 99—447.

Sakwa, Paul. Skateboard brake. 3,288,251, 11-29-66, Cl. 188—29.

Salto, Rinaldo, to Ing. C. & C. Olivetti, S.p.A. Variable spacing mechanism for typewriters and like machines. 3,288,262, 11-29-66, Cl. 197—84.

Salto, Rinaldo, to Ing. C. & C. Olivetti, S.p.A. Variable spacing run controlling device for typewriters and like machines. 3,288,263, 11-29-66, Cl. 197—94.

Salvadori, Andre: *See*—
Beigelman, Michel, and Salvadori. 3,288,647.

Saltsberg, Burton R.: *See*—
Davey, James R., Saltzberg. 3,289,108.

Salvatori Industries, Inc.: *See*—
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Sampson, George H., to Winthrop-Atkins Co., Inc. Fan and method of making the same. 3,288,359, 11-29-66, Cl. 230—266.

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Farmer, Everett W., Bellucci, and Dinolfo. 3,289,124.
Hayner, Paul F., and Mayo. 3,287,982.

Sanders, Petrus F. M.: *See*—
Schimmelpenninck, Laurens M. H., and Sanders. 3,288,440.

Sandoz A.G.: *See*—
Benz, Jakob, and Uehlinger. 3,288,776.
Benz, Jakob, and Schweizer. 3,288,777.
Fleck, Fritz, Balzer, and Aebli. 3,288,801.
Fleck, Fritz, Balzer, and Aebli. 3,288,804.

Sandoz Ltd.: *See*—
Benz, Jakob, and Uehlinger. 3,288,776.
Benz, Jakob, and Schweizer. 3,288,777.
Fleck, Fritz, Balzer, and Aebli. 3,288,801.
Fleck, Fritz, Balzer, and Aebli. 3,288,804.

Sandret, Robert. Apparatus for welding wires on condenser coils. 3,288,976, 11-29-66, Cl. 219—56.

Saperstein, Zalman P.: *See*—
Mabry, Milton M., Prescott, and Saperstein. 3,288,981.

Saraber, Petrus G., to Contina Bureaux- und Rechenmaschinenfabrik AG. Motion picture film projectors. 3,288,550, 11-29-66, Cl. 352—180.

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Oberster, Arthur E., and Sarett. 3,288,818.

Sargent, Kenneth, to Olivetti Underwood Corp. Carriage speed governing means for typewriters. 3,288,260, 11-29-66, Cl. 197—64.

Sato, Makoto: *See*—
Morita, Sadayoshi, Sato, Furuya, Yamaguchi, and Umeda. 3,288,657.

Savit, Carl H., M. J. Wells, and T. L. Slaven, to Western Geophysical Co. of America. Apparatus for compositing seismographic signals. 3,289,153, 11-29-66, Cl. 340—15.5.

Sawada, Jiro: *See*—
Tanaka, Ichiro, Sawada, Misaki, and Yasui. 3,288,683.

Schachenmann, C. Dr., & Co.: *See*—
Grunbaum, Heinrich. 3,287,935.

Schaefer, Edward J., to Franklin Electric Co., Inc. Securing of electric motor end members. 3,289,018, 11-29-66, Cl. 310—42.

Schaeffer, William D., to Union Oil Co. Method of preparing unsaturated esters by oxidation of olefins. 3,288,845, 11-29-66, Cl. 260—497.

Schampers, Paulus P. M.: *See*—
DeHaan, Edward F., Schampers, and Van der Drift. 3,289,024.

Schauer, Ronald E., to Automatic Electric Laboratories, Inc. Solenoid selection arrangement. 3,289,191, 11-29-66, Cl. 340—176.

Schauster, John L., to General Steel Industries, Inc. Locomotive truck. 3,288,084, 11-29-66, Cl. 105—34.

Schechter, Alfred, to Phillips Petroleum Co. Heat sealed container cover with tear tape opening. 3,288,323, 11-29-66, Cl. 220—54.

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Schulte, Anthonius M., and J. Steenberg, to North American Philips Co., Inc. Magnetic storage matrix capable of storing fixed words. 3,289,178, 11-29-66, Cl. 340—174.

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Smith, Hugh R., Jr., to United Metallurgical Corp. Purification of metals. 3,288,594, 11-29-66, Cl. 75—84.

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Sommer, Fritz, 1/11 each to Aktiengesellschaft Oederlin & Cie, Scovill Mfg. Co., Revere Copper and Brass Inc., Triangle Conduit and Cable Co., Inc., Cerro Copper & Brass Co., Anaconda American Brass Co., Chase Brass & Copper Co., Inc., Mueller Brass Co., Phelps Dodge Copper Products Corp., Bridgeport Brass Co., Division of National Distillers and Chemical Corp., and Calumet & Hecla, Inc. Air separator for drain pipes. 3,287,885, 11–29–66, Cl. 55—201.

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Soredal, Sven G., to Svenska Ackumulator Aktiebolaget Jungner. Method of utilizing hydrocarbon as fuel in fuel cells. 3,288,646, 11–29–66, Cl. 136—86.

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Yamaguchi, Yoshinori: *See*—
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Clements, Francis J., and Yartz. 3,288,380.

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Buehler, Arthur, Zickendraht, and Schoenenberg. 3,288,619.

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Sturdivan, Rex E. 3,289,150.

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CLASSIFICATION OF PATENTS

ISSUED NOVEMBER 29, 1966

NOTE.—First number, class; second number, subclass; third number, patent number

2—206	3,287,737	29—460	3,287,801	55—378	3,287,886	73—209	3,287,970	94— 8	3,288,039	117— 62	3,288,630
209.7	3,287,738	508	3,287,802	57— 19	3,287,887	210	3,287,971	25	3,288,040	62.1	3,288,631
224	3,287,739	30— 90	3,287,803	35	3,287,888	219	3,287,972	46	3,288,041	68	3,288,632
4—172	3,287,740	131	3,287,804	53	3,287,889	228	3,287,973	51	3,288,042	70	3,288,633
180	3,287,741	202	3,287,805	77.4	3,287,890	336.5	3,287,974	95— 10	3,288,043	123	3,288,634
191	3,287,742	326	3,287,806	99	3,287,891	355	3,287,975	11.5	3,288,044	128.4	3,288,635
213	3,287,743	31— 44	3,287,807	152	3,287,892		3,287,976	18	3,288,045	130	3,288,636
5— 82	3,287,895	33— 32	3,287,808	157	3,287,893	359	3,287,977	75	3,288,046	212	3,288,637
260	3,287,744	81	3,287,809	164	3,287,894	362	3,287,978		3,288,047	213	3,288,638
263	3,287,745	125	3,287,810	58— 85.5	3,287,896	483	3,287,979	96— 1	3,288,602		3,288,639
327	3,287,746	147	3,287,811	116	3,287,897	493	3,287,980		3,288,603	118— 2	3,288,102
338	3,287,747		3,287,812	60— 30	3,287,898	74— 1	3,287,981		3,288,604	68	3,288,103
345	3,287,748	168	3,287,813		3,287,899	5.7	3,287,982		3,288,605	76	3,288,104
351	3,287,749	180	3,287,814		3,287,900	61	3,287,983	27	3,288,606		3,288,105
355	3,287,750	34— 7	3,287,815	36	3,287,901	84	3,287,984		3,288,607	100	3,288,106
7— 5.4	3,287,751	18	3,287,816	39.02	3,287,902	104	3,287,985	33	3,288,608	234	3,288,107
8— 21	3,288,551	31	3,287,817	39.16	3,287,903	204	3,287,986	50	3,288,609	258	3,288,108
44	3,288,552	45	3,287,818	39.34	3,287,904	230.17	3,287,987	106	3,288,610	316	3,288,109
115.6	3,288,553	58	3,287,819	39.36	3,287,905		3,287,988	114	3,288,612	119— 5	3,288,110
120	3,288,554	151	3,287,820	39.51	3,287,906	330	3,287,989	98— 2	3,288,048	52	3,288,111
158	3,287,752	156	3,287,821	39.66	3,287,907	501	3,287,990	99— 1	3,288,613	110	3,288,112
9— 8	3,287,753	157	3,287,822	54	3,287,908	533	3,287,991	64	3,288,614	120— 15	3,288,113
310	3,287,754	173	3,287,823	54.5	3,287,909	562	3,287,992	235	3,288,051	42.03	3,288,114
15— 1.7	3,287,755	202	3,287,824	203	3,287,910	567	3,287,993		3,288,052		3,288,115
119	3,287,756	35— 2	3,287,825	220	3,287,911	721	3,287,994	238	3,288,053	42.1	3,288,116
16— 72	3,287,757	8	3,287,826	256	3,287,912	763	3,287,995	260	3,288,054	122—406	3,288,117
84	3,287,758	9	3,287,827		3,287,913	75— 1	3,288,588	289	3,288,049	123— 8	3,288,118
87	3,287,759	12	3,287,828	61— .5	3,287,914	12	3,288,589	447	3,288,050		3,288,119
171	3,287,760	34	3,287,829		3,287,915	26	3,288,590	100— 4	3,288,055		3,288,120
17— 32	3,287,761	35	3,287,830	9	3,287,916	52	3,288,591	98	3,288,056		3,288,121
18— 5	3,287,762	42	3,287,831	25	3,287,917		3,288,592	198	3,288,057	11	3,288,122
12	3,287,763	45	3,287,832	28	3,287,918	84	3,288,593	101— 6	3,288,058	57	3,288,123
	3,287,764	36— 36	3,287,833	48	3,287,919		3,288,594	153	3,288,060	140	3,288,124
19	3,287,765	37—156	3,287,834	63	3,287,920	84.1	3,288,595	210	3,288,061	148	3,288,125
30	3,287,766	180	3,287,835		3,287,921	84.5	3,288,596	211	3,288,059	179	3,288,126
	3,287,767	38— 71	3,287,836	72.6	3,287,922	108	3,288,597	390	3,288,062	124— 11	3,288,127
19—200	3,287,768	77	3,287,837	62— 3	3,287,923	109	3,288,598	401.1	3,288,063	125— 15	3,288,128
21— 2.7	3,288,555	143	3,287,838	5	3,287,924		3,288,599	102— 22	3,288,064	126— 19.5	3,288,129
120	3,288,556	40— 2.2	3,287,839	51	3,287,925	126	3,288,600	24	3,288,065	215	3,288,130
22— 57	3,287,769	138	3,287,840	71	3,287,926	128	3,288,611	38	3,288,066	128— 20	3,288,131
57.2	3,287,770	308	3,287,841	135	3,287,927	142	3,288,601	70	3,288,067	24	3,288,132
112	3,287,771	42— 16	3,287,842	141	3,287,928	77— 33.5	3,287,996	70.2	3,288,068		3,288,133
174	3,287,772	69	3,287,843	256	3,287,929	42	3,287,997	103— 1	3,288,069	66	3,288,134
200.1	3,287,773	43— 21.2	3,287,844	277	3,287,930	55	3,287,998		3,288,070	132	3,288,135
23— 2	3,288,557	53.5	3,287,845	324	3,287,931	81— 54	3,287,999	38	3,288,071	133	3,288,136
	3,288,558	44— 1	3,288,576	374	3,287,932		3,288,000	43	3,288,072		3,288,137
19	3,288,559	62	3,288,577	441	3,287,933	68	3,288,001	87	3,288,073	139	3,288,138
85	3,288,560	46— 50	3,287,846	64— 21	3,287,934	71	3,288,002		3,288,074	156	3,288,139
98	3,288,561	118	3,287,847	30	3,287,935	82— 2	3,288,003		3,288,075	248	3,288,140
140	3,288,562	135	3,287,848	65— 2	3,288,581	4	3,288,004	126	3,288,076	288	3,288,141
200	3,288,563	232	3,287,849	3	3,288,582	36	3,288,005	128	3,288,077	350	3,288,142
230	3,288,564	47— 9	3,287,850	11	3,288,583	83— 6	3,288,006	130	3,288,078	129— 13	3,288,143
252	3,288,565	25	3,287,851	22	3,288,584	117	3,288,007	153	3,288,079	16.7	3,288,144
259	3,288,566	48—192	3,288,578	37	3,288,585	169	3,288,008		3,288,080	131— 4	3,288,145
288	3,288,567	49— 87	3,287,852	66— 82	3,287,936	176	3,288,009	234	3,288,081	10	3,288,146
319	3,288,568	179	3,287,853	171	3,287,937	191	3,288,010	104— 2	3,288,082	21	3,288,147
	3,288,569	501	3,287,854	190	3,287,938	310	3,288,011	105— 34	3,288,083	140	3,288,148
328	3,288,570	503	3,287,855	67— 7.1	3,287,939		3,288,012		3,288,084	246	3,288,149
347	3,288,571	504	3,287,856	68— 18	3,287,940	328	3,288,013	193	3,288,085	261	3,288,150
349	3,288,572		3,287,857	20	3,287,941	84— 1.01	3,288,904	106— 40	3,288,615	262	3,288,151
24— 70	3,287,774	51— 9	3,287,858	23	3,287,942		3,288,905	58	3,288,616	267	3,288,152
77	3,287,775	120	3,287,859	70— 58	3,287,943	1.16	3,288,906	60	3,288,617	133— 8	3,288,153
81	3,287,776	165	3,287,860	364	3,287,944	1.25	3,288,907	148	3,288,618	134— 22	3,288,640
	3,287,777	204	3,287,861		3,287,945		3,288,908	193	3,288,619	58	3,288,154
123	3,287,778		3,287,862	71— 2.6	3,288,586	1.26	3,288,909	271	3,288,620	176	3,288,155
205.11	3,287,779	295	3,288,579	64	3,288,587	85— 3	3,288,014	288	3,288,621		3,288,156
205.14	3,287,780	309	3,288,580	72— 8	3,287,946	47	3,288,015	107— 1	3,288,086	135— 5	3,288,157
230	3,287,781	375	3,287,863	56	3,287,947	70	3,288,016	18	3,288,087		3,288,158
25— 1	3,287,782	52— 81	3,287,864	57	3,287,948	88— 1	3,288,017	54	3,288,088	8	3,288,159
28— 1	3,287,783	136	3,287,865	62	3,287,949		3,288,018	69	3,288,089	136— 6	3,288,641
	3,287,784	169	3,287,866	63	3,287,950	14	3,288,019	108—138	3,288,090	14	3,288,642
2	3,287,785	179	3,287,867	85	3,287,951		3,288,020	111— 7	3,288,091	24	3,288,643
4	3,287,786	220	3,287,868	150	3,287,952		3,288,021	112—100	3,288,092	86	3,288,644
76	3,287,787	270	3,287,869	171	3,287,953	24	3,288,022	104	3,288,093		3,288,645
	3,287,788	473	3,287,870	364	3,287,954		3,288,023	178	3,288,094		3,288,646
29— 25.42	3,287,789	509	3,287,871	407	3,287,955		3,288,024	113—113	3,288,095		3,288,647
33.5	3,287,790	598	3,287,872	73— 1	3,287,956		3,288,025	114— 66.5	3,288,096		3,288,648
35.5	3,287,791	675	3,287,873		3,287,957		3,288,026	73	3,288,097	100	3,288,649
54	3,287,792	720	3,287,874	6	3,287,958		3,288,027	74	3,288,098	107	3,288,650
103	3,287,793	747	3,287,875	23	3,287,959	28	3,288,028	153	3,288,099		3,288,651
155.5	3,287,794	53— 33	3,287,876	53	3,287,960	89— 33	3,288,029	115— 11	3,288,100	120	3,288,652
	3,287,795	112	3,287,877	61.1	3,287,961	41	3,288,030	116— 55	3,288,101		3,288,653
157	3,287,796	133	3,287,878	67.9	3,287,962	90— 5	3,288,031	117— 7	3,288,622	234	3,288,654
159.3	3,287,797	188	3,287,879		3,287,963	11	3,288,032	8	3,288,623	137— 27	3,288,160
177	3,287,798	222	3,287,880	95	3,287,964	91— 36	3,288,033	21	3,288,624	56	3,288,161
178	3,287,799	256	3,287,881	116	3,287,965	56	3,288,034	33.3	3,288,625	223	3,288,162
182.8	3,288,573	378	3,287,882	140	3,287,966	467	3,288,035	33.5	3,288,626	242	3,288,163
194	3,288,574	55— 33	3,287,883	148	3,287,967	92— 62	3,288,036	36.8	3,288,627	320	3,288,164
196.1	3,288,575	63	3,287,884	186	3,287,968	93— 61	3,288,037	38	3,288,628	505.13	3,288,165
222	3,287,800	201	3,287,885	187	3,287,969	93	3,288,038	46	3,288,629	509	3,288,166

137–541	3.288,167	176– 28	3.288,682	200–166	3.288,972	229– 5.6	3.288,342	250– 83.3	3.288,998	260–240	3.288,786
138– 30	3.288,168	177–210	3.288,231	169	3.288,973	6	3.288,343	83.6	3.288,999		3.288,787
118	3.288,169	178– 3	3.288,919	170	3.288,974	7	3.288,344	103	3.289,000	244	3.288,788
122	3.288,170	5.4	3.288,920	172	3.288,975	14	3.288,345	199	3.289,001	248	3.288,789
145	3.288,171		3.288,921	203– 11	3.288,685		3.288,346	209	3.289,002	248.6	3.288,790
139–118	3.288,172	6	3.288,922		3.288,686	30	3.288,347	218	3.289,003	250	3.288,791
122	3.288,173	6.6	3.288,923	35	3.288,687	37	3.288,348	219	3.289,004	256.4	3.288,792
161	3.288,174		3.288,924	58	3.288,688	39	3.288,349	239	3.289,005	256.5	3.288,793
425	3.288,175	6.7	3.288,925	204– 29	3.288,689	70	3.288,350	251–149.1	3.288,429	268	3.288,794
140– 3	3.288,176	7.3	3.288,926	52	3.288,690	71	3.288,351	254	3.288,431		3.288,795
141– 73	3.288,177	7.5	3.288,927	56	3.288,691	77	3.288,352	310	3.288,432	271	3.288,796
225	3.288,179	50	3.288,928	80	3.288,692	87	3.288,353	315	3.288,430	294.8	3.288,797
330	3.288,178	69	3.288,929	143	3.288,693	230–101	3.288,354	317	3.288,433	302	3.288,798
143–145	3.288,180	179– 1	3.288,930	147	3.288,694	125	3.288,355	252– 8.75	3.288,709		3.288,799
144– 1	3.288,181		3.288,931	157.1	3.288,695	134	3.288,356	25	3.288,710	306.7	3.288,800
110	3.288,182	2	3.288,932	173	3.288,696	208	3.288,357	28	3.288,711	308	3.288,801
136	3.288,183	5	3.288,933	193	3.288,697	254	3.288,358	49.6	3.288,712		3.288,802
145– 50	3.288,184	8	3.288,934	224	3.288,698	266	3.288,359	51.5	3.288,713		3.288,803
51	3.288,185	11	3.288,935		3.288,699	233– 22	3.288,360	57	3.288,714		3.288,804
146– 73	Re.26,117	15	3.288,936	298	3.288,700	23	3.288,361	59	3.288,715	309.6	3.288,805
148– 6.15	3.288,655	16	3.288,937	206– 42	3.288,277	235– 61.11	3.288,985		3.288,716	326.5	3.288,806
33.5	3.288,656	18	3.288,939	46	3.288,278	61.5	3.288,984	301.1	3.288,717		3.288,807
143	3.288,657	18.5	3.288,938	56	3.288,279	84	3.288,362	391	3.288,684	330.5	3.288,808
149– 2	3.288,658	84	3.288,940		3.288,280	92	3.288,986	408	3.288,718	343.2	3.288,809
36	3.288,659	100.1	3.288,941		3.288,281	134	3.288,363	416	3.288,719		3.288,810
	3.288,660	110	3.288,942	208– 22	3.288,701	177	3.288,987	429	3.288,720	345.2	3.288,811
60	3.288,661	175.3	3.288,943	48	3.288,702	201	3.288,364	435	3.288,721	345.9	3.288,812
150– .5	3.288,186		3.288,944	86	3.288,703		3.288,365	438	3.288,722	346.3	3.288,813
	3.288,187		3.288,945	106	3.288,704	236– 15	3.288,366	442	3.288,723	348	3.288,814
36	3.288,188	180– 1	3.288,232	310	3.288,705	49	3.288,370	443	3.288,724	396	3.288,815
52	3.288,189	2	3.288,233	341	3.288,706	56	3.288,367	447	3.288,725		3.288,816
151– 14	3.288,190	6.5	3.288,234	209– 11	3.288,282	238– 10	3.288,368	253– 78	3.288,434	397.45	3.288,818
38	3.288,191	7	3.288,235	45	3.288,283	243	3.288,369	254– 86	3.288,435	397.5	3.288,817
41.75	3.288,192		3.288,236	135	3.288,284	239–107	3.288,371		3.288,436	399	3.288,819
152– 49	3.288,193	54	3.288,237	143	3.288,285	251	3.288,372	132	3.288,437	404	3.288,821
361	3.288,194	77	3.288,238	241	3.288,286	265.23	3.288,373	150	3.288,438		3.288,822
156– 11	3.288,662	78	3.288,239	236	3.288,287	265.41	3.288,374		3.288,439	404.5	3.288,820
222	3.288,663	82	3.288,240	210– 54	3.288,707	332	3.288,375	256– 13.1	3.288,440	410.5	3.288,823
310	3.288,664	181– .5	3.288,241	62	3.288,708	428.5	3.288,376	259– 3	3.288,441	410.6	3.288,824
513	3.288,665		3.288,242	66	3.288,288	433	3.288,377	8	3.288,442	412.6	3.288,825
158– 28	3.288,195		3.288,243	90	3.288,289	547	3.288,378	9	3.288,443	413	3.288,826
115	3.288,196		3.288,244		3.288,290	585	3.288,379	151	3.288,444	429	3.288,827
	3.288,197		3.288,245		3.288,291	240– 6.4	3.288,988	260– 2	3.288,726		3.288,828
116	3.288,198	24	3.288,246	97	3.288,292	11.4	3.288,989		3.288,727		3.288,829
117.5	3.288,199	182–106	3.288,247	107	3.288,293	106	3.288,990		3.288,728	446	3.288,830
160–180	3.288,200	118	3.288,248	134	3.288,294	147	3.288,991	2.5	3.288,729	453	3.288,851
188	3.288,201	214	3.288,249	194	3.288,295	241–100.5	3.288,380		3.288,730	454	3.288,831
	3.288,202	188– 5	3.288,250	232	3.288,296	101	3.288,381		3.288,731	455	3.288,832
161– 5	3.288,666	29	3.288,251	272	3.288,297	242– 2	3.288,382		3.288,732	468	3.288,833
44	3.288,667	32	3.288,252	401	3.288,298	45	3.288,383		3.288,733	470	3.288,834
162–347	3.288,668	59	3.288,253	487	3.288,299	55	3.288,384	7	3.288,734	471	3.288,835
165– 2	3.288,203	82.3	3.288,254	512	3.288,300	55.11	3.288,385	17.4	3.288,735	473	3.288,836
5	3.288,204	171	3.288,255	211– 41	3.288,301	55.12	3.288,386	23	3.288,736		3.288,837
22	3.288,205	192– 13	3.288,256		3.288,302	55.53	3.288,387	27	3.288,737		3.288,838
39	3.288,206	35	3.288,257	51	3.288,303	71.1	3.288,388	29.2	3.288,738	474	3.288,839
40	3.288,207	150	3.288,258	64	3.288,304		3.288,389	29.6	3.288,739		3.288,840
108	3.288,208	195– 66	3.288,683	71	3.288,305	71.2	3.288,390		3.288,740		3.288,841
184	3.288,209	197– 6.7	3.288,259		3.288,306	71.8	3.288,391	29.7	3.288,741	475	3.288,842
166– 4	3.288,210	64	3.288,260	123	3.288,308	74	3.288,392	30.4	3.288,742		3.288,843
9	3.288,211	71	3.288,261	177	3.288,307	243– 1	3.288,393	30.6	3.288,743	480	3.288,844
	3.288,212	84	3.288,262	212–128	3.288,309	16	3.288,394		3.288,744	497	3.288,845
	3.288,213	94	3.288,263	214– 1	3.288,310	244– 17.17	3.288,395	33.2	3.288,745	500	3.288,846
40	3.288,214	133	3.288,264	10.5	3.288,311	17.23	3.288,396	37	3.288,746	514	3.288,847
42	3.288,215	198– 30	3.288,265	11	3.288,312	29	3.288,397		3.288,747	518	3.288,848
	3.288,216	33	3.288,266	147	3.288,313	31	3.288,398	45.9	3.288,748	525	3.288,849
	3.288,217		3.288,267	152	3.288,314	41	3.288,399		3.288,749	539	3.288,850
119	3.288,218		3.288,268	506	3.288,315	43	3.288,400	47	3.288,750	556	3.288,852
120	3.288,219	35	3.288,269	771	3.288,316	83	3.288,401		3.288,751	586	3.288,853
138	3.288,220	103	3.288,270	215– 1	3.288,317	138	3.288,402		3.288,752		3.288,854
183	3.288,221	131	3.288,271	7	3.288,318	145	3.288,403		3.288,753	590	3.288,855
192	3.288,222	139	3.288,272	39	3.288,320	246–173	3.288,992		3.288,754	592	3.288,856
167– 22	3.288,669	195	3.288,273	217– 12	3.288,319	248– 5	3.288,404		3.288,755	604	3.288,857
31	3.288,670	221	3.288,274	219– 56	3.288,976	24	3.288,405	67	3.288,756	607	3.288,858
33	3.288,671	230	3.288,275	79	3.288,977	49	3.288,406		3.288,757		3.288,859
	3.288,672	199– 52	3.288,276	80	3.288,978	56	3.288,407		3.288,758		3.288,860
	3.288,673	200– 5	3.288,946	104	3.288,979	61	3.288,408	75	3.288,759	610	3.288,861
42	3.288,674	6	3.288,947	125	3.288,980	62	3.288,409	78	3.288,760	611	3.288,862
51.5	3.288,675		3.288,948	137	3.288,981	63	3.288,410	78.4	3.288,761	615	3.288,863
53	3.288,676	11	3.288,949		3.288,982	119	3.288,411	79.3	3.288,762	619	3.288,864
65	3.288,677	18	3.288,950	522	3.288,983	125	3.288,412		3.288,763	621	3.288,865
	3.288,678	35	3.288,951	220– 18	3.288,321	158	3.288,413		3.288,764	638	3.288,866
74	3.288,679		3.288,952	26	3.288,322	223	3.288,414	80.3	3.288,765	644	3.288,867
78	3.288,680		3.288,953	54	3.288,323	226	3.288,415	88.2	3.288,767	654	3.288,868
90	3.288,681	42	3.288,954	57	3.288,324	311	3.288,416		3.288,768	666	3.288,869
168– 12	3.288,223	48	3.288,955	65	3.288,325	317	3.288,417		3.288,769		3.288,870
169– 19	3.288,224	50	3.288,956	113	3.288,326	354	3.288,418	88.3	3.288,770	669	3.288,871
170–135.4	3.288,225	51.09	3.288,957	221– 70	3.288,327	358	3.288,419	88.7	3.288,771		3.288,872
160.26	3.288,226	51.12	3.288,958	102	3.288,328	359	3.288,420	89.5	3.288,772	672	3.288,873
	3.288,227	51.14	3.288,959	155	3.288,329	396	3.288,421	93.7	3.288,773		3.288,874
160.43	3.288,228	61.04	3.288,960	174	3.288,330	429	3.288,422	97	3.288,774		3.288,875
173– 9	3.288,229	61.06	3.288,961	238	3.288,331	249– 34	3.288,423	117	3.288,775		3.288,876
174– 53	3.288,910	61.39	3.288,962	222– 80	3.288,332	108	3.288,424	146	3.288,776	680	3.288,877
68	3.288,911	67	3.288,963	95	3.288,333	153	3.288,425		3.288,777	683.3	3.288,878
70	3.288,912	116	3.288,964	107	3.288,334	192	3.288,426	163	3.288,778	827	3.288,879
79	3.288,913		3.288,965	455	3.288,335		3.288,427	207.1	3.288,779	828	3.288,880
84	3.288,914		3.288,966	226– 2	3.288,336	214	3.288,428	211.5	3.288,780	830	3.288,881
94	3.288,915	122	3.288,967	181	3.288,337	250– 41.9	3.288,993		3.288,781	835	3.288,766
116	3.288,916	135	3.288,968	193	3.288,338		3.288,994	239	3.288,782	836	3.288,882
150	3.288,917	148	3.288,969	227–130	3.288,339	71.5	3.288,995		3.288,783		3.288,883
173	3.288,918	159	3.288,970	229– 1.5	3.288,340		3.288,996		3.288,784	837	3.288,884
175– 72	3.288,230	166	3.288,971	4.5	3.288,341		3.288,997	239.1	3.288,785	857	3.288,885

260–876	3.288,886	280– 79.1	3.288,483	303– 11	3.288,538	317–235	3.289,053	333– 14	3.289,107	340–146.3	3.289,162
880	3.288,887	79.2	3.288,484	13	3.288,539		3.289,054	18	3.289,108		3.289,163
898	3.288,888	96.1	3.288,485	21	3.288,540	248	3.289,055	22	3.289,109		3.289,164
955	3.288,889	112	3.288,486	307– 24	3.289,006	249	3.289,056	24.1	3.289,110	151	3.289,165
	3.288,890	124	3.288,487	88.5	3.289,007		3.289,057	24.2	3.289,111	163	3.289,166
971	3.288,891	165	3.288,488		3.289,008	258	3.289,058		3.289,112		3.289,167
261– 36	3.288,445	202	3.288,490		3.289,009		3.289,059	28	3.289,113	172.5	3.289,168
41	3.288,446	410	3.288,491		3.289,010	262	3.289,060	30	3.289,114		3.289,169
69	3.288,447	415	3.288,492		3.289,011	318– 18	3.289,061	31	3.289,115		3.289,170
152	3.288,448	285– 3	3.288,493		3.289,012	139	3.289,062	70	3.289,116		3.289,171
263– 28	3.288,449	14	3.288,494		3.289,013	252	3.289,063	73	3.289,117		3.289,172
32	3.288,450	53	3.288,495		3.289,014	265	Re.26,118	79	3.289,118		3.289,173
40	3.288,451	94	3.288,496	110	3.289,015	320– 1	3.289,064	80	3.289,119		3.289,174
264– 13	3.288,892	138	3.288,497	116	3.289,016	40	3.289,065	81	3.289,120		3.289,175
17	3.288,893	334.1	3.288,498	308– 2	3.288,541	321– 1	3.289,066	95	3.289,121		3.289,176
25	3.288,894	287– 54	3.288,499	216	3.288,542	2	3.289,067	98	3.289,122	174	3.289,177
40	3.288,895	85	3.288,500	310– 2	3.289,017	8	3.289,068	334– 19	3.289,123		3.289,178
45	3.288,896	90	3.288,501	42	3.289,018	18	3.289,069	22	3.289,124		3.289,179
78	3.288,897	91	3.288,502	52	3.289,019	69	3.289,070	335– 33	3.289,125		3.289,180
98	3.288,898	189.35	3.288,503	70	3.289,020	322– 28	3.289,071	47	3.289,126		3.289,181
102	3.288,899	189.36	3.288,489	168	3.289,021	324– .5	3.289,072	118	3.289,127		3.289,182
149	3.288,900		3.288,504	312– 12	3.288,543	34	3.289,073	152	3.289,128		3.289,183
267	3.288,901		3.288,505	140.1	3.288,544	54	3.289,074	153	3.289,129		3.289,184
300	3.288,902		3.288,506	193	3.288,545		3.289,075	157	3.289,130		3.289,185
329	3.288,903	292– 53	3.288,507	313– 35	3.288,546	67	3.289,076	162	3.289,131		3.289,186
266– 4	3.288,452	128	3.288,508	65	3.289,024	70	3.289,077	189	3.289,132		3.289,187
36	3.288,453	238	3.288,509	108	3.289,025	77	3.289,078	253	3.289,133	174.1	3.289,188
267– 1	3.288,454	251	3.288,510	231	3.289,026	103	3.289,079	338– 4	3.289,134		3.289,189
	3.288,455	251.5	3.288,511		3.289,027		3.289,080	5	3.289,135		3.289,190
45	3.288,456	293– 1	3.288,512	318	3.289,028	158	3.289,081	42	3.289,136	176	3.289,191
48	3.288,457	294– 19	3.288,513	314– 61	3.289,029	325– 30	3.289,082	162	3.289,137	239	3.289,192
107	3.288,458	87.2	3.288,514	315– 3.5	3.289,030	59	3.289,083	183	3.289,138	248	3.289,193
271– 10	3.288,459	296– 22	3.288,515		3.289,031	63	3.289,084	218	3.289,139	280	3.289,194
19	3.288,460	23	3.288,516	3.6	3.289,032	119	3.289,085	339– 5	3.289,140	324	3.289,195
35	3.288,461		3.288,517	5	3.289,033	320	3.289,086	17	3.289,141		3.289,196
47	3.288,462		3.288,518	31	3.289,034	388	3.289,087	22	3.289,142		3.289,197
62	3.288,463		3.288,519	39.51	3.289,035	408	3.289,088	145	3.289,143		3.289,198
65	3.288,464		3.288,520	39.53	3.289,023	328– 69	3.289,089	149	3.289,144	347	3.289,199
74	3.288,465		3.288,521		3.289,036	330– 4	3.289,090	176	3.289,145	381	3.289,200
273– 1.5	3.288,466	61	3.288,522	39.55	3.289,037	4.7	3.289,091		3.289,146	343– 5	3.289,201
87.4	3.288,467	65	3.288,523	84.6	3.289,038	15	3.289,092		3.289,147		3.289,202
189	3.288,468	146	3.288,524	243	3.289,039	35	3.289,093		3.289,148	6	3.289,203
199	3.288,469	297– 284	3.288,525	307	3.289,040	69	3.289,094	183	3.289,149	7.5	3.289,204
207	3.288,470	354	3.288,526	317– 5	3.289,041		3.289,095	192	3.289,150	18	3.289,205
274– 10	3.288,471	355	3.288,527	11	3.289,042	331– 1	3.289,096	257	3.289,151	105	3.289,206
277– 11	3.288,472	388	3.288,528	99	3.289,043	49	3.289,097	340– 5	3.289,152	112	3.289,207
58	3.288,473	460	3.288,529		3.289,044	62	3.289,098	15.5	3.289,153	752	3.289,208
88	3.288,474	298– 17	3.288,530	101	3.289,045	94.5	3.289,099		3.289,154	346– 74	3.289,209
205	3.288,475	23	3.288,531		3.289,046		3.289,100	17	3.289,155		3.289,210
280– 11.35	3.288,476	299– 18	3.288,532		3.289,047		3.289,101	18	3.289,156	140	3.289,211
	3.288,477	57	3.288,533		3.289,048	109	3.289,102		3.289,157	351– 24	3.288,546
33.99	3.288,478	59	3.288,534	119	3.289,049	111	3.289,103	75	3.289,158	155	3.288,547
35	3.288,479		3.288,535	148.5	3.289,050		3.289,104	146.2	3.289,159	352– 87	3.288,548
43.23	3.288,480	64	3.288,536	230	3.289,051	113	3.289,105		3.289,160	131	3.288,549
47.27	3.288,481	302– 53	3.288,537	234	3.289,052	117	3.289,106	146.3	3.289,161	180	3.288,550
47.38	3.288,482										

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37 : 206,360
39 : 206,317
206,368
46 : 206,336
48 : 206,365

PLANT PATENTS

4 : 2,687

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

November 29, 1966 Volume 832 Number 5

TRADEMARKS

NOTICES

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 22,406(a) (COCA-COLA in script), The Coca-Cola Company, Nutrient or tonic beverages; **Reg. No. 47,189(a)**, same, Tonic beverages and syrups for the manufacture of such beverages; **Reg. No. 238,145(a)** (COCA-COLA), same, Beverages and syrups for the manufacture of such beverages; **Reg. No. 415,755(a)** (COKE), same, Non-alcoholic maltless beverages and the syrups for making such beverages, **filed** June 20, 1966, D.C., W.D. Mo. (Springfield), Doc. 2270, *The Coca-Cola Co.* v. *Sherm Lollar Lanes.* Final consent judgment—trademark registrations held valid; defendant enjoined; defendant's counterclaim dismissed with prejudice Sept. 30, 1966.

Reg. No. 22,406(b); **Reg. No. 47,189(b)**; **Reg. No. 238,145(b)**; **Reg. No. 238,146** (COCA-COLA in script), The Coca-Cola Company, Beverages and syrups for the manufacture of such beverages; **Reg. No. 415,755(b)**, **filed** Aug. 31, 1966, D.C., E.D. Ky. (Lexington), Doc. 1719, *The Coca-Cola Company* v. *Southland Bowling Lanes of Lexington, Inc. et al.* **Same,** Doc. 1720, *The Coca-Cola Company* v. *Eastland Bowling Lanes, Inc. et al.* **Same, filed** Sept. 19, 1966, D.C., W.D. Wash. (Seattle), Doc. 6886, *The Coca-Cola Company* v. *Melody Lane (Marine Room Bar) and Melody Lane (Restaurant).* **Same, filed** Oct. 12, 1966, D.C. Oreg. (Portland), Doc. 66-49S, *The Coca-Cola Company* v. *Nelson Chaney et al.* **Same, filed** Oct. 21, 1966, D.C. Oreg. (Portland), Doc. 66-510, *The Coca-Cola Co.* v. *Eino K. Hemmila.* **Same, filed** Oct. 25, 1966, D.C., W.D. Pa. (Pittsburgh), Doc. 66-1282, *The Coca-Cola Company* v. *Paxton's Lunch.* **Same,** Doc. 66-1283, *Coca-Cola Company* v. *Lone Pine Inn.* **Same,** Doc. 66-1284, *The Coca-Cola Company* v. *Ward's Restaurant.*

Reg. No. 29,145 (FPO BERIO & CO. LUCCA ETC. AND DESIGN), F. Romeo & Co., Olive-oil, **filed** Jan. 13, 1965, D.C., S.D.N.Y., Doc. 65/100, *Societa Anonima Luchese Olii e Vini et ano.* v. *Domestic Edible Oil Co., Inc.* Order dismissing action Sept. 27, 1966.

Reg. No. 47,189. (See Reg. No. 22,406.)

Reg. No. 195,360 (CHANEL), Chanel, Inc., Toilet preparations—viz, face powder, perfume, eau de cologne, toilet water, lipstick and rouge; **Reg. No. 215,556** (NO. 5), same, Perfume and toilet water; **Reg. No. 233,407**, same, Perfume, toilet water and face powder; **Reg. No. 302,600** (CHANEL), same, Soap; **Reg. No. 400,004** (NO. 5), same, Toilet soap; **Reg. No. 422,335**, same, Perfume, toilet water, eau de cologne, face powder, talcum powder and bath powder; **Reg. No. 510,992** (CHANEL), same, Perfume, toilet water, eau de cologne, face powder, bath powder, talcum powder, lipsticks, and lip oil; **Reg. No. 513,132**, same, Soap; **Reg. No. 701,978** (CHANEL NO. 5), Chanel Industries, Inc., Perfume, cologne, talcum powder, and bath powder; **Reg. No. 802,851** (CHANEL), same, Bath oil, after shave lotion and after bath oil spray, **filed** Sept. 14, 1966, D.C., N.D. Calif. (San Francisco), Doc. 45647, *Chanel, Inc. et al* v. *Ta'Ron, Inc.*

CONDITION OF TRADEMARK APPLICATIONS AS OF OCTOBER 31, 1966

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]..... 27,254
Date of oldest new application..... Sept. 13, 1965
Date of oldest amended application (filing date)..... Sept. 11, 1963

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION

	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	9-13-65	3-5-64
(II) F. H. WETHERBEE, Classes 1, 3, 6, 7, 9, 10, 18, 22, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	12-21-65	9-11-63
Renewals (All Classes)	9-2-66	
Sec. 12(c) Publications (All Classes)	9-27-66	

Applications filed during the month of October—2,265

Registrations Issued..... 351—No. 819,326 to No. 819,676
Renewals Issued..... 70

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

Reg. No. 215,556. (See Reg. No. 195,360.)
Reg. No. 233,407. (See Reg. No. 195,360.)
Reg. No. 238,145. (See Reg. No. 22,406.)
Reg. No. 238,146. (See Reg. No. 22,406(b).)
Reg. No. 302,600. (See Reg. No. 195,360.)
Reg. No. 400,004. (See Reg. No. 195,360.)
Reg. No. 415,755. (See Reg. No. 22,406.)
Reg. No. 422,335. (See Reg. No. 195,360.)
Reg. No. 510,992. (See Reg. No. 195,360.)
Reg. No. 513,122. (See Reg. No. 195, 360.)
Reg. No. 761,978. (See Reg. No. 195,360.)
Reg. No. 892,851. (See Reg. No. 195,360.)

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 187,544. Western Litho Plate & Supply Co., St. Louis, Mo. Filed Feb. 26, 1964.

VELVET GRAIN

The word "Grain" is disclaimed apart from the mark as shown.

Class 6—Chemicals and Chemical Compositions

For Compositions for Developing Photo-Sensitive Coatings on Plates, Copperizing Solution, Plate Lacquers, Image Preservatives, and Material Useful for Developing Images on Printing Plates.

Class 50—Merchandise Not Otherwise Classified

For Lithographic Plates.

Class 52—Detergents and Soaps

For Compositions for Cleaning Plates, Blankets, and Rollers.

First use Jan. 2, 1959.

SN 189,825. Wilhelm Jackstadt & Co., Wuppertal-Elberfeld, Germany. Filed Mar. 27, 1964.

JPC

Class 5—Adhesives

For Adhesive Tapes.

Class 14—Metals and Metal Castings and Forgings

For Metal Foils.

Class 37—Paper and Stationery

For Self-Adhesive Paper and Self-Adhesive Foils for Wallpaper, and Paper Label Stock.

First use May 9, 1962; in commerce May 9, 1962.

SN 206,495. Sanyo Electric Co., Ltd., Osaka, Japan. Filed Nov. 19, 1964.

SANYO

Owner of Japanese Reg. No. 594,184, dated July 24, 1962.

Class 31—Filters and Refrigerators

For Electric Refrigerators, Electric Home Freezers, Electric Beer Coolers, Refrigerating Show Cases, Electric Ice Cream Freezers, Electric Air Purifiers, Ice Making Machines, Refrigerator Compressor and Condensing Units, Electric Water Coolers, and Thermoelectric Refrigerators.

Class 36—Musical Instruments and Supplies

For Magnetic Tape Recorders and Reproducers, Electric Organs, and Phonographs.

SN 208,713. Montecatini, Società Generale per l'Industria Mineraria e Chimica, Milan, Italy. Filed Dec. 23, 1964.

ignilux

Owner of Italian Reg. No. 166,153, dated Apr. 30, 1964.

Class 1—Raw or Partly Prepared Materials

For Sheets or Rolls of Uninflammable Plastic Material.

Class 12—Construction Materials

For Corrugated Uninflammable Translucent or Plastic Material.

SN 210,619. Tire Improvement Company, Inc., Akron, Ohio. Filed Jan. 25, 1965.

tiCO

The representation of the white sidewall tire is disclaimed apart from the mark as shown.

Class 5—Adhesives

For Adhesive and Thinner Therefor, for Application of Whitewall Rings to Rubber Tires.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Rubber Whitewall Rings for Installation on Rubber Tires.

First use Sept. 19, 1964.

SN 214,449. Magna Visual, Inc., St. Louis, Mo. Filed Mar. 18, 1965.

MAGNA VISUAL

Class 16—Protective and Decorative Coatings

For Chalkboard Compound Attractive to Magnets, and Magnetically Attractive Paint.

First use May 9, 1963.

Class 50—Merchandise Not Otherwise Classified

For Magnetic-Chart or Control Boards, and Permanent Magnets.
First use July 1963.

SN 216,238. Michel & Pelton Co., Emeryville, Calif. Filed Apr. 12, 1965.

Mapco Products

No claim is made to the word "Products."

Class 6—Chemicals and Chemical Compositions

For Disinfectants, Insecticides, Pesticides, Fungicides, Germicides, Sheep Dips, and Animal Repellents.
First use Apr. 3, 1922.

Class 16—Protective and Decorative Coatings

For Wound Sealers and Grafting Compounds.
First use as early as Dec. 1, 1929.

Class 52—Detergents and Soaps

For Toilet Soap, Hexachlorophene Liquid Soap, Surgical Soap, Lice and Flea Soap, Medicinal Soap, Hair Shampoo; and Liquid Soap for Cleaning and Sanitizing Floors, and Linoleum Cleaner.
First use Apr. 3, 1922.

SN 224,139. Air Shields, Inc., Hatboro, Pa. Filed July 26, 1965.



Class 21—Electrical Apparatus, Machines, and Supplies

For Electric Motors.
First use on or about June 18, 1958.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Compressors for Air and Other Gases.
First use on or about June 18, 1958.

Class 26—Measuring and Scientific Appliances

For Mechanism for Measuring, Indicating and Controlling Temperature, Pressure, Flow, Volume, or Composition of Gases in Anesthetic, Therapeutic and Ventilating Equipment; and Instruments for Sensing, Reporting, Recording and Monitoring Vital Signs and Body Functions.
First use on or about July 11, 1958.

Class 31—Filters and Refrigerators

For Filters and Coolers for Air and Other Gases in Infant Incubators, Humidifiers, and Anesthetic, Therapeutic and Ventilating Equipment.
First use on or about July 11, 1958.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Heating, Cooling and Ventilating Devices, Particularly for Use With Infant Incubators and Other Therapeutic Equipment.
First use on or about July 11, 1958.

Class 44—Dental, Medical, and Surgical Appliances

For Specialized Hospital, Medical and Therapeutic Equipment, Particularly: Anesthesia Equipment; Apparatus for Aerosolized Humidification; Apparatus for Nebulized Medication; Aspirators; Blood-Pressure Monitors; Compressors for Air and Other Gases; Compressor-Aspirators; Filters for Air and Other Gases; Humidifiers; Humidity Tents; Infant Incubators; Instruments for Sensing, Reporting, Recording and Monitoring Vital Signs and Body Functions; Monitor Systems; Multi-Channel Printing Recorders; Oxygen Tents; Pressure Breathing Assistors; Pressure Breathing Monitors; Pulse Rate Monitors; Pulse-Temperature Monitors; Respiration Rate Monitors; Resuscitators; Respirators; Systolic and Diastolic Blood Pressure Monitors; Tamponade Apparatus; Temperature Monitors; and Ventilators.
First use on or about July 11, 1958.

SN 225,647. Firma H. Heinzelmann, Reutlingen, Baden-Wurttemberg, Germany. Filed Aug. 13, 1965.

ORCHIDEE

Owner of German Reg. No. 605,950, dated Apr. 25, 1949.

Class 39—Clothing

For Head Wear, Particularly Bathing Caps; Shoes, Particularly Bathing Shoes; Ladies' Underwear, Dresses, Coats, Blouses, Skirts, Beachwear, Hosiery, Corsets, Brassieres, Waistcoats, Pullovers, and Vests.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Table and Bed Linen.

SN 233,038. Scaffolding (Great Britain) Limited, Mitcham, Surrey, England. Filed Nov. 22, 1965.

SGB

Owner of British Reg. Nos. 860,086, 860,091, and others, dated Feb. 11, 1964.

Class 7—Cordage

For Rope, and Cordage.

Class 19—Vehicles

For Wheelbarrows; Hand-Barrows; Sack Trucks; and Handcarts.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Concrete Mixing Machines; Traveling Cradles; Lifting and Hoisting Apparatus; Winches; Grabs; and Jacks.

Class 50—Merchandise Not Otherwise Classified

For Scaffolds, Platform Stages, and Related Equipment for Use in Construction Projects—Namely, Shuttering, Trestles, Tripods, Baskets, Ladders, Ladder Brackets, Ladder Hooks, Chain Slings, Clamps, Wire Lashing, Platform Steps, Slatted Boarding, Scaffold Barrels, Paperhangers' Pasting Boards, and Tarpaulins.

SN 238,749. Laboratories Roja, Naterre (Seine), France. Filed Feb. 14, 1966.

ROJA

"Roja" is a Spanish word meaning "red, ruby, ruddy, or reddish." Owner of French Reg. No. 478,224, dated Feb. 12, 1959 (Paris); Natl. Inst. No. 120,815.

Class 51—Cosmetics and Toilet Preparations

For Hair Lotions, Hair Creams, Brilliantines, Hair Setting Lotions, Hair Colorings and Decolorings, and Hair Sprays.

Class 52—Detergents and Soaps

For Hair Shampoos.

SN 246,017. Societe Peugot & Cie, Levallois-Perret (Seine), France. Filed May 19, 1966.



Owner of French Reg. No. 1,312, dated Mar. 10, 1958 (Montbellard); Natl. Inst. No. 104,766; and U.S. Reg. No. 110,576.

Class 21—Electrical Apparatus, Machines, and Supplies

For Stationary and Portable Electric Tools—Namely, Drills, Drill Presses, Saws, Sanders, Scrapers, Buffers, Polishers, Routers, Grinders and Compressors; Mounting Brackets and Accessories Therefor and Parts Thereof; Electric Irons, Electric Motors and Electric Coffee Grinders.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Non-Electric Hand Tools for Use in Carpentry, Masonry, Plumbing, and Iron Works—Namely, Saws, Chisels, Trowels, Levels, Drills, Screw Drivers, Wrenches, Hammers, Scrapers, Planes and the Like, Hand Forgers, Chains and Anvils; Gardening Tools—Namely, Rakes, Hoes, Forks, and the Like, Mountings and Brackets for Tools, Chucks, Bits and Drills, Paint Sprayers, Agitators, Coffee, Pepper and Salt Grinders and Mills.

SN 249,275. Ionetics Corporation, New York, N.Y. Filed June 30, 1966.



Class 21—Electrical Apparatus, Machines, and Supplies

For Capacitors and Resistors.

Class 26—Measuring and Scientific Appliances

For Panel Meters.
First use June 10, 1966; February 1966 in a different form.

SN 253,402. Jean Nate, Inc., New York, N.Y. Filed Aug. 30, 1966.

JEAN NATE

Owner of Reg. Nos. 299,041, 786,930, and others.

Class 51—Cosmetics and Toilet Preparations

For After Bath Lotion, Bath Crystals, Hand Lotion, Bath Oil, Bath Powder, Talc, Bath Bubbles, After Shave Lotion, Personal Deodorant and Cologne.
First use July 6, 1932.

Class 52—Detergents and Soaps

For Bath Soap.
First use at least as early as 1935.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 199,050. Garden Galleries, Inc., Geneva, N.Y. Filed Aug. 3, 1964.

BURL-A-POT

For Horticultural Products Preplanted in a Soil Ball—Namely, Roses, Flowering Shrubs, Evergreens, Flowering Trees, Fruit Trees, and Shade Trees.
First use Mar. 11, 1964.

SN 220,523. Metalflake, Inc., Haverhill, Mass. Filed June 7, 1965.

METALFLAKE

For Colored Chips of Laminated or Metalized Film.
First use Oct. 14, 1957.

SN 232,062. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Nov. 3, 1965.

CROFON

For Resinous Plastic Materials in the Form of Fibers and Filaments, for General Use in the Industrial Arts.
First use July 29, 1965.

SN 244,236. National Distillers and Chemical Corporation, New York, N.Y. Filed Apr. 25, 1966.

PETROTHENE XL

Owner of Reg. No. 611,277.
For Cross-Linkable Polyethylene Resins.
First use Mar. 25, 1966.

SN 246,299. Euribrid N.V., Boxmeer, Netherlands. Filed May 23, 1966.

HYPOR

Owner of Dutch Reg. No. 152,805, dated July 29, 1964.
For Live Pigs, Young Pigs, and Porkers.

SN 246,562. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed May 25, 1966.

wing-tack

Owner of Reg. Nos. 553,590 and 649,962.
For Hydrocarbon Resin.
First use Mar. 31, 1966.

SN 251,281. Ciba Limited, Basel, Switzerland. Filed July 29, 1966.

AEROPHEN

Owner of Swiss Reg. No. 211,007, dated June 18, 1965.
For Synthetic Resins Sold in Solid, Liquid or Powdered Form for Industrial Purposes.

Class 2—Receptacles

SN 226,869. Tube-Vend Limited, Scarborough, Ontario, Canada. Filed Aug. 31, 1965.

TUBE-O-GRAM

For Paper Board Containers.
First use February 1961; in commerce August 1962.

SN 228,909. Hedwin Corporation, New York, N.Y. Filed Sept. 29, 1965.

TALK O'THE TABLE

Owner of Reg. No. 803,200.
For Coasters, Trays, Napkin Rings, and Lazy Susans.
First use June 7, 1965.

SN 229,696. Union Bag-Camp Paper Corporation, New York, N.Y. Filed Oct. 8, 1965.

TRIM TOWN

Owner of Reg. No. 621,336.
For Cabinet for Holding Paper Bags To Receive Waste and Garbage.
First use Sept. 10, 1963.

Class 6—Chemicals and Chemical Compositions

SN 225,421. Imperial Chemical Industries Limited, Millbank, London, England. Filed Aug. 10, 1965.

VYNAMON

Owner of British Reg. No. 694,864, dated Dec. 22, 1950.
For Dyes and Dyestuffs, Pigments, and Colouring Matters.

SN 227,679. W. R. Grace & Co., New York, N.Y. Filed Sept. 13, 1965.

MALGON

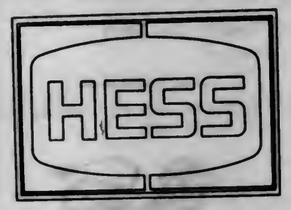
For Post Emergence Herbicide for Cotton.
First use Mar. 23, 1965.

SN 236,731. The Euclid Chemical Company, Cleveland, Ohio. Filed Jan. 18, 1966.

DELAZ

For Lignin Base Water Reducer and Set Retarder Admixture for Brick Mortar.
First use on or about Mar. 1, 1957.

SN 238,221. Hess Oil & Chemical Corporation, Perth Amboy, N.J. Filed Feb. 7, 1966.



Owner of Reg. No. 753,201.
For Chemicals and Chemical Compositions for Use in Industry, Science, Agriculture, and Horticulture.
First use May 30, 1962.

SN 238,222. Hess Oil & Chemical Corporation, Perth Amboy, N.J. Filed Feb. 7, 1966.



The drawing is lined for the colors green, yellow, or gold.
Owner of Reg. No. 753,201.
For Chemicals and Chemical Compositions for Use in Industry, Science, Agriculture, and Horticulture.
First use May 30, 1962.

SN 238,340. Carlisle Chemical Works, Inc., Reading, Ohio. Filed Feb. 8, 1966.



For Synthetic Waxes, Surface Active Agents, Optical Brightening Agents, Antioxidants, Plasticisers, Stabilisers, Driers, Catalysts, Repellents, Glass Plating Compositions, Oil and Asphalt Additives; Glyceride Esters; Tin Compounds, Organometal, Compounds, Organic Sulfur Compounds, and Phosphorus Compounds, Particularly for Use as Catalysts, Stabilisers, Antioxidants, and Biocides.
First use December 1962.

SN 238,958. Marchon Products Limited, London, England. Filed Feb. 16, 1966.

EMPIQUAT

Owner of British Reg. No. 866,168, dated June 26, 1964; and U.S. Reg. Nos. 696,247 and 703,083.
For Chemical Compositions—Namely, Benzalkonium Chloride Solution.

SN 241,125. Diamond Crystal Salt Company, St. Clair, Mich. Filed Mar. 16, 1966.

TANNERS FRIEND

The word "Tanners" is disclaimed apart from the mark as shown.
For Salt for Use in the Treating of Hides.
First use Feb. 22, 1966.

SN 241,772. The F. & M. Schaefer Brewing Co., Brooklyn, N.Y. Filed Mar. 24, 1966.



For Chemical Preparation for Use in the Cold Sterilization of Beer and Other Food Products.
First use Feb. 8, 1966.

SN 241,809. Shell Oil Company, New York, N.Y. Filed Mar. 24, 1966.

HALBARD

For Insecticide.
First use Feb. 18, 1966.

SN 242,412. A. J. & J. O. Pilar, Inc., Newark, N.J. Filed Mar. 11, 1966.

TRU-TAN

For Synthetic Tannage or an Aid to Tanning Leather.
First use Jan. 1, 1945.

SN 242,688. James Varley & Sons, Inc., St. Louis, Mo. Filed Apr. 4, 1966.

SPACETAINER

For Disinfectants Sold in Aerosol Form, and Kits of a Plurality of Such Disinfectants.
First use Feb. 28, 1966.

SN 242,714. College Pharmacy Inc., Washington, D.C. Filed Apr. 5, 1966.

SMEL-X-PEL

For Air Freshener and Deodorant.
First use July 8, 1964.

SN 243,311. Diversified Chemicals & Propellants Company, Handsdale, Ill. Filed Apr. 13, 1966.

AERON

For Pressurized Fluid Chemicals of the Type Used as Propellants in the preparation of Aerosol Products.
First use Dec. 1, 1965.

SN 243,323. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed Apr. 13, 1966.

PERMAPOWER

For Chlorinated Organic Solvents—Namely, Trichlorethylene and Perchlorethylene.
First use Aug. 27, 1965.

SN 243,370. Wyrough and Loser, Inc., Trenton, N.J. Filed Apr. 13, 1966.

POLY-DISPERSION

For Vulcanizing Agents, Drying Agents, Reinforcing Fillers and Extenders, Antiaging Agents, Low Temperature Flexibilizing Agents, Heat-Stabilizing Agents, Antiradiation Agents, Antioxidants, Fluorescent Marking Agents, Chemical Stabilizing Agents, Pigments, Blowing Agents, Vulcanization Retarding Agents, and Flame Retarding Agents for Addition to Natural and Synthetic Rubbers and Synthetic Plastics.
First use Sept. 1, 1958.

SN 243,520. Allied Chemical Corporation, New York, N.Y. Filed Apr. 15, 1966.

CADOXEN

For Cellulose Solvent—Namely, Cadmium Ethylene Diamine Complex for Laboratory and Manufacturing Use.
First use Jan. 18, 1966.

SN 245,213. Martin-Marietta Corporation, New York, N.Y. Filed May 9, 1966.

MASTER BUILDERS

Owner of Reg. Nos. 203,180, 203,394, and 353,184.
For Compositions for Improving the Qualities of Cements, Concretes, Mortars and Grouts; and in Addition, Compositions for Curing, Sealing, Hardening, and Coloring Concrete and Mortar Surfaces.
First use in or about 1909.

Class 7—Cordage

SN 244,867. Agway, Inc., Syracuse, N.Y. Filed May 4, 1966.

AGWAY

For Baler Twine, Binder Twine, and Rope.
First use Mar. 5, 1964.

Class 9—Explosives, Firearms, Equipments, and Projectiles

SN 238,203. The Ensign-Bickford Company, Simsbury, Conn. Filed Feb. 7, 1966.

HOT LINE

For Sustained Burning Ignition Cord With a High Propagation Rate.
First use Dec. 17, 1965.

SN 238,336. Bristol Flare Corporation, Bristol, Pa. Filed Feb. 8, 1966.

SCRATCH BOX

For Flare Kit.
First use Jan. 7, 1966.

SN 238,558. Plee-Zing, Inc., Evanston, Ill. Filed Feb. 10, 1966.

PLEE-ZING

For Matches.
First use July 1924.

Class 11 — Inks and Inking Materials

SN 220,015. Miller-Cooper Ink Company, Kansas City, Mo. Filed May 28, 1965.

DEEPTONE

For Printing Inks.
First use November 1947.

SN 244,337. Monroe International Corporation, Orange, N.J. Filed Apr. 26, 1966.

LASTON

For Inked Ribbons.
First use not later than Jan. 7, 1966.

Class 12 — Construction Materials

SN 224,874. North American Jalousies, Inc., Newton Lower Falls, Mass. Filed Aug. 3, 1965.

New Englander

For Sliding Glass Panels Used as Doors or Windows.
First use June 7, 1965.

SN 225,371. Swift & Company, Chicago, Ill. Filed Aug. 9, 1965.

V-ALOY

For Two-Component, Epoxy-Resin Compositions Used as Void Fillers in Metals.
First use on or about Apr. 27, 1965.

SN 229,990. Mississippi Glass Company, St. Louis, Mo. Filed Oct. 12, 1965.

PROFILITE

The channel representation is disclaimed apart from the mark as shown. Owner of Reg. Nos. 702,083, 743,640, and 795,235.
For Structural Glass Shapes—Namely, Channels, Beams, and the Like.
First use June 22, 1965.

SN 230,151. Goodyear Aerospace Corporation, Akron, Ohio. Filed Oct. 14, 1965.

PYRAD

For Mineral Silicate Laminated Sheets Used in the Construction of High Performance Radomes.
First use May 7, 1965.

SN 231,949. Southeastern Tool & Die Company, Inc., Birmingham, Ala. Filed Nov. 1, 1965.

CUSHION-LITE

For Aluminum Roll Formed Shapes Especially Made for the Fabricating of Storm Windows.
First use Oct. 22, 1965.

SN 233,704. Fastab Insulations, Inc., Cleveland, Ohio. Filed Dec. 1, 1965.

FASTAB

Owner of Reg. No. 700,026.
For Construction Materials—Namely, Tapes and Films Coated With a Pressure Sensitive Adhesive for Application Over Insulating Material and Particularly the Joints Thereof.
First use Oct. 27, 1958.

SN 234,227. Nufold Corporation, Philadelphia, Pa. Filed Dec. 8, 1965.

nufold

For Folding Doors.
First use Oct. 12, 1965.

SN 238,093. Ivan C. King, d.b.a. Crusher Parts Co., Portland, Oreg. Filed Feb. 4, 1966.

PLASTIZINC

For Two-Component Resinous Filler in Pourable Form and Hardenable When Used, and Sold to Rock Crusher Manufacturers, Owners and Users, as a Backing Material for Use in Rock Crushers.
First use Oct. 5, 1962.

SN 238,289. Potlatch Forests, Inc., San Francisco, Calif. Filed Feb. 7, 1966.

FASHION-A-FENCE

Applicant disclaims the word "Fence" apart from the mark as shown.
For Fences Made of Wood.
First use Dec. 29, 1965.

SN 240,002. International Paper Company, New York, N.Y. Filed Mar. 2, 1966.

LONG-PLY

For Plywood.
First use Nov. 22, 1965.

SN 240,228. Yamaska Mills Inc., St. Pie de Bagot, Quebec, Canada. Filed Mar. 4, 1966.

FIBRAIR

For Wood Pulp Insulation Board.
First use Jan. 6, 1966; in commerce Jan. 6, 1966.

SN 240,334. Permaglass, Inc., Woodville, Ohio. Filed Mar. 7, 1966.

PERMAGLASS

Owner of Reg. No. 776,890.
For Architectural Glass Panels.
First use November 1965.

SN 241,123. Chemical Fireproofing Corporation, Cincinnati, Ohio. Filed Mar. 16, 1966.

PLASENE

For Plastic-Like Fireproofing Lining for Minimizing the Hazard of Fire in Kitchen Exhaust Ducts, and for Eliminating Minor Duct Leaks and for Preventing Grease Drips From the Ducts.
First use Oct. 1, 1943.

SN 241,405. The Aeroshade Company, Inc., Waukesha, Wis. Filed Mar. 21, 1966.

AEROFOLD

For Wood Panel Folding Doors.
First use June 1952.

SN 241,511. Pittsburgh Corning Corporation, Pittsburgh, Pa. Filed Mar. 21, 1966.

UNI-CLAD

For Pipe Insulation.
First use at least as early as Feb. 1, 1966.

SN 241,533. Simpson Timber Company, Seattle, Wash. Filed Mar. 21, 1966.

MINUET

For Doors.
First use Nov. 29, 1965.

SN 241,534. Simpson Timber Company, Seattle, Wash. Filed Mar. 21, 1966.

PRELUDE

For Doors.
First use Nov. 29, 1965.

SN 241,539. L & M-Surco Mfg., Inc., Dallas, Tex. Filed Mar. 21, 1966.

SURPOXY

For Epoxy Grout and Mortar.
First use Jan. 12, 1966.

SN 241,858. Anthony Grandenthaler, Baker, Oreg. Filed Mar. 25, 1966.

MOON MESA

For Ornamental Building Stone.
First use Jan. 10, 1966.

SN 242,124. General Refractories Company, Philadelphia, Pa. Filed Mar. 29, 1966.

GR

For Refractory Brick.
First use Oct. 21, 1965.

SN 242,361. Harbison-Walker Refractories Company, Pittsburgh, Pa. Filed Mar. 31, 1966.

MICACRETE 7

For Premixed Dry Castable Concrete Composition.
First use Mar. 12, 1965.

SN 245,215. Martin-Marietta Corporation, New York, N.Y. Filed May 9, 1966.

MASTER BUILDERS

Owner of Reg. Nos. 203,180 and 203,394.
For Cementitious Compositions for Producing High Strength, Non-Shrink, Wear and Impact-Resistant Concretes, Mortars, Grouts and Floor Surfaces, and Components of Such Compositions Including Mineral and Metallic Aggregates and Colored Cementitious Compositions.
First use in or about 1909.

SN 248,579. Kinkead Industries Incorporated, Chicago, Ill. Filed June 21, 1966.

EMPRESS

For Bathtub and Shower Enclosures.
First use November 1963.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 227,960. P. L. Robertson Mfg. Co. Limited, Milton, Ontario, Canada. Filed Sept. 16, 1965.

SWAGESET

For Screws.
First use June 21, 1965; in commerce June 21, 1965.

SN 236,512. James E. Marriot, Jr., d.b.a. Jiffy Gas Company. Greenville, Tex. Filed Nov. 29, 1965.

JIFFY GAS

For Valves for Attachment in the Gasoline Line of an Automobile.
First use Nov. 18, 1965.

SN 236,191. Jay R. Smith Mfg. Co., New Market, N.J. Filed Jan. 11, 1966.

BEST BY TEST

For Plumbing Supplies—Namely, Device for Control of Water Hammer or Knock in Pipe Lines; Fixture Supports for Wall Hung Toilets, Lavoratories, Urinals, Sinks, Drinking Fountains, etc.; Drains for Roofs, Showers, Floors, Scuppers, Swimming Pools, etc., and Interceptors for Oil, Grease, Plaster, Sediment, etc.
First use Sept. 1, 1965.

SN 241,169. Northland Aluminum Products, Inc., Minneapolis, Minn. Filed Mar. 16, 1966.

GRIDDLE KING

For Griddles.
First use 1946.

SN 241,170. Northland Aluminum Products, Inc., Minneapolis, Minn. Filed Mar. 16, 1966.

SERVO-KING

For Hot Food Platters Having a Metal Plate Heated in a Plastic Holder.
First use 1958.

SN 243,791. Lif-O-Gen, Inc., Lumberton, N.J. Filed Apr. 19, 1966.

CHEMODULAR

Owner of Reg. No. 803,291.
For Valves, Fittings, Regulators, and Tubing for Use in Gas or Liquid Transmission.
First use Apr. 7, 1966.

SN 245,432. Union Carbide Corporation, New York, N.Y. Filed May 11, 1966.

UCAR

Owner of Reg. No. 696,264.
For Mist Nozzles for Spraying Agricultural Chemicals.
First use on or about Mar. 26, 1966.

SN 245,973. The Sheffer Corporation, Cincinnati, Ohio. Filed May 18, 1966.

FLO-DIRECTOR

For Valves, Specifically, Spool Type, Disc Type, Van Type, Vane Type, and Poppet Type.
First use Jan. 3, 1966.

SN 246,193. National Tank Company, Tulsa, Okla. Filed May 20, 1966.

INST-O-SERT

For Adapters for Safety Heads Placed Within the Bolt Circle of Flanges.
First use on or about May 12, 1966.

SN 246,378. Cora M. Seeger, d.b.a. Peg Seeger, Toledo, Ohio. Filed May 23, 1966.

EZE BEVEL

For Sheet Metal Cake Pans.
First use Apr. 12, 1966.

SN 246,473. Lethalite Corporation, Pecos, Tex. Filed May 24, 1966.

Western STA★SHUT

For Spring and Cable Device for Automatically Closing Sliding Glass Doors.
First use Oct. 15, 1965.

SN 246,621. Talon, Inc., Meadville, Pa. Filed May 25, 1966.
For Slide Fasteners.

Z

First use on or about May 17, 1966.

SN 246,757. The Curtice Manufacturing Company, Denver, Colo. Filed May 27, 1966.

NOZZ-ALL

For Water Sprinklers.
First use on or about Sept. 1, 1961.

SN 246,896. Edison Brothers Stores, Inc., St. Louis, Mo. Filed May 31, 1966.

SHEELD

For Protective Cover for Ladies' and Misses' Shoe Heels.
First use Nov. 12, 1965.

SN 247,208. Empire Slip-On Hook Corp., Watertown, Mass. Filed June 3, 1966.

SLIP-ON

Owner of Reg. No. 658,202.
For Drapery Hooks.
First use at least as early as May 27, 1949.

SN 247,331. Carr-Harris Products Limited, Cooksville, Ontario, Canada. Filed June 6, 1966.

DURAPEG

For Elongated Plastic Pins With a Hook at One End for Use as Portable Hold-Down Devices for Sheet Material, Including Tents, Tarpaulins, Picnic Spreads, and for Use as Markers and Other Like Uses.
First use Mar. 1, 1966; in commerce Mar. 1, 1966.

SN 247,724. Hans S. Singer, d.b.a. H. S. Singer, Spartanburg, S.C. Filed June 9, 1966.

MAHASI

For Steak Cooking Dish.
First use June 6, 1966.

SN 248,557. Topco Associates, Inc., Skokie, Ill. Filed June 20, 1966.

TOPCO

Owner of Reg. Nos. 728,539 and 772,668.
For Aluminum Cooking Utensils.
First use Mar. 2, 1965.

SN 248,577. Kinkead Industries Incorporated, Chicago, Ill. Filed June 21, 1966.

PRINCESS

For Valance Rods for Bathroom Shower Curtain Fixtures.
First use January 1968.

SN 254,129. Clayton Mark & Company, Evanston, Ill. Filed Sept. 9, 1966.

MARK

Owner of Reg. Nos. 160,916, 419,256, and 664,043.
For Valves.
First use at least as early as Mar. 5, 1962.

Class 14—Metals and Metal Castings and Forgings

SN 235,454. K. & F. Shonback, San Francisco, Calif. Filed Dec. 27, 1965.

K. & F. S.

For Silver Metal Castings.
First use Nov. 2, 1965.

SN 236,441. The Consolidated Mining and Smelting Company of Canada Limited, Montreal, Quebec, Canada. Filed Jan. 10, 1966.

COMINCO

Owner of U.S. Reg. Nos. 545,491, 773,946, and others.
For Iron.
First use on or about July 9, 1965; in commerce on or about July 13, 1965.

Class 15—Oils and Greases

SN 240,124. Sun Oil Company, Philadelphia, Pa. Filed Mar. 3, 1966.

SUNGARD

Owner of Reg. Nos. 548,922, 442,869, and others.
For Viscous Petroleum Oils, for Example Anti-Leak Hydraulic Oils.
First use Sept. 7, 1965.

Class 16—Protective and Decorative Coatings

SN 158,987. The Master Mechanics Company, Cleveland, Ohio. Filed Dec. 12, 1962.

SANITILE

For Pigmented and Non-Pigmented Protective and Decorative Coating Compositions of the Nature of Paints Capable of Yielding Ceramic-Like Surfaces, Said Coating Compositions Being Intended Primarily for Use on Interior Walls and Ceilings of Concrete, Concrete Block, Cinder Block, Brick, Plastic, Composition Board, Wood, and the Like.
First use Apr. 30, 1946.

SN 201,820. Conchemco, Incorporated, Kansas City, Mo. Filed Sept. 14, 1964.

SEIDLITZ

Owner of Reg. Nos. 515,595 and 643,821.
For Paints and Paint-Like Compositions Used as Protective and Decorative Coatings—Namely, Exterior Finishes, Interior Finishes, Stains, Varnishes, Sealers, Fillers, Metal Finishes, Thinners, Screen Enamel, Street Marking Paint, Slateboard Paint, Glazing and Mottling Liquid.
First use May 1, 1931.

SN 227,915. Archer-Daniels-Midland Company, Minneapolis, Minn. Filed Sept. 16, 1965.

ARDANCO

For Limed Linseed Oil for Coated Vehicles, Such as Are Used in Paints, Primers, and Enamels.
First use on or about Feb. 24, 1948.

SN 238,284. Phelan-Faust Paint Manufacturing Company, St. Louis, Mo. Filed Feb. 7, 1966.



The characterization of the human figure and the name "Perky Phelan" are fanciful and not that of a living person.
Owner of Reg. No. 592,652.
For Protective and Decorative Coatings—Namely, Interior and Exterior Paints and Enamels, Varnishes, Stains, Floor Sealers, Latex Paints, Primers and Finish Paints, and Lacquer.
First use March 1947.

SN 254,422. Textron Industries, Inc., Orange, N.J. Filed Sept. 14, 1966.

AQUA-LUSTRE

For Latex Semi-Gloss Interior Paint.
First use July 29, 1966.

Class 18—Medicines and Pharmaceutical Preparations

SN 223,677. Physicians Products Co., Inc., Petersburg, Va., assignee of International Latex Corporation, Dover, Del. Filed July 19, 1965.

SYROCOL PM

For Cough Syrup.
First use 1951.

SN 227,944. Physicians Products Co., Inc., Petersburg, Va., assignee of International Latex Corporation, Dover, Del. Filed Sept. 16, 1965.

SYROCOL-JR.

For Cough Syrup for Children.
First use Aug. 25, 1965.

SN 232,147. Pharmaceutical Laboratories, Inc., Plainfield, N.J. Filed Nov. 4, 1965.

VERNON

For Analgesics, Multivitamin Preparations, and Rubbing Alcohol.
First use on or about Sept. 20, 1965, on analgesics.

SN 236,397. Merck & Co., Inc., Rahway, N.J. Filed Jan. 13, 1966.

RAPISORB

For Analgesic, Antipyretic, and Anti-Inflammatory Preparation.
First use Dec. 28, 1965.

SN 237,846. Lafayette Pharmacal, Inc., Lafayette, Ind. Filed Feb. 2, 1966.

V13V

For Barium Sulphate Meal for X-Ray Diagnosis.
First use Oct. 15, 1965.

SN 240,817. Armour Pharmaceutical Company, d.b.a. Reheis Chemical Company, Chicago, Ill. Filed Mar. 11, 1966.

FINE REHEIS CHEMICALS

Applicant disclaims the words "Fine Chemicals" apart from the mark as shown. Owner of Reg. Nos. 550,093, 794,898, and others.
For Pharmaceutical and Medicinal Preparations.
First use in or prior to April 1953.

SN 243,827. B. F. Ascher & Company, Inc., Kansas City, Mo. Filed Apr. 20, 1966.

Perkē

For Stimulant.
First use Mar. 16, 1966.

SN 244,121. Johnson & Johnson, New Brunswick, N.J. Filed Apr. 22, 1966.

NO-OUCH!

For Antiseptic Preparation for Topical Use.
First use Mar. 22, 1966.

SN 247,210. FMC Corporation, New York, N.Y. Filed June 3, 1966.

AVITENE

For Microcrystalline Collagen.
First use Apr. 19, 1966.

SN 247,463. Holland-Rantos Company, Inc., New York, N.Y. Filed June 7, 1966.

RANTEX

Owner of Reg. Nos. 276,184 and 392,556.
For Disposable Fibrous Applicator Saturated With a Liquid Medicated Preparation for Topical Application.
First use May 6, 1966.

SN 247,642. Standard X-Ray Company, Chicago, Ill. Filed June 8, 1966.

STAND-EVAC

For Gall Bladder Stimulant for Cholecystography.
First use May 23, 1957.

SN 247,718. Noxzema Chemical Company, Baltimore, Md. Filed June 9, 1966.

THERA-BLEM

For Medicated Skin Cream.
First use May 18, 1966.

SN 247,829. Pharmacia Laboratories, Inc., Piscataway, New Market, N.J. Filed June 10, 1966.

PIREXYL

For Cough Medicine.
First use Apr. 20, 1966.

SN 248,423. Otis Clapp & Son, Inc., Boston, Mass. Filed June 20, 1966.

SILEXIN

For Cough Syrup.
First use Apr. 14, 1966.

SN 248,527. R & S Enterprises, Deland, Fla. Filed June 20, 1966.

PSORISO—REMEDY

For Topical Remedy for Treatment of Skin Conditions.
First use May 10, 1966.

SN 248,688. Raymond Epstein, d.b.a. Vetco Company, Sharon, Mass. Filed June 22, 1966.

VETLIN

For Veterinary Pharmaceuticals—Namely, Veterinary Antiseptic Cleanser and Liniment for Reducing Soreness and Lameness.
First use August 1960.

SN 248,826. Miles Laboratories, Inc., Elkhart, Ind. Filed June 23, 1966.

CHARLIE CHOCKS

Owner of Reg. No. 687,826.
For Multiple Vitamins.
First use on or before May 2, 1966.

SN 248,835. The Noxzema Chemical Company, Baltimore, Md. Filed June 23, 1966.

NOXELL

Owner of Reg. Nos. 112,638, 561,345, and others.
For Medicated Skin Cream.
First use Apr. 13, 1966.

SN 253,947. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Sept. 7, 1966.

NAVANE

For Psychotherapeutic Preparation.
First use Aug. 17, 1966.

SN 254,362. American Home Products Corporation, New York, N.Y. Filed Sept. 13, 1966.

CLOXCIL

For Antibiotic Preparation.
First use July 27, 1966.

Class 19—Vehicles

SN 226,031. Automotive Development Corporation, Seymour, Conn. Filed Aug. 19, 1965.

Formula S

The word "Formula" is disclaimed apart from the mark as shown.
For Automobiles; Kits Comprising Disassembled Automobile Parts, i.e., Frame, Body, Wind Screen, Coil Spring Shock Units, Steering Unit, Front Spindle Carriers, Brake, Clutch and Throttle Control Assembly and Roll Bar.
First use on or about Apr. 1, 1964.

SN 238,005. Pioneer Parachute Company, Inc., Manchester, Conn. Filed Feb. 3, 1966.

PARATWIN

For Parachute Packs and Harnesses.
First use Jan. 18, 1966.

Class 20—Linoleum and Oiled Cloth

SN 241,625. Balamundi-Nederland N.V., Huizen, Netherlands. Filed Mar. 23, 1966.

SOLOTRED

Owner of Dutch Reg. No. 155,999, dated June 1, 1965.
For Vinyl Floor Coverings.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 197,184. Servel, Inc., Freeport, Ill. Filed July 6, 1964.

SNAPLITE

For Self-Contained, Battery-Operated Pocket Lights.
First use Jan. 28, 1964.

SN 199,486. Ford Motor Company, Dearborn, Mich. Filed Aug. 7, 1964.

FORD

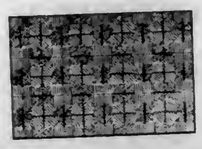
Owner of Reg. Nos. 74,530, 361,140, and 643,185.
For Television Transmitting and Receiving Equipment and Parts Thereof, Garbage Grinders and Parts Thereof, and Electric Ranges and Parts Thereof.
First use May 12, 1964.

SN 210,089. Chisholm Products, Inc., Salem, Mass. Filed Jan. 18, 1965.

WATCH DOG

For Electric Burglar, Fire, and Sprinkler Alarm Systems.
First use Dec. 17, 1964.

SN 217,198. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Apr. 23, 1965.



The mark consists of a Scotch plaid. Owner of Reg. No. 579,685 and others.
For Electrical Insulating Materials Comprising Electrical Tape, Spring Connectors, Cable Plugs, Electrical Coatings, Resins, and Splicing Kits.
First use at least as early as Dec. 31, 1963.

SN 219,511. American Precision Industries, Incorporated, Buffalo, N.Y. Filed May 24, 1965.

APILON

For Friction Faces Which Are Used as Components of Electro-Magnetic Clutches and Brakes.
First use Mar. 4, 1965.

SN 229,732. Aquariums Incorporated, Maywood, N.J. Filed Oct. 11, 1965.

DUOSTAT

For Electric Aquarium Heater.
First use in or about September 1960.

SN 230,224. American District Telegraph Company, New York, N.Y. Filed Oct. 15, 1965.

Vidmac

For Optical Motion Detectors for Detecting the Motion of a Person or Object Within a Protected Area.
First use on or about Aug. 9, 1965.

SN 231,288. Charles L. Terragno, d.b.a. Electro-Matic Sales Company, Ogden, Utah. Filed Oct. 22, 1965.

RANCH ROASTERS

No claim is made to the word "Roasters," apart from the mark as shown, without waiving any common law rights therein. Owner of Reg. No. 812,928.
For Commercial Electric Rotisseries and Warmers.
First use July 12, 1965.

SN 234,354. Magnatran Incorporated, Kearny, N.J. Filed Dec. 10, 1965.

MOBIL-FLEX

For Mobile Substation for Electrical Distribution.
First use January 1964.

SN 234,741. The R. B. Denison Manufacturing Company, Bedford, Ohio. Filed Dec. 16, 1965.

LOXSWITCH

Owner of Reg. No. 608,247.
For Electrical Circuit Breakers.
First use Oct. 17, 1952.

SN 235,295. The Edwin F. Guth Company, St. Louis, Mo. Filed Dec. 27, 1965.

CORRITRONICS

For Electric Lighting Fixtures.
First use Nov. 15, 1965.

SN 235,302. Herbert Products, Inc., Westbury, N.Y. Filed Dec. 27, 1965.

CURASTAT

For Static Eliminators.
First use April 1959.

SN 235,638. Electro Materials Corporation, San Diego, Calif. Filed Jan. 3, 1966.

EMC

For Capacitors and Dielectric Ceramics.
First use May 1, 1964.

SN 235,718. Robosonics, Inc., Bronx, N.Y. Filed Jan. 3, 1966.

ROBO-COUPLER

For Coupling Unit To Connect a Telephone Answering Apparatus to a Telephone Line Circuit.
First use Dec. 8, 1965.

SN 236,866. Kurt S. Adler, Inc., New York, N.Y. Filed Jan. 20, 1966.

Santa's World

For Christmas Tree Light Sets.
First use Jan. 7, 1965.

SN 237,543. Detrex Chemical Industries, Inc., Detroit, Mich. Filed Jan. 28, 1966.

ECONO-SONIC

Owner of Reg. Nos. 689,428 and 692,771.
For High Frequency Generators.
First use May 26, 1958.

SN 240,010. Magnatrol Valve Corporation, Hawthorne, N.J. Filed Mar. 2, 1966.

MAGNATROL

For Solenoid Valves.
First use Dec. 31, 1936.

SN 244,869. Agway, Inc., Syracuse, N.Y. Filed May 4, 1966.

AGWAY

For Electric Motors, Electric Water Heaters, Electrical Yard Lights, and Electric Fence Controllers.
First use Mar. 5, 1964.

SN 245,742. National Stamping & Electric Works, St. Louis, Mo. Filed May 16, 1966.

COFFEE-VAC

For Electric Brewing Units for Preparing Tea and Coffee.
First use 1952.

SN 248,719. The Magnavox Company, Fort Wayne, Ind. Filed June 22, 1966.

MAGNAVOX

For Electro-Mechanical, Electro-Chemical Equipment and Parts Therefor for Facsimile Devices Used in Remote Duplicating Equipment—Namely, Acoustical Coupler and Phone Coupler.
First use Sept. 27, 1963.

SN 248,985. Electroid Corporation, Union, N.J. Filed June 27, 1966.

ELECTROID

For Electro-Magnetically Actuated Solenoids, Clutches, Brakes, Coupling Devices, and Relays.
First use on or about Jan. 7, 1960.

Class 22—Games, Toys, and Sporting Goods

SN 236,004. Parkway Fabricators, South Amboy, N.J. Filed Jan. 7, 1966.

SHARKSKIN

For Protective Apparel for Skin Diving—Namely, Jackets, Trousers, Hoods, and Boots, Made in Whole or in Part of Spongy Elastomeric Material in Sheet Form.
First use August 1962.

SN 238,616. De Luxe Reading Corporation, Elizabeth, N.J. Filed Feb. 11, 1966.

CLOCK-A-WORD

For Equipment for Playing a Game of Word Knowledge.
First use Jan. 28, 1966.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 218,491. Smith Industries International, Inc., Whittier, Calif. Filed May 10, 1965.

LUBELOC

For Bearings Used in Rock Bits.
First use Apr. 16, 1965.

SN 218,959. Robert G. Bodtke, d.b.a. American Monarch Machine Company, Peoria, Ill. Filed May 17, 1965.

Super-Feed

For Automatic Air Feed Device for Use on Any Press, Spot Welder, Drill Press, and the Like, in Feeding Stock Thereto.
First use November 1962.

SN 221,244. Armstrong Beverley Engineering Ltd., Montreal, Quebec, Canada. Filed June 16, 1965.

STRONGARM

Priority claimed under Sec. 44(d) on Canadian application filed May 11, 1965; Reg. No. 145,578, dated June 3, 1966.
For Hydraulic Jacks and Presses.

SN 222,082. Uhrich Supply Company, North Kansas City, Mo. Filed June 25, 1965.

WATER MATIC

The term "Water" is disclaimed except as a part of the mark shown.
For Automatic Coin Operated Bulk Water Dispensers.
First use Nov. 11, 1961.

SN 222,809. Applied Power Industries, Inc., West Allis, Wis. Filed July 7, 1965.

BLACKHAWK

Owner of Reg. Nos. 204,588, 682,830, and others.
For Pneumatically, Hydraulically, Mechanically, and Electrically Actuated Portable, Wheeled and Stationary Lifting Equipment and Vehicle Jacks; Fluid Pressure Actuated Rams; Hydraulic Pumps; Swivel Joints; Straightening, Bending, Clamping and Spreading Equipment; Power Applying Tools; Remote Control Apparatus for Fluid Pressure Actuated Equipment; Machine Element Pullers and Pushers for Removing and Inserting Parts; Tool Racks; and Driving Mechanisms for Portable Power Tools.
First use on or about Apr. 8, 1964.

SN 223,681. Kesco Products Corp., Jamaica, N.Y. Filed July 19, 1965.

KESCO

For Condensate Disposal Pumps, Condensate Water Disposal Pumps, Ice Cube Maker Pumps, and Sump Pumps.
First use Sept. 8, 1954.

SN 226,770. Penn State Metal Fabricators, Inc., New York, N.Y. Filed Aug. 30, 1965.

CONBEST

For Pile Driving Cushioning Blocks and Components Thereof—Namely, Discs, Plates, and Washers.
First use Sept. 22, 1964.

SN 228,096. Zimmer & Francescon, Moline, Ill. Filed Sept. 17, 1965.

ZF

For Pumping and Ejector Stations for Water and Sewage Treatment and Handling Systems, and Accessory Equipment and Control Systems Therefor.
First use in or about January 1955.

SN 228,264. Lignum-Vitae Products Corporation, Jersey City, N.J. Filed Sept. 21, 1965.

NMB

The mark consists of the letters "NMB" and design.
For Bushings, Bearings, Rollers, Wheels, Guides, Slides, Sheaves, Pulleys, Wear Strips, Balls, Bulls Eyes, Lizards, Mast Trucks, Steady Rests, Parrels, and Dead Eyes.
First use Apr. 30, 1962.

SN 228,479. National Instrument Company Inc., Baltimore, Md. Filed Sept. 23, 1965.

FILLCAPPER

For Machine Which Fills and Caps Bottles.
First use June 14, 1964.

SN 228,936. Richardson Manufacturing Company, Inc., Cawker City, Kans. Filed Sept. 29, 1965.

AD Flex

For Agricultural Implements—Namely, a Towable Frame Assembly Designed To Carry Various Earth Working Tools, and Hitches for Such Assemblies.
First use Apr. 24, 1963.

SN 229,311. Union Bag-Camp Paper Corporation, New York, N.Y. Filed Oct. 4, 1965.

PANELOK

For Machine for Forming a Container Around a Product.
First use Sept. 15, 1965.

SN 229,519. Gaunt Industries, Chicago, Ill. Filed Oct. 7, 1965.

LONG-NOSE

For Hand-Operated Oilers.
First use Nov. 1, 1957.

SN 229,522. Groendyk Manufacturing Company, Inc., Buchanan, Va. Filed Oct. 7, 1965.



For Rubber Pads and Rubber Matting for Business Machines.
First use Aug. 17, 1965.

SN 229,728. Aquariums Incorporated, Maywood, N.J. Filed Oct. 11, 1965.

LANCER

For Aquarium Air Pumps.
First use in or about May 1963.

SN 232,095. Sargent Engineering Inc., Fort Dodge, Iowa. Filed Nov. 3, 1965.

HYDRA-TOWER

For Cranes.
First use Oct. 15, 1965.

SN 232,455. The Eldred Company, Columbus, Ohio. Filed Nov. 10, 1965.

Eldred

For Glass Machinery, i.e., Burn-Off Machines, Loading and Handling Machines, Forming Machines, and Decorating and Labeling Machines.
First use July 1, 1946.

SN 233,399. Rosco Manufacturing Company, Minneapolis, Minn. Filed Nov. 26, 1965.

VIBRATOW

Owner of Reg. Nos. 671,153, 671,154, and 696,720.
For Tow-Type Road Rollers.
First use Mar. 24, 1959.

SN 233,401. Rosco Manufacturing Company, Minneapolis, Minn. Filed Nov. 26, 1965.

STA-PAC

Owner of Reg. Nos. 671,153, 671,154, and 696,720.
For Self-Propelled Road Rollers.
First use Dec. 17, 1959.

SN 233,442. Big Dutchman, Inc., Zeeland, Mich. Filed Nov. 29, 1965.

Roll-R-Grind

For Apparatus for Milling and Mixing Grain Food for Animals, and the Like.
First use Apr. 30, 1965.

SN 233,616. Meiki Co., Ltd., Mizuho-ku, Nagoya City, Japan. Filed Nov. 30, 1965.

THERM SETTER

For Injection Molding Machines.
First use Apr. 1, 1963; in commerce May 5, 1964.

SN 236,149. Rosin Engineering Company Ltd., London, England. Filed Jan. 10, 1966.

PASTILLATOR

For Apparatus for Pelletizing in a Fluid State Materials That Normally Are Solid at Ambient Temperature, and Parts Thereof.
First use December 1955; in commerce Sept. 16, 1965.

SN 238,158. Beebe Bros., Inc., d.b.a. Beebe Bros., Seattle, Wash. Filed Feb. 7, 1966.

HANDI-WINCH

For Winches.
First use Sept. 25, 1957.

SN 239,032. Ermanno Fabbri, Vignola, Italy. Filed Feb. 17, 1966.

AUTOMAC

Owner of Italian Reg. No. 168,799, dated Jan. 23, 1965.
For Packaging Machines.

SN 239,041. Geartronics Corporation, North Billerica, Mass. Filed Feb. 17, 1966.

INCREMENT-O-DRIVE

For Multi-Decade, Gear Tranmission, Speed Reducers, Having Wide Range of Selective Output Speeds.
First use May 6, 1965.

SN 239,353. Vega-Cutter, Northridge, Calif. Filed Feb. 21, 1966.

VEGA-CUTTER

For Vegetable Trimming Machines.
First use Jan. 21, 1966.

SN 239,720. Champion Dish Washing Machine Co., Winston-Salem, N.C. Filed Feb. 28, 1966.

CORNER-MATIC

For Dish Washing Machines for Commercial Use.
First use Dec. 1, 1964.

SN 240,259. The Cincinnati Milling Machine Co., Cincinnati, Ohio. Filed Mar. 7, 1966.

CINCO 15

For Grinding Machines.
First use June 1965.

SN 240,745. Krogh Industries, Inc., d.b.a. Krogh Pump Company, San Francisco, Calif. Filed Mar. 11, 1966.

flexibility

For Centrifugal Pumps.
First use Jan. 15, 1965.

SN 246,043. Challenge-Cook Bros., Incorporated, Los Angeles, Calif. Filed May 19, 1966.

SQUEEZ-CRETE

For Concrete Pumps.
First use Jan. 15, 1964.

SN 246,088. Lumaside, Inc., Milwaukee, Wis. Filed May 19, 1966.

SHEAR-O-MATIC

For Hand-Operated Cutters for Steel and Aluminum Siding.
First use Mar. 16, 1966.

SN 246,484. Rice Barton Corporation, Worcester, Mass. Filed May 24, 1966.



For Pulp and Papermaking Machinery; Textile Printing Machines; Non-Woven Fabric Producing Machines; Paper Coating and Finishing Equipment; and Wet Baling Systems and Fiber Flash Drying Systems for Pulp; as Well as Components of and Parts and Instrumentation Cabinets and Controls for Each of the Foregoing.
First use 1950.

SN 246,552. Donald M. Gales, Silver Spring, Md. Filed May 25, 1966.

FoldaRoll

For Folding Machines for Rolls of Paper.
First use May 3, 1966.

SN 246,566. Herman Pneumatic Machine Company, Pittsburgh, Pa. Filed May 25, 1966.

MATCHMASTER

For Foundry Molding Machines.
First use Apr. 28, 1966.

SN 246,584. My-T-Veyor Corporation, Oxford, Mich. Filed May 25, 1966.



For Conveyors.
First use Jan. 20, 1966.

SN 246,810. Olin Mathieson Chemical Corporation, New York, N.Y. Filed May 27, 1966.

PISTON-SET

For Tools for Use in Driving Pins, Bolts, Studs, Screws, Rivets, and Plugs Into or Through Metal, Concrete, Masonry, Wood, and the Like.
First use on or about Mar. 24, 1965.

SN 246,874. Bostitch, Inc., East Greenwich, R.I. Filed May 31, 1966.

SPARTAN

For Stapling Machines.
First use Feb. 19, 1966.

SN 246,953. Rome Machine & Foundry Company, Rome, Ga. Filed May 31, 1966.

HYDRALIFT

For Textile Dyeing Apparatus.
First use Apr. 15, 1965.

SN 246,998. Bissell Inc., Grand Rapids, Mich. Filed June 1, 1966.

GEMINI

For Carpet Sweepers.
First use May 24, 1966.

SN 247,045. The Monarch Machine Tool Company, Sidney, Ohio. Filed June 1, 1966.

MERIT

For Lathes, Engine Lathes, and Parts Thereof.
First use on or about Mar. 23, 1966.

SN 247,115. Firma Franz Muller, Monchen-Gladbach, Germany. Filed June 2, 1966.



Owner of German Reg. No. 788,754, dated Feb. 11, 1963.
For Napping Machines.

SN 247,193. The D. S. Brown Company, North Baltimore, Ohio. Filed June 3, 1966.

dsb

Owner of Reg. Nos. 627,573, 757,969, and 775,135.
For Device for Installing Sealing Materials in Highways and Other Surface Areas.
First use Oct. 18, 1965.

SN 247,194. The D. S. Brown Company, North Baltimore, Ohio. Filed June 3, 1966.

DELASTALL

Owner of Reg. No. 776,608.
For Device for Installing Sealing Materials in Highways and Other Surface Areas.
First use Oct. 18, 1965.

SN 247,195. F. N. Burt Company, Inc., Buffalo, N.Y. Filed June 8, 1966.

PERMA-LOCK

For Carton Setting Up Machine.
First use Dec. 17, 1963.

SN 247,334. The Colorado Fuel and Iron Corporation, Denver, Colo. Filed June 6, 1966.

WISSCO

Owner of Reg. No. 255,074.
For Metal Conveyor Belts.
First use 1920.

SN 247,589. Firma Maschinenfabrik Gustav Eirich, Hardheim (Nordbaden), Germany. Filed June 8, 1966.

EIRICH

Owner of German Reg. No. 444,496, dated Feb. 18, 1932; and U.S. Reg. No. 691,442.
For Machines for Mixing, Granulating, Fluffing, Grinding, Densifying, Kneading, Emulsifying and Processing Materials for Industrial and Agricultural Use, as Well as Parts of Such Machines.
First use 1956; in commerce 1956.

SN 247,677. Brown Company, Kalamazoo, Mich. Filed June 9, 1966.

DISPENS-A-TRAY

For Apparatus for Erecting Trays From Blanks and Making Trays Available in Sequence.
First use May 16, 1966.

SN 247,819. Labelette Company, Chicago, Ill. Filed June 10, 1966.

LABELETTE

For Labeling Machines.
First use July 1952.

SN 248,316. Esco Corporation, Portland, Oreg. Filed June 17, 1966.

P.M.

Owner of Reg. No. 780,260.
For Replacement Parts for Crushing, Reducing, Pulverising, and Grinding Equipment.
First use May 6, 1966.

SN 249,337. Krebs Engineers, Palo Alto, Calif. Filed June 30, 1966.

KREBS

Owner of Reg. No. 726,228.
For Centrifugal Separators and Attachments.
First use Oct. 23, 1953.

SN 252,989. Morey Machinery Co., Inc., Astoria, N.Y. Filed Aug. 24, 1966.

HERCULES-REX

Owner of Reg. Nos. 670,194 and 777,819.
For Horizontal and Vertical Boring Mills, Radial Drills, Surface Grinders, Lathes, and Milling Machines.
First use Aug. 15, 1966.

SN 253,082. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Aug. 25, 1966.

GREEN LITE

For Pavement Striping Machine.
First use June 29, 1966.

SN 254,486. American Machine & Tool Company, Inc., Royersford, Pa. Filed Sept. 15, 1966.

PERMATRAK

For Radial Arm Saw.
First use Aug. 10, 1966.

SN 254,846. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Sept. 21, 1966.

INTERSTATE

For Machine for Applying Sheet Material to a Backing.
First use July 25, 1966.

Class 24 — Laundry Appliances and Machines

SN 199,484. Ford Motor Company, Dearborn, Mich. Filed Aug. 7, 1964.

FORD

Owner of Reg. No. 74,530 and 643,186.
For Home and Commercial Laundry and Dry Cleaning Equipment, and Parts Thereof.
First use May 12, 1964.

SN 244,870. Agway, Inc., Syracuse, N.Y. Filed May 4, 1966.

AGWAY

For Washers and Dryers.
First use Mar. 5, 1964.

Class 26 — Measuring and Scientific Appliances

SN 211,345. Cimron Corporation, San Diego, Calif. Filed Feb. 4, 1965.

CIMRON

For Electro-Mechanical Instruments for Measurement, Control, and Automation—Namely, Analog and Digital Power Supplies; Signal Sensing, Measuring, and Indicating Apparatus; Analog and Digital Signal Conversion Circuitry; Analog and Digital Signal Amplifiers, Programmers, Scanners, Comparators, Translators, and Information Recording Apparatus.
First use Apr. 7, 1961.

SN 219,999. Kistler Instrument Corporation, Clarence, N.Y. Filed May 28, 1965.

KISTLER INSTRUMENTS

Applicant disclaims the word "Instruments" apart from the mark as shown.
For Crystal Transducers for Pressure, Force, Acceleration, and Vibration Measurements; Calibration Equipment; and Impedance Matching Circuitry and Amplifiers for Use With Crystal Transducers.
First use March 1960.

SN 225,734. Compur-Werk Gesellschaft mit beschrankter Haftung & Co., Munich, Germany. Filed Aug. 16, 1965.

COMPUR electronic

Priority claimed under Sec. 44(d) on German application filed Apr. 9, 1965; Reg. No. 815,788, dated Feb. 9, 1966. Applicant disclaims the word "Electronic" apart from the mark as shown.
For Photographic and Optical Apparatus and Instruments—Namely, Cameras, Projectors, Enlargers, and Parts Thereof and Accessories Therefor, Namely, Flash Apparatus, Diaphragms, Lenses, and Photographic Shutters and Accessories Therefor.

SN 230,563. Pyles Industries, Inc., Southfield, Mich. Filed Oct. 19, 1965.

SUPERSHOT

For Apparatus for Mixing and Dispensing Fluids in Measured Amounts.
First use on or about Aug. 13, 1965.

SN 231,553. Dresser Industries, Inc., Dallas, Tex. Filed Oct. 24, 1965.

DYNAFLECT

For Deflectometers Used for the Taking of Deflection Measurements in Roadways, Runways, and Other Similar Structures.
First use Mar. 29, 1965.

SN 232,396. Fischer & Porter Co., Warminster, Pa. Filed Nov. 9, 1965.

Lab Crest

Owner of Reg. No. 664,700.
For Fluid Flow Measurement Instruments, Including Head Flowmeters, Area Flowmeters, Positive-Displacement Meters, and Mass and Magnetic Flowmeters.
First use June 11, 1965.

SN 232,770. Engineering Developments Co., Inc., Vicksburg, Miss. Filed Nov. 16, 1965.

EDS

For Apparatus for Compaction and Testing of Samples of Soils and Paving Materials.
First use March 1960.

SN 232,863. SCM Corporation, New York, N.Y. Filed Nov. 17, 1965.

CORONASTAT

For Electrostatic Copying Machines.
First use Nov. 10, 1965.

SN 232,907. E-C Apparatus Corporation, Philadelphia, Pa. Filed Nov. 18, 1965.

E-C

For Medical Research and Hospital Laboratory Apparatus—Namely, Countercurrent Fractionators, Electrophoresis Apparatus, Destaining Appartaus, Electroconvection Apparatus, and Component Parts Therefor.
First use April 1952.

SN 233,663. Virginia Lens Company, Inc., Petersburg, Va. Filed Nov. 30, 1965.

VALGREN

Owner of Reg. Nos. 420,975 and 517,266.
For Ophthalmic Lenses.
First use January 1942.

SN 236,330. Rayex Corporation, Flushing, N.Y. Filed Jan. 11, 1966.

ASTRO-SKI

For Sunglasses.
First use May 3, 1965.

SN 236,421. Spiratone, Inc., Flushing, N.Y. Filed Jan. 13, 1966.

TELEGUARD

For Cases or Containers in Which Telephoto and Other Photographic Lenses Are Sold.
First use Dec. 20, 1965.

SN 236,808. General Aniline & Film Corporation, New York, N.Y. Filed 1-19-66.

ANSCOCOLOR

Owner of Reg. No. 402,828.
For Light Sensitive Photographic Materials, Particularly Film and Paper.
First use Sept. 17, 1965.

SN 236,920. Royal Typewriter Company, Inc., Hartford, Conn. Filed Jan. 20, 1966.

ROYTRON

For Data Processing Tape Punches.
First use on or about Jan. 6, 1966.

SN 237,525. American Photocopy Equipment Company, Evanston, Ill. Filed Jan. 28, 1966.

SUPER-STAT

For Photocopy Machines.
First use Jan. 14, 1966.

SN 237,993. Micro-Measurements, Inc., Romulus, Mich. Filed Feb. 3, 1966.

—S/N—

For Gages—Namely, Electrical Resistance Type Gages.
First use December 1964.

Class 27 — Horological Instruments

SN 235,749. Sidney Watch Co., Inc., New York, N.Y. Filed Dec. 27, 1965.

Paul Peugeot

"Paul Peugeot" is a fictitious name.
For Watches.
First use Mar. 19, 1965.

Class 28 — Jewelry and Precious-Metal Ware

SN 235,882. Baldwin Bracelet Corporation, New York, N.Y. Filed Jan. 6, 1966.

DORAL

For Watch Bracelets.
First use Dec. 29, 1965.

SN 236,290. Roype S.L., Madrid, Spain. Filed Jan. 12, 1966.

XANDRA

Owner of Spanish Reg. No. 443,537, dated Feb. 27, 1965.
For Pearls, Artificial Pearls, and Jewelry Including Such Pearls.

SN 236,654. Luella C. Schroeder, Cabot, Vt. Filed Jan. 17, 1966.

LCS

For Jewelry (Silver and Gold).
First use Dec. 20, 1951.

SN 251,082. Plainville Stock Company, Plainville, Mass. Filed July 26, 1966.

PATRICIAN

For Men's and Women's Jewelry for Personal Wear and Adornment, Not Including Watches.
First use June 24, 1966.

Class 29 — Brooms, Brushes, and Dusters

SN 248,393. King Kullen Grocery Co., Inc., Westbury, N.Y. Filed June 20, 1966.

Little KING

Owner of Reg. Nos. 734,653, 680,126, and others.
For Tooth Brushes.
First use July 19, 1965.

Class 31 — Filters and Refrigerators

SN 199,485. Ford Motor Company, Dearborn, Mich. Filed Aug. 7, 1964.

FORD

Owner of Reg. Nos. 74,530 and 643,185.
For Freezers, Refrigerators, Combination Freezer and Refrigerator Units, and Parts Thereof.
First use May 12, 1964.

SN 228,798. Imperial Chemical Industries Limited, Millbank, London, England. Filed Aug. 18, 1965.

FLOCOR

Owner of British Reg. Nos. 868,813 and 868,814, dated Sept. 2, 1964.
For Plastic Filter Media for Use in the Biological Treatment of Effluent and Sewage, and in the Treatment of Water.

SN 241,976. Central Soya Company, Inc., Fort Wayne, Ind. Filed Mar. 28, 1966.

GILT EDGE

For Milk Filter Disks.
First use on or before Mar. 8, 1966.

SN 242,557. The Cellulo Company, Sandusky, Ohio. Filed Apr. 4, 1966.

CRYSTAL WHITE

For Filter Pads.
First use Nov. 29, 1965.

SN 243,200. Universal American Corporation, Detroit, Mich. Filed Apr. 11, 1966.

BOHN-EL

For Low Temperature Unit Cooler.
First use November 1961.

Class 32 — Furniture and Upholstery

SN 225,167. Lambeth Designs, Inc., High Point, N.C. Filed Aug. 6, 1965.

POSITION CHAIR

No registration rights are claimed for the word "Chair" apart from the mark as a whole, but applicant expressly reserves all common law rights thereto without waiving any feature thereof.
For Chairs.
First use Apr. 28, 1965.

SN 237,673. Godfrey L. de'Caccia, d.b.a. D.E.C. Associates, Los Alamitos, Calif. Filed Feb. 1, 1966.

OPTI-MAN

For Work Tray Units Having Receptacles for Tools and Parts, and Parts Thereof.
First use Oct. 21, 1965.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 216,465. Affiliated Incinerator Corporation, Detroit, Mich. Filed Apr. 14, 1965.

AFFCO

For Industrial Incinerators, Flue Gas Scrubbers, Controls for the Aforesaid Goods, and Stacks.
First use December 1962 on stacks.

SN 226,435. Fluxolder Products Limited, London, England. Filed Aug. 25, 1965.

Fluxolder

For Solder Paint—Namely, a Paint-Like Composition of Solder and Flux.
First use February 1946; in commerce May 1949.

SN 227,406. Eutectic Welding Alloys Corporation, Flushing, N.Y. Filed Sept. 8, 1965.

FC

For Flux Coated Welding Rods.
First use May 1947.

SN 227,575. Gilben Lamp Co., Inc., New York, N.Y. Filed Sept. 10, 1965.

Mini-Lamps

For Table Lamps.
First use June 16, 1965.

SN 234,832. Murphy Diesel Company, Milwaukee, Wis. Filed Dec. 17, 1965.

WELD-GEN-AIR

For Welding Equipment Package, Including an Engine, Generator, Welder, and Compressor.
First use Dec. 3, 1965.

SN 235,102. The Harris Calorific Company, Cleveland, Ohio. Filed Dec. 22, 1965.

SPIT-FIRE

For Welding and Cutting Torches.
First use Nov. 18, 1965.

SN 240,475. Pneumafil Corporation, Charlotte, N.C. Filed Mar. 8, 1966.

SPRĀ-GARD

For Air Conditioning Equipment—Namely, Humidifying Equipment for Textile Mills.
First use Oct. 29, 1965.

SN 242,500. Rubel & Co. Decorative Accessories Inc., New York, N.Y. Filed Apr. 1, 1966.

FIREFLY

For Candle Holders.
First use Feb. 11, 1966.

Class 36 — Musical Instruments and Supplies

SN 198,109. The Wurlitzer Company, Chicago, Ill. Filed July 17, 1964.

MULTI-MATIC PERCUSSION

No claim is made to the word "Percussion" apart from the mark as shown.
For Percussion Tone Chambers Sold Separate or as a Part of Electric Organs.
First use on or about May 8, 1964.

SN 227,112. ABC-Paramount Records, Inc., New York, N.Y. Filed Sept. 3, 1965.



For Phonograph Records.
First use July 19, 1965.

SN 251,682. International Teaching Tapes, Inc., Tulsa, Okla. Filed Aug. 4, 1966.

ITTI

For Tape Recorders, Pre-Recorded Magnetic Tapes, and Supplemental Educational and Instructional Materials for Use in Connection Therewith.
First use July 14, 1966.

SN 251,728. International Teaching Tapes, Inc., Tulsa, Okla. Filed Aug. 4, 1966.

SKILLTAPES

For Tape Recorders, Pre-Recorded Magnetic Tapes, and Supplemental Educational and Instructional Materials for Use in Connection Therewith.
First use July 14, 1966.

SN 253,476. M. Hohner Inc., Hicksville, N.Y. Filed Aug. 31, 1966.



Owner of Reg. Nos. 57,457, 601,874, and others.
For Harmonicas.
First use July 28, 1966.

Class 37 — Paper and Stationery

SN 227,683. Judi, Beverly Hills, Calif. Filed Sept. 13, 1965.

TIGER

For Paper and Stationery, Such as Partially Printed Calendars and Memo Pads.
First use July 22, 1965.

SN 232,176. Frances Wynn Wright, Crowley, La. Filed Nov. 4, 1965.



No claim is made to the word "Original" apart from the mark as shown without waiving any common law rights therein.
For Paper Placemats, Napkins, Bridge Tallies, and Notepaper.
First use Apr. 2, 1965, on paper placemats.

SN 233,158. Wallace Pencil Company, Maplewood, Mo. Filed Nov. 22, 1965.

INVADER

Owner of Reg. No. 281,477.
For Writing Implements—Namely, Pencils, Mechanical Pencils, and Ballpoint Pens; Felt and Fiber Tipped Markers and Marking Pens.
First use Dec. 8, 1964.

SN 235,043. The Sherwin-Williams Company, Cleveland, Ohio. Filed Dec. 16, 1965.

HiLite

For Wallpaper Murals.
First use Sept. 30, 1964.

SN 237,598. Sanford Ink Company, Bellwood, Ill. Filed Jan. 28, 1966.

Vis-à-Vis

For Marking Pens.
First use Oct. 15, 1965.

SN 240,005. Kenart Sales Corporation, New York, N.Y. Filed Mar. 2, 1966.

TILT-A-MATIC

For Writing Instruments—Namely, Ballpoint Pens.
First use Nov. 4, 1965.

SN 245,750. The Procter & Gamble Company, Cincinnati, Ohio. Filed May 16, 1966.

BRAVO

For Paper Napkins.
First use Mar. 24, 1966.

SN 245,752. The Procter & Gamble Company, Cincinnati, Ohio. Filed May 16, 1966.

VENTURE

For Kitchen Roll Towels.
First use Mar. 24, 1966.

SN 245,754. The Procter & Gamble Company, Cincinnati, Ohio. Filed May 16, 1966.

FURY

For Kitchen Roll Towels.
First use Mar. 24, 1966.

SN 246,006. Xerox Corporation, Rochester, N.Y. Filed May 18, 1966.

400

For Paper for Writing and Printing.
First use Aug. 20, 1965.

SN 246,968. Universal Plastics, Incorporated, Cookeville, Tenn. Filed May 31, 1966.

TEL-A-GUIDE

For Removable Covers for Telephone Directories.
First use Apr. 20, 1966.

SN 247,079. George W. Stroh, Lancaster, Pa. Filed June 1, 1966.

M-SETS

For Printed Forms for Record Keeping.
First use December 1965.

SN 247,139. Morgan Adhesives Company, Stow, Ohio. Filed June 2, 1966.

SCHEMAC

For Adhesive Coated Plastic Sheet for Use in Transferring Art Work From One Surface to Another.
First use Mar. 25, 1966.

SN 247,189. Blaisdell Pencil Company, Bethayres, Pa. Filed June 3, 1966.

COLOR-VISION

For Ink Markers.
First use May 10, 1966.

SN 247,906. Farah Manufacturing Company, Inc., d.b.a. Farah Industries, El Paso, Tex. Filed June 13, 1966.

ANEX

For Cleansing Tissue.
First use May 28, 1966.

Class 38 — Prints and Publications

SN 220,761. Grant-Mann Lithographers Ltd., Vancouver, British Columbia, Canada. Filed June 9, 1965.

TAKE A MINUTE TO KEEP IN TOUCH

Priority claimed under Sec. 44(d) on Canadian application filed Dec. 11, 1964; Reg. No. 141,017, dated July 2, 1965.
For Pictorial Postcards, Accordian Pictorial Postcard-Type Folders, Pictorial Miniature Albums, and Pictorial Souvenir View Books.

SN 252,055. The Hearst Corporation, New York, N.Y. Filed Aug. 10, 1966.

SEATTLE POST-INTELLIGENCER

Owner of Reg. No. 219,591.
For Newspaper.
First use Oct. 1, 1881.

SN 252,059. The Hearst Corporation, New York, N.Y. Filed Aug. 10, 1966.

THE LIGHT

Owner of Reg. No. 219,291.
For Newspaper.
First use June 2, 1924.

SN 253,709. The Hearst Corporation, New York, N.Y. Filed Sept. 2, 1966.



For Series of Books.
First use July 22, 1966.

Class 39 — Clothing

SN 212,624. Kangol Wear Limited, Cleator, Cumberland, England. Filed Dec. 14, 1964.



Owner of U.S. Reg. No. 731,192.
For Hats, Caps, and Berets.
First use Aug. 3, 1964; in commerce Aug. 3, 1964.

SN 219,368. Tip-Top Hosiery Mills, Inc., Asheboro, N.C. Filed May 20, 1965.

HAPPY WALK

For Men's Hosiery.
First use May 18, 1965.

SN 224,098. Jackson Millinery Inc., Buffalo, N.Y. Filed July 23, 1965.

DIXIE'S

For Ladies' Hats.
First use Jan. 1, 1940.

SN 224,167. City Products Corporation, Des Plaines, Ill. Filed July 26, 1965.

RUTH BARRY

The name "Ruth Barry" is fictitious. Owner of Reg. No. 538,051.
For Ladies' Sportswear—Namely, Blouses, Shirts, Jamaica Shorts, Bermuda Shorts, Capris, Slacks, Pants and Pedal Pushers, and Rubber Gloves.
First use September 1963 on rubber gloves.

SN 226,650. Lewel Manufacturing Co., Inc., New York, N.Y. Filed Aug. 27, 1965.

DANDI LONG LEGS

No claim is made for the words "Long Legs" apart from the mark as shown.
For Girdles and Panty Girdles.
First use Aug. 2, 1965.

SN 227,405. Etablissements Pierre Conte & Fils, Societe Anonyme, Jurancon, Basses-Pyrenees, France. Filed Sept. 8, 1965.

Pierre CONTE

Owner of French Reg. No. 1,227, dated Aug. 26, 1958 (Paris); Natl. Inst. No. 112,958.
For Pullovers, Waistcoats, Polo Shirts, Cardigans, Vests, Hosiery, Socks, Underwear, Necktles, Berets, and Gloves for Men, Women, and Children.

SN 227,646. Carhartt, Inc., Detroit, Mich. Filed Sept. 13, 1965.

carhartt

Owner of Reg. No. 563,882.
For Men's and Boys' Clothing—Namely, Shirts, Pants, Coats, Jackets, and Overalls.
First use on or about Feb. 1, 1965.

SN 230,739. A. Rivetz Co., Inc., Boston, Mass. Filed Oct. 15, 1965.



For Fabrics Made Up Into Neckwear.
First use on or about Aug. 23, 1965.

SN 231,274. Strathmore Shoe Co., Inc., Brockton, Mass. Filed Oct. 22, 1965.

Filippo Verde Deluxe BY VERDE

The name "Filippo Verde" is the Italian for "Philip Green," a living individual who signed the application as treasurer. Owner of Reg. No. 660,155.
For Men's Shoes.
First use about 1963.

SN 231,276. Strathmore Shoe Co., Inc., Brockton, Mass. Filed Oct. 22, 1965.

ToLoS by VERDE

Owner of Reg. No. 660,155.
For Men's Shoes.
First use Aug. 1, 1965.

SN 231,278. Strathmore Shoe Co., Inc., Brockton, Mass. Filed Oct. 22, 1965.

Verde

Owner of Reg. No. 660,155.
For Men's Shoes.
First use about 1956.

SN 231,425. Susan Ives Stores, Inc., New York, N.Y. Filed Oct. 23, 1965.

SUSAN IVES

"Susan Ives" is not the name of any individual, it is fanciful.
For Women's and Misses' Garments—Namely, Sweaters, Skirts, Slacks, Shorts, Blouses, Jackets, T-shirts, Two-Piece Suits, Shoes, Scarves, Coats, Dresses, Bathing Suits, and Bathing Caps.
First use July 9, 1953.

SN 233,994. Chadbourn Gotham, Inc., Charlotte, N.C. Filed Dec. 6, 1965.

FASHION FIVE

No exclusive claim is made to the word "Fashion" apart from the mark as shown.
For Ladies' Hosiery.
First use Sept. 1, 1949.

SN 234,351. Ph. Horowitz, Inc., New York, N.Y. Filed Dec. 10, 1965.

MarcoVello

The name "Marco Vello" is fanciful.
For Wool Knit Shirts, Sweaters, Coats, and Jackets, for Men, Boys, Ladies, and Girls.
First use Sept. 1, 1965.

SN 234,988. American Maid Company, Chicago, Ill. Filed Dec. 21, 1965.

DRESS LINER

Owner of Reg. No. 774,176.
For Women's, Misses', and Children's Slips and Half Slips.
First use Jan. 29, 1963.

SN 235,392. Country Miss, Inc., Bangor, Pa. Filed Dec. 28, 1965.

Country.... Traditionals

For Dresses.
First use Nov. 20, 1965.

SN 236,030. Wembley, Inc., New Orleans, La. Filed Jan. 7, 1966.

PERMASET

For Men's Neckwear.
First use Nov. 1, 1965.

SN 237,006. Manchester Hosiery Mills, Manchester, N.H. Filed Jan. 21, 1966.

Wendy Lee

"Wendy Lee" identifies a living individual whose consent is of record.
For Women's and Girls' Hosiery.
First use Nov. 10, 1965.

SN 237,202. Central Textiles, Inc., Arlington Heights, Ill. Filed Jan. 25, 1966.

KAMA-KENT

The designation "Kama-Kent" is fanciful and is not known to be the name of any individual.
For Clothing and Shoes for Children, Specifically Mittens, Sox, Knit Headwear, Sneakers, and Overshoes.
First use Mar. 26, 1965, on sox.

SN 237,203. Central Textiles, Inc., Arlington Heights, Ill. Filed Jan. 25, 1966.

KAMA LEE

The designation "Kama Lee" is fanciful and is not known to be the name of any individual.
For Womens' Clothes and Footwear, Specifically Sneakers, Snow Boots, Gloves, Mittens, Knit Headwear, and Socks.
First use Sept. 16, 1965.

SN 237,404. The Union Company, Columbus, Ohio. Filed Jan. 26, 1966.

NAN-CAROL

For Women's and Misses Dresses.
First use on or about Dec. 1, 1965.

SN 238,044. Butler's Shoe Corporation, Atlanta, Ga. Filed Feb. 4, 1966.

Town-flair

For Shoes.
First use on or about Nov. 4, 1965.

SN 238,900. Thomson Company, Thomson, Ga. Filed Feb. 15, 1966.

THOMSON

Owner of Reg. Nos. 626,251, 799,561, and others.
For Clothing—Namely, Men's Slacks.
First use July 22, 1965.

SN 239,109. Baka Manufacturing Company, Inc., Plainville, Mass. Filed Feb. 18, 1966.

MIDRIFFER

For Waist Cinchers.
First use Dec. 15, 1965.

SN 239,140. Garland Corporation, Brockton, Mass., by change of name from Garland Knitting Mills, Brockton, Mass. Filed Feb. 18, 1966.

EDWARD WARREN

For Sweaters.
First use at least as early as Feb. 10, 1966.

SN 239,367. David A. Bales, Chicago, Ill. Filed Feb. 23, 1966.

HOUSE OF BALES

For Men's and Women's Custom Tailored Wearing Apparel.
First use on or about June 8, 1965.

SN 239,749. Divina Footwear, Inc., St. Louis, Mo. Filed Feb. 28, 1966.

PERPIGNAN.

For Women's Shoes.
First use Jan. 25, 1966.

SN 239,769. Charles Greenberg & Sons, Inc., New York, N.Y. Filed Feb. 28, 1966.

LUCKY PRESS

Applicant disclaims the word "Press" apart from the mark. Owner of Reg. No. 269,471.
For Boys' Outer Shirts.
First use Feb. 4, 1966.

SN 240,446. Kirby, Block Distributing Corp., New York, N.Y. Filed Mar. 8, 1966.

SHANMONT

Owner of Reg. Nos. 286,849 and 366,436.
For Men's and Boys' Underwear, Shirts, Pajamas, and Hosiery; and Ladies' and Girls' Sweaters, Skirts, Blouses, Dresses, Coats, Suits, and Hosiery.
First use Apr. 29, 1931.

SN 240,756. Maidenform, Inc., New York, N.Y. Filed Mar. 11, 1966.

SHAPERIES

Owner of Reg. No. 569,154.
For Foundation Garments.
First use Feb. 14, 1966.

SN 240,927. The Lo-Bel Company, New York, N.Y. Filed Mar. 14, 1966.

RANCH WARMER

For Boys' and Girls' Western Jackets.
First use Mar. 8, 1966.

SN 240,933. Marlene Industries Corporation, New York, N.Y. Filed Mar. 14, 1966.

RICH GIRL

For Men's, Women's, and Children's Apparel, Consisting of Shirts and Blouses.
First use Jan. 14, 1966.

SN 240,936. Marlene Industries Corporation, New York, N.Y. Filed Mar. 14, 1966.

RICH BOY

For Men's, Women's, and Children's Apparel, Consisting of Shirts and Blouses.
First use Jan. 10, 1966.

SN 241,152. Donald S. Lavigne, Inc., Miami, Fla. Filed Mar. 16, 1966.

MARDON 1000

For Shirts.
First use Feb. 1, 1966.

SN 241,375. Rose Brothers, Inc., New York, N.Y. Filed Mar. 18, 1966.

ALEMEDA

For Men's and Young Men's Suits, Pants, and Shorts.
First use Nov. 30, 1943.

SN 241,770. Exquisite Form Industries, Inc., New York, N.Y. Filed Mar. 24, 1966.

"NO BRA"

The word "Bra" is disclaimed apart from the mark as shown.
For Brassieres.
First use Aug. 28, 1964.

SN 241,776. Fly Manufacturing Company, Inc., Shelbyville, Tenn. Filed Mar. 24, 1966.

WIFE SAVER

For Work Shirts, Slacks, Work Trousers, and Dungarees.
First use Nov. 15, 1965.

SN 242,307. Samuel F. Stein, Milton, Pa. Filed Oct. 24, 1965.

ESCALATOR

For Men's, Boys', Women's, and Children's Suits, Trousers, and Slacks.
First use Oct. 20, 1965.

SN 242,472. Munsingwear, Inc., Minneapolis, Minn. Filed Apr. 1, 1966.

PRE-FORMER

For Brassieres and Girdles.
First use Mar. 21, 1966.

SN 242,482. Peter Pan Foundations, Inc., New York, N.Y. Filed Apr. 1, 1966.

TRANSISTOR

For Brassieres.
First use Mar. 17, 1966.

SN 251,619. Exchange Service Co., Inc., Waban, Mass. Filed Aug. 3, 1966.



The pictorial representation of a shoe is disclaimed apart from the mark as a whole.
For Shoes.
First use on or about July 7, 1966.

SN 253,948. Maidenform, Inc., New York, N.Y. Filed Sept. 7, 1966.

UP-STARES

For Foundation Garments.
First use Aug. 10, 1966.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 232,986. Duplan Textiles Limited, Montreal, Quebec, Canada. Filed Nov. 19, 1965.

CANADIAN MIST

Applicant disclaims the word "Canadian" apart from the mark as shown, and without predjudice to its common law rights therein.
For Textile Fabrics of Natural and Synthetic Fibers for Use in Making Water Repellent Jackets, Raincoats, and the Like.
First use Mar. 1, 1961; in commerce September 1963.

SN 233,452. Canton Cotton Mills, Canton, Ga. Filed Nov. 29, 1965.

CAT'S MEOW

For Fabrics of Cotton, Wool and Synthetic Materials, and Combinations Thereof.
First use Oct. 28, 1965.

SN 233,453. Canton Cotton Mills, Canton, Ga. Filed Nov. 29, 1965.

CAT'S WHISKERS

For Fabrics of Cotton, Wool and Synthetic Materials, and Combinations Thereof.
First use Oct. 27, 1965.

SN 236,059. Crown Tuft Carpet, Inc., Dalton, Ga. Filed Jan. 10, 1966.

INSTANT TURF

For All Purpose Indoor/Outdoor Carpet.
First use Dec. 13, 1965.

SN 236,060. Crown Tuft Carpet, Inc., Dalton, Ga. Filed Jan. 10, 1966.

ROYALTY TURF

For All Purpose Indoor/Outdoor Carpet.
First use Dec. 13, 1965.

SN 237,785. Amphenol Corporation, Broadview, Ill. Filed Feb. 2, 1966.

CUDDLER

For Pile Fabrics of Cotton, Wool, Synthetic Fibers, or Combinations of Either of Them.
First use Mar. 1, 1965.
Subj. to Intf. with SN 238,722.

SN 238,485. APL Corporation, Linden, N.J. Filed Feb. 11, 1966.

THIRTY MISS



The portrait is fanciful. Applicant disclaims any accurate representation of the goods. The hatch-markings on the drawing do not indicate specific colors, but do indicate a plaid pattern.
For Dish Towels, Wash Cloths, Utility Cloths, and Dish Cloths.
First use January 1965.

SN 239,485. Bates Manufacturing Company, Incorporated, Lewiston, Maine. Filed Feb. 24, 1966.

PLY-GUARD

For Fabrics, i.e., Yard Goods for Making Articles of Clothing Including Rainwear, Hats, Slacks, Skirts, and the Like.
First use Feb. 9, 1966.

SN 241,037. Concord Fabrics Inc., New York, N.Y. Filed Mar. 15, 1966.

CONCORD FABRICS OF AMERICA

Applicant disclaims the words "Fabrics of America" apart from the mark as shown. Owner of Reg. Nos. 735,407 and 747,346.
For Textile Fabrics Made of Cotton and/or Synthetic Fibers, and Blends Thereof.
First use Apr. 30, 1965.

SN 241,099. Thorndike Mills, Inc., Palmer, Mass. Filed Mar. 15, 1966.

MARY ANN

For Braided Rugs Made of Cloth Strips.
First use August 1962.

SN 241,871. Deering Milliken, Inc., New York, N.Y. Filed Mar. 25, 1966.

MILLICURE

For Textile Fabrics Made of Wool, Cotton and Synthetic Fibers, and Combinations Thereof.
First use on or about Mar. 17, 1966.

SN 242,659. Princeton Knitting Mills, Inc., New York, N.Y. Filed Apr. 4, 1966.

Princeknit

For Fabrics Sold in the Piece and by the Yard, Made of Natural, Man-Made Fibers, and of Special Blends.
First use Mar. 14, 1966.

SN 243,249. Klopman Mills, Inc., Rockleigh, N.J. Filed Apr. 12, 1966.

VINO TWILL

No registration rights are claimed for the word "Twill" apart from the mark as shown.
For Greige and Finished Fabrics in the Piece of All Types for Use in Men's, Women's, and Children's Apparel, in Home Furnishings, and in the Industrial Field.
First use Feb. 7, 1966.

SN 245,319. Klopman Mills, Inc., Rockleigh, N.J. Filed May 10, 1966.

OVERTRICK

For Greige and Finished Fabrics in the Piece of All Types for Use in Men's, Women's, and Children's Apparel, in Home Furnishings, and in the Industrial Field.
First use Apr. 19, 1966.

SN 245,320. Klopman Mills, Inc., Rockleigh, N.J. Filed May 10, 1966.

HEAVY WHIPPED CREAM

Owner of Reg. No. 740,695.
For Greige and Finished Fabrics in the Piece of All Types for Use in Men's, Women's, and Children's Apparel, in Home Furnishings, and in the Industrial Field.
First use Mar. 11, 1966.

SN 247,461. Cone Mills Corporation, Greensboro, N.C. Filed June 7, 1966.

DOUBLE FIFTY, SR.

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers, or Any Combination Thereof.
First use Mar. 19, 1963.

SN 247,472. Cone Mills Corporation, Greensboro, N.C. Filed June 7, 1966.

DOUBLE FIFTY, JR.

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers, or Any Combination Thereof.
First use Mar. 19, 1963.

SN 251,685. Normandie Bedspread Co., Inc., New York, N.Y. Filed Aug. 4, 1966.

LADY OF SPAIN

No claim is made to the term "of Spain."
For Bedspreads.
First use July 29, 1966.

SN 253,822. Deering Milliken, Inc., New York, N.Y. Filed Sept. 6, 1966.

RAISANETTE

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers, and Combinations Thereof.
First use on or about Aug. 31, 1966.

SN 253,823. Deering Milliken, Inc., New York, N.Y. Filed Sept. 6, 1966.

TWINDLE

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers, and Combinations Thereof.
First use on or about Aug. 31, 1966.

SN 253,824. Deering Milliken, Inc., New York, N.Y. Filed Sept. 6, 1966.

ROCKRIMMON

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers, and Combinations Thereof.
First use on or abont Aug. 30, 1966.

SN 253,825. Deering Milliken, Inc., New York, N.Y. Filed Sept. 6, 1966.

SAFFRONELLA

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers, and Combinations Thereof.
First use on or about Aug. 30, 1966.

SN 254,014. Guilford Mills, Inc., Greensboro, N.C. Filed Sept. 8, 1966.

CAVLON

For Foam Cushioned Knitted Nylon Fabric for Upholstered Furniture.
First use Apr. 1, 1966.

SN 254,016. Guilford Mills, Inc., Greensboro, N.C. Filed Sept. 8, 1966.

ULTRILON

For Foam Cushioned Stretch Nylon Fabric for Furniture Upholstery.
First use Jan. 14, 1966.

SN 254,022. Klopman Mills, Inc., Rockleigh, N.J. Filed Sept. 8, 1966.

BANDMASTER

For Greige and Finished Fabrics in the Piece of All Types for Use in Men's, Women's, and Children's Apparel, in Home Furnishings, and in the Industrial Field.
First use July 5, 1966.

Class 43 — Thread and Yarn

SN 240,013. Metal Film Company, Inc., Passaic, N.J. Filed Mar. 2, 1966.

NL-A$_G$

Owner of Reg. No. 729,515.
For Metallized Synthetic Yarn.
First use Dec. 17, 1965.

SN 240,060. Blankin Yarn Company, Philadelphia, Pa. Filed Mar. 3, 1966.

THE WISDOM OF WOOL

No claim is made to the word "Wool" apart from the mark as shown.
For Woolen Yarns.
First use November 1965.

SN 245,441. Chapman, Fraser & Company Limited, Thurmaston, Leicester, England. Filed Apr. 11, 1966.

CEFLEX

For Threads and Yarns.
First use May 25, 1965.

Class 44 — Dental, Medical, and Surgical Appliances

SN 231,649. E. R. Squibb & Sons, Inc., New York, N.Y., assignee of Olin Mathieson Chemical Corporation, New York, N.Y. Filed Oct. 26, 1965.

ORAHESIVE

For Nonmedicated Intra-Oral Bandage.
First use Oct. 8, 1965.

SN 234,113. Coles Electronic Corporation, Philadelphia, Pa. Filed Dec. 7, 1965.

ELECTROSURG

Owner of Reg. No. 383,906.
For Radio Frequency Electrosurgical Unit Used in Surgical Treatment or Intervention.
First use Mar. 28, 1940.

SN 234,114. Coles Electronic Corporation, Philadelphia, Pa. Filed Dec. 7, 1965.

RADIOSURG

Owner of Reg. No. 589,214.
For Radio Frequency Electrosurgical Unit Used in Surgical Treatment or Intervention.
First use September 1952.

SN 234,429. Walter E. Jordan, d.b.a. Jordan Manufacturing Company, Des Plaines, Ill. Filed Dec. 13, 1965.

DELCREST

For Surgical Apparatus—Namely, Catheters, Syringes, Drainage Tubes, Disposable Shaving Preparation Sets, Disposable Razors, and Disposable Catheter Kits.
First use on or before Aug. 24, 1965.

SN 234,430. Walter E. Jordan, d.b.a. Jordan Manufacturing Company, Des Plaines, Ill. Filed Dec. 13, 1965.



For Surgical Apparatus—Namely, Catheters, Syringes, Drainage Tubes, Disposable Shaving Preparation Sets, Disposable Razors, and Disposable Catheter Kits.
First use on or before Aug. 24, 1965.

SN 237,572. The Kendall Company, Boston, Mass. Filed Jan. 28, 1966.

LURIDE

Owner of Reg. Nos. 696,308 and 710,460.
For Disposable Mouthpieces for Professional Dental Use.
First use Mar. 5, 1965.

SN 238,737. Hollister Incorporated, Chicago, Ill. Filed Feb. 14, 1966.

IDENT-A-TUBE

Owner of Reg. No. 560,855.
For Diagnostic Device Containing One or More Reagents for Laboratory Use.
First use Feb. 1, 1966.

Class 45 — Soft Drinks and Carbonated Waters

SN 254,096. PepsiCo, Inc., New York, N.Y. Filed Sept. 9, 1966.

DIET PEPSI-COLA

Exclusive right to the use of the word "Diet" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 40,619, 369,426, and others.
For Soft Drinks and Syrups and Concentrates for the Preparation Thereof.
First use February 1964.

SN 254,097. PepsiCo, Inc., New York, N.Y. Filed Sept. 9, 1966.

PEPSI

Owner of Reg. Nos. 40,619, 369,426, and others.
For Soft Drinks and Syrups and Concentrates for the Preparation Thereof.
First use Nov. 21, 1911.

SN 254,098. PepsiCo, Inc., New York, N.Y. Filed Sept. 9, 1966.

PEPSI-COLA

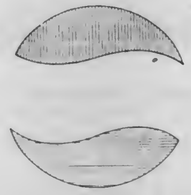
Owner of Reg. Nos. 40,619, 369,426, and others.
For Soft Drinks and Syrups and Concentrates for the Preparation Thereof.
First use at least as early as 1898.

SN 254,099. PepsiCo, Inc., New York, N.Y. Filed Sept. 9, 1966.

DIET PEPSI

Exclusive right to the use of the word "Diet" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 40,619, 369,426, and others.
For Soft Drinks and Syrups for the Preparation Thereof.
First use Mar. 2, 1964.

SN 254,100. PepsiCo, Inc., New York, N.Y. Filed Sept. 9, 1966.



The drawing is lined for red and blue.
For Soft Drinks.
First use Sept. 3, 1963; 1944 in a different form.

SN 254,101. PepsiCo, Inc., New York, N.Y. Filed Sept. 9, 1966.

COME ALIVE! YOU'RE IN THE PEPSI GENERATION!

Owner of Reg. Nos. 40,619, 369,426, and others.
For Soft Drinks.
First use at least as early as June 1964.

SN 254,764. Richard Headley, d.b.a. Burpo Co., Santa Barbara, Calif. Filed Sept. 20, 1966.

BURP

For Carbonated Soft Drinks.
First use Aug. 19, 1966.

Class 46 — Foods and Ingredients of Foods

SN 226,517. Country Gardens Inc., Milwaukee, Wis. Filed Aug. 26, 1965.

COUNTRY GARDEN

Owner of Reg. No. 314,223.
For Canned Foods—Namely, Peas, Green Beans, Wax Beans, Corn, Beets, Mixed Vegetables, Peas and Carrots, Carrots, Lima Beans, Kidney Beans, Rutabagas, Potatoes, Pork and Beans, Sauerkraut, Spinach, Chili Sauce, Tomato Catsup, Whole Tomatoes, and Tomato Juice.
First use Nov. 14, 1933.
Subj. to Intf. with SN 225,641.

SN 227,876. Schmidt Baking Co., Inc., Baltimore, Md. Filed Sept. 15, 1965.

SCHMIDT'S BLUE RIBBON

For Bread, Rolls, and Croutons.
First use October 1927.

SN 230,526. Fine Products Company, Inc., d.b.a. Hollingsworth's, Augusta, Ga., assignee of Fine Products Corporation, Augusta, Ga. Filed Oct. 19, 1965.

Hollingsworth's UNUSUAL CANDIES

Applicant makes no exclusive claim to "Candies" apart from the mark as shown. Owner of Reg. No. 189,726.
For Candy.
First use November 1919.

SN 232,805. John B. Aitchison, d.b.a. The Chex Company, Philadelphia, Pa. Filed Nov. 17, 1965.

CHEX

For Candy Breath Sweetener.
First use on or about Jan. 2, 1938.

SN 232,948. Unisabi, Strasbourg-Neudorf, Bas-Rhin, France. Filed Nov. 18, 1965.

CANIGOU

Owner of French Reg. No. 6,980, dated Apr. 6, 1959 (Strasbourg); Natl. Inst. No. 124,724.
For Dog Food.

SN 233,820. The Quaker Oats Company, Chicago, Ill. Filed Dec. 2, 1965.

QUOTA

Owner of Reg. No. 724,889.
For Breakfast Cereal.
First use Nov. 11, 1965.

SN 234,586. Campbell Taggart Associated Bakeries, Inc., Dallas, Tex. Filed Dec. 14, 1965.

PONY EXPRESS

For Bread.
First use Nov. 22, 1965.

SN 234,779. TV Time Foods, Inc., Chicago, Ill. Filed Dec. 16, 1965.

SNO-WHITE

Owner of Reg. No. 688,121.
For Unpopped Popcorn.
First use Oct. 3, 1957.

SN 236,233. Chicken Delight, Inc., Rock Island, Ill. Filed Jan. 12, 1966.



The drawing is lined for the colors red (coral) and yellow. Applicant disclaims the word "Chicken" apart from the mark as shown. Owner of Reg. Nos. 578,807, 779,635, and others.
For Packaged Ready-To-Eat Food Products, Comprising Hot Chicken, Shrimp, Fish, Meat Ribs, and Pizza.
First use Sept. 9, 1965.

SN 236,473. Doc Holliday, Inc., Valdosta, Ga. Filed Jan. 14, 1966.

DOC HOLLIDAYLAND

The name used in this mark refers to that historical character of the West, now deceased.
For Pecans.
First use on or about Dec. 31, 1964.

SN 236,475. Doc Holliday, Inc., Valdosta, Ga. Filed Jan. 14, 1966.

J. H. (DOC) HOLLIDAY

The name used in this mark refers to that historical character of the West, now deceased.
For Pecans.
First use on or about Dec. 31, 1964.

SN 236,592. Glen Maid, Inc., San Francisco, Calif. Filed Jan. 17, 1966.

GlenMaid

For Fresh Milk, Fresh Non-Fat Milk, Fresh Low Fat Milk, Fresh Homogenized Milk, Concentrated Fresh Milk, Half and Half, Buttermilk, Canned Evaporated Milk, Chocolate Dairy Drink, Whipping Cream, Aerated Whipped Cream, Instant Non-Fat Dry Milk, Butter, Fresh Eggs, Cheese, Cottage Cheese, Sour Cream, Sour Cream Dressing, Fresh Orange Juice, Non-Carbonated Fruit Punch, and Orange Flavored Food Drink.
First use 1935.

SN 237,065. Campbell Soup Company, Camden, N.J. Filed Jan. 26, 1966.

FLEXI-PACK

Owner of Reg. No. 794,540.
For Frozen Individually Packed Entrees Composed Principally of One or More of the Following: Meats, Fish, Shellfish, Poultry, Alimentary Paste, and Vegetables.
First use Sept. 14, 1962.

SN 237,359. Richard Kuriger, Inc., Yonkers, N.Y. Filed Jan. 26, 1966.

OAKWOOD

For Canned and Fresh Meats and Prepared (Processed) Meat Products.
First use at least from Jan. 2, 1940.

SN 239,212. Bird Provision Co., Pekin, Ill. Filed Feb. 21, 1966.

Vogel's

Owner of Reg. No. 735,088.
For Sausage and Ground Beef.
First use June 15, 1937.

SN 239,625. Holmes Packing Corporation, Eastport, Maine. Filed Feb. 25, 1966.

SEA FOAM

For Canned Fish.
First use 1921.

SN 253,590. G. Kawamura, d.b.a. Western Marketing Company of California, and Western Marketing Company, Fullerton, Calif. Filed Sept. 1, 1966.

WESTERN CHIEF

Owner of Reg. No. 422,420.
For Fresh Vegetables and Fresh Strawberries.
First use Aug. 12, 1944, on fresh vegetables.

SN 253,816. W. S. Pope & Son, d.b.a. W. S. Pope & Sons, Philadelphia, Pa. Filed Sept. 6, 1966.



The drawing is lined for the colors red and blue. Owner of Reg. No. 773,301.
For Cheese.
First use Mar. 7, 1966.

SN 254,651. W. F. Cosart Packing Co., Exeter, Calif. Filed Sept. 19, 1966.

YOKOHL

Owner of Reg. No. 515,663.
For Fresh Grapes.
First use 1913.

Class 47 — Wines

SN 235,802. Societa per Azioni Fratelli Folonari, Brescia, Italy. Filed Jan. 4, 1966.

FOLONARI

Owner of Reg. Nos. 318,732, 735,092, and 735,093.
For Wines.
First use October 1957; in commerce October 1957.

SN 241,601. San Antonio Winery, Inc., d.b.a. San Antonio Winery, Los Angeles, Calif. Filed Mar. 22, 1966.

CHERRYDORO

For Wines.
First use Feb. 18, 1966.

Class 49 — Distilled Alcoholic Liquors

SN 199,338. Julius Wile Sons & Co., Inc., New York, N.Y. Filed Aug. 5, 1964.

GARNIER

Owner of Reg. Nos. 317,067 and 317,071.
For Domestic Cordials and Brandies.
First use 1943.

SN 249,422. Forexp S.A. Comercio e Exportacao, Rio de Janeiro, Brazil. Filed July 1, 1966.



No claim of exclusive right is made to "Cafe" as used on coffee liqueur.
For Coffee Liqueur.
First use Oct. 14, 1964; in commerce May 18, 1966.

Class 50 — Merchandise Not Otherwise Classified

SN 245,253. Dean Spencer, Seattle, Wash. Filed May 9, 1966.

DINEGARD

For Insert for Drinking Cups To Prevent Spilling.
First use Nov. 4, 1965.

SN 246,078. Hawkins-Hawkins Co., Inc., Berkeley, Calif. Filed May 19, 1966.

HAWKLITE

Owner of Reg. Nos. 767,962 and 805,723.
For Light Reflective Sheet Material.
First use on or about Mar. 15, 1966.

Class 51 — Cosmetics and Toilet Preparations

SN 199,219. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Aug. 4, 1964.

THERMODENT

For Tooth Paste.
First use in or before February 1955.

SN 216,913. Yardley of London, Inc., Totowa, N.J. Filed Apr. 19, 1965.

Oh! de London

Applicant disclaims the word "London" apart from the mark as shown.
For Fragrance Products—Namely, Colognes, Perfumes, and Powders.
First use Apr. 6, 1965.

SN 226,044. Enrico Caruso Hairstylists, Inc., New York, N.Y. Filed Aug. 19, 1965.

ENRICO CARUSO

For Hair Dressing; Hair Preparations—Namely, Hair Setting Lotion, Hair Rinse, Hair Spray, Hair Conditioner, and Dandruff Cream; Skin Preparations—Namely, Hand Cream, Cleansing Cream and Facial Cream; Cologne, and Bubble Bath Preparation.
First use June 30, 1953.

SN 228,966. Yardley of London, Inc., Totowa, N.J. Filed Sept. 29, 1965.

SIGH SHADOW

Applicant disclaims the word "Shadow" apart from the mark as shown.
For Eye Shadow.
First use Aug. 16, 1965.

SN 229,391. Yardley of London, Inc., Totowa, N.J. Filed Oct. 5, 1965.

WOW BROW

Applicant disclaims the word "Brow" apart from the mark as shown.
For Eye Make-Up Products—Namely, Eye Shadow and Eye Pencil.
First use Aug. 16, 1965.

SN 229,392. Yardley of London, Inc., Totowa, N.J. Filed Oct. 5, 1965.

BABY BLUES

For Eye Make-Up Kit Containing Mascara and Eye Shadow.
First use Sept. 3, 1965.

SN 232,717. Pharmaco, Inc., Kenilworth, N.J. Filed Nov. 15, 1965.

SPRAY DENT

The word "Spray" is disclaimed apart from the mark as shown.
For Spray Deodorant for Dentures.
First use on or about Dec. 4, 1964.

SN 236,515. Royal Beauty Laboratories, Inc., New York, N.Y. Filed Jan. 14, 1966.

COLOR BOND

For Hair Tinting or Bleaching Preparations.
First use Dec. 28, 1965.

SN 242,231. Fairway Foods, Inc., St. Paul, Minn. Filed Mar. 30, 1966.

FAIRWAY

Owner of Reg. Nos. 197,673, 805,728, and others.
For Dentifrice.
First use Mar. 21, 1966.

SN 244,026. Rabin-Winters Corporation, d.b.a. Bruco, El Segundo, Calif. Filed Apr. 21, 1966.

BRUCO

For Proprietary Cosmetic Preparation—Namely, a Liquid Hair Groom.
First use Feb. 26, 1966.

SN 245,371. Richardson-Harris, Inc., New York, N.Y. Filed May 11, 1966.

LITTLE WONDER

For Aerosol Dispensed Hair Spray.
First use Apr. 26, 1966.

SN 247,007. Chap Stick Company, Lynchburg, Va. Filed June 1, 1966.

PORT OF CALL

For Men's Toiletries—Namely, Cologne, After Shave Lotion, Deodorant, Talc, and Hair Dress.
First use May 26, 1966.
Subj. to Intf. with SN 247,871.

SN 247,871. Anson Incorporated, Providence, R.I. Filed June 13, 1966.

PORT OF CALL

For Men's Cologne.
First use Mar. 29, 1966.
Subj. to Intf. with SN 247,007.

SN 251,688. The Procter & Gamble Company, Cincinnati, Ohio. Filed Aug. 4, 1966.

CONFIDE

For Hair Colorant.
First use Jan. 5, 1966.

SN 252,789. Lever Brothers Company, New York, N.Y. Filed Aug. 22, 1966.

TWINK

Owner of Reg. Nos. 128,429 and 734,694.
For Dentifrice.
First use Oct. 8, 1964.

SN 253,595. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Sept. 1, 1966.

LALIXE

For Perfume.
First use Aug. 19, 1966.

SN 253,597. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Sept. 1, 1966.

VOLANT

For Perfume.
First use Aug. 18, 1966.

SN 253,599. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Sept. 1, 1966.

BART

For Cologne.
First use Aug. 18, 1966.

SN 253,603. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Sept. 1, 1966.

BRUXAINE

For Cologne.
First use Aug. 19, 1966.

SN 253,608. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Sept. 1, 1966.

ULENA

For Perfume.
First use Aug. 12, 1966.

SN 253,609. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Sept. 1, 1966.

ZALLA

For Perfume.
First use Aug. 18, 1966.

SN 253,708. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Sept. 2, 1966.

RONDOLAY

For Perfume.
First use Aug. 22, 1966.

Class 52 — Detergents and Soaps

SN 231,462. Morton International, Inc., Chicago, Ill. Filed Oct. 23, 1965.



For Metal and Glass Cleaning Preparations, Drain Cleaners, Polish and Wax Removers, Cleaning Preparation for Automobile, Industrial, Institutional, and General Household Use.
First use on or about Sept. 29, 1965.

SERVICE MARKS

Class 100 — Miscellaneous

SN 231,049. Central Charge Service, Inc., d.b.a. Central Leasing Service, Washington, D.C. Filed Oct. 22, 1965.

CENTRALEASE

Owner of Reg. No. 798,192.
For Complete Equipment Leasing Service.
First use Oct. 5, 1965.

SN 232,513. Automatic Canteen Company of America, Chicago, Ill. Filed Nov. 12, 1965.



The mark consists of the letters "HH" within an oval design.
For Providing Dietary Services—Namely, Operating Diet Kitchens for Patients, and Cafeterias, Restaurants, Snack Bars, and Food Vending Equipment for Staff and Visitors in Institutions Such as Hospitals, Sanatoria and Nursing Homes.
First use Sept. 25, 1964.

Class 101 — Advertising and Business

SN 197,496. Keyvertising, Inc., Baltimore, Md. Filed July 9, 1964.

KEYVERTISING

For Advertising the Goods and Services of Others by Means of Promotional Matter Placed on Key Holders.
First use Oct. 1, 1959.

SN 199,011. Bergen Drug Data Processing Corp., Hackensack, N.J. Filed Aug. 3, 1964.

TIP

For Service Providing Proof of Drug, Medical and Surgical Supply Purchases Which Qualify for Tax Deduction and Medical Insurance Payments.
First use September 1963.

Class 102 — Insurance and Financial

SN 227,938. Thomas Edison Life Insurance Company, Des Moines, Iowa. Filed Sept. 16, 1965.

THOMAS EDISON

The mark consists of the name of "Thomas Edison," the deceased scientist.
For Underwriting Life Insurance.
First use Mar. 10, 1965.

Class 104 — Communication

SN 229,914. Autolert, Washington, D.C. Filed Oct. 7, 1965.

AUTOLERT

For Electronic Emergency Call Services To Alert Highway Authorities of the Location of Motorists in Distress.
First use Sept. 24, 1964.

Class 107 — Education and Entertainment

SN 237,320. Edco, Inc., Greenwood, S.C. Filed Jan. 26, 1966.

MEDALLIONS

For Entertainment Services, Particularly a Musical Group.
First use January 1960.

COLLECTIVE MEMBERSHIP MARKS

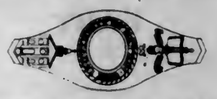
Class 200

SN 227,293. Institute of American Poultry Industries, Chicago, Ill. Filed Sept. 7, 1965.



Applicant disclaims the words "Participant," "Leadership," and "Integrity" apart from the mark as shown.
For Indicating Membership in Applicant.
First use June 28, 1965.

SN 240,132. University of Dayton, Dayton, Ohio. Filed Mar. 3, 1966.



The Latin wording "Pro Deo et Patria" is translated "for God and country."
For Indicating Membership in the Student Body of the University of Dayton as an Upper Classman, and/or for Indicating Membership in the Alumni Body of the University of Dayton as One Who Previously Attained the Status of an Upper Classman in the Student Body Thereof.
First use in or about 1953.

SN 246,480. Nothing, Inc., Providence, R.I. Filed May 24, 1966.

NOTHING

For Indicating Membership in Applicant.
First use on or before May 11, 1966.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 2 — Receptades

819,326. SILVAPLEX. Weyerhaeuser Company. MULTIPLE CLASS (Classes 2, 12, and 32). SN 200,217. Pub. 9–13–66. Filed 8–19–64.

819,327. TALK O' THE TABLE AND DESIGN. Hedwin Corporation. MULTIPLE CLASS (See Classes 2 and 50). SN 240,491. Pub. 9–13–66. Filed 3–9–66.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

819,328. MISCELLANEOUS DESIGN. Bond Street Ltd. MULTIPLE CLASS (See Classes 3 and 8). SN 200,903. Pub. 9–13–66. Filed 8–31–64.

819,329. SHU-PAK. Reliable Luggage, Inc. SN 235,716. Pub. 9–13–66. Filed 1–3–66.

Class 4 — Abrasives and Polishing Materials

819,330. TUFFIE. Mary Carter Paint Co. SN 201,091. Pub. 11–2–65. Filed 9–2–64.

819,331. CLEANOLA AND DESIGN. The Cleanola Company. SN 224,515. Pub. 9–13–66. Filed 7–29–65.

Class 5 — Adhesives

819,332. 3D. The Delta Company. SN 220,919. Pub. 9–13–66. Filed 6–11–65.

Class 6 — Chemicals and Chemical Compositions

819,333. SCENT-OFF. Johnson Nurseries (Kingston) Limited. SN 204,477. Pub. 9–13–66. Filed 10–21–64.

819,334. STOPIT. Private Brands, Inc. SN 212,809. Pub. 9–13–66. Filed 2–25–65.

819,335. AM. Alken-Murray Corporation. MULTIPLE CLASS (See Classes 6, 15, and 52). SN 213,510. Pub. 9–13–66. Filed 3–8–65.

819,336. DURAPHOS. FMC Corporation. SN 214,856. Pub. 9–13–66. Filed 3–24–65.

819,337. DIANOL. Mills-Pearson Corp. MULTIPLE CLASS (Classes 6 and 15). SN 230,021. Pub. 7–5–66. Filed 10–13–65.

819,338. PERMACHLOR. The Sherwin-Williams Company. SN 230,908. Pub. 9–13–66. Filed 10–21–65.

819,339. S AND DESIGN. Sandoz, Inc. SN 231,774. Pub. 9–13–66. Filed 10–28–65.

819,340. CHEVRON. Standard Oil Company of California. SN 236,021. Pub. 9–13–66. Filed 1–7–66.

819,341. GESABAL. Geigy Chemical Corporation. SN 236,364. Pub. 9–13–66. Filed 1–13–66.

819,342. GARDOTOP. Geigy Chemical Corporation. SN 236,365. Pub. 9–13–66. Filed 1–13–66.

819,343. ANOFEX. Geigy Chemical Corporation. SN 236,366. Pub. 9–13–66. Filed 1–13–66.

819,344. AROPENE. Geigy Chemical Corporation. SN 236,367. Pub. 9–13–66. Filed 1–13–66.

819,345. GESATAMIN. Geigy Chemical Corporation. SN 236,368. Pub. 9–13–66. Filed 1–13–66.

819,346. STENTAN. Geigy Chemical Corporation. SN 236,369. Pub. 9–13–66. Filed 1–13–66.

819,347. GESADOM. Geigy Chemical Corporation. SN 236,370. Pub. 9–13–66. Filed 1–13–66.

819,348. GENALON. Geigy Chemical Corporation. SN 236,371. Pub. 9–13–66. Filed 1–13–66.

819,349. CAMPAGARD. Geigy Chemical Corporation. SN 236,374. Pub. 9–13–66. Filed 1–13–66.

819,350. CAMPAPRIM. Geigy Chemical Corporation. SN 236,375. Pub. 9–13–66. Filed 1–13–66.

819,351. MURAL. Geigy Chemical Corporation. SN 236,376. Pub. 9–13–66. Filed 1–13–66.

819,352. SALITAL. Geigy Chemical Corporation. SN 236,377. Pub. 9–13–66. Filed 1–13–66.

819,353. MILOGARD. Geigy Chemical Corporation. SN 236,378. Pub. 9–13–66. Filed 1–13–66.

819,354. GESAFRAM. Geigy Chemical Corporation. SN 236,379. Pub. 9–13–66. Filed 1–13–66.

819,355. TOPAZOL. Geigy Chemical Corporation. SN 236,380. Pub. 9–13–66. Filed 1–13–66.

819,356. SURFHARD. The Euclid Chemical Company. SN 236,725. Pub. 9–13–66. 1–18–66.

819,357. EUCON WR. The Euclid Chemical Company. SN 236,730. Pub. 9–13–66. Filed 1–18–66.

819,358. HEXSOL. Hess Oil & Chemical Corporation. SN 236,750. Pub. 9–13–66. Filed 1–18–66.

819,359. AGSOL. Hess Oil & Chemical Corporation. SN 236,751. Pub. 9–13–66. Filed 1–18–66.

819,360. LACASOL. Hess Oil & Chemical Corporation. SN 236,756. Pub. 9–13–66. Filed 1–18–66.

819,361. FORMAFIX. Biological Research, Inc. SN 237,196. Pub. 9–13–66. Filed 1–25–66.

819,362. TISSUEFIX. Biological Research, Inc. SN 237,197. Pub. 9–13–66. Filed 1–25–66.

819,363. KN–48. Zevel Corporation. SN 238,325. Pub. 9–13–66. Filed 2–7–66.

819,364. TANZOSE. Corn Products Company. SN 238,839. Pub. 9–13–66. Filed 2–15–66.

Class 7 — Cordage

819,365. MANTA-LINE. Mantaline Corporation. SN 237,363. Pub. 9–13–66. Filed 1–26–66.

Class 8 — Smokers' Articles, Not Including Tobacco Products

819,328. (See Class 3 for this trademark.)

819,366. USUS. Adolf Waldmann. SN 228,962. Pub. 9–13–66. Filed 9–29–65.

Class 10 — Fertilizers

819,367. BINUTRIN. Geigy Chemical Corporation. SN 236,381. Pub. 9–13–66. Filed 1–13–66.

819,368. NU-BUD. Glenn J. Elliott, d.b.a. Clarel Laboratory. SN 236,887. Pub. 9–13–66. Filed 1–20–66.

Class 11—Inks and Inking Materials

819,369. LION DESIGN. Martin-Marietta Corporation, assignee of Pope & Gray, Inc. SN 224,445. Pub. 8–30–66. Filed 7–28–65.

819,370. HYDROJET. Sun Chemical Corporation. SN 228,848. Pub. 9–13–66. Filed 9–28–65.

819,371. HUBERFLEX. J. M. Huber Corporation. SN 235,187. Pub. 9–13–66. Filed 12–23–65.

819,372. EXECUTIVE. A. P. Little, Inc. SN 235,785. Pub. 9–13–66. Filed 1–4–66.

819,373. SILON. A. P. Little, Inc. SN 236,902. Pub. 9–13–66. Filed 1–19–66.

Class 12—Construction Materials

819,326. (See Class 2 for this trademark.)

819,374. SHEL-BRIK. Sheldon L. Pollack. SN 91,175. Pub. 5–30–61. Filed 2–18–60.

819,375. DORIC. Doric Corporation. MULTIPLE CLASS (Classes 12 and 18). SN 194,039. Pub. 5–10–66. Filed 5–22–64.

819,376. MODU-LINE. Morton Manufacturing Company. MULTIPLE CLASS (Classes 12 and 32). SN 202,611. Pub. 9–13–66. Filed 9–24–64.

819,377. CHEMSTRESS. Chemically Prestressed Concrete Corporation. SN 210,271. Pub. 9–13–66. Filed 1–21–65.

819,378. OM AND DESIGN. The O'Malley Lumber Company. SN 226,275. Pub. 9–13–66. Filed 8–23–65.

819,379. DECOR-WALL. Howmet Corporation, by change of name from Howe Sound Company. SN 226,661. Pub. 9–13–66. Filed 8–27–65.

819,380. SPANDRELINE. Pittsburgh Plate Glass Company. SN 227,955. Pub. 9–13–66. Filed 9–16–65.

819,381. FLORIDA TILE AND DESIGN. Florida Tile Industries, Inc. SN 228,145. Pub. 9–13–66. Filed 9–20–65.

819,382. DORIC AND DESIGN. Doric Industries, Inc. SN 230,364. Pub. 6–14–66. Filed 10–18–65.

819,383. GLAZE-COTE. Readco Industries Inc. SN 231,938. Pub. 9–13–66. Filed 11–1–65.

819,384. READCO. Readco Industries Inc. SN 231,940. Pub. 9–13–66. Filed 11–1–65.

819,385. SWEDCAST 300. Swedlow Inc. SN 234,859. Pub. 9–13–66 Filed 11–26–65.

819,386. SHUR-WEDGE. Shur-Line Manufacturing Co., Inc. SN 234,940. Pub. 9–13–66. Filed 12–20–65.

819,387. AIR-DEK. United States Steel Corporation (Delaware corporation), by merger and change of name from United States Steel Corporation (New Jersey corporation). SN 234,976. Pub. 9–13–66. 12–20–65.

819,388. INSULTHERM AND DESIGN. Holmes Company, Inc. SN 235,186. Pub. 9–13–66. Filed 12–23–65.

819,389. FLEXLOK. General Refractories Company. SN 237,332. Pub. 9–13–66. Filed 1–26–66.

819,390. RIDGE. General Refractories Company. SN 237,334. Pub. 9–13–66. Filed 1–26–66.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

819,375. (See Class 12 for this trademark.)

819,391. MISCELLANEOUS DESIGN. United-Carr Incorporated. SN 233,151. Pub. 9–13–66. Filed 11–22–65.

819,392. MISCELLANEOUS DESIGN. United States Steel Corporation (Delaware corporation), by merger and change of name from United States Steel Corporation (New Jersey corporation). SN 234,856. Pub. 9–13–66. Filed 12–17–65.

819,393. AV AND DESIGN. Albert Voigt Industries, Inc. SN 235,143. Pub. 9–13–66. Filed 12–22–65.

819,394. WOODFORD AND FANCIFUL W. Woodford Manufacturing Co. MULTIPLE CLASS (Classes 13 and 23). SN 237,637. Pub. 9–13–66. Filed 2–1–66.

819,395. CHARTER MATIC AND DESIGN. Charter Design and Manufacturing Corporation. SN 237,536. Pub. 9–13–66. Filed 1–28–66.

819,396. TRI-CON. Molded Specialties, Inc. SN 247,243. Pub. 9–13–66. Filed 6–3–66.

Class 15—Oils and Greases

819,335. (See Class 6 for this trademark.)

819,337. (See Class 6 for this trademark.)

Class 16—Protective and Decorative Coatings

819,397. OLYMPIC. Philip W. Bailey. SN 228,606. Pub. 9–13–66. Filed 9–27–65.

819,398. COLOUR CUPBOARD. Turco Paint & Varnish Co., Inc. SN 230,963. Pub. 9–13–66. Filed 10–21–65.

819,399. R AND DESIGN. Readco Industries Inc. SN 231,941. Pub. 9–13–66. Filed 11–1–65.

819,400. PORAFLOR. Porafior, Inc. SN 233,387. Pub. 9–13–66. Filed 11–26–65.

819,401. AMER-FLINT. American Lacquer Solvents Co. SN 235,449. Pub. 9–13–66. Filed 12–28–65.

819,402. POLY-LUSTRE. T. C. Esser Company. SN 239,395. Pub. 9–13–66. Filed 2–23–66.

Class 17—Tobacco Products

819,403. AMS AND DESIGN. Faber, Coe & Gregg, Inc. SN 173,749. Pub. 11–24–64. Filed 7–25–63.

819,404. JOBEY. Wally Frank, Ltd. SN 228,355. Pub. 9–13–66. Filed 9–22–65.

819,405. GOLDEN HORN. Wally Frank, Ltd., d.b.a. Hollco. SN 228,357. Pub. 9–13–66. Filed 9–22–65.

819,406. PLEBES. Consolidated Cigar Corporation. SN 234,179. Pub. 9–13–66. Filed 12–3–65.

819,407. EDINHALL AND DESIGN. Erik Edinger. SN 234,889. Pub. 9–13–66. Filed 12–20–65.

819,408. JOHANNES CULEMBORG. Turmac Tobacco Company N.V. SN 234,958. Pub. 9–13–66. Filed 12–20–65.

819,409. TRUE. P. Lorillard Company. SN 237,461. Pub. 9–13–66. Filed 1–27–66.

Class 18—Medicines and Pharmaceutical Preparations

819,410. GINROY. Tamara Royal Jelly Products, Ltd., d.b.a. Tamara Products. SN 236,427. Pub. 9–13–66. Filed 1–13–66.

819,411. C-B-O. C-B Drug Company. SN 239,010. Pub. 9–13–66. Filed 2–17–66.

Class 19—Vehicles

819,412. CAL CUSTOM AND DESIGN. The Kraus Accessories Company, d.b.a. California Custom Accessories Mfg. Co. SN 220,621. Pub. 9–13–66. Filed 6–7–65.

819,413. ADVENTURE WAGON. Adventure Line Manufacturing Co., Inc. SN 224,056. Pub. 9–13–66. Filed 7–23–65.

819,414. THUNDERBALL. The Buehler Corporation. SN 224,714. Pub. 9–13–66. Filed 8–2–65.

819,415. SUNLINER. Jetboat, Incorporated. SN 229,814. Pub. 9–13–66. Filed 10–11–65.

819,416. SPORTSMAN. Outboard Marine Corporation. SN 229,865. Pub. 9–13–66. Filed 10–11–65.

819,417. PAYMASTER. International Harvester Company, assignee of Rockwell-Standard Corporation. SN 229,874. Pub. 9–13–66. Filed 10–11–65.

819,418. CHINOOK. Mair & Son, Inc. SN 230,176. Pub. 9–13–66. Filed 10–14–65.

819,419. CHECK-A-MATIC. American Metal Products, Inc. SN 230,346. Pub. 9–13–66. Filed 10–18–65.

819,420. CART-A-MATIC. American Metal Products, Inc. SN 230,347. Pub. 9–13–66. Filed 10–18–65.

819,421. MM. Moulton Bicycles Limited. SN 230,417. Pub. 9–13–66. Filed 10–18–65.

819,422. DEEPSTAR. Westinghouse Electric Corporation. SN 230,983. Pub. 9–13–66. Filed 10–21–65.

819,423. TORRENTAIR. Ronald Larry Davis, d.b.a. Torrentair. SN 236,807. Pub. 9–13–66. Filed 1–19–66.

819,424. COLOR MATE. Dayco Corporation. SN 245,167. Pub. 9–13–66. Filed 5–9–66.

Class 20—Linoleum and Oiled Cloth

819,425. SOFTRED. The Ruberoid Co. SN 228,938. Pub. 9–13–66. Filed 9–29–65.

819,426. HIGHLIGHT. Congoleum-Nairn Inc. SN 237,540. Pub. 9–13–66. Filed 1–28–66.

Class 21—Electrical Apparatus, Machines, and Supplies

819,427. ARMEL. Armel Electronics, Inc. SN 92,206. Pub. 2–20–62. Filed 3–7–60.

819,428. OKI IN DIAMOND DESIGN. Oki Electric Industry Company, Ltd. MULTIPLE CLASS (Classes 21 and 36). SN 145,209. Pub. 1–28–64. Filed 5–22–62.

819,429. FUSE LINK AND DESIGN. Advance Transformer Co. SN 208,876. Pub. 9–13–66. Filed 12–28–64.

819,430. MIAL. Mial S.p.A. SN 215,526. Pub. 9–13–66. Filed 4–1–65.

819,431. (See Class 22 for this trademark.)

819,432. (See Class 22 for this trademark.)

819,433. (See Class 22 for this trademark.)

819,434. (See Class 22 for this trademark.)

819,435. (See Class 22 for this trademark.)

819,436. MISCELLANEOUS DESIGN. Microphase Corporation. SN 220,868. Pub. 9–13–66. Filed 6–10–65.

819,437. CERRA-DYNAMIC. Audiophonics Corporation. SN 223,275. Pub. 9–13–66. Filed 7–14–65.

819,438. P AND SHIELD DESIGN. Pinkerton Security, Inc. SN 224,551. Pub. 9–13–66. Filed 7–29–65.

819,439. STAKSWITCH. Electronic Engineering Company of California. SN 225,745. Pub. 9–13–66. Filed 8–16–65.

819,440. PORT-A-LIER. The Verplex Company. SN 227,895. Pub. 9–13–66. Filed 9–15–65.

819,441. INVERTAIR AND DESIGN. Vapor Corporation. SN 228,222. Pub. 9–13–66. Filed 9–20–65.

819,442. MK. Merkle-Korff Gear Co. SN 229,264. Pub. 9–13–66. Filed 10–4–65.

819,443. ATLAS. Atlas Supply Company. SN 229,832. Pub. 9–13–66. Filed 10–5–65.

819,444. NU/RATE. Emerson Electric Co. SN 231,818. Pub. 9–13–66. Filed 10–29–65.

819,445. INSULTITE. Electronized Chemicals Corporation. SN 240,601. Pub. 9–13–66. Filed 3–10–66.

819,446. DISSOPAD AND DESIGN. Bivar Company. SN 240,703. Pub. 9–13–66. Filed 3–11–66.

Class 22—Games, Toys, and Sporting Goods

819,431. SURF SKATER AND DESIGN. Potential, Inc. SN 197,327. Pub. 1–19–65. Filed 7–7–64.

819,432. BLACK KNIGHT. Columbia Industries, Inc. SN 207,366. Pub. 6–22–65. Filed 12–3–64.

819,433. K AND DESIGN. Kohner Bros., Inc. SN 216,704. Pub. 9–13–66. Filed 4–16–65.

819,434. FLASK (DESIGN). Shakespeare Company. SN 229,140. Pub. 9–13–66. Filed 10–1–65.

819,435. MUSCLE BACK. Northwestern Golf Company. SN 233,731. Pub. 9–13–66. Filed 12–1–65.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

819,394. (See Class 13 for this trademark.)

819,447. WORKHORSE. Gilson Bros. Co. SN 161,703. Pub. 8–25–64. Filed 1–30–63.

819,448. FLEX-TEX. Canadian Allis-Chalmers Limited. SN 199,788. Pub. 9–13–66. Filed 8–13–64.

819,449. PEMCO. Pemco, Inc., by change of name from Pavement Equipment Mfg. Co. SN 201,301. Pub. 9–13–66. Filed 9–4–64.

819,450. OMNI-LIFT. Robert Grisley, d.b.a. J. M. Grisley Machine Tools. SN 217,114. Pub. 7–5–66. Filed 4–22–65.

819,451. DIAL-A-BOW. Clarence T. Bickner, d.b.a. Bickner Manufacturing Co. SN 217,703. Pub. 7–5–66. Filed 4–30–65.

819,452. HI-FOG AND DESIGN. James C. Price, d.b.a. The Hi-Fog Company. SN 219,904. Pub. 9–13–66. Filed 5–27–65.

819,453. CONTROLMASTER. American Chain & Cable Company, Inc. SN 221,881. Pub. 9–13–66. Filed 6–24–65.

819,454. ATLAS VAC-MACHINE. Koehler-Dayton, Inc. SN 222,382. Pub. 9–13–66. Filed 6–30–65.

819,455. HYDRA-DYNAMILL. Missouri-Rogers Corporation. SN 222,731. Pub. 7–26–66. Filed 7–6–65.

819,456. DYNAMILL. Missouri-Rogers Corporation. SN 222,732. Pub. 7–19–66. Filed 7–6–65.

819,457. BUSATIS AND DESIGN. Gebrüder Busatis. SN 223,357. Pub. 9–13–66. Filed 7–16–65.

819,458. CLEANOLA AND DESIGN. The Cleanola Company. SN 224,516. Pub. 9–13–66. Filed 7–29–65.

819,459. PENTON. Landbouwwerktuigen- en Machinefabriek H. Vissers N.V. SN 228,262. Pub. 9–13–66. Filed 9–21–65.

819,460. LAD-ALLOY. Ladish Co. SN 228,543. Pub. 9–13–66. Filed 9–24–65.

819,461. LAD-CUT. Ladish Co. SN 228,544. Pub. 9–13–66. Filed 9–24–65.

819,462. HWB. Delta Manufacturing and Engineering Corp. SN 228,659. Pub. 9–13–66. Filed 9–27–65.

819,463. COUNT-O-VEYOR AND DESIGN. Graphic Engineers, Inc. SN 228,820. Pub. 9–13–66. Filed 9–28–65.

819,464. "K-MECH." Kaspar Wire Works, Incorporated. SN 228,825. Pub. 9–13–66. Filed 9–28–65.

819,465. PINEHURST. Black, Sivalls & Bryson, Inc. SN 228,986. Pub. 9–13–66. Filed 9–30–65.

819,466. SBB. Miniature Precision Bearings, Inc. SN 229,021. Pub. 9–13–66. Filed 9–30–65.

819,467. DYNAWINCH. Applied Power Industries, Inc. SN 229,399. Pub. 9–13–66. Filed 10–6–65.

819,468. LAURUS AND DESIGN. Walter Peters. SN 230,685. Pub. 9–13–66. Filed 10–20–65.

819,469. LINOFILM. Ekra Corporation. SN 231,077. Pub. 9–13–66. Filed 10–22–65.

819,470. SCOTCH VALVE SAVER. Ronald J. Vlasin, d.b.a. V & V Manufacturing Company. SN 231,609. Pub. 9–13–66. Filed 10–24–65.

819,471. T AND DESIGN. The Torrington Company. SN 232,614. Pub. 9–13–66. Filed 11–12–65.

819,472. BLACK STRAND. Howell Macduff, d.b.a. Edward D. Strand Company. SN 232,840. Pub. 9–13–66. Filed 11–17–65.

819,473. MOSELEY. Morrie Chaitlen, d.b.a. C. & E. Marshall Co. SN 232,969. Pub. 9–13–66. Filed 11–19–65.

819,474. HANDLE WITH CROWN AND DESIGN. Crown Controls Corporation. SN 234,337. Pub. 9–13–66. Filed 12–10–65.

819,475. METROPOLITAN. Wood Newspaper Machinery Corporation. SN 235,880. Pub. 7–5–66. Filed 1–5–66.

819,476. BRAUCHLASIZER. Herbert C. Brauchla. SN 236,715. Pub. 9–13–66. Filed 1–18–66.

819,477. FANCIFUL M. Morton International, Inc. SN 237,580. Pub. 9–13–66. Filed 1–28–66.

819,478. CLASSIC STAR. Washington Forge, Incorporated. SN 237,606. Pub. 9–13–66. Filed 1–28–66.

819,479. TROPIC STAR. Washington Forge, Incorporated. SN 237,607. Pub. 9–13–66. Filed 1–28–66.

819,480. MIRILUIM. Washington Forge, Incorporated. SN 237,609. Pub. 9–13–66. Filed 1–28–66.

819,481. COLLAMAT. Guhl & Scheibler A.G. SN 244,551. Pub. 9–13–66. Filed 4–29–66.

819,482. FLICR. Brown & Sharpe Manufacturing Company. SN 247,550. Pub. 9–13–66. Filed 6–8–66.

Class 24 — Laundry Appliances and Machines

819,483. ECI. Eastern Cyclone Industries, Inc. SN 228,347. Pub. 9–13–66. Filed 9–22–65.

819,484. NYLOFELT. Samuel Yuter, d.b.a. Jayson's. SN 231,348. Pub. 7–12–66. Filed 10–22–65.

Class 26 — Measuring and Scientific Appliances

819,473. (See Class 23 for this trademark.)

819,485. PORTIONATOR. Glenmare Manufacturing Co. SN 181,544. Pub. 1–5–65. Filed 11–20–63.

819,486. OSCILLOPERTURBOGRAPHE MASSON-CARPENTIER. CSF—Compagnie Generale de Telegraphie Sans Fil. SN 206,917. Pub. 9–13–66. Filed 11–25–64.

819,487. EMA AND DESIGN. Engineering Model Associates. SN 213,769. Pub. 9–13–66. Filed 3–10–65.

819,488. SAFETY SIGHT. Safety-Sight, Inc. SN 217,512. Pub. 9–13–66. Filed 4–27–65.

819,489. CORDAX. The Sheffield Corporation. SN 218,328. Pub. 9–13–66. Filed 5–7–65.

819,490. RAY-WEIGH. The Ohmart Corporation. SN 221,839. Pub. 11–9–65. Filed 6–23–65.

819,491. COMBIMETER. Ingenjorsfirma A. Alfredéen AB. SN 224,621. Pub. 9–13–66. Filed 7–30–65.

819,492. BIRD AND DESIGN. B-D Laboratories, Inc. SN 225,100. Pub. 9–13–66. Filed 8–6–65.

819,493. INFRATIO. Latronics Corporation. SN 230,657. Pub. 9–13–66. Filed 10–20–65.

819,494. RECORDETTE-4 STRIPCORDER. Latronics Corportion. SN 230,659. Pub. 9–13–66. Filed 10–20–65.

Class 31 — Filters and Refrigerators

819,495. MCQUAY. McQuay, Inc. SN 187,303. Pub. 2–16–65. Filed 2–24–64.

819,496. EZY-FLO. Dover Corporation. SN 214,092. Pub. 3–1–66. Filed 3–15–65.

819,497. TRI DOT AND DESIGN. Pall Corporation. SN 218,686. Pub. 9–13–66. Filed 5–12–65.

819,498. TURBOMAG. Technical Development Company. SN 221,223. Pub. 9–13–66. Filed 6–15–65.

Class 32 — Furniture and Upholstery

819,326. (See Class 2 for this trademark.)

819,376. (See Class 12 for this trademark.)

819,499. MODULAB. The Valtronic Corporation. SN 190,302. Pub. 11–24–64. Filed 4–3–64.

819,500. LEISURE KING. Cleveland Chair Company, Inc. SN 224,721. Pub. 9–13–66. Filed 8–2–65.

819,501. AQUABAN AND DESIGN. Porch & Patio Inc. SN 225,065. Pub. 3–15–66. Filed 8–5–65.

Class 34 — Heating, Lighting, and Ventilating Apparatus

819,502. CHILLER-DILLER. Lucky Furniture Manufacturing Company, Inc. SN 230,174. Pub. 9–13–66. Filed 10–14–65.

819,503. AQUAFLO. Orr & Sembower, Inc. SN 232,085. Pub. 7–5–66. Filed 11–3–65.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

819,504. FABRIFLEX. Dayco Corporation. SN 245,168. Pub. 9–13–66. Filed 5–9–66.

Class 36 — Musical Instruments and Supplies

819,428. (See Class 21 for this trademark.)

819,505. MONUMENTAL. Monumental Films and Recordings Inc. SN 197,747. Pub. 9–13–66. Filed 7–13–64.

819,506. R RHEEM AND DESIGN. Rheem Manufacturing Company. SN 223,457. Pub. 9–13–66. Filed 7–15–65.

819,507. ROBERTS. Rheem Manufacturing Company. SN 223,458. Pub. 9–13–66. Filed 7–15–65.

819,508. SOUNDEX STEREO 8. Soundex Radio Corp. SN 244,949. Pub. 9–13–66. Filed 5–5–66.

Class 37 — Paper and Stationery

819,473. (See Class 23 for this trademark.)

819,509. TOUCHE. The Parker Pen Company. SN 222,195. Pub. 9–13–66. Filed 6–28–65.

819,510. SHRINKASE. Reynolds Metals Company. SN 223,723. Pub. 9–13–66. Filed 7–19–65.

819,511. PIKKER-UPPERS. Edmund Scientific Co. SN 225,410. Pub. 9–13–66. Filed 8–10–65.

819,512. PASTEL POODLES. Norcross, Inc. SN 225,888. Pub. 9–13–66. Filed 8–17–65.

819,513. PEN-EASE. Nationwide Papers Incorporated. SN 227,608. Pub. 9–13–66. Filed 9–10–65.

819,514. FLAG. Venus Pen & Pencil Corporation. SN 229,816. Pub. 9–13–66. Filed 10–4–65.

819,515. SANI-SEAL. Arvey Corporation. SN 229,739. Pub. 9–13–66. Filed 10–11–65.

819,516. ATTACH-O-STRIP AND DESIGN. The Albrecht Company. SN 230,222. Pub. 9–13–66. Filed 10–15–65.

819,517. BONDUGRAPH. Hammermill Paper Company. SN 235,297. Pub. 9–13–66. Filed 12–27–65.

819,518. TORINO. Weyerhaeuser Company. SN 236,532. Pub. 9–13–66. Filed 1–14–66.

819,519. SPENSEAL AND DESIGN. Gulf Oil Corporation. SN 236,990. Pub. 9–13–66. Filed 1–21–66.

819,520. DELICARE. Kimberly-Clark Corporation. SN 237,356. Pub. 9–13–66. Filed 1–26–66.

819,521. ZEPHYR. The Procter & Gamble Company. SN 237,740. Pub. 9–13–66. Filed 2–1–66.

819,522. STAT-REM. Med-Dent Publishing Co. SN 237,862. Pub. 9–13–66. Filed 2–2–66.

819,523. CLINI-REC. Med-Dent Publishing Co. SN 237,863. Pub. 9–13–66. Filed 2–2–66.

819,524. HEADSTART. The Joseph Dixon Crucible Company. SN 238,185. Pub. 9–13–66. Filed 2–7–66.

Class 38 — Prints and Publications

819,525. POTPOURRI. Litton Precision Products, Inc. SN 162,564. Pub. 12–1–64. Filed 2–12–63.

819,526. SELF-EXPRESSO AND DESIGN. Dorothy E. Johnson. SN 228,914. Pub. 9–13–66. Filed 9–29–65.

819,527. CUADERNO TRIMESTRAL DE LA CIENCIA CRISTIANA. The Christian Science Publishing Society. SN 230,234. Pub. 9–13–66. Filed 10–15–65.

819,528. ESG AND DESIGN. Walter J. Black, Inc. SN 230,505. Pub. 9–13–66. Filed 10–19–65.

819,529. COUPLER. D. H. Baldwin Company. SN 233,671. Pub. 9–13–66. Filed 12–1–65.

819,530. ONE-DESIGN & OFFSHORE YACHTSMAN. One-Design Yachtsman, Inc. SN 233,764. Pub. 9–13–66. Filed 12–1–65.

819,531. GOLD MEDAL AND DESIGN. Fawcett Publications, Inc. SN 233,788. Pub. 9–13–66. Filed 12–2–65.

819,532. CREST BOOK AND DESIGN. Fawcett Publications, Inc. SN 233,789. Pub. 9–13–66. Filed 12–2–65.

Class 39 — Clothing

819,533. PILLOW-PAWS. Principle Business Enterprises, Inc. SN 150,970. Pub. 10–8–63. Filed 8–10–62.

819,534. SHIRLEY GAY. Independent Grocers' Alliance Distributing Co. SN 196,964. Pub. 8–17–65. Filed 7–2–64.

819,535. BEAGLE HOUSE AND DESIGN. Jacquelin D. Woolfolk, d.b.a. Beagle House. SN 200,899. Pub. 9–13–66. Filed 8–21–64.

819,536. MIGHTY CHAMP. Boss Manufacturing Company. SN 206,219. Pub. 10–5–65. Filed 11–16–64.

819,537. MONTY BY KANGOL WEAR LTD. Kangol Wear Limited. SN 206,627. Pub. 4–26–66. Filed 11–20–64.

819,538. AWARD AND DESIGN. Salem Shoe Manufacturing Company. SN 224,247. Pub. 9–13–66. Filed 7–26–65.

819,539. DURAGLUV. Golden International. SN 225,305. Pub. 9–13–66. Filed 8–9–65.

819,540. DEBBY DARE AND DESIGN. Danny Dare, Inc., assignee of Debby Dare, Inc. SN 226,130. Pub. 9–13–66. Filed 8–20–65.

819,541. MISS E. R. P. Hazzard Co. SN 226,843. Pub. 9–13–66. Filed 8–31–65.

819,542. WORK WEAR AND DESIGN. Work Wear Corporation. SN 227,462. Pub. 9–13–66. Filed 9–8–65.

819,543. FEMALE. HK Corporation. SN 227,580. Pub. 9–13–66. Filed 9–10–65.

819,544. LADY WEMBLEY. Wembley, Inc. SN 227,682. Pub. 9–13–66. Filed 9–10–65.

819,545. MAGNIFYING GLASS SHOWN AT THE TOE PORTION (DESIGN). Great American Knitting Mills, Inc. SN 229,650. Pub. 9–13–66. Filed 10–8–65.

819,546. SNAPAK. William Fayer, d.b.a. Snapak Raincoat Co. SN 229,780. Pub. 9–13–66. Filed 10–11–65.

819,547. VITALITY SUBURBANS. International Shoe Company. SN 230,543. Pub. 9–13–66. Filed 10–19–65.

819,548. GOLDEN BEAUTY. Murray Undergarment Co., Inc. SN 230,555. Pub. 9–13–66. Filed 10–19–65.

819,549. VM. Virginia Maid Hosiery Mills, Inc. SN 231,317. Pub. 9–13–66. Filed 10–22–65.

819,550. CLOISTER. The Londontown Manufacturing Company. SN 232,468. Pub. 9–13–66. Filed 11–10–65.

819,551. CATALINA. Catalina, Inc. SN 234,592. Pub. 9–13–66. Filed 12–13–65.

819,552. WEMFLEX. Wembley, Inc. SN 234,979. Pub. 9–13–66. Filed 12–20–65.

819,553. PEP STEP MOCCASINS AND DESIGN. A. S. Beck Shoe Corporation. SN 235,089. Pub. 9–13–66. Filed 12–22–65.

819,554. BRISTOL. White Swan Uniforms, Inc. SN 235,244. Pub. 9–13–66. Filed 12–23–65.

819,555. BIG SOUND. The Puritan Sportswear Corp. SN 235,334. Pub. 9–13–66. Filed 12–27–65.

819,556. PEA PICKER'S. Ely & Walker, Inc. SN 235,377. Pub. 9–13–66. Filed 12–22–65.

819,557. SKEGS. The Kaynee Company. SN 235,408. Pub. 9–13–66. Filed 12–28–65.

819,558. D DRUMMOND. Drummond Knitwear Co., Ltd. SN 235,498. Pub. 9–13–66. Filed 12–29–65.

819,559. WEST MAID. West Brothers of De Ridder, Louisiana Inc. SN 235,748. Pub. 9–13–66. Filed 1–3–66.

819,560. MIRACLE KNIT. McGregor-Doniger Inc. SN 235,787. Pub. 9–13–66. Filed 1–4–66.

819,561. STITCH-IN-TAME. Maidenform, Inc. SN 235,838. Pub. 9–13–66. Filed 1–5–66.

819,562. FLUTTER-FLIRT. Maidenform, Inc. SN 235,839. Pub. 9–13–66. Filed 1–5–66.

819,563. BRIEFLING. Maidenform, Inc. SN 235,840. Pub. 9–13–66. Filed 1–5–66.

819,564. DREAM SPUN. Maidenform, Inc. SN 235,841. Pub. 9–13–66. Filed 1–5–66.

819,565. SANDHURST. The Commercial Shirt Corp. SN 236,236. Pub. 9–13–66. Filed 1–12–66.

819,566. PRECIOUS FORM. Splendor Form Brassiere Co., Inc. SN 236,422. Pub. 9–13–66. Filed 1–13–66.

819,567. HUCKSTER. Kenrich Shoe Corporation. SN 236,611. Pub. 9–13–66. Filed 1–17–66.

819,568. IMPETUOUS. Kayser-Roth Corporation. SN 236,894. Pub. 9–13–66. Filed 1–20–66.

819,569. ROGUE. Genesco Inc. SN 243,861. Pub. 9–13–66. Filed 4–20–66.

Class 40 — Fancy Goods, Furnishings, and Notions

819,570. KANEKALON LIFE. Kanegafuchi Chemical Industry Company, Limited. SN 217,743. Pub. 4–26–66. Filed 4–30–65.

819,571. MISCELLANEOUS DESIGN. Johnson & Johnson, d.b.a. Permacel. SN 218,775. Pub. 9–13–66. Filed 5–13–65.

819,572. CAN'T-A-PART. C. & C. Button & Trimming Company, Inc. SN 236,800. Pub. 9–13–66. Filed 1–19–66.

819,573. 3M. Minnesota Mining and Manufacturing Company. SN 238,652. Pub. 9–13–66. Filed 2–11–66.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

819,574. ESTREL. Eastman Kodak Company. SN 226,227. Pub. 9–13–66. Filed 8–23–65.

819,575. FOAM-TAILORED. Allied Chemical Corporation. SN 228,870. Pub. 9–13–66. Filed 9–29–65.

819,576. GILCOLAR. Gilford, Inc. SN 236,588. Pub. 9–13–66. Filed 1–17–66.

819,577. SPLANKET. Thomas Pride Mills, Inc. SN 237,761. Pub. 9–13–66. Filed 2–1–66.

819,578. BORGLEAM. Amphenol Corporation. SN 237,784. Pub. 9–13–66. Filed 2–2–66.

819,579. BORGEASE. Amphenol Corporation. SN 237,787. Pub. 9–13–66. Filed 2–2–66.

819,580. BORGLUX. Amphenol Corporation. SN 237,788. Pub. 9–13–66. Filed 2–2–66.

819,581. BORGLO. Amphenol Corporation. SN 237,789. Pub. 9–13–66. Filed 2–2–66.

819,582. BORGALA. Amphenol Corporation. SN 237,790. Pub. 9–13–66. Filed 2–2–66.

819,583. BORGUARD. Amphenol Corporation. SN 237,791. Pub. 9–13–66. Filed 2–2–66.

819,584. SUPER-BORGLURA. Amphenol Corporation. SN 237,792. Pub. 9–13–66. Filed 2–2–66.

819,585. TOASTMASTER. Amphenol Corporation. SN 237,793. Pub. 9–13–66. Filed 2–2–66.

819,586. VALEREAU. Fieldcrest Mills, Inc. SN 238,067. Pub. 9–13–66. Filed 2–4–66.

819,587. FOUR SEASONS. General Felt Industries, Inc. SN 240,292. Pub. 9–13–66. Filed 3–7–66.

Class 43 — Thread and Yarn

819,588. SPINDYE. Roselon Yarns, Inc. SN 236,782. Pub. 9–13–66. Filed 1–18–66.

819,589. WINSOM. Indian Head Mills, Inc. SN 237,561. Pub. 9–13–66. Filed 1–28–66.

819,590. WIN-KNIT. Indian Head Mills, Inc. SN 237,562. Pub. 9–13–66. Filed 1–28–66.

819,591. WINFANT. Indian Head Mills, Inc. SN 237,563. Pub. 9–13–66. Filed 1–28–66.

819,592. ENKASHEER. American Enka Corporation. SN 237,643. Pub. 9–13–66. Filed 2–1–66.

819,593. DY. Dixie Yarns, Inc. SN 238,410. Pub. 9–13–66. Filed 2–9–66.

Class 44 — Dental, Medical, and Surgical Appliances

819,594. DYNA-VAC. Coastal Dynamics Corporation. SN 174,343. Pub. 4–7–64. Filed 8–5–63.

819,595. DYNA-DENT. Coastal Dynamics Corporation. SN 174,344. Pub. 4–7–64. Filed 8–5–63.

819,596. KAP-PAK. Becton, Dickinson and Company. SN 229,742. Pub. 5–10–66. Filed 10–11–65.

819,597. YOUNGS ETC. AND DESIGN. Youngs Drug Products Corporation. SN 234,613. Pub. 9–13–66. Filed 12–13–65.

819,598. Z-PAD. Ipco Hospital Supply Corporation. SN 234,648. Pub. 9–13–66. Filed 12–15–65.

819,599. SWIFT. The Martin Brothers Electric Company. SN 235,517. Pub. 9–13–66. Filed 12–29–65.

819,600. EAR-MATE. Otarion Electronics, Inc. SN 235,707. Pub. 9–13–66. Filed 1–3–66.

819,601. DURASORB. Parke, Davis & Company. SN 245,135. Pub. 9–13–66. Filed 5–9–66.

Class 46 — Foods and Ingredients of Foods

819,602. SWEETRIM. Ralph Rosenthal. SN 191,606. Pub. 12–29–64. Filed 4–20–64.

819,603. ANTHONY WAYNE. Wayne Candles, Inc. SN 206,901. Pub. 9–13–66. Filed 11–24–64.

819,604. EL YUNQUE. United Salesmen, Inc. SN 209,878. Pub. 9–14–65. Filed 1–5–65.

819,605. DOW AND DESIGN. The Dow Chemical Company. SN 211,040. Pub. 9–13–66. Filed 2–1–65.

819,606. PINE CONE. Albert W. Sisk & Son. SN 213,367. Pub. 9–13–66. Filed 3–4–65.

819,607. EGG MATE. Robert I. Garver, d.b.a. Garver Products. SN 215,610. Pub. 9–13–66. Filed 4–2–65.

819,608. CANDY BREAK. Standard Brands Incorporated. SN 215,792. Pub. 9–13–66. Filed 4–5–65.

819,609. WONDER KING. Ray Costa, d.b.a. Costa Sales Company. SN 222,673. Pub. 12–21–65. Filed 7–6–65.

819,610. MERCURY. Peavey Company. SN 233,230. Pub. 9–13–66. Filed 11–22–65.

819,611. PANDO. Peavey Company. SN 233,236. Pub. 9–13–66. Filed 11–22–65.

819,612. SATURN. Peavey Company. SN 233,237. Pub. 9–13–66. Filed 11–22–65.

819,613. FRED'S AND DESIGN. Fred Mushroom Products Co. SN 235,772. Pub. 9–13–66. Filed 1–4–66.

819,614. THAT TOUCH. General Mills, Inc. SN 235,828. Pub. 9–13–66. Filed 1–4–66.

Class 47 — Wines

819,615. PARAMOUNT. Delaforce Sons & Ca. Limitada, d.b.a. Delaforce & Sons Co. SN 207,797. Pub. 9–13–66. Filed 12–9–64.

Class 50 — Merchandise Not Otherwise Classified

819,327. (See Class 2 for this trademark.)

819,616. EMGEE. Emgee Corp., assignee of James M. Greenwell. SN 218,639. Pub. 6–7–66. Filed 5–12–65.

819,617. TRINITY AND DESIGN. Coggins Granite Industries, Inc. SN 229,204. Pub. 9–13–66. Filed 10–4–65.

819,618. FRILL-ETTES. Harold Leonard & Co., Inc. SN 240,925. Pub. 9–13–66. Filed 3–14–66.

Class 51 — Cosmetics and Toilet Preparations

819,619. THE BEAUTY PRESCRIPTION FOR TROUBLED HAIR. Clairol Incorporated. SN 221,156. Pub. 9–6–66. Filed 6–15–65.

819,620. HAAREL. Hoyu Kabushiki Kaisha, d.b.a. Hoyu Co., Ltd. SN 231,132. Pub. 9–13–66. Filed 10–22–65.

819,621. FOR THE MAN WHO CALLS THE PLAYS AND DESIGN. Quarterback Sports Federation Inc. SN 231,592. Pub. 9–13–66. Filed 10–24–65.

819,622. COCO CHANEL. Chanel Industries, Inc. SN 237,533. Pub. 9–13–66. Filed 1–28–66.

819,623. MADEMOISELLE COCO. Chanel Industries, Inc. SN 237,535. Pub. 9–13–66. Filed 1–28–66.

819,624. GOING STEADY. The Andrew Jergens Company. SN 239,162. Pub. 9–13–66. Filed 2–18–66.

819,625. SPRAY-TEX AND DESIGN. Charles Pyron Ponton, d.b.a. Spray-Tex Company. SN 239,312. Pub. 9–13–66. Filed 2–21–66.

819,626. PLAY-OF-LIGHT. Frances Denney, Inc. SN 239,505. Pub. 9–13–66. Filed 2–24–66.

819,627. DIAL AND DESIGN. Armour and Company. SN 239,579. Pub. 9–13–66. Filed 2–25–66.

819,628. DIAL. Armour and Company. SN 239,580. Pub. 9–13–66. Filed 2–25–66.

819,629. HAND-LO. Beauty Counselors, Inc. SN 239,707. Pub. 9–13–66. Filed 2–28–66.

819,630. BODY-LO. Beauty Counselors, Inc. SN 239,708. Pub. 9–13–66. Filed 2–28–66.

819,631. MISS RITZ. Lanvin-Charles of the Ritz, Inc. SN 239,912. Pub. 9–13–66. Filed 3–1–66.

Class 52 — Detergents and Soaps

819,335. (See Class 6 for this trademark.)

819,632. JETS. Household Cleansers Limited. SN 148,035. Pub. 4–28–64. Filed 6–29–62.

819,633. BOUNCE. Cowles Chemical Company. SN 240,157. Pub. 9–13–66. Filed 3–4–66.

819,634. CARPET LIFE. American Chemco, Inc. SN 240,236. Pub. 9–13–66. Filed 3–7–66.

Service Marks

Class 100 — Miscellaneous

819,635. AIR-O-TEL. Mercury International Hotel Co., Ltd. SN 231,167. Pub. 9–13–66. Filed 10–22–65.

Class 101 — Advertising and Business

819,636. SKI SHOW-U.S.A. Ronald M. Blanding, d.b.a. Denver Merchandise Mart. SN 216,783. Pub. 3–8–66. Filed 4–19–65.

819,637. QUALITY AND QUANTITY EQUAL AND DESIGN. Shaffer Enterprises, Inc., assignee of Glen D. Shaffer, d.b.a. Shaffer Enterprises. SN 226,793. Pub. 8–2–66. Filed 8–30–65.

Class 102 — Insurance and Financial

819,638. AMERICAN HERITAGE LIFE. American Heritage Life Insurance Company. SN 121,056. Pub. 12–22–64. Filed 5–31–61.

819,639. ORTRON. Scantlin Electronics, Inc. SN 226,166. Pub. 9–13–66. Filed 8–20–65.

Class 103 — Construction and Repair

819,640. C-COR AND DESIGN. C-Cor Electronics, Inc. SN 185,757. Pub. 1–25–66. Filed 1–31–64.

819,641. TECH-CARE. Whirlpool Corporation. SN 203,133. Pub. 8–30–66. Filed 10–1–64.

819,642. AIRCOWELL. Air Reduction Company, Incorporated. SN 206,994. Pub. 9–13–66. Filed 11–27–64.

819,643. SCUBA DUBA. William R. Crawford III, d.b.a. Scuba Duba. SN 223,974. Pub. 9–13–66. Filed 7–22–65.

Class 106 — Material Treatment

819,644. VIRGINIA PHOTO AND DESIGN. Mail Enterprises, Incorporated. SN 231,164. Pub. 9–13–66. Filed 10–22–65.

Collective Membership Mark

Class 200

819,645. UNITED REPUBLICANS OF AMERICA ETC. AND DESIGN. United Republicans of America. SN 214,805. Pub. 9–13–66. Filed 3–23–65.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 8 — Smokers' Articles, Not Including Tobacco Products

819,646. Kanamaru Shoten, Ltd., Daito-ku, Tokyo, Japan. SN 228,693. Filed P.R. 9–27–65; Am. S.R. 9–27–66.

BIFLAME

For Gas Lighters for Smokers' Use.
First use Sept. 22, 1965; in commerce Sept. 22, 1965.

Class 16 — Protective and Decorative Coatings

819,647. Texas Refinery Corp., Fort Worth, Tex. SN 228,767. Filed P.R. 9–27–65; Am. S.R. 10–4–66.

LEARN TO EARN AND EARN WHILE LEARNING

For Liquid Asbestos Roof Coating.
First use Sept. 13, 1965.

819,648. Claremont Polychemical Corporation, Roslyn Heights, N.Y. SN 242,332. Filed P.R. 3–31–66; Am. S.R. 9–22–66.

"CHROMA-CLAD"

For Colored Aluminum Flakes Used To Pigment Plastics and Used in the Manufacture of Decorative Paints.
First use Apr. 6, 1964.

Class 17 — Tobacco Products

819,649. Iwan Ries & Co., Chicago, Ill. SN 213,363. Filed P.R. 3–4–65; Am. S.R. 9–28–66.

DR. BRADLEY MIXTURE

The word "Mixture" is disclaimed apart from the mark as shown.
For Smoking Tobacco.
First use March 1963.

Class 21 — Electrical Apparatus, Machines, and Supplies

819,650. Racine Industrial Plant, Inc., Racine, Wis. SN 194,237. Filed P.R. 5–25–64; Am. S.R. 10–4–66.

LIFT-BRUSH

For Carpet Cleaning Machine.
First use Sept. 3, 1963.

819,651. Phelps Dodge Electronic Products Corporation, New York, N.Y. SN 204,918. Filed P.R. 10–27–64; Am. S.R. 10–7–66.

TAPERLOK

For Coaxial Cable Connectors.
First use on or about July 28, 1964.

819,652. The Glidden Electric Corporation, Manchester, Mass. SN 208,860. Filed P.R. 12–17–64; Am. S.R. 9–21–66.

DATA-DIALER

For Mechanism Attached to a Telephone Which Automatically Dials a Given Number in Response to a Signal Such as a Fire, Forcible Entry Into the Premises, etc., and Thereafter Transmits a Predetermined Message by Signals Created by Pulsing, Tone, Light Waves, Voice and Other Adaptable Signaling Methods When the Dialed Number Responds.
First use Oct. 15, 1964.

819,653. Phillips Manufacturing Company, Inc., Minneapolis, Minn. SN 213,707. Filed P.R. 3–9–65; Am. S.R. 9–29–66.

ICE FREE

For Electric Stock Tank Heaters.
First use Sept. 13, 1963.

819,654. Nippon Electric Company, Limited, Minato-ku, Tokyo, Japan. SN 222,402. Filed P.R. 6–30–65; Am. S.R. 9–30–66.

ONE-TOUCH DIAL

For Automatic Dialing Accessories for Use With Telephones.
First use November 1962; in commerce Apr. 20, 1964.

Class 22 — Games, Toys, and Sporting Goods

819,655. Minnesota Mining and Manufacturing Company, St. Paul, Minn. SN 211,185. Filed P.R. 2–2–65; Am. S.R. 9–27–66.

STOCKS & BONDS

For Apparatus Sold as a Unit for Playing a Board Game.
First use Nov. 19, 1964.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

819,656. Meinor Industries, Inc., Moonachie, N.J. SN 215,879. Filed P.R. 4–6–65; Am. S.R. 8–30–66.

FLOATING FULCRUM

For Hand Held Shears.
First use Jan. 25, 1965.

Class 34 — Heating, Lighting, and Ventilating Apparatus

819,657. Twin-Fire Corporation, Albert City, Iowa. SN 208,786. Filed P.R. 12–23–64; Am. S.R. 9–21–66.

"TWIN-FIRE"

For Charcoal Grill Having a Vertical Broiler and a Horizontal Cooking Top.
First use on or before Oct. 3, 1964.

Class 38 — Prints and Publications

819,658. Interscience Information, Inc., New York, N.Y. SN 211,534. Filed P.R. 2–8–65; Am. S.R. 10–5–66.

WOMEN'S MEDICAL NEWS

For Bi-Weekly Publications in the Nature of a Newsletter and Backgrounder Containing Information, Commentary and Other Matters of Interest.
First use Jan. 20, 1965.

819,659. Kennedy Sinclaire, Inc., Montclair, N.J. SN 231,571. Filed P.R. 10–24–65; Am. S.R. 9–27–66.

FAMILY FINANCIAL PLANNER

For Booklets Prepared Periodically for Distribution by Others.
First use January 1964.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

819,660. Towel City Towel Co., Inc., Kannapolis, N.C. SN 217,953. Filed P.R. 5–3–65; Am. S.R. 10–4–66.

THE ORIGINAL TOWEL STORE

For Towels, Wash Cloths, Bath Mats, and Sheets.
First use at least as early as 1945.

Class 44 — Dental, Medical, and Surgical Appliances

819,661. Lacto-Seal, Inc., Indianapolis, Ind. SN 209,443. Filed P.R. 1–6–65; Am. S.R. 9–27–66.

INTER/LOK

For Infant Nursing Nipples and Nipple Covers.
First use on or before Dec. 21, 1964.

819,662. Hollister Incorporated, Chicago, Ill. SN 233,103. Filed P.R. 11–22–65; Am. S.R. 9–23–66.

DOUBLE-GRIP

For Umbilical Cord Clamp.
First use at least as early as June 1, 1964.

Class 45 — Soft Drinks and Carbonated Waters

819,663. Choco-Lato Sales, Inc., South Elmonte, Calif. SN 233,249. Filed P.R. 11–24–65; Am. S.R. 9–28–66.

CHOCO-LATO

For Chocolate Flavored Soft Drink.
First use Apr. 1, 1964.

Class 46 — Foods and Ingredients of Foods

819,664. Estee Candy Co., Inc., New York, N.Y. SN 186,341. Filed P.R. 2–10–64; Am. S.R. 9–22–65

BELGIANTREAT

For Dietetic Cookies, and Candies.
First use Feb. 5, 1964.

819,665. B. F. Trappey's Sons Inc., New Iberia, La. SN 226,868. Filed P.R. 8–31–65; Am. S.R. 9–23–66.



The representation of the woman shown in the drawing is fanciful. The word "Torrido" is translated as "very hot."
For Bottled Peppers.
First use Sept. 24, 1943.

819,666. Hill Packing Company, Topeka, Kans. SN 230,156. Filed P.R. 10–14–65; Am. S.R. 9–8–66.

READY ROUNDS

For Dog Food.
First use Aug. 13, 1965.

819,667. Welch's Nut & Candy Co., Chicago, Ill. SN 249,708. Filed 7–7–66.

IOWA CRUNCH

For Food Snack Consisting of Sugar, Peanuts, Corn Syrup, Popcorn, Butter, and Salt.
First use May 10, 1965.

Class 48 — Malt Beverages and Liquors

819,668. G. Heileman Brewing Company, Inc., La Crosse, Wis. SN 195,408. Filed P.R. 6–11–64; Am. S.R. 9–29–66.

MILWAUKEE'S CHOICEST

For Beer.
First use Dec. 15, 1944.

Class 49 — Distilled Alcoholic Liquors

819,669. Senior & Co. Incorporated, Curacao, Netherlands Antilles. SN 199,502. Filed P.R. 8–7–64; Am. S.R. 6–20–66.



The mark consists of the conformation of the cover of the container of applicant's liqueurs. The ribbon on the drawing is lined for the color orange; the remainder of the cover depicted in the drawing is not lined for color.
For Liqueurs.
First use at least as early as February 1949.

Class 51 — Cosmetics and Toilet Preparations

819,670. Lady Fair Creations, Inc., Newark, N.J. SN 166,015. Filed P.R. 4–3–63; Am. S.R. 9–22–66.

OLD FASHION

For Skin Demulcent Humectant Preparations.
First use about Dec. 26, 1957.

819,671. Sybil Ives Incorporated, White Plains, N.Y. SN 202,330. Filed P.R. 9–21–64; Am. S.R. 9–20–66.

BODY 'N SHEEN

For Hair Spray, Creme Rinse and Cold Permanent Waving Preparations.
First use Oct. 18, 1960.

819,672. Richard Hudnut, Morris Plains, N.J. SN 208,190. Filed P.R. 12–15–64; Am. S.R. 8–2–66.

LIP SLICK

For Lipstick.
First use Dec. 4, 1964.

819,673. The Andrew Jergens Company, Cincinnati, Ohio. SN 212,946. Filed P.R. 2–1–65; Am. S.R. 9–28–66.

INSTANT HOLD

For Hair Spray.
First use Feb. 5, 1965.

819,674. Revlon, Inc., New York, N.Y. SN 227,070. Filed P.R. 9–2–65; Am. S.R. 9–15–66.

BRICKTOP

For Lipstick and Nail Enamel.
First use Aug. 19, 1965.

Service Mark

Class 100 — Miscellaneous

819,675. Southern California Gas Company, Los Angeles, Calif. SN 233,221. Filed P.R. 11–22–65; Am. S.R. 9–26–66.

THE FUTURE BELONGS TO GAS

For Transmission and Distribution of Natural Gas to the Public.
First use February 1961.

Certification Mark

Class A — Goods

819,676. Southern Counties Gas Company of California, Los Angeles, Calif. SN 233,226. Filed P.R. 11–22–65; Am. S.R. 9–26–66.

BALANCED POWER HOMES

The mark certifies that the homes to which the mark is applied, or the plans and specifications therefor, conform to certain minimum standards and specifications as to the use of both natural gas and electricity and gas and electric appliances as set forth in applicant's Balanced Power Homes program, a nation-wide program of applicant to promote the use of gas appliances in homes.
For Homes.
First use February 1961.

TRADEMARK REGISTRATIONS RENEWED

29,299. STAR BRAND AND DESIGN. Cl. 9. 12–16–1896.
52,699. MASURY'S. Cl. 16. 5–15–06.
57,617. TRIPLE CRESCENT (DESIGN). Cl. 14. 11–13–06.
210,360. KLO-KAY. Cl. 37. 3–16–26.
211,843. ARROWHEAD. Cl. 37. 4–10–26.
215,216. GYRAFOAM. Cl. 24. 7–13–26.
216,720. MA BROWN. Cl. 46. 8–17–26.
216,965. ALL AROUND CREAM AL AND DESIGN. Cl. 51. 8–24–26.
218,284. ENDOTHYRIN. Cl. 18. 9–21–26.
218,363. PROTECTAR. Cl. 12. 9–28–26.
218,555. WAVERLY PRINTS. Cl. 42. 9–28–26.
218,580. THE BELL AND REPRESENTATION OF BELL. Cl. 39. 9–28–26.
219,229. ROSINAL. Cl. 5. 10–12–26.
219,233. SOFTEX. Cl. 6. 10–12–26.
219,234. AETNA. Cl. 6. 10–12–26.
219,331. BANDERILLO. Cl. 39. 10–19–26.
219,358. BAMA. Cl. 46. 10–19–26.
219,538. UNCLE TOM'S. Cl. 46. 10–19–26.
220,771. BRUNSWICK. Cl. 36. 11–16–26.
221,041. HEINZ AND DESIGN. Cl. 46. 11–23–26.
221,126. GRIFFON BONDED BLUE. Cl. 39. 11–23–26.
221,423. GIANTOL. Cl. 15. 11–30–26.
221,992. PARISIAN. Cl. 4. 12–21–26.
222,236. ROYAL CUP. Cl. 46. 12–28–26.
222,899. HYCOE. Cl. 35. 1–11–27.
222,998. ASTRO. Cl. 37. 1–11–27.
222,999. ECUADORIAN PANAMA HAT CO. AND DESIGN. Cl. 39. 1–11–27.
223,444. LUCKY BUY. Cl. 46. 2–1–27.
223,736. AUTOMAT. Cl. 20. 2–8–27.
223,858. ROGERS BRUSHING LACQUER AND DESIGN. Cl. 16. 2–15–27.
224,094. TRAXO. Cl. 18. 2–15–27.
224,226. LOK-BON. Cl. 12. 2–22–27.
224,308. THUMBNAIL CANDY TALK. Cl. 38. 2–22–27.
224,722. CHANTY. Cl. 51. 3–1–27.
224,869. BLUE ANCHOR AND DESIGN. Cl. 46. 3–8–27.
225,187. THE OFFICIAL RAILWAY EQUIPMENT REGISTER. Cl. 38. 3–15–27.
422,334. HERMETITE. Cl. 6. 7–16–46.
422,797. ON DIT. Cl. 52. 8–13–46.
423,715. BENOL. Cl. 18. 9–10–46.
423,859. SUNOCO. Cl. 6. 9–10–46.
423,945. NUTTY COMICS. Cl. 38. 9–17–46.
424,183. YOUNG WORLD. Cl. 51. 9–24–46.
424,288. PACIFIC AND DESIGN. Cl. 18. 10–1–46.
424,314. FAIR LADY. Cl. 39. 10–1–46.
424,378. CHAMPION. Cl. 8. 10–1–46.
424,378. HYDRY AND DESIGN. Cl. 11. 10–1–46.
424,390. RAPTAR. Cl. 26. 10–1–46.
424,438. DESIGN BEAVER AND SHAFT. Cl. 23. 10–8–46.
424,439. FLEXROLL. Cl. 23. 10–8–46.
424,499. DENSCLENE. Cl. 15. 10–8–46.
424,613. MULTI-CENTERCHRONO. Cl. 27. 10–15–46.
424,732. KYNAL. Cl. 51. 10–22–46.
424,990. VARICUT. Cl. 23. 10–29–46.
425,166. ODOR OUT. Cl. 6. 11–5–46.
425,660. SILK-TOP. Cl. 51. 11–26–46.
425,662. PYRIBENZAMINE. Cl. 18. 11–26–46.
425,934. ARIS. Cl. 28. 12–10–46.
425,944. BUTCH. Cl. 38. 12–10–46.
426,118. RESTONIC. Cl. 32. 12–17–46.
426,277. VR. Cl. 23. 12–24–46.
426,360. FORMAX. Cl. 52. 12–24–46.
426,521. K-LENS-M. Cl. 2. 12–31–46.
427,426. UNIBASE. Cl. 18. 2–11–47.
427,496. NOBODIN. Cl. 18. 2–11–47.
427,509. MR. DONUT AND DESIGN. Cl. 46. 2–11–47.
427,642. BAREFOOT FREEDOM AND DESIGN. Cl. 39. 2–18–47.
427,721. METALOX. Cl. 52. 2–18–47.
427,743. DUETTE. Cl. 34. 2–18–47.
427,944. LIFETIME. Cl. 50. 3–4–47.
428,109. IRWIN AND DESIGN. Cl. 23. 3–11–47.

TRADEMARK REGISTRATIONS CANCELED

Section 8

The following registrations issued Oct. 11, 1960

705,387. KAOPOLITE. Cl. 1.
705,395. KAHN-CEPT. Cl. 3.
705,397. AQUASEAL. Cl. 5.
705,398. THERMO-FAX. Cl. 5.
705,408. CAPTAIN BLACK. Cl. 8.
705,412. A.O. Cl. 9.
705,417. HURRI-GREEN. Cl. 10.
705,418. BLUE GRASS. Cl. 11.
705,420. RUSCO PREMIER. Cl. 12.
705,426. CEDAR MAID AND DESIGN. Cl. 12.
705,430. REX. Cl. 12.
705,435. CUSTOM G. Cl. 12.
705,436. GEWI. Cl. 12.
705,439. TOUCH-O-MATIC. Cl. 12.
705,441. BUMP IT BAR. Cl. 13.
705,442. SATINA. Cl. 13.
705,444. MULOX. Cl. 13.
705,447. CATHEDRAL. Cl. 13.
705,454. OCTAGEN. Cl. 15.
705,463. LESOPON. Cl. 16.
705,464. LESODON. Cl. 16.
705,465. LESONIT. Cl. 16.
705,466. LESOCOTE. Cl. 16.
705,467. PENTA-LINE. Cl. 16.
705,482. TRESCILLIN. Cl. 18.
705,483. HECTOCILLIN. Cl. 18.
705,485. PARSTELIN. Cl. 18.
705,486. WHITE HOUSE. Cl. 19.
705,490. MECO MAID. Cl. 19.
705,498. SIMKIMATIC. Cl. 21.
705,500. FLEETWOOD. Cl. 21.
705,503. STARTONE. Cl. 21.
705,505. BISSELLECTRIC. Cl. 21.
705,510. SERENATA. Cl. 21.
705,511. THETA AND DESIGN. Cl. 21.
705,518. FLASHMASTER. Cl. 21.
705,519. LITE-A-LITE. Cl. 21.
705,521. RHEEM AND DESIGN. Cl. 21.
705,524. COLORED RECESSED MARKINGS FOR GOLF BALL. Cl. 22.
705,527. THE BIG BOARD. Cl. 22.
705,533. CLEANTAPE. Cl. 23.
705,535. KEY HOLE DESIGN. Cl. 23.
705,537. MANHATTAN. Cl. 23.
705,538. CAN-CAN AND DESIGN. Cl. 23.
705,543. HANDIMAN. Cl. 23.
705,544. FABCO. Cl. 23.
705,550. PRISMAT. Cl. 26.
705,551. PCA. Cl. 26.
705,552. DIAL-A-STYLE. Cl. 26.
705,562. HAYDON. Cl. 27.
705,564. FLEX-O-MATIC. Cl. 28.
705,565. MRS. AMERICA. Cl. 28.
705,566. GOLDEN-OX. Cl. 29.
705,572. INVITATION CLASSIC. Cl. 32.
705,575. PAGEANT. Cl. 32.
705,583. DINER-MITE. Cl. 34.
705,587. GIFT RITER. Cl. 37.
705,589. TINTIPRINT. Cl. 37.
705,598. HOBBY BIRTHDAY. Cl. 38.
705,601. PLA-NOW. Cl. 38.
705,602. PAULE SYSTEM. Cl. 38.
705,608. D AND DESIGN. Cl. 38.
705,610. SILIKIZED. Cl. 39.
705,612. YEARABOUT. Cl. 39.
705,613. ROCKET AND DESIGN. Cl. 39.
705,626. DIXIE PRIDE. Cl. 39.
705,629. "LIFETIME GOLD STAR TOPS." Cl. 39.
705,632. "SWEET PETITE." Cl. 39.
705,636. DURA-LACE. Cl. 40.
705,639. VILIRON. Cl. 42.
705,641. TOP DECK. Cl. 42.
705,642. LEBEL OF FRANCE. Cl. 42.
705,643. LAVETTE. Cl. 42.
705,647. ROCKAWAY. Cl. 44.
705,650. PLIVOL. Cl. 44.
705,654. R. M. HAAN. Cl. 46.
705,659. THE BAIER-PIT. Cl. 46.
705,668. WHEAT-O-LUNCH. Cl. 46.
705,671. CAROLINA KITCHEN. Cl. 46.
705,672. YELLOW ROSE. Cl. 46.
705,673. HAGUE ETC. AND DESIGN. Cl. 48.
705,674. REPRESENTATION OF A BOAT WITH LIONS. Cl. 48.
705,678. RESPOC. Cl. 50.
705,679. MOON ROCKS. Cl. 50.
705,681. NAMESTIX. Cl. 50.
705,683. SKINLIFT. Cl. 51.
705,688. SAV-ON. Cl. 100.
705,692. SCHOOLMATE. Cl. 101.
705,693. STAMP-O-RAMA. Cl. 101.
705,694. HARRY D. SQUIRES THE MAN BEHIND THE MAN ETC. Cl. 101.
705,695. GOLD SHIELD AND DESIGN. Cl. 101.
705,698. "KISS OF BEAUTY" AND DESIGN. Cl. 103.
705,699. RENTZ HAND OF QUALITY AND DESIGN. Cl. 103.
705,700. AMERICANA HOMES. Cl. 103.
705,701. SKY-HIGHWAY. Cl. 105.
705,705. DENNIS THE MENACE. Cl. 107.
705,706. THE HIGH HOPES. Cl. 107.
705,707. CHAR-KO TOTE. Cl. 2.
705,711. JEWELRY CO. OF AMERICA AND DESIGN. Cl. 28.
705,712. CITY TITES. Cl. 39.
705,715. POND'S C ETC. AND DESIGN. Cl. 51.

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NOVEMBER 29, 1966

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

Adams-Mills Corp., High Point, N.C. 705,610, canc. Cl. 39.
Advance Transformer Co., Chicago, Ill. 819,429, pub. 9–13–66. Cl. 21.
Adventure Line Mfg. Co., Inc., Parsons, Kans. 819,413, pub. 9–13–66. Cl. 19.
Air Reduction Co., Inc., New York, N.Y. 819,642, pub. 9–13–66. Cl. 103.
Albrecht Co., The, Baltimore, Md. 819,516, pub. 9–13–66. Cl. 37.
Alken-Murray Corp., New York, N.Y. 819,835, pub. 9–13–66. Multiple Class (Classes 6, 15, and 52).
Allied Chemical Corp.: *See*—
Barrett Co., The.
Allied Chemical Corp., New York, N.Y. 819,575, pub. 9–13–66. Cl. 42.
Allyson Frocks, Inc., New York, N.Y. 705,632, canc. Cl. 39.
Alumiline Corp., The, Pawtucket, R.I. 705,435, canc. Cl. 12.
American Chain & Cable Co., Inc., New York, N.Y. 819,453, pub. 9–13–66. Cl. 23.
American Chemco, Inc., Decatur, Ga. 819,634, pub. 9–13–66. Cl. 52.
American Enka Corp., Enka, N.C. 819,592, pub. 9–13–66. Cl. 43.
American Heritage Life Insurance Co., Jacksonville, Fla. 819,638, pub. 12–22–64. Cl. 102.
American Home Products Corp.: *See*—
Griffin Mfg. Co., Inc.
American Lacquer Solvents Co., Phoenixville, Pa. 819,401, pub. 9–13–66. Cl. 16.
American Metal Products, Inc., Auburn, Mass. 819,419, pub. 9–13–66. Cl. 19.
American Metal Products, Inc., Auburn, Mass. 819,420, pub. 9–13–66. Cl. 19.
Amphenol Corp., Broadview, Ill. 819,578, pub. 9–13–66. Cl. 42.
Amphenol Corp., Broadview, Ill. 819,579, pub. 9–13–66. Cl. 42.
Amphenol Corp., Broadview, Ill. 819,580, pub. 9–13–66. Cl. 42.
Amphenol Corp., Broadview, Ill. 819,581, pub. 9–13–66. Cl. 42.
Amphenol Corp., Broadview, Ill. 819,582, pub. 9–13–66. Cl. 42.
Amphenol Corp., Broadview, Ill. 819,583, pub. 9–13–66. Cl. 42.
Amphenol Corp., Broadview, Ill. 819,584, pub. 9–13–66. Cl. 42.
Amphenol Corp., Broadview, Ill. 819,585, pub. 9–13–66. Cl. 42.
Anc-Co Preserving Co., Birmingham, Ala., to The Borden Co., New York, N.Y. 219,358, ren. 11–29–66. Cl. 46.
Anselmo Ortiz Rodrigues, Merida (Badajos), Spain. 705,412, canc. Cl. 9.
Applied Power Industries, Inc., Milwaukee, Wis. 819,467, pub. 9–13–66. Cl. 23.
Architectural Woodwork Institute, Chicago, Ill. 705,692, canc. Cl. 101.
Arden, Elisabeth, Sales Corp., New York, N.Y. 422,797, ren. 11–29–66. Cl. 52.
Armel Electronics, Inc., Brooklyn, N.Y. 819,427, pub. 2–20–62. Cl. 21.
Armour and Co., Chicago, Ill. 819,627, pub. 9–13–66. Cl. 51.
Armour and Co., Chicago, Ill. 819,628, pub. 9–13–66. Cl. 51.
Armstrong Cork Co., Lancaster, Pa. 223,786, ren. 11–29–66. Cl. 20.
Arvey Corp., Chicago, Ill. 819,515, pub. 9–13–66. Cl. 37.
Atlas Supply Co., Springfield, N.J. 819,443, pub. 9–13–66. Cl. 21.
Audiophonics Corp., Beverly, Mass. 819,437, pub. 9–13–66. Cl. 21.
B-D Laboratories, Inc., East Rutherford, N.J. 819,492, pub. 9–13–66. Cl. 26.
Backes, M., Sons, to M. Backes Sons, Inc., Wallingford, Conn. 29,299, ren. 11–29–66. Cl. 9.
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Baier Pit Enterprises, Inc., San Fernando, Calif. 705,659, canc. Cl. 46.
Bailey, Philip W., Seattle, Wash. 819,397, pub. 9–13–66. Cl. 16.
Baldwin, D. H., Co., Cincinnati, Ohio. 819,529, pub. 9–13–66. Cl. 38.
Barrett Co., The, to Allied Chemical Corp., New York, N.Y. 218,363, ren. 11–29–66. Cl. 12.
Batterton Coffee Co., Inc., to Royal Cup, Inc., Birmingham, Ala. 222,236, ren. 11–29–66. Cl. 46.
Beagle House: *See*—
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Beatrice Foods Co.: *See*—
Squire Dingee Co.
Beauty Counselors, Inc., Grosse Pointe, Mich. 819,629, pub. 9–13–66. Cl. 51.
Beauty Counselors, Inc., Grosse Pointe, Mich. 819,630, pub. 9–13–66. Cl. 51.
Beaver Gear Works, Inc., Rockford, Ill. 424,438, ren. 11–29–66. Cl. 23.
Beck, A. S., Shoe Corp., New York, N.Y. 819,553, pub. 9–13–66. Cl. 39.
Becton, Dickinson and Co., East Rutherford, N.J. 819,596, pub. 5–10–66. Cl. 44.
Beecham Research Laboratories Ltd., Brentford, England. 705,482, canc. Cl. 18.
Beecham Research Laboratories Ltd., Brentford, England. 705,483, canc. Cl. 18.
Ben-Hur Mfg. Co., Milwaukee, Wis. 705,695, canc. Cl. 101.
Bickner, Clarence T., d.b.a. Bickner Mfg. Co., El Sobrante, Calif. 819,451, pub. 7–5–66. Cl. 23.
Biological Research, Inc., Bridgeton, Mo. 819,861, pub. 9–13–66. Cl. 6.
Biological Research, Inc., Bridgeton, Mo. 819,862, pub. 9–13–66. Cl. 6.
Bissell Inc., Grand Rapids, Mich. 705,505, canc. Cl. 21.
Bivar Co., Palo Alto, Calif. 819,446, pub. 9–13–66. Cl. 21.
Black, Sivalls & Bryson, Inc., Kansas City, Mo. 819,465, pub. 9–13–66. Cl. 23.
Black, Walter J., Inc., Roslyn, N.Y. 819,528, pub. 9–13–66. Cl. 38.
Blanding, Ronald M., d.b.a. Denver Merchandise Mart, Denver, Colo. 819,636, pub. 3–8–66. Cl. 101.
Boker, H., & Co., Inc., New York, N.Y. 705,537, canc. Cl. 23.
Bond Street Ltd., New York, N.Y. 819,328, pub. 9–13–66. Multiple Class (Classes 3 and 8).
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Boss Mfg., Co., Kewanee, Ill. 819,536, pub. 10–5–66. Cl. 39.
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Brittains Ltd., Leek Staffordshire, England. 222,998, ren. 11–29–66. Cl. 37.
Brown, L. C., Co., Atlanta, Ga. 705,626, canc. Cl. 39.
Brown & Sharpe Mfg. Co., North Kingstown, R.I. 819,482, pub. 9–13–66. Cl. 23.
Broyhill Furniture Factories, Lenoir, N.C. 705,572, canc. Cl. 32.
Brunswick Corp., from The Brunswick-Balke-Collender Co., Chicago, Ill. 705,575, canc. Cl. 32.
Brunswick-Balke-Collender Co., The, Wilmington, Del., and Chicago, Ill., to Coral Records, Inc., New York, N.Y. 220,771, ren. 11–29–66. Cl. 36.
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Buehler Corp., The, Indianapolis, Ind. 819,414, pub. 9–13–66. Cl. 19.
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C-B Drug Co., Charlotte, N.C. 819,411, pub. 9–13–66. Cl. 18.
C. & C. Button & Trimming Co., Inc., New York, N.Y. 819,572, pub. 9–13–66. Cl. 40
CSF Compagnie Generale de Telegraphie Sans Fil, Paris, France. 819,486, pub. 9–13–66. Cl. 26.
California Custom Accessories Mfg. Co.: *See*—
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California Fruit Exchange, Sacramento, Calif. 224,869, ren. 11–29–66. Cl. 46.
Canadian Allis-Chalmers Ltd., Lachine, Quebec, Canada. 819,448, pub. 9–13–66. Cl. 23.
Capezio, Inc., New York, N.Y. 705,712, canc. Cl. 39.
Carbon Web Mfg. Corp., Covington, Ky. 705,418, canc. Cl. 11.
Caroline Kitchen Foods, Inc., Forest, Va. 705,671, canc. Cl. 46.
Carter, Mary, Paint Co., Tampa, Fla. 819,330, pub. 11–2–66. Cl. 4.
Catalina, Inc., Los Angeles, Calif. 819,551, pub. 9–13–66. Cl. 39.
C-Cor Electronics, Inc., State College, Pa. 819,640, pub. 1–25–66. Cl. 103.
Chain Belt Co., Milwaukee, Wis. 105,430, canc. Cl. 12.
Chaitlen, Morrie, d.b.a. C. & E. Marshall Co., Chicago, Ill. 819,473, pub. 9–13–66. Multiple Class (Classes 23, 26, and 37.
Chanel Industries, Inc., New York, N.Y. 819,622, pub. 9–13–66. Cl. 51.
Chanel Industries, Inc., New York, N.Y. 819,623, pub. 9–13–66. Cl. 51.
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Charter Design and Mfg. Corp., Minneapolis, Minn. 819,395, pub. 9–13–66. Cl. 13.
Chemically Prestressed Concrete Corp., Van Nuys, Calif. 819,377, pub. 9–13–66. Cl. 12.
Chemon Corp., Stamford, Conn. 705,454, canc. Cl. 15.
Chesebrough-Pond's Inc., New York, N.Y. 705,715, canc. Cl. 51.
Choco-Lato Sales, Inc., South Elmonte, Calif. 819,663. Cl. 45.
Christian Science Publishing Society, The, Boston, Mass. 819,527, pub. 9–13–66. Cl. 38.
Ciba Corp.: *See*—
Ciba Pharmaceutical Products, Inc.
Ciba Pharmaceutical Products, Inc., Summit, N.J., to Ciba Corp., New York, N.Y. 426,662, ren. 11–29–66. Cl. 18.

Cities Service Oil Co.: *See*—
Lindsay-McMillan Co.
Clairol Inc., New York, N.Y. 819,619, pub. 9–6–66. Cl. 51.
Clarel Laboratory: *See*—
Elliot, Glenn J.
Claremont Polychemical Corp., Roslyn Height, N.Y. 819,648. Cl. 16.
Cleanola Co., The., Glenshaw, Pa. 819,331, pub. 9–13–66. Cl. 4.
Cleanola Co., The, Glenshaw, Pa. 819,458, pub. 9–13–66. Cl. 23.
Cleveland Chair Co., Inc., Cleveland, Tenn. 819,500, pub. 9–13–66. Cl. 32.
Coastal Dynamics Corp., Venice, Calif. 819,594, pub. 4–7–64. Cl. 44.
Coastal Dynamics Corp., Venice, Calif. 819,595, pub. 4–7–64. Cl. 44.
Coggins Granite Industries, Inc., Elberton, Ga. 819,617, pub. 9–13–66. Cl. 50.
Cohen, Joseph H., & Sons, Vanity Clothes Inc. to Rapid-American Corp., New York, N.Y. 219,331, ren. 11–29–66. Cl. 39.
Columbia Industries, Inc., San Antonio, Tex. 819,432, pub. 6–22–65. Cl. 22.
Commercial Shirt Corp., The, New York, N.Y. 819,565, pub. 9–13–66. Cl. 39.
Congoleum-Nairn Inc., Kearny, N.J. 819,426, pub. 9–13–66. Cl. 20.
Consolidated Cigar Corp., New York, N.Y. 819,406, pub. 9–13–66. Cl. 17.
Coral Records, Inc.: *See*—
Brunswick-Balke-Collender Co., The.
Corn Products Co., New York, N.Y. 819,364, pub. 9–13–66. Cl. 6.
Costa, Ray, d.b.a. Costa Sales Co., Salinas, Calif. 819,609, pub. 12–21–66. Cl. 46.
Costa Sales Co.: *See*—
Costa, Ray.
Cowles Chemical Co., Cleveland, Ohio. 819,633, pub. 9–13–66. Cl. 52.
Crawford, William R., d.b.a. Scuba Duba, Long Beach, Calif. 819,643, pub. 9–13–66. Cl. 103.
Crown Controls Corp., New Bremen, Ohio. 819,474, pub. 9–13–66. Cl. 23.
Dadan, Inc., Watertown, N.Y. 705,527, canc. Cl. 22.
Dail, Earl B., d.b.a. Enterprise Feed Mill, Mount Olive, N.C. 705,672, canc. Cl. 46.
Dare, Danny, Inc., from Debby Dare, Inc., Kansas City, Mo. 819,540, pub. 9–13–66. Cl. 39.
Dare, Debby, Inc.: *See*—
Dare, Danny, Inc.
Davis, Ronald L., d.b.a. Torrentair, Arlington, Va. 819,423, pub. 9–13–66. Cl. 19.
Davol Rubber Co., Providence, R.I. 705,650, canc. Cl. 44.
Dayco Corp., Dayton, Ohio. 819,424, pub. 9–13–66. Cl. 19.
Dayco Corp., Dayton, Ohio. 819,504, pub. 9–13–66. Cl. 35.
Delaforce & Sons Co.: *See*—
Delaforce Sons & Ca. Limitada.
Delaforce Sons & Ca. Limitada, d.b.a. Delaforce & Sons Co., Villa Nova De Gaya, Portugal. 819,615, pub. 9–13–66. Cl. 47.
Delta Co., The, Wheeling, Ill. 819,332, pub. 9–13–66. Cl. 5.
Delta Mfg. and Engineering Corp., Dallas, Tex. 819,462, pub. 9–13–66. Cl. 23.
De Mert & Dougherty, Inc., Chicago, Ill. 705,467, canc. Cl. 16.
Denney, Frances, Inc., Philadelphia, Pa. 819,626, pub. 9–13–66. Cl. 51.
Densco, Inc.: *See*—
Dental-Specialty Mfg. Co., Inc., The.
Dental-Specialty Mfg. Co., Inc., The, to Densco, Inc., Denver, Colo. 424,499, ren. 11–29–66. Cl. 15.
Denver Merchandise Mart: *See*—
Blanding, Ronald M.
Detroit White Lead Works, to Rogers Paint Products, Inc., Detroit, Mich. 223,858, ren. 11–29–66. Cl. 16.
Dial-A-Style, Inc., Evansville, Ind. 705,552, canc. Cl. 26.
Diaz, Carlos J., New York, N.Y., to Jacinto Sosa, d.b.a. Chanty, Brooklyn, N.Y. 224,722, ren. 11–29–66. Cl. 51.
Dick, A. B., Co., Niles, Ill. 705,535, canc. Cl. 23.
Dixie Yarns, Inc., Chattanooga, Tenn. 819,593, pub. 9–13–66. Cl. 43.
Dixon, Joseph, Crucible Co., The, Jersey City, N.J. 819,524, pub. 9–13–66. Cl. 37.
Doric Corp., Fredericksburg, Ohio. 819,375, pub. 5–10–66. Multiple Class (Classes 12 and 13).
Doric Industries, Inc., Warren, Mich. 819,382, pub. 9–13–66. Cl. 12.
Dover Corp., Grand Rapids, Mich. 819,496, pub. 3–1–66. Cl. 31.
Dow Chemical Co., The, Midland, Mich. 819,605, pub. 9–13–66. Cl. 46.
Drummond Knitwear Co., Ltd., Maspeth, N.Y. 819,558, pub. 9–13–66. Cl. 39.
Dynamics Letter, Inc., The, New York, N.Y. 705,608, canc. Cl. 38.
Eastern Cyclone Industries, Inc., Clifton, N.J. 819,483, pub. 9–13–66. Cl. 24.
Eastman Kodak Co., Rochester, N.Y. 819,574, pub. 9–13–66. Cl. 42.
Ebert Electronics Corp., Queens Village, N.Y. 705,518, canc. Cl. 21.
Ebert Electronics Corp., Queens Village, N.Y. 705,519, canc. Cl. 21.
Ecuadorian Panama Hat Co.: *See*—
Israel, Elias.
Edinger, Erik, Copenhagen, Denmark. 819,407, pub. 9–13–66. Cl. 17.
Edmund Scientific Co., Barrington, N.J. 819,511, pub. 9–13–66. Cl. 37.
Ekstrand, Ernest W., Washington, D.C. 705,647, canc. Cl. 44.
Elars Products, Inc., Richmond, Va. 424,732, ren. 11–29–66. Cl. 51.
Electronic Engineering Co. of Calif., Santa Ana, Calif. 819,439, pub. 9–13–66. Cl. 21.
Electronized Chemicals Corp., Burlington, Mass. 819,445, pub. 9–13–66. Cl. 21.
Elise Mercantile of New York, Inc., New York, N.Y. 705,503, canc. Cl. 21.
Elliott, Glenn J., d.b.a. Clarel Laboratory, McHenry, Ill. 819,368, pub. 9–13–66. Cl. 10.
Eltra Corp., Brooklyn, N.Y. 819,469, pub. 9–13–66. Cl. 23.
Ely & Walker, Inc., Nashville, Tenn. 819,556, pub. 9–13–66. Cl. 39.
Emerson Electric Co., St. Louis, Mo. 819,444, pub. 9–13–66. Cl. 21.
Emgee Corp., from J. M. Greenwell, Honolulu, Hawaii. 819,616, pub. 9–7–66. Cl. 50.
Endo Laboratories Inc.: *See*—
Endo Products Inc.
Endo Products Inc., New York, to Endo Laboratories Inc., Garden City, N.Y. 427,496, ren. 11–29–66. Cl. 18.
Engineering Model Associates, Los Angeles, Calif. 819,487, pub. 9–13–66. Cl. 26.
Enterprise Feed Mill: *See*—
Dail, Earl B.
Esser, T. C., Co., Milwaukee, Wis. 819,402, pub. 9–13–66. Cl. 16.
Estee Candy Co., Inc., New York, N.Y. 819,664. Cl. 46.
Euclid Chemical Co., The, Cleveland, Ohio. 819,356, pub. 9–13–66. Cl. 6.
Euclid Chemical Co., The, Cleveland, Ohio. 819,357, pub. 9–13–66. Cl. 6.
Eyrich, Theresa F., d.b.a. Lavette Co., St. Paul, Minn. 705,643, canc. Cl. 42.
FMC Corp., New York, N.Y. 819,336, pub. 9–13–66. Cl. 6.
Fa. Flensburger Brauereien Emil Petersen & Co., Flensburg, Germany. 705,674, canc. Cl. 48.
Faber, Coe & Gregg, Inc., New York, N.Y. 819,403, pub. 11–24–64. Cl. 17.
Fabricated Metal Products Co., St. Louis, Mo. 705,544, canc. Cl. 23.
Fansteel Metallurgical Corp.: *See*—
Vascoloy-Ramet Corp.
Wesson Co.
Fawcett Publications, Inc., New York, N.Y. 819,531, pub. 9–13–66. Cl. 38.
Fawcett Publications, Inc., New York, N.Y. 819,532, pub. 9–13–66. Cl. 38.
Fayer, William, d.b.a. Snapak Raincoat Co., New York, N.Y. 819,546, pub. 9–13–66. Cl. 39.
Fieldcrest Mills, Inc., Spray, N.C. 819,586, pub. 9–13–66. Cl. 42.
Flex-O-Matic Products: *See*—
Onsrud, Paul O.
Florida Tile Industries, Inc., Lakeland, Fla. 819,381, pub. 9–13–66. Cl. 12.
Flying Tiger Line Inc., The, Burbank, Calif. 705,701, canc. Cl. 105.
Formax Co.: *See*—
Murano, Carl G.
Frank, Wally, Ltd., New York, N.Y. 819,404, pub. 9–13–66. Cl. 17.
Frank, Wally, Ltd., d.b.a. Holleo New York, N.Y. 819,405, pub. 9–13–66. Cl. 17.
Fred Mushroom Products Co., South Lebanon, Ohio. 819,613, pub. 9–13–66. Cl. 46.
Freeman, Carl M., Inc., Bethesda, Md. 705,700, canc. Cl. 103.
Garver Products: *See*—
Garver, Robert I.
Garver, Robert I., d.b.a. Garver Products, Wilton, Conn. 819,607, pub. 9–13–66. Cl. 46.
Gebruder Busatis, German Ltd. Liability Co., Remscheid-Lennep, Germany. 819,457, pub. 9–13–66. Cl. 23.
Geigy Chemical Corp., Ardsley, N.Y. 819,341, pub. 9–13–66. Cl. 6.
Geigy Chemical Corp., Ardsley, N.Y. 819,342, pub. 9–13–66. Cl. 6.
Geigy Chemical Corp., Ardsley, N.Y. 819,343, pub. 9–13–66. Cl. 6.
Geigy Chemical Corp., Ardsley, N.Y. 819,344, pub. 9–13–66. Cl. 6.
Geigy Chemical Corp., Ardsley, N.Y. 819,345, pub. 9–13–66. Cl. 6.
Geigy Chemical Corp., Ardsley, N.Y. 819,346, pub. 9–13–66. Cl. 6.
Geigy Chemical Corp., Ardsley, N.Y. 819,347, pub. 9–13–66. Cl. 6.
Geigy Chemical Corp., Ardsley, N.Y. 819,348, pub. 9–13–66. Cl. 6.
Geigy Chemical Corp., Ardsley, N.Y. 819,349, pub. 9–13–66. Cl. 6.
Geigy Chemical Corp., Ardsley, N.Y. 819,350, pub. 9–13–66. Cl. 6.
Geigy Chemical Corp., Ardsley, N.Y. 819,351, pub. 9–13–66. Cl. 6.
Geigy Chemical Corp., Ardsley, N.Y. 819,352, pub. 9–13–66. Cl. 6.
Geigy Chemical Corp., Ardsley, N.Y. 819,353, pub. 9–13–66. Cl. 6.
Geigy Chemical Corp., Ardsley, N.Y. 819,354, pub. 9–13–66. Cl. 6.
Geigy Chemical Corp., Ardsley, N.Y. 819,355, pub. 9–13–66. Cl. 6.
Geigy Chemical Corp., Ardsley, N.Y. 819,367, pub. 9–13–66. Cl. 10.
General Felt Industries, Inc., Chicago, Ill. 819,587, pub. 9–13–66. Cl. 42.

General Mills, Inc., Minneapolis, Minn. 819,614, pub. 9–13–66. Cl. 46.
General Refractories Co., Philadelphia, Pa. 819,389, pub. 9–13–66. Cl. 12.
General Refractories Co., Philadelphia, Pa. 819,390, pub. 9–13–66. Cl. 12.
General Time Corp., New York, N.Y. 705,562, canc. Cl. 27.
General Tire & Rubber Co., The, Akron, Ohio. 705,678, canc. Cl. 50.
Genesco Inc.: *See*—
Greif, L., & Bro., Inc.
Genesco Inc., Nashville, Tenn. 819,569, pub. 9–13–66. Cl. 39.
Gerta, Lumbard & Co., Chicago, Ill. 705,566 canc. Cl. 29.
Gilford, Inc., New York, N.Y. 819,576, pub. 9–13–66. Cl. 42.
Gilson Bros. Co., Plymouth, Wis. 819,447, pub. 8–25–64. Cl. 23.
Glenmarc Mfg. Co., Northfield, Ill. 819,485, pub. 1–5–65. Cl. 26.
Glidden Electric Corp., The, Manchester, Mass. 819,652. Cl. 21.
Gold Bond Stamp Co., Minneapolis, Minn. 705,693, canc. Cl. 101.
Gold Seal Enterprises: *See*—
Kessler, Herman S.
Golden International, Stamford, Conn. 819,539, 9–13–66. Cl. 39.
Graphic Engineers, Inc., San Bernardino, Calif. 819,463, pub. 9–13–66. Cl. 23.
Great American Kitting Mills, Inc., New York, N.Y. 819,545, pub. 9–13–66. Cl. 39.
Greenwell, James M.: *See*—
Emgee Corp.
Greif, L., & Bro., Inc., Baltimore, Md., to Genesco Inc., Nashville, Tenn. 221,126, ren. 11–29–66. Cl. 39.
Griffin Mfg. Co. Inc., to American Home Products Corp., New York, N.Y. 221,992, ren. 11–29–66. Cl. 4.
Grisley, J. M., Machine Tools: *See*—
Grisley, Robert.
Grisley, Robert, d.b.a. J. M. Grisley Machine Tools, Salt Lake City, Utah. 819,450, pub. 7–5–66. Cl. 23.
Guhl & Scheibler A.G., Basel, Switzerland. 819,481, pub. 9–13–66. Cl. 23.
Gulf Oil Corp., Pittsburgh, Pa. 819,519, pub. 9–13–66. Cl. 37.
H K Corp., Atlanta, Ga. 819,543, pub. 9–13–66. Cl. 39.
H. & W. Shoe Supplies Co., Dumont, N.J. 705,636, canc. Cl. 40.
Haan, R. M.: *See*—
Sharaf Co., Inc., The.
Hall Syndicate, Inc., The, New York, N.Y. 705,705, canc. Cl. 107.
Hammermill Paper Co., Erie, Pa. 819,517, pub. 9–13–66. Cl. 37.
Harrower Laboratory, Inc., The, Wilmington, Del. and Glendale, Calif., to Nelson Boyer Co., Inc., Pasadena, Calif. 218,284, ren. 11–29–66. Cl. 18.
Harvey, Eva: *See*—
Nutty Comics, Inc.
Hassard, R. P., Co., Augusta, Maine. 819,541, pub. 9–13–66. Cl. 39.
Heatbath Corp., Indian Orchard, to Heatbath Mfg. Co. Inc., Springfield, Mass. 427,743, ren. 11–29–66. Cl. 34.
Heatbath Mfg. Co., Inc.: *See*—
Heatbath Corp.
Hedwin Corp., New York, N.Y. 819,327, pub. 9–13–66. Multiple Classes (Classes 2 and 50).
Heileman, G., Brewing Co., Inc., La Crosse, Wis. 819,668. Cl. 48.
Heins, H. J., Co., Pittsburgh, Pa. 221,041, ren. 11–29–66. Cl. 46.
Hepler, Robert H.: *See*—
Stanton, Thomas F.
Herbert Chemical Co., The, Cincinnati, Ohio. 427,721, ren. 11–29–66. Cl. 52.
Herman, Paul J., Chattanooga, Tenn. 705,601, canc. Cl. 38.
Herman, Paul J., Chattanooga, Tenn. 705,602, canc. Cl. 38.
Hermetite Corp., Nutley, N.J., to UMC Industries, Inc., St. Louis, Mo. 422,334, ren. 11–29–66. Cl. 6.
Hess Oil & Chemical Corp., Perth Amboy, N.J. 819,358, pub. 9–13–66. Cl. 6.
Hess Oil & Chemical Corp., Perth Amboy, N.J. 819,359, pub. 9–13–66. Cl. 6.
Hess Oil & Chemical Corp., Perth Amboy, N.J. 819,360, pub. 9–13–66. Cl. 6.
Heyer, C. M., and Co., Inc., Los Angeles, Calif. 705,444, canc. Cl. 13.
Hiawatha Metalcraft, Inc., Minneapolis, Minn. 705,441, canc. Cl. 18.
Hi-Fog Co., The: *See*—
Price, James C.
High Hopes, The: *See*—
Piacitelli, Phillip J., and Fiore.
Hill Packing Co., Topeka, Kans. 819,666. Cl. 46.
Holleo: *See*—
Frank, Wally, Ltd.
Hollister Inc., Chicago, Ill. 819,662. Cl. 44.
Holmes Co., Inc., Lakeland, Fla. 819,388, pub. 9–13–66. Cl. 12.
Household Cleansers Ltd., Ontario, Canada. 819,632, pub. 4–28–64. Cl. 52.
Howmet Corp., New York, NY., from Navaco Co. Division of Howe Sound Co., Dallas, Tex. 819,379, pub. 9–13–66.
Hoyu Co.: *See*—
Hoyu Kabushiki Kaisha.
Hoyu Kabushiki Kaisha, d.b.a. Hoyu Co., Ltd., Nagoya-shi, Japan. 819,620, pub. 9–13–66. Cl. 51.
Huber, J. M., Corp., Borger, Tex. 819,371, pub. 9–13–66. Cl. 11.
Hudnut, Richard, Morris Plains, N.J. 819,672. Cl. 51.
Independent Grocers' Alliance Distributing Co., Chicago, Ill. 819,584, pub. 8–17–65. Cl. 39.
Indian Head Mills, Inc., New York, N.Y. 819,589, pub. 9–13–66. Cl. 43.
Indian Heads Mills, Inc., New York, N.Y. 819,590, pub. 9–13–66. Cl. 43.
Indian Head Mills, Inc., New York, N.Y. 819,591, pub. 9–13–66. Cl. 43.
Industrial Plant Service Inc., Watertown, Mass. 705,426, canc. Cl. 12.
Industria Mexicana De Ropa, S.A., Mexico City, Mexico. 705,613, canc. Cl. 39.
Ingejorsfirma A. Alfredeen, AB, Bandhagen, Sweden. 819,491, pub. 9–13–66. Cl. 26.
Intermarco, Inc., Brighton, Mass. 705,642, canc. Cl. 42.
International Harvester Co., Chicago, Ill., from Rockwell-Standard Corp., Pittsburgh, Pa. 819,417, pub. 9–13–66. Cl. 19.
International Shoe Co., St. Louis, Mo. 819,547, pub. 9–13–66. Cl. 39.
Interscience Information, Inc., New York, N.Y. 819,658. Cl. 38.
Ipco Hospital Supply Corp., New York, N.Y. 819,598, pub. 9–13–66. Cl. 44.
Irwin Auger Bit Co., The, Wilmington, Ohio. 428,109, ren. 11–29–66. Cl. 23.
Israel, Elias, d.b.a. Ecudorian Panama Hat Co., New York, N.Y., to Byer-Rolnick Corp., Garland, Tex. 222,999, ren. 11–29–66. Cl. 39.
Iwan Ries & Co., Chicago, Ill. 819,649. Cl. 17.
Jacinto Sosa: *See*—
Diaz, Carlos J.
Jayson's: *See*—
Yuter, Samuel.
Jeffrey Co., The: *See*—
Jeffrey Mfg. Co., The.
Jeffrey Gallon Mfg. Co.: *See*—
Jeffrey Mfg. Co., The.
Jeffrey Mfg. Co., The, n.b.c.o.n.t. The Jeffrey Co., assor. to The Jeffrey Mfg. Co., a corp. of Ohio, to Jeffrey Gallon Mfg. Co., Columbus, Ohio. 424,439, ren. 11–29–66. Cl. 23.
Jergens, Andrew, Co., Cincinnati, Ohio. 819,624, pub. 9–13–66. Cl. 51.
Jergens, Andrew Co., The, Cincinnati, Ohio. 819,673. Cl. 51.
Jewelry Co. of America: *See*—
Kessler, Herman S.
Johnson, Dorothy E., Evanston, Ill. 819,526, pub. 9–13–66. Cl. 38.
Johnson, H. M., Inc., Elizabeth, N.J. 705,387, canc. Cl. 1.
Johnson & Johnson, d.b.a. Permacel, New Brunswick, N.J. 819,571, pub. 9–13–66. Cl. 40.
Johnson Nurseries (Kingston) Ltd., Kingston, Ontario, Canada. 819,333, pub. 9–13–66. Cl. 6.
Julian & Kokenge Co., The: *See*—
Miller Shoe Co., The.
Kahn, Charles S., Inc., Miami, Fla. 705,395, canc. Cl. 3.
Kanamaru Shoten, Ltd., Tokyo, Japan. 819,646. Cl. 8.
Kanegafuchi Chemical Industry Co., Ltd., Osaka, Japan. 819,570, pub. 4–26–66. Cl. 40.
Kangol Wear Ltd., Cumberland, England. 819,537, pub. 4–26–66. Cl. 39.
Kaspar Wire Works, Inc., Shiner, Tex. 819,464, pub. 9–13–66. Cl. 23.
Kaynee Co., The, Greenville, S.C. 819,557, pub. 9–13–66. Cl. 39.
Kayser-Roth Corp., New York, N.Y. 819,568, pub. 9–13–66. Cl. 39.
Kelly, E. J., Co., Kalamazoo, Mich., to Sun Chemical Corp., New York, N.Y. 424,378, ren. 11–29–66. Cl. 11.
Kennedy Sinclaire, Inc., Montclair, N.J. 819,659. Cl. 38.
Kenrich Shoe Corp., Maysville, Ky. 819,567, pub. 9–13–66. Cl. 39.
Kessler, Herman S., d.b.a. Gold Seal Enterprises and also as Jewelry Co. of America, Baltimore, Md. 705,711, canc. Cl. 28.
Kimberly-Clark Corp., Neenah, Wis. 705,589, canc. Cl. 37.
Kimberly-Clark Corp., Neenah, Wis. 819,520, pub. 9–13–66. Cl. 37.
King-Kan Opener, Inc., New York, N.Y. 705,538, canc. Cl. 23.
Koehler-Dayton, Inc., Dayton, Ohio. 819,454, pub. 9–13–66. Cl. 23.
Kohner, Bros., Inc., New York, N.Y. 819,433, pub. 9–13–66. Cl. 22.
Krauss Accessories Co., The, d.b.a. California Custom Accessories Mfg. Co., Gardena, Calif. 819,412, pub. 9–13–66. Cl. 19.
Labratest, Inc., New York, N.Y. 424,183, ren. 11–29–66. Cl. 51.
Lacto-Seal, Inc., Indianapolis, Ind. 819,661. Cl. 44.
Ladish Co., Cudahy, Wis. 819,460, pub. 9–13–66. Cl. 23.
Ladish Co., Cudahy, Wis. 819,461, pub. 9–13–66. Cl. 23.
Lady Fair Creations, Inc., Newark, N.J. 819,670. Cl. 51.
Lance, Inc., Charlotte, N.C. 705,668, canc. Cl. 46.
Landbouwwerktuigen- En Machinefabriek H. Vissers N.V., Nieuw Vennep, Netherlands. 819,459, pub. 9–13–66. Cl. 23.
Lanvin-Charles of the Ritz, Inc., New York, N.Y. 819,631. pub. 9–13–66. Cl. 51.
Lane Ltd.: *See*—
Lane Tobacco, Ltd.
Lane Tobacco, Ltd., to Lane Ltd., New York, N.Y. 424,373, ren. 11–29–66. Cl. 8.
Latronics Corp., Latrobe, Pa. 819,493, pub. 9–13–66. Cl. 26.
Latronics Corp., Latrobe, Pa. 819,494, pub. 9–13–66. Cl. 26.
Lavette Co., T.: *See*—
Eyrich, Theresa F.
Leary, Ann G., Brookline, Mass. 216,965, ren. 11–29–66. Cl. 51.
Lechler Chr. & Sohn Nachf.: *See*—
Schowitz, Dr. Heinrich.
Lehman Bros., Cleveland, Ohio. 705,397, canc. Cl. 5.
Leonard, Harold, & Co., Inc., New York, N.Y. 819,618, pub. 9–13–66. Cl. 50.

Lindsay-McMillan Co., Milwaukee, Wis., to Cities Service Oil Co., Tulsa, Okla. 219,229, ren. 11–29–66. Cl. 5.
Link Research Corp., Beverly Hills, Calif. 705,679, canc. Cl. 50.
Lipka, Luke H., d.b.a. William H. Simkins Studio, Philadelphia, Pa. 705,498, canc. Cl. 21.
Little, A. P., Inc., Rochester, N.Y. 819,372, pub. 9–13–66. Cl. 11.
Little, A. P., Inc., Rochester, N.Y. 819,373, pub. 9–13–66. Cl. 11.
Litton Precision Products, Inc., Mount Vernon, N.Y. 819,525, pub. 12–1–64. Cl. 38.
Londontown Mfg., Co., The, Baltimore, Md. 819,550, pub. 9–13–66. Cl. 39.
Lorillard, P., Co., New York, N.Y. 819,409, pub. 9–13–66. Cl. 17.
Lubell Bros. Corp.: *See*—
Lubell Brothers.
Lubell Brothers, to Lubell Bros. Corp., New York, N.Y. 216,580, ren. 11–29–66. Cl. 39.
Lucky Furniture Mfg., Co., Inc., Etowah, Tenn. 819,502, pub. 9–13–66. Cl. 34.
MacDuff, Howell, d.b.a. Edward D. Strand, West Boylston, Mass. 819,472, pub. 9–13–66. Cl. 28.
Magikist Service Corp., Chicago, Ill. 705,698, canc. Cl. 103.
Maidenform, Inc., New York, N.Y. 819,561, pub. 9–13–66. Cl. 39.
Maindenform, Inc., New York, N.Y. 819,562, pub. 9–13–66. Cl. 39.
Maidenform, Inc., New York, N.Y. 819,563, pub. 9–13–66. Cl. 39.
Maidenform, Inc., New York, N.Y. 819,564, pub. 9–13–66. Cl. 39.
Mail Enterprises, Inc., Richmond, Va. 819,644, pub. 9–13–66. Cl. 106.
Mair & Son, Inc., Union Gap, Wash. 819,418, pub. 9–13–66. Cl. 19.
Manhattan Rubber Mfg. Co., The, to Raybestos-Manhattan, Inc., Passaic, N.J. 222,899, ren. 11–29–66. Cl. 35.
Manowske, Paul E., Fond du Lac, Wis. 705,707, canc. Cl. 2.
Mantaline Corp., Mantua, Ohio. 819,365, pub. 9–13–66. Cl. 7.
Margio, Inc., New Britain, Conn. 705,681, canc. Cl. 50.
Marshall, C. & E., Co.: *See*—
Chaitlen, Morrie.
Martin Bros. Electric Co., The, Cleveland, Ohio. 819,599, pub. 9–13–66. Cl. 44.
Martin-Marietta Corp., New York, N.Y., from Pope & Gray, Inc., Clifton, N.J. 819,369, pub. 8–30–66. Cl. 11.
Masury, John W., & Son, Brooklyn, N.Y., to Masury Paints, Inc., Baltimore, Md. 52,699, ren. 11–29–66. Cl. 16.
Masury Paints, Inc.: *See*—
Masury, John W., & Son.
Maytag Co., The, to The Maytag Co., Newton, Iowa. 215,216, ren. 11–29–66. Cl. 24.
McConkey, Jay S., d.b.a. McConkey Products, Hollywood, Calif. 705,683, canc. Cl. 51.
McConkey Products: *See*—
McConkey, Jay S.
McGregor-Doniger Inc., New York, N.Y. 819,560, pub. 9–13–66. Cl. 39.
McQuay, Inc., Minneapolis, Minn. 819,495, pub. 2–16–65. Cl. 31.
Med-Dent Publishing Co., San Francisco, Calif. 819,522, pub. 9–13–66. Cl. 37.
Med-Dent Publishing Co., San Francisco, Calif. 819,523, pub. 9–13–66. Cl. 37.
Melnor Industries, Inc., Moonachie, N.J. 819,656. Cl. 23.
Mercury International Hotel Co., Ltd., Los Angeles, Calif. 819,635, pub. 9–13–66. Cl. 100.
Merkle-Korff Gear Co., Chicago, Ill. 819,442, pub. 9–13–66. Cl. 21.
Metals Engineering Corp., Greeneville, Tenn. 705,490, canc. Cl. 19.
Meyer, Joseph H., Bros., Brooklyn, to The Richelieu Corp., Holbrook, N.Y. 425,934, ren. 11–29–66. Cl. 28.
Mial S.p.A., Milan, Italy. 819,430, pub. 9–13–66. Cl. 21.
Microphase Corp., Cos Cob, Conn. 819,436, pub. 9–13–66. Cl. 21.
Mido Societe Anonyme, to Mido G. Schaeren & Co. S.A., Bienne, Switzerland. 424,613, ren. 11–29–66. Cl. 27.
Miller Shoe Co., The, Cincinnati, to The Julian & Kokenge Co., Columbus, Ohio. 427,642, ren. 11–29–66. Cl. 39.
Mills-Pearson Corp., St. Petersburg, Fla. 819,337, pub. 7–5–66. Multiple Class (Classes 6 and 15).
Miniature Precision Bearings, Inc., d.b.a. Split Ballbearing, Keene, N.H. 819,466, pub. 9–13–66. Cl. 23.
Minneapolis Sound Laboratories, Inc., Minneapolis, Minn. 705,510, canc. Cl. 21.
Minnesota Mining and Mfg. Co.: *See*—
Wollensak Optical Co.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 705,398, canc. Cl. 5.
Minnesota Mining and Mgf. Co., St. Paul, Minn. 819,573, pub. 9–13–66. Cl. 40.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 819,655. Cl. 22.
Missouri-Rodgers Corp., Joplin, Mo. 819,455, pub. 7–26–66. Cl. 23.
Missouri-Rogers Corp., Joplin, Mo. 819,456, pub. 7–19–66. Cl. 23.
Mister Donut of America, Inc.: *See*—
Ragsdale, Finis.
Molded Specialties, Inc., Cleveland, Ohio. 819,396, pub. 9–13–66. Cl. 13.
Monumental Films and Recording, Inc., Baltimore, Md. 819,505, pub. 4–20–65. Cl. 36.
Morton International, Inc., Chicago, Ill. 819,477, pub. 9–13–66. Cl. 23.
Morton Mfg. Co., Chicago, Ill. 819,376, pub. 9–13–66. Multiple Class (Classes 12 and 32).
Moulton Bicycles Ltd., Bradford-On-Avon, England. 819,421, pub. 9–13–66, Cl. 19.
Mrs. America, Inc., New York, N.Y. 705,565, canc. Cl. 28.
Murano, Carl G., d.b.a. Formax Co., New Haven, Conn. 426,360, ren. 11–29–66, Cl. 52.
Murray Undergarment Co., Inc., New York, N.Y. 819,548, pub. 9–13–66. Cl. 39.
N.V. Technische Handelsonderneming J. V. Meijer, Soest, Netherlands. 705,436, canc. Cl. 12.
Naamloose Vennootschap Zuid-Hollandsche Bierbrouwerij, d.b.a. South Holland Brewery, The Hague, Netherlands. 705,673, canc. Cl. 48.
Nationwide Papers Inc., Chicago, Ill. 819,513, pub. 9–13–66. Cl. 37.
National Presto Industries, Inc., Eau Claire, Wis. 705,500, canc. Cl. 21.
Navaco Co., Division of Howe Sound Co.: *See*—
Howmet Corp.
Nelson-Boyer Co., Inc.: *See*—
Harrower Laboratory, Inc.
Nippon Electric Co., Ltd., Tokyo, Japan. 819,654. Cl. 21.
Norcross, Inc.: *See*—
Norcross.
Norcross, Inc., New York, N.Y. 819,512, pub. 9–13–66. Cl. 37.
Norcross to Norcross, Inc., New York, N.Y. 425,944, ren. 11–29–66. Cl. 38.
Northwest Paper Co., The: *See*—
Northwest Paper Co., The.
Northwest Paper Co., The, to The Northwest Paper Co., Cloquet, Minn. 210,360, ren. 11–29–66. Cl. 37.
Northwest Paper Co., The: *See*—
Northwest Paper Co., The.
Northwest Paper Co., The, to The Northwest Paper Co., Cloquet, Minn. 211,843, ren. 11–29–66. Cl. 37.
Northwestern Golf Co., Chicago, Ill. 819,435, pub. 9–13–66. Cl. 22.
Nulomoline Co., to The Sucrest Corp., New York, N.Y. 224,308, ren. 11–29–66. Cl. 38.
Nutty Comics, Inc., to Eva Harvey, New York, N.Y. 423,945, ren. 11–29–66. Cl. 38.
Ohio Clay Co., The, Cleveland, Ohio. 224,226, ren. 11–29–66. Cl. 12.
Ohmart Corp., The, Cincinnati, Ohio. 819,490, pub. 11–9–65. Cl. 26.
Oki Electric Industry Co., Ltd., Tokyo, Japan. 819,428, pub. 1–28–64. Multiple Class (Classes 21 and 36).
O'Malley Lumber Co., The, Phoenix, Ariz. 819,378, pub. 9–13–66. Cl. 12.
One-Design Yachtsman, Inc.,Chicago, Ill. 819,530, pub. 9–13–66. Cl. 38.
Onsrud, Paul O., d.b.a. Flex-O-Matic Products, La Crosse, Wis. 705,564, canc. Cl. 28.
Orlik, L., Ltd., London, England. 705,408, canc. Cl. 8.
Orr & Sembower, Inc., Reading, Pa. 819,503, pub. 7–5–66. Cl. 34.
Otarion Electronics, Inc., Ossining, N.Y. 819,600, pub. 9–13–66. Cl. 44.
Outboard Marine Corp., Waukegan, Ill. 819,416, pub. 9–13–66. Cl. 19.
Pacific Wire Works Co.: *See*—
Pacific Wire Works, Inc.
Pacific Wire Works, Inc., to Pacific Wire Works Co., Seattle, Wash. 424,288, ren. 11–29–66. Cl. 13.
Pall Corp., Glen Cove, N.Y. 819,497, pub. 9–13–66. Cl. 31.
Parke, Davis & Co., Detroit, Mich. 427,426, ren. 11–29–66. Cl. 15.
Parke, Davis & Co., Detroit, Mich. 819,601, pub. 9–13–66. Cl. 44.
Parker Pen Co., The, Janesville, Wis. 819,509, pub. 9–13–66. Cl. 37.
Pavement Equipment Mfg. Co.: *See*—
Pemco, Inc.
Peavey Co., Minneapolis, Minn. 819,610, pub. 9–13–66. Cl. 46.
Peavey Co., Minneapolis, Minn. 819,611, pub. 9–13–66. Cl. 46.
Peavey Co., Minneapolis, Minn. 819,612, pub. 9–13–66. Cl. 46.
Pellon Corp., New York, N.Y. 705,639, canc. Cl. 42.
Pemco, Inc. from Pavement Equipment Mfg. Co., Roselle, Ill. 819,449, pub. 9–13–66. Cl. 23.
Penn-Akron Corp., Woodside, N.Y. 705,442, canc. Cl. 13.
Pennock, Jerome H., Moorestown, N.J. 705,598, canc. Cl. 38.
Permacel: *See*—
Johnson & Johnson.
Peters, Walter, Solingen-Wald, Germany. 819,468, pub. 9–13–66. Cl. 23.
Phelps Dodge Electronic Products Corp., New York, N.Y. 819,651. Cl. 21.
Phillips Mfg. Co., Inc., Minneapolis, Minn. 819,653. Cl. 21.
Photon, Inc., Cambridge, Mass. 705,533, canc. Cl. 23.
Photronic Corp. of America, Takoma Park, Md. 705,550, canc. Cl. 26.
Photronic Corp. of America, Takoma Park, Md. 705,551, canc. Cl. 26.
Placitelli, Philip J., and Louis Fiore, d.b.a. The High Hopes, Norristown, Pa. 705,706, canc. Cl. 107.
Pinkerton Security, Inc., Detroit, Mich. 819,438, pub. 9–13–66. Cl. 21.
Pinus Medicine Co., Monticello, Ill., to Pluto Corp., French Lick, Ind. 224,094, ren. 11–29–66. Cl. 18.
Pittsburgh Plate Glass Co., Pittsburgh, Pa. 819,380, pub. 9–13–66. Cl. 12.
Pluto Corp.: *See*—
Pinus Medicine Co.
Pollack, Sheldon L., Los Angeles, Calif. 819,374, pub. 5–30–61. Cl. 12.
Ponton, Charles P., d.b.a. Spray-Tex Co., Corpus Christi, Tex. 819,625, pub. 9–13–66. Cl. 51.

Pope & Gray, Inc.: *See*—
Martin-Marietta Corp.
Porafior, Inc., Woodside, N.Y. 819,400, pub. 9–13–66. Cl. 16.
Porch & Patio Inc., Rockville Centre, N.Y. 819,501, pub. 8–15–66. Cl. 32.
Potential, Inc., Del Mar, Calif. 819,431, pub. 1–19–65. Cl. 22.
Price, James C., d.b.a. The Hi-Fog Co., Montebello, Calif. 819,452, pub. 9–13–66. Cl. 23.
Principle Business Enterprises, Inc., Perrysburg, Ohio. 819,533, pub. 10–8–63. Cl. 39.
Private Brands, Inc., Kansas City, Mo. 819,334, pub. 9–13–66. Cl. 6.
Procter & Gamble Co., The, Cincinnati, Ohio. 819,521, pub. 9–13–66. Cl. 37.
Puritan Chemical Co., Atlanta, Ga. 425,166, ren. 11–29–66. Cl. 6.
Readco Industries Inc., Readingg, Mass. 819,383, pub. 9–13–66. Cl. 39.
Quarterback Sports Federation Inc., Minneapolis, Minn. 819,621, pub. 9–13–66. Cl. 51.
Racine Industrial Plant, Inc., Racine, Wis. 819,650. Cl. 21.
Ragsdale, Finis L., Everett, Wash., to Mister Donut of America, Inc., Westwood, Mass. 427,509, ren. 11–29–66. Cl. 46.
Railway Equipment and Publication Co., The, New York, N.Y. 225,187, ren. 11–29–66. Cl. 38.
Rapid-American Corp.: *See*—
Cohen, Joseph H., & Sons, Vanity Clothes Inc.
Raybestos-Manhattan, Inc.: *See*—
Manhattan Rubber Mfg. Co., The.
Reach, Milton B., Springfield, Mass. 705,524, canc. Cl. 22.
Readco Industries Inc., Readings, Mass. 819,383, pub. 9–13–66. Cl. 12.
Readco Industries Inc., Reading, Mass. 819,384, pub. 9–13–66. Cl. 12.
Readco Industries Inc., Reading, Mass. 819,399, pub. 9–13–66. Cl. 16.
Reichard-Coulston, Inc., New York, N.Y. 219,233, ren. 11–29–66. Cl. 6.
Reichard-Coulston, Inc., New York, N.Y. 219,234, ren. 11–29–66. Cl. 6.
Reliable Luggage, Inc., West Pittsburgh, Pa. 819,329, pub. 9–13–66. Cl. 3.
Remark Chemical Co., Inc., Miami, Fla. 705,417, canc. Cl. 10.
Rents Auto Body Co.: *See*—
Rents, Harry E., Jr.
Rents, Harry E., Jr., d.b.a. Rents Auto Body Co., Wilmington, Del. 705,699, canc. Cl. 103.
Restonic Corp.: *See*—
Wonder-Rest Corp.
Revlon, Inc., New York, N.Y. 819,674. Cl. 51.
Reynolds Metals Co., Richmond, Va. 819,510, pub. 9–13–66. Cl. 37.
Rheem Mfg. Co., New York, N.Y. 819,506, pub. 9–13–66. Cl. 36.
Rheem Mfg. Co., New York, N.Y. 819,507, pub. 9–13–66. Cl. 36.
Rheem Mfg. Co., Richmond, Calif. 705,521, canc. Cl. 21.
Richelieu Corp., The: *See*—
Meyer, Joseph H., Bros.
Rockwell-Standard Corp.: *See*—
International Harvester Co.
Roselon Yarns, Inc., Philadelphia, Pa. 819,588, pub. 9–13–66. Cl. 43.
Rosenthal, Ralph, Richmond, Va. 819,602, pub. 12–29–64. Cl. 46.
Royal Cup, Inc.: *See*—
Batterton Coffee Co., Inc.
Ruberoid Co., The, South Bound Brook, N.J. 819,425, pub. 9–13–66. Cl. 20.
Russell, F. C., Co., The, Columbiana, Ohio. 705,420, canc. Cl. 12.
S-B Mfg. Co., to S-B Mfg. Co., Milwaukee, Wis. 427,944, ren. 11–29–66. Cl. 50.
Safety-Sight, Inc., Baltimore, Md. 819,488, pub. 9–13–66. Cl. 26.
Salem Shoe Mfg. Co., Salem, Mass. 819,538, pub. 9–13–66. Cl. 39.
Sandos, Inc., Hanover, N.J. 819,339, pub. 9–13–66. Cl. 6.
Sav-on Drugs, Inc., Los Angeles, Calif. 705,688, canc. Cl. 100.
Scantlin Electronics, Inc., Los Angeles, Calif. 819,639, pub. 9–13–66. Cl. 102.
Schaeren, Mido G., & Co., S.A.: *See*—
Mido Societe Anonyme.
Schowits, Dr. Heinrich, d.b.a. Chr. Lechler & Sohn NACH, Stuttgart-Feuerbach, Germany. 705,463, canc. Cl. 16.
Schowits, Dr. Heinrich, d.b.a. Chr. Lechler & Sohn NACH, Stuttgart-Feuerbach, Germany. 705,464, canc. Cl. 16.
Schowits, Dr. Heinrich, d.b.a. Chr. Lechler & Sohn NACHF, Stuttgart-Feuerbach, Germany. 705,465, canc. Cl. 16.
Schowits, Dr. Heinrich, d.b.a. Chr. Lechler & Sohn NACHF, Stuttgart-Feuerbach, Germany. 705,466, canc. Cl. 16.
Schumacher, F., & Co., New York, N.Y. 218,555, ren. 11–29–66. Cl. 42.
Scott, Robert R., Corp., New York, N.Y. 705,641, canc. Cl. 42.
Scuba Duba: *See*—
Crawford, William R., III.
Sears, Roebuck and Co., Chicago, Ill. 705,543, canc. Cl. 23.
Selinsheimer, H. A., Co., The, Cincinnati, Ohio. 705,612, canc. Cl. 39.
Senior & Co. Inc., Curacao, Netherlands Antilles. 819,669. Cl. 49.
Service Heel Co., Inc., Lawrence, Mass. 705,629, canc. Cl. 39.
Sexton Can Co., Inc., Everett, Mass. 705,583, canc. Cl. 34.
Shaffer Enterprises: *See*—
Shaffer, Glen D.
Shaffer, Glen D.: *See*—
Shaffer Enterprises, Inc.
Shaffer Enterprises, Inc., Kansas City, Mo., from G. D. Shaffer, d.b.a. Shaffer Enterprises, Kansas City, Mo. 819,637, pub. 8–2–66, Cl. 101.
Shakespeare Co., Kalmasoo, Mich. 819,434, pub. 9–13–66. Cl. 22.
Sharaf Co., Inc., The, d.b.a. R. M. Haan, and as Royal Confectionery Co., East Boston, Mass. 705,654, canc. Cl. 46.
Sheffield Corp., The, Dayton, Ohio. 819,489, pub. 9–13–66. Cl. 26.
Sherwin-Williams Co., The, Cleveland, Ohio. 819,338, pub. 9–13–66. Cl. 6.
Shur-Line Mfg. Co., Inc., Lancaster, N.Y. 819,386, pub. 9–13–66. Cl. 12.
Simkins, William H., Studio: *See*—
Lipka, Luke H.
Sisk, Albert W., & Son, Preston, Md. 819,606, pub. 9–13–66. Cl. 46.
Smith Kline & French Laboratories, Philadelphia, Pa. 705,485, canc. Cl. 18.
Snapak Raincoat Co.: *See*—
Fayer, William.
Sonneborn, L., Sons, Inc., to Witco Chemical Co., Inc., New York, N.Y. 423,715, ren. 11–29–66. Cl. 18.
Soundex Radio Corp., Brockton, Mass. 819,508, pub. 9–13–66. Cl. 36.
South Holland Brewery: *See*—
Naamloose Vennootschap Zuid-Hollandsche Bierbrouwerij.
Southern California Gas Co., Los Angeles, Calif. 819,676. Cl. 100.
Southern Counties Gas Co. of California, Los Angeles, Calif. 819,676. Cl. A.
Souvenir Lead Pencil Co., Cedar Rapids, Iowa. 705,587, canc. Cl. 37.
Spencer, Walter, & Co., Ltd., Sheffield, England. 57,617, ren. 11–29–66, Cl. 14.
Splendor Form Brassiere Co., Inc., New York, N.Y. 819,566, pub. 9–13–66. Cl. 39.
Split Ballbearing: *See*—
Miniature Precision Bearings, Inc.
Spray-Tex Co.: *See*—
Ponton, Charles P.
Squire Dingee Co., to Beatrice Foods Co., Chicago, Ill. 216,720, ren. 11–29–66. Cl. 46.
Squires, Harry D., Enterprises: *See*—
Squires, Harry D.
Squires, Harry D., d.b.a. Squires, Harry D., Enterprises, New York, N.Y. 705,694, canc. Cl. 101.
Standard Brands Inc., New York, N.Y. 819,608, pub. 9–13–66. Cl. 46.
Standard Oil Co. of Calif., San Francisco, Calif. 819,340, pub. 9–13–66. Cl. 6.
Stanton, Thomas F., New Stanton, Pa., to Robert H. Hepler, Youngwood, Pa. 219,538, ren. 11–29–66. Cl. 46.
Stokely-Van Camp, Inc.: *See*—
Vail Ed. S., Butterine Co.
Strand, Edward D.: *See*—
MacDuff, Howell.
Stutman, Hyman H.: *See*—
Stutman, Hyman H.
Stutman, Hyman H., Brighton, Mass., to Hyman H. Stutman, Brookline, Mass. 424,314, ren. 11–29–66. Cl. 39.
Sucrest Corp.: *See*—
Nulomoline Co., The.
Sun Chemical Corp.: *See*—
Kelly, E. J., Co.
Sun Chemical Corp., New York, N.Y. 819,370, pub. 9–13–66. Cl. 11.
Sun Oil Co., Philadelphia, Pa. 423,859, ren. 11–29–66. Cl. 6.
Swedlow Inc., Garden Grove, Calif. 819,385, pub. 9–13–66. Cl. 12.
Sybil Ives Inc., White Plains, N.Y. 819,671. Cl. 51.
Tamara Products: *See*—
Tamara Royal Jelly Products.
Tamara Royal Jelly Products, d.b.a. Tamara Products, New York, N.Y. 819,410, pub. 9–13–66. Cl. 18.
Technical Development Co., Glenolden, Pa. 819,498, pub. 9–13–66. Cl. 31.
Texas Refinery Corp., Fort Worth, Tex. 819,647. Cl. 16.
Theta Electronics, Inc., Greensburg, Pa. 705,511, canc. Cl. 21.
Thomas Pride Mills, Inc., Atlanta, Ga. 819,577, pub. 9–13–66. Cl. 42.
Tiona Petroleum Co., Camden, N.J. 221,423, ren. 11–29–66, Cl. 15.
Towel City Towel Co., Inc., Kannapolis, N.C. 819,660. Cl. 42.
Torrentair: *See*—
Davis, Ronald L.
Torrington Co., The, Torrington, Conn. 819,471, pub. 9–13–66. Cl. 23.
Trappey B. F., Sons Inc., New Iberia, La. 819,665. Cl. 46.
Turco Paint & Varnish Co., Inc., Philadelphia, Pa. 819,398, pub. 9–13–66. Cl. 16.
Turmac Tobacco Co., Frederikspleln, Netherlands. 819,408, pub. 9–13–66. Cl. 17.
Twin-Fire Corp., Albert City, Iowa. 819,657. Cl. 34.
UMC Industries, Inc.: *See*—
Hemetite Corp.
United-Carr Inc., Boston, Mass. 819,391, pub. 9–13–66. Cl. 13.
United Republicans of America, Washington, D.C. 819,645, pub. 9–13–66. Cl. 200.
United Salesmen, Inc., Brooklyn, N.Y. 819,604, pub. 9–14–66. Cl. 46.

United States Steel Corp.: *See*—
United States Steel Corp.
United States Steel Corp. from United States Steel Corp., Pittsburgh, Pa. 819,387, pub. 9–13–66. Cl. 12.
United States Steel Corp. from United States Steel Corp., Pittsburgh, Pa. 819,392, pub. 9–13–66. Cl. 18.
Universal Fabricators, Inc., New York, N.Y. 705,439, canc. Cl. 12.
V & V Mfg. Co.: *See*—
Vlasin, Ronald J.
Vail, Ed. S., Butterine Co., Chicago, Ill., to Stokely-Van Camp, Inc., Columbus, Ohio. 223,444, ren. 11–29–66. Cl. 46.
Valtronic Corp., The, New York, N.Y. 819,499, pub. 11–24–66. Cl. 32.
Valmor Products Co.: *See*—
Valmor Products Co.
Valmor Products Co., to Valmor Products Co., Chicago, Ill. 425,660, ren. 11–29–66. Cl. 51.
Vapor Corp., Chicago, Ill. 819,441, pub. 9–13–66. Cl. 21.
Vascoloy-Ramet Corp., to Fansteel Metallurgical Corp., North Chicago, Ill. 426,277, ren. 11–29–66. Cl. 23.
Venus Pen & Pencil Corp., New York, N.Y. 819,514, pub. 9–13–66. Cl. 37.
Verplex Co., The, Essex, Conn. 819,440, pub. 9–13–66. Cl. 21
Virginia Maid Hosiery Mills, Inc., Pulaski, Va. 819,549, pub. 9–13–66. Cl. 39.
Vlasin, Ronald J., d.b.a. V & V Mfg. Co., Crete, Neb. 819,470, pub. 9–13–66. Cl. 23.
Volgt, Albert, Industries, Inc., Hicksville, N.Y. 819,393, pub. 9–13–66. Cl. 13.
Vollrath Co., The, Sheboygan, Wis. 705,447, canc. Cl. 13.
Waldmann, Adolf, German Ltd. Liability Co., Pforzheim, Germany. 819,366, pub. 9–13–66. Cl. 8.
Washington Forge, Inc., Englishtown, N.J. 819,478, pub. 9–13–66. Cl. 23.
Washington Forge, Inc., Englishtown, N.J. 819,479, pub. 9–13–66. Cl. 23.
Washington Forge, Inc., Englishtown, N.J. 819,480, pub. 9–13–66. Cl. 23.
Wayne Candles, Inc., Fort Wayne, Inc. 819,603, pub. 9–13–66. Cl. 46.
Wembley, Inc., New Orleans, La. 819,544, pub. 9–13–66. Cl. 39.
Wembley, Inc., New Orleans, La. 819,552, pub. 9–13–66. Cl. 39.
Wesson Co., Ferndale, Mich., to Fansteel Metallurgical Corp., North Chicago, Ill. 424,990, ren. 11–29–66. Cl. 23.
West Brothers of De Ridder, Louisiana Inc., De Ridder, La. 819,559, pub. 9–13–66. Cl. 39.
Westinghouse Electric Corp., Baltimore, Md. 819,422, pub. 9–13–66. Cl. 19.
Weyerhaeuser Co., Tacoma, Wash. 819,326, pub. 9–13–66. Multiple Class (Classes 2, 12, and 32).
Weyerhaeuser Co., Tacoma, Wash. 819,518, pub. 9–13–66. Cl. 37.
Whirlpool Corp., Benton Harbor, Mich. 819,641, pub. 8–30–66. Cl. 103.
White Swan Uniforms, Inc., New York, N.Y. 819,554, pub. 9–13–66. Cl. 39.
Whitehouse Reinforced Plastic Co., Fort Worth, Tex. 705,486, canc. Cl. 19.
Wilkins, Ralph R., Cortland, N.Y. 426,521, ren. 11–29–66. Cl. 2.
Witco Chemical Co., Inc.: *See*—
Sonneborn, L., Sons, Inc.
Wolch's Nut & Candy Co., Chicago, Ill. 819,667. Cl. 46.
Wollensak Optical Co., Rochester, N.Y., to Minnesota Mining and Mfg. Co., St. Paul, Minn. 424,890, ren. 11–29–66. Cl. 26.
Wonder-Rest Corp., Milwaukee, Wis., to Restonic Corp., Chicago, Ill. 426,118, ren. 11–29–66. Cl. 32.
Wood Newspaper Machinery Corp., Plainfield, N.J. 819,475, pub. 7–5–28. Cl. 23.
Woodford Mfg. Co., Des Moines, Iowa. 819,394, pub. 9–13–66. Multiple Class (Classes 13 and 25).
Woolfolk, Jacquelin D., d.b.a. Beagle House, Pittsburgh, Pa. 819,535, pub. 9–13–66. Cl. 39.
Work Wear Corp., Cleveland, Ohio. 819,542, pub. 9–13–66. Cl. 39.
Young Drug Products Corp., New York, N.Y. 819,597, pub. 9–13–66. Cl. 44.
Yuter, Samuel, d.b.a. Jayson's, Philadelphia, Pa. 819,484, pub. 7–12–66. Cl. 24.
Zevel Corp., La Mirada, Calif. 819,363, pub. 9–13–66. Cl. 6.

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